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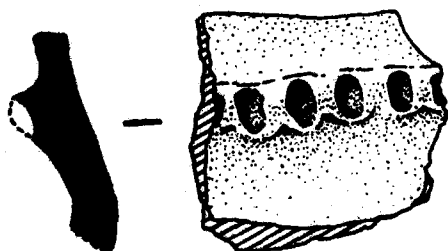
**The Archeology Laboratory
of the Center for Western Studies
Augustana College**

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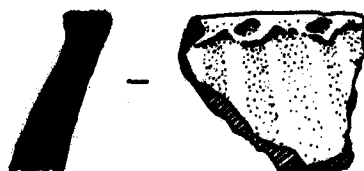
Cultural Resources Reconnaissance Along the Cheyenne River Arm of Lake Oahe in Dewey, Haakon, Stanley, and Ziebach Counties, South Dakota

Volume 1 Main Report

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CULTURAL RESOURCES RECONNAISSANCE
ALONG THE CHEYENNE RIVER ARM OF LAKE OAHE
IN DEWEY, HAAKON, STANLEY AND ZIEBACH COUNTIES, SOUTH DAKOTA

VOLUME 1
MAIN REPORT

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ARCHEOLOGY LABORATORY OF THE CENTER FOR WESTERN STUDIES,
AUGUSTANA COLLEGE, SIOUX FALLS, SOUTH DAKOTA

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A Class II Inventory survey of over 19,000 acres along both banks of the Cheyenne River arm in Dewey, Haakon, Stanley and Ziebach counties, South Dakota, was conducted by the Archeology Laboratory, Augustana College from August to October 1986. Sixty-nine sites with seventy-two site components were recorded, consisting of thirty artifact scatters, twenty-seven cairns, three cemeteries, an earthlodge village, a mound group, six depressions and four historic sites. All diagnostic material recovered was associated with the Late Prehistoric and Historic periods.

Geomorphological and ethnohistorical studies augmented the archeological survey and provided a more integrated evaluation of this area. Extensive channel migration of the Cheyenne River was documented and areas with the potential for buried deposits were identified.

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A survey of this scope involves interaction with many people and organizations. We would like to acknowledge the help and cooperation of the following groups and individuals: The Cheyenne River Sioux Tribe (particularly Raymond Roach of the Cultural Center, Don Annis, Representative of District III on the Tribal Council, and Morgan Garreau, Tribal Chairman); U.S. Army Corps of Engineers Archeologists, Richard Berg (Omaha, NE) and Timothy Nowak (Pierre, SD); U.S. Army Corps of Engineers Park Manager, Ronald O. Hamborg; The Bureau of Indian Affairs (particularly Wayland Lilly, Lands Operations Officer, and Don White, who helped locate maps and photographs at the BIA Office in Eagle Butte); Gary Marrone, South Dakota Department of Game, Fish and Parks, Pierre, for use of the Foster Bay spawning station; the South Dakota Department of Water and Natural Resources, Pierre, for loaning us a reference book; Ken Heil, Dewey County SCS (Pierre); Bob Demery, Ziebach County SCS (Dupree); Bob Nielson, Haakon County SCS; Darwin Heyd, U.S. Geological Survey, for providing information on gaging stations; the staff of the Stanley and Dewey County courthouses and the State Library Archives in Pierre; John Borst, the Robinson Museum, Pierre; and Bob Alex, Pat Hofer, and Tom Haberman of the South Dakota Archaeological Research Center. The EROS data center provided information on the available photographic coverage of the area and the S.D. Geological Survey provided information on reports and maps.

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Type and Purpose of Investigation

This project consisted of a Class II Inventory/cultural resources reconnaissance survey of the Cheyenne River arm of Lake Oahe (Figure 1). The survey area included portions of Dewey, Haakon, Stanley and Ziebach counties, South Dakota (Figure 2). The reconnaissance area was comprised of about 20,220 acres from the shoreline to the takeline. A 70 percent sample survey of a portion (4,024 acres) of the reconnaissance area meant that on-the-ground survey of a total of 19,016 acres was projected.

The purpose of this reconnaissance was to satisfy the U.S. Army Corps of Engineers, Omaha District's obligations to Federal Preservation legislation and associated implementing regulations by providing both documentation and evaluation of the cultural resources located within the area bounded by the shoreline and the takeline along the reservoir (see appendices G and H).

Study Area

The study area extends into two of the Archeological Regions established in South Dakota: 1) the Central Cheyenne Region (Haakon and Ziebach counties), and 2) the Bad/Cheyenne Region (Stanley and Dewey counties) (CSDA 1986). The survey areas are situated along the now inundated Cheyenne River floodplain and its tributaries within the Pierre Hills physical division of South Dakota (Westin and Malo 1978:11).

Summary of Procedures and Personnel

After award of the contract on June 16, 1986, background research for the project was begun. Site-specific information was initially obtained from the South Dakota Archaeological Research Center, then located at Fort Meade. The Archeology Laboratory of the Center for Western Studies (ALCWS) also had relevant information at hand, obtained during previous research at archives in Lincoln, Nebraska; at the South Dakota Archaeological Research Center; and at repositories in Pierre, SD. Additionally, previous work by ALCWS near the project area (Winham

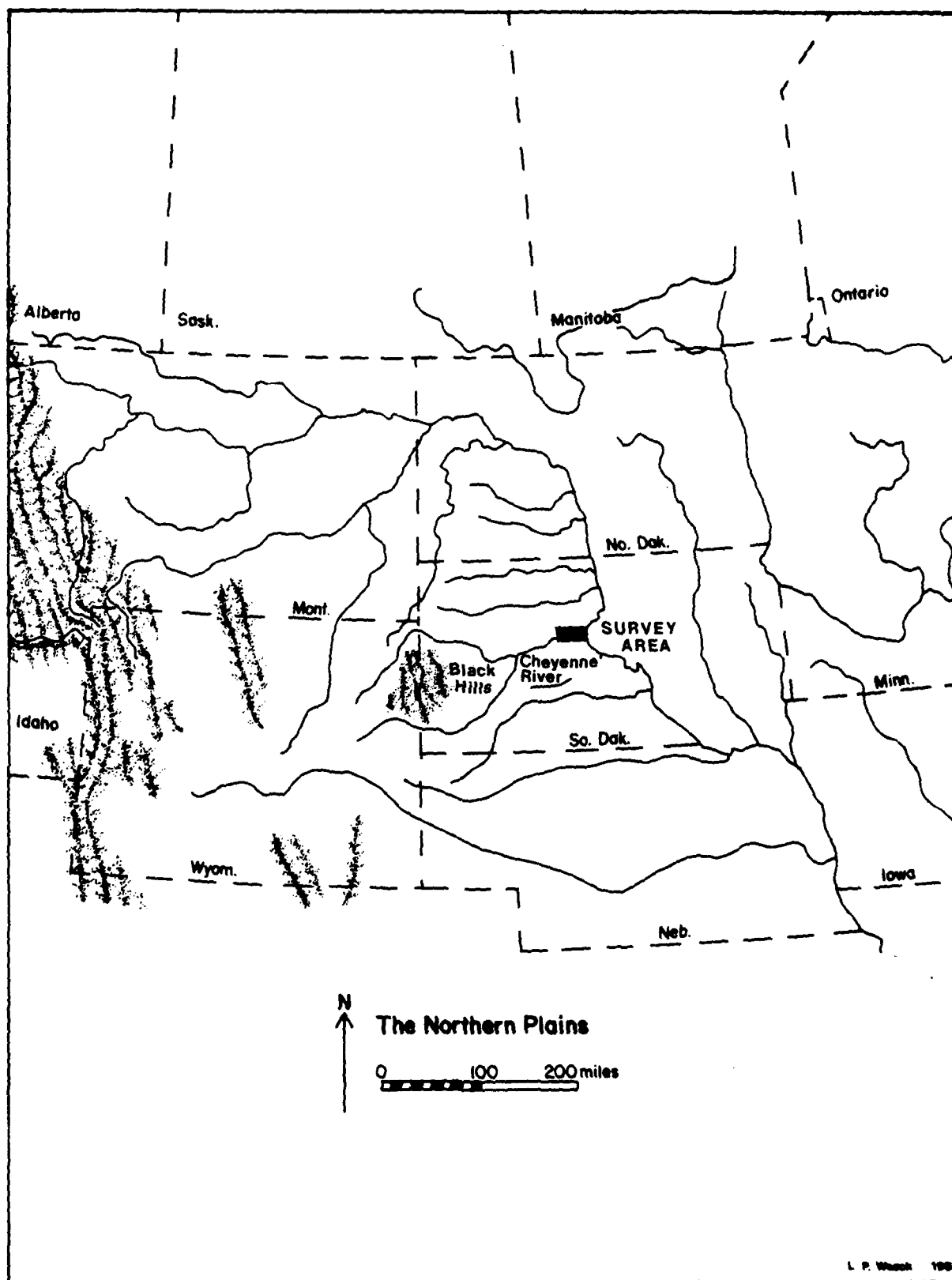


Figure 1. General location of the survey area within the Northern Plains, showing the Cheyenne River in relation to the Black Hills.

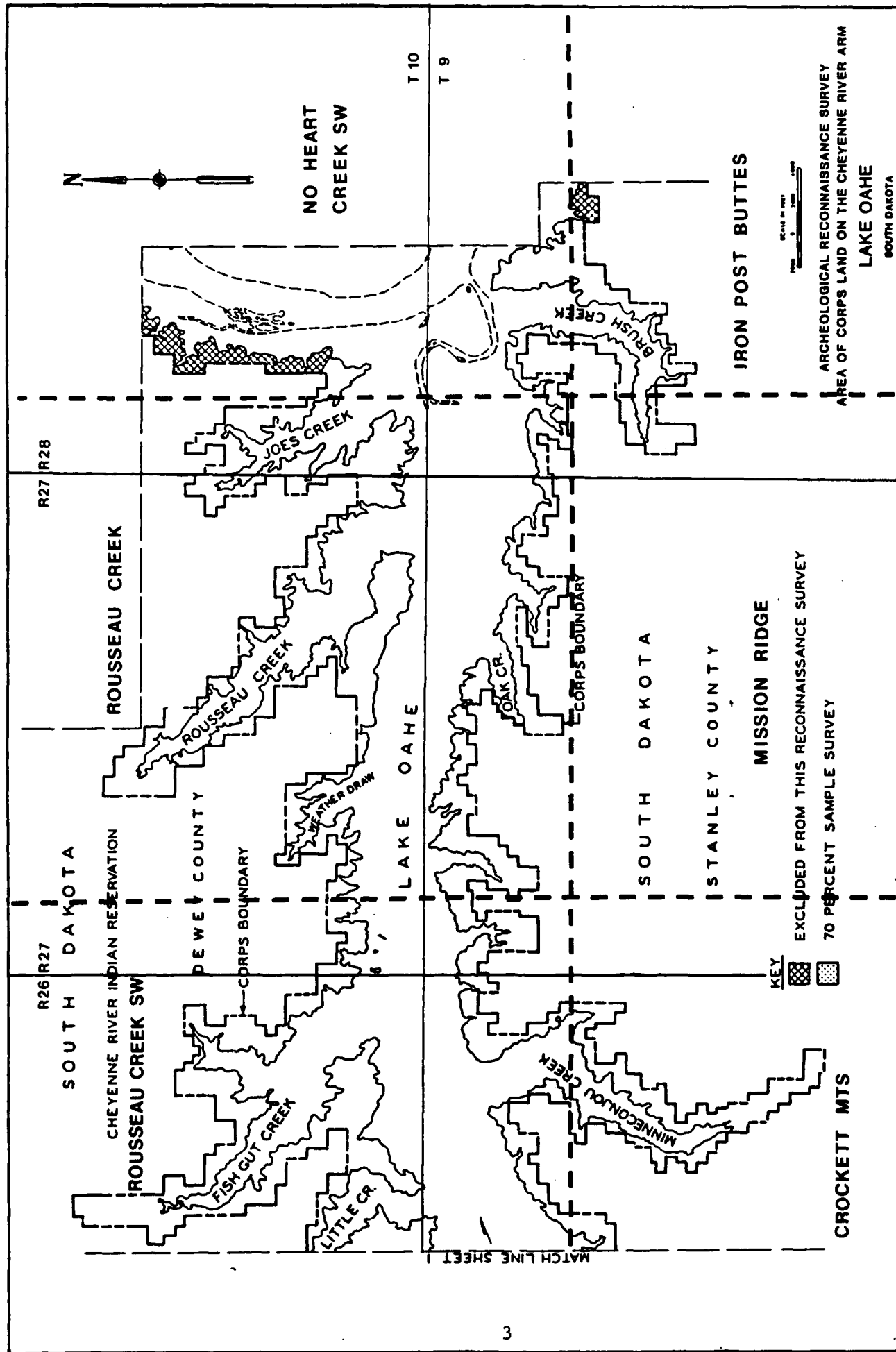


Figure 2. Detailed map of the Cheyenne River arm survey area, including proposed sample survey area. Township, range and USGS 7.5' quadrangle map areas superimposed (map supplied by the U.S. Army Corps of Engineers).

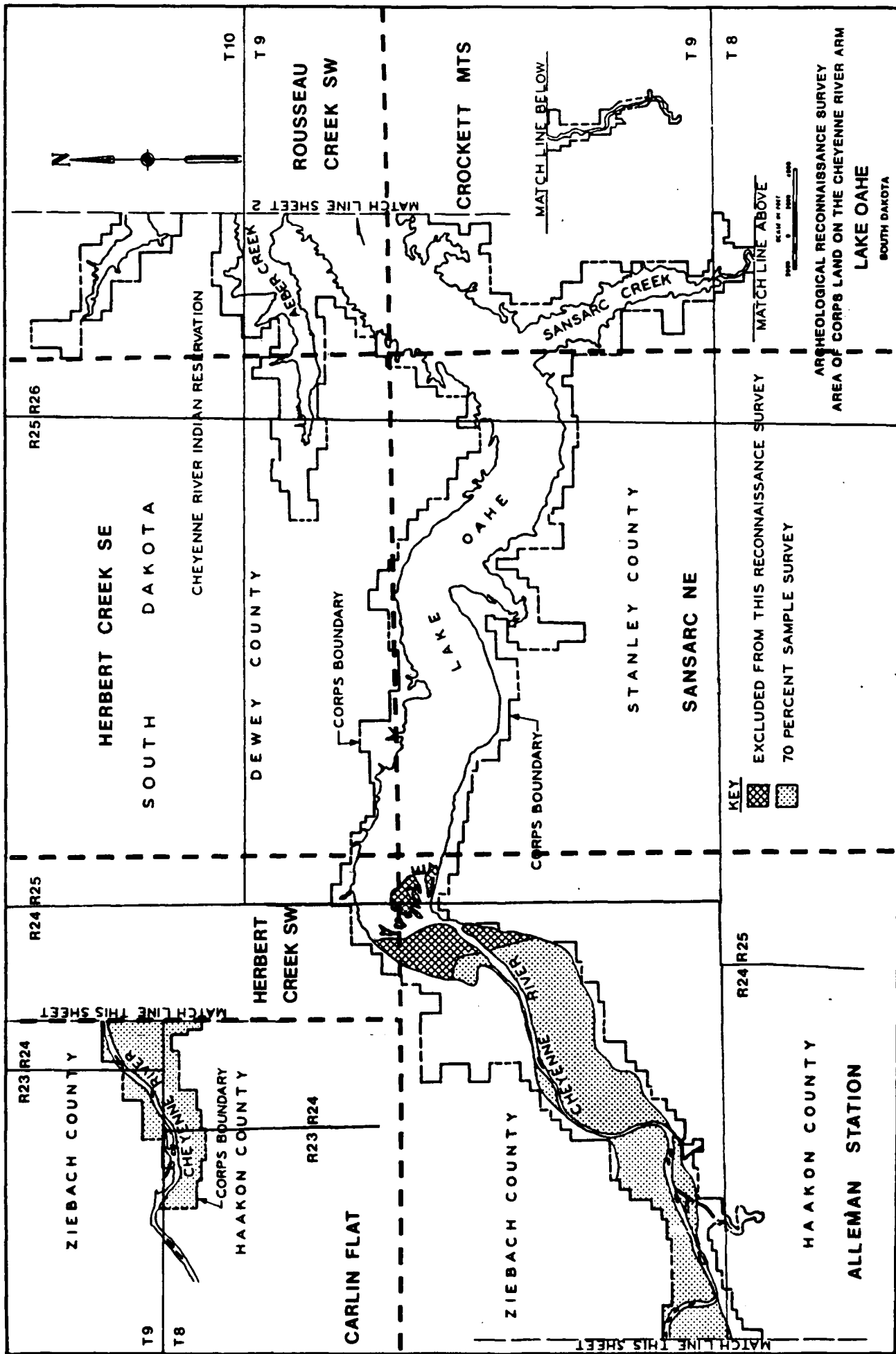


Figure 2 (cont.). Detailed map of the Cheyenne River arm survey area, including proposed sample survey area. Township, range and USGS 7.5' quadrangle map areas superimposed (map supplied by the U.S. Army Corps of Engineers).

and Butterbrodt 1983; Winham and Lueck 1987) had established contact with the Cheyenne River Sioux Tribe.

Further research at the Robinson Museum and the State Library Archives in Pierre, SD, and other repositories in the project area was accomplished both prior to initiation of the 1986 fieldwork and during the course of the fieldwork (see Literature and Records Search). The applicable Register of Deeds records were examined at the respective county courthouses after completion of the fieldwork.

The survey was begun in August, 1986, under the direction of R. Peter Winham; Kerry Lippincott then replaced Winham as field director. Fieldwork was completed in October, 1986. Additional field crew members included Peter K. Froelich, Edward J. Lueck, Melinda G. Ritter, and Kurt A. Watzek. Surveying and recording procedures followed those outlined in the scope-of-work (Appendix G) and are detailed in Chapter 7.

Disposition of Artifacts and Original Records

Collected artifacts are to be curated at the South Dakota Archaeological Research Center in Rapid City, SD, while the paper archive will be stored with the U.S Army Corps of Engineers, Omaha District, Omaha, Nebraska.

Report Organization

The organization of this report essentially follows the outline provided in the scope-of-work. The report is comprised of two volumes. The first volume presents a narrative account of the project and a site-by-site inventory. This inventory addresses each site, by county, in site number order. Site maps and photographs accompany the inventory. Brief summaries of the site types are presented in the subsequent analytical sections. A summary of management recommendations is presented as a separate chapter.

The second volume contains the South Dakota state site forms, with specific locational information and various appendices listing the basic data and records derived from the project.

General Environmental Framework: Bad/Cheyenne and Central Cheyenne Archeological Regions

The Cheyenne River arm of Lake Oahe drains central South Dakota. It runs almost due west from the Missouri River, cutting through the Pierre Hills, a low relief landscape of smooth, rounded hills formed on the easily eroded black shale of the Pierre Formation. The Cheyenne River extends west and south, dividing into two branches; the South Fork of the Cheyenne River flows to the south of the Black Hills and the Belle Fourche River flows to the north (Figure 1).

The survey area varies in elevation from pool level (ca. 1616' amsl) to 1850' amsl, although the majority of the area is situated below 1700' amsl. The area is comprised of terraces, rolling uplands and shale breaks, although along portions of the inundated Cheyenne River steep cliffs are being eroded. At low pool levels mud flats occur upstream, while in times of high pool levels the floodplains are inundated at the upper reaches of the embayment area. Plates 1 through 7 provide illustrations of the topography of the survey area. Plate 1 shows the terrace on which the Meyer site is located at the southeastern edge of the survey area. Plate 2 shows an area further west around Joes Creek; Plate 3 shows Sand Creek; and Plate 4 shows Oak Creek. Further west still, Plate 5 illustrates an area on the Haakon/Stanley County border; Plate 6 shows the now inundated confluence of Rudy Creek and the Cheyenne River; and Plate 7 shows an area in Haakon County at the west end of the survey area.

Physiography

The project area is situated within what is termed the Pierre Hills physical division of the Missouri Plateau in South Dakota (Westin and Malo 1978:11). The eastern end of the survey area adjoins the Missouri River Trench at the former mouth of the Cheyenne River. The soil associations for the area have been defined as follows: Sansarc-Opal and Schamber (Borchers 1980) in Stanley County; Sansarc-Dupree (Kalvels and Boden 1979) in Dewey County; and Samsil-Pierre in Haakon and Ziebach counties (Westin and Malo 1978).



Plate 1. View, facing north, across terrace near the southeast end of the survey area, with the Missouri River to the right, the Cheyenne River ahead and Brush Creek to the left.



Plate 2. View, facing north, towards Joes Creek from the south side of the (inundated) Cheyenne River.



Plate 3. View, facing east, down the (inundated) Cheyenne River from near Sand Creek.



Plate 4. View, facing north-northwest, across Oak Creek drainage area.



Plate 5. View, facing northwest, from the south side of the (inundated) Cheyenne River at the Haakon County/Stanley County boundary.



Plate 6. View, facing east, from the north side of the (inundated) Cheyenne River towards its former confluence with Rudy Creek.



Plate 7. View, facing northeast, along a portion of the survey area in Haakon County.

The survey area in Dewey and Stanley counties contains soils of the Warm Dry Plain (Typic Ustoll Area) which developed under a warm, dry subhumid climate, while in Haakon and Ziebach counties the soils are of the Warm, Very Dry Plain (Aridic Ustoll Area), having developed under a warm, semi-arid climate.

Sansarc soils are clays on sloping to steep breaks in dissected shale plains. These soils are formed in clayey residuum weathered from shale. Opal soils are clays on nearly level to steep uplands. Schamber soils are excessively drained, moderately sloping to steep, loamy soils that are very shallow over sand and gravel on terraces. Dupree soils are similar to Sansarc soils. Samsil soils are clays on slope breaks of dissected shale plains, with gradients of 2 percent to 45 percent, and formed in residuum weathered from shale. Pierre soils are clays on nearly level to steep uplands that have slight gilgai microrelief in some places. Slopes are typically 3 percent to 9 percent but vary from 0 percent to 25 percent. They are formed in residuum weathered from clay shales. In several areas within the project boundaries there was little or no soil development on the Pierre shale.

Flora and Fauna

This region's "potential natural vegetation," as described by Kuchler (1964:1-2), is wheatgrass-needlegrass, a moderately dense, short or medium-tall grassland. The dominant grasses are Western wheatgrass (Agropyron smithii), blue grama (Bouteloua gracilis), needleandthread grass (Stipa comata), and green needlegrass (Stipa viridula), but on the Pierre plain, an area dominated by clay soils, the principal association is one of Western wheatgrass, blue grama grass and buffalograss (Buchloe dactyloides).

Bordering the now inundated rivers the potential natural vegetation would be Northern floodplain forest, a low to tall broadleaf deciduous forest, open to dense, often with vines. Dominant components are cottonwood (Populus deltoides), black willow (Salix nigra) and American elm (Ulmus americana).

It is estimated that 11,000 years ago the vegetation regions of North America were displaced well to the south of recent locations, and that around 12,000 years B.P. the southern limit of the boreal forest was located in South Dakota. By the Sub-Boreal period (ca. 10,030 to

9300 years B.P.) the area was grasslands. The Atlantic period (ca. 8490 to 5060 years B.P.) saw drier and/or warmer conditions than today. By 4000 years B.P. the major ecotones had stabilized near or at their present locations, although the regional climate continued to fluctuate. The Plains were apparently somewhat moister during the neo-Atlantic (ca. 1260 to 850 years B.P.) than in later periods (Wendland 1978).

Mammals in the area included typical prairie species such as the white-tailed and mule deer, pronghorn antelope, bison, coyote, fox, skunk, raccoon, jackrabbit, and prairie dog. Common amphibians and reptiles would have been frogs, prairie rattlesnakes, bull snakes and garter snakes. Significant avifauna included both golden and bald eagles, hawks, sharp-tailed grouse, prairie chickens and migratory waterfowl.

Climate

The climate in the study area today is the continental type; large variations in temperature occur from winter to summer and occasionally from day to day. Temperatures rise above 100°F in summer and fall below -20°F in winter. Records averaged from those at the Pierre and Dupree stations (Sphuler, Lytle and Moe 1971) show the average date for last frost in spring is May 10 and the average date for first frost in fall is September 30. Average annual precipitation is 16.00 inches, of which 12.1 inches fall between April and September; thunderstorms provide the main source of rain during this period. Snowfall averages 34 inches each season, with an annual variation from 14-81 inches. Winds average 11 mph with the prevailing direction being from the south during the summer months and from the northwest during the winter months.

Field Survey Conditions

Apart from some poor (wet, cold) weather conditions in late September and October 1986, the field survey was conducted in fair, but variable, weather. Conditions often changed from calm, sunny and very hot one day to windy and threatening rain the next.

Human Geography

The project area is very sparsely populated. The east end of the survey area is located 30 miles north and west of Pierre, SD, the State

Capitol, while the west end is some 30 miles south and east of Dupree (population 538) and 20 miles south of Eagle Butte (population 438). There are no other centers of similar populations near the project area.

The boundaries of the Cheyenne River Indian Reservation are situated to the north of the Cheyenne River. This region is given over mainly to ranching, with minimal cultivation of the land. To the south of the Cheyenne River ranching is also predominant, although more cultivation occurs on the terrace areas. Lake Oahe is a popular recreation, boating and fishing locality - two campgrounds, Minneconjou and Foster Bay, have been established on the south side of the Cheyenne River arm.

A brief literature and records search was conducted in July and early August, 1986 prior to the initiation of the field survey. A reexamination of the records and files was completed after the survey, incorporating data gathered from field verification. Additional materials and literature were examined in October, 1986 and April of 1987. The following section presents an overview of the results of the literature and records search, as modified by field verification. The records search is described and a summary of previous investigations is provided.

Procedures and Overview

The initial literature and records search, conducted in July and early August of 1986, focused on identifying the location of previously recorded sites in and near the project area. To accomplish this goal, efforts were concentrated on examining site records at the South Dakota Archaeological Research Center (SDARC), then located at Ft. Meade, South Dakota. As a result, the authors were able to locate all previously recorded sites.

The specific objectives of the initial literature and records search were to determine the following:

1. the location of sites previously recorded in and near the project area;
2. the location of documented structures and activity areas not otherwise recorded as sites;
3. the nature and extent of previous field investigations, including a history of specific site investigations;
4. the nature and extent of previous analyses of archeological data from the project area; and
5. the general prehistory and history of the project region.

Resources utilized included site files maintained at SDARC; early maps of the Missouri River and nearby areas at the South Dakota State Historical Society (SDSHS) which were produced by the U.S. Army Corps of Engineers (Corps) and the U.S. War Department; the General Land Office Survey Maps of the area which were available at the South Dakota State Library (State Archives), Pierre, SD; and early plat maps which were

available at SDSHS. County highway maps, dated 1936, were found in the Stanley County Register of Deeds Office in Fort Pierre. The U.S. Army Corps of Engineers, Omaha District Office, provided copies of the Missouri River Commission maps of the Missouri River, dated 1894, and the U.S. Army Corps of Engineers Map of the Missouri River, dated 1948. Aerial photography for the latter was conducted in 1945.

Various published and unpublished documents and manuscripts at a number of institutions were examined. In addition to materials on hand at the Archeology Laboratory and at the Center for Western Studies, Augustana College, sources were examined at the following institutions: the South Dakota Archaeological Research Center, then at Ft. Meade; the U.S. Army Corps of Engineers area office in Pierre; the South Dakota State Historical Society, Pierre; and the State Archives (South Dakota State Library). Materials available through interlibrary loan from various sources were also examined.

The early maps of the Missouri River indicate a number of structures which are in or near the current project area. An abandoned cemetery (individuals disinterred and reburied) and 14 buildings are shown in the project area, while 134-142 buildings and two cemeteries are located near (intact/out or inundated) the project area. The above structures and cemeteries occur at 62 different general locations.

James K. Haug (Staff Archeologist, SDARC) has attempted to locate on U.S. Geological Survey (USGS) topographical maps all previously recorded sites and investigations. These maps provided a useful check of the author's investigations.

The sites previously recorded in the project area were located as a result of a Smithsonian Institution River Basin Surveys investigation in 1948. Three smaller-scale investigations have identified four recorded sites which lie near the project area (see Haberman 1982 and 1983; SDARC site files for 39ST175). Major excavations have been conducted at four sites near the project area (see Lehmer 1971:195, 200; Wood 1976), all of which are presently inundated.

An attempt was made to identify all preceding investigations. This records search accounted for all previously recorded sites in and near the project area and identified some 18 separate investigations, including a volunteer effort by the Middle Missouri Chapter of the South Dakota Archaeological Society (MMC-SDAS). The latter was supervised by

Tim Nowak, archeologist for the U.S. Army Corps of Engineers. Also, independent and volunteer efforts by the Missouri Archaeological Society resulted in the analysis and publication of the Fay Tolton (39ST11) materials. The basis for defining an investigation is a survey or excavation limited by the scope of a project and by a season. The prior investigations are listed below chronologically. This information is followed by a more comprehensive discussion for each project. Each investigation included on-the-ground evaluation at one or more localities in the project area, or in close proximity to the project area.

Eleven individuals conducted 18 field investigations in and/or near the project area under the auspices of eight different sponsoring arrangements. The principal investigator(s) or primary individual(s) is listed first, followed by the name of the sponsor, if any, the year(s) in which the on-the-ground phase of the investigation was conducted, and lastly the general type of investigation.

William H. Over--University of South Dakota Museum--1912-1946?--archeological
 Paul L. Cooper--Smithsonian Institution, River Basin Surveys (SIRBS)--1948--archeological
 Lyon J. Hoard--South Dakota Archaeological Commission (SDAC)--1949--archeological
 Waldo R. Wedel--SIRBS--1951--archeological
 Ray H. Mattison--National Park Service (NPS)--1952--historical
 Richard P. Wheeler--SIRBS--1953--archeological
 Waldo R. Wedel--SIRBS--1955--archeological
 Waldo R. Wedel--SIRBS--1956--archeological
 Joseph G. Lazio--Corps--1977--archeological
 Timothy R. Nowak--Corps--1979--archeological
 Joseph G. Lazio--Tri-County Water Association--1979--archeological
 Joe Alan Artz--Corps--1980--archeological
 David M. Hovde--South Dakota Department of Transportation (DOT)--1981--archeological
 Thomas W. Haberman--DOT--1982--archeological
 Timothy R. Nowak--1982--Corps and South Dakota Department of Game, Fish and Parks (SDGFP)--archeological
 Timothy R. Nowak--1982--Corps and SDGFP--archeological
 Thomas W. Haberman--DOT--1983--archeological
 Timothy R. Nowak--MMC-SDAS--1986--archeological

Only two sites were previously recorded in the project area. Eleven sites in close proximity to the project area are apparently

inundated and four sites near, but outside, the project area were also identified (Figure 3 and Table 1).

Included in the previously documented sites are five separate locations of buildings and two cemeteries shown on early maps as existing in the project area (Table 1, Nos. 1-6, 71). Also within the project area are six to seven recent buildings at three locations (Table 1, Nos. 7-8, 70). These are shown on 1948 Corps maps and/or USGS maps. Among the documented inundated sites are 54 locations of buildings and/or two cemeteries (see Table 1, Nos. 9-62) shown on early maps. The individuals disinterred from the cemeteries were reburied by the Corps in Le Plant Episcopal Cemetery, Le Plant Catholic Cemetery, and Cherry Creek Cemetery before inundation (U.S. Army Corps of Engineers 1958).

The inundated, documented building locations appear to include an agency school (No. 20), a mission school (No. 31), two churches (Nos. 25 and 30 or 31), two post offices/stores (Nos. 27 and 47), and one to three Indian camps or communities which were used by the Cheyenne River Sioux from the 1880s until ca. 1918 (see Robinson 1904:466; Anderson 1956:408, Figure 7; Historical Society of Old Stanley County (HSOSC) 1968:195, 404; Lazio 1980:21). Anderson's (1956) White Swan's Camp can be reasonably attributed to the four buildings associated with the names White Swan and Fair Weather (No. 46). Anderson's (1956) Corn's Camp which is approximately four miles west of White Swan's Camp is more problematical, but may be tentatively associated with the mission school (No. 31) and the nearby building situated across the creek (No. 30). Anderson's (1956) other Corn's Camp, located approximately seven miles further west, is also problematical. It is tentatively associated with 39DW74 and Walking Hunter Cemetery (No. 72) (shown as Walking Horse Cemetery), or Lower Cheyenne River Cemetery (Congregational), and inundated locations Nos. 14-16, 18 and 20. Site 39DW74 and the inundated locations are five to eight miles west of the first Corn's Camp described above.

Anderson's (1956) locations for the three Indian camps described in the preceding paragraph appear to be based on similar locations shown on the map of the "Campaign Against the Sioux Indians" of 1890 (see Robinson 1904:466). On Robinson's map, however, the westernmost of the three camps in or near the project area is associated with the name "Cook." The only individual identified who might possibly be related to

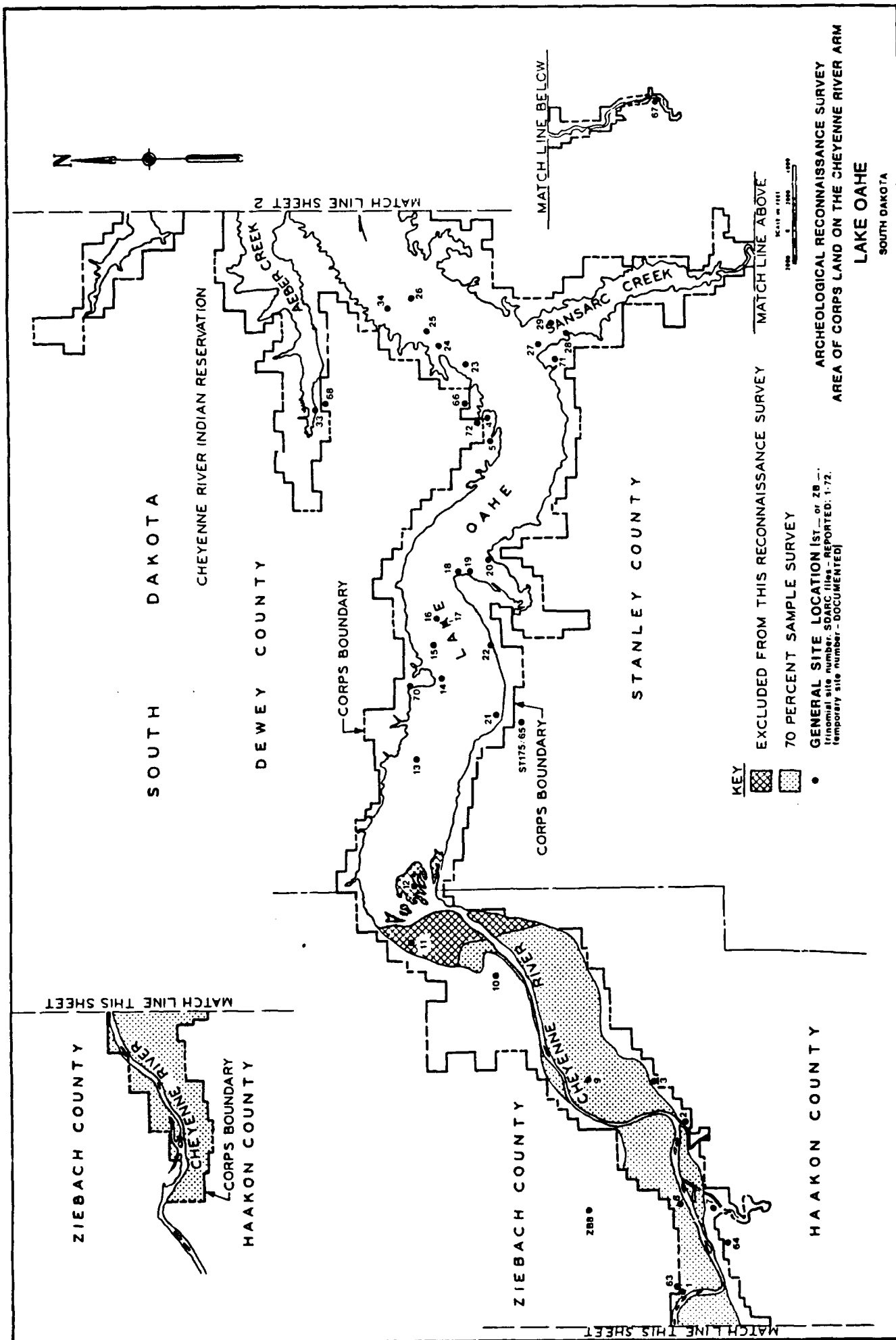


Figure 3. Locations of sites identified during the literature search.

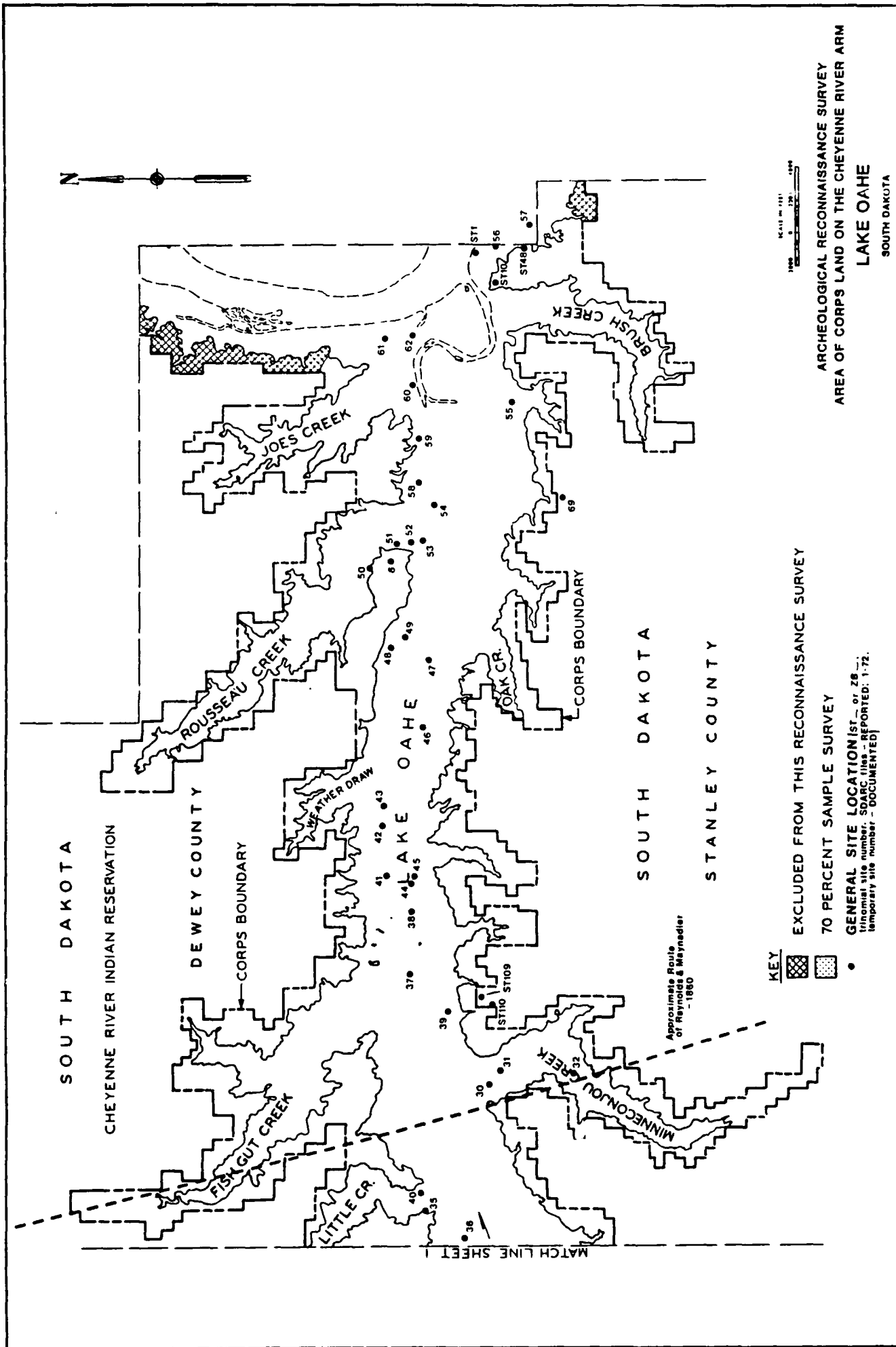


Figure 3 (continued). Locations of sites identified during the literature search.

Table 1. Previously Recorded* and Documented Sites In and Near the Cheyenne River Arm Project Area.

* Recorded refers to sites assigned Smithsonian trinomial numbers - those listed in the SDARC site files; e.g., 39ST10. Documented sites are identified in records or literature or on maps, but are not officially numbered.

SITE NUMBER/ NAME	CULTURAL AFFILIATION	SOURCES(S)
Note: EC = Extended Coalescent PCC = Post Contact Coalescent		IMM = Initial Middle Missouri EMM = Extended Middle Missouri
<u>Recorded in Project Area</u>		
39ST10 Myers Site/ Meyer Village/ Meyer Site	EC	Sigstad & Sigstad 1973:269; Hoard 1949; Cooper 1949:304; Lehmer 1954:3, 117, 118, 119, 121, 123, 124, 125, 126, 127, 129, 130, Fig. 54, 133, 135, 137, 140, 141, 150, 151, 154, 155, 156, 157; Cooper 1953:19, 23, 24, 60 (table); Woolworth & Wood 1964:72, 130; Hoffman 1967:3, 52; Neuman 1967:481, 482-483; Hoffman 1968:73, 74; Lehmer 1971:117; Adamczyk 1975:74; Lazio 1977
39ST48 (Mounds)		SIRBS Records; Cooper 1953: 62 (table); Adamczyk 1975: 75; Lazio 1977
<u>Documented In Project Area</u>		
1 - Duprees	Historic	GLO--1899 (3 bldgs.) SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 31, T9N, R24E
2	"	GLO--1890 (4 bldgs.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 34, T9N, R24E
3	"	GHM--1936 (1 bldg.) NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 34, T9N, R24E
4 - (see 39DW74) Corn's Band? (Cook band?)	"	GLO--1890 (4 bldgs.; 1 a church) Robinson 1904:466; Anderson 1956:408, Figure 7; HSOSC 1968: 404; Fay 1972:281; Lazio 1977:21; Corps--1948 (1 bldg.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 13 & NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 24, T9N, R25E & NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 19, T9N, R26E
5	"	GLO--1890 (1 bldg.) NW $\frac{1}{4}$ NE $\frac{1}{2}$ Sec. 24, T9N, R25E

Table 1. (cont.)

SITE NUMBER/ NAME	CULTURAL AFFILIATION	SOURCES
6 - 39DW82--"00"-- St. Peters Catholic Cemetery	Historic	Corps--1958 NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 35, T10N, R27E & NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 36, T10N, R27E
7 - Alleman Station	"	Corps--1948 & GHM--1936 (1 bldg.); HSOSC 1968:224 SW $\frac{1}{4}$ Sec. 33, T9N, R24E
8 - School?/ Farmstead	"	GHM--1936 (1 bldg.) Corps--1948 & USGS--1956 (3 bldgs.) SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 32 & SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 33, T9N, R24E
70 - 39DW64 Vanderveer Ranch	"	USGS--1956 (2 bldgs.) SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 9, T9N, R25E
71 - 39ST281 Lindsay Cemetery	"	USGS--1956 SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 19, T9N, R26E
<u>Recorded-Inundated</u> 39ST1 Cheyenne River Village	EMM, EC, PCC	Sigstad & Sigstad 1973:247-251; Cooper 1949:301, 303, 305, 308; Wedel 1953a:28; Cooper 1953:20, 21, 34, Fig. 5, 59; SIRBS Staff 1959:2; Lehmer 1966:59; Caldwell 1966b:156 (plate); Lehmer and Jones 1968:97; Lehmer 1971:67, 117, 135; Weakly 1971:22, 32, 33, 34; Adamczyk 1975:73; Thiessen 1977:63, 66, 74-75
39ST4 Black Widow (was 39ST3 and 39ST49)	EMM?, EC	Sigstad & Sigstad 1973:257-258; Cooper 1949:301; Lehmer 1971:67, 117; Adamczyk 1975:73; Nowak 1979a:4, 6-7
39ST11 Fay Tolton (was 39ST68 and Gillette #3)	IMM	Sigstad & Sigstad 1973:262, 265-266; Cooper 1953:60 (table); Caldwell 1966b:156 (plate); Neu- man 1967:481, 482; Hoffman 1968: 2, 70; Lehmer 1971:64; Adamczyk 1975:74; Wood 1976; Caldwell 1977:165-166; Thiessen 1977:63, 66, 76; Jantz 1977:168, 171; A. Johnson 1979:125, 135, 139, 141, 142, 143, 145, 146, 147, 150, 151; Nowak 1979a:6

Table 1. (cont.)

SITE NUMBER/ NAME	CULTURAL AFFILIATION	SOURCE(S)
39ST203 Emilie Island (was 39ST3)	PCC	Sigstad & Sigstad 1973:257-258; Cooper 1953:63 (table); Lehmer & Jones 1968:96, 97; Lehmer 1971:135; Adamczyk 1975:76; Nowak 1979a:3, 4, 8
Documented-Inundated		
9 - Carr Ranch	Historic	Corps--1948 & USGS--1956 (2-3 bldgs.) E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 27, T9N, R24E
10	"	GLO--1899 (1 bldg.) NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 23, T9N, R24E
11 - Wm. Rudy	"	GLO--1899 (1 bldg.) NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 13, T9N, R24E
12 - Two Eagle Wm. Ruddy Pearman Ranch	"	GLO--1890 (1 bldg.) GLO--1890 (1 bldg.) Corps--1948 & USGS--1956 (2 bldgs.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 18, T9N, R25E
13	"	GLO--1890 (1 bldg.) Corps--1948 (1 bldg.) SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 17, T9N, R25E
14	"	GLO--1890 (1 bldg.) SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 16, T9N, R25E
15	"	GLO--1890 (1 bldg.) SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 15, T9N, R25E
16	"	GLO--1890 (3 bldgs.) SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 15, T9N, R25E
17	"	Corps--1948 (1 bldg.) NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 15, T9N, R25E
18 - Agency Farmer	"	GLO--1890 (1 bldg.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 15, T9N, R25E
19 - Sunshine Ranch	"	Corps--1948 (2 bldgs.) & USGS--1956 (2 bldgs.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 15 & SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 14, T9N, R25E

Table 1. (cont.)

SITE NUMBER/ NAME	CULTURAL AFFILIATION	SOURCE(S)
20 - Agency School (& another bldg.)	Historic	GLO--1890 (2 bldgs.) & Peterson 1904 (1 bldg.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 23, T9N, R25E
21	"	Corps--1948 (2 bldgs.) USGS--1956 (1 bldg.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 21, T9N, R25E
22	"	Corps--1948 (1 bldg.) USGS--1956 (2 bldgs.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 22, T9N, R25E
23	"	GLO--1890 (3 bldgs.) NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 18, T9N, R26E
24	"	GLO--1890 (1 bldg.) Corps--1948 (3 bldgs.) USGS--1956 (1 bldg.) SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 18, T9N, R26E
25 - Church/Cemetery --"EE"--St Mark's Episcopal Cemetery-- Rousseau Cemetery	"	GLO--1890 (2 bldgs., 1 a church; cemetery) Corps--1948, 1958 (1 cemetery) Corps 1958:9 says the church was relocated many years ago. USGS--1956 (1 cemetery) SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 17, T9N, R26E
26	"	GLO--1890 (2 bldgs.) NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 17, T9N, R26E
27 - Lindsay P.O. & Store (? after Charles Lindsay, pioneer store owner)-- ? Sam Smith's road ranch, post office and store-- Guy L. Hart family residence (1914-1916)-- Frank L. Norman family residence (1916-1926?)	"	GLO--1890 (1 bldg.) Peterson--1904 (1 bldg.) Corps--1948 & USGS--1956 (1 bldg.) HSOSC 1968: 94, 404, 405; Sneve 1973:76; Ziebach County Historical Society 1982:518; Baye 1982:181; Pioneer Club of Western South Dakota 1965: front inner cover W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 19, T9N, R26E
28	"	USGS--1956 (1 bldg.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 20, T9N, R26E
29	"	GLO--1890 (2 bldgs.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 20, T9N, R26E

Table 1. (cont.)

SITE NUMBER/ NAME	CULTURAL AFFILIATION	SOURCE(S)
30 - Rev. Thomas Riggs Mission Church?-- Joseph Kirley home? (ca. 1892-1934)	Historic	GLO--1890 (1 bldg.) Corps--1948 (2 bldgs.) HSOSC 1968:194-195 SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 2, T9N, R26E
31 - Mission School-- Rev. Thomas Riggs Mission Church?	"	GLO--1890 (1 bldg.) HSOSC 1968:195 NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 11, T9N, R26E
32	"	Corps--1948 (1 bldg.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 11, T9N, R26E
33	"	GLO--1890 (1 bldg.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 6, T9N, R26E
34 - High Elk Ranch	"	GLO--1890 (3 bldgs.) Corps--1948 & USGS--1956 (1 bldg.) SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 8, T9N, R26E
35	"	GHM--1936 (1 bldg.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 34, T10N, R26E
36 - Mrs. Aeber-- Holloway Ranch	"	GLO--1890 (2 bldgs.) Corps--1948 & USGS--1956 (1 bldg.) S $\frac{1}{2}$ NE $\frac{1}{4}$, Sec. 4, T10N, R26E
37	"	GLO--1898 (4 bldgs.) E $\frac{1}{2}$ SE $\frac{1}{4}$, Sec. 36, T10N, R26E
38	"	GLO--1898 (1 bldg.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 31, T10N, R27E
39 - Chisholm Ranch	"	Corps--1948 (2 bldgs.) USGS--1956 (4 bldgs.) E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 1, T9N, R26E
40 - Paradee	"	GLO--1890 (2 bldgs.) N $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 3, T9N, R26E
41	"	Corps--1948 (1 bldg.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 32, T10N, R27E
42	"	GLO--1898 (2 bldgs.) SE $\frac{1}{4}$ NE $\frac{1}{4}$ & NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 32, T10N, R27E

Table 1. (cont.)

SITE NUMBER/ NAME	CULTURAL AFFILIATION	SOURCE(S)
43	Historic	GLO--1898 (2 bldgs.) SW $\frac{1}{4}$ NW $\frac{1}{2}$ & NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 33, T10N, R27E
44	"	Corps--1948 (1 bldg.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 31, T10N, R27E
45	"	GLO--1898 (4 bldgs.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 32, T10N, R27E
46 - White Swan & Fair Weather	"	GLO--1892? (4 bldgs.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 3, T9N, R27E
47 - Rousseau P.O. & Store	"	Peterson--1904 (1 bldg.) NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 3, T9N, R27E
48 - Swan	"	GLO--1898 (1 bldg.) NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 34, T10N, R27E
49	"	Corps--1948 (10 bldgs.) E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 34 & SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 35, T10N, R27E
50 - Ed. Narcelle	"	GLO--1898 (1 bldg.) SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 35, T10N, R27E
51 - Rousseau	"	GLO--1898 & Corps--1948 (1 bldg.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 36, T10N, R27E
52	"	Corps--1948 (1 bldg.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 36, T10N, R27E
53	"	GLO--1898 (1 bldg.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 36, T10N, R27E
54	"	GLO--1890-1891 (3 bldgs.) N $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 1, T9N, R27E
55 - Spotted Rabbit	"	GLO--1890 (2 bldgs.) Corps--1948 (2 bldgs.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 8, T9N, R28E
56 - Wide Back	"	GLO--1890 (1 bldg.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 3, T9N, R28E
57 - Eagle Man	"	GLO--1890 (1 bldg.) SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 10, T9N, R28E
58	"	Corps--1948 (5 bldgs.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 31, T10N, R28E

Table 1. (cont.)

SITE NUMBER/ NAME	CULTURAL AFFILIATION	SOURCE(S)
59 - "DD"--Yearling Cemetery (family)	Historic	Corps--1958 SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 31, T10N, R28E
60	"	GLO--1898 (1 bldg.) SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 32, T10N, R28E
61	"	GLO--1898 (2 bldgs.) SE $\frac{1}{4}$ NE $\frac{1}{4}$ & NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 32, T10N, R28E
62	"	Corps--1948 (7 bldgs.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 32 & SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 33, T10N, R28E
<u>Recorded-Near</u>		
39ST109	Unknown	Haberman 1983
39ST110	Unknown	Haberman 1983
39ST175 Mortenson	EC	State Site Files
39ZB8	Unknown	Haberman 1982
<u>Documented-Near</u>		
63 - Duprees	Historic	GLO--1899 (1 bldg.--shed) SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 32, T9N, R24E
64	"	GHM--1936 (1 bldg.) SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 32, T9N, R24E
65 - (see 39ST175)	"	GLO--1890 (1 bldg.) NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 21, T9N, R25E
66 - West Ranch	"	Corps--1948 & USGS--1956 (1 bldg.) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 18, T9N, R26E
67	"	Corps--1948 (2 bldgs.) NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 10, T8N, R26E
68 - A.E. Rich.	"	GLO--1890 (2 bldgs.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 7, T9N, R26E
69 - Black Bird	"	GLO--1892? (1 bldg.)
72 - Walking Hunter Cemetery (Walking Horse?)	"	Corps--1951 (map and table) USGS--1956

the name Cook is Bennett Cook (Psaloka, a member of the "Minikanju Band"), shown as being 19 years of age in 1889 (Fay 1972:281 - No. 365).

The literature search (focused particularly on Robinson 1904, Johnston 1948, Mattison 1954, Anderson 1956, HSOSC 1968, Boorman 1973 and Lawson 1974) resulted in little additional information on the two churches (No. 4 - 39DW74; No. 25) and two schools (Nos. 20 and 31). The Vyril Conklin account (HSOSC 1968:404) for the period ca. 1906-1918 appears to refer to the church which once sat at site 39DW74. Also, the Frank Kirley account (HSOSC 1968:194-195) appears to identify the mission school location or that vicinity (No. 30 or 31 from the 1890 GLO map) as Rev. Thomas Riggs's mission church in 1892, and a log home in the vicinity of No. 30 as Riggs's home beginning about 1892. This was the family home of Frank Kirley. His father, Joseph, occupied the house until his death in 1934.

Another nine buildings which are not inundated are documented at seven locations (Table 1, Nos. 63-69) near the project area.

The section which follows enumerates previous cultural resources investigations conducted within the study area(s).

Previous Cultural Resources Investigations

An elaboration of the investigations and studies mentioned above, their results, and an evaluation of previous work are provided below. The cultural affiliations identified are shown in Table 1.

The archeology of the reservoirs along the Missouri River in South Dakota has emphasized and concentrated on sites of relatively late Indian groups who lived in fixed villages (Lehmer 1971:61; Wood 1974:5). This focus resulted in a number of extensive excavations at sites recorded near the project domain. According to Lehmer (1971), major excavations were conducted at sites 39ST1, 39ST4, 39ST11 and 39ST203, all located near the project area.

The earliest recorded archeological surveys in any of the areas considered here were performed by William H. Over. Over, from ca. 1912-1946, both independently and under the auspices of the University of South Dakota Museum, undertook surveys of the Missouri River. While Over's survey techniques have been characterized as often inaccurate and sporadic in coverage, he has left a determinable record of four sites located near the project area -- 39ST1, 39ST4, 39ST11 and 39ST203.

Over's records, including descriptions of many other sites, have been revised and reproduced in Sigstad and Sigstad (1973). Over's original records are presumably those consulted by the Smithsonian Institution River Basin Surveys personnel (see Nowak 1979a:2).

The next recorded work in the area took place in 1948, when an archeological investigation was conducted by the Smithsonian Institution River Basin Surveys personnel. The project domain and/or nearby areas were visited by five different SIRBS expeditions and two related investigations (Hoard in 1949 and Mattison in 1952). The five SIRBS investigations were led by P.L. Cooper in 1948; Waldo R. Wedel in 1951, 1955 and 1956; and R.P. Wheeler in 1953.

The first SIRBS investigation occurred during the late summer of 1948, when a party of two to six persons surveyed the area on the west side of the Missouri River between the Oahe Dam site and the Cheyenne River (Cooper 1953:4). Among the sites recorded was Fay Tolton (Wood 1976:2). This party also excavated small test trenches at nine sites in the northern portion of the area (Cooper 1953:4).

In 1949, Lyon J. Hoard conducted excavations at the Myers site for the South Dakota Archaeological Commission (SDAC) under a cooperative agreement with the National Park Service. The Myers site is located within the project boundaries, about one-third of a mile south of the mouth of the Cheyenne River. Due to a short field season and the lack of excavators, Hoard and John Shield opened only one lodge (Hoard 1949:2).

Additionally in 1949, P. L. Cooper and C. W. Gavitt identified several depressions and a low mound at site 39SL15 within the Little Bend Recreation Area across the river from the project area.

Two years later, in 1951, a SIRBS crew, directed by Waldo R. Wedel, conducted excavations at Cheyenne River Village (39ST1) (Cooper 1953:20). This site is inundated near the mouth of the Cheyenne River.

An extensive literature search and two field trips were undertaken by Ray H. Mattison in 1952 to identify historical aspects of the Oahe Reservoir. Mattison was a historian for the Region Two Office, National Park Service. His investigation and survey were conducted under the auspices of the National Park Service and included several months of intensive research on original and secondary materials found in libraries in Pierre, South Dakota, Lincoln and Omaha, Nebraska, and in

Washington, D.C. Mattison (1954) identified two significant historical sites or points across the Missouri River from the project domain.

While Mattison's search and survey represent an intensive effort, he does not provide an evaluation of a site type commonly found along the Cheyenne River--the occupation and use sites associated with the reservation period and Euro-American settlement of the area. The historic sites identified by Mattison which are inundated across the river from the project area include: 1) Little Bend Post Office (1874-1911); and 2) Binder Post Office (1912-1927).

In 1953, Richard P. Wheeler investigated several sites in or near the project area. At site 39ST48 Wheeler surface collected and placed a test pit in one of the central mounds (Wheeler 1953 [SIRBS site files]). The test pit measured 28 feet by 2 feet (8.5m x 0.6m) and was excavated to a depth of 2.4 feet (0.73m). No buried cultural materials were unearthed. Wheeler also excavated three test pits at Fay Tolton (Wood 1976:2) and revisited site 39SL15.

Excavations begun in 1951 were continued at Cheyenne River Village in 1955 and 1956 by SIRBS parties under the direction of Wedel (Lehmer 1971:195). The following year (1957), another SIRBS party, under the direction of Donald D. Hartle, mapped and excavated at the Fay Tolton site (SIRBS site files; Wood 1976:2).

Some 16 years elapsed between the SIRBS fieldwork and the next recorded archeological survey in the area, conducted by Joseph G. Lazio in 1977. Lazio's (1977) in-house archeological reconnaissance survey for the U. S. Army Corps of Engineers included a reinvestigation of the Myers site and site 39ST48. Lazio examined two pump sites on opposite sides of the terrace and accomplished a series of parallel east-west transects across the peninsula/terrace.

In 1979, two cultural resource surveys were conducted in and/or near the project area. Joseph G. Lazio examined a number of tracts of land for the Tri-County Water Association (Lazio 1980). Three narrow, linear tracts on the north side of the Cheyenne arm were situated in or adjacent to the project area. One tract was located in parts of Sections 30, 31, 32 and 33, Township 9 North, Range 23 East. Portions of Sections 32 and 33 fall within the current project area. Another of Lazio's survey tracts was just outside of the current project area, in Section 18, Township 9 North, Range 26 East, and in Sections 3, 4, 10,

11 and 13, Township 9 North, Range 25 East. The third tract was also located just outside of the project area, in Section 1, Township 10 North, Range 26 East, and Sections 6, 7, 17, 18, 20, 21, 28 and 34, Township 10 North, Range 27 East. No sites were identified in or near the current project area during the Tri-County survey.

The second survey conducted in 1979 was performed by Timothy R. Nowak under the auspices of the Corps. Nowak conducted a cultural resource investigation of a 0.76 acre tract of land in the NW $\frac{1}{4}$, SE $\frac{1}{4}$ of Section 12, Township 9 North, Range 26 East (Nowak 1979b). His survey was associated with an irrigation project easement for right-of-way. No cultural materials were found.

Also in 1979, a University of Nebraska-Lincoln (UNL) field party under the direction of Carl R. Falk and Robert E. Pepperl conducted a pedestrian survey of all Corps land on the opposite, or east, bank of the Oahe Reservoir from the South Dakota/North Dakota border to a point a few hundred meters below the Oahe Dam (see Falk and Pepperl 1986). This investigation accomplished a survey of the Little Bend Recreation Area and a reexamination of site 39SL15. One of the authors of this report, Ed Lueck, participated in much of the UNL survey.

Small-scale cultural resource surveys by Joe Alan Artz in 1980 and David M. Hovde in 1981 were undertaken near the current project area. Neither survey recorded any sites. Artz's West River Aqueduct survey examined approximately 180 acres in Sections 17 and 20, Township 10 North, Range 28 East, at a point about 2.5-3.5 miles north of the Cheyenne River (Artz 1980). Hovde's closest survey area was some 2.5 miles south of the current project area (see Hovde 1981:11).

Several small-scale surveys were conducted in or near the project area in 1982 and 1983. Timothy Nowak carried out two cultural resource surveys in the Foster Bay area, both associated with the construction and modification of fisheries facilities (Owens 1982a, 1982b). These surveys were conducted under the auspices of the Corps and the South Dakota Department of Game, Fish and Parks. No cultural materials were encountered.

Two other small-scale surveys by Thomas W. Haberman in 1982 and 1983 recorded sites 39ZB8, 39ST109 and 39ST110. The 1982 survey examined approximately 60 acres in Ziebach County on a high ridge or table north of the current project area and identified site 39ZB8,

represented by an isolated core of light brown chalcedony (Haberman 1982). Haberman's 1983 survey examined approximately 60 acres in Stanley County which were adjacent to, and partially within, the present project area. The survey recorded sites 39ST109 and 39ST110, both lithic scatters (Haberman 1983). These two sites are located outside of the current project boundaries. Also in 1982, ALCWS conducted an archeological investigation of site 39SL15 (Winham and Lueck 1983).

The remaining archeological investigation undertaken in the vicinity of the current project area recorded the Mortenson site (39ST175). This effort was conducted about two weeks prior to initiation of the current survey. It was accomplished by the Middle Missouri Chapter of the South Dakota Archaeological Society under the direction of Timothy Nowak. A surface examination and test excavation recovered lithic debris and Extended Coalescent pottery fragments as well as a charcoal sample from a small fire hearth (see State Site Card Files).

Two publications have provided important analyses and evaluations of a number of sites in or near the current project area. Wood (1976) provides a descriptive/analytical report of materials excavated and collected from the Fay Tolton site by SIRBS crews. Nowak (1979a) presents a helpful reappraisal of sites in the Black Widow Ridge archeological zone. His suggestions, where pertinent, are adopted in this report.

Several other publications are especially important to an understanding of the Initial Middle Missouri and Extended Middle Missouri components of sites in or near the current project area. A review of Wood (1976) is available in Caldwell (1977). Caldwell (1966b) and Caldwell and Jensen (1969) also provide important evaluations of IMM materials.

In considering the adequacy of past work in the project domain, it should be noted that the majority of the newly recorded sites, described in other sections of this report, were by their nature largely ignored previously, particularly by surveys such as those of the SIRBS. This was probably caused primarily by a lack of time and money--the 1948 and 1949 field seasons were virtually lost because of inadequate funding (Wedel 1953a:3, 1953b:67). The SIRBS work focused on large, well-preserved and well-represented sites, which are generally associated

with relatively late groups. More obscure sites with sparse remains--prehistoric short-term occupation sites and historic reservation period and early settlement sites--were recorded in a more cursory manner, if at all.

The SIRBS work also focused on sites at and below the projected high flood pool level, although two of the sites above the flood pool level--39ST10 and 39ST48--were recorded.

The problem with inadequate funding appears to be reflected in the lack of completed and/or published final reports for major excavations which have been conducted in the project area. While major excavations were conducted at four sites near the current project area (according to Lehmer 1971), only one complete final report is available. The four sites which were extensively excavated are Cheyenne River Village--39ST1; Black Widow--39ST4; Fay Tolton--39ST11; and Emilie Island--39ST203. A final report has been produced for the Fay Tolton site (39ST11) (Wood 1976).

In light of the above comments, it may be useful to list several synthetic works pertinent to the region. These are Lehmer's (1971) Middle Missouri Archeology; Memoir 13 of Plains Anthropologist, edited by Wood (1977); Ceramic Classification in the Middle Missouri Subarea of the Plains by C. Johnson (1980); Anthropology on the Great Plains, edited by Wood and Liberty (1980); Missouri National Recreational River: Native American Cultural Resources, by Ludwickson et al. (1981); and Memoir 17 of Plains Anthropologist, edited by Jantz and Ubelaker (1981). Reviews of several of these works are also available in Wedel (1973), Howard (1981) and Smith (1982).

Personal Names from the Literature Search

A cross-tabulation of individuals' names drawn from several primary sources indicates a repetition of names. Some names presumably represent the same individual. On the other hand, there are two different individuals with the same English (translation) name--Turtle Necklace--on the 1889 list. They are Keya Na pin (No. 5), a member of the Black Feet Band, and Ke Napiu (No. 607), a member of the Sans Arc Band. It is not known which individual, if either, is represented on the GLO map as being associated with a building presently included in

site 39DW225, a component recently recorded by ALCWS (Winham and Lueck 1987:47).

Table 2 presents possible repetitions of an individual's name. These comparisons are only tentative since another form of duplication of names occurs among individuals having similar surnames who are clearly different individuals. One example of the latter involves an individual named Iron Rib (No. 349) (Fay 1972:281), a member of the Black Foot Band in 1889 who was apparently 18 years old or older, and William Iron Rib, a deceased four-year old who was buried in St. Peters Catholic Cemetery ("OO") (see U.S. Army Corps of Engineers 1958:40). Another example is an individual named Medicine Body (No. 251), also presumably 18 years old or older and a member of the Two Kettle Band (Fay 1972:280), and George Medicine Body, a deceased nine year old who was buried in St. Mark's Episcopal Cemetery ("EE") (see U.S. Army Corps of Engineers 1958:19).

Table 2. Possible Repetition of Some Individuals' Names From the Cheyenne River Indian Reservation.

NAME	1876 TREATY	1882-1883 AGREEMENT	GLO MAPS			1889 LIST	1958 CEMETERIES DD EE OO	1956 USGS
Narcisse Narcello/ Narcelle		X Interpre- ter				X Inter- preter	X	
Wm Fielder (White)	X Inter- preter					X		
Wm Ruddy/ Rudy			X		X			
Swan* (Minne- conjou)	X		X	X		X	X	
Black Bird (Sans Arc)			X			X		
Spotted Rabbit (Minne- conjou)			X			X		
Eagle Man (Minne- conjou)			X			X		
Ed. Narcelle/ Edward Narcelli (Minne- conjou)				X		X		
Walking Hunter (Two Kettle)	X							X

* Chief White Swan?

Introduction

The project area extends along the now inundated portion of the Cheyenne River from its mouth at the Missouri River, west for approximately 30 miles. The north (left) bank of the Cheyenne River in this area formed the boundary of the Cheyenne River Indian Reservation in Dewey (formerly Armstrong) and Ziebach counties. The south (right) bank includes portions of Stanley and Haakon counties. The Stanley and Dewey County areas are included within the Bad/Cheyenne Archeological Region of South Dakota, while the Ziebach and Haakon County areas are part of the Central Cheyenne Archeological Region.

Research in the Central Cheyenne Region has been extremely limited. "Virtually nothing is known about the archaeological resources of the Central Cheyenne study area" (Buechler 1984:13). Past research in the Bad/Cheyenne region has concentrated on the Missouri River. Through the work of W.H. Over and the Smithsonian Institution River Basin Surveys, a large resource base focused on the Missouri River has been developed. This resource base has recently been expanded through the efforts of the U.S. Army Corps of Engineers in initiating large-scale surveys and site testing programs within the reservoir taking areas.

The Cheyenne River has long been postulated to have been a major transportation route linking the Missouri River with the Black Hills and White River Badlands regions of South Dakota. "The Cheyenne River, with its headward forks [Belle Fourche River and South Fork of the Cheyenne] accessible from both the northern and southern tips of the Black Hills, is the most likely travel route connecting the Black Hills with the Missouri River on an east-west axis" (Lazio 1980:6).

This culture history overview, therefore, draws on information from the Missouri River Trench, the Black Hills and the White River Badlands to illustrate the archeological potential of the project area and to provide the background for the research approach instigated in this project, specifically, the landscape-oriented assessment. Prior work by ALCWS in these areas provides the major sources for this summary (Hannus 1983a; Hannus, Miller and Winham 1984; Hannus, Nowak and Winham 1984; Winham and Lueck 1987).

Both this overview and the following ethnohistoric section are based on the premise that many of the people whose cultural presence is documented in this region of the Plains by the archeological record were nomadic. Their living systems incorporated seasonal movements over wide areas. Subsistence activities, including procurement of raw materials such as Knife River flint, may have involved travel and trade networks with other cultural groups.

At this initial stage in the assessment of past utilization of the project area, our landscape-oriented view considers the totality of such possible utilization of the area and is not limited to known sites. The culture history overview, therefore, is not narrowly focused but is a broad-based study stressing the possibility that the project area might have been visited by groups from many sub-regions of the Plains, and have been influenced, directly or indirectly, by groups from further afield.

To simplify what would otherwise be a complexity of hypotheses and assumptions based on a limited set of data, the overview is structured in terms of the following, often overlapping, periods: 1) the Paleoindian period (pre-8000-4000 B.C.), 2) the Early Plains Archaic (or Foraging) period (6000-2500 B.C.), 3) the Middle Plains Archaic period (2500-1000 B.C.), 4) the Late Plains Archaic/Early Woodland period (1000-100 B.C.), 5) the Middle/Late Woodland/early Late Prehistoric period (100 B.C.-A.D. 800), 6) Great Oasis (A.D. 800-1200), 7) the Plains Village/late Late Prehistoric period (A.D. 900-1862), 8) the Early Historic period (A.D. 1700-1860), and 9) the Late Historic period (A.D. 1860-present). The dates given for these periods are approximate.

It should be noted that the next chapter, Schlesier's ethnohistoric overview of the region, begins at about 1000 B.C. with the Pelican Lake cultural complex. It must be clearly understood that Schlesier's interpretations are supported by the broader data sets of ethnographic and linguistic studies, joined with the archeological record. His section is meant to be both controversial and thought-provoking. Rather than assuming that the currently held interpretations of the archeological community are correct, Schlesier provides new possibilities to be confirmed or refuted as more knowledge of the prehistoric record is accumulated.

Paleoindian Period

Because of the likelihood that the Cheyenne River acted as a major routeway from east to west/west to east across western South Dakota, it has long been suspected that Paleoindian sites exist in this area (Hannus 1983a). The same rationale underlies the idea that pre-Clovis presence might be investigated in this area if the appropriate geological deposits are preserved.

Pre-Clovis

Pre-Clovis presence is addressed by Mueller-Beck (1966 and 1967), Haynes (1970), MacNeish (1976), Jennings (1978), Stanford (1978), Morlan (1980), and Stanford, Bonnicksen and Morlan (1981), among others. Various opinions are held regarding the earliest actual entrance to the New World and the type of technocomplex which accompanied that entrance. Krieger (1964) postulates a pre-projectile point stage of technological development for the pre-Clovis hunters, compatible with the Asiatic evidence, especially from Siberia and China. Mueller-Beck (1966), in an exhaustive piece of scholarship, presents much of the European and Asiatic data, evoking what he identifies as the Aurignacoid complex, derived from the Old World antecedents in the Aurignacian and Mousterian. The suggested technocomplex accompanying the Aurignacoid includes prismatic flakes, retouched flakes, bifaces, burins, and microblades as well as bone projectile points. Bryan (1969), in concurrence with Mueller-Beck's position, also recognizes a possible Mousterian antecedent for the New World technocomplexes of pre-Clovis times.

Haynes (1969) has established a three-period scheme for human chronology in the New World. Period I (Early) dates pre-30,000 B.P., and Period II (Middle) extends from 30,000 to 12,000 B.P. The final period (Late) dates from 12,000-8000 B.P. Jennings (1978) has noted that our current knowledge precludes the assignment of any sites to the Period I temporal locus with assurance. Unfortunately, even at the present writing, the few sites assigned to Period II are fraught with problems that make their total acceptance difficult at best. To a large degree, it is the lack of tightly controlled stratigraphic placement that calls the materials into question. Certainly the severe climatological/geomorphological processes affecting these Pleistocene

period materials bear very heavily on their highly disturbed nature. Thus, we are left with the Period III materials to develop our most concise understanding of the Paleoindian inhabitants of the New World.

Knowledge of the Paleoindian period is derived primarily from kill/butchering sites and small ephemeral encampments scattered throughout the High Plains. Technologically, the period is characterized and partially defined by its most representative artifacts, the fluted and unfluted lanceolate projectile points and knife forms. Within the Middle Missouri subarea this period is poorly represented. Two sites with late Paleoindian components are located upstream from the mouth of the Moreau River on the left bank of the Missouri River - the Travis II site (39WW15) and the Walth Bay site (39WW203).

Several significant Paleoindian sites are located along the Cheyenne River near the southern edge of the Black Hills, including the Agate Basin site (48NO201), the Betty Greene (Lusk complex) site (48NO203) and the Ray Long (Angostura) site (39FA65).

Clovis

In a review of the Llano complex (Clovis), Haynes (1970:77-79) identified 18 sites, five of which produced radiocarbon age determinations. These dates, when subjected to statistical treatment, meet the chi-square test for a single event at $11,240 \pm 140$ B.P. (Haynes 1970:78). Additional Clovis locales have been identified in the last decade, bringing the total number of sites to 26; 11 of these 26 sites have produced radiometric age determinations (Haynes personal communication 1982). Interestingly, the cluster of Clovis mammoth kill/butchering sites continues to fit the temporal locus worked out by Haynes in 1970. Again, it is most unfortunate that we are still severely lacking in our knowledge of the dynamics of the Clovis culture beyond the highly specialized nature of the people's hunting complex. The Clovis components at two sites, Agate Basin (Frison 1978) and Murray Springs (Haynes 1970, personal communication 1982) contain features other than kill/butchering related activities.

A site which has yielded an important closure between the earlier pre-Clovis technocomplex of bone tools and the Clovis period is Lange/Ferguson (39SH33) (Hannus 1985a, 1987). At Lange/Ferguson the

first in situ evidence of the production and use of bone flakes for a portion of the butchery technology has been established. The materials from Lange/Ferguson provide evidence to strengthen the arguments surrounding an in-place (New World) development of hunting technologies in the pre-Clovis period.

Folsom

When the fully-fluted projectile point type that marks Folsom was initially identified, along with the specialized hunting of bison, it was treated as the beginning of a new cultural system on the Plains of North America. As Jennings (1978:31) has noted "...to call the Folsom-Plano a 'new' cultural system is not entirely correct. The settlement patterns, the basic tool kit, the areas and pattern of exploitation, and most other basic subsystems in the culture persisted for several millennia."

Frison (1978:30) has indicated that "...Folsom follows Clovis on the Northwestern Plains with no radiocarbon dated intermediate forms. The mammoths disappear and there is an apparent time gap of several hundred years" (emphasis added). Frison reports radiocarbon age determinations for the Folsom component of several sites, including Lindenmeier (10,850 $\pm$ 550 B.P. and 10,700 $\pm$ 670 B.P.) and Brewster (10,375 $\pm$ 700 B.P.), establishing a rather narrow temporal limit on the Folsom localities (Frison 1978:23). Importantly, fluted projectile points that appear to fit between Clovis and Folsom have been reported for Wyoming (Frison 1978:23) and other areas. An evaluation (Hannus and Nowak 1984) of some twenty specimens of fluted points recovered in the White River Badlands region of western South Dakota suggests that some of the specimens may be assigned this difficult mid-range position, typologically between Clovis and Folsom. As additional work is conducted, it seems very likely that the previous models portraying a rather sharp division between the Paleoindian culture complexes will require significant reworking.

Folsom-Plano

Appearing contemporaneously with Folsom and evolving over the next several millennia across the Plains of North America, are the techno-

complexes known as Plano. This long period of prehistory is broadly characterized as a continued hunting/foraging subsistence quest, with unique specializations in hunting technologies, both in killing/butchering tools and in the techniques utilized for controlling the prey animals.

Sites of the Plano period are recognized from the various parallel-oblique flaked, lanceolate, unfluted projectile point types that emerge. A number of authors, including Wheat (1972), Dibble and Lorrain (1968), and Irwin-Williams et al. (1973), have seen the Plainview point type as perhaps marking a transition from Folsom into the long sequence of unfluted types that continue. More recently, Frison (1978:31-35) and Jennings (1978:33-38) have attempted to clarify the temporal morass that exists in the sequence of projectile point typologies of the Plano cultural complexes. In considering only the confusion over the Folsom-Plainview temporal relationships Jennings suggests that:

The differing stratigraphic positions may reflect a broad distribution over many hundreds of horizontal miles, with the Plainview point having developed in the northern Plains and later been adopted in south Texas as the type gained in popularity [Jennings 1978:33].

Knowledge of the Plano complex in southwestern South Dakota is still rudimentary. Tratebas (1979:25), in reviewing Wheeler's (n.d.) notes on the Long site (39FA65), which became the type site for the Angostura point type associated with the Plano complex, emphasizes that the Angostura points were never adequately described and, therefore, few comparisons have been made with points found elsewhere. Two components of the Long site, Component B and Component C, contained Angostura points as well as unprepared hearths; a date of 9380 ± 500 B.P. was obtained from Component C and two dates, 7715 ± 740 and 7073 ± 300 B.P., came from Component B. Only Component B yielded grinding slabs, manos, and end scrapers, which Wheeler (n.d.) interprets as representing a campsite of hunters and gatherers. Component C contained, in addition to the points, a graver and three workshop clusters of thin quartzite flakes, suggesting a shift in subsistence strategies during Plano times.

A recent evaluation of the Ray Long site (Hannus 1986) indicated only Area B had the potential for remaining extant cultural deposits. Testing in that area provided hearth carbon for radiocarbon age

determinations which produced dates that ranged from $11,000 \pm 310$ B.P. to 8950 ± 410 B.P., indicating the possibility of an earlier cultural sequence than was contacted during the Smithsonian excavations.

The actual hunting strategies utilized across the Plains are most intriguing for the Plano period. The Olsen-Chubbuck site (Wheat 1972) has provided evidence that a large herd of bison was stampeded into a long narrow gully, crushing the lower animals and allowing the hunters to dispatch the upper animals which were entrapped. Frison (1974), in excavating the Casper site, found a cul-de-sac trap in an ancient parabolic sand dune. In this instance the animals became entrapped by the loose, shifting sand of the dune face. Another form of bison trapping was the arroyo technique, such as that utilized at Agate Basin (Frison 1978:161). In this circumstance the hunters are seen to have "...crowded the animals up a steep-sided arroyo until a knickpoint or perpendicular wall several feet high was reached."

Following the temporal locus of Folsom-Plainview, the human groups hunting the Plains and Southwest of North America pursued the modern species of Bison bison. The human response, in terms of hunting technology, is probably related to, but not necessarily caused by, the smaller size of the animals hunted. The focus seems to be on increasing utilization of various entrapment techniques, thus causing larger total kills to be accomplished at single sites. While total human numbers were likely increasing, it is doubtful that this alone was the cause for the changing strategy. Coupled with the changing techniques utilized to control and entrap the animals hunted, we see the expansion of projectile point types. When dealing with regional/local variants of these broader types, the problem of temporal placement and cultural/techno assignment becomes increasingly difficult. Although surface finds of Paleoindian point types have been noted in past investigations, little specific analysis of the Paleoindian period has occurred in South Dakota until very recently.

Paleoindian point types are not uncommon in southwestern South Dakota. Hughes (1949:270) reports a Plainview point from the Long site; Tratebas (1978:80) recovered an Alberta point near Deerfield; Haug (1978a:Figure 11G) illustrates a James Allen point from the southern Hogback; and points similar to Lovell constricted types were found at the Adoni site near Deerfield (Eckles 1978:16) and at the Ditch Creek

site (Tratebas and Vagstad 1979). A series of investigations by ALCWS in the White River Badlands has begun to clarify the complex typological circumstances within this rather restricted region for the Paleoindian and more recent prehistoric adaptations.

Specific to the project area, Lazio (1980) reports three private artifact collections from within the Cheyenne River Indian Reservation which contain Paleoindian points. The Brennan collection, gathered north of the town of Isabel in the northwest corner of Dewey County, contains four Paleoindian points; the Vergil Wall collection from near Cottonwood Creek, which drains into the Cheyenne River approximately seven miles west of the project area in southern Ziebach County, contains a complete Hell Gap point, a Plainview-like point, and a Scottsbluff-point; finally, the Wayne Holmes collection, also from Cottonwood Creek, contains one probable Paleoindian point (Lazio 1980:6-7).

Early Plains Archaic

The transition from Paleoindian to Archaic, beginning about 8000 B.P., is marked by an abrupt change in projectile point styles from the lanceolate Paleoindian types to the large side-notched Early Plains Archaic types (Frison 1978:41). The earliest dates for these side-notched types (7600 B.P.) and the best dated chronological record for the Early Plains Archaic period come from Mummy Cave, located along the Shoshone River in Park County, Wyoming (Wedel et al. 1968). Dates from Mummy Cave range from 7600 to 5500 B.P.

The Plains Archaic or Foraging period represents a nomadic, broad-spectrum foraging adaptation to the Plains, which is probably a readjustment of the Paleoindian lifeway resulting from the extinction of many species of Pleistocene megafauna and the changing Plains environment which required a radical shift in subsistence practices. These subsistence practices appear to be a generalized resource exploitation based on both large and small game hunting and an apparent increase on the reliance of plant resources with a shift away from specialized big game hunting. Technologically, there appears to be a related shift to more regionally restricted patterns of tool manufacture which is most apparent in the appearance of many different styles of notched and stemmed projectile points.

The beginning of the Archaic also coincides with the Altithermal Climatic episode, generally believed to have occurred between 8000 and 3500 B.P. (Antevs 1955). During the Altithermal the climate on the Plains became significantly warmer and increasingly more arid, resulting in renewed down-cutting of streams and rivers, and causing major changes in the grassland communities, a response manifested in a marked expansion of the shortgrass plains and accompanied by a general decrease in forage. Although the shift in the density of bison probably impacted the distribution of human groups, it is no longer believed that the Plains were abandoned during this period. Reeves (1973) has discussed the possible effects of the Altithermal on bison populations and a corresponding shift in the subsistence strategies of Early Plains Archaic hunting groups.

Increased erosion and reduced ground cover during the Early Plains Archaic may be one important factor influencing the paucity of archaeological sites of this period. Tratebas (1979:29) has suggested that side-notched points exhibiting basal grinding from the Ditch site (39PN90) in the Black Hills resemble points from the Hawken site. The Hawken site, an early Altithermal period arroyo bison trap located west of the South Dakota line near Sundance, Wyoming, was reported by Frison, Wilson and Wilson (1976). According to Frison (1978:199), two radiocarbon dates of 6500 and 6300 B.P. make the projectile points from the Hawken site the earliest side-notched type known from the Northwestern Plains associated with bison hunting. Frison (1978:199) suggests that Hawken points may be considered nothing more than terminal Paleoindian types similar to Frederick or Lusk points but with side notches added.

It was previously thought that the Medicine Crow site (39BF2), located near Ft. Thompson, contained a Paleoindian component (Irving n.d.), but recent work with the assemblage indicates that its occupation probably did not begin until the Early Plains Archaic period (Ahler 1980). Early Plains Archaic materials have been excavated at the Travis II site (Ahler et al. 1977) and at the Walth Bay site (Ahler et al. 1974); additionally, a radiocarbon date on bone from a site in the Indian Creek vicinity indicates a possible early Archaic occupation (Winham and Lueck 1984). Surface finds assigned to the Early Plains Archaic were recovered during the Northern Border Pipeline survey

(Hannus 1985b) in northeastern South Dakota and other finds are reported but not confirmed (see Buechler 1984 [draft]).

The end of the Early Plains Archaic exhibits a widespread distribution of smaller side-notched atlatl point forms which have been generally designated "Bitterroot," a term adopted from Swanson's (1962) Bitterroot and Salmon River Side-Notched point styles in Idaho. Lahren (1976) has identified similar early side-notched forms from the Myers-Hindman site in Montana, and Reeves (1973:1244) relates a point expression, which he terms the Mummy Cave complex, to Bitterroot. Husted (1969) has also made stylistic comparisons between Bitterroot and Simonsen points of the Central Plains, and Reeves (1973:1244-1245) has noted that points from the Itasca bison kill (Shay 1971) in Minnesota and the Swan River site (Gryba 1968) in Manitoba can also be attributed to Bitterroot types. Level 8 of the Long Creek site (Wettlaufer and Mayer-Oakes 1960) in Saskatchewan, which appears to be transitional between the Early Plains Archaic and the Oxbow/McKean complex of the Middle Plains Archaic, as well as the Logan Creek site (Kivett 1962) in Nebraska, seem to fit well into this designation.

Middle Plains Archaic

The arid Atlantic climatic conditions of the Altithermal which are documented during the Early Plains Archaic came to an end about 4500 B.P. (Frison 1978:201). In South Dakota, as well as the rest of the Northern Plains, the Middle Plains Archaic begins with the sudden appearance of the McKean complex and a proliferation of bison remains associated with arroyo traps, bison jumps and corrals. While bison hunting unquestionably remains the primary subsistence activity, there is now an increased emphasis on plant foods as evidenced by flat grinding stones and sandstone manos (Frison 1978:47).

The McKean complex, recognized by true McKean Lanceolate points with concave basal notching, as well as stemmed Yonkee, Duncan and Hanna types and the Mallory side-notched variety, still lacks concise definition (Frison 1978:49; Tratebas 1981; Kornfeld and Todd 1985). Oxbow points, regarded by Frison as pre-McKean, are often mixed with McKean types although they are more generally believed to be the earliest type in a morphological progression of McKean complex projectile point forms. Oxbow dates range from 5193 ± 130 B.P. at the

Oxbow Dam site in Saskatchewan to 4050 ± 100 B.P. at Head-Smashed-In Buffalo Jump in Alberta (Frison 1978:45). McKean complex dates range from 5040 ± 150 B.P. at Rigler Bluffs, Montana, to 2460 ± 140 B.P. at the Mavarkis-Bentzen-Roberts site in Wyoming (Frison 1978:47).

As to the origins of the McKean complex, it has been noted (Frison 1978:45) that some cultural materials occurring toward the end of the Early Plains Archaic, particularly assemblages from Mummy Cave, Southsider Cave and Dead Indian Creek, all in Wyoming, are reminiscent of Oxbow and suggest a continuity in projectile point styles from Early Plains Archaic into McKean or Middle Plains Archaic. Benedict and Olson (1973) have previously recognized point forms intermediate between James Allen points and McKean Lanceolate points and between Pryor Stemmed and Duncan points. Reeves (1973:1244-1245) points out that certain components in the Rocky Mountains, which he terms the Mummy Cave complex, contain Oxbow points in association with Bitterroot and Salmon River points and suggests that Oxbow developed out of these earlier technocomplexes. Level 8 of the Long Creek site in Saskatchewan (Wettlaufer and Mayer-Oakes 1960) appears to be transitional Oxbow and contains points similar to those from Logan Creek in Nebraska and to the Hawken point type from Wyoming.

The McKean complex was originally defined by Wheeler (1952; 1954) and Mulloy (1954) from the McKean site, located along the Belle Fourche River in northeastern Wyoming and now inundated by the Keyhole Reservoir. Mulloy (1954:454) recognized the correspondence between the Lower Level assemblage from the McKean site and materials from the Signal Butte I (Strong 1935) and Ash Hollow Cave (Champe 1946) components from southwestern Nebraska. The complex is now acknowledged to have a wide distribution in South Dakota. The mixed assemblage from Ludlow Cave (Over 1936) in the northwestern corner of the state contains points identifiable as Duncan. Tratebas (1981) has noted that Kolterman, Harney and Landers points, corresponding to sites of the same name from the Angostura Reservoir in the Black Hills (Wheeler n.d.), as well as Component A points from the Ray Long site, can all be assigned to the McKean complex.

Numerous other McKean complex sites have been reported in the Black Hills. The Gant site (Gant and Hurt 1965), located near Bear Butte, has a radiocarbon date of 4130 ± 130 B.P. and contains McKean Lanceolate,

Duncan, Hanna and Oxbow points. Haug's (1976a) cultural resources assessment of the Coldbrook and Cottonwood Springs reservoirs recorded two McKean sites (39FA201 and 39FA296) and he assigns three other sites reported by Mallory (1967) and four reported by Sigstad and Jolley (1975) in Fall River County to the McKean complex. Tratebas (1979) and Tratebas and Vagstad (1979) have also attributed 39FA396, the George Hey site, and the Ditch Creek site in the southern Black Hills to the same period, while Cassells (1981) has recorded a McKean complex site, 39CU566, in Custer County. Keyser (1982) has recently reported on a multi-component McKean phase site, Lightning Spring (39HN204), in the North Cave Hills of Hand County in northwestern South Dakota. Dates cluster about 1900 B.C. (3880 B.P.).

McKean sites are also found along the Missouri River in central South Dakota. Irving (1958) identified Duncan points at the Medicine Crow site and Neuman (1964b) describes McKean, Oxbow (Harney) and Hanna (Kolterman) points from preceramic levels at Sitting Crow and a Duncan point from the McBride site, all in Buffalo County. At the Walth Bay site in Walworth County, Hanna points were recovered from the Zone B occupation level (Ahler et al. 1974), while the lowest occupation level (Level I) at the Tramp Deep site (Howard and Gant 1966:Plate 22, e-f), located along the Missouri River in northeastern Nebraska, contained points assignable to Hanna forms of the McKean complex.

A recent cultural resources survey conducted by Sundstrom and Malone (1982) in the White River Badlands region of South Dakota identified a site (39PN561) which contained an exposed fire hearth with an associated McKean projectile point.

Late Plains Archaic/Early Woodland

The Late Plains Archaic evolved on the Northwestern and Northern Plains with manifestations of the Pelican Lake point complex replacing McKean. First defined at the Mortlach site in Saskatchewan by Wettlaufer (1955), the Pelican Lake technocomplex is recognized mainly by a distinctive true corner-notched point with acute or barbed shoulders and diagonal notching. The Pelican Lake complex probably represents a number of regional nomadic hunting-gathering populations which, while maintaining a single cultural tradition, express variations according to local adaptations. At Mortlach and Long Creek (Wettlaufer

and Mayer-Oakes 1960) the habitation sites appear to be located on stream terraces, while on the open plains, the sites representing summer habitations consisting of tipi rings are mainly on the prairie level or on high terraces (Reeves 1970:83).

According to Reeves (1970:74), the transition from the McKean complex to Pelican Lake occurred on the Northern Plains with the Pelican Lake complex emerging out of Hanna by at least 3000 B.P. and continuing until approximately 1900 B.P. Reeves sees Pelican Lake as a component/temporal phase of a cultural tradition he calls TUNAXA, preceded by Hanna and McKean temporal phases (Reeves 1970:142-149). Radiocarbon dates of the Pelican Lake occupations at Mortlach and Long Creek range in time from about 2800 to 2300 B.P. Two Pelican Lake levels have been dated at Medicine Lodge Creek in Wyoming at 3000 and 3100 B.P. (Frison 1978:58).

No Pelican Lake sites have as yet been dated from South Dakota although the Pelican Lake Corner-Notched point type is found frequently in surface collections in the Black Hills (Haug 1976b) and in outwashed cultural deposits in the Pass Creek and Fog Creek drainages of the White River Badlands (Hannus et al. 1983). In the southern Black Hills a style of small projectile points having very narrow notches, straight base and sides, a fairly narrow blade, and usually lacking basal grinding, has been tentatively identified by Tratebas (1979:40-41) as a late Pelican Lake derivative.

At least seven sites containing Pelican Lake materials were identified in northeastern South Dakota during the Northern Border Pipeline survey. One site, 39MP23, was associated with two very tiny ceramic sherds, both too small to be diagnostic. Reeves (1970:80-81) notes that ceramics have only been found in one clear association with a component assignable to Pelican Lake (Upper Miles Subphase, Mule Creek Rockshelter) and appear to be most closely comparable to Besant and Valley ceramics.

The Late Plains Archaic coincides with the Early Woodland, estimated by Griffen, Flanders and Titterington (1970) to date approximately 1000 to 200-100 B.C. It has been characterized by "the introduction of pottery, mound building for burial of the dead, initial eastern agriculture, increasing use of special raw materials which become widely distributed such as copper, mica, galena, ocean shells and other

items...with increased emphasis on burial ceremonialism" (Griffen et al. 1970:1). The distribution of Early Woodland is generally considered to be within the eastern Deciduous Forest and the southern edge of the mixed Conifer-Hardwood Forest below the Great Lakes, with the Mississippi River forming the western boundary (Syms 1977:74). This region, referred to as the Midwest-Riverine area and incorporating the Mississippi, Ohio, lower Missouri, Illinois and Wabash drainages, became the heartland of an eastern agricultural complex, emerging possibly as early as the late Archaic (Struever and Vickery 1973).

As yet no manifestations attributable to Early Woodland have been found in South Dakota although it may occur in the prairie-lakes environment shared with Minnesota. The Fox Lake phase, known from the Pederson site in Lincoln County, Minnesota, is characterized by Hudak (1976) and Anfinson (1979:79) as Middle Woodland. Based on a radiocarbon date of 2050 ± 80 B.P., Ludwickson et al. (1981) would argue that it should be considered Early Woodland.

It can be postulated that the development of horticulture and the increased productivity it provided resulted in increased populations and changing demographic patterns by the latter part of the Early Woodland. As Syms (1977:77) has noted, "...population growth and the greater numbers of distinct ethnic groups may have created a degree of crowding and conflict that necessitated subsequent territorial expansion and adaptation to new economic cycles in the Boreal Forest to the north and Plains to the west during the subsequent Middle Woodland Stage."

(Early) Late Prehistoric/Middle and Late Woodland

The Late Prehistoric period, recognized typologically by a change in projectile point types and sizes resulting from the introduction of the bow and arrow, begins around 1500 B.P. (Frison 1978:62). Projectile points at this time become reduced in size, side-notching becomes the norm, and blade serration is common.

The earliest of these small side-notched projectile point technocomplexes to emerge on the Northwestern Plains is Avonlea, characterized by distinctive delicate side-notched points (Kehoe and McCorquodale 1961:87). Reeves (1970:102) recognizes a transition from Pelican Lake to Avonlea at about A.D. 150-250 in Alberta and Saskatchewan and at about A.D. 400-500 in the Belle Fourche-Powder River

region. Terminal estimates range from A.D. 700 for the Saskatchewan Basin to A.D. 900 or 1000 for the Upper Missouri.

The significance of Avonlea is that it is a distinct cultural complex which co-exists on the Northern Plains with a number of other distinct cultural configurations which will be discussed below. The other factor of importance about Avonlea is the association of pottery, which begins to diffuse to the Plains complexes through interaction with Woodland populations. Pottery was identified in the Avonlea level at the Long Creek site in Saskatchewan (Wettlaufer and Mayer-Oakes 1960:39), at the Pas site in Manitoba and at the Garratt site at Moose Jaw, Saskatchewan (Syms 1977:92). According to Syms (1977:92), Avonlea pottery most closely resembles the pottery from the Sonota complex of the same period.

The Avonlea complex is restricted primarily to the Plains region from west of the Middle Missouri to as far as the Platte drainage. It is also found north of the Bighorn-Shoshone Basin and east of the Parkland in Manitoba. In South Dakota, until recently, Avonlea points had been found only among the projectile points at Ludlow Cave (Over 1936) in the northwestern corner of the state, although Tratebas (1979:44) suggested that one of the sites tested at Angostura, 39FA35, contained a probable Avonlea point. Also, two points illustrated by Haug (1978b:Figures 6A and 7A) from sites in the southern Hogback appeared to be Avonlea. Current research in the White River Badlands has produced Avonlea occupational deposits in the Pass Creek and Fog Creek drainages with mean radiocarbon dates clustering around 1395 years B.P. (Hannus et al. 1983; Hannus and Nowak 1987). One site in McPherson County (39MP18), recorded during the Northern Border Pipeline survey, contained an Avonlea point of the Timber Ridge Side-Notched variety.

Another diagnostic point complex emerging on the Northern Plains around 1900 B.P. is Besant, recognized by the characteristic atlatl dart point configuration having shallow notches and round shoulders and known as Besant Side-Notched. With the technological transition from atlatl to arrow between A.D. 420 and A.D. 750, Samantha Side-Notched, the smaller corresponding arrow point of the Besant technocomplex, replaces Besant Side-Notched through time (Reeves 1970:89, 92). Evidence of Avonlea in Besant components and Besant types in Avonlea components indicates that Besant and Avonlea are coeval.

The Besant manifestation, first described from the Mortlach site in Saskatchewan (Wettlaufer 1955), is best described from the Ruby site in the Powder River Basin of Wyoming and the Muddy Creek site in the Shirley Basin on a drainage of the North Platte River in south central Wyoming (Frison 1978:213). Based on excavations of these two sites, Frison has commented that:

...the Besant incursion into the Northwestern Plains brought with it, or else developed there, the most sophisticated bison procurement methods the area had seen. Hunters were able to incorporate sophisticated artificial structures into certain features of the natural topography and produce highly efficient buffalo corrals or pounds. As a result, these hunters were less dependent upon the arroyo trap and the jump and consequently could set up operations in a wider variety of favorable bison habitat areas. ...Besant was actually a cultural climax - at least in terms of bison procurement - that was never reached again on the Northwestern Plains [1978:223].

The distribution of Besant in South Dakota is particularly difficult to determine due to the tremendous variability in point forms which have never been systematically quantified. Besant projectile point types are found frequently in surface collections from the Black Hills (Tratebas 1978:141) and from the Pass Creek Basin in the White River Badlands (Lueck and Butterbrodt 1984). Only one excavated Black Hills site has produced Besant points. A shallowly buried hearth containing red ochre, a large dart point, ovate knives, and antler flakers was excavated at 48CK209 (Wheeler n.d.).

A style of pecked rock art identified from some 70 panels widely scattered throughout the southern Black Hills may be related to a Besant-like cultural manifestation (Sundstrom 1981). The panels show scenes of spear- or atlatl-bearing humans hunting bison, deer, mountain sheep, and pronghorn in what appear to be some kind of enclosures, perhaps corrals or pounds. A Late Archaic date is suggested for the panels on the basis of the depicted artificial game enclosures, which are not definitely known from earlier periods on the Northwestern Plains, and on the absence of depictions of bows and arrows (spears or atlatls are shown on several panels), which were in use by the early Late Prehistoric.

Besant points are also characteristically associated with the Sonota complex (Neuman 1975:82) from the Missouri River Trench of North

and South Dakota. McNerney (1970) has illustrated a mixed assemblage of points from Blue Dog Lake (39DA301) in Day County which includes a number of Besant forms. During the Northern Border Pipeline survey, five sites were identified which contained Besant point forms: 39MP13; 39MP15; 39MP21; 39BN24; and 39DE38.

During the early centuries of the Late Prehistoric period, while Avonlea and Besant nomadic hunting groups were spreading over the Northern and Northwestern Plains, manifestations of the Middle Woodland complex made their incursion into southeastern and eastern South Dakota. Syms does not characterize the Middle Woodland as a static cluster of technological traits, but rather suggests:

The increase in population based on incipient horticulture of the preceding stage and intensification during the present stage, with the concomitant centralizations of control, and the organization of vast trade networks for the redistribution of non-local resources must be considered as important processes of change for groups in surrounding areas....it is proposed that the developments of the...Middle Woodland...and the Early Ceramic Configuration reflect population movements and shifts to multiple biome utilization in response, at least in part, to changes in the Hopewell area [Syms 1977:79].

The earliest Middle Woodland manifestation clearly recognized but poorly understood in South Dakota is the Valley phase, first described by Hill and Kivett (1941:91 Valley focus) on the basis of early ceramic sites in Nebraska. The proposed ceramic type, Valley Cord-roughened (Kivett 1949), is a thick concoidal vessel predominantly sand-tempered with exterior cord marking usually oriented vertically with less frequent oblique and horizontal applications. The rims are nearly vertical and flat, and decorative techniques include punctating, embossing, dentate, cord-wrapped stick impressing and incising.

The data on Valley phase subsistence are limited but evidence suggests emphasis on diffuse, riverine resources with bison being relatively unimportant (Kivett 1952, 1953, 1970). Shellfish are abundantly represented and small to medium-sized game such as antelope or deer, water birds, turtles and rabbits were significant.

Burial mounds for disposal of the dead are associated with the Valley phase (O'Brian 1971) but the absence of diagnostic ceramics from

excavated mounds in eastern South Dakota has hampered identification of the mound complex with Valley.

The distribution of identifiable Valley materials includes the Badger component of the Good Soldier site (39LM238) (Neuman 1964a), component D of the La Roche site (39ST9) (Hoffman 1968), the Hitchell site (39CH45) (Johnston 1967), the Scalp Creek (39GR1) and Ellis Creek (39GR2) sites (Hurt 1952), and the Arp site (39BR101) (Gant 1967), all along the Missouri River in South Dakota. Sites containing Valley Cord-roughened pottery are distributed "on the Plains at least from the border of Kansas, north through Nebraska, and then gradually following the immediate valley of the Missouri River from southeastern South Dakota, northwest North Dakota, and as far west as Havre, Montana" (Neuman 1975:84). Syms (1977:88) has reported Valley phase pottery near the Moore Group mounds in southwestern Manitoba and notes that nothing similar to Valley Cord-roughened pottery has been found in Minnesota.

The Valley phase, based on comparison with material from the Taylor Mound in northeastern Kansas, is probably contemporaneous with Kansas City Hopewell and Illinois Hopewell sites (O'Brian 1971). Dates for Kansas City Hopewell range from approximately A.D. 8 to A.D. 680 (Syms 1977:88). The spatial configuration of Valley phase suggests that it is derived from the Central Plains tradition.

Recent work by Benn (1981) at the Rainbow (13PM91) and M.A.D. sites (13CF101 and 13CF102) in western Iowa suggests that the Held Creek phase, which is later than the early part of Middle Woodland, but possibly contemporaneous with the later part, may represent a newly proposed "Early Late Woodland" period (Ludwickson et al. 1981:125-127). Postulated dates range from A.D. 300 to A.D. 700. Components from South Dakota which may be tentatively included in this phase are the White Swan Mound (39CH9) at Ft. Randall (Cooper 1949) and Hurt's (1952) Scalp Punctate.

Perhaps the most interesting and significant of the early Late Prehistoric configurations in South Dakota is the Sonota complex. The Sonota complex was originally defined by Neuman (1975) on the basis of excavations at the Stelzer site (39DW242), as well as materials from the Swift Bird (39DW233), Grover Hand (39DW240), Arpan (39DW252), and Boundary Mound (32SI1) sites. The complex is recognized as having an emphasis on bison procurement, a dominance of tools made from Knife

River flint, a distinctive variation of corner-notched projectile points very similar to Besant and Samantha Side-Notched forms, upright bones in village and kill sites, and small burial mounds containing multiple bundle burials as well as numerous bison remains. Sonota ceramics are shoulderless, concoidal vessels with straight walls and rounded bases. Most have a vertically cord-roughened surface similar to Valley ceramics. Both Syms (1977:90) and Benn (1981), however, see the Sonota and Valley complexes as two quite distinct groups despite the overlap.

Neuman (1975:96) interpreted the Sonota complex as "representing a regional segment of a cultural tradition which effectively exploited the plains-riverine environment" in the Northeastern Plains. The distribution of the Sonota complex is now recognized as being much larger than the regional aspect suggested by Neuman, extending throughout the narrow central plains of North and South Dakota and southern Manitoba, with some sites also found in Saskatchewan and Alberta (Syms 1977:89). Haberman (1979) has reported a small, temporary aceramic occupation site in Stanley County (39ST80) assignable to the Sonota complex which yielded two Besant-like points. The site is situated on the uplands at the edge of the Missouri Breaks.

In the Coteau des Prairie region of eastern South Dakota, the Sonota complex has been identified at the Oakwood Lakes site (39BK7). Nowak (1981:124) has noted that, based on the analysis of the stone tool assemblage and its cultural affinities, it appears that the Oakwood Lakes site represents a Sonota complex bison hunting and processing camp on the eastern prairie periphery of South Dakota dating ca. A.D. 200 to A.D. 700.

The similarities with aspects of the Valley complex to the south and west and with western periphery Laurel to the north suggests an interface of mobile hunting and gathering groups participating in multiple biome utilization and exploiting the bison herds of the tall grass prairies all along the eastern periphery of the Northeastern Plains [Nowak 1981:125].

This hypothesis is compatible with Sym's (1977) Co-Influence Sphere model and it is not unlikely that the Sonota complex may be viewed as a composite of a number of regionally varied complexes similar in nature to Besant and Valley and may, in fact, be the manifestation of the interface between the Besant complex of the Plains Archaic tradition and

the ceramic and small notched and unnotched point complexes of the Eastern Woodland tradition.

During the succeeding Late Woodland period, horticulture, sedentary life, and increased complexity of social organization represent important changes developing on the eastern periphery of the plains and spreading up major rivers and creeks. In South Dakota this period is recognized by a configuration referred to as the Loseke Creek phase and is identified at sites found exclusively in the Missouri River drainage and along its tributaries, including the James and Big Sioux rivers in southeastern South Dakota and the Niobrara and Platte rivers in eastern Nebraska. Loseke Creek phase sites extend southward from the Chamberlain vicinity (Ludwickson, Blakeslee and O'Shea 1981:130) along the Missouri River in western Iowa until contact is made with the Sterns Creek phase configuration in southwestern Iowa and southeastern Nebraska.

The Loseke Creek phase is characterized by cord-roughened pottery having single-line cord-impressed decorations on the rim, generally in horizontal rows but occasionally in alternate triangles or oblique lines over the horizontal rows. Vessels change from the concoidal form of the Middle Woodland to rounded vessels with pronounced flaring rims and distinct shoulders. Vessel walls tend to be thinner with smoothing over cord-roughening or simple-stamping (Syms 1977:91; Ludwickson et al. 1981:132).

The Loseke Creek Late Woodland configuration first recognized by Kivett (1952) at the Feye and Lawson sites in Nebraska, has been identified in South Dakota at the Arp site (Gant 1967), the Hitchell site (Johnston 1967), the Tabor site (Hurt 1961), the Gavins Point site (Brown 1968), the Scalp Creek and Ellis Creek sites (Hurt 1952), Spawn Mound (Howard 1968) and the Split Rock Creek Mounds (Over and Meleen 1941). The recent excavations by Benn (1981) at the Rainbow and MAD sites in western Iowa have provided significant information on the transition from Middle Woodland Valley phase configurations to Late Woodland Loseke Creek. The age of Loseke Creek phase Late Woodland sites is based primarily on four radiocarbon dates from the Arp site (Gant 1967) ranging from A.D. 420 to A.D. 810.

A significant Late Woodland manifestation which is not assignable to Loseke Creek is the Truman Mounds, located near Ft. Thompson in

central South Dakota. Neuman (1960:87-91) recovered simple-stamped pottery in association with beads and other implements of bone and shell as well as corner and side-notched projectile points. Simple-stamped impression exhibited on exterior vessel surfaces is also found at the Gavins Point site (39YK203). This technique is considered to be quite late within the Woodland tradition and is thought to be of Mississippian derivation (Howard and Gant 1966:58).

Recognition of Woodland period sites in southwestern South Dakota is not common. Wheeler (n.d.) found Woodland pottery at Mule Creek Rockshelter, associated with corner-notched points. Reeves (1970:80-81) finds these ceramics most closely comparable to Besant and Valley ceramics, and assigns the component to the Upper Miles subphase of Pelican Lake. Tratebas (1979:42-43) reports that stemmed points, similar to those found in Lens D at Ash Hollow Cave (Champe 1946) which are associated with corner-notched points and Woodland pottery, are found in the southern Black Hills (cf. Sigstad and Jolley 1975:Figures 1-3; Haug 1978b:Figures 6 and 7).

Great Oasis

Just how or when the transition from the Woodland tradition to the Plains Village tradition occurred remains a matter of speculation. However, it can be said that the Great Oasis cultural phenomenon appears to be in a prime position to bridge the two traditions on both economic and ceramic grounds.

Great Oasis sites range in date from A.D. 800 $\pm$ 55 to as late as A.D. 1260 $\pm$ 80 (Ludwickson et al. 1981:133), with the majority falling between A.D. 900 and A.D. 1100 (Henning 1981). A complete Great Oasis lodge, excavated in 1976 (Hannus 1976; Hannus et al. 1986) at the Heath site (39LN15), produced a C-14 determination of 940 $\pm$ 195 B.P. (Teledyne Isotope # I-9499). The Heath site is located on a terrace above the Big Sioux River just east of Sioux Falls, South Dakota. Great Oasis cultural materials, particularly ceramics, are distributed over a wide area in the Plains region, extending from southeastern North Dakota (Anfinson 1979:87), to eastern Iowa (Caldwell 1961:118) and western Illinois (Henning 1967:189). The core area for Great Oasis distribution, however, centers on northwestern Iowa, southeastern South Dakota, southwestern Minnesota and northeastern Nebraska (Henning 1971).

The Great Oasis tool assemblage includes Woodland-type projectile points as well as other small triangular and side-notched points typical of the somewhat later Initial Middle Missouri variant of the Plains Village tradition (Henning 1981:36). Great Oasis ceramics have commonly been divided into two distinct ware groupings on the basis of rim and neck form: Great Oasis High Rim and Great Oasis Wedge Lip (Henning and Henning 1978). Both ware groups are grit-tempered and vary in color from orange through tan to gray and black. Elizabeth Henning (1981:36) has noted the decorative attribute similarities between Great Oasis High Rim and Late Woodland Missouri Bluffs Cord Impressed types and suggests that the wedge lip ware may have Woodland antecedents with the low-rim Minott focus types from western and central Iowa or with the plain ceramics of the Sterns Creek component at Walker-Gilmore in eastern Nebraska.

One significant aspect of Great Oasis is that occupation sites, based on excavations of rectangular semi-subterranean houses at Broken Kettle West (13PM25 - Baerreis 1970) and at the Heath site (39LN15 - Hannus 1974; Hannus et al. 1986), appear to be permanent or semi-permanent village settlements. The subsistence practices of Great Oasis peoples seem to be a broad spectrum of hunting and gathering with a major dependence on maize. Whether or not Great Oasis groups cultivated maize is a subject of some controversy. Large quantities of corn kernels, but an unusually rare occurrence of corn cobs and scapula hoes, suggests that, although Great Oasis peoples made regular use of maize, they did not grow it themselves, but rather obtained it through trade, possibly with the Mill Creek horticulturists (Henning 1981:35). Important to a reassessment of this argument is a heavily-worn bison scapula hoe recovered from the lodge floor at the Heath site (Hannus et al. 1986:Figure 39).

Mill Creek is now considered by most investigators to be a legitimate early eastern configuration of the Initial Middle Missouri tradition, as is Cambria in Minnesota. Mill Creek sites, based on present knowledge, are restricted in their distribution to northwestern Iowa (Ludwickson et al. 1981:143).

(Late) Late Prehistoric/Plains Village Period

The Plains Village period, in terms of the number of known sites, is the predominant cultural phenomenon in the Middle Missouri subarea. The period encompasses the late prehistoric and early historic time frame, and is subdivided by Lehmer (1971) into a number of taxonomic units. In Lehmer's system, the Plains Village period includes the prehistoric Middle Missouri tradition and the prehistoric and historic Coalescent tradition, which are made up of seven variants: 1) Initial Middle Missouri (A.D. 900-1400); 2) Extended Middle Missouri (A.D. 1100-1550); 3) Terminal Middle Missouri (A.D. 1550-1675); 4) Initial Coalescent (A.D. 1400-1550); 5) Extended Coalescent (A.D. 1550-1675); 6) Post-Contact Coalescent (A.D. 1675-1780); and 7) Disorganized Coalescent (A.D. 1780-1862). While the major framework of Lehmer's taxonomic scheme for the Plains Village period is still usable, continuing research in the subarea makes it clear that revisions are needed, particularly in unit definition and chronology.

Plains Village tradition sites are best known as extensive earthlodge villages, both fortified and unfortified. Other, less well-known, site types include isolated earthlodges, campsites, burial grounds, and activity areas. Such sites were once common along both sides of the Missouri River valley extending throughout most of the subarea, particularly on level terraces and bottom lands. Prominent features of the tradition include semisedentary settlement and subsistence based on horticulture, hunting (particularly bison), and gathering of wild plants. The innovations noted for the preceding Plains Woodland period (i.e., increased sedentism, horticulture, ceramic manufacture, the bow and arrow, and substantial dwellings) all manifest themselves in more fully developed and complex forms during this period.

Meyer Village, 39ST10, lies within the proposed project area and is recorded as an Extended Coalescent site. The Cheyenne River Village, 39ST1, now inundated, is about a half-mile north of Meyer Village, and is a multi-component village site with Post-Contact Coalescent, Extended Coalescent and Middle Missouri components recorded.

In South Dakota the first recognized development of the Plains Village tradition is the Initial Middle Missouri variant, composed of three possible phases: the Over phase, the Anderson phase and the Grand Detour phase (cf. Brown 1974; Caldwell and Jensen 1969).

The Over phase is the earliest and broadest in distribution, with sites occurring on the upper Big Sioux in the vicinity of Sioux Falls (Brandon site), on the lower James River (Mitchell, Bloom, Goehring and Twelve-Mile Creek sites) and along the Missouri River (Swanson, Pretty Head B and Chapelle Creek sites). Ludwickson et al. (1981:143) have recently discussed the problems of phase level taxon for the Initial Middle Missouri, stating that the "Grand Detour and Anderson Phases seem to differ little in terms of any material culture parameter, and the differences perceived between the Missouri trench sites and the James and Big Sioux sites might change if a single, consistent ceramic typology was applied." Until the phraseology can be adequately worked out it is perhaps sufficient to deal with all of these sites as Initial Middle Missouri variants. Other materials treated in this configuration are the Initial Middle Missouri components of the Crow Creek, Langdeau, Jiggs Thompson, Cattle Oiler and Sommer sites on the Missouri River below Pierre, SD, and the Breeden, Dodd and Fay Tolton sites above Pierre. Robert Alex (1981) has also reported an Initial Middle Missouri site from the Coteau du Missouri region of South Dakota (Crow Lake site) and several sites in the Black Hills (39FA23 and the Phelps site). Lynn Alex (1979) has recently carried out excavations at the fortified Smiley-Evens site (39BU2) on the Belle Fourche River - a site which bears similarities to Initial Middle Missouri sites. Dates for Initial Middle Missouri variant sites cluster between A.D. 950 and A.D. 1300 (Lehmer 1971:95) and the florescence of this cultural configuration may be synchronous with the Neo-Atlantic climatic episode of Baerreis and Bryson (Caldwell and Jensen 1969:80-82), although Griffin (1976:33-35) postulates that stress upon critical resources led to the movement of village groups. Approximately half of the known Initial Middle Missouri sites are fortified. Subsistence appears directed toward the exploitation of bison as the major prey species with lesser emphasis on floodplain fauna. Gilbert (1969) and Chomko (1976) have studied faunal exploitation in some detail and Chomko has concluded that 94.8 percent to 98.9 percent of the animal flesh represented in Initial Middle Missouri sites were upland species, namely bison, and that the bottom land forest species served primarily as a supplement. Horticulture was also important, with an emphasis on maize, supplemented by sunflower seeds, cucurbits, beans and wild seeds (Benn 1974).

Based on Johnson's (1979) reexamination of a number of so-called Modified Middle Missouri sites, there are now about 29 Initial Middle Missouri sites identified in the area between Chamberlain, SD and the mouth of the Cheyenne River, with a significant concentration in the Big Bend region.

About A.D. 1100 the Extended Middle Missouri variant appears; it is distinguished from the Initial variant by ceramic differences and certain features in house configuration. The distribution of this later variant extends over a much greater area than its predecessor, with sites occurring from the mouth of the Little Missouri River in North Dakota to the Big Bend region in South Dakota. The majority of these sites lie north of the Bad River; only five are known to exist between Chamberlain and the Bad River (Johnson 1979).

It is interesting to note that the northern Extended Middle Missouri villages were not fortified but most of the southern Extended Middle Missouri villages had some form of fortification system. Lehmer (1971:100) believed that this situation suggested that the Initial Middle Missouri groups were the original village population in the valley with their main center of occupation being the Big Bend region. Sometime after A.D. 1100, the Extended Middle Missouri groups began to filter downstream from North Dakota. The fortifications at the contemporary Initial and Extended Middle Missouri villages suggest that conflict resulted from the intrusion of the Extended Middle Missouri groups into Initial Middle Missouri territory.

The Bad-Cheyenne region is the only region reflecting any overlap in the distribution of Initial and Extended Middle Missouri sites and has been referred to as a "contact zone" (Lehmer 1971:102-103, Figures 70-73). Johnson (1979) has presented evidence to indicate that five sites - Hallam (39ST37 and 39ST38), Cattle Oiler (39ST224), King (39LM55), and Hickey Brothers (39LM4) - contain components of both the Initial and Extended variants within the same site.

By about A.D. 1250, as suggested by Lehmer (1970:121), the Plains were affected by a cooler, drier climate causing deterioration in farming conditions. The result was a movement of cultural groups out of the Central Plains into the Missouri River trench of South Dakota, with the new immigrants coming into direct contact with the Initial Middle Missouri villagers. Lehmer (1971:125) further proposed that this

contact was followed by a fusion of cultural characteristics derived from the Middle Missouri and Central Plains traditions, forming the Coalescent tradition.

The earliest manifestations of this coalescence in South Dakota, known as the Initial Coalescent variant, appear in the Big Bend region of the Missouri and can be viewed mainly as a modified Central Plains configuration. The basic trait complexes between Initial Coalescent and Central Plains are similar and the few significant differences are probably the result of the Coalescent villagers borrowing from the Middle Missouri villagers.

Recently Ludwickson et al. (1981:161-162) have discussed the meaning of the term "coalescent" and, offering a new subdivision of the Coalescent tradition which they call "Basal Coalescent," suggest that aspects of the Central Plains tradition, as manifested in the Loup River and St. Helena cultural groups of Nebraska, were already receiving a wide range of cultural characteristics from the Middle Missouri tradition long before they appeared in South Dakota. Proposed dates for the Basal Coalescent range from A.D. 1250 to A.D. 1400. Hughes (1949) reports pottery from 39FA23 in the Black Hills which he identifies as Upper Republican and assigns to the Horsehead Creek focus; Wheeler (n.d.) assigns similar pottery from 39FA83 to Upper Republican.

The Initial Coalescent sites in the Big Bend region are embodied in the formation of large compact villages containing transitionally circular earthlodge houses randomly scattered within the confines of a bastioned fortification ditch. These fortified Initial Coalescent villages appear to be a response to the period of intense warfare which marked the movement of these southerners into what had been Middle Missouri tradition territory. This is particularly evident at the Crow Creek site (39BF11) where excavations turned up a mass grave of nearly 500 Initial Coalescent skeletons, testifying to the massacre and dismemberment of the early villagers (Zimmerman et al. 1981). Dates for the Initial Coalescent, which were tentatively thought to range between A.D. 1400 and A.D. 1550 (Lehmer 1971), have been pushed back to approximately A.D. 1300 as a result of new C-14 dates from Crow Creek.

The Lynch village (25BD1), located in Boyd County in northeastern Nebraska, probably represents an early phase of the Initial Coalescent. The site lacks the distinctive fortification system characteristic of

the Initial Coalescent villages to the north but has relatively similar frequencies of certain rim types (Caldwell 1966a:85). This site can perhaps be interpreted as a village of early Initial Coalescent peoples dating to a point in time when they were just beginning to settle the Missouri trench.

Sites such as Crow Creek (39BF11), Talking Crow (39BF3), Black Partizan (39LM218) and Arzberger (39HU6) probably represent the culmination of the coalescence between the Initial Middle Missouri peoples and the Central Plains intruders. Of the fourteen Initial Coalescent sites known in the Big Bend, only three are recognized to have representative components of the earlier Initial Middle Missouri culture variant. These sites include Crow Creek (39BF11), DeGrey (39HU205) and Medicine Creek (39LM2).

By A.D. 1550 the presence of the Middle Missouri tradition in the Big Bend and Bad-Cheyenne regions of the Missouri River had been terminated, possibly because of pressures from the intruding Initial Coalescent groups (Lehmer 1971:126). Thus begins the northward expansion of the Coalescent peoples and the transition from the Initial to the Extended Coalescent variant.

With the end of Middle Missouri tradition occupation and the period of intense conflict with the Initial Coalescent groups, the succeeding Extended Coalescent villages of the Big Bend and Bad-Cheyenne region, which appear to be a direct outgrowth from Initial Coalescent, become scattered groups of houses without fortifications, suggesting a return to the older village plan of the Central Plains tradition. Upstream from the Cheyenne River, however, Extended Middle Missouri villages continue to cluster on the right bank of the Missouri between the Grand and Moreau rivers. These sites are of fairly short-term occupation and suggest the northward withdrawal of the Middle Missouri tradition. It is in this region that opposition to the Extended Coalescent expansion continues to be reflected in the small fortified Extended Coalescent sites of the Le Compte focus (Johnston and Hoffman 1966), including such sites as Moreau Village (39DW1), Molstad Village (39DW234), Payne (39WW302), Potts (39C019) and No Heart Creek (39AR2) in the north and Scalp Creek (39GR1) in the south.

Smith and Johnson (1968:49) have proposed that most of the Extended Coalescent manifestations extending south from below the Big Bend, such

as Spain (39LM301) and Clarkstown (39LM47), be included in what they call the Shannon phase. The majority of the Extended Coalescent sites, however, are assigned to the La Roche focus; these include all of the fairly small unfortified villages with widely separated houses, such as those represented at Meyer (39ST10) and La Roche (39ST9) and by the Wheeler component at Scalp Creek (39GR1).

The northernmost Extended Coalescent sites, such as Demery (39C01), Davis (39C014) and Anton Rygh (39CA4) are also fortified and embrace numerous elements from the coeval Terminal Middle Missouri peoples. Hurt (1957) has assigned these Extended Coalescent villages to the Akaska focus. Sites such as the heavily fortified Helb site (39CA208) and Jake White Bull (39C06) form the last remaining Terminal Middle Missouri villages of this period in northern South Dakota. The fortifications at these Terminal Middle Missouri villages and at the northern Extended Coalescent sites of the Akaska focus suggest that there was a fair amount of conflict between the groups, but there is also evidence of significant interchange of cultural traits. This process resulted in the final crystalization of the Coalescent tradition and the disappearance of the Middle Missouri tradition as a recognizable entity sometime before A.D. 1675.

It was during the period of expansion of the Extended Coalescent groups that Plains Village peoples from the Missouri trench began to utilize the lithic resources from the White River Badlands, as reflected by recent investigations at West Horse Creek quarry (39SH37) which produced evidence of Extended Coalescent pottery and abandoned tools of Bijou Hills quartzite from off of the Missouri trench (Nowak and Hannus 1981). Also, pottery from sites 39FA45 and 39FA48 in the southern Black Hills, which was originally assigned by Hughes (1949) to the Dry Creek focus, is identified by Tratebas (1979:47) as Extended Coalescent.

As early as A.D. 1541 European explorers had entered the Southern Plains. Although there was no significant European settlement of the Northern Plains until the beginning of the nineteenth century, the impact from white contact in adjacent areas tremendously affected the Northern Plains cultures. In South Dakota, the pattern of long-distance contact between the village groups living along the Missouri River and the Europeans resulted in a hybrid culture which is evidenced in the archeological record of the Post-Contact Coalescent.

The Post-Contact Coalescent variant sites are considered to be proto-historic in that they contain a scattering of European trade items but are undocumented historically. It is apparent that the origins of these sites can be traced back to the Extended Coalescent and Terminal Middle Missouri variants, with individual Post-Contact Coalescent subdivisions relating to one or the other of the older complexes. The Post-Contact Coalescent and historic Arikara of South Dakota can be derived directly from the earlier Extended Coalescent complexes. Generally believed to date from approximately A.D. 1675 to A.D. 1780 (Lehmer 1971:33), the Post-Contact Coalescent period is perhaps best identified in the Bad-Cheyenne region in the vicinity of Pierre. Previous archeological work in the area has clearly identified two stages of contact acculturation. The earlier stage reflects the initial effects of external trade factors which operated to change the native cultures, as evidenced in the archeological record. During this initial stage, the European trader was far removed from the Arikara and the great bulk of the trade goods came through Indian middlemen by way of a complex network of intertribal trade stretching across the Plains from the Dakotas to New Mexico. During the later stage the effects of culture change are fully manifested with the archeological record reflecting direct contact with European traders.

The two stages correspond respectively to the Stanley and Snake Butte foci which were originally proposed by Lehmer (1954:118-134) and included by Hoffman and Brown (1967) in their delineation of the Bad River phase. Lehmer and Jones (1968) utilize these stages as subphases within the Bad River phase, designating the earlier subphase Bad River 1 and the later as Bad River 2.

Bad River 1 is defined from late components at the Dodd (39ST30) and Indian Creek (39ST15) sites, both located on the west bank of the Missouri River. This subphase is estimated to range in time from A.D. 1675-1740. It is distinguished from the later subphase by the lack of village fortifications and the rather limited amount of European trade items. Generally some glass beads and some metal artifacts are found but definite European manufactured metal items are extremely rare; most metal objects are scraps modified by native craftsmen. Particularly significant is the lack of recognizable gun parts in the early subphase. As for pottery, Stanley Braced Rim types are dominant, with Talking Crow

types a minor element and almost no Colombe Collared rims (Hoffman 1970).

The Bad River 2 subphase is defined from the Phillips Ranch (39ST14) and Buffalo Pasture (39ST6) sites. Generally the village occupation area is enclosed by a curvilinear fortification ditch without bastions, probably reflecting pressure from the Dakota, who began intruding onto the Plains from Minnesota. Artifacts include numerous items of European manufacture including utilitarian pieces such as knives and firearms as well as glass beads. Native crafted metal items include scraps of iron, brass or copper transformed into arrow points, a variety of cutting tools, and ornaments. Stanley Braced Rim types continue to be dominant with Talking Crow types a minority element. Colombe Collared rims, however, are typically present in large amounts. A further distinguishing characteristic from the earlier subphase is the presence of horse bones.

The Talking Crow phase, discussed by Smith (1977:153-154), has been confined to components in the Big Bend region which were formerly identified as relating to the Fort Thompson focus. Among components closely related are Component III at Talking Crow, the late component at 39BF4, the Oacoma sites (39LM26 and 39LM27), Components A and B at Medicine Crow (39BF2) and Components A and B at Oldham (39CH7). Smith believes that the Talking Crow phase represents the last occupation by semi-sedentary horticultural peoples in the Big Bend region, lasting from approximately A.D. 1725 to as late as A.D. 1780.

The Felicia phase in the Big Bend is an earlier manifestation of the Post-Contact Coalescent commencing about A.D. 1700. It is represented by Component A at the Black Partizan site (39LM218) and the Crazy Bull site (39LM220). Both the Felicia and Talking Crow phases appear as outgrowths of primarily Extended Coalescent complexes and are themselves considered to represent proto-historic Arikara of the Big Bend.

In the Black Hills, two Post-Contact cultural groups are tentatively identified. The Miller Creek site, ascribed by Wheeler (n.d.) to ancestral Crow, contained pottery similar to that found at sites in northern Wyoming, Montana, and Alberta. The Crow sites on the Northwestern Plains appear to represent a westward movement of Hidatsa from settlements on the Missouri River. Gunnerson (1960:237) reports that one sherd from 39FA45 and three from 39FA83 are within the range of

Dismal River pottery which appears to be associated with Kiowa/Apache groups.

Of final note in the culture prehistory of South Dakota is the problem of Oneota. The term has often been utilized to define a "ceramic culture" (Harvey 1979), and Hall (1962) has divided the Oneota tradition into Emergent, Developmental and Classic horizons. It is often seen as containing several lines of development leading to historic Winnebago, Oto, Ioway, Kansa and Missouri. The basic archeological phases include the Orr focus, Blue Earth, Correctionville, Lake Winnebago, Grand River, Koshonong, Moingona, Huber and Fisher (Ludwickson et al. 1981:174).

Alex has noted that prior to 1978 only two Oneota sites were known in South Dakota: the Vermillion Bluff Village (39CL1) and the Rock Island site (39LN2), apparently a western extension of the Blood Run site (13L02) located just across the Big Sioux River in Iowa. Both sites contained historic trade items and may represent historic Ioway. What is enigmatic about these sites is that the pottery is more similar to Correctionville-Blue Earth Oneota ceramics than to the Orr focus ceramics which would be expected for historic Ioway (Alex 1981:43).

In 1978 survey crews operating along the James River recorded thirteen sites containing Oneota pottery between Mitchell and Olivet, South Dakota. To date no excavations have been carried out at any of these sites, and no ethnic affiliations can be attributed to them. Currently there are only two aboriginal villages on the James River in South Dakota which can be attributed to a specific historic group; both are nineteenth century Dakota villages in Spink County.

Figure 4 presents a suggested prehistoric chronology of South Dakota as developed in the report of cultural resource investigations of the South Dakota segment of the Northern Border Pipeline (Hannus et al. 1982), while in Figure 5 this chronology is focused on the Black Hills region (Hannus, Miller and Winham 1984). The Sonota complex is viewed as a likely composite of a number of regionally varied complexes--representing the manifestation of the interface occurring between the Besant complex of the Plains Archaic tradition and the ceramic and small notched and unnotched point complexes of the Eastern Woodland tradition.

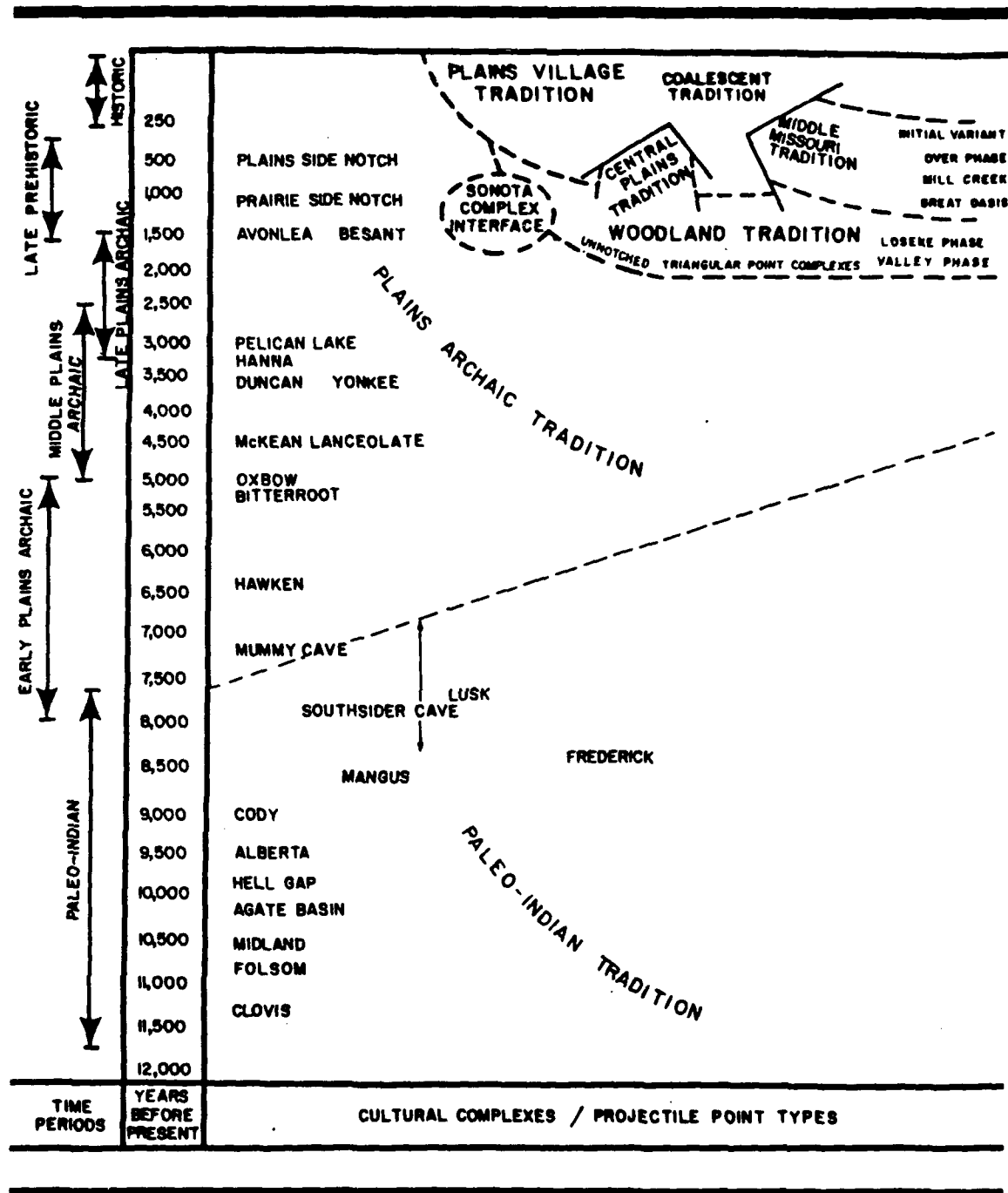


Figure 4. Prehistoric chronology of South Dakota with an eastern focus (from Hannus et al. 1982:Figure 25.1).

YEARS AD/BC	NORTHWESTERN PLAINS	CULTURE PROCESSES/ COMMENTS	DIAGNOSTIC ARTIFACTS	SITES/RADIOCARBON DATES ($\pm 1SD$) IN THE BLACK HILLS AND VICINITY	MIDDLE MISSOURI
1900	HISTORIC	Lumber, Tourists Gold, Transportation Military expeditions.		Numerous trails (Cheyenne-Deadwood) Mining towns (Custer, Lead etc)	HISTORIC
1700	PROTOHISTORIC	Trappers, Explorers. Euro-American contact	European Trade Goods. Horse.	Miller Creek (48CK47 - Crow) 39FA45, 39FA83 (Dismal River Ceramics - Kiowa/Apache*)	Disorganized/ Post Contact Coalescent
1600 1500 1400 1300	LATE	Village groups utilized lithic resources from White River Badlands.	Plains Side Notched Points.	39FA45, 39FA48 (Extended Coalescent) Vore Buffalo Jump (48CK302, 1440-1840AD) 39FA23, 39FA83 (Up Republican Ceramics*)	ExC EMM IC ExC IMM IC
1200 1100	PREHISTORIC	Movement of MM Village groups. Mississippian and Central Plains Influences.	Prairie Side Notched Points.	39FA23, 39BU2 (Smiley Evans), 39CU206 (Phelps) - Early Plains Village	EMM
1000				39FA35 (Avonlea), 48CK209 & surface collections - Besant	IMM PLAINS VILLAGE
500 0	LATE	Sonota Complex Interface. Sophisticated Bison Trapping. Bow and arrow - small side-notched points.	Ceramics. Avonlea. Besant.	Mule Creek Rockshelter (48CK204 - ceramics like Besant with Valley & Stemmed point types - Woodland	WOODLAND
500	ARCHAIC	Eastern Woodland Influences.		39FA307 (Pelican Lake) & surface collections and Pelican Lake derivative point types in Southern Black Hills.	
1000		True Corner Notched Points.	Pelican Lake.		
1500 2000	MIDDLE ARCHAIC		Hanna Duncan-Yonkee	Fulton (48WE302) McKean (48CK7 - 1937-737BC) Gant (39ME9 - 2310-2050BC) Kelterman (39FA68 - 2630-1350BC) Hawken (48CK303 - 2440-2160BC) George Hay (39FA396), Harney (39FA10) Landers (39FA34), Ditch Creek (39PN90)	ARCHAIC
2500 3000		Bison Jumps, Arroyo Traps, Grinding stones, Manos. Smaller Side-Notched Points.	McKean Lanceolate Oxbow Bitterroot	Ray Long (39FA65), 39CU355, 39FA201, 39FA296, Belle Rockshelter (48CK4), Mule Creek Rockshelter (48CK204). Hawken (48CK303 - 4660-3890BC)	
4000 5000	EARLY ARCHAIC	Altithermal period. Large Side-Notched Points.	Hawken	Ditch Creek (39PN90)	ARCHAIC
6000			Frederick-Lusk	Ray Long (39FA65 - 7930-4823BC) Andoni (39FN326), Ditch Creek (39PN90) Trail Draw Alberta (39FN97)	PALEO- INDIAN
7000	PLANO	Parallel-Oblique Flaked Lanceolates. Unfluted points. Bison Trapping.	Cody Alberta Hell Gap Agate Basin Midland	39CU12 (Plainview point) 39FA465 (James Allen point)	
8000	FOLSOM	Clovis-Folsom transition being re- evaluated on basis of fluted point analysis in White River Bad- lands/Wyoming areas.			
9000	CLOVIS		Folsom	Browster (Agate Basin Locality- Folsom, 9125-7725BC). Carter-Kerr-McGee (48CA12 - Folsom, Clovis, Agate Basin, Hell Gap). Agate Basin (48NO201 - 9050-7910BC - Folsom, Clovis, Agate Basin, Hell Gap). Lange/Ferguson (39SH33 - 9090-8350BC).	
10000		Fluted points. Mammoth hunting.	Clovis		
11000	PALEO-INDIAN	Bone flaking.			
	PRE-CLOVIS				

* Signifies material needs reappraising

Abbreviations - ExC (Extended Coalescent), IC (Initial Coalescent), EMM (Middle Missouri)
EMM (Extended Middle Missouri), IMM (Initial Middle Missouri)
Up Republican (Upper Republican), $\pm 1SD$ ($\pm$ one standard deviation)

Figure 5. Prehistoric chronology of South Dakota with a focus on the Black Hills (from Hannus, Miller and Winham 1984:Figure 3).

Historic Period

A chronology of selected dates and events affecting the project area is provided below as a brief overview of the history of the area.

Early Historic Period (A.D. 1700-1860)

1804--Teton trading post located by Lewis and Clark above mouth of Cheyenne River.

1832--Trading post at Cherry Creek probably constructed.

1860--September--Exploration by Capt. W.F. Reynolds, Top. Eng., and Lieut. H.E. Maynadier, 10th Inft. Assistant, as they passed north-south through the project area, approximately through Fishgut and Minneconjou creeks (current names) (see Figure 3).

With the advent of the fur trade and the introduction of European manufactured goods and the horse, a new Native American force arose on the Northern Plains - nomadic Equestrians. These relative newcomers began to rapidly replace Plains Villagers as the dominant cultural entity in the subarea. During the early 1700s nomadic tribes began moving onto the Northern Plains from the east under the pressures of the expanding Euro-American frontier and intertribal warfare. These Plains Equestrians became historically known groups such as the Sioux, Cheyenne, Crow and Assiniboin. After 1780, as smallpox decimated the village tribes, the mounted nomads (especially the Sioux), who were less hard hit by the epidemic, were able to dominate the Middle Missouri region well into the historic period. However, sites relating to these groups are rarely identified and little archeology is directly attributable to them.

Coeval with the rise of the Plains Equestrian groups was the development of the Euro-American/Native American fur trade, which actively operated in the Middle Missouri during most of the nineteenth century. Euro-American fur trading posts, at one time, were a common type of archeological site in the region. However, these sites, like all other site types, have suffered from dam and reservoir construction, and few intact examples exist today.

Lazio's (1980) discussion of the Teton fur trade is presented below.

Chittenden (1954:956) provides the following summary of the Teton Fur Trade of the 19th Century: "Scattered through the Sioux country on both sides of the Missouri there were many subordinate posts or houses of the American Fur Company dependent upon Fort Pierre. There were no fewer than three in the valley of James River....There was one at the forks of the Cheyenne, another at its mouth, one at the Aricara villages and others on Cherry, White and Niobrara rivers, and among the Brule, Ogallala and other bands of the Sioux. In fact wherever there was an inducement to trade these temporary houses were erected."

One Teton trading post was located by Lewis and Clark in 1804 "about four miles above the mouth of the Cheyenne River," according to Robinson (1902), or perhaps "about 11 miles above the mouth of the Cheyenne River" (Mattison 1953:76)....Robinson (1902:97) states that the post located by Lewis and Clark "was built by Mr. Valle, a French trader from St. Louis, whom they met at the mouth of the Cheyenne. Mr. Valle informs them that he spent the previous winter (1802-3) in the Black Mountains (Hills) going by way of the Cheyenne River...."

Of greater interest here is the trading post mentioned by Chittenden...at Cherry Creek.

Anderson (1961:224) tells us the following: "In the winter of 1831-1832, Narcisse LeClerc...sent parties to Cherry Creek on the Cheyenne to compete for the trade with the Saone groups of Sioux...."

Finally, Ewers...tells us that Edwin T. Denig..."was in charge of a small winter trading post subordinate to Fort Pierre during the winter of 1834-35. This house was located in Sioux country on Cherry Creek, a tributary of the Cheyenne..." [Lazio 1980:15-17].

Late Historic Period (A.D. 1860-Present)

1866-1868 Fort Sully II constructed.

1868 Fort Laramie Treaty of 1868. Cheyenne River Agency No. I established.

1870 White Swan visits Washington.

1870, Military post ("Cheyenne Agency"--"Cheyenne River Agency

1872, Post"--"Fort Bennett") constructed.

1876-1877

1874 Gold rush of 1874. Fort Sully II Post active in attempting to prevent whites from moving into western South Dakota.

1876 Treaty of 1876--Black Hills and Upper Cheyenne River area

sold.

- 1882-1883 A number of Cheyenne River Agency Indians signed an unratified agreement to subdivide the reservation. Signers of the proposed land cessions, which were enacted in 1889, reportedly were threatened by the loss of their agency if they did not sign. Others reportedly misunderstood the terms (see Anderson 1956:489).
- 1887 General Allotment Act enacted which results in the reduction of Indian lands.
- 1889 Land sale/cessions enacted.
- 1890, General Land Office survey(s) conducted, producing maps
1898, approved in 1891, 1892 and 1901.
1899
- 1904 E. Frank Peterson's atlas produced.
- 1917 New policy of fee-patenting Indian lands which results in the accelerated sale of land by Indians.
- 1933 Civil Works Administration survey of living conditions on reservations.
- 1935 Special survey by the Superintendent of conditions on the Cheyenne River Indian Reservation.
- 1948 Corps topographic maps produced.
- 1957 U.S. government condemns land for Oahe Reservoir.

Toward the end of the fur trade era U.S. military occupation of the Middle Missouri began. A number of Indian agency posts and forts were established along the Missouri (Athearn 1967). The purpose of the military was to subjugate and pacify the native population in order to secure the region for permanent Euro-American settlement. While not as numerous as the fur posts, U.S. military establishments were once rather common in the region.

Fort Sully II was constructed in the period 1866-1868 (Mattison 1954:41-42). It replaced Fort Sully I, 30 miles downriver. Fort Sully II was involved in a number of actions. The fort was on alert for Indian attacks on the Cheyenne River Agency, eight miles up the river, in the period 1868-1870; Fort Sully also supplied two companies as escorts for the first Yellowstone Expedition which was organized in 1871 to survey the proposed line of the Northern Pacific (Mattison 1954:42).

After the discovery of gold in the Black Hills in 1874, the post was active in attempting to prevent whites from moving into western Dakota in violation of the Indian Treaty of 1868 (Mattison 1954:42-43). The post supplied troops to prevent "Sooners" from intruding on the Indian reservation prior to its opening for settlement as a result of the Treaty of 1889; it was also active in connection with the "Messiah Craze" in 1890 (Mattison 1954:43). Fort Sully II was no longer needed by the close of the 1880s and was abandoned in 1894 (Mattison 1954:43).

The Cheyenne River Agency No. I was established in 1868 about eight miles above Fort Sully II. The agency was built on the south side of the junction of Agency Creek and the Missouri River (Mattison 1954:53). It was rebuilt on higher ground in 1876 after nearly all of the buildings were swept away by the river (Mattison 1954:53).

The Sioux (Dakota) Indians associated with the agency were defiant and rebellious, and in 1870 a military post was built near the agency (Mattison 1954:47). This post was known as the "Cheyenne Agency" or "Cheyenne River Agency Post" until 1878, when its name was changed to Fort Bennett in honor of Captain Andrew S. Bennett of the 5th Infantry. Bennett was killed September 4, 1878, in Montana Territory (Mattison 1954:47). Also in 1870, White Swan, a Minneconjou chief, visited Washington in an attempt by the Indian Bureau to pacify restless elements (Anderson 1956:414).

There were actually three military posts built in the immediate vicinity (Mattison 1954:47). The first, Cheyenne River Agency Post I (described in the preceding paragraph), was built in 1870 (Mattison 1954:46-47). The site was as poor as that chosen for the first agency (Cheyenne River Agency No. I) and encroachment by the Missouri River forced the rebuilding of the post on higher ground on the north side of Agency Creek in 1872 (Mattison 1954:47). The second location of the post was also poor and the fort was compelled to remove to still higher grounds on the south side of the creek in 1876-1877 (Mattison 1954:47).

Fort Bennett, like Fort Sully II, was active in connection with the "Messiah Craze" (Mattison 1954:48). The garrison assisted in the suppression of the "Ghost Dance Rebellion" in 1890 and 1891; Chief Hump, considered the most dangerous Indian leader was, along with most of his followers, induced into surrendering at Fort Bennett in December 1890 (Mattison 1954:48-49).

Fort Bennett and Cheyenne River Agency No. II were abandoned in 1891 (Mattison 1954:50); the agency was moved to Forest City (Mattison 1954:53).

Acculturation continued during the 1880s through missionization, and in 1883 Secretary of the Interior Henry M. Teller issued orders prohibiting all traditional Sioux dances, feasts and religious customs (Lawson 1974:139). In 1887 the Dawes Severalty Act was enacted by congress granting "a 160-acre allotment to heads of Indian families, eighty acres to single adults and orphans, and forty acres to dependent children" (Lawson 1974:137).

Prior to relocation on allotments, the Cheyenne River Sioux were divided into 13 separate camps, four placed along the Missouri River and the remaining nine along the Cheyenne River (Anderson 1956:408, Figure 7). Three of these camps are associated with the current project area (see Literature and Records Search).

In 1888 Congress decided to divide the Great Sioux Reservation into smaller reservations. The creation of the Cheyenne River Indian Reservation meant the loss to the Cheyenne River Sioux of all land south of the Cheyenne River and the need to relocate the Cheyenne Agency further north (Lawson 1974:137).

Reservation archeological sites consist of the remains of Indian agencies, including structures left from military, missionary, and Bureau of Indian Affairs occupation. Structural remains such as "dugouts" and cabins once occupied by the Native American population are also present.

After the Cheyenne River Agency had been established, white administrators instituted various policies to acculturate the Indians into white society. "Begun under Agent Koues in the spring of 1872, an extensive building program, providing log cabins for the Indians was carried on by the agency carpenter and his aids. By the late 1880's all but 25 or 30 families possessed one of these structures, those that did not being the reactionaries at Cherry Creek..." (Anderson 1956:516) [Lazio 1980:19-20].

Lazio also reports the information supplied by Anderson (1956) that several families continued to live in tipis adjacent to these log structures, using the structures to keep their horses in.

The alternative life style made available to Native Americans in the late nineteenth century included missions and mission schools. The

locations of three sites--an agency school (No. 20), a mission school (No. 31) and a church (part of 39DW74)--inundated near the project area, are apparently associated with this thrust.

A number of dwellings which date from the late nineteenth century were situated in and near the project area. A recent survey by ALCWS in Dewey County (Winham and Lueck 1987), a number of miles upriver, located dwellings on 1897 GLO maps which apparently reflect settlement or relocation resulting from the opening of the area south of the Cheyenne River for homesteading in 1890. The name "Turtle Necklace," associated with a dwelling, may refer to one of two individuals recorded as having been a member of the reservation in 1899--Keya Na (No. 5), a member of the Black Feet Band, or Ke Napiu (No. 607), a member of the Sans Arc Band (see Fay 1972:279, 283). The depression associated with this building is included in site 39DW225.

Some indicators of reservation period settlement are available in the literature, although site- and vicinity-specific information is scarce and conjectural. The information considered here comes from Indian agents' or commissioners' reports, from a 1933 Civil Works Administration (CWA) survey, and from a special survey of the Cheyenne River Indian Reservation in 1935. The latter two are summarized in the State Planning Board report of 1937.

In 1877, the Indian Agent of the Cheyenne River Indian Reservation (Cheyenne Reservation), J.F. Cravens, reported that "Many of the Indians live 15, 20, and 30 miles from the agency, where they can procure wood and grass, and weekly journeys for rations consume such a large portion of their time that the complaints made are getting monotonous" (U.S. Department of the Interior 1877:54). Such problems had presumably not diminished by 1922, when the Indian Commissioner, George Vaux, Jr., noted that "The Indians of this jurisdiction live remote from the headquarters at the settlement of Cheyenne Agency [on the west side of the Missouri River, about 20 miles west of present Gettysburg], not 25 per cent living within a distance of 40 miles, and more than 30 per cent of them are over 100 miles away" (U.S. Department of the Interior 1922:27). Vaux's information was apparently largely secondhand, as he also recorded that travel about the reservation was practically impossible due to climatic conditions (U.S. Department of the Interior 1922:27).

Native American burial grounds from the reservation period are located in the project area (see Table 1, No. 6--"00"--St. Peters Catholic Cemetery), occurring as multiple grave depressions. Theoretically, all individuals were reburied near Le Plant and Cherry Creek, South Dakota.

Inundated several miles downriver from the project area are two Indian agencies--Cheyenne River Agency No. I and No. II--and two military forts--Fort Sully II and Fort Bennett.

It seems unlikely that living conditions were any better when surveys of South Dakota reservations were made in 1933 by the CWA and in 1935 by the Indian Commissioner of the Cheyenne River Reservation. These surveys indicated that standards of living on the reservations were very low as compared to the rest of the population (South Dakota State Planning Board (SDSPB) 1937:64). More than half of the Indian homes on the reservations were built of logs. More than two-thirds had two rooms or less. Mostly one and two room log houses were reported on the Cheyenne River Indian Reservation (SDSPB 1937:64, 65, 68).

Furthermore, 40 percent of the homes had no foundations (dirt); 9.5 percent had log foundations; and 8.7 percent had stone foundations. Shingles were present on 58.5 percent of the roofs and 32.9 percent had dirt roofs; 57.7 percent of the homes had tin chimneys (SDSPB 1937:65, 66). Water supply conditions were also poor, with 41.6 percent of the Indians on the reservations relying on surface water (creeks, dams or ponds). Wells were used by 37.8 percent of the population; and 18.5 percent used springs as a source of water (SDSPB 1937:68).

Some patterns are suggested by the old reports and surveys. First, it appears that an increasing number of Indian families tended to settle at greater distances from the agencies. Second, the settlement locations were based at least in part on the availability of wood and grass. Availability of natural and dammed water sources apparently was an important factor in the 1930s, as it likely was earlier. Third, most of the Indian houses on the Cheyenne River Reservation would have left few structural remains since they often lacked permanent foundations and utilized wood and tin materials which can decay or rust relatively quickly. These materials might also have been reused elsewhere for similar or other needs.

Once the subarea had been secured by the military, Euro-American settlers began occupying the region. Early Euro-American and/or Indian settlement sites consist of the remains of small communities, post offices (Table 1, Nos. 27 and 47), homesteads, and farm/ranch yards. Cemeteries of this period are also present, usually as small community (sites 39ST281 and 39DW82 (Table 1, No. 6) and Table 1, No. 25) or family plots (Table 1, No. 59). Euro-American settlement of the region was complete by the early 1900s, and land use and settlement patterns had become more or less fixed, continuing until the present day. Some structures are shown on maps from the period, including a 1936 County Highway map and the 1948 and 1955 Corps maps.

Euro-American settlement and land use in the project area was brought about and influenced by several important events that took place during the latter part of the 19th century and early 20th century. Once part of the Great Sioux Reservation, Euro-American settlement in the area was made possible by treaties that divided and opened up the area for settlement. Land legislation, such as the Homestead Act, provided more incentives for homesteaders, and as the railroads expanded, movement onto the Great Plains became easier.

Prior to the Homestead Act this area was essentially open rangeland.

One of the best known of the large ranches to survive the homesteading era was Diamond A. Its range, acquired mostly through leases in Armstrong, Dewey, and Ziebach counties covered up to 300,000 acres. The Diamond A was dissolved in 1939 [Schell 1975:348-349].

However, the homesteaders fenced off their parcels of land and restricted the ranges available for cattle ranching.

The homesteading invasion of the west-river area after 1900 forced the stockmen to accept a modified system of ranching with an emphasis on forage and feed crops...the transition from the open range to the new order was made without the violence experienced in neighboring states [Schell 1975:348].

The counties in the project area were organized between 1890 (Stanley) and 1914 (Haakon). The climate also played a significant role in the settlement of this region. A severe winter in 1886-1887 caused heavy cattle losses on the northern range, and a drought in 1910 and 1911 drove many homesteaders away: "the settlers who did not join the

exodus from the area following the droughts of 1910 and 1911 gradually learned to adapt themselves to the region" (Schell 1975:346).

The land did not lend itself to cultivation, yet many people tried. Sodbusting the fragile terrain resulted in extensive soil erosion in some areas. Water availability was also a problem and the new settlers began using stock dams, a practice that escalated when mechanical excavators were available. Soil conservation districts were also organized, but for the project area itself, the most significant event was the Oahe Project.

The most recent population redistribution on the Cheyenne River Reservation was due to the transformation of the Missouri River into Oahe Reservoir by the U.S. Army Corps of Engineers during the early 1960's....

Lawson (1974:125, 156) tells us...that between 113 and 200 Indian families had to be removed from the reservoir area [Lazio 1980:22-23].

The flooding of the bottom lands of the Cheyenne River in the project area was clearly a major impact for both Native Americans and Euro-Americans alike, but of more "significance" for the Indian families.

In the years prior to the construction of the Oahe Dam, it seemed as though the Cheyenne River Sioux would never rise again...the majority of tribal members still had not been able to escape the depths of poverty....The one high spot in the reservation economy was the Indian livestock program....In 1952 there were 341 Indian families who were engaged in livestock operations on Cheyenne River...[but] white ranchers, as late as 1955, still operated 63 percent of all the land on the reservation [Lawson 1974: 150-155].

5. AN ETHNOHISTORIC OVERVIEW FOR THE CHEYENNE RIVER ARM SURVEY

by Karl. H. Schlesier

Late Prehistoric and Historic Cultures in the Black Hills-Middle
Missouri Region, 1000 B.C. to A.D. 1860

1000 B.C. to A.D. 100

Pelican Lake

Pelican Lake is the type name for a distinctive projectile point (Pelican Lake Corner-Notched) found in all components of what Reeves (1970:68) defines as a phase. He assigned some 90 archeological components to this phase and divided it into eight regional subphases that he sees as corresponding in varying degrees to distinctive environmental areas of the Northern Plains (1970:68-72). It should be noted that Foor (1982:25-29, 81) defined Pelican Lake as a culture.

Sites of the Pelican Lake phase extend from the northern half of Colorado through western Nebraska, Wyoming, South Dakota, and Montana to Alberta, southern Saskatchewan, and southwestern Manitoba (Reeves 1970: Figure 3). The heaviest concentrations are in Wyoming and Montana.

The time period of this phase extends in the High Plains from at least 1000 B.C. to A.D. 250. Temporal and spatial distributions of sites signal a withdrawal of Pelican Lake phase groups westward from the eastern portions of the region (southern Manitoba, South Dakota, and Nebraska) around A.D. 100, and from the Saskatchewan Basin, northern Montana and eastern Wyoming between A.D. 200 and 250 (Reeves 1970:Figure 7). In the Rocky Mountains of Alberta and Montana, in southern Montana, and in the Bighorn Basin, sites continue until about A.D. 700; Foor (1982:84-89) has suggested that they persisted until A.D. 1000.

Reeves (1970:142-149) interprets the Pelican Lake phase as a serial component of a cultural tradition he calls TUNAXA, which is divided into three temporal phases - McKean, Hanna, and Pelican Lake.

The McKean phase, named after the diagnostic lanceolate projectile point found at the McKean site in northeastern Wyoming, appeared in the western High Plains around 3600 B.C. (Wright 1982:150). The earliest dates come from the Bighorn Mountains and southern Montana. Although sites of this phase occur from western Nebraska to Manitoba and from Wyoming to Alberta, the heaviest concentration is in Wyoming (Reeves

1973:Figure 6). Two other projectile points are often associated with McKean points in sites of this phase - Duncan and Hanna. A gradual transition from the McKean phase to the Hanna phase apparently began around 2000 B.C. The last dates for McKean, so far, range from about 1500 B.C. (Brumley 1978:176; Wright 1982:150) to 1230 B.C. (Greiser 1985:121). Development from the Hanna phase to the Pelican Lake phase began around 1300 B.C., as is evidenced by the low incidence of Pelican Lake points associated with Hanna points after this date. Around 1000 B.C., Pelican Lake points dominate assemblages, signaling phase transition (Brumley 1978:176). A few Hanna corner-notched points are present in early Pelican Lake phase sites.

According to Reeves (1970:87), the available data indicate that the Pelican Lake phase economy was based primarily on the communal hunting of buffalo where buffalo populations were dense. In other areas, a more generalized hunting pattern existed, with the grinding of wild plants for food. North of Wyoming, grinding slabs and handstones are lacking. Riverine and lacustrine resources were utilized where they were advantageous. The Bighorns, the Black Hills, and the Alberta and Montana Rocky Mountains were seasonally used by groups of this phase for hunting elk, deer, and sheep. Ceramics are extremely rare; Reeves (1970:80-81) considers this phase to be preceramic or aceramic. The main hunting weapon was the atlatl.

Buffalo kill sites, which are more prevalent in the northern area used by the peoples of the Pelican Lake phase, include jumps and pounds. Post molds and logs representing holding corrals are occasionally preserved (Reeves 1970:83). If the Pecked Realistic rock art of the Hogback Ridge in the southern and southwestern part of the Black Hills, described by Sundstrom (1984), was made by Pelican Lake groups, as is most likely, their locations in steep canyons suggest that these canyons were used as game traps by fencing off one end and then driving in animals from the opposite side.

Ceremonial structures have not been found. The burial systems varied. During the early stage of the phase and at least in some regions (Alberta, Saskatchewan, Montana), burial sites are often on high, prominent spots with a commanding view. Burials are usually secondary. Shallow subsurface burial pits often contain more than one individual. Red ochre covers the bones and occurs in the infill as

well. Rock cairns were often raised over the site. Grave goods include Pelican Lake points, native copper and clam shell beads (Brink and Baldwin 1985). Reeves (1970:88) reports primary flexed pit interments with few associated grave goods for the relatively late Glendo subphase of Pelican Lake in Wyoming.

The TUNAXA tradition entered the High Plains from the Rocky Mountain west (Benedict and Olson 1973; Husted 1969:91) and from the Great Basin (see e.g., Brumley 1978:188). Linguistically, as Husted has suggested, a part of Pelican Lake should be identified with Aztec-Tanoan speakers. Schlesier (1987:128) concurs; he also includes in the Pelican Lake phase the ancestors of the Kiowa, Nez Perce, Pend d'Oreille and Kutenai.

250 B.C. to A.D. 800

Besant

The name Besant comes from the Besant Valley in Saskatchewan. It designates the characteristic atlatl projectile point type (Besant Side-Notched) that was first described and named by Boyd Wettlaufer at the Mortlach site. Prairie Side-Notched (or Samantha in some areas) is the type designation for the corresponding arrow point. According to Reeves (1970:89), the technological transition during the Besant phase from atlatl to arrow took place after A.D. 420.

Reeves (1970:89) originally assigned 51 components to this phase; more have been added since his writing. Besant sites extend from southwestern Manitoba through Saskatchewan to Alberta, south into Montana and eastern Wyoming, and eastward into South Dakota and most of North Dakota. Besant is absent from the Bighorn and Shoshoni basins of Wyoming and from the Central Plains, although Besant points appear there occasionally.

Both Reeves (1970) and Syms (1977) include Neuman's (1975) Sonota complex in Besant. Schlesier (1987:134-150) has distinguished two regional subphases of Besant and identified the western subphase with the prehistoric Blackfoot divisions and the eastern subphase with the prehistoric Cheyenne; he considers Sonota to be part of eastern Besant.

The earliest Besant sites are in the eastern part of the region. Boundary Mound 3, on the Missouri River in south-central North Dakota, provided a date of 250 B.C., which is considered to be too early by the

investigator (Neuman 1975:88). Syms (1977:90) expects beginning dates for Besant in southwestern Manitoba around 100 B.C. Reeves (1970:91), agreeing that the introduction of the Besant phase varies from east to west, views a beginning in the North Dakota-Missouri River area between A.D. 1-100, between A.D. 100-200 in the Belle Fourche and western Montana area, and between A.D. 150-250 in the Saskatchewan Basin. Schlesier (1987:134) sees the early date in North Dakota (250 B.C.) as agreeing with his proposed time period of the Proto-Cheyenne arrival in the prairies of Manitoba and Saskatchewan and with their movement southwest toward the Black Hills (Schlesier 1987:74-87). If this is correct, dates preceding that for Boundary Mound 3 should eventually come from the northeastern Plains edge.

In Manitoba, Besant boundaries are marked by Laurel people; in Minnesota, by Malmo groups. Some aspects of the burial systems of Laurel and Malmo are similar to Besant. In Saskatchewan, Besant groups shared the region with Avonlea people (see below) after the latter's arrival.

Because the withdrawal of Pelican Lake groups westward coincides with the direction of the Besant and Avonlea penetration, it appears reasonable to consider both the latter groups responsible for the withdrawal. The haztova hotoxceo enemies of the Cheyenne tradition (Schlesier 1987:79-80) who were encountered in the Black Hills and ultimately forced out, may have been people of the Pelican Lake phase.

Eastern Besant groups (Cheyenne) appear to have abandoned the southwestern portion of their range (west and south of the Black Hills) after A.D. 600, slowly shifting back toward the region of their entrance a thousand years earlier.

Because their next withdrawal from the eastern portion of their range and the Black Hills coincides with the arrival there of Proto-Mandan (Mandan before the initiation of the Okipa ceremony) of the Initial Middle Missouri tradition (see below), it seems reasonable to consider the latter responsible for it.

Archeology has essentially corroborated the Mandan traditions that describe a general migration from the southeast, up the Mississippi River, with the movement of separate bands into the mixed-grass prairie from the grassland edges in Minnesota and Iowa (Maximilian n.d.:2: 93-103; Bowers 1950:25-26, 156-163). The traditions also mention that

some Proto-Mandan bands ranged west as far as the Black Hills and north into southwestern Manitoba before they began congregating on the Missouri River shortly before A.D. 1100; they nevertheless continued to use the area from the Black Hills northward seasonally.

In southeastern Saskatchewan and southern Manitoba, terminal dates for eastern Besant are around A.D. 1000 (Reeves 1970:Figure 7; Syms 1977:90). It appears that prior to that date the first of their bands went south into the Red River-Minnesota River area, where Schlesier (1987:138) sees them in the archeological record as the entity called the Arvilla complex. Ossenberrg (1974:38-39), in her analysis of discrete traits in cranial samples from Minnesota and the adjacent plains of the time period 200 B.C. to A.D. 1700, appears to support this view. She has identified Arvilla skeletal material as ancestral Cheyenne. Syms (1981:37-38), after reviewing the evidence, at least agrees that "Arvilla includes a predominance of an Algonquian population spread throughout eastern and central Minnesota with the Red River as a western boundary." Populations east of Arvilla were ancestral Dakota; Moore (1987:97-117, 145-154) has emphasized the long-standing and intimate Cheyenne-Dakota relationship in the region.

Reeves (1970:176) views Besant as a representative of a Plains cultural tradition separate from both the TUNAXA and the Plains Horticultural traditions. He named this tradition NAPIKWAN and believes that it resulted from the movement of groups into the Northern Plains from the outside. Schlesier (1987) has traced this movement north through the boreal forest to the transitional zone between woodland and tundra in the southern Keewatin and southeastern Mackenzie districts.

Generally, the eastern subphase is viewed by Schlesier (1987:139) as moving largely within southwestern Manitoba, southeastern Saskatchewan, the Dakotas, and northeastern Wyoming, living in different, specific regions over time. The western subphase is viewed as moving largely within western Saskatchewan, Alberta, and the High Plains of Montana, also favoring specific regions over time. It is to be expected that bands of both subphases made long-range visits and excursions into each other's territories. The eminence of Knife River flint in the artifact inventories of both eastern and western groups attests to this.

The archeological evidence suggests that ceremonial structures such as burial mounds and stone spirit wheels (Schlesier 1987:139) occur only in the eastern Besant culture and are lacking in western Besant sites. Spirit lodges were almost certainly used by both groups; as archeological features, the evidence, so far, comes from eastern Besant (Ruby site). Excavated basin-shaped earth-filled hearths associated with piles of fired rocks appear to occur among all groups and may represent sweat lodge features (Schlesier 1987:62-65). Heated rocks were, of course, also used for cooking in skin containers, a technique that made ceramics unimportant. Ceramics do occur and are more frequent in eastern rather than in western Besant sites; the pottery consists of simple corded or punctated conoidal vessels. Ceremonial hunts by eastern Besant groups emphasized carefully constructed pounds according to the description of the Cheyenne Massaum ceremony (Schlesier 1987:52-58); jumps were rejected.

Winter and summer habitation sites of both subphases may have been nearly identical due to the similar social organizations, the band system, and the nomadic way of life. Eastern Besant summer campsites, however, are occasionally associated with burial mounds (e.g., the Stelzer site; Neuman 1975:3-37). Of two eastern Besant sites, the Main Muddy Creek Village in southeastern Wyoming (Frison 1983:87-88; Reher 1983:202-203) contained an estimated 73 stone circle features located directly southeast of the bison pound, whereas the Springer site, in central North Dakota (Schneider 1983:94-96), had 81 tipi rings.

The Besant phase economy of all regions concentrated on the communal hunting of buffalo. Collecting activities included both fowling and fishing and some shell collecting. The general lack of grinding implements indicates little reliance on seed grinding.

Bear Butte, South Dakota, had become the Cheyenne holy place with the introduction of the Massaum (earth-giving) ceremony between 400 and 200 B.C. (Schlesier 1987). Thus, it was visited regularly by at least the ceremonial participants through the Cheyenne-Besant removal period and throughout the Cheyenne-Arvilla transformations.

Valley

Sites of the Valley phase are characterized by a ceramic ware called Valley cord-roughened. It features vertical or spiral

cord-roughening, a bulge at midpoint on the vessel, a straight rim lacking a shoulder, a single row of interior punctates below the lip, and occasionally incised lines; bases are tapered and round (Syms 1977:88). Reeves (1970:107, Table 4) assigned 18 components to this phase.

Valley sites are distributed from eastern Kansas through eastern Nebraska and western Iowa, following the Missouri upriver as far as Havre, Montana. Neuman (1975:84) observed that Valley phase ceramic traits are related to some pottery of his Sonota complex. He also sees a close general resemblance between the side-notched projectile points, atlatl weights, bone tubes, and awls of the Valley phase and Sonota. This is not surprising because Sonota is part of the Besant phase. Although Besant and Valley each utilized a different subsistence system, groups of both phases were contemporaneous for a time in Montana, North Dakota and South Dakota. Syms (1977:88) views the Central Plains and South Dakota as the core area of the Valley phase and regards its extension north along the Missouri River as secondary.

According to Reeves (1970:108-109), this phase developed during the first century A.D.; phase transition to the Loseke phase occurred at A.D. 500-600. The distribution of Loseke phase sites in northeastern Nebraska, southeastern South Dakota, and northwestern Iowa appears to signal a retreat of Valley groups from the Missouri River valley lying to the north. Syms (1977:88) describes the Valley phase as at least contemporaneous with, and possibly later than, Kansas City Hopewell, which begins about 100 B.C.

Valley subsistence activities concentrated on diffuse, riverine resources. The taking of small game such as deer, antelope, water birds, turtles, and rabbits was important, as was shellfish collecting. Buffalo hunting was insignificant. Reeves (1970:111) believes that corn horticulture can be inferred from the abundance of ceramics and permanent habitations; he interprets Valley groups as semi-sedentary hunter-gatherer-horticulturists. It is curious that handstones and grinding slabs are absent. Habitation sites are located on creek and river terraces. Ceremonial structures have not been found. The burial system consisted of secondary burial in a pit without an overlying mound or secondary burial in a pit or on the mound floor below a mound (Reeves 1970:111).

The Valley phase marks the intrusion of groups into the Northern Plains from the Central Plains and regions lying to the east. Linguistically, they may be identified as Caddoan speakers (Schlesier 1987:132-133).

Avonlea

The Avonlea phase is characterized by a distinctive triangular side-notched arrow point with frequent, finely serrated edges. The name derives from the Avonlea type site located southwest of Regina in south-central Saskatchewan. Reeves (1970:Table 4) assigned 36 components to this phase.

Avonlea sites extend from southwestern Manitoba (where they are rare) through Saskatchewan to Alberta, south through Montana into northeastern Wyoming and western South Dakota. The largest concentrations are in Saskatchewan, Alberta, Montana, and northeastern Wyoming. Avonlea artifacts occur quite often in association with Besant phase material, indicating a high degree of contact between two different traditions sharing the same region.

Initial dates mark the arrival of groups of this phase in the Canadian Plains at the beginning of the Christian era. Their expansion southward is evidenced by sites near the Black Hills and northeastern Wyoming dated around A.D. 500 (Reeves 1970:Figure 7). Radiocarbon age determinations of recent Avonlea finds in the White River Badlands produced a mean date of 1395 B.P. (A.D. 555) (Hannus and Nowak 1988). Coexistence with Besant groups in much of this area began well before this time. After A.D. 600, Avonlea groups concentrated in the western portions of the High Plains from Alberta to Wyoming. They may have been partly responsible for the withdrawal of Pelican Lake phase groups into the Rocky Mountains and the Bighorn Basin. By A.D. 700 Avonlea groups had abandoned the Saskatchewan Basin, and the region was used almost exclusively by Besant phase hunters. In southern Montana and adjacent areas in Wyoming, Avonlea sites continue until A.D. 1000 (Husted 1969:92-95; Reeves 1970:Figure 7).

At the Head-Smashed-In buffalo jump in southern Alberta, Avonlea follows Pelican Lake in time; at the Gull Lake buffalo drive site in southwestern Saskatchewan, the terminal Avonlea presence is dated at A.D. 660 (Kehoe 1973:77).

The economy of the Avonlea phase was based on highly efficient buffalo hunting in the regions of dense buffalo populations. Communal hunts were of considerable importance; jumps, pounds and traps were used. Avonlea is best known from kill sites. Habitation sites are located on stream terraces and in caves; settlement features are still generally unknown. Smaller game formed only a minimal part of the diet (Reeves 1970:106). Collecting activities included fowling, fishing and plant gardening.

Although no ceremonial structures associated with Avonlea buffalo drives have been found, two investigators (Kehoe and Kehoe 1968:28) believe that game-calling ceremonies played an important role. Ceramics existed throughout much of the Avonlea temporal range (Syms 1977:92-93). The Avonlea burial system featured a primary flexed or extended pit burial.

The Avonlea phase must be credited with having introduced the bow and arrow into the Northern Plains. It is interesting that Besant groups, generally on friendly terms with Avonlea people, continued use of the atlatl for centuries after they knew about the bow-and-arrow's performance. The Besant transition from the atlatl to the bow took place after A.D. 400 (Schlesier 1987:129-130).

Kehoe (1973:76-78, 192), against the unfounded objections of other investigators, has suggested that the Avonlea groups were Athapaskan speakers who entered the Alberta and Saskatchewan parks and grasslands from the north where they had hunted wood buffalo earlier. He sees the Avonlea groups of the period around A.D. 1000 as the vanguard of historical Athapaskans of the Central Plains and of Navajo and Apache groups in the Southwest. No evidence contradicts this interpretation.

Schlesier (1987:129) suggests that Avonlea groups in Alberta became the historical Sarcee whose relationships with the historic Blackfoot were close and of long standing. He further suggests that some Avonlea groups in eastern Wyoming became the historical Kiowa-Apache, whose close cooperation with the Kiowa element of the Pelican Lake phase endured as long as that of their northern relatives with the Blackfoot. It is not surprising that Apache languages in the Southwest have their closest linguistic ties in the north with Sarcee (Krauss and Golla 1981:68). Both researchers have postulated, on the basis of Athapaskan language differentiation, that an Athapaskan expansion occurred out of

the upper drainages of the Yukon River and northern British Columbia in two directions. One was eastward into the Mackenzie River drainage, eventually reaching Hudson Bay. The other was south along the eastern Rockies (Krauss and Golla 1981:68). From a survey of the archeological information, Schlesier (1987:130) has concluded that the latter appears to be reflected in the Avonlea arrival.

A.D. 800 to 1400

Initial and Extended Middle Missouri traditions

Wood (1967:119-166) has traced the evolving Mandan tradition on the Missouri River from the Thomas Riggs focus (A.D. 1100-1400) through the Huff focus (A.D. 1400-1600) and the Heart River focus (A.D. 1600-1797) to Historic Mandan (A.D. 1797-1886). The Okipa ceremony, which required a permanent ceremonial lodge fronting a village plaza, was initiated at the beginning of the Thomas Riggs focus, around A.D. 1100, because these features are an integral part of settlements of this focus (Wood 1967:156-157). From A.D. 1100 to the beginning of reservation times these features remained the center of every Mandan village, although plaza location and the structure of the Okipa lodge itself changed over time. At the beginning of the Thomas Riggs focus, Mandan settlements were distributed on the Missouri from the mouth of the White River in South Dakota, to the mouth of the Little Missouri in North Dakota, over a stretch of about 350 miles (Wood 1967:130).

Directly ancestral to the Thomas Riggs focus and early Mandan is the Initial Middle Missouri tradition. This tradition is dated from about A.D. 800-1300 (Syms 1977:112; Ludwickson et al. 1981:133-154) and includes such archeological entities as Cambria, Mill Creek and Great Oasis. Archeological sites range from southwestern Minnesota (Cambria, see Watrall 1974) and northwestern Iowa (Mill Creek, see Baerreis and Alex 1974), to the upper Big Sioux and lower James rivers, and occur along the Missouri in South Dakota as far north as the Cheyenne River (Great Oasis, see Ludwickson et al. 1981:133-140). The Proto-Mandan arrival, as documented archeologically in Cambria, Great Oasis and Mill Creek assemblages, introduced to the region sedentary villages with mixed horticultural and hunting subsistence activities.

The first Proto-Mandan to arrive on the Middle Missouri occupied the river between the White and Cheyenne rivers (Lehmer 1970:Figure 1).

Some of their bands ranged west as far as the Black Hills. One band singled out by tradition to have moved to the Black Hills are the Awigaxa (Bowers 1950:160). The Awigaxa were led by the shaman, Good Furred Robe, whose skull has been kept in one of the major Mandan ceremonial bundles (Maximilian n.d.:2:100; Bowers 1950:160, 196). According to Wolf Chief's narrative (Bowers 1950:162), one group of Awigaxa "was lost while making sinews near the Black Hills." The Awigaxa tradition states that they arrived with a Corn Medicine ceremony (Bowers 1950:158-160). They found the land hostile: "In the mountains they planted corn out there, but the seasons were too short, and the yields were small" (Bowers 1950:163).

Perhaps the reason for the disappearance of an Awigaxa group is to be found in the Awigaxa tradition collected by Maximilian at Fort Clark in the winter of 1833-1834; it certainly mentions the first enemies of this band. Arriving near the Black Hills, Good Furred Robe's people "at that time knew nothing of enemies. Then, when a Mandan woman was scraping a hide, a Cheyenne came and killed her" (Maximilian n.d.:2:100). Following this incident, long-lasting warfare developed with the Cheyenne (Besant) (Maximilian n.d.:2:100-103) who obviously defended their territory against the new arrivals. This condition led to the creation by Good Furred Robe of Awigaxa soldier societies (Maximilian n.d.:2:101) that eventually defeated the Cheyenne in a great battle. The tradition continues in describing that the Awigaxa were later joined by a Hidatsa band that had also suffered from Cheyenne raiding (Maximilian n.d.:2:102). The combined strength of the two groups successfully resisted Cheyenne hostilities; this happened after the Awigaxa had moved to the Missouri River in North Dakota (Maximilian n.d.:2:102).

Because the early warfare near the Black Hills, according to Maximilian's and Bowers's informants, took place before the initiation of the Okipa, it belongs to a time period preceding the Thomas Riggs focus, and therefore must be located in Initial Middle Missouri tradition time, around and after A.D. 800 (Schlesier 1987:137). Because the first Hidatsa band settled near the Mandan after the development of the Thomas Riggs focus, the tradition suggests a time span of at least 300 years of Cheyenne-Mandan warfare. The intensity and extent of this exchange explains the final withdrawal of the Cheyenne (Besant) from the

Middle Missouri to the tall grass prairie along the Red and Minnesota rivers.

The Awigaxa presence near the Black Hills has recently been documented by archeological evidence. L. Adrien Hannus (personal communication 1987) has identified Initial Middle Missouri tradition sites in the Fog Creek drainage in the South Dakota Badlands. Initial Middle Missouri tradition village sites have also been recorded at the southeastern edge of the Black Hills (site 39FA23), on the eastern slope (the Phelps site), and on the Belle Fourche River (site 39BU2) to the north. Dates for these sites, so far, cluster between A.D. 950 and 1300 (L. Adrien Hannus, personal communication 1987). The latter site, called the fortified Smiley Evans site by the excavators, Lynn and Bob Alex, produced C-14 dates around A.D. 1000, and is located a few miles north of Bear Butte, the Cheyenne holy place. Haug et al. (1980:31, 298) have found sites of the tradition in the southern Black Hills, mainly as rockshelter occupations. They believe that these groups made extensive use of the Black Hills as a resource base.

After A.D. 1100, Mandan sedentary villages were largely concentrated along the Missouri River. According to Lehmer (1970:Figures 2-4), those of the Extended Middle Missouri variant emphasized the area between the Knife and Grand rivers while those of the Initial Middle Missouri variant extended from the mouth of the Cheyenne south to the White River. With the exception of one intrusion of northern bands into the area around the mouth of the Cheyenne River, both Mandan clusters appear to have largely retained their geographical positions until about A.D. 1400. Basically, southern Mandan groups may have been the "Corn People" of Mandan tradition, with the northern groups being the "Buffalo People"; it is the latter who developed the Okipa ceremony (Bowers 1950:117). After A.D. 1400, bands still left in the southern position abandoned their territory and moved north on the Missouri beyond the Cannonball, and eventually became the corn moiety. In the seating arrangement of the historic Okipa lodge, the matriclans of the buffalo moiety sat on the west side, those of the corn moiety on the east side. The total number of clans then remembered was 16; they were called out by name on the fourth day of the Okipa (Bowers 1950:147-148).

Nomad groups in the Black Hills

It is to be expected that groups ancestral to the Kiowa, of Pelican Lake phase origin, and groups ancestral to the Gataka or Kiowa-Apache, of Avonlea phase origin, occupied the Black Hills in the wake of the Besant-Cheyenne withdrawal. In southern Montana and adjacent regions in Wyoming, groups of both phases were available for this extension of their range; sites of both Pelican Lake and Avonlea continue there until A.D. 1000 (see above).

Mooney (1898) learned this from old Kiowa-Apache informants:

They have not migrated from the southwest into the Plains country, but have come with the Kiowa from the extreme north, where they lay the scene of their oldest traditions, including their great medicine story. Their association with the Kiowa antedates the first removal of the latter from the mountains, as both tribes say they have no memory of a time when they were not together [Mooney 1898:247].

And McAllister's informants, in 1933, located the early Kiowa-Apache holy place in the Black Hills area:

Long ago the land of the dead was visited by a Kiowa-Apache who brought back and gave to the people one of their worship bundles. This place is generally located under the ground, sometimes specifically located under the waters of "Medicine Lake," a mythical body of water said to be located in the Black Hills region of Dakota. No living Kiowa-Apache has seen this lake, but several of the old men would like to look for it [McAllister 1937: 162].

The Kiowa-Apache medicine lake where their most sacred bundle came from should be identified with Bear Butte Lake. The Kiowa, according to their tradition, received an important ceremonial object in the same area, at Bear Butte (Hedburg 1976).

The next nomad group to reach the Black Hills area, a number of centuries after the Kiowa and Kiowa-Apache, was the Arapaho. Schlesier (1987:132) identifies the westernmost expressions of the Blackduck tradition with the historical Arapaho and Atsina. Syms (1977:106) has described the rapid westward movement of related Blackduck groups through the boreal forest and aspen parklands of Manitoba into the Plains edge. The oldest Blackduck sites in Minnesota and Manitoba cluster around A.D. 800; the tradition ended in Minnesota perhaps during

the fifteenth century. West of Lake Superior it extended into historic times. The southern boundaries included the boreal forest of Minnesota, the parklands of the Lower Red River valley, the Pembina and Assiniboine river valleys and the grasslands of southwestern Manitoba (Syms 1977:108, Figure 18). In part of its range, Blackduck sites overlap with those of the Laurel tradition for about three centuries. Differences in the material culture of the two traditions are minimal, probably indicating a common economic base and a common heritage.

Blackduck groups to become the historical Arapaho appear to have removed south into western North Dakota before A.D. 1400, while Blackduck groups to become the historical Atsina remained on the lower Saskatchewan River where they were found by Henry Kelsey in September 1691. Some Blackduck groups in northern Minnesota may have become the historical Suhtai, whose later historical fate connected them with the Cheyenne.

A.D. 1400 to 1675

The Coalescent and Terminal Middle Missouri traditions

Important events that came to influence the project area took place in southeastern South Dakota, western Iowa and eastern Nebraska around A.D. 1250. Ludwickson et al. (1981:165) have proposed this date for the approximate initiation of the Coalescent tradition. Its first manifestations, called Basal Coalescent, extended from this date to about A.D. 1400. As the Coalescent tradition formed, a host of earlier cultural lines terminated. Ancestral to the Basal Coalescent variant were, in the same region, the Loseke and Nebraska phases. Sites of the Basal Coalescent variant include those of the Loup River and St. Helena phases. Transition from Basal Coalescent to the Initial Coalescent variant began about A.D. 1300; this phase of the tradition terminates about A.D. 1550 (Ludwickson et al. 1981:166).

The Coalescent tradition represents the prehistoric Arikara. Their movement northward along the Missouri River from southeastern South Dakota and northeastern Nebraska began with the formation of the Initial variant, about A.D. 1300. Within a century they had replaced the southern Mandan groups of the Middle Missouri tradition and occupied both banks of the river to near where Pierre is located today. The Mandan did not retreat from this southernmost portion of their range

without resistance. Some of the Initial Coalescent sites were fortified with dry moats and palisade systems, such as Arzberger, Black Partizan, Talking Crow, Crow Creek, and others.

The intense warfare of this period is most clearly expressed at the Crow Creek site, where about 500 villagers were killed in a single incident, and their settlement destroyed (Zimmerman 1985:108-111). The author suggests that the Cheyenne might be considered as the possible perpetrators. If his challenging new interpretation of Cheyenne prehistory is correct, Cheyenne delegations would have continued their annual pilgrimages to Bear Butte from after their removal to Minnesota to their return to the Black Hills during the eighteenth century. If some of the new arrivals on the Missouri, the Arikara of the Initial Coalescent tradition, had acted hostile to Cheyenne delegations on their way to Bear Butte, it is conceivable that the Cheyenne might have responded with a disastrous strike against the village identified as the offender. Cheyenne tradition tells that at one time, a long time ago, they destroyed one entire tribe. It should be remembered in this context, that the Cheyenne used their total tribal strength in cases where they felt they had a reason to move their Sacred Arrows against an enemy (Grinnell 1956).

During the Extended Coalescent tradition, from about A.D. 1550 to 1675, the Arikara advance northward along the Missouri River continued. By the end of this period their settlements extended from above the mouth of the Grand River southward to below the mouth of the White River (Lehmer 1970:Figure 6; Zimmerman 1985:Figure 66), over a distance of about 475 river miles. During this phase warfare was no longer a serious threat, and therefore the Arikara had reverted to less nucleated forms of settlement.

Mandan villages of the Terminal Middle Missouri tradition of the same time period were concentrated upriver on the relatively short stretch between the mouth of the Cannonball River and Painted Woods Lake (Lehmer 1970:125).

The Devils Lake-Sourisford burial complex

This archeological entity may have influenced the project area only indirectly. The complex, so far, has been identified tentatively on the basis of a series of conical burial mounds with subsurface pits. Known

sites and surface finds are scattered from eastern North Dakota to southwestern Manitoba and southeastern Saskatchewan (Syms 1979:Figure 8). Syms (1979:296) has compared the site distribution pattern with the recorded annual bison movements in the northeastern Plains and adjacent parklands. He concluded that a very strong correlation exists.

Ultimately, the Devils Lake-Sourisford burial complex appears to be a regional and peripheral expression of Mississippian developments. The Mississippian pattern emerged in the southern Mississippi River Valley between A.D. 500-600. It spread north and became the foundation of large-scale societies based upon intensive horticulture during the period A.D. 800-1300. Mississippian traits in the Devils Lake-Sourisford burial complex are these: (1) small mortuary vessels with smooth surfaces and incised decoration; (2) mortuary vessels with four handles; (3) shell mask-gorgetts with the "weeping eye" motif; and (4) incised tablets, here mainly of catlinite (Syms 1979:299-300).

Dates for the complex in the area of the distribution mentioned begin around A.D. 900-1000 and persist to at least 1400, with a few elements continuing into historic times (Syms 1979:301).

Schlesier (1987:137) has identified the carriers of this complex with groups of the historical Hidatsa and Crow. The nomadic element of the complex, emphasizing buffalo hunting, shifted its range to the Little Missouri and Yellowstone rivers probably during the twelfth century. Groups of this element became the divisions of the historical Crow, or more precisely, the Mountain Crow division. The element of the complex emphasizing horticulture eventually settled in earthlodge villages on the Missouri in a position above the Mandan. These groups became the various Hidatsa divisions of historical times. Bowers (1965) has defined the Hidatsa-Crow association as of very long standing.

Hidatsa tradition recounts that their three original divisions moved to the Missouri River separately over a period of about 150 years. First were the Awatixa, followed by the Awaxawi and the Mirokac (Bowers 1965:21-22, 482). The Crow had originally been elements of the Awatixa (Mountain Crow) and the Mirokac (River Crow) (Schlesier 1968:25-29). The first alliance of the Crow with a group north and west of the Black Hills was with the Kiowa (Wright 1978:131).

Because it is very difficult to distinguish early Hidatsa from early Mandan sites on the Missouri (Woo 1986:13), the exact time of the

arrival of the Awatixa has not been determined. Wood (1986:13) believes that they were present in the Square Buttes and Sanger Bend areas sometime after A.D. 1450. This concept is in agreement with the closing dates of the Devils Lake-Sourisford burial complex as advanced by Syms.

Nomad groups in the Black Hills

Numic speakers, originally of the Great Basin, arrived in western Wyoming during the fifteenth century (Wright 1978:125). These were the advance groups of a migration that eventually would lead them to occupy much of the northern High Plains. Regarding their ethnic identity, Numic speakers in the High Plains were Eastern Shoshone and Comanche. Shimkin (1986:309) has defined their proto-history and history as belonging to seven phases. The first phase, dating from A.D. 1500-1700, is marked by the pre-horse penetration of the High Plains and the adoption of large-scale buffalo hunting.

In Wyoming, and on their continuing advance northward, they forced the final removal of remaining Apachean groups and the Kiowa. While some Apachean groups migrated south along the eastern slope of the Colorado Rockies, the Kiowa and Kiowa-Apache concentrated on the Black Hills and adjacent regions to the east and south. This is where they were located in historic times. Part of their northeastern range they appear to have shared with the Arapaho and part of their northwestern range with the Crow.

During the period A.D. 1400-1675 the project area could have been visited by members of the following distinct groups: Arikara, Mandan, Kiowa, Kiowa-Apache, and Arapaho. Hidatsa and Crow were marginal to this area although they might have touched it on rare occasions. The Cheyenne passed through on their regular, long-range pilgrimages, demanding undisturbed access.

Shoshonean groups remained distant from the project area during the time period under consideration, although they may have made sporadic incursions into the Black Hills. Shield-bearing warrior motifs in the rock art of the North Cave Hills, located 80 miles north of the Black Hills, appear to be of Shoshonean origin (Keyser 1984:25), but the precise time of their creation remains unresolved. Because they are not associated with depictions of horses, which appear in a later rock art phase, they could be dated tentatively to the time period around 1650.

Reher (1978:63-64) believes that Shoshoneans were present at the Vore buffalo jump site in the Black Hills of northeast Wyoming at that time.

A critical consideration

It is a curious fact that prehistorians and ethnohistorians of the Middle Missouri region have ignored the impact of European-transmitted diseases on the various populations discussed above (prior to the year 1780). But according to Dobyns (1983:13-15), the most lethal of all smallpox pandemics, the very first on the continent, that of 1520-1524, swept through all of the densely populated portions of the Americas. It must have reached the Middle Missouri also. Dobyns (1983:14) estimates that the areas affected lost about 75 percent of their populations. If his thesis is correct, the tremendous population losses, and the discontinuity and biological-cultural shock in the aftermath, should be visible in the archeological record of the decade 1520-1530.

In addition to the first pandemic, the eastern Great Lakes region was struck again by smallpox epidemics in 1592-1593 and 1634 (Dobyns 1983:15), and it would be odd if the Plains and the Middle Missouri had escaped unharmed. Also, the measles ran through New England, New France and the Great Lakes from 1633-1634 and 1658-1659 (Dobyns 1983:17), causing great losses in life. Additionally, the same areas were reached by influenza in 1647 and 1675 (Dobyns 1983:19) and by the bubonic plague in 1612-1619 (Dobyns 1983:20). Not all epidemics may have reached the Middle Missouri and its periphery, but some might have, and certainly with grave consequences. Unless anthropologists begin to consider this issue, and ask new questions of the archeological evidence, Middle Missouri prehistory of this time period remains an unenlightened exercise.

A.D. 1675 to 1795

The most significant event during this time period, given the present level of knowledge, was the smallpox epidemic of 1779-1783. On the Canadian periphery of the Middle Missouri, Europeans were eyewitnesses to it; on the Middle Missouri, early European travelers recorded the memories of Indian survivors. Unfortunately, no questions were asked about the earlier occurrences of epidemic diseases in the region. Dobyns (1983:15-26), however, lists no less than nine smallpox

epidemics (not counting epidemic episodes of other diseases) that lapped around the Middle Missouri between 1675 and the disaster of 1779-1783. At least one, that of 1762-1766, is listed as having reached the Arikara (Dobyns 1983:15). Because Indian cultures on the Middle Missouri did not exist in a vacuum, it should be expected that they were not spared when populations nearby were decimated. Epidemics were "decisive demographic events"; along with fearful population losses, Indian cultures lost confidence in their existence and purpose. The survivors became vulnerable to the transculturation demands by the invading Europeans.

Perhaps Syms's (1977:118) label for all Middle Missouri horticulturists of the period 1780-1862, "Disorganized Coalescent," should be extended to include the period beginning 1675. That something had happened on the Middle Missouri by that time is evidenced by the fact that the various Hidatsa groups were concentrated in the small area between the Knife River and the Painted Woods. The Mandan occupied the river banks around the mouth of Heart River - a far cry from their settlement distribution two centuries earlier. The Arikara continued in their slow climb upriver. Their villages were scattered from above the White River to near the Moreau (Schlesier 1968:26-27).

The Hidatsa and Mandan remained in their positions until the smallpox epidemic of 1780; afterwards the survivors joined in four villages below Knife River (Wedel 1961:202; Bowers 1965:17). In 1780, Arikara settlements had reached the mouth of the Grand River; after the epidemic the survivors occupied two villages on the west bank of the Missouri, three miles south of the mouth of the Cheyenne River (Trudeau 1912:28).

New developments in Minnesota, Iowa, and southeastern South Dakota, beginning in 1675, or a bit earlier, were of consequence to the project area. They were triggered by: (1) drastic population losses from epidemics which were understood by Indian groups as originating in the European advance from the Atlantic coast; (2) the flight of many surviving segments of formerly very large populations away from the sources of destruction; and (3) the arrival of Europeans west of the Great Lakes.

The map drafted by Delisle, based upon information provided by Le Sueur in 1701, shows a French trail leading from the mouth of the

Wisconsin River across Iowa to a village in the Spirit Lake area, and terminating at another Iowa village on the Big Sioux River in South Dakota. In 1703 the trail led to the mouth of the Little Sioux, where it crossed the Missouri and continued up its west bank (Mott 1938:247). In 1706, Frenchmen joined Skidi war parties in attacks on Apachean groups in southern Nebraska and northern Kansas. As early as 1703 the French were reaching as far as the Arikara villages.

The Redbird focus of northeastern Nebraska, dated by Wood (1965:130) "about A.D. 1650 to 1750," clearly represents the historical Ponca (Wood 1965:125-129); Howard (1970:132) concurs on the basis of Ponca oral tradition. Redbird sites may include the Omaha.

Both tribes belonged to the Dhegiha branch of Siouan speakers. They were survivors of epidemics that had emptied the Ohio country around 1645 (Schlesier 1975:187). When other Dhegiha groups fled west to become the historical Osage and Kansas, groups ancestral to Ponca and Omaha moved up the Des Moines River. They made friendly contact with the Iowa-Oto and ventured into the prairie country. According to their tradition, they made their first permanent settlement after leaving the Ohio near the pipestone quarries in southwestern Minnesota (Howard 1970:115).

This occupation of part of the Cheyenne range led to a serious conflict which forced the Dhegiha to withdraw to the Big Sioux River. Here they were attacked and defeated by the Cheyenne. The Omaha sacred legend remembers that the Dhegiha dead were buried in a great mound (Fletcher and LaFlesche 1972:1:73). After a few years of wandering near the Missouri they returned to the loop of the Big Sioux where they and the Iowa-Oto made a lasting peace with the Cheyenne. In this location those Dhegiha who chose to participate organized themselves, becoming the Omaha tribe. This event took place in 1690 or 1691.

Dhegiha groups who had not shared in the Omaha formation continued roaming southeastern South Dakota. Eventually, on the mouth of the White River, in approximately 1710, they organized themselves into a separate tribe, the Ponca, with seven divisions, a system of chiefs, and seven Sacred Pipes (Fletcher and LaFlesche 1972:1:47). When they began exploring westward on the White River toward the Black Hills, they entered Kiowa-Apache territory and quickly became involved in bitter warfare. The Ponca called the Kiowa-Apache, Padonka, whose settlements

stretched from the Nebraska Sandhills ("where the Padonka built breastworks"; Fletcher and LaFlesche 1972:1:91) to the east slope of the Black Hills. In these clashes the Ponca met mounted warriors for the first time and suffered badly. After a few years peace was made, the Ponca having withdrawn to the Missouri where they settled on Ponca Creek and below the mouth of the Niobrara, where their earthlodges would stand to the beginning of reservation time. Ponca tradition tells that they received their first horses from the Kiowa-Apache, who also taught them "how to ride and to put burdens on horses."

The first tribes near the project area to receive horses were the Kiowa-Apache and Kiowa; the donors were Apachean groups of the Central Plains with whom the Kiowa-Apache had remained in contact since the Apachean removal from Wyoming. Along with the horse, the Kiowa-Apache also adopted horse leather armor and efficient cavalry tactics which the Kansas Plains Apache employed successfully against Pawnee, Oto and Kansa at that time. Kiowa-Apache horse armor and cavalry tactics are described in detail in Ponca tradition (Fletcher and LaFlesche 1972:1:79-80). It is not known if the Kiowa adopted horse armor from their allies also. Within a short time, however, Shoshonean groups had carefully imitated Kiowa-Apache cavalry, perhaps after most unhappy experiences, and carried mounted warfare to the edge of the northern High Plains. Keyser (1984:25) is clearly in error when, based on Secoy, Ewers and Dempsey, he states that Shoshoneans were the only people who used horse armor in the Northern Plains. Therefore, the battle scene at 39HN210, in the North Cave Hills, which shows armored horsemen in combat (Keyser 1984:Figure 20), might represent Kiowa-Apache riders and not Shoshone.

The horse frontier crossed the Middle Missouri around 1715, reaching the Cheyenne in western Minnesota around 1720. The "Gens des Chevaux" (the Horse People of the Verendrye report; Verendrye 1927:412-413; Schlesier 1972:118-119), the horse traders who brought mounts to trade to the annual Mandan fair from about 1725 to 1739, were clearly Kiowa-Apache.

The first of the Dakota to leave the maple and basswood forests of Minnesota permanently were the Yankton and Yanktonai. Instead of following their cousins, the Assiniboine, in a northwestern direction, they turned south. The Yankton bands were leading the move. Around

1692 they had crossed the Minnesota River, advancing to the Big Sioux and lower James rivers. The Lower Yanktonai band of the John K. Bear Winter Count spent the winter of 1700-1701 at Le Sueur's post on Blue Earth Creek near the knee of the Minnesota. In this year, behind the Yanktonai, the first of the Teton Dakota also stepped into the tall grass prairie. These were the Oglala and Brule bands who began to use the upper course of the Minnesota following the retreat of the Cheyenne from the region.

The Dakota had suffered from a smallpox epidemic in the 1650s. Nicolas Perrot, who entered Wisconsin in 1665, reported that

...all those tribes are, at the present time, reduced to very small numbers: the Scioux, who formerly had more than seven or eight thousand men...form, today a body of only a hundred men or so, at most [Blair 1911:170-171].

Ten years earlier the Jesuits had known about 30 Dakota villages west of Green Bay (Blair 1911:278). Radisson, who had visited some of these on his fourth journey (1658-1660), had estimated the number of villages to be 40 (Thwaites 1959:45:237).

The Cheyenne withdrawal from Minnesota was triggered by Le Sueur's return to the Minnesota River in October, 1700. Cheyenne tradition describes his feluca and the flag flying over it (Grinnell 1923:1:34). Their withdrawal occurred due to the old prophesy of their culture hero, Motseyoef, who had predicted the arrival of a different kind of people and disasters accompanying it.

The first Cheyenne band to abandon the region was that which had held the southeastern portion of the Cheyenne range, centered on the Yellow Medicine River. This band passed other villages of the tribe and built a new earthlodge settlement near Kulm, North Dakota. In 1733 this band continued on westward and established an earthlodge village on the west bank of the Missouri, five miles north of Ft. Yates, at the mouth of Porcupine Creek (Grinnell 1923:1:23), and in a position between the Mandan and Arikara. According to Cheyenne tradition, this band occupied its settlement there until 1784, then moved to a location on the Grand River, 20 miles above its mouth.

Other Cheyenne bands also moved westward in stages, and independently. The last band east of the Missouri gave up its earthlodge village on the Sheyenne River, 12 miles southeast of Lisbon (the

Biesterfeldt site), in 1770 following a serious attack by Plains Ojibwa (Schlesier 1968:35). Thompson (1916:261-263) has described the attack in detail; his informant in 1798 was the very Ojibwa chief who had led the raid. This band built another earthlodge village on the Missouri at a location 20 miles south of the Cheyenne settlement near Ft. Yates, and close to the Arikara. The band stayed until 1795, when it also moved upriver on the Grand and, for a last time, built an earthlodge village near that of the other Cheyenne band (Grinnell 1923:1:28).

The Cheyenne removal from the Minnesota River to the Missouri took place between 1700-1770. Of the Cheyenne bands, three continued to use earthlodge villages on the Missouri and Grand. The tribe during this period comprised both a horticultural and a nomadic element. The nomadic element favored the country to the east and northeast of the Black Hills. It appears that Cheyenne relationships with the Kiowa, Kiowa-Apache and Arapaho were quite amiable. Cheyenne tradition, however, records hostilities with the Suhtai, who joined them near the Black Hills about 1740, and who later became a subdivision of the tribe.

In late July, 1742, a French party consisting of two of Verendrye's sons and a few companions set out from the Mandan towns to search for the Horse People who had failed to come to trade in 1741 and 1742. On their eventful journey the Verendryes reached the base of the Black Hills and met camps of a number of tribes: "Beaux Hommes"; "Petit Renards"; "Pioya"; "Gens de la Belle Riviere"; "Gens de l'Arc"; and "Gens de Chevaux." They visited the "Gens de la Petite Cerise" on their return trip on the Missouri, near Pierre; these were Arikara. The Gens des Chevaux were the Kiowa-Apache. Perhaps the Pioya represented the Kiowa, and the Gens de l'Arc, the Cheyenne. Schlesier (1987) believes that the term "People of the Bow" derives from the important object of this band seen by the French, a Cheyenne Thunder Bow. Candidates for the remaining tribal camps are the Arapaho and Suhtai.

The Gens des Chevaux (Kiowa-Apache), reported the Verendryes,

...were in great distress, nothing but tears and groans, all their villages having been destroyed by the Gens du Serpent and very few having escaped. This Serpent tribe is considered very brave....It is said that in 1741 they had entirely ruined 17 villages, killed all the men and old women, made slaves of the young women [Verendrye 1927:412-413].

Schlesier (1972:118-122) identified the Gens du Serpent of 1741-1742 not with the Eastern Shoshone but with the Kwahadi and Kotsoteka, new arrivals in the region fresh out of Wyoming. They remained near the Black Hills until 1745, when they turned south and appeared in eastern Colorado in 1748 (Verendrye 1927:121). They already were, or became, two divisions of the Comanche tribe.

The Verendryes in 1742 had accidentally stepped into a large inter-tribal war camp intent on punishing the "Snake," and led by the chief of the Bow People. Somewhere near Rapid City the two forces met. The Comanche were not mounted and carried large shields. In the confusion of the skirmish the Verendrye party was forced to use its rifles on Comanche warriors trying to encircle them. The French escaped, were separated from their Indian camp, and moved east to the Missouri which they reached at Pierre (they left a plate there with names and dates to commemorate their visit).

During the 1770s the combined populations of all Mandan-Hidatsa groups numbered approximately 12,000 (Bowers 1965:486). Trudeau (1912:28), after visiting the Arikara in 1795-1796, reported their population before the 1780 smallpox to have occupied 32 villages, suggesting numbers at least double that of their northern neighbors on the river.

The results of the 1780-1781 epidemic on the Middle Missouri were devastating; much of the Indians' culture was destroyed forever. The Arikara lost nearly 95 percent of their people. The survivors joined in two villages below the mouth of the Cheyenne (Trudeau 1912:28). Mandan and Hidatsa survivors took four villages around the mouth of the Knife River, two for each tribal group (Bowers 1965:17; Wedel 1961:202). Thus, the horticultural traditions on the Middle Missouri had essentially ended.

The losses of the Black Hills groups, including the Cheyenne, are unrecorded but must have been significant if eyewitness accounts of losses among nomadic groups elsewhere are considered. Blackfoot, Sarcee and Atsina lost 3/5 of their populations (Thompson 1916:321), the Plains Cree lost half of their tribe (Denig 1961:142), and the Crow were reduced from 2,000 to 300 tipis (Ewers in Denig 1961:142). The Shoshones in the Northern Plains lost so many people that they were forced to abandon the region altogether and retreated to Wyoming.

On the Middle Missouri, space emptied by disease was slowly occupied by small Teton groups. The Oglala arrived with two subdivisions in 1788, the Okondana and Chihaut; they occupied two earthlodge villages adjacent to the Arikara near the Cheyenne River mouth (Tabeau 1939:104). They abandoned these villages after a conflict with the Arikara in 1795 (Tabeau 1939:104); it was the last attempt of the Oglala to practice horticulture. About 1793 the second Teton band arrived, the Brule; they came as a nomadic group and occupied the region between the Bad and White rivers, north of the Ponca. Next came the Miniconjou; in 1795 one of their camps, the Ta Corpa, 80 tipis strong, visited the Arikara for the first time (Trudeau 1912:47).

For a number of years these three Teton divisions spent the autumns and winters near the Missouri River, returning to Minnesota to trade in the spring. From there they brought European trade goods to the two remaining Arikara villages which became a meeting ground visited also by the Black Hills groups. Significant this was not. Anthropologists have always overrated the importance of European trinkets, perhaps because they can be so easily traced in archeological assemblages. On the Middle Missouri, as everywhere in the New World, historical process was not shaped by European trinkets but by European-introduced pestilences and, at last, European military conquest.

A.D. 1795 to 1860

In the fall of 1795 the Arikara abandoned their two villages in the project area, three miles below the mouth of the Cheyenne River. They were divided by internal dissension. One group moved downriver and joined the Skidi in Nebraska for a few months; the other moved upriver to reside with the Mandan. They reunited in 1796, when John Evans met them above the mouth of the Cannonball. For a short period thereafter, the Arikara occupied two earthlodge villages near the Mandan at present-day Hensler, North Dakota. In 1799 they quarreled with the Mandan and moved downstream. In 1804 they lived in three villages above the mouth of the Grand River: one village was located on Ashley Island (abandoned in 1810) and the other two were on the west bank of the Missouri. Tabeau (1939:130) visited them in 1804 and described them as "serfs" of the Teton Dakota. The Arikara remained in this location until 1823, when they left following two clashes with fur traders and American

troops. They became nomadic buffalo hunters associated with the Crow until 1832, and then returned to the Missouri for one year. Catlin painted one of their villages from the deck of the steamer Yellowstone. They continued to roam west of the Missouri until 1837, when they joined with the Mandan at Ft. Clark village a few weeks before the outbreak of the serious smallpox epidemic of 1837 (Ewers in Denig 1961:42, 58-59; Schlesier 1968:42).

In the north, from 1795 to 1837, the Hidatsa occupied two villages near the mouth of the Knife River and the Mandan resided in two villages just to the south (Ft. Clark and Deapolis) (Bower 1965:24; Wood 1967:140). Catlin visited them there in 1832 and Maximilian visited them in 1833-1834. From at least 1837 on, none of the old horticulturist groups of the Middle Missouri retained any contact with the project area.

Beginning in 1805 the Black Hills nomadic groups - Kiowa, Kiowa-Apache, and Arapaho - began a removal southward in the wake of the final withdrawal of northern Comanche groups south from the headwaters of the Platte and southeastern Wyoming. Kiowa and Kiowa-Apache were centered on the Platte River in 1815, and in 1829 they were located in eastern Colorado. In 1832 they had established themselves firmly in northern Oklahoma, an area which they claimed as part of their range to the beginning of the reservation period.

The Kiowa and Kiowa-Apache were followed by the Arapaho. Some Cheyenne bands occupied the regions south of the Black Hills; the first band of the Southern Cheyenne explored the Cimarron River in northwest Oklahoma in 1820. Until 1840 Cheyenne bands were distributed from the upper Grand River in South Dakota west through the Black Hills, and south as far as the Arkansas River in eastern Colorado, their boundary with the Comanche, Kiowa and Kiowa-Apache (Schlesier 1968:41).

From at least 1820 on, none of the Black Hills groups - Kiowa, Kiowa-Apache and Arapaho - retained any contact with the project area. The causes of their abandonment of the Black Hills and adjacent regions are unknown. Perhaps the demise of the horticulturists played a certain role. The Teton Dakota are not responsible although they slowly took over empty territories. Teton numbers remained small and were further threatened by repeated epidemics. Teton winter counts document smallpox epidemics for the years 1800 and 1810, and the measles, which killed

many children, for the year 1818 (Howard 1960:352, 357, 362-363). Other groups suffered also. The Cheyenne and Pawnee, for instance, were struck by smallpox in 1832 (Denig 1961:171), the Arikara in 1833 (Denig 1961:57-58). In the same year the Crow again lost half of their already shattered population (Denig 1961:170).

American exploration, fur trade and expansion in the Middle Missouri region began seriously with the Lewis and Clark expedition of 1804. The following eyewitness accounts describe the general cultural decline of Indian populations: Tabeau, 1803-1805; Larocque, 1804-1805; Lewis and Clark, 1804-1806; Mackenzie, 1805-1806; Henry, 1806; Bradbury, 1809-1811; Brackenridge, 1811; the Duke of Wuertemberg, 1822; Catlin, 1832; Maximilian, 1833-1834; Denig, 1833-1856; Chardon, 1834-1839; Kurz, 1848-1852; and Culbertson, 1850 (Schlesier 1968:38).

Thompson (1916) gave this account of the Mandan in 1797:

The curse of the Mandanes is an almost total want of chastity; this, the men with me knew, and I found it was almost their sole motive for their journey hereto; The goods they brought, they sold at 50 to 60 per cent above what they may cost, and reserving enough to pay their debts, and buy some corn; they spent the rest on Women. Therefore we could not preach chastity to them, and by experience they informed me that siphylis was common and mild [Thompson 1916:234].

And Tabeau (1939) echoed in 1804 from the Arikara:

The word, modesty, is not even known among the Ricaras. The Cheyennes and Caninanbiches (Arapaho, Schl.) are reserved in this respect, even in their conservation. The Sioux are at least modestly covered; but the Ricara men are absolutely nude....Incest is not recognized till the third degree....The venereal disease makes terrible ravages here and, from the moment it attacks a man, it makes more progress here in 8 days than elsewhere in 5 or 6 weeks [Tabeau 1939:181].

Tabeau (1939:162) also cautioned against exaggerated expectations regarding a profitable fur trade with groups on the Middle Missouri:

Here are some of the reasons that prevent one from hoping that the trade of these nations could soon be profitable: 1st. All the wandering nations which subsist only on the buffalo do not dwell very long in the place suitable to the beaver, the otter, and the bear, all animals hostile to the prairies. 2nd. They disregard all other hunting and are unskilful at it. 3rd. The facility of the buffalo-hunting

with the arrow, as it requires only to meet the animals, makes them dislike all fatigue. The beaver can be obtained only by activity and industry as they are nowhere common enough to be hunted with the arrow or the gun. 4th. None of these nations values our merchandise highly and, if we except some iron implements, they have more liking for their skins, white as alabaster, which they work upon and ornament in different ways and which are, throughout the Upper Missouri, the foremost fancy goods. 5th. They find in the buffalo cow, as I have remarked elsewhere, everything necessary to them and much that is superfluous and, for this hunt, they rightly prefer the bow and arrow to our guns and ammunition. If they desire the latter, it is for war alone, as they do not dare to use them even against the black bear [Tabeau 1939:162].

Tabeau's statement, based on nearly three years of observations made from the "trader center," the Arikara villages, contradicts the still widely held opinion of most historians and ethnohistorians that European trinkets were important to the horse nomads. About 1850, Denig (1961:94) confirmed Tabeau's report from his post among the Assiniboine:

They will not purchase guns, or if they do, exchange or give them away to other nations. In a party of 50 hunters or warriors not more than 10 or twelve guns could be counted. They depend on their horses to catch the buffalo, and when these are stolen or dead they are at a loss how to live....Even when guns are given them they take no care of them, cut them off, or give them away to the first person who flatters them a little....They do not seem to keep up with the age of advancement [Denig 1961:94].

By 1805 four Teton Dakota groups were distributed along the Missouri (and regions westward) from the Cannonball to the White River. They were, north to south: the Hunkpapa, Miniconjou, Oglala, and Brule. The project area was included in the overlapping ranges of the Oglala and Miniconjou. Sporadically it may have been visited by the Cheyenne. Relationships between these tribes were friendly; intermarriages of Cheyenne, especially with Oglala and Hunkpapa, were significant.

The Teton expansion toward the Black Hills and beyond continued during the decades 1810-1850. By the 1830s the first four groups had moved west to include the Black Hills and the country lying directly to the north and south. Behind them the last three Teton divisions had moved to the Missouri: the Two Kettle, Sans Arc and Blackfoot Sioux.

In 1833 Denig (1961:14-15) listed the following numbers of Teton lodges: Brule, 500; Oglala, 300; Miniconjou, 260; Blackfeet, 220; Two Kettle, 100; Hunkpapa, 150; and Sans Arc, 100, for a total of 1630 lodges, and a total population (he counted five persons per lodge) of about 8150 people.

This was the year 1833. The worst smallpox epidemic since the disaster of 1780-1781 hit the Middle Missouri region in 1837. The disease was carried upriver by steamboat. It struck first at Ft. Clark in July, with devastating results. By autumn, 7/8 of the Mandan had perished and half of the Arikara. The latter were reduced to 600 people. The Hidatsa suffered similarly; some abandoned the Missouri River and joined the Crow (Bowers 1965:24). In 1845 the Mandan and Hidatsa survivors joined in one settlement, Like-A-Fishhook Village. The Arikara held on at Ft. Clark. In 1862 they all moved together in the single village at Ft. Berthold.

There was no eyewitness account of the suffering of the Teton and Cheyenne bands. But, Denig's (1961) lament for the Assiniboine may be considered applicable to nomadic groups of the whole region:

...they passed on to the fort, and 250 lodges or upwards of 1000 souls contracted the disease at the same time, which during the summer and fall reduced them to 30 lodges or about 150 persons young and old. Other bands coming in from time to time caught the infection, some of which remained at the fort where the dead were daily thrown into the river by cart loads. Others attempted to run away from it. The different roads were dotted with carcasses and occasionally lodges standing in which whole families lie dead....They continued dying until the middle of the ensuing winter, when the disease, having spent itself, ceased. Out of the upwards of 1000 lodges of Assiniboines but 400 remained. Of these, 200 were saved by having been vaccinated in former years by the Hudson's Bay Company. Among the rest relationship was nearly extinguished, all property lost or sacrificed, and generally very old or very young persons were the only ones who recovered. Most of the principal men having died, it took years to recover from the shock [Denig 1961:72-73].

The epidemic had run its course in 1838. In its wake the last earthlodge band of Cheyenne abandoned its village on Grand River and turned its back on the Missouri River, following other bands beyond the

Black Hills. This year marks the end of any association with the project area. In the following year, 1841, the Oregon Trail, first explored by Bonneville's wagon train in 1832, opened. With the immigrant trains, cholera and influenza were added to the continuing scourge of smallpox and measles.

Now Teton Dakota territory on the Middle Missouri, once again emptied by disease, was slowly occupied by the Yanktonai. They had already begun to explore the Missouri River and its western tributaries in the 1830s. In the wake of the epidemic of 1837-1838, the Upper Yanktonai included the whole stretch of the Middle Missouri from the Knife River to the mouth of the Cheyenne River in their tribal range, a position they held until about 1860 (Warren 1986:Figure 45).

A final episode to be mentioned is the establishment of Ft. Bennett on May 17, 1870. It was located on the west bank of the Missouri just below the mouth of the Cheyenne River. Established by Captain Edward Pearson, 17th U.S. Infantry, it was founded to protect the Cheyenne River Agency. On December 30, 1878, the fort was designated Ft. Bennett; it was abandoned on November 18, 1891 (Frazer 1965:134).

It is hoped that those involved in future reappraisals of the archeological record in this region will find the ideas and information presented in this overview both challenging and stimulating. For the present, the data base remains rather obscure. However, by focusing future research on the cultural entities and relationships postulated here, our understanding of the complex human dynamics of this region should be enhanced.

The research orientation presented in the original proposal (Appendix H) defined goals that were fourfold. The primary aim of the project was to perform a pedestrian survey to locate and record prehistoric and historic evidence of past human activity. In accomplishing this task, a 100 percent intensive pedestrian survey of the project area was required, with the recording of sufficient information to allow an accurate reconstruction of survey conditions - e.g., transect spacing and ground surface visibility. This documentation was achieved in the field by maintaining detailed daily logs (see Appendix C) and annotated maps, and by completing State Site Forms (Appendix B).

The initial task of locating sites in the project area was complemented by conducting background research focused on the prehistory and history of the region, and more specifically, evaluating the ethnohistorical data which might aid in equating sites to specific ethnic groups (sometimes referred to as the "direct historical approach"). This research area is addressed in the detailed, original work on the ethnohistory of the region in the section by Karl Schlesier. Some limited success in assigning archeological sites to known ethnic groups was also achieved.

A third research area involved the integration of a geomorphological assessment of the study area, relating soil and landscape formation to human occupation. This activity produced a crucial baseline of original data. The results were enhanced by the fact that Dr. Brakenridge provided a student assistant, thus increasing the geomorphological research effort, and also contributed additional funding to obtain radiocarbon age determinations on two samples. The resulting section adds the much needed documentation of the landscape formation processes which have affected site preservation and site location, and also delimits areas with the potential for deeply buried deposits.

The fourth research focus was analytical, concerned with defining site boundaries, site components/chronology, and site locational characteristics. The numbers and types of sites actually documented during this project failed to match original expectations. Diagnostic

materials were rare and those recovered relate to the Late Prehistoric ceramic horizon. This lack of diagnostic material constrained our ability to develop a dynamic predictive model. The geomorphological study, however, provides a level of prediction for the location of buried sites within the project area and also provides a data base for some areas outside the Corps lands. This section documents the effects of time on the transformation of the landscape through erosion, deposition, river channel migration and river impoundment.

A broad, "non-site" approach to research in the study area was to be applied. The results of the survey were to be incorporated with the geomorphological data relating to the formation of the present landscape to formulate what can be termed a "landscape-oriented" assessment of the study area, as compared to the more generic "site-oriented" assessment. A broad definition of "landscape-oriented" is applied here, as described earlier. It involves the concepts of landscape and region as the concentration of study rather than the individual archeological site. In a strictly site-oriented study, a survey which located no sites would be considered at best to have produced a negative data base. Applying the broader landscape-orientation, the same survey information assumes greater importance; namely, explanations must be developed either in terms of cultural or natural processes to account for the lack of sites.

The landscape-orientation proved the most appropriate for the current project. The numbers and types of sites located by the pedestrian survey provided a view of restricted human utilization of the region in the past. However, integration of the geomorphological and ethnohistorical studies with the archeological data provide a far different picture. The area emerges as a potentially significant region of cultural activity throughout prehistory, but one that has undergone drastic transformations through natural processes of erosion and river channel migration, as well as cultural processes such as the construction of the Oahe Reservoir. Many sites have likely been destroyed or buried as a result of these processes. Monitoring and testing to locate buried sites to further elucidate this region's cultural record should now focus on the areas of high potential defined by the geomorphological study.

Specific research questions to be addressed in the project area, which would guide data collection in the field, were severely limited

because of the lack of detailed information on the nature and timing of occupations along the river. Because the Cheyenne River has been viewed as a major artery to the Black Hills it was anticipated that evidence of at least transient use of the area might be found relating to numerous groups that inhabited the Plains from the Paleoindian period to the present.

Recognizing the unknown and somewhat unpredictable results of the survey, the following topics were presented as realistic research orientations guiding the course of this project:

- 1) Site type, variability and density in the area (see Laboratory Analysis and Research; and Survey Results - Overview).
- 2) Documentation of human utilization of the area through time - prehistoric/historic (see Laboratory Analysis and Research; Ethnohistoric Overview; and Literature and Records Search).
- 3) Development of hypotheses relating archeological sites to ethnic groups (see Ethnohistoric Overview; and Literature and Records Search).
- 4) Lithic procurement and utilization patterns (see Laboratory Analysis and Research).
- 5) Potentials for buried deposits of specific cultural periods in the area based on geomorphological studies (see Geomorphology).
- 6) Ethnohistoric outline for the project area (see Ethnohistoric Overview).
- 7) Reconstruction of landscape development in the project area (see Geomorphology).

Site significance was to be discussed in relation to the research questions, the integrity of the sites and their comparison with culturally similar sites in the area in order to address the management of the cultural resources located. All sites identified would be ranked

with reference to their significance (above), current state of preservation and future threats (e.g., erosion). Specific recommendations would be made for individual sites and/or archeological districts from a management standpoint with the rationale for the recommendations succinctly presented.

Site significance and management considerations are discussed both on a site by site basis (see Inventory) and in relation to site types (see Survey Results - Overview), with more general management considerations discussed from the "non-site" or "landscape" orientation of this project.

The field methodology designed for this project (Appendix H) anticipated a more complex series of cultural resources than those actually located. The methodology utilized was adapted (see below) to obtain the most intensive coverage of the area in the most efficient manner. The generally excellent surface visibility enhanced the evaluation of the project area (underlain by Pierre Shale), although shovel testing was employed in a few instances to delineate site boundaries.

All areas were inspected by a pedestrian transect survey. In gently rolling and flat terrain, personnel were spaced approximately 30 meters apart and walked parallel transects to each other. In more dissected and eroded areas, such as ridge systems, the surveying strategy was adapted to match the terrain, since strict adherence to parallel transects might result in surveyors walking along the steep side slopes of a narrow ridge rather than along the flatter top where sites, if present, would be more likely to be located.

Transects were generally walked parallel to the reservoir, but ridges were preferentially examined by walking along the ridge top. Conversely, steep slopes were less intensively surveyed. Where possible, cutbanks were inspected; this effort did result in the discovery of some shallowly buried cultural deposits. However, the high lake level precluded surveying along the shoreline in much of the project area.

A boat was used in many instances to gain access to sites and survey areas. The field crew was usually comprised of two or three persons. Project-specific site forms and South Dakota state site forms were completed in the field. When sites were located the area was intensively examined for artifacts and associated features which were flagged to aid in the recording process. A Brunton compass and metric tape were used to produce scaled site maps, and all sites were photographed. When a Corps or other boundary marker was present nearby, the map was tied to it; otherwise, temporary datum points were used and removed on completion of the mapping. When features were present, these

were used as datum points (e.g., centers of cairns, corners of buildings). Artifact collection was limited to diagnostic items, with other items being collected at the discretion of the field director.

A second factor affecting the field methodology was the presence of a geomorphologist on the project team. The scope-of-work called for a 70 percent sample of a 4,024 acre area. Initially (see Appendix H), ALCWS had proposed an amalgamation of the geomorphological evaluation with detailed mapping of the sample survey area to derive stratified units to survey at varying sample percentages, depending on the nature of the unit. In the proposal ALCWS suggested that no unit would be sampled at less than 25 percent while some units might receive 100 percent survey.

In evaluating the area to be sample surveyed (Figure 2), Brakenridge (geomorphologist) determined that up to several feet of recent alluvium covered much of the area and that no cultural resources would be located by a surface survey. A terrace area to the west (Carlin Bottom) was evaluated as the most likely area to contain preserved surface evidence of past human utilization. Based on this information, ALCWS proposed to the Corps (Appendix I) to undertake a 100 percent survey of the terrace surface at the west end of the project area (approximately 1000 acres), and to undertake no additional survey in the remaining areas, beyond that which had already been accomplished during the geomorphological evaluation of the area. This approach was approved by the Corps (Richard Berg, personal communication 1986), and was thus implemented. Meanwhile, Brakenridge and his team conducted further evaluations of the depositional circumstance in this area (see section on the Geomorphology).

Sites Identified by the Literature Search but not Relocated
during the Survey

Included among sites documented as existing in the project area are those listed in Table 1 as Numbers 1 (Duprees) and 8 (school?/farmstead). The recorded locations of these sites were not surveyed because they are within the current floodplain of the Cheyenne River. No standing structures were visible within the project boundaries from the edges of the floodplain, and the geomorphological evaluation indicated several feet of recent alluvial deposition in this area.

Despite good surface visibility, no artifactual remains were found at the locations of Numbers 2, 3, 5 and 7 (Table 1), also documented as being within the project area. The brief occupation and impermanent nature of reservation period dwellings, such as Number 2, and those of the early to mid 1930s (see the Civil Works Administration study of 1933, the 1935 study by the Superintendent, and others) may account for the absence of remains at the related sites. Occasional--if not periodic--flooding of the bottom land and destruction from farming practices may also be factors contributing to this situation. Remains were found at Number 6 (39DW82--St. Peters Catholic Cemetery--"00") and Number 4 (39DW74--church--Corn's Band?).

Site Inventory

A total of 69 sites were identified during the Cheyenne River arm survey. Two of these sites, both in Stanley County, had been previously recorded (39ST10 and 39ST48). Of the remaining 67 sites, 26 are located in Dewey County, 31 are located in Stanley County, and 10 in Ziebach County. No sites were recorded in Haakon County.

The 69 sites located (Figure 6), including both newly recorded sites and previously recorded sites, are inventoried below. The inventory format is as follows. All sites are presented in site number order by county (Stanley, Ziebach and Dewey respectively). Descriptive information and recommendations are provided for each site. These data are followed by a site map and site photographs. Specific locational data and other information not specifically required in the main text are given on the official South Dakota State Site Forms in Appendix B.

The site maps accompanying the site forms are generally self-explanatory. Where additional information is required to interpret the site map, it is listed under the "Data Plotted on Site Map" category of the site data page. A key to the symbols found on the site maps that are not otherwise defined is provided on page 121.

Site boundaries are sometimes defined by a solid or dashed line which encloses the features/cultural material noted on the survey. In other cases, just the specific information on cultural features and associated materials is presented, without imposing such an "interpretive" boundary to the site. Following the inventory, analyses of the data and summaries of the sites, by site type, are presented.

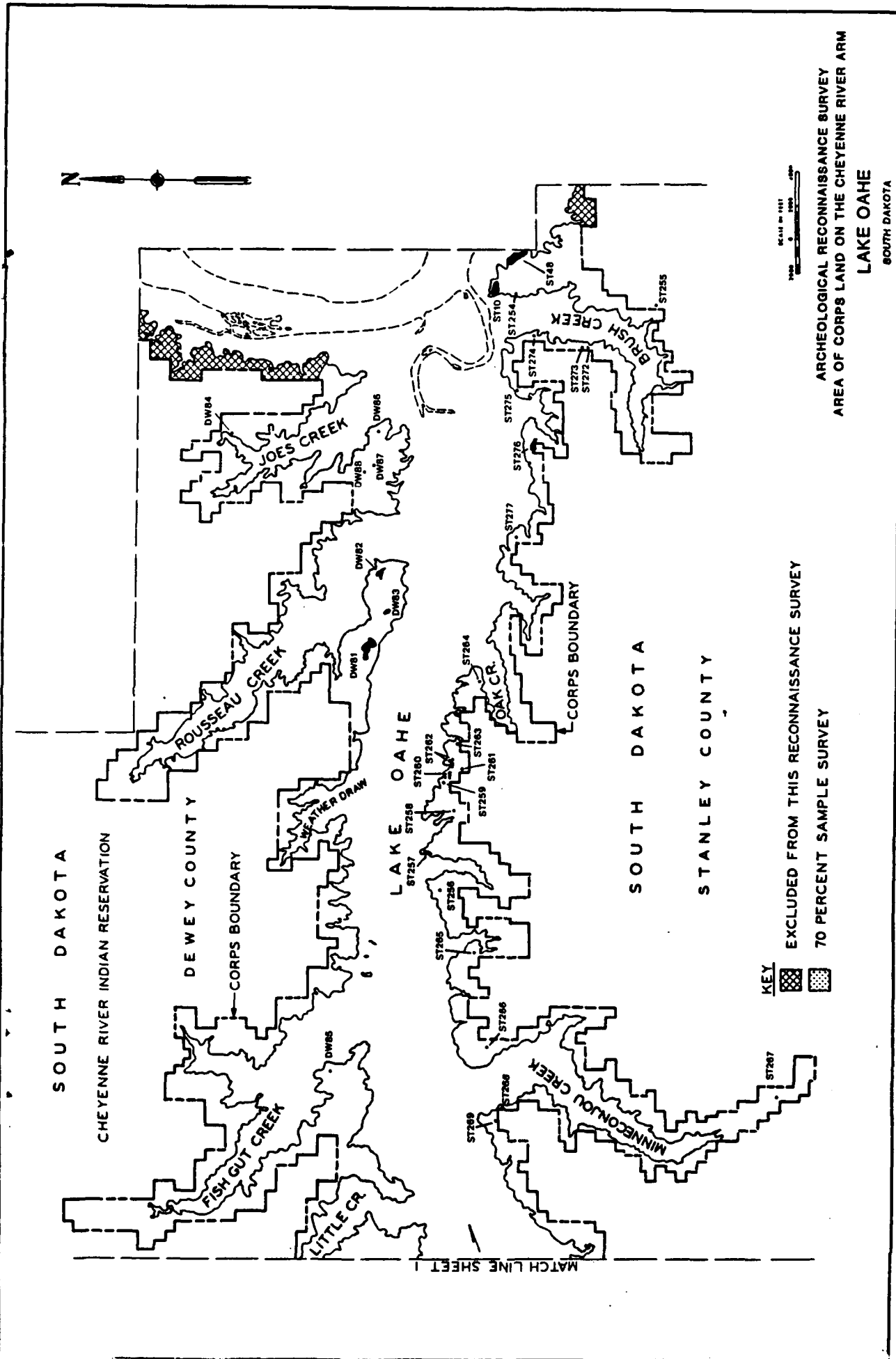


Figure 6. Distribution of sites recorded within the Cheyenne River arm survey area.

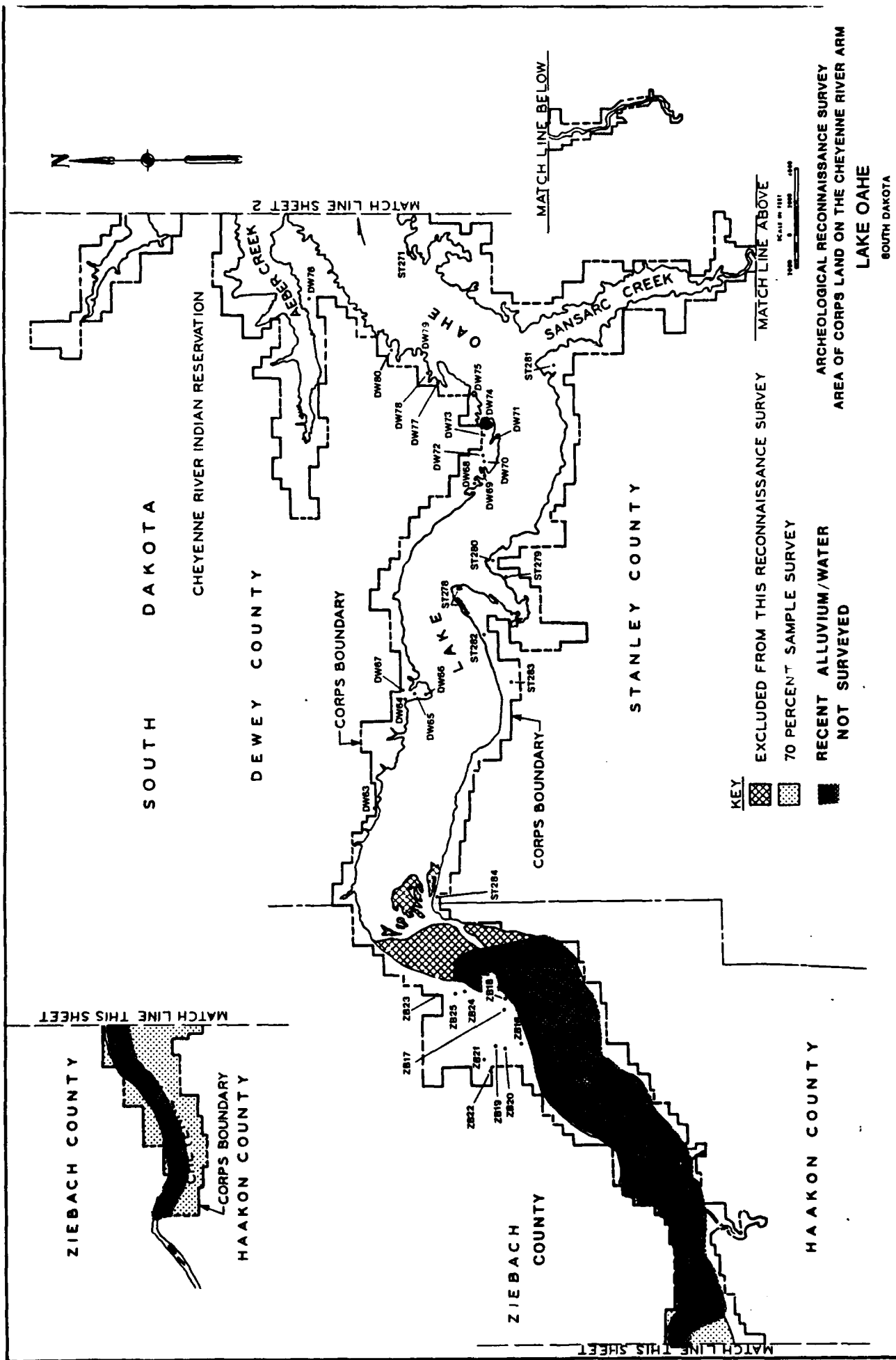


Figure 6 (cont.). Distribution of sites recorded within the Cheyenne River arm survey area.

Explanation of Site Inventory Data Categories

SITE NUMBER: 39ST/39DW/39ZB SITE NAME: (If given)

COUNTY: Stanley/Dewey/Ziebach. STATE: South Dakota. FIGURE(S) PLATE(S)

PROPERTY OWNER AND ADDRESS: Generally the owner is the U.S. Army Corps of Engineers, Omaha, Nebraska, but one site was located on private/tribal land en route to Corps land and others extend onto private land.

TENANT AND ADDRESS: In every case this is unknown; therefore, this category is not listed on each site data page.

SITE TYPE: A simple description/site type category is given. More details of the site are provided in the information below and on the State Site Form in Appendix B.

A site is defined here on the basis of spatial association of material/features and/or some topographic linking of components. Proof that there is, indeed, any direct association between the individual given components of a site must await further evaluation.

For previously recorded sites a combination of the total information available for the site is presented.

SITE COMPONENT(S): These are generally based on diagnostic material (projectile points, ceramics) and feature types (concrete foundations). Some features - notably depressions and cairns - might be prehistoric, historic or recent. The following definitions are applied here: prehistoric is defined as essentially pre-1800; historic is defined as being post-A.D. 1800 and pre-A.D. 1935; and recent is defined as post-A.D. 1935. In this study the following feature types (as they are defined in this report) are considered prehistoric: rock cairns (unless associated with boundary markers) and artifact scatters (unless containing items clearly of Euro-American manufacture). Direct evidence for the age of all features is lacking on such a survey and these assumptions must be made to avoid repetitious discussion about the nature of the site.

For previously recorded sites components are listed if previously recorded, even if they were not noted during the 1986 survey.

SITE SIZE: Given as m² or dimensions. The site area is only a figure for the area encompassing all the cultural material/features presently recorded as making up that site. It is a general measure of size and cannot, from a surface survey, relate to any clearly stated definition of a site area because there are too many unknowns.

TOPOGRAPHY: Local topography is given. See USGS maps in the appendix for the regional perspective.

ELEVATION (m): One figure is given as the average for the whole site area. In some sites variation of several meters can occur.

VIEW (degree): Degree (0-360) of view from site (relates to exposure and location).

VIEW (distance): A measure of the distance objects can be seen from the site.

STRATA AND DEPTH: In this category the depth of an occupation layer is indicated. This can be based on data from profiles, from feature types (the occupation layer associated with a stone circle is approximately at the depth of the base of the stones), or from the general depth of soil in the area. It does not include (unless stated) features cut through the living surface - such as cache pits or depressions.

VEGETATION: Vegetation in the site area is noted.

SURFACE VISIBILITY (%): This is an approximate figure indicative of the ability to locate cultural material on the site's surface. Generally 20 percent or greater visibility indicates there was good potential for locating surface artifacts. Less than 20 percent visibility suggests ground cover could obscure surface materials, although sporadic eroded areas, animal burrows, etc., might be present.

NEAREST WATER: This refers to the nearest water source shown on the USGS quadrangle maps, unless specified otherwise. The name or type of water source is also given.

CONDITION: Categories are those used in completing the state site forms - Extant, Disturbed, Inundated, Destroyed.

PREVIOUS INVESTIGATIONS: Listed as follows:

- ALCWS = Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD.
- SIRBS = Smithsonian Institution, River Basin Surveys.
- SDAC (Hoard) 1949 = Excavations at 39ST10 by Jack Hoard and John Shield in 1949 for the South Dakota Archaeological Commission under a cooperative agreement with the National Park Service.
- Lazio 1977 = Cultural Resource Reconnaissance of a Proposed Irrigation Project undertaken for the U.S. Army Corps of Engineers, Omaha District.

COLLECTIONS - BY WHOM AND WHEN: The Archeology Laboratory of the Center for Western Studies is abbreviated 'ALCWS.' For other abbreviations refer to "Previous Investigations."

COLLECTED ARTIFACTS: Brief descriptions of the collected artifacts are given here. Additional details and measurements are given in the artifact description portion of the Laboratory Analysis and Research chapter and in the appendices. Note: This section is not included if there are no collected artifacts.

LOCATION OF ARTIFACTS: All artifacts collected on this project are to be curated at the South Dakota Archaeological Research Center in Rapid City. Note: This section is not included if there are no collected artifacts. For previously collected artifacts, if the site form states where the artifacts are, this information is given; however, in some cases the artifacts may have been moved elsewhere. Generally the location is listed as unknown.

OTHER MATERIAL REPORTED BY OWNER: Previous collections are recorded above under "Surface Collections." This category is for miscellaneous information reported by the owner, but not otherwise substantiated.

CRM STATUS: Following the State Site Form - Eligible or Not Eligible. A conservative approach is used here, with most sites considered potentially eligible at this stage unless they clearly have no research value or are less than 50 years old.

DATA PLOTTED ON MAP: This section is completed only if there is information on the site map that is not readily understood and to give specific measurements of plotted features.

REMARKS: This section is used as necessary to add to the site information provided above and to discuss the recommendations.

IMPACTS: Type and severity.

RECOMMENDATIONS/TESTING: As stated. If sites are under no adverse impacts, generally no further work will be recommended. The rationale is that if a site is not threatened there is no immediate need for further work. Efforts should be directed at the many sites known to be threatened. However, it is recognized that to forward research some of these sites may need to be evaluated in the future.

PURPOSE OF TESTING (National Register Eligibility): In most cases, the purpose of testing is to further document a site's areal extent, depth, components present, research potential and integrity. Sometimes areal extent, depth and integrity can be inferred from the surface survey to a degree. Occasionally, specific aspects of a site which need to be tested are defined here.

PRIORITY: Low - Medium - High. This classification relates to severity of impacts to the site and relative significance of the site. Sites which are under no current or immediate impact are given a low priority. Sites which are considered potentially eligible for nomination to the National Register of Historic Places and which are undergoing major impacts are considered high priority; however, if these sites are undergoing minor impacts they are given a medium priority. Sites not considered eligible for nomination to the National Register of Historic Places are given a low priority whether under adverse impacts or not.

Note that under the conservative approach adopted in this report, a site might have limited research potential (a restricted data base which is not in pristine condition), but be determined potentially eligible. Eligibility is based on the fact that the site has some research potential which might be considered significant. If the site is not threatened, no further work might be recommended, as discussed above.

Key To Site Maps

North Arrow = Magnetic north.

GLO = General Land Office.

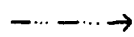
USCoE = United States Army Corps of Engineers boundary.

FCR = Fire-cracked rock.

1700' = Elevation, in feet above mean sea level.

 = Cutbank.

+ = Datum.

 = Intermittent drainage.

SITE NUMBER: 39ST10 SITE NAME: Meyer Site
COUNTY: Stanley STATE: S.D. FIGURE(S): 7, 8 PLATE(S): 8-11
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Earthlodge village.
SITE COMPONENT: Extended Coalescent.
SITE SIZE: 140m N-S x 250m E-W - 3.5ha.
TOPOGRAPHY: On second terrace above the confluence of the Cheyenne
River and Missouri River.
ELEVATION: 506m.
VIEW (degree): 360. VIEW (distance): Over 4 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown silt loam. Hoard
(1949) records the profile in his excavation of an earthlodge depression
as "loess...three inches deep from the peak of the rim outward to its
extremities, but from the peak of the rim towards the center of the
depression it thickened rapidly within two feet to a depth of six to
eight inches where the beginning of the mixed soil strata was
discernible" (Hoard 1949:4).
VEGETATION: Mixed grasses.
SURFACE VISIBILITY: 5-100%.
NEAREST WATER: Cheyenne River - 360m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: Recorded by U.S. Army Corps of Engineers 1892;
W.H. Over (Sigstad and Sigstad 1973:269); SIRBS; excavated by SDAC
(Hoard) 1949; surface collected by Wedel (Smithsonian Institution) 1956;
Lazio 1977.
COLLECTIONS - BY WHOM AND WHEN: USD (Hoard) 1948; Wedel 1956; probably
Lazio 1977.
COLLECTED ARTIFACTS: SDAC (see Hoard 1949 - ceramic, lithic and bone
material from excavations); Wedel - unknown.
LOCATION OF ARTIFACTS: Some material (? collected by Lazio) accessioned
at SDARC (Acc. #77-396). Location of other material unknown.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Long bone fragments (deer?); 2: Secondary gray
chalcedony flake and FCR (chert); 3: Secondary gray/white chert flake;

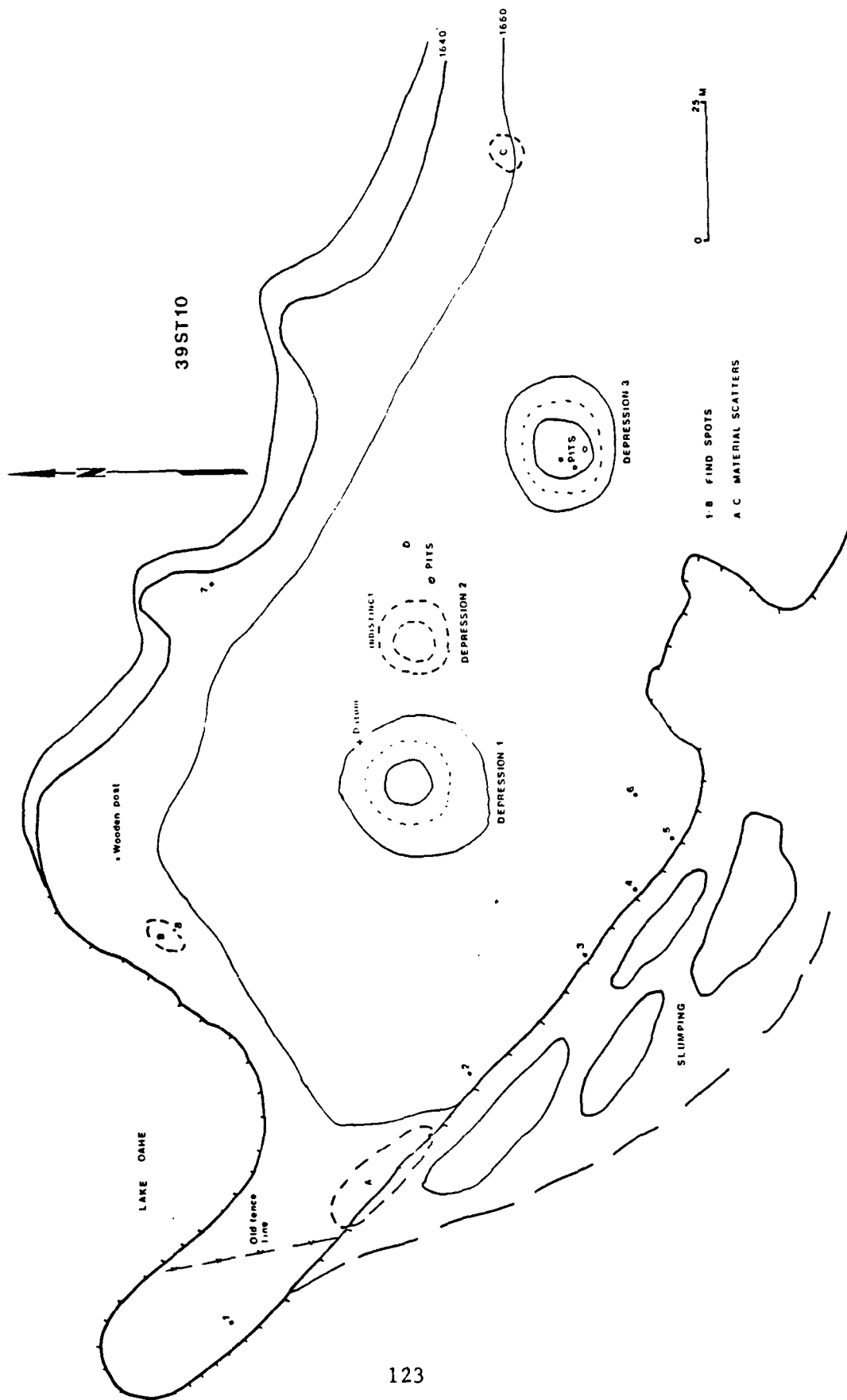


Figure 7. Plan of site 39ST10.

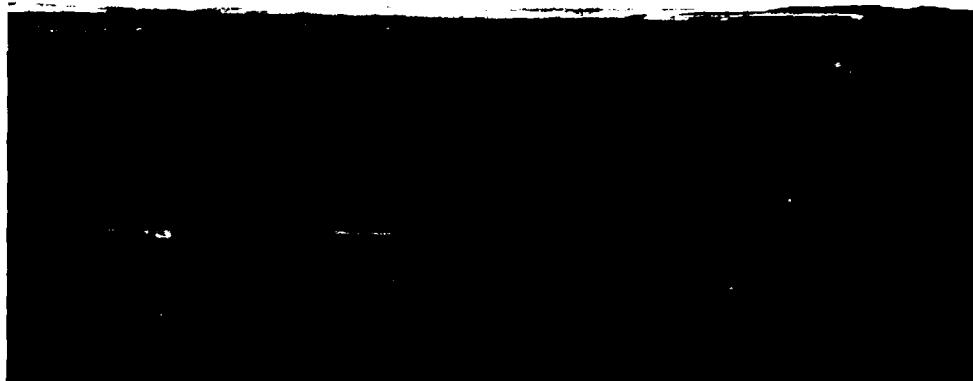


Plate 8. 39ST10 site area, facing N.



Plate 9. Lodge depression (south) at 39ST10, facing ESE.

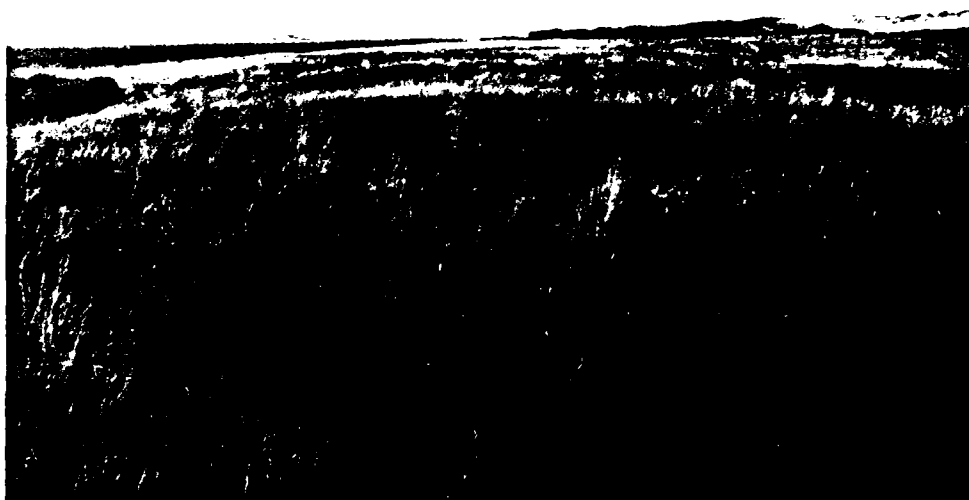


Plate 10. Lodge depression (central) at 39ST10, facing ESE.



Plate 11. Lodge depression (north) at 39ST10, facing SSE.

4: Brown quartzite tertiary flake; 5: 4mm thick plain bodysherd; 6: Pelvic bone fragment; 7: Smoothed rock fragment/FCR; 8: Anthill with microflakes. Area A: secondary patinated gray chalcedony flake, secondary opaque chalcedony flake, reddish-tan chert pebble shatter fragments. Area B: gray chalcedony core fragment, tertiary gray chalcedony flake, tertiary tan chert flake, tertiary gray banded chert flake, tertiary dark reddish-brown quartzite flake, primary tan chert pebble shatter, FCR and cobble fragments. Area C: burned bone, FCR (quartzite), three plain and two decorated bodysherds, 3-4mm thick, gray fossiliferous chert transverse scraper (45 x 25 x 15mm) and a brown quartzite retouched flake (32 x 29 x 6mm). The 1986 survey located only three distinct depressions in what appears to be the southeast portion of the site.

REMARKS: Over (Sigstad and Sigstad 1973:269) reports the existence of two, apparently different, villages under the name Meyer Village. Lazio (1977:1-2) postulates that both of Over's Meyer villages refer to site 39ST10.

Hoard (1949) excavated a single lodge depression located on a knoll near the northern end of the village. This depression measured fifty feet in diameter and the rim rose one foot above the surrounding area. The center of the depression was one and one-half feet below the level of the rim. Hoard recorded 26 distinct lodge depressions scattered on a slight rise in a "lazy L" pattern on the northeastern point of a gently rolling terrace, well protected on three sides by the steep walls of the terrace (Figure 8).

It has not been possible to equate Hoard's site plan with the remains observed in 1986, but, as Lazio observed in 1977, a good portion of the tip of the peninsula on which 39ST10 lies has eroded into Lake Oahe. In 1977 Lazio recorded two well-defined circular house rings at this site and a few other lodges were inferred from less distinctive depressions, some of which have been plowed. Lazio also noted remains of a fortification ditch traceable around the village. "The surface of one well-defined house ring yielded a few Extended Coalescent potsherds, but other cultural materials were rare over the entire site area" (Lazio 1977:6).

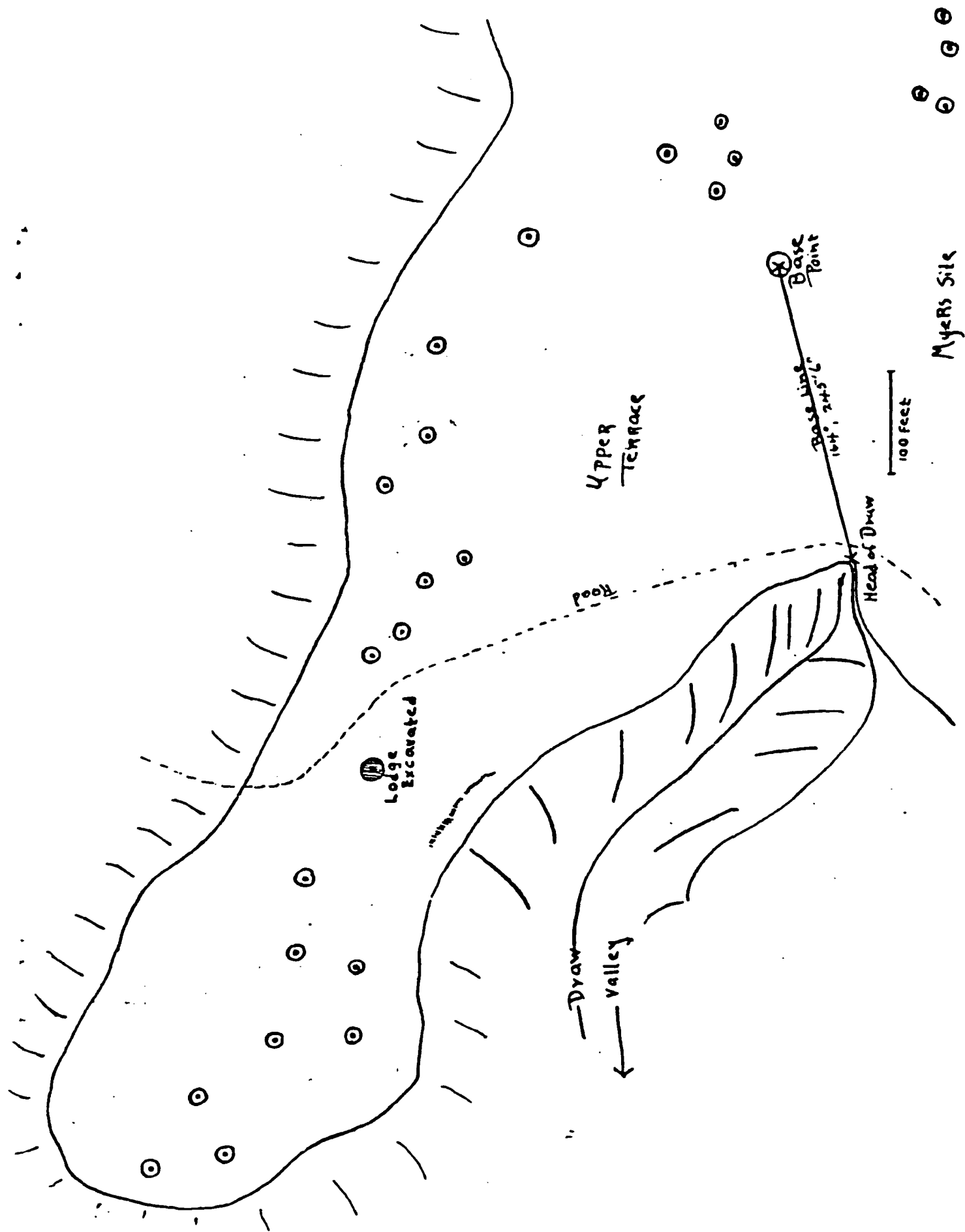


Figure 8. Hoard's plan of site 39ST10.

Lehmer (1954) noted that there was no apparent plan to the Meyer site and that the site appeared to have been unfortified (Lehmer 1954:120-121).

IMPACTS: Severe - mass-wasting of terrace edge.

RECOMMENDATIONS/TESTING: Reexamine previous work at this site, especially Hoard's excavated material and any available field notes. Based on a detailed appraisal of prior work, and preparation of a contour map of the site, develop a testing plan to determine the extent and integrity of this site and to ascertain whether a fortification ditch exists. Finally, controls should be established with which the rate of mass-wasting of the terrace edge can be monitored.

PURPOSE OF TESTING: To determine areal extent, components/features present and research potential of the site.

PRIORITY: High.

SITE NUMBER: 39ST48 SITE NAME:
 COUNTY: Stanley STATE: S.D. FIGURE(S): 9 PLATE(S): 12-13
 PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
 Nebraska.
 SITE TYPE: Mounds/artifact scatter.
 SITE COMPONENT: Unknown.
 SITE SIZE: 120m N-S x 600m E-W - 7.2ha.
 TOPOGRAPHY: Terrace edge.
 ELEVATION: 500m.
 VIEW (degree): 120. VIEW (distance): 2 miles.
 STRATA AND DEPTH: Unknown; soil is a brown silt loam/loess. Wheeler
 excavated a test pit in 1953 and Lazio dug a test unit in 1977. Lazio's
 unit was excavated into a mound to a depth of 60cm and yielded only
 sterile loam. Wheeler's test was also sterile.
 VEGETATION: Mixed grasses.
 SURFACE VISIBILITY: 10-100%.
 NEAREST WATER: Missouri River - 500m.
 CONDITION: Disturbed.
 PREVIOUS INVESTIGATIONS: SIRBS (three visits); Wheeler (SIRBS) 1953;
 Lazio 1977.
 COLLECTIONS - BY WHOM AND WHEN: Wheeler (SIRBS) 1953; ALCWS 1986.
 COLLECTED ARTIFACTS: Wheeler - two unworked flakes. ALCWS - bone
 fragment, notched tooth, tooth enamel fragment.
 LOCATION OF ARTIFACTS: SIRBS - unknown; ALCWS - SDARC.
 OTHER MATERIAL REPORTED BY OWNER: None.
 CRM STATUS: Potentially eligible.
 DATA PLOTTED ON MAP: 1-13: mounds; A-J: find spots.
 1 - 15.5 x 10.5m (long axis NE-SW)
 2 - 17.1 x 11.5m "
 3 - 20.5 x 12.5m "
 4 - 17.8 x 12.0m "
 5 - 16.0 x 10.5m "
 6 - 18.5 x 13.0m "
 7 - 26.0 x 16.0m "
 8 - 15.5 x 11.0m "
 9 - 15.0 x 10.5m "

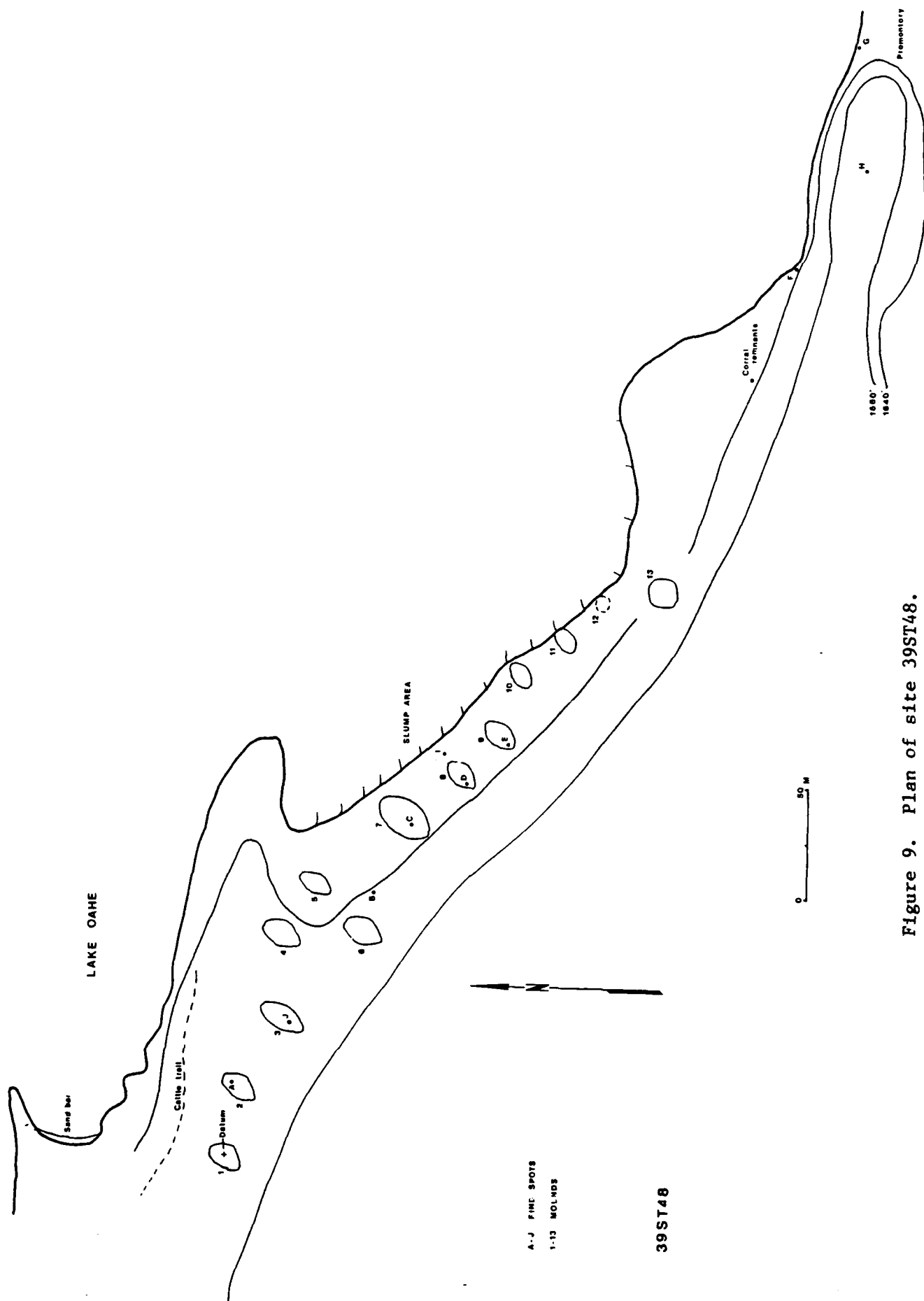


Figure 9. Plan of site 39ST48.



Plate 12. Site 39ST48, view from Mound 10 towards Mounds 5-9,
facing NW.



Plate 13. Site 39ST48, view of Mounds 10-13, by slump, facing NW.

10 - 13.0 x 9.5m (long axis NE-SW)

11 - 11.4 x 9.5m "

12 - 5.8 x 7.0m "

13 - 14.5 x 13.0m "

A - Mineralized bone fragment.

B - Primary brown chert flake.

C - Quartz shatter fragment.

D - Secondary white chert flake, secondary brown petrified wood flake.

E - Notched deer? tooth.

F - Bison skull fragment exposed in cutbank; tertiary flake of tan chert; struck (tested) pebble of light brown chert.

G - Brown chalcedony shatter, secondary patinated brown chalcedony flake, tertiary brown quartzite flake, secondary brown quartzite flake, brown chalcedony shatter, primary gray chalcedony flake - located on surface and 0-10cm b.s. in cutbank.

H - Vertebra (deer?) on low mound.

I - Secondary gray chalcedony flake, two microflakes of clear chalcedony, animal tooth fragment, patinated brown chalcedony primary flake - located on an anthill.

J - Primary brown chert flake, tertiary brown quartzite flake, tan/gray chalcedony core fragment, primary white chert flake.

REMARKS: Wheeler's 1953 test consisted of excavating a test pit 8.5 x 0.6 meters (28 by 2 feet) to a depth of 0.73 meters (2.4 feet) into one of the central mounds. No cultural materials were unearthed and the investigator concluded these "mounds" were natural formations created as a result of wind erosion and deposition. Lazio closely inspected this site in 1977, locating only a single, unworked flake on the third mound from the west. A small test unit produced only sterile loam, leading Lazio to conclude that the mounds were natural. However, he suggested that cultural material might be very deeply buried and recommended deeper tests to determine this possibility. He explained the three (total) flakes recorded from this site as either being related to the site's use as an overlook or being derived from the nearby earthlodge village, site 39ST10.

The present investigation recorded a greater scatter of cultural material than previous investigations and extended the site area to

encompass a peninsula to the southeast where shallowly-buried deposits were observed in the precipitous cutbank.

IMPACTS: Moderate to severe - cutbank slumping and erosion.

RECOMMENDATIONS/TESTING: Have a geomorphologist inspect exposed cutbanks and excavate deep trenches through selected mounds to determine their origin and the nature of the surface artifactual material observed on the mounds.

PURPOSE OF TESTING: To determine research potential and components present. While the mounds would appear to be natural formations, the presence of cultural materials on them needs explaining. With the site extended to include the peninsula to the southeast, this area has buried cultural deposits which should be investigated.

PRIORITY: High.

SITE NUMBER: 39ST254 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 10 PLATE(S): 14
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 12m N-S x 12m E-W - 144m².
TOPOGRAPHY: On a valley terrace edge above Brush Creek.
ELEVATION: 500m.
VIEW (degree): 180. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown/surficial; soil is a brown loam.
VEGETATION: Short grass.
SURFACE VISIBILITY: 65%.
NEAREST WATER: Brush Creek - 500m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Not eligible.
REMARKS: Good surface visibility and exposures have been formed by
slumping. Eight artifacts were observed: one core reduction flake of
brown and tan chert, one tertiary flake of gray mottled chert, one
tertiary flake of gray chalcedony, one secondary flake of gray
quartzite, one flake fragment of patinated gray chert, one pebble
reduction flake of light and dark tan chert, one pebble core fragment of
grayish-tan chert and FCR (chert).
IMPACTS: Moderate to severe - slumping and slope erosion.
RECOMMENDATIONS/TESTING: No further work.
PRIORITY: Low.

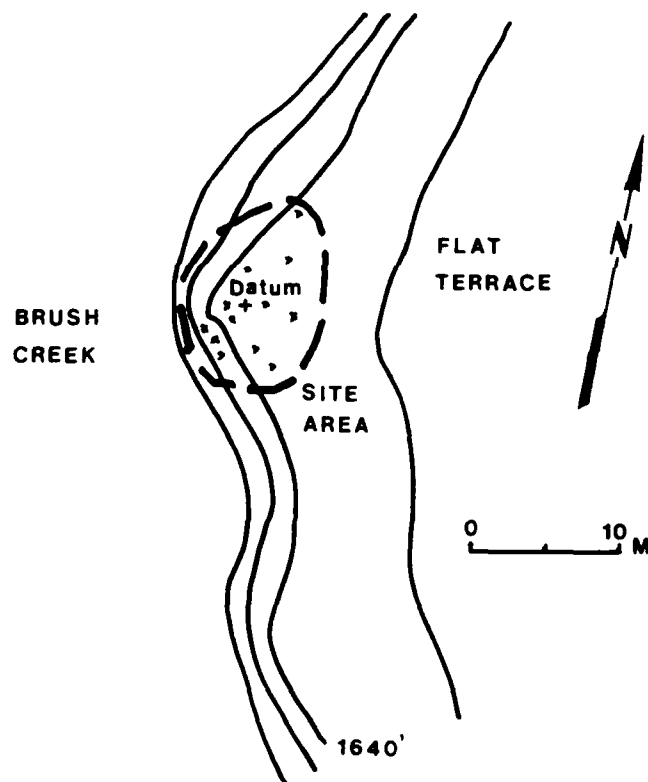


Figure 10. Plan of site 39ST254.



Plate 14. Site 39ST254, facing N.

SITE NUMBER: 39ST255 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 11 PLATE(S): 15
PROPERTY OWNER AND ADDRESS: Larry Donelan, Mission Ridge.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 50m N-S x 50m E-W - 0.25ha.
TOPOGRAPHY: Valley bluff, at the end of and along the margins of a
triangular point overlooking Brush Creek.
ELEVATION: 549m.
VIEW (degree): 360. VIEW (distance): 5 miles.
STRATA AND DEPTH: Unknown; soil is a brown fine silt.
VEGETATION: Mixed grass - buffalograss, bunchgrass, tall grass.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Brush Creek - 1000m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Thirty lithic items were observed: 24 debitage items (14
chalcedony, two chert, one quartzite, six quartz, one plate chalcedony);
two cores (one chert, one plate chalcedony); a bifacially worked plate
chalcedony fragment; a bilaterally, bifacially retouched plate
chalcedony fragment; a unifacially retouched plate chalcedony fragment;
and a Tongue River silica bifacially retouched flake.
The site seems to extend around the periphery of the point and has
the potential for shallow buried deposits.
IMPACTS: Slight.
RECOMMENDATIONS/TESTING: None; the site is located outside of the Corps
survey area.
PRIORITY: Out of Corps survey area.

TO BRUSH CREEK

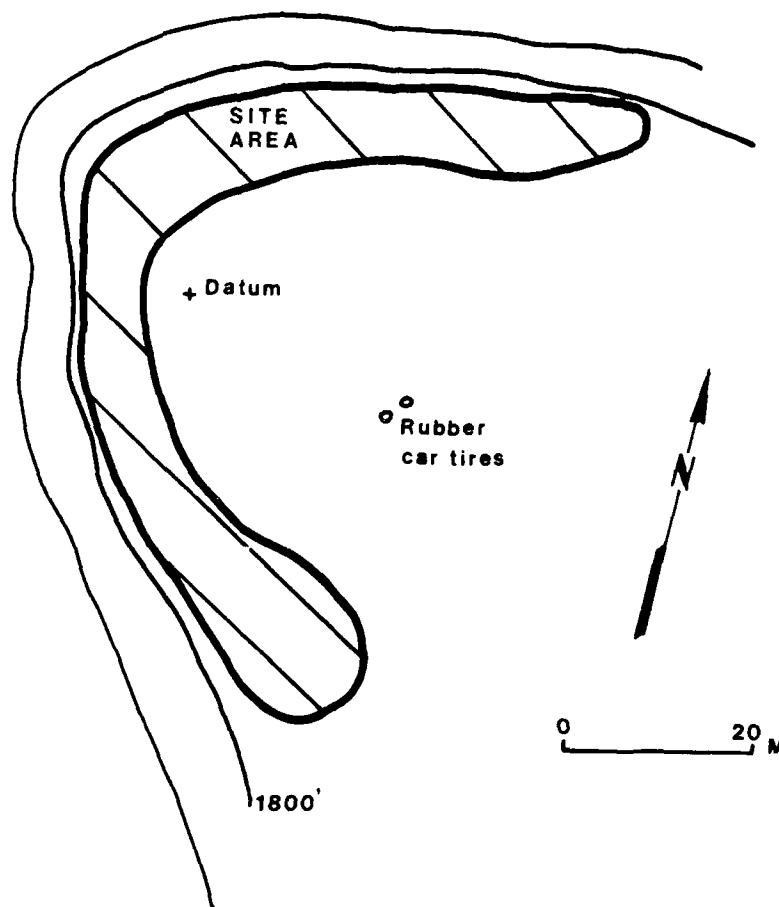


Figure 11. Plan of site 39ST255.



Plate 15. Site 39ST255, facing N.

SITE NUMBER: 39ST256 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 12 PLATE(S): 16
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 60cm N-S x 70cm E-W.
TOPOGRAPHY: On a sloping ridge crest.
ELEVATION: 525m.
VIEW (degree): 180. VIEW (distance): 2 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown silt containing
small gravel.
VEGETATION: Short bunchgrass, silver sagebrush, black sampson,
skunkbrush.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Cheyenne River - 400m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: The site is a small rock pile comprised of 20+ double
fist-sized to half head-sized granite cobbles. A listing of timber lots
(MRBI 1952a, 1952b) possibly associates this area with Segment C -
Allotment 918.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. In that case it should be tested.
PURPOSE OF TESTING: Determine the nature of the feature.
PRIORITY: Low.

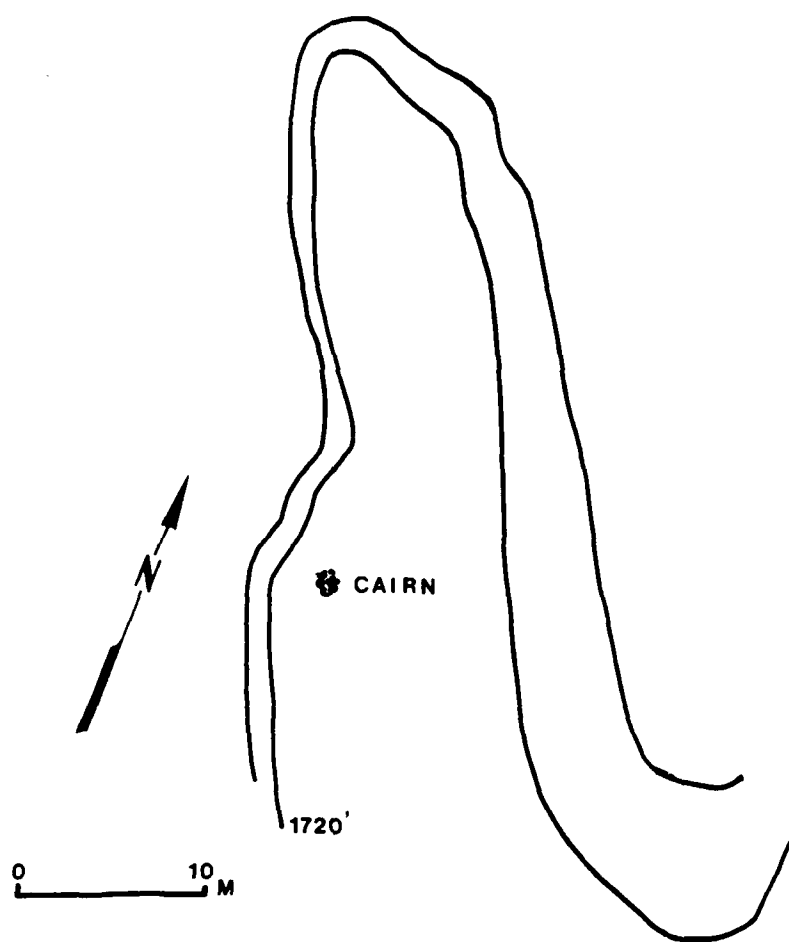


Figure 12. Plan of site 39ST256.



Plate 16. Site 39ST256, facing NNW.

SITE NUMBER: 39ST257 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 13 PLATE(S): 17
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 100m x 10m - 0.1ha.
TOPOGRAPHY: On top of a bifurcated ridge/dissected terrace system.
ELEVATION: 500m.
VIEW (degree): 360. VIEW (distance): 1-3 miles.
STRATA AND DEPTH: Unknown; the soil is a brown sandy loam.
VEGETATION: Buffalograss, blue grama, silver sagebrush.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Cheyenne River - 250m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Unnotched triangular projectile point produced on
translucent chalcedony.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Tongue River silica primary flake;
2: Chalcedony tertiary flake; 3: Triangular unnotched projectile point;
4: Retouched plate chalcedony fragment.
REMARKS: The site is a sparse scatter with only a slight potential for
buried deposits (likely shallow). The site has limited research
potential (i.e. restricted data base).
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: Erosion might encroach on this site and it
should be further evaluated if this circumstance occurs; otherwise no
further work is recommended at this time unless it is felt necessary to
document the limited research potential. If the site is tested, a
minimum of two to four 1m x 1m units should be examined.
PURPOSE OF TESTING: Testing should evaluate the areal extent, depth and
research potential of the site.
PRIORITY: Low.

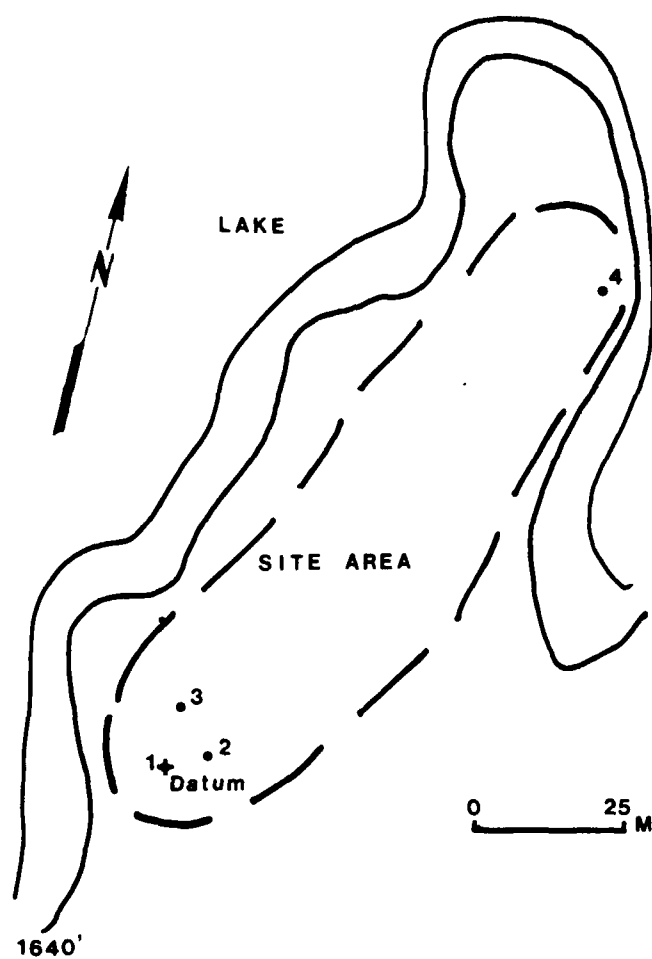


Figure 13. Plan of site 39ST257.



Plate 17. Site 39ST257, facing N.

SITE NUMBER: 39ST258 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 14 PLATE(S): 18
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 12m N-S x 12m E-W - 144m².
TOPOGRAPHY: On a small knob protruding off the west side of a long and
narrow ridge point/dissected terrace.
ELEVATION: 512m.
VIEW (degree): 135. VIEW (distance): 1-3 miles.
STRATA AND DEPTH: Unknown/surficial; soil is a fine brown sandy silt.
VEGETATION: Buffalograss, bunchgrass, mid-tall grasses, curlycup
gumweed.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Intermittent stream - 120m.
CONDITION: Disturbed by slope erosion.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: The six lithic items observed included: one brown chert
tertiary flake, a purple chert shatter, a brown quartzite shatter, a
small brown quartzite tabular core, a brown quartzite tertiary flake and
a white quartz tertiary flake.
IMPACTS: Slight - surface/slope erosion.
RECOMMENDATIONS/TESTING: Define subsurface integrity with two to four
1m x 1m units.
PURPOSE OF TESTING: To determine stratification, cultural components,
research potential and integrity of the site.
PRIORITY: Low.

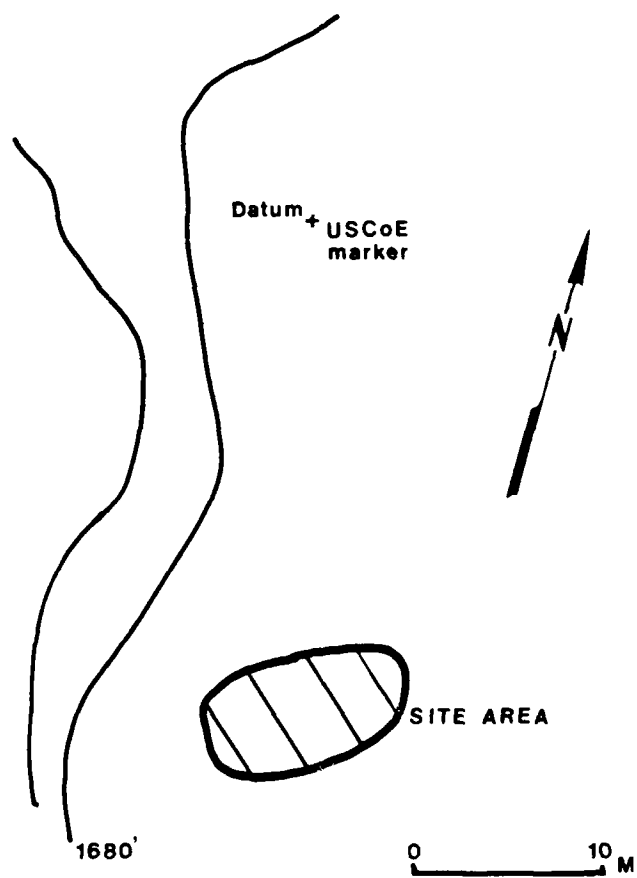


Figure 14. Plan of site 39ST258.

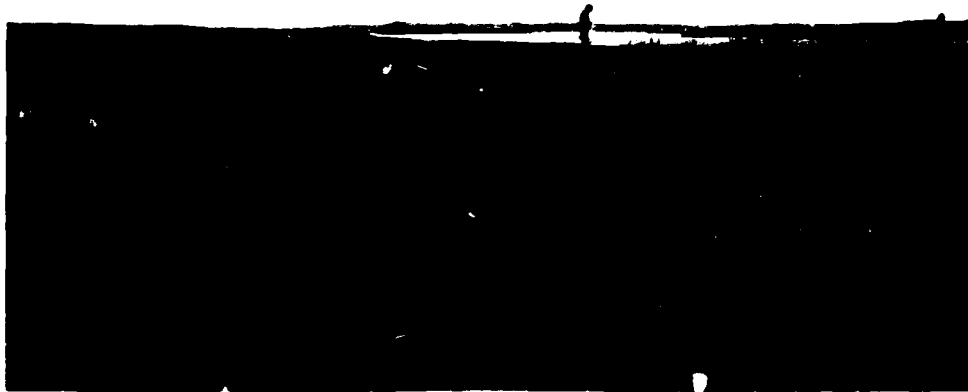


Plate 18. Site 39ST258, facing NW.

SITE NUMBER: 39ST259 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 15 PLATE(S): 19
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 10m N-S x 100m E-W - 0.1ha.
TOPOGRAPHY: On the edge of a valley terrace.
ELEVATION: 506m.
VIEW (degree): 110. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a sandy light brown loess.
VEGETATION: A milo field lies to the south and west. The site is in
native grass, buffalograss, silver sage and big sage.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Cheyenne River - 650m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Chipping station with associated flakes and core
fragments - 10 tertiary flakes and two core fragments of purple/gray
chalcedony.
REMARKS: A total of 34 lithic items were observed as well as some fire-
cracked rock. The lithic material consisted of debitage (15 chalcedony,
one chert, five quartzite, three Tongue River silica, one petrified
wood, two quartz, one silicified sediment) and cores (two chalcedony,
one quartzite, one quartz and two silicified sediment).
IMPACTS: Slight shoreline erosion.
RECOMMENDATIONS/TESTING: Test to determine the site's subsurface
integrity with two to four 1m x 1m units.
PURPOSE OF TESTING: To establish areal extent, depth, components
present, research potential and integrity.
PRIORITY: Medium.

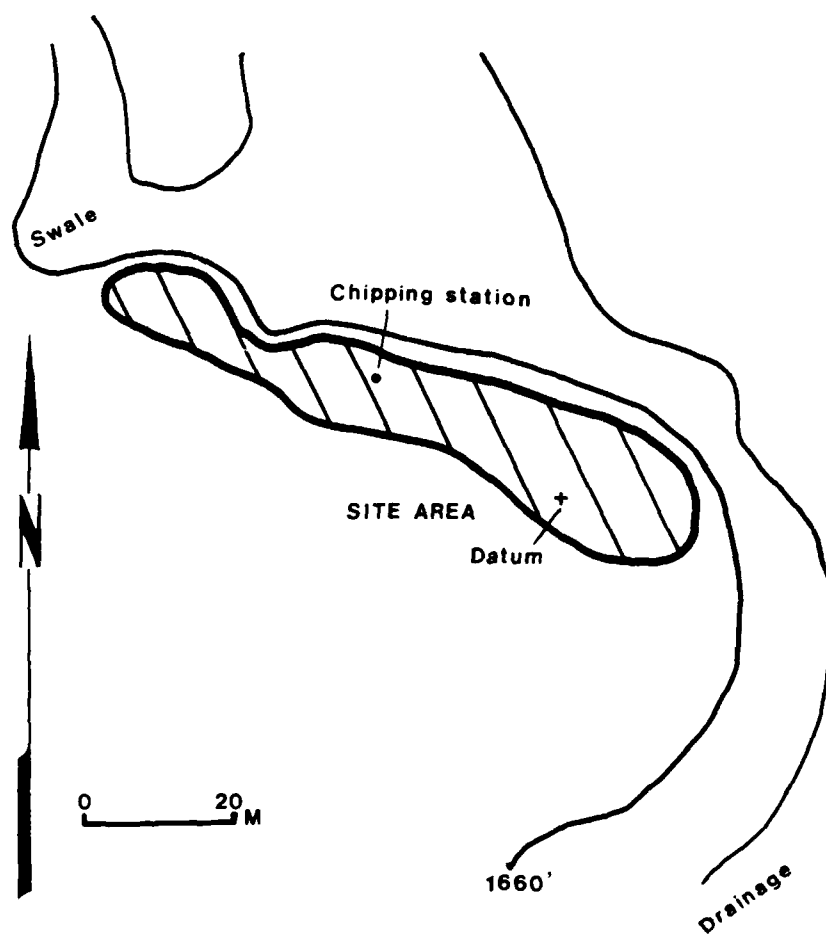


Figure 15. Plan of site 39ST259.

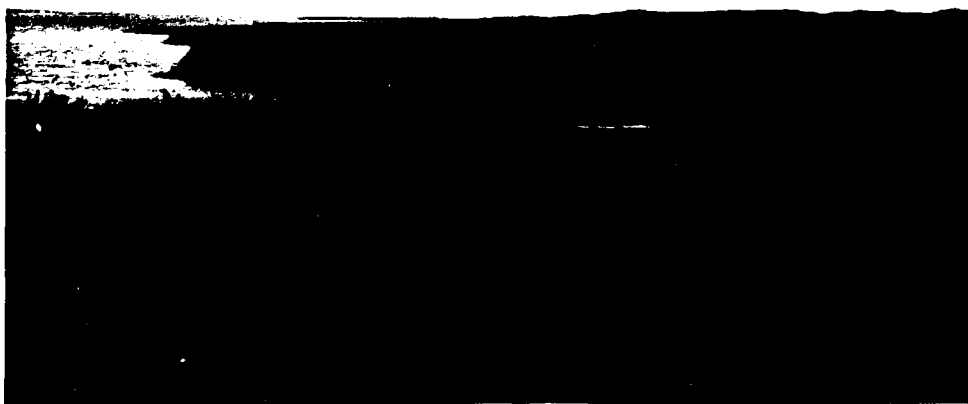


Plate 19. Site 39ST259, facing E.

SITE NUMBER: 39ST260 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 16 PLATE(S): 20
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown - Plains Village?
SITE SIZE: 120m N-S x 100m E-W - 1.2ha.
TOPOGRAPHY: On top of a dissected flat terrace with a curving drainage
on the east and south sides and a small drainage to the northwest.
ELEVATION: 508m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a sandy loess.
VEGETATION: Native grass, buffalograss, silver sage and big sage.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Cheyenne River - 750m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Transverse scraper produced on partially-patinated
brown chalcedony; and a light yellowish-brown ceramic rimsherd - raised
(pinched) lug with punctates below the rim. The rim edge is flat and
the temper is fine sand.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Artifact scatter showing location of ceramic
material (a rimsherd and four bodysherds).
REMARKS: Well over 100 items of lithic debitage were observed in the
following proportions: 45 percent chalcedony, 30 percent quartzite, 15
percent chert, 5 percent Tongue River silica and 1-2 percent of
porcelanite, quartz and silicified sediment. A gray-red quartzite
cobble core was also noted. A single lithic tool, a transverse scraper,
was collected. Ceramic material and some fire-cracked rock were also
observed.
IMPACTS: Slight slope wash.

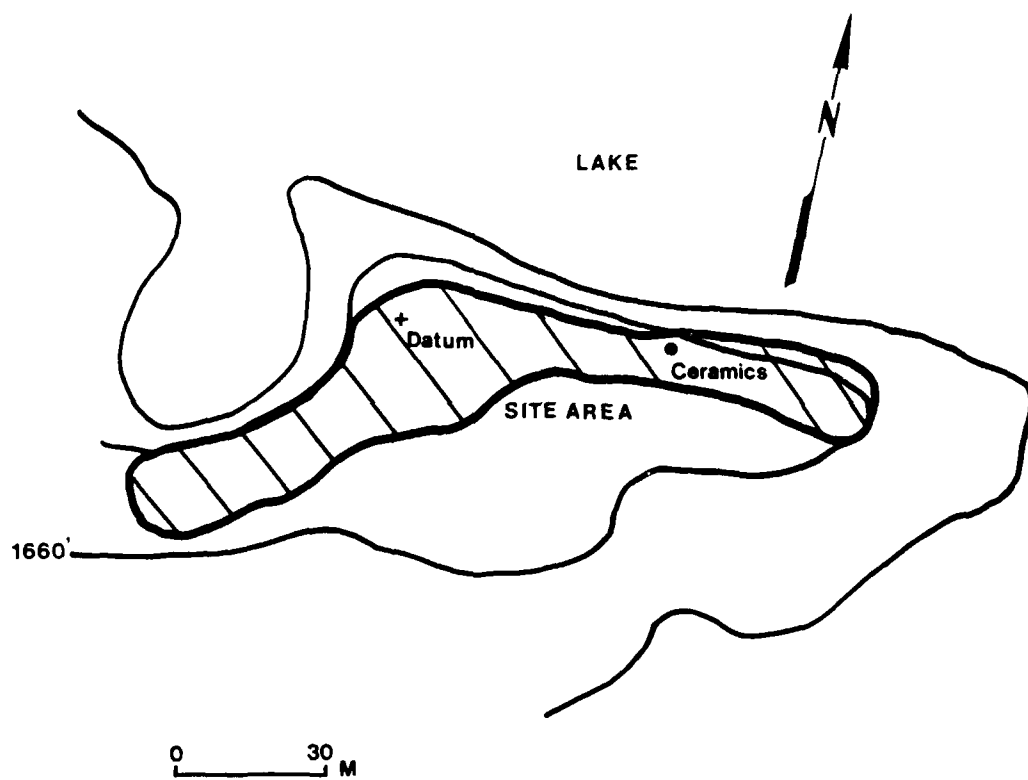


Figure 16. Plan of site 39ST260.



Plate 20. View of the west end of site 39ST260, facing E.

RECOMMENDATIONS/TESTING: Determine the nature of the site's subsurface integrity by minimally excavating two to four 1m x 1m units in relation to FCR, ceramics and concentrations of debitage.

PURPOSE OF TESTING: To determine areal extent, depth, components present, research potential and integrity of the site.

PRIORITY: Medium.

SITE NUMBER: 39ST261 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 17 PLATE(S): 21
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 80m N-S x 20m E-W - 0.16ha.
TOPOGRAPHY: On flat top of a point on a dissected terrace.
ELEVATION: 508m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a sandy loess.
VEGETATION: Native grass, buffalograss, sage.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Cheyenne River - 1000m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Midsection and base of a triangular projectile
point of pinkish-white chert; midsection and portion of base of a
projectile point produced on patinated chalcedony.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Thirteen lithic items and some FCR were observed at this site.
In addition to the point fragments collected (see above), a bifacially
retouched flake of red chert was observed. Core fragments of milky and
tan chalcedony were present, as was a tested quartz cobble. A primary
flake of brown quartzite was observed; secondary flakes of chalcedony,
tertiary flakes of quartzite, and a shatter of rock quartz complete the
observed cultural material assemblage.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: Evaluate the site's subsurface integrity with
two to four 1m x 1m units.
PURPOSE OF TESTING: To assess areal extent, depth, components, research
potential and integrity of the site.
PRIORITY: Low.

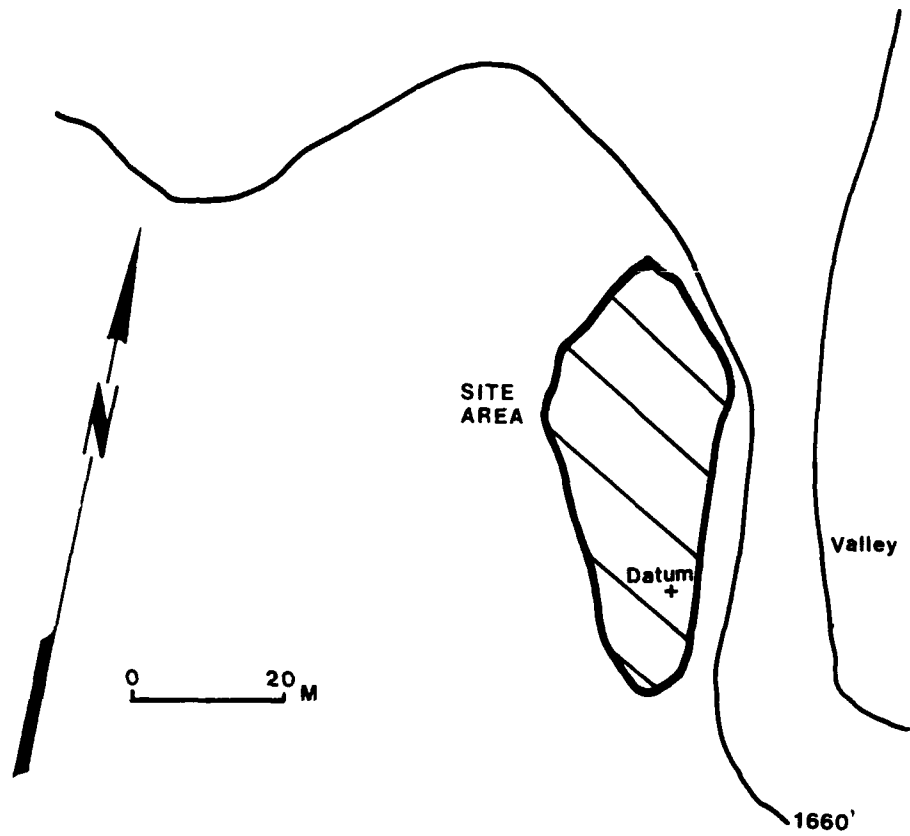


Figure 17. Plan of site 39ST261.

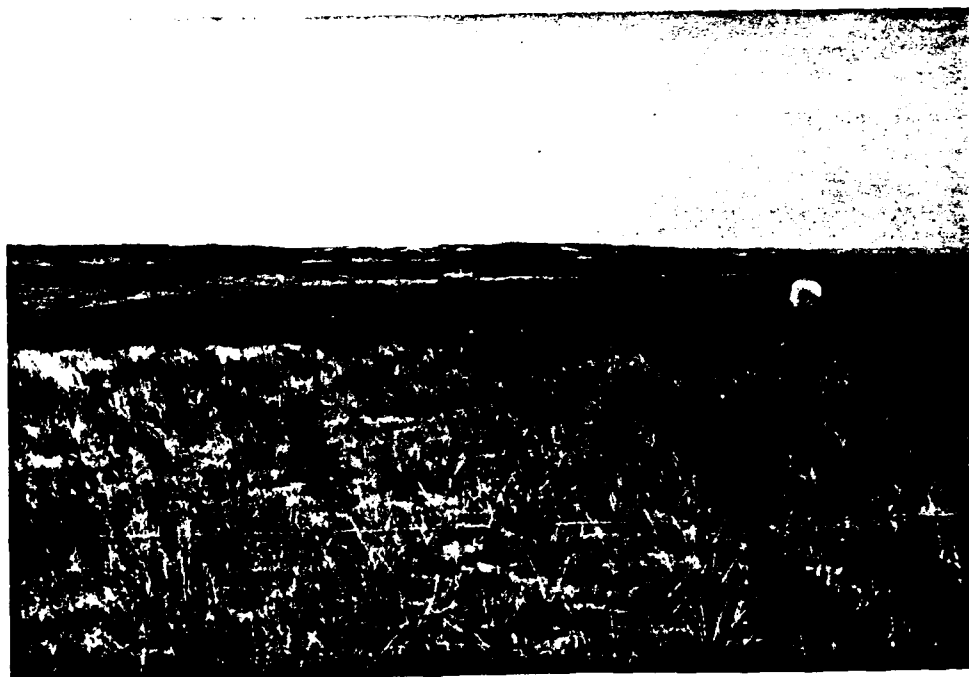


Plate 21. Site 39ST261, facing ENE.

SITE NUMBER: 39ST262 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 18 PLATE(S): 22
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Prehistoric and historic artifact scatters.
SITE COMPONENT: Unknown/historic.
SITE SIZE: 220m N-S x 75m E-W - 1.65ha.
TOPOGRAPHY: On the east side of a small drainage (now inundated) just
above the fork of the drainage. The site is bounded on the east by a
milo field, on the north by Lake Oahe and on the south by an old river
bluff. It is situated on an old dissected terrace.
ELEVATION: 503m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a sandy loess.
VEGETATION: Native grass, blue grama, buffalograss, tall grass.
SURFACE VISIBILITY: 20-40%.
NEAREST WATER: Cheyenne River - 975m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Secondary flake with bifacial reduction on lateral
margins; secondary flake of slightly patinated silicified wood with
bifacial reduction on lateral margins; silicified wood tabular flake
with some unifacial flaking on lateral margin.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Area A: 29+ items of lithic debitage and FCR
scatter. Debitage includes nine primary flakes, 15 tertiary flakes, one
secondary flake and four shatter fragments. Area B: Well over 100
items of debitage, concentrations of FCR (possible remnant hearths),
bifaces of Tongue River silica and petrified wood, and a bifacially
retouched flake of brown quartzite. Raw material types in Areas A and B
are comprised as follows: 30 percent chalcedony, 30 percent chert, 30
percent quartzite, 4 percent Tongue River silica, and 4 percent quartz,
with petrified wood and silicified sediment also present.

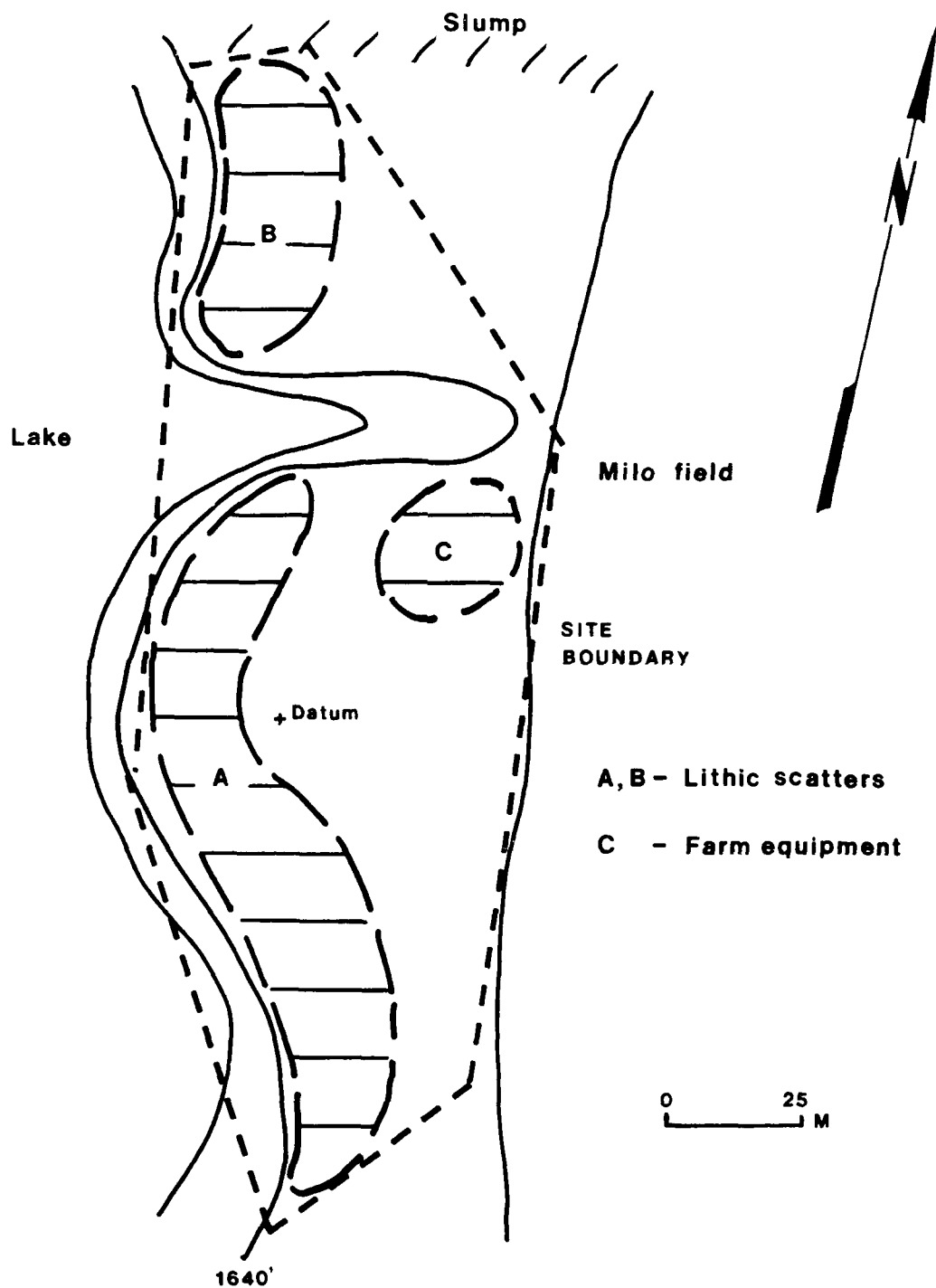


Figure 18. Plan of site 39ST262.



Plate 22. Site 39ST262, facing NW.

Area C: Recent/historic farm equipment including an old horse-drawn one-row corn planter and harrow drag; a two-row horse-drawn cultivator; a one-row horse-drawn cultivator; a John Deere No. 12A pull type combine; a horse-drawn mower with wood tongue and single/double tree; a John Deere Model B tractor; part of an old disk; and various tractor and combine parts.

REMARKS: Concentrations of FCR suggest possible hearths. Occasional lithic items were located up to the milo field. The remnants of farm machinery are nothing to which significance need be attached. None of the equipment is rare or unusual. Such machinery was common throughout the Midwest and Great Plains for decades. Since both horse-powered and engine-powered items are present, it would seem to indicate a time period of 50 years or so, dating from the turn of the century to past World War II.

IMPACTS: Slight - slope wash and encroaching cultivation.

RECOMMENDATIONS/TESTING: Test FCR concentrations to determine if they are derived from hearths. If carbon is present obtain a sample for dating. Test three to six 1m x 1m units in Areas A and B.

PURPOSE OF TESTING: To more clearly establish subsurface integrity, research potential, depth, components present and areal extent of the site.

PRIORITY: Medium.

SITE NUMBER: 39ST263 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 19 PLATE(S): 23
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 20m N-S x 40m E-W - 0.08ha.
TOPOGRAPHY: On a valley terrace system, on a grassy area between a milo
field and a drainage.
ELEVATION: 499m.
VIEW (degree): 180. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a brown sandy loam.
VEGETATION: Buffalograss, low shrub.
SURFACE VISIBILITY: 25%.
NEAREST WATER: Cheyenne River - 1200m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Site area showing concentration of FCR.
REMARKS: Only four lithic items in addition to the FCR were observed:
a tan quartzite secondary flake, a brown quartzite secondary flake, a
red chalcedony secondary flake and a shatter of rock quartz.
IMPACTS: Slight - agriculture.
RECOMMENDATIONS/TESTING: Evaluate the potential for a hearth by placing
a 1m x 1m unit over the concentration of FCR.
PURPOSE OF TESTING: To determine the integrity of the site, evaluate
the potential for a hearth, obtain a carbon sample for dating and define
site component(s).
PRIORITY: Low.

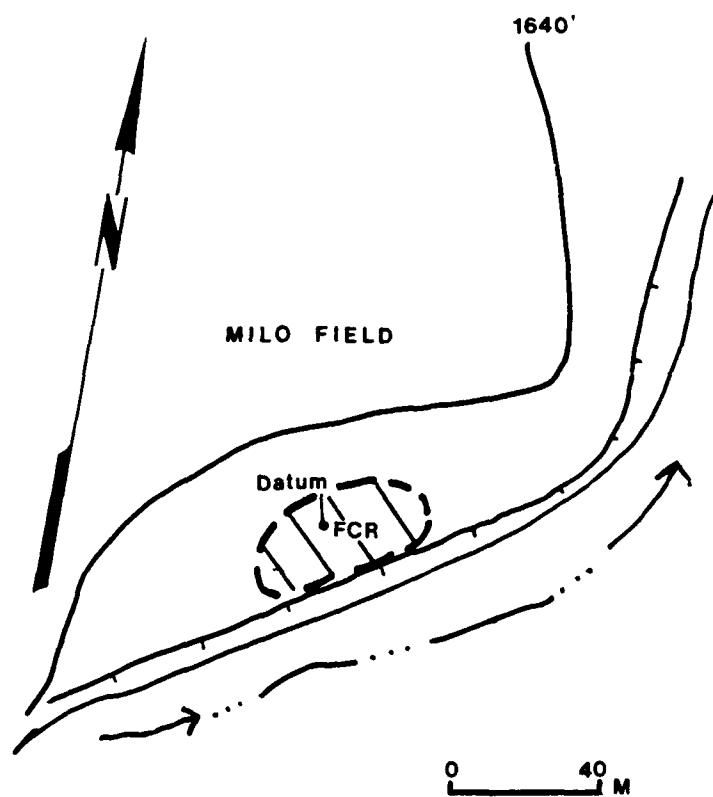


Figure 19. Plan of site 39ST263.



Plate 23. Site 39ST263, facing E.

SITE NUMBER: 39ST264 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 20 PLATE(S): 24
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown (with historic isolated find).
SITE SIZE: 20m N-S x 50m E-W - 0.1ha.
TOPOGRAPHY: On the edge of a small hilltop on the north side of Oak
Creek on an old terrace system of the Cheyenne River.
ELEVATION: 503m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a sandy loess.
VEGETATION: Buffalograss, sage, green shrub.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Cheyenne River - 600m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Isolated historic find - a 46 caliber Henry
(short) copper shell casing. The raised "H" on the headstamp indicates
earlier Winchester manufacture.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Site area: dense concentration (14 items) to the
east; sparse concentration (eight items) to the west. Three shovel
tests to the north were negative.
REMARKS: All observed material was lithic debitage and included a core
fragment of tan chalcedony and a tested cobble of grayish-white
quartzite.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: Evaluate subsurface circumstance in site area
with two to four 1m x 1m units.
PURPOSE OF TESTING: Determine site integrity, research potential and
component(s) present.
PRIORITY: Low.

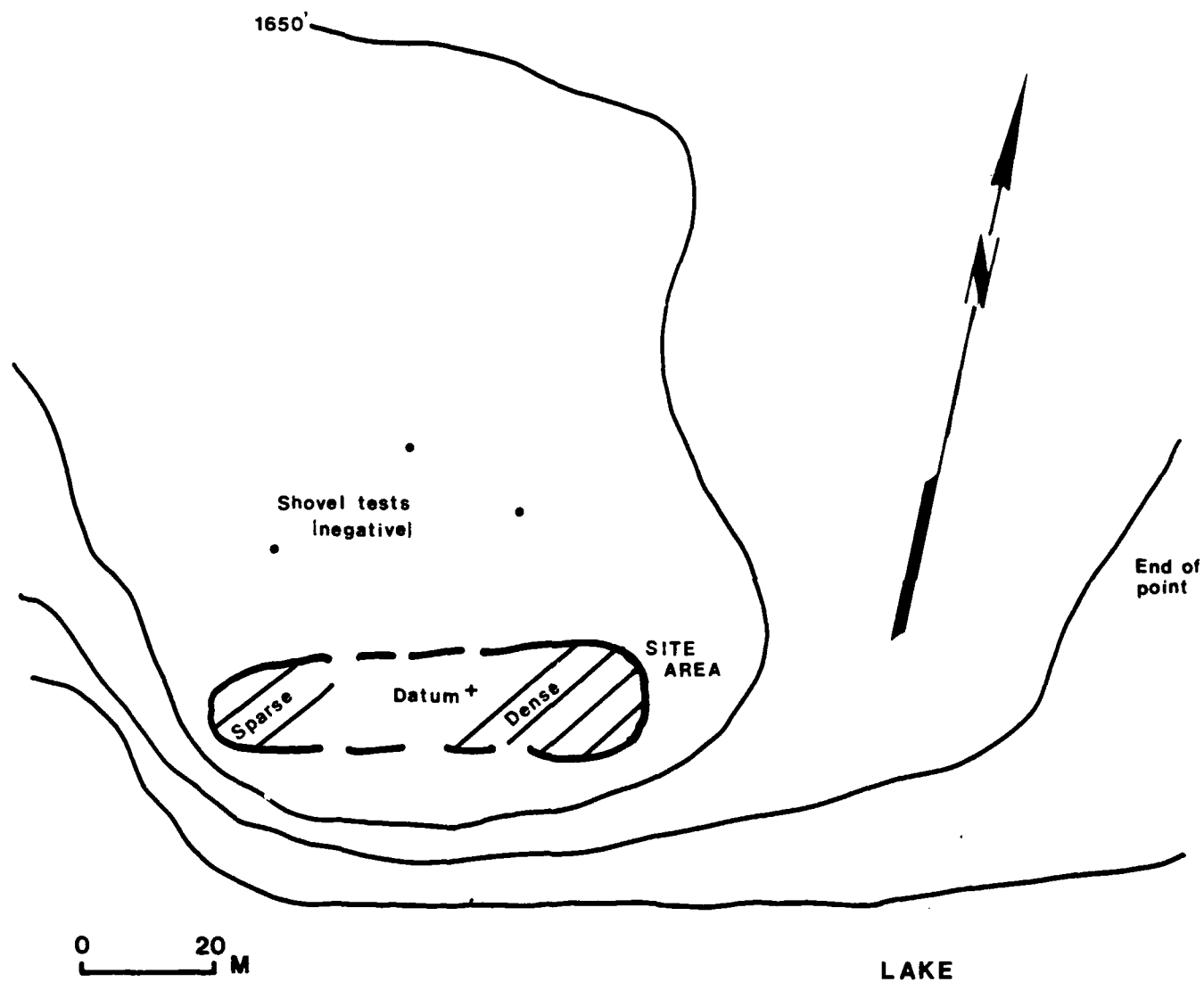


Figure 20. Plan of site 39ST264.

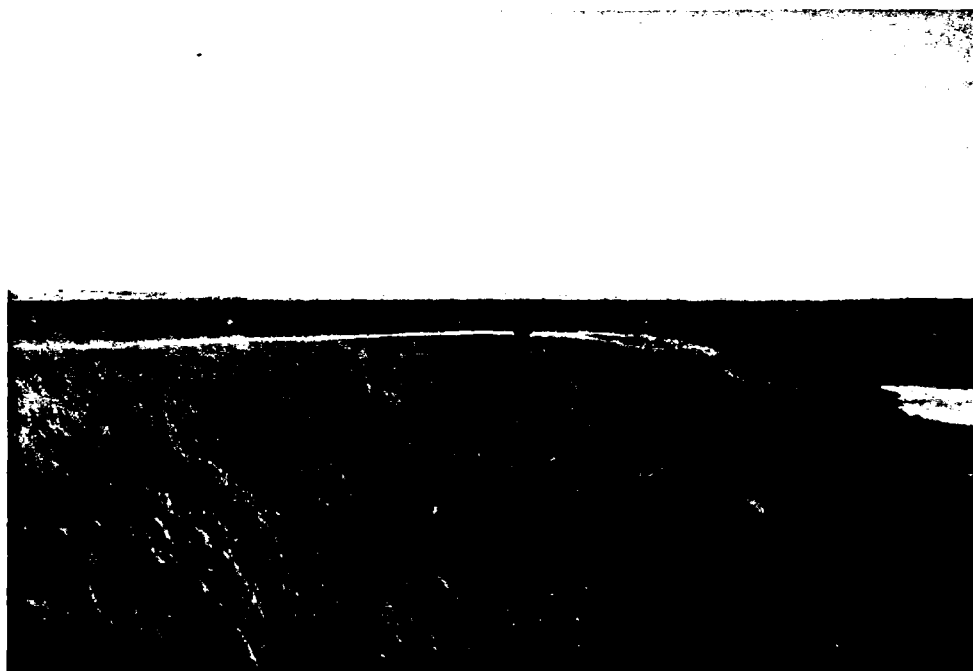


Plate 24. Site 39ST264, facing NE.

SITE NUMBER: 39ST265 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 21 PLATE(S): 25
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 54m N-S x 45m E-W - 0.24ha.
TOPOGRAPHY: On a triangular area at the northeast end of Little Flat, a
large old terrace remnant.
ELEVATION: 526m.
VIEW (degree): 360. VIEW (distance): 1-5 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown fine silt.
VEGETATION: Buffalograss.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Intermittent stream - 408m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Transverse scraper produced on partially-patinated
chalcedony; transverse scraper produced on mottled gray and brown
agatized chert.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Transverse scraper, agatized chert;
2: Transverse scraper, chalcedony; 3: 3m diameter area of FCR and tooth
enamel.
REMARKS: Thirty lithic items were observed as well as FCR, battered
cobbles and tooth enamel fragments. Debitage consisted of 10
chalcedony, one chert, one quartz and five quartzite items; cores
included four of chalcedony, two of chert, two of quartzite and one of
petrified wood. In addition to the two collected tools, a bifacially
worked fragment of gray chalcedony and a bifacially worked pebble of
brown quartzite were observed.
IMPACTS: Slight slope wash.

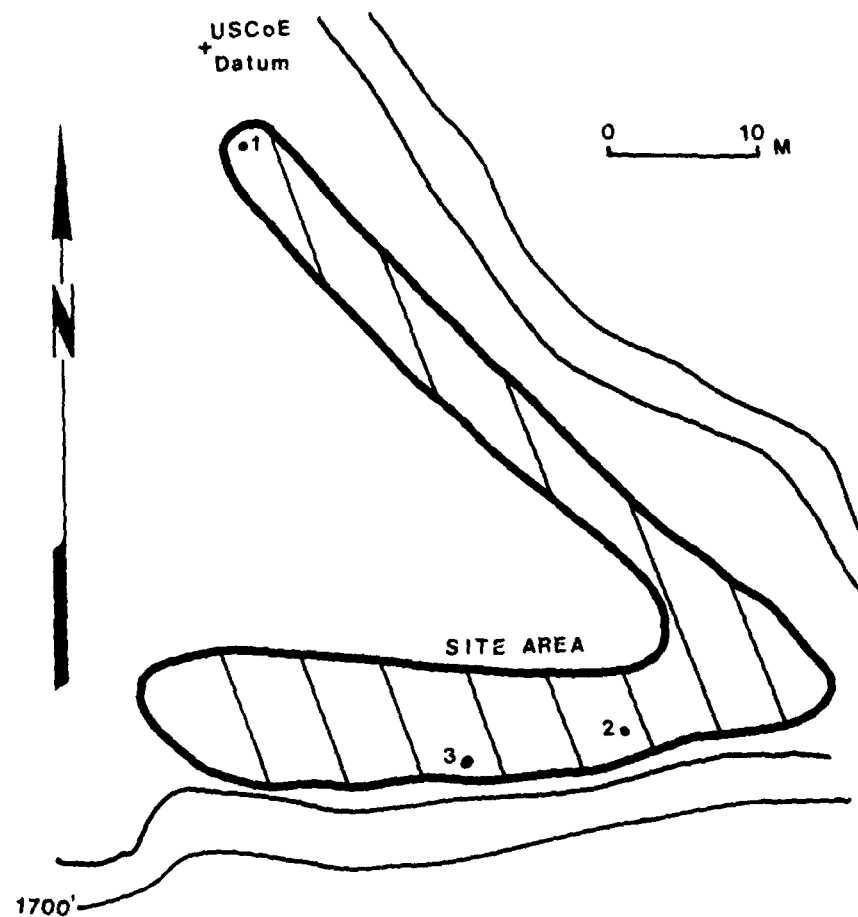


Figure 21. Plan of site 39ST265.



Plate 25. Site 39ST265, facing E.

RECOMMENDATIONS/TESTING: Evaluate the possibility of a feature in the area of the FCR/tooth enamel and assess general subsurface integrity. Two to four 1m x 1m units are considered minimal for testing the site.

PURPOSE OF TESTING: To address site integrity, research potential and component(s) present; specifically, to investigate the area of FCR. If a hearth is located, obtain carbon for dating.

PRIORITY: Low.

SITE NUMBER: 39ST266 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 22 PLATE(S): 26
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 45m N-S x 25m E-W - 0.1125ha.
TOPOGRAPHY: On the edge of Little Flat, a large old terrace remnant.
Material located mostly on the sloping ridge base of the west side of
the flat.
ELEVATION: 530m.
VIEW (degree): 360. VIEW (distance): 3-7 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown fine sandy silt.
VEGETATION: Buffalograss, yucca on ridge slope; wild oats in field on
Little Flat.
SURFACE VISIBILITY: 60%.
NEAREST WATER: Minneconjou Creek - 600m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Twenty-two lithic items were observed, including a bifacially
worked opaque chalcedony fragment, nine cores (two chalcedony, three
chert, one quartzite, one mudstone, two silicified sediment), and 12
items of debitage (six chalcedony, three chert, two quartzite, one plate
chalcedony).
IMPACTS: Slight slope wash.
RECOMMENDATIONS/TESTING: Determine subsurface integrity with one to two
1m x 1m units.
PURPOSE OF TESTING: To evaluate site integrity and research potential
and to determine site component(s).
PRIORITY: Low.

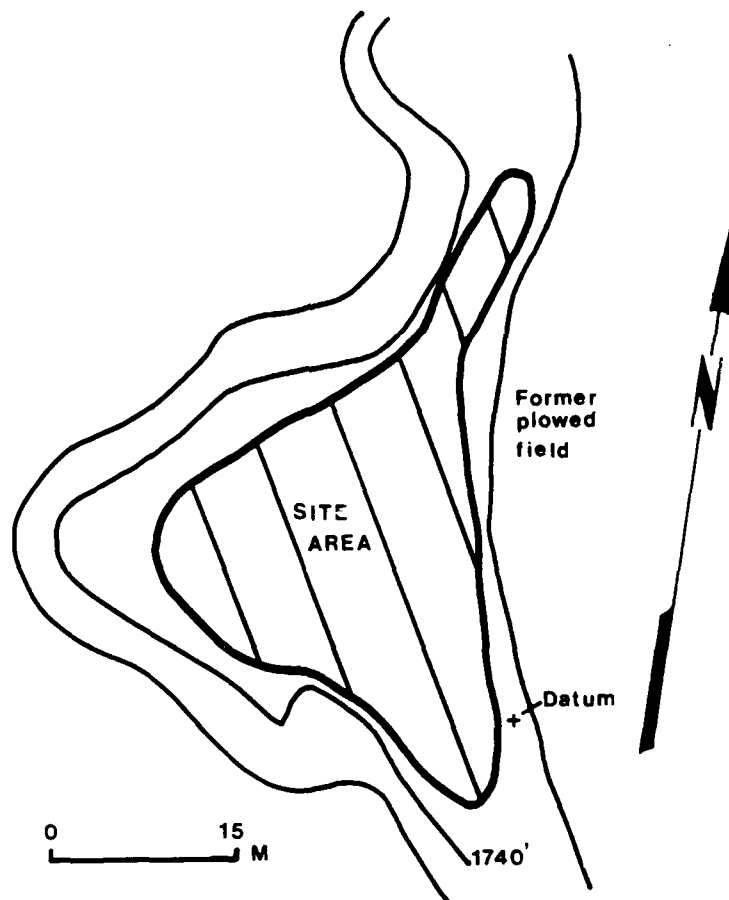


Figure 22. Plan of site 39ST266.

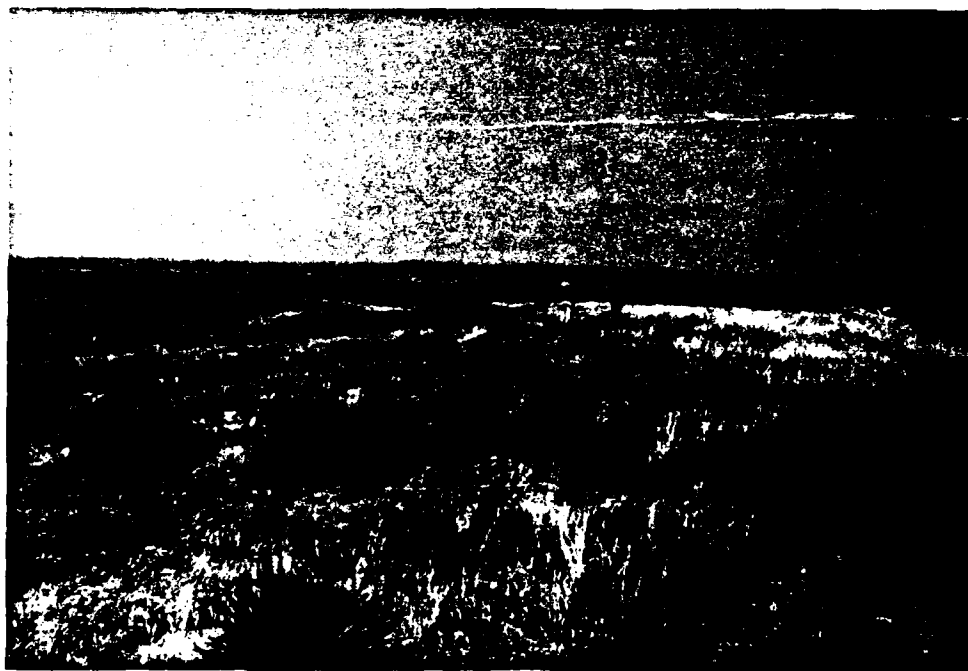


Plate 26. Site 39ST266, facing NW.

SITE NUMBER: 39ST267 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 23 PLATE(S): 27
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter (with historic/recent isolated find).
SITE COMPONENT: Unknown.
SITE SIZE: 60m N-S x 20m E-W - 0.12ha.
TOPOGRAPHY: On a low rise on the first terrace of Minneconjou Creek.
ELEVATION: 494m.
VIEW (degree): 360. VIEW (distance): 1-3 miles.
STRATA AND DEPTH: Unknown; soil is a brown sandy loam with gravel and
pebbles.
VEGETATION: Buffalograss, prickly pear.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Minneconjou Creek - 60m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Twelve lithic items were observed, including a biface fragment
of semi-opaque chalcedony and a retouched flake of dark gray quartzite.
Debitage was comprised of seven chalcedony pieces and three chert items.
The historic/recent isolated find consisted of two pieces of a metal
strap $\frac{1}{2}$ " wide and $2\frac{1}{2}$ " long with a notch on the end.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: Determine subsurface integrity by excavating
one to two 1m x 1m units.
PURPOSE OF TESTING: Evaluate site integrity, research potential and
component(s) present.
PRIORITY: Low.

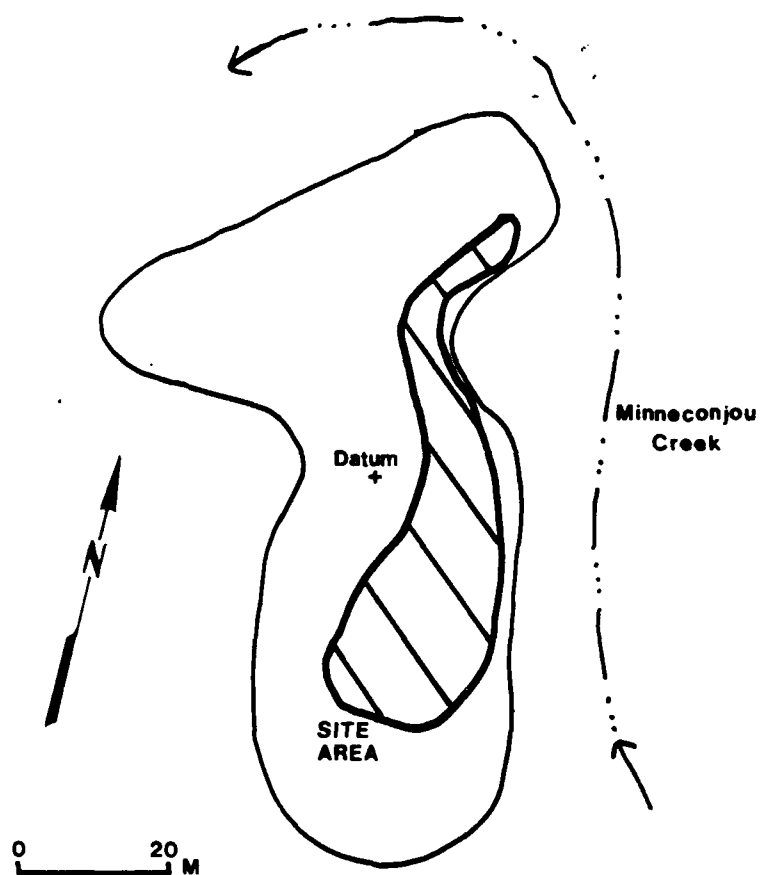


Figure 23. Plan of site 39ST267.



Plate 27. Site 39ST267, facing WNW.

SITE NUMBER: 39ST268 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 24 PLATE(S): 28
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 1.2m N-S x 0.75m E-W.
TOPOGRAPHY: At the end of a ridge spur or extension.
ELEVATION: 513m.
VIEW (degree): 180. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a blocky gray silt and gravel.
VEGETATION: Sparse wheatgrass, silver sagebrush.
SURFACE VISIBILITY: 60%.
NEAREST WATER: Minneconjou Creek - 600m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn is comprised of 23 fist-sized to double
fist-sized cobbles, 1.2m N-S x 0.75m E-W.
REMARKS: No associated cultural material was observed.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the
cairn is to be disturbed. In that circumstance, mitigate the site.
PURPOSE OF TESTING: To determine the nature/function of the cairn.
PRIORITY: Low.

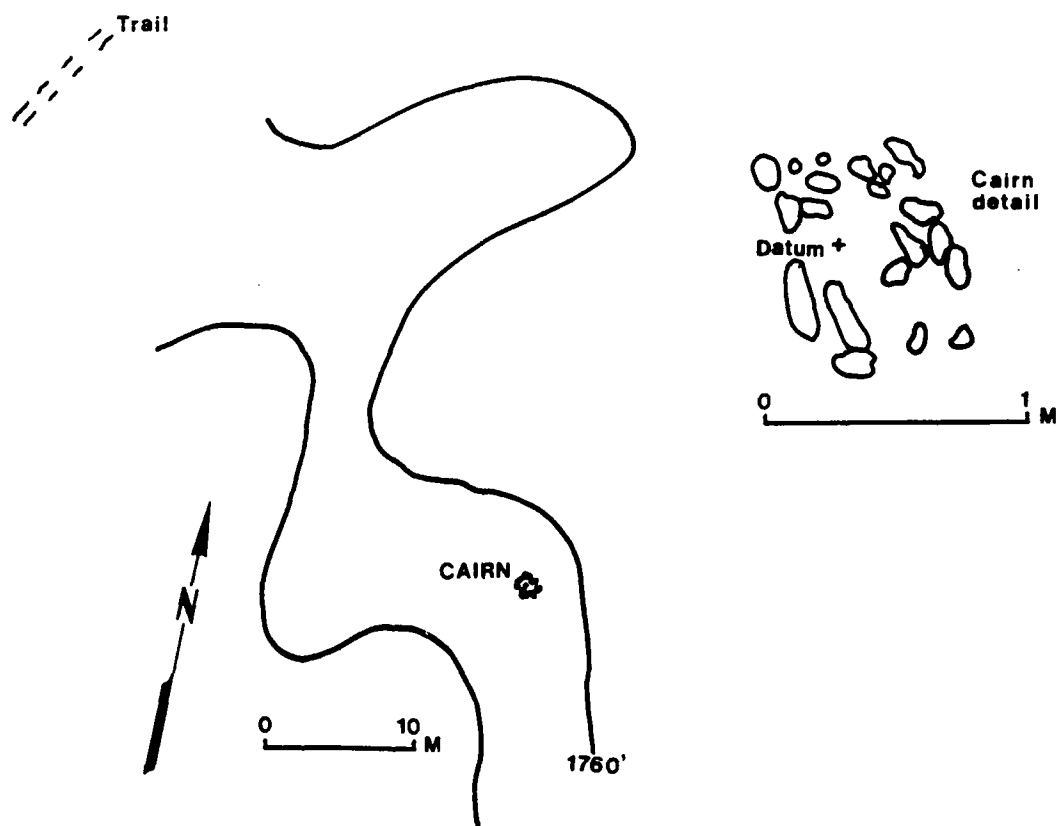


Figure 24. Plan of site 39ST268.



Plate 28. Stone setting at site 39ST268, facing N.

SITE NUMBER: 39ST269 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 25 PLATE(S): 29
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Possible grave depressions/burials with artifact scatter.
SITE COMPONENT: Unknown historic.
SITE SIZE: 12m N-S x 2m E-W.
TOPOGRAPHY: At a prominent point end overlooking the confluence of
Minneconjou Creek and the Cheyenne River.
ELEVATION: 530m.
VIEW (degree): 245. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a light gray sand/silt with gravels
and pebbles.
VEGETATION: Bunchgrass, prickly pear, native forbs.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Cheyenne River - 550m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Two square cut iron nails.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: South depression: 1.55m x 1.0m. Central
depression: 1.25m x 1.0m. North depression: 1.85m x 1.3m.
REMARKS: The following items were observed: six-seven square cut
nails, a wire loop, 24 seed beads on an anthill (white, red, blue and
green in color), a Stage I biface of red chalcedony, two retouched
flakes of tan chert, a tested cobble of tan chert, a tested cobble of
Tongue River silica, seven chert flakes and a quartzite flake.
IMPACTS: Slight - surface erosion, anthill.
RECOMMENDATIONS/TESTING: The aim is to determine if these depressions
are graves, and, if so, whether the interments are still present. The
investigation should begin with further attempts to locate records on
this area. If no records exist, use methods of minimal impact (such as
coring) to test the depressions. If the depressions are not burials,

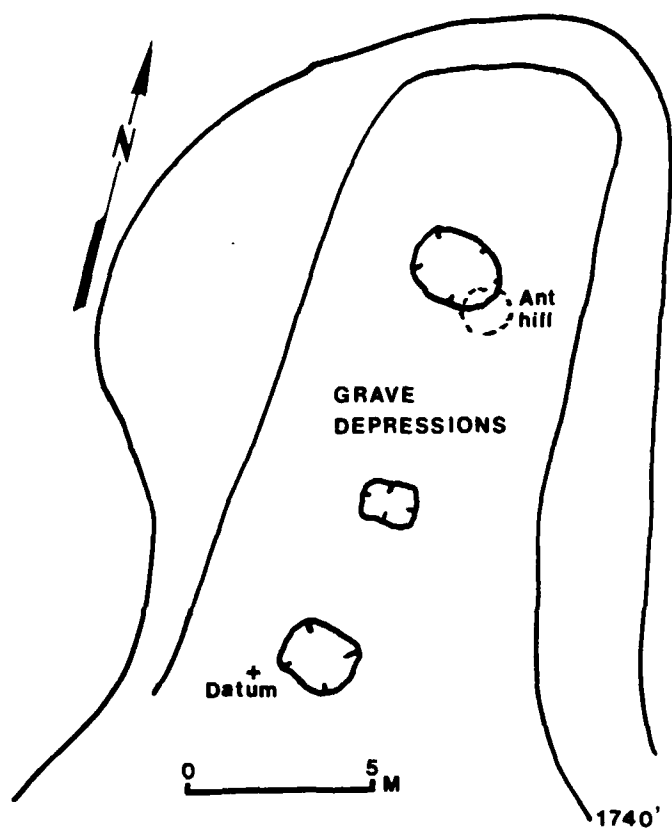


Figure 25. Plan of site 39ST269.



Plate 29. Site 39ST269, facing N.

excavate a single 1m x 1m unit to determine the nature of the depressions and the component(s) present.

The site is not within the Cheyenne River Indian Reservation boundaries today and is not listed in the examined U.S. Army Corps of Engineers Cemetery Relocation Records for Lake Oahe, Stages I and III (U.S. Army Corps of Engineers 1958).

PURPOSE OF TESTING: To evaluate site function and integrity.

PRIORITY: Medium.

SITE NUMBER: 39ST270 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 26 PLATE(S): 30
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 7m N-S x 7m E-W - 49m².
TOPOGRAPHY: On a sloping apron/hillside descending into a bay.
ELEVATION: 497m.
VIEW (degree): 45. VIEW (distance): Generally less than ½ mile.
STRATA AND DEPTH: Unknown; soil is a blocky gray silt with small
pebbles.
VEGETATION: Tall rye grass, curlycup gumweed.
SURFACE VISIBILITY: 60%.
NEAREST WATER: Intermittent stream - 70m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Transverse scraper produced on gray porcelanite.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: In addition to the collected transverse scraper, the following
seven lithic items were observed: a bifacially worked fragment of plate
chalcedony, a retouched fragment of plate chalcedony, a tested cobble
and a tested fragment of plate chalcedony, a shatter of purple
chalcedony, a secondary flake of mottled gray chert and a tertiary flake
of brown petrified wood.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: Focus on defining the subsurface integrity
with a minimum of one to two 1m x 1m units.
PURPOSE OF TESTING: Define site integrity, research potential,
component(s), depth of deposits and areal extent.
PRIORITY: Low.

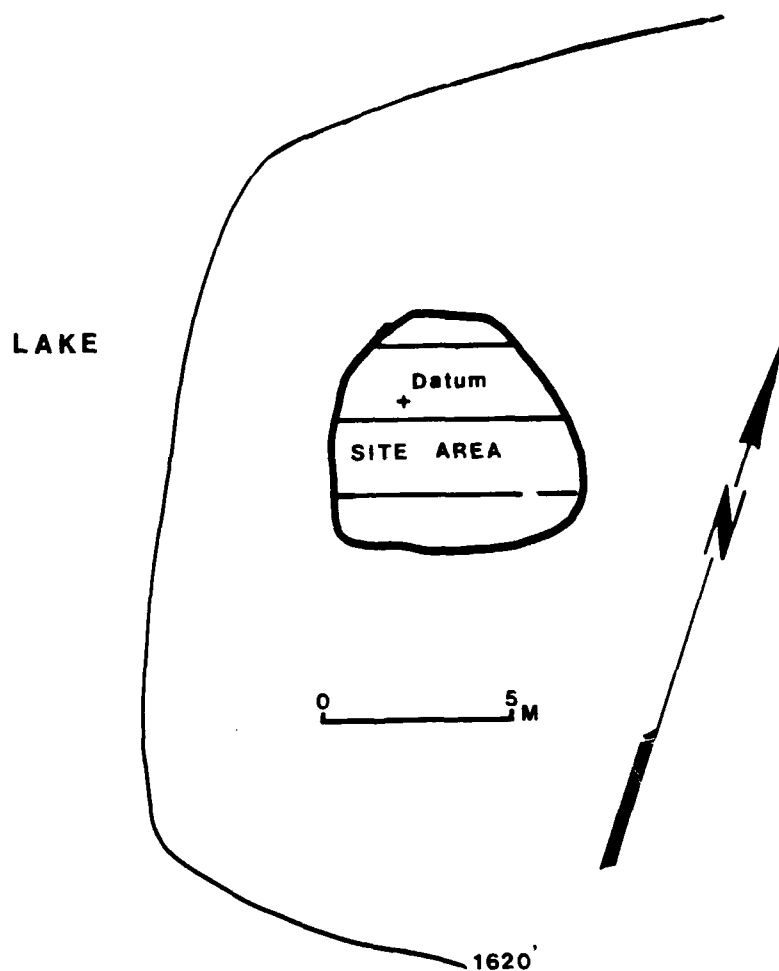


Figure 26. Plan of site 39ST270.



Plate 30. Site 39ST270, facing ESE.

SITE NUMBER: 39ST271 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 27 PLATE(S): 31
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter (and recent isolated find).
SITE COMPONENT: Unknown.
SITE SIZE: 45m N-S x 20m E-W - 0.09ha.
TOPOGRAPHY: At end of a point on an especially prominent, almost
isolated, knob at the end of a long ridge complex/dissected terrace.
ELEVATION: 503m.
VIEW (degree): 360. VIEW (distance): 1-7 miles.
STRATA AND DEPTH: Unknown/surficial; soil is a brown, very fine silt.
Good exposure suggests the site is a surface manifestation.
VEGETATION: Buffalograss, prickly pear.
SURFACE VISIBILITY: 60%.
NEAREST WATER: Intermittent stream - 70m.
CONDITION: Disturbed by slope erosion.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Not eligible.
REMARKS: A biface fragment of white oolitic chert and six items of
debitage (a primary flake of brown chert, a secondary flake of cloudy
chalcedony, primary flakes of red and brown chert, a tertiary flake of
red chert and a shatter of brown chert) were observed. An isolated 50-
caliber brass cartridge was also present.
IMPACTS: Surface erosion.
RECOMMENDATIONS/TESTING: The limited amount of cultural material
observed, despite excellent surface visibility, indicates low research
potential. No further work is recommended.
PRIORITY: Low.

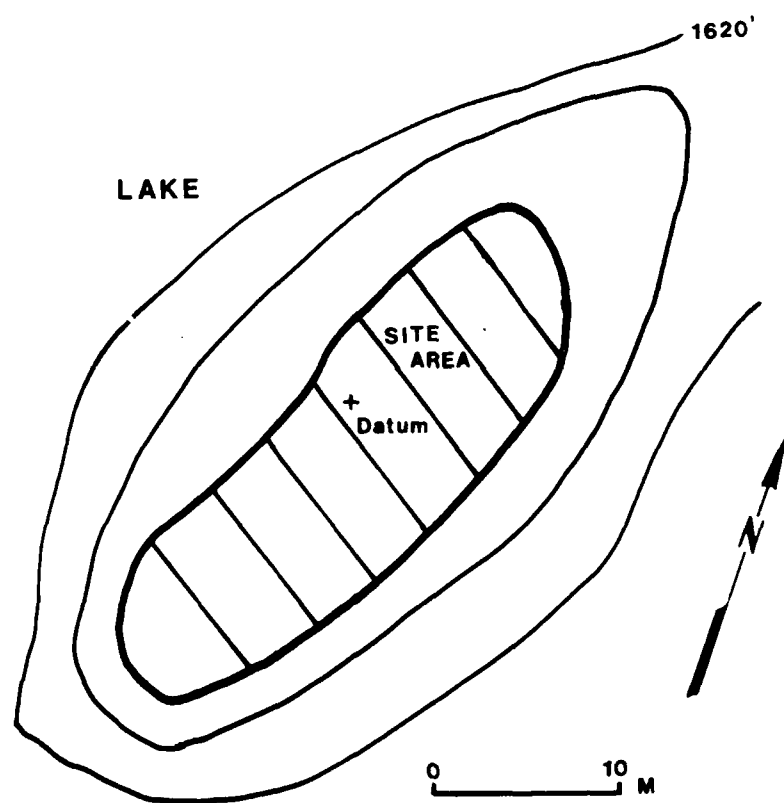


Figure 27. Plan of site 39ST271.



Plate 31. Site 39ST271, facing SW.

SITE NUMBER: 39ST272 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 28 PLATE(S): 32
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 17m N-S x 22m E-W - 0.04ha.
TOPOGRAPHY: On the upper surface of a small erosional remnant/ridge
just to the south of a wooded area.
ELEVATION: 512m.
VIEW (degree): 180. VIEW (distance): 1-7 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown fine silt with small
pebbles.
VEGETATION: Buffalograss, silver sagebrush, skunkbrush.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Brush Creek - 550m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Tertiary flake of banded brown chert with bifacial
reduction on the left lateral margin; bifacially flaked shatter of gray
chert; basal fragment of a biface produced on a tabular chert flake.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Forty lithic items and FCR (granite, plate chalcedony) were
observed in the site area. In addition to the collected tools, two
bifaces were observed, one produced on chert and the other on Tongue
River silica. The other 35 items of debitage included six produced on
chalcedony, 23 on chert, three on quartzite, one on petrified wood and
two on porcelanite.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: Examine the site's subsurface integrity with
one to two 1m x 1m units.
PURPOSE OF TESTING: Evaluate site integrity and research potential.
PRIORITY: Medium.

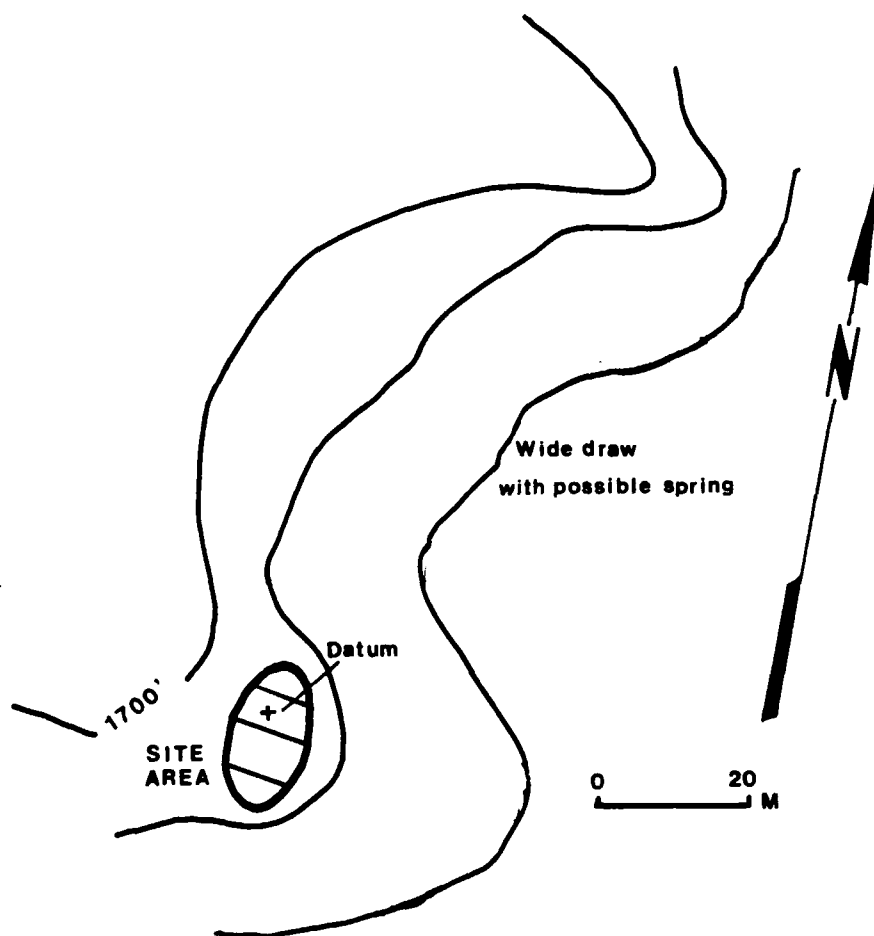


Figure 28. Plan of site 39ST272.



Plate 32. Site 39ST272, facing N.

SITE NUMBER: 39ST273 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 29 PLATE(S): 33
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska and private (Wayne Tibbs). Most of the site, including the
depression and prehistoric artifact scatter, is on private land.
SITE TYPE: Prehistoric artifact scatter and a depression amid a
historic artifact scatter.
SITE COMPONENT: Historic and unknown.
SITE SIZE: 75m N-S x 50m E-W - 0.375ha.
TOPOGRAPHY: Along the edge of an upper terrace.
ELEVATION: 521m.
VIEW (degree): 180. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown fine silt.
VEGETATION: Buffalograss, tall grass, yucca.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Brush Creek - 500m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Area to west of Corps marker on private land.
Depression measures 1.68m N-S x 1.65m E-W and is 30cm deep.
REMARKS: The material within the project area (east of the Corps
marker) consisted of broken window glass and large iron nails. Material
observed on private land in the area marked "Historic debris" included a
Herters 303 best brass cartridge, an R-P .30-.30 Winchester brass
cartridge, five thin sheet metal discs 1½" in diameter, glazed
stoneware, a blue-patterned dinner ware fragment (transfer ware) and one
prehistoric secondary flake of petrified wood. In the area marked
"Prehistoric material" the following items were observed: two brown
quartzite tertiary flakes, a red chert tertiary flake, a brown chert
tertiary flake and a cobble core of red chert.

The historic materials faintly suggest a late nineteenth or early
twentieth century origin. If this was a habitation site, one would
expect more artifacts of a domestic nature, but there is really
insufficient evidence for a judgment to be inferred.

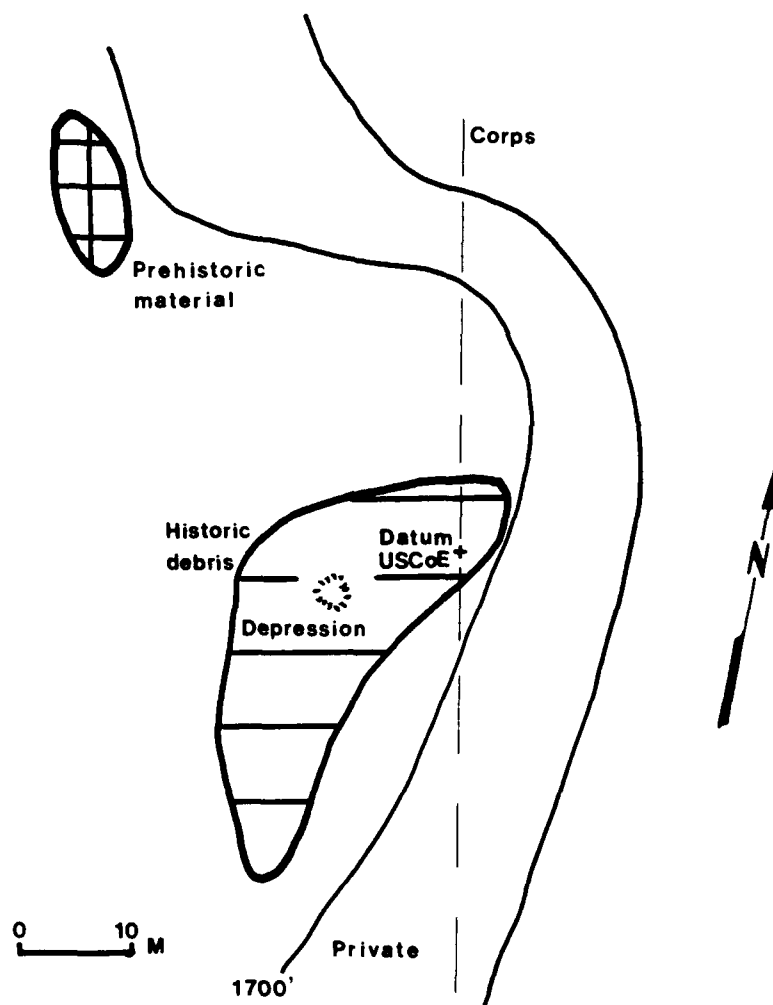


Figure 29. Plan of site 39ST273.

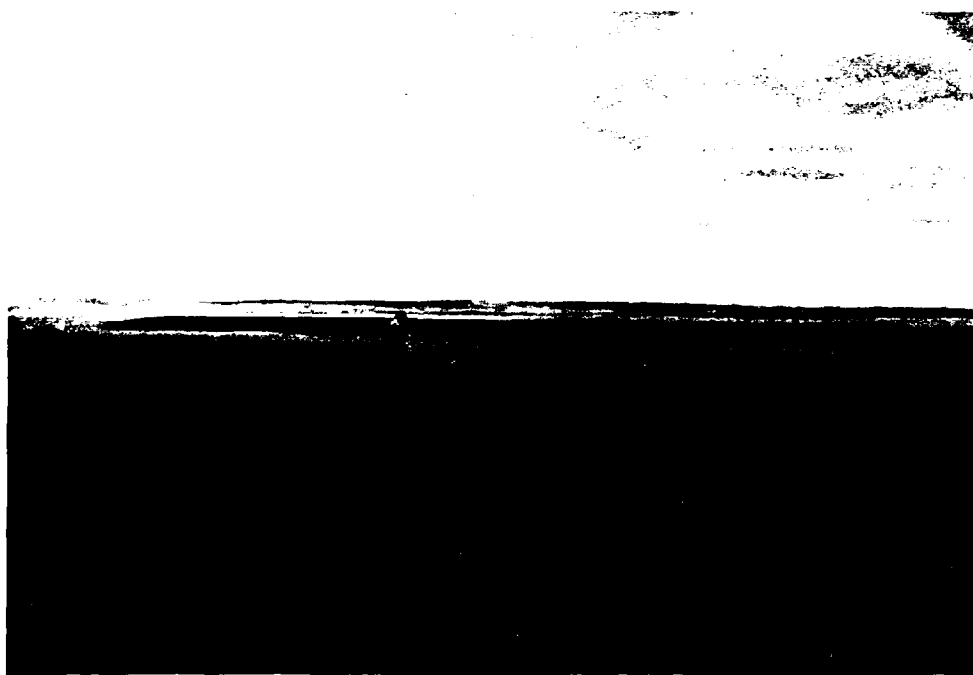


Plate 33. Site 39ST273, facing NE, Corps marker on right.

IMPACTS: Relatively undisturbed.

RECOMMENDATIONS/TESTING: No further work is recommended for the site area located on Corps land. If examined, the site area on private land should be evaluated for subsurface integrity and the depression should be tested to determine its function/cultural affiliation.

PURPOSE OF TESTING: Assess site integrity, research potential and nature of depression.

PRIORITY: Low.

SITE NUMBER: 39ST274 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 30 PLATE(S): 34
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 30m N-S x 60m E-W - 0.18ha.
TOPOGRAPHY: At the end of a point on the edge of a terrace that has now
developed a crack and may soon slump.
ELEVATION: 506m.
VIEW (degree): 360. VIEW (distance): 1-5 miles.
STRATA AND DEPTH: Unknown; soil is a very fine grayish-brown silt.
VEGETATION: Bunchgrass, yucca.
SURFACE VISIBILITY: 60%.
NEAREST WATER: Brush Creek - 506m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Seven lithic items were observed at this site in addition to
some FCR (silicified sediment). These artifacts consisted of a Stage I
biface fragment of white chert, a retouched fragment of plate
chalcedony, a core fragment of brown quartzite, two secondary flakes of
brown chalcedony and one of red chert, and a shatter of white chert.
IMPACTS: Potentially severe - slumping threatens to remove most of the
suspected site area.
RECOMMENDATIONS/TESTING: Two to four 1m x 1m test units should be
placed in the area threatened by slumping.
PURPOSE OF TESTING: To evaluate site integrity, research potential and
components present.
PRIORITY: High.

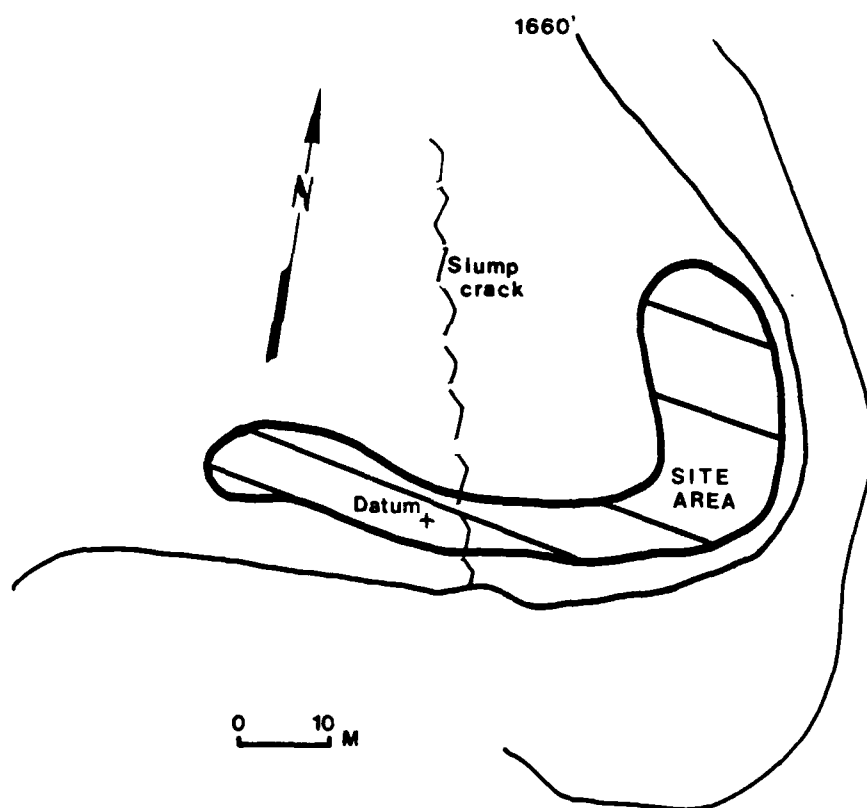


Figure 30. Plan of site 39ST274.



Plate 34. Site 39ST274, facing SE.

SITE NUMBER: 39ST275 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 31 PLATE(S): 35
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 25m N-S x 10m E-W ~ 0.025ha.
TOPOGRAPHY: On the end of a small point at the edge of a terrace and
down its front slope.
ELEVATION: 506m.
VIEW (degree): 360. VIEW (distance): 2-7 miles.
STRATA AND DEPTH: Unknown; soil is a light brown fine silt.
VEGETATION: Buffalograss.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Cheyenne River - 500m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Nineteen lithic items were observed. These were comprised of
a single tool - a biface tip of white chert, a core fragment of white
chert, a core of brown chalcedony and 16 pieces of debitage (four
produced on chalcedony, nine on chert, one on quartzite and two on
porcelanite).
IMPACTS: Moderate slope wash.
RECOMMENDATIONS/TESTING: Two to three 1m x 1m units should be
excavated.
PURPOSE OF TESTING: To determine subsurface integrity and research
potential.
PRIORITY: Low.

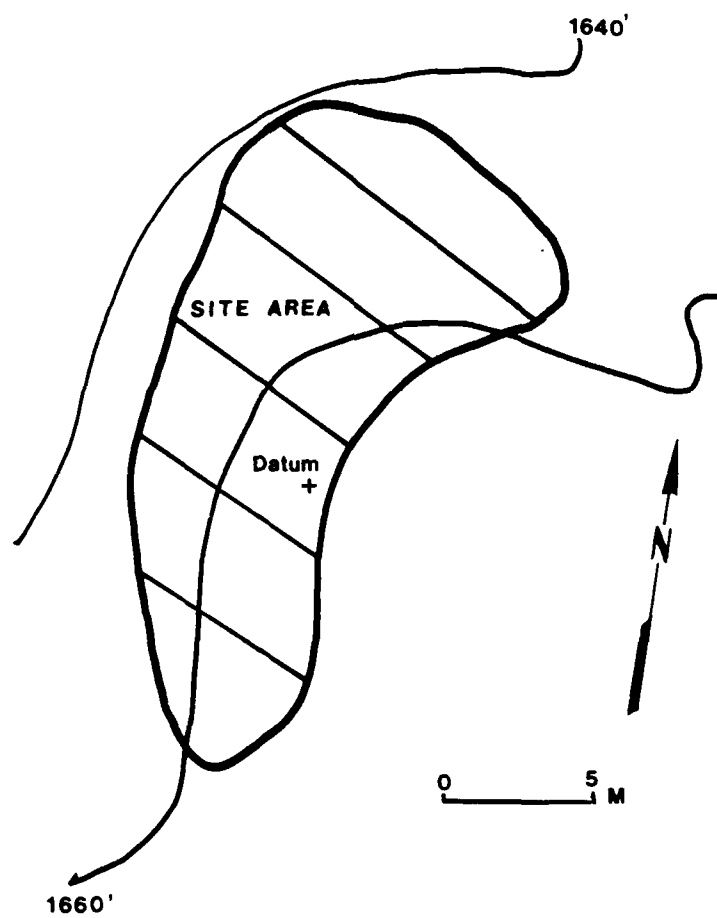


Figure 31. Plan of site 39ST275.

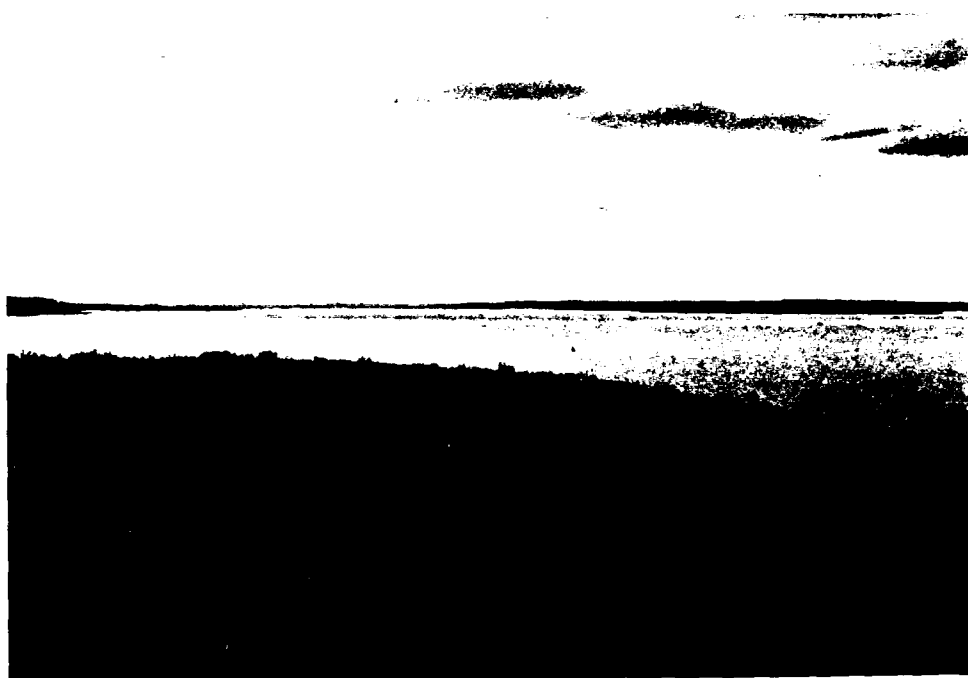


Plate 35. Site 39ST275, facing WNW.

SITE NUMBER: 39ST276 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 32 PLATE(S): 36
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska and private.
SITE TYPE: Artifact scatter (with isolated recent debris).
SITE COMPONENT: Unknown.
SITE SIZE: 40m N-S x 70m E-W - 0.28ha.
TOPOGRAPHY: On a subsidiary protrusion along the edge of a prominent
ridge system.
ELEVATION: 529m.
VIEW (degree): 360. VIEW (distance): 3-7 miles.
STRATA AND DEPTH: Unknown; soil is a very fine gray silt.
VEGETATION: Buffalograss, forbs, tall grass.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Sand Creek (intermittent) - 250m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Transverse scraper on a primary flake produced on
partially-patinated brown translucent chalcedony.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Thirty-three lithic items in addition to FCR and three
cartridges (a .243 and two 30.06) were observed. In addition to the
collected scraper, a bifacially retouched flake of brown chalcedony, a
retouched flake of white chert, a core of purple quartzite and a tested
cobble of tan chert were present. The 28 items of debitage consisted of
four chalcedony, 14 chert, eight quartzite and two petrified wood
pieces.
IMPACTS: Slight slope wash and track crossing site area.
RECOMMENDATIONS/TESTING: Two to four 1m x 1m test units should be
excavated.
PURPOSE OF TESTING: To evaluate the site integrity and research
potential.
PRIORITY: Medium.

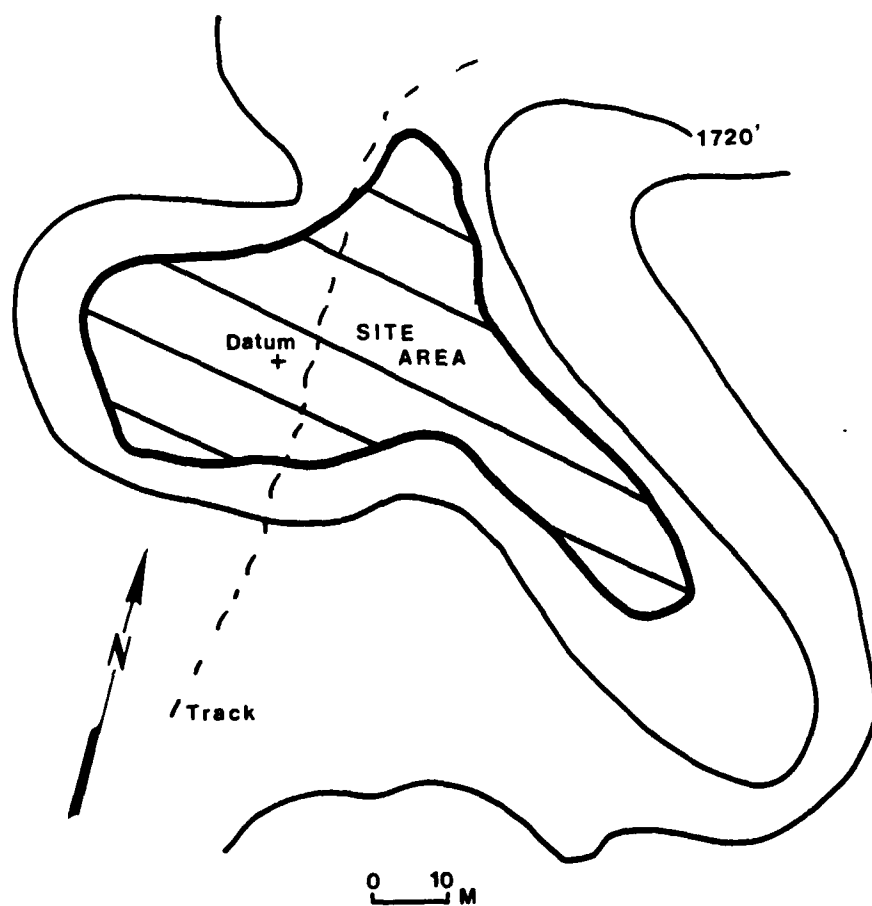


Figure 32. Plan of site 39ST276.



Plate 36. Site 39ST276, facing E.

SITE NUMBER: 39ST277 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 33 PLATE(S): 37
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter (and isolated shell casing).
SITE COMPONENT: Unknown.
SITE SIZE: 20m x 20m - 0.04ha.
TOPOGRAPHY: On a small knob on a ridge.
ELEVATION: 514m.
VIEW (degree): 180. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown gravelly loam.
VEGETATION: Mixed grass prairie.
SURFACE VISIBILITY: 60%.
NEAREST WATER: Intermittent stream - 240m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Isolated find - brass shell casing, 44 W.C.F.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Eleven lithic items and some tooth enamel fragments were
noted. The lithics consisted of three tested cobbles and a tested
cobble fragment of red chalcedony, a primary flake of brown chalcedony,
two secondary flakes of tan chalcedony, one secondary flake of red
chalcedony, one secondary flake of brown chert, one secondary flake of
brown quartzite and a shatter of red chalcedony.
IMPACTS: Moderate slope and surface wash.
RECOMMENDATIONS/TESTING: Evaluate subsurface integrity with one to two
1m x 1m units.
PURPOSE OF TESTING: To evaluate the site's integrity and research
potential.
PRIORITY: Low.

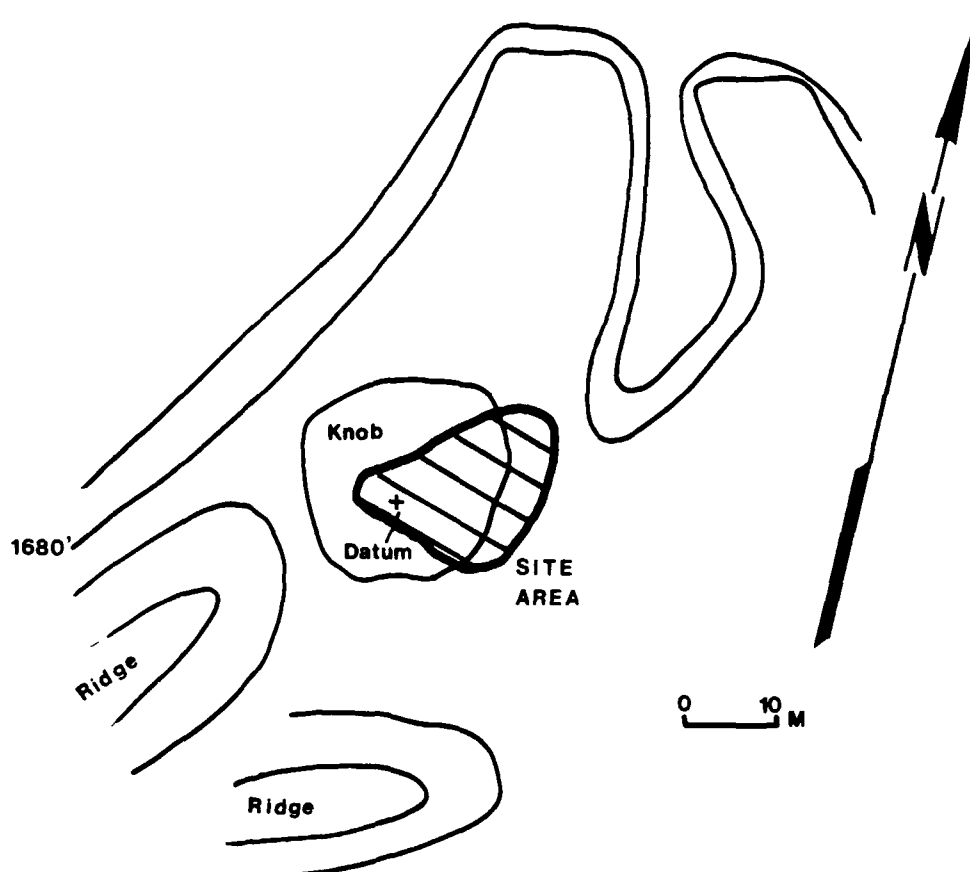


Figure 33. Plan of site 39ST277.

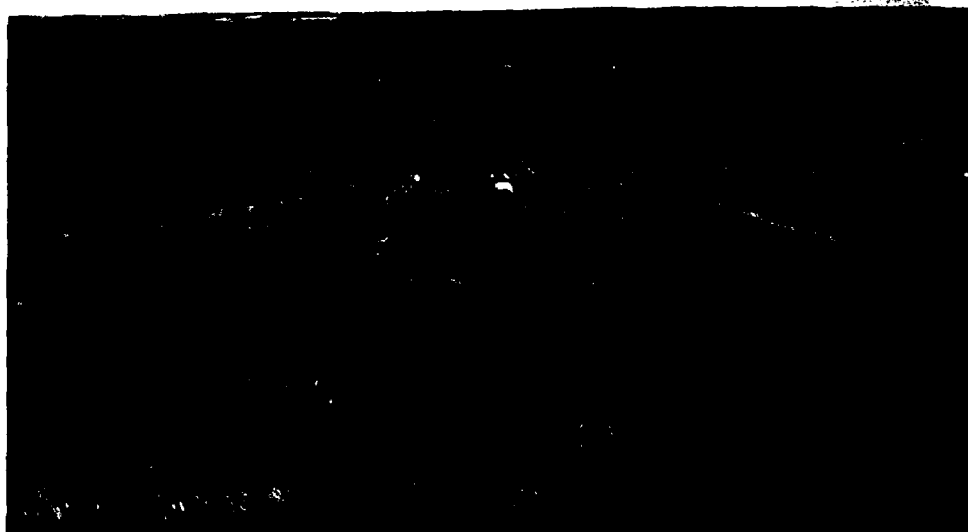


Plate 37. Site 39ST277, facing N.

SITE NUMBER: 39ST278 SITE NAME: Das Ritter Site.
COUNTY: Stanley STATE: S.D. FIGURE(S): 34 PLATE(S): 38-41
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Plains Village.
SITE SIZE: 260m N-S x 60m E-W - 1.6ha.
TOPOGRAPHY: On a long narrow ridge/erosional remnant of an upper
terrace jutting out towards the confluence of Foster Creek and Cheyenne
River -- at the edge of the flat-topped terrace.
ELEVATION: 510m.
VIEW (degree): 360. VIEW (distance): 1-7 miles.
STRATA AND DEPTH: Soil is a fine gray silt. Cultural materials were
observed from 0-10cm b.s.
VEGETATION: Buffalograss, blue grama, wheatgrass, prickly pear, skunk-
brush.
SURFACE VISIBILITY: 20-80%; visibility was best along the two-track and
the terrace edge.
NEAREST WATER: Cheyenne River - 260m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Twenty-one items were collected including: a
chalcedony biface tip; a cloudy chalcedony prismatic flake with steep
unifacial flaking on the left lateral margin; an asymmetrical bifacial
knife of gray porcelanite; a biface midsection of plate chalcedony; a
Badlands knife fragment; a primary chert pebble with flaking on the
right and left lateral margins; a biface midsection of plate chalcedony;
a biface fragment of gray porcelanite; three plain ceramic bodysherds;
seven ceramic bodysherds with vertical cord impressions; a ceramic neck
sherd with incised diagonal lines and punctates; and two flat rimsherds
with indent punctates on the external rim edge and external cord
impressions.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.

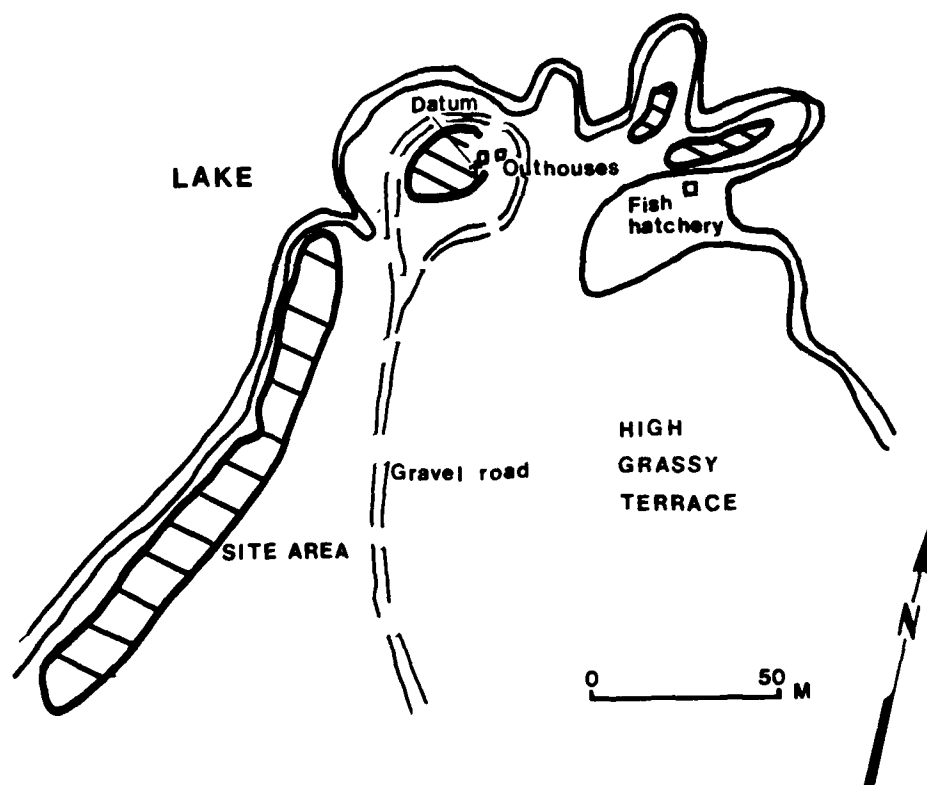


Figure 34. Plan of site 39ST278.

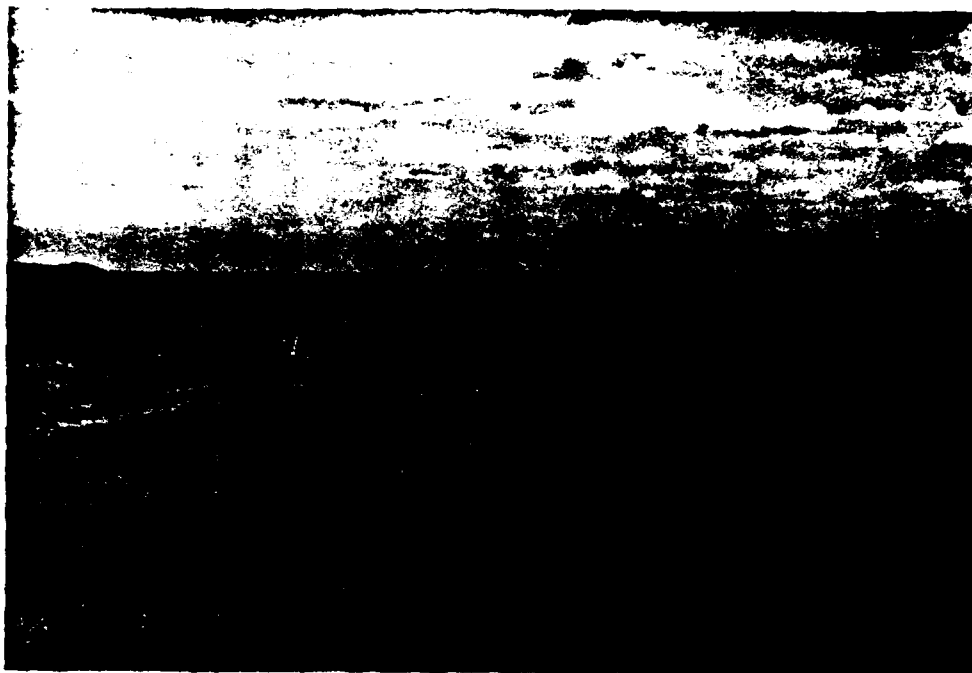


Plate 38. Overview of SE part of site 39ST278, facing E.

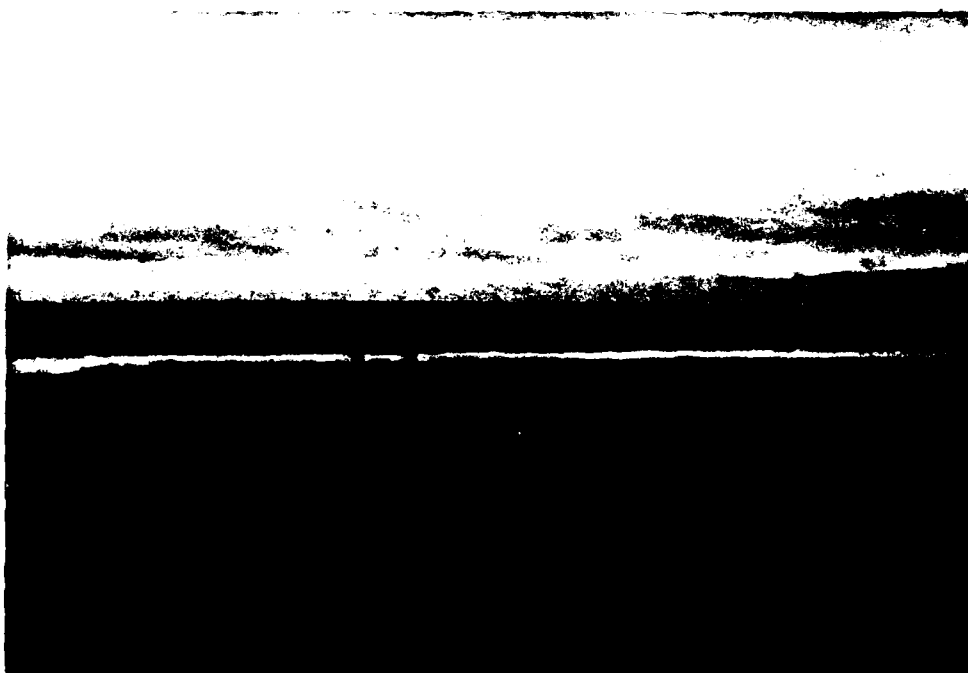


Plate 39. Site 39ST278, area of sparse scatter, facing N.



Plate 40. Site 39ST278, main concentration, facing SE.



Plate 41. View of site 39ST278 from boat, facing E.

REMARKS: All observed lithic tools were collected. Additionally, three cores/core fragments of chert and 43 items of debitage were noted. The debitage consisted of 15 chalcedony, four chert, 15 quartzite, one quartz, and eight jasper items. Other material observed included ceramics, bone, FCR and a battered and ground granite cobble.

IMPACTS: Severe - slope/cutbank erosion, two-tracks and recreation area.

RECOMMENDATIONS/TESTING: Systematic shovel testing to supplement four to six 1m x 1m units is recommended.

PURPOSE OF TESTING: To fully evaluate the integrity, extent and research potential of this site.

PRIORITY: High.

SITE NUMBER: 39ST279 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 35 PLATE(S): 42
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 2m N-S x 1m E-W.
TOPOGRAPHY: On ridge point/valley bluff.
ELEVATION: 512m.
VIEW (degree): 120. VIEW (distance): 1-3 miles.
STRATA AND DEPTH: Unknown; soil is a light brownish-gray clay.
VEGETATION: Mixed grass with bare ground.
SURFACE VISIBILITY: 30% (100% in areas of bare ground).
NEAREST WATER: Intermittent stream - 168m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn, 2m x 1m, formed of 15 rocks ranging from
15-25cm in diameter.
REMARKS: An old animal burrow lies nearby.
IMPACTS: Moderate - slope wash, animal burrow.
RECOMMENDATIONS/TESTING: No further work is recommended unless the
feature is to be impacted. In that circumstance, the site should be
mitigated.
PURPOSE OF TESTING: To ascertain the nature of the feature.
PRIORITY: Low.

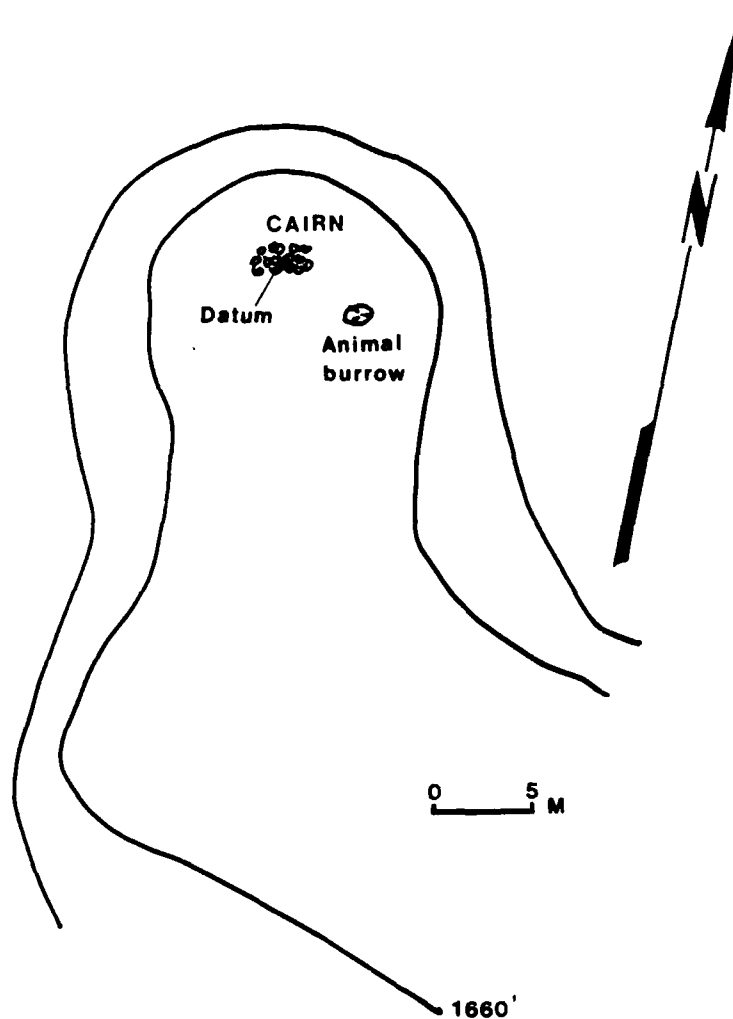


Figure 35. Plan of site 39ST279.



Plate 42. Site 39ST279, cairn, facing NNW.

SITE NUMBER: 39ST280 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 36 PLATE(S): 43
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Depressions and artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 125m N-S x 150m E-W - 1.875ha.
TOPOGRAPHY: On top of a bifurcated ridge forming the valley bluff.
ELEVATION: 506m.
VIEW (degree): 180. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a light brownish-gray clay.
VEGETATION: Mixed grasses.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Foster Creek - 400m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Depression, 3m x 2m x 30cm deep, oriented
NW-SE. A pink chalcedony primary flake was observed to the east of this
depression. 2: Depression, 1.5m in diameter and 15-20cm deep. A
retouched primary flake of red quartzite was observed to the north and a
red and tan chalcedony shatter was located to the southwest. 3:
Depression, 3.75m E-W x 3m N-S and 20cm deep. 4: Depression, 4.5m x
0.85m and 21cm deep (disturbed by animal burrows). 5: Depression, 2m x
0.8m and 20cm deep. 6: Oval depression, 1.15m x 0.85m and 10cm deep.
7: Depression, 1.35m x 1.0m and 15cm deep. Depressions 4 through 7 are
oriented approximately true north to south. Other lithic items observed
included a red chert tested cobble, a tertiary jasper flake, a secondary
flake of yellow chalcedony and a brown chalcedony shatter.
REMARKS: These depressions may be burials, but are not regularly spaced
or shaped. The burial hypothesis needs testing/research prior to
further formulation of management strategies for this site.
IMPACTS: Relatively undisturbed - some animal burrowing.

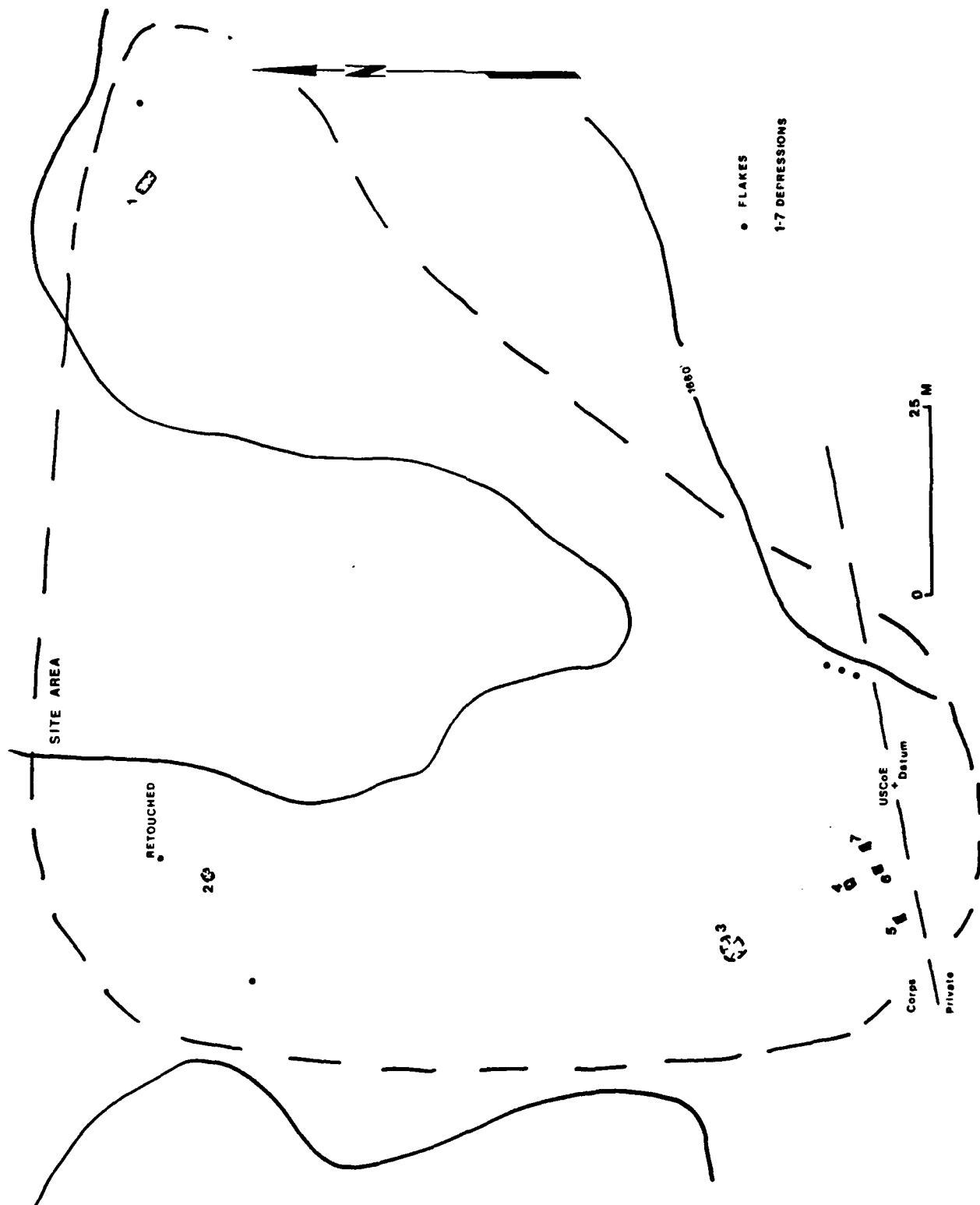


Figure 36. Plan of site 39ST280.



Plate 43. Site 39ST280, facing NE.

RECOMMENDATIONS/TESTING: Additional background research is needed to determine whether the site is a burial ground. If the research results are inconclusive, limited coring and/or shovel testing should be conducted to establish the nature of the depressions. If the depressions are not burials, more extensive excavation in the form of two to four 1m x 1m units should be undertaken.

PURPOSE OF TESTING: To establish the nature, function, integrity and components present at this site.

PRIORITY: Low.

SITE NUMBER: 39ST281 SITE NAME: Lindsay Cemetery.
COUNTY: Stanley STATE: S.D. FIGURE(S): 37 PLATE(S): 44
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cemetery.
SITE COMPONENT: Historic.
SITE SIZE: 20m N-S x 15m E-W - 0.03ha.
TOPOGRAPHY: Valley bluff at mouth of Sansarc Bay, along a saddle in a
ridge system.
ELEVATION: 518m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a brown silt loam.
VEGETATION: Mid-tall grasses, buffalograss, silver sagebrush, prickly
pear.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Sansarc Creek - 600m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Seven grave depressions. The largest measured 2m
x 1m and contained a rabbit skull.
REMARKS: Additional items observed at this site included a metal strap,
a purple glass jar base and two dentalium shells. Corps cemetery
relocation records (U.S. Army Corps of Engineers 1958) do not mention
this site and additional records searches have been unsuccessful in
locating any specific information about age and users.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: The site should be protected if it is
threatened by adverse effects. If the site must be impacted, then
further background research should be undertaken to attempt to establish
the names of the persons interred, and any remaining burials should be
exhumed and reinterred.
PRIORITY: Low.

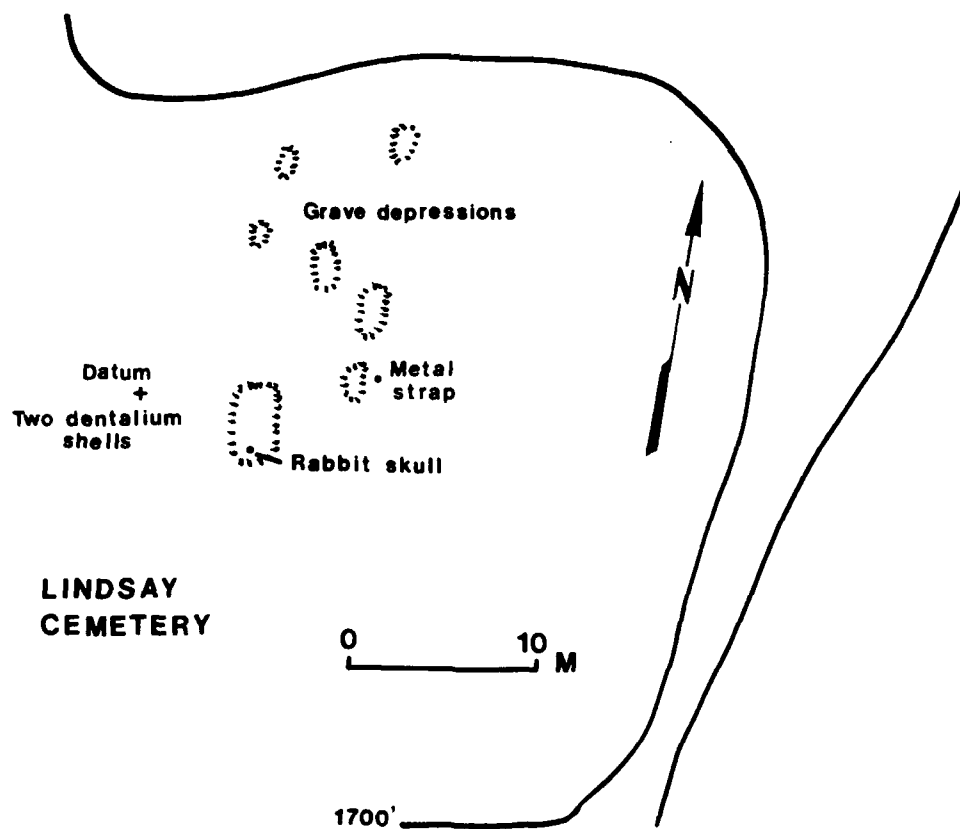


Figure 37. Plan of site 39ST281.

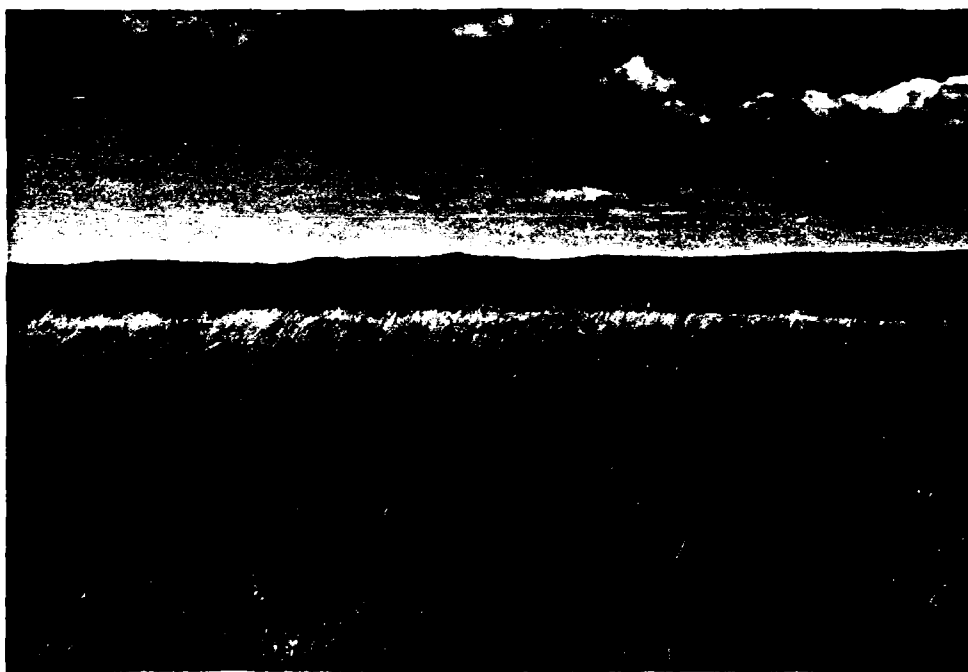


Plate 44. Site 39ST281, facing E.

SITE NUMBER: 39ST282 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 38 PLATE(S): 45
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 40m N-S x 10m E-W - 0.04ha.
TOPOGRAPHY: On top and along the edge of a semi-isolated terrace
remnant.
ELEVATION: 512m.
VIEW (degree): 220. VIEW (distance): 2-5 miles.
STRATA AND DEPTH: Unknown; soil is a fine brown silt.
VEGETATION: Buffalograss, silver sagebrush, yucca and prickly pear.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Cheyenne River - 400m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Site area and location of isolated tertiary cloudy
chalcedony flake.
REMARKS: Sixteen lithic items, in addition to some FCR and some tooth
enamel fragments, were observed at this site. The lithic items
consisted of a biface fragment of cream chert, two cores of brown
quartzite and 13 pieces of debitage (four produced on chalcedony, two on
chert and seven on quartzite).
A more recent activity area was noted in the vicinity of the
isolated flake. A red cardboard package of Trojans, a plastic comb and
a disposable lighter were observed.
IMPACTS: Moderate slope wash.
RECOMMENDATIONS/TESTING: Excavate two to three 1m x 1m units.
PURPOSE OF TESTING: To evaluate the site's integrity and research
potential.
PRIORITY: Low.

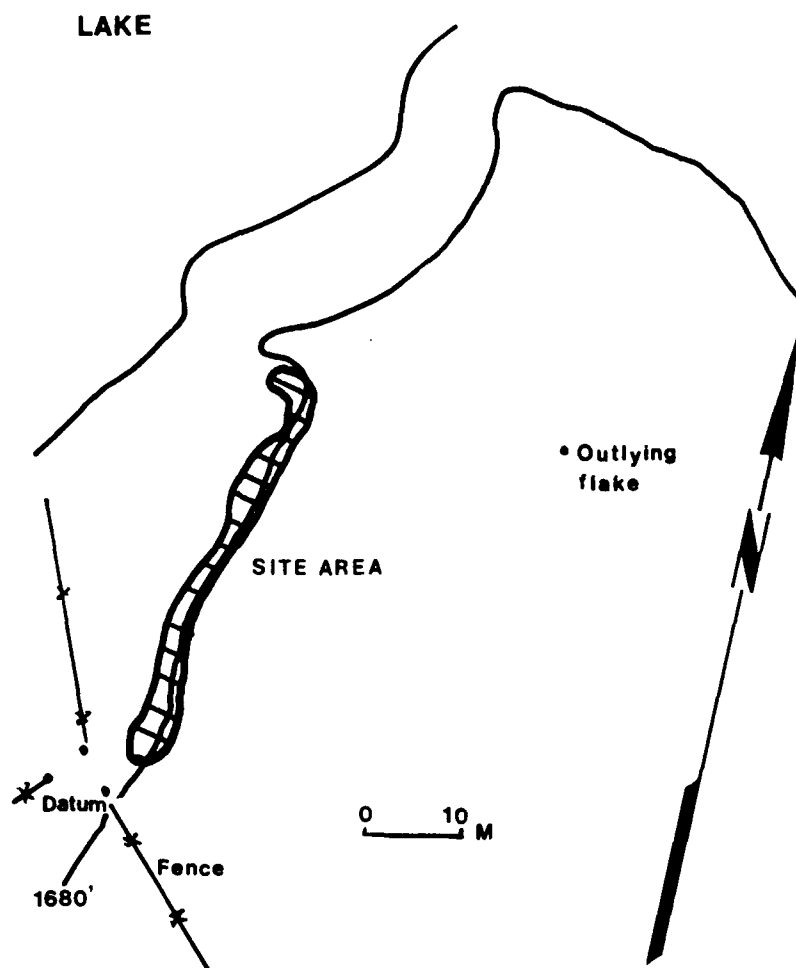


Figure 38. Plan of site 39ST282.



Plate 45. Site 39ST282, facing E.

SITE NUMBER: 39ST283 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 39, 40 PLATE(S): 46, 47
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 30m N-S x 50m E-W - 0.15ha.
TOPOGRAPHY: On top of a bluff/ridge.
ELEVATION: 555m.
VIEW (degree): 360. VIEW (distance): 2-7 miles.
STRATA AND DEPTH: Unknown; soil is a very fine grayish-brown silt.
VEGETATION: Buffalograss in clumps and tall grass.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Foster Creek - 1000m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: F1: Rock feature, 0.45m in diameter, composed of
20 small cobbles; F2: Rock feature, 1m N-S x 0.5m E-W, composed of 16
small to medium-sized rocks.
REMARKS: In addition to the two rock features that may be hearths, 13
lithic items were observed. These consisted of two cloudy chalcedony
cores, a tan quartzite core and a white quartzite core, a primary cloudy
chalcedony flake, four secondary flakes (one chert, two chalcedony and
one quartzite), three tertiary flakes (one chert, one chalcedony and one
quartzite) and a quartzite shatter.
IMPACTS: Slight surface/slope erosion.
RECOMMENDATIONS/TESTING: Partially excavate each feature and examine
the general site area with two to four 1m x 1m units.
PURPOSE OF TESTING: To determine the site's integrity and research
potential, evaluate the component(s) present and the site function. The
purpose of excavating the features is to reveal their nature, and, if
they are hearths, to attempt to extract some carbon for radiocarbon
dating.
PRIORITY: Medium.

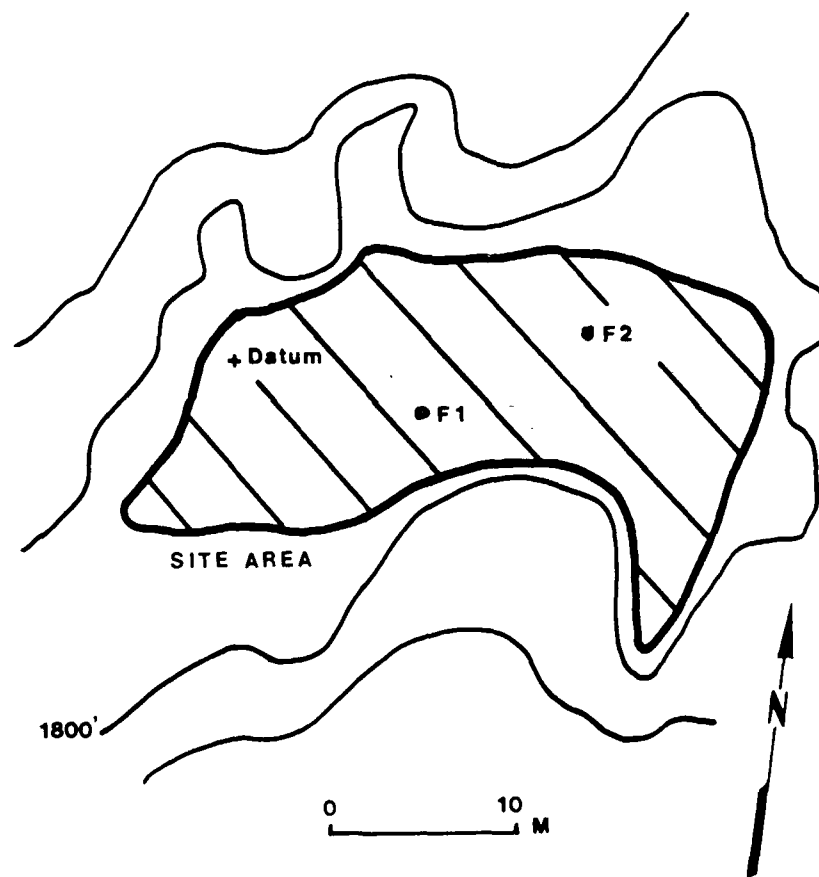


Figure 39. Plan of site 39ST283.

39ST283

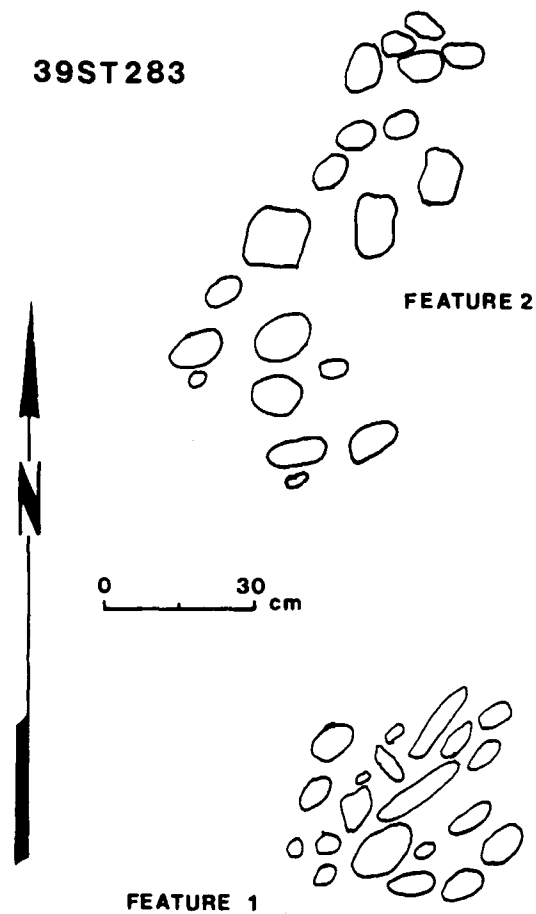


Figure 40. Detailed plans of Features 1 and 2, 39ST283.



Plate 46. Site 39ST283, facing NE.



Plate 47. Detail of Feature 1, site 39ST283, facing NW.

SITE NUMBER: 39ST284 SITE NAME:
COUNTY: Stanley STATE: S.D. FIGURE(S): 41 PLATE(S): 48
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Depression.
SITE COMPONENT: Unknown (presumably Historic).
SITE SIZE: 1.5m N-S x 3m E-W.
TOPOGRAPHY: Along a sloping ridge, part of a ridge complex.
ELEVATION: 509m.
VIEW (degree): 135. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a very fine grayish-brown silt.
VEGETATION: Mid to tall grasses.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Cheyenne River - 800m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Depression, 3m x 1.5m and 40cm deep, and the
location of three negative shovel tests.
REMARKS: Within the depression were five 1.5-2.5m long branches or logs
and three 1.0-1.5m long boards. Since there are no domestic artifacts,
the depression may relate to a livestock shelter. A listing of timber
lots (MRBI 1952a, 1952b) possibly associates this area with Lot 3 -
Pierre Allotments P340-409?; Pierre Allotments 339-410?
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. In that case, test the depression by placing a 3m x
1m trench across it.
PURPOSE OF TESTING: To determine the nature/function of the depression
and its significance/research potential.
PRIORITY: Low.

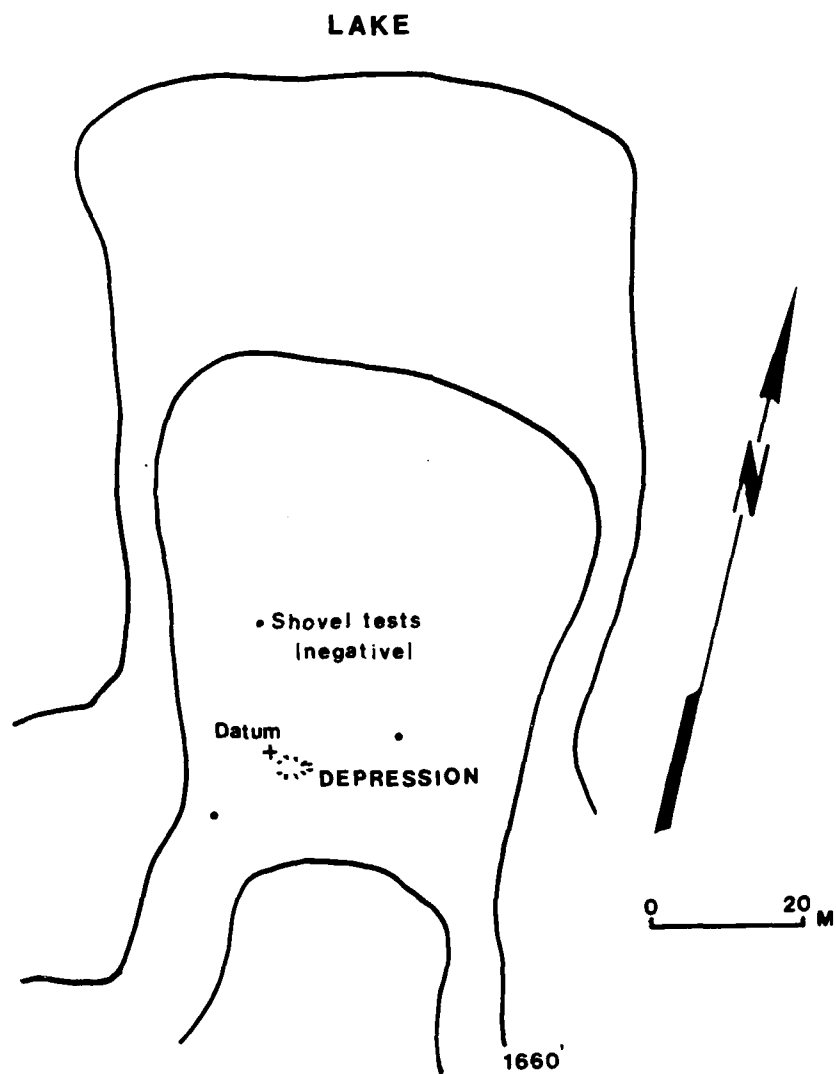


Figure 41. Plan of site 39ST284.

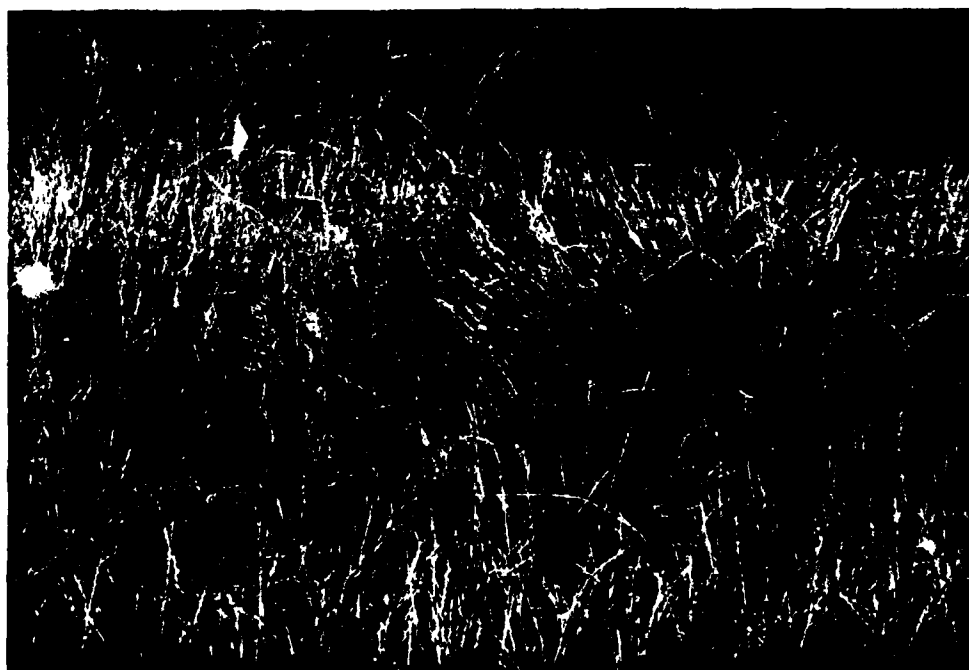


Plate 48. Site 39ST284, facing W.

SITE NUMBER: 39ZB16 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 42 PLATE(S): 49
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn with artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 1.3m N-S x 1.2m E-W.
TOPOGRAPHY: On top of an isolated knoll.
ELEVATION: 539m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a medium gray silt with numerous
pebbles.
VEGETATION: Buffalograss, curlycup gumweed, prickly pear, yucca.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Cheyenne River - 300m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 40+ double fist-sized to half head-sized
cobbles with an anthill in the middle. The cairn is 1.3m N-S x 1.2m
E-W.
REMARKS: A tan chert microflake was located on the anthill and a cloudy
chalcedony core was noted just to the southwest of the cairn. A listing
of timber lots (MRBI 1952a, 1952b) indicates this area may be part of
Lot #7 - Segment A - Allotment X-1051?
IMPACTS: Moderate - anthill and surface erosion.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. In that circumstance, the site should be mitigated.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

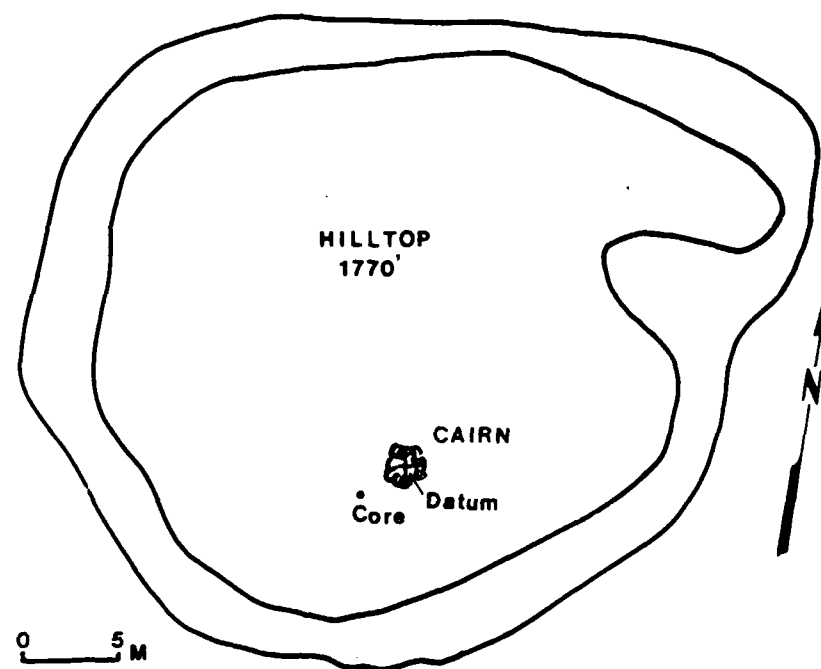


Figure 42. Plan of site 39ZB16.



Plate 49. Site 39ZB16, cairn, facing SE.

SITE NUMBER: 39ZB17 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 43 PLATE(S): 50
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 0.85m N-S x 0.75m E-W.
TOPOGRAPHY: On a small rise at the end of a sinuous ridge.
ELEVATION: 530m.
VIEW (degree): 360. VIEW (distance): 1-3 miles.
STRATA AND DEPTH: Unknown; soil is a fine brown sand covered with
pebbles and gravel.
VEGETATION: Buffalograss, dotted gayfeather.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Intermittent stream - 716m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of ca. 30 half fist-sized to half head-sized
stones and cobbles, 0.85m N-S x 0.75m E-W.
REMARKS: No cultural materials were observed. A listing of timber lots
(MRBI 1952a, 1952b) indicates this area may be part of Segment A -
Allotment X-1051?
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, the site should be mitigated.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

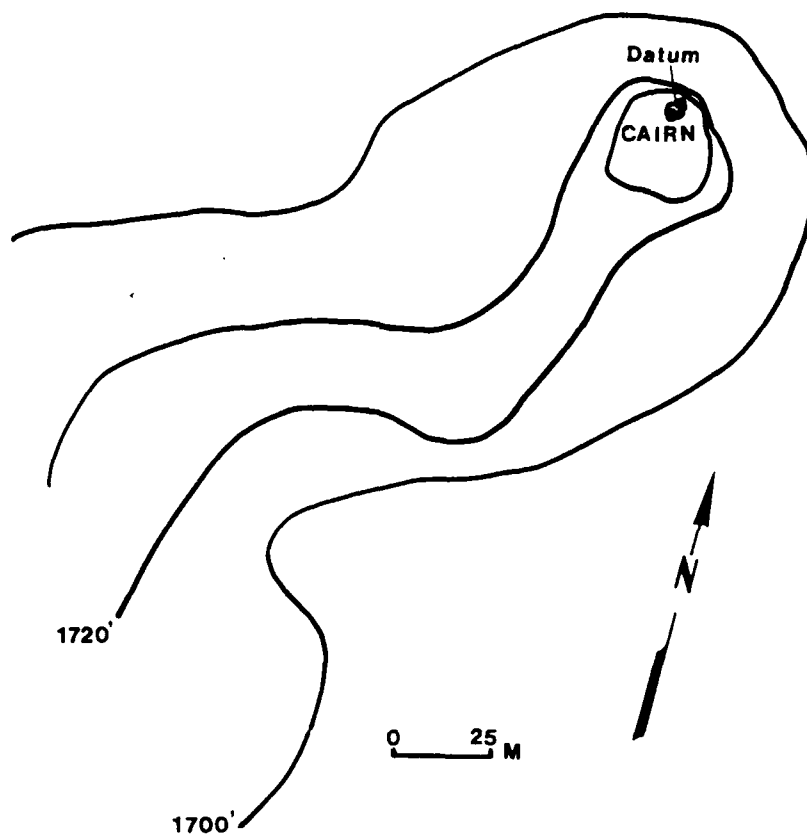


Figure 43. Plan of site 39ZB17.



Plate 50. Site 39ZB17, cairn, facing E.

SITE NUMBER: 39ZB18 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 44 PLATE(S): 51
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 1.5m N-S x 2.0m E-W.
TOPOGRAPHY: On top of an isolated cone-shaped hill.
ELEVATION: 518m.
VIEW (degree): 360. VIEW (distance): 1-7 miles.
STRATA AND DEPTH: Unknown; soil is a fine grayish-brown sandy silt.
VEGETATION: Wheatgrass, prickly pear.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Cheyenne River - 250m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 50+ double fist-sized to head-sized
cobble, 1.5m N-S x 2.0m E-W.
REMARKS: No cultural materials were observed. A listing of timber lots
(MRBI 1952a, 1952b) indicates this area may be part of Segment A -
Allotment X-1051?
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, the site should be mitigated.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

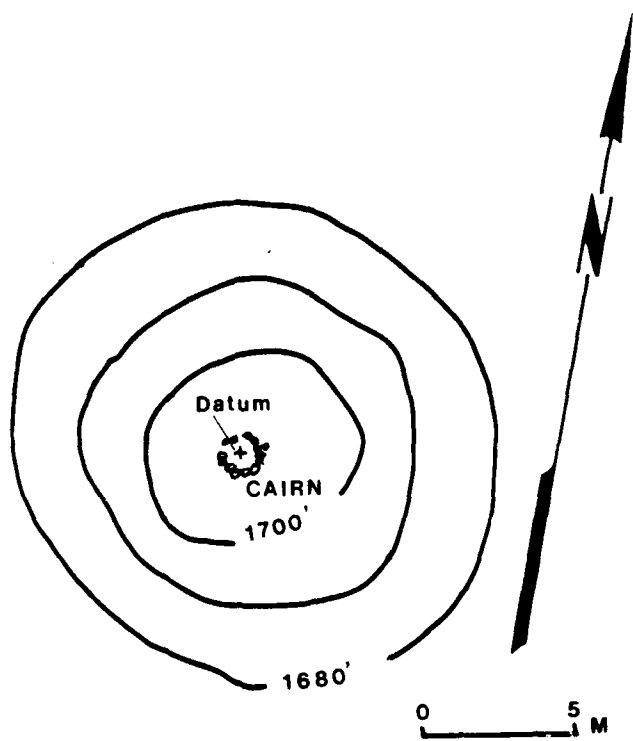


Figure 44. Plan of site 39ZB18.

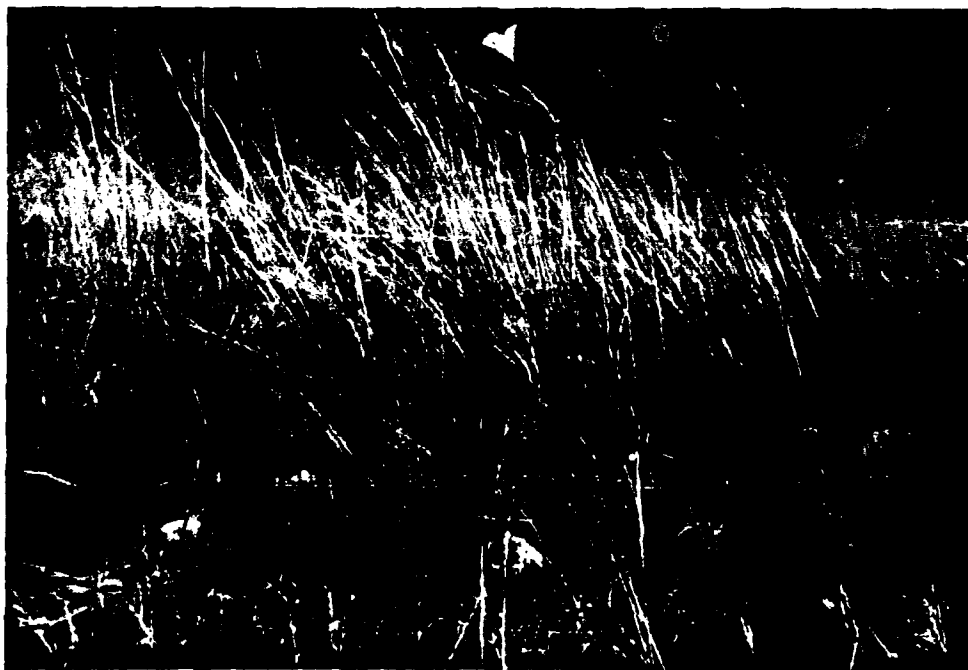


Plate 51. Site 39ZB18, cairn, facing W.

SITE NUMBER: 39ZB19 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 45 PLATE(S): 52
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 1.5m N-S x 1.5m E-W.
TOPOGRAPHY: At the extreme northeast end of a ridge crest or low rise.
ELEVATION: 555m.
VIEW (degree): 360. VIEW (distance): 3-7 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown sandy silt under
rocks and pebbles.
VEGETATION: Sparse grass, yucca, prickly pear, skunkbrush.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Rudy Creek - 200m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CLM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of ca. 100 double fist-sized to half
head-sized cobbles, 1.5m in diameter.
REMARKS: No cultural materials were observed. A listing of timber lots
(MRBI 1952a, 1952b) indicates this area may be part of Segment A -
Allotment X-1051?
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. In that circumstance, mitigate the site.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

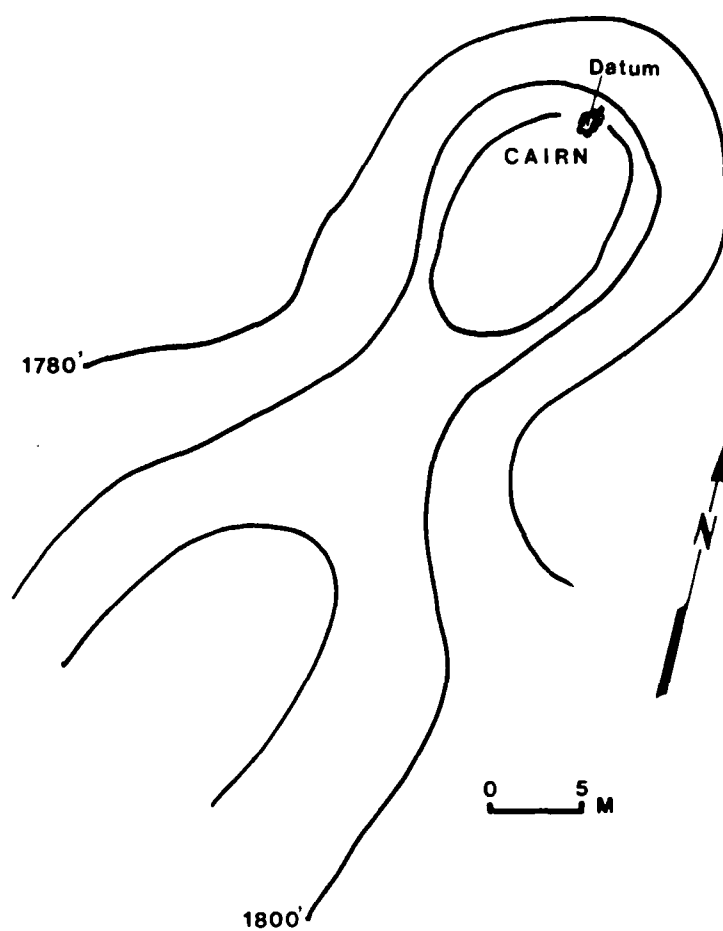


Figure 45. Plan of site 39ZB19.



Plate 52. Site 39ZB19, facing NE.

SITE NUMBER: 39ZB20 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 46 PLATE(S): 53-55
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairns with artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 35m N-S x 4m E-W - 0.02ha.
TOPOGRAPHY: On the edge of a ridge system/valley bluff.
ELEVATION: 553m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a medium-brown, fine sand.
VEGETATION: Buffalograss, prickly pear, yucca.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 90m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: F1: Cairn with 20 rocks, 1m N-S x 0.9m E-W; F2:
Cairn with 27 rocks, 1m N-S x 1.5m E-W; F3: Cairn with 42 rocks, 1.25m
N-S x 1.2m E-W.
REMARKS: Lithic items noted in the site area consisted of a tested
cobble of red quartzite, a core fragment of dark red chert and a shatter
of cloudy chalcedony. A listing of timber lots (MRBI 1952a, 1952b)
indicates this area may be part of Segment A - Allotment X-1051?
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: Evaluate the nature of the cairns using 1m x
0.5m units and place two to three 1m x 1m units nearby.
PURPOSE OF TESTING: To determine the nature of the cairns and the
potential for activity areas nearby.
PRIORITY: Low.

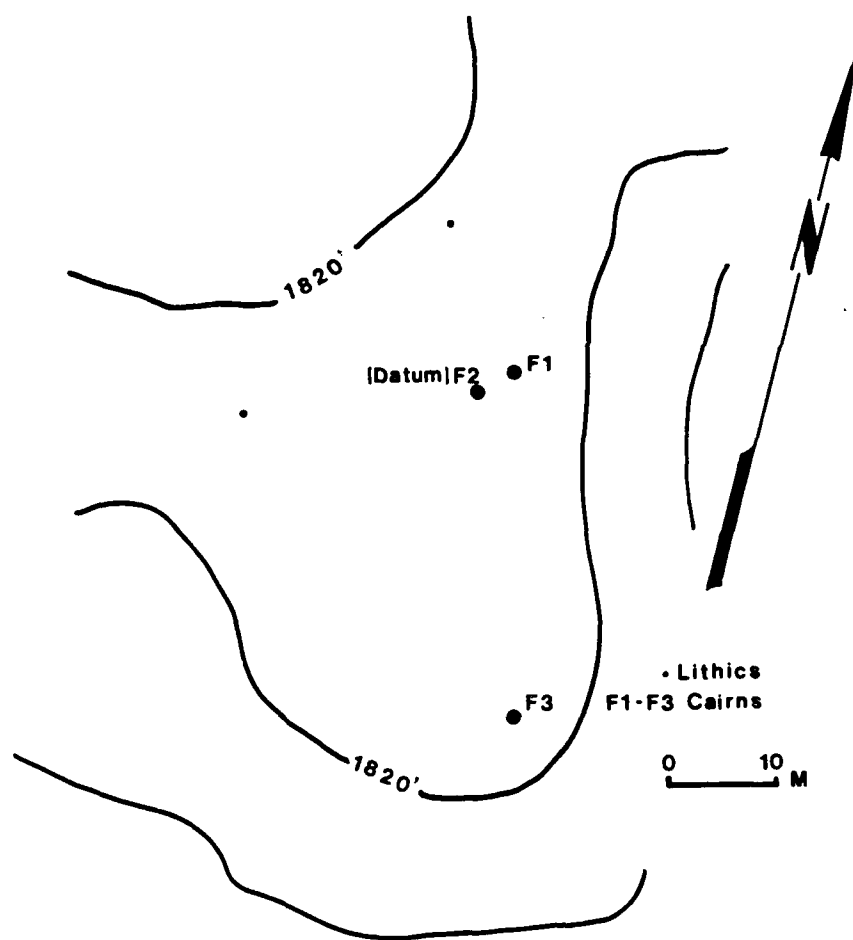


Figure 46. Plan of site 392B20.



Plate 53. Site 39ZB20, detail of Cairn 1, facing SW.



Plate 54. Site 39ZB20, detail of Cairn 2, facing SW.



Plate 55. Site 39ZB20, detail of Cairn 3, facing W.

SITE NUMBER: 39ZB21 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 47 PLATE(S): 56, 57
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairns with an isolated tested cobble.
SITE COMPONENT: Unknown.
SITE SIZE: 12m N-S x 1m E-W.
TOPOGRAPHY: On a low ridge remnant along Dupree Creek.
ELEVATION: 500m.
VIEW (degree): 160. VIEW (distance): 1-3 miles.
STRATA AND DEPTH: Unknown; soil is a small blocky clay under pebbles
and gravels.
VEGETATION: Sparse grass, prickly pear.
SURFACE VISIBILITY: 70%.
NEAREST WATER: Dupree Creek - 50m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Cairn of 55+ rocks, 1.1m NE-SW x 1.25m NW-SE.
2: Cairn of 10 rocks, 0.77m N-S x 0.55m E-W.
REMARKS: The tested cobble is produced on brown chert. The site
appears to have a very limited research potential. A listing of timber
lots (MRBI 1952a, 1952b) indicates this area may be part of Segment A -
Allotment 5178; Segment A - Allotment X-1165?
IMPACTS: Moderate slope and surface erosion.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, the site should be mitigated.
PURPOSE OF TESTING: To determine the nature of the cairns.
PRIORITY: Low.

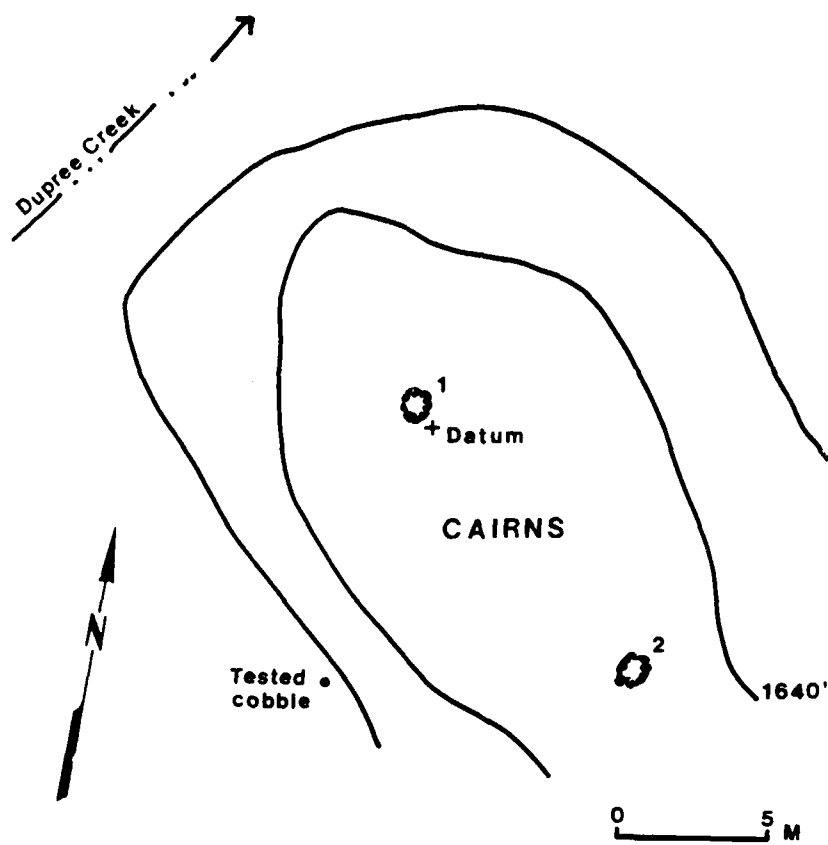


Figure 47. Plan of site 39ZB21.



Plate 56. Site 39ZB21, detail of Cairn 1, facing SW.



Plate 57. Site 39ZB21, detail of Cairn 2, facing NE.

SITE NUMBER: 39ZB22 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 48 PLATE(S): 58
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 1m E-W x 1.25m N-S.
TOPOGRAPHY: On a small point between two smaller hills in somewhat of a
low swale.
ELEVATION: 500m.
VIEW (degree): 45. VIEW (distance): Less than 1 mile.
STRATA AND DEPTH: Unknown; surface is eroded shale with sparse gravels
and cobbles.
VEGETATION: Wheatgrass on eroded shale.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Dupree Creek - 100m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn, 1m E-W x 1.25m N-S.
REMARKS: No cultural materials were observed.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, mitigate the site.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

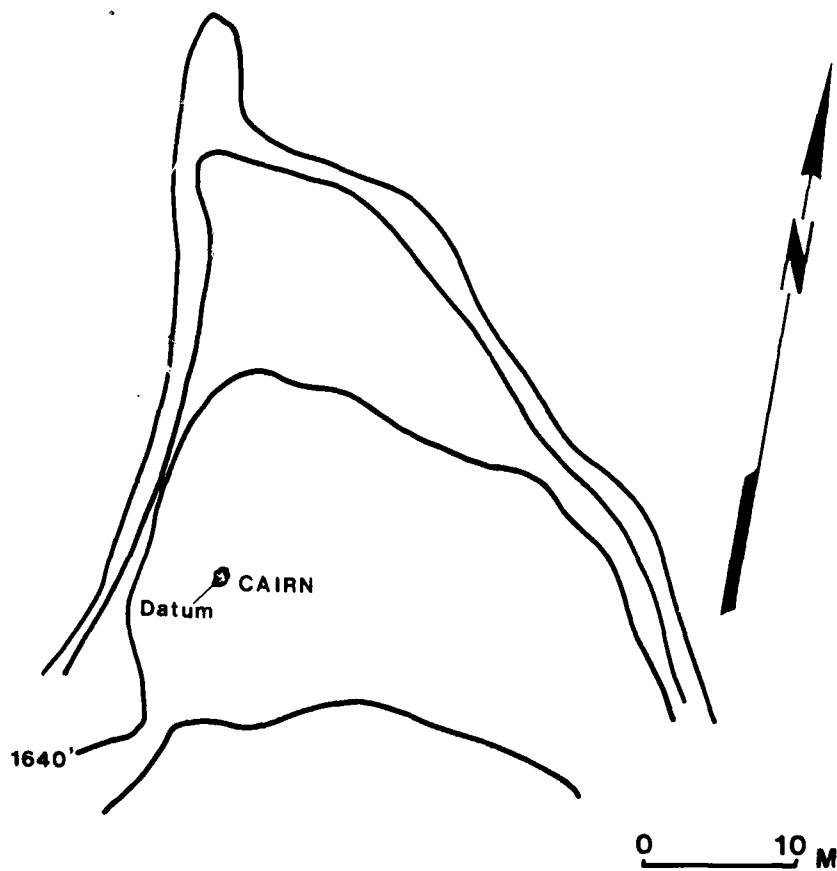


Figure 48. Plan of site 39ZB22.



Plate 58. Site 39ZB22, cairn, facing NE.

SITE NUMBER: 39ZB23 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 49 PLATE(S): 59
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 0.66m N-S x 0.66m E-W.
TOPOGRAPHY: Along the crest line of a complex ridge system on the north
side of Rudy Creek.
ELEVATION: 524m.
VIEW (degree): 360. VIEW (distance): 1-12 miles.
STRATA AND DEPTH: Unknown; soil is a light brown fine silt with
numerous small pebbles.
VEGETATION: Buffalograss, prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 260m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 15 fist-sized to double fist-sized rocks,
half hidden by an anthill. The cairn is 0.66m in diameter.
REMARKS: No cultural materials were observed; the location is possibly
a natural aggregation of rocks. A listing of timber lots (MRBI 1952a,
1952b) indicates this area may be part of Segment A - Allotment 5178;
Segment A - Allotment X-1165?
IMPACTS: Moderate surface erosion, anthill.
RECOMMENDATIONS/TESTING: No further work is suggested unless the site
is to be impacted. In that circumstance, it should be mitigated.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

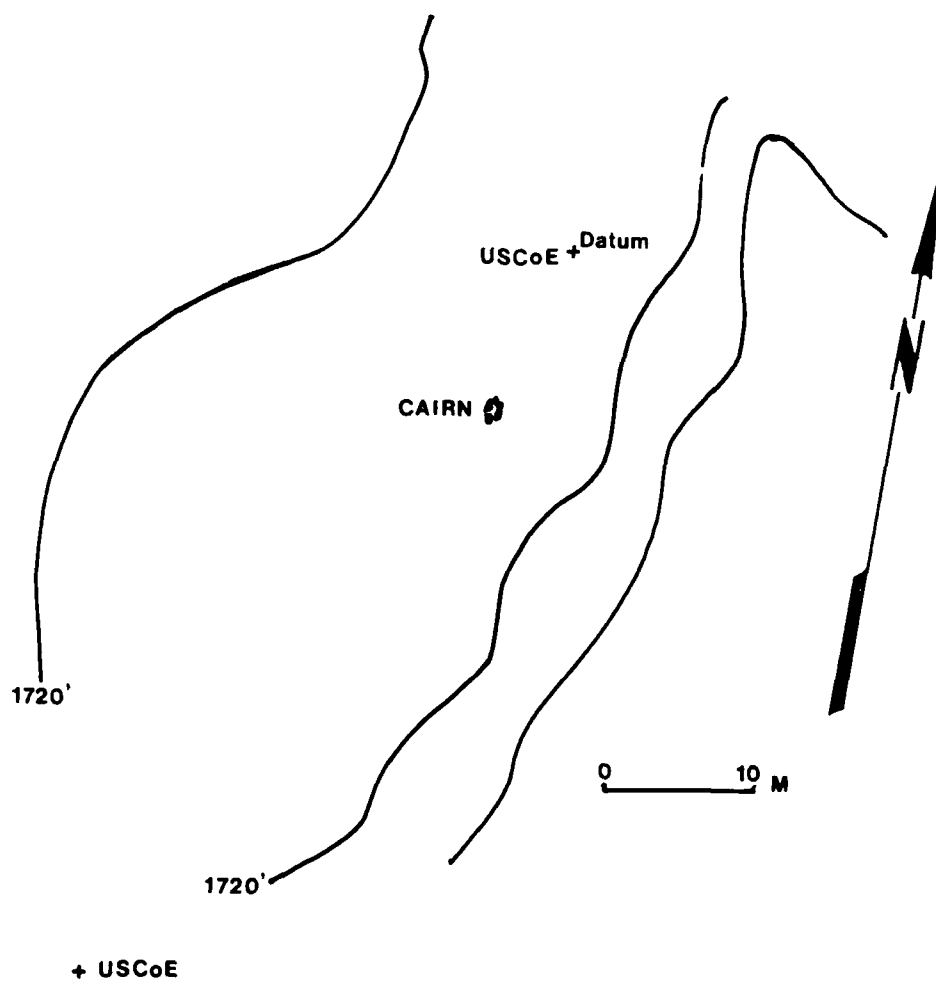


Figure 49. Plan of site 39ZB23.

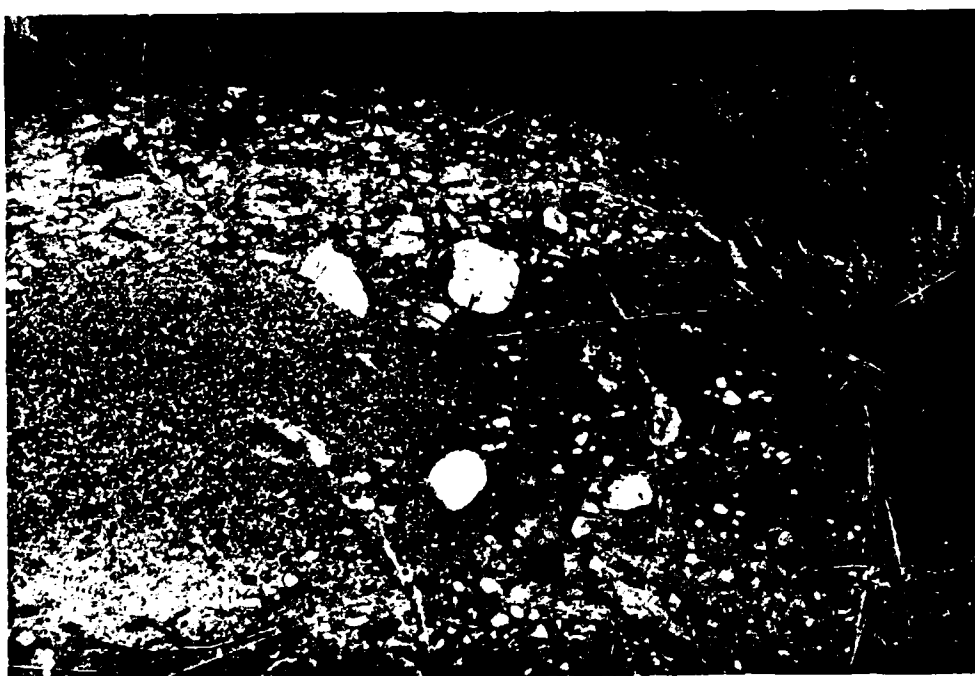


Plate 59. Site 39ZB23, cairn, facing N.

SITE NUMBER: 39ZB24 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 50 PLATE(S): 60
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 50m N-S x 30m E-W - 0.15ha.
TOPOGRAPHY: Towards the end of the north side of Rudy Creek ridge.
ELEVATION: 524m.
VIEW (degree): 360. VIEW (distance): 1-5 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown fine silt.
VEGETATION: Buffalograss, medium grasses, prickly pear, skunkbrush,
leafy forbs.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Intermittent stream - 384m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Nineteen lithic items were observed at this site in addition
to a battered/ground granite cobble. One tool, a Stage I biface of red
quartzite, was noted. One core of brown quartzite, a tested cobble of
red chert, a tested cobble of cloudy chalcedony and a core fragment of
purple chert were also present. The 14 items of debitage included seven
of chalcedony, two of chert and five of quartzite.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: Evaluate the site by excavating two to four 1m
x 1m units.
PURPOSE OF TESTING: To define the site's subsurface integrity, research
potential and component(s) present.
PRIORITY: Low.

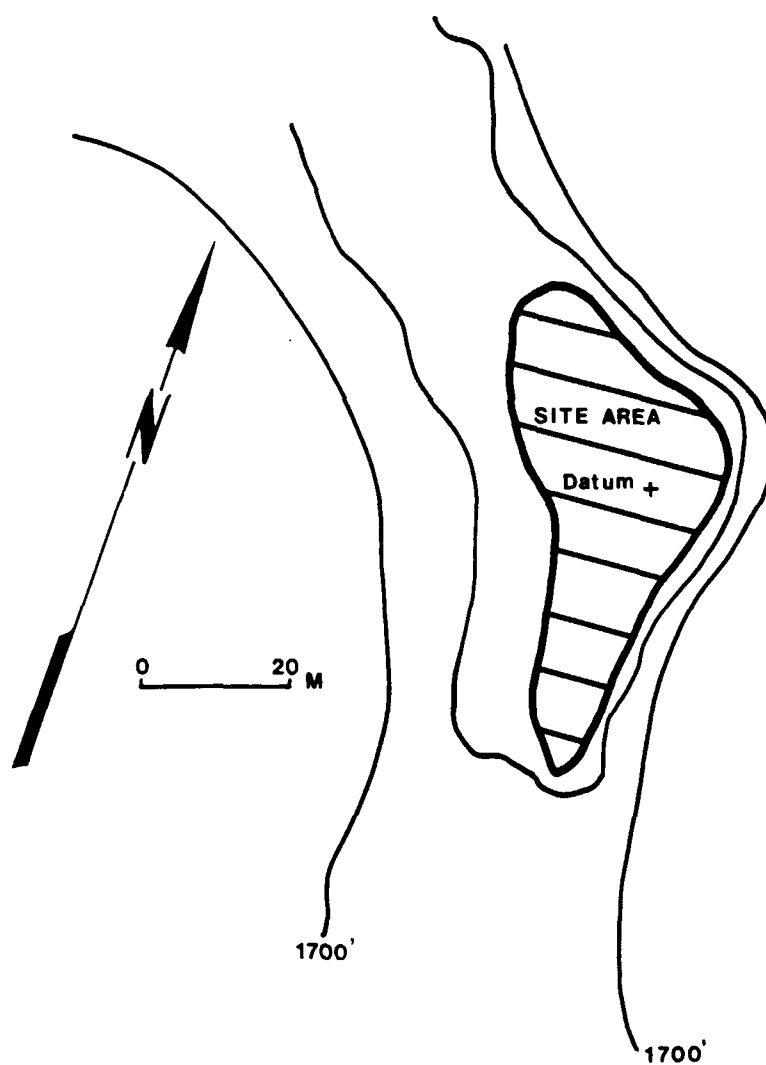


Figure 50. Plan of site 39ZB24.

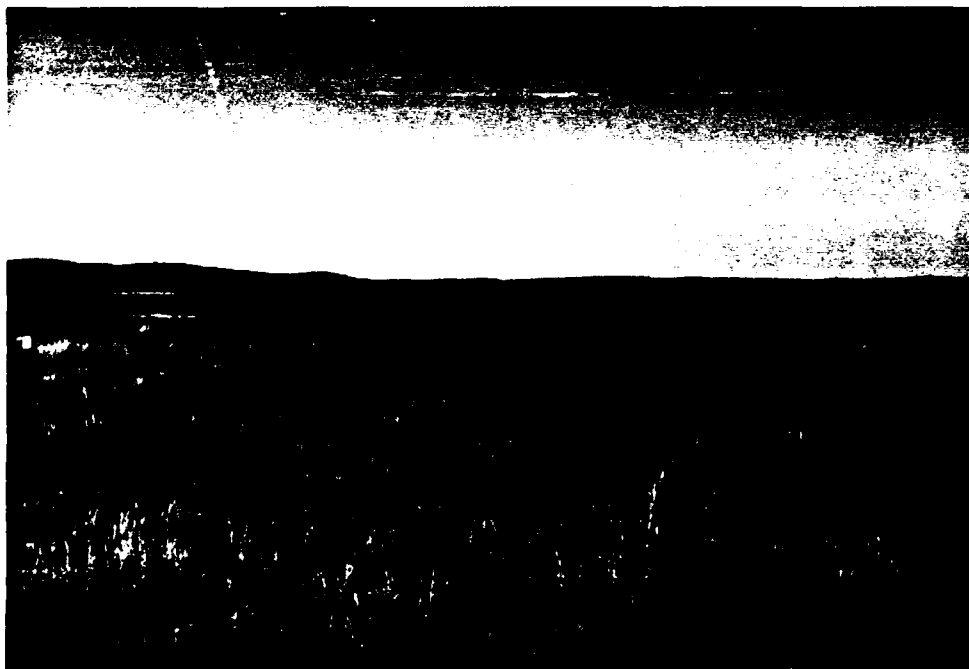


Plate 60. Site 39ZB24, facing N.

SITE NUMBER: 39ZB25 SITE NAME:
COUNTY: Ziebach STATE: S.D. FIGURE(S): 51 PLATE(S): 61
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 0.8m N-S x 0.72m E-W.
TOPOGRAPHY: On a slight saddle along a complex ridge crest.
ELEVATION: 518m.
VIEW (degree): 360. VIEW (distance): 5-7 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown silt with numerous
pebbles.
VEGETATION: Buffalograss, dotted gayfeather, prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 384m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Small rock pile of 15 stones, fist-sized to half
head-sized, 0.8m N-S x 0.72m E-W.
REMARKS: No cultural materials were observed. A listing of timber lots
(MRBI 1952a, 1952b) indicates this area may be part of Segment A -
Allotment 5178; Segment A - Allotment X-1165?
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, mitigate the site.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

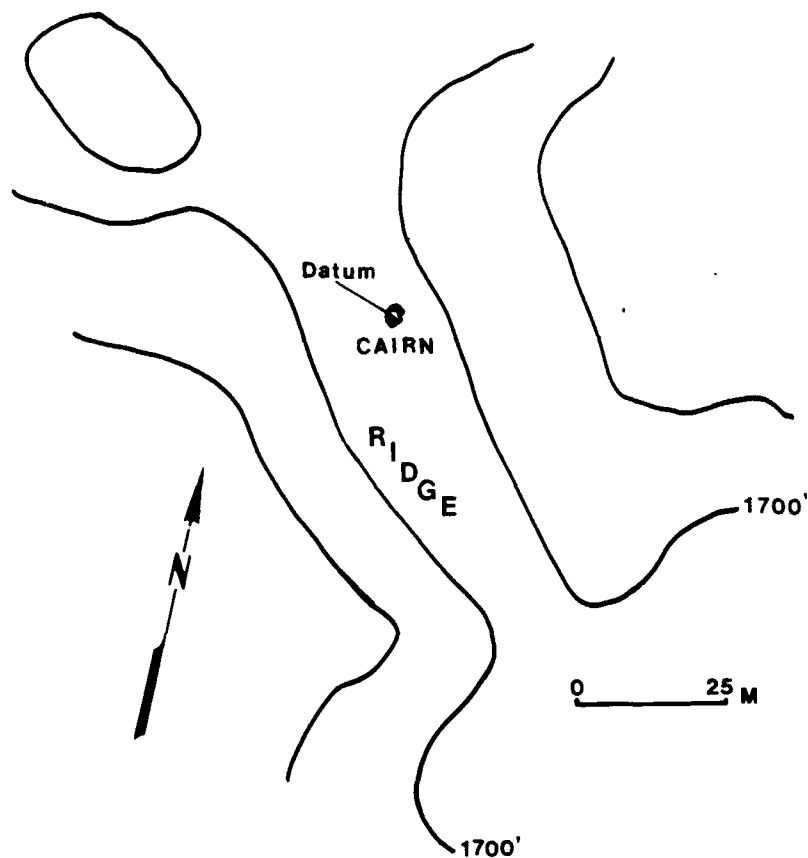


Figure 51. Plan of site 39ZB25.



Plate 61. Site 39ZB25, cairn, facing SE.

SITE NUMBER: 39DW63 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 52 PLATE(S): 62-64
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairns.
SITE COMPONENT: Unknown.
SITE SIZE: 14m N-S x 2m E-W.
TOPOGRAPHY: At the crest and on the west side slope of the first
distinctive ridge west of a large flat.
ELEVATION: 512m.
VIEW (degree): 360. VIEW (distance): 4-7 miles.
STRATA AND DEPTH: Unknown; soil is a brown sandy silt with numerous
pebbles.
VEGETATION: Buffalograss, prickly pear, green spongy forbs.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Intermittent stream - 96m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Cairn of 24 stones, 0.87m N-S x 0.81m E-W.
2: Cairn of 40+ stones, 1.15m N-S x 1.45m E-W. 3: Cairn of 80+ stones,
fist-sized to half head-sized, 1.78-2.27m N-S x 2.0m E-W.
REMARKS: No cultural materials were observed.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. In that circumstance, determine the nature of the
cairns by placing three 1m x 0.5m units across the features.
PURPOSE OF TESTING: To ascertain the purpose/function of the cairns.
PRIORITY: Low.

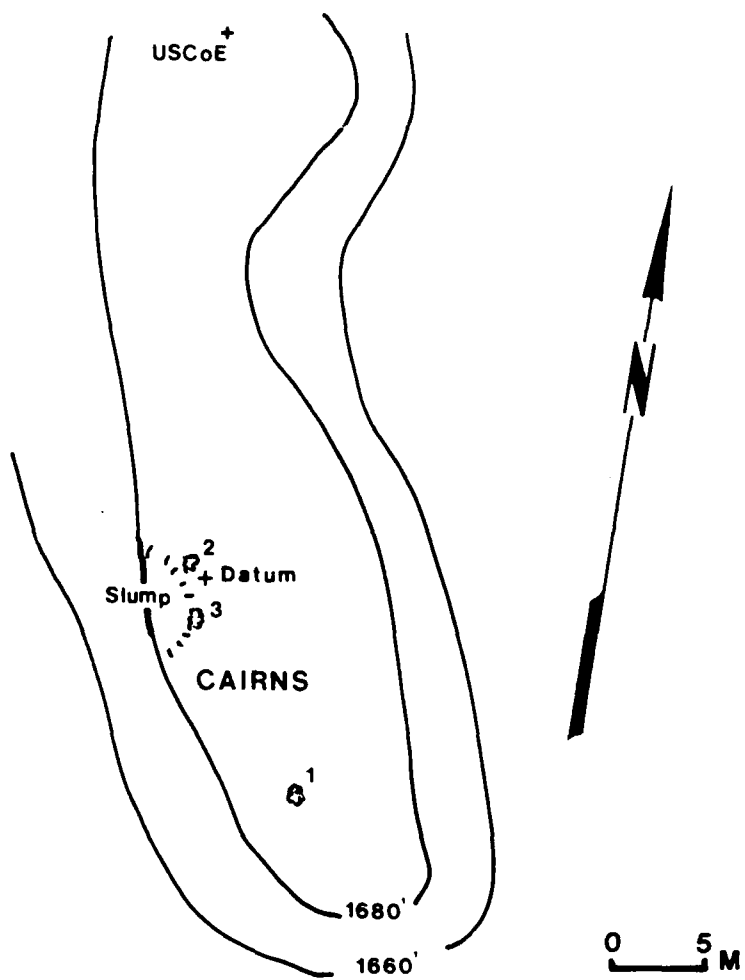


Figure 52. Plan of site 39DW63.



Plate 62. Site 39DW63, detail of Cairn 1, facing SE.



Plate 63. Site 39DW63, detail of Cairn 2, facing E.



Plate 64. Site 39DW63, detail of Cairn 3, facing E.

SITE NUMBER: 39DW64 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 53, 54 PLATE(S): 65-67
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Historic ranch.
SITE COMPONENT: Euro-American.
SITE SIZE: 50m N-S x 100m E-W - 0.5ha.
TOPOGRAPHY: On a sloping hillside.
ELEVATION: 495m.
VIEW (degree): 225. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a brown blocky silt.
VEGETATION: Bunchgrass.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Intermittent stream - 168m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP:
F1: Concrete house foundation, with overall dimensions of 9.51m x 6.49m.
 Figure 54 is a detailed scaled plan of the structure.
F2: Cistern with inner wood frame outline, 2.18m in diameter. Dated
 April 7, 1946, in the concrete.
F3: Dugout with log beam on south side with door frame. Overall
 measurements are 8.53m x 6.88m.
F4: Concrete and stone foundation; the NE-SW oriented portion is 6.31m x
 4.38m and the other portion is 3.15m x 5.95m. Piles of concrete
 rubble lie nearby.
F5: Area of trash - wagon parts, ribbon wire, pitch fork, framing
 lumber.
F6: Wagon, metal frame and wheel, wooden sides. South Dakota license
 plate 1960 - 24T 785; also bottles of vaccine, vinegar and ketchup.
F7: Silage pit, 10m x 52m.
REMARKS: The cistern may or may not be contemporaneous with the
remainder of the ranch. The site is not marked on early GLO maps or on
the 1936 General Highway Maps or 1948 War Department Maps, but is shown

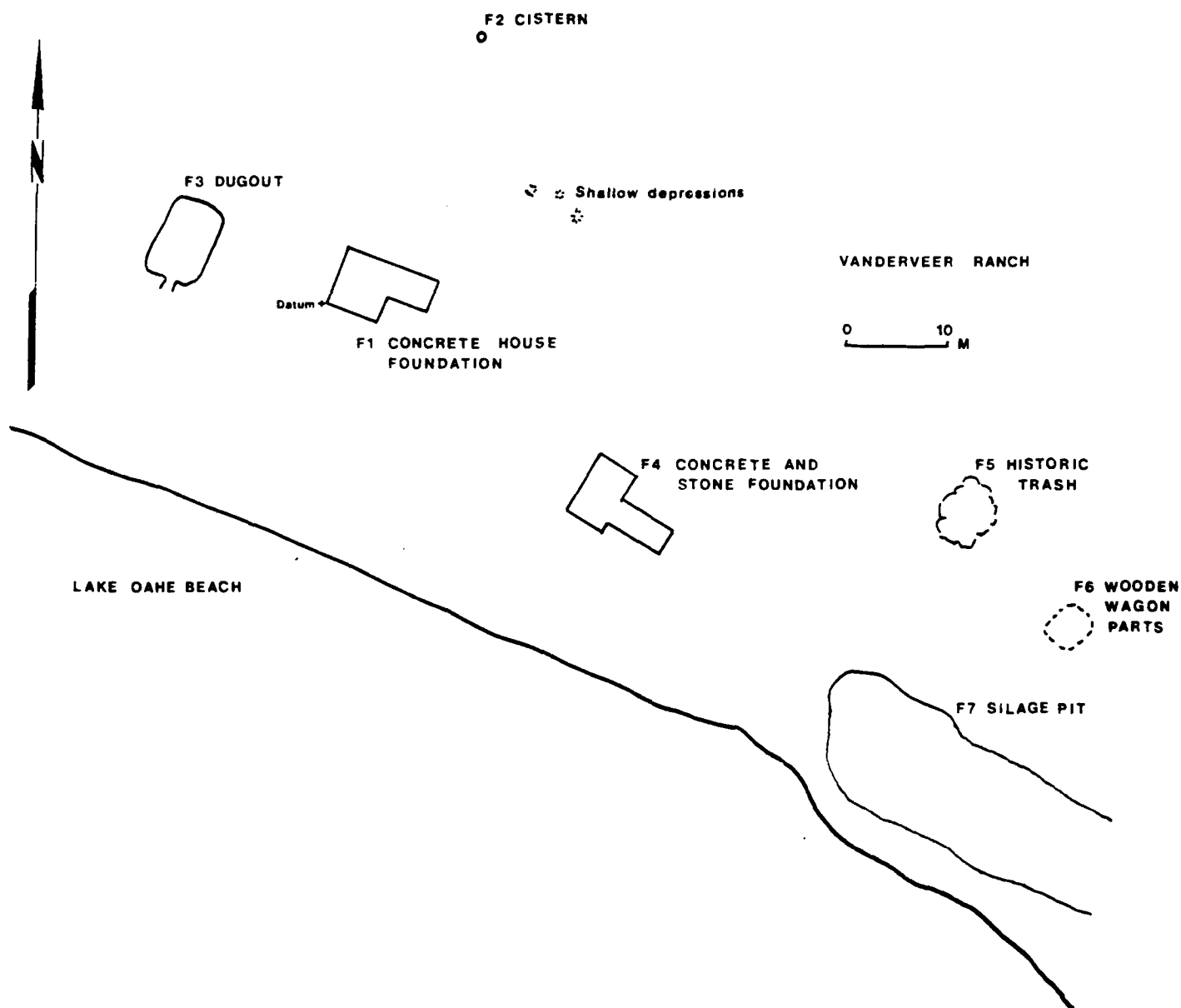


Figure 53. Plan of site 39DW64.

39DW64 FEATURE 1

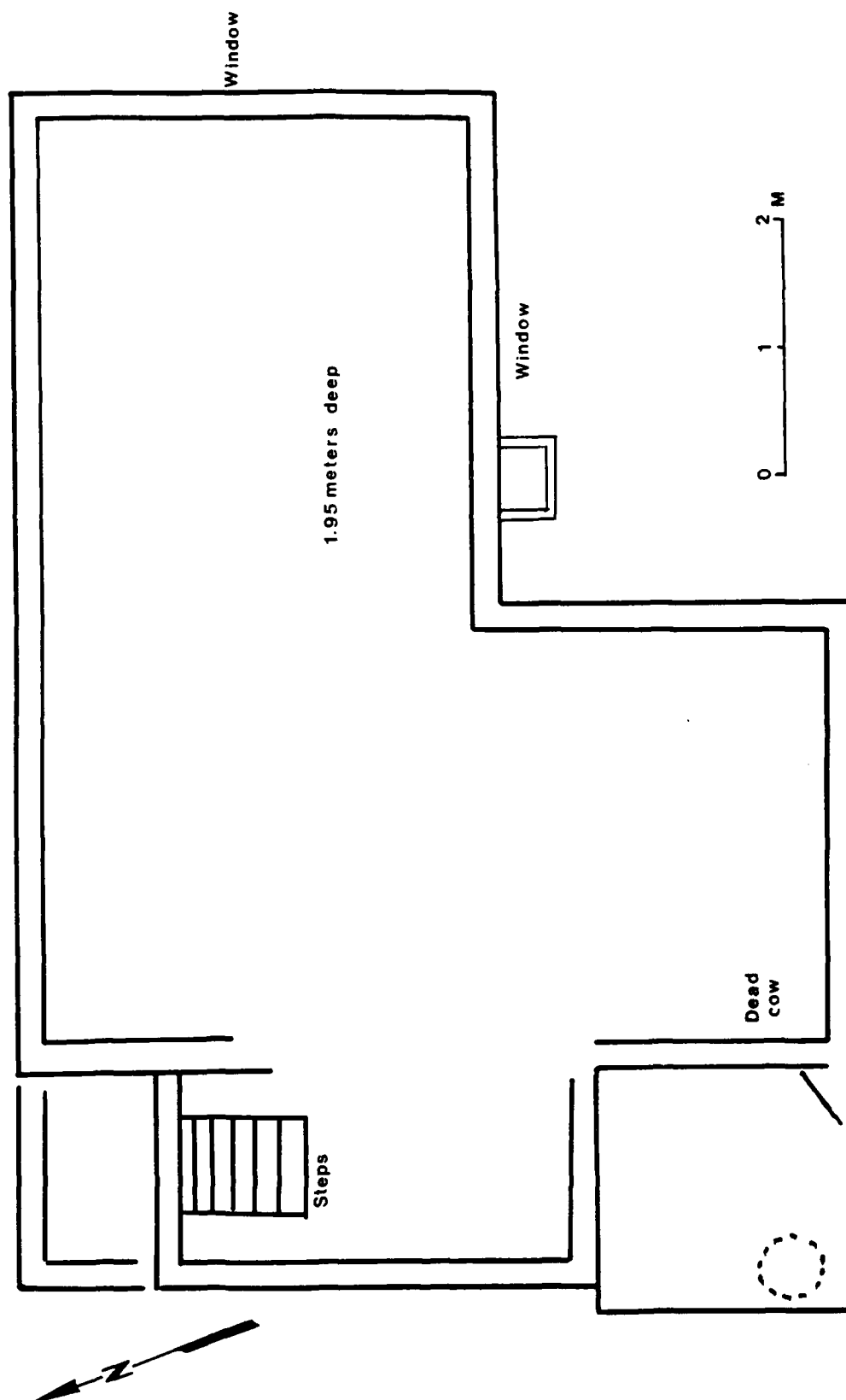


Figure 54. Plan of Feature 1, site 39DW64.



Plate 65. Site 39DW64, facing S.

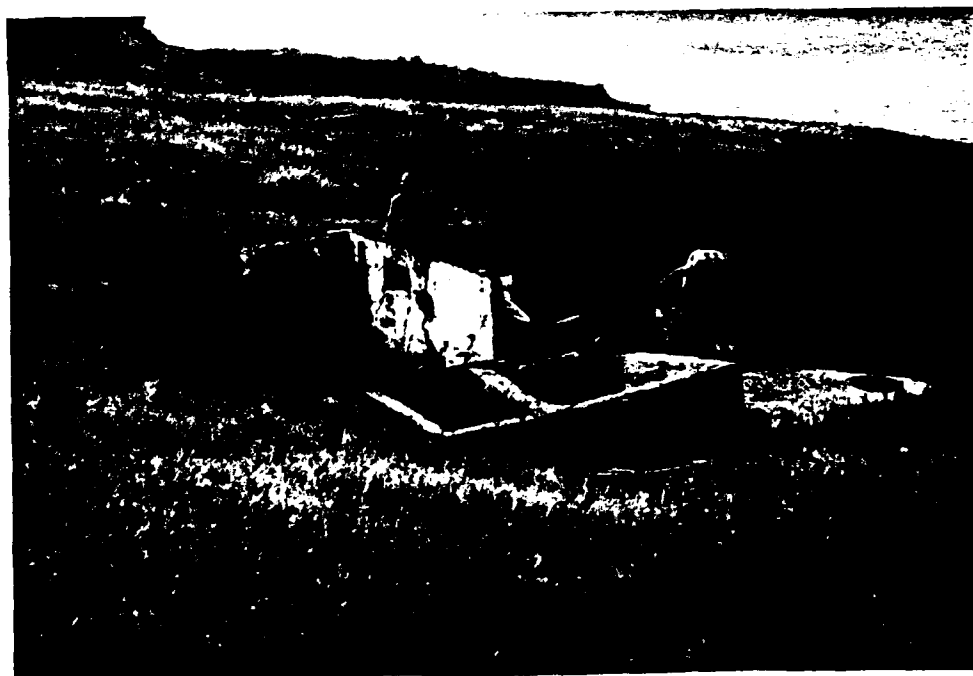


Plate 66. Site 39DW64, detail of Feature 1, house foundation, facing SW.

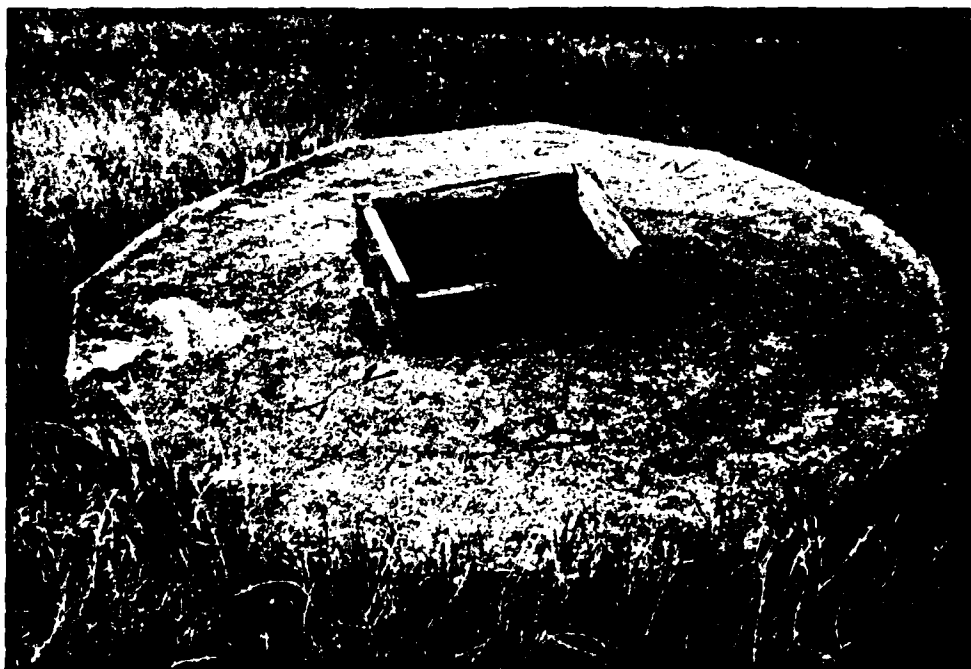


Plate 67. Site 39DW64, detail of Feature 2, well, facing W.

on the 1958 USGS Quadrangle map. The site probably dates from the later 1940s.

IMPACTS: Relatively undisturbed at this time.

RECOMMENDATIONS/TESTING: Further documentary research and regional historical evaluation as to the site's significance are recommended. The site appears to be too recent and lacking in significant architectural features and association with significant persons and events to warrant testing at this time.

PURPOSE OF RESEARCH: To establish a local/regional evaluative framework to determine the significance of preserving sites of this type.

PRIORITY: Low.

SITE NUMBER: 39DW65 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 55 PLATE(S): 68
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 1.28m N-S x 1.15m E-W.
TOPOGRAPHY: Off the crest and on the slope of a ridge.
ELEVATION: 501m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a grayish-brown clay.
VEGETATION: Mixed grass, prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 120m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 44 fist-sized to double fist-sized
stones, 1.28m N-S x 1.15m E-W.
REMARKS: No cultural materials were observed.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, the site should be mitigated.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

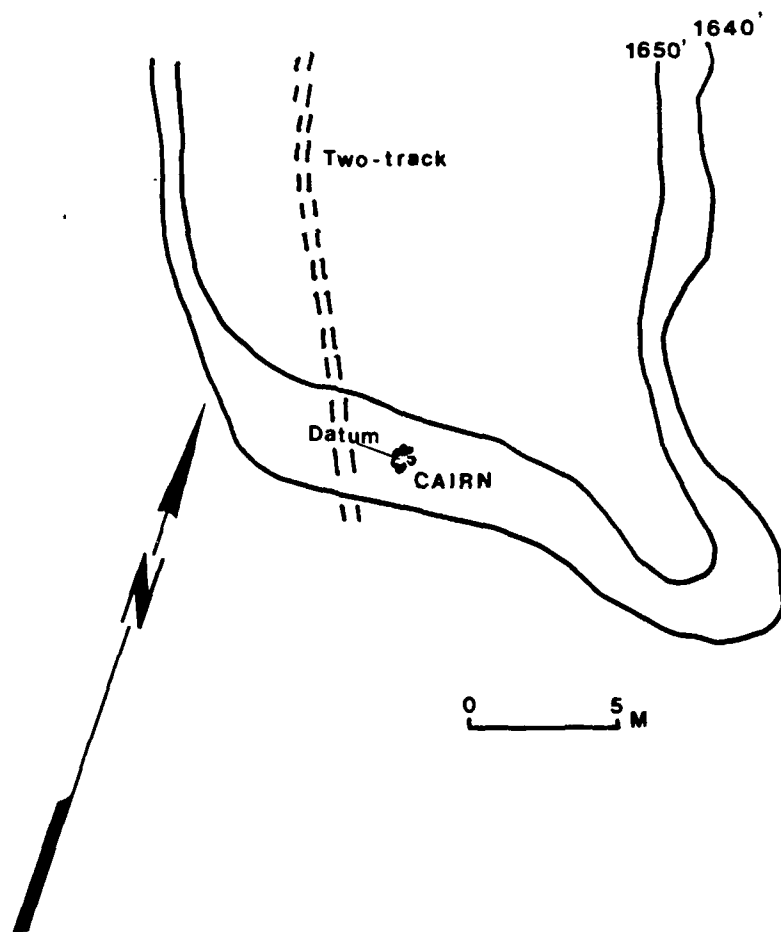


Figure 55. Plan of site 39DW65.



Plate 68. Site 39DW65, cairn, facing E.

SITE NUMBER: 39DW66 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 56 PLATE(S): 69
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Plains Village.
SITE SIZE: 150m N-S x 100m E-W - 1.5ha.
TOPOGRAPHY: On top of a ridge and along side slopes.
ELEVATION: 506m.
VIEW (degree): 360. VIEW (distance): 1-7 miles.
STRATA AND DEPTH: Unknown; soil is a medium brown fine silt.
VEGETATION: Buffalograss, silver sagebrush, curlycup gumweed.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Cheyenne River - 50m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: One triangular unnotched projectile point of brown
chalcedony; one transverse scraper of brown chert; one transverse
scraper/burin of patinated brown chalcedony; one transverse scraper of
translucent agatized chalcedony with black inclusions; one transverse
scraper of red jasper; and three ceramic bodysherds, one with slight
cord impressions and angular grit temper.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Site area showing location of ceramic sherds and
an outlying area containing seven half head-sized to head-sized cobbles,
and one FCR (?hearth) in an area 0.5m in diameter.
REMARKS: In addition to the collected materials, a bifacially worked
fragment of plate chalcedony and a small biface of brown chert were
observed. Core fragments of chalcedony, chert and silicified sediment
and a tested chert pebble were also present. Forty-four items of
debitage were recorded, consisting of 18 chalcedony, 14 chert, seven
quartzite, one petrified wood, one silicified sediment and three jasper
pieces.
IMPACTS: Slight slope wash and surface erosion; two-track road.

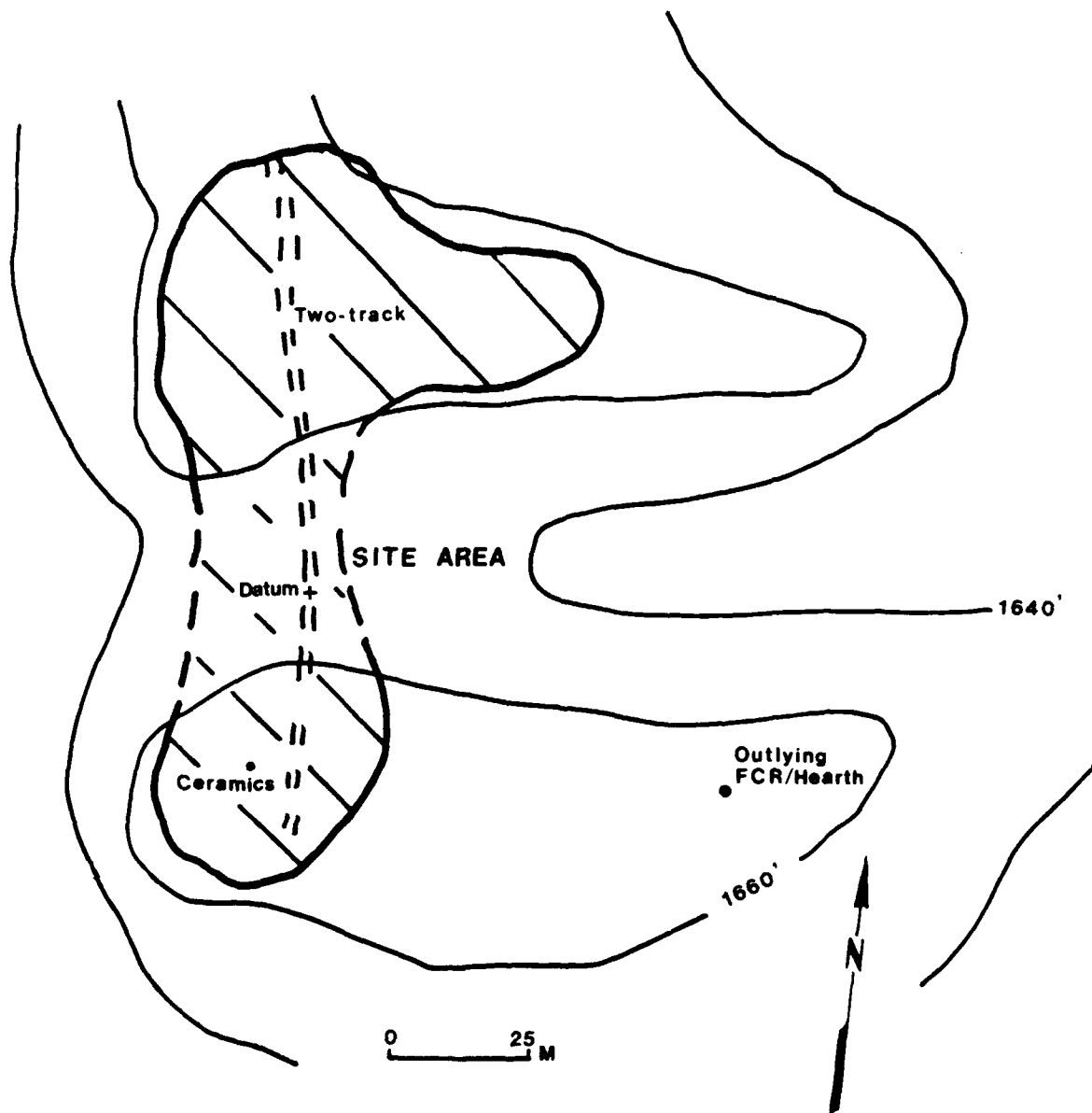


Figure 56. Plan of site 39DW66.



Plate 69. Site 39DW66, facing S.

RECOMMENDATIONS/TESTING: Shovel testing, coring and excavation of three to six 1m x 1m units are recommended.

PURPOSE OF TESTING: To determine site extent, depth, integrity and research potential. The testing should particularly examine the nature of the possible outlying hearth and its relationship, if any, with the main site area (artifact scatter).

PRIORITY: Medium.

SITE NUMBER: 39DW67 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 57 PLATE(S): 70
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska and private.
SITE TYPE: Cairn.
SITE COMPONENT: Euro-American.
SITE SIZE: 0.55m N-S x 0.5m E-W.
TOPOGRAPHY: Just below the high point of the ridge.
ELEVATION: 506m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a fine brown sand under pebbles and
gravel.
VEGETATION: Buffalograss, dotted gayfeather, prickly pear.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Intermittent stream - 75m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn comprised of seven rocks, 55cm N-S x 50cm
E-W.
REMARKS: The cairn is located less than 1m from a Corps marker. The
two features are probably associated.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. In that circumstance, mitigate and/or test the
hypothesis that the cairn and Corps marker are related through further
research.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

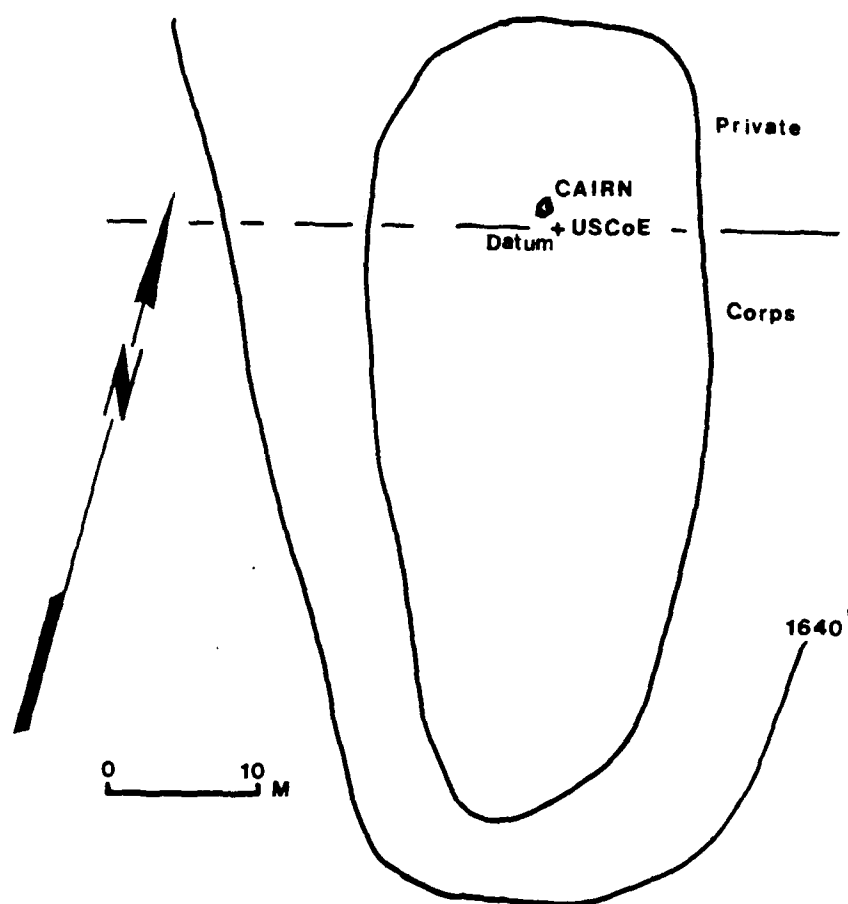


Figure 57. Plan of site 39DW67.



Plate 70. Site 39DW67, cairn, facing N.

SITE NUMBER: 39DW68 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 58 PLATE(S): 71, 72
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairns.
SITE COMPONENT: Unknown.
SITE SIZE: 6m N-S x 1m E-W.
TOPOGRAPHY: On top of a prominent, isolated hilltop.
ELEVATION: 509m.
VIEW (degree): 360. VIEW (distance): 3-7 miles.
STRATA AND DEPTH: Unknown; soil is a fine brown sand/coarse silt with
pebbles and cobbles.
VEGETATION: Tall grass, prickly pear.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Intermittent stream - 168m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Cairn of 60 double fist-sized to half head-
sized stones, 1.27m N-S x 0.97m E-W. 2: Cairn of 15 stones, 0.55m N-S x
0.51m E-W.
REMARKS: No cultural materials were observed.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, test the cairns with two 1m x 0.5m
units.
PURPOSE OF TESTING: To determine the nature/function of the cairns.
PRIORITY: Low.

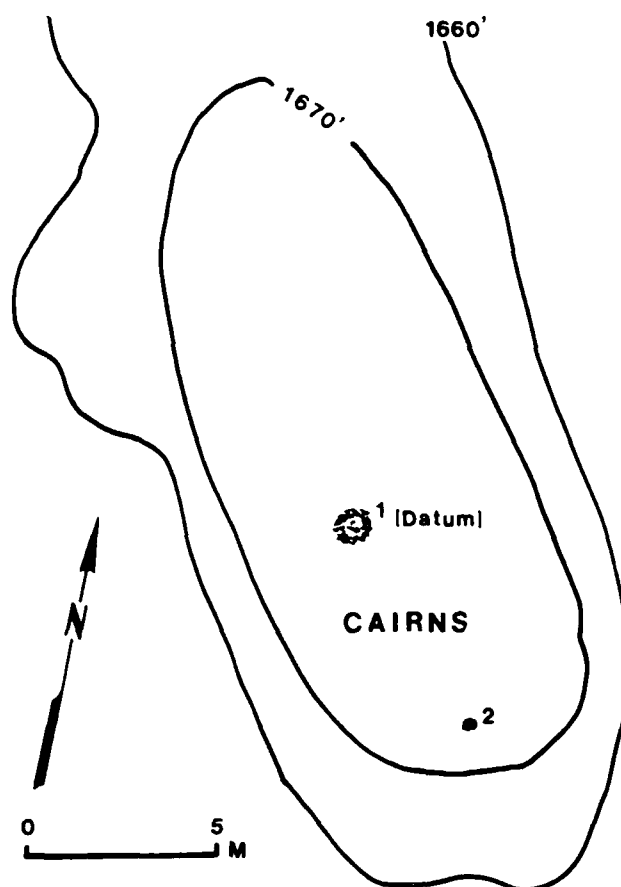


Figure 58. Plan of site 39DW68.



Plate 71. Site 39DW68, detail of Feature 1, facing NE.



Plate 72. Site 39DW68, detail of Feature 2, facing SE.

SITE NUMBER: 39DW69 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 59 PLATE(S): 73
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairns.
SITE COMPONENT: Unknown.
SITE SIZE: 1m N-S x 50m E-W.
TOPOGRAPHY: Near the end of a protruding erosional ridge off of a main
terrace remnant.
ELEVATION: 500m.
VIEW (degree): 200. VIEW (distance): 2-7 miles.
STRATA AND DEPTH: Unknown; soil is a brown silt.
VEGETATION: Buffalograss, prickly pear, forbs.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Intermittent stream - 70m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Cairn of 40+ double fist-sized to head-sized
cobbles, 0.75m N-S x 1.15m E-W. 2: Cairn of 15 double fist-sized to
half head-sized cobbles, 0.6m in diameter.
REMARKS: No cultural materials were observed. A listing of timber lots
(MRBI 1952a, 1952b) indicates this area may be part of Lot #7.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted; in that circumstance, it should be mitigated.
PURPOSE OF TESTING: To determine the nature of the cairns.
PRIORITY: Low.



Plate 73. Site 39DW69 (person standing at Feature 2), facing N.

SITE NUMBER: 39DW70 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 60 PLATE(S): 74
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 1.0m N-S x 1.15m E-W.
TOPOGRAPHY: At the edge of a large flat-topped terrace remnant.
ELEVATION: 500m.
VIEW (degree): 180. VIEW (distance): 1-7 miles.
STRATA AND DEPTH: Unknown; soil is a brown silt.
VEGETATION: Buffalograss, medium grasses, prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 36m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 60+ double fist-sized to half head-sized
cobbles, 1m N-S x 1.15m E-W.
REMARKS: No cultural materials were observed. A listing of timber lots
(MRBI 1952a, 1952b) indicates this area may be part of Lot #6.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, the site should be mitigated.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

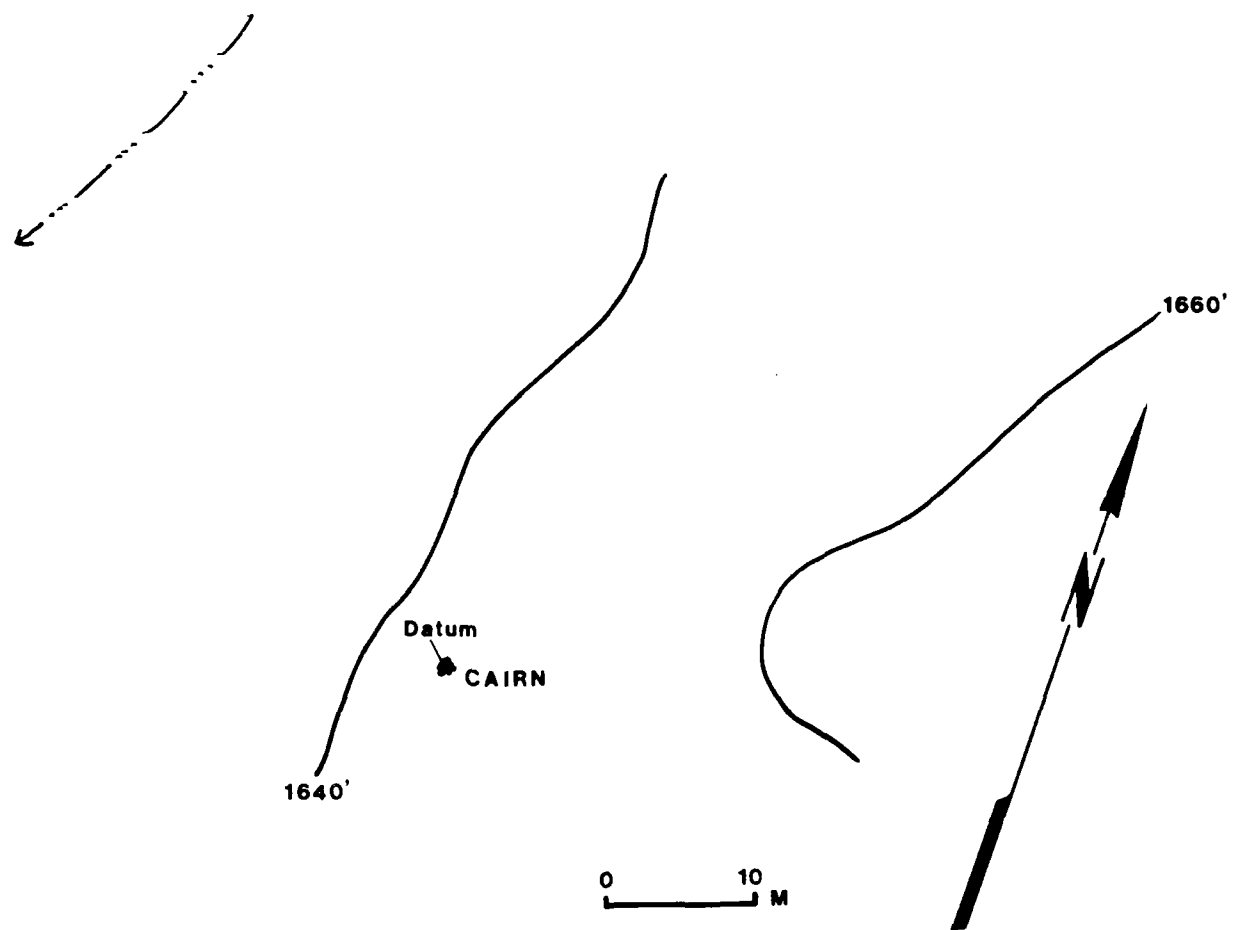


Figure 60. Plan of site 39DW70.



Plate 74. Site 39DW70, cairn, facing S.

SITE NUMBER: 39DW71 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 61 PLATE(S): 75
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 1.12m diameter.
TOPOGRAPHY: On a prominent ridge end between the Cheyenne River and a
minor tributary.
ELEVATION: 494m.
VIEW (degree): 110. VIEW (distance): 3-5 miles.
STRATA AND DEPTH: Unknown; soil is a very fine light gray silt.
VEGETATION: Buffalograss, medium grasses, dotted gayfeather.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Cheyenne River - 50m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 25-40 double fist-sized to half
head-sized cobbles, 1.12m in diameter.
REMARKS: An area of the cairn 0.72m in diameter is disturbed. No
cultural materials were observed. A listing of timber lots (MRBI 1952a,
1952b) indicates this area may be part of Lot #5.
IMPACTS: Presently relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, the site should be mitigated.
PURPOSE OF TESTING: Determine the nature of the cairn.
PRIORITY: Low.

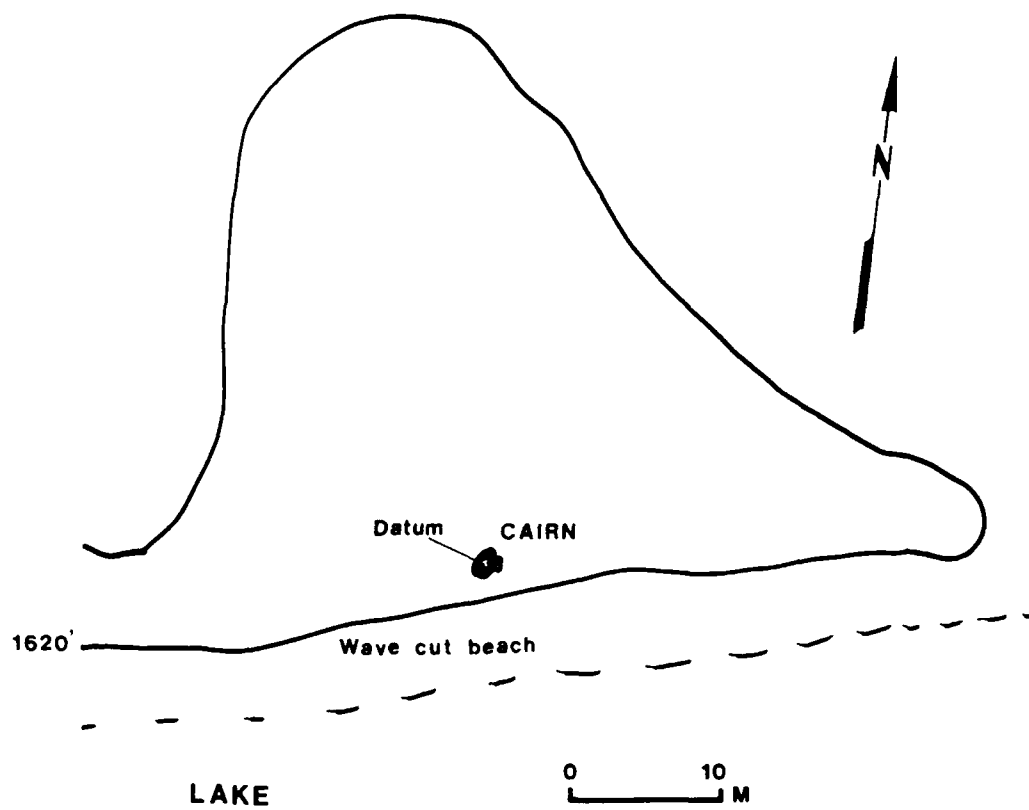


Figure 61. Plan of site 39DW71.



Plate 75. Site 39DW71, cairn, facing E.

SITE NUMBER: 39DW72 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 62 PLATE(S): 76
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 1m N-S x 0.9m E-W.
TOPOGRAPHY: At the southwest corner of an upper terrace edge.
ELEVATION: 512m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a brown silt with numerous pebbles.
VEGETATION: Buffalograss, dotted gayfeather, prickly pear.
SURFACE VISIBILITY: 50%.
NEAREST WATER: Intermittent stream - 120m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 50+ fist-sized to double fist-sized
cobbles, 1.0m N-S x 0.9m E-W.
REMARKS: No cultural materials were observed. A Corps marker was
present to the south. A listing of timber lots (MRBI 1952a, 1952b)
indicates this area may be part of Lot #6.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If that circumstance occurs, mitigate the site.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

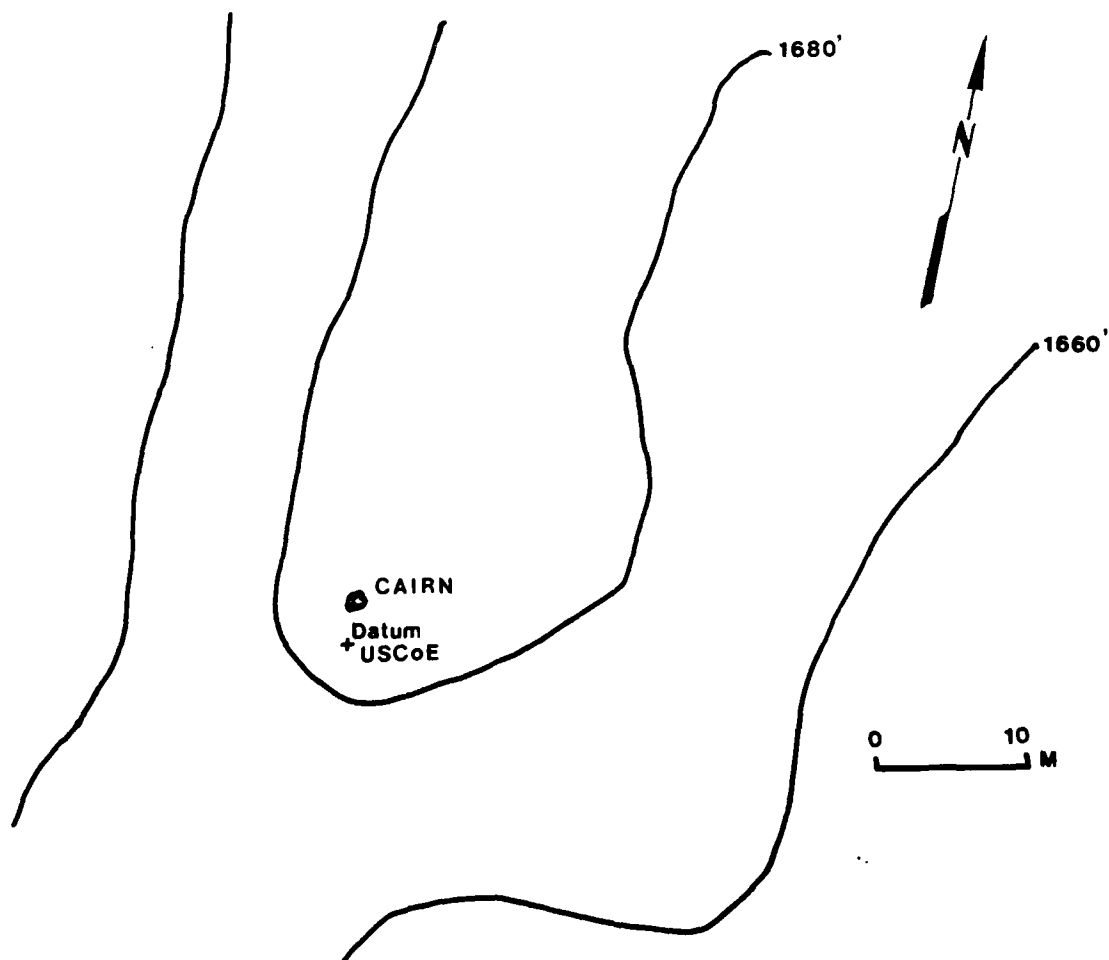


Figure 62. Plan of site 39DW72.



Plate 76. Site 39DW72, cairn, facing E.

SITE NUMBER: 39DW73 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 63 PLATE(S): 77
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska and private.
SITE TYPE: Cairn.
SITE COMPONENT: Euro-American.
SITE SIZE: 0.85m diameter.
TOPOGRAPHY: At the sloping end of a ridge or erosional remnant on the
upper terrace.
ELEVATION: 512m.
VIEW (degree): 360. VIEW (distance): 3-12 miles.
STRATA AND DEPTH: Unknown; soil is a brown silt with pebbles.
VEGETATION: Buffalograss, medium grass, yucca, dotted gayfeather,
prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 336m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 30 fist-sized to head-sized stones, 0.85m
in diameter. An Indian Allotment brass cap (1930) and Corps stake were
located within the area of the cairn.
REMARKS: No cultural materials were observed (other than markers). The
cairn and the markers are very likely associated. A listing of timber
lots (MRBI 1952a, 1952b) indicates this area may be part of Lot #5.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. In that case, research the hypothesis that the cairn
and allotment/Corps marker are associated and/or mitigate the site.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

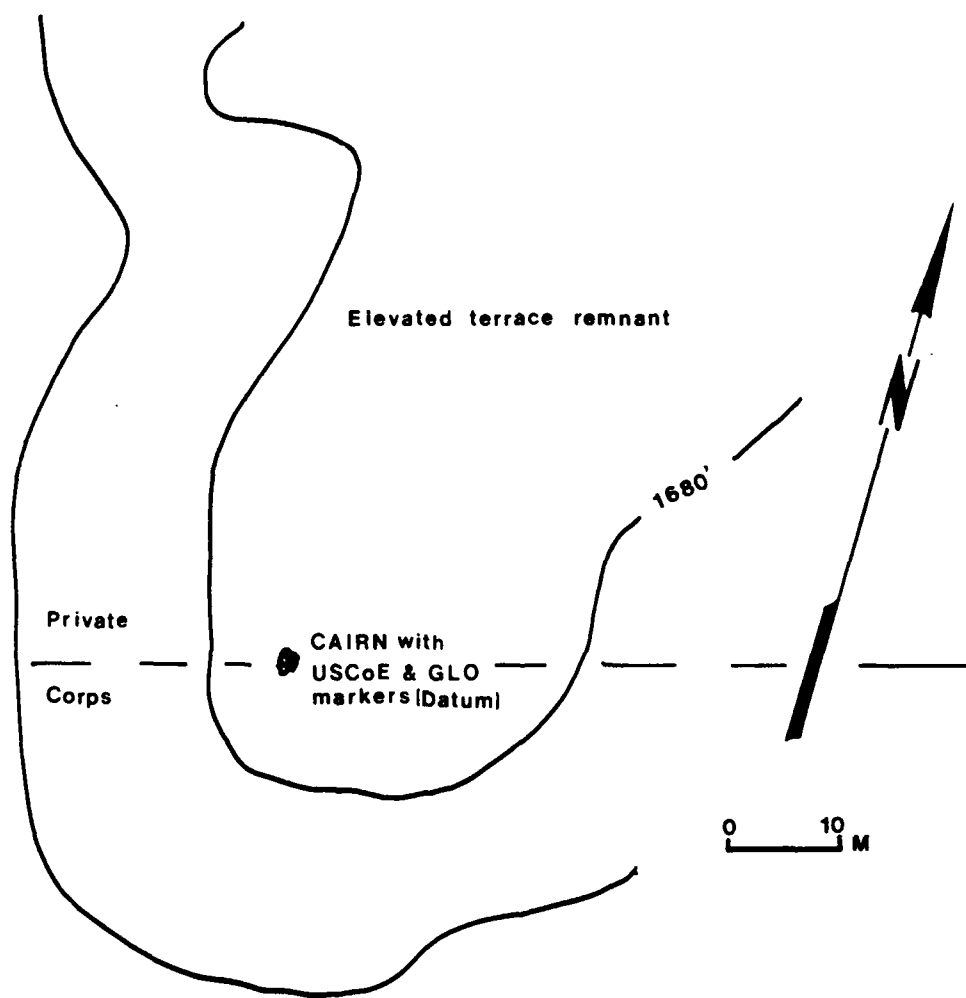


Figure 63. Plan of site 39DW73.



Plate 77. Site 39DW73, cairn, facing S.

SITE NUMBER: 39DW74 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 64 PLATE(S): 78-84
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Occupation.
SITE COMPONENT: Historic Native American.
SITE SIZE: 350m N-S x 300m E-W - 10.5ha.
TOPOGRAPHY: At the east side of a large terrace flat, along the
northeast side of a low to medium terrace.
ELEVATION: 500m.
VIEW (degree): 110. VIEW (distance): 3 miles.
STRATA AND DEPTH: Unknown; soil is a brown silt.
VEGETATION: Buffalograss, medium grasses, prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 50m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP:
1: Cairn of 15 fist-sized to double fist-sized cobbles, 0.66m N-S x
0.85m E-W.
2: Cairn of 15 fist-sized to double fist-sized cobbles, 0.66m in
diameter.
3: Depression, 4.5m x 4.25m and 63cm deep.
4: Dugout, 6m N-S x 9.0m E-W and 1.56m deep.
5: Depression, 4.5m x 7.0m and 84cm deep.
6: Depression, 3.7m x 5.9m and 42cm deep.
7: Rock foundation, 8.5m x 9.6m. This is a rock-lined sill or
foundation with burned wooden beams and siding.
8: Rock foundation, 11.21m N-S x 5.52m E-W, consisting of large (two
head-sized) rocks. Four small stone circles are located down the
mid-line of the foundation, approximately every 1.75m.
REMARKS: In addition to the features listed above, Walker Hunter
Cemetery is located just to the northwest of this site (outside the
survey area) and may be associated. The little cultural material

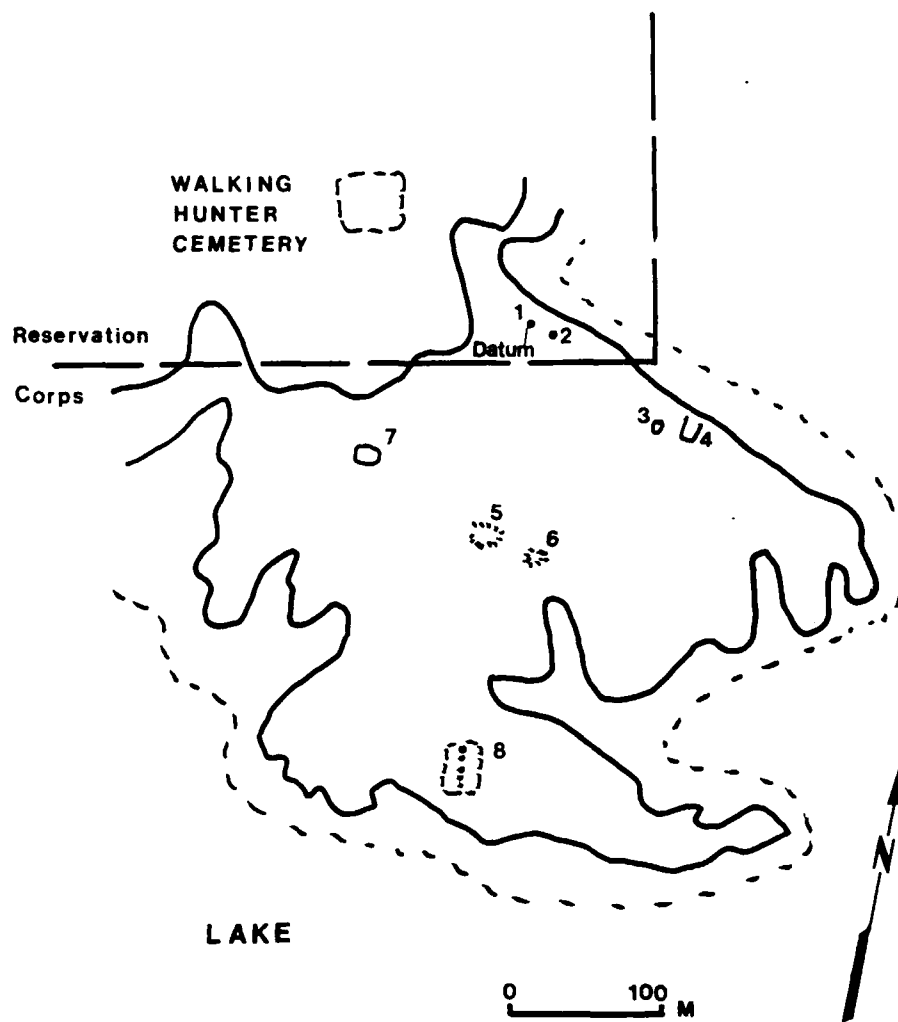


Figure 64. Plan of site 39DW74.



Plate 78. Site 39DW74, detail of Feature 1 (cairn), facing N.

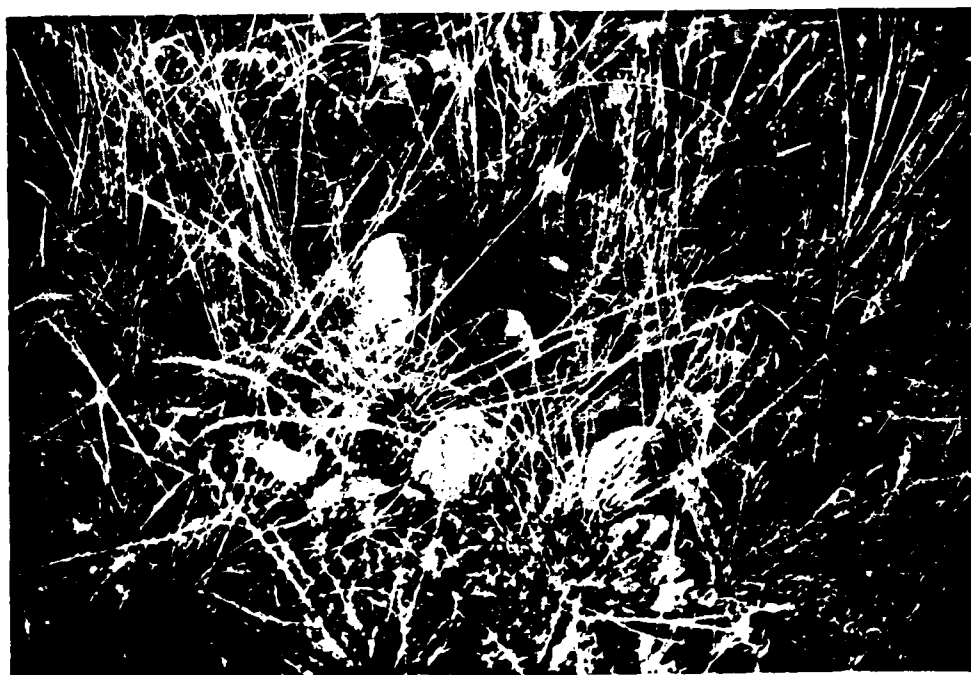


Plate 79. Site 39DW74, detail of Feature 2 (cairn), facing N.



Plate 80. Site 39DW74, detail of Feature 3 (depression), facing SE.



Plate 81. Site 39DW74, detail of Feature 4 (dugout), facing SE.



Plate 82. Site 39DW74, detail of Features 5 and 6 (depressions), facing E.



Plate 83. Site 39DW74, detail of debris around Feature 7, facing W.

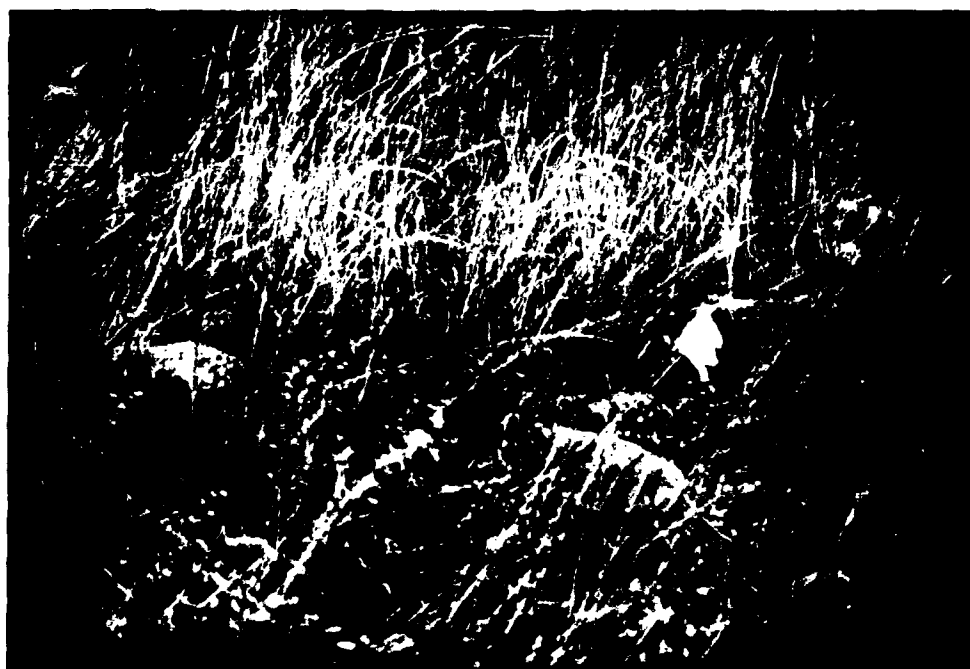


Plate 84. Site 39DW74, detail of Feature 8 (foundation), facing SE.

observed consisted of some purple and green glass fragments and white glazed stoneware around Features 5 and 6.

The site is shown on the 1901 General Land Office Map (at least four structures). One structure (possibly Feature 8) is labeled a church. A structure (possibly Feature 7) is shown on the 1948 War Department Map in this area.

A listing of timber lots (MRBI 1952a, 1952b) suggests this area is associated with Lot 5 (Sec. 24) and Lot 10 (Sec. 19). Segment A - Allotment X-1115? Segment B - Allotment Tribal 1?

The site appears to be a small community and is potentially very significant.

IMPACTS: Presently relatively undisturbed.

RECOMMENDATIONS/TESTING: It is recommended that in-depth documentary research on this site be continued and the potential local and regional significance be assessed. Detailed mapping of the site should be undertaken to determine the total number of features extant. Depending on the results of this research, selective testing should be conducted to determine the nature/age of those features for which such information was not obtained during the documentary research.

PURPOSE OF TESTING: To ascertain the nature, integrity, research potential and component(s) of the site features.

PRIORITY: Medium.

SITE NUMBER: 39DW75 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 65 PLATE(S): 85
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Historic artifact scatter.
SITE COMPONENT: Euro-American.
SITE SIZE: 40m N-S x 80m E-W - 0.32ha.
TOPOGRAPHY: On a point of a terrace system above the Cheyenne River.
ELEVATION: 500m.
VIEW (degree): 180. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Surficial; soil is sandy.
VEGETATION: Tall grass, sage, buffalograss.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Cheyenne River - 50m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Not eligible.
DATA PLOTTED ON MAP:
1: Large pile of lumber, boards and wire.
2: A sign ... "Red Gas - Power E"
3: Area of sheet metal.
4: Area of cans.
5: Scatter of cans, bottles and other trash.
6: Scattered boards.
REMARKS: Appears to be a dump/trash area that is less than 50 years
old. A listing of timber lots (MRBI 1952a (Figure 3), 1952b) indicates
this area is associated with Allotment 932 (Segment B).
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended.
PRIORITY: Low.

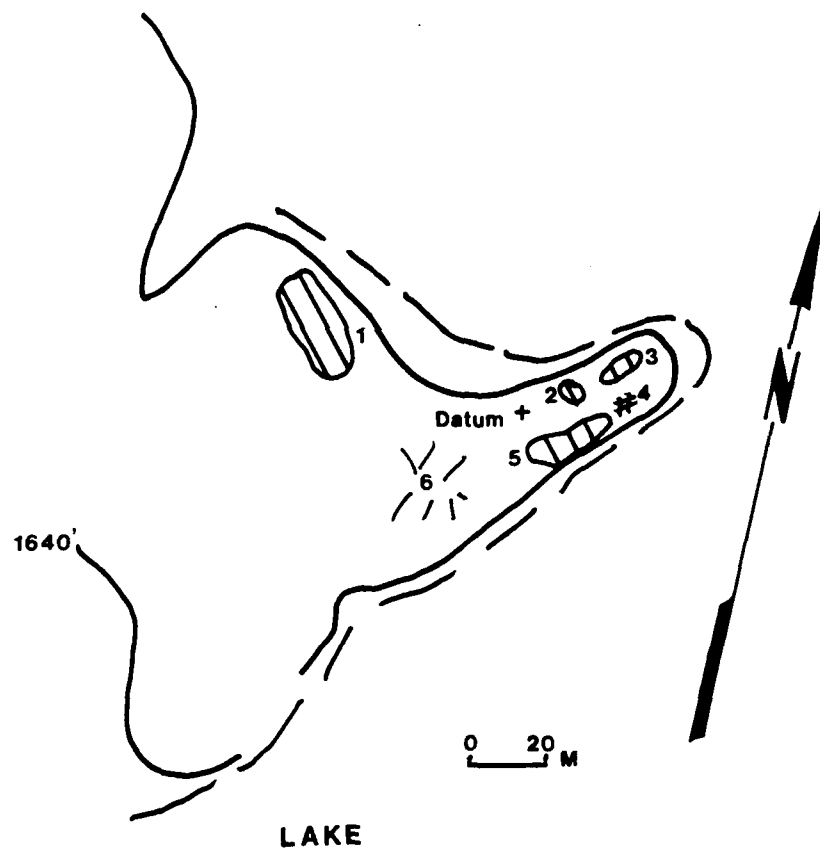


Figure 65. Plan of site 39DW75.

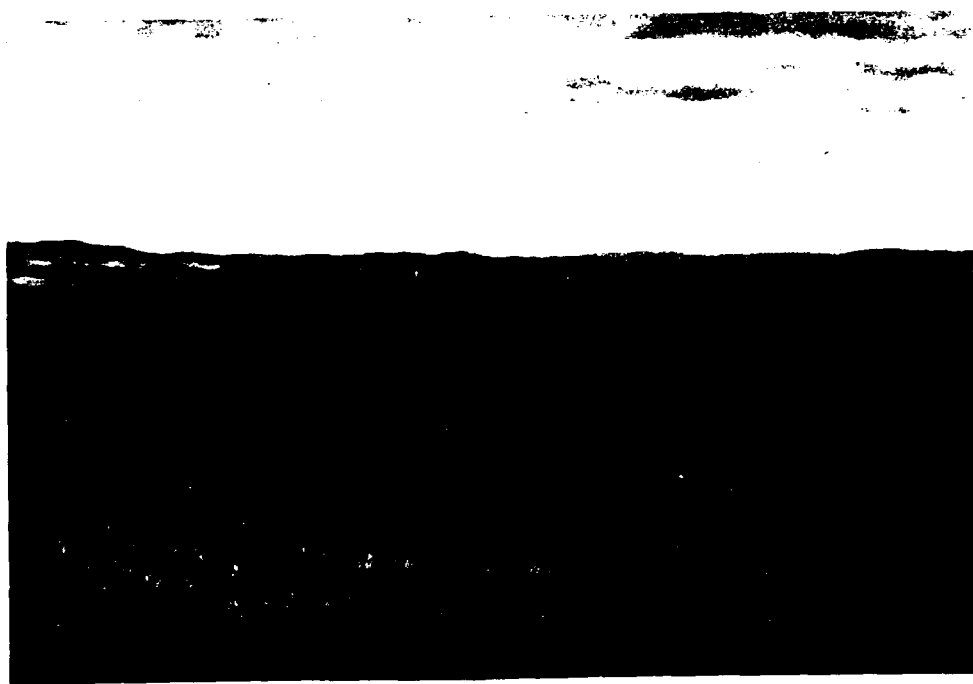


Plate 85. Site 39DW75, facing SE.

SITE NUMBER: 39DW76 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 66 PLATE(S): 86
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Euro-American.
SITE SIZE: 0.83m N-S x 1.34m E-W.
TOPOGRAPHY: On a small subsidiary knob jutting off a descending terrace
edge.
ELEVATION: 512m.
VIEW (degree): 90. VIEW (distance): 2 miles.
STRATA AND DEPTH: Unknown; soil is a fine brown sand.
VEGETATION: Buffalograss, prickly pear, silver sagebrush.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Herbert Creek - 300m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 30 fist-sized to double fist-sized
cobbles, 0.83m N-S x 1.34m E-W.
REMARKS: An Indian Allotment brass cap GLO 1931 marker and Corps marker
are located adjoining the cairn and are likely associated. A listing of
timber lots (MRBI 1952a, 1952b) indicates this area may be part of
Segment B - Allotment X-1228; Segment B - Allotment 986; Segment B -
Allotment X-1227?
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, mitigate the site.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

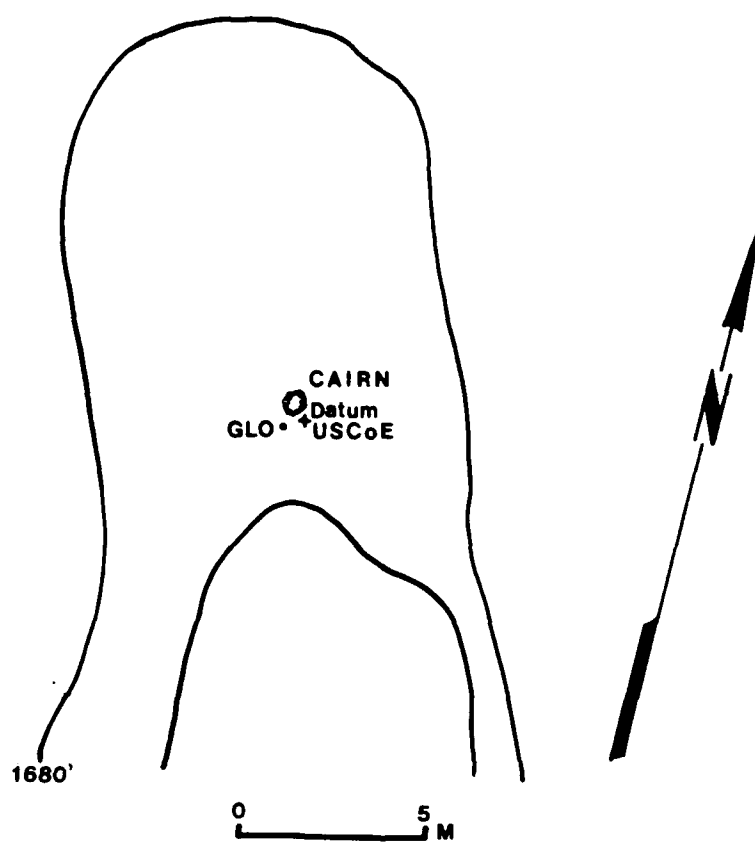


Figure 66. Plan of site 39DW76.

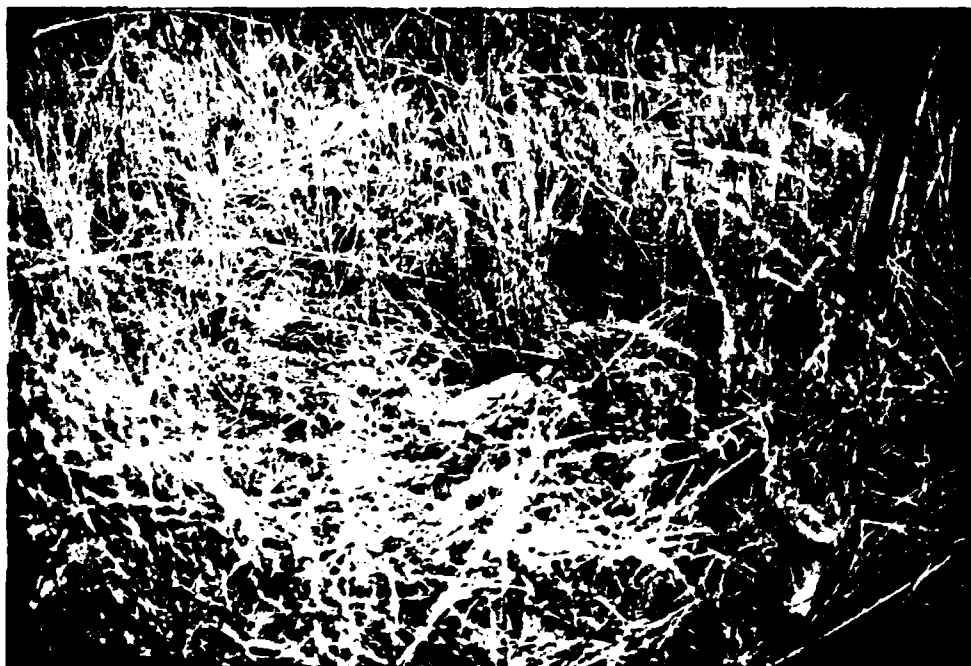


Plate 86. Site 39DW76, cairn, facing N.

SITE NUMBER: 39DW77 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 67 PLATE(S): 87
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 0.45m x 0.45m.
TOPOGRAPHY: On the edge of a narrow point/ridge.
ELEVATION: 500m.
VIEW (degree): 40. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown/surficial; soil is a sand and gravel.
VEGETATION: Sparse buffalograss, sage, yucca, prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 70m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 9-10 rocks in an area 45cm in diameter.
REMARKS: No cultural materials were observed.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, mitigate the site.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

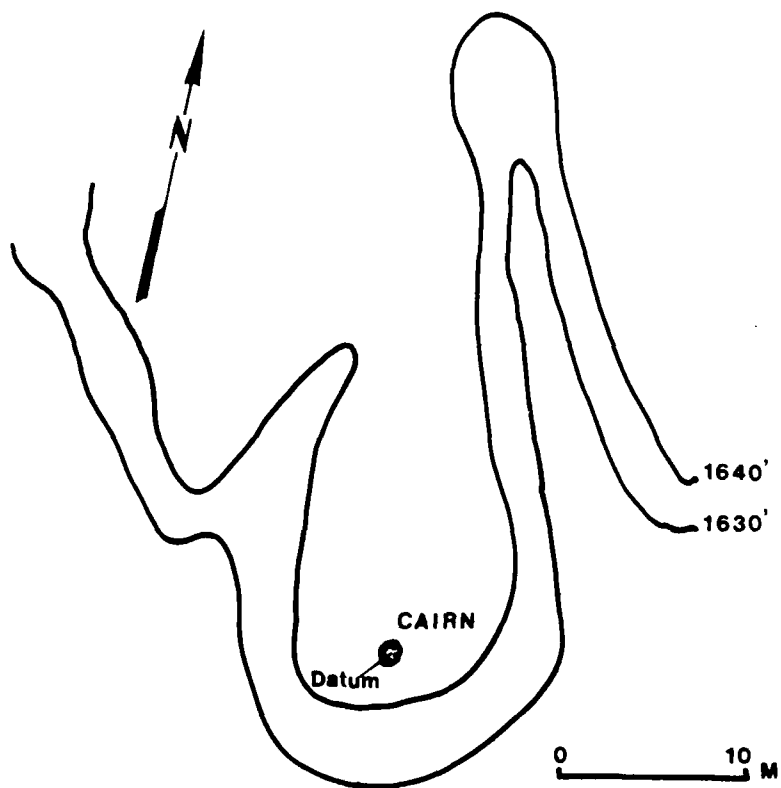


Figure 67. Plan of site 39DW77.

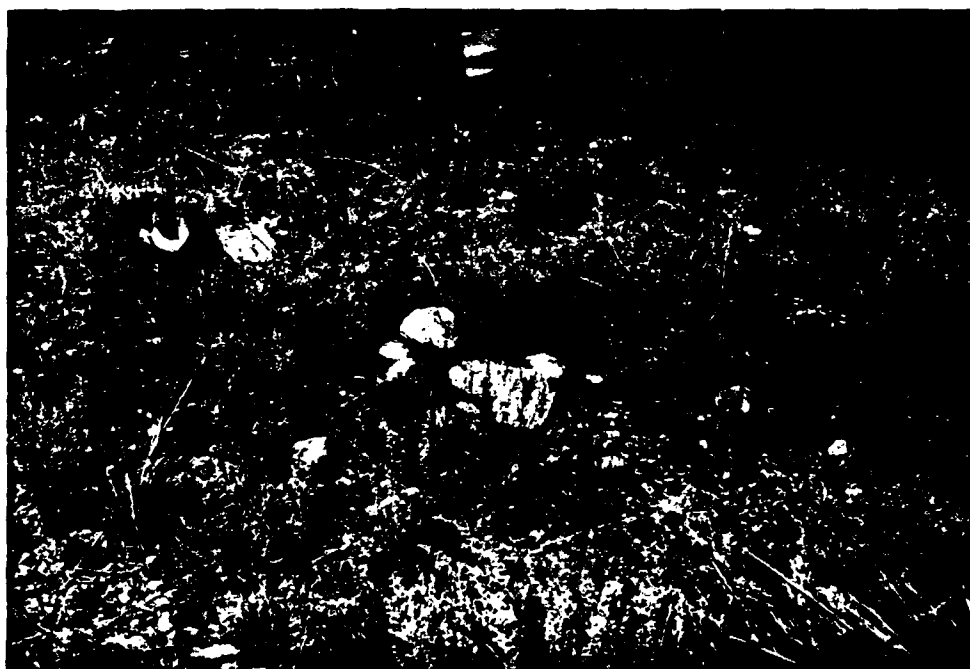


Plate 87. Site 39DW77, cairn, facing N.

SITE NUMBER: 39DW78 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 68 PLATE(S): 88
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 0.6m x 0.3m.
TOPOGRAPHY: On a small hill overlooking a bay.
ELEVATION: 506m.
VIEW (degree): 110. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown/surficial; soil is a sand and gravel.
VEGETATION: Sparse grasses, sage and prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 216m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn of 9-10 rocks in an area 60cm by 30cm.
REMARKS: No cultural materials were observed.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted; in that case mitigation should be undertaken.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

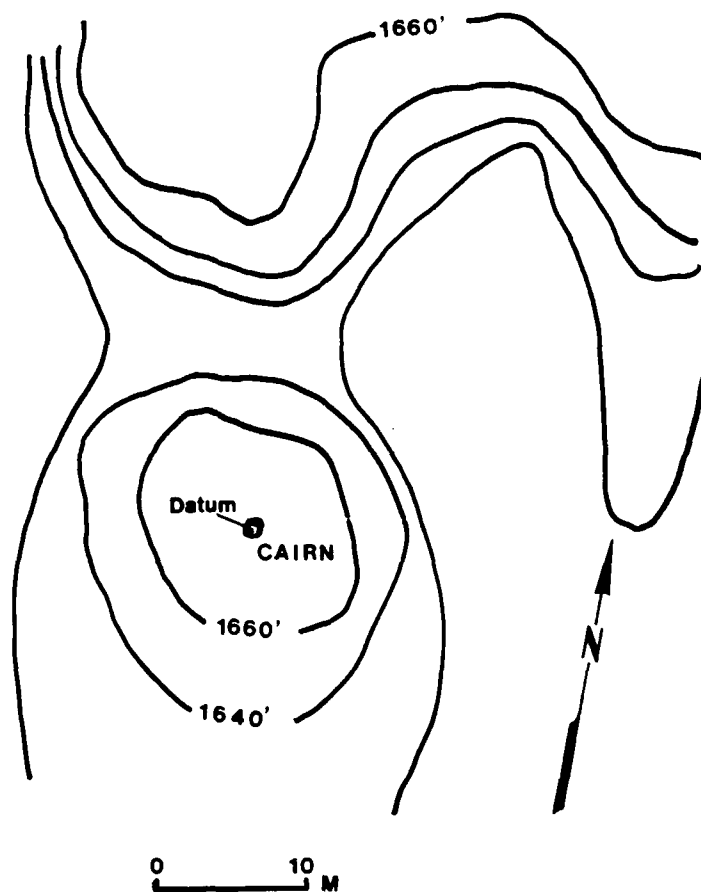


Figure 68. Plan of site 39DW78.

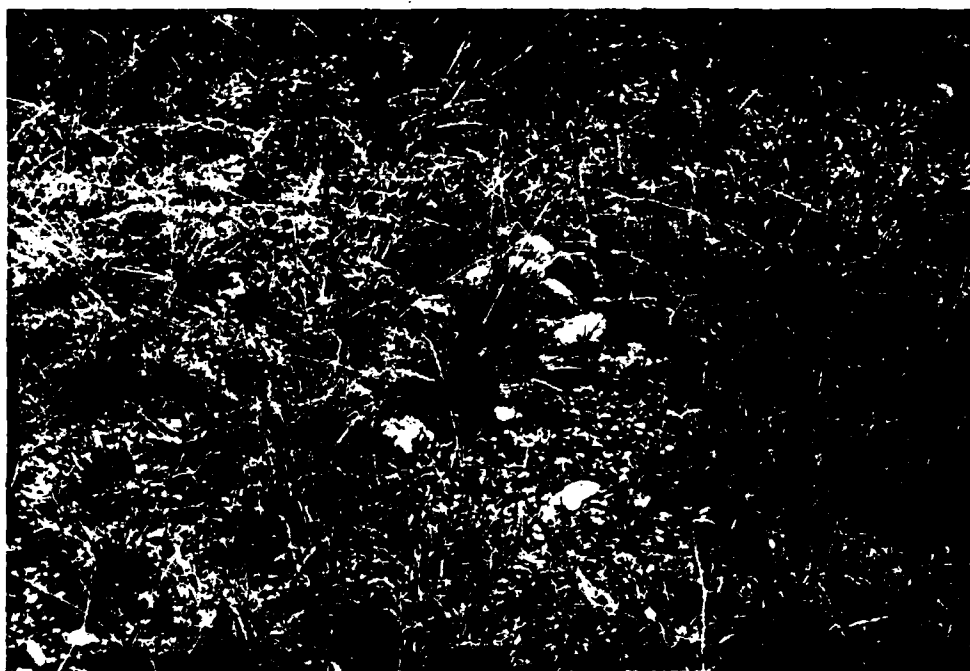


Plate 88. Site 39DW78, cairn, facing S.

SITE NUMBER: 39DW79 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 69 PLATE(S): 89, 90
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn and artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 30m N-S x 1m E-W.
TOPOGRAPHY: On the end of a square-ended point at the mouth of a small
bay.
ELEVATION: 510m.
VIEW (degree): 230. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a sand and gravel over shale.
VEGETATION: Sparse sage, buffalograss, yucca and prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 120m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Cairn, 1m x 1m; 2: Cairn, 60cm x 30cm.
REMARKS: A jasper core fragment, a tested cobble of quartzite and a
tested cobble of chert were located just to the southeast of Cairn 1.
IMPACTS: Slight surface erosion.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, mitigate the cairns.
PURPOSE OF TESTING: To determine the nature of the cairns.
PRIORITY: Low.

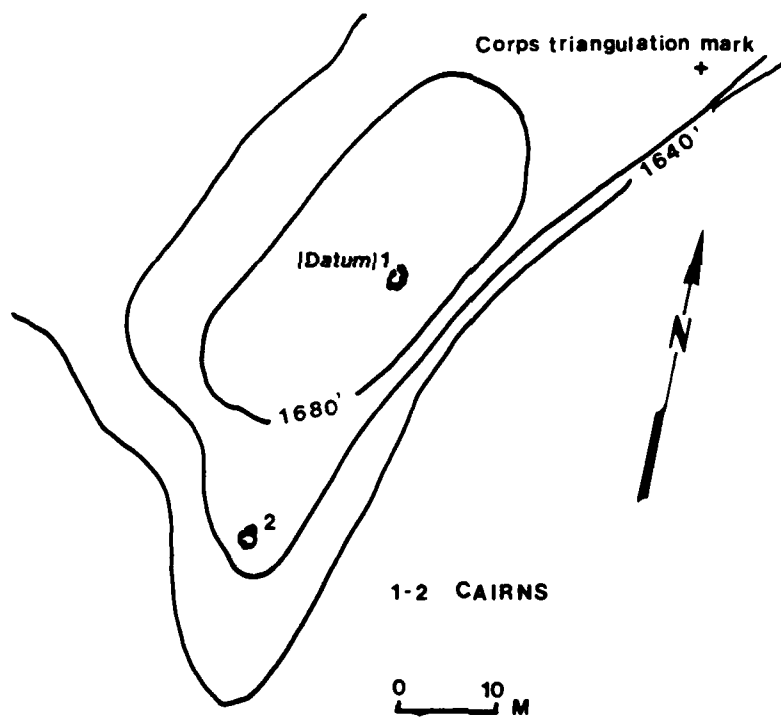


Figure 69. Plan of site 39DW79.



Plate 89. Site 39DW79, detail of Cairn 1, facing SE.



Plate 90. Site 39_{DW}79, detail of Cairn 2, facing SW.

SITE NUMBER: 39DW80 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 70 PLATE(S): 91
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 0.6m x 0.7m.
TOPOGRAPHY: On a small hill midway between the end of a point and the
bluff of a flat.
ELEVATION: 510m.
VIEW (degree): 180. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown/surficial; soil is a gravel on shale.
VEGETATION: Sage, mixed grasses and prickly pear.
SURFACE VISIBILITY: 30%.
NEAREST WATER: Intermittent stream - 60m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Cairn comprised of 30 rocks, 60cm x 70cm.
REMARKS: No cultural materials were observed.
IMPACTS: Slight surface weathering.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, mitigation should be undertaken.
PURPOSE OF TESTING: To determine the nature of the cairn.
PRIORITY: Low.

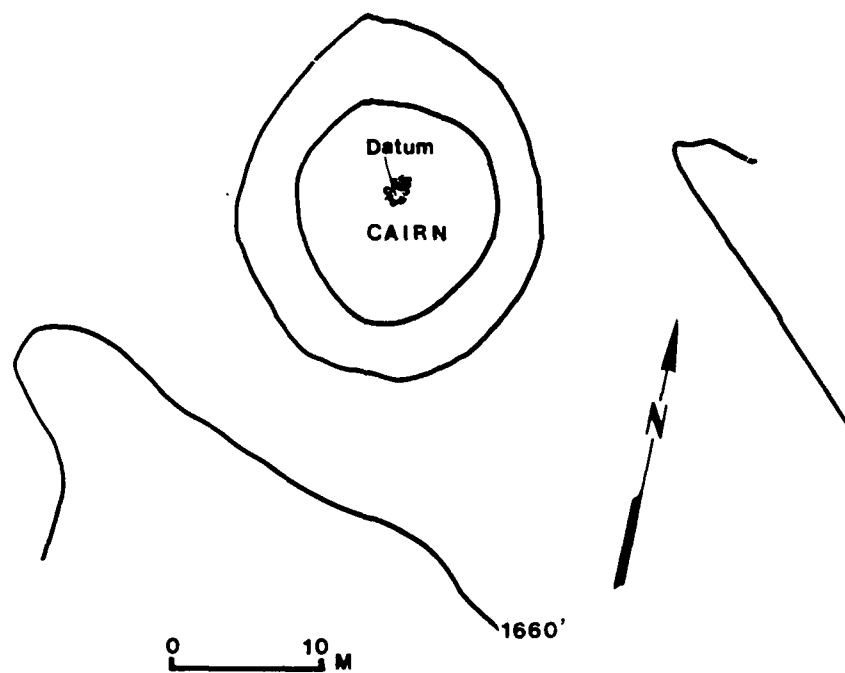


Figure 70. Plan of site 39DW80.



Plate 91. Site 39DW80, cairn, facing SE.

SITE NUMBER: 39DW81 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 71 PLATE(S): 92
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Plains Village.
SITE SIZE: 150m N-S x 450m E-W.
TOPOGRAPHY: On top of a bluff/terrace ridge system.
ELEVATION: 530m.
VIEW (degree): 180. VIEW (distance): 1-3 miles.
STRATA AND DEPTH: Unknown; soil is a brown sandy silt loam.
VEGETATION: Buffalograss, leafy spurge, medium grasses and yucca.
SURFACE VISIBILITY: 30-100%.
NEAREST WATER: Cheyenne River - 700m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Midsection and base of a side-notched projectile
point of translucent brown chalcedony; grooved maul fragment of granite;
three ceramic bodysherds with slight dentate on one piece; and a ceramic
neck sherd with parallel horizontal incised lines.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: In addition to the collected items listed above, three other
stone tools were noted: two Stage I bifaces of brown chalcedony and a
bifacially worked fragment of cloudy chalcedony. Twelve cores, core
fragments or tested cobbles (four quartzite, three chert and one each of
chalcedony, petrified wood, Tongue River silica, jasper and plate
chalcedony) were observed. Fifty-one debitage items were noted (11
chalcedony, 15 chert, 13 quartzite, two Tongue River silica, seven
petrified wood, and one each of porcelanite, quartz, and silicified
sediment). Some FCR was also present.
IMPACTS: Moderate - tracks, surface and slope erosion.
RECOMMENDATIONS/TESTING: Detailed site mapping and evaluation using
shovel tests and four to eight 1m x 1m units are recommended.

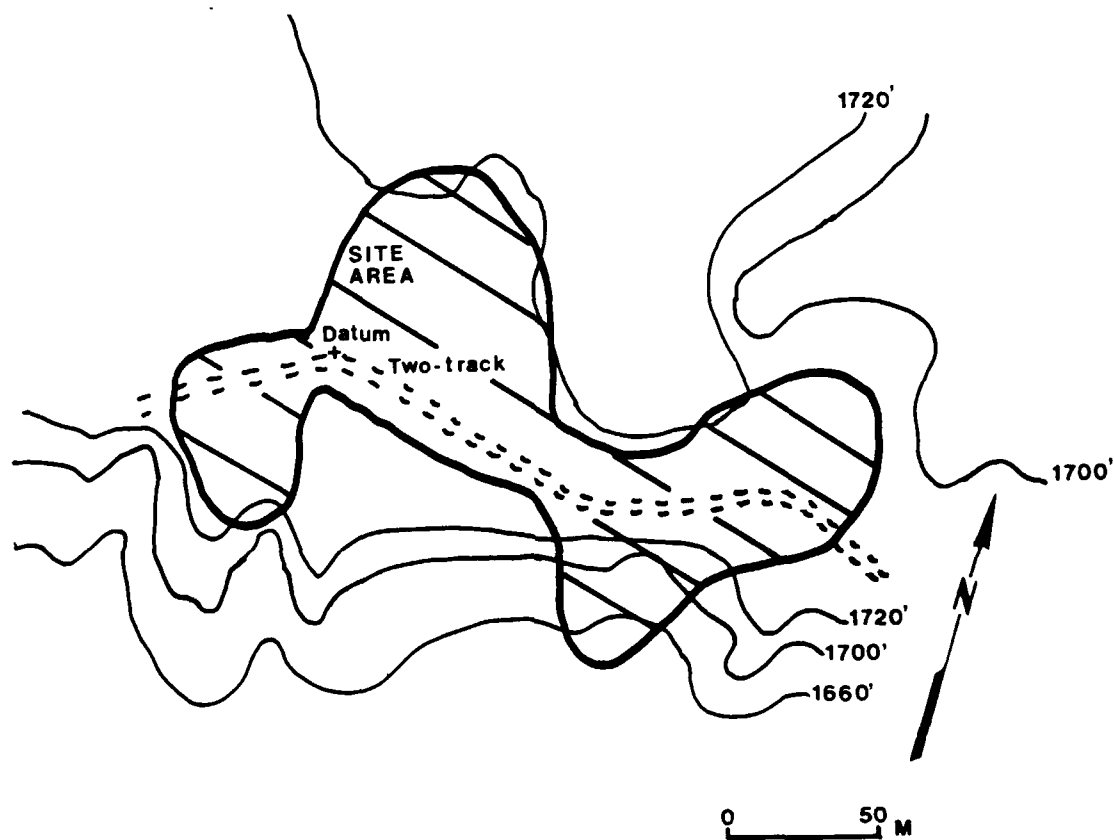


Figure 71. Plan of site 39DW81.



Plate 92. Site 39DW81, facing W.

PURPOSE OF TESTING: To determine the extent of the site, integrity,
research potential and component(s) at the site.

PRIORITY: Medium.

SITE NUMBER: 39DW82 SITE NAME: St. Peters Cemetery Site.
COUNTY: Dewey STATE: S.D. FIGURE(S): 72, 73 PLATE(S): 93, 94
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cemetery and prehistoric artifact scatter.
SITE COMPONENT: Native American and Plains Village?
SITE SIZE: 180m N-S x 250m E-W - 4.5ha.
TOPOGRAPHY: On top of a flat-topped ridge/terrace system.
ELEVATION: 529m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a brown silt under sparse gravel.
VEGETATION: Buffalograss, skunkbrush.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Rousseau Creek - 750m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: Unnotched triangular projectile point with a
portion of the left lateral basal area removed; produced on white chert.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Location of cemetery (St. Peters) within areas of
prehistoric artifact scatter. Fenced cemetery area is ca. 75m N-S x 45m
E-W. Sunken depressions, several of which are difficult to define,
appear generally as on the cemetery map (Figure 73). This map lists 54
graves (there are two #5s and no #26), with 24 of the graves marked
unknown. A list in the Bureau of Indian Affairs (1951) census of Indian
cemeteries on the Cheyenne Indian Reservation provides 25 names and 30
unidentified graves, for a total of 55 burials.
REMARKS: In addition to the collected projectile point, four cores, 35
pieces of debitage and a long bone fragment were observed. The cores
are produced on tan quartzite, brown quartzite, brown chert and white
chert. The debitage consisted of 12 chalcedony, 16 chert, one Tongue
River silica, one quartz and five quartzite items.

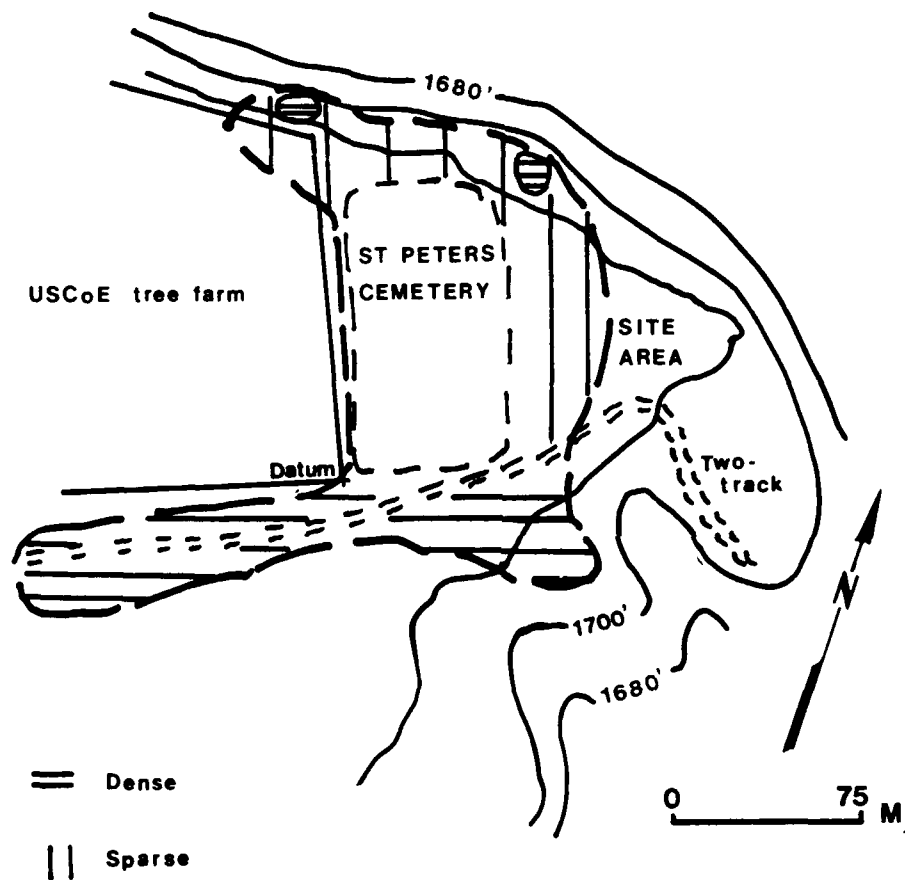


Figure 72. Plan of site 39DW82.



Plate 93. Site 39DW82 (fence at edge of cemetery), facing E.

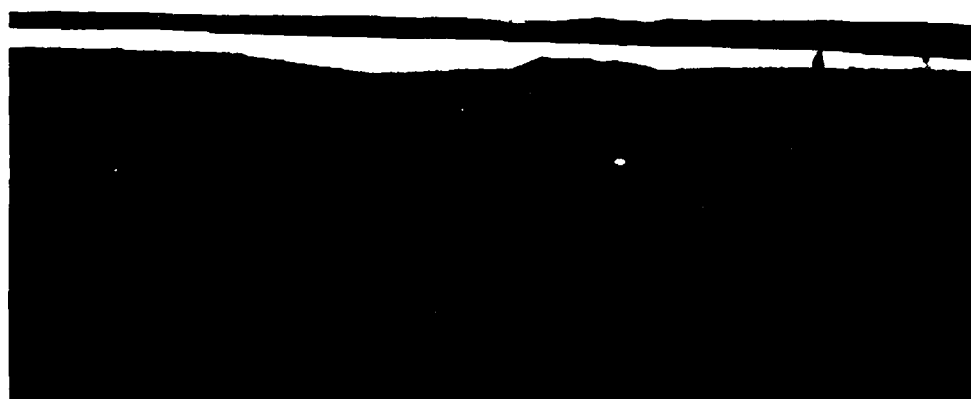


Plate 94. Site 39DW82, cemetery area, facing SE.

IMPACTS: Presently slight - area crossed by tracks, slope/surface erosion and impacted by tree planting. Cemetery probably impacted the artifact scatter.

RECOMMENDATIONS/TESTING: Combine shovel testing and six to eight 1m x 1m units to evaluate the artifact scatter. The cemetery area is documented, but further research could be undertaken.

PURPOSE OF TESTING: To define subsurface integrity, components, areal extent of the site and research potential.

PRIORITY: Medium.

SITE NUMBER: 39DW83 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 74 PLATE(S): 95
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Unknown.
SITE SIZE: 20m N-S x 35m E-W - 0.07ha.
TOPOGRAPHY: Along the edge of the terrace/bluff on the north side of
the Cheyenne River.
ELEVATION: 525m.
VIEW (degree): 360. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a brown loam.
VEGETATION: Buffalograss.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Cheyenne River - 1200m.
CONDITION: Extant.
PPEVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
REMARKS: Nineteen lithic items were observed at this site in addition
to some tooth enamel fragments. A retouched plate chalcedony fragment
was the only tool observed, and only two core fragments (of brown chert
and cloudy chalcedony) were noted. The debitage consisted of nine
chalcedony, three chert, one plate chalcedony, one quartzite, and two
quartz items.
IMPACTS: Slight surface erosion; trail.
RECOMMENDATIONS/TESTING: Combine shovel tests with two to three 1 x 1m
units to evaluate the site.
PURPOSE OF TESTING: To determine areal extent, subsurface integrity,
component(s) present and research potential of the site.
PRIORITY: Low.

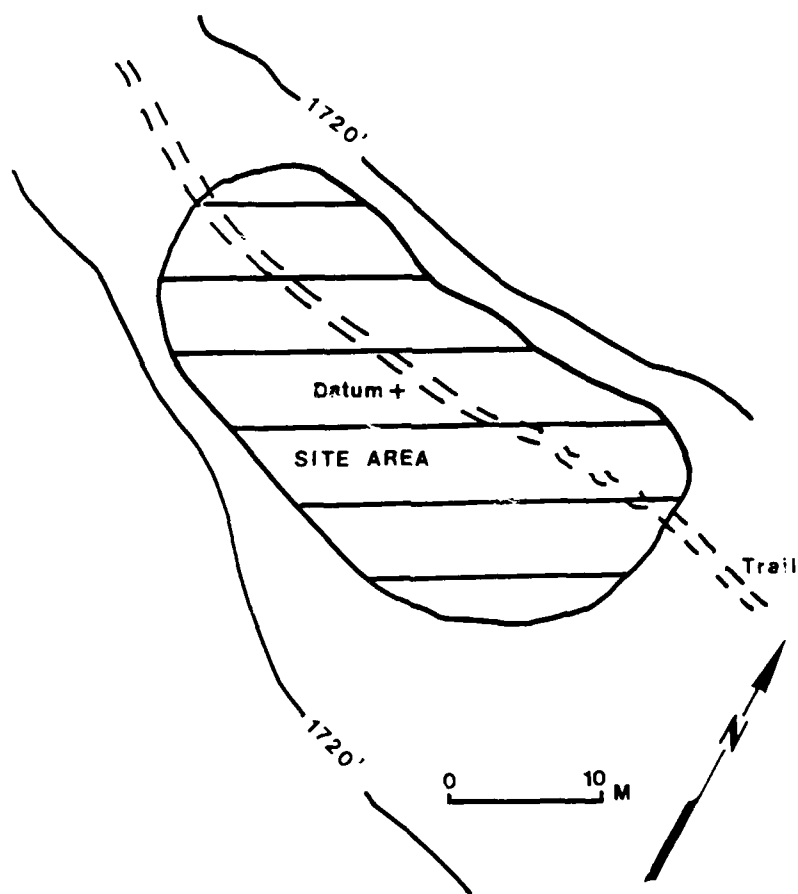


Figure 74. Plan of site 39DW83.

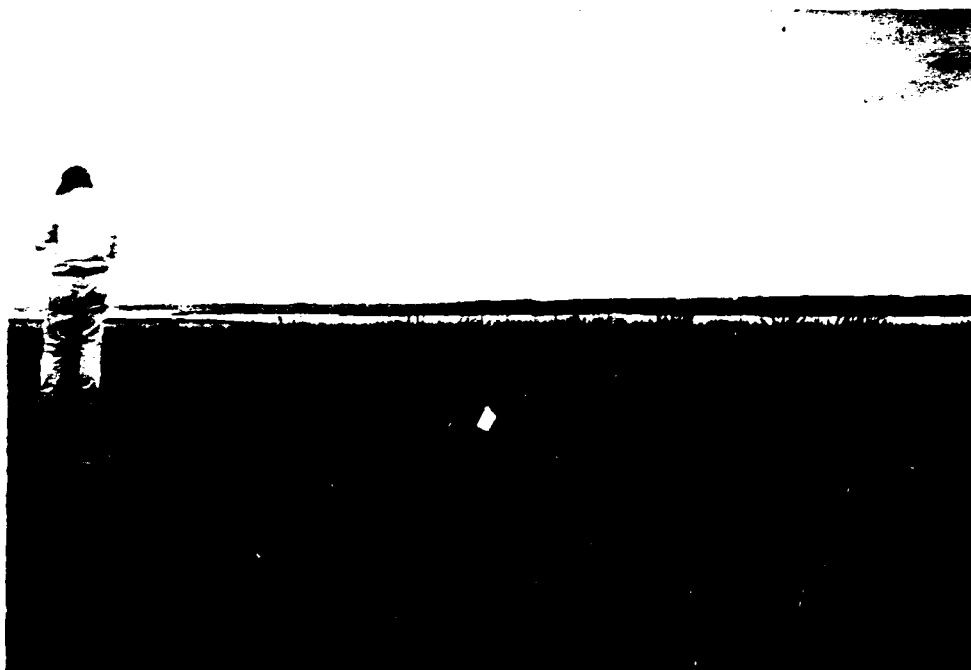


Plate 95. Site 39DW83, facing E.

SITE NUMBER: 39DW84 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 75 PLATE(S): 96
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Artifact scatter.
SITE COMPONENT: Late Prehistoric.
SITE SIZE: 8m N-S x 6m E-W.
TOPOGRAPHY: On a small flat at the end of a ridge descending from a
long main ridge system.
ELEVATION: 494m.
VIEW (degree): 180. VIEW (distance): 1 mile.
STRATA AND DEPTH: Unknown; soil is blackened decomposed shale with
concretions.
VEGETATION: Buffalograss, sparse medium to tall grass, sagebrush.
SURFACE VISIBILITY: 60%.
NEAREST WATER: Intermittent stream - 100m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: ALCWS 1986.
COLLECTED ARTIFACTS: One Plains side-notched projectile point, distal
tip resharpened, of tan quartzite; and one triangular point,
asymmetrical left lateral margin, of dark brown quartzite.
LOCATION OF ARTIFACTS: SDARC.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1, 2: Location of projectile points.
REMARKS: In addition to the two projectile points collected, there were
several areas of broken and crushed bone (possibly bison); rib
fragments, long bone fragments, a large molar, the left third phalanx
and a small lateral incisor (right) were noted. One broken granite
cobble was also observed, but no lithic debitage was located.
IMPACTS: Moderate surface erosion.
RECOMMENDATIONS/TESTING: One to two 1m x 1m units are recommended to
evaluate the site.
PURPOSE OF TESTING: To determine subsurface integrity, relationships of
observed cultural material, component(s) present and research potential.
PRIORITY: Medium.

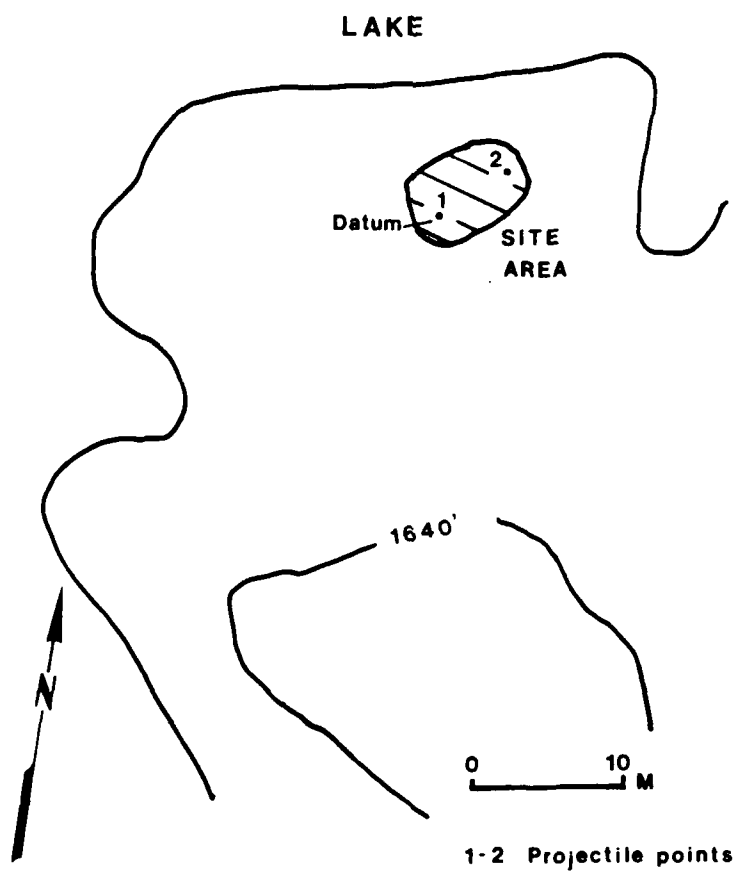


Figure 75. Plan of site 39DW84.



Plate 96. Site 39DW84, facing NW.

SITE NUMBER: 39DW85 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 76 PLATE(S): 97
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Cairn.
SITE COMPONENT: Unknown.
SITE SIZE: 2.15m N-S x 2.85m E-W.
TOPOGRAPHY: At the base of three converging erosional lobes/ridges.
ELEVATION: 494m.
VIEW (degree): 15. VIEW (distance): Less than 1 mile.
STRATA AND DEPTH: Surficial; area is eroded Pierre shale.
VEGETATION: Sparse short grasses and forbs.
SURFACE VISIBILITY: 70%.
NEAREST WATER: Fishgut Creek - 500m.
CONDITION: Disturbed.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Not eligible.
DATA PLOTTED ON MAP: Cairn is a collection of ca. 30 fist-sized to
head-sized cobbles in a diffuse arrangement; it is likely natural but
could possibly be a badly eroded cairn. Dimensions are 2.15m N-S x
2.85m E-W.
REMARKS: The cairn is clearly surficial and lacks any real "form." No
cultural materials were observed. A listing of timber lots (MRBI 1952a,
1952b) indicates this area may be part of Segment B - Allotment 2294;
Segment B - Allotment Tribal 24?
IMPACTS: Moderate slope wash.
RECOMMENDATIONS/TESTING: No further work.
PRIORITY: Low.

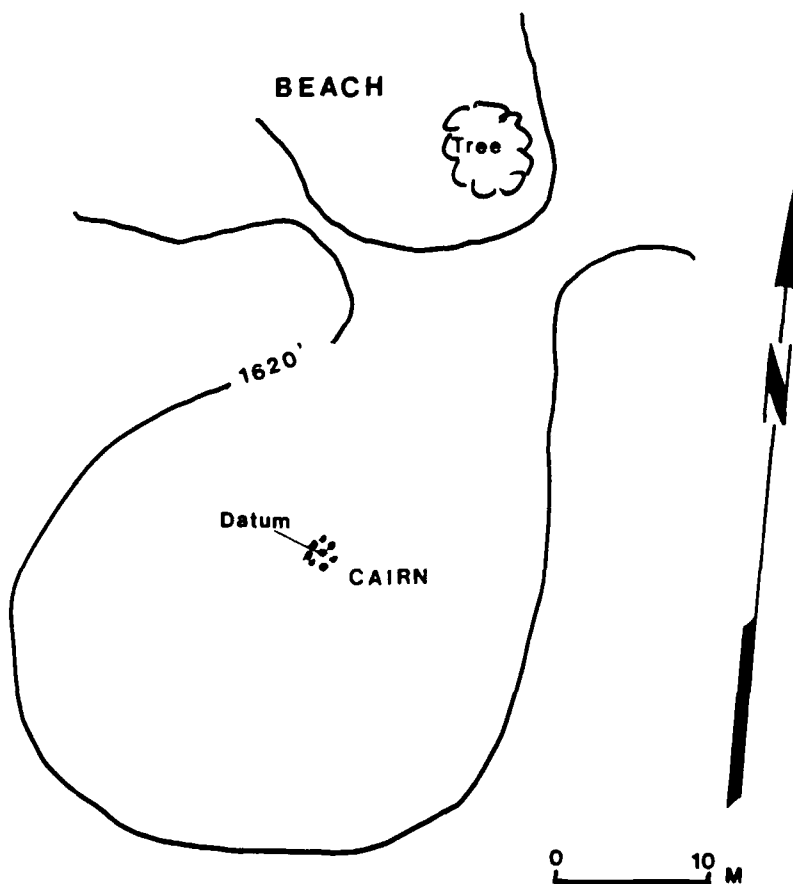


Figure 76. Plan of site 39DW85.



Plate 97. Site 39DW85, cairn, facing SE.

SITE NUMBER: 39DW86 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 77 PLATE(S): 98
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Depression.
SITE COMPONENT: Unknown.
SITE SIZE: 1.75m E-W x 0.85m N-S.
TOPOGRAPHY: At a high point towards the edge of a ridge.
ELEVATION: 520m.
VIEW (degree): 360. VIEW (distance): 3-7 miles.
STRATA AND DEPTH: Unknown; soil is a brown coarse sand with pebbles.
VEGETATION: Buffalograss - buckbrush in depression.
SURFACE VISIBILITY: 40%.
NEAREST WATER: Joes Creek (intermittent) - 500m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Shallow depression, 1.75m E-W x 0.85m N-S and 15cm
deep.
REMARKS: No cultural materials were observed.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. In that case, assess the nature of the depression by
placing one 1m x 0.5m trench across it.
PURPOSE OF TESTING: To determine the nature/function of the depression,
component(s) present and research potential.
PRIORITY: Low.

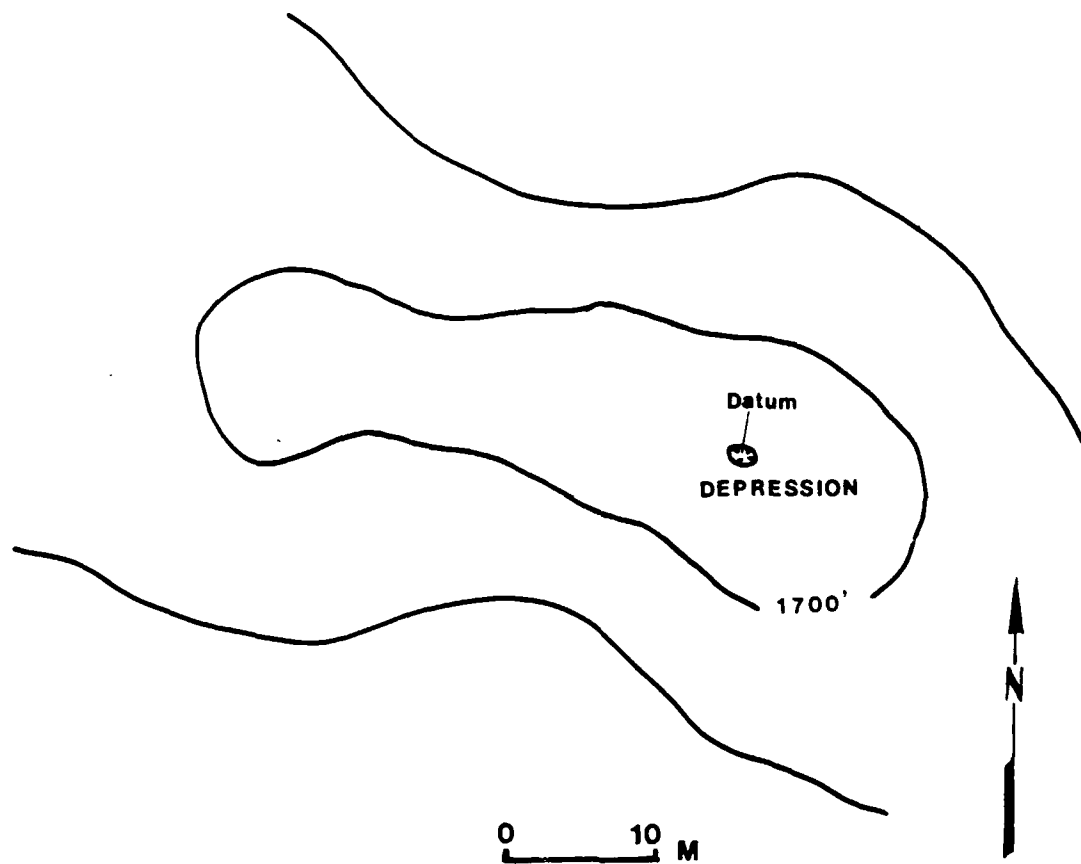


Figure 77. Plan of site 39DW86.

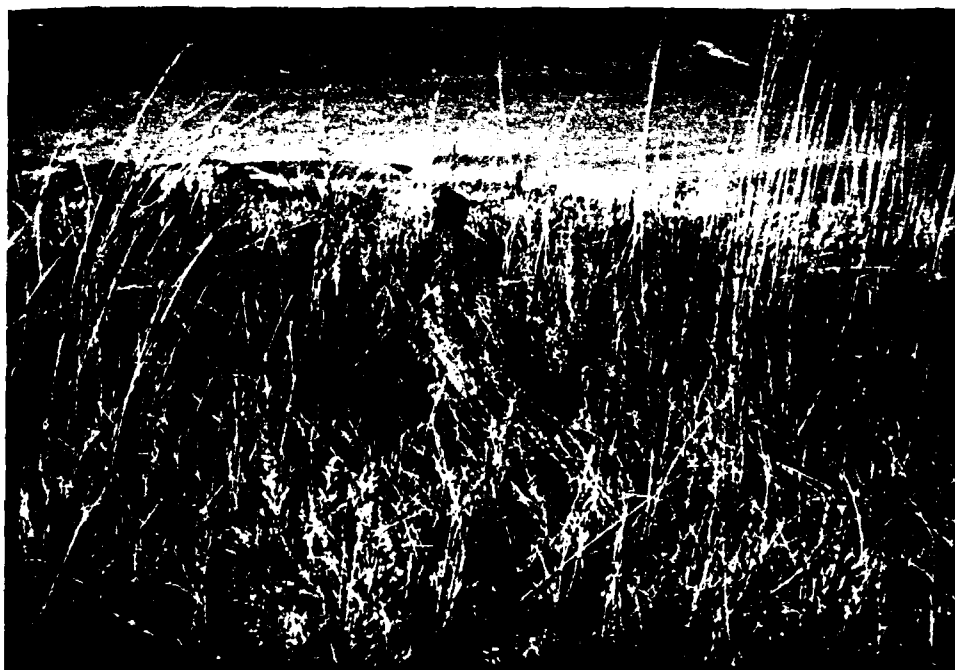


Plate 98. Site 39DW86, depression, facing NE.

SITE NUMBER: 39DW87 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 78 PLATE(S): 99
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Depressions.
SITE COMPONENT: Unknown.
SITE SIZE: 5m N-S x 20.0m E-W.
TOPOGRAPHY: On a ridge saddle between two higher points.
ELEVATION: 520m.
VIEW (degree): 90. VIEW (distance): Over 3 miles.
STRATA AND DEPTH: Unknown; soil is a brown silt.
VEGETATION: Buffalograss and medium grasses.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Joes Creek (intermittent) - 1000m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: 1: Depression, 5.0m N-S x 3.5m E-W and 0.5m deep.
2: Depression, 4.5m N-S x 3.0m E-W and 0.25m deep.
REMARKS: No cultural materials were observed.
IMPACTS: Slight, from track.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, assess the nature of the
depressions by placing two 1m x 0.5m trenches across the depressions.
PURPOSE OF TESTING: To determine the nature/function of the
depressions, component(s) present and research potential.
PRIORITY: Low.

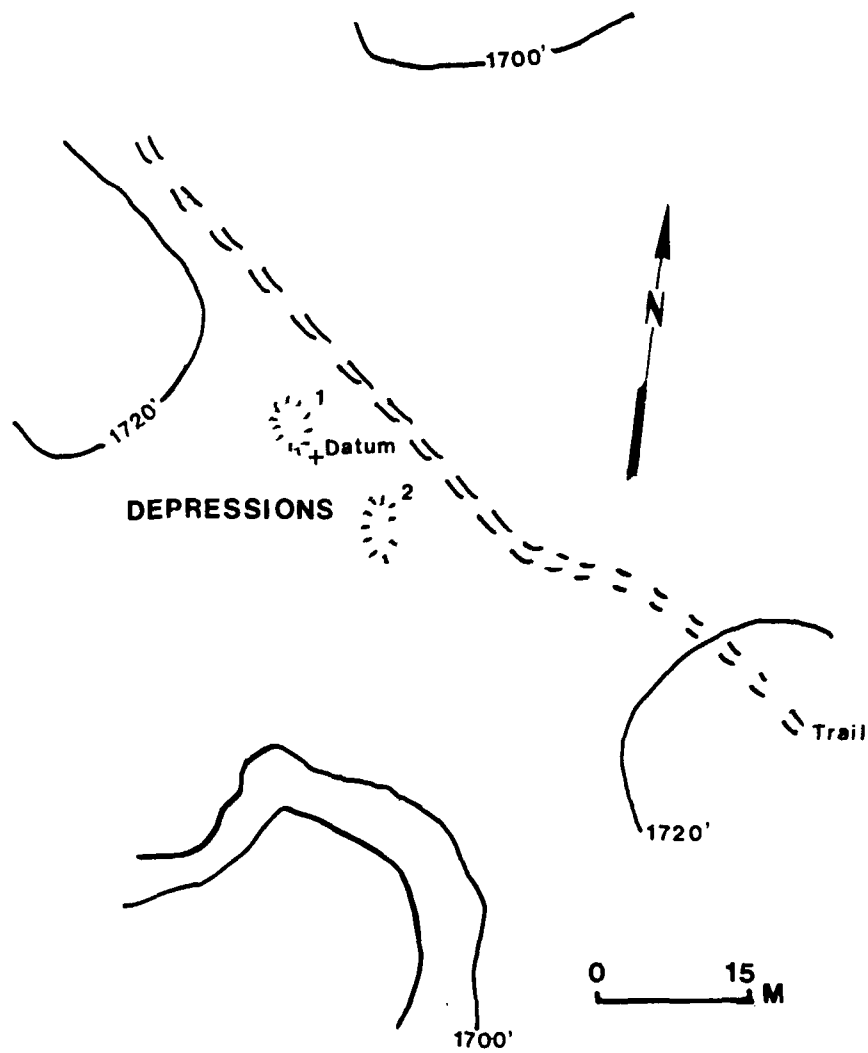


Figure 78. Plan of site 39DW87.



Plate 99. Site 39DW87, depressions to right of track, facing E.

SITE NUMBER: 39DW88 SITE NAME:
COUNTY: Dewey STATE: S.D. FIGURE(S): 79 PLATE(S): 100
PROPERTY OWNER AND ADDRESS: U.S. Army Corps of Engineers, Omaha,
Nebraska.
SITE TYPE: Depression.
SITE COMPONENT: Unknown.
SITE SIZE: 6.5m diameter.
TOPOGRAPHY: Along the crest of a ridge.
ELEVATION: 525m.
VIEW (degree): 230. VIEW (distance): 3-7 miles.
STRATA AND DEPTH: Unknown; soil is a brown fine silt loam.
VEGETATION: Medium-tall grasses, yucca.
SURFACE VISIBILITY: 20%.
NEAREST WATER: Joes Creek (intermittent) - 500m.
CONDITION: Extant.
PREVIOUS INVESTIGATIONS: None.
COLLECTIONS - BY WHOM AND WHEN: None.
OTHER MATERIAL REPORTED BY OWNER: None.
CRM STATUS: Potentially eligible.
DATA PLOTTED ON MAP: Roughly circular shallow depression, 6.5m in
diameter and 0.3m deep.
REMARKS: No cultural materials were observed. A records search
suggests this area is related to Lot #2.
IMPACTS: Relatively undisturbed.
RECOMMENDATIONS/TESTING: No further work is recommended unless the site
is to be impacted. If impacts occur, assess the nature of the
depression by placing one 1m x 0.5m trench across it.
PURPOSE OF TESTING: To determine the nature/function of the depression,
component(s) present and research potential.
PRIORITY: Low.

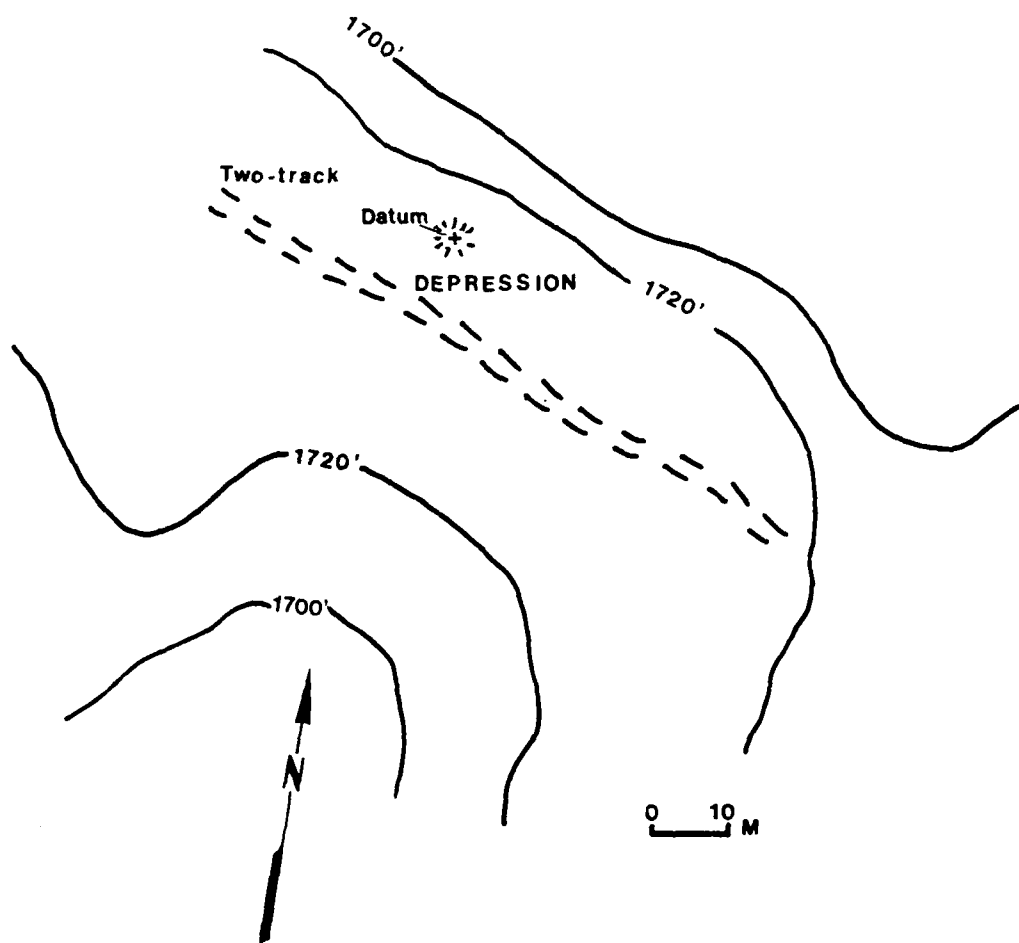


Figure 79. Plan of site 39DW88.



Plate 100. Site 39DW88, depression, facing SE.

9. CULTURAL RESOURCE INVENTORY - PART II: ISOLATED FINDS

Table 3 summarizes, by category, all the isolated artifacts recorded. For purposes of the current survey, an isolated find referred to the occurrence of four or less artifacts in isolation, or a very sparse, widespread scatter with a cultural material density of no more than one item every 2500 square meters. The category of isolated find was also used to record cultural material considered less than 50 years old or of dubious human modification/use. Latitude was given to the field directors to utilize professional judgment in their designations.

The distribution of prehistoric lithic isolated finds throughout the project area generally reflects the distribution of sites. Along Oak Creek, however, isolated finds 14, 15 and 16 were recorded in an area where there are no known sites. Historic/recent isolated finds are scattered throughout the project area on both sides of the Cheyenne River.

Table 3. Summary of Isolated Finds.

CATEGORY	NUMBER OF ISOLATED FINDS
a) Single lithic flake (IFs 9, 11, 13, 30, 54, 63, 64, 65)	Total = 8
b) Single lithic tool/core (IFs 4, 7, 10, 14, 15, 17, 19, 27, 33, 36, 42, 44, 50, 55, 58, 61)	Total = 16
c) Two-four lithic items or very sparse scatter (IFs 1, 2, 3, 6, 8, 12, 16, 20, 22, 24, 25, 28, 29, 32, 37, 39, 40, 41, 43, 45, 46, 48, 51, 52, 60, 62, 66)	Total = 27
d) Fossil bone (IF 18)	Total = 1
e) Historic/recent* debris/structures (IFs 5, 21, 23, 26, 31, 38, 47, 49, 53, 56, 57, 59)	Total = 12
f) Corps/GLO markers with stones piled around [not recorded as sites] (IFs 67, 68)	Total = 2

*Items most likely less than 50 years old; but the possibility exists in some cases that the age is greater than 50 years.

ISOLATED FIND DESCRIPTIONS

Legal locations are given in Appendix L.

- 1 Four items of lithic debitage (chert/chalcedony).
- 2 A white chalcedony tested cobble, a core fragment or primary flake, a large gray chert primary flake and a white quartz tested cobble.
- 3 Purple chert tested cobble, shatter fragment and polyhedral core and a jasper tertiary flake.
- 4 Large brown quartzite bifacially retouched flake.
- 5 John Deere model 12A pull type combine, horse-drawn wagon remains, windcharger prop and generator assembly, recent junk scatter, trailer house, building foundation, and dugout - OFF CORPS PROPERTY.
- 6 Purple quartz biface, white chert secondary flake, white chalcedony tertiary flake and brown chert primary flake.
- 7 Purple chert core.
- 8 Purple chert core, brown chert primary flake, brown chert tertiary flake and a white chert primary flake.
- 9 Tertiary flake - cloudy chalcedony with dark dendrites.
- 10 Red chert core fragment.
- 11 Cloudy chalcedony secondary flake.
- 12 Milky chalcedony tertiary flake and a brown chalcedony pyramidal core.
- 13 Tertiary flake of white chert.
- 14 Brown petrified wood tabular core.
- 15 Rosy chert biface or core.
- 16 Red chert core and primary flake.
- 17 Red chert biface fragment.
- 18 Fossil vertebrae.
- 19 Porcelanite tertiary flake with bifacial reduction.
- 20 Tested cobble of chalcedony and one of red chert.
- 21 Axle and differential drive shaft, one wheel hub and one wheel with wooden spokes and iron rim.
- 22 Mottled brown chert retouched flake and bifacially worked fragment of plate chalcedony.
- 23 Two drags off an old harrow remade into another with pipe bar and woven wire rope.
- 24 One purple quartzite primary flake, a white chert secondary flake and a white chert tertiary flake.
- 25 Brown petrified wood tertiary flake and a cloudy chalcedony tested tabular cobble.
- 26 Recent trash - tin cans, glass pitcher, beverage bottles and bone.
- 27 Utilized gray chert flake.
- 28 Plate chalcedony tabular core and a tertiary flake of quartzite.
- 29 A red chert cobble core and tested cobble.
- 30 Red chert secondary flake.
- 31 Circular cast concrete well or cistern with square-formed concrete case around it with bolts at each of the corners.
- 32 Small quartz pebble with flakes bifacially removed from one edge and two broken quartzite cobbles.
- 33 White chert core.
- 34 NOT ASSIGNED

- 35 NOT ASSIGNED
- 36 Tested plate chalcedony fragment.
- 37 Quartzite primary flake, red chert core, secondary quartzite flake with bifacial reduction on all margins, and a gray quartzite tertiary flake.
- 38 Sparse recent material scatter - oil pan, purple glass bottle neck, end of a bone-toothed brush, crockery fragment, clear bottle glass and white china.
- 39 Tested chert cobble and tested pebble of purple chert.
- 40 Petrified wood secondary flake and a tertiary flake.
- 41 Cloudy chalcedony tertiary flake, core and shatter fragment and a red chert shatter.
- 42 Bifacially flaked gray chalcedony cobble.
- 43 Two tan chalcedony cores, purple chert core fragment and a yellow quartzite tested cobble.
- 44 Brown and tan coarse quartz chopper or bifacially tested cobble.
- 45 Two cloudy chalcedony tertiary flakes, one secondary flake and a tan quartzite secondary flake.
- 46 Red jasper primary flake, milky chalcedony biface fragment, and a tan quartzite core.
- 47 Three forked (single or multiple forks in the upper member) branches, 3-8 feet in length; appeared non-natural.
- 48 Two bifacially flaked fragments of cloudy chalcedony.
- 49 Two-wheeled homemade boat trailer.
- 50 Tongue River silica biface.
- 51 Retouched red/tan chert secondary flake, tested purple/tan chert secondary flake.
- 52 Core and secondary flake of red chert.
- 53 Recent debris.
- 54 Large tertiary reduction flake of pink-tinted gray quartzite.
- 55 Struck pebble core of tan/brown chert.
- 56 Barge "201 C."
- 57 Fused/melted amber bottle.
- 58 Double fist-sized rock quartz cobble with bifacial flake removal at one end.
- 59 Single bit metal ax head.
- 60 Plate chalcedony secondary flake, quartz tertiary flake.
- 61 Purple chert primary flake with utilization.
- 62 Tested gray/red purple chert fragment, red chert primary flake, tan/red chert tested pebble, red chert secondary flake.
- 63 Gray Tongue River silica secondary flake.
- 64 Gray chalcedony secondary flake.
- 65 Gray Tongue River silica secondary flake.
- 66 Retouched gray plate chalcedony fragment and a shatter of blocky gray chalcedony.
- 67 Corps marker and Indian Allotment marker with rockpile, 1m E-W x 0.5m N-S, consisting of ca. 40 stones. Located at 1622' amsl in Township 9N, at junction of Sections 1 and 12, R25E and 6 and 7, R26E.
- 68 Corps marker and GLO 1929 marker with a dispersed rockpile of ca. 50 stones. At junction of T9N, R25E, Sections 35, 36 and T8N, R23E, Section 1.

The analysis of data generated during the Cheyenne River arm survey focused on the quantification and summarization of information related to site morphology (type), content (features, artifacts) and location. Specific analyses were accomplished for diagnostic materials and other selected artifacts (projectile points, scrapers, bifaces, prehistoric ceramics and historic artifacts).

A total of 69 sites were analyzed; three of these 69 sites contained two components, making a total of 72 components analyzed. Data derived through the general studies are presented within the context of the site type discussions. Summaries and analyses of the projectile points, scrapers, bifaces and other lithic artifacts, prehistoric ceramics, and historic artifacts are given below. An analysis of lithic utilization at these sites is also presented.

Site Types

The sites located during the survey were divided initially into ten types. Table 4 lists these types and the numbers of sites assigned to each category. The following three sites contained two types: site 39ST262 (historic farmstead/artifact scatter and large prehistoric artifact scatter); site 39ST273 (small prehistoric artifact scatter and depression); and site 39DW82 (large prehistoric artifact scatter and burial area/cemetery). Numerically, small artifact scatters and rock cairns are the predominant site types in the area.

Site Area and Distribution

Approximate areas were defined for each site located on the basis of extant features and/or the extent of cultural material scatters. These approximate figures are summarized in Table 5. The only sites exceeding 10,000m² in area are the six large artifact scatters, the previously recorded earthlodge village (39ST10) and mounds (39ST48), a series of depressions (39ST280) and a historic Native American occupation area (39DW74).

In another recent survey conducted along the Missouri River Trench in Stanley County (Winham and Lueck 1987), Plains Village sites ranged in size from 0.435 ha to over 35 ha. Out of 27 artifact scatters,

Table 4. Site Types Recorded Along the Cheyenne River Arm.

TYPE	TOTAL
1 Small prehistoric artifact scatters (less than 10,000m ²)	24 ¹
2 Large prehistoric artifact scatters (over 10,000m ²)	6 ¹
3 Earthlodge villages	1
4 Mounds	1
5 Cairns	24
6 Cairns associated with boundary markers (GLO, Allotment, Corps)	3 ²
7 Depressions	6
8 Burial areas/cemeteries	3
9 Historic farmsteads/artifacts scatters	3
10 Large historic Native American sites	1
TOTAL 72	

¹ These categories do not include artifact scatters associated with other features (cairns, mounds, depressions, earthlodge villages).

² Two additional markers with stones piled around them were located during the survey but were not recorded as sites (see IF's 67 and 68). Numerous BLM cadastral survey markers, General Land Office/Indian Allotment markers and U.S. Army Corps of Engineers boundary markers were also noted in the project area.

Table 5. Site Area by Site Type - Cheyenne River Arm Survey.

AREA (m ²)	Prehistoric scatters	Earth- lodge villages	Mounds	Cairns	Cairns with markers	Depres- sions	Burials/ cemeteries	Historic Large farms/ scatters	Native American	ALL SITES
0-1	-	-	-	10	2	-	-	-	-	12
1-9	-	-	-	9	1	2	-	-	-	12
10-99	3	-	-	4	-	1	1	-	-	9
100-500	6	-	-	1	-	1	1	-	-	9
501-1000	5	-	-	-	-	-	-	1	-	6
1001-5000	10	-	-	-	-	1	1	2	-	14
5001-10000	-	-	-	-	-	-	-	-	-	-
10001-25000	4	-	-	-	-	1	-	-	-	5
25000+	2	1	1	-	-	0	-	-	1	5

seven sites covered less than 100m² in area, 12 sites were between 101m² and 1000 m², and the remaining eight sites covered areas up to ca. 4 ha.

It is probable that the larger-sized scatters (over 1000m²) represent either substantial occupations or repeated occupations of the area. However, since surface densities can be very misleading, an accurate calculation of the density of material at these sites is lacking at this time. The distribution of the 20 prehistoric sites recorded on the current survey which cover areas of 1000m² or more shows that the majority (17) are located in Stanley County. This figure is in direct contrast to the distribution of cairns.

The majority of the rock cairns are located in Dewey and Ziebach counties, on the north side of the Cheyenne River arm. This pattern may reflect the fact that the north side is within the present Indian Reservation boundaries and some of the cairns may relate to land allotment surveys; it may reflect the more limited cultivation of these lands; or it may be a significant cultural pattern reflecting differential use between the areas on either side of the river in the past.

Site Locational Analyses

Site location was addressed with regard to land form, elevation, distance to a water source, view-degree and view-distance. Four land form divisions were used: 1) terrace/terrace edge/bluff; 2) ridges/points; 3) hilltops/knolls/low rises; and 4) slopes.

Three categories for distance of view were used: 1) less than 1 mile; 2) 1-3 miles; and 3) over 3 miles.

A tabular summary of this analysis is presented in Table 6. Cairns, depressions, burial areas and some of the smaller artifact scatters are associated with hilltops and raised areas. Most of the larger occupation sites are situated on terraces.

The figures for elevation show two-thirds of the sites below 515m amsl, although both cairns and small artifact scatters occur over a range (the range is limited) of elevations. Similarly, with distance to a water source, there is no apparent preference for adjacent water sources (0-100m), although two-thirds of all sites are within 500 meters

Table 6. Summary of Locational Data for Sites Along the Cheyenne River Arm.

	Prehistoric scatters		Earth- lodge villages	Mounds	Cairns	Cairns with markers		Depres- sions	Burials/ cemeteries	Historic Large farms/ scatters		Native American Sites
	Small	Large										
<u>LANDFORM</u>												
1	12	4	1	1	3	1	1	1	1	2	1	27
2	1	-	-	-	1	-	-	-	-	1	-	3
3	6	2	-	-	13	1	1	5	2	-	-	29
4	5	-	-	-	7	1	1	-	-	-	-	13
<u>ELEVATION (m)</u>												
494-500	6	-	-	1	7	-	-	-	-	1	1	16
501-505	2	1	-	-	1	-	-	-	-	2	-	6
506-510	4	3	1	-	4	1	2	2	-	-	-	15
511-515	4	-	-	-	4	2	-	-	-	-	-	10
516-520	-	-	-	-	2	-	2	2	1	-	-	5
521-525	3	-	-	-	2	-	-	2	-	-	-	7
526-530	3	2	-	-	1	-	-	-	2	-	-	8
530+	2	-	-	-	3	-	-	-	-	-	-	5
<u>WATER (m)</u>												
0-100	4	1	-	-	9	1	-	-	-	1	1	17
101-200	1	-	-	-	6	-	-	-	-	1	-	8
201-300	3	1	-	-	4	1	-	-	-	-	-	9
301-400	2	-	1	-	2	1	1	1	-	-	-	7
401-500	4	-	-	1	1	-	-	2	-	-	-	8
501-700	5	1	-	-	1	-	-	-	2	-	-	9
701-900	-	2	-	-	1	-	-	1	1	-	-	5
901-1100	3	1	-	-	-	-	-	2	-	1	-	7
1100+	2	-	-	-	-	-	-	-	-	-	-	2

Table 6 (cont.). Summary of Locational Data for Sites Along the Cheyenne River Arm.

VIEW°	Prehistoric		Earth- lodge villages	Cairns		Depres- sions	Burials/ cemeteries	Historic Large farms/ scatters	Native American Sites	All Sites
	Small	Large		Mounds	Cairns with markers					
0-90	1	-	-	-	3	1	-	-	-	6
91-180	8	1	-	1	8	3	-	1	1	23
181-270	1	-	-	-	2	1	1	1	-	5
271-360	14	5	1	-	11	1	2	1	-	37
VIEW (mi)	1	-	-	-	2	-	-	-	-	3
2	4	1	-	1	4	1	-	-	1	12
3	19	5	1	-	18	2	3	3	-	57

of a water source. The relationship between site location and proximity to a water source is enigmatic in terms of the current data base. Eighty percent of the cairns are within 300m of a water source, compared with only 33 percent of the small artifact scatters. Most likely, the highly ephemeral nature of the sites located presents a biased data set for accurately evaluating the role of water in determining site location.

Finally, the figures for degree of view and distance of view reflect the open nature of the landscape and the fact that most sites had vistas extending across the now inundated Cheyenne River and its tributaries.

One reviewer of the draft report asked what these analyses mean as far as interpretation of the use of the area. Such interpretation would require a greater variety of data than is currently available. Information is needed as to site function and temporal/cultural affiliation and it would be useful to contrast the above site locations with randomly chosen non-site locations. Above all, the unit/region of study needs to be evaluated as to its relevance as an interpretive unit. The project area is an artificially defined region not based on any guiding hypotheses. It is unlikely that past patterns of landscape use are totally reflected within this region.

On a less complex level of analysis, however, the site locational and distributional information reflects the relatively sparse, but geographically widespread, use of the region - a concept better evaluated in conjunction with the geomorphological studies discussed later. There are several areas, however, that lack recorded prehistoric sites, notably Haakon County and the upper reaches of many of the major drainages, such as Fishgut Creek and Rousseau Creek (see Figure 6). One hypothesis to be investigated is that the majority of the activity took place closer to the Cheyenne River, in areas now inundated. Studies further to the west beyond the reservoir area might address this issue, but if the sites were originally located along the floodplain, it is likely they have been destroyed by river channel migrations. This factor is explored by Brakenridge in his geomorphological investigation.

Prior to accomplishing this survey, it was hypothesized that the Cheyenne River was a major prehistoric travel route linking the Black Hills and Badlands with the Missouri Trench and areas to the north,

south and east. Expectations for finding exotic materials at sites in this region were not realized by the survey, but our hypothesis is by no means refuted. It might be argued that many of the cairns served as markers to help guide travelers from one area to the next, and the several artifact scatters may reflect repeated camps made by groups making their way along the river. Such a pattern of sites, however, would also be expected if groups of people were utilizing the area as part of their "seasonal round." Apart from the Meyer Village, located near the confluence of the Missouri and Cheyenne rivers, the prehistoric sites identified by this survey are all reflective of transient occupation.

Lithic Utilization

As indicated above, prior to conducting this survey it was postulated that the project area would contain evidence for movements of groups of people back and forth between the Black Hills and Badlands and the Missouri Trench. Such evidence would be reflected in the presence of exotic lithic raw materials such as obsidian, porcelanite, flattop and plate chalcedonies, Knife River flint, Tongue River silicified sediment and Bijou Hills quartzite. While realizing that some of these raw materials might be naturally present within the area, having been washed down from source areas in the Black Hills, a study of local versus non-local raw materials could, nevertheless, reveal a pattern.

The data on lithic utilization resulting from the survey were, however, very limited. Few of the sites located contained over 40 lithic items, and none contained more than a few "non-local" items. The results of the analysis of the lithic materials are presented in Table 7. While this information is based largely on in-the-field examination of surface material, the overall impression is that at most of these sites locally available lithic raw materials were adequate. The possible exceptions occur at sites such as 39ST255 and 39ST270, where all of the tools noted were of non-local materials. Otherwise, materials which are possibly non-local make up a very small percentage of the total assemblages.

Key to Table 7

LOCAL RAW MATERIALS:

- 1 = CHALCEDONIES/SILICIFIED WOOD/
PETRIFIED WOOD
- 2 = CHERTS
- 3 = QUARTZITE
- 4 = QUARTZ
- 5 = SILICIFIED SEDIMENT/MUDSTONE

NON-LOCAL RAW MATERIALS:

- TR = TONGUE RIVER SILICA
- P = PORCELANITE
- J = JASPER
- PC = PLATE CHALCEDONY

+ = Additional material present

X = Item present

% = Estimate of the percentage of each lithic raw material type present

ITEMS:

- D = Chipped stone debitage/shatter
- C = Cores, core fragments and tested cobbles
- T = Chipped stone tools

Table 7. Summary of Lithic Utilization and Artifact Assemblages at Sites Along the Cheyenne River Arm, South Dakota (number of sites = 38).

SITE	ITEM	LOCAL MATERIALS					NON-LOCAL MATERIALS					PC	TOTAL	BONE/ TEETH	CERAMICS	FCR	GROUND/BATTERED STONE
		1	2	3	4	5	TR	P	J								
39ST10	D	4+	5+	2+								11+	X	X			
	C	1										1					
	T		1	1								2					
39ST48	D	9	5	3	1							18	X				
	C	1	1									2					
39ST254	D	1	4	1								6			X		
	C		1									1					
39ST255	D	14	2	1	6						1	24					
	C		1							1	2						
	T						1			3	4						
39ST257	D	1					1				2						
	T	1					1			1	2						
39ST258	D		2	2	1						5						
	C			1							1						
39ST259	D	16	1	5	2	1	3				28				X		
	C	2		1	1	2					6						
39ST260	D	45%	15%	30%	2%	2%	5%	1%			100+			X	X		
	C			1							1						
39ST261	T	1									1						
	D	3		3	1						7			X			
	C	2			1						3						
39ST262	T	1	2								3						
	D	31%	30%	30%	4%	1%	4%				250+			X			
	C		1								1						
39ST263	T	2	1								3						
	D	1		2	1						4			X			
39ST264	D	8	4	4	4						20						
	C	1		1							2						
39ST265	D	10	1	5	1						17		X		X		X
	C	5	2	2							9						
	T	2	1	1							4						

Table 7. (cont.) Summary of Lithic Utilization and Artifact Assemblages at Sites Along the Cheyenne River Arm, South Dakota (number of sites = 38).

SITE	ITEM	LOCAL MATERIALS					NON-LOCAL MATERIALS				TOTAL	BONE/ TEETH	CERAMICS	FCR	GROUND/BATTERED STONE
		1	2	3	4	5	TR	P	J	PC					
39ST266	D	6	3	2						1	12				
	C	2	3	1		3					9				
	T	1									1				
39ST267	D	7	3								10				
	T	1		1							2				
39ST269	D		7				1				8				
	C		1				1				2				
	T	1	2								3				
39ST270	D	1	2								3				
	C										2				
	T							1		2	3				
39ST271	D	1	5								6				
	T		1								1				
39ST272	D	7	23	3				2			35			X	
	T		5								5				
39ST273	D	1	2	2							5				
	C		1								1				
39ST274	D	2	2								4			X	
	C			1							1				
	T		1							1	2				
39ST275	D	4	9	1				2			16				
	C	1	1								2				
	T		1								1				
39ST276	D	6	14	8							28			X	
	C		1	1							2				
	T	2	1								3				
39ST277	D	5	1	1							7			X	
	C	4									4				
39ST278	D	15	4	15	1				8		43		X	X	X
	C		3								3				
	T	2	1					2		3	8				

Table 7. (cont.) Summary of Lithic Utilization and Artifact Assemblages at Sites Along the Cheyenne River Arm, South Dakota (number of sites = 38).

SITE	ITEM	LOCAL MATERIALS					NON-LOCAL MATERIALS				TOTAL	BONE/ TEETH	CERAMICS	FCR	GROUND/BATTERED STONE
		1	2	3	4	5	TR	P	J	PC					
39ST280	D	4							1		5				
	C		1								1				
	T			1							1				
39ST282	D	4	2	7							13	X	X		
	C			2							2				
	T		1								1				
39ST283	D	4	2	3							9				
	C	2		2							4				
39ZB16	D		1								1				
	C	1									1				
39ZB20	D	1									1				
	C		1	1							2				
39ZB21	C		1								1				
39ZB24	D	7	2	5							14				X
	C	1	2	1							4				
	T			1							1				
39DW66	D	19	14	7		1			3		44		X	X	
	C	1	2			1					4				
	T	3	2						1	1	7				
39DW79	C		1	1					1		3				
39DW81	D	18	15	13	1	1	2	1			51		X	X	
	C	2	3	4			1		1	1	12				
	T	4									4				
39DW82	D	12	16	5	1		1				35	X			
	C		2	2							4				
	T		1								1				

Table 7. (cont.) Summary of Lithic Utilization and Artifact Assemblages at Sites Along the Cheyenne River Arm, South Dakota (number of sites = 38).

SITE	ITEM	LOCAL MATERIALS					NON-LOCAL MATERIALS					TOTAL	BONE/ TEETH	CERAMICS	FCR	GROUND/BATTERED STONE
		1	2	3	4	5	TR	P	J	PC						
39DW83	D	9	3	1	2					1	16	X				
	C	1	1								2					
	T									1	1					
39DW84	T			2							2	X				
	D	322	244	206	34	8	23	6	12	3	858	9	5	15	4	
	C	27	30	22	2	6	2	0	2	4	95					
TOTALS	T	21	21	7	0	0	1	3	1	12	66					

Summary of Site Chronology

A total of 72 site components (sites) identified during the survey were analyzed. Six contained evidence (based on projectile points located during the current survey) for being assigned to the Late Prehistoric period. One earthlodge village (39ST10) located in the survey area is assigned to the Extended Coalescent period (A.D. 1550-1675). Ten sites are classified as historic Native American or Euro-American, including three cairns in close proximity to Corps and allotment markers. The remaining 55 sites lack sufficient data to permit temporal placement; however, six sites which contain one or more depressions are probably historic and it is very likely that some of the other 24 cairns recorded relate to historic activities in this area, such as travel and surveying.

Artifact Descriptions

Projectile points

Eight projectile points or projectile point fragments were recovered during this survey. Table 8 relates the projectile points to a cultural/techno complex and a temporal locus. Table 8 is followed by descriptions of each projectile point which are accompanied by illustrations (Figures 80 and 81). Tables 9 and 10 following these descriptions provide morphological data for the points. Figures 82 and 83 present the discriminate dimensions which are recorded in Tables 9 and 10. These discriminate dimensions are based on the earlier work of Ahler (1971) and are utilized here as a means of standardizing the data reported.

It is recognized that the assessment of cultural-chronological affiliations of projectile points, especially fragmentary specimens, is often tenuous and based to a large extent on the analyst's background. In this report comparative examples from the literature are referenced to substantiate the assessment presented, but undoubtedly as further work is undertaken in the area, some of these assessments will be changed. All of the projectile point forms are individually described, and illustrated at actual size.

Table 8. Sites and Cultural Affiliation.

SITE (Find #)	CULTURAL/TECHNO COMPLEX	TEMPORAL LOCUS
39ST257 [1]	Triangular, unnotched	Late Prehistoric
39ST261 [1]	Triangular, unnotched	Late Prehistoric
39DW66 [1]	Triangular, unnotched	Late Prehistoric
39DW82 [1]	Triangular, unnotched	Late Prehistoric
39DW84 [2]	Triangular, unnotched	Late Prehistoric
39ST261 [2]	Side-notched	Late Prehistoric
39DW81 [4]	Side-notched	Late Prehistoric
39DW84 [1]	Plains side-notched	Late Prehistoric

[Affiliations are based on projectile point types recovered from the current survey.]

Cultural/Techno Complex: Late Prehistoric

a. Figure 80(a)

Site: 39DW82

Specimen 39DW82 [1]

Description: The specimen is an unnotched triangular projectile point. A portion of the left lateral basal area has been removed. It is produced on white chert.

Munsell Color: 5YR 8/1

Measurements: Length 22.00mm
Width 15.30mm
Thickness 3.10mm

b. Figure 80(b)

Site: 39ST261

Specimen 39ST261 [1]

Description: The specimen is the midsection and base of an unnotched triangular projectile point. It is produced on pinkish-white chert.

Munsell Color: 5YR 8/2

Measurements: Length 14.30mm*
Width 17.10mm
Thickness 3.50mm

c. Figure 80(c)

Site: 39ST257

Specimen 39ST257 [1]

Description: The specimen is an unnotched triangular projectile point. It is produced on translucent/white chalcedony.

Munsell Color: 5YR 8/1

Measurements: Length 21.86mm*
Width 14.96mm
Thickness 4.30mm

d. Figure 80(d)

Site: 39DW66

Specimen 39DW66 [1]

Description: The specimen is an unnotched triangular projectile point. It is produced on brown chalcedony.

Munsell Color: 7.5YR 3/4

Measurements: Length 31.32mm
Width 17.20mm
Thickness 4.10mm

e. Figure 80(e)

Site: 39DW84

Specimen 39DW84 [2]

Description: The specimen is an unnotched triangular projectile point with an asymmetrical left lateral margin. The distal tip has been reworked as a possible drill. It is produced on dark reddish-brown quartzite.

Munsell Color: 5YR 2.5/2

Measurements: Length 27.60mm
Width 20.40mm
Thickness 5.60mm

Related Materials (for all of the above): Ahler 1981: Type 01 points; Ahler 1981:4; Nowak 1981:77 (Figure 3f).

* Underlining = Specimen incomplete along this dimension.

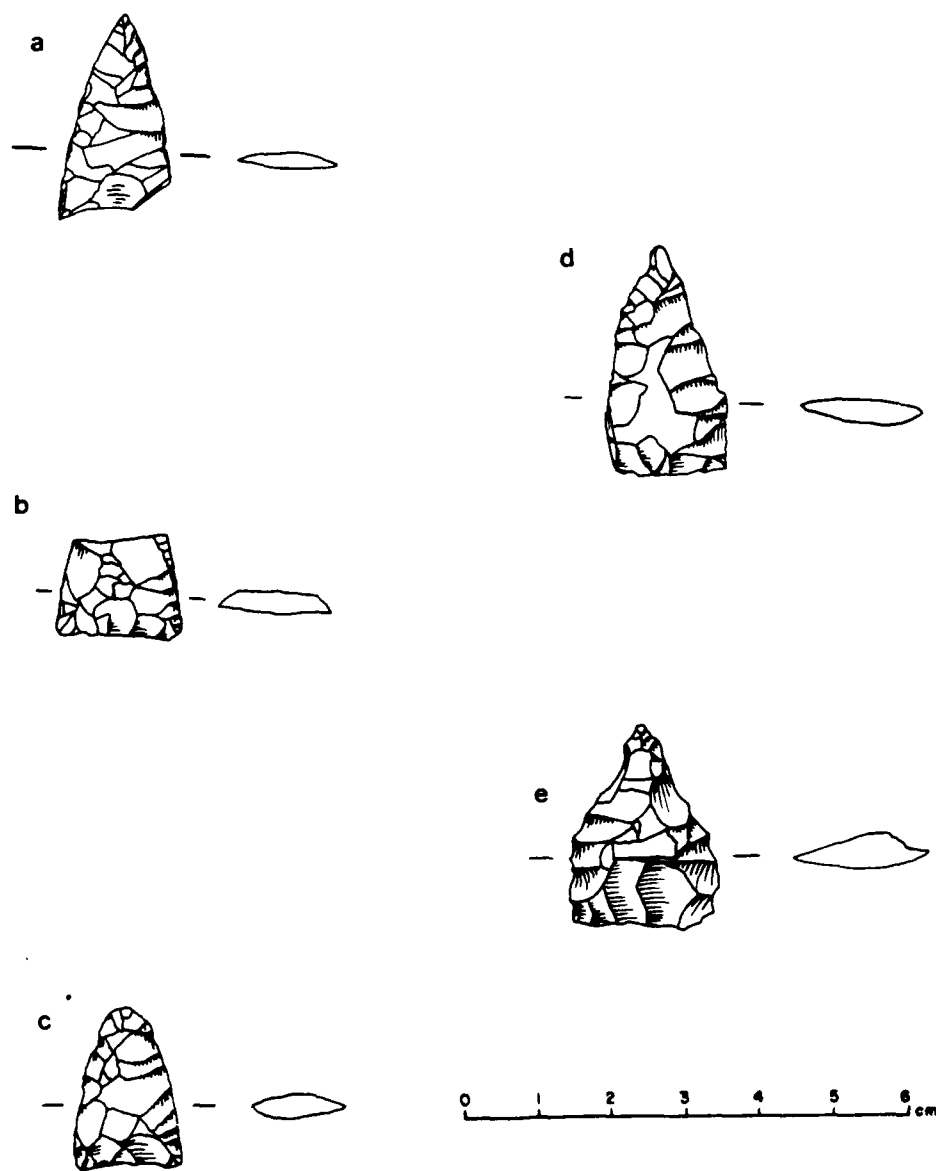


Figure 80. Late Prehistoric triangular unnotched projectile points from the Cheyenne River arm survey: (a) 39DW82 [1]; (b) 39ST261 [1]; (c) 39ST257 [1]; (d) 39DW66 [1]; (e) 39DW84 [2].

Cultural/Techno Complex: Late Prehistoric

a. Figure 81(a)

Site: 39DW81

Specimen 39DW81 [4]

Description: The specimen is the midsection and base of a side-notched projectile point. It is produced on translucent brown chalcedony.

Munsell Color: 7.5YR 4/6

Measurements:	Length	<u>16.20mm*</u>
	Width	<u>14.70mm</u>
	Thickness	4.30mm

b. Figure 81(b)

Site: 39ST261

Specimen 39ST261 [2]

Description: The specimen is the midsection and portion of the base of a side-notched projectile point. It is produced on patinated white chalcedony.

Munsell Color: 5YR 8/1

Measurements:	Length	22.04mm
	Width	12.06mm
	Thickness	5.12mm

c. Figure 81(c)

Site: 39DW84

Specimen 39DW84 [1]

Description: The specimen is a Plains side-notched projectile point. The distal tip has been resharpened. It is produced on yellowish-brown quartzite.

Munsell Color: 10YR 5/8

Measurements:	Length	<u>14.60mm*</u>
	Width	<u>12.40mm</u>
	Thickness	2.50mm

Related Materials (for all of the above): Kehoe 1973:62 - Plate 14 (a-g); Kehoe 1973:50 - Figure 6 (Plains side-notched).

* Underlining = Specimen incomplete along this dimension.

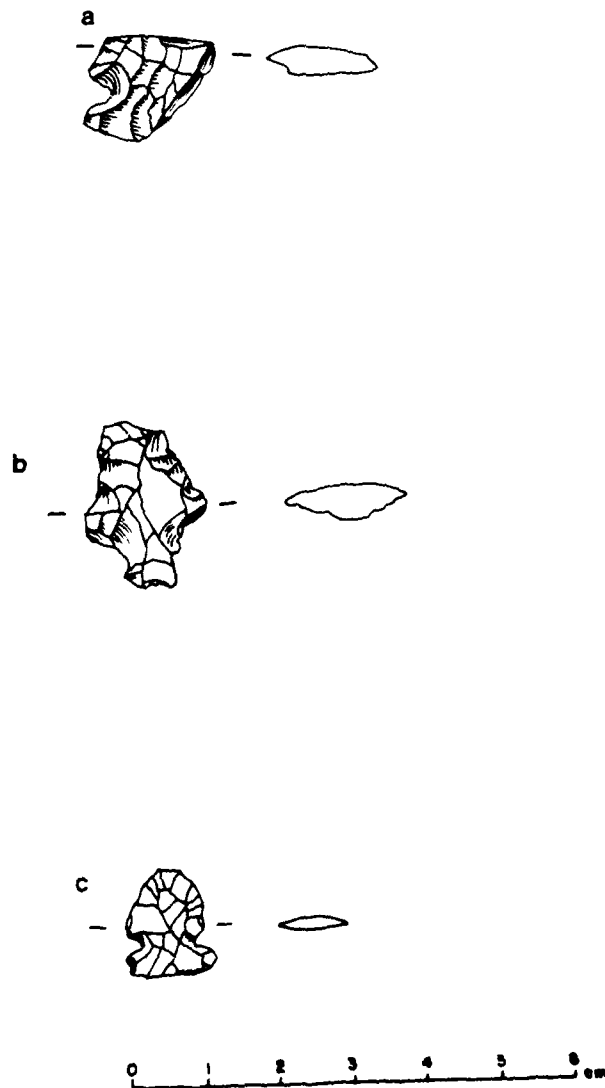


Figure 81. Late Prehistoric projectile points from the Cheyenne River arm survey: (a) 39DW81 [4]; (b) 39ST261 [2]; (c) 39DW84 [1].

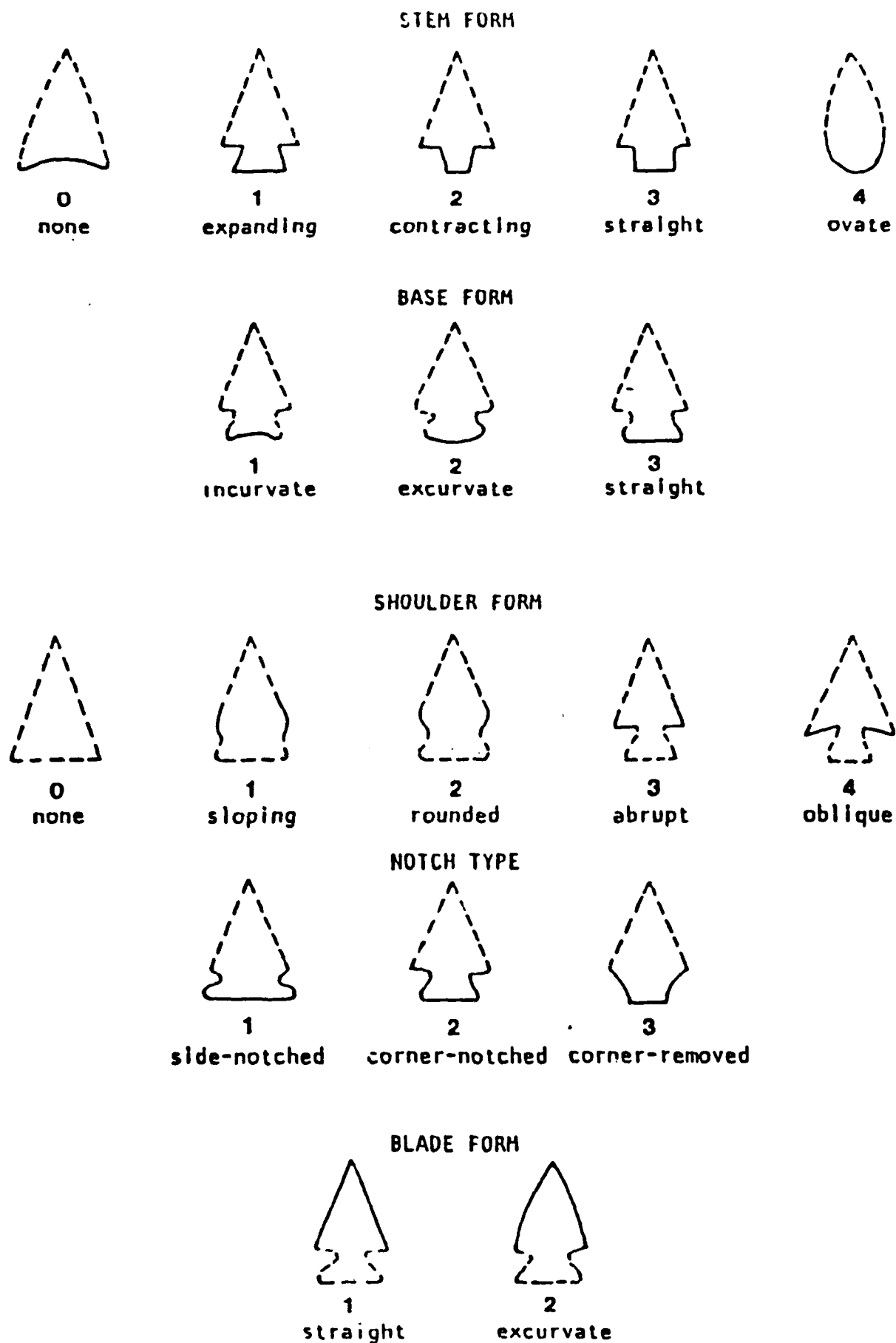
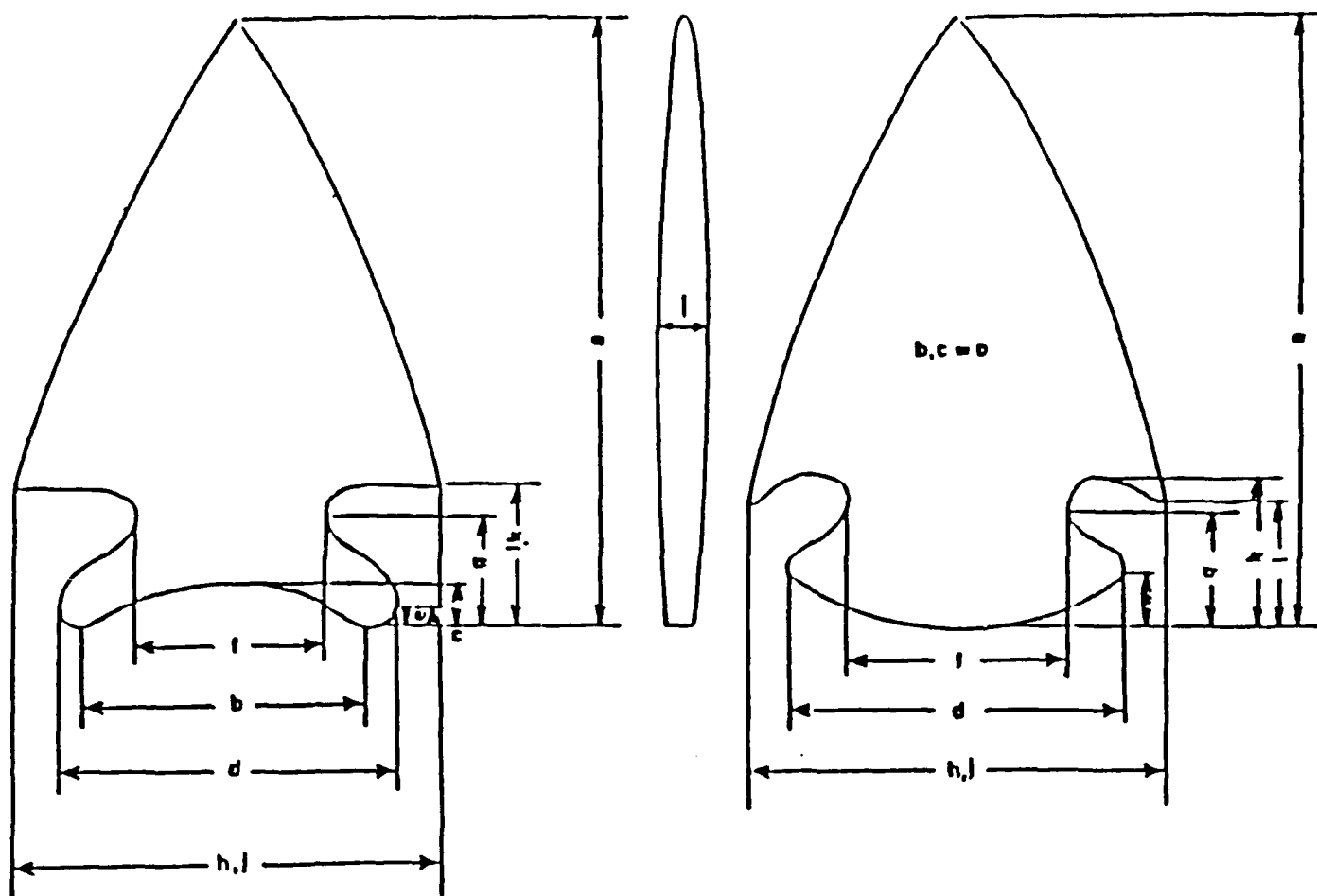


Figure 82. Graphic representation of the five nominal observations utilized in the projectile point analysis.



a. Total Length	g. Distal Haft Element Length
b. Basal Contact Width	h. Blade Base Width
c. Basal Center Point Length	i. Shoulder to Base Length
d. Proximal Haft Element Width	j. Maximum Width
e. Proximal Haft Element Length	k. Total Haft Element Length
f. Distal Haft Element Width	l. Maximum Thickness

Figure 83. Diagram of two generalized projectile point forms indicating the measurements taken in the projectile point analysis (adapted from Ahler 1971:23).

Table 9. Summary of Material Type and Form Observations:
Projectile Points - Cheyenne River Arm, South Dakota.

SPECIMEN	STEM FORM	BASE FORM	SHOULDER FORM	NOTCH TYPE	BLADE FORM	MATERIAL TYPE	MUNSELL COLOR
39ST257 [1]	0	1	0	NA	2	Chalcedony	5YR 8/1 Translucent/ white
39ST261 [1]	0	3	0	NA	1	Chert	5YR 8/2 Pinkish-white
39ST261 [2]	1	1	3	1	1	Chalcedony	5YR 8/1 White
39DW66 [1]	0	3	0	NA	1	Chalcedony	7.5YR 3/4 Dark brown
39DW81 [4]	1	3	3	1	1	Chalcedony	7.5YR 4/6 Strong brown
39DW32 [1]	0	1	0	NA	1	Chert	5YR 8/1 White
39DW84 [1]	1	3	3	1	2	Quartzite	10YR 5/8 Yellowish-brown
39DW84 [2]	0	3	0	NA	2	Quartzite	5YR 2.5/2 Dark reddish- brown

Table 10. Summary of Measurements and Cultural/Techno Complex:
Projectile Points - Cheyenne River Arm, South Dakota.

SPECIMEN	MEASUREMENTS (mm)												CULTURAL/TECHNO COMPLEX
	A	B	C	D	E	F	G	H	I	J	K	L	
39ST257 [1]	(21.86)	NA	NA	NA	NA	NA	NA	14.96	NA	14.96	NA	4.30	Late Prehistoric triangular unnotched
39ST261 [1]	(14.30)	NA	NA	NA	NA	NA	NA	17.10	NA	17.10	NA	3.50	Late Prehistoric triangular unnotched (midsection and base)
39ST261 [2]	22.04	NA	NA	NA	NA	NA	NA	(7.32)	NA	12.06	NA	5.12	Late Prehistoric - probably side-notched
39DW66 [1]	31.32	NA	NA	NA	NA	NA	NA	16.20	NA	17.20	NA	4.10	Late Prehistoric triangular unnotched
39DW81 [4]	(16.20)	NA	NA	NA	NA	NA	NA	(7.98)	NA	(14.70)	NA	4.30	Late Prehistoric side-notched (midsection and portion of base)
39DW82 [1]	22.00	NA	NA	NA	NA	NA	NA	NA	NA	15.30	NA	3.10	Late Prehistoric triangular unnotched (portion of left lateral basal area removed)
39DW84 [1]	(14.60)	8.90	1.10	12.30	2.30	8.10	4.90	10.70	6.10	12.40	6.10	2.50	Plains Side-Notched (distal tip resharpened)
39DW84 [2]	27.60	NA	NA	NA	NA	NA	NA	19.20	NA	20.40	NA	5.60	Late Prehistoric triangular unnotched

Scrapers

Transverse scrapers, like projectile points, are a class of tools that are consistently patterned and bilaterally symmetrical, thus lending themselves to more detailed metric analysis and typology. Following a typology similar to that utilized by Lee and Lovick (1979) and Nowak (1981), all of the transverse scrapers recovered from the sites identified during the survey were measured (Figure 84) and morphologically grouped according to overall shape, dorsal flaking treatment, distal margin shape, and treatment of the lateral margins. The raw material, Munsell color and measurements for each specimen are presented in Table 11. No lateral scrapers were noted in the site assemblages.

Transverse Scrapers

Type A (Figure 85). These scrapers are generally oval to slightly triangular in shape with a convex distal margin. They are commonly dome-shaped in cross-section with numerous dorsal flake scars occurring both perpendicular and oblique to the longitudinal axis. They are continuously unifacially retouched on all margins. Three Type A transverse scrapers were recovered from the Cheyenne River arm survey.

Type B (Figure 86). Scrapers in this category are triangular in shape with a straight to slightly convex distal margin. One lateral margin is formed by removing a single long flake from the dorsal surface along the longitudinal axis, leaving a ridge or arris. This technique always produces a triangular cross-section. The opposite lateral margin is beveled by removal of numerous dorsal flakes perpendicular to the arris. Secondary retouch occurs only on the lateral and distal margins; the proximal end normally retains a remnant striking platform. Four Type B transverse scrapers were recovered from the current survey.

Type C (Figure 87). Scrapers identified in this category are characteristically oval to slightly rectangular in shape with a wide, slightly convex distal margin. One or two large flakes are removed from the dorsal surface perpendicular to the longitudinal axis, usually leaving a concave depression. The cross-section is thin and tabular to slightly concave. Unifacial retouch occurs primarily on the lateral

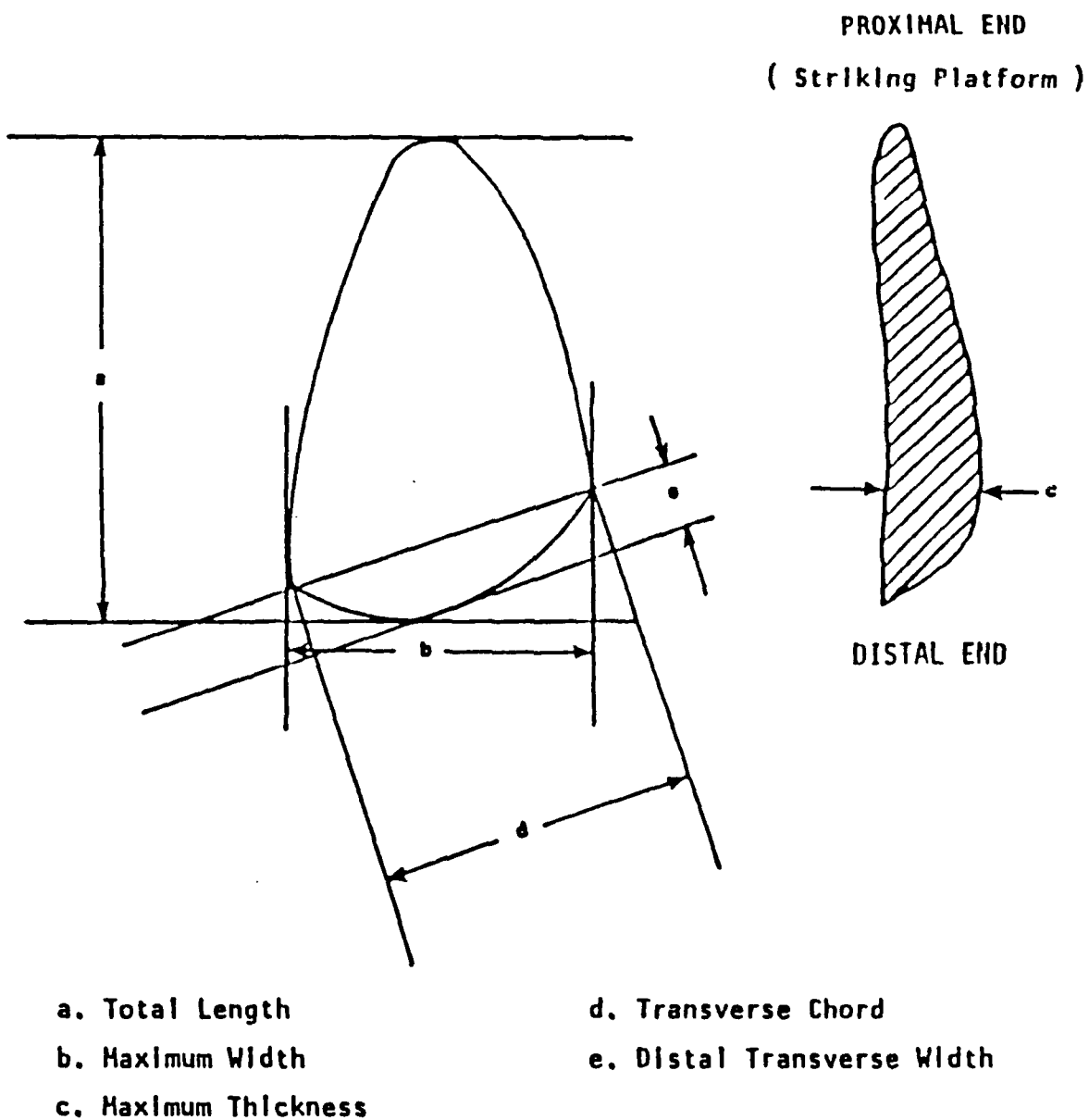


Figure 84. Diagram of a generalized transverse scraper indicating the five measurements taken (adapted from Lee and Lovick 1979).

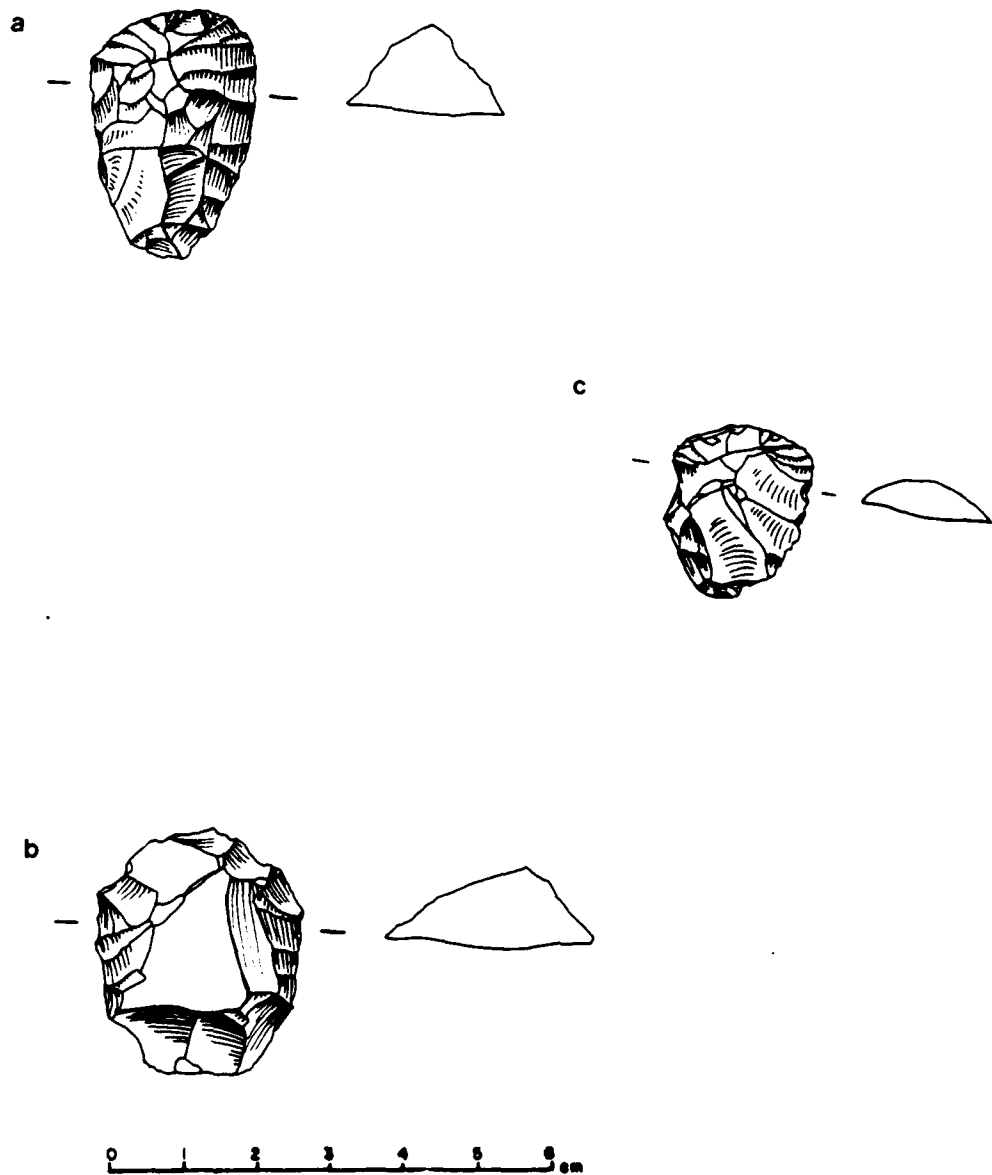


Figure 85. Selected examples of Type A transverse scrapers from the Cheyenne River arm survey: (a) 39ST265 [2]; (b) 39ST260 [1]; (c) 39ST270 [1].

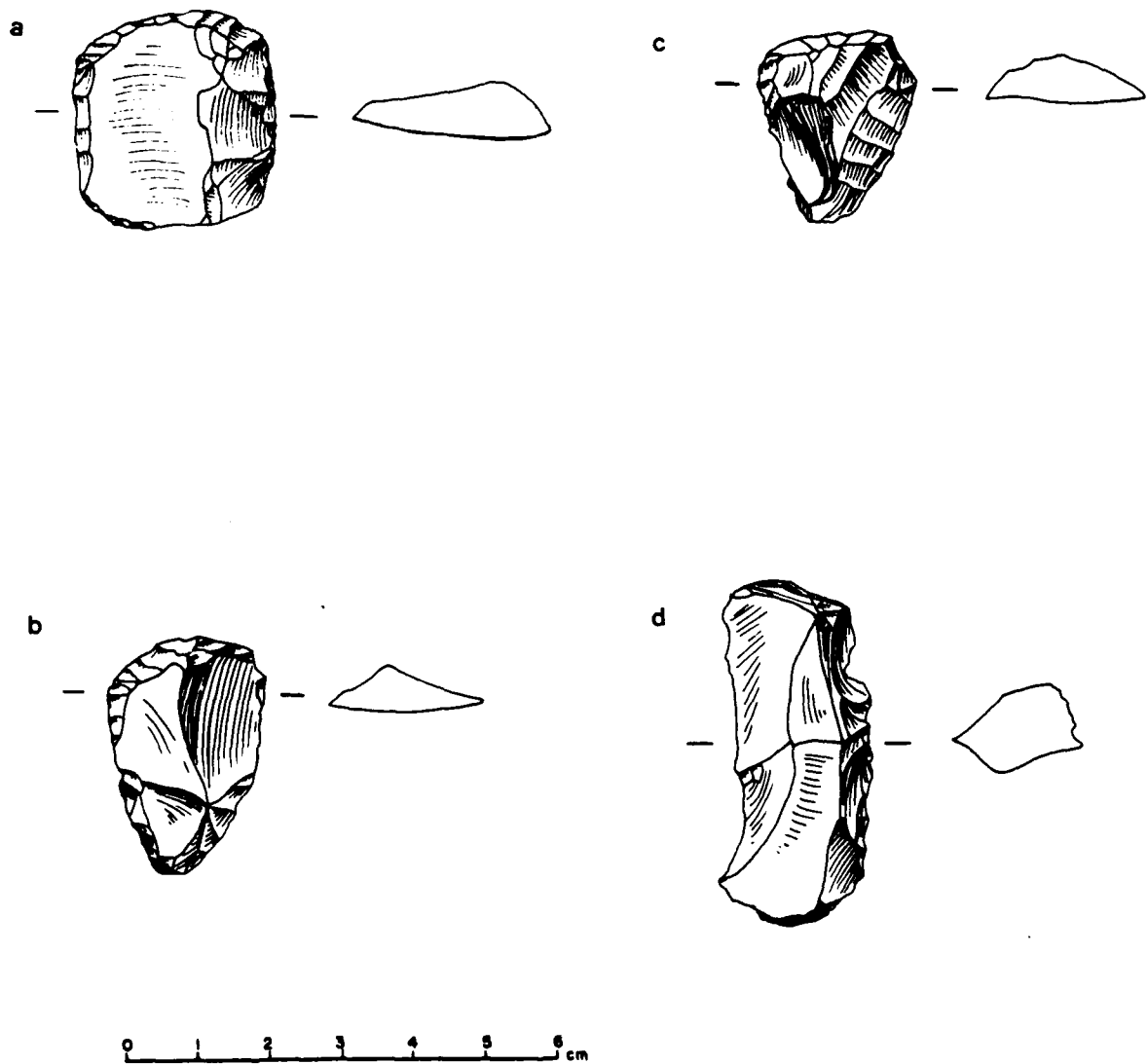


Figure 86. Selected examples of Type B transverse scrapers from the Cheyenne River arm survey: (a) 39ST265 [1]; (b) 39DW66 [2]; (c) 39DW66 [4]; (d) 39ST278 [2].

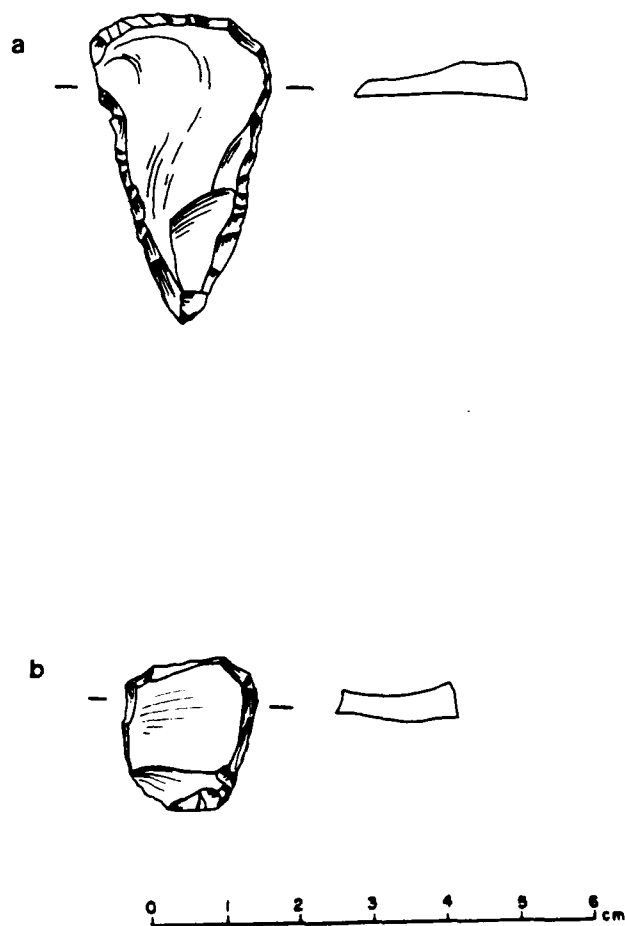


Figure 87. Selected examples of Type C transverse scrapers from the Cheyenne River arm survey: (a) 39DW66 [3]; (b) 39DW66 [5].

and distal margins with a remnant striking platform retained on the proximal end. These scrapers are frequently broken transversely across the middle, leaving a hinge fracture where the proximal end had been attached. Two Type C transverse scrapers were recovered from the survey.

Type D (Figure 88). This category consists of transverse scrapers made from an expanding decortication flake. Shape is irregularly triangular with both convex and straight distal margins. No flakes are removed from the dorsal side with the exception of the margins, thereby retaining cortex on the entire dorsal surface. Secondary retouch may occur on the lateral margins but often there is no marginal retouch except on the distal edge. One Type D specimen was recovered from the survey.

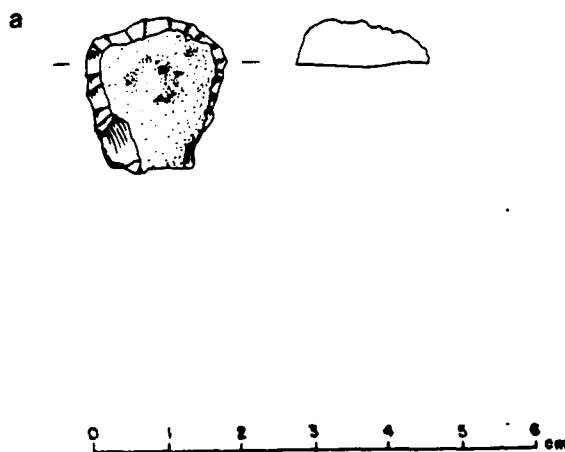


Figure 88. Type D transverse scraper from the Cheyenne River arm survey: (a) 39ST276 [1].

Table 11. Raw Material and Measurement Summary: Scrapers - Cheyenne River Arm, South Dakota.

SCRAPER TYPES SITE/SPECIMEN	MUNSELL COLOR	RAW MATERIAL	MEASUREMENT DATA (mm)				
			A	B	C	D	E
Transverse Scrapers							
<u>Type A (N = 3)</u>							
39ST260 [1]	7.5YR 5/4	Patinated brown chalcedony	33.54	28.72	12.96	23.50	10.88
39ST265 [2]	2.5Y 3/2	Mottled grey and brown agatized chert	33.84	22.28	12.32	19.34	9.64
39ST270 [1]	7.5YR N6/	Gray porcelainite	23.72	19.28	5.84	18.46	6.24
<u>Type B (N = 4)</u>							
39ST265 [1]	5YR 8/1	Moderately patinated white chalcedony	30.18	28.22	9.04	25.28	8.78
39ST278 [2]	7.5YR 5/4	Light brown chalcedony	48.34	21.22	12.70	17.50	12.30
39DW66 [2]	7.5YR 4/6	Brown chert	33.38	22.26	6.98	21.04	6.08
39DW66 [4]	5YR 3/1	Translucent agatized chalcedony	26.40	22.26	8.20	18.78	8.02
<u>Type C (N = 2)</u>							
39DW66 [3]	5YR 4/3	Patinated brown chalcedony	42.38	24.12	5.16	23.42	4.62
39DW66 [5]	2.5YR 2.5/4	Red jasper	20.96	17.82	5.52	17.14	5.66
<u>Type D (N = 1)</u>							
39ST276 [1]	7.5YR 4/2	Patinated brown chalcedony	20.94	19.20	7.96	18.48	6.50

For explanation of measurement data refer to Figure 84.

Bifaces and other lithic artifacts

In addition to projectile points and scrapers, several other chipped stone tool types were recorded during the Cheyenne River arm survey. The majority of these tools were unpatterned bifacially or unifacially worked flakes, with some bifaces and examples of Badlands Knives also present. A summary of the items collected is presented in Table 12 and selected items are illustrated in Figure 89.

Ground stone items were rare on sites located in the survey area, but a grooved maul fragment was collected from site 39DW81.

Table 12. Summary of Other Chipped Stone Tools Collected During the Cheyenne River Arm Survey.

SITE/ITEM	LENGTH	WIDTH	THICKNESS	RAW MATERIAL	MUNSELL		DESCRIPTION
					COLOR		
39ST262 [1]	48.74	30.84	9.72	Chert	10YR 7/3		Secondary flake with bifacial reduction on lateral margins.
39ST262 [2]	41.40	33.02	7.84	Silicified wood	5YR 4/1		Secondary flake with bifacial reduction on lateral margins.
39ST262 [3]	51.68	35.42	8.82	Silicified wood	5YR 4/1		Tabular flake with unifacial flaking on lateral margin.
39ST272 [1]	27.72	24.08	7.32	Chert	10YR 6/6		Tertiary flake with bifacial reduction on left lateral margin.
39ST272 [2]	34.78	22.12	7.80	Chert	10YR 4/1		Bifacially flaked shatter.
39ST272 [3]	14.42	20.69	6.98	Chert	7.5YR N6/		Basal fragment of biface.
39ST278 [1]	18.69	19.78	7.48	Chalcedony	7.5YR N8/		Biface tip.
39ST278 [3]	27.12	15.72	4.80	Porcelanite	2.5Y N6/		Asymmetrical bifacial knife.
39ST278 [4]	32.56	17.10	5.92	Plate	10YR 8/1		Badlands Knife midsection.
39ST278 [5]	39.46	22.14	6.32	chalcedony			
				Plate	10YR 8/1		Badlands Knife fragment with bifacial flaking on left lateral margin.
				chalcedony			
39ST278 [11]	57.48	26.12	12.62	Chert	2.5Y N3/		Pebble with flaking on right and left lateral margins.
39ST278 [12]	16.59	21.84	5.93	Plate	10YR 8/1		Biface midsection.
				chalcedony			
39ST278 [13]	26.42	10.20	3.41	Porcelanite	7.5YR N7/		Biface fragment.
IF 1a	72.84	44.46	23.26	Chert	10YR 6/2		Tabular cobble-bifacial flaking on left lateral margin.
IF 1b	53.14	33.52	18.14	Chert	10R 2.5/2		Cobble bifacial shatter.
IF 17	28.80	32.08	8.38	Jasper	10R 3/2		Biface fragment on secondary flake.
IF 19	32.22	32.62	11.86	Porcelanite	10R 6/1		Tertiary flake with bifacial reduction.
IF 37	54.28	50.32	15.84	Quartzite	5YR 2.5/1		Secondary flake with bifacial reduction on all margins.
IF 50	48.22	34.92	15.98	Tongue River silica	5YR 5/1		Tabular pebble with bifacial reduction on right and left lateral margins/distal end.

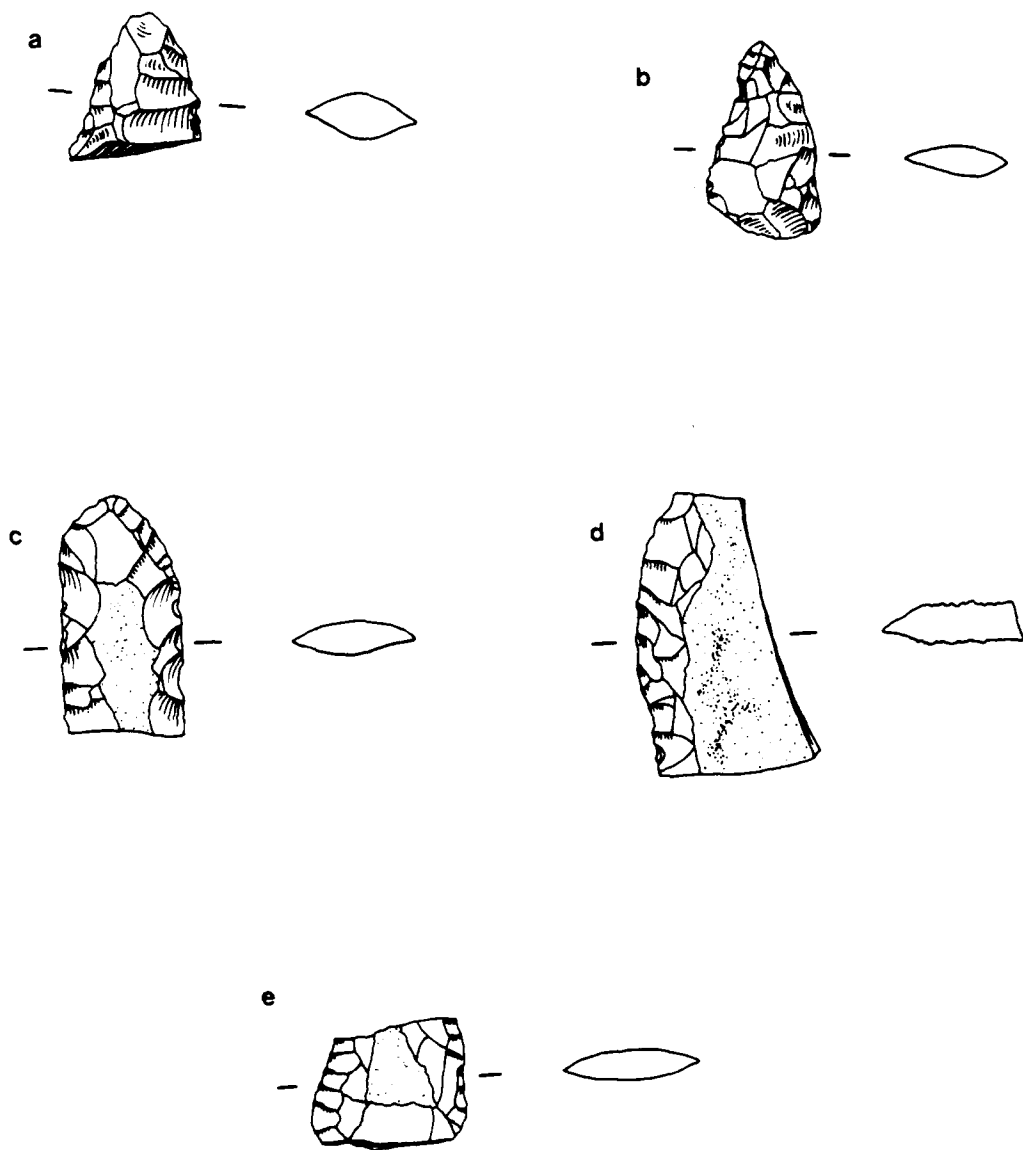


Figure 89. Selected examples of bifaces from the Cheyenne River arm survey: (a) 39ST278 [1]; (b) 39ST278 [3]; (c) 39ST278 [4]; (d) 39ST278 [5]; (e) 39ST278 [12].

Prehistoric ceramics

Prehistoric ceramics were recovered from four sites during the survey and had been previously recorded at one site, Meyer Village (39ST10). These items are described below and identified by type, when possible.

<u>Site/Find #</u>	<u>Description of Ceramic Material Collected</u>
39ST260 [2] (Figure 90a)	Rimsherd with raised (pinched) lug with punctates below the rim. Rim edge is flat. Temper is a fine sand. Sherd is partially burnished. Weight 8.4g, length 32.24mm, width 32.76mm, thickness 10.00mm. Munsell color, 10YR 6/4 (light yellowish-brown). Campbell Creek Ware - Campbell Creek Indented Type. Initial Coalescent. (References: Hanenberger 1986:Plate 3.21 I; Caldwell 1966a:34-35, 123).
39ST278 [6]	Three bodysherds, angular sand temper.
39ST278 [7] and [8] (Figure 90b-c)	Rimsherds; rim edge is flat. Indent punctates on external rim edge. Cord impressed external surface. Angular grit temper. Campbell Creek Ware - Campbell Creek Indented Type. Initial Coalescent. (References: Smith 1977:66-67; Kivett and Jensen 1976:39, 211; Caldwell 1966a:34-35, 123).
39ST278 [9]	Seven bodysherds with external vertical cord impressions.
39ST278 [10] (Figure 90d)	Neck sherd with incised diagonal lines and punctates. Angular sand temper. Campbell Creek Ware. Initial Coalescent.

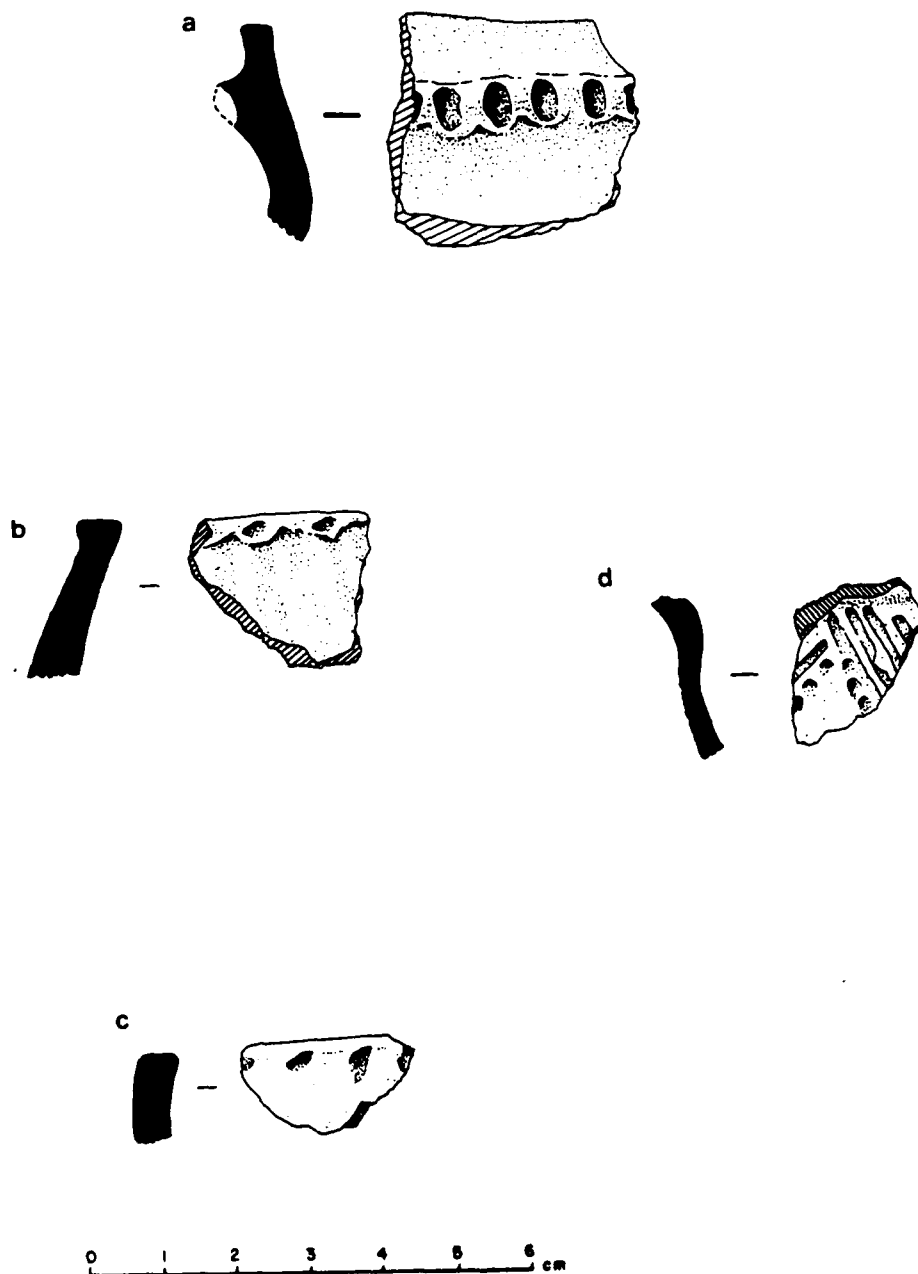


Figure 90. Selected examples of prehistoric ceramic rimsherds from the Cheyenne River arm survey: (a) 39ST260 [2]; (b) 39ST278 [7]; (c) 39ST278 [8]; (d) 39ST278 [10] (rim edge removed).

39DW66 [6] Three bodysherds, one with slight cord impressions.
Angular grit temper.

39DW81 [1] Neck sherd with parallel horizontal incised lines.

39DW81 [2] Three bodysherds, slight dentate on one piece. Fine
angular temper. All exhibit slight burnishing on
exterior surface.

These few sherds are not readily identifiable as to "type" and the above identifications must be considered tentative, given such limited material. The only prehistoric ceramic materials previously identified along the Cheyenne River arm have been classified as Extended Coalescent (Lehmer 1971 (39ST10); Nowak (39ST175 State Site Form)).

Historic artifacts

Historic materials were collected from three sites and two isolated finds. The following descriptions were provided by Loren Horton and L. Adrien Hannus. The paucity of material and its surficial nature limit the information which can be derived from the items (below). The material from the three sites is best reviewed in relation to the site descriptions (see next section).

<u>Site/Find #</u>	<u>Description of Collected Artifacts</u>
39ST264 [1]	Copper cartridge, 27/32" copper case, .458 diameter. Rim fire, with a raised series "H" on the base. Caliber 46 (short). Total bullet length was 1-5/16". The cartridges contained a 230 gr. conical, flat nose, lead bullet. Loaded with 26 gr. black powder. Used in the Remington Army single-action and other revolvers. The raised "H" on the headstamp is of the earlier Winchester manufacture under a Henry patent. Produced during the 1860s (Logan 1959:68-69).
39ST269 [1]	Two iron cut nails, length 2", 6D at 252 nails per pound, non-raised platform on machine-stamped head. Manufactured from 1830 to past 1895. These kinds of nails were annealed after 1870, but chemical analysis would be necessary to determine if that process was used on these examples or not, because of corrosion. These nails were common throughout the United States in the latter half of the nineteenth century and even into the twentieth century. There are no unique, identifying, or diagnostic characteristics of these examples (see Fontana and Greenleaf 1962:51, 54-56; and Nelson 1968).

39ST277 [1] Brass cartridge, 1-5/16" in length. Diameter at head .465. Diameter at mouth .436. Caliber 44-40 WCF. Center fire. Headstamped W.R.A.Co.-44 W.C.F. Total length with bullet 1-19/32". Held a 200 grain flat nose bullet and 40 grains black powder. Produced for use in the Model 1873 Winchester rifle and Colt single action revolver (Logan 1959:137).

IF38 Glass bottle neck fragment with lip intact for use with cork, rubber, or glass stopper. The specimen is of a clear glass with a lavender tint caused by oxidized manganese. It has a flaring lip. Bottles of this type were known to have been carried in the Missouri River mercantile trade. For instance, the "Bertrand," which sank in 1865, carried bottles with a similar flare lip. (See Switzer 1974:8 Figure 2, #15 and Switzer 1974:69 Figure 96 for examples). Switzer indicates uses ranging from wine to culinary sauces and seasonings. He does not show any bottles of this type which contained other than edible contents. The Sears Roebuck catalogue of 1897 shows bottles with this type of flared lip available for purchase at 44¢ per gross in white flint glass for prescriptions and at \$1.80 for 5 gross for pomades (see #G1241 and G1246 on p. 35 for examples). There is no way to date this bottle accurately to closer than about 50 years, roughly between the Civil War and World War I. Such bottles were used for intoxicating beverages, for liniments and tonics, for condiments, cosmetics, and many other purposes.

IF53a Two ironstone fragments with the word "ironstone" in the maker's mark. Charles James Mason patented the term "Ironstone China" and the formula for it in 1813 from his pottery in Lane Delph, Staffordshire. His formula was

numbered 3724. Since that time dozens of manufacturers have produced ware which they called "ironstone." Much of this was produced in England for export to the United States, and some was produced domestically in this country. Among the leading potters who produced a ware called ironstone were: T. Furnival and Sons of Cobridge; Jewett; T. and R. Boote; Enoch Wedgewood of Tunstall; Challinor; Thomas Hughes of Brownsville; James and George Meaken of Tunstall; Holland and Green of London; J.W. Pankhurst of Hanley; and J. Clementson of Sydenham. Most English ironstone export ware ceased to be important in the American market during the 1890s. The ware itself is a refined earthenware which was also marketed under such names as granite, stone china, semi-china, semi-porcelain and vitreous china. The word "ironstone" on this piece helps narrow the possible makers and dates. But in addition to the English manufacturers listed above, there were American potters, such as: Vodrey Brothers of East Liverpool, Ohio with such a mark after 1875; The American Crockery Company of Trenton, New Jersey with such a mark after 1876; and the Crown Pottery Company of Evansville, Indiana with such a mark after 1891. As pointed out by William C. Ketchum, Jr. (1971:122-123), many American potters counterfeited the English marks for better sales. This counterfeiting was especially common with the use of the word "ironstone" and the use of the Royal Coat of Arms (See Ralph M. and Terry H. Kovel 1953:153-156) for American marks which imitated the English ones. There is not enough of the mark on these two fragments to make a definite identification as to manufacture or date (see also Hughes 1959:53-57). The United States government, after the McKinley Tariff of 1890, required all such imports to bear the country of origin's name on the object. If the words "made in" are a part of the mark, it is definitely of twentieth century origin, when that was required after 1900.

IF53b

Silver plate utensil handle, 5/8" wide at base. This is most likely a spoon handle of some ornateness of design. Fork, knife, and other flatware handles were usually larger and heavier. It does not have quite enough plate remaining to recreate the pattern. Because of the small size and delicate nature of the handle, it might be a coffee spoon or a bon bon server. There were hundreds of patterns for such items, most of them manufactured by a Meriden, Connecticut firm variously named "William Rogers and C. Rogers," "Rogers Bros. 1847," and "C. Rogers and Bros." Their sales were nation-wide for a century. Not enough of the shank handle remains to determine if this item was stamped with a manufacturer's name or mark.

IF53c

Iron buckle, 1½" by 1½", with no identifying or distinguishing marks or characteristics. The Sears Roebuck catalogue of 1897 (p. 765) shows an illustration of a similar artifact. It is labelled an X C plate iron center bar-harness and halter buckle for strap, #93822. This size is offered at 25¢ per dozen. The corrosion on this example prevents a determination of whether it was originally "white" or "japanned" iron. It is possible that this was a buckle for a belt to be worn by humans, but more likely it was for horse harness. Such items were readily available, cheap and common.

This section briefly summarizes the major site types located during the Cheyenne River arm survey.

Earthlodge Village

The Meyer Village site, 39ST10, was the only earthlodge village located within the survey area. A description of the site is provided in the preceding site inventory section. The site had been previously excavated by Hoard, who also compiled a report on the excavation (Hoard 1949). At that time, 26 distinct lodge depressions were recorded scattered on a slight rise in a "lazy L" pattern on the northeastern point of a gently rolling terrace. The 1986 survey located only three distinct depressions in what appears to be the southeast portion of the site. Substantial cutbank erosion of the northern and western part of the site has probably taken place since the formation of the Oahe Reservoir, and this erosion is continuing. The management recommendation for this site calls for a full assessment of the site's remaining research potential as soon as possible. Information from areas under immediate threat from erosion should be salvaged.

Mounds

Site 39ST48 was the only mound group identified within the survey area. However, whether the mounds are artificial or natural formations has not been determined. All evidence to date suggests that they are natural, although there is an artifact scatter located in this area and to the southeast of the mound group. The management recommendation for this site includes further evaluation, particularly in the areas subject to slumping and cutbank erosion, to determine the full research potential of the site.

Artifact Scatters (prehistoric)

The term "artifact scatter" can be applied as a generic designation for the characterization of surface materials (discards) resulting from human utilization at a particular locality. The manifestation of surface materials in the archeological context reflects a complexity of relationships between natural and non-natural (cultural) factors -

beginning with the depositional circumstance, extending through burial, decomposition and, ultimately, re-exposure. Climatic and geomorphological processes, along with other more subtle factors, serve to affect the course of preservation. The specific physiographic and environmental parameters affecting the present study area limit the long-term preservation of organic material, frequently presenting an assemblage of lithic materials as the surviving evidence of past human activity. Protohistoric and historic sites exhibit greater preservation of organic (floral and faunal) remains. The inorganic category also expands to include metals and glass.

Interpretation of surficially exposed materials can be further complicated by agricultural disturbance, construction activities and vandalism affecting the archeological localities. The long term and unremitting removal of materials by collectors continues to present the field archeologist with samples lacking in reliability.

The more complex a site is, the greater permanence and/or importance it probably had to the society. Complexity can be measured in terms of the number and types of formed tools at a site - illustrating different activities; the stages of tool making represented; the variety of lithic raw materials utilized; the range of associated non-lithic material; the presence of hearths or indications of the use of fire; and other features such as depressions and rock alignments.

The current survey recorded 36 prehistoric sites with lithic material present; the two previously recorded sites in the survey area, the earthlodge village and the possibly natural mound group, also contained lithic material. Four of the newly recorded sites are associated with cairns (39ZB16, 39ZB20, 39ZB21, 39DW79), one is located in the same area as St. Peters Cemetery (39DW82), one is associated with grave depressions (39ST269) and another is associated with depressions that may also be graves (39ST280). Additionally, a depression was located near a prehistoric artifact scatter on private land and an historic artifact scatter which extended onto Corps land (39ST273). Of the 38 sites containing lithic material, 28 are not associated with any features. The majority of these sites (28 of the 38) are located in Stanley County on the south side of the river. The prehistoric artifact assemblages recorded by this investigation are summarized in Table 7.

Management priorities for artifact scatters (excluding scatters associated with other features)

The majority of artifact scatters that have the potential for subsurface cultural deposits are considered to warrant further evaluation; however, those sites which are more extensive and have a greater complexity of artifacts/material types present (fire-cracked rock, ceramics), have broader research potential than smaller sites with limited artifact assemblages. While exceptions will arise, and the data available to evaluate these sites are extremely limited, it is necessary to make a determination of the relative importance of these sites to provide a framework within which to discuss the sites with regard to further evaluation and management.

Based on the data summarized in Table 7 and additional information derived from the site reports (Appendix B), the following sites are evaluated as having a higher research potential: 39ST260, 39ST262, 39ST265, 39ST272, 39ST276, 39ST278, 39ST282, 39ST283, 39DW66, 39DW81, and 39DW84.

Depressions

Six sites located during the survey are listed in this category. A brief description of each is given below.

39ST273: Depression (on private land), 1.68m N-S x 1.65m E-W and 30cm deep, associated with historic artifact scatter.

39ST280: Seven depressions, not regularly spaced, associated with some chipped stone debris. Possibly burials, but no definite indications. Sizes and shapes not typical for burials.

- 1 - 3m x 2m and 30cm deep.
- 2 - 1.5m diameter and 15-20cm deep.
- 3 - 3.75m x 3m and 20cm deep.
- 4 - 4.5m x 0.85m and 21cm deep.
- 5 - 2m x 0.8m and 20cm deep.
- 6 - 1.15m x 0.85m and 10cm deep.
- 7 - 1.35m x 1.0m and 15cm deep.

39ST284: Depression, 3m x 1.5m and 40cm deep. Within the depression were five 1.5 to 2.5m long branches or logs and three 1.0 to 1.5m long boards, suggesting a historic origin.

39DW86: Depression, 1.75m x 0.85m and 15cm deep.

39DW87: Two depressions. 1 - 5.0m x 3.5m and 50cm deep.
2 - 4.5m x 3.0m and 25cm deep.

39DW88: Depression, roughly 6.5m in diameter and 30cm deep.

Management considerations

All of these sites appear to offer limited research potential; if impacts threaten the sites, they should be examined to determine their nature and origin. It is likely that most of these depressions are historic (Native American or Euro-American) in origin, but the general lack of associated materials and other features precludes a determination from surface evidence alone.

Cairns

The terms "cairn," "rock cairn" or "rock pile" may cover a wide range of features in terms of size, shape and function. A strict definition of a "cairn" should emphasize the piled-up nature of rocks or cobbles when compared with features such as hearths or mosaics which are generally spread out or single-coursed stone features. However, when conducting a surface survey it is not always possible to clearly discern whether a feature is partially buried or whether a stone pile has been spread out at some time after its original construction.

Almost all of the stone cairns recorded during the Cheyenne River arm survey were either isolated features or associated with other cairns. The few exceptions include those noted in relation to recent boundary markers and two recorded as part of an historic Native American site (39DW74). The cairns varied in size and number of stones, but were all basically circular in shape. In regard to the function of cairns, it has been noted:

Cairns are not an archeological phenomenon unique to the Plains; they have been observed in a

wide range of locations in North America. Their function has long been a puzzle to researchers, and ethnographic, historic, and archeological literature indicates that rock piles have served a wide range of purposes. Malouf (1962) and Lahern et al. (1978) provide good summaries of the myriad functions of rock piles. Briefly, cairns have been recorded or postulated as being or marking any of the following:

- food caches
- ceremonial/religious activities
- burials
- memorials for the dead
- memorials for battles
- shrines
- trail markers
- bison drive alignments
- lookout or vision quest site markers
- finishing lines for horse races
- children's play
- support for a tipi or flag pole
- support for scaffolding of a burial or
- meat-drying rack
- support for spears or other weapons
- trash piles

...Some may have been built to support a bison skull in anticipation of a successful kill.

Obviously, cairns may have served in an unlimited number of ways, which poses a problem for the archeologist [Hanchette 1983:6.11-6.12].

Table 13 summarizes the information recorded for the 28 sites at which one or more cairns were present. When the stones forming the cairn were actually piled around a Corps or GLO marker stake, it was assumed the two were associated and during the field survey a decision was made not to record further instances as sites (thus, two such features are recorded as isolated finds - #67 and #68).

If a cairn is only "close to" a survey marker, it may, or may not, be associated. A review of cairn locations in relation to legal locations ($\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$ sections, etc.) shows a close correlation for sites 39DW68, 39DW69, 39DW73, 39DW76, 39DW77 and 39DW78 to such legal points, suggesting these are more likely to be survey markers. Of the above sites, 39DW73 and 39DW76 are associated with extant allotment markers. Not all Indian allotment markers located during the survey, however, had associated cairns, nor did most of the U.S. Army Corps of Engineers stakes; none of the BLM cadastral markers (dating from 1976-1979) had associated cairns.

It was noted earlier in this report that all the cairns, except the three in Stanley County, are located on the north side of the river. This is also true for the six GLO/allotment markers located (four with cairns, two without) and the 28 BLM cadastral survey markers found. It would appear that more intensive surveying and division into allotments of lands have occurred within the current Cheyenne River Indian Reservation than is the case with land divisions south of the river (which were part of the Great Sioux Reservation until 1889). In addition, the patterns of land use south of the river, with more extensive ranching (on the better rangeland) and cultivation, are more likely to have caused the destruction of cairns and markers.

Management considerations

The research potential of rock cairns is clearly limited unless they are associated with a larger site. Because some lithic material was present at sites 39ZB16, 39ZB20, 39ZB21 and 39DW79, these localities may merit more attention. Sites 39DW67, 39DW73 and 39DW76 are considered to be associated with historic/recent survey markers (GLO allotment and Corps markers), and sites 39DW68, 39DW69, 39DW77 and 39DW78 may have a similar function based on their legal location. In the case of sites 39DW68 and 39DW69, where two cairns are present, the larger cairn may be a marker to aid in locating the smaller one, which would actually mark the legal location.

Overall, rock cairns are assigned a lower priority in regard to further work than most other site types. Nevertheless, if these sites are threatened, further evaluation should be undertaken.

In this area, it is likely that these cairns are trail or lookout markers, but it is possible that some either cover or mark a feature. Although material indicating temporality could be encountered among or beneath the stones, the potential is considered low.

...the majority of cairn functions...cannot be detected by the archeologist since no tangent cultural remains are associated with them. While rock piles have been excavated, the results have varied and, more often than not, evidence as to their function, or raison d'etre, has been inconclusive [Hanchette 1983:6.12].

Table 13. Summary of Cairns Located During the Survey.

SITE NUMBER	CAIRN DIMENSIONS (cm)	OTHER INFORMATION
39ST256	60 x 70	20+ cobbles.
39ST268	120 x 75	23 cobbles.
39ST279	200 x 100	15 cobbles.
39ZB16	130 x 120	40+ cobbles. Lithics present.
39ZB17	85 x 75	30 cobbles.
39ZB18	150 x 200	50+ cobbles.
39ZB19	150cm diameter	100+ cobbles.
39ZB20-1	100 x 90	20 cobbles. Lithics present.
-2	100 x 150	27 cobbles.
-3	125 x 120	42 cobbles.
39ZB21-1	110 x 125	55+ cobbles. Tested cobble nearby.
-2	77 x 55	10 cobbles.
39ZB22	100 x 125	
39ZB23	66cm diameter	15 cobbles.
39ZB25	80 x 72	15 cobbles.
39DW63-1	87 x 81	24 cobbles.
-2	115 x 145	40+ cobbles.
-3	200 x 178-227	80+ cobbles.
39DW65	128 x 115	44 cobbles.
39DW67	55 x 50	7 cobbles. Corps marker.
39DW68-1	127 x 97	60 cobbles.
-2	55 x 51	15 cobbles.
39DW69-1	75 x 115	40+ cobbles.
-2	60cm diameter	15 cobbles.
39DW70	100 x 115	60+ cobbles.
39DW71	112cm diameter	25-40 cobbles.
39DW72	100 x 90	50+ cobbles.
39DW73	85cm diameter	30 cobbles. Corps and allotment markers. 1931 Indian allotment brass cap. 1/16 S13/S24 --- 926.
39DW74-1	66 x 85	15 cobbles.
-2	66cm diameter	15 cobbles. Both are part of Native American occupation site.
39DW76	83 x 134	30 cobbles. Corps and allotment markers. 1931 GLO allotment marker. 1/2 S5/S8 --- 4367.
39DW77	45cm diameter	9-10 cobbles.
39DW78	30 x 60	9-10 cobbles.
39DW79-1	100 x 100	Lithics present.
-2	60 x 30	
39DW80	60 x 70	30 cobbles.
39DW85	215 x 285	30+ cobbles. Diffuse area of cobbles.

Burial Areas and Cemeteries

Three sites are assigned to this category - 39ST269, 39ST281 and 39DW82. Site 39ST269 consists of three graves and is an unmarked/unnamed burial area. Site 39ST281 is the Lindsay Cemetery and 39DW82 is St. Peters Cemetery. Site 39ST280 contains seven depressions of unknown function. While the size and shape of several of the depressions at 39ST280 are not typical for graves, this function cannot be ruled out without testing the site.

Historical Sites Research

Dr. Loren Horton, historian with the Iowa State Historical Department, served as the project's historical archeologist/architectural historian. All information specific to historic sites collected by the field crew, including maps, notes, photographs and artifacts, was analyzed by Dr. Horton. Based on that analysis, and discussions with the field crew, Horton decided which sites, if any, he would be required to field check in order to make assessments of significance. Because of the nature of the sites and the information already recorded, he determined that none of the historical sites identified on this survey required further on-the-ground evaluation. His assessments of the sites are based on many years of experience in Euro-American historical research and analysis. A broader documentation of historic sites in the project vicinity is provided as part of the Literature and Records Search section (above).

Two historic sites, 39DW64 and 39DW74, which were located during the current survey, can be considered major occupation sites; discussions of these sites are provided below. Based on associated materials, two depressions, designated sites 39ST273 and 39ST284, are assigned to the historic period. These two sites are discussed above. In addition to these sites, a dump/scatter of farm equipment was recorded at site 39ST262, and an area of recent/historic debris was designated site 39DW75 (see inventory). Historic isolated finds were also limited in number and included cut nails and brass cartridges, a glass bottle neck, an ironstone fragment, an iron buckle and a utensil fragment. These items are all from the late nineteenth to mid-twentieth century. As noted above, the activities involved in mapping and delimiting boundaries in this area in the late nineteenth and early

twentieth centuries probably account for some of the rock piles noted around and near the actual boundary marker stakes. Finally, it is possible that some of the unassigned depressions relate to historic activity in the area.

Major occupation sites

39DW64 - Vanderveer Ranch. This site appears to be of fairly recent origin. Abundant evidence of human activity and occupation is present (see Inventory). The cistern carries a date of April 7, 1946, impressed into the poured concrete, and the foundations also appear to be less than 50 years old. Other artifactual remains at the site are not precisely datable. Documentary evidence (maps) reinforces the relatively recent origin of much of this material. The nature of the remains suggests a purposeful intent to occupy the site for a lengthy period of time. That this was not the case was probably due to the acquisition of the area for the Oahe Reservoir project.

Other ranches shown on the pre-reservoir USGS quadrangle maps (Appendix A), including Carr Ranch, Pearman Ranch, Sunshine Ranch, High Elk Ranch, Holloway Ranch and Chisholm Ranch, are all now inundated.

39DW74 - Native American occupation site. The eight features recorded at this site (see Inventory) reflect the human activity which occurred at this locale. The domestic artifacts observed are generally those one would expect to find in this region. The remnants of structures show no significance as individual units, but some significance might be attached to them in combination, particularly if documentary sources show an association with a person or event of significance. The inclusive dates from the maps (see Inventory) cover the half century (late nineteenth century to mid-twentieth century) when the site was most likely occupied. If a church was located here, denominational records should explain when and why. Further documentary research is recommended for this site prior to any further physical evaluation. A tentative association between Corn's Camp (a Cheyenne River Sioux camp occupied in the 1880s) and this site has been proposed (p. 17). Similarly, given the nearby location of St. Mark's Episcopal Cemetery, the church recorded at this site might be St. Mark's Episcopal Church.

12. LATE QUATERNARY GEOLOGY OF THE LOWER CHEYENNE RIVER VALLEY,
SOUTH DAKOTA AND ITS IMPLICATIONS FOR ARCHEOLOGICAL SITE LOCATIONS
by G. Robert Brakenridge and Roger McCready

Introduction

This chapter assesses the importance of late Quaternary geology and sedimentary/erosional history on the location of archeological remains in the Cheyenne arm of Oahe Reservoir. The report is the result of nine weeks of work by the senior author and three weeks of work by the junior author. The inferences to be presented are based on evidence gathered from: 1) geomorphic analysis of aerial photographs, topographic maps, and county soil maps, 2) field reconnaissance mapping and sampling for radiocarbon in natural exposures, and 3) regional reports that describe local radiocarbon date locations and archeological sites. These data are discussed below and also included is an examination of the effects of geomorphic history on the preservation of buried archeological sites. We conclude with a series of specific recommendations concerning management of buried archeological remains in the reservoir.

The Study Area

Figure 91 shows the location of the Cheyenne River in relation to the Mississippi basin as a whole, and to other alluvial study sites useful for comparative purposes. The Cheyenne Arm of the Oahe Reservoir extends from the former mouth of the Cheyenne River to ca. 48km upstream (latitude 44° 41' 15", longitude 101° 17' 10"); it ends approximately where the east-west trending Cheyenne River valley floor ascends above ca. 1630 ft. above mean sea level (amsl). The project reservoir water surface elevation is shown as 1617 ft. amsl on U.S. Geological Survey 1:24,000 topographic maps, so that an approximately 1km wide and 8km long reach of upstream Reservoir land is not normally inundated. The reservoir was filled in 1963, and examination of U.S. Army Corps of Engineers reservoir stage records from 1967-1985 indicates that the stage has commonly fluctuated from lows of approximately 1600-1605 ft. amsl to highs of approximately 1610-1618 ft. amsl on an annual basis.

The climate of the area is subhumid and continental. Average annual precipitation totals 16 inches, whereas snowfall averages 34

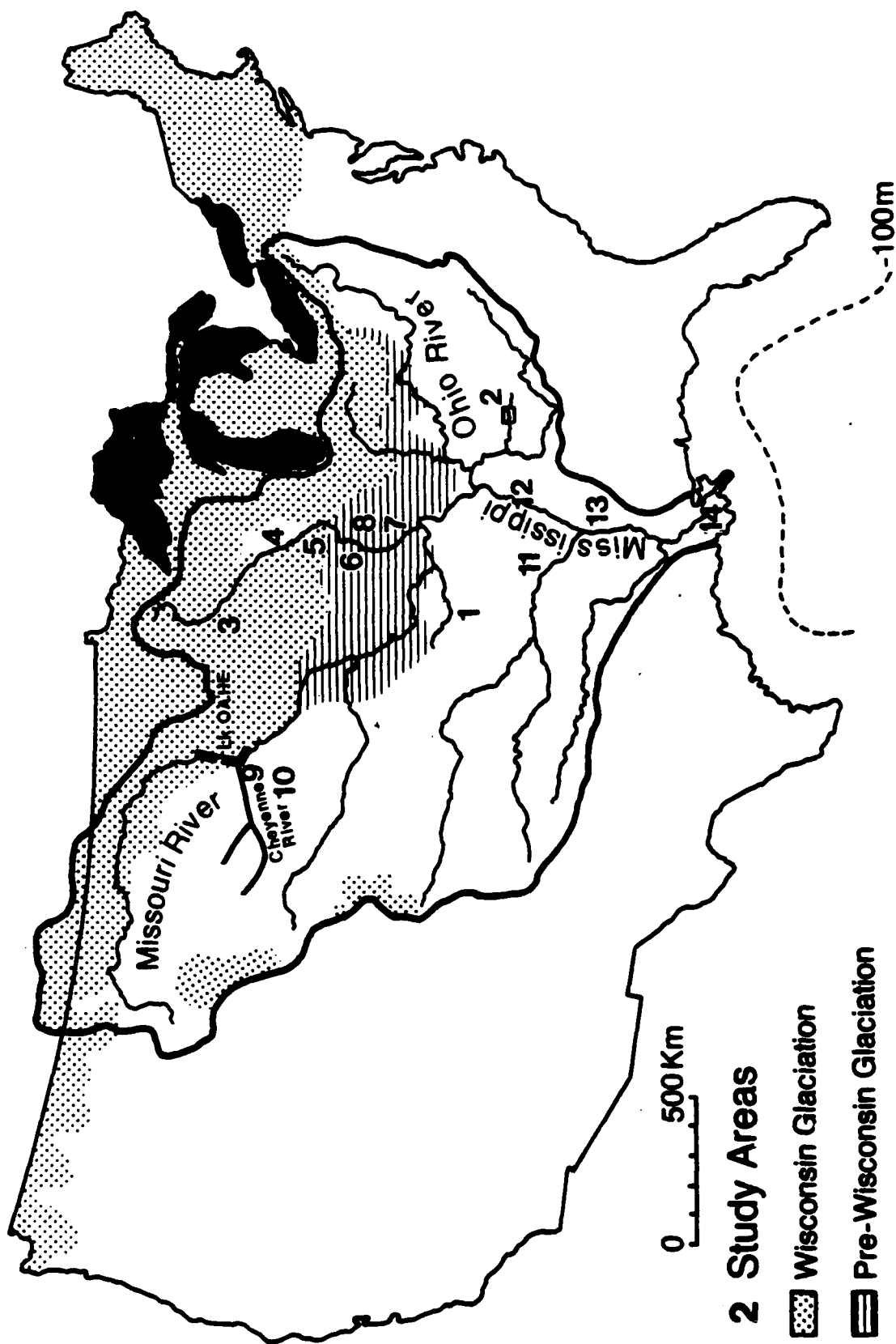


Figure 91. Location of the Cheyenne River and Oahe Reservoir in relation to other alluvial chronological studies in the Mississippi River basin (modified from Schumm and Brakenridge 1988). Numbered sites are discussed in the text.

inches. The region is known for its great climatic variability: some years or series of years experience much higher or lower rainfall totals than the average value. Winter (January) average temperature in Pierre, South Dakota is 19°F and summer (July) average temperature is 72°F; the heaviest one-day rain during the period of record at Pierre was 3.52 inches on August 2, 1953 (Borchers 1980). The prevailing climate supports forest vegetation only along the major drainages, whereas the less well-watered interfluvies and flat upland surfaces are covered by grass species.

The Missouri River in this region closely borders the mapped westward limit of the Wisconsinan continental glacial lobes (Figure 91), and the late Pleistocene history of that river was affected by the melt history of this ice (Schumm and Brakenridge 1988). However, the Cheyenne River's watershed was apparently not glaciated during the Wisconsinan. The Missouri trench, and the smaller trenches formed by its tributaries such as the Cheyenne, are the most significant physiographic features of the regional landscape (Plate 101). The Missouri trench in this area is approximately 5km wide and 100+ m deep; the surrounding relatively flat landscape west of the Missouri is at an average elevation of 1420-2250 ft. amsl.

The local bedrock includes several relatively similar members of the Pierre Shale, a weak and easily erodible Cretaceous black shale. As a result of the shaly bedrock, local tributaries to the Cheyenne are characterized by fine-grained sediment loads and a paucity of sand and gravel. However, the bedload of the Cheyenne includes abundant quartzose sand and gravels of crystalline igneous and other rock types, which are derived from its upstream reaches near the Black Hills uplift, 200km to the west. The intricate fluvial dissection of the weak shales in the vicinity of the major valleys creates local badlands topography and major soil erosion and stream sedimentation problems for local ranchers. It also suggests the general activity of the geomorphic environment and the potential for burial or erosion of archeological sites.



Plate 101. The Cheyenne River valley, 1.6km west of the State Highway 63 bridge crossing at the upstream boundary of Oahe Reservoir. A cutbank and opposing point bar are well shown in the right hand middleground of the photograph; the surface to the left of the point bar is T0 and that to the right of the cutbank is T1. The flat-lying surface forming the horizon is the top of the 91m terrace shown on Figures 92 and 92a; it is developed on the Mobridge Member of the Pierre Shale.

Quaternary Deposits and Soils Along the Cheyenne River

Figure 92 is a geomorphic map of the upstream portions of the study area. It encompasses a 20km long reach of the river, including and adjoining reservoir lands, that was examined for comparative purposes because it is difficult to interpret fluvial terrace sequences in the reservoir area itself without baseline data concerning the unimpounded river. U.S. Geological Survey 1:24,000 topographic quadrangles were used as bases for producing Figure 92. Also, field observations indicated that the river channel has moved appreciably since 1947-1948, when aerial photographs used in producing these base maps were obtained. Therefore, a limited but more recent set of aerial photographs flown in 1986 to cover the Oahe Reservoir (OAHE DACW 45 86) was used to add to the map the locations of the 1986 channel in the reservoir project area. This 1986 channel position is shown as the gray-toned channel in the map. The other geomorphic units shown on the map are described below.

The surface shown as T0 stands less than 3m above the local map river level and is subject to yearly flooding. It was also mapped where comparisons of the 1947-1948 and 1986 channel indicated alluvial deposition occurring between these two dates. The T1 surface is Holocene to early Historic alluvium and is flooded infrequently, although rare floods such as that occurring in 1929 covered the entire valley floor. It stands 3m to 6m above the local map river level and is probably underlain by alluvia of a variety of Holocene ages. Alluvial fans are prominent along valley floor margins at many locations, and commonly are superimposed in the T1 surface. They may, however, be of a wide variety of ages, or be coeval to (rather than post-date) T1 accumulation at any given location. T2 consists of relatively rare preserved alluvial terrace remnants (former floodplains) which stand 6m-13m above the local map river level; these terraces most likely represent prehistoric accumulations according to the radiocarbon dates to be discussed. T3 consists of even rarer preserved remnants of a 25m-33m above map river level terrace. These remnants are of important archeological significance because of their probable correlation to the 35m terrace exposed at the (partly) Archaic Walth Bay archeological site described by Ahler et al. (1974). Based on this correlation it may be of terminal Pleistocene or early Holocene age. Finally, a succession of

Key to Figure 92.



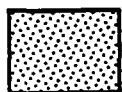
T0

Historic Alluvium within zone of yearly flooding, < 3 m above mrl*



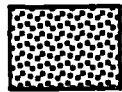
**Alluvial
Fans**

Holocene to Historic alluvial fan deposits overlying T1 alluvium



T1

Holocene to early Historic alluvium within 100 yr floodplain, 3 m-6 m above mrl*, may be divided locally into older and younger row terraces



T2

Earlier Holocene, or older, alluvium 6-13 m above mrl*



T3

Late Pleistocene alluvium 25-33 m above mrl*



**Older
Terraces**

Older Pleistocene alluvium with surfaces at 61,82,88-95, 100, and 113 m above mrl*

*mrl is map river level as shown on U.S. Geological Survey
1:62,500 maps

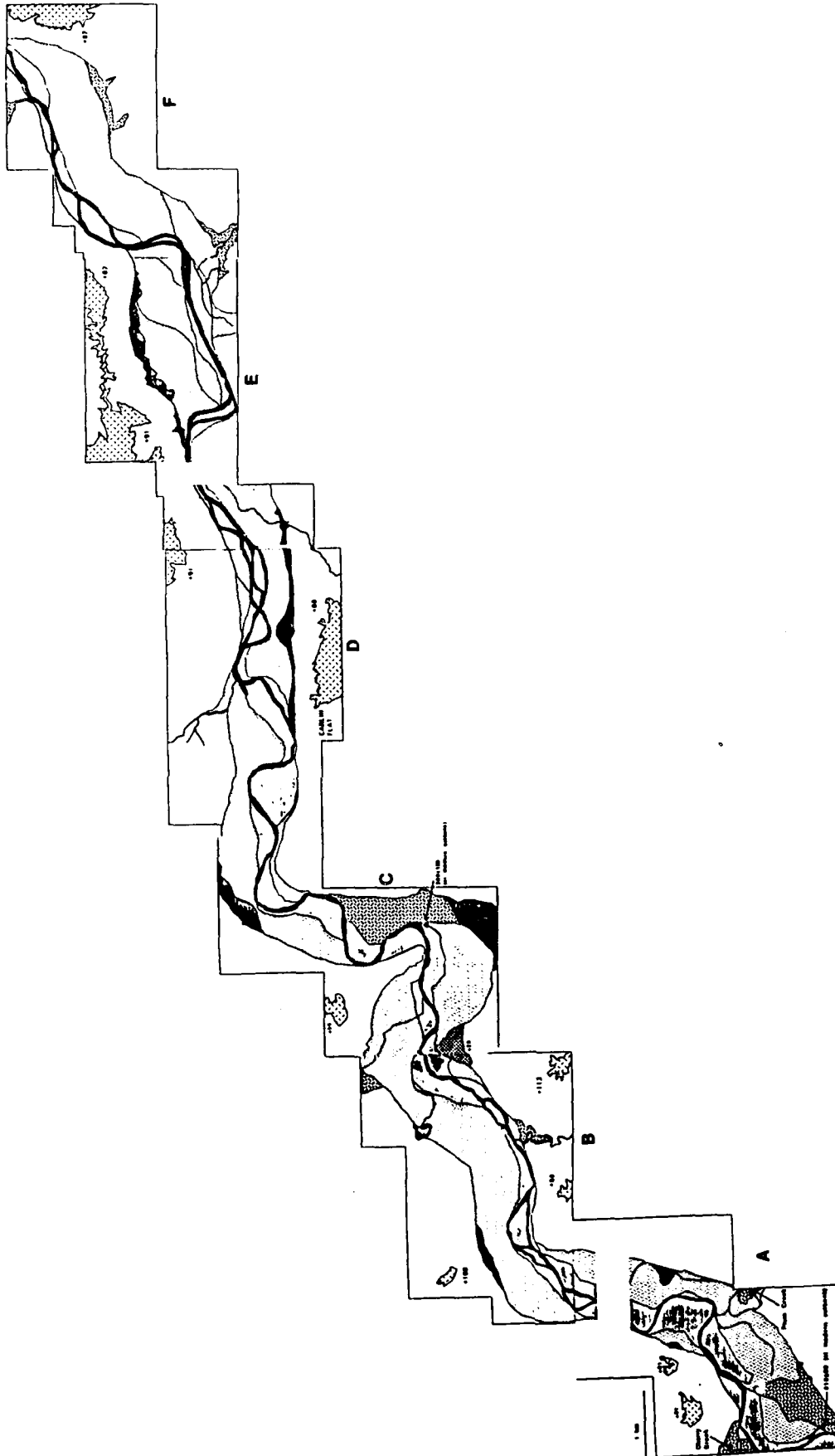


Figure 92. Geomorphic map of the Cheyenne River valley from Cherry Creek to the upstream portions of the Cheyenne arm of the Oahe Reservoir (Areas A through F are shown in detail on Figures 92a-92f).

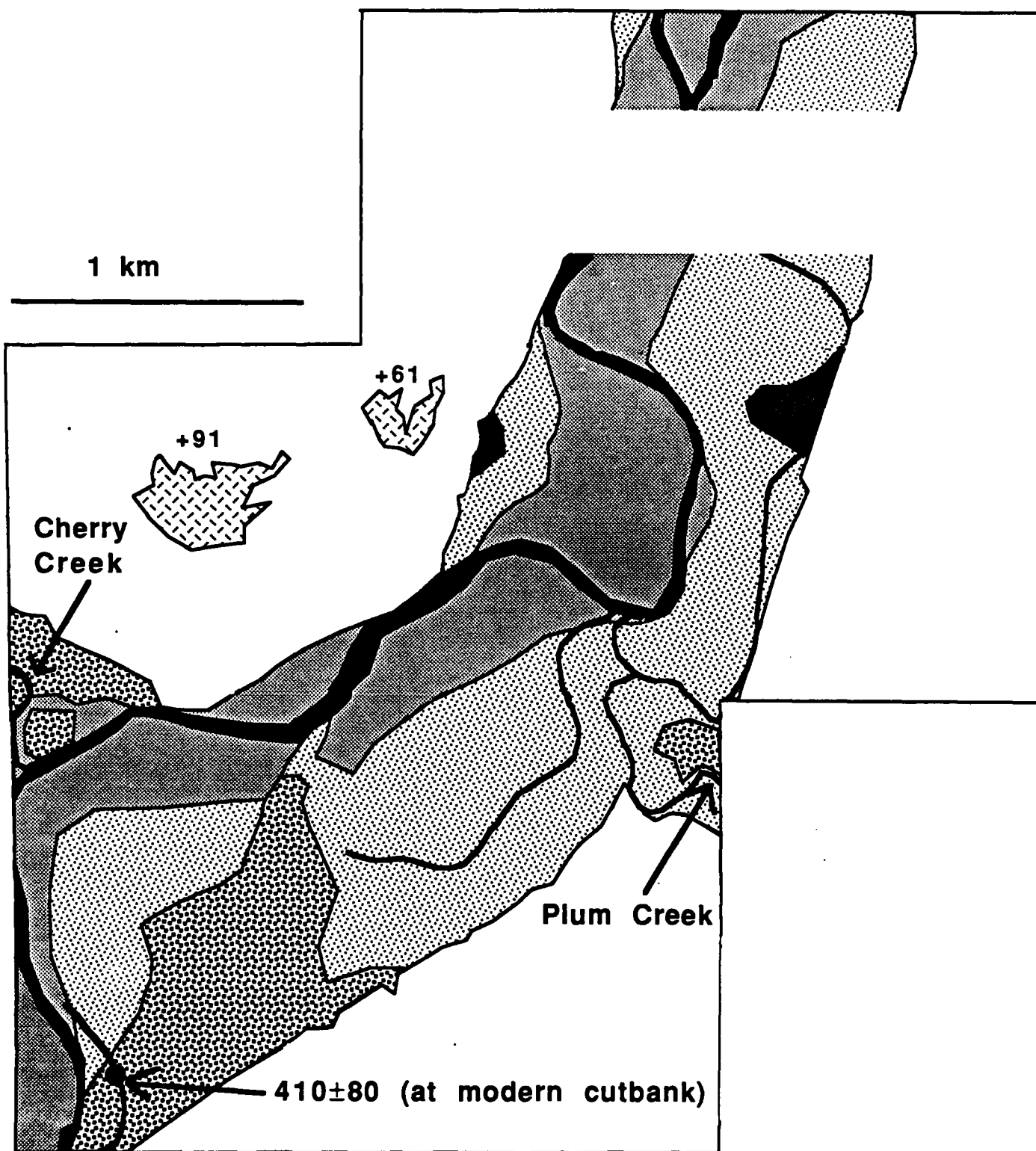


Figure 92a. Area A.

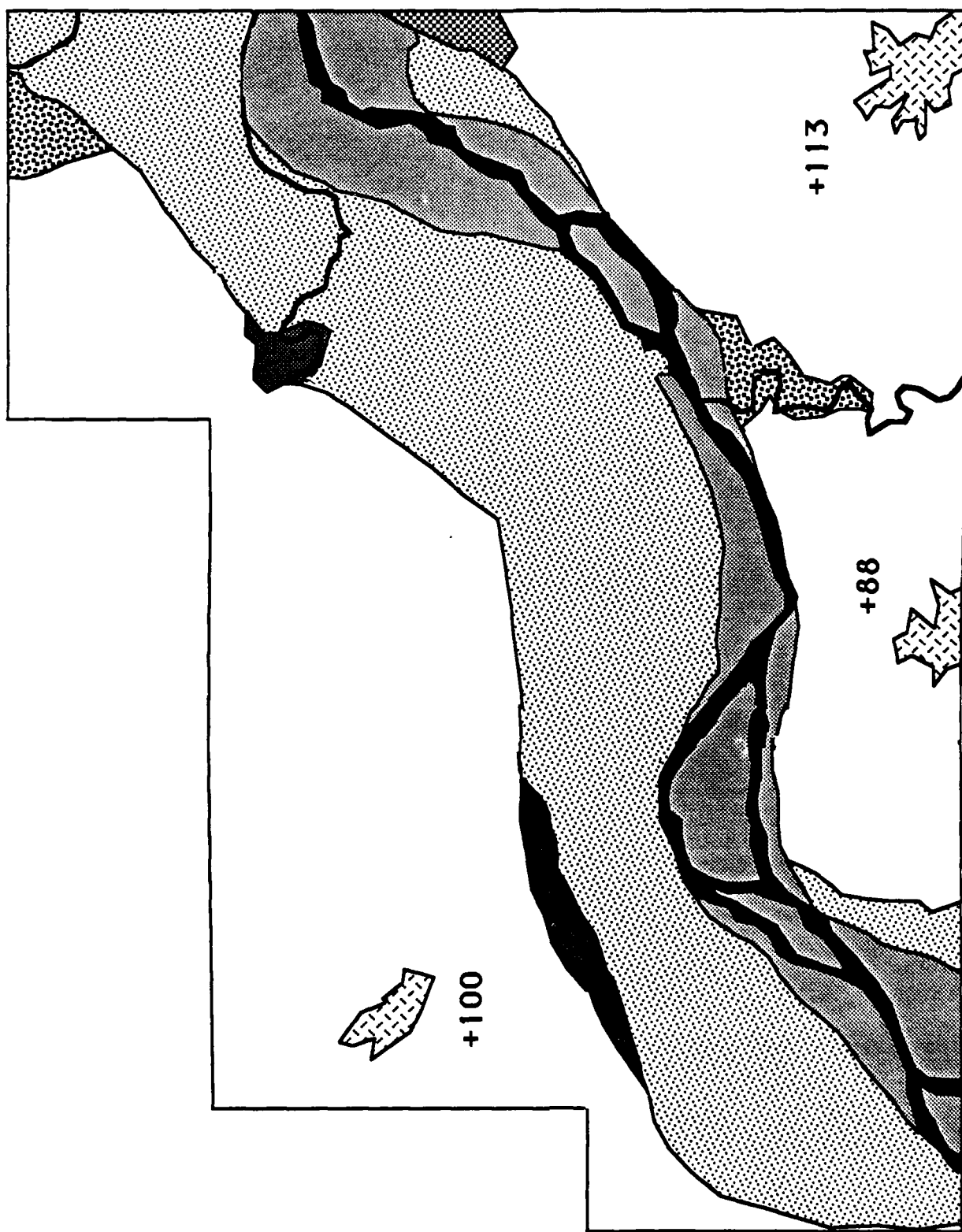


Figure 92b. Area B.

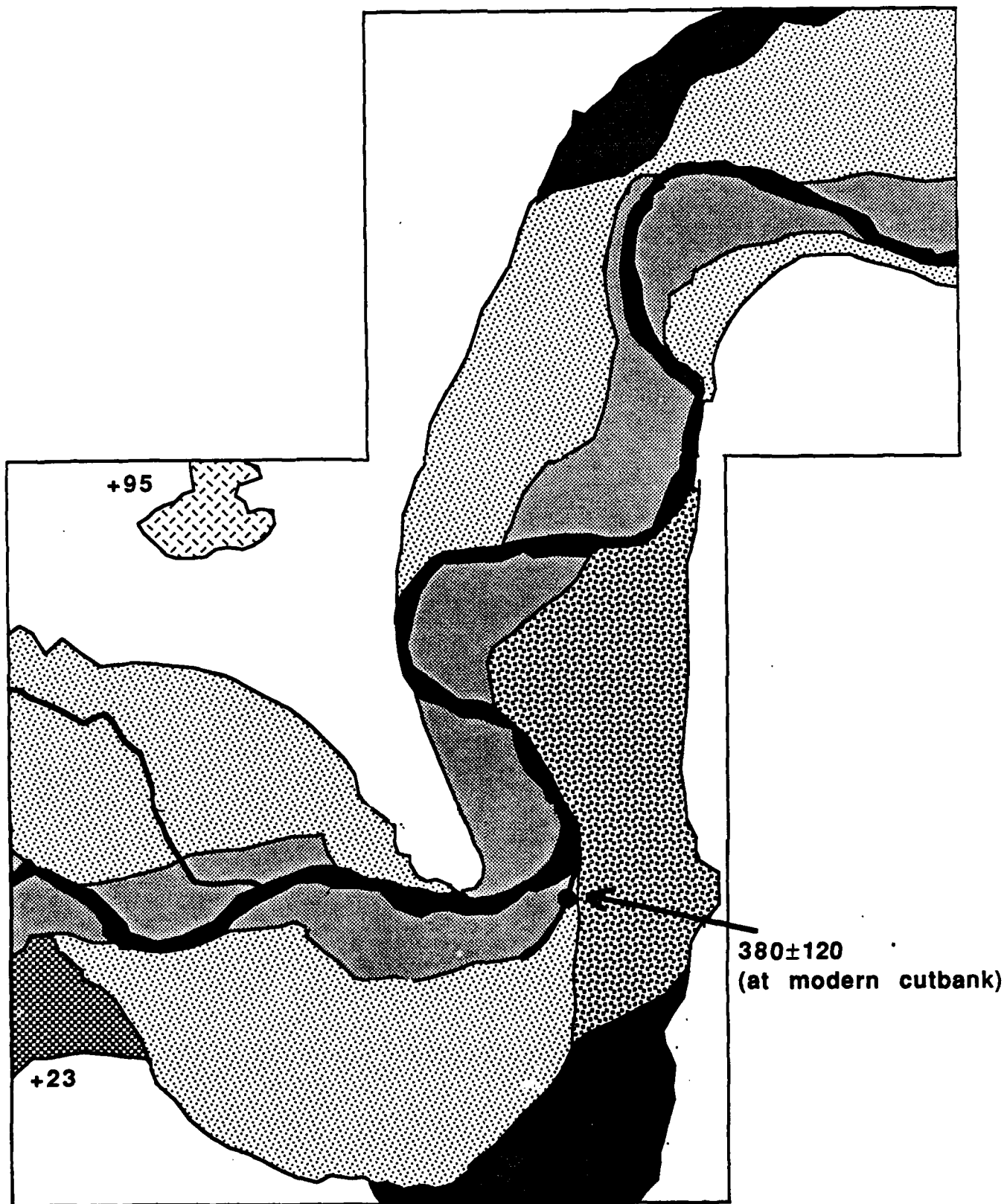


Figure 92c. Area C.

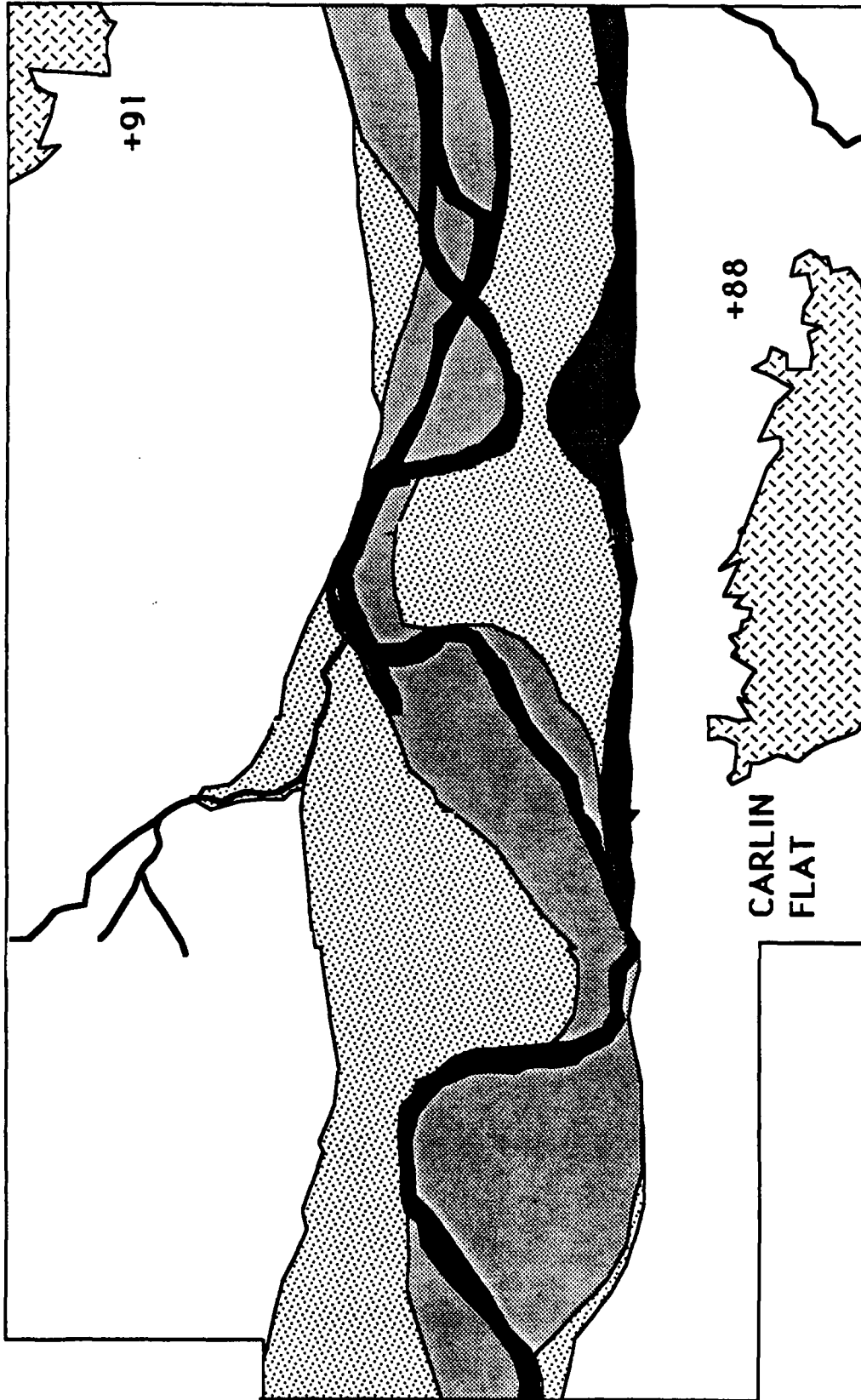


Figure 92d. Area D.

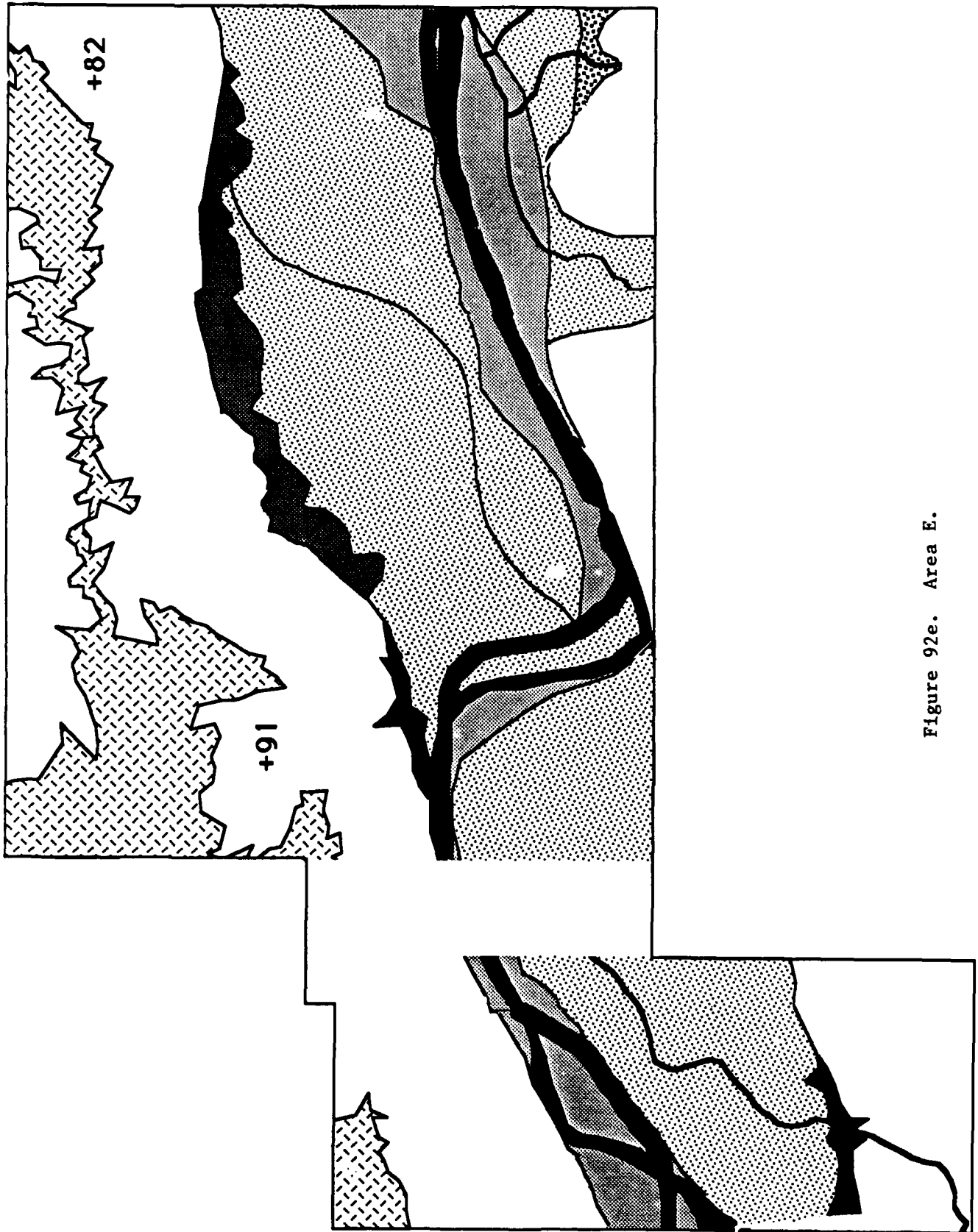


Figure 92e. Area E.

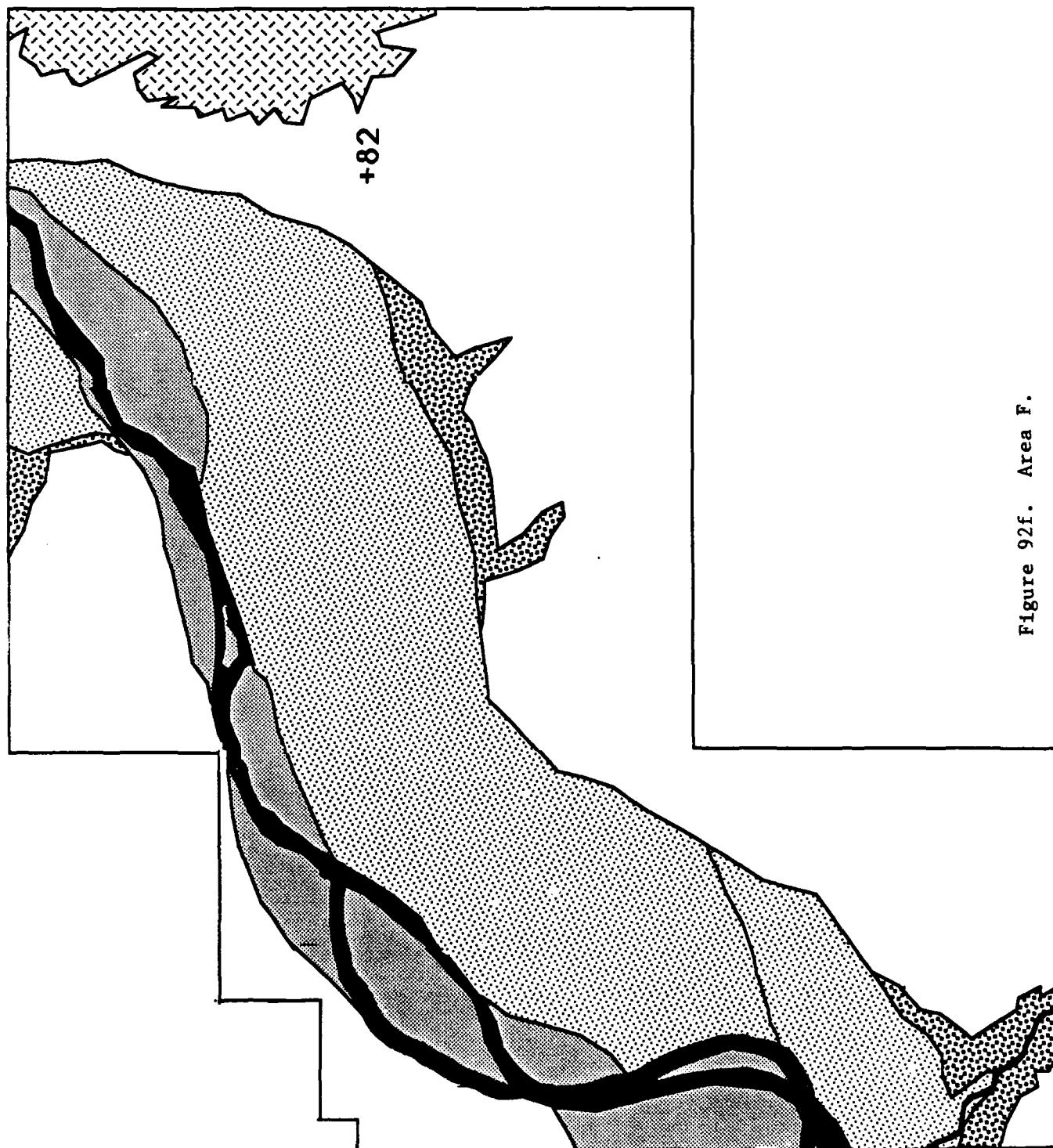


Figure 92f. Area F.

older Pleistocene age river terraces occur at elevations above the river of 61m, 82m, 88m-95m, 100m, and 113m.

The degree of surface soil development is relevant to inferring terrace ages. According to the Ziebach County Soil Survey (in preparation, U.S. Soil Conservation Service, Dupree, SD), Wendte silty clay, Trumbles fine silty loam, Bankard variant loamy fine sand, and Riverwash soils are mapped on the T0 surface. The first is a typic udifluent and thus an entisol; the classifications of the second and third were not available but entisol status is likely, and Riverwash areas lack soil profiles. Thus, soil development is absent to weak on this youngest alluvial surface. On the alluvial fans, one common soil is the Swanboy-Slickspots complex, which is classified as a ustertic cambiorthid. The increasing degree of profile development (aridisols with cambic horizons) suggests the greater age of these surfaces and the possibility of buried prehistoric archeological materials. On the T1 surface are developed the Lohmiller silty clay loam and the Haverson loam, but no classification is given for these soils in the Ziebach, Stanley, or Dewey County surveys. The soils on the T2 and T3 surfaces were not yet mapped (in late 1986). The Daglum-Rhoades loam and the Savage silt loam occur on the 82m and 88m-95m, respectively, older Pleistocene terraces in Ziebach County, and the soil survey for Dewey County also lists the Regent-Daglum complex occurring on the 88m-95m terrace. All three named soils or soil complexes are classified as typic argiborolls (mollisols with dark gray, organic-rich mollic horizons and clay-enriched argillic horizons), which indicates their mature level of soil profile development and Pleistocene age.

Basis for Age Estimates

A limited amount of subsurface excavation for stratigraphic purposes was originally planned, but we located abundant natural exposures and after approval from the Corps, we determined that a better use of the funds originally planned for trench excavations would be for radiocarbon dating of materials thereby obtained. The following age assessments are based partly on correlation, partly on several old maps of the study area, and partly on three new radiocarbon dates obtained as part of this study.

Two dates of 380 ± 120 B.P. and 410 ± 80 B.P. (Table 14; Figure 92 [Areas A and C]) were obtained from detrital charcoal exposed by modern cutbanks being carved into the T1 surface (settings similar to that shown in Figure 92). The dates support a late Holocene age for the T1 deposits at these locations. Also, the activity of the channel itself

Table 14. Radiocarbon Dates Obtained During Geomorphological Study.

SAMPLE NUMBER	MATERIAL DATED	AGE* B.P.	DEPTH OR ALTITUDE	LOCATION
I-14,885	Detrital charcoal	380 ± 120	-3.75 ft.	Within floodplain facies sediments exposed by Cheyenne River cutbank thirteen miles upstream from Route 63 bridge.
I-14,886	Detrital charcoal	410 ± 80	-4.4 to 5.0 ft.	Within floodplain facies sediments exposed by Cheyenne River cutbank one mile upstream from Cherry Creek mouth.
I-14,844	Decayed wood	$28,440 \pm 1120$	+1630 ft.	Within poorly sorted channel gravel facies of terrace deposits exposed by reservoir bank slumping, one mile northeast along shoreline from east side of Sansarc Creek mouth.

* Libby half-life of 5568 yr. used to calculate age

suggests that most of the T1 sediments are quite young. We determined this activity by comparative analysis of old and young aerial photographs and maps. Thus, Figure 92 shows the amount of lateral channel migration accomplished in only 40 years in a portion of the mapped area, as based on the A.D. 1986 channel shown in aerial photographs compared to that illustrated on A.D. 1947 topographic base maps. Also, Figure 93 shows the A.D. 1890 channel position as reconstructed from the oldest surveyed map of the valley. Although significant cartographic errors are present in the old map (e.g., the channel is shown, at several locations, as existing outside of the present bedrock valley walls), the map does emphasize the rapidity of the lateral sweeping movement this river makes at time scales of only a century. Reconstructed lateral migration rates of ca. 800m/100 years are common, based on Figures 92 and 93; this compares with only 1m/100 years for rivers with well-developed Holocene terrace sequences in Vermont and Tennessee (Brakenridge 1984, 1985; Brakenridge et al. 1988). Therefore, in this reach (as well as along the now inundated portions in Oahe Reservoir) the freely migrating Cheyenne River has reworked its valley floor floodplain deposits at a relatively high rate: older prehistoric deposits (and buried archeological sites) occur only in relatively rare localities that were protected from the river. Probably most of the T1 surface is underlain only by late Holocene sediments.

It is difficult to accurately map and differentiate the T2 and the alluvial fan deposits from each other on 1:24,000 scale topographic maps; additional field reconnaissance could modify the (Figure 92) maps. However, we can note that both T2 and alluvial fan deposits occur as land surfaces extending above T1, and an especially common location for T2 remnants is upstream from tributary stream mouths (Figure 92). In contrast, alluvial fans occur at the distal end of small streams that are approximately orthogonal to the river and debouch from steep ravines onto the marginal areas of the valley floor (fan locations are mapped in Figure 92, and Plate 102 shows an example of such a fan). Both types of geomorphic surfaces attest to the local absence of recent reworking of the valley floor by the river. In particular, alluvial fans are non-steady state landforms and grow through time, so that the larger

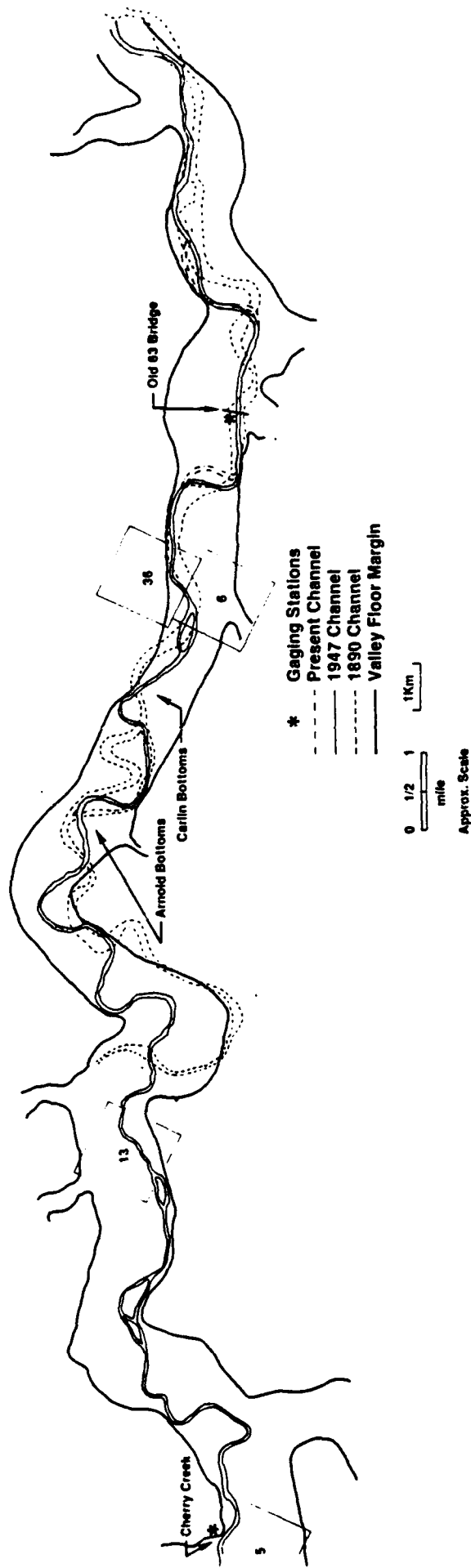


Figure 93. Map showing historic channel position changes (compiled by Roger McCready). Gray shading shows areas of alluvium younger than ca. 100 years in age, as based on the history of channel migration.



Plate 102. Small alluvial fans accreting the T1 surface at the valley wall margin north of Carlin Flat.

fans shown may be the oldest and should pose the greatest probability for the burial of old archeological sites. Also, the following age constraints apply: where the fans actually overlie T1 alluvium, their age must be quite young; where they interfinger with T1 deposits, they may date back to various times in the Holocene; where they overlie or interfinger with T2 or T3 sediments they may be of early Holocene, or older, age (see below). Additional fieldwork is needed to accurately choose between these alternatives at many of the fan locations shown.

The inferred late Pleistocene age of T3 is based on two correlations: 1) To the Walth Bay archeological site described by Ahler et al. (1974), which is entombed in fluvial terrace sediments capped by eolian silts and sands at 35m above the local Missouri River level. The site contained preceramic and possibly Paleoindian artifacts, and the obtained radiocarbon dates suggest a terminal date, for fluvial deposition, of approximately 8000 B.P. 2) A radiocarbon date on wood of $28,440 \pm 1120$ B.P. was obtained in the reservoir area, near the mouth of Sansarc Creek, from fluvial gravel and sand exposed by reservoir bank slumpage (Plate 103; Table 14). The wood was apparently detritus deposited together with the gravel and was at an elevation of ca. 33m above the (now inundated) Cheyenne River level. The date suggests that the basal portion of "T3" terraces were the active locus of fluvial deposition during the late Wisconsinan.

T3 surfaces are not well-preserved in the valley, but instead tend to be heavily dissected. However, the abundance of reservoir slump bank exposures of similar sediment and at similar heights suggests that the deposits may be more extensively preserved than their associated terrace landforms. If the T3 terrace is late Pleistocene in age, then its upper portions could contain pre-ceramic sites.

Quaternary Deposits and Soils Along the Reservoir Shoreline

Whereas in the uppermost portions of the lake, the plane of the lake level is only slightly above the normal river level, in the downstream portions of the Cheyenne arm, near the now-deeply flooded mouth of the pre-dam Cheyenne River, the water level is lapping against



Plate 103. Buried soil profiles (Farmdale-equivalent?) developed in fluvial facies exposed at 33m above the local Cheyenne River grade. Abundant charcoal and wood are present in, below, and above the dark gray Ah Horizon shown; a radiocarbon date on wood from gravel below the soil yielded an age of $28,440 \pm 1120$ B.P. (see Table 14). Note active slumping. Cautionary note: the single date, with large standard deviation, is not sufficient to reliably fix the age of this sequence.

the highest of the older Pleistocene terraces. Downstream from the area covered by the map in Figure 92, and especially where the reservoir water surface is above the 25m-33m (above river) T3 terrace, the Holocene units described above are now inundated. Therefore, east of approximately longitude 100° (or east of the mouth of Sansarc Creek), buried sites would not be expected to occur within Cheyenne River terrace deposits. They could, however, occur in alluvium along major tributaries, or within the extensive eolian silt and sand deposits that mantle some of the older Pleistocene river terraces. Figures 94 and 95, a Quaternary geological map and a special soils map, provide additional information concerning landforms, soils, and deposits in the immediate environs of the reservoir as a whole.

The geological map (Figure 94) shows the now-drowned river reach prior to reservoir construction, and was compiled from four geological quadrangle maps published by the South Dakota Geological Survey in 1950-1952 (see figure caption for references). "Quaternary alluvium" occupies the valley floor and the major tributaries, and two older alluvial units are also shown: "terrace alluvium" and "Orton Gravel." The terrace alluvium is fine-grained (at least near the surface) alluvium similar to that found along the river's modern floodplain, but its surface is elevated 24m above the local river level (as shown on the Iron Post Buttes 1:24,000 topographic quadrangle). This unit most closely matches the T3 surfaces discussed previously. The Orton Gravel includes higher deposits correlating to the older Pleistocene terrace gravels (at a variety of elevations) previously discussed; the Orton name derives from the extensive Orton Surface (lower middle of Figure 94) that is 146m above the Cheyenne River. This ancient surface is underlain by the highest river gravel in the region and is thus a record of the ancient evolution of the Cheyenne River, but the map unit includes less ancient Pleistocene deposits as well. Lastly, also shown on Figure 94 are Quaternary loess deposits that locally cover the Orton terrace surfaces. Cultural materials of all ages could be entombed within these sediments.

The soil map of the reservoir area (Figure 95) was compiled from the published soil surveys for Dewey and Stanley counties (see figure caption for references). The light gray pattern shows all soils listed in these surveys as having a fluvial sediment parent material (e.g.,

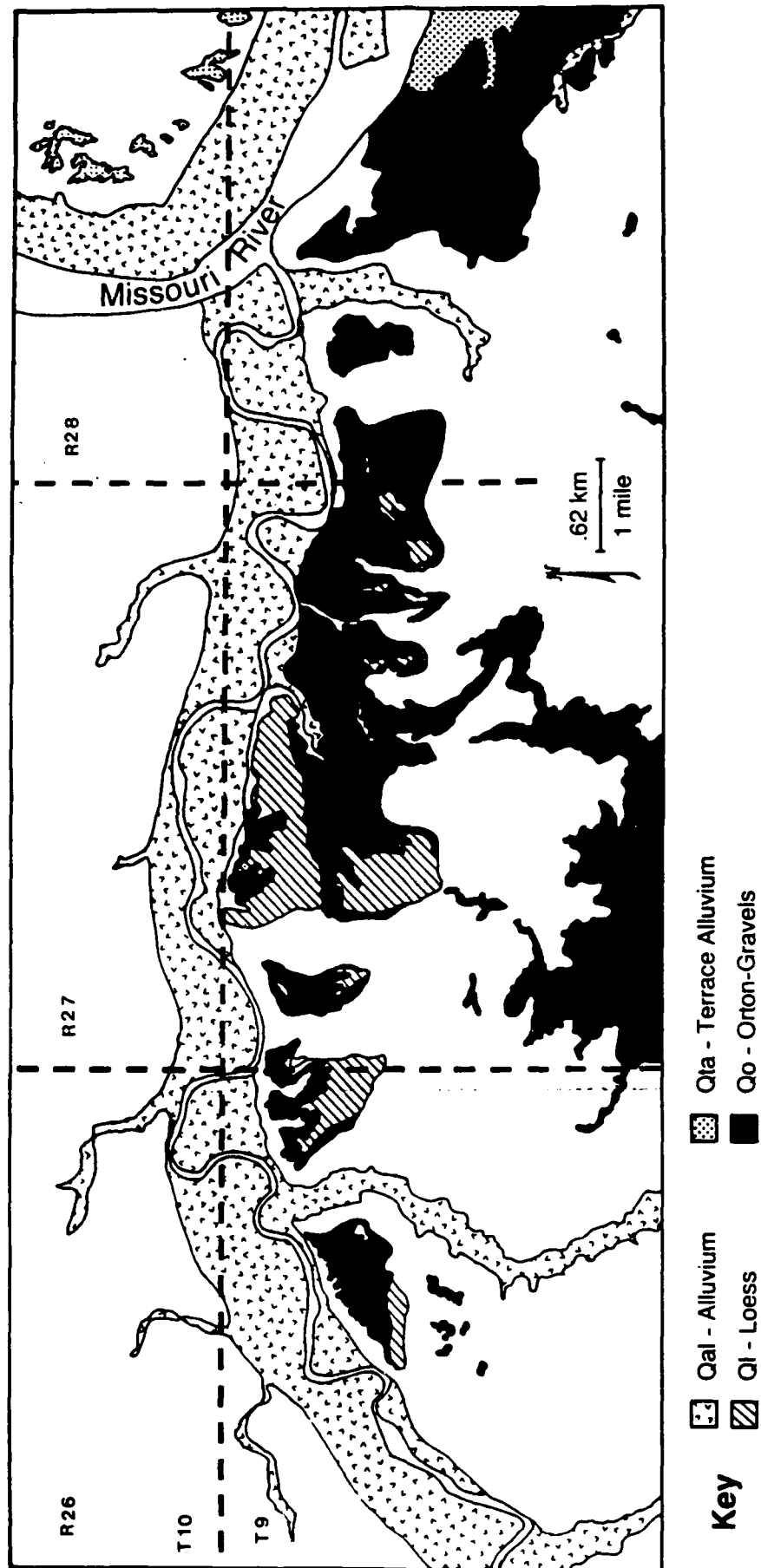


Figure 94. Geological map showing Quaternary fluvial and eolian deposits, compiled from South Dakota Geological Survey (1950, 1952a, 1952b, 1952c).



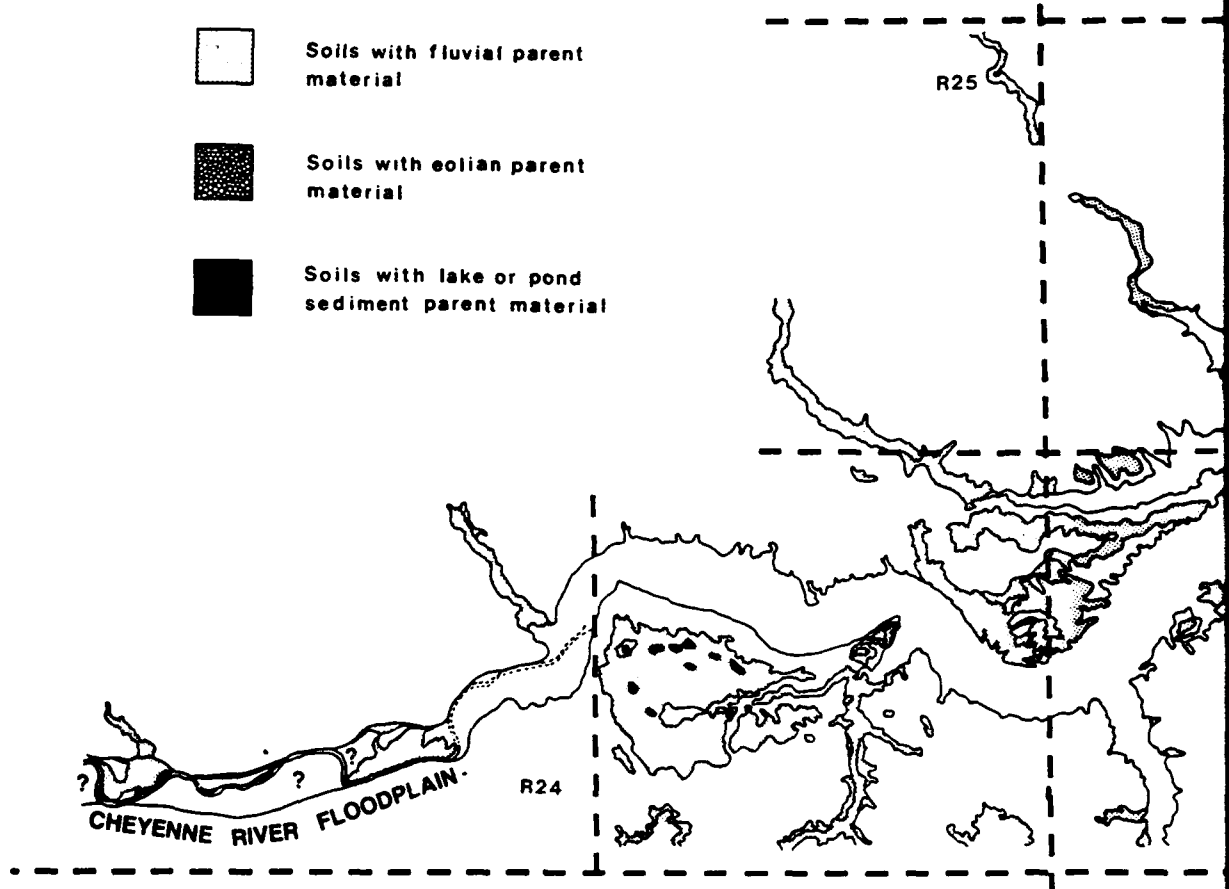
Soils with fluvial parent material



Soils with eolian parent material



Soils with lake or pond sediment parent material



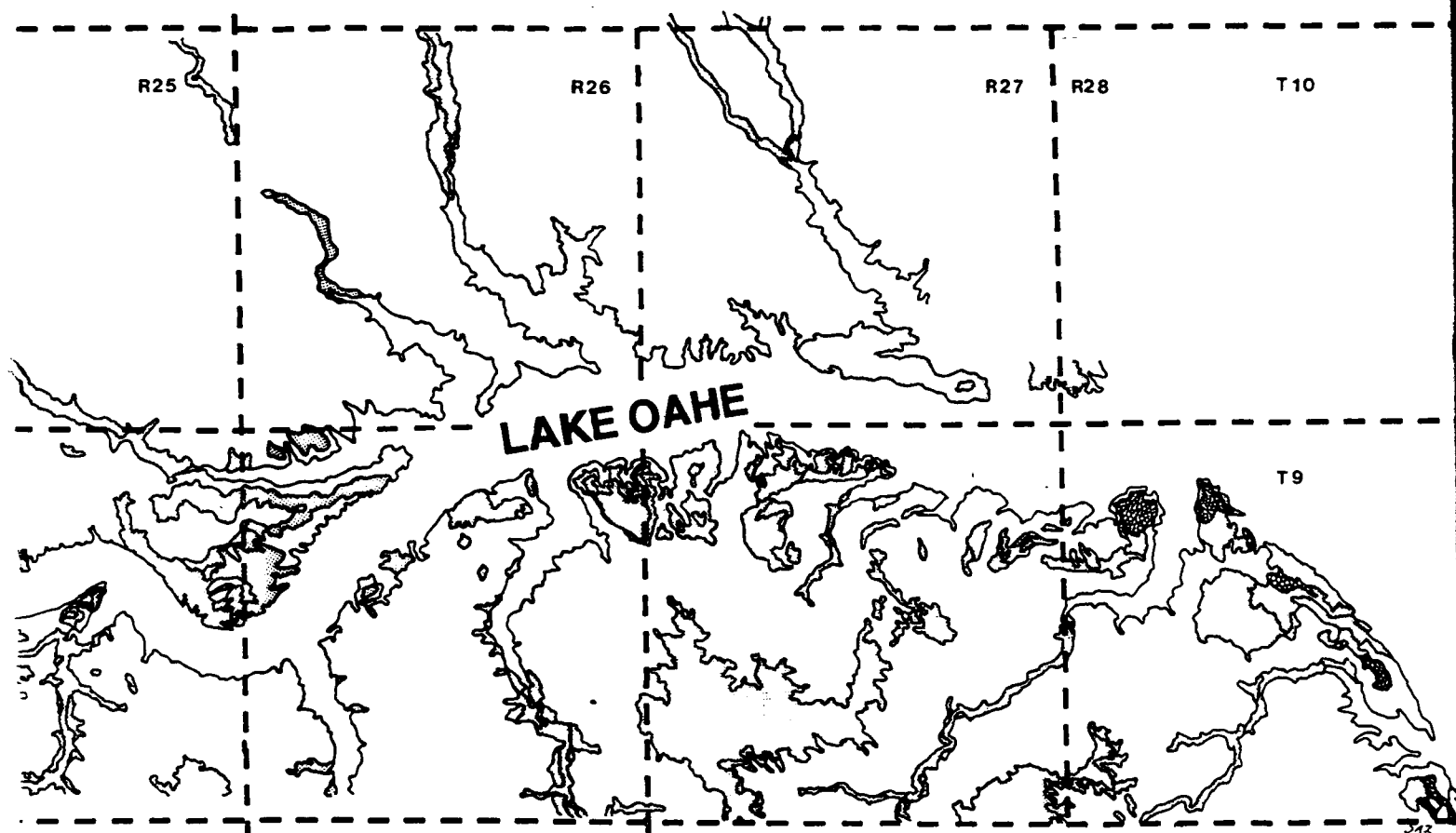


Figure 95. Soil map showing mapped distribution of soils having fluvial, eolian, or lacustrine parent material, compiled from Kalvels and Boden (1979), Borchers (1980), and unpublished Soil Conservation Service data.

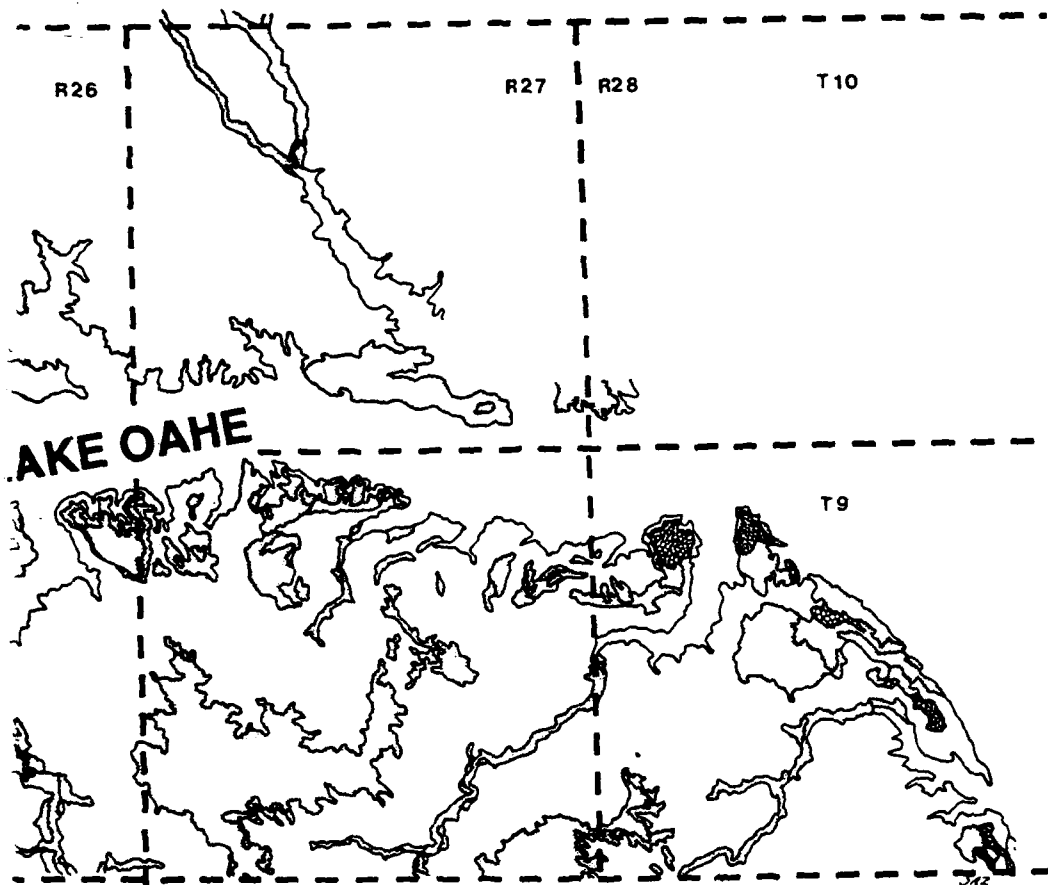


Figure 95. Soil map showing mapped distribution of soils having fluvial, eolian, or lacustrine parent material, compiled from Kalvels and Boden (1979), Borchers (1980), and unpublished Soil Conservation Service data.

fluvial sand, silt, or gravel); the small areas of black are those soils with a lacustrine (pond sediment) parent material; and, the coarse patterning in the eastern portion of the reservoir shows soils listed as having an eolian parent material. Figure 95 again illustrates the presence of old river deposits at high elevations, as well as the occasional presence of Quaternary loess deposits.

Comparison of Figures 94 and 95 shows two areas of disagreement.

1) The geological map does not show fluvial gravels north of the Cheyenne River, but the soil map does illustrate several occurrences of such deposits north of the upstream portions of the reservoir. 2) The geological map shows widespread eolian deposits south of the river, whereas such parent materials were noted only on a much more restricted basis by the soils mappers. These disagreements are not unexpected, and serve to emphasize the need for using both types of information together in mapping Quaternary surfaces and deposits. Thus, taken together, the maps show possible locations of late Quaternary eolian and alluvial parent material areas bordering the reservoir. They also clearly illustrate the many tributary stream locations where other fluvial parent materials (normally with relatively mature aridisols and mollisols profiles) offer again the potential for buried archeological materials.

Relationship to Other Regional Geoarcheological Studies

Toom and Artz (1985) conducted an archeological survey of a portion of the west bank of Lake Oahe along the Missouri River in Stanley County. Included was a geoarcheological analysis designed to use geomorphological data and information from soil survey maps to locate areas where there is a potential for buried sites and also to better describe the context of the recorded surface sites. Because of the proximity of their work to the present study area, their conclusions concerning the origin and ages of landforms require discussion here.

According to Toom and Artz, at least five alluvial fill terraces are mappable in Stanley County on the basis of surface elevation above the Missouri and Cheyenne rivers: MT4 (Giddings Flat Surface) at 100m-140m; MT3 (Scotty Philips Surface; Rothrock 1944) at 39m-67m; MT2 at 8.5m-21m; MT1 at 4m-7m; and MT0 (modern floodplain) at 2.4m-4m. The "MT" designation is an abbreviation for "Missouri Terrace" (Coogan and Irving 1959) and conforms in concept to "T1," "T2," and so forth, names

used for successively higher river terrace surfaces in many other regions. On the basis of elevations, MT4 and MT3 would include the older Pleistocene terraces described in this report, whereas MT2 possibly correlates to both the T3 and T2 terraces, MT1 correlates to the T1 surface, and MT0 to the T0 surface.

The MT3 surface was mapped by Crandell (1953) as "Oahe valley fill" and considered to be Tazewell stage glacial outwash, or early Wisconsinan in age. The Giddings Flat Surface (MT4) would then pre-date the last glaciation, and MT2-MT0 surfaces would be of late Wisconsinan and younger age. However, this assessment was not based on modern radiometric or other dating methods. Also, as noted by Toom and Artz (1985), the existence of reliably dated archeological sites entombed in loess now known to be Holocene in age, and which locally mantles the older surfaces, removes the basis for age correlation of these deposits to loesses of glacial age to the east. Yet the age estimates of Crandell (1953) are supported within broad limits by our new data: the $28,440 \pm 1120$ date is within gravels at only ca. 33m above river level, but the surface of the (eroded) terrace at that site is ca. 39m above the Cheyenne. A terrace at 61m elevation above the river was also mapped upstream (Figure 92), and a MT3 correlation and an age estimate of middle to later Wisconsinan (rather than early Wisconsinan) appears to be in order. The older portions of the MT2 unit could then still be latest Wisconsinan, in agreement with Crandell. This again indicates the potential archeological significance of the mapped remnants of the T3 and T2 terraces shown in Figures 92 and 94.

It should be emphasized that the presence of eolian sediments immediately underlying the old, high "river terrace" surfaces adds another variable in attempts to map river history by mapping terrace elevations and gradient. In this regard, Coogan (1984) believes that the MT1 and MT2 terraces can be traced along the Missouri River from a location about 100km south of the Oahe Dam northward to the dam. However, he concludes that both surfaces drop in elevation (as expressed in distance above the river channel) as they approach the dam. He considers these surfaces to possibly reflect deposition in large glacial-age lakes related to Missouri River damming through glaciation (Coogan 1984). The lake hypothesis for origin of the MT1 and MT2 surfaces has not, however, been supported by cross-sectional information

demonstrating these surfaces to be underlain by lake deposits, and the ages, especially of MT1 terraces, now appear to be too young for lakes of glacial origin to be important in their genesis.

Geomorphic Process History and Site Location

The time period of interest in this report is that of the latest Pleistocene and the Holocene, or the past 12,000 years. We identify three basic components of the study area's overall geomorphic systems during this period: 1) the episodically downcutting Cheyenne River and its floodplain; 2) the tributary streams that are more-or-less graded to the Cheyenne, including, in some cases, distal alluvial fans at locations where they debouch into the Cheyenne valley; and 3) eolian sedimentation and erosion, especially on the abandoned alluvial surfaces (terraces) of the Cheyenne. These components are considered in this order below.

The Lower Cheyenne River

Prominent along the shoreline of the Oahe Reservoir are slump bank exposures of the different river terraces described above (Plate 103 and Plate 104). Plate 104 in particular shows the erosional base of one such terrace deposit, and presents clear testimony to a time when the Cheyenne River's bed stood many meters above its present location. As one travels further upstream along the Cheyenne arm, the reservoir water plane is increasingly close to the original Cheyenne River grade, and lower and younger (Holocene) terraces are increasingly exposed in such banks. The most likely locations for buried archeological materials are in the bank and overbank facies of these terraces, because floodplains are common prehistoric occupation sites, whereas channel sand and gravel facies are much less likely to contain well-preserved archeological materials.

At what times were the different terrace levels along the Cheyenne abandoned, and why did the episodic downcutting occur? The causal question relates directly to archeological studies, because, as



Plate 104. Typical slump bank exposure of older Pleistocene terrace sediments (channel facies) along the shoreline of the downstream portions of the Cheyenne arm, Oahe Reservoir. The exposure in the foreground shows a basal contact with Pierre Shale bedrock, whereas the exposure in the background is Quaternary sediment from top to bottom.

described above, the ages of different terrace levels have often been tied to this region's Pleistocene glacial history (see also White's 1982 study of the White River). Given mainly topographic information, terraces are mapped partly as objective entities and partly in terms of theoretical models held by the investigator. This means that a presumption concerning the mode of origin of terraces influences attempts to correlate one terrace remnant to another. In this respect, the age estimations made here are based on local datings and correlations and thus are relatively model-independent, but they are still insufficient to provide the level of time control now available at, for example, other U.S. Army Corps of Engineers reservoirs (e.g. Harry S. Truman Reservoir, central Missouri; Brakenridge 1981; Haynes 1985). Such studies have clearly demonstrated the complexity of most late Quaternary alluvial sequences and caution against attempts to correlate terraces only on the basis of topography.

Other workers have modeled the origin of especially the old and high river terraces in the Great Plains region as the result of epeirogenic landscape elevation and river downcutting (e.g., Stanley and Wayne 1972). Yet recent field studies, as well as laboratory simulations of bedrock erosion by rivers, have demonstrated that no external cause need necessarily be invoked for episodes of river downcutting (see discussion in Mills et al. 1987:41-43). It may be the case that the Cheyenne River terraces do not represent responses to either glaciation or to pulses of tectonic uplift.

This does not deny the possible importance of tectonic or climatic controls over river history. The problem is that the applicable (and probably complex) cause and effect relationships are inadequately known and cannot be assumed. Five examples drawn from elsewhere in the Mississippi-Missouri watershed, for the general time period of Wisconsinan deglaciation (22,000-8000 C-14 years B.P.), serve to illustrate this point and to suggest alternative possibilities for Cheyenne River history.

- 1) A tributary to the Illinois River, the Sangamon River (site 8, Figure 91) also drained the Wisconsinan ice (Miller 1973). Rapid aggradation of this valley by sand and silt in a meandering river was underway at ca. 30,000-20,000 years B.P. This deposition filled a 25m deep valley, and resulted in damming of non-glaciated tributaries. The

filling is attributed to coeval rapid aggradation of the Illinois (its local base level) at this time, which itself may be related to general aggradation of the Missouri-Mississippi system. Alluviation of the Sangamon valley slowed at ca. 25,000-20,500 years B.P., when the Mississippi River was diverted into its present valley. During the early Woodfordian ice advance into this river's watershed, extensive scouring of these sediments occurred, and Miller (1973:27) notes that the "early Woodfordian erosion probably scoured to bedrock in many areas." Shortly thereafter, at ca. 20,000 years B.P., enough outwash sediment was entrained at the glacier margin to cause extensive sand deposition along the Sangamon River valley over the scoured surfaces. When this aggradation overtopped the older deposits, tributary valleys were impounded and lacustrine sediments accumulated (20,000-ca. 14,000 years B.P.). Finally, after the glacier margin retreated out of the basin, the Sangamon River underwent a change to a meandering regime, the lakes were drained, and silty overbank sediments accumulated. The Cheyenne is in a roughly analogous position with relation to the Missouri during late Wisconsinan deglaciation, but did not experience glaciation in its upstream watershed.

2) As suggested by White (1982) for eastern South Dakota, but perhaps applicable over much of the upper Mississippi basin, eolian sediment on slopes was relatively stable during the last part of the late Wisconsin glaciation, and the early Holocene witnessed the large-scale transport of (destabilized) fine-grained sediments from the hillslopes to the valley floors. The Holocene meandering systems that occupied the Mississippi and other valleys responded to this sediment influx by aggrading a younger floodplain deposit that is now inset within, or is superimposed over, the glacial maximum floodplain sediment. Perhaps terminal Pleistocene cultural materials along the Cheyenne lie buried below T2 sediments on a similar, late Pleistocene age, surface?

3) Along many rivers in the upper and middle Mississippi valley (Figure 91 - sites 1, 7, 3, 4, 5 and 6; see Schumm and Brakenridge 1988 for details) the early Holocene deposits are commonly bounded at their base by a terminal Pleistocene erosional unconformity. The existence of these deposits as fill terraces superimposed over this unconformity suggests a complex response (entrenchment, valley filling, and then

re-establishment of grade through subsequent entrenchment into the fill). The initial system-external perturbation appears to have occurred at ca. 12,000 years B.P. and is probably related to landscape instability caused by the climatic change. The T3/T2 boundary along the Cheyenne may relate to these events.

4) During the mid-Wisconsinan ca. 30,000 years B.P., the Mississippi valley in eastern Arkansas developed prominent braided stream surfaces (Saucier 1974, 1978; site 11, Figure 91). As was the case for the upstream tributary rivers, Mississippi valley aggradation here dammed the lower end of the Ouachita River of Arkansas and Louisiana (Saucier and Fleetwood 1970; site 12, Figure 91). The Ouachita River subsequently trenched the lacustrine plain and developed a set of terraces that are not well dated. The relevance to the Cheyenne/Missouri system during Wisconsinan deglaciation is that if large amounts of Missouri River aggradation also occurred due to glacial meltwater influxes, the lower Cheyenne may have become impounded. Although no late Pleistocene lake deposits were noted in our field reconnaissance, we have not mapped the available exposures in detail, and relatively coarse-grained lacustrine facies might be mistaken for fluvial overbank facies (Plate 105). The possibility of terminal Pleistocene lacustrine deposits along the lower Cheyenne must, therefore, be considered (see also Coogan 1984).

5) Finally, in a detailed stratigraphic and geochronological study in the Yazoo-Little Tallahatchie watershed east of the Mississippi Alluvial Plain (site 13, Figure 91), Grissinger and others (1982) and Grissinger and Murphey (1983) also infer an important episode of net erosion immediately preceding the Holocene, and not long before 12,000 years B.P. At this time, erosional topography was carved on consolidated sandstone underlying the dated channel lag and bog deposits. Grissinger and others (1982:150) interpret this event as due to a combination of low sea level and "post-glacial pluvial conditions"; but Schumm and Brakenridge (1988) note that it agrees with the abundant marine core isotopic and the regional alluvial evidence for enhanced glacial meltwater discharge at this time. It is probable that the Missouri River also experienced such a meltwater pulse; the final entrenchment of both it and the Cheyenne River may have occurred at about this time, and probably occurred following T3 deposition.

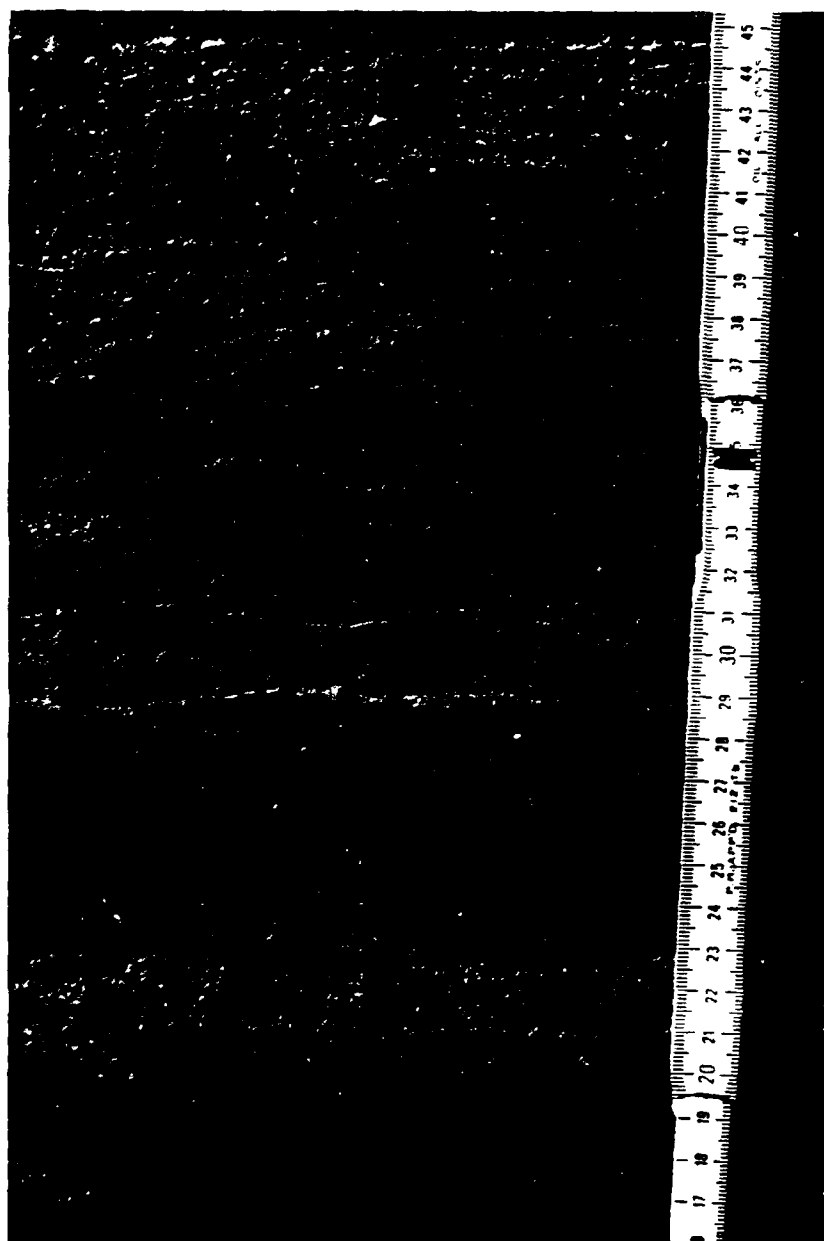


Plate 105. Close view of "overbank facies" of Pleistocene terrace exposed along an Oahe Reservoir slump bank. The fine-grained (sandy silt) nature of the finely bedded sediments agrees with an overbank floodplain environment of deposition, but a deltaic or shallow lacustrine origin is also possible. No cultural remains are expected in these sediments, but their age is important in fixing the chronology of Cheyenne River incision and the location of artifact-bearing sediments.

In summary, the Cheyenne and Missouri rivers have both episodically downcut in late Quaternary time. The cause for their erosional history is not securely fixed, and the applicable chronology is not yet secure. Too-simplistic cause and effect models relating their history to glaciation are no longer defensible, but the above regional data do suggest that the deglacial time period may have witnessed several types of changes along the lower Cheyenne River: aggradation of the river valley, possibly by lacustrine sedimentation, may have occurred during several intervals of the Wisconsinan; such aggradations may have been followed by periods of net erosion related to glacial meltwater discharges, particularly at ca. 12,000 years B.P., when the main elements of the modern valley morphology may have been attained; and in-wash of unstable loessial sediments from local hillslopes early in the Holocene may have resulted in temporary positive net sedimentary balance, alluvial fan construction, and the emplacement of fill terraces. This model emphasizes the potential complexity of particularly the late Pleistocene/early Holocene Cheyenne River sedimentary record.

The above concerns geomorphic processes in Cheyenne River prehistory. Not yet considered, however, are possible effects of historic era, reservoir-related Cheyenne River sedimentation on modern burial of archeological sites. Clearly, portions of the valley submerged below the normal reservoir stage are now receiving varying amounts of lacustrine or deltaic sediments and burial is underway. Within and near the upstream limits of the reservoir, rapidly prograding (eastward) fine-grained deltaic deposition also occurs. As noted, higher-than-normal reservoir stages temporarily shift upstream the locus of deltaic sedimentation, into river reaches where subaerial sites may still exist. Approximately the eastern one-half of the area covered in Figure 92 could be affected by this burial process, especially during floods (Plate 106): local ranchers with bottom land holdings report several feet, or more, of flood associated sediment they claim is related to the reservoir.

A flood history study (McCready, in preparation) documents the occurrence of infrequent floods which have inundated the valley floor (T0 and T1 surfaces) during the past 60 years. An attempt is being made to determine whether the reservoir is causing channel, as well as

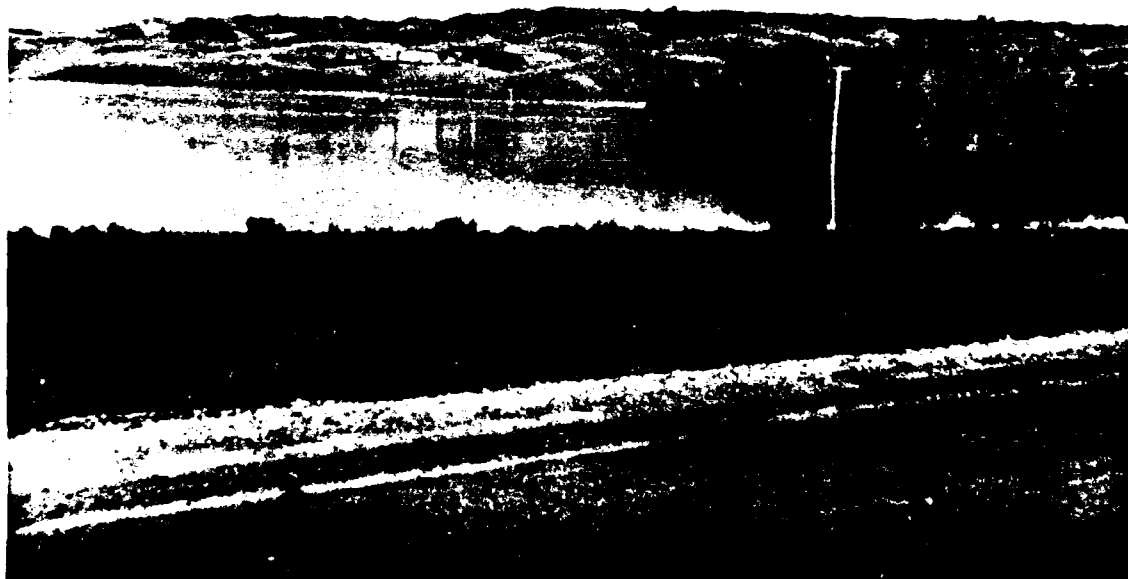


Plate 106. The 1982 flood. The location shown is 2km upstream from the 1620 ft. amsl limit of Oahe Reservoir; the T0 and a large amount of the T1 surfaces are inundated.

floodplain, aggradation upstream. Two stream gauging station records at locations shown in Figure 93 have been examined in order to determine whether similar discharges are attaining higher gauge heights. If true, this suggests that channel capacity is being restricted through aggradation, and that flood heights are, therefore, increasing. Figures 96a and 96b show sample results from this analysis. At the most-upstream location (Plot A, Cherry Creek), a history of stage attained by the 1000cfs discharge for the period 1960-1985 shows no large changes. At a location very near the upstream end of the reservoir, and for the period 1929-1966, the reverse of what was expected has occurred: the stage reached by the 1000cfs flow has been steadily declining since ca. 1950, despite reservoir completion (Plot B, Eagle Butte). Unfortunately, however, the 1966-present record at that station is unavailable due to removal of the gauge.

In regard to historic sedimentary processes, preliminary data thus suggest a lack of the expected reservoir effects: no reduced upstream channel capacity, increased flooding, and increased flood-related sedimentation have yet been documented. However, there are several possible explanations for the apparent increase in channel capacity shown at Eagle Butte. The channel bed may still have suffered aggradation, but, along a river with relatively uncohesive banks, this may have stimulated enhanced lateral channel cutting, thus enlarging the channel despite bed aggradation, and perhaps exposing archeological sites buried within T1. Reconstructions of channel cross profiles from the gauging station records are underway to test this and other hypotheses.

Tributary streams

The pre-dam processes and history of the reservoir's tributary streams is also a complex problem in fluvial geomorphology. Both unincised and incised tributary valleys occur (Plate 107a). Whether human land-use related effects (White and Lewis 1967) or complex response (see discussion in White and Hannus 1985 and Schumm and Brakenridge 1988) is the dominant cause for tributary incisement has not been resolved, but, in either case, it is likely that tributary valley stratigraphy is complex in detail. Elsewhere, such locations have provided the most dramatic and detailed evidence of the older cultures

Figures 96a and 96b.

Plots (A and B) assessing historic channel capacity of the Cheyenne River in the study area. Plot A shows the stage reached by the 1000cfs flow along the Cheyenne River at the Cherry Creek gauging station from 1960-1985; plot B shows the stage reached by the 1000cfs flow at the Eagle Butte gauging station, close to Oahe Reservoir, from 1929-1966. Neither plot indicates any reduction in channel capacity has occurred.

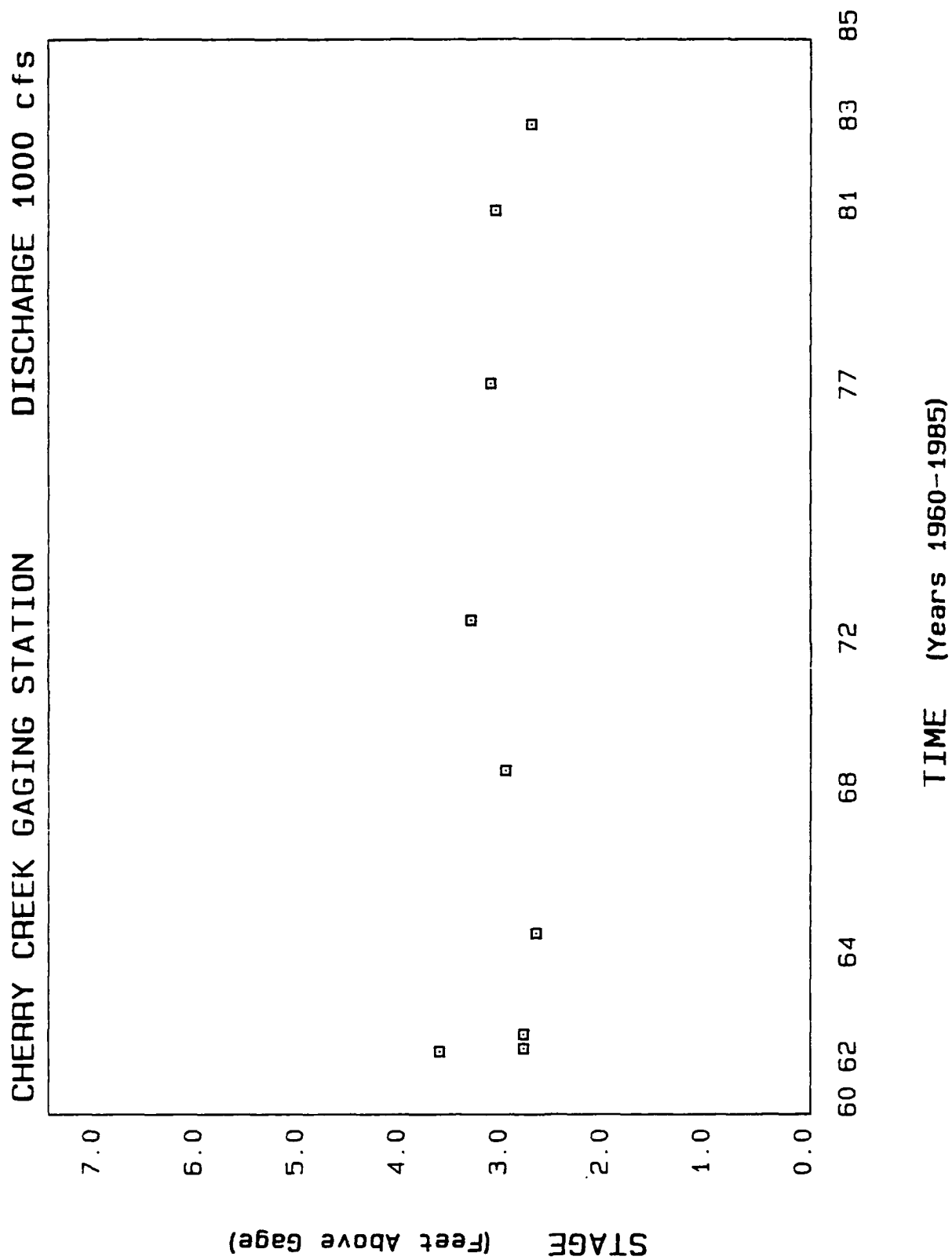
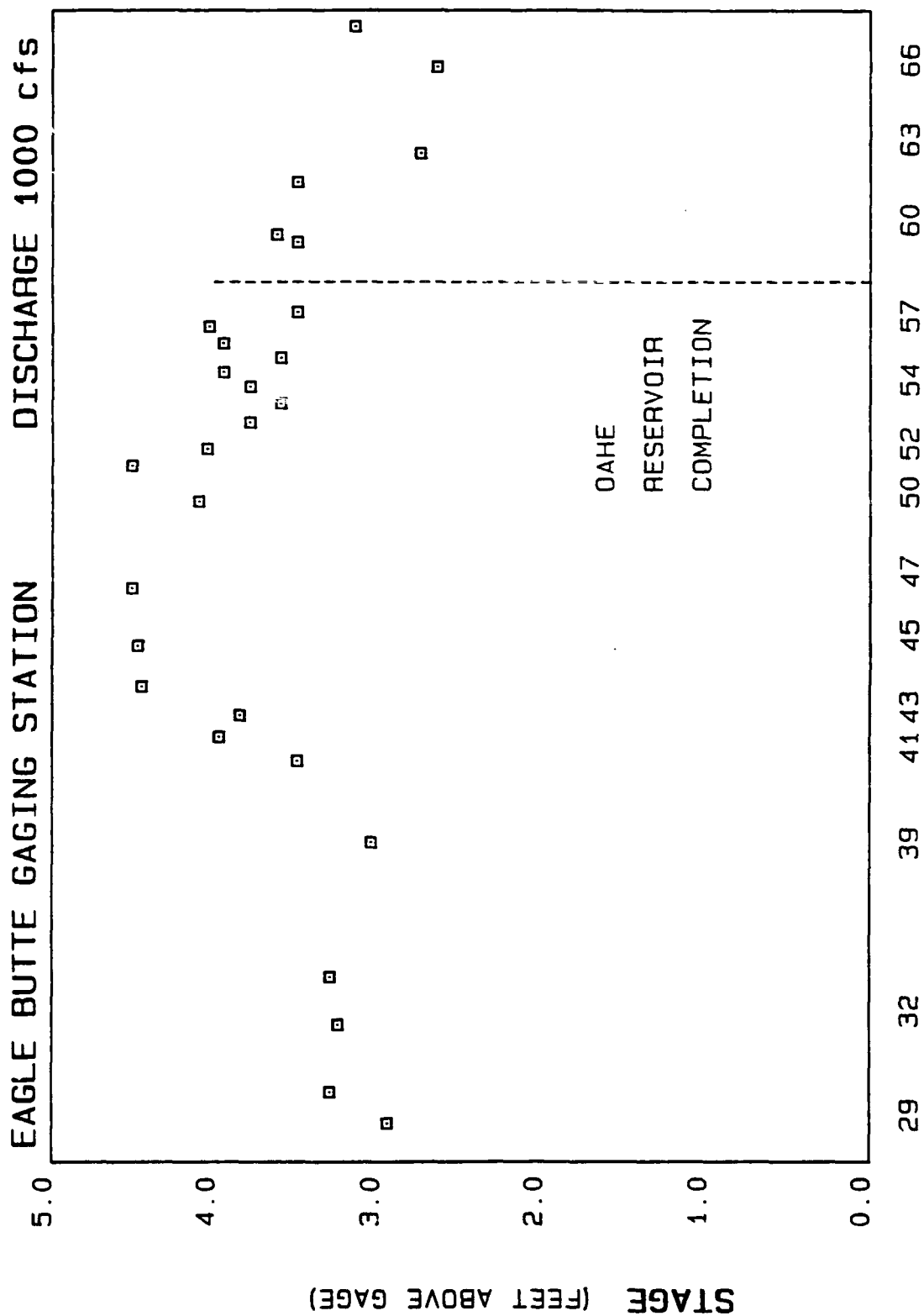


Figure 96a. Plot A.



TIME (Years 1929-1967)

Figure 96b. Plot B.

Plates 107a and 107b.

Two morphologies for tributary channel reaches in the Oahe Reservoir area. (a) shows a major incised tributary stream; grass-fire charcoal layers were located at several positions in its walls. Other similar valleys are unincised, and thus offer less potential for exposed archeological sites. (b) shows the aggraded distal end of a small tributary stream at its mouth in Oahe Reservoir (view is looking away from reservoir). The sediments shown are related to reservoir deposition (the stage had recently been higher), but some tributary deposition still occurs. Such aggraded reaches do not extend far upstream, and the same tributary may exhibit incised morphologies above such aggraded reaches.



Plate 107a.



Plate 107b.

in the region (Hannus 1980, 1983b, 1985a, 1987), and spring locations within such tributary streams have been especially fruitful (Agenbroad and Laury 1984). The numerous incised tributary valleys within the Reservoir limits, in fact, pose the strong possibility that important buried archeological sites may now be exposed, and that, near the downstream ends of these streams where they debouch into the reservoir, such sites may be buried by reservoir sedimentation (Plate 107b).

In this respect, Figures 94 and 95 document major tributaries that have mappable areas of alluvium and are of obvious potential. Other smaller ones are not shown on maps of this scale. Our field reconnaissance did locate several locations where grass-fire charcoal layers and well-preserved deer, bison, and other bone material are exposed in tributary walls. Charcoal samples collected, however, proved to be inadequate in quantity for standard radiocarbon dating. Several incised tributaries (Hermaphrodite Creek, Sage Creek) were traversed to their upstream heads, and, at such locations, springs and small areas of travertine deposits were noted. The local bedrock exhibits joints and fractures, so that downward water movement to impermeable layers, followed by horizontal movement to spring heads, is the probable cause for these springs. Older Archaic, as well as Paleoindian, sites could be present at these locations, and the abundant preserved charcoal and bone suggests an obvious archeological potential.

Eolian deposits

The climatic or other environmental controls over eolian deposition also remain little known, despite the presence of known archeological sites along the Missouri that are entombed in eolian silts and sands and are sandwiched between buried paleosols indicative of periods of non-deposition. Following the breakdown of the loess=glacial stage, paleosol in loess=interglacial stage correlations made by Flint (1955) and Crandell (1953) (e.g., Ahler et al. 1974), the paleoenvironmental significance of the alternating periods of Holocene loess deposition and soil development is problematical.

Many attribute climatic significance to such sequences, with the eolian sediments implying drier conditions and the paleosols relatively more moist conditions. White (1960, 1973), however, illustrates the variety of factors that may be involved, including grass fires, grazing,

and the activity of sediment source areas. Important to this report is the evidence of various eolian deposits partially covering the higher alluvial terraces (Figures 94 and 95). Because eolian deposits on the older terraces in this region have elsewhere yielded both ceramic and pre-ceramic artifacts, and Holocene dates, all of these deposits are of potential archeological significance. In addition, field reconnaissance indicates that many of the units are well-exposed by reservoir bank slumping and are composed of meters-thick sequences of eolian silt and sand separated by buried and well-preserved Ah (humic) and Bt (clay-enriched) soil horizons. Thus, whether the Holocene witnessed region-wide episodes of eolian sedimentation, related to climate, or only local re-activation of eolian sediments, due to local grazing, fire, or other causes, it is clear that an episodic history of Holocene eolian sedimentation has occurred. This history implies that many undiscovered (and relatively intact) sites could be located beneath such covers.

General Conclusions

Despite intensive archeological surface surveys, data concerning cultural remains in Oahe Reservoir lands are incomplete. However, the addition of geological and geomorphological investigations allows more accurate estimation of the probable types and ages of included cultural remains, and suggests mechanisms whereby site visibility may be poor due to geological processes rather than to actual cultural hiatuses.

Specifically, the relative scarcity of older artifactual remains in the study area may relate directly to the very active nature of sedimentary systems operating in much of this landscape. For example, in studies by the senior author along other comparable rivers, extensive trenching of the valley fill, as well as radiocarbon datings, demonstrated rates of lateral channel migration on the order of 1m/100 years. In contrast, along the freely migrating Cheyenne, our historical reconstructions demonstrate that the river has moved as much as 800m/100 years, and this may not be a maximum rate. The result is that the sediments of the valley floor, including any low alluvial terraces, are frequently reworked by the river, and only isolated terraces probably remain from the middle and early Holocene (see also Marron 1987 for comparable results concerning fluvial activity of the Belle Fourche

River, a major tributary to the Cheyenne). Although fluvial stratigraphic studies of other valleys have also demonstrated the presence of "terrace veneer" deposits, and thus the shallow burial of old terraces by much younger alluvium (Haynes 1985; Brakenridge 1987), the history of the Cheyenne suggests that such would have been unusual in this study area; it appears that the bulk of the present valley fill (the T0 and T1 surfaces) may be of late Holocene age.

The available geological/geomorphological data and inferences do suggest locations where buried archeological sites of some antiquity may be located. With increasing distances west of the mouth of Sansarc Creek in this reservoir, the T3 and T2 surfaces, where present, are exposed at increasingly higher distances above the reservoir level. A radiocarbon date of ca. 28,000 years B.P. was obtained from the basal portions of a probable T3 terrace remnant along the reservoir shoreline downstream, and indicates ca. 33m of downcutting since T3 time. Based on this age constraint, as well as comparison to other studies, we infer that Paleoindian and Archaic sites may be buried within overbank facies within the T2 alluvium. Plains Woodland and related ceramic-utilizing components may occur within T1 deposits. T3 is not, however, securely dated, and its upper portions could extend into Paleoindian or early Archaic times. Finally, we also infer that prehistoric archeological sites may additionally be located 1) on or within the mapped alluvial fan deposits; 2) within eolian mantles present on the older river terraces and that now are being exposed by reservoir bank slumping; and 3) along incised tributary walls. In contrast, the data presented indicate that fluvial deposits associated with the aggradation of the older Pleistocene terraces mapped should not contain any cultural materials. Thus, east of the mouth of Sansarc Creek in the reservoir we expect slump bank exposures of fluvial terrace deposits to be culturally sterile.

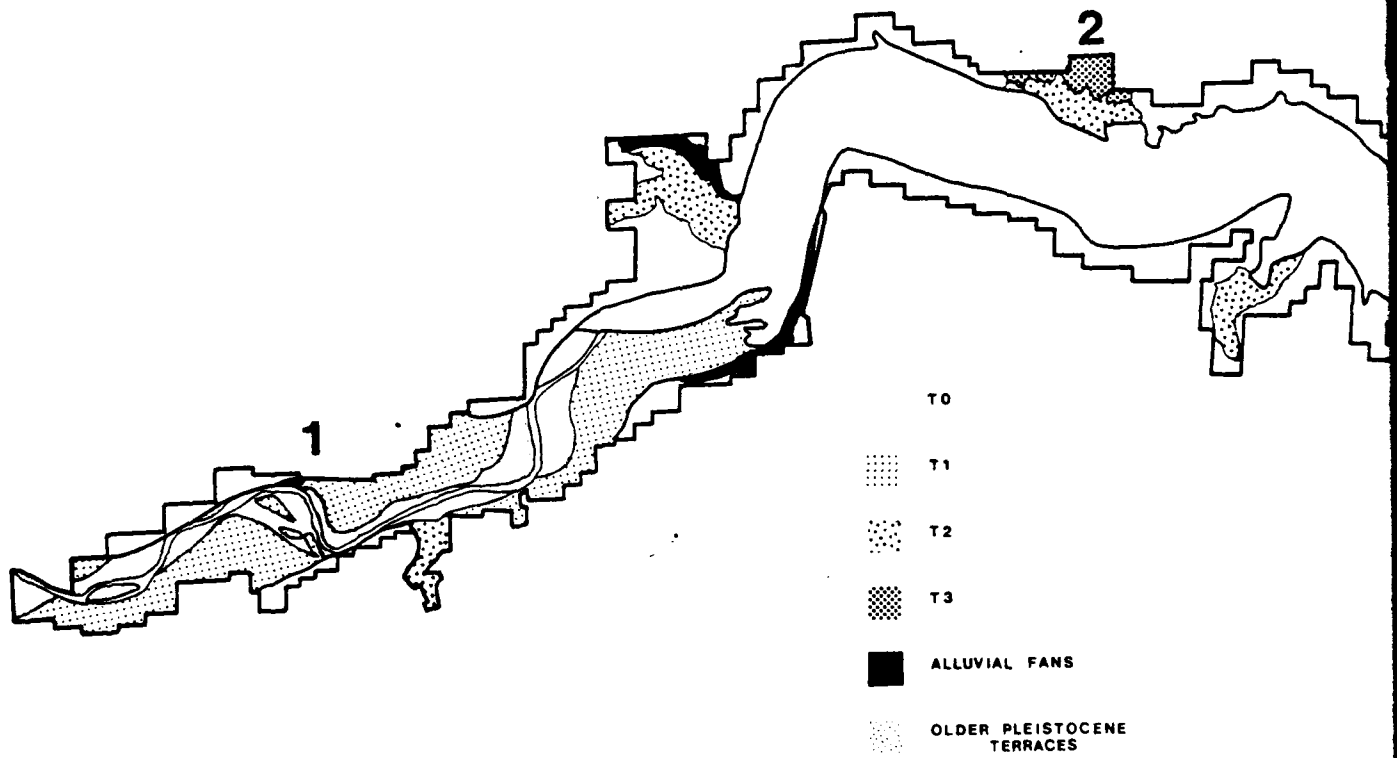
Geomorphology-Related Management Recommendations

It is useful first to consider the importance of buried sites in this region. River valleys in the central Great Plains were intensively occupied by ceramic-utilizing people at the time of initial contact with Euro-American exploration parties in the early A.D. 1800s (Thwaites 1904-1905). Prior to extensive reservoir construction, the visible remains of these peoples and their ancestors were relatively well-preserved, as documented by the Smithsonian Institution Missouri River Basin Surveys (Hoffman 1968; Lehmer 1954, 1971; Lehmer and Jones 1968). Subsequently, federally-sponsored survey and salvage projects (e.g., Falk, Steinacher and Toom 1984; Winham and Lueck 1984) have helped mitigate the loss of cultural resources caused by reservoir construction and by the continuing erosion along the reservoir edges.

Known older (pre-ceramic) archeological sites remain relatively rare in this region: "No other geographic area in North America has been the focus of so large a federal archeological salvage program, yet has produced so little evidence of pre-ceramic human activity, as has the Middle Missouri area in North Dakota and South Dakota" (Ahler et al 1974:908). Why is this? One possibility is that archeological investigators are not looking in the right places, or using the appropriate techniques. Specifically, either 1) the Paleoindian and Archaic peoples were not, in fact, at all abundant in this region, or 2) geomorphological processes have acted to obscure the previously common traces of these ancient peoples and regional workers have not yet determined the most efficient approach toward locating such older (and commonly buried) archeological sites. If the last is true, then more attention needs to be paid to analyzing the probable locations of buried sites, and devising research strategies to sample such terrains.

Our study was restricted in scope, but we can, however, make an initial assessment of where buried archeological sites are most likely to occur within the Reservoir lands, and also where problems of site destruction will be most important. We have proceeded by extrapolating field observations made outside the study area, along the upstream, un-inundated reach of the river, to the Reservoir itself.

Figure 97 is a map of inferred Quaternary geology in the Cheyenne arm. It is based on 1:24,000 topographic maps which allow tracing of the various terrace and fan landforms into the area now flooded by Lake



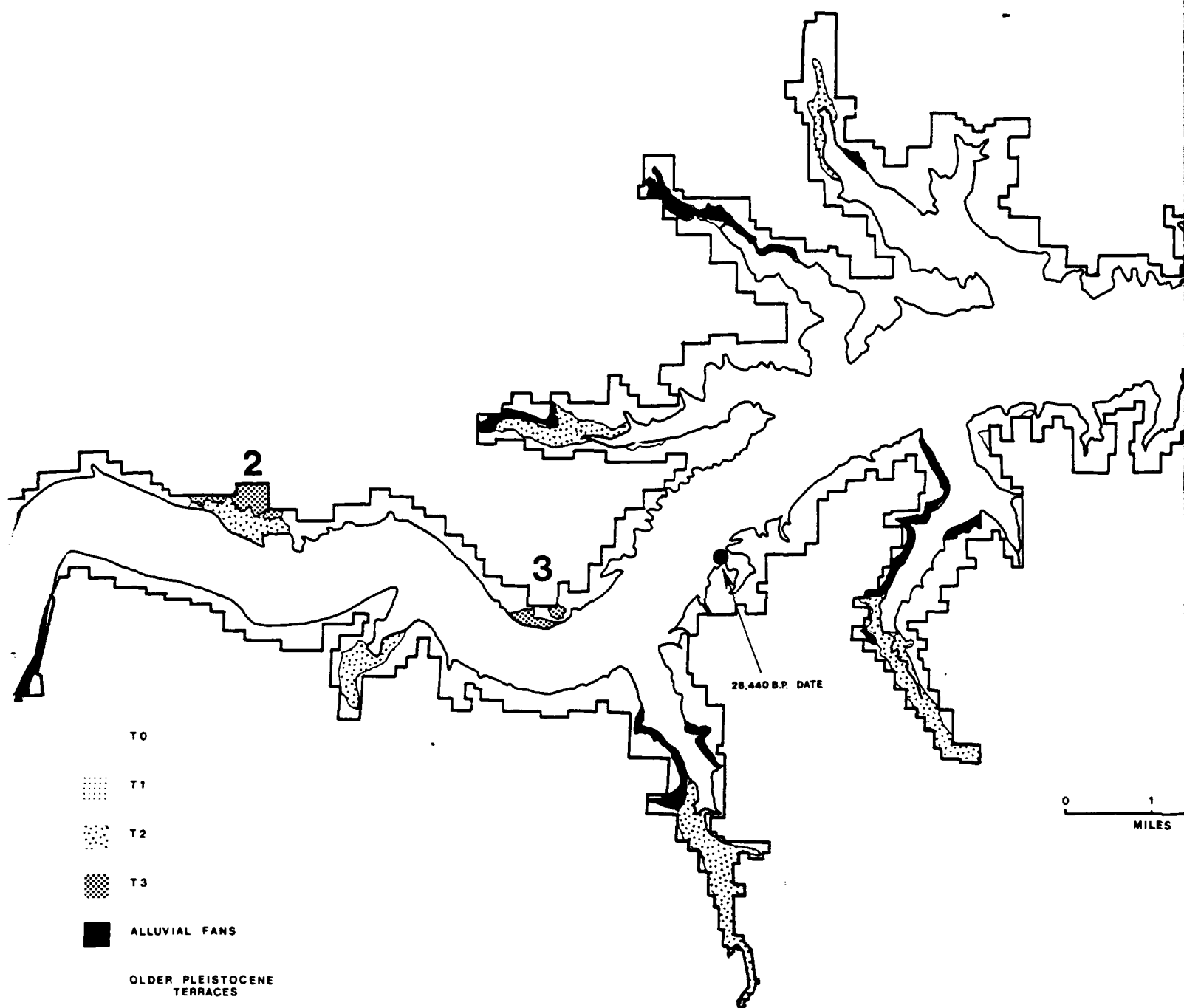


Figure 97.

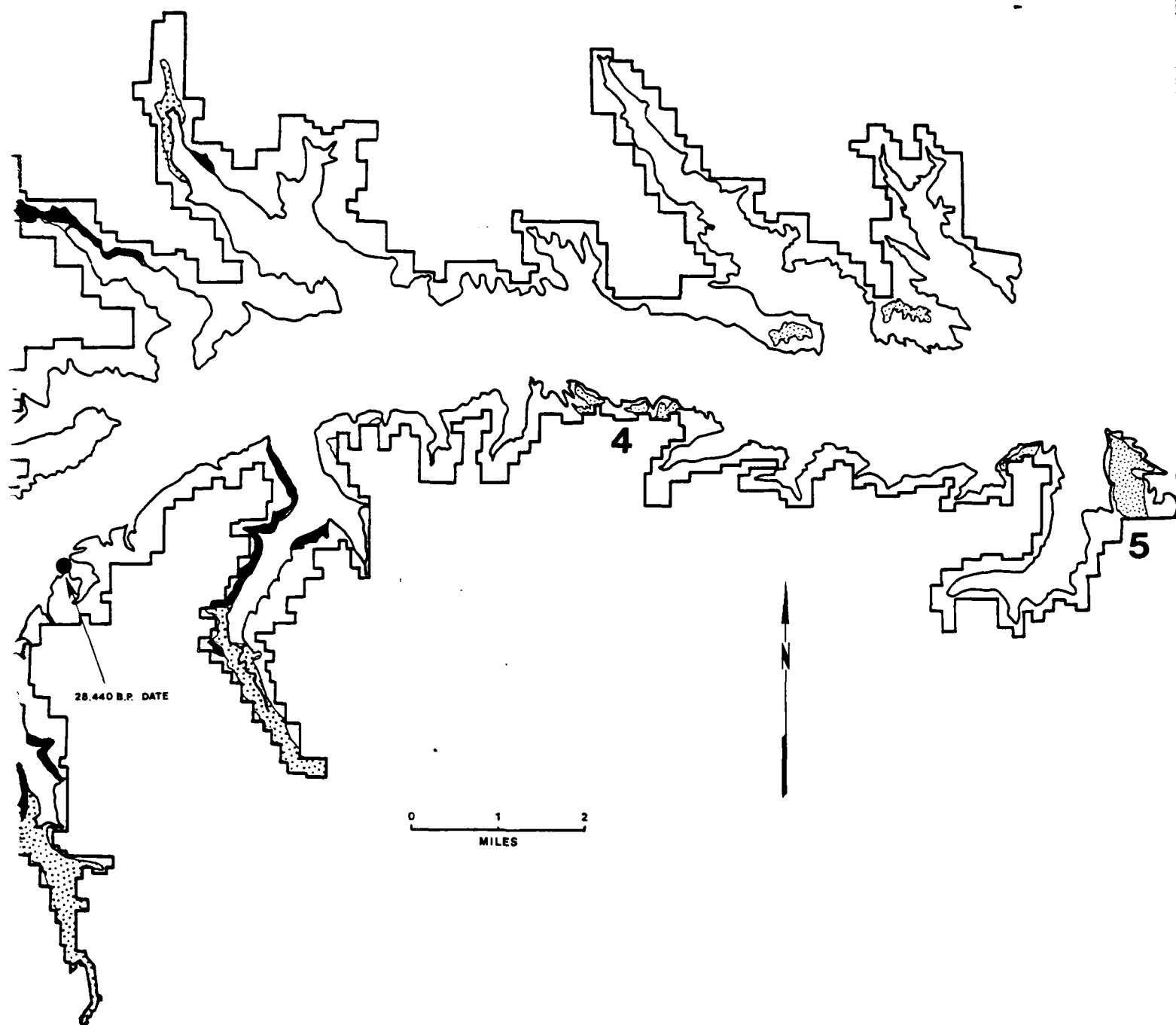
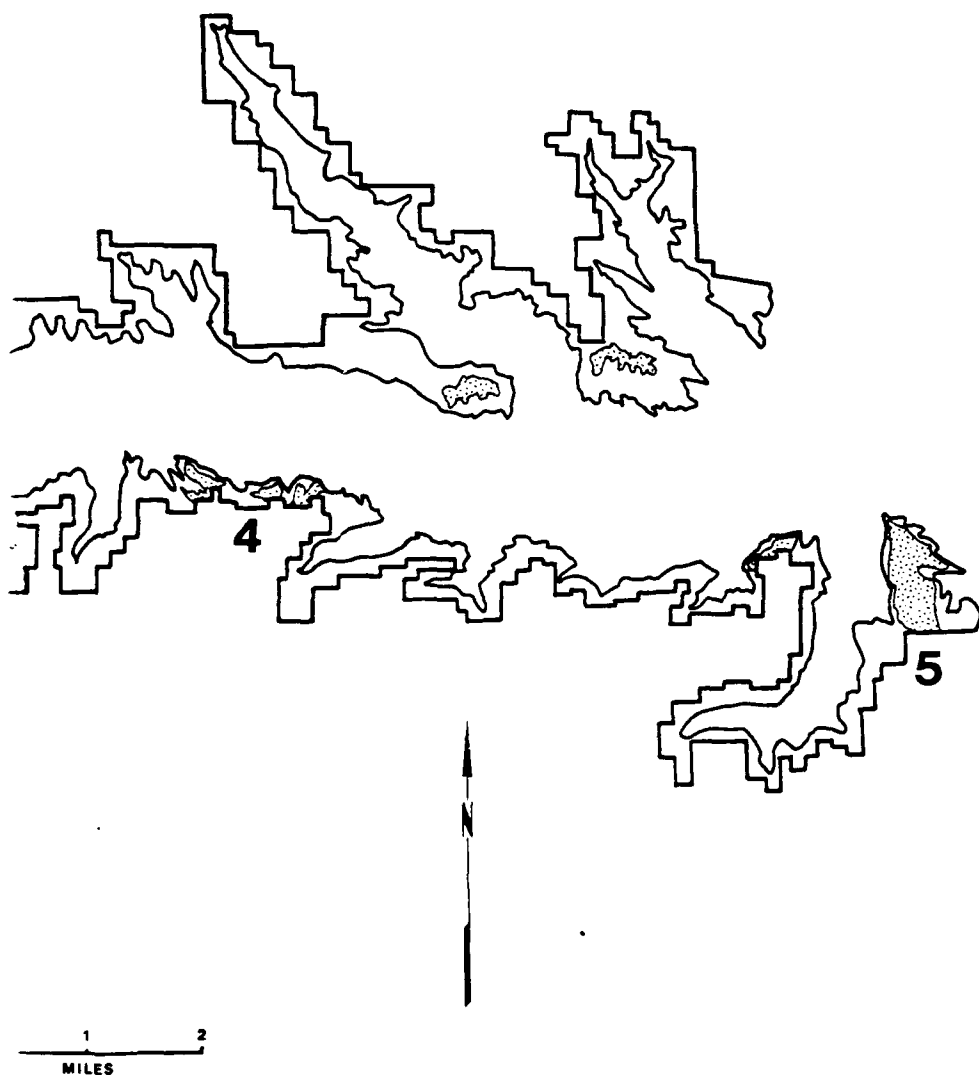


Figure 97. Map of inferred Quaternary geology in the Cheyenne Arm.

(1)



re 97. Map of inferred Quaternary geology in the Cheyenne Arm.

Oahe. In the eastern portions of the reservoir, the lower terraces are all completely submerged and thus do not require illustration. Reservoir managers concerned with archeological resources should note especially 1) the intersection of the modern shoreline with the fluvial terrace deposits, and 2) the location of the shoreline within tributary drainages, and its intersections in the drainages, with the associated terrace and alluvial fan deposits. These are all potentially important shoreline locations where negative impacts of the reservoir may be currently affecting archeological resources.

Some specific examples follow:

1) The upstream reaches of the reservoir (area 1 in Figure 97) are entirely river-proximal bottomlands. Only T0 and T1 deposits are affected by the reservoir pool, and these Holocene surfaces are mainly the scene of sediment burial and not erosion. Potential sites do exist within these terraces, but water tables are high (making backhoe excavation difficult), and thick (1-2 meters or more) modern deposits veneer the terrace surfaces. However, the river channel is also engaged in rapid lateral cutting, and its fresh cutbanks could be exposing relatively easily accessible archeological sites.

2) Further downstream, at locations 2 and 3 in Figure 97, the (rare) remnants of T3 and T2 are at lower altitudes and the Oahe Reservoir shoreline intersects them. Slump banks developed in these deposits are prime locations for the presence of buried prehistoric materials. Location 2 should be examined periodically to determine whether slumping is occurring, and, if it is, whether archeological materials are being exposed. Location 3 should also be periodically examined, and it is emphasized that other similar exposures may exist nearby. We note that preserved T3 deposits are probably more common than shown, because heavily eroded remnants do not exhibit terrace morphology and thus are not shown on this map.

3) At one location (shown on Figure 97 and Plate 103), a cutbank on an eroded remnant of T3 revealed a sequence of buried soils, and its lower portions yielded a late Pleistocene date. The sequence is reminiscent of the important Walth Bay site and is at a similar elevation above the (now-inundated) local river channel. Additional dating of the abundant included wood and charcoal should be undertaken in order to constrain the age of the exposure. If the upper portions

also are of Pleistocene age, then the exposure is not likely to be an important location of buried deposits. If of Holocene age, then this exposure could be extremely important because of its deep, well-stratified nature and the presence of abundant charcoal and wood.

4) We have previously noted the importance of small stream alluvial sites in this region's archeological record. The Oahe Reservoir shoreline extends up a number of major tributaries, each of which probably possess a complex internal stratigraphy even if their surface morphology is relatively smooth. Most such tributary valley floors are mapped as T2 and a scarp commonly occurs near the valley margins where these tributary surfaces step down to meet the river's T1 valley floor. Upstream from these scarps, some tributaries are entrenched ca. 7m, and buried sites may be located in the now-exposed alluvium within these mainly ephemeral channels. In contrast, reservoir slump banks are rare within most upstream reaches of the tributary valleys. Therefore, the situations of most management importance would be the incised tributary cutbanks upstream of Oahe's shoreline but within the reservoir boundaries. Pedestrian field visits to each tributary could locate and map the important reaches in an estimated 9-10 days, and such reaches should be revisited at intervals of every two or three years to determine whether sites are being exposed by new erosional events.

5) Finally, at locations 4 and 5, the shoreline intersects the very ancient older Pleistocene terraces, and slump banks are common. No cultural materials are expected within the fluvial deposits proper. However, our field visits and other regional studies show such terraces to be overlain by silt caps that may range up to Holocene in age. Important sites could be entombed within these eolian deposits, as they are along the Missouri River itself. The map shows locations where the reservoir shoreline intersects such deposits. Given the observed fast rate of bank slumping along this reservoir, we recommend relatively frequent monitoring of these exposures to: 1) examine the eolian silt and sand facies for possible buried archeological materials, and 2) check for datable materials which could assist in narrowing the array of specific localities young enough to include cultural remains.

In summary, Figure 98 is a plot of river channel and terrace longitudinal profiles from the upstream end of the Cheyenne arm to the Missouri River. Also shown is the interval of reservoir stage fluctuation.

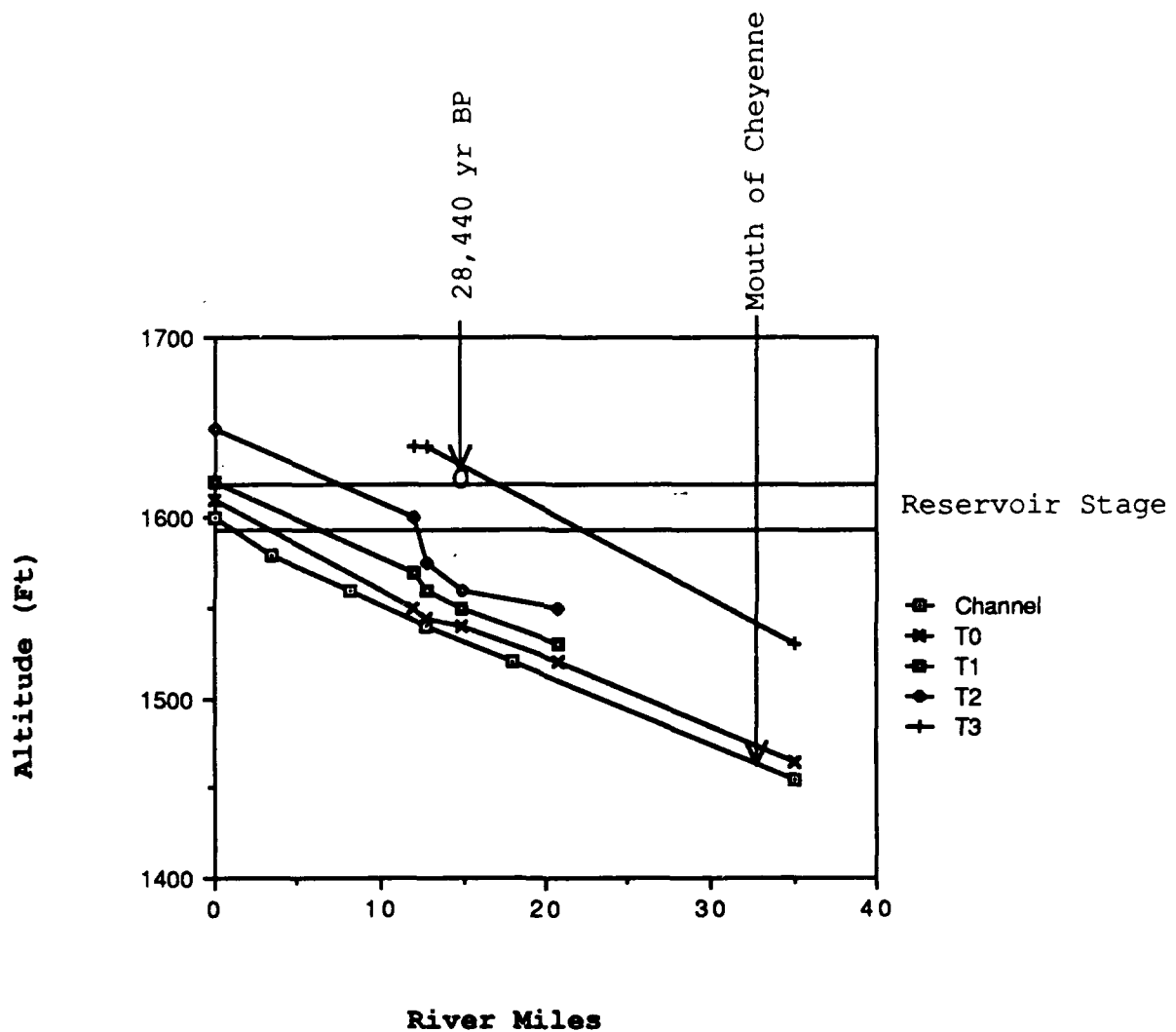


Figure 98. Plot of longitudinal profiles of the Cheyenne River channel and the T0, T1, T2, and T3 terraces from the upstream end of the Cheyenne Arm Segment of Lake Oahe to a point on the Missouri River 2.5 miles south of the Cheyenne River mouth. Also shown is the interval of reservoir stage fluctuation for the period 1967-1986.

tuation, which ranged from ca. 1595 to 1620 f+ above sea level in the period 1967-1986. The plot illustrates the fact that the downstream-dipping terraces, which follow the river to the Missouri, intersect the flat (but fluctuating) plane of the reservoir's water level at different locations within the reservoir. Shoreline erosion and archeological site destruction can occur where the stage interval intersects, or is slightly below, the trends of the terraces. The Figure 97 map may be the more useful management tool, because actual terrace locations are visible, but the plot is valuable for conceptualizing the dynamic processes underway. When water levels are high, already-existent low slump-bank exposures of, for example, T3, may be completely inundated, while new slump banks may form at upstream locations. Thus, the geological map actually shows a somewhat restricted version of archeologically critical locations, which may vary somewhat with changing reservoir stages.

In conclusion, it is widely acknowledged that the most valuable archeological information commonly derives from buried sites. This chapter has made an initial assessment of where such sites are most likely to be found. However, it is clear that additional mapping and dating work is needed in order to place tighter constraints on the possible archeologically important land areas. We also suggest that, given the changing nature of the reservoir's shoreline, some form of modest, long-term monitoring program, focused on the locations discussed above, will be necessary in order for the Corps to comply with relevant legislation.

The results of the Cheyenne River arm investigations, derived by incorporating data from the intensive pedestrian survey, background literature and records search, ethnohistoric overview and geomorphological study, provide a detailed appraisal of this region of the Northern Plains. The background research and ethnohistorical studies show that this area was of much greater importance to human groups than is currently indicated by the extant archeological remains.

Several major Late Prehistoric and Historic period sites have been inundated by the Oahe Reservoir in the project area. However, this survey, as is the case with many previous surveys conducted along the Missouri River, failed to produce evidence of earlier Archaic and Paleoindian occupation and utilization. An explanation for the lack of early sites is supplied, in part, by the geomorphological studies undertaken during the current investigation.

Brakenridge has documented extensive channel migration of the Cheyenne River which has resulted in the frequent reworking of the sediments of the valley floor, and consequent destruction of occupations on the valley floor. The bulk of the present valley fill, the T0 and T1 surfaces, must be of late Holocene age.

West of Sansarc Creek, and extending upstream beyond the U.S. Army Corps of Engineers management area, the potential for extant older cultural deposits increases with the preservation of areas of the T3 and T2 surfaces. Brakenridge infers that Paleoindian and Archaic sites may be buried within overbank facies within the T2 and T3 terraces. Older deposits are also likely within alluvial fans on the surfaces of these old terraces, or possibly within fans bordering the T1 surface; under eolian mantles present on the older river terraces and being exposed by reservoir slumping; and along incised tributary walls. While older sites may thus become exposed by erosion, in the case of sites exposed at the downstream ends of incised tributary valleys, reservoir sedimentation may now be acting to rebury the sites.

It is clear that although sites of an earlier age than those located during this archeological survey likely exist in the project area, some would have been destroyed by the geomorphological processes that have occurred over the last thousand years. Others should be

preserved, but are buried under fluvial or eolian deposits. Such sites would, however, present a very restricted exposed data base, making it unlikely that even intensive surveys of the type performed here would locate them.

Given the understanding we now have of the cultural and geomorphological history of this region, it would be possible to undertake detailed evaluations of those areas identified as having a high potential for buried deposits - particularly the vertical faces of incised tributary streams within the project area. Several specific locales might be identified for monitoring following high reservoir levels, when increased slumping occurs. Unless some specific program like this is implemented, the presence of these early sites is likely to be documented only by chance, if at all.

In the case of Late Prehistoric and Historic period sites, direct documentation is available within the project area, although many of these sites were also destroyed by river migration prior to being inundated by the reservoir. The type of utilization and occupation documented by this survey, while limited in terms of numbers of sites, does exhibit a range of variability. Late Prehistoric period sites vary from earthlodge villages to hunting camps while the Protohistoric/Historic period is represented by sites ranging from ranches and small settlements to homesteads and marker cairns.

Certain patterns have emerged from this study, but their interpretation is still open to discussion. The most striking contrast is between the north and south sides of the river. The area north of the river, currently the Cheyenne River Sioux Reservation, contained very few artifact scatters, but almost all of the recorded cairns. Conversely, on the south side of the river in Stanley County, only three cairns were located, but 28 of the total 38 artifact scatters were recorded, including 17 of the 20 larger (over 1000m²) prehistoric sites.

Interpreting and reconstructing the past in the area of the Cheyenne River arm will be a lengthy, and by no means straightforward, process. Much more work must be accomplished in the region as a whole before the biases in the current documentation of past utilization of the area can be fully assessed.

In evaluating the sites identified during the survey of the Cheyenne River arm, both the type category and individual localities within the category were examined.

For each site the following information is tabulated in Table 15 and summarized in Table 16.

Site condition is shown as (1) extant (largely undisturbed); or (2) disturbed (by erosion, agriculture). Site impacts are listed as (1) severe; (2) moderate; (3) slight; or (4) undisturbed. Site condition and site impacts provide a summary of the integrity and current threats to the site. The impacts refer to those affecting the site area at this time - not to impacts the site may have been affected by in the past.

Site status with regard to National Register eligibility is noted as either (1) not eligible or (2) potentially eligible. Priority is ranked high (1), medium (2) or low (3). Site status and priority provide our evaluation of the site from a management standpoint.

High priority sites include those sites potentially eligible for nomination to the National Register of Historic Places which are being impacted at this time. Sites which are not threatened by immediate or foreseeable impacts are given a low priority.

The one earthlodge village in the survey area, 39ST10, is assigned a high priority for management considerations because it is being actively eroded on two sides and is in an area where few extant villages are recorded. Similarly, the mound group, 39ST48, is accorded a high management priority since it is located in an area that is actively eroding. Not only does the origin of the mounds need to be specifically determined, but the cultural material in the immediate area and to the south and east suggests more than just casual utilization of the area by groups from the nearby village. Sites 39ST274 and 39ST278 are also assigned high management priorities on the basis of possibly severe erosional impacts from bank slumping and mass wasting which may occur in the near future.

The sites in the Priority 2 category include all the remaining larger artifact scatters, two of the burial areas and the one large historic Native American occupation site, in addition to five of the

Table 15. List of Site Condition, Impacts, CRM and Priority Status
Assigned to Sites Recorded Along the Cheyenne River Arm.
[in site number order by priority status]

SITE NUMBER	CONDITION		IMPACTS				CRM STATUS		PRIORITY STATUS		
	1	2	1	2	3	4	1	2	1	2	3
39ST10		X	X					X	X		
39ST48		X		X				X	X		
39ST274	X		X					X	X		
39ST278		X	X					X	X		
39ST259	X				X			X		X	
39ST260	X				X			X		X	
39ST262											
(prehistoric)	X				X			X		X	
39ST269	X				X			X		X	
39ST272	X					X		X		X	
39ST276	X				X			X		X	
39ST283	X				X			X		X	
39DW66	X				X			X		X	
39DW74		X				X		X		X	
39DW81		X		X				X		X	
39DW82 (both components)	X				X			X		X	
39DW84	X				X			X		X	
39ST254		X		X				X			X
39ST256	X					X		X			X
39ST257	X					X		X			X
39ST258		X			X			X			X
39ST261	X					X		X			X
39ST262											
(historic)	X					X		X			X
39ST263	X				X			X			X
39ST264	X					X		X			X
39ST265	X				X			X			X
39ST266		X			X			X			X
39ST267	X					X		X			X
39ST268	X					X		X			X
39ST270	X					X		X			X
39ST271		X			X			X			X
39ST273 (both components)	X					X		X			X
39ST275		X		X				X			X
39ST277		X		X				X			X
39ST279	X			X				X			X
39ST280	X					X		X			X
39ST281	X					X		X			X
39ST282	X			X				X			X
39ST284	X					X		X			X
39ZB16	X			X				X			X
39ZB17	X					X		X			X
39ZB18	X					X		X			X
39ZB19	X					X		X			X
39ZB20	X					X		X			X

Table 15. (cont.)

SITE NUMBER	CONDITION		IMPACTS				CRM STATUS		PRIORITY STATUS		
	1	2	1	2	3	4	1	2	1	2	3
39ZB21	X			X				X			X
39ZB22	X					X		X			X
39ZB23	X			X				X			X
39ZB24	X					X		X			X
39ZB25	X					X		X			X
39DW63	X					X		X			X
39DW64		X				X		X			X
39DW65	X					X		X			X
39DW67	X					X		X			X
39DW68	X					X		X			X
39DW69	X					X		X			X
39DW70	X					X		X			X
39DW71		X				X		X			X
39DW72	X					X		X			X
39DW73	X					X		X			X
39DW75	X					X	X				X
39DW76	X					X		X			X
39DW77	X					X		X			X
39DW78	X					X		X			X
39DW79	X				X			X			X
39DW80	X				X			X			X
39DW83	X				X			X			X
39DW85		X		X			X				X
39DW86	X					X		X			X
39DW87	X				X			X			X
39DW88	X					X		X			X
39ST255		X			X			X		Private	

Table 16. Summary of Management Considerations for Sites Located on the Cheyenne River Arm Survey.

	ALL	SITE TYPES									
	SITES	1	2	3	4	5	6	7	8	9	10
<u>CONDITION</u>											
1	57	17	4	-	-	22	3	6	3	2	-
2	15	7	2	1	1	2	-	-	-	1	1
<u>IMPACTS</u>											
1	3	1	1	1	-	-	-	-	-	-	-
2	12	5	1	-	1	5	-	-	-	-	-
3	19	10	4	-	-	2	-	1	2	-	-
4	38	8	-	-	-	17	3	5	1	3	1
<u>CRM STATUS</u>											
1	5	2	-	-	-	1	-	-	-	2	-
2	67	22	6	1	1	23	3	6	3	1	1
<u>PRIORITY</u>											
1	4	1	1	1	1	-	-	-	-	-	-
2	13	5	5	-	-	-	-	-	2	-	1
3	54	17	-	-	-	24	3	6	1	3	-
*Private	1	1	-	-	-	-	-	-	-	-	-

* Site on private land

smaller artifact scatters. Included within Priority 1 and 2 are all sites at which prehistoric ceramic materials were observed, and most of the sites at which hearths are suspected because of the presence of fire-cracked rock features.

Priority 3 sites are comprised largely of sites with few or no ongoing impacts/threats and/or with limited research potential. Five sites are considered not eligible for nomination to the National Register of Historic Places on the basis of this survey's evaluation: 39ST254 (sparse surface artifact scatter manifestation); 39ST262 (historic component - a dump for farm equipment); 39ST271 (sparse surface artifact scatter manifestation); 39DW75 (recent/historic trash dump); and 39DW85 (an extremely disturbed/destroyed cairn).

Few of the small artifact scatters and cairns are likely to be nominated to the National Register of Historic Places, but these sites clearly reflect a common and extended period of utilization of the area and examples should be protected, perhaps as part of an archeological

region or thematic nomination. For example, if a series of the cairns were identified as trail markers, then they might be nominated as a group. It is for this 'thematic' reason that most of these sites have been classified as potentially eligible, rather than on the basis of the perceived research potential at each individual site.

With reference to the geomorphological evaluation of the area, a number of locations have the potential for buried cultural materials relating to the pre-Plains Village/Late Prehistoric periods (see Figures 92, 93, 94 and 97). The erosion of cutbanks in these areas should be closely monitored in order to identify and evaluate such sites, if they exist.

- Adamczyk, Ted J.
1975 Archaeological Inventory Missouri River Reach Between Fort Benton, Montana, and Sioux City, Iowa. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-75-M-1411.
- Agenbroad, L. D., and Laury, R.L.
1984 Geology, Paleontology, Paleohydrology, and Sedimentology of a Quaternary Mammoth Site, Hot Springs, South Dakota. National Geographic Research Reports 16:1-32.
- Ahler, Stanley A.
1971 Projectile Point Form and Function at Rodgers Shelter, Missouri. Missouri Archaeological Society Research Series 8, edited by W. Raymond Wood. University of Missouri-Columbia and Missouri Archaeological Society.
- 1980 Evaluation of the Condition of the Travis 2 Archeological Site, 39WW15, Oahe Reservoir, South Dakota, November 1979. Department of Anthropology and Archaeology, University of North Dakota, Grand Forks. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-80-M-0247.
- 1981 Preceramic Archeology of the Medicine Crow Site, South Dakota. Paper presented at the 39th Annual Plains Conference, Bismarck, ND.
- Ahler, Stanley A., David K. Davies, Carl R. Falk, and David B. Madsen
1974 Holocene Stratigraphy and Archeology in the Middle Missouri River Trench, South Dakota. Science 184:905-908.
- Ahler, Stanley A., Alan M. Cvancara, David B. Madsen, and Richard W. Kornbrath
1977 Archeological Reconnaissance and Test Excavation at the Travis 2 Site, 39WW15, Oahe Reservoir, South Dakota. Contribution No. 62. Department of Anthropology and Archeology. University of North Dakota, Grand Forks. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-76-3846.
- Alex, Lynn M.
1979 39BU2: A Fortified Site in Western South Dakota. South Dakota Archaeological Society Newsletter 9(3):3-7.
- Alex, Robert A.
1981 Village Sites Off the Missouri River. In The Future of South Dakota's Past, edited by Larry J. Zimmerman and Lucille Stewart, pp. 39-45. Special Publications of the South Dakota Archaeological Society 2. Vermillion.

- Anderson, Harry H.
1956 A History of the Cheyenne River Indian Agency and Its Military Post, Fort Bennett, 1868-1891. South Dakota Historical Collections, vol. 28. State Historical Society, Pierre.
- 1961 The Fort Lookout Trading Post Sites-A Reexamination. Plains Anthropologist 6:221-227.
- Anfinson, Scott F. (compiler and editor)
1979 A Handbook of Minnesota Prehistoric Ceramics. Occasional Publications in Minnesota Anthropology 5. Minnesota Archaeological Society, Fort Snelling, St. Paul.
- Antevs, Ernst
1955 Geological-Climatic Dating in the West. American Antiquity 20:317-335.
- Artz, Joe Alan
1980 Cultural Resources of the West River Aqueduct: Literature Search and Preliminary Reconnaissance. Contract Investigations Series 30. South Dakota Archaeological Research Center, Rapid City.
- Athearn, Robert G.
1967 Forts of the Upper Missouri. University of Nebraska Press, Lincoln.
- Baerreis, David A. (editor)
1970 Environmental Archaeology in Western Iowa. Northwest Iowa Archaeological Society Newsletter 18(5):3-15.
- Baerreis, David A., and Robert A. Alex
1974 An Interpretation of Midden Formation - The Mill Creek Example. In Aspects of Upper Great Lakes Anthropology, edited by Elden Johnson, pp. 143-148. Minnesota Prehistoric Archaeology Series 11. Minnesota Historical Society, St. Paul.
- Baye, Elsie Hay (compiler)
1982 Haakon Horizons. State Publishing, Pierre.
- Benedict, James B., and Byron L. Olson
1973 Origin of the McKean Complex: Evidence from Timberline. Plains Anthropologist 18(62):323-327.
- Benn, David W.
1974 Seed Analysis and Its Implications for an Initial Middle Missouri Site in South Dakota. Plains Anthropologist 19(63):55-72.

- Benn, David W. (editor)
1981 Archaeological Investigations at the Rainbow Site, Plymouth County, Iowa. Luther College Archaeological Research Center, Decorah, Iowa. Submitted to Interagency Archeological Services-Denver, Contract No. C3571(78).
- Blair, Emma H.
1911 The Indian Tribes of the Upper Mississippi Valley and Region of the Great Lakes, vol. 1. Arthur H. Clark, Cleveland.
- Boorman, Jane
1973 A Frontier Learns of God and Man. In Dakota Panorama, edited by J. Leonard Jennewein and Jane Boorman, pp. 163-185. Pine Hill Press, Freeman.
- Borchers, Glenn A.
1980 Soil Survey of Stanley County, South Dakota. United States Department of Agriculture in cooperation with Bureau of Indian Affairs and South Dakota Agricultural Experiment Station.
- Bowers, Alfred W.
1950 Mandan Social and Ceremonial Organization. University of Chicago Press, Chicago.

1965 Hidatsa Social and Ceremonial Organization. Smithsonian Institution Bureau of American Ethnology Bulletin 194. Washington.
- Brakenridge, G.R.
1981 Late Quaternary Floodplain Sedimentation Along the Pomme de Terre River, Southern Missouri. Quaternary Research 15:62-76.

1984 Alluvial Stratigraphy and Radiocarbon Dating Along the Duck River, Tennessee: Implications Regarding Floodplain Origin. Geological Society of America Bulletin 95:9-25.

1985 Rate Estimates for Lateral Bedrock Erosion Based on Radiocarbon Ages, Duck River, Tennessee. Geology 13:111-114.

1987 Floodplain Stratigraphy. In Flood Geomorphology, edited by V.R. Baker, C. Kochel, and P.C. Patton. John Wiley and Sons, New York, in press.
- Brakenridge, G.R., P.A. Thomas, J.C. Schiferle, and L.E. Conkey
1987 Fluvial Stratigraphy as an Indicator of River Channel Migration and Floodplain Sedimentation Rates, Missisquoi River, Vermont. Ms. in possession of the authors.

- Brink, Jack, and Stuart J. Baldwin
 1985 Thoughts on a Human Burial System During Pelican Lake Times. Paper presented at the 43rd Plains Conference, Iowa City.
- Brown, Lionel A.
 1968 The Gavins Point Site (39YK203). An Analysis of Surface Artifacts. Plains Anthropologist 13(40):118-131.
 1974 The Archaeology of the Breeden Site. Plains Anthropologist Memoir 10.
- Brumley, John H.
 1978 McKean Complex Subsistence and Hunting Strategies in the Southern Alberta Plains. In Bison Procurement and Utilization: A Symposium, edited by Leslie B. Davis and Michael Wilson, pp. 175-193. Plains Anthropologist Memoir 14.
- Bryan, Alan L.
 1969 Early Man in America and the Late Pleistocene Chronology of Western Canada and Alaska. Current Anthropology 10(4):339-367.
- Buechler, Jeff (Preparer)
 1984 Management Plan for Archaeological Resources in South Dakota. Part I: Study Units (Working Draft). Prepared for South Dakota Archaeological Research Center, Rapid City, SD.
- Bureau of Indian Affairs
 1951 Location and Census of Indian Cemeteries, Cheyenne River Indian Reservation, South Dakota. Missouri River Basin Investigations 120. Bureau of Indian Affairs, Aberdeen and Billings Areas, U.S. Department of the Interior. Billings.
- Caldwell, Warren W.
 1961 Archeological Investigations at the Coralville Reservoir, Iowa. River Basin Surveys Papers 22. Smithsonian Institution Bureau of Ethnology Bulletin 169.
 1966a The Black Partizan Site. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 2.
 1966b The Middle Missouri Tradition Reappraised. Plains Anthropologist 11(32):152-157.
 1977 Review of Fay Tolton and the Initial Middle Missouri Variant. Plains Anthropologist 22:165-167.
- Caldwell, Warren W., and R. E. Jensen
 1969 The Grand Detour Phase. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 13.

- Cassells, E. Steve
1981 Cultural Resource Survey of the Twin Sisters Timber Sale, Custer District, Black Hills National Forest, South Dakota. Plano Archaeological Consultants. Submitted to U.S. Forest Service, Custer District, Contract No. 43 82X9-0-1257.
- Champe, John L.
1946 Ash Hollow Cave: A Study of Stratigraphic Sequence in The Central Great Plains. University of Nebraska Studies, New Series 1. Lincoln.
- Chittenden, H.M.
1954 The American Fur Trade of the Far West. 2 vols. Academic Reprints, Stanford.
- Chomko, Stephen A.
1976 Faunal Exploitation in the Initial Middle Missouri Variant. In Fay Tolton and the Initial Middle Missouri Variant, edited by W. Raymond Wood, pp. 35-41. Missouri Archaeological Society Research Series 13. University of Missouri-Columbia and the Missouri Archaeological Society.
- Coogan, A.H.
1984 Holocene Stratigraphy and the Stratigraphic Framework of Archeological Sites in Central South Dakota. Ms. in possession of author, Department of Geology, Kent State University, Kent, Ohio.
- Coogan, A.H., and W.N. Irving
1959 Late Pleistocene and Recent Missouri River Terraces in the Big Bend Reservoir, South Dakota. Iowa Academy of Science Proceedings 66:317-327.
- Cooper, Paul L.
1949 Recent Investigations in Fort Randall and Oahe Reservoirs, South Dakota. American Antiquity 14(4):300-310.

1953 Appraisal of the Archeological Resources of the Oahe Reservoir, North and South Dakota. Missouri Basin Project, Smithsonian Institution. Ms. on file, Midwest Archeological Center, National Park Service, Lincoln, Nebraska (reissued in 1965).
- Council of South Dakota Archaeologists (CSDA)
1986 Minutes of Placerville Camp Meeting.
- Crandell, D.R.
1953 Pleistocene Geology of Part of Central South Dakota. Geological Society of America Bulletin 64:581-598.

- Denig, E.T.
1961 Five Indian Tribes of the Upper Missouri. University of Oklahoma Press, Norman.
- Dibble, David S., and Dessamae Lorrain
1968 Bonfire Shelter: A Stratified Bison Kill Site, Val Verde County, Texas. Texas Memorial Museum Miscellaneous Papers 1. University of Texas, Austin.
- Dobyns, H.F.
1983 Their Number Becomes Thinned. The University of Tennessee Press, Knoxville.
- Eckles, David
1978 Cultural Resource Survey of the Heely Creek Timber Sale. Black Hills National Forest. Custer, South Dakota.
- Ewers, John C.
1938 Teton Dakota: Ethnology and History. United States Department of the Interior, National Park Service, Berkeley.
- Falk, Carl R., and R.E. Pepperl (editors)
1986 A Cultural Resource Survey of the East Shore of Lake Oahe, South Dakota: Final Report. Technical Report 83-01. Division of Archeological Research, University of Nebraska-Lincoln. Draft submitted to U.S. Army Corps of Engineers, Omaha District.
- Falk, Carl R., T.L. Steinacher, and D.L. Toom
1984 Archeological Investigations within Federal Lands Located on the East Bank of the Lake Sharpe Project Area, South Dakota: 1978-1979 Final Report. Technical Report 83-04. Division of Archeological Research, University of Nebraska-Lincoln. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-78-C-1036.
- Fay, George E. (editor)
1972 Treaties, and Land Cessions, Between the Bands of the Sioux and the United States of America, 1805-1906. 3 vols. Colorado State University, Greeley.
- Fletcher, Alice C., and Francis LaFlesche
1972 The Omaha Tribe. 2 vols. University of Nebraska Press, Lincoln.
- Flint, R.F.
1955 Pleistocene Geology of Eastern South Dakota. U.S. Geological Survey Professional Paper 262.
- Fontana, Bernard L., and J. Cameron Greenleaf
1962 Johnny Ward's Ranch: A Study in Historic Archaeology. The Kiva 28(1, 2).

- Foor, Thomas Allyn
1982 Cultural Continuity on the Northwestern Great Plains, 1300 B.C. to A.D. 200: The Pelican Lake Culture. Ph.D. dissertation. University of California, Santa Barbara. University Microfilms, Ann Arbor.
- Frazer, R.W.
1965 Forts of the West. University of Oklahoma Press, Norman.
- Frison, George C.
1970 The Kobold Site, 24BH406: A Post-Altithermal Record of Buffalo-jumping for the Northwestern Plains. Plains Anthropologist 15:1-35.
- 1974 The Casper Site: A Hell Gap Bison Kill on the High Plains. Academic Press, New York.
- 1978 Prehistoric Hunters of the High Plains. Academic Press, New York.
- 1983 Stone Circles, Stone-filled Firepits, Grinding Stones, and High Plains Archaeology. In From Microcosm to Macrocosm: Advances in Tipi Ring Investigation and Interpretation, edited by Leslie B. Davis, pp. 81-91. Plains Anthropologist Memoir 19.
- Frison, George C., Michael Wilson, and Diane J. Wilson
1976 Fossil Bison and Artifacts from an Early Altithermal Period Arroyo Trap in Wyoming. American Antiquity 41(1):23-57.
- Gant, Robert D.
1967 Report on the Archeological Investigations at the Arp Site, 39BR101, Brule County, South Dakota, 1961. Archaeological Circular 12. W.H. Over Dakota Museum, Vermillion.
- Gant, Robert D., and W.R. Hurt
1965 The Sturgis Archeological Project: An Archeological Survey of the Northern Black Hills. Museum News 26(7-8). University of South Dakota, Vermillion.
- Gilbert, B.M.
1969 Some Aspects of Diet and Butchering Techniques Among Prehistoric Indians in South Dakota. Plains Anthropologist 14(46):277-294.
- Greiser, Sally T.
1985 Predictive Models of Hunter-gatherer Subsistence and Settlement Strategies on the Central High Plains. Plains Anthropologist Memoir 20.

- Griffen, James B., R.E. Flanders, and P.F. Titterington
1970 The Burial Complexes of the Knight and Norton Mounds in Illinois and Michigan. Memoirs of the Museum of Anthropology 2. University of Michigan, Ann Arbor.
- Griffin, D.
1976 A Model of Culture Change for the Middle Missouri Subarea. In Fay Tolton and the Initial Middle Missouri Variant, edited by W. Raymond Wood, pp. 33-35. Missouri Archaeological Society Research Series 13. University of Missouri-Columbia and Missouri Archaeological Society.
- Grinnell, George B.
1923 The Cheyenne Indians. 2 vols. Yale University Press, New Haven.

1956 The Fighting Cheyenne. University of Oklahoma Press, Norman.
- Grissinger, E.H., and J.B. Murphey
1983 Present Channel Stability and Late Quaternary Valley Deposits in Northern Mississippi. Special Publications of the International Association of Sedimentologists 6:241-250.
- Grissinger, E.H., J.B. Murphey, and W.C. Little
1982 Late-Quaternary Valley-fill Deposits in North-Central Mississippi. Southeastern Geology 23:147-162.
- Gryba, E.
1968 A Possible Paleo-Indian and Archaic Site in the Swan Valley, Manitoba. Plains Anthropologist 13:218-227.
- Gunnerson, James H.
1960 An Introduction to Plains Apache Archeology - The Dismal River Aspect. Smithsonian Institution Bureau of American Ethnology Bulletin 173:131-260.
- Haberman, Thomas W.
1979 Test Excavations and Evaluation of 39ST80: A Plains Woodland Site in Stanley County, South Dakota. Contract Investigations Series 3. South Dakota Archaeological Research Center, Rapid City.

1982 Cultural Resources Survey of a DOT Materials Pit in Section 29, T. 9N, R. 24E, Ziebach County, South Dakota. Contract Investigations Series 74. South Dakota Archaeological Research Center, Rapid City. Submitted to the South Dakota Department of Transportation.

1983 Cultural Resources Survey of a DOT Materials Pit in Section 1, T. 9N, R. 26E, Stanley County, South Dakota. Contract Investigations Series 9. South Dakota Archaeological Research Center, Rapid City. Submitted to the South Dakota Department of Transportation.

- Hall, R.L.
1962 The Archaeology of Carcajan Point. 2 vols. University of Wisconsin Press.
- Hanchette, Carol
1983 The Investigation of Shallow Plains Sites. In Archaeological Investigations on the Northern Border Pipeline, Montana Segment, edited by Ken Deaver, pp. 6.1-6.18, vol 1. Professional Analysts, Eugene, Oregon. Submitted to Northern Border Pipeline Company, Omaha, NE.
- Hanenberger, Ned
1986 Ceramic Analysis. In Report of a 1981 Archeological Salvage Excavation at the Crow Creek Site, 39BF11, Buffalo County, South Dakota, edited by James K. Haug, pp. 19-137. Contract Investigations Series 109. State Archaeological Research Center, Rapid City. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-83-M-1836.
- Hannus, L. Adrien
1974 Statement on Preliminary Excavations, The Heath Site 39LN15. South Dakota Archaeological Society Newsletter 5(2,3).
- 1976 Heath Site, 39LN15, Excavation Report. Unpublished field notes. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD.
- 1980 The Lange/Ferguson Site (39SH33). Plains Anthropology Society, Thirty-Eighth Plains Conference Program and Abstracts:23.
- 1983a A Cultural Resources Survey of a Portion of the South Fork of the Cheyenne River, Fall River County, South Dakota. Publications in Anthropology 1. Archeology Laboratory, South Dakota State University, Brookings. Submitted to Historical Preservation Center, Vermillion.
- 1983b Of Mammoths, Men, and Ice: Making It On the Margin. Symposium: Late Glacial Environments of Early Man in North America. Geological Society of America Abstracts with Program 15:590.
- 1985a The Lange/Ferguson Site, An Event of Clovis Mammoth Butchery with the Associated Bone Tool Technology: The Mammoth and its Track. Ph.D. dissertation, Department of Anthropology, University of Utah. University Microfilms, Ann Arbor.
- 1985b An Overview and Summary of the Northern Border Project in Montana, North Dakota, South Dakota, Minnesota and Iowa. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to the Northern Border Pipeline Company, Omaha, NE.

Hannus, L. Adrien (continued)

1986 Report on 1985 Test Excavations at the Ray Long Site (39FA65), Angostura Reservoir, Fall River County, South Dakota. With contributions by John Albanese, Linda J. Scott and Rhoda Owen Lewis. Archeological Contract Series 27. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to the State Archaeological Research Center, Rapid City, Contract # 86C-016.

1987 Flaked Mammoth Bone From the Lange/Ferguson Site, White River Badlands Area, South Dakota. In Bone Modifications, edited by R. Bonnicksen and M. Sorg. Center for the Study of Early Man, University of Maine at Orono, in press.

Hannus, L. Adrien (Principal Investigator), J. Apley, P.R. Bjork, K.L. Brown, M.E. Brown, J. Butterbrodt, T. Haberman, R. Keller, S. Keller, E.J. Lueck, D.B. Miller, T. Nowak, C. Orser, Jr., B. Rhodd, E.M. White, K. Winham, and P. Winham

1982 Cultural Resource Investigations of the South Dakota Segment of the Northern Border Pipeline Project. 5 vols. Archeology Laboratory, South Dakota State University, Brookings. Submitted to Northern Plains Natural Gas Company, Omaha, NE.

Hannus, L. Adrien, John M. Butterbrodt, Edward J. Lueck, Timothy R. Nowak, and Everett M. White

1983 An Archeological Survey of Selected Areas Within Fog Creek, Babby Butte Canyon and Lower Cain Creek in Shannon and Pennington Counties, South Dakota. Publications in Anthropology 4. Archeology Laboratory, South Dakota State University, Brookings. Preliminary report submitted to the Historic South Dakota Foundation.

Hannus, L. Adrien, Edward J. Lueck and R. Peter Winham

1987 The Mitchell Prehistoric Indian Village 39DV2. Summary of Studies and Excavations Through 1986. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls. Prepared for the Mitchell Prehistoric Indian Village Preservation Society.

Hannus, L. Adrien, Paul V. Miller, and R. Peter Winham

1984 Cultural Resource Survey of Eleven Timber Sales in the Black Hills National Forest - South Dakota/Wyoming. 5 vols. Frontier Cultural Services, Custer, and Cultural Resources Consulting Services, Sioux Falls. Submitted to U.S. Department of Agriculture, Forest Service, Black Hills National Forest, Custer, SD, Co tract No. 53-67TO-4-62.

- Hannus, L. Adrien, and Timothy R. Nowak
 1984 An Analysis of Paleo-Indian Projectile Points from Surface Finds in the White River Badlands, Western South Dakota. Draft Ms., Archaeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, South Dakota.
- 1988 Avonlea: A Point Industry Surfaces in South Dakota, or Archers on the March. In Avonlea Yesterday and Today: Archaeology and Prehistory, edited by Leslie B. Davis. Saskatchewan Archaeological Society. Brigdens, Regina, in press.
- Hannus, L. Adrien, Timothy R. Nowak, and R. Peter Winham
 1984 Regional Background, Project Organization and Research Design. White River Badlands Regional Research Project Report, vol. 1. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to Historical Preservation Center, Office of Cultural Preservation, Vermillion, S.D.
- Hannus, L. Adrien, R. Peter Winham, and Edward J. Lueck
 1986 Cultural Resource Reconnaissance Survey of Portions of Moody, Lincoln and Union Counties, South Dakota [Within the Upper and Lower Big Sioux and Yankton Study Units], with Reports on the Heath Site and the Blood Run/Rock Island Site. Archeological Contract Series 26. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to Historical Preservation Center, Vermillion, South Dakota.
- Harvey, A.E.
 1979 Oneota Culture in Northwestern Iowa. Office of the State Archeologist Report 12. The University of Iowa, Iowa City.
- Haug, James K.
 1976a Archeological Survey of Coldbrook and Cottonwood Springs Reservoirs, Fall River County, South Dakota. South Dakota Archaeological Research Center, Rapid City. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-76-M-32228.
- 1976b Archaeological Survey Within the Buffalo Gap National Grasslands, Fall River County, South Dakota. South Dakota Archaeological Research Center, Rapid City.
- 1978a Cultural Resources Survey in the Southern Black Hills, South Dakota. South Dakota Archaeological Research Center, Rapid City.

- Haug, James K. (continued)
 1978b Cultural Resources Survey of Selected Silver King Mine Properties in Custer and Fall River Counties, South Dakota. South Dakota Archaeological Research Center, Rapid City. Submitted to Tennessee Valley Authority, Contract No. TV-46932A.
- Haug, James K., J.E. Buehrig, J.A. Moore, and J.A. Sartain
 1980 Archaeological Excavations in the Highway 18 Right-of-Way, Fall River County, South Dakota, 1978-1979. Contract Investigations Series 20. South Dakota Archaeological Research Center, Rapid City. Submitted to South Dakota Department of Transportation.
- Haynes, C. Vance, Jr.
 1969 The Earliest Americans. Science 166(3906):709-715.
- 1970 Geochronology of Man-Mammoth Sites and Their Bearing on the Origin of the Llano Complex. In Pleistocene and Recent Environments of the Central Great Plains, edited by Wakefield Dort, Jr., and J. Knox Jones, Jr., pp. 77-92. Department of Geology Special Publication 3. University of Kansas, Lawrence.
- 1985 Mastodon-Bearing Springs and Late Quaternary Geochronology of the Lower Pomme de Terre River, Missouri. Geological Society of America Special Paper 204.
- Hedburg, Donna S.
 1976 Nowahwus, Bear Butte, Sacred Mountain of the Cheyenne, An Ethnohistorical and Ethnographical Account. Unpublished Master's thesis, Department of Anthropology, Wichita State University.
- Henning, Dale R.
 1967 Mississippian Influences on the Eastern Plains Border: An Evaluation. Plains Anthropology 12(36):184-193.
- 1971 Great Oasis Culture Distributions. In Prehistoric Investigations, edited by Marshall McKusick. Reprint 3:125-133. Office of the State Archeologist, Iowa City.
- Henning, Dale R., and Elizabeth Henning
 1978 Great Oasis Ceramics. In Some Studies of Minnesota Prehistoric Ceramics: Papers Presented at the First Council for Minnesota Archeology Symposium - 1976, edited by Alan R. Woolworth and Mark A. Hall, pp. 12-26. Occasional Publications in Minnesota Anthropology 2. Minnesota Archaeological Society, Fort Snelling, St. Paul.

- Henning, Elizabeth R. Potter
1981 Great Oasis and the Middle Missouri Transition. In The Future of South Dakota's Past, edited by Larry J. Zimmerman and Lucille C. Stewart, pp. 33-38. Special Publications of the South Dakota Archaeological Society 2. Vermillion.
- Hill, A.T., and Marvin F. Kivett
1941 Woodland-Like Manifestations in Nebraska. Nebraska History 21(3):141-243.
- Historical Society of Old Stanley County (HSOSC)
1968 Prairie Progress in West Central South Dakota. Historical Society of Old Stanley County. Midwest Beach, Inc., Sioux Falls.
- Hoard, Lyon J.
1949 Report of the Investigation of the Meyer Site, Stanley County, South Dakota. Archaeological Studies Circular 2. South Dakota Archaeological Commission.
- Hoffman, J.J.
1967 The Molstad Village. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 4. Lincoln.
1968 The La Roche Sites. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 11. Lincoln.
1970 Two Arikara Villages: A Study in Bad River Phase Material Culture. Ms. on file, U.S. Dept. of the Interior, National Park Service, Midwest Archeological Center, Lincoln.
- Hoffman, J.J., and Lionel A. Brown
1967 The Bad River Phase. Plains Anthropologist 12(37):323-343.
- Hovde, David M.
1981 South Dakota Department of Transportation Gravel Pit Survey, Bennett, Haakon, Hughes, Jackson, Lyman, Mellette, Stanley, Sully, and Tripp Counties. Contract Investigations Series 26m. South Dakota Archaeological Research Center, Rapid City. Submitted to the South Dakota Department of Transportation.
- Howard, James H.
1960 Dakota Winter Counts as a Source of Plains History. Smithsonian Institution Bureau of American Ethnology Bulletin 172, pp. 335-416.
1968 Archeological Investigations at the Spawn Mound, 39LK201, Lake County, South Dakota. Plains Anthropologist 13(40):132-145.

- Howard, James H. (cont.)
- 1970 Known Village Sites of the Ponca. Plains Anthropologist 15(48):109-134.
- 1981 Review of Anthropology on the Great Plains, edited by W. Raymond Wood and Margot Liberty. Plains Anthropologist 26:333-338.
- Howard, James H., and Robert D. Gant
- 1966 Report of the Archeological Salvage Investigations in the Gavin's Point Reservoir Area, Lewis and Clark Lake, Nebraska and South Dakota, 1963 and 1964. Archeological Studies Circular 11. South Dakota Museum, Vermillion.
- Hudak, G. Joseph
- 1976 Woodland Ceramics from the Pedersen Site. Scientific Publications of the Science Museum of Minnesota, New Series 3(2). St. Paul.
- Hughes, G. Bernard
- 1959 Victorian Pottery and Porcelain. Country Life Limited, New Haven.
- Hughes, Jack T.
- 1949 Investigations in Western South Dakota and Northeastern Wyoming. American Antiquity 14(4):266-277.
- Hurt, Wesley R.
- 1952 Report on the Investigation of the Scalp Creek Site 39GR1 and the Ellis Creek Site 39GR2 Gregory County, South Dakota. Archaeological Studies Circular 4. South Dakota Archaeological Commission, Pierre.
- 1957 Report of the Investigations of the Swan Creek Site, 39WW7, Walworth County, South Dakota, 1954-1956. Archaeological Studies Circular 7. South Dakota Archaeological Commission, Pierre.
- 1961 Archaeological Work at the Tabor and Arp Sites. Museum News 22(8):1-6. W.H. Over Museum, University of South Dakota, Vermillion.
- Husted, Wilfred M.
- 1969 Bighorn Canyon Archeology. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 12. Lincoln.
- Irving, W.N.
- 1958 Chronology of the Medicine Crow Site. Proceedings of the Nebraska Academy of Sciences. Lincoln.
- n.d. Preceramic Occupations in the Lower Big Bend Reservoir, South Dakota. Ms. on file, U.S. Dept. of the Interior, National Park Service, Midwest Archeological Center, Lincoln.

- Irwin-Williams, Cynthia, Henry Irwin, George Agogino, and C. Vance Haynes, Jr.
1973 Hell Gap: Paleo-Indian Occupation on the High Plains. Plains Anthropologist 18(59):40-53.
- Jantz, Richard L.
1977 Cranimetric Relationships of Plains Populations: Historical and Evolutionary Implications. Plains Anthropologist Memoir 13:162-176.
- Jantz, Richard L., and Douglas H. Ubelaker
1981 Progress in Skeletal Biology of Plains Populations. Plains Anthropologist Memoir 17.
- Jennings, Jesse D. (editor)
1978 Ancient Native Americans. W.H. Freeman, San Francisco.
- Johnson, Ann M.
1979 Extended Middle Missouri Components in the Big Bend Region, South Dakota. Special Publications of the South Dakota Archaeological Society 1. Vermillion.
- Johnson, Craig M.
1980 Ceramic Classification in the Middle Missouri Subarea of the Plains. Technical Report 80-02. Department of Anthropology, University of Nebraska, Lincoln.
- Johnson, Mary Antonio
1948 Federal Relations with the Great Sioux Indians of South Dakota, 1887-1933, with Particular Reference to Land Policy Under the Dawes Act. Catholic University of America Press, Washington, D.C.
- Johnston, Richard B.
1967 The Hitchell Site. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 3. Lincoln.
- Johnston, Richard B., and J.J. Hoffman
1966 An Analysis of Four Survey Collections from Armstrong County, South Dakota, 39AR2 (No Heart Creek Site), 39AR4, 39AR5, and 39AR7. Plains Anthropologist Memoir 3:39-75.
- Kalvels, John, and Paul M. Boden
1979 Soil Survey of Dewey County, South Dakota. United States Department of Agriculture in cooperation with the Bureau of Indian Affairs and the South Dakota Agricultural Experiment Station.
- Kehoe, Thomas F.
1973 The Gull Lake Site: A Prehistoric Bison Drive Site in Southwestern Saskatchewan. Milwaukee Public Museum Publications in Anthropology and History 1.

- Kehoe, Thomas F., and Alice B. Kehoe
 1968 Saskatchewan. In The Northwestern Plains: A Symposium, edited by Warren W. Caldwell, pp. 21-35. Occasional Papers 1. Center for Indian Studies, Rocky Mountain College, Billings, Montana.
- Kehoe, Thomas F., and Bruce A. McCorquodale
 1961 The Avonlea Point: Horizon Marker for the Northwestern Plains. Plains Anthropologist 6(13):179-188.
- Ketchum, William C., Jr.
 1971 The Pottery and Porcelain Collector's Handbook. Funk and Wagnalls, New York.
- Keyser, James D.
 1982 A Comparative Analysis of Two McKean Phase Occupations in the Grand River Drainage. Journal of the North Dakota Archaeological Association 1:31-41.
- 1984 Rock Art of Western South Dakota. The North Cave Hills. In Rock Art of Western South Dakota, edited by L. Adrien Hannus, pp. 1-51. Special Publications of the South Dakota Archaeological Society 9. Sioux Falls, SD.
- Kivett, Marvin F.
 1949 A Woodland Pottery Type from Nebraska. Proceedings of the Fifth Plains Conference for Archaeology: 67-89. University of Nebraska, Lincoln.
- 1952 Woodland Sites in Nebraska. Nebraska State Historical Society Publications in Anthropology 1. Lincoln.
- 1953 The Woodruff Ossuary, a Prehistoric Burial Site in Phillips County, Kansas. River Basin Surveys Paper 3. Smithsonian Institution Bureau of American Ethnology Bulletin 154.
- 1962 Logan Creek Complex. Paper presented at the 20th Annual Plains Conference, Lincoln, Nebraska.
- 1970 Early Ceramic Environmental Adaptions. In Pleistocene and Recent Environments of the Central Great Plains, edited by W. Dort, Jr., and J.K. Jones, Jr., pp. 93-102. Department of Geology Special Publication 3. University of Kansas, Lawrence.
- Kivett, Marvin F., and Richard E. Jensen
 1976 Archeological Investigations at the Crow Creek Site (39BF11). Publications in Anthropology 7. Nebraska State Historical Society, Lincoln.

- Kornfeld, Marcel, and Lawrence C. Todd (editors)
 1985 McKean/Middle Plains Archaic - Current Research.
Occasional Papers on Wyoming Archaeology 4. Office of
 the Wyoming State Archaeologist and Wyoming Recreation
 Commission, Laramie, Wyoming.
- Kovel, Ralph M., and Terry H. Kovel
 1953 Dictionary of Marks - Pottery and Porcelain. New York.
- Krauss, Michael E., and Victor K. Golla
 1981 Northern Athapaskan Languages. In Subarctic, edited by
 June Helm, pp. 67-85. Handbook of North American
Indians, vol. 6. Smithsonian Institution, Washington
 D.C.
- Krieger, Alex D.
 1964 Early Man in the New World. In Prehistoric Man in the
New World, edited by Jesse D. Jennings and E. Norbeck,
 pp. 23-81. University of Chicago Press.
- Kuchler, A.W.
 1964 Potential Natural Vegetation of the Conterminous United
States. Special Publication 36. American Geographical
 Society.
- Lahren, Larry A.
 1976 The Meyers-Hindman Site--An Exploratory Study of Human
Occupation Patterns in the Upper Yellowstone Valley from
7000 B.C. to A.D. 1200. Anthropological Research Inter-
 national, Inc. Livingston, Montana.
- Lahren, Larry A., J. George Runkel, and Catherine D. Washburne
 1978 Archaeological Investigations of the Crooked Coulee Site
Complex (24LT25), Liberty County, Montana. Submitted to
 the Department of the Interior, Bureau of Reclamation,
 Billings, Montana.
- Lawson, Michael
 1974 Reservoir and Reservation: The Oahe Dam and the Cheyenne
River Sioux. South Dakota Historical Society Collections
 37:102-233.
- Lazio, Joseph
 1977 Cultural Resources Reconnaissance of a Proposed Irriga-
tion Project in Stanley County, South Dakota, Permit No.
SD 2SB OXT 1034. Submitted to the U.S. Army Corps of
 Engineers, Omaha District.
- 1980 Cultural Resource Survey of the Proposed Tri-County Water
Association Domestic Water System Supply. The Cheyenne
River Indian Reservation. Dewey and Ziebach Counties,
South Dakota. Submitted to Tri-County Water Association.

- Lee, Chung Ho, and Steven K. Lovick
1979 Laboratory Investigations of White Buffalo Robe Village (32MN7), North Dakota. Paper presented at the 37th Annual Plains Conference, Kansas City, Missouri.
- Lehmer, Donald J.
1954 Archeological Investigations in the Oahe Dam Area, South Dakota, 1950-51. River Basin Surveys Paper 7. Smithsonian Institution Bureau of American Ethnology Bulletin 158.
- 1966 The Fire Heart Creek Site. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 1. Lincoln.
- 1970 Climate and Culture History in the Middle Missouri Valley. In Pleistocene and Recent Environments of the Central Great Plains, edited by W. Dort, Jr., and J.K. Jones, Jr., pp. 117-129. Department of Geology Special Publication 3. University of Kansas Press, Lawrence.
- 1971 Introduction to Middle Missouri Archeology. Anthropological Papers 1. National Park Service, U.S. Department of the Interior. Washington.
- Lehmer, Donald J., and David T. Jones
1968 Arikara Archeology: The Bad River Phase. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 7. Washington.
- Logan, Herschel C.
1959 Cartridges - A Pictorial Digest of Small Arms Ammunition. Bonanza Books, New York.
- Ludwickson, John, Donald Blakeslee, and John O'Shea
1981 Missouri National Recreation River: Native American Cultural Resources. Submitted to the Heritage Conservation and Recreation Service, Interagency Archeological Services-Denver. Contract No. C53011(80).
- Lueck, Edward J., and John Butterbrodt
1984 Cultural Resource Surveys at Pass Creek, Nelson Butte, Babby Butte, Squaw-Humper Creek and Cuny Table in Jackson (Washabaugh) and Shannon Counties, South Dakota. White River Badlands Regional Research Project Report, vol. 3. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to Historical Preservation Center, Office of Cultural Preservation, Vermillion, S.D.
- MacNeish, Richard S.
1976 Early Man in the New World. American Scientist 64(3): 316-327.

- Mallory, Oscar L.
1967 Notes and Field Forms of the 1967 Cottonwood Springs Reservoir Area Survey, River Basin Surveys. Ms. on file, South Dakota Archaeological Research Center, Rapid City.
- Malouf, Carling I.
1962 Stone Piles. Archaeology in Montana 4(1):9-11.
- Marron, D.C.
1987 Floodplain Storage of Metal-contaminated Sediment Downstream of a Gold Mine at Lead, South Dakota. In The Chemical Quality of Water and the Hydrologic Cycle, edited by R.C. Averett and D.M. McKnight. Lewis Publishers, Ann Arbor, Michigan, in press.
- Mattison, R.H.
1953 Report on Historic Sites in the Oahe Reservoir Area, Missouri River. River Basin Code No. XXVI/70. History Division, Region Two Office, National Park Service.

1954 Report on Historical Aspects of the Oahe Reservoir Area, Missouri River, South and North Dakota. South Dakota Historical Collections 27:1-159. State Historical Society, Pierre.
- Maximilian, Prinz zu Weid
n.d. Reise in das Innere Nordamerika. 2 vols. Lothar Borowsky, Munich.
- McAllister, J.G.
1937 Kiowa-Apache Social Organization. In Social Anthropology of North American Tribes, edited by Fred Eggan, pp. 99-169. University of Chicago Press.
- McAndrews, J.H., R.E. Stewart, and R.C. Bright
1967 Glacial Geology of the Missouri Coteau. In Glacial Geology of the Missouri Coteau. North Dakota Geological Survey Miscellaneous Series 30:101-113..
- McNerney, Michael J.
1970 A Description of Chipped Stone Artifacts from Northeastern South Dakota. Plains Anthropologist 15:50 Part 1.
- Miller, J.A.
1973 Quaternary History of the Sangamon River Drainage System, Central Illinois. Reports of Investigations 27. Illinois State Museum, Springfield.
- Mills, H.H., G.R. Brakenridge, R.B. Jacobson, W.L. Newell, M.J. Pavich, and J.S. Pomeroy
1987 Appalachian Mountains and Plateaus. In Geomorphic Systems of North American, edited by W.L. Graf, pp.5-50. Geological Society of America Centennial Special Volume 2. Boulder, CO.

- Missouri River Basin Investigations (MRBI)
- 1952a Appraisal of Indian Property on the Oahe Reservation Site within the Cheyenne River Indian Reservation, South Dakota. Report No. 132 and Supplement. United States Department of the Interior, Bureau of Indian Affairs, Missouri River Basin Investigations Project. Billings, Montana.
- 1952b Consolidated Schedule Cheyenne River Reservation 1951 Timber Cruise on Oahe Project. Missouri River Basin Investigations, U.S. Indian Service. Billings, Montana.
- Mooney, J.
1898 Calendar History of the Kiowa Indians. Smithsonian Institution Bureau of American Ethnology, 17th Annual Report, Part I. Washington.
- Moore, John H.
1987 The Cheyenne Nation. University of Nebraska Press, Lincoln, in press.
- Morlan, Richard E.
1980 Taphonomy and Archaeology in the Upper Pleistocene of the Northern Yukon Territory: A Glimpse of the Peopling of the New World. Archaeological Survey of Canada Paper 94. National Museum of Man Mercury Series, Ottawa.
- Mott, Mildred
1938 The Relation of Historic Indian Tribes to Archaeological Manifestations. Iowa Journal of History and Politics 36(3).
- Mueller-Beck, Hansjürgen
1966 Paleohunters in America: Origins and Diffusion. Science 152(3726):1191-1210.
- 1967 On Migrations of Hunters Across the Bering Land Bridge in the Upper Pleistocene. In The Bering Land Bridge, edited by David M. Hopkins, pp. 373-408. Stanford University Press.
- Mulloy, William T.
1954 The McKean Site in Northeastern Wyoming. Southwestern Journal of Anthropology 10:432-460.
- Nadler, C.T., and S.A. Schumm
1981 Metamorphosis of South Platte and Arkansas Rivers, Eastern Colorado. Physical Geography 2:95-115.
- Nelson, Lee H.
1968 Nail Chronology. American Association for State and Local History, Nashville, Tennessee.

Neuman, Robert W.

- 1960 The Truman Mound Site, Big Bend Reservoir Area, South Dakota. American Antiquity 26(13):78-92.
- 1964a The Good Soldier Site (39LM238), Big Bend Reservoir, Lyman County, South Dakota. River Basin Surveys Papers 37. Smithsonian Institution Bureau of American Ethnology Bulletin 189.
- 1964b Projectile Points from Preceramic Occupations near Fort Thompson, South Dakota: A Preliminary Report. Plains Anthropologist 9:173-189.
- 1967 Radiocarbon-dated Archaeological Remains on the Northern and Central Great Plains. American Antiquity 32(4):471-486.
- 1975 The Sonota Complex and Associated Sites on the Northern Great Plains. Nebraska State Historical Society. Publications in Anthropology 6:1-216. Lincoln.

Nowak, Timothy R.

- 1979a A Reappraisal of the Black Widow Ridge Archeological Zone, Stanley County, South Dakota. Submitted to U.S. Army Corps of Engineers, Omaha District.
- 1979b Cultural Resource Investigation of an Irrigation Project in Stanley County, South Dakota. Permit No. SD 2SB OXT 1 002080 Clifford Fravel. Prepared for U.S. Army Corps of Engineers, Omaha District.
- 1981 Lithic Analysis of the Oakwood Lakes Site (39BK7) Brookings County, South Dakota: A Woodland Period Stone Tool Assemblage of the Northeastern Prairie Periphery. In Archaeological Excavations at 39BK7, Brookings County, South Dakota, edited by L. Adrien Hannus, pp. 51-152. Contract Investigations Series 33. South Dakota Archaeological Research Center, Rapid City.

Nowak, Timothy R., and L. Adrien Hannus

- 1981 Knife River Flint--I Know It When I See It--Or Do I?: An Alternative Primary Source from South Dakota. Paper presented at the 39th Annual Plains Conference, Bismarck, North Dakota.

O'Brian, Patricia J.

- 1971 Valley Focus Mortuary Practices. Plains Anthropologist 16(53):165-182.

Ossenberg, Nancy S.

- 1974 Origins and Relationships of Woodland Peoples: The Evidence of Cranial Morphology. In Aspects of Upper Great Lakes Anthropology, edited by Elden Johnson, pp. 15-39. Minnesota Prehistoric Archaeology Series 11. Minnesota Historical Society, St. Paul.

- Over, W. H.
1936 The Archaeology of Ludlow Cave and its Significance.
 American Antiquity 2:126-129.
- Over, W.H., and Elmer E. Meleen
1941 A Report on an Investigation of the Brandon Village and
 the Split Rock Creek Mounds. Archaeological Studies
 Circular 3. University of South Dakota, Vermillion.
- Owens, Doyle F.
1982a Letter to the Chief, Planning Division, reporting the
 results of a cultural resources survey at Foster Bay,
 Lake Oahe completed on August 4, 1982, by T.R. Nowak.
 U.S. Army Corps of Engineers, Omaha District.
- 1982b Letter to the Chief, Regulatory Functions, reporting the
 results of a cultural resources survey at Foster Bay,
 Lake Oahe completed on November 4, 1982, by T.R. Nowak.
 U.S. Army Corps of Engineers, Omaha District.
- Pioneer Club of Western South Dakota
1965 Pioneers of the Open Range - Haakon County, South Dakota
 - Settlers Before January 1, 1906. Pioneer Club of
 Western South Dakota, Midland.
- Reeves, Brian O.K.
1970 Culture Change in the Northern Plains: 1000 B.C.- A.D.
 1000. Unpublished Ph.D. dissertation, Department of
 Anthropology, University of Calgary.
- 1973 The Concept of an Altithermal Cultural Hiatus in Northern
 Plains Prehistory. American Anthropologist 75:1222-1253.
- Reher, Charles A.
1978 Adaptive Process on the Late Prehistoric Shortgrass
 Plains: Archeological Study of the Vore Site, a Buffalo
 Jump Site in the Black Hills of Northeast Wyoming. Ph.D.
 dissertation. Department of Anthropology, University of
 New Mexico. University Microfilms, Ann Arbor.
- 1983 Analysis of Spatial Structure in Stone Circles. In
 From Microcosm to Macrocosm: Advances in Tipi Ring
 Investigation and Interpretation, edited by Leslie B.
 Davis, pp. 193-222. Plains Anthropologist Memoir 19.
- Robinson, De Lorme W.
1902 Editorial Notes on Historical Sketch of North and South
 Dakota. In The History of Dakota, edited by D.W.
 Robinson, pp. 85-178. South Dakota Historical Society
 Collections, vol 1.

- Robinson, Doane
1904 A History of the Dakota or Sioux Indians from Their Earliest Traditions and First Contact with White Men to the Final Settlement of the Last of Them upon Reservations and the Consequent Abandonment of the Old Tribal Life. South Dakota Historical Society Collections 2:1-523.
- Rothrock, E.P.
1944 Sand and Gravel Deposits of the Missouri Valley between Little Bend and White River. South Dakota Geological Survey Reports of Investigations 47. Rapid City.
- Saucier, R.T.
1974 Quaternary Geology of the Lower Mississippi Valley. Research Series 6. Arkansas Archeological Survey.

1978 Sand Dunes and Related Eolian Features of the Lower Mississippi Valley. Geoscience and Man 19:23-40.
- Saucier, R.T., and A.R. Fleetwood
1970 Origin and Chronologic Significance of Late Quaternary Terraces, Ouachita River, Arkansas and Louisiana. Geological Society of America Bulletin 81:869-890.
- Schell, Herbert S.
1975 History of South Dakota. University of Nebraska Press, Lincoln.
- Schlesier, Karl H.
1968 Migration und Kulturwandel am Mittleren Missouri, 1550-1850. Zeitschrift fuer Ethnologie 93:23-48.

1972 Rethinking the Dismal River Aspect and the Plains Athapaskans, A.D. 1692-1768. Plains Anthropologist 17:101-134.

1975 Die Irokesenkriege und die Grosse Vertreibung, 1609-1656. Zeitschrift fuer Ethnologie 100:157-194.

1987 The Wolves of Heaven. Cheyenne Shamanism, Ceremonies, and Prehistoric Origins. University of Oklahoma Press, Norman.
- Schneider, Fred A.
1983 Artifact Distribution at Tipi Ring Sites: A Cautionary Tale. In From Microcosm to Macrocosm: Advances in Tipi Ring Investigation and Interpretation, edited by Leslie B. Davis, pp. 93-100. Plains Anthropologist Memoir 19.
- Schumm, S.A., and G.R. Brakenridge
1988 River Responses During Deglaciation. In Geological Society of America Centennial Special Volume. Boulder, Colorado, in press.

- Sears, Roebuck and Company
1897 Sears, Roebuck and Company catalogue. Reprinted in 1968.
Chelsea House, New York.
- Shay, C. Thomas
1971 The Itasca Bison Kill Site: An Ecological Analysis.
Minnesota Historical Society.
- Shimkin, Demitri B.
1986 Eastern Shoshone. In Great Basin, edited by Warren L. D'Azevedo, pp. 308-337. Handbook of North American Indians, vol. 11. Smithsonian Institution, Washington, D.C.
- Sigstad, John S., and Robert Jolley
1975 An Archeological Survey of Portions of Fall River and Custer Counties, South Dakota. South Dakota Archaeological Research Center, Rapid City. Submitted to Tennessee Valley Authority.
- Sigstad, John S., and Joanita K. Sigstad (editors)
1973 Archaeological Field Notes of W. H. Over. Research Bulletin 1. South Dakota State Archaeologist, Department of Education and Cultural Affairs, State of South Dakota.
- Smith, Carlyle S.
1977 The Talking Crow Site. University of Kansas Publications in Anthropology 9. Lawrence.

1982 Review of Ceramic Classification in the Middle Missouri Subarea of the Plains, by Craig M. Johnson. Plains Anthropologist 27:177-178.
- Smith, Carlyle S., and Alfred E. Johnson
1968 The Two Teeth Site. Smithsonian Institution River Basin Surveys, Publications in Salvage Archeology 8. Lincoln.
- Smith, Jason W.
1976 Foundations of Archaeology. Glencoe Press, London.
- Smithsonian Institution River Basin Surveys Staff (SIRBS)
1959 Missouri Basin Chronology Program, Statement No. 2. Smithsonian Institution, River Basin Surveys, Missouri Basin Project.
- Sneve, Virginia Driving Hawk (editor)
1973 South Dakota Geographic Names. Brevet Press, Sioux Falls.
- South Dakota Geological Survey
1950 Areal Geology of the Fort Bennett Quadrangle. South Dakota Geological Survey, Vermillion.

1952a Areal Geology of the No Heart Quadrangle. South Dakota Geological Survey, Vermillion.

South Dakota Geological Survey (cont.)

- 1952b Areal Geology of the Standing Butte Quadrangle. South Dakota Geological Survey, Vermillion.
- 1952c Areal Geology of the Rousseau Creek Quadrangle. South Dakota Geological Survey, Vermillion.
- South Dakota State Planning Board (SDSPB)
- 1937 Indians of South Dakota. South Dakota State Planning Board, Central Office, Brookings.
- Spuhler, W., W.F. Lytle, and D. Moe
- 1971 Climate of South Dakota. Agricultural Experiment Station Bulletin 582. South Dakota State University, Brookings.
- Stanford, Dennis
- 1978 The Archaeology of the Dutton/Selby Sites. Paper presented at a Symposium at the 36th Annual Plains Conference, Denver.
- Stanford, Dennis, Robson Bonnicksen, and Richard E. Morlan
- 1981 The Ginsberg Experiment: Modern and Prehistoric Evidence of a Bone-Flaking Technology. Science 212:438-440.
- Stanley, K.O., and W.J. Wayne
- 1972 Epeirogenic and Climatic Controls Over Early Pleistocene Fluvial Sediment Dispersal in Nebraska. Geological Society of America Bulletin 83:3675-3690.
- Strong, William D.
- 1935 An Introduction to Nebraska Archeology. Smithsonian Miscellaneous Collections 93(10). Washington.
- Struever, Stuart, and K.D. Vickery
- 1973 The Beginnings of Cultivation in the Midwest-Riverine Area of the United States. American Anthropologist 75(5):1197-1220.
- Sundstrom, Linea
- 1981 Rock Art of the Southern Black Hills, South Dakota and Wyoming. Publications in Anthropology 2. Archeology Laboratory, South Dakota State University, Brookings.
- 1984 Rock Art of Western South Dakota. The Southern Black Hills. In Rock Art of Western South Dakota, edited by L. Adrien Hannus, pp. 53-140. Special Publications of the South Dakota Archaeological Society 9. Sioux Falls, South Dakota.
- Sundstrom, Linea, and Patricia Malone
- 1982 Archaeological, Historical and Paleontological Resources in the Proposed Highway 44 Right-of-Way Between Scenic and Interior, South Dakota. Contract Investigations Series 57. South Dakota Archaeological Research Center, Rapid City.

- Swanson, Earl H., Jr.
 1962 Early Cultures in Northwestern America. American Antiquity 28:151-158.
- Switzer, Ronald R.
 1974 The Bertrand Bottles: A Study of 19th Century Glass and Ceramic Containers. National Park Service, Washington, D.C.
- Syms, E. Leigh
 1969 The McKean Complex as a Horizon Marker in Manitoba and on the Northern Great Plains. Unpublished Master's thesis, Department of Archaeology, University of Manitoba, Winnipeg.
- 1977 Cultural Ecology and Ecological Dynamics of the Ceramic Period in Southwestern Manitoba. Plains Anthropologist Memoir 12.
- 1979 The Devil's Lake-Sourisford Burial Complex on the Northeastern Plains. Plains Anthropologist 24:283-308.
- 1981 The Arvilla Burial Complex: A Re-Assessment. Paper presented at the 39th Plains Anthropological Conference, Bismarck, ND.
- Tabeau, Pierre Antoine
 1939 Tabeau's Narrative of Loisel's Expedition to the Upper Missouri, edited by Annie H. Abel. University of Oklahoma Press, Norman.
- Thiessen, Thomas D.
 1977 A Tentative Radiocarbon Chronology for the Middle Missouri Tradition. Plains Anthropologist Memoir 13:59-82.
- Thompson, David
 1916 David Thompson's Narrative of His Explorations in Western America, 1784-1812, edited by J.B. Tyrrell. Champlain Society Publication 12. Toronto.
- Thwaites, R.G. (editor)
 1904-05 Original Journals of the Lewis and Clark Expedition, 1804-06. 8 vols. Dodd, Meade, & Co., New York.
- 1959 The Jesuit Relations and Allied Documents. Travels and Exploration of the Jesuit Missionaries in New France, 1610-1791. 72 vols. Pageant Book Co., New York.

Toom, D.L., and J.A. Artz

- 1985 An Archeological Survey of Selected Federal Lands on the West Bank of Lake Oahe, Oahe Dam Vicinity, Stanley County, South Dakota, 1984. Contribution No. 215. Department of Anthropology and Archeology, University of North Dakota, Grand Forks. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-84-C-0191.

Tratebas, Alice M.

- 1978 Archeological Surveys in the Black Hills National Forest, South Dakota (1975-1977). South Dakota Archaeological Research Center, Rapid City. Submitted to U.S. Forest Service, Black Hills National Forest.
- 1979 Archaeological Surveys in the Black Hills National Forest, South Dakota (1977-1978). Contract Investigations Series 5. South Dakota Archaeological Research Center, Rapid City. Submitted to U.S. Forest Service, Black Hills National Forest.
- 1981 Current Status of Research on the McKean Complex in South Dakota. In The Future of South Dakota's Past, edited by Larry J. Zimmerman and Lucille C. Stewart, pp. 21-28. Special Publications of the South Dakota Archaeological Society 2. Vermillion.

Tratebas, Alice M., and Kristi Vagstad

- 1979 Archaeological Test Excavations of Four Sites in the Black Hills National Forest, South Dakota. Contract Investigations Series 6. South Dakota Archaeological Research Center, Rapid City.

Trudeau, Jean Baptiste

- 1912 Journal of Jean Baptiste Trudeau Among the Arikara Indians in 1795, edited by Mrs. H.T. Beauregard. Missouri Historical Society Collections, vol 4:9-48. St. Louis.

U.S. Army Corps of Engineers

- 1958 Missouri River Oahe Reservoir Cemetery Relocations, Stage III. In Relocation Plan Assembly for Stage III, Oahe Dam and Reservoir. Office of the District Engineer, U. S. Army Corps of Engineers, Omaha, Nebraska.

U.S. Department of the Interior

- 1877 Annual Report of the Commissioner of Indian Affairs. U.S. Department of the Interior, Government Printing Office, Washington, D.C.
- 1922 Fifty-Third Annual Report of the Board of Indian Commissioners. U.S. Department of the Interior, Government Printing Office, Washington, D.C.

- Verendrye, Pierre G.V. La
 1927 Journals and Letters of Pierre Gaultier de las Varennes de la Verendrye and His Sons, edited by L.J. Burpee. Toronto.
- Warren, Robert E.
 1986 Ice Glider Faunal Remains and Yanktonai Ethnohistory. In Ice Glider, 320L110, edited by W. Raymond Wood, pp. 146-183. Special Publications of the South Dakota Archaeological Society 10. Sioux Falls, SD.
- Watrall, Charles R.
 1974 Subsistence Pattern Change at the Cambria Site: A Review and Hypothesis. In Aspects of Upper Great Lakes Anthropology, edited by Elden Johnson, pp. 138-142. Minnesota Prehistoric Archaeology Series 11. Minnesota Historical Society, St. Paul.
- Weakly, Ward F.
 1971 Tree-ring Dating and Archaeology in South Dakota. Plains Anthropologist 16(54):1-51.
- Wedel, Waldo R.
 1953a Prehistory and the Missouri Valley Development Program: Summary Report on the Missouri River Basin Archeological Survey in 1948. River Basin Surveys Papers 1. Smithsonian Institution Bureau of American Ethnology Bulletin 154.
- 1953b Prehistory and the Missouri Valley Development Program: Summary Report on the Missouri River Basin Archeological Survey in 1949. River Basin Surveys Papers 2. Smithsonian Institution Bureau of American Ethnology Bulletin 154.
- 1961 Prehistoric Man on the Great Plains. University of Oklahoma Press, Norman.
- 1973 Review of Introduction to Middle Missouri Archeology, by Donald J. Lehmer. Plains Anthropologist 18:169-172.
- Wedel, Waldo R., Wilfred Husted, and John Moss
 1968 Mummy Cave: Prehistoric Record from the Rocky Mountains of Wyoming. Science 160:184-186.
- Wendland, Wayne M.
 1978 Holocene Man in North America: The Ecological Setting and Climatic Background. Plains Anthropologist 23(82) Pt. 1:273-287.
- Westin, F.C., and D.D. Malo
 1978 Soils of South Dakota. Agricultural Experiment Station Bulletin 656. Plant Science Department, South Dakota State University, Brookings.

- Wettlaufer, Boyd
 1955 The Mortlach Site in the Besant Valley of Central Saskatchewan. Anthropological Series 1. Saskatchewan Museum of Natural History, Regina.
- Wettlaufer, Boyd, and William J. Mayer-Oakes
 1960 The Long Creek Site. Anthropological Series 2. Saskatchewan Museum of Natural History, Regina.
- Wheat, Joe Ben
 1972 The Olsen-Chubbuck Site: A Paleo-Indian Bison Kill. Society for American Archaeology Memoir 26.
- Wheeler, Richard P.
 1952 A Note on the "McKean Lanceolate Point." Plains Archaeological Conference Newsletter 4:45-50.
- 1954 Two New Projectile Point Types: Duncan and Hanna Points. Plains Anthropologist 1:7-14.
- n.d. Archeological Remains in the Angostura Reservoir Area, South Dakota, and in the Keyhole and Boysen Reservoir Areas, Wyoming. Ms. (1957) on file, Midwest Archeological Center, Lincoln.
- White, E.M.
 1960 Conditions for Cliff Dune Formation and the Climatic Implications. Plains Anthropologist 5:80-82.
- 1973 Wind Erosion as a Factor in Soil Formation in the Pierre-Shale Landscape of Western South Dakota. Soil Science Society of America Proceedings 37:919-923.
- 1982 Geomorphology of the Lower and Middle Part of the White River Basin, South Dakota. Proceedings of the South Dakota Academy of Science 61:45-55.
- White, E.M., and L.A. Hannus
 1985 Holocene Alluviation and Erosion in the White River Badlands, South Dakota. Proceedings of the South Dakota Academy of Science 64:82-93.
- White, E.M., and J.K. Lewis
 1967 Recent Gully Formation in the Prairie Areas of the Northern Great Plains. Plains Anthropologist 12:318-322.
- Winham, R. Peter, and John Butterbrodt
 1983 Report on a Survey of the Cheyenne River Sioux Tribe Irrigation Project, Lake Oahe, in Dewey County, South Dakota. Archeological Contract Series 7. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to Bureau of Indian Affairs.

Winham, R. Peter, and Edward J. Lueck

- 1983 Report of Test Excavations at Sites Within Indian Creek, West Whitlocks and Little Bend Recreation Areas, Lake Oahe, South Dakota, Within the Counties of Walworth, Potter and Sully. Archeological Contract Series 1. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-82-M-2268.
- 1984 Report of a Cultural Resources Reconnaissance of Selected Areas along the White River and along the West Bank of Lake Francis Case. Archeological Contract Series 11. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-83-C-0184.
- 1987 Cultural Resource Reconnaissance Along Portions of Lake Oahe in Stanley and Dewey Counties, South Dakota. Archeological Contract Series 25. Archeology Laboratory of the Center for Western Studies, Augustana College, Sioux Falls, SD. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-85-C-0325.

Wood, W. Raymond

- 1965 The Redbird Focus and the Problem of Ponca Prehistory. Plains Anthropologist 10:79-145.
- 1967 An Interpretation of Mandan Culture History. Smithsonian Institution Bureau of American Ethnology Bulletin 198.
- 1974 Northern Plains Village Cultures: Internal Stability and External Relationships. Journal of Anthropological Research 30:1-6.
- 1986 Cultural Chronology of the Upper Knife-Heart Region. In Ice Glider, 320L110, edited by W. Raymond Wood, pp. 7-24. Special Publications of the South Dakota Archaeological Society 10. Sioux Falls, SD.

Wood, W. R. (editor)

- 1976 Fay Tolton and the Initial Middle Missouri Variant. Missouri Archaeological Society Research Series 13. University of Missouri-Columbia and Missouri Archaeological Society.
- 1977 Trends in Middle Missouri Prehistory: A Festschrift Honoring the Contributions of Donald J. Lehmer. Plains Anthropologist Memoir 13.

Wood, W.R. (compiler)

- 1983 An Atlas of Early Maps of the Midwest. Scientific Papers, vol. 18. Illinois State Museum, Springfield, Illinois.

- Wood, W.R., and M. Liberty (editors)
 1980 Anthropology on the Great Plains. University of Nebraska Press, Lincoln.
- Woolworth, Alan R., and W. R. Wood
 1964 The Demery Site (39C01), Oahe Reservoir Area, South Dakota. River Basin Surveys Papers 34. Smithsonian Institution Bureau of American Ethnology Bulletin 189.
- Wright, Gary A.
 1978 The Shoshonean Migration Problem. Plains Anthropologist 23:113-136.
- 1982 Notes on Chronological Problems on the Northwestern Plains and Adjacent High Country. Plains Anthropologist 27:145-160.
- Ziebach County Historical Society
 1982 South Dakota's Ziebach County - History of the Prairie. Ziebach County Historical Society. The State Publishing Co., Pierre.
- Zimmerman, Larry J.
 1985 Peoples of Prehistoric South Dakota. University of Nebraska Press, Lincoln.
- Zimmerman, Larry J., Thomas Emerson, P. Wiley, Mark Swegle, John B. Gregg, Pauline Gregg, Everett White, Carlyle Smith, Thomas Haberman, and M. Pamela Bumsted
 1981 The Crow Creek Site (39BF11) Massacre: A Preliminary Report. The University of South Dakota Archeology Laboratory, Vermillion. Submitted to U.S. Army Corps of Engineers, Omaha District, Contract No. DACW45-78-C-0018.

MAPS CONSULTED

- Andreas, A. T.
 1884 Andreas's Historical Atlas of Dakota. A. T. Andreas, Chicago.
- Brown, Brig. Gen. W. C., and Gen. Charles King
 1876 Capt. W. F. Reynolds map of the Yellowstone and Missouri Rivers and their tributaries - 1859-1860 (revised 1876). Clason Map Co., Denver.
- General Land Office Survey Maps
 c1898 Township 8 North, Range 23 East.
- c1890 Township 9 North, Range 24 East.
 c1899
- c1890 Township 9 North, Range 25 East.
- c1890 Township 9 North, Range 26 East.

General Land Office Survey Maps (cont.)

c1890 Township 9 North, Range 27 East.
c1891

c1890 Township 9 North, Range 28 East.

c1898 Township 10 North, Range 26 East.

c1898 Township 10 North, Range 27 East.

c1898 Township 10 North, Range 28 East.

Missouri River Commission

1894 Missouri River. Chart Nos. 42. Missouri River
Commission.

Peterson, E. Frank

1904 Historical Atlas of South Dakota. E. Frank Peterson,
Chicago.

South Dakota

1936 Armstrong (Dewey) County General Highway Map.

1936 Haakon County General Highway Map.

1936 Stanley County General Highway Map.

1936 Ziebach County General Highway Map.

U.S. Army Corps of Engineers

1892 The Missouri River. Chart Nos. 144. U.S. Army Corps of
Engineers.

1948 Missouri River. Sheet Nos. 84, 85, 85A, 86, 86A, 86B,
86C, 87, 87A, 87B, 87C. U.S. Army Corps of Engineers,
Omaha District.

1958 Missouri River Oahe Reservoir Cemetery Relocations
(maps). Sheet 7. U.S. Army Corps of Engineers, Omaha
District.

1981 Boating and Recreation Map, Lake Oahe. Sheet Nos. 10-12.
U.S. Army Corps of Engineers, Omaha District.

1984 Boating and Recreation Map, Missouri River, Oahe Dam,
Lake Oahe, North Dakota-South Dakota. Sheet Nos. 10-12.
U.S. Army Corps of Engineers, Omaha District.

U.S. Geological Survey

1956 7.5' Series, Alleman Station Quadrangle.

1956 7.5' Series, Herbert Creek SE Quadrangle.

1956 7.5' Series, Rousseau Creek SW Quadrangle.

U.S. Geological Survey (cont.)

- 1956 7.5' Series, Carlin Flat Quadrangle.
- 1956 7.5' Series, Crockett Mountains Quadrangle.
- 1956 7.5' Series, Sansarc NE Quadrangle.
- 1969 7.5' Series, No Heart Creek SW Quadrangle.
- 1969 7.5' Series, Rousseau Creek Quadrangle.
- 1973 7.5' Series, Iron Post Buttes Quadrangle.
- 1981 7.5' Series, Herbert Creek SW Quadrangle.
- 1982 7.5' Series, Mission Ridge Quadrangle (provisional
edition).

Westin, F.C., and D.L. Bannister (compilers)

- 1971 Soil Associations of South Dakota. AES Info Series.
Agricultural Experiment Station. South Dakota State
University and U.S. Department of Agriculture. Soil
Conservation Service, Huron.

Wood, W.R. (compiler)

- 1983 An Atlas of Early Maps of the Midwest. Scientific
Papers, vol. 18. Illinois State Museum, Springfield,
Illinois. Consulted as follows:
Plate 3B. Sheet 3. John Thomas Evans map, 1796-1797.
Plate 4A. James Mackay (?) map, c. 1797.
Plate 6. Anonymous French map, c. 1797.
Plate 9. Perrin du Lac map, 1802.
Plate 10. James Pitot (Barthelemy Lafon) map, 1802.
Plate 13A. Robert Frazer map, 1807.
Plate 16. Gero-Schunu-Wy-Ha map, 1825.

alluvia	Referring to material such as loose gravel, sand, and mud deposited by streams.
alluvial fan	The outspread sloping deposit of boulders, gravel and sand left by a stream where it leaves a gorge to enter upon a plain or an open valley bottom.
amsl	Above mean sea level.
argillic	Pertaining to clay or clay minerals. Said of a soil horizon characterized by illuvial accumulation of clays.
aridisols	Soils with pedogenic horizons, low in organic matter, and never moist as long as three consecutive months.
bluff	(a) A high bank or bold headland, with a broad, precipitous, sometimes rounded cliff face overlooking a plain or body of water, especially on the outside of a stream meander; (b) any cliff with a steep, broad face.
b.s.	Below surface.
cambic	A "weathered B" horizon formed by alteration of primary minerals and accumulation of secondary ones.
component	A specific local manifestation of a <u>phase</u> .
deltaic deposits	Sedimentary deposits laid down in a river delta.
entisols	Soils that have no diagnostic pedogenic horizons. They may be found in any climate on very recent geomorphic surfaces, either on steep slopes that are undergoing active erosion or on fans and floodplains where the recently eroded materials are deposited. They may also be on older geomorphic surfaces if the soils have been recently disturbed to such depths that the horizons have been destroyed or if the parent materials are resistant to alteration, as is quartz.
eolian	Of, relating to, formed by or deposited from the wind. Such as sands and other loose materials along shores which are arranged by the wind.
epeirogeny	The changes in the earth's surface that produce continents, ocean basins, etc.
erosion	The wearing away of the land surface by running water, waves, or moving ice and wind, or by such processes as mass wasting and corrosion (solution and other chemical weathering).

field survey	Intensive pedestrian survey utilizing spacing intervals averaging 30 meters apart, varying with terrain and surface visibility.
flat	A general term for a level or nearly level surface or small area of land marked by little or no relief.
floodplain	The nearly level alluvial plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is usually a constructional landform built of sediment deposited during overflow and lateral migration of the stream.
fluvial	Of, or pertaining to, streams and rivers; produced by stream or river action.
geomorphology	The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationship to underlying structures, and of the history of geologic changes as recorded by these surface features.
gilgai	The microrelief of soils produced by expansion and contraction with changes in moisture. Found in soils that contain large amounts of clay, which swells and shrinks considerably with wetting and drying. Usually a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel to the direction of slope.
illuviation	Deposition in an underlying layer of soil (usually the B horizon) of minerals or organic matter which have been leached out of an overlying soil layer. The action occurs in humid climates.
isolated find	Four or less artifacts in isolation, or a very sparse, widespread scatter with a density of no more than one item every 2500 square meters. Also: 1) an item or feature of doubtful cultural origin; and 2) abandoned recent artifacts, such as farm equipment, in the absence of related activities.
lacustrine	Pertaining to, produced by, or formed in a lake.
mollisols	Soils with nearly black, organic-rich horizons and high supply of bases. These are soils that have decomposition and accumulation of relatively large amounts of organic matter in the presence of calcium. Approximately equivalent to soils of the grassland.

phase	This term has various connotations in the literature, but essentially refers to an artifact sequence, often spatially restricted and occupying a short time period, around which a social and cultural activity sequence of prehistoric peoples can be developed and studied. Phases have specific local manifestations which are called <u>components</u> , and can be grouped together into what is termed a horizon, representing a broad pattern of cultural activity (Smith 1976:81-82).
potential natural vegetation	The vegetation that would exist today if man was removed from the scene and if the resulting plant succession was telescoped into a single moment.
residuum	Residual soil material - unconsolidated, weathered, or partly weathered mineral material that accumulates by disintegration of bedrock in place.
shovel testing	Tests accomplished during the survey with a shovel to inspect the immediate subsurface conditions in areas of poor visibility. Generally the test approximates a unit 45cm x 45cm and 45cm deep.
SIRBS	Smithsonian Institution River Basin Surveys.
slump(ing)	The downward slipping of a mass of rock or unconsolidated material of any size, moving as a unit or as several subsidiary units, usually with backward rotation on a more or less horizontal axis parallel to the cliff or slope from which it descends.
terrace	A step-like surface, bordering a valley floor or shoreline, that represents the former position of an alluvial plain, or lake or sea shore. The term is usually applied to both the relatively flat summit surface, cut or built by stream or wave action, and steeper descending slope, graded to a lower base level of erosion.
typic udifluvent	A variety of the entisols, which are soils without pedogenic horizons.
ustertic cambiorthid	A variety of the aridisols, which are dry soils with pedogenic horizons. The orthids do not, however, exhibit horizons of clay accumulation.