

Prehistory on First Street NE
The Archaeology of Scattered Village in Mandan, North Dakota

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Submitted to

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ABSTRACT

In June 1998, the remains of Scattered Village, site 32MO31, were unexpectedly encountered in a federally supported street renovation project on First Street NE in the City of Mandan, North Dakota. This discovery led to an emergency salvage (data recovery) program involving fieldwork, laboratory analysis, and technical reporting funded jointly by the City of Mandan and federal dollars through the North Dakota Department of Transportation. The project was executed as a collaborative effort between Metcalf Archaeological Consultants, Inc. (MAC) and PaleoCultural Research Group (PCRG) in which MAC took the lead role in execution of fieldwork and PCRG the lead role in execution of lab work and technical reporting of both field and lab phases of the project. Fieldwork occurred in phases that involved (1) rapidly testing and isolating significant, intact parts of the site that lay between the street curb and the outer edge of the street ROW, (2) excavation of samples of those deposits, and (3) salvage of isolated features discovered while monitoring construction activities. Excavation occurred in eight block areas that sampled the remains of three earthlodge locations (two were burned) as well as middens and outside-house deposits of various kinds. A large number of pit features, several hearths, 13 human interments, numerous postmolds, and several other features were excavated, as well as of large volumes of artifact-rich non-feature fill. Altogether, controlled excavation totaled almost 68 m³ of fill, all processed with field flotation or fine waterscreen recovery.

Both a location referred to as “Scattered Village” and a location referred to as “Crying Hill Village” (perhaps the same location) are mentioned in the oral traditions of certain subgroups of both the Mandans and the Hidatsas. Both villages are mentioned as once existing at about the spot where this excavation took place in the eastern part of the City of Mandan. A major research focus was therefore to determine how the excavated site related to oral traditions and if this was a Mandan or an Hidatsa community. Other goals were to date the occupation as precisely as possible, examine cultural and technological change within the period of site occupation, and present detailed descriptive information about the site contents useful for continuing comparative study. Lab work focused on detailed analysis of artifacts and materials from about 43 m³ or about 63% of the controlled excavated sample; the balance of the remains have been archived for continuing research. A large number of radiocarbon dates and a small but highly significant sample of Euroamerican trade artifacts date the occupation period as being from the very late AD 1500s to about AD 1700. Large ceramic, stone, faunal, bone, shell, and botanical collections were analyzed in detail by a team of specialists. No firm conclusion is reached regarding ethnic association of the village, because the pottery collection is stylistically quite distinct from available Mandan and Hidatsa comparative samples, and the chipped stone and modified bone/antler industries are also equally distinct from the same comparative assemblages. The pottery sample contains an unusual boat-shaped vessel; this and melted pots on the floor of a burned earthlodge provide useful public interpretive materials. Stone tools of bipolar technology are abundant and apparently relate to unusual techniques for fashioning scapula hoes and pressure flakers, and also involve antler bracelet production that was prominent at the site. Vertebrate, shellfish, and botanical collections document shifts through time in subsistence base characterized by decreasing emphasis on bison and cultivated crops and increasing emphasis on smaller mammal, fish, shellfish, and gathered wild plant resources. Microfaunal remains are taxonomically unbalanced, indicating a highly altered and disturbed landscape around the village. The overall picture is one of a community existing within a changing environment and gradually making accommodations to those changes by shifts in subsistence focus. The artifacts and information now in hand from the Scattered Village Project provide an excellent base for developing public education programs that could include museum displays and video productions.

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The First Street or Scattered Village Archaeological Project was a lengthy endeavor, requiring more than three years for completion. Projects of this nature are readily divisible into a relatively short fieldwork phase and a much more lengthy lab work and reporting phase. A large number of individuals have played diverse and substantive roles in both phases of this project. During fieldwork, those roles fall in the realms of administration, management, and coordination on the one hand, versus the practical details of getting the work done and the artifacts out of the ground. In lab work, the roles divide into manipulating and managing artifacts and data, versus analysis and writing. All of the writers and several important analysts are listed as authors and co-authors; here I will try to identify and credit the host of people who filled many other roles.

The fieldwork phase of the project was conducted under the overall direction of Michael D. Metcalf of Metcalf Archaeological Consultants (MAC), which has offices in Eagle, CO and Bismarck, ND. Mike and MAC agreed to spearhead and manage the field program at Scattered Village, with Mike, Ahler, and Eric Feiler serving as co-field directors. Had Mike not been able to meet the challenge of organizing a major emergency salvage excavation on short notice, the project would have taken a very different form. Mike recruited most of the field staff for the project, and he maintained staffing levels as the field program continued from mid-summer into the fall. A key player in the field operation was Suzzane Nelsen, MAC Administrative Assistant in Bismarck, who managed details such as vehicles, crew per diem payments, lodging, supplies, and so on, with ease and experience. To stay out of trouble during her spare time, Suzanne conducted waterscreening at the site and treated the crew at critical times to cold drink infusions from the nearby Dairy Queen. Mike Metcalf also played a central role in identifying and fine-tuning strategies, priorities, and work execution as the field program moved rapidly through compressed phases of testing, evaluation, focused information recovery, and construction clearance. Mike and his staff closed out the field program in mid-September, attending to removal of the last feature remnants in the path of sidewalk construction along City Block N910.

Several persons with the North Dakota Department of Transportation (NDDOT) played essential roles in the project, for which I am very grateful. Archaeologists Kent Good and Robert Christensen were instrumental in bringing PCRG into the project, supporting in particular PCRG's role in the analysis and reporting phases of the study. Kent made available wheelbarrows, a portable generator, and other field equipment and assisted in excavation on several occasions. Kent and Dave Leftwich of NDDOT were instrumental in meeting a request by PCRG for additional funds for radiocarbon dating. Bob Christensen, the primary administrative contact for PCRG in NDDOT, has consistently been a strong public advocate of all aspects of the program. Bob participated in fieldwork on several occasions, especially during excavation of several pit features along City Block 910 during the final phases of fieldwork. Terry Wiklund, Audio-Visual Manager for NDDOT, conducted interviews and recorded several hours of digital imagery during fieldwork and, with Kent Good, traveled to Flagstaff to record additional footage regarding lab work for the project. Terry's skills at visual documentation have yielded a valuable archival record useful for future education phases of the program. NDDOT archaeologist Jeannie Borchert also worked on site, enthusiastically excavating parts of the burned house and several features in Block 8 and salvaging pit features at the close of fieldwork.

Fieldwork was conducted amid a large, fast-paced construction project on First Street, and I am particularly thankful to several individuals who helped mesh the archaeological efforts rather seamlessly with the street renovation program. Tom Little, Mandan City Engineer, played a central role in this process. After fieldwork, Tom has continued as the main administrative contact person between PCRG and the City during the lengthy process of lab work. Tom expedited the flow of administrative documents and has been a steady and valuable advocate for the program. His positive perspective on this whole endeavor is greatly appreciated. Several other persons played important coordinating roles during fieldwork. Robert Shannon, a lead engineer with Kadmas, Lee, & Jackson, P. C., the prime engineering contractor for the First Street

Project, was our main contact person for all on-the-ground actions and decisions. We also worked closely in that regard with Wendy Kuntz of Northern Improvement Construction, the lead construction contractor, regarding weekly planning and day-to-day coordination of our field activities and construction work. Bob and Wendy were assisted by Richard Schneider and Niles Hushka of KLJ regarding construction coordination. We were all in unfamiliar territory as these individuals skillfully guided the archaeologists through pouring of street curbs, street closures and traffic reroutes, gas line excavations, street light borings and placements, sidewalk grading, and local residents' need to access their houses and garages. On numerous occasions and sometimes on short notice Wendy provided equipment and skilled operators to clean the waterscreen sump, remove overburden from burned earthlodges, and excavate exploratory trenches in our search for the village fortification system.

A large number of people served ably as paid or voluntary field assistants on the project, and I am thankful to all of them for efforts provided with skill, diligence, and good cheer. The Scattered Village field project began just as the University of Missouri-Columbia archaeological field school at the Menoken site, near Bismarck, was concluding, and several participants in the Menoken field program moved directly from there to MAC field positions at Scattered Village. Those workers included Vincent Collier, Peter Kohlberg, Brian Muldoon, Nichelle Robinson, Bud Rovetto, Robert Speakman, and Erin Stevens. Additional paid MAC crew members included Christ Galster, Wade Haakenson, Cindy Haakenson, Tami Hebert, Jon Heidt, Christina Kelly, Matt Lawrence III, Matt Lawrence IV, Mark Levine, John Morrison, Mike Runge, Todd Swan, and Lauri Travis. Most of these people focused their efforts rather exclusively on either excavation or waterscreen/flotation duty, while a few persons served ably in special areas. Nichelle Robinson and Matt Lawrence IV kept the field catalog and organized bags and records for excavators. Tami Hebert directed the screening/flotation end of the operation and cheerfully conducted sample sorting, record checks, and boxing work at the ends of many long days. Bud Rovetto conducted most of the project field photography and did quite well at a job he never imagined having. John Morrison and Lauri Travis, both highly experienced field workers, focused as needed on special tasks such as profile documentation and feature excavations.

Two PCRG members contributed volunteer field efforts on the project, for which I am particularly thankful. Dave Jensen of Hazen, ND, a long-time student of North Dakota prehistory, assisted for several days in the excavation of the burned house in Block 8. John Craig of St. Cloud, MN, worked for several days in the arduous task of excavating Feature 108, a nearly bottomless pit in Block 3.

Soil scientist Michael Timpson conducted coring work, profile studies, and sampling on two occasions during the field program and produced an excellent technical report on soils and the geomorphology of the site.

A few other persons played critical roles in fieldwork and other project components. Fern Swenson and Paul Picha, archaeologists with the State Historical Society of North Dakota, assisted in fieldwork on several occasions. Fern and Tom Little were our designated contact persons whom we alerted when human remains were discovered. Fern executed other required procedures from that point forward, and she responded quickly and efficiently in each of these instances. Paul and Fern conducted virtually all aspects of exposing, documenting, and removing human skeletal remains from the site. Elgin Crows Breast, a member of the North Dakota Intertribal Reinterment Committee, visited the site after the first discovery of human remains and worked with Fern to develop a procedure for handling such remains when they were encountered. We are especially thankful to Elgin and Fern for implementing a process compatible with ongoing excavation and construction work. John Williams, a physical anthropologist at the University of North Dakota, also responded to project needs regarding human remains, visiting the site or Bismarck several times to record and document skeletal materials prior to their reburial.

Laboratory work involved efforts from an equally large number of individuals. Eric Feiler oversaw the day-to-day activities of sorting and collection processing that occurred during the first year or so of lab

work, patiently training a number of people in the sorting process and checking the consistency of their work. Gail Ryser had the equally important job of collection and database management for the project. She entered the field catalog in the project database; tracked samples through the steps of lab work; developed, updated, and error-checked many database tables; and developed inventories of materials studied and boxed for shipment from Flagstaff to Bismarck or elsewhere. In addition to her role in the study of shell remains reported here, Gail also classified pottery by zone and recorded data on pottery surface treatment. Deirdre Morgan conducted a preliminary classification of pottery rim sherds that was instrumental in developing the analytic structure for the site.

Routine lab work, consisting of artifact sorting, quantification, labeling, and similar tasks, was ably conducted by many additional people, mostly students at North Arizona University, whose names include Jennifer Armetta, Chad Badorek, Ryan Corkill, Dan Cruz, Gavin Gardner, Amanda Johnson, Mason Jones, Lucas Kellet, Jason Kidd, Jill Laufer, Tracy Locarni, Jennifer Minor, Deirdre Morgan, Faith Oliver, Roberta Parry, Kristin Sizemore, Monique Smail, and Vince Warner. The tasks performed by many of these persons were very tedious and were conducted with accuracy and patience. Jennifer Chumbley, Kristin Sizemore, and especially, Rayonna Lash deserve special mention for success at refitting broken pottery vessels from the excavation, now illustrated in this report and available for use in museum displays.

Analytic work conducted elsewhere also involved efforts from several people. At Carl Falk's faunal lab in Sevierville, Tennessee, much of the routine work involving preparation and descriptive analysis of vertebrate faunal remains was completed with the very able assistance of Jodi A. Jacobson and Sarah C. Hughes, at the time both graduate students in the Department of Anthropology, University of Tennessee, Knoxville. Their work was first-rate and contributed much to the finished report. Dr. Walter E. Klippel (Department of Anthropology, University of Tennessee, Knoxville) facilitated use of the Department's outstanding vertebrate reference collection. Dr. Klippel deserves a special note of appreciation for his generous assistance and cooperation throughout the duration of the project.

Susan Dingle, Reference Specialist at the State Historical Society of North Dakota, was particularly helpful in locating and providing copies of documents that pertained to the early history of the City of Mandan, and particularly, the earliest references to archaeological sites near Mandan. Fern Swenson of the SHSND has been particularly helpful throughout all phases of the lab and reporting work, providing copies of relevant site forms and many other pertinent documents on file at that agency. Paul Picha has also been especially helpful in analytic tasks, providing a modern reference collection for freshwater molluscs from North Dakota and many suggestions regarding current research and pertinent citations. Fern and Paul also read and commented on a draft version of the final report. John Hoganson, the North Dakota State Paleontologist, kindly examined samples of modified and unmodified fossil gastropods from the excavations and provided useful information regarding taxonomy and provenance for such materials.

Valory Holton, Administrative Assistant at the PCRG office in Flagstaff, facilitated the project in many ways, primarily through her efficient handling of paperwork and communications regarding personnel, payroll, and financial matters. Chad Badorek proofread the draft report and caught many additional errors. Three people not previously mentioned played essential roles in final production of this report and deserve special credit. In one of PCRG's first ventures into the realm of digital graphics production, Amanda Johnson developed a large array of excellent line drawings for the final report, most of which appear in Chapter 2 dealing with fieldwork. Picking up where Mandy left off, R-G de Stolfe developed the remaining illustrations for the report that involve mostly digitized photographic images of artifacts. R-G and Vince Warner conducted most of the artifact photography used in the report, and R-G did much of the composition work and formatting for the draft report. Last but certainly not least, I am particularly grateful to George Crawford who applied his many talents to final proofing, editing, formatting, and digital composition of this report as now printed.

PREFACE

During the summer of 1998, the City of Mandan, North Dakota, undertook the First Street Improvement Project. This construction project involved replacement of pavement, curbs, and sidewalks and upgrading of sewer, gas, and electrical utility connections for residents and businesses along First Street. The project extended for 20 city blocks along First Street NE and First Street NW, extending from the intersection with Mandan Avenue on the east to 7th Avenue NW on the west. Work involved much earthmoving in the form of removal and replacement of fill below the old street pavement, excavation of many new utility trenches, and substantial landscaping work in curb and sidewalk areas.

In June 1998, early in the course of this construction work, it became clear that a major prehistoric archaeological site beneath the existing street and within the city right-of-way was being impacted by construction. A quick search of existing site records indicated that this site was probably the location referred to as Scattered Village or Crying Hill Village (assigned site number 32MO31), and at the time only vaguely located as being beneath the east end of the City of Mandan. Construction work had progressed too far for any treatment to be implemented other than emergency salvage archaeological excavation. Such an excavation program was begun in July and finished in September 1998, causing some rescheduling of construction tasks but no serious delay in the overall construction program.

Scattered Village was a settlement containing earthlodges and occupied by farmers and bison hunters from late in the sixteenth century through the seventeenth century (a classic Plains Village archaeological site as discussed by Lehmer [1971] and many other regional treatments). This particular settlement is apparently mentioned in both Mandan and Hidatsa oral traditions that describe their respective histories of living near the mouth of Heart River. As typical of such archaeological sites, the village contained complex structural remains and dense deposits of artifacts and refuse. While the emergency excavation program was carried out rapidly, the study of recovered artifacts and information was slower-paced and occurred over the course of the following three years. The chapters that follow constitute the final report on those investigations, describing the fieldwork program in detail, discussing the research topics that guided the study of artifacts, and presenting the results of all analytic investigations.

The first chapter describes the setting of the Scattered Village site and summarizes pertinent knowledge about this location deriving from historic records and native traditions. Chapter 2 is a lengthy and thorough treatment of all phases of the fieldwork program, summarizing how it proceeded and what was learned from the vast array of information collected during excavation. In the field, it was a challenging task to simply find and isolate the most productive and informative parts of the village that remained undisturbed beneath former city sidewalks. The village proved to have considerable time depth, and small exposures of several different kinds of layered settlement features were encountered in the street work (remnants of earthlodges, sheet middens, borrow areas, and major trash dumps). Chapter 3 presents the research design for the project, which was fully developed only after sufficient analysis has been completed for us to understand chronological relationships in several parts of the excavated samples.

We conducted radiocarbon dating in two phases in an attempt to achieve the greatest gain from this important analytic tool. Pottery and trade artifacts are probably the most chronologically sensitive artifacts in the site. We could assess the meaning of trade artifacts only after all the small glass beads and metal pieces were meticulously sorted in the lab from the screened residue. Straightforward interpretation of pottery as a time marker has been confounded by the likely presence and mixture of two potting traditions at villages such as Scattered near the Heart River where both local Mandans and immigrating Hidatsas record periods of residence. In this instance, we could not immediately interpret pottery in the field and use it to order the age of the houses and pits as they were excavated. It eventually became clear that sorting out Mandan and Hidatsa material culture and their possible combined presence at Scattered Village was in fact a major research goal, as we discuss in Chapter 3, and we took care to design the pottery study so as not to

build circular reasoning into its outcome. These complexities are the reason that the research design could not be completed until substantial analysis had occurred.

Chapter 4 gives a detailed discussion of general laboratory procedures and how we dealt, when necessary, with the task of selecting only a sample of excavated material for most intensive study. Chapter 5 is designed in part for the general reader but also for the benefit of the several specialists who each analyzed portions of the collection. In this section we present and evaluate all of the available information regarding the chronological age of different parts of the site (trade artifacts density, radiocarbon dates, pottery, etc.), and we present what we call an “analytic unit structure” for the site. The analytic unit structure describes how we have chosen to package the physical information from the site, according to time units and different kinds of depositional contexts, to allow the most informative treatment of the identified research topics.

The remaining chapters of the report, constituting the bulk of the document, present and discuss results of various kinds of analyses conducted with material remains recovered during excavations. Chapters 6 through 10 deal with vertebrate (bone) and invertebrate (shell) remains that reflect primarily the subsistence pursuits of village occupants and to a lesser degree natural plant and animal remains incorporated into the site deposits. Chapters 6 and 7, by zooarchaeologists Kathryn Cruz-Urbe and Carl Falk, respectively, present and interpret data about the remains of mammals, fish, birds, and other animals that contain evidence about the role that hunting and trapping played in the lives of the village occupants. Bison are easily the dominant animal resource procured by the villagers, complemented by a host of smaller species. When this suite of materials is studied comparatively with nearby Slant Village, parallel patterns of shifts through time toward greater use of smaller species are revealed in both sites. Freshwater clams, discussed in Chapter 10, while numerous, probably reflect only a minor part of the food resources procured by occupants of Scattered Village. Most significantly, the use of local shellfish increased through time, paralleling the pattern of shift toward greater use of smaller animal packages during the history of site use. Holmes A. Semken, Jr., presents data on a particular subset of the animal remains – micromammals, such as rodents and insectivores – with an eye toward what these small creatures tell us about the environment around the village. The picture is an interesting one, likened to the disturbed landscape around a modern strip mine. In Chapter 9 Robert Nickel analyzes a sample of the abundant charred seeds and other botanical materials that represent some of the wild and cultivated plant food resources used by the villagers. He examines, in particular, the hypothesis that the village was used by immigrants from the east unfamiliar with corn farming, and finds no support for this idea in the botanical remains.

The next six chapters present information about the artifacts and material culture of the occupants of Scattered Village. Pottery always receives great attention from the archaeologist, and we make no exception in the current treatment in Chapter 11. Existing ways for classifying pottery had to be modified to accommodate the Scattered Village collection, and the sample was examined in detail for changes through time and for the differences or similarities it could reveal between Scattered and nearby communities such as that of the Mandans at Slant Village. Highlights of this study lie in partial reconstruction of several vessels that were crushed and melted in a burning earthlodge, and the reconstruction of a highly unusual oval or boat-shaped pot. Studies of stone tools and flaking debris (Chapter 12) provide insights regarding stone procurement areas used by the villagers and as well as distant areas, mostly far to the west and southwest, contacted or exploited by the villagers. Distinctively crushed and splintered bipolar cores and tools make up an unusually large part of the stone tool sample, and it is only from analysis of modified bone and antler artifacts that a partial explanation for their existence emerges. Bipolar stone objects were used as punches for shaping and fabricating many bone tools, such as scapula hoes and pressure flakers made from the bison ribs. A surprisingly well-developed industry in the manufacture of delicate antler bracelets was revealed in the collection. A very small but highly important sample of glass beads and small metal tools obtained through indirect trade with Euroamericans occurs in

the site. This is one of the earliest and chronologically best documented trade artifact samples from anywhere in the Northern Plains.

During fieldwork, the project team learned about discoveries of human burials along First Street NE that had occurred occasionally during the past century. Therefore, it was not unexpected when human remains were encountered in our excavations. These were treated with respect and in accordance with North Dakota laws and regulations regarding such discoveries. With agreement from members of the North Dakota Intertribal Reinterment Committee, the human remains were recorded and removed from the ground, were briefly studied by a physical anthropologist, and were then transferred to appropriate members of the Three Affiliated Tribes for reburial. In Chapter 17, John Williams provides a description and study of the human burials discovered during the project. His study provides important information relevant to two topics. The first relates to the identity of the people who lived in Scattered Village, when it was a living community, as revealed through information about their facial and cranial features as well as cultural practices associated with treatment of the dead. The second has to do with evidence regarding the general health of the village population as documented in maladies (or the lack thereof) that leave their traces in the teeth and bones of a deceased individual.

The concluding chapter of this report (Chapter 18) provides a brief summary of the major findings, many of which have just been touched upon here. One disappointment is that we really cannot say with certainty who the people were who built and lived in Scattered Village. Oral traditions and written historical records regarding various subgroups of the Mandans and Hidatsas are simply too complex, contradictory, or incomplete to provide a clear answer. The material record is surprising in its complexity and dissimilarity to information currently available for comparison from the known contemporaneous villages built by the Mandans near Heart River or the Hidatsas near Knife River. It seems that the task of understanding prehistoric village archaeology at Heart River grows more complex and challenging rather than more straightforward. This is not really a setback, however, but rather is a statement about how new knowledge bares the complexity of the intertwined cultural pathways of all people who lived at Heart River during the past several hundred years.

The final chapter closes with an appeal to bring the fruits of this project – new information, new discoveries, new knowledge – full circle to the residents of the City of Mandan and the state of North Dakota (and the nation) who have consciously or unknowingly supported the Scattered Village research endeavor through public funding. North Dakota Department of Transportation archaeologist Robert Christensen, a resident of the City of Mandan, has reported persistent questions from fellow citizens wishing to know, “What was found? What was discovered? What did we learn?” These are very legitimate questions, and in the final section of the report we suggest two of perhaps several ways we can convey our answers. One recommendation is to develop a museum display within the City of Mandan that focuses on the First Street construction and archaeological project and its discoveries and interpretations. Such a display would center on presentations of the actual potsherds, charred corn cobs, bipolar tools, antler bracelets, flint chipping tools, arrowpoints, trade beads, and other objects that form the fabric of the Scattered Village project. Another recommendation is to develop a video or similar digital/graphic production that tells the story of the project, and that can be seen by perhaps a much wider audience than those able to visit a museum on First Street in Mandan. In meetings in October and November 2001, the City of Mandan, the North Dakota Department of Transportation, and several other involved parties expressed unanimous support for a concrete, funded plan that would bring the results of this project, in the broadest sense, to the people of North Dakota. When such a plan is completed, we can rightly consider this project a success for all.

Stanley A. Ahler
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