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INTEGRATING ETHNOHISTORY AND ARCHAEOLOGY AT FORT CLARK STATE HISTORIC SITE, NORTH DAKOTA

W. Raymond Wood

A two-year mapping project at Fort Clark State Historic Site produced a 15-cm contour map of the Native American (Mandan and Arikara) earthlodge village and a planimetric map of that part of the historic district that lies above the Missouri River flood plain. Aerial photography and ground-level transit mapping detected more than 2,200 surface features at the site, including 86 earthlodges, 2 fur-trading posts, hundreds of storage and grave pits, and Euroamerican and Native American roads and trails. More than 80 percent of the site as mapped lies outside the fortification ditch of the Mandan/Arikara village. When we are trying to determine the potential impact on sites such as this one of such activities as nearby road construction, our recommendations must consider the broader context of the site, not simply the narrow spectrum provided by the settlement core area. A buffer zone as presently exists at Fort Clark is not only necessary to preserve its visual integrity but also to preserve the record of the activities that took place in its immediate vicinity.

Un proyecto topográfico de dos años en el sitio histórico estatal en Fort Clark dio como resultado un plano de contornos de 15 centímetros de las viviendas en las aldeas indígenas americanas Mandan y Arikara, y un mapa planimétrico de esa parte del distrito histórico que yace sobre los llanos del Río Misuri. Con la ayuda de fotografía aérea y topografía se detectaron más de 2.200 rasgos en la superficie de dicho sitio, los cuales incluyen 86 viviendas, 2 postas de intercambio de pieles, cientos de pozos de almacenaje y tumbas, y caminos y senderos nativos así como los de americanos de origen europeo. Se sabe que no menos del 80 por ciento del sitio, de acuerdo al plano, yace fuera de la trinchera de fortificación de la aldea Mandan/Arikara. Cuando tratamos de determinar el potencial impacto de actividades como la construcción de caminos cercanos en sitios como éste, nuestra recomendación debe tomar en cuenta el contexto más amplio del sitio y no sólo el estrecho espectro que el núcleo del área poblada provee. Una zona de amortiguamiento como la que existe actualmente en Fort Clark es necesaria para conservar no sólo su integridad visual sino también el registro de las actividades que ocurrieron en su vecindad inmediata.

Fort Clark State Historic Site (32ME2), in Mercer County, North Dakota, is a mid-nineteenth-century Mandan and Arikara earthlodge village associated with the American Fur Company's Fort Clark trading post and with that of its competitor, Primeau's Post. The earlier, or Mandan Indian community, known to them as Mit-tutta-hang-kush, was occupied by the Mitutanka Mandan from its establishment in about 1822 until 1837, the year of a disastrous smallpox epidemic. The community was occupied annually only between about March and October; winter months were spent in a village in a wooded bend of the Missouri River bottomlands a few miles downstream. A resident trader, Francis A. Chardon, provided a vivid account of the 1837 epidemic that he said destroyed "seven eighths" of the Mandan tribe. Smallpox broke out with the first recorded death in the village on July 14, and by August the epidemic was at its height. In mid-August, the remaining Mandan left the dead and dying in the village and moved to their winter village two months ahead of their usual schedule. Before the Mandan survivors could return to Mit-tutta-hang-kush, the Arikara Indians moved into and took over the village in March 1838. A few Mandan nevertheless moved in with the Arikara and remained until June, when disagreements with them led to most of the Mandan leaving the village. The Arikara continued to occupy the village until 1861 (Abel 1932: 126–165; Dill 1990). Curiously enough, there is no hint of any earlier occupation in the paleosols in the 1 m of wind-blown silt underlying the historic ones on the surface. In any case, the potential exists for quite old in situ Holocene cultural materials at the site (J. Reiten, letter to W. R. Wood, 14 November 1986).

The pristine earthlodge village; its association with the infamous 1837 smallpox epidemic; the role of the site generally as a focal point in the northern fur trade; and the presence of the remains

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of the last two undisturbed fur-trade posts along the Missouri River in the Dakotas merited its nomination to, and listing on, the National Register of Historic Places as an archaeological district in 1986. Fort Clark and its competitor posts were the last of a series of Canadian and American trading establishments built on the Missouri River near the mouth of the Knife River for the Mandan and Hidatsa trade (Wood and Thiessen 1985). The two forts and the village, and a considerable part of their environs, are preserved in the state historic site. Only two significant intrusions on its visual integrity exist. The Burlington Northern Railroad cuts a 30-m-wide swath across it to a depth of a meter or more, and a 2.44-m (8-foot) wire fence encloses the site area north of the railroad and east of the access road (Figure 1).

Despite the vast documentation that exists for the later history of Fort Clark and the associated Indian community, details are elusive concerning the founding of both entities. In 1822 or 1823 James Kipp, an employee of the Columbia Fur Company, built a post known as Tilton's Post somewhere near the newly established Mandan village (Thiessen 1993:58–59). Or, perhaps, Mit-tutta-hang-kush was established to take advantage of the new post, for the explorer Prince Maximilian said, in 1833, that the Mandan “were brought hither by Mr. Kipp” (Thwaites 1906:23:229). The date of the abandonment and, indeed, the location of Tilton's Post is unknown. Fort Clark appears to have been in existence and called by that name at least as early as 1829 (Thiessen 1993:62–63), although in most accounts it is said to have been established by James Kipp and by David D. Mitchell, of the American Fur Company, in 1830 or 1831. The fort remained the principal trading post for the sedentary Mandan and Hidatsa, as well as for local nomadic tribes such as the Crow, and the Yankton and Yanktonai, until it burned in 1860. After the Columbia Fur Company merged with the American Fur Company in 1826, Kipp continued in the employ of the Upper Missouri Outfit (UMO), operated by Pierre Chouteau, Jr., and Company, although the firm was still usually called the American Fur Company. In the late 1850s, a disaffected UMO employee, Charles Primeau, built Primeau's Post (or Fort Primeau) between Fort Clark and the Mandan village (Thiessen 1993: 67–68). Primeau's Post operated until about 1860, when it was purchased by the UMO. When Fort Clark burned the same year, its traders moved into Primeau's Post and continued to operate until 1861, the year the Arikara abandoned the old Mandan village and established Star Village (32ME16), further up the Missouri River (Metcalf 1963:66). The ruins of the fort provided occasional fuel for steamboats until at least 1865, for in the spring of that year the *Effie Deans* and *St. Johns* “both wooded from the ruins of the ‘Fort’ ” (Moss 1963:179).

The vast records of the American Fur Company in the Missouri Historical Society in St. Louis can be combined with the many other documents produced by a parade of visitors to the site; collectively, they include both ordinary and extraordinary accounts and visual images of the locality and its inhabitants (Chomko 1986:Table 9). Steamboat captains, fur traders such as Charles Larpenteur, and missionaries such as Fathers Nicholas Point and Pierre Jean DeSmet left many perfunctory notes of their visits. On the other hand, explorers and artists, including George Catlin, Prince Maximilian of Wied and Karl Bodmer, John James Audubon, and Charles Wimar left a visual and documentary legacy that cannot be duplicated elsewhere on the Plains. Finally, there is an account of its ruins by early ethnologist Lewis Henry Morgan (1871). The drawings and paintings of its Native American inhabitants, their village, and its setting are unparalleled in the American midcontinent. Except for Rudolph Friedrich Kurz (Klāy and Läng 1984; Kurz 1937) and William Jacob Hays, however, the ethnographic focus of most of the visiting artists left us ignorant of the fort's architecture and the appearance of the fur traders.

Because of the richness of its written and graphic documentation, the site permits us to ask many questions not possible for other Plains village sites. We therefore have a number of research problems we plan to address over a period of years. These questions include basic queries relating to: first, the history of the two Indian occupations of the village; second, the social history of the men living at Fort Clark and Primeau's Post; and third, the roles the two posts played in their competition for the Indian trade at the village and with nearby nomadic groups. The interaction of the participants on both sides of the fur trade has yet to be investigated for this time and place, although historians of the fur trade generally are now beginning to look at this aspect of Indian–Euroamerican relations. In addition, a study is planned that focuses on the economic history of the Upper Missouri Outfit



Figure 1. Aerial photograph of Fort Clark State Historic Site; the view is west (Courtesy the State Historical Society of North Dakota).

of the American Fur Company. This report on our fieldwork to date, however, highlights several features visible there that are not so well preserved in most other Plains sites and underscores the significance of the many features and activities that can be documented at the site.

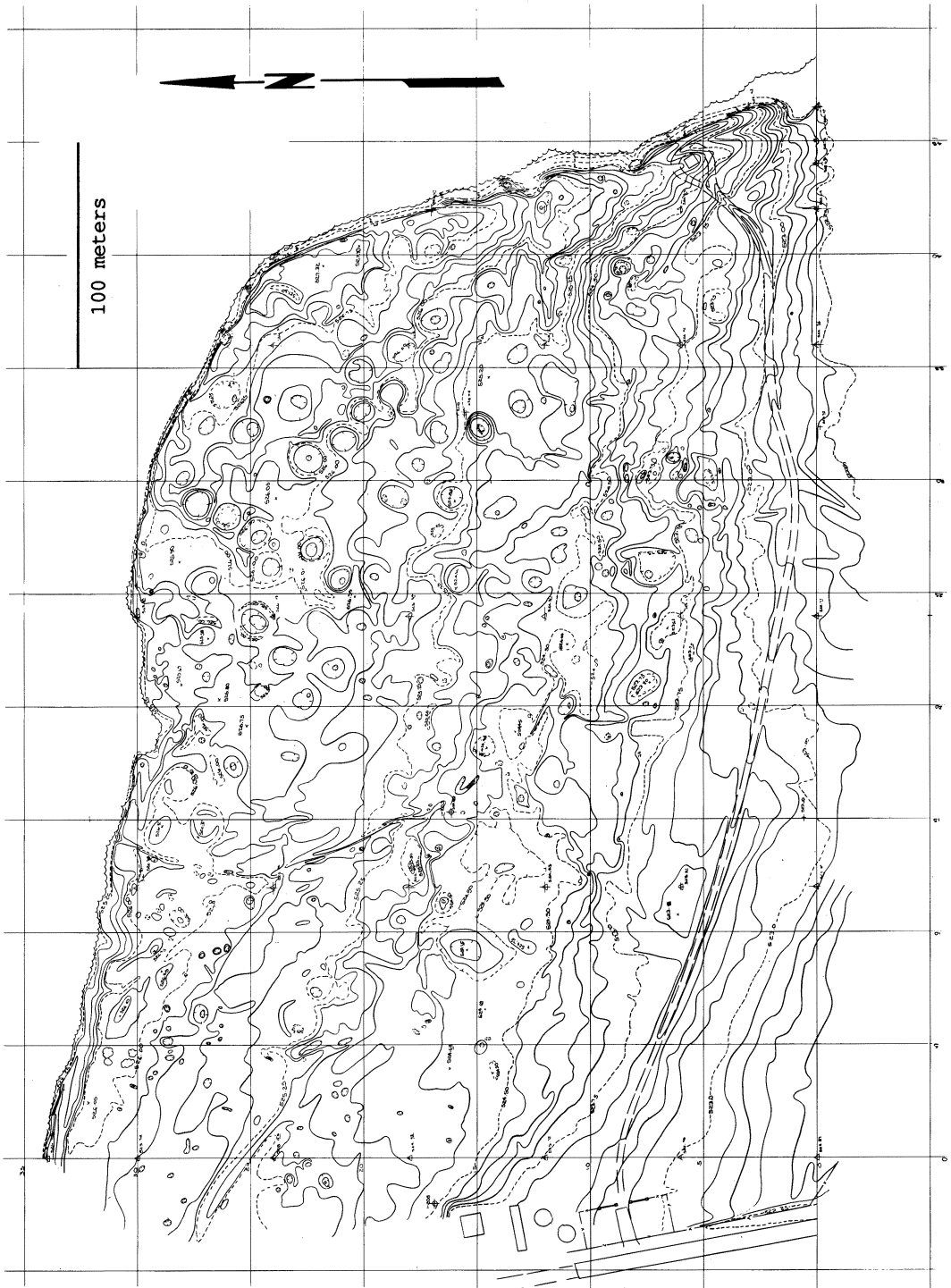
SITE MAPPING AND EXCAVATIONS

Fort Clark State Historic Site is under the management of the State Historical Society of North Dakota, and our fieldwork is being coordinated with their long-range plans for the site. Early work at the site in 1904 by Emil R. Steinbrueck, and investigations in 1929 by Alfred W. Bowers from the Logan Museum, were not augmented until 1968. That summer, small-scale tests in the village were made by a joint party from the University of Missouri–Columbia and Dana College led by the author and Donald J. Lehmer. Additional limited tests in 1973–1974 by C. L. Dill, from the State Historical Society of North Dakota, were made in the village area and on the sites of Fort Clark and Primeau's Post (Dill 1990:29–32). The most recent phase of fieldwork began in the summer of 1985, when a field party from the University of Missouri–Columbia set permanent benchmarks at the site and laid ground controls for aerial photogrammetry. The result of that work is a detailed, 15-cm contour map of the north half of the site encompassing the village ruins (Figure 2). We were joined that year by a field party from the Midwest Archeological Center of the National Park Service, under the direction of Robert Nickel, who carried out proton-magnetometer surveys in the plaza area, Fort Clark, Garreau's lodge, and in the Native American cemetery area west of the fort.

The following summer, the University of Missouri–Columbia, with the assistance of the archaeological field school of the University of North Dakota, spent a second field season at Fort Clark with the primary goal of preparing a planimetric map of the uncultivated parts of the site (Figure 3). This large map (designed to be illustrated in four parts) was prepared from black-and-white, color, and color-infrared photographs of the site, combined with intensive ground-truth checks and transit mapping of the more ephemeral features. The resulting map illustrates that part of the site that lies on the terrace surface above the Missouri River flood plain. A map of this nature was mandatory before undertaking further study for, although there are several older maps of the site, not one of them is accurate or complete. The mapping program exposed many previously undetected features, since even very modest subsurface features remain visible at ground level. Surface visibility was enhanced by having the site mowed using a tractor with a rear-mounted side sickle, and some parts were further cleared using a small gasoline-powered lawnmower. Nowhere else on the Plains has an earthlodge village been mapped in such minute detail. The extraordinary breadth of data preserved there, augmented by the historical record and by nondestructive site mapping, provides a unique opportunity to integrate historical and archaeological data for such villages.

The 1986 field program also included test excavations in three areas: An investigation was made of the microstratigraphy in a cross trench in one of the earthlodges, House 28; a trench was cut across the fortification ditch on the west side of the village to reveal details of the defensive system; and a test pit was opened near the south wall of Primeau's Post to obtain samples of trade goods. The latter test was abandoned when it exposed an Arikara interment.

The fortification ditch revealed in our cross trench was only 60 cm deep. George Catlin (1965:1:81) said that the palisade that paralleled it in 1832 was outside the ditch. Expectedly, the only posthole found in our trench also was outside the ditch, consistent with Catlin's observation. At Rock Village (32ME15), a late-eighteenth-century Hidatsa community upriver from the mouth of Knife River, the palisade is outside the later of the two ditches around the site; it is not clear on which side the palisade was built on the inner, earlier ditch (Hartle 1960:97). At prehistoric and protohistoric Arikara earthlodge villages, however, the palisade is inside the ditch (e.g., Lehmer 1954:Map 4; Lehmer and Jones 1968:20–23, Figure 9). This reversal of prehistoric practices also is paralleled at Like-a-Fishhook Village (32ML2), built in 1845 by the Hidatsa and by Mandan survivors and descendants of the occupants of Mit-tutta-hang-kush. Gilbert Wilson said that Like-a-Fishhook was fortified by a palisade banked with earth thrown up from the ditch "about three feet deep on the inside" (Wilson 1934:353). We conclude that fortification ditches dug inside the



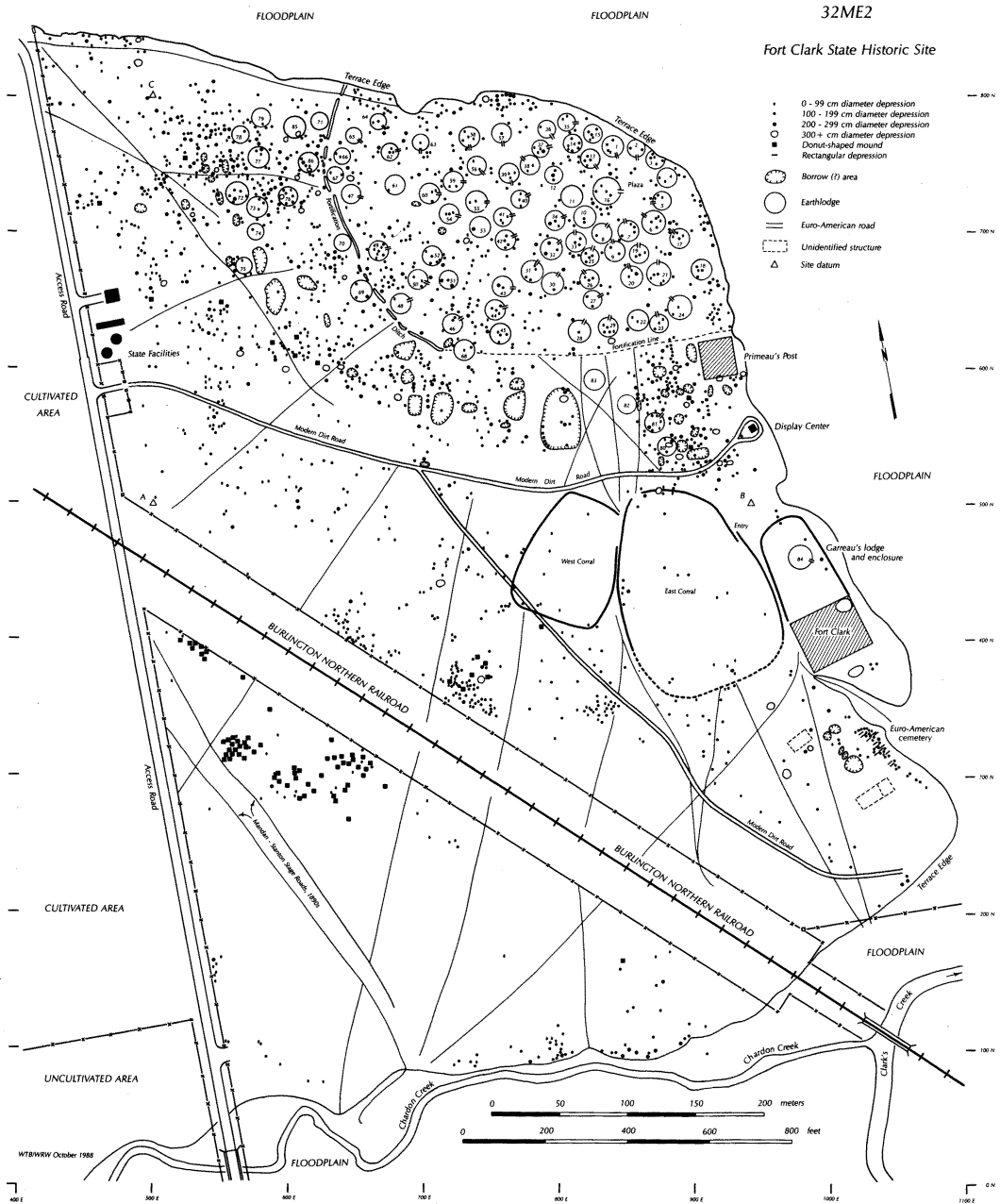


Figure 3. Planimetric map of Fort Clark State Historic Site. The part of the site on the river flood plain was not mapped.

Figure 2. The 15-cm contour map of the earthlodge village in the north part of Fort Clark State Historic Site. Photogrammetry in 1986 by KBM, Inc., Grand Forks, North Dakota. Ground controls for air photographs by Michael J. O'Brien, University of Missouri-Columbia.

palisade wall appear to be an historic construction feature that appeared at least as early as the late-eighteenth-century occupation of Rock Village. Prince Maximilian, in 1833–1834, plotted four bastions in the fortification line at Fort Clark—none of which is visible today on the ground or on air photographs (Thwaites 1906:23:map opposite p. 363). Maximilian was told that these “cones or block-houses were not erected by the Indians themselves, but by the Whites” (Thwaites 1906:22:344, 23:255), despite the fact that well-designed bastions along their fortifications were in use by the Mandan in earlier times.

SURFACE FEATURES

The uncultivated part of the site, as finally mapped, consists of 37 ha (92 acres), an area equivalent to about 50 city blocks. We do not yet know how far the site might extend west of the access road because features in this area have been obliterated by cultivation, and no form of survey has yet been carried out there. The area within the fortification, occupied by the Mandan between about 1822 and 1837, comprises only 4.9 ha (12 acres), or about 13 percent of the site. That area, plus the area occupied by the later Arikara dwellings, both inside the fortification and outside, consists of 7.2 ha (18 acres), or about 19 percent of the site. More than 2,200 surface features were plotted on the terrace, including the fortification ditch, earthlodges, and collapsed cache pits in the village. In addition, the graves of both fur traders at Fort Clark and Native Americans living in the village, borrow areas, and roads and trails were mapped.

Nearly 1,800 of the surface features mapped are surface depressions of varying size and configuration. These depressions are concentrated in the vicinity of the lodges. However, they are found throughout the site, and vary from 20 cm in diameter to more than 3 m, and are up to 1 m deep. Most of them are collapsed cache pits, grave pits, and looted cache and grave pits, although other identifications are possible.

Houses appear clearly on air photographs although they sometimes are difficult to see at ground level. Each of the 86 houses, however, was verified by the presence of a hearth in its center. Some of the smaller depressions within the houses mark the locations of cache pits and, in some cases, the large center support posts. Depressions in the house center invariably produced burned earth and ash when they were cored with a soil probe, and clearly are central hearths. Even more subtle surface relief was detected, including an earthen altar on the back wall of the Arikara ceremonial lodge, House 16 (facing the plaza in the northeast part of the village). The surface configuration of the altar conforms exactly to the size and shape of those revealed by excavations in protohistoric Arikara communities in central South Dakota (Lehmer 1954:16–17, 94–95, Figures 11 and 46; Lehmer and Jones 1968:Plate 22). The Arikara built this lodge near the center of the formerly open Mandan village plaza. Its entry passage lies over the center of the plaza where Catlin illustrated the barrel-shaped “ark of the first man” (Catlin 1965:1:Plate 47).

Entrance passages are clearly visible for most of the earthlodges, appearing as gaps in the raised earthen rims that delineate the house depressions. When they are visible, the entries for the lodges around the plaza face the plaza center. Most of the other houses in the village also tend to face the plaza, although there is variation depending on the placement of the lodge. Except for Garreau’s lodge, the lodges outside the fortified portion of the village are too faint to determine the entry position. The latter houses are believed to be of Arikara origin, since they do not show on Bodmer’s or Catlin’s views illustrating the Mandan occupation (e.g., Goetzmann et al. 1984:Plate 301; McCracken 1959:88).

Catlin’s idealized 1832 view of the Mandan village, as shown in his birds-eye view from a point overlooking the plaza, also shows most entries facing the plaza (Catlin 1965:1:Plate 47). Bodmer’s paintings are less helpful, but they do not contradict Catlin’s impressions. The entry orientations on our map hint that the Arikara reoccupation and rebuilding of the village in the late 1830s followed this architectural feature of their predecessors.

The names of the Mandan leaders who lived in the earthlodges facing the plaza were obtained in 1906 or 1907 by Orin G. Libby from “Bad Gun, Rushing War Eagle, son of Ma-ta-to-pe or Four Bears” (Libby 1908:499). Four Bears, one of the most prominent men in the village in the 1830s,

was painted by both Catlin and Bodmer and, according to his son, lived in House 2, the first house east of the “holy tepee,” or Mandan ceremonial lodge. Whether Bad Gun’s memory was correct or not in ascribing individuals to specific dwellings, his list of the residents of the 15 houses around the open plaza provides valuable data for understanding the social hierarchy and leadership in the community. Only at Like-a-Fishhook Village is there a comparable list of occupants for a Plains earthlodge village (Smith 1972:26).

Another interesting aspect of the lodge identified by Bad Gun as the ceremonial lodge is the fact that the elevated rim around the circular depression shows no trace of flattening on the side facing the plaza, as it is said that the front of the Mandan ceremonial lodge was flat fronted (Bowers 1950: 111, Figures 13 and 14; see also Libby 1908:Plate 1). Neither the detailed small-scale vertical air photos nor any of the many fine oblique views available show any suggestion of flattening. Arikara lodges of any description lacked any such flattening of the front. This may suggest that the lodge was rebuilt after the fire of January 9, 1839, when the village, then in Arikara hands, was destroyed. Eyewitness Francis Chardon “beheld the . . . Village all in flames, the Lodges . . . all on fire at the same time” (Abel 1932:181).

Between the earthlodge village and Fort Clark are three irregular enclosures consisting of low, sod-mantled earthen embankments. One of them, adjoining the north wall of Fort Clark, marks an enclosure that traditionally is attributed to Pierre Garreau, a French–Arikara interpreter at the fort. A sketch of Fort Clark and of Garreau’s enclosure made by William Jacob Hays on July 14, 1860 (Dill 1990:22) shows that a wall of closely set vertical posts, perhaps eight feet high, surrounded the living area of .31 ha (.76 acre) containing Garreau’s earthlodge and drying racks. It is likely that the embankment resulted either from earth that was packed against the sides of the palisade base to reinforce it or from windblown sediment that accumulated at its base.

The origin of the two enclosures west of Fort Clark is less certain, although both of them have been known for most of the twentieth century. Two facts seem to confirm their Arikara origin. First, neither appears in representations of the area prepared either by George Catlin or by Karl Bodmer between 1832 and 1834 (the Arikara did not arrive until 1838). For this reason they appear to postdate the Mandan occupation. Second, their size, general outline, composition, and position near the village margin closely conform to the so-called “Bullberry Fence” corral at Like-a-Fishhook Village. This .53 ha (1.3-acre) feature was identified by two former residents of the village (Byron Wilde, an Arikara, and Ralph Wells) as the remains of a horse corral built by an Arikara, Strikes-Enemy (Smith 1972:56, Figure 3) sometime between 1862 and 1886. Over time, the bullberry bushes acted as a sediment trap, leading to the development of a low earth embankment at its base. An identification of the analogous features as Arikara corrals at Fort Clark therefore is plausible.

The function of the enclosures at Fort Clark, however, has for years been in doubt: they have been called both “gardens” and “corrals.” The east enclosure contains 1.3 ha (3.2 acres); the west enclosure, .57 ha (1.4 acre). An identification as enclosed gardens is the least likely of the alternatives. Because of the toughness of native prairie sod on terraces such as the one on which Fort Clark was built, aboriginal gardens almost invariably were on the river flood plain and not on terrace surfaces (Wilson 1917). In 1850, however, when Thaddeus Culbertson visited the Arikara village at Fort Clark, “there were little patches of corn and pumpkins, generally enclosed by a slight bush fence” on the prairie near the fort (Culbertson 1952:98). The residents of the fort had gardens, too, but in unspecified locations. An 1847 sketch by Father Nicholas Point, S.J., labeled “Fort Clarke et village d’Arikaras,” shows some kind of large enclosure south of the fort (Point 1967:250). The feature is not described and is not readily identifiable; it may represent either Arikara or traders’ gardens or corrals. The sketch is misidentified in the caption as a site at the junction of the Grand and Missouri rivers in South Dakota. Point’s editor confused the Arikara settlement at Fort Clark site with the Leavenworth site (39CO9), a village abandoned by the Arikara in 1823, nine years before Father Point sketched their village and 15 years before they moved to Fort Clark (Chomko 1986:87).

A key to the identification of the enclosures was sought in soil chemistry. The use of these areas as gardens would not have significantly changed the chemistry of their underlying soils, since native gardeners did not use fertilizer. Their use as a corral, however, would have enriched two important substances in the soil. Available phosphorus and total organic carbon would build up in the soil

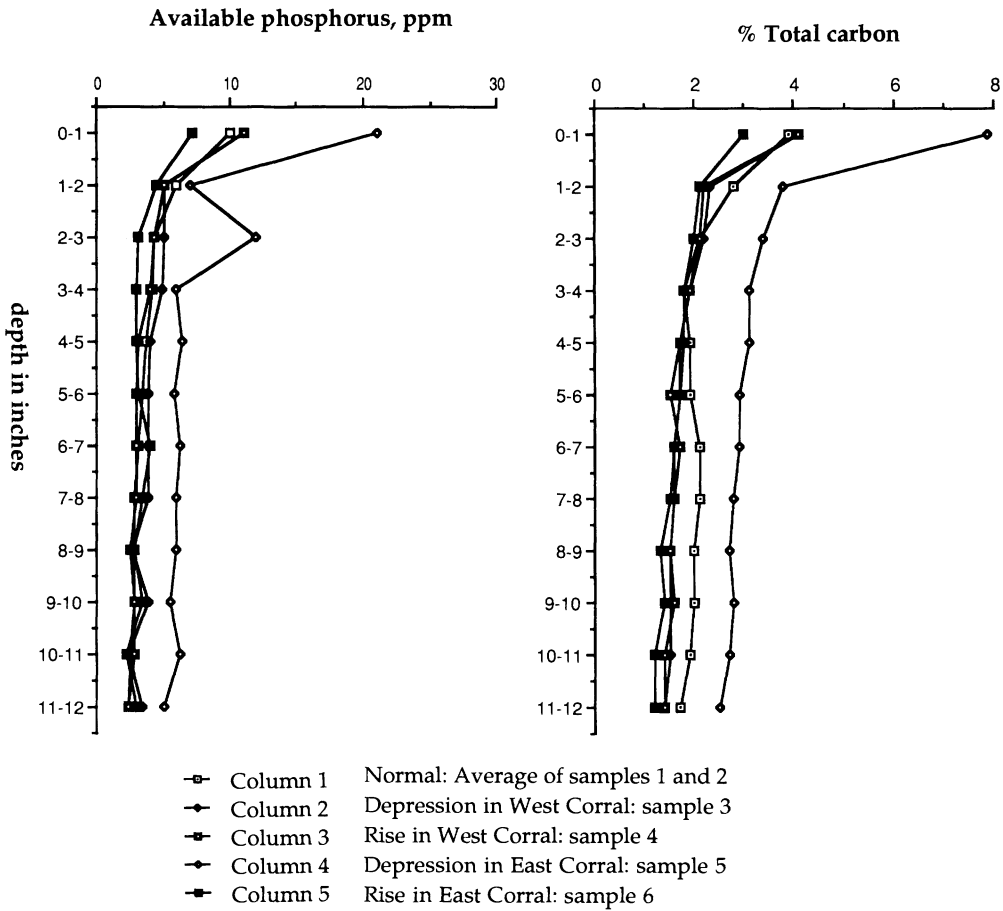


Figure 4. Results of the 1988 soil tests for total organic carbon (percent) and available phosphorus (parts per million) by one-inch increments.

profile through the accumulation of animal waste in the corral, especially in poorly drained areas where water carrying that waste would accumulate.

Six soil samples were taken in the summer of 1988 to test the corral hypothesis. Since rainwater would transport phosphorus and total organic carbon contained in the animals' urine and manure downslope, the expectation was that these elements would be more abundant in the low, poorly drained areas than in samples from other parts of the corral and site. Accordingly, two control samples were taken from areas outside the enclosures and away from the village where one might expect a "normal" soil profile, and one sample each was taken from two locales within both enclosures: one from a high, well-drained point and another from a low, poorly drained area. Soil samples were collected in one-inch increments to a depth of one foot.

The results are most striking for the large enclosure on the east, where both phosphorus and total organic carbon are present in quantities far greater than is usual in a typical soil profile for Mandan Silt Loam, the mollisol that caps the site (Soil Conservation Service 1978). Total organic carbon was nearly twice as abundant in the poorly drained area there as in any of the other locales, and phosphorus was up to one and a half times greater (Figure 4). Neither element was present in such striking abundance in the west enclosure, and phosphorus was only slightly more abundant in the poorly drained area there than in all other samples. The results clearly support the supposition that the large east enclosure is a corral; the data from the west enclosure are consistent with that identification but are not convincing.

A new feature discovered in 1986 was a baffle entrance to the east enclosure on its northeast side provided by the overlapping ends of the embankment. Other possible entries to both enclosures appear simply as gaps in the embankment line. In three instances, features that are interpreted as trails extend from the village to these gaps, reinforcing their identification as entries.

That part of the site on the terrace and now in the State Historic Site was never cultivated and, as far as is known, was never extensively grazed. It has, however, been severely vandalized. The cemetery areas, favorite locations for looting in the past, are principally southwest of the fortified village area. Many of the shallow depressions there represent grave pits. Many other depressions probably resulted from the activities of looters. What percentage of them are recent intrusions of this sort cannot be determined without excavation. It is reasonable to believe, however, that vandals would have dug either into visible features or near them. If so, these recent disturbances should intensify, not destroy, existing surface patterns of features at the site.

Some features that are believed to be Arikara graves are readily distinguishable from other features. When the artist Carl Wimar visited the village at Fort Clark on June 25, 1859—then occupied by the Arikara—he made a sketch of two Arikara graves (Figure 5, top; see also Bushnell 1927:83, Plate 37). He shows them as conical, although Lewis Henry Morgan described them in 1862 as “about three feet high, seven feet long and five feet wide at the level of the ground” (Morgan 1871:44).

When the cone-shaped mounds Wimar sketched eroded and settled over the collapsed grave pit, they left donut-shaped earthen rings 3–5.3 m in diameter and averaging about 3.3 m (Figure 5, bottom). When Morgan visited Fort Clark on June 3–4, 1862, he made a number of observations on the village, including comments on the Arikara graves. He published his observations in 1871 in a brief paper entitled “The Stone and Bone Implements of the Arickarees,” the year after his monumental *Systems of Consanguinity and Affinity* (1870) appeared in print. After Morgan described the Arikara graves he went on to say that “Just back of the village upon the open prairie, was a long row of these mounds quite near together. There were several hundred of them forming a segment of a great circle apparently a mile in length” (Morgan 1871:44).

A great irregular arc of these features, confirming Morgan’s observation, was in fact mapped on the west side of the site, bisected today by the Burlington Northern Railroad. The arc is much shorter than the “one mile” Morgan believed it to be. A more realistic estimate of its length would be about 500 m, or half a kilometer. There are other donut-shaped graves scattered across the site north and east of the “great circle,” and others apparently were destroyed by plowing west of the access road. Other graves undoubtedly are represented by the many simple, unrimmed depressions west of the fort and of the village. These could either be Arikara or Mandan graves, since the Mandan mode of burial at this time was divided between pit graves and “aerial sepulcher” on scaffolds. Prince Maximilian was told on his visit that “The Lord of Life has, indeed, told us that we come from the ground and should return to it again; yet we have lately begun to lay the bodies of the dead on stages, because we love them, and would weep at the sight of them” (Thwaites 1906:23:361).

Euroamerican fur traders also are buried at the site. The cemetery for Fort Clark is on the south side of a small gully on the terrace edge 70 m southeast of the fort. At least 13—and probably more—shallow, linear depressions there were identified as the graves of men who died at Fort Clark by the late Paul Ewald of Bismarck, who had done a great deal of digging at the site. No roster of the men buried there is available, but the corpse of the fort blacksmith, Bullé (Alexis Dusseau) was “entered” on February 28, 1837 (Abel 1932:100). The setting of this cemetery is analogous to the one further upriver at Fort Union: Washington Matthews said that “about one hundred paces east of the ruins of Union and separated from there by a little ravine may now be seen the remains of the cemetery—empty graves and overturned paling and head-boards” (Medical History of Post, Fort Buford, Dakota from July 1868 to April 1873, 1873, Washington Matthews Papers 9:7, Wheel-right Museum of the American Indian, Santa Fe, cited in Thompson 1968:231).

Some of the more conspicuous features visible on aerial photographs are American and Native American roads and trails. Native trails have been shown on maps of the site since 1883, when Theodore H. Lewis made a crude sketch map of the village at Fort Clark showing four main sets

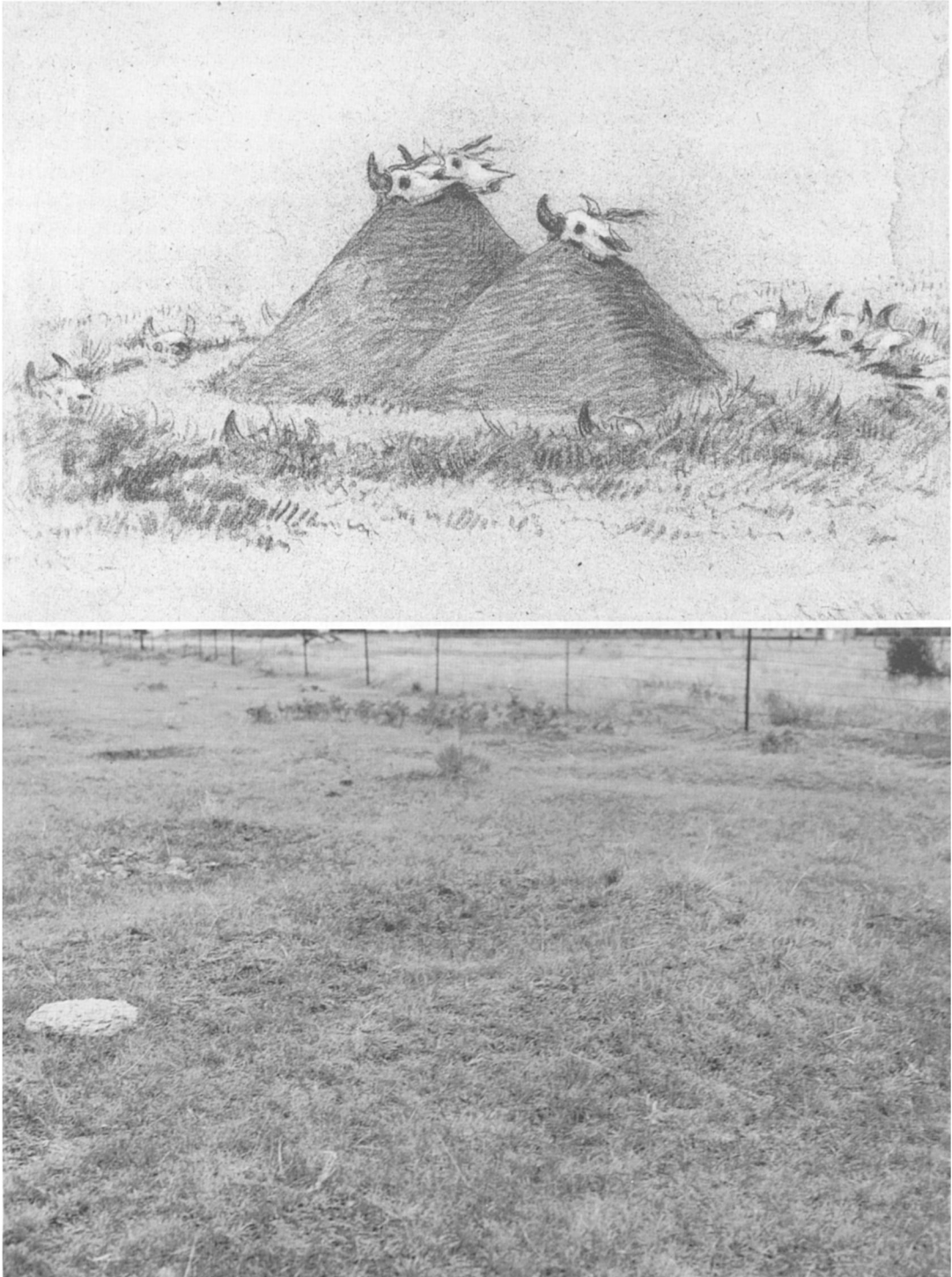


Figure 5. Arikara graves at Fort Clark: *top*, as sketched by Carl Wimar, June 25, 1859 (Peabody Museum, Harvard University; photographed by David I. Bushnell, Jr.); *bottom*, collapsed grave pits south of the railroad right-of-way. The view is north.

of them radiating out at right angles from the village. One set of them he called the "Grand Trail to Knife River" (Map of Fort Clark Village, 1883, Theodore H. Lewis Papers, Archaeological Records, Division of Archives and Manuscripts, Minnesota Historical Society, St. Paul). Few of the trails shown on his or on other old maps, however, can be identified with those plotted on the present map. We know that well-established roads connected the Mandan and Hidatsa villages in this area; some of them were mapped as early as 1909 by A. B. Stout of the State Historical Society of North Dakota (Wood 1986:Figure 22). Such roads were important routes of communication. Alexander Henry the Younger said, in 1806, as he "proceeded on a most delightful hard dry road" to the Hidatsa village at the mouth of the Knife River, that he saw at "every moment natives on foot and on horse back, going and coming from one Village to the other" (Gough 1988:234).

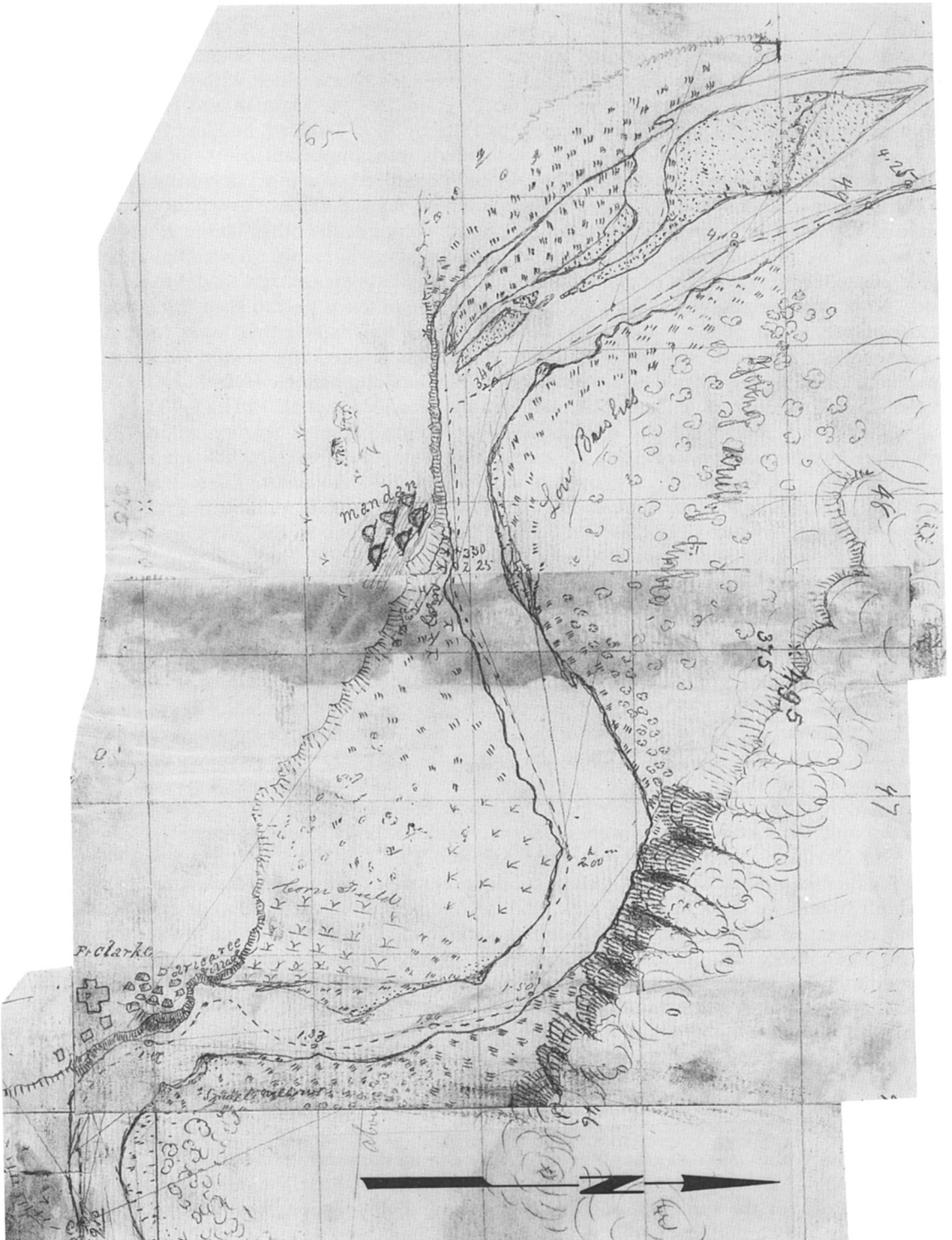
The trails we plotted were chosen based on their consistent presence on aerial photographs from the 1930s to the present. Most of them radiate out of the village area at right angles to the fortification ditch, sometimes originating at gaps in that ditch. Some of them lead to such features as openings in the corrals south of the village. Another convincing trail is one that leads to the southwest, beginning near the west entry to Fort Clark. Analogous features are visible 19.3 km (12 miles) upstream, radiating out from Big Hidatsa village (32ME12), an historic Hidatsa Indian community in the Knife River Indian Villages National Historic Site (Ahler et al. 1991:85–87).

Two features at Fort Clark are unquestionably of late-nineteenth-century origin. These are the two sets of two parallel tracks cutting across the southwest part of the large site map (Figure 3). The tracks consist of two parallel ruts in the sod averaging 130 cm apart. These tracks are reliably identified as stage roads from Stanton to Mandan dating to the late nineteenth century. This route is shown on the 1892 to 1895 Missouri River Commission map of the Missouri River, based on data from 1889 to 1891 (Missouri River Commission 1892–1895:Sheet 51) and on charts of the Missouri River Survey.

The 130-cm spacing of the ruts in the stage road is the same as that in the two outermost ruts of a three-rut trail that begins in the northwest corner of the site and extends to the southeast—that has been called a "travois trail." The derivation of the third rut, evenly centered between the two outer ones, is uncertain. This feature probably is a road made before the state of North Dakota obtained the land in the 1930s and is believed to be part of a road that led to a winter skating area on Clark's Creek that was popular with local residents. Another three-rut track extends from the south side of the site near House 28 to the gap in the embankments between the east and west enclosures (Figure 3).

Many nomadic groups came to Fort Clark to trade, and when they did they camped near the fort. Yankton and Yanktonai Dakota were frequent visitors at Fort Clark, as were the Crow and the Saone, or Northern Dakota (Blackfoot, Sans Arc, and Two Kettles). Two locales would have been ideal for their camps: first, the flat terrace south and east of the arc of Arikara graves and north of the small stream we call Chardon Creek; and, second, the level terrace that extends for hundreds of meters west of the site. The only contemporary documentation of which we are aware that is specific about where the nomad camps were set up, however, is in the journal of Prince Maximilian. "Immediately behind the fort there were, in the prairies, seventy leather tents of the Crows" (Thwaites 1906:22:349). Field sketches by Karl Bodmer of Forts Pierre and Union in 1833 and 1834 show the tipis of visiting Indians set in groups within a few hundred meters of the fort (Goetzmann et al. 1984:Plates 184 and 193). Many of the features south of Fort Clark, especially those along the north bank of Chardon Creek, may relate to such nomad visitors and their camps.

Some features visible on air photographs remain to be identified. Two rectangular features south of Fort Clark to date have resisted identification. Although they appear clearly enough on aerial photos, they are not visible at ground level, at least during the summer months. Are they residences for independent fur traders, the location of the elusive Tilton's Post, the predecessor of Fort Clark, or outbuildings for the fort? Although no maps show their location, we know such outbuildings existed. In an 1857 letter, Samuel E. McElderry says he had taken down "Mr. Chardons fine House" at Fort Clark and "instead thereof have put up a good substantial one story log building 52 + 20 in the clear" (Samuel E. McElderry to Pierre Chouteau, Jr., & Co., February 25, 1857, Chouteau Family Papers, Missouri Historical Society Archives, St. Louis). They also could correspond with



some of the rectangular features adjoining Fort Clark shown on G. K. Warren's 1856 manuscript map of the Missouri River (Figure 6). No doubt other surface features will appear as our work continues, for each season has yielded new and unexpected ones as we become increasingly familiar with the site. Additional proton magnetometry and other nondestructive techniques are planned for both known and enigmatic elements of the Fort Clark landscape before excavation plans are completed.

CONCLUSIONS

Any ethnographer will be aware, from a theoretical, historical, and intuitive perspective, that much of the activity at Plains earthlodge villages—as in any community worldwide—took place outside the village itself. About two-thirds of the visible surface features on the terrace level at Fort Clark, in fact, are outside the area occupied by houses. Even this figure ignores the area in which the inhabitants cultivated maize and other crops in the river bottomland, and that realistically doubles the site area. This is graphically illustrated by the 1856 field map of Lt. Gouverneur K. Warren (Wood 1983:Plate 22) showing the “Corn Field” in the flood plain north of the “aricaree village” at Fort Clark (Figure 6). We all know such outliers exist, yet our work at, and our recommendations for, Plains earthlodge sites or fur-trading posts usually are based on the settlement core area where the houses are found—not on what we see here as the more nearly complete site. Virtually all examples of Plains village archaeological studies—including my own—are based on the settlement core area and focus on the architecture and related remains within nucleated village areas. Even the areas between individual dwellings generally are neglected (e.g., Smith 1972; Wood 1967). Consequently, our documented knowledge of the activities that took place outside the village at most excavated sites either is nonexistent or is speculative. Roads, cemeteries, gardens, corrals, shrines, gaming areas, and a host of other activities and features peripheral to village core areas have important implications for every patterned, nucleated archaeological site, and deserve equally dedicated research, conservation, and informed management.

Determinations of potential impact to village sites such as Fort Clark must consider the scale of context of the site—a much broader context than we usually consider. The concept of a site itself is an arbitrary one at best, and is essentially a record-keeping device that may have little or uncertain relation with activities at a given location (e.g., Dunnell 1992). Fort Clark admittedly is a remarkably well-preserved community, and records of activities on its periphery are exceptional in their clarity. Nearby Hidatsa earthlodge villages in the Knife River Indian Villages National Historic Site also retain similar evidence of activities in the peripheral zones beyond the edges of the village proper; examples are the trails already mentioned at Big Hidatsa village (Lovick and Ahler 1982:150–52).

Surface features of the sorts found at Fort Clark and at some of the villages in the Knife River Indian Villages National Historic Site have been muted at older sites by the same physical processes that are now leveling and concealing those in the more recent villages. This is exemplified at Double Ditch State Historic Site (32BL8), a Mandan village that was abandoned just before the arrival of Lewis and Clark in 1804. The site has never been plowed, yet exterior features such as trails and depressions do not appear on the detailed air photographs available for the site. Nevertheless, the information we now have for Fort Clark suggests the kinds and locations for data that may be revealed at such sites. Let us look for them.

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Figure 6. Detail from Lt. Gouverneur K. Warren's 1856 manuscript map of the Missouri River (National Archives and Records Service, Record Group 77, Q579, Sheet 30). North arrow was added by the author.

Hammer, Department of Agronomy, University of Missouri–Columbia. The abstract was translated into Spanish by J. Ambrow. Gladys Levis and the North Dakota Humanities Council provided support for the 1985 fieldwork that resulted in Figure 2, the 15-cm contour map of the village prepared by KBM, Inc., of Grand Forks, North Dakota. C. L. Dill and the staff of the State Historical Society of North Dakota also provided valuable services and support for this work.

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