

A Multicultural Sacred Space

reconnecting the three affiliated tribes of the central dakota plains

mandan *hidatsa* *arikara*



North Dakota State University
2005-2006 Undergraduate Design Thesis
Jason Tomanek

A MULTICULTURAL SACRED SPACE
RECONNECTING THE THREE AFFILIATED TRIBES
OF THE CENTRAL DAKOTA PLAINS

A Design Thesis Submitted to the Department of
Architecture and Landscape Architecture of
North Dakota State University

by

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF
BACHELOR OF LANDSCAPE ARCHITECTURE

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May 2005
Fargo, North Dakota



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introduction

Double Ditch Native American Village

reconnecting the three affiliated tribes of the central dakota plains

DEVELOPING AND PRESERVING A MULTICULTURAL SACRED SPACE ALONG THE MISSOURI RIVER

By

Jason J. Tomanek
2005-2006

The recent focus throughout much of the central and northwest regions of the United States has been to draw the attention of tourists, travelers, and visitors to the Lewis and Clark Trail. The Bicentennial of the Lewis & Clark expedition from 1804-1806 has drawn national recognition and created countless opportunities for travel, exploration, and education. Much like other states in the region North Dakota capitalized on the opportunity by promoting the amenities brought to it through the Corps of Discovery's journey across the state.

However; the Native American people existed throughout the region long before Lewis and Clark explored the area. This project is an opportunity to highlight the culture, heritage, and way of life of the Native people in order to preserve their place in the history of America. The multicultural sacred space found as the focus of this project will be an opportunity to educate, preserve, and interpret the culture of the Native American people that settled in the central Dakota plains nearly 600 years ago.

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LOCATION

This project spans nearly 80 miles across the prairie coteau region along the Missouri River. The southern most point being Huff Indian Village, 20 miles south of Mandan, North Dakota. The Knife River Village near Stanton, 58 miles northwest of Bismarck marks the northern boundary. Other significant points throughout the project area include On-A-Slant Village 8 miles south of Mandan, Chief Looking's Village in northwest Bismarck, Double Ditch Native American Village 7.5 miles north of Bismarck, and Fort Clark near Washburn.

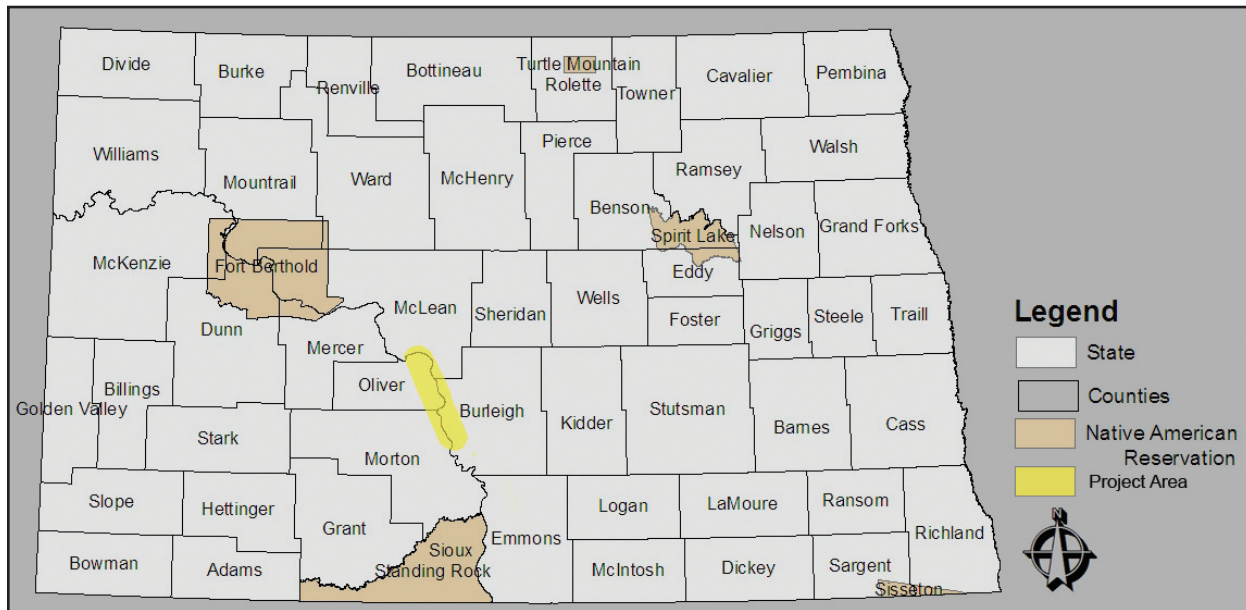


fig. 1-1 North Dakota Counties

UNIFYING CONCEPT

The unifying concept of this project is to educate, understand, and preserve the heritage, culture, and way of life of the Native American tribes that once inhabited this region of the central Dakota plains. The Three Affiliated Tribes, Mandan, Hidatsa, and Arikara were the first people to settle the land nearly 600 years ago. Physical linkages of the North American settlements are found through the Missouri River and US Highways 1804 and 1806. These common modes of transportation provide opportunities for developing a connection to tell the stories of the Native American people through preservation, interpretation, and education.



fig. 1-2 Site Context Map



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General History

Indian people of North Dakota include the Mandan, Hidatsa, Arikara, Yanktonai, Sisseton, Wahpeton, Hunkpapa, Dakotah, Lakotah, Chippewa, Cree, and Metis. Even though the individual tribes have unique cultures, origins, histories, and languages, they all share core beliefs and values that emanate an understanding and respect of humankind's coexistence with nature and the world around us.

By the time Lewis and Clark had explored the Louisiana Purchase west of the Mississippi River, the Native American tribes had established an extensive trade network from Mexico to Canada. Many of the tribes interacted as peaceful nations depending on one another for trade goods and various items.

The Mandan, Hidatsa, and Arikara tribes were well-established farmers that lived in permanent settlements primarily along the Missouri and Knife Rivers in Central North Dakota. The large settlements where the people lived in earth lodges depended on the Bison and agriculture as a way of life. Some of the villages had 2,000 to 3,000 residents.

Records indicate by 1862 western diseases like smallpox wiped out entire villages killing thousands and forcing the survivors to consolidate into smaller multicultural groups at Like-A-Fishhook Village in central North Dakota near present day Washburn. Within these groups the culture of individual tribes was preserved as a lasting characteristic to each tribe. Like-A-Fishhook Village was the last known inhabited plains village and reflected the unique and lasting characteristics of many North American tribes that lived there. (<http://www.state.nd.us/hist/ndhist.htm>).



fig. 1-3 Mandan Community
ND Tourism Brochure, 2005.



fig. 1-4 Bluff Overlook
The George Catlin Book of
American Indians 1977.



fig. 1-5 Rain Dance
The George Catlin Book of
American Indians 1977.



fig. 1-6 Hidatsa Village by G Catlin
ND Tourism Brochure, 2005

By 1851 the Fort Laramie Treaty established Fort Berthold Indian Reservation. The reservation expanded from the Missouri River beyond the Yellowstone River in Montana encompassing more than 12 million acres. Politics of the late 1800's reduced the size of the reservation to its current size of just under one million acres. Currently the reservation has over 8,400 enrolled members, but less than 4,000 actually live on the reservation. (<http://www.mhanation.com>).

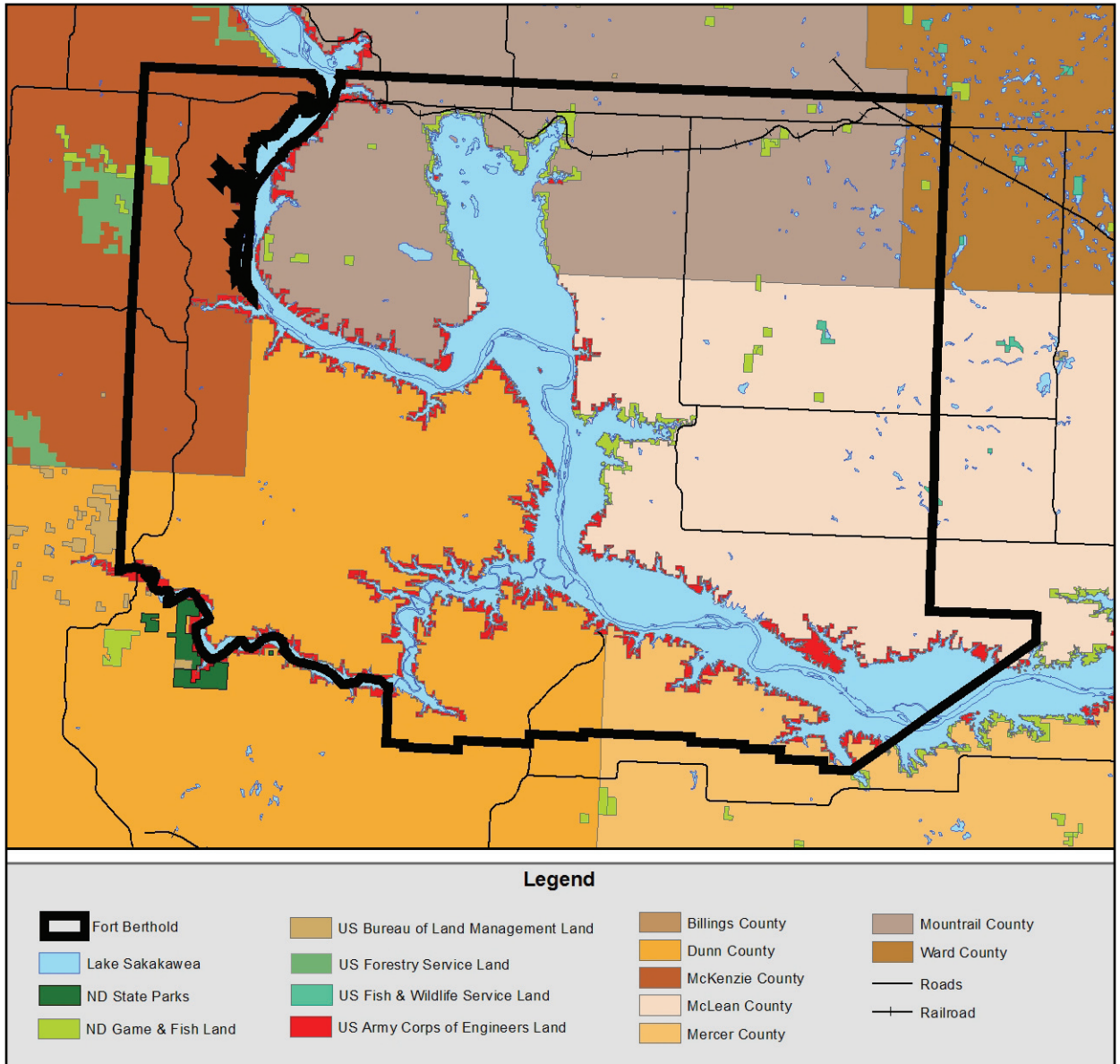


fig. 1-7 Fort Berthold Reservation
Personal Map, 2005

Project Description

Double Ditch Indian Village will be a multicultural interpretive center focused on the preservation of the Native American culture and educating the public. The objective for the project is to enhance the current site through education of the culture, people, and land surrounding it. Double Ditch will also serve as a catalyst for change, this project is to serve as an example of how other Native American sites along the Missouri River can be enhanced to receive recognition and preservation of the Native American culture unique to each site.

Project Objectives and Goals

- This project is to serve as a demonstration model and fulfill the following goals and objectives.
- To link the Native American sites along the Missouri River in such a way that visitors can independently explore each area.
- Develop signage that will allow the visitor to confidently travel from one destination to the next. The signs will capture, interpret, and reflect the character of the Native American people and their culture through context sensitivity.
- Preserve the integrity of the Double Ditch Indian Village through a culturally sensitive design that allows visitors to engage in active learning through exploration and interaction.
- Create a program that will help to meet the needs of visitors on a daily basis. Such elements shall include, restrooms, parking accommodations, shelter from the elements, interpretive signage, and interactive areas throughout the site for children and adults to experience hands-on learning.

User/Client Description

The project will be designed principally for the people of the Three Affiliated Tribes, the North Dakota State Historical Society, the North Dakota Park and Recreation Service, and the general public. Currently the State Historical Society owns and assumes responsibility for the area. The requirement for the tribes is cultural preservation of their heritage.

Description of Research...a design methodology

To establish a multicultural center, informative signage, and a comprehensive design several forms of research need to be conducted. These methodologies include but are not limited to:

Methodology

- Archival research will include Culture and History
- Documentation and observation through traditional means such as sketches, photos, and personal interviews.
- Biotic and abiotic analysis

History

The history of the people and the region will be a major contributing factor in the overall design and development of this project. Historical information will be gathered to ensure accurate information for the interpretive signage, literature, and representation of the Native American people. This information will be predominantly about the Mandan Indians but will also include facts about other Native American tribes and pertinent information surrounding the central Dakota plains.

Culture

Recognizing the fact that the Native American's uphold the proud traditions and heritage of their people will be the major theme throughout the project. The overall concept, design, and final product will reflect the Native American way of life, their heritage, and their traditions.

Interpretive Signage

Commonalities within and between the historic sites will be an important issue relating to the ease in which tourists and guests travel. Developing similarities in signs will allow for less confusion and positive affirmation to wary travelers. The story of the Native American Indian will unfold throughout the entire journey across the Central Dakota Plains.

Environmental Issues

Sustainability will play an integral part of the design and development for this project. Recognizing the fact that the Native Americans believe all things including the landscape have a spirit will help in guiding the design process, material selection, and the overall outcome.

Statement of Intent

Jason Tomanek
September 7, 2005

CONNECTING THE THREE AFFILIATED TRIBES OF THE UPPER MISSOURI
Jason Tomanek Landscape Architecture Capstone Project

Project Typology

A reconnection of culturally and historically significant American Indian Tribes and the settlements they once inhabited. The project test sites will include Menoken Village, Huff Indian Village, On-A-Slant Village, Chief Looking's Village, Mit-Tutta-Hang-Kush Village, Knife River Villages, with a concentration at Double Ditch Native American Village, 8 miles north of Bismarck, North Dakota.

Theoretical Premise

The thesis will examine the interconnectedness of these now fractured ancient villages. Design metaphors, analogies, and or tectonics will be developed from the examination.

Project Justification

The need to recover and preserve these places for the future as well as educating the public.

regional analysis

Project Location

The broad scope of the project area begins 20 miles south of Mandan, North Dakota at Huff Indian Village. The northern limit of the project terminates at Knife River Indian Village at Stanton, North Dakota. Several other Native American settlements lie along the Missouri River. The larger more notable settlements include On-A-Slant Village south of Mandan, Chief Looking's Village Overlook in northwest Bismarck, and Double Ditch Indian Village 7.5 miles north of Bismarck. The major project emphasis will be focused around the preservation and enhancement of the Double Ditch site.

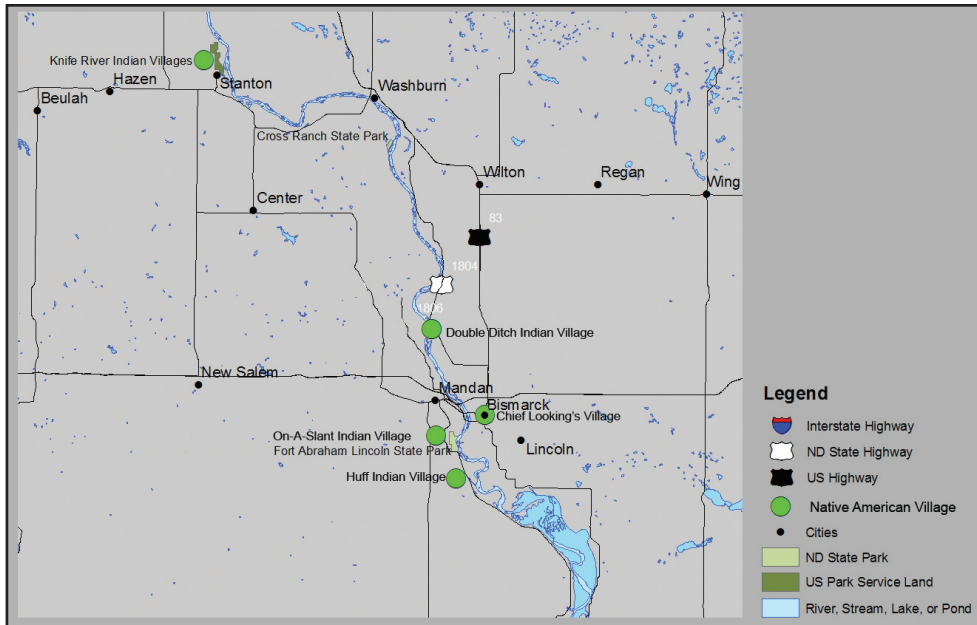


fig. 2-1 Native American Villages located within the project boundaries. Personal Map 2005.

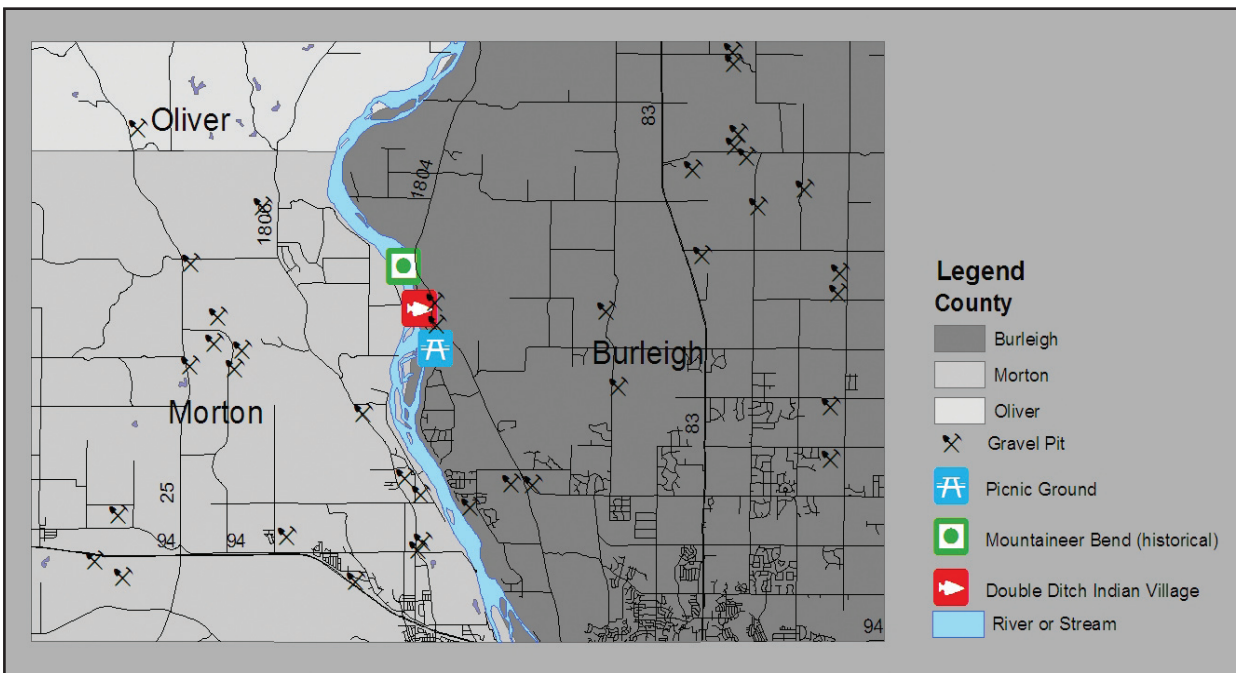


fig.2-2 Double Ditch Native American Village along the Missouri River Personal Map 2005.

History

Archeological investigations indicate the presence of big game hunting cultures nearly 10,000 years ago. Studies indicate hunting and gathering settlements began to form around 2000 B.C. to the late nineteenth century. Distinct Native American groups existed by 1860 when the first non-native explorers arrived. These cultures included the Dakota or Lakota, often called Sioux by their enemies, Assiniboine, Mandan, Hidatsa, Arikara, originally known as the Sanish, and Cheyenne. Several of the tribes were nomadic hunter-gatherers that lived in portable teepees made from long poles and the hides of bison. The Mandan, Hidatsa, and Arikara were much more sedentary. These tribes relied on hunting, fishing, and agriculture to support large permanent settlements. The villages of these tribes became a trading center for other Native American tribes and eventually the fur trade. Euro-Americans and Native Americans first came into contact around 1738. A French explorer named La Verendrye, reached the Missouri River from Canada as he was searching for an all water route to the Pacific Ocean. The Native Americans played a key role in the fur trade. Offering vegetables such as corn, squash, and pumpkins in exchange for guns, metal tools, and cloth or beads. (<http://www.state.nd.us.hist.ndhist.htm>).



fig. 2-3 Buffalo Bull Society Leader
Karl Bodmer's America 1884.



fig. 2-4 Mandan Chief Mato-Tope
Karl Bodmer's America 1884.



fig. 2-7 Mandan Chief Mato-Tope
Karl Bodmer's America 1884.



fig. 2-5 Bison Dance
People of the First Man 1976.

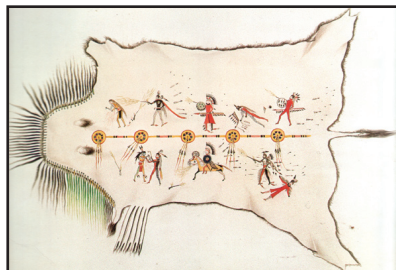


fig. 2-6 Mandan Buffalo Robe
Karl Bodmer's America 1884.

Between 1737 and 1782 smallpox nearly wiped out entire tribes. This forced the surviving members of the Mandan, Hidatsa, and Arikara north to avoid the advancing Sioux migration. The tribes permanently settled two villages near the confluence of the Knife and Missouri Rivers. (<http://www.state.nd.us.hist.ndhist.htm>).

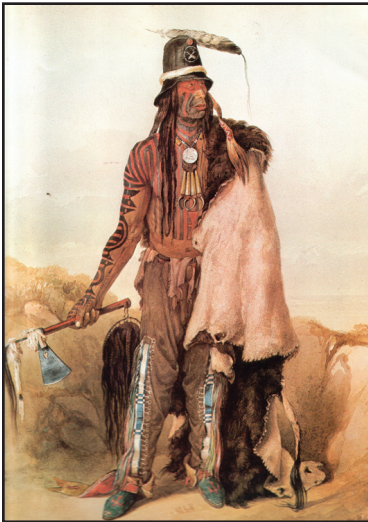


fig. 2-8 Addih-Hiddisch
Karl Bodmer's America 1984.



fig. 2-9 Mahchsi-Karehde
Karl Bodmer's America 1984.



fig. 2-10 Pehriska-Ruhpa
Karl Bodmer's America 1984.

In 1804 Meriwether Lewis and William Clark led the Corps of Discovery up the Missouri River from St. Louis. By autumn of 1804 the explorers had come in contact with the Mandans. The journals of Lewis and Clark indicate several abandoned villages along the Missouri River. William Clark's journal entry for October 22, 1804 read "...passed 2 old villages at the mouth of a large creek L.S. (Hunting Creek) and a small island at the head of which is a bad place, and an old village on the S.S. (Double Ditch) and the upper of the 6 villages of the Mandans occupied about 25 years ago this village was entirely cut off by the Sioux & one of the others nearby, the smallpox destroyed great numbers."

(<http://www.factmonster.com/t/hist/lewis-clark-journal/day162.html>).



fig. 2-11 Corps of Discovery
Undaunted Courage 1996.

By the end of October, 1804 the Corps of Discovery reached the two villages near the Knife and Missouri Rivers. Lewis and Clark referred to the settlements in their journals as Matootonha and Roptahee, these were both incorrectly interpreted, the actual pronunciation is Mitutanka and Nuptadi, respectively. The village referred to as Matootonha was on the western bank of the Missouri River. Directly north, on the east side of the river was Roptahee.

The winter of 1804 the Corps of Discovery camped across the river from Matootonha at Fort Mandan. The relations between the Corps of Discovery and the Native Americans was nearly without conflict. The Mandans supplied the Corps with food while in exchange for trade goods like beads and cloth. When food supplies became scarce members of the Corps of Discovery joined the Mandans on a buffalo hunt. Lewis and Clark met with Mandan leaders, Sheheke and Black Cat several times throughout the winter. Lewis and Clark also took part in ceremonial rituals and Mandan traditions. (<http://www.pbs.org/lewisandclark/native/man.html>).



fig. 2-12 Bears Belly
www.fishhook.ndsu.edu/pictures



figs. 2-13 Inside Mandan Earth Lodge
Karl Bodmer's America 1984.



figs. 2-14 Rush Gatherer
www.fishhook.ndsu.edu/pictures

By 1851 the Fort Laramie Treaty established Fort Berthold Indian Reservation. The reservation expanded from the Missouri River beyond the Yellowstone River in Montana encompassing more than 12 million acres. Politics of the late 1800's reduced the size of the reservation to its current size of just under one million acres. The Mandan and Hidatsa have lived on the reservation since 1845. The Arikara joined the other tribes around 1862. Currently the reservation has over 8,400 enrolled members, but less than 4,000 actually live on the reservation. The tribal government maintains jurisdiction throughout the reservation. (<http://www.mhanation.com>).

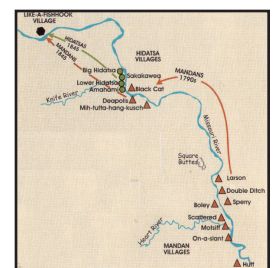


fig. 2-15 Migration Map
www.fishhook.ndsu.edu/pictures



fig. 2-16 Earth lodge
www.fishhook.ndsu.edu/pictures

Over the course of ten years rapid settlement of the newly recognized Dakota Territory had begun in 1861. A direct result of the 1862 Homestead Act, the westbound Northern Pacific Railway reached the Missouri River in 1873. Between 1879 and 1886 over 100,000 people entered the territory. On November 2, 1889 North Dakota was granted admission to the Union as the 39th state by President Benjamin Harrison. The population again surged, this time in 1905. From 1890 to 1920 the state's population more than tripled from 190,983 to 646,872. Many of the settlers were of Scandinavian or German descent. Norwegians held the greatest portion of the state's population. (<http://www.state.nd.us/hist/ndhist.htm>).



fig. 2-17 Homesteaders
<http://www.lib.ndsu.nodak.edu/ndirs/collections/photography.htm>



fig. 2-18 Wheat Harvest
<http://www.lib.ndsu.nodak.edu/ndirs/collections/photography.htm>



fig. 2-19 Townley Oil Drilling
<http://www.lib.ndsu.nodak.edu/ndirs/collections/photography.htm>

Wartime prosperity continued into the late 1940s. Major Federal projects kept the construction economy booming, for example. In 1946, the demand for Missouri River flood control and diversion of the river's waters for irrigation and industrial development were rewarded with initiation of construction on the Garrison Dam; project supporters also envisioned a grand scheme of canals to move the water into other parts of the state, and the project's start seemed the realization of dreams voiced since the early 1920s. Reservoirs on the Sheyenne, James, and other rivers were also constructed for flood control and municipal water purposes.

Development of natural resources expanded in 1951 when oil was discovered near Tioga. The resulting "oil rush" coincided with expanding use of lignite coal to generate electricity; in 1952 and 1954, two coal-fired plants were built near Velva and Mandan, and oil refineries were established at Williston and Mandan, as well. (<http://www.state.nd.us/hist/ndhist.htm>).

Governmental efforts to encourage economic diversification have taken several forms. In the 1960s, the administration of Governor William Guy actively promoted massive use of the vast lignite coal reserves. As the demand for electricity expanded, coal-fired generating plants became economically feasible, leading to major development of power plants and open-pit mining. A national concern with energy self-sufficiency in the 1970s resulted in huge investments by generating corporations and cooperatives in western North Dakota. (<http://www.state.nd.us/hist/ndhist.htm>).

By 1960 two large Air Force bases had been built at Grand Forks and Minot, a modern continuation of an historic role in Federal military strategy that began in the 1860s. Changes in communications and transportation were enhanced by better airline service and a rapid shift away from dependence on railways. Though airline routes had included North Dakota since 1927, regular service expanded in the 1940s and 1950s, at least in part as a result of a conscious effort by state government to develop local and regional airports. Likewise, the steadily more modern network of state and federal highways made truck transportation into a viable alternative to railroads. Those same highways made private auto transportation more reliable; more North Dakotans bought cars after World War II than ever, soon giving the state a ratio of over two vehicles for every person in the state. As a consequence, however, use of rail passenger service declined, and by the end of the 1950s railroads had increasingly become a means for hauling freight, not people.

The Garrison Diversion plan, authorized by Congress in 1968, entered construction, but by 1976 was stalled by court challenges based on its environmental impacts; even though many leaders strongly backed the plan, landowners, environmental groups, and Canadian officials asserted that the negative effects far outweighed any benefits. A compromise between these interests was hammered out in 1986; construction of a greatly-reduced project has continued, but even that remains under attack from agricultural and environmental groups. For many longtime backers of the project, the primary issue became North Dakota's ability to obtain some benefits in return for the destruction of Missouri River bottomland by the Garrison Reservoir. Conceived as a project to combine municipal, industrial, and agricultural uses for the water, the project has been substantially modified; presently plans call for delivery of Missouri River water to the Red River, Indian Municipal, Rural and Industrial (MR&I) water funding, and an increase in the statewide MR&I water fund to help deliver water to cities and towns throughout southwestern and northwestern North Dakota. For most state residents, the most obvious benefit from years of planning and effort are the recreational uses of Lake Sakakawea.

(<http://www.state.nd.us/hist/ndhist.htm>).

The 1980's brought progressive changes to North Dakota. Traditional "blue laws" that restricted such things as gambling and retail stores operating on Sundays have been relaxed in order to help draw tourists to the state. Many rural schools consolidated or closed due to declining enrollment numbers. A 1987 census indicated that for the first time in North Dakota history more people lived in cities or towns than in rural areas. These changes will have drastic impacts on the role of government in the state and the structure of its economy. North Dakota continues to struggle with many of the same issues facing it in 1989. As a social, cultural, and economic colony, consumer of capital and manufactured goods, producer of raw materials, and exporter of young educated people North Dakota finds itself looking much the same as it has for over 120 years.

(<http://www.state.nd.us/his/ndhist.htm>.)



fig. 2-20 Hickson, ND ca. 1908
<http://www.lib.ndsu.nodak.edu/ndirs/collections/photography.htm>



fig. 2-21 Falkirk Coal Mining
<http://www.lib.ndsu.nodak.edu/ndirs/collections/photography.htm>



fig. 2-22 North Dakota State University
<http://www.lib.ndsu.nodak.edu>

The First Man was once on the banks of the Missouri, when a dead buffalo cow, in the side of which the wolves had eaten a hole, floated down the stream. A woman was on the bank, who called to her daughter, "Make haste, pull off your clothes, and bring the cow on shore." The First Man heard this and brought the cow to the spot. The girl ate some of the flesh, which the First Man gave her, and became pregnant. She was ashamed and said to her mother, that "she could not tell how she came into this state, as she had no intercourse with any man, : and her mother was ashamed with her. The daughter was afterwards delivered of a son, who grew with extraordinary rapidity and soon became a robust young man. He was immediately the first chief of his people-a great leader among men. The new chief was of the nation of the Numangkake-the Mandans.

*From the Mandan Legend of Creation
as transcribed by Prince Maximilian
Fort Clark, December, 1833.
(Thomas and Ronnefeldt 1976.)*

Culture

Much of the information related to the lives and culture of the Mandan people was recorded by fur traders and explorers searching for a water route to the Pacific Ocean. Pierre Gaultier de Varennes La Verendrye first reached the Mandans in the winter of 1738-39. La Verendrye recorded much detailed information regarding the Mandans and their interaction with various tribes. A majority of the interaction developed through an extensive series of trade networks. The Mandans were at the center of a far-reaching trade organization between fur traders and other Native American tribes. La Verendrye stated that the Mandans exchanged agricultural goods, animal skins, and colored plumes for guns, axes, kettles, bullets, powder, knives, and awls. La Verendrye wrote: "The Mandan are much more crafty than the Assiniboin in their commerce and in everything, and always dupe them" (www.trailtribes.org/kniferiver/intertribal-trade.htm).

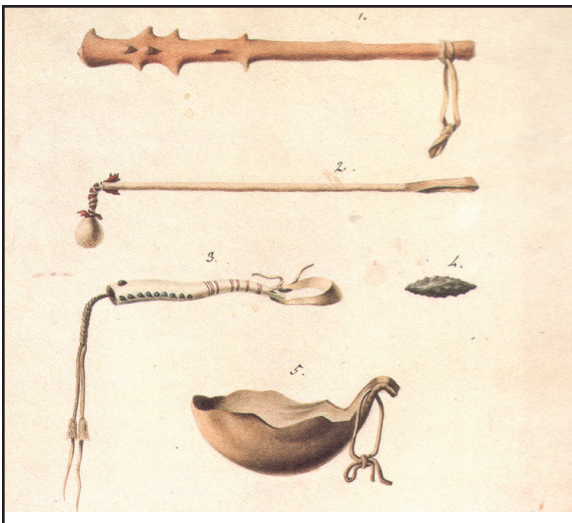


fig. 2-23 Mandan Artifacts
Karl Bodmer's America 1984.

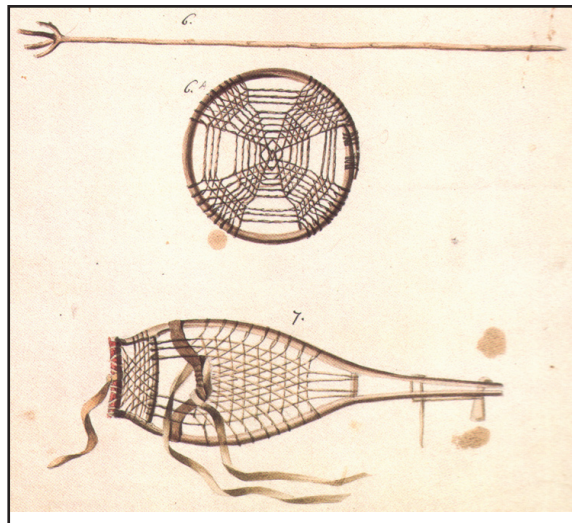


fig. 2-24 Mandan Artifacts
Karl Bodmer's America 1984.

Prince Maximilian of Weid was a German explorer and naturalist who traveled through the United States between 1832 and 1834. ([www.valdosta.edu/~mgnoll/Prince Maximilian.htm](http://www.valdosta.edu/~mgnoll/Prince_Maximilian.htm)) Karl Bodmer, a Swiss artist accompanied Maximilian across North America. Bodmer was commissioned to make detailed illustrations of the life, habits, and customs of the Indians encountered along the way. In 1833 the company traveled by steamboat up the Missouri river from St. Louis with the help and protection of John Jacob Astor's Fur Company. During the trip Bodmer recorded events in what is now Nebraska, South Dakota, North Dakota, Wyoming, and Montana. Bodmer sketched and painted Native Americans at every stop along the way. Bodmer is known for his honest representation of his subjects and acute attention to detail. (<http://monet.unk.edu/mona.artexplr/bodmer/bodmer.html>).

The winter of 1833-34 the group stayed at Fort Clark, near Washburn, ND. During this time Maximilian took extensive accounts of the customs, language, and culture of the Mandan people. The increasing presence of fur traders had a substantial impact on the plains tribes of North America. Many of these changes were recorded and documented by Maximilian and Bodmer.

([http://www.valdosta.edu/~mgnoll/Prince Maximilian.htm](http://www.valdosta.edu/~mgnoll/Prince_Maximilian.htm)).



fig. 2-25 Mih-Tutta-Hang-Kusch Village
Karl Bodmer's America 1984.

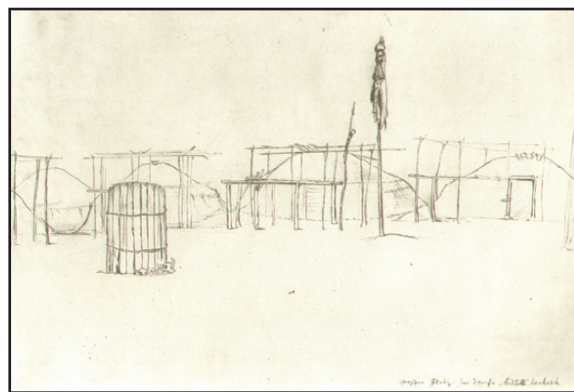


fig. 2-26 Mih-Tutta-Hang-Kush Village
Karl Bodmer's America 1984.

The Mandan people lived in round earth lodges that ranged from 40 to 90 feet in diameter depending on the size and the importance of the family. The lodges were occupied by 20 to 40 people. Various accounts and descriptions from Maximilian and Catlin indicate there were minor differences in the construction of these lodges at various settlements along the Missouri River. The lodges were made primarily of large timbers, willow branches, soil, and clay. "The first step in building the house was the excavation of the ground where the floor was to be, to a depth of about one and a half to two feet, the earth being thrown out in a bank all around the rim of the excavation. Around this circle, against the edges were placed eleven to fifteen great posts, four to six feet in height. Logs were laid across from one to another of these, and on the outside were slabs slanting in and resting against the cross logs. The rafters rested on large squared beams which were laid horizontally on this inner circle of large posts. The remaining space was filled by placing timber cross-cross over the cross-beams leaving a smoke hole in the center. On top of the rafters was placed a matting of willows, six inches thick, fastened together compactly and secured to the rafters. Over the surface then one to three feet of earth was placed, and the sides were banked with earth three or four feet high, and four feet thick." The entire surface was then covered with clay that served as a water repellent. (Will and Spinden 1906).

A majority of the lodges contained similar elements such as fireplaces that were constructed by digging, a round hole one foot deep and four to five feet in diameter and lining it with stones. Beds numbering from ten to twelve were raised above the ground two feet and were positioned around the perimeter of the lodge. A portion of the lodge was screened off, behind this area the horses were kept. The use of cache pits was very common. A cache pit was a jug shaped hole in the ground six to eight feet deep at the base with an opening just large enough for a person to pass through. Dried vegetables like corn and beans were stored in these pits along with other valuables. The sedentary character of the tribes led to the fact that they engaged in agriculture and developed a means in which to store their produce. (Will and Spinden 1906).

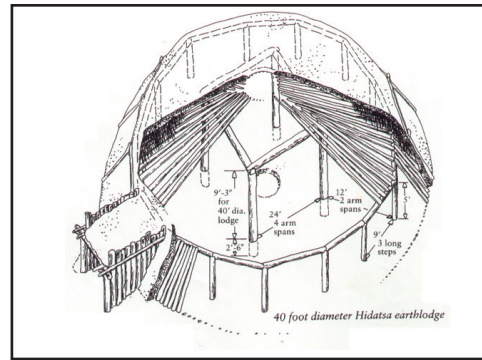


fig. 2-27 Earth lodge
Native American Architecture, 1989.

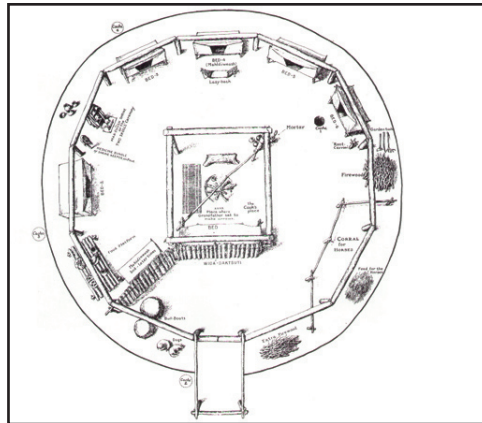


fig. 2-28 Earth lodge
Native American Architecture, 1989.

The Mandans were agricultural people, more so than any of their neighboring tribes. Maximillian reports that each family cultivated three fields of four to five acres each. The farms were moved to new locations when the harvests began to yield smaller products. The Mandans primarily raised corn, beans, squash, tobacco, and sunflowers. With the reports from Maximilian and Lewis and Clark pertaining to the size and amounts of cache pits in a typical settlement, it is possible that nearly one thousand bushels of corn could be stored in the village throughout the year. Wild fruits and vegetables eaten by the tribes included june berries, chokecherries, wild plums, and turnips. (Will and Spinden 1906).

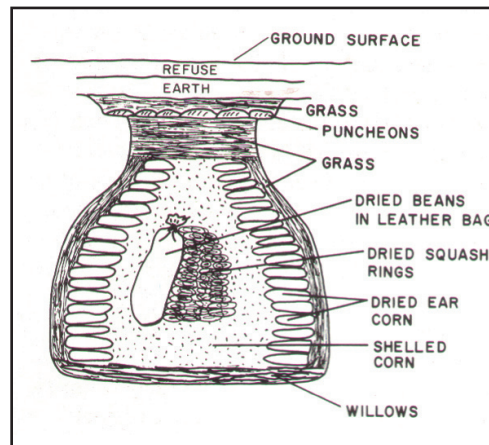


fig. 2-29 Cache Pit
People of the Willows, 1991.

The dress of the Mandans in general was very minimal. Verendrye says at the time of his visit the men were naked except for a carelessly worn buffalo robe. While most of the women wore simply an apron about the waist. Elder women and small girls wore a tunic shaped garment made of deerskin often decorated with a fringe. Bead necklaces and earrings were worn as well as leggings that reached just below the knee. (Will and Spinden 1906).

Ceremonies and feasts called for extensive ornamentation and clothing. Embroidered leather shirts, moccasins decorated with porcupine quill work, necklaces of elk teeth, bears' claws, tobacco pouches, quivers, medicine pouches, and large glass beads were all part of the Mandan ceremonial dress. Large head-dresses comprised of eagle, hawk, raven, and crow feathers were worn by some members of the tribes as well. (Will and Spinden 1906).

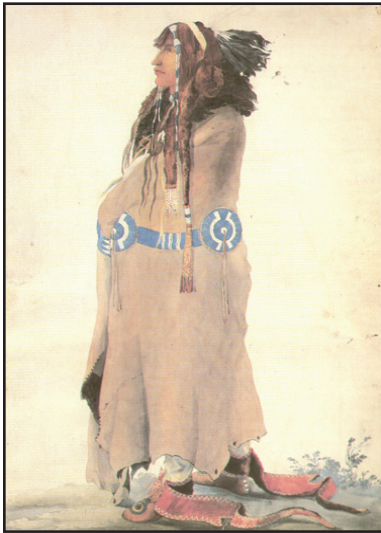


fig. 2-30 Sih-Sa
Karl Bodmer's America 1984.



fig. 2-31 Upsichta
Karl Bodmer's America 1984.

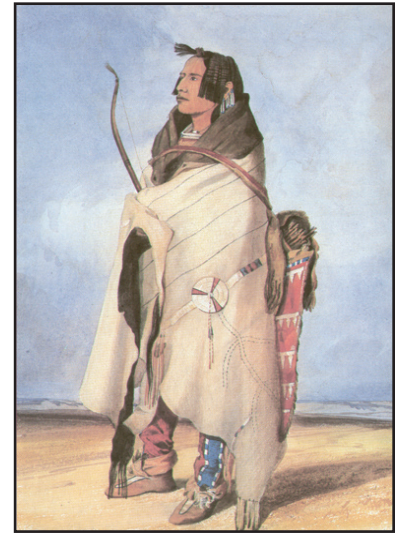


fig. 2-32 Sih-Sa
Karl Bodmer's America 1984.

Hunting was an equal contributor to the success of the Mandan people. Buffalo were hunted year round whenever a herd was near the village. Additionally elk, antelope, deer, bighorn sheep, beaver, rabbits, ducks, geese, and the occasional bear provided food and pelts. Other animals such as ermines, mink, foxes, wolves, and panther were killed for their hides. Eagles and other raptors were hunted for their plumes which were used in ceremonies and ornamentation. (Will and Spinden 1906).

The Mandans were known for their craftsmanship and manufacturing many goods. The common items included dressed animal skins, bull-boats, medicine bags, tobacco pouches, sheathes for knives and bows, bridles for horses, and tools for gardening like hoes and rakes. Nearly all the written accounts of the Mandan culture include some reference to their ability to craft pottery for food storage and preparation. (Will and Spinden 1906).

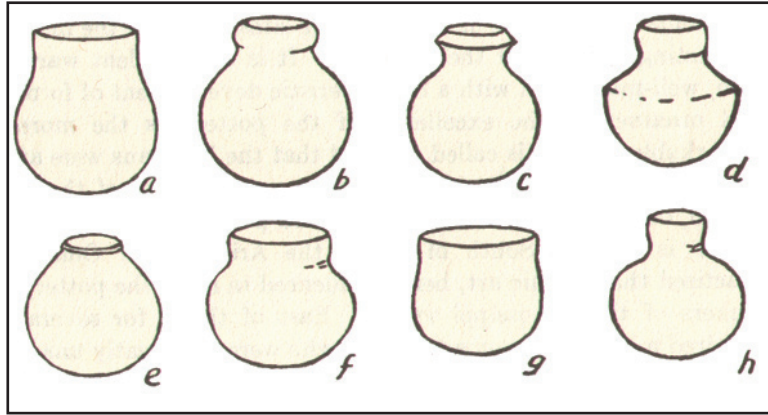


fig. 2-33 Common Pottery Shapes of the Mandans
The Mandans 1906.

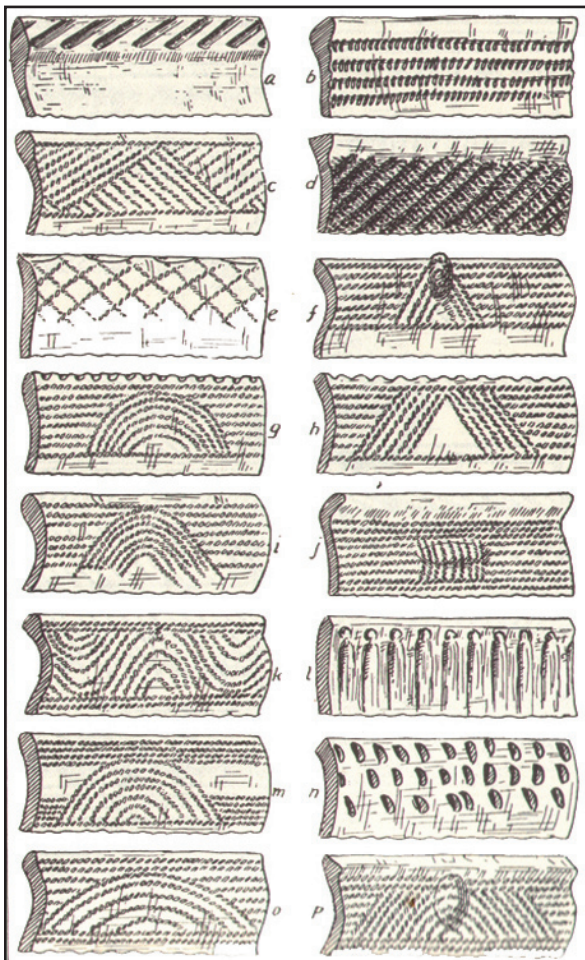


fig. 2-34 Common Pottery Designs of the Mandans
The Mandans 1906.

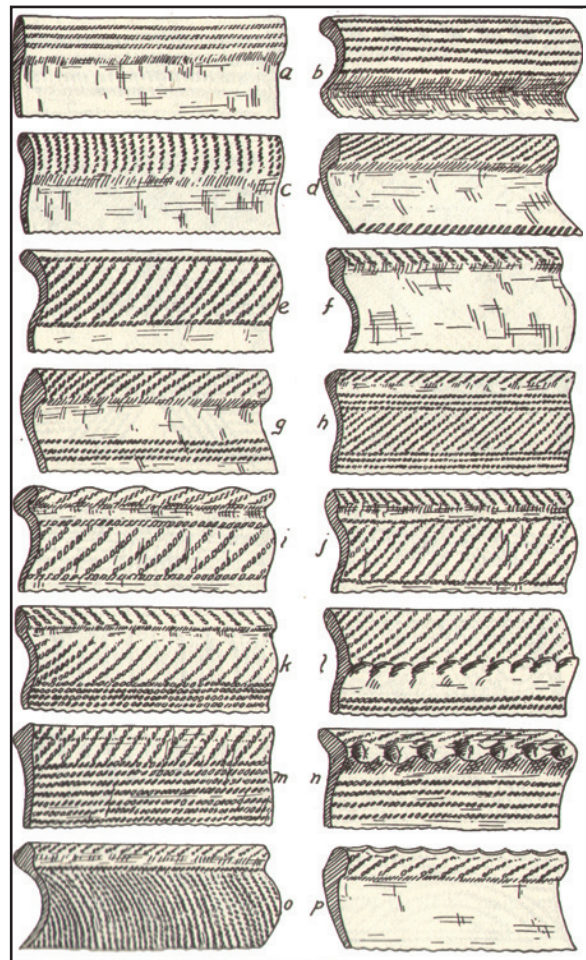


fig. 2-35 Common Pottery Designs of the Mandans
The Mandans 1906.

The primary occupation of the men in the tribe was war. The Mandans were in constant danger of attacks from other tribes in the area. The Mandans were not known to attack other tribes, simply to defend themselves when being attacked or invaded by other tribes like the Dakotas and the Cheyenne.

(Will and Spinden 1906).

The Mandans developed games for men, women, and children—betting was an important part of most sports played by the tribal members. Skohpe or Tchung-kee, as some referred to it was the best known of all games. The game consisted of sticks with notches and a stone ring. The scoring resulted from catching the stone ring with the stick. Other games played by men included horse races, foot races, and archery contests. Women and children also played a variety of other games such as Asse, a children's game that involved the tip of an antler and feathers, the women played a game similar to modern hackey sack that involved a large leather ball that was alternately kicked by the knee and foot. Other games played by the children helped to prepare them to be successful hunters and warriors as adults. (Will and Spinden 1906).

Nearly every visitor to the Mandan villages mentions the hospitable nature of their hosts. The Mandans were known to customarily “feed liberally all who came among them, selling only what was to be taken away.” The Mandans would take in an enemy seeking refuge, once he had eaten corn with them the people of the tribe would treat the man as one of their own. (Will and Spinden 1906).



fig. 2-36 Meeting at Fort Clark
People of the First Man 1976.

The Mandans recognized several deities in regard to religious activity. Special attention was paid to Lord of Life, the creator of earth and everything on it. Five other deities were part of the Mandan way of life, some of the gods had evil powers while others were a sign of death. Sacrifices and offerings were used to appease many of the gods. (Will and Spinden 1906).

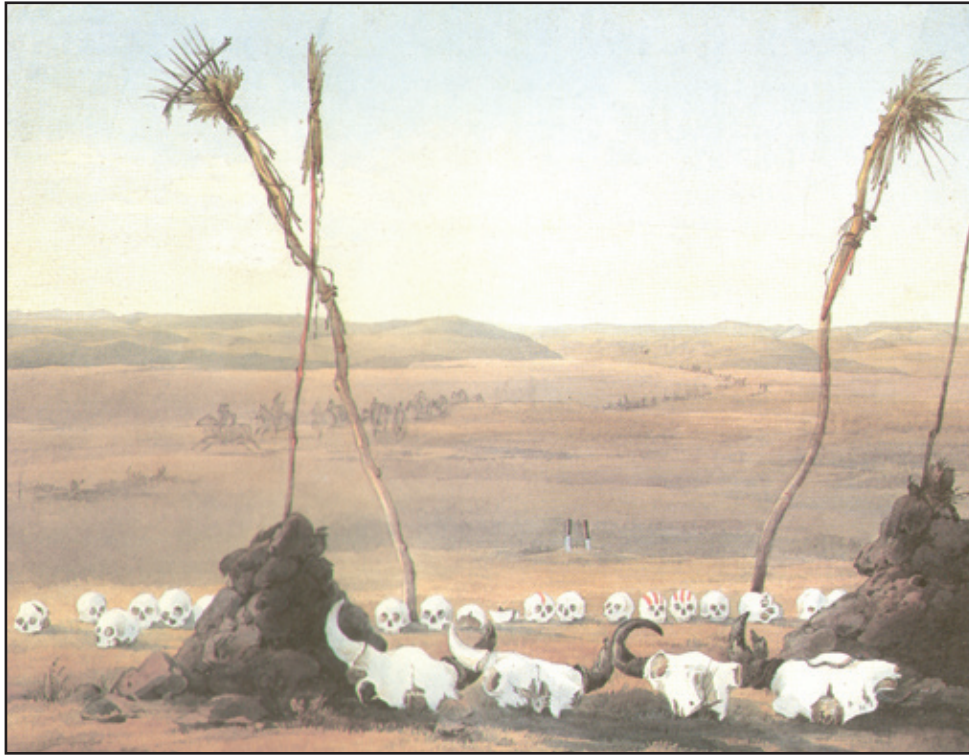


fig. 2-37 Mandan Ceremonial Shrine
Karl Bodmer's America 1984.



fig. 2-38 Mandan Shrine
Karl Bodmer's America 1984.

Climate

The climatic conditions in North Dakota are due primarily to its location at the geographic center of North America. The overall climate of the state can dramatically vary annually and day-to-day. Moderate precipitation, low relative humidity, sunny skies, and perpetual air movement are all common conditions associated with a continental climate. These conditions result in warm-humid summers and cold-dry winters. The average daily temperature ranges from 37 degrees F in the northeast to 43 degrees in the southwest. January is the coldest month, with average daily temperatures ranging from 2-17 degrees F. July is the warmest month on record with mean temperatures from 67-73 degrees Fahrenheit. The highest recorded temperature was recorded at Steele on July 6, 1936, the thermometer peaked at 121 degrees Fahrenheit. The lowest recorded temperature was set in February of the same year, with the mercury bottoming out at -60 degrees F. at Parshall. Annual precipitation ranges from 13 to 20 inches, with the eastern portion of the state receiving the majority of rainfall.

(<http://www.npwr.usgs.gov/resource/habitat/climate/climate.htm>).

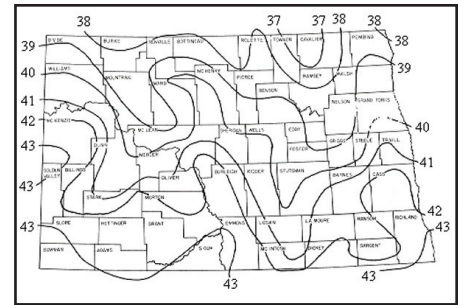


fig. 2-39 Mean Daily Temperature
<http://www.npwr.usgs.gov/resource/othrdata/climate/climate.htm>.

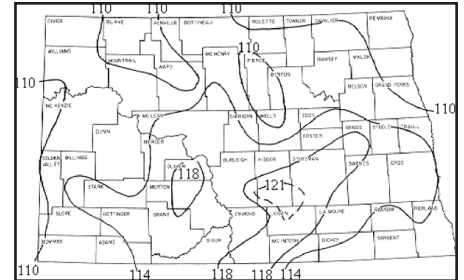


fig. 2-40 Extreme High Temperatures
<http://www.npwr.usgs.gov/resource/othrdata/climate/climate.htm>.

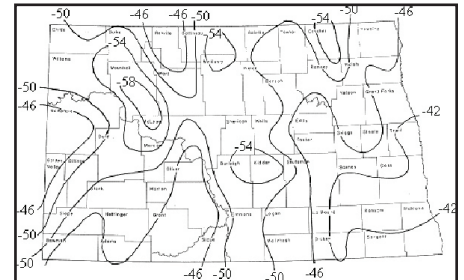


fig. 2-41 Extreme Cold Temperatures
<http://www.npwr.usgs.gov/resource/othrdata/climate/climate.htm>.

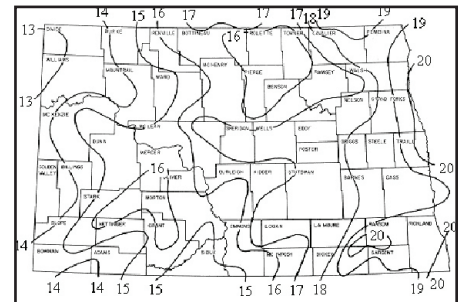


fig. 2-42 Annual Precipitation-inches
<http://www.npwr.usgs.gov/resource/othrdata/climate/climate.htm>.

The average wind speeds across North Dakota are greatest during the latter months of winter and the early portion of spring. The Red River Valley along the eastern border experiences a 10 to 20% increase in wind velocity due to a lack of topography and vast open spaces. The fastest wind speed was clocked at a sustained rate of 115 miles per hour for a 60 second duration.

<http://www.npwrc.usgs.gov/resource/habitat/climate/climate.htm> .

Month	Bismarck			Devils Lake			Fargo			Williston		
	Mean Speed	Prevailing direction	Fastest Mile	Mean Speed	Prevailing direction	Fastest Mile	Mean Speed	Prevailing direction	Fastest Mile	Mean Speed	Prevailing direction	Fastest Mile
January	10.2	WNW	54	9.7	NW	41	13.2	SSE	62	9.9	W	70
February	10.2	WNW	54	9.9	NW	54	13.0	N	56	9.1	NE	66
March	11.4	WNW	65	10.6	NW	54	13.6	N	56	10.1	NW	52
April	12.8	WNW	63	11.3	NW	47	14.9	N	68	11.4	SE	56
May	12.5	SSE	66	10.7	NE	52	13.8	N	72	11.9	SE	56
June	11.3	WNW	66	9.5	SE	50	12.2	SSE	115	9.7	SE	61
July	9.8	SSE	72	8.4	NW	56	10.9	S	60	9.1	SE	64
August	10.0	E	72	8.5	SE	47	11.4	SSE	71	10.1	SW	47
September	10.5	WNW	66	9.3	NW	46	12.5	SSE	88	10.1	SW	50
October	10.4	WNW	61	9.9	NW	47	13.1	SSE	57	10.0	SW	57
November	10.6	WNW	67	10.1	NW	57	13.7	S	66	9.2	SW	47
December	9.8	WNW	61	9.3	NW	42	12.8	S	58	9.7	SW	56
Year	10.8	WNW	72	9.8	NW	57	12.9	N	115	10.0	SW	70
Yrs. of record	30	14	30	57	57	57	28	14	29	5	3	8

fig.2-43 Prevailing Wind Direction and Mean Speed
<http://www.npwrc.usgs.gov/resource/habitat/climate/climate.htm>

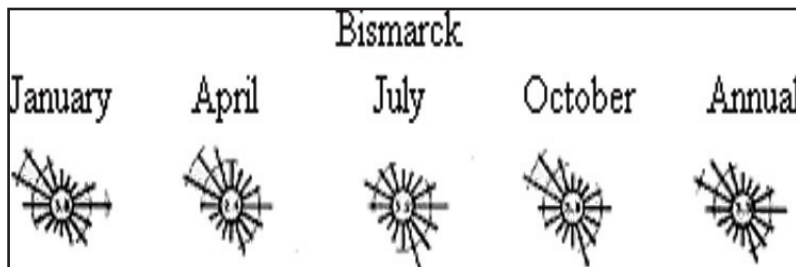


fig. 2-44 Seasonal Wind Direction
<http://www.npwrc.usgs.gov/resource/othrdata/climate/climate.htm>.

Geology

Much of North Dakota's landscape is a direct result of glacial activity thousands of years ago. The primary deposits found around the region include elements from the tertiary formation such as Cannonball (Tc) and Bullion Creek (Tb) from the Paleocene epoch. The materials include olive brown sand, shale, sandstone, and lignite. These elements were primarily formed from marine shoreline and off shore sediments. Plateaus or buttes are common land formations throughout the region.

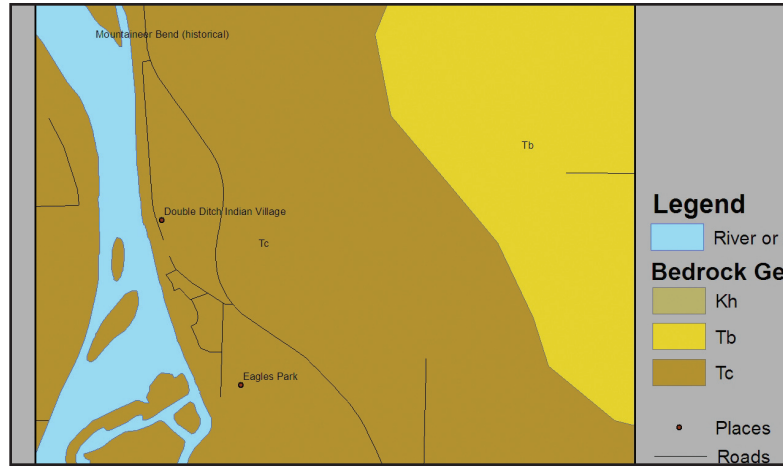


fig.2-45 Geologic remnants Personal Map 2005.

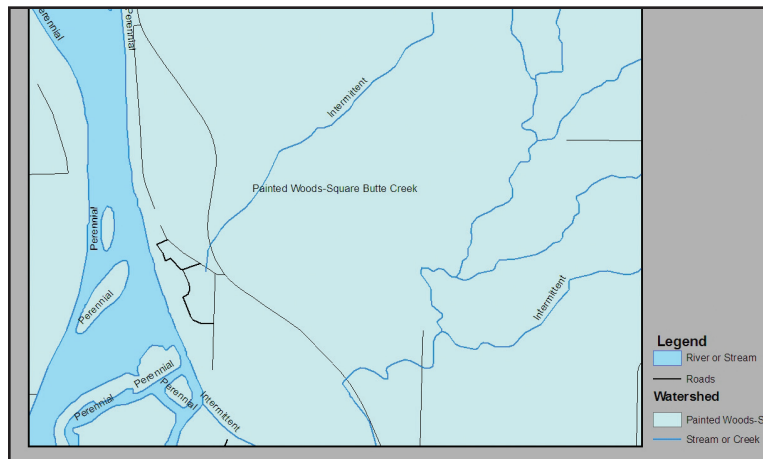


fig.2-46 Rivers, Streams, Aquifers Personal Map 2005.

Hydrology

The central region of the state is commonly referred to as the Prairie Coteau. Prairie Potholes dot the landscape. Groundwater and spring thaw are the two primary sources of water contributing to the potholes. The water table is considerably shallow in this area which also contributes to the amount of surface water. These potholes are home to thousands of waterfowl including ducks, geese, and swans. Some accounts attribute the production of over 50% of the entire duck and goose populations of North America to these potholes.

(<http://www.lib.ndsu.nodak.edu/govdocs/text/potholes/585c.html>).

Soils

The Havreton-Lohler-Banks association dominates the lowlands of the Missouri River region. The entire association occupies less than 3 percent of the total land in Burleigh county. Two primary soil classifications are found in the region; the Mandan Series and the Linton Series. Both have similar characteristics; nearly level to steep slopes, deep, well-drained soils. These soil properties are commonly found along the Missouri River. The soil permeability is moderate to poor in some areas which increases the amount of water the soil can retain as well. Overall fertility of the soil is rated medium due to the moderate levels of carbon producing organic compounds. Typically trees, shrubs, and grasses do well in these soil types. Additionally small grains, such as wheat and barley are harvested in these as well as legumes and sunflowers. Much of this region is agricultural land that requires soil preparation and irrigation. The remaining portions of the association is brushy grassland, and wooded. Some portions of the land is used for livestock grazing or wildlife habitat. Many of the farmers in the region combine livestock grazing and small grain crops to maintain their operations.

(U.S. Department of Agriculture Soil Conservation Service, 1974.)

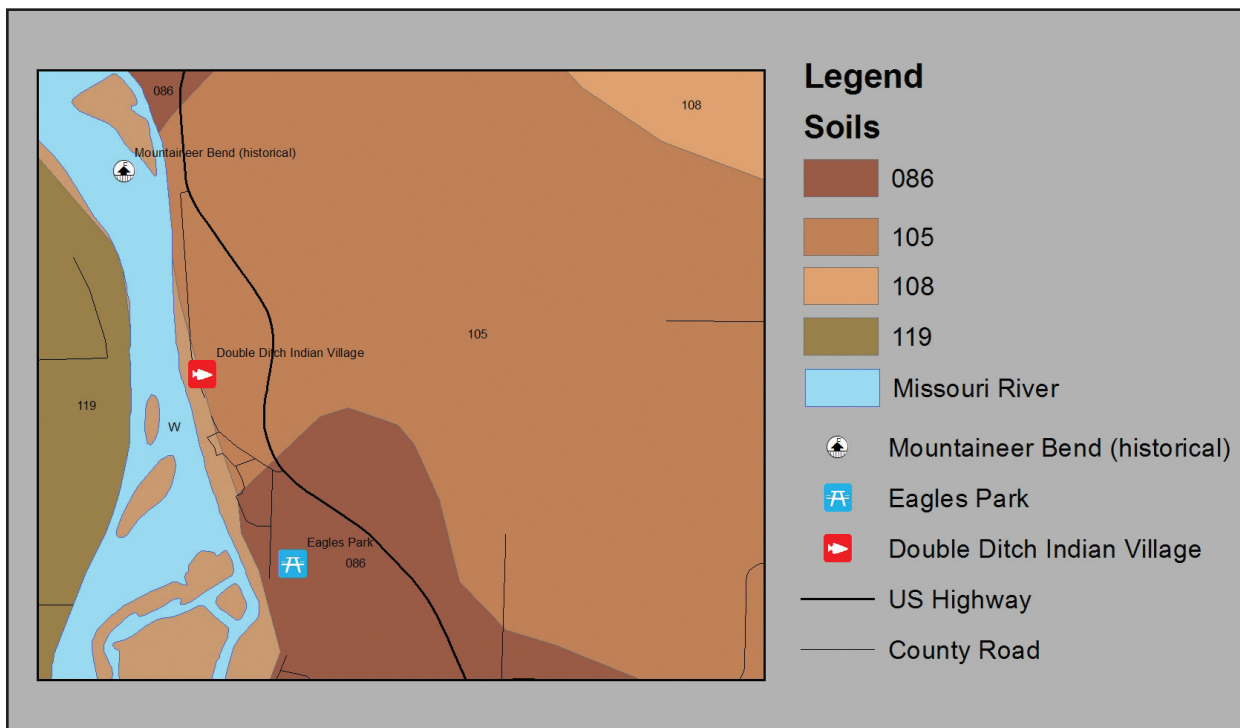


fig.2-47 Soil Types Personal Map 2005.fig.

Vegetation

Central North Dakota is classified as a mixed-grass prairie that plays host to hundreds of grass, tree, shrub, sedge and forb species. The predominant vegetation across the region are grasses. The three major genera found in the region include *Bouteloua*, *Stipa*, and *Agropyron*. The species commonly found within each genera include blue grama (*Bouteloua gracilis*), Needle-and-Thread (*Stipa comata*), Porcupine grass (*Stipa spartea*), and Western Wheatgrass (*Agropyron smithii*) respectively. The remaining portions of the grasslands are predominantly covered by fescues (*Festuca sp.*) (Barker p.7) Double Ditch lies within the mixed-grass prairie region which offers nearly 200 native and introduced species. The plants vary based on slope aspect, moisture regimes, soil conditions and grazing intensity.

(<http://www.npal.ndsu.nodak.edu/vegetation.htm>.)

Grasses

Scientific Name

Common Name

<i>Agropyron canunum</i>	Slender Wheatgrass
<i>Agropyron caninum</i> 'majus'	Bearded Wheatgrass
<i>Agropyron cristatum</i>	Crested Wheatgrass
<i>Atropyron elongarum</i>	Tall Wheatgrass
<i>Agropyron intermedium</i>	Pubescent Wheatgrass
<i>Agropyron repens</i>	Quackgrass
<i>Agropyron smithii</i>	Western Wheatgrass
<i>Agropyron spicatum</i>	Bluebunch Wheatgrass
<i>Andropogon gerardii</i>	Big Bluestem
<i>Adnropogon hallii</i>	Sand Bluestem
<i>Aristida purpurea</i>	Red Threeawn
<i>Avena fatua</i>	Wild Oats
<i>Bouteloua curtipendula</i>	Sideoats Grama
<i>Bouteloua gracilis</i>	Blue Grama
<i>Bouteloua hirsuta</i>	Hairy Grama
<i>Bromus inermis</i>	Smooth Brome
<i>Buchloe dactyloides</i>	Buffalo Grass
<i>Calamagrostis stricta</i>	Northern Reedgrass
<i>Calamovilfa longifolia</i>	Prairie Sandreed
<i>Distichlis spicata</i>	Inland Saltgrass
<i>Elymus canadensis</i>	Canada Wildrye
<i>Hordeum jubatum</i>	Foxtail Barley
<i>Koeleria pyramidata</i>	Prairie Junegrass
<i>Muhlenbergia cuspidata</i>	Plains Muhly
<i>Oryzopsis hymenoides</i>	Indian Ricegrass
<i>Panicum virgatum</i>	Switchgrass
<i>Phalaris arundinacea</i>	Reed Canarygrass
<i>Poa arida</i>	Plains bluegrass
<i>Schizachryrium scoparium</i>	Little Bluestem
<i>Spartina pectinata</i>	Prairie Cordgrass
<i>Stipa comata</i>	Needle-and-Thread
<i>Stipa spartea</i>	Porcupine Grass



fig.2-48 Buffalo Grass
<http://www.lib.ksu.edu/wildflower/>.



fig.2-49 Indian Grass
<http://www.lib.ksu.edu/wildflower/>.



fig.2-50 Little Bluestem
<http://www.lib.ksu.edu/wildflower/>.



fig.2-51 Big Bluestem
<http://www.lib.ksu.edu/wildflower/>.

Forbs

Scientific Name

Achillea millefolium
Agoseris glauca
Amorpha canescens
Artemisia absinthium
Artemisia campestris
Artemisia cana
Artemisia frigida
Artemisia ludoviciana
Astragalus adsurgens
Astragalus crassicaarpus
Dalea candida
Echinacea pallida
Gaillardia aristata
Geum triflorum
Glycyrrhiza lepidota
Liatris ligulistylis
Lithospermum canescens
Lithospermum incisum
Psoralea argophylla
Ratibida columnifera
Rudbeckia hirta
Senecio plattensis
Solidago canadensis
Solidago mollis
Solidago rigida
Thermopsis rhombifolia

Common Name

Western Yarrow
 False Dandelion
 Leadplant
 Absinth Wormwood
 Common Sagewort
 Silver Sagebrush
 Fringed Sagewort
 White Sagewort
 Standing Milkvetch
 Groundplum Milkvetch
 White Prairie Clover
 Purple Coneflower
 Gaillardia
 Torch Flower
 American Licorice
 Blazing Star
 Hoary Puccoon
 Narrow-Leaved Puccoon
 Silverleaf scurfpea
 Prairie Coneflower
 Black-Eyed Susan
 Prairie Ragwort
 Canada Goldenrod
 Soft Goldenrod
 Stiff Goldenrod
 Golden Pea



fig.2-52 Purple Coneflower
<http://www.lib.ksu.edu/wildflower/>.



fig.2-53 Leadplant
<http://www.lib.ksu.edu/wildflower/>.



fig.2-54 Black-Eyed Susan
<http://www.lib.ksu.edu/wildflower/>.



fig.2-55 Hoary Puccoon
<http://www.lib.ksu.edu/wildflower/>.



fig.2-56 Blazing Star
<http://www.lib.ksu.edu/wildflower/>.

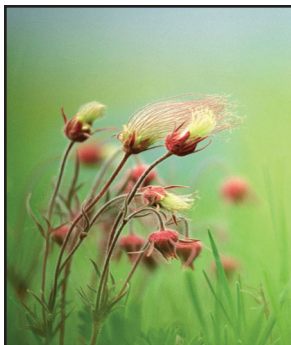


fig.2-57 Torch Flower
<http://www.lib.ksu.edu/wildflower/>.



fig.2-58 Silver Sagebrush
<http://www.lib.ksu.edu/wildflower/>.



fig.2-59 Gaillardia
<http://www.lib.ksu.edu/wildflower/>.

Shrubs and Trees

Scientific Name

Acer negundo
Acer saccharinum
Amerlanchier alnifolia
Betula occidentalis
Celtis occidentalis
Cornus sericea
Fraxinus pennsylvanica
Ginkgo Biloba
Juniperus virginiana
Juniperus virginiana
Larix laricina
Picea pungens
Ostrya virginiana
Prunus americana
Quercus macrocarpa
Populus deltoides
Potentilla fruticosa
Shepherdia argentea
Salix amygdaloides
Syring vulgaris
Tilia americana
Ulmus americana
Viburnum lentago

Common Name

Boxelder Maple
 Silver Maple
 Saskatoon Serviceberry
 River Birch
 Hackberry
 Redosier Dogwood
 Green Ash
 Ginkgo/Maidenhair Tree
 Rocky Mountain Juniper
 Eastern Red-cedar
 American Larch
 Colorado Spruce
 Ironwood/Hop-hornbeam
 American Plum
 Bur Oak
 Eastern Cottonwood
 Shrubby cinquefoil
 Peachleaf Willow
 Silver Buffalo-berry
 Common Lilac
 American Linden
 American Elm
 Nannyberry Viburnum



fig.2-60 Honeysuckle
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-61 Common Lilac
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-62 American Plum
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-63 Golden Willow
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-64 Redosier Dogwood
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-65 Shrubby Cinquefoil
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-66 Ironwood
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>

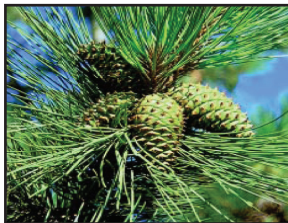


fig.2-67 Ponderosa Pine
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-68 Serviceberry
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-69 Bur Oak
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-70 American Elm
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>

Sedges

Scientific Name

Carex atherodes
Carex eleocharis
Carex filifolia
Carex heliophila
Carex lanuginosa
Equisetum hymale
Juncus balticus

Common Name

Slough Sedge
 Needleleaf Sedge
 Threadleaf Sedge
 Sun Sedge
 Woolly Sedge
 Scouring Rush
 Baltic Rush



fig.2-71 Slough Sedge
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>



fig.2-72 Scouring Rush
<http://www.ag.ndsu.nodak.edu/aginfo/treeshandbook/ndhand-1.htm>

Demographics and Culture

The 2000 US Census poll listed North Dakota's population at 634,366 which was a half of a percent increase from the previous census results taken a decade earlier. North Dakota residents make up less than one-half of one percent of the entire United States population of 293,655,404. In 2002 the State claimed 294,165 housing units with an ownership rate just over 66 percent. The average annual household income was just under \$35,000 leaving nearly 12 percent of the people at or below the National poverty level. More than 83 percent of the of the residents age 25 and up have a high school diploma with 22 percent earning a bachelor's degree or higher.

Scandinavian and German cultures make up a large portion of the cultural background of North Dakota residents. Other cultures include Native American, Irish, Latino, and Asian. (<http://www.quickfacts.census.gov/qfd/states/38000.html> 2005).

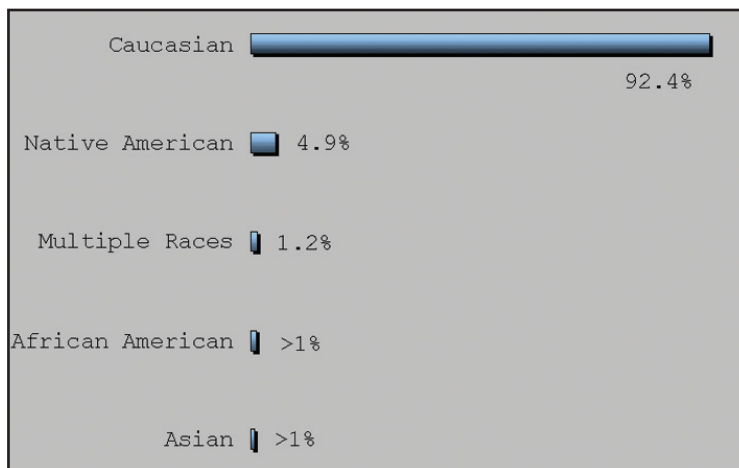


table 1 Cultural Heritage (Personal Drawing 2005).

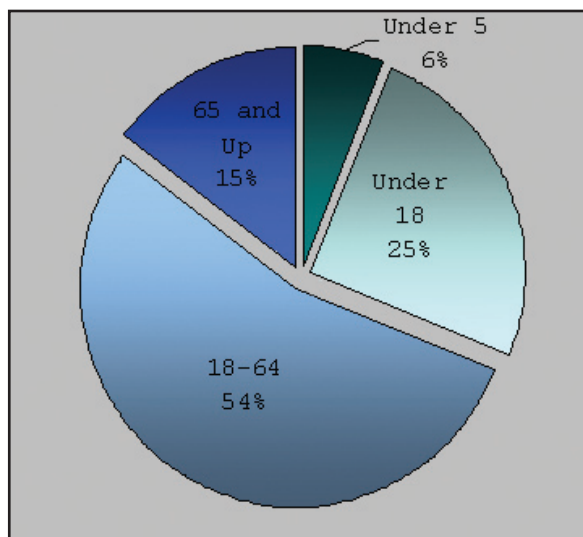


table 2 Age Breakdown (Personal Drawing 2005).

Activities and Recreation

North Dakota has countless opportunities for tourism, recreation, and vacationing. The central region of the state offers some of the best hunting, fishing, and outdoor recreation in the area. The Missouri River offers miles of opportunities for fishing, boating, or bird watching. The Missouri River offers several species of game fish including Walleye, Sauger, Saugeye, and Northern Pike. From Huff to Stanton nearly one dozen public boat ramps are available with ample parking and fish cleaning stations. Hunting in the central region of the state is enjoyed by local and non-resident enthusiasts as well. Pheasants, grouse, partridge, geese, grouse, turkey, several species of waterfowl, and deer are commonly found in this area. (<http://www.ndtourism.com/secondary/viewArticle.asp?ID=69>).



fig. 2-73 State Capital
<http://www.nd.gov/capital.htm>.



fig. 2-74 Ft. Lincoln Trolley
<http://realnd.com/fortlincolntrolleyindex.htm>

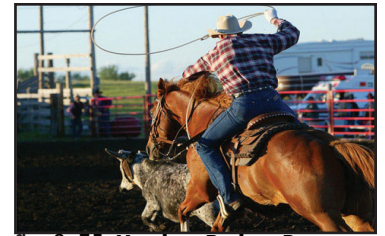


fig. 2-75 Mandan Rodeo Days
<http://www.nd.gov/postcard.htm?imageid=16604>

Bismarck

ND State Capital Grounds
Heritage Center
United Tribes Pow-Wow
ND State Historical Society
Lewis and Clark Riverboat
Former Governor's Mansion
Chief Looking's Village
Buckstop Junction

Sertoma Park Complex
Folkfest
Annual Sam McQuade
Softball Tournament
McDowell Dam
Recreation Area
Bismarck-Mandan Symphony Orchestra
Camp Hancock Historic Site
Sleepy Hollow Performing Arts Park

Mandan

Buggies and Blues
On-A-Slant Indian Village
Huff Indian Village
Huff Hills Ski Area
Fort Lincoln Trolley
Fort Abraham Lincoln
State Park
Roughrider Trail System
4th of July Rodeo Days
Raging Rivers Water Park
North Dakota State
Railroad Museum

Washburn

Lewis & Clark Interpretive Center
Fort Mandan
Cross Ranch State Park

Stanton

Knife River Indian Villages
National Historic Site
Sakakawea State Park
Fort Clark

Huff

Huff Hills Ski Area

POWOWS

Powwows are ceremonial traditions originally held in the spring to celebrate the beginning of new life. Powwows gave the people an opportunity to rekindle old friendships, sing, and dance. For many tribes the powwow had religious significance. Today powwows are still an important tradition in Native American culture.

One of the largest powwows in the Nation is held the first weekend after Labor Day at the United Tribes Technical College in Bismarck. Public spectators are welcomed and encouraged to attend this event. The grand entry is a parade of dancers that begins each session. The dancers perform for the audience sun-wise (clockwise) around an eagle staff. The style of dance and costumes worn are unique to each competitor. (<http://www.unitedtribespowwow.com>).



fig.2-76 United Tribes International Powwow
<http://www.unitedtribespowwow.com>



fig.2-77 United Tribes International Powwow
<http://www.unitedtribespowwow.com>

The women's dance category is divided into three sections; traditional dance, fancy shawl dance, and the jingle dress dance. Traditional dancers move subtly, bending at the knees with small up and down body movements. Their costumes are ornately decorated with bead work that adorns their moccasins and matching leggings. Fancy shawls and jewelry are routinely part of the dance that bears its name. The jingle dress dance has costumes covered with hundreds of metal cones that produce a jingling sound as the dancer performs the rhythmic steps across the floor. Some tribesmen believe the jingle dress dance originated from a holy man's dream.

(<http://www.unitedtribespowwow.com>.)



fig.2-78 United Tribes International Powwow
<http://www.unitedtribespowwow.com>

The men's field is also divided into three categories; traditional dance, grass dance, and fancy dance. The traditional dancer is decorated with porcupine quill and ornate bead work. A circular bustle of eagle feathers illustrates the sacred relationship of the Natives to the great bird. These men "dance out" the story of a heroic battle or hunt. The grass dancers performance is meant to emulate the flowing of the native grasses across the prairie. Their costumes are decorated with color fringe on the sleeves and pant legs. Men's fancy dance is a much more acrobatic performance. Fast footwork, spinning motions, and freestyle steps designate this dance from the others. The costumes for this dance are recognizable by two vibrantly colored bustles made of feathers.

Regional Powwows

Kenel Powwow	Last Weekend in May	Kenel, SD
Twin Buttes Powwow	3rd Weekend in June	Twin Buttes, ND.
Long Soldier Powwow	1st Weekend in August	Fort Yates, ND.
Little Shell Powwow	2nd Weekend in August	New Town, ND.
Mandaree Powwow	3rd Weekend in July	Mandaree, ND.
Fort Totten Days Powwow	4th Weekend in July	Fort Totten, ND.



fig.2-79 United Tribes International Powwow
<http://www.unitedtribespowwow.com>



fig.2-80 United Tribes International Powwow
<http://www.unitedtribespowwow.com>



fig.2-81 United Tribes International Powwow
<http://www.unitedtribespowwow.com>



fig.2-82 United Tribes International Powwow
<http://www.unitedtribespowwow.com>

Scenic Byways

North Dakota offers nearly 200 miles of Scenic Byways and Backways across the state. The difference between a Byway and Backway is the surface of the road-asphalt or gravel respectively. A recent study was done by NDSU Landscape Architecture interns to assess current conditions and improvements to the byways.



fig.2-83 Signage
Hansen, et al. 2005.



fig.2-84 Signage
Hansen, et al. 2005.

Theodore Roosevelt National Park North Unit Scenic Byway can be found in McKenzine County in western North Dakota. This 14 mile paved road features the North Dakota Badlands Wilderness Area. Often times wildlife such as deer, elk, and bison can be seen in the park. The Sheyenne River Valley Scenic Byway in the southeast portion of the state is also recognized as a National Byway. Unique farmsteads, the Sheyenne National Grasslands, Fort Ransom State Park, and Valley City historic bridges can all be found along the Sheyenne River Valley trail.



fig.2-85 Valley City High Line Bridge
Hansen, et al. 2005.



fig.2-86 Killdeer Scenic Byway
Hansen, et al. 2005.

Other Scenic Byways found in the state include the Standing Rock Historical Byway, Killdeer Four Bears, James River Valley, Turtle Mountain and Sakakawea. The Standing Rock Historical Byway is located on the Standing Rock Indian Reservation in North and South Dakota. The Sitting Bull grave, horseback riding, and Prairie Knights Casino, Lodge, and Marina are all stops along the byway. The Sakakawea Byway travels along Highway 200A between Stanton and Washburn. The Knife River Indian Village National Park and Lewis and Clark Interpretive center are both excellent attractions along this 22 mile paved highway.

North Dakota also has two recognized Scenic Backways. The Rendezvous Region in the northeast portion of the state offers more than 450 miles of groomed hiking, biking, and snowmobile trails. The Des Lacs National Wildlife Refuge Backway provides excellent opportunities to view rolling topography, wooded draws, hundreds of species of birds, and larger animals like moose and deer.



fig.2-87 Rendezvous Region
Hansen, et al. 2005.



fig.2-88 Sakakawea Park-Stanton, ND
Hansen, et al. 2005.



fig.2-89 North Dakota Buttes
Hansen, et al. 2005.



fig.2-90 Killdeer Mountains
Hansen, et al. 2005.



fig.2-91 Little Missouri State Park
Hansen, et al. 2005.



fig.2-92 Little Missouri State Park
Hansen, et al. 2005.



fig.2-93 Sheyenne Valley
Hansen, et al. 2005.



fig.2-94 Killdeer Battlefield
Hansen, et al. 2005.



fig.2-95 Reunion Bay
Hansen, et al. 2005.

site analysis

Current Uses

The Double Ditch Indian Village is possibly one of the most outstanding archeological finds in North America. Recent archeological digs have located huge refuse piles that indicate the settlement had occupied the area for hundreds of years. "South of the site approximately 100 yards is a deep ravine; to the east and north gentle slopes ease into gentle prairie land. Below the bluffs stretch the bottom lands and the shores of the Missouri River. The remains of the village extend for 1,300 feet along the edge of the bluff and more than 800 feet back. The remnants of the settlement are evident in mounds from one to ten feet in height; continuous fortification ditches; circular slightly sunken rings left from the earth lodges, and small sunken areas marking the remains of cache pits. (Will & Spinden 1906).

A small shelter built in 1933 by the Civilian Conservation Corps, Interpretive panels, and two benches are the only objects that exist on the entire site. A small gravel turnoff serves as a parking lot on the east side of the village. A single-lane asphalt road enters from the north edge of Double Ditch that also serves as parking for guests visiting the village, exercising, or fishing from the banks of the Missouri River below the bluff. The site is open year-round with no charge for admission.

Through extensive research and multiple site visits an inventory and analysis was developed to help guide the design process. Building location and the interpretive walking path were critical components to the overall master plan. Location of the building needed to fit cohesively into the landscape to allow visitors to be completely immersed in the culture of the Native American. Allowing the terrain to dictate the location of the visitor center is a key factor in this project.

Site Images



fig.3-1 Road Sign
(Personal Photo, 2005).



fig.3-2 Entry Sign (Personal Photo, 2005).



fig.3-3 Entry Gate (Personal Photo, 2005).



fig.3-4 Concrete Entry Walk (Personal Photo, 2005).



fig.3-5 Concrete Picnic Table (Personal Photo, 2005).



fig.3-6 Interpretive Panel (Personal Photo, 2005).

Site Images



fig.2-7 Asphalt Parking Lot West Side of Project Site (Personal Photo, 2005) .



fig.2-8 Asphalt Parking Lot West Side (Personal Photo, 2005) .



fig.2-9 Asphalt Parking Lot West Side (Personal Photo, 2005) .



fig.2-10 CCC Shelter West Side of Site (Personal Photo, 2005) .

Site Images



fig.2-11 Walking Trail Looking North
(Personal Photo, 2005).



fig.2-12 View Looking North
(Personal Photo, 2005).



fig.2-13 Northwest View
(Personal Photo, 2005).



fig.2-14 Northwest View
(Personal Photo, 2005).



fig.2-15 North Property Line
(Personal Photo, 2005).



fig.2-16 North Adjacent Property
(Personal Photo, 2005).

Site Images



fig.2-17 Bluffs Overlooking Missouri River
(Personal Photo, 2005).



fig.2-18 Looking North Along Bluffs
(Personal Photo, 2005).



fig.2-19 View South Along Bluffs
(Personal Photo, 2005).



fig.2-20 West View
(Personal Photo, 2005).



fig.2-21 View South Along Bluffs
(Personal Photo, 2005).



fig.2-22 Looking North Along Bluffs
(Personal Photo, 2005).

Site Images



fig.2-23 View South (Personal Photo, 2005).



fig.2-24 Gravel Walking Trail (Personal Photo, 2005).



fig.2-25 View West From CCC Shelter (Personal Photo, 2005).



fig.2-26 West View (Personal Photo, 2005).



fig.2-27 Barbed Wire Fence (Personal Photo, 2005).



fig.2-28 Fishing Along the Missouri (Personal Photo, 2005).



fig.2-29 View Overlooking Bike Trail
(Personal Photo, 2005).



fig.2-30 View South From Bike Trail
(Personal Photo, 2005).

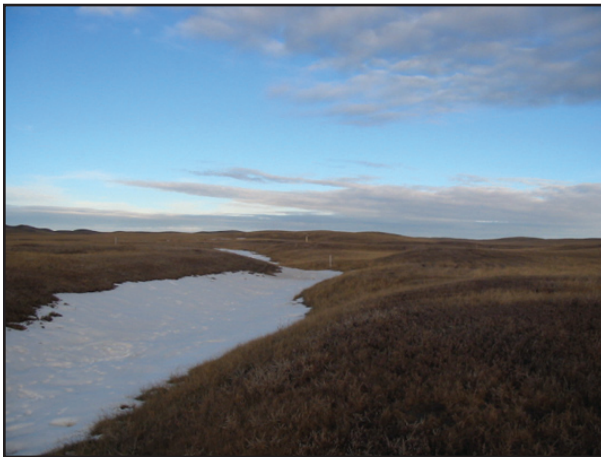


fig.2-31 Outer Fortification Ditch (Personal Photo, 2005).



fig.2-32 Adjacent Houses South West of Site
(Personal Photo, 2005).



fig.2-33 View South Overlooking Frozen Missouri River
(Personal Photo, 2005).



fig.2-34 Coulee Along North Edge of Site
(Personal Photo, 2005).

programmatic
requirements

Double Ditch Native American Village is a former Mandan Indian settlement along the Missouri River that has been preserved by the North Dakota State Historical Society. The NDSHS primary concern is preservation of the site remains. A low-impact, cohesive, non-invasive design based on the principles and lifestyles of the former dwellers, the Mandans, will best suit the project, the design, and the overall outcome of Double Ditch Native American Village.

INFORMATIONAL REQUIREMENTS

•MAPS AND GUIDES TO VILLAGES

- Specific routes and roads to follow
- Easy to follow driving directions
- Native American culture, heritage, and lifestyle
- Visually descriptive site information
- Free and available to the public
- Maps and diagrams of village remains and locations
- Aerial photos
- Artists paintings of villages and Natives

BUILDING REQUIREMENTS

•VISITOR CENTER

- Display artifacts collected from the site
- Integrated into the landscape for minimal impact
- Storage and collection of artifacts
- Native American cultural information
- Native American historical information
- Site specific information
- Temporary lodging for Archeologists working on site
- Seating and gathering areas for travelers
- Natural materials to blend with the landscape
- Public restrooms
- Support facilities

LANDSCAPE REQUIREMENTS

•ENTRY PLAZA

- Natural elements for construction
- Seating areas
- Gathering areas
- Resembles the gathering areas of village settlements
- Opportunity to recognize cardinal directions
- Interpretive panels
- Connection to the parking area and visitor center
- Minimal impact integrated with the landscape

- PARKING AND ROADS
 - Parking for at least 15 automobiles
 - Parking for RVs and tour buses
 - ADA Parking for 2 vehicles
 - Low impact design incorporating natural elements
 - Sustainable materials that mimic natural terrain
 - Limit all unnecessary off-road traffic

- ENTRY SIGN
 - Site identification
 - Welcomes visitors to the site
 - Designed to resemble Native American elements
 - Natural materials that will blend with landscape

- INTERPRETIVE WALKING PATH
 - Integrated throughout the village remains
 - Trail clearly defined
 - Points of interest along the path
 - Interpretive panels to provide shade and information
 - Resting and seating areas
 - ADA accessible

- SCENIC OVERLOOK
 - Provides an all-encompassing view of the village
 - Seating and resting area
 - Construction techniques resemble earth lodge style
 - View to Square Buttes

- INTERPRETIVE PANELS
 - Provide comprehensive site information
 - Offer shade and protection from natural elements
 - Help guide views throughout the site
 - Located at critical points within the village
 - Demonstrate recent archeological excavations
 - Guide visitors through the village

- MATERIALS STANDARDS
 - Natural elements designed to fit into the landscape
 - Energy efficient
 - Recycled content
 - Available to Indians during habitation of the village
 - Period specific construction

design concepts
and influences



fig. 5-2 Site Concept 2



fig.5-3 Site Concept 3

The previous series of site concepts explored the principle location of the visitor center, trail system, and parking. The primary concerns addressed were blending the building with the landscape, total walking distance along the interpretive path, and general impact on the site. The interpretive path through the village remains was explored extensively. Through much deliberation the final building placement was sited south of the village remains. The building was located here primarily due to the previous excavation of gravel and the ability of the natural terrain to help conceal the structure and parking areas.

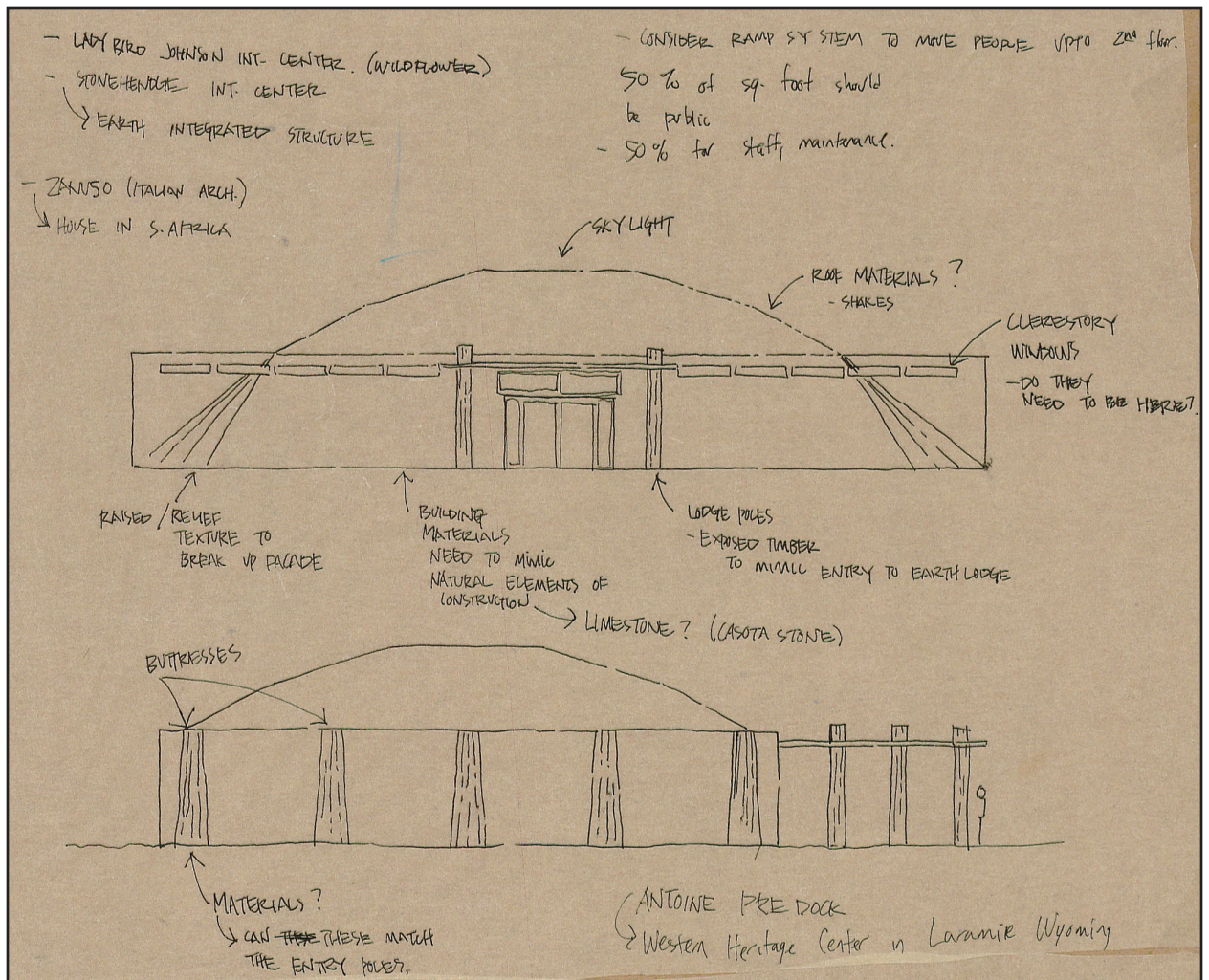


fig.5-4 Building Concept 1

The design of the visitor center was to mimic the traditional construction and form of an earth lodge. The goal of the visitor center design was to non-invasive and to blend with the landscape. Through consultation with an member of the architecture faculty a much more fluid design was achieved.

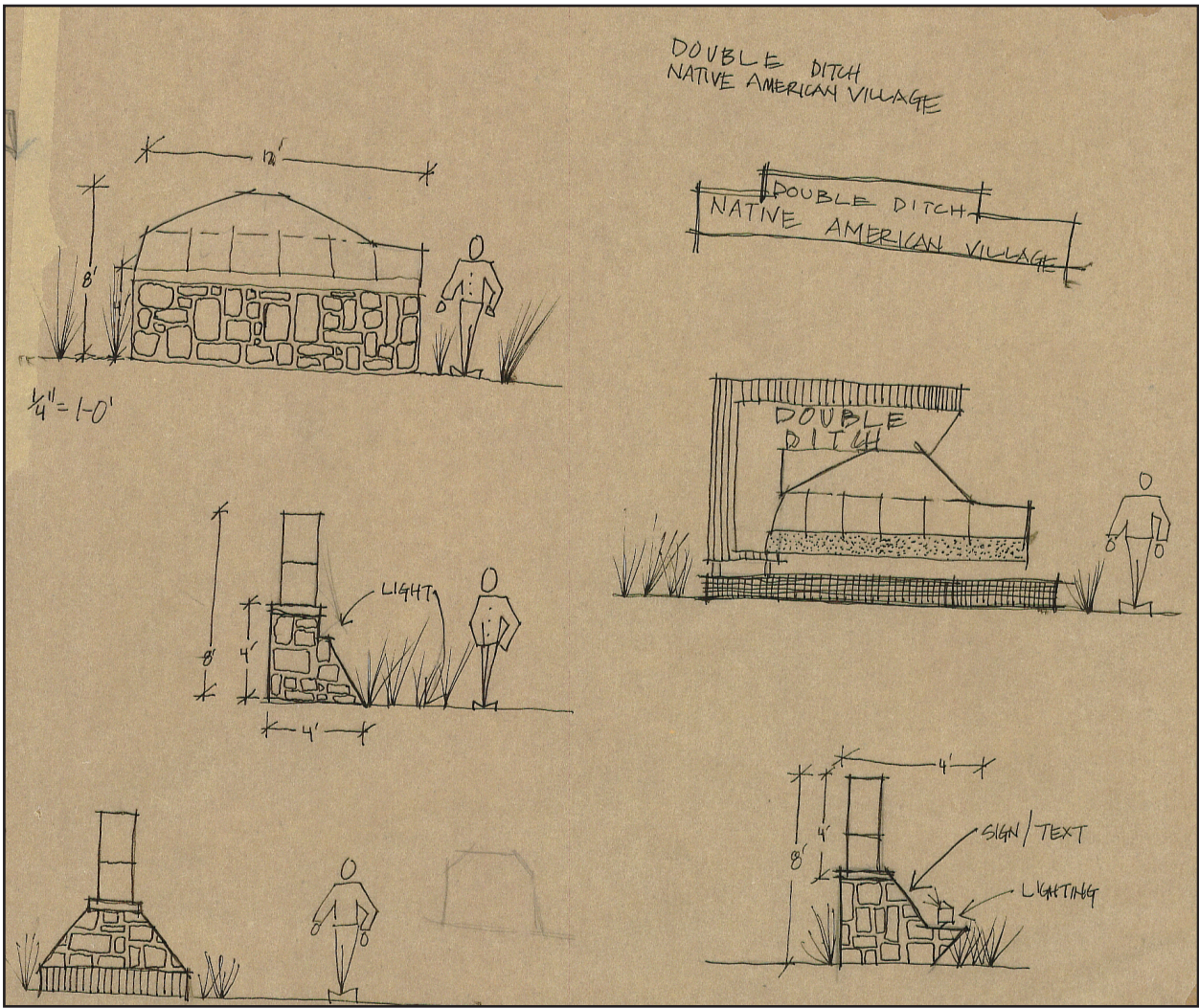


fig.5-5 Entry Sign Concepts

A series of concepts for a welcome sign at the main entry to the site.

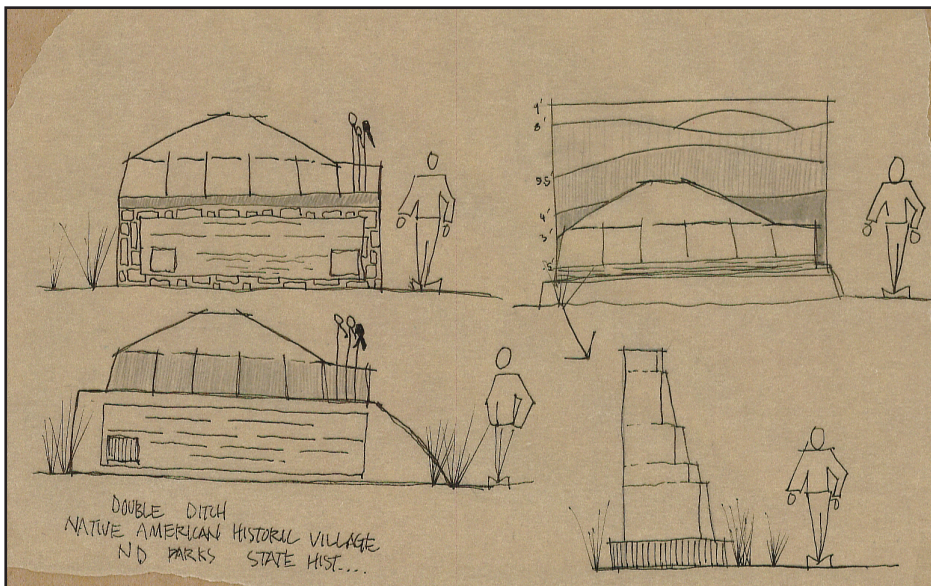


fig.5-6 Entry Sign Concept 2

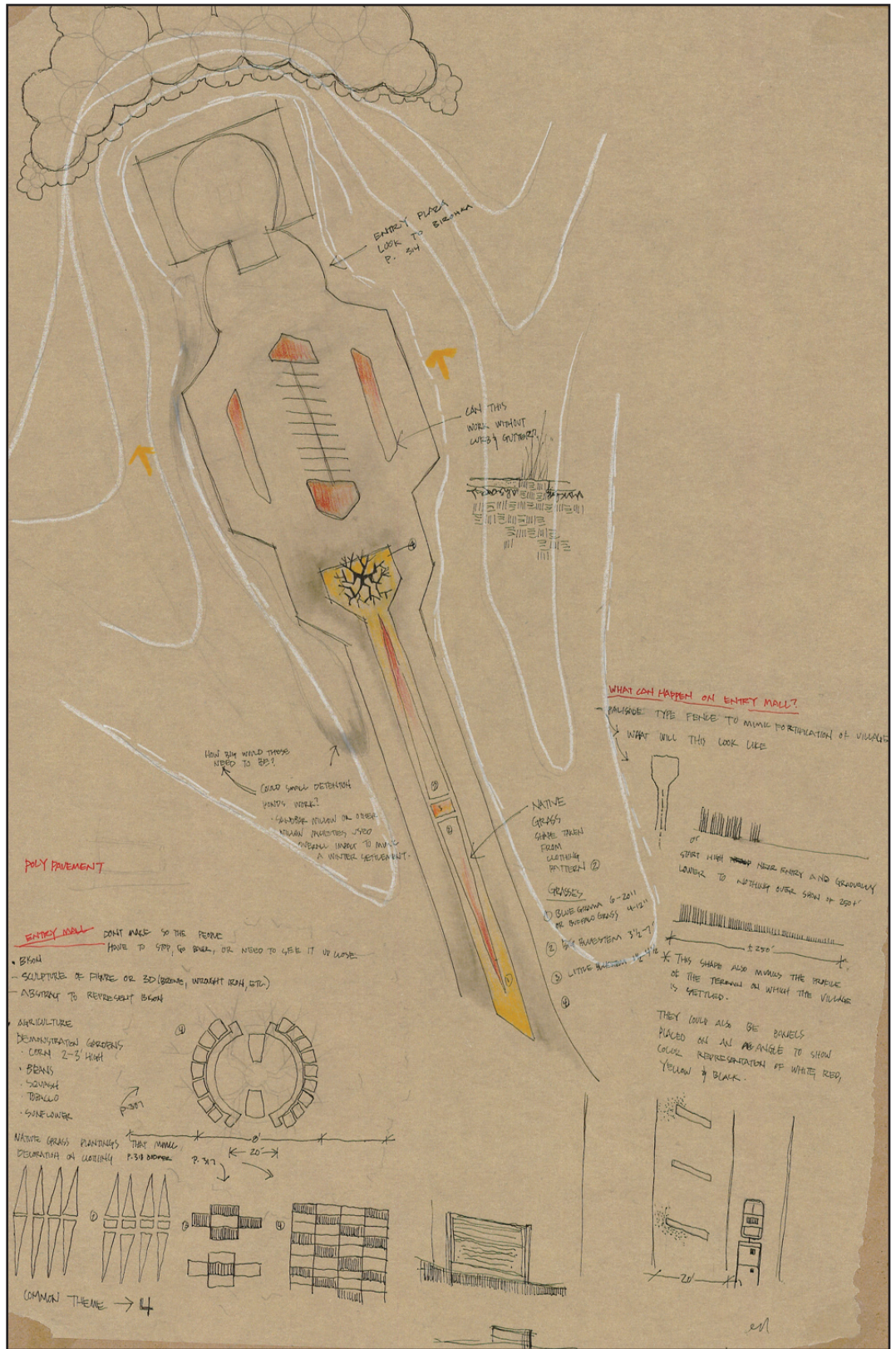


fig. 5-7 Visitor Center Concept 1

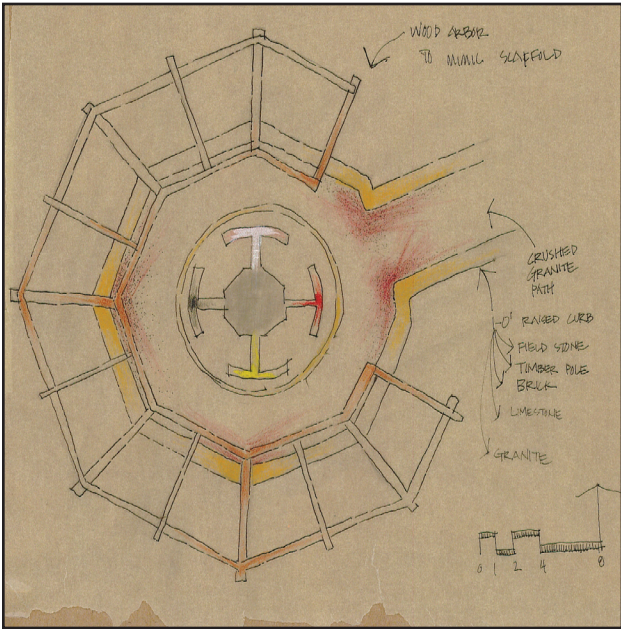


fig.5-8 Scenic Overlook Concept

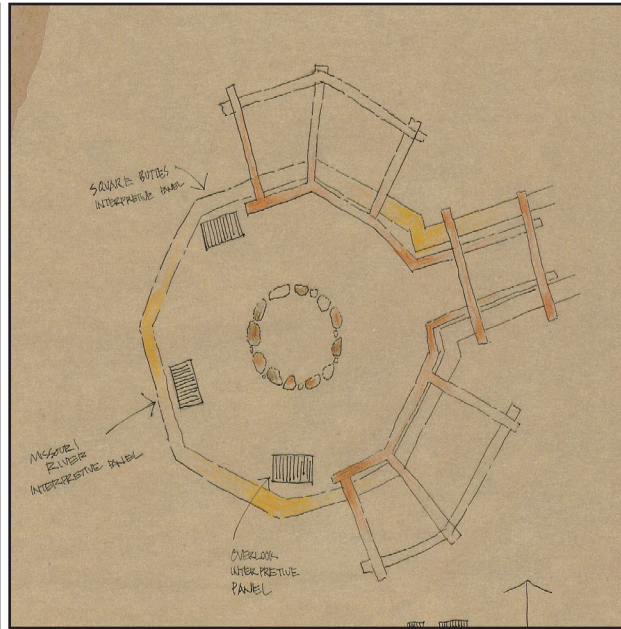


fig.5-9 Scenic Overlook Concept

The scenic overlook located near the village remains was to resemble the shape and form of an et. The overlook provided directed views back to the site remains in addition to a shaded area for relief from the summer elements.

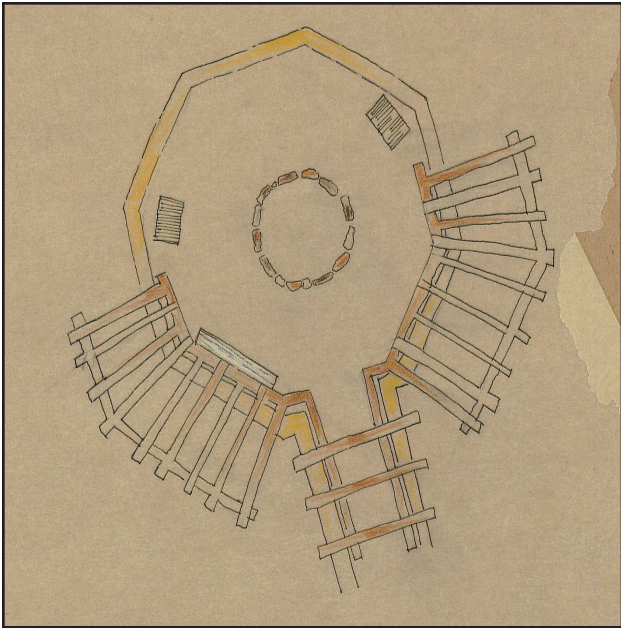


fig.5-10 Scenic Overlook Concept

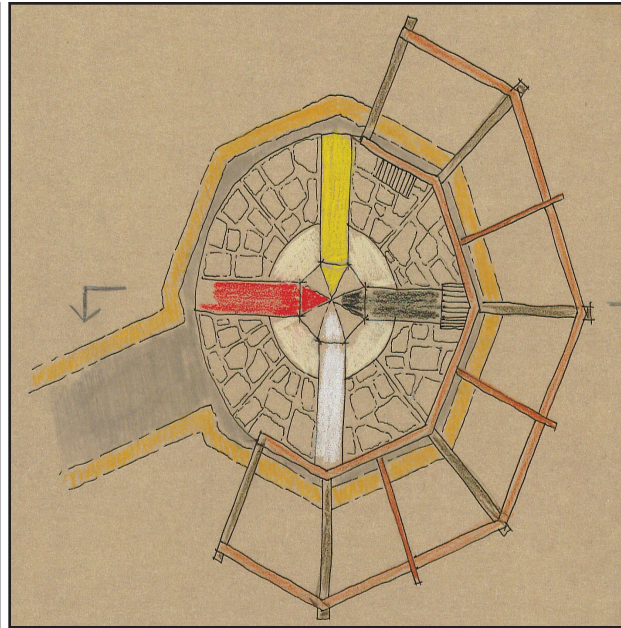


fig.5-11 Scenic Overlook Concept



fig.5-12 Interpretive Panel Concepts

final presentation

Reconnecting the Tribes of the Upper Missouri

Native American tribes settled throughout the Central Plains of North America more than eight centuries ago. Hundreds of villages and settlements have been lost over time due to pressures from Euro-American settlers, disease, and exposure to nonnative foods. Some of the Native American groups include the Mandan, Hidatsa, and Arikara (MHA) Tribes. These groups include the Lakota, Dakota, Assiniboin, Cheyenne, Mandan, Hidatsa, and Arikara (MHA). Each of the three embodies a unique culture and way of life. The goal of this project was to reconnect the three tribes and their people. Other tribes such as the Kiowa, Arapaho, and Comanche were also present in the region and their descendants are still living in the area. The project was a collaborative effort between the three tribes and the state of North Dakota. An advisory team was formed consisting of members from the three tribes and the state of North Dakota. The project was a collaborative effort between the three tribes and the state of North Dakota. An advisory team was formed consisting of members from the three tribes and the state of North Dakota. The project was a collaborative effort between the three tribes and the state of North Dakota. An advisory team was formed consisting of members from the three tribes and the state of North Dakota.



Three images are shown of historical paintings for the Mandan and Hidatsa. The images are from the 19th century and show the tribes in their traditional dress and activities. The images are from the 19th century and show the tribes in their traditional dress and activities.

Double Ditch Native American Village

Double Ditch Village is a historic site along the Missouri River along Highway 100A nearly eight miles north of Minot, North Dakota. Archaeological investigations indicate the village is one of the largest archaeological sites in North America and has been continuously occupied for more than 1000 years. The site is located on the Missouri River. The site is located on the Missouri River. The site is located on the Missouri River. The site is located on the Missouri River.



These images were taken at the Double Ditch Native American Village site in the summer of 2010. The images show the site from various angles and show the river and the village site. The images were taken at the Double Ditch Native American Village site in the summer of 2010.

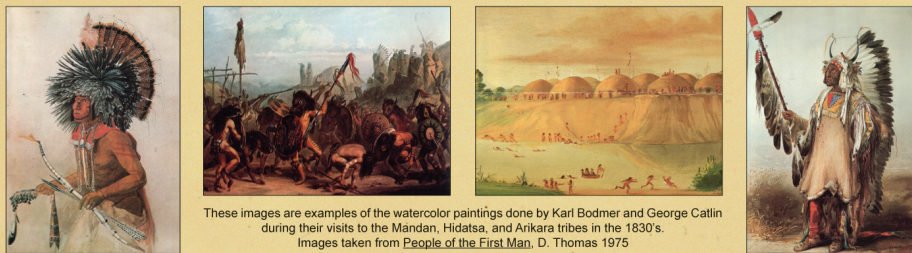
fig.6-1 Final Presentation 6' x 8'

reconnecting the three affiliated tribes of the central dakota plains

Reconnecting the Tribes of the Upper Missouri

Native American tribes settled throughout the Central Plains of North America more than eight centuries ago. Hundreds of villages and settlements have been lost over time due to pressures from Euro-American settlers, diseases, and migration to reservation lands. Several distinct Native American groups existed in what is now North Dakota. These groups include the Lakota, Dakota, Assiniboine, Cheyenne, Mandan, Hidatsa, and Arikara (Sahnish). Each of the tribes embodies a unique culture and way of life. Many of the groups were nomadic peoples following the massive bison herds across the prairie. Other tribes such as the Mandan, Hidatsa, and Arikara were primarily sedentary people that depended on an agricultural lifestyle raising corn, beans, squash, and tobacco. The nomadic tribes came to rely on the Mandan, Hidatsa, and Arikara for food and occasionally shelter during harsh winters. An extensive trade network developed among Canadian fur traders and the Native People with the Mandans being at the center of much of the trade activity. The trade network also brought hardships to the tribes of the Central Dakota Plains. Several smallpox epidemics decimated entire villages and thousands of Native People that were unable to cope with the new diseases brought upon them by the white man. Over the years as the number of surviving tribal members dwindled. The Mandan and Hidatsa banded together in the late 18th Century, intermarried, and began to form a new culture together at Like-A-Fishhook Village near present day Washburn, North Dakota. The Arikara tribes also faced extreme devastation from smallpox outbreaks. Records indicate in the late summer of 1862 following two successive crop failures and years of harsh times the surviving members of the Arikara joined the Mandans and Hidatsa at Like-A-Fishhook Village.

Much of what is known today about the Native Americans has been taken from journals written by explorers like Pierre Gaultier de Varrennes, sieur de la La Verendrye, who first visited the Mandan Native American tribe near the Menoken Village in the fall of 1738. Likewise the journals of Meriwether Lewis, William Clark, and other members of the Corps of Discovery written during their journey through the land acquired in the Louisiana Purchase between the years of 1804 and 1806. Maximilian, Prince of Weid-Neuwied, a German explorer visited several tribes along the Missouri River from 1832 to 1834 with Karl Bodmer, a Swiss-born artist. Bodmer was able to capture the intimate details of the social organization, lifestyle, and nuances of the people and places he visited. Another artist, George Catlin, also ventured into Native American territory in 1832 with the help of fur traders he was able to fearlessly enter villages and spend a great deal of time learning about the cultures and way of life unique to the Native People. Catlin's journals and paintings offer a first-hand account of never-before-seen ceremonies performed by the Mandan and Hidatsa tribes.



These images are examples of the watercolor paintings done by Karl Bodmer and George Catlin during their visits to the Mandan, Hidatsa, and Arikara tribes in the 1830's. Images taken from *People of the First Man*, D. Thomas 1975

fig. 6-2 Final Presentation

The final presentation of this project was one comprehensive composition measuring six feet wide by eight feet tall. It was designed to resemble a story depicted by Native Americans on a buffalo hide, much like their pictographic histories used to tell of the battle accomplishments and victories of the tribal chiefs.

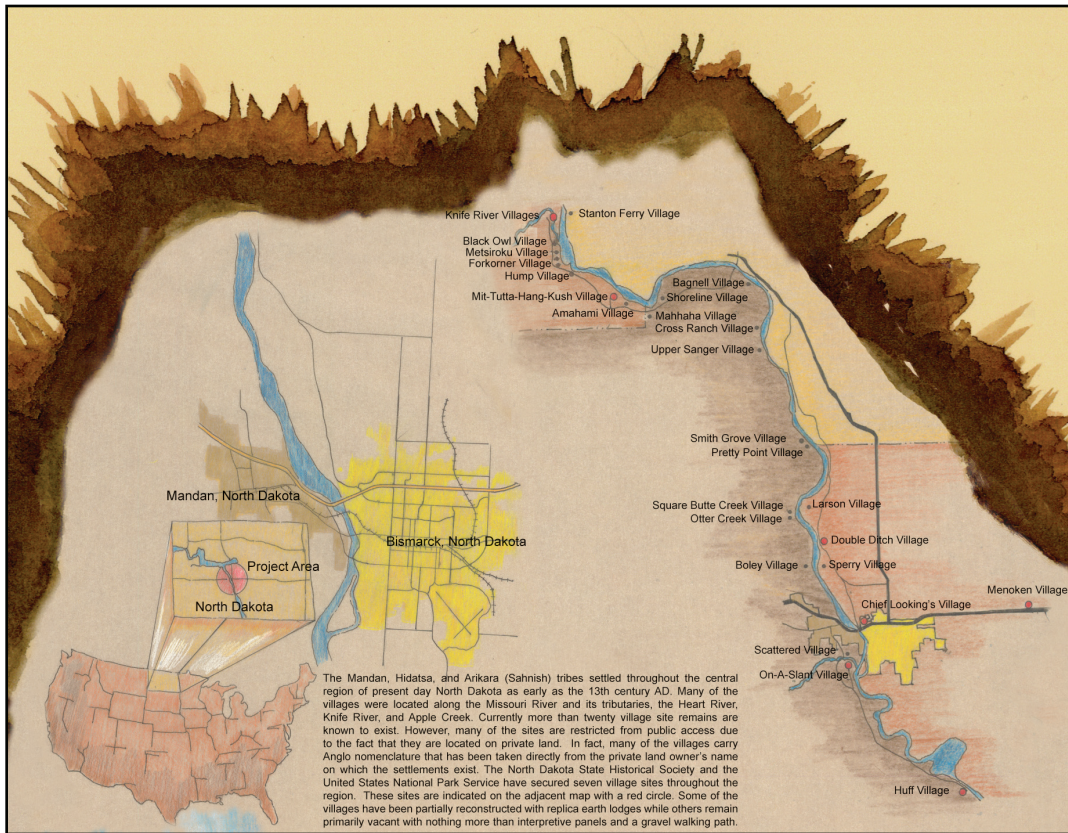


fig. 6-3 Final Presentation

Double Ditch Native American Village

Double Ditch Village is situated atop a steep bluff overlooking the Missouri River along ND Highway 1804 nearly eight miles north of Bismarck, North Dakota. Archeological excavations indicate the village is one of the largest archeological sites in North America and it was continuously occupied for more than three hundred years. The village remains cover nearly twenty acres and is marked by more than forty earth lodge depressions, huge midden mounds or refuse piles, and two prominent fortification ditches that encircle the village on three sides. The western boundary of the village is located directly atop an impassable bluff more than fifty feet above the Missouri River. Historians believe more than 1,000 people could have inhabited this settlement at any given time. Journal records indicate the fortification ditches used to protect the village were nearly twenty feet wide and over fifteen feet deep. The village was surrounded by an eighteen foot high piquet-style fence to keep intruders at-bay. Various earthen mounds surround the village as well. Some of these mounds were undoubtedly used as strongholds in defense of the village during an attack by neighboring tribes. The larger mounds were also used as viewing areas for the various games and exhibitions held by the Mandans. The goal of this project is to demonstrate how the scattered remains of the various villages along the Missouri River and its tributaries can be reconnected and preserved to tell the stories about the Native Americans and their unique culture and heritage.



These images were taken at the Double Ditch Native American Village site in the summer of 2005. Currently there are a few interpretive panels and an undeveloped walking trail around the site, and a small gravel parking area off ND Highway 1804. Personal photos 2005.

fig.6-4 Final Presentation



fig. 6-5 Final Presentation



fig.6-6 Final Presentation

Site Specific Inventory and Analysis

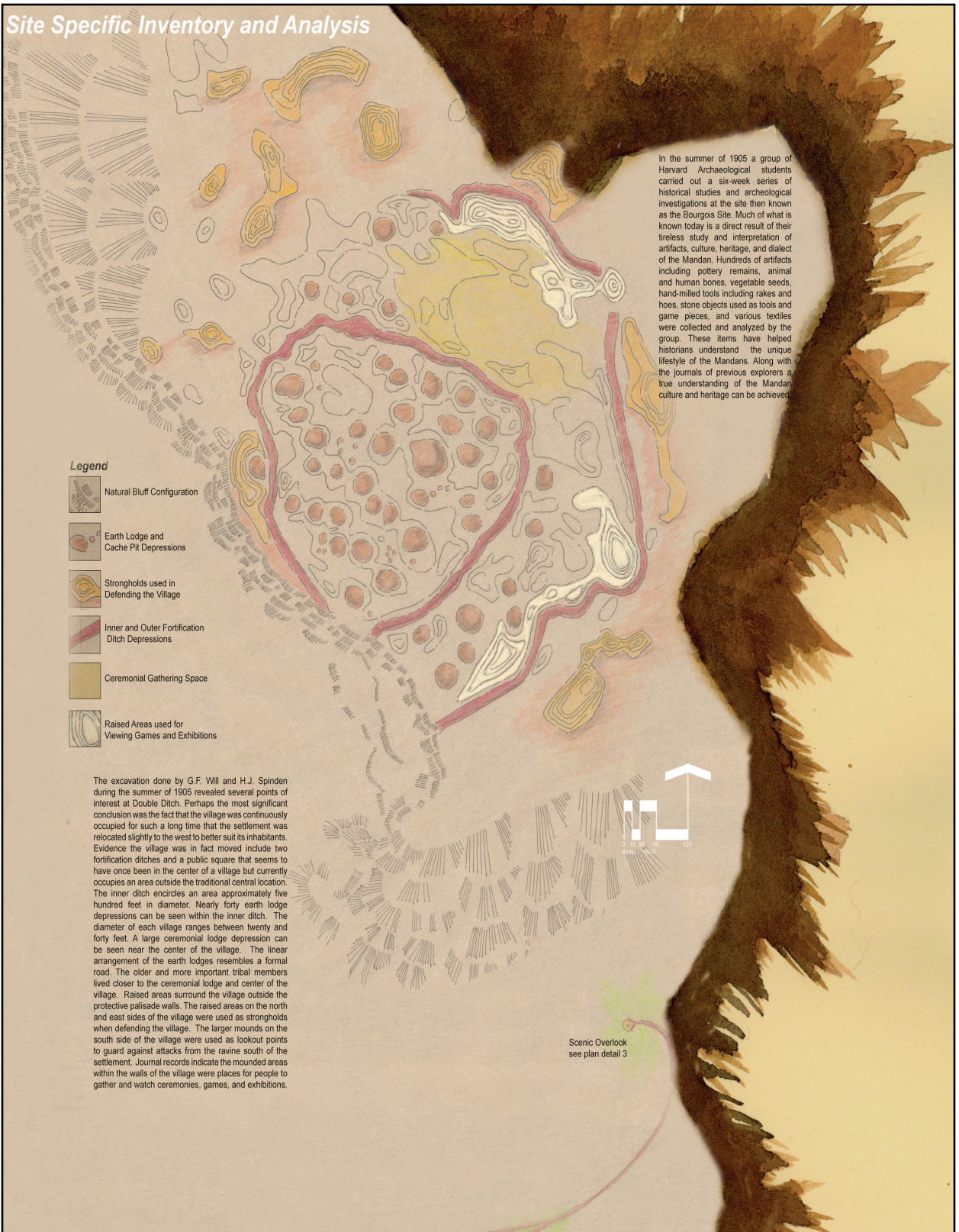


fig.6-7 Final Presentation

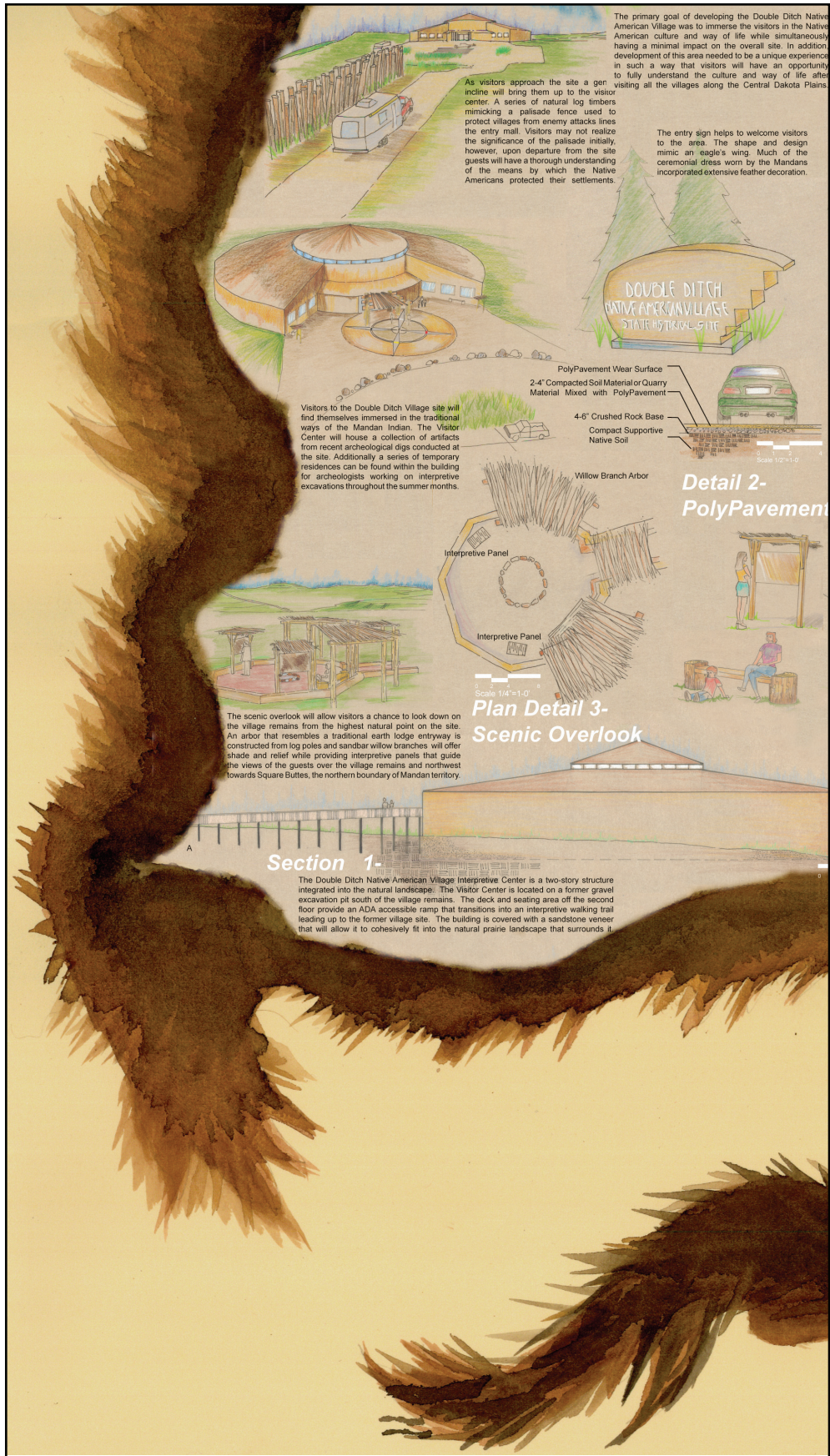


fig.6-8 Final Presentation



fig. 6-9 Final Presentation

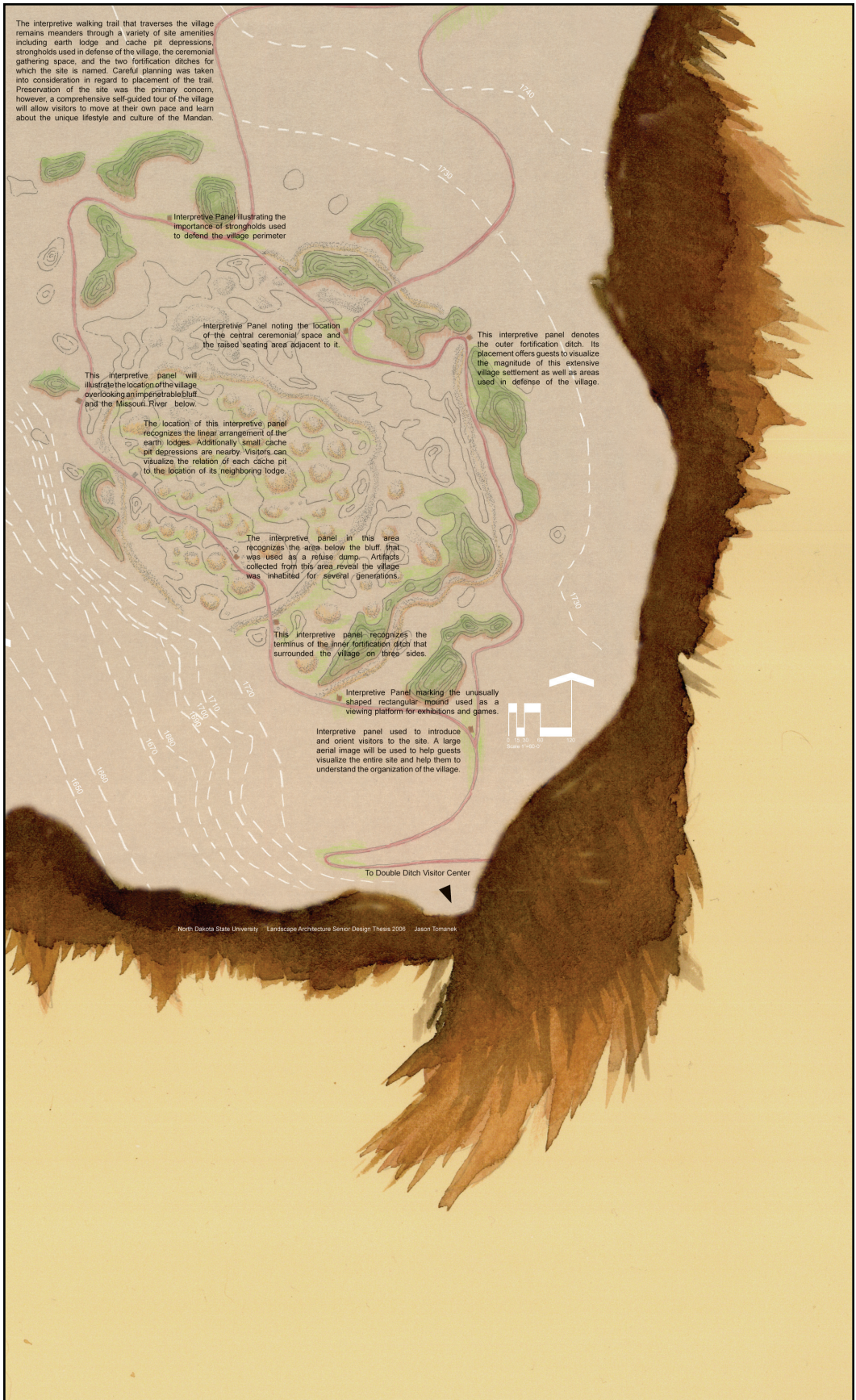


fig.6-10 Final Presentation

The following series of maps and guides were designed as part of the total thesis project. The intent of the brochures was to provide the public an opportunity for a self-guided eco-tour to the seven public Native American villages along the Missouri River from Huff to Stanton. Each brochure has detailed driving instructions as well as a GIS generated map. Additional information includes site-specific facts pertinent to each village and a portion of a seven part story about the culture, heritage, and way of life for the Mandan, Hidatsa, and Arikara tribes of the upper Missouri River valley. Each brochure was designed to be a tri-fold pamphlet available free to the public at rest stops along the highway and museums and cultural points throughout North Dakota. The largest brochure is a general overview of all the villages with a comprehensive map outlining all the villages as they span across five counties in central North Dakota. The individual site brochures were 8.5 by 11 inches with detailed information regarding the location, habitation, and other information significant to the particular site.



Native Americans of the Upper Missouri

Central North Dakota has some of the most extensive archeological remains known today. The Native American tribes of the Mandan, Hidatsa, and Sahnish (Arikara) settled in this region as early as the 13th Century A.D. These cultures and settlements were rich in agriculture and hunting, additionally they developed extensive trade networks with many of the other tribes of the upper midwest. The exact number of settlements along the Missouri, Heart, and Knife Rivers is unknown, but studies have indicated they numbered in the hundreds. Through European and American influence the traditional way of life for the American Indian changed dramatically over the years as a direct result of explorers, settlers, and traders. Much of what we know today about these people was gathered in journals and paintings by explorers like Prince Maximilian of Germany and French explorer Pierre Gaultier de Varennes, sieur de la Verendrye. Artists like Karl Bodmer and George Catlin witness first-hand social and ceremonial events practiced by the tribes of the Central Dakota Plains. Through their recordings and images we are able to understand the intimate lifestyle of the People of the Upper Missouri.

A small portion of the village remains are now protected by State and Federal agencies, and are open year-round to public visitation. This map and guide will help make the adventure informative and easy to follow. Allow at least two full days to visit all of these sites and explore the natural beauty of the Missouri River Valley of central North Dakota. All of the villages have informational panels and interpretive trails. Reconstructed earth lodges can be found at On-A-Slant Village south of Mandan and at the Knife River Villages near Stanton. Museums and visitor centers are located at On-A-Slant, Double Ditch, the Knife River Villages, and the North Dakota Heritage Center located on the State Capital Grounds in Bismarck.

DISTANCES BETWEEN SETTLEMENTS

- Heritage Center to Menoken
Map and Guide 1.....14.5 miles
- Heritage Center to Chief Looking's Village
Map and Guide 2.....3.5 miles
- Heritage Center to On-A-Slant Village
Map and Guide 3.....13.0 miles
- On-A-Slant Village to Huff Village
Map and Guide 4.....15.3 miles
- Chief Looking's Village to Double Ditch Village
Map and Guide 5.....9.0 miles
- Double Ditch Village to Fort Clark
Map and Guide 6.....45.1 miles
- Fort Clark to Knife River Villages
Map and Guide 7.....10.5 miles

MENOKEN VILLAGE

Recent excavations at Menoken Village indicate this settlement was occupied as early as 1200 A.D., which makes it the one of the oldest fortified villages in the area. An arc-shaped fortification ditch with four bastions is the most evident feature of the site. The village was located on a now abandoned meander of Apple Creek, a tributary of the Missouri River. Oval-shaped lodge depressions can be seen as well. Some historians believe this village was the site where French explorer Pierre Gaultier de Varennes, sieur de la Verendrye first made contact with the "Mantannes" in late 1738.

On Site Interpretation - Interpretive panels and walking trails.

fig. 6-11 Final Presentation Brochure

CHIEF LOOKING'S VILLAGE

Chief Looking's Village is situated atop a very prominent hilltop in Bismarck. The village is thought to have been settled around 1500 A.D. by the Mandans. Evidence reveals the settlement was well-protected by a combination of a ditch with bastions and steep drop-offs into natural ravines surrounding the village. Depressions in the ground indicate both rectangular, early settlement, and circular lodges, associated with later settlements were constructed at the village. A large stone used by the Native Americans to grind corn and other materials is preserved in its natural setting within the village. The entire stone has a rough texture except for a small circular portion used in the grinding process. Pioneer Park is located just below the village. Modern restrooms, picnic facilities, and playground equipment can all be found here.

On-Site Interpretation - On-Site interpretation includes a walking path, interpretive panels, and brochures to aid in self-guided tours of the village remains.

ON-A-SLANT VILLAGE

On-A-Slant Village is one of many traditional Mandan settlements near the mouth of the Heart River. The river is named as such due to its critical role in the lives of the Mandans. Studies during the 1930's, 1980's and more recently in 2001 indicate the village was settled in the 1500's and occupied continuously for several generations. Lewis & Clark passed by the remains of the village in 1804 and again in 1806 noting the remains indicated it had been abandoned over 25 years prior. The Mandan Chief Shahaka- Sheheke was born here and traveled with Lewis & Clark to Washington D.C. The remains Fort McKeen and Fort Abraham Lincoln, two military posts occupied in the late 19th Century can also be found in the park.

On-Site Interpretation - On-Site interpretation includes a museum, walking paths, reconstructed earth lodges, interpretive panels, and brochures to aid in self-guided tours. During summer months guided tours of the village are offered as well.



Typical Mandan village settlement

HUFF VILLAGE

This village was settled around 1450 A.D., nearly two hundred years before European or American influence reached the region. Lack of trash accumulation indicates this large settlement was only inhabited for a period of time ranging from ten to thirty years. The rectangular depressions reveal this settlement to be very large and well-planned with lodges situated parallel to the riverbank in rows forming a street-like system. Studies indicate more than one thousand Mandans could have occupied the village simultaneously. The entire settlement is surrounded by a massive ditch more than 2,000 feet in length with several bastions around the perimeter.

On-Site Interpretation - On-Site interpretation includes informational signs about the village and recent excavations



Aerial view of Double Ditch Village

DOUBLE DITCH VILLAGE

Double Ditch Village is one of the largest archaeological sites in North America. It was settled high on a terrace overlooking the Missouri river to the west and Square Buttes to the north. The buttes marked the traditional boundary between the Mandan and the Hidatsa tribes. The entire village settlement covers nearly twenty acres, and is marked by more than 40 earthlodge depressions. Huge midden mounds, or refuse piles, indicate the village was settled continuously for more than three hundred years. The two prominent fortification ditches for which the village is named are still visible today. The inner ditch is completely intact, while the outer ditch is now fragmented. Journal entries from the French explorer La Verendrye and artists Karl Bodmer and George Catlin indicate the ditches were nearly 20 feet wide and over 15 feet deep. The village was surrounded by an 18 foot high piquet which was protected by bastions and ramparts covering the piquet. Various mounds are located beyond the outer ditch. Some of these were undoubtedly used as strongholds in defense of the village during attacks from neighboring tribes. The larger mounds were used as elevated gathering spaces during games and exhibitions.

On-Site Interpretation - On-Site interpretation includes a visitor center, museum, interpretive panels, scenic overlook, and walking trails throughout the village remains.

fig. 6-12 Final Presentation Brochure

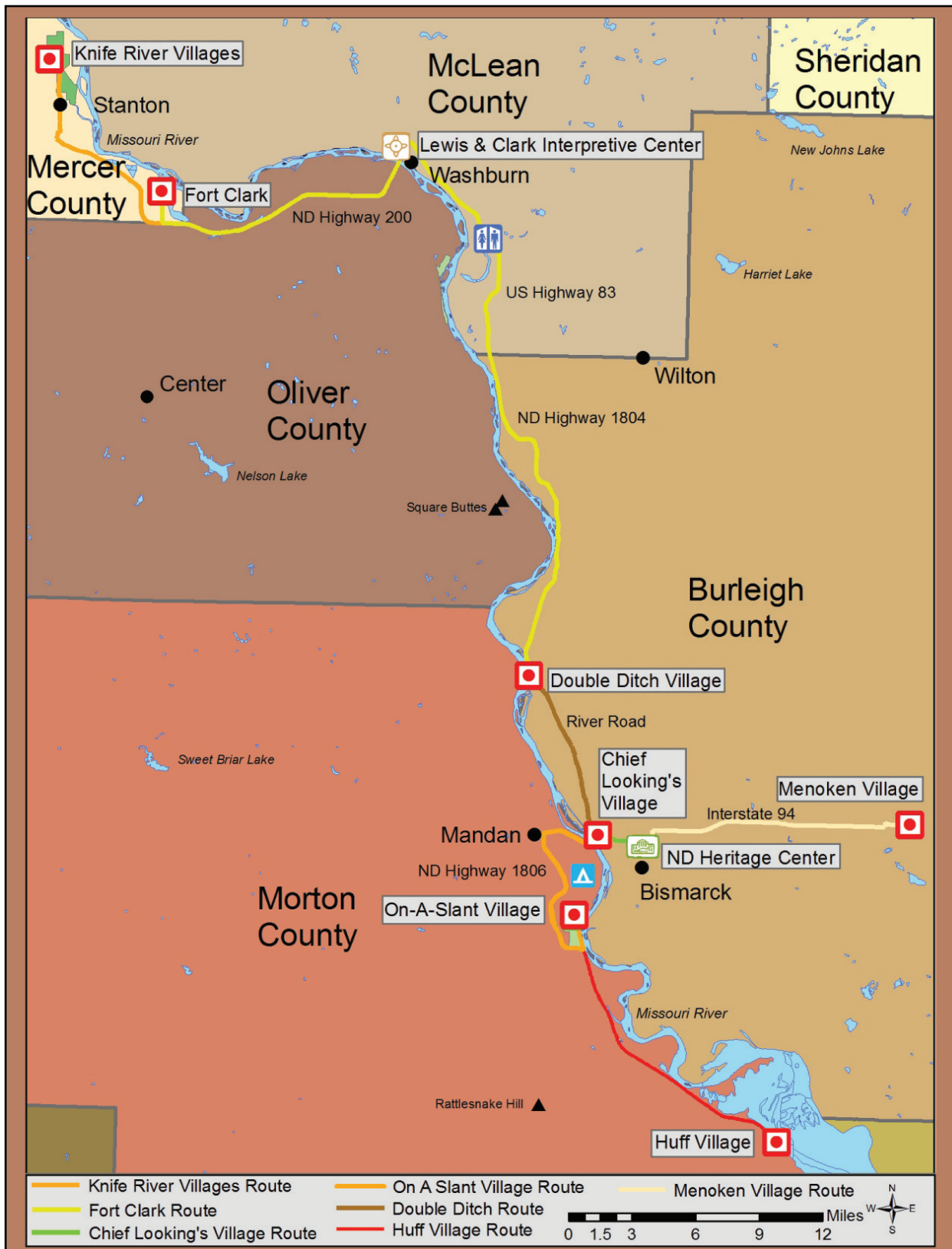


fig.6-13 Final Presentation Brochure

MIT-TUTTA-HANG-KUSH VILLAGE AT FORT CLARK

The Mandans established *Mit-tutta-hang-kush* or Fort Clark Village in the early 1820's and occupied it until the smallpox epidemic of 1837. From 1838 to 1861 the abandoned village was inhabited by the Arikaras. Historians believe the majority of the earth lodge depressions visible today were a result of the Arikara's occupation of the village. Fort Clark trading post was established near the Mandan settlement around 1830. The fort became one of many important trade centers of the Upper Missouri supplying steamboats, trappers and traders, as well as Native Americans with goods until it burned in 1860.

On-Site Interpretation - Interpretation includes informational signs about recent and past excavations and brochures to aid in the self-guided tour of the historic site.

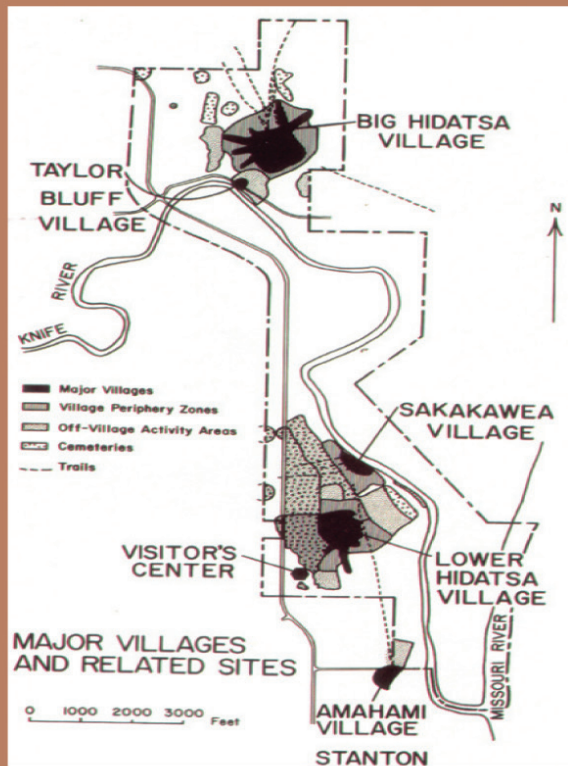


Aerial view of Big Hidatsa Village near the Knife River

KNIFE RIVER VILLAGES NATIONAL HISTORIC SITE

In 1974 Congress declared this 1,700-acre area a National Historic Site in order to preserve and study the rich cultural and archeological history found near the confluence of the Knife and Missouri Rivers. Three important villages, Big Hidatsa, Sakakawea, and Lower Hidatsa are preserved within the boundaries of the archaeological park and maintained by the National Park Service. Big Hidatsa Village is by far the largest settlement in the area with over 100 visible remains of earth lodges. Historians believe settlement of this area began around 1600 A.D.

On-Site Interpretation - On-Site interpretation includes informational signs about recent and past excavations, a visitor center, interpretive panels, walking trails, a reconstructed earth lodge, and brochures to aid in the self-guided tour of the historic site. The National Park Service maintains and staffs the interpretive center within the park year-round.



Major village locations within Knife River National Historic Site



Aerial view of Lower Hidatsa Village near the Knife River

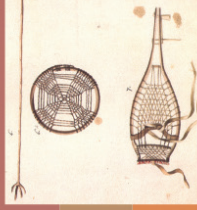
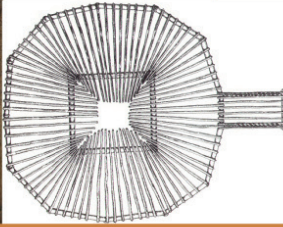
fig.6-14 Final Presentation Brochure

MENOKEN VILLAGE

North Dakota State Historic Site

Native Americans of the Upper Missouri Part One

Distinct Native American groups existed by the 18th Century when the first non-native explorers arrived in the region. These cultures included the Dakota or Lakota, often called Sioux by their enemies, Assiniboine, Mandan, Hidatsa, Arikara, originally known as the Sanish, and Cheyenne. Several of the tribes were nomadic hunter-gatherers that lived in portable teepees made from long poles and the hides of bison. The Mandan, Hidatsa, and Arikara were much more sedentary. These tribes relied on hunting, fishing, and agriculture to support large permanent settlements. The villages of these tribes became a trading center for other Native American tribes and eventually the fur trade. Euro-Americans and Native Americans first came into contact around 1738. A French explorer named La Verendrye, reached the Missouri River from Canada as he was searching for an all water route to the Pacific Ocean. The Native Americans played a key role in the fur trade. Offering vegetables such as corn, squash, and pumpkins in exchange for guns, metal tools, and cloth or beads. The Mandans, Hidatsa, and Arikara established several permanent settlements along the Heart, Missouri, and Knife Rivers in what is now central North Dakota.



MAP AND GUIDE

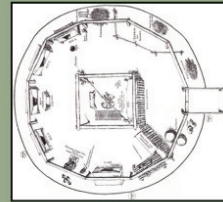


Aerial view looking northeast across Menoken Village. Apple Creek, a Missouri River tributary meanders on the west edge of the settlement.

Recent excavations at Menoken Village indicate this settlement was occupied as early as 1200 A.D., which makes it the one of the oldest fortified villages in the area.

An arc-shaped fortification ditch with four bastions is the most evident feature of the site. The village was located on a now abandoned meander of Apple Creek, a tributary of the Missouri River. Oval-shaped lodge depressions can be seen as well.

Some historians believe this village was the site where French explorer Pierre Gaultier de Varennes, sieur de la Verendrye first made contact with the "Mantannes" in late 1738.



Plan view drawing of earth lodge interior

fig.6-15 Final Presentation Brochure Menoken Village

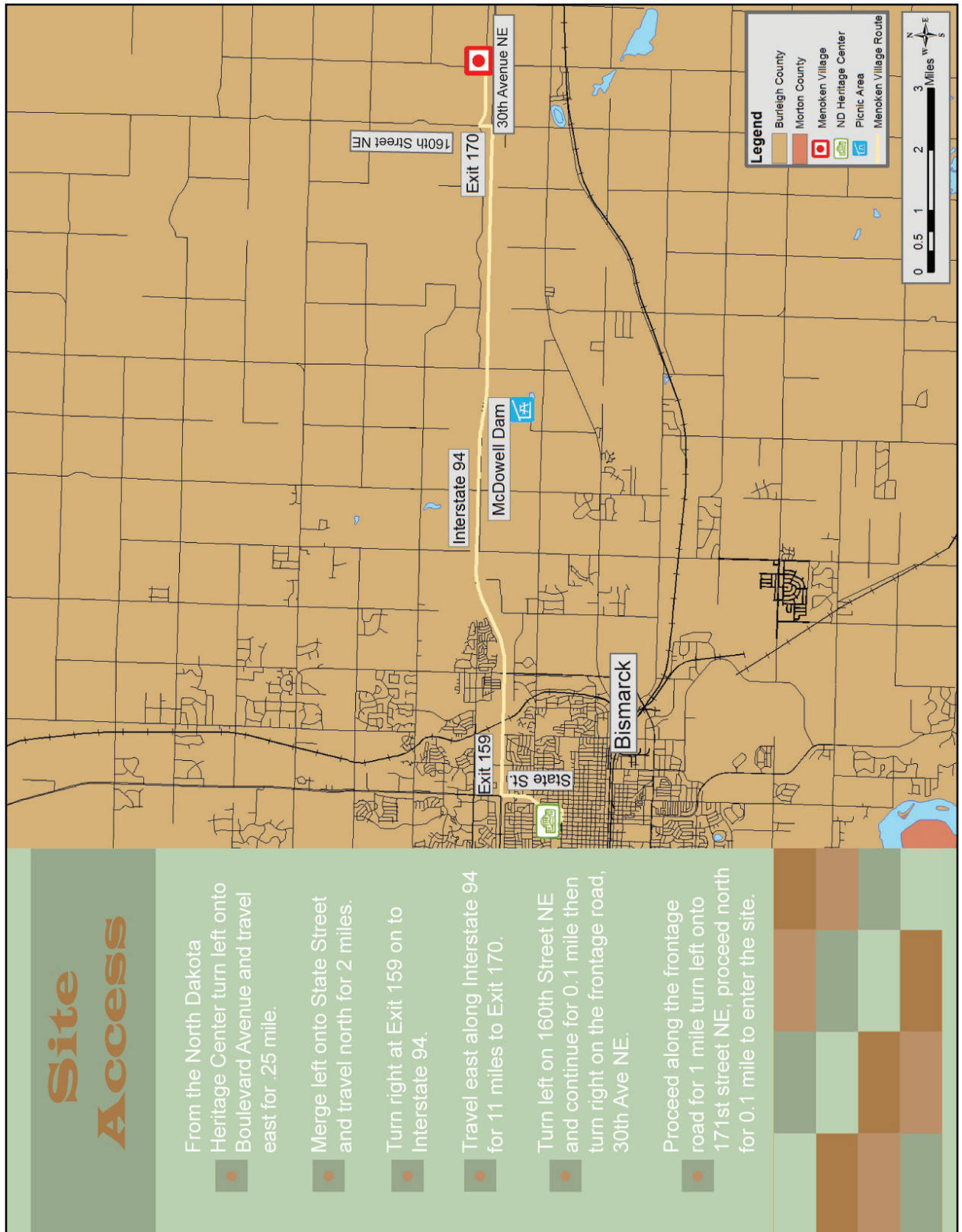
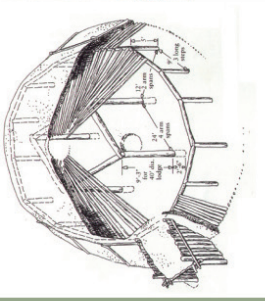


fig.6-16 Final Presentation Brochure Menoken Village

CHIEF LOOKING'S VILLAGE

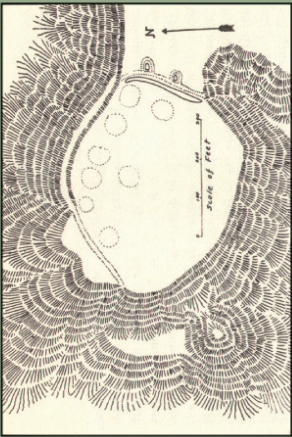
North Dakota State Historic Site



MAP AND GUIDE

Native Americans of the Upper Missouri Part Two

Much of the information related to the lives and culture of the Mandan people was recorded by fur traders and explorers searching for a water route to the Pacific Ocean. Pierre Gaultier de Varennes La Verendrye first reached the Mandans in the winter of 1738-39. La Verendrye recorded much detailed information regarding the Mandans and their interaction with various tribes. A majority of the interaction developed through an extensive series of trade networks. The Mandans were at the center of an far-reaching trade organization between fur traders and other Native American tribes. La Verendrye stated that the Mandans exchanged agricultural goods, animal skins, and colored plumes for guns, axes, kettles, bullets, powder, knives, and awls. La Verendrye wrote: "The Mandan are much more crafty than the Assiniboin in their commerce and in everything, and always dupe them" Prince Maximilian of Weid was a German explorer and naturalist who traveled through the United States between 1832 and 1834. Karl Bodmer, a Swiss artist accompanied Maximilian across North America. Bodmer was commissioned to make detailed illustrations of the life, habits, and customs of the Indians encountered along the way. Bodmer is known for his honest representation of his subjects and acute attention to detail. Much of what is known today about the Native Americans comes from the journals and paintings of early explorers and artists like Bodmer and Maximilian.



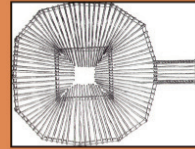
Plan drawing done in 1905 by G.F. Will and H.J. Spinden during their archaeological study of the Mandans. Dotted lines indicate depressions where earth lodges once stood.

Chief Looking's Village is situated atop a very prominent hilltop in Bismarck. The village is thought to have been settled around 1500 A.D. by the Mandans.

Evidence reveals the settlement was well-protected by a combination of a ditch with bastions and steep drop-offs into natural ravines surrounding the village.

Depressions in the ground indicate both rectangular, early settlement, and circular lodges, associated with later settlements were constructed at the village.

A large stone used by the Native Americans to grind corn and other materials is preserved in its natural setting within the village. The entire stone has a rough texture except for a small circular portion used in the grinding process.



Plan view drawing of earth lodge

fig.6-17 Final Presentation Brochure Chief Looking's Village

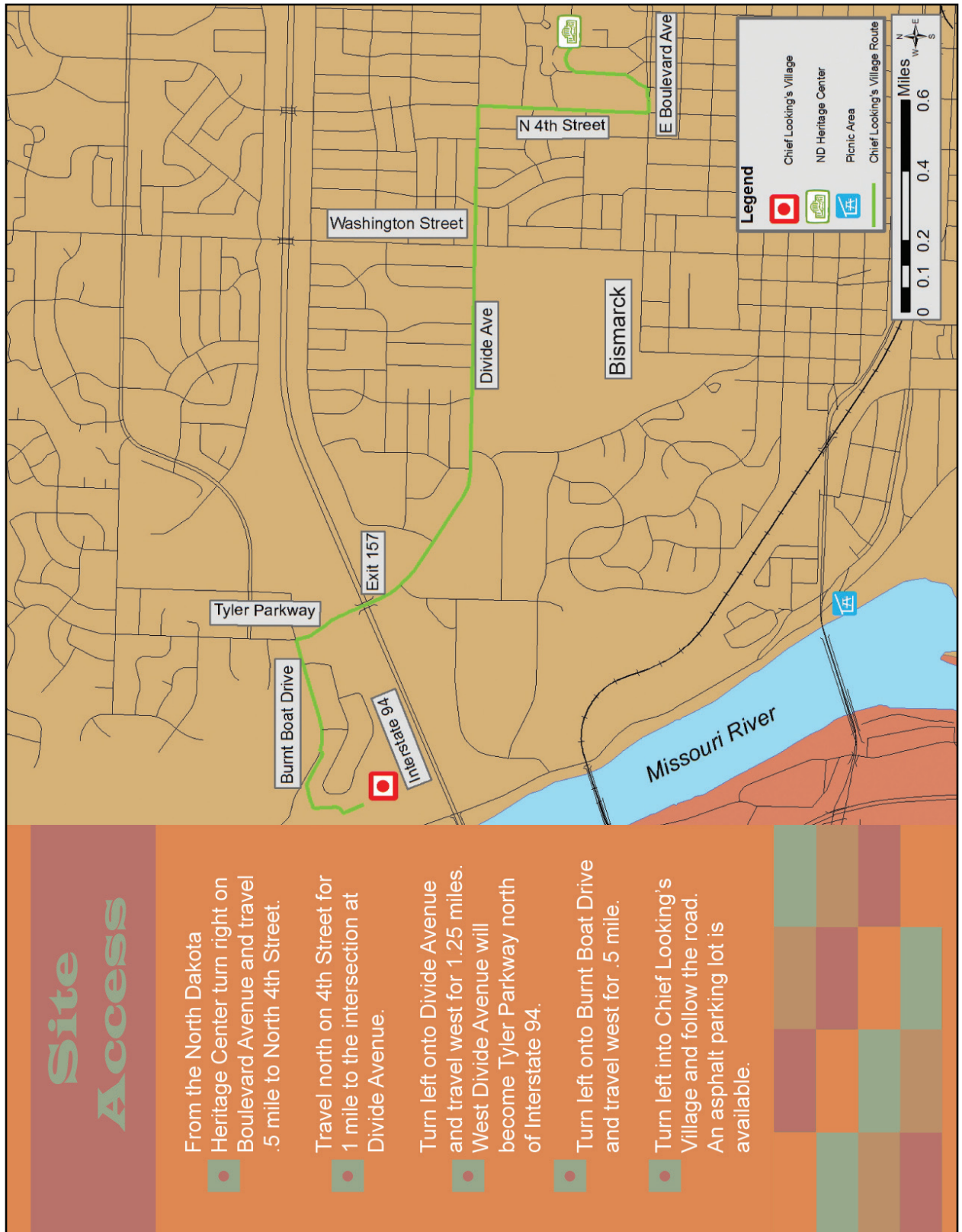


fig.6-18 Final Presentation Brochure Chief Looking's Village

ON-A-SLANT VILLAGE

North Dakota State Historic Site



MAP AND GUIDE

Native Americans of the Upper Missouri Part Three

The Mandan people lived in round earth lodges that ranged from 40 to 90 feet in diameter depending on the size and the importance of the family. The lodges were occupied by 20 to 40 people. Various accounts and descriptions from Maximilian and Catlin indicate there were minor differences in the construction of these lodges at various settlements along the Missouri River. The lodges were made primarily of large timbers, willow branches, soil, and clay. "The first step in building the house was the excavation of the ground where the floor was to be, to a depth of about one and a half to two feet, the earth being thrown out in a bank all around the rim of the excavation. Around this circle, against the edges were placed eleven to fifteen great posts, four to six feet height. Logs were laid across from one to another of these, and on the outside were slabs slanting in and resting against the cross logs. The rafters rested on large squared beams which were laid horizontally on this inner circle of large posts. The remaining space was filled by placing timber cross-cross over the cross-beams leaving a smoke hole in the center. On top of the rafters was placed a matting of willows, six inches thick, fastened together compactly and secured to the rafters. Over the surface then one to three feet of earth was placed, and the sides were banked with earth three or four feet high, and four feet thick." The entire surface was then covered with clay that served as a water repellent.



Aerial view looking northeast across On-A-Slant Village. Five reconstructed earth lodges are on site, in addition to interpretive panels and a museum. The village is located within Fort Lincoln State Park at the confluence of the Heart and Missouri Rivers.

On-A-Slant Village is one of many traditional Mandan settlements near the mouth of the Heart River. The river is named as such due to its critical role in the lives of the Mandans.

Studies during the 1930's, 1980's and more recently in 2001 indicate the village was settled in the 1500's and occupied continuously for several generations.

Lewis & Clark passed by the remains of the village in 1804 and again in 1806 noting the remains indicated it had been abandoned over 25 years prior. The Mandan Chief Shahakashaheke was born here and traveled with Lewis & Clark to Washington D.C.

The remains of Fort McKeen and Fort Abraham Lincoln, two military posts occupied in the late 19th Century can also be found in the park.



Reconstructed earth lodge at On-A-Slant Village

fig.6-19 Final Presentation Brochure On-A-Slant Village

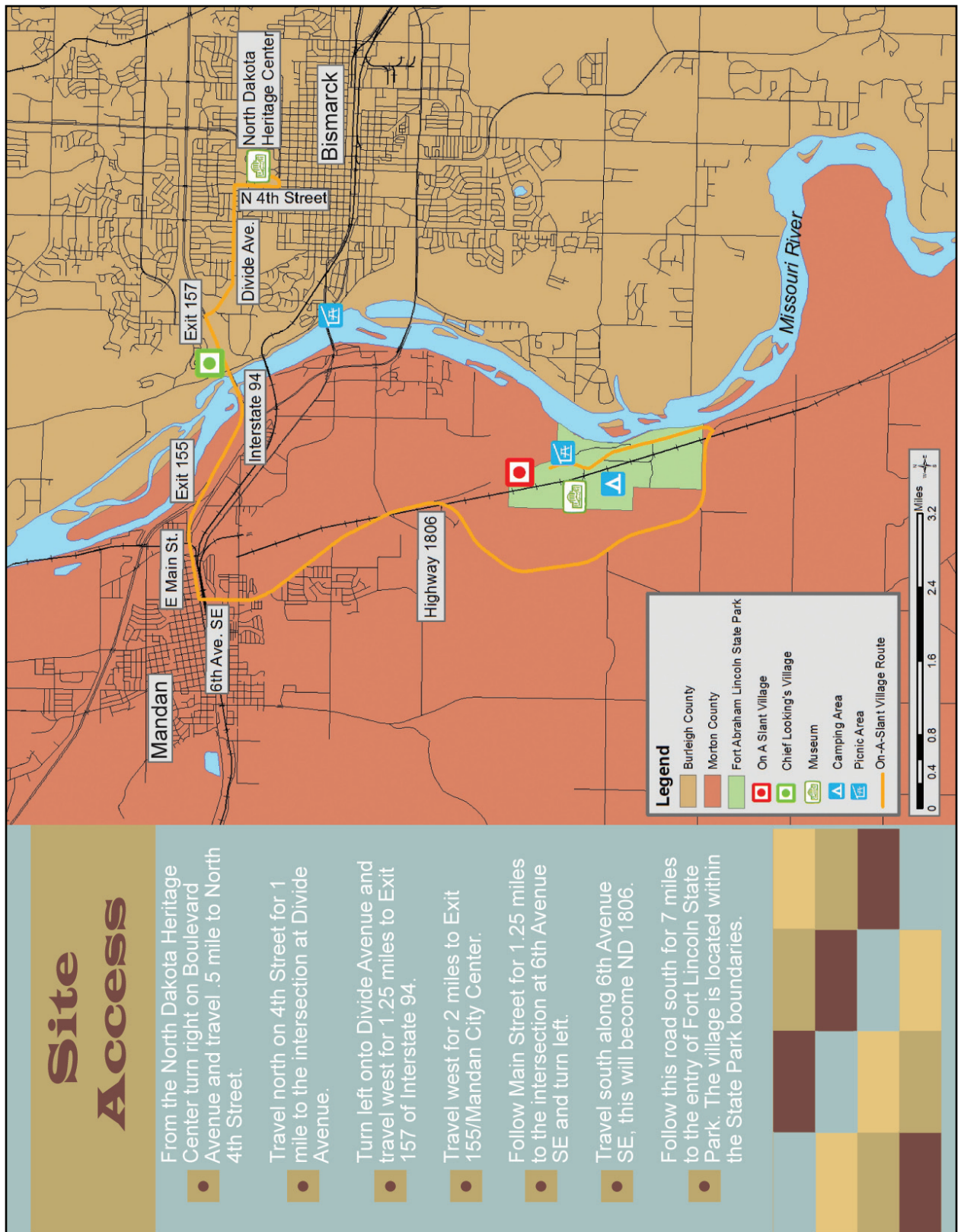


fig.6-20 Final Presentation Brochure On-A-Slant Village

HUFF VILLAGE

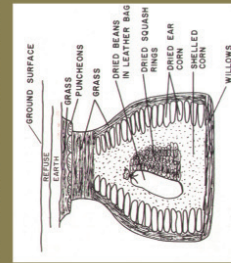
North Dakota State Historic Site



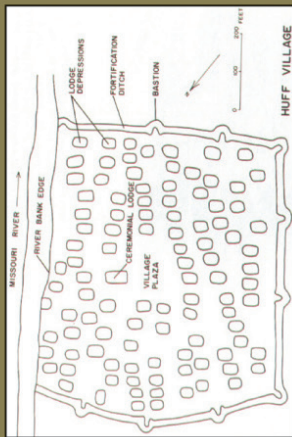
MAP AND GUIDE

Native Americans of the Upper Missouri Part Four

The Mandans were agricultural people, more so than any of their neighboring tribes. Maximilian reports that each family cultivated three fields of four to five acres each. The farms were moved to new locations when the harvests began to yield smaller products. The Mandans primarily raised corn, beans, squash, tobacco, and sunflowers. With the reports from Maximilian and Lewis and Clark pertaining to the size and amounts of cache pits in a typical settlement, it is possible that nearly one thousand bushels of corn could be stored in the village throughout the year. Wild fruits and vegetables eaten by the tribes included june berries, chokecherries, wild plums, and turnips. The use of cache pits was very common. A cache pit was a jug shaped hole in the ground six to eight feet deep at the base with an opening just large enough for a person to pass through. Dried vegetables like corn and beans were stored in these pits along with other valuables. The sedentary character of the tribes led to the fact that they produced agriculture and developed a means in which to store their produce.



Drawing of a typical cache pit.



Aerial view looking southwest across Double Ditch Village. The inner ditch is clearly visible in the center of the image while the circular depressions mark the remains of earth lodges. The Missouri River is below the steep bluff in the background.

This village was settled around 1450 A.D., nearly two hundred years before European or American influence reached the region. Lack of trash accumulation indicates this large settlement was only inhabited for a period of time ranging from ten to thirty years.

The rectangular depressions reveal this settlement to be very large and well-planned with lodges situated parallel to the riverbank in rows forming a street-like system. Studies indicate more than one thousand Mandans could have occupied the village simultaneously.

The entire settlement is surrounded by a massive ditch more than 2,000 feet in length with several bastions around the perimeter.



Large depression from ceremonial lodge

fig.6-21 Final Presentation Brochure Huff Village

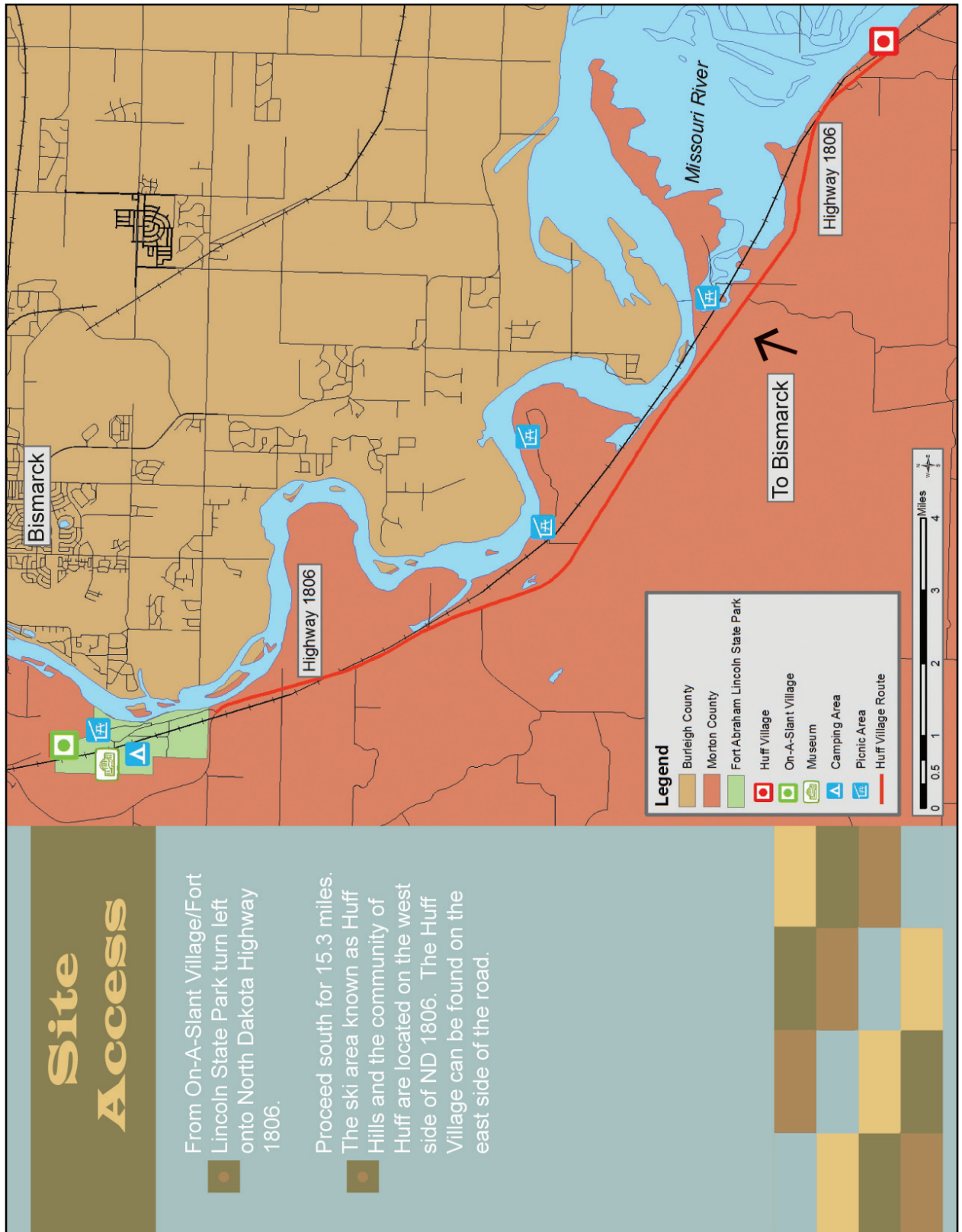


fig.6-22 Final Presentation Brochure Huff Village

DOUBLE DITCH NATIVE AMERICAN VILLAGE

North Dakota State Historical Site



MAP AND GUIDE

Native Americans of the Upper Missouri Part Five

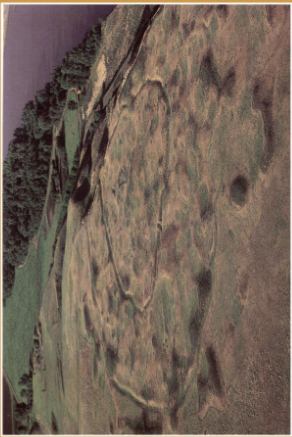
The dress of the Mandans, Hidatsa, and Arikara in general was very minimal. Verendrye says at the time of his visit the men were naked except for a carelessly worn buffalo robe. While most of the women wore simply an apron about the waist. Elder women and small girls wore a tunic shaped garment made of deerskin often decorated with a fringe. Bead necklaces and earrings were worn as well as leggings that reached just below the knee. Ceremonies and feasts called for extensive ornamentation and clothing. Embroidered leather shirts, moccasins decorated with porcupine quill work, necklaces of elk teeth, bears' claws, tobacco pouches, quivers, medicine pouches, and large glass beads were all part of the Mandan ceremonial dress. Large head-dresses comprised of eagle, hawk, raven, and crow feathers were worn by some members of the tribes as well.



Mato-Tope, Mandan Chief



Sih-Chida, Mandan Man



Aerial view looking southwest across Double Ditch Village. The inner ditch is clearly visible in the center of the image while the circular depressions mark the remains of earth lodges. The Missouri River is below the steep bluff in the background.

Double Ditch Village is one of the largest archaeological sites in North America. It was settled high on a terrace overlooking the Missouri river to the west and Square Buttes to the north. The buttes marked the traditional boundary between the Mandan and the Hidatsa tribes.

The entire village settlement covers nearly twenty acres, and is marked by more than 40 earthlodge depressions. Huge midden mounds, or refuse piles, indicate the village was settled continuously for more than three hundred years.

The two prominent fortification ditches for which the village is named are still visible today. The inner ditch is completely intact, while the outer ditch is now fragmented. Journal entries from the French explorer La Verendrye and artists Karl Bodmer and George Catlin indicate the ditches were nearly 20 feet wide and over 15 feet deep. The village was surrounded by an 18 foot high piquet which was protected by bastions and ramparts covering the piquet.



Looking north across Double Ditch Village remains

fig.6-23 Final Presentation Brochure Double Ditch Village

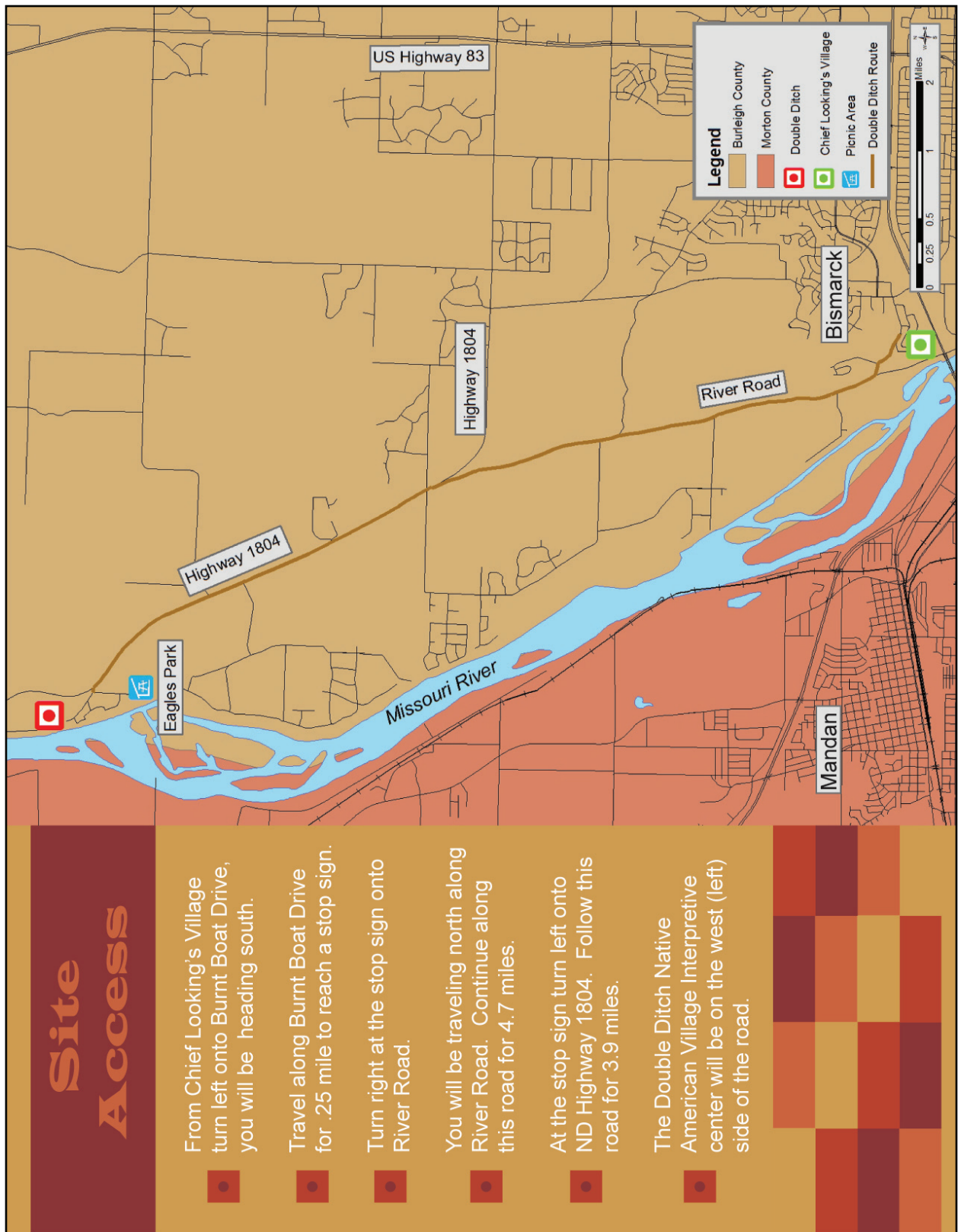


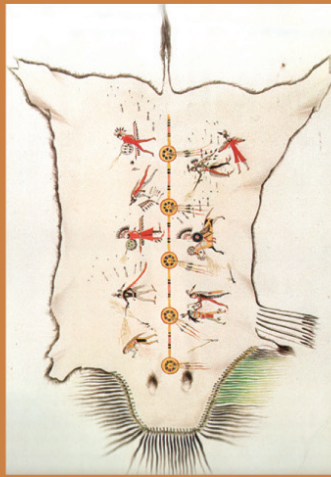
fig.6-24 Final Presentation Brochure Double Ditch Village

Native Americans of the Upper Missouri Part Six

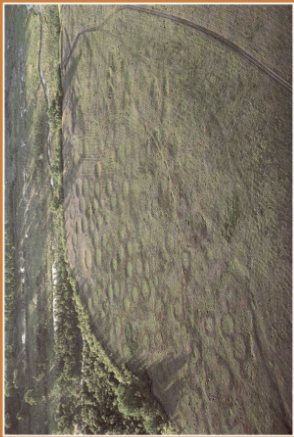
MIT-TUTTA-HANG-KUSH VILLAGE at FORT CLARK

North Dakota State Historical Site

The Mandans were known for their craftsmanship and manufacturing many goods. The common items included dressed animal skins, bull-boats, medicine bags, tobacco pouches, sheathes for knives and bows, bridles for horses, and tools for gardening like hoes and rakes. Nearly all the written accounts of the Mandan culture include some reference to their ability to craft pottery for food storage and preparation. The primary occupation of the men in the tribe was war. The Mandans were in constant danger of attacks from other tribes in the area. The Mandans were not known to attack other tribes, simply to defend themselves when being attacked or invaded by other tribes like the Dakotas and the Cheyenne.



This portrait of a buffalo robe was painted by Karl Bodmer based on an original painting by Mandan Chief Mato-Tope. The robe depicts several battle episodes and heroic feats.



Aerial view looking northwest across *Mit-tutta-hang-kush* Village. The remains of eighty-six circular earth lodges can be found here. Trails, foundations, and evidence of a fortification system are also evident on the ground as well.

The Mandans established *Mit-tutta-hang-kush* or Fort Clark Village in the early 1820's and occupied it until the smallpox epidemic of 1837. From 1838 to 1861 the abandoned village was inhabited by the Arikaras. Historians believe the majority of the earth lodge depressions visible today were a result of the Arikara's occupation of the village.

Fort Clark trading post was established near the Mandan settlement around 1830. The fort became one of many important trade centers of the Upper Missouri supplying steamboats, trappers and traders, as well as Native Americans with goods until it burned in 1860.

Artifacts like muzzle loading devices, transfer print ceramics, and recycled brass buttons from military uniforms collected from recent archeological events illustrate the enormous impact traders had on the Native people.



Mit-tutta-hang-kush Village near Fort Clark



MAP AND GUIDE

fig.6-25 Final Presentation Brochure Mit-Tutta-Hang-Kush Village

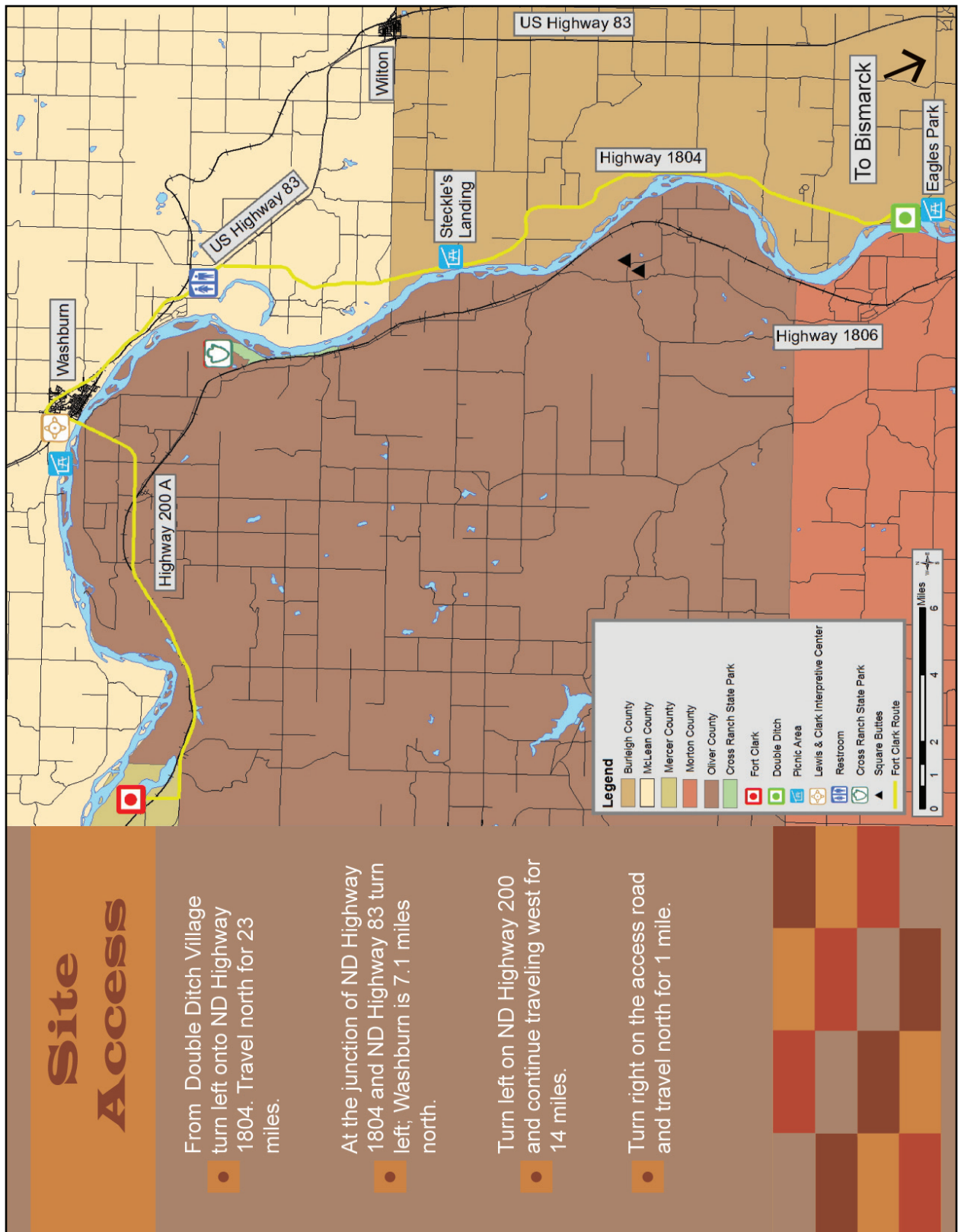


fig.6-26 Final Presentation Brochure Mit-Tutta-Hang-Kush Village

KNIFE RIVER NATIVE AMERICAN VILLAGES

National Historic Site

Native Americans of the Upper Missouri Part Seven

Nearly every visitor to the Mandan villages mentions the hospitable nature of their hosts. The Mandans were known to customarily “feed liberally all who came among them, selling only what was to be taken away.” The Mandans would take in an enemy seeking refuge, once he had eaten corn with them the people of the tribe would treat the man as one of their own.

Between 1737 and 1782 smallpox nearly wiped out entire tribes. This forced the surviving members of the Mandan, Hidatsa, and Arikara north to avoid the advancing Sioux Migration. The tribes established two permanent settlements near the confluence of the Knife and Missouri Rivers.

In 1851 the Fort Laramie Treaty established the Fort Berthold Indian Reservation. The reservation expanded from the Missouri River beyond the Yellowstone River in Montana encompassing more than 12 million acres. Politics of the late 1800’s reduced the size of the reservation to its current size of just under one million acres. The Mandan and Hidatsa have lived here since 1845. The Arikara joined the other tribes around 1862. Currently the reservation has over 8,400 enrolled members, but less than 4,000 actually live on the reservation. The tribal government maintains jurisdiction throughout the reservation.



MAP AND GUIDE

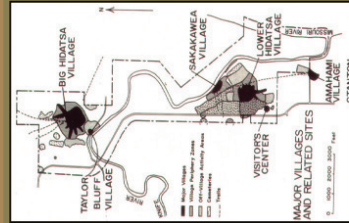


Aerial view looking northeast across Big Hidatsa Village located in the foreground. Cemetery grounds are visible on the hills in the background and trails can be seen in the upper left portion of the image.

In 1974 Congress declared this 1,700-acre area a National Historic Site in order to preserve and study the rich cultural and archeological history found near the confluence of the Knife and Missouri Rivers.

Three important villages, Big Hidatsa, Sakakawea, and Lower Hidatsa are preserved within the boundaries of the archaeological park and maintained by the National Park Service.

Big Hidatsa Village is by far the largest settlement within the area, containing more than 100 visible remains of earth lodges. Historians believe settlement of this area began around 1600 A.D.



Knife River National Historic Site Map

fig.6-27 Final Presentation Brochure Knife River Villages

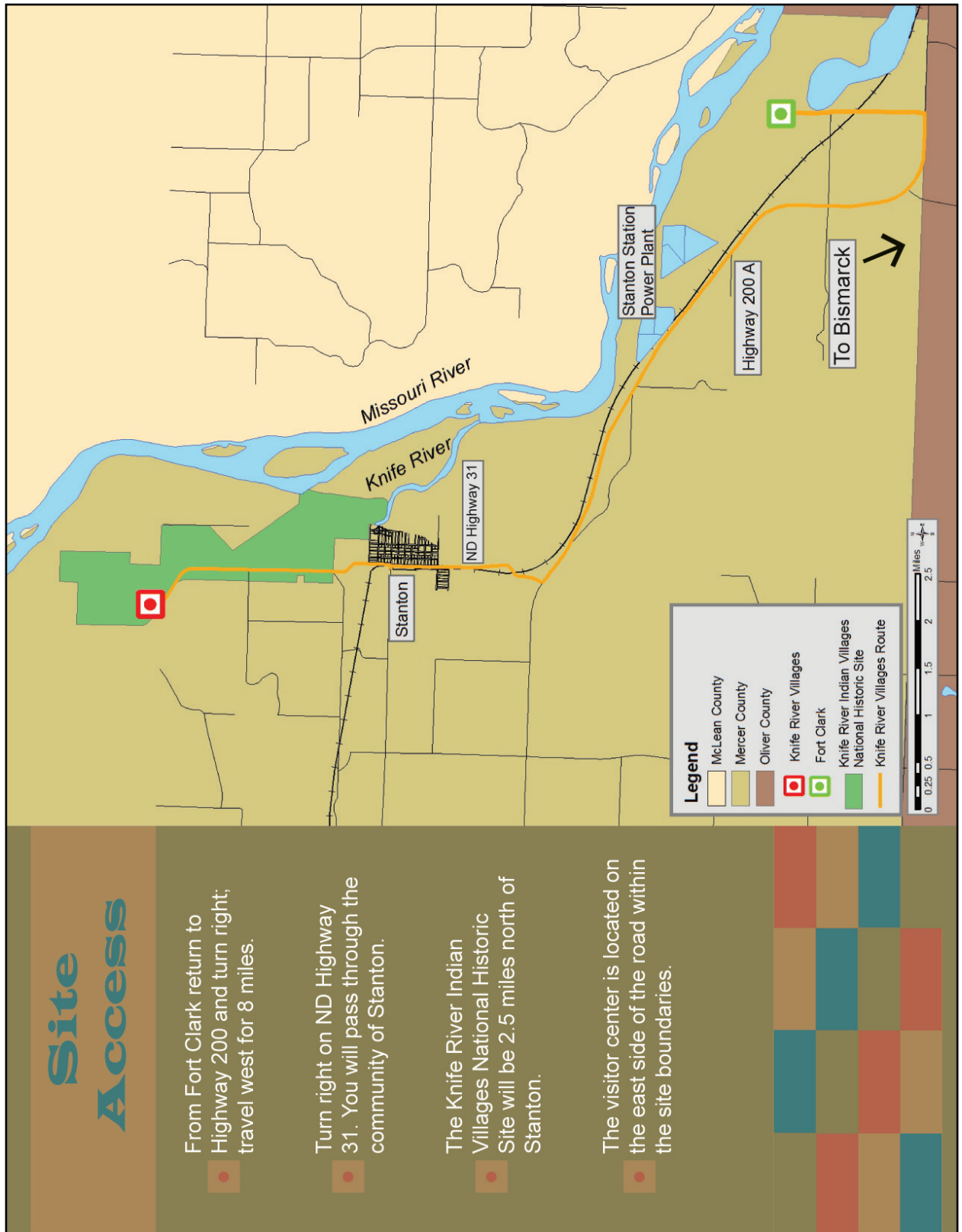


fig.6-28 Final Presentation Brochure Knife River Villages

appendix

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The Narrative

Reconnecting the once densely populated settlements of the Mandan, Hidatsa, and Arikara Native American tribes along the Missouri River in central North Dakota can be seen as an implied connection across the landscape. The same can be said of similar projects that are linked not only in concept and scope but visually and physically as well. Projects with precedent demonstrate both literal and implied connections as well as and underlying themes or motifs that helps to strengthen the overall goal and concept. Ultimately, a strong, well-developed concept is the vehicle for a successful project.

A strong and concise concept will be the driving force throughout the entire design process. Ultimately, the goal of this project is to realize, explore and understand the cultures and peoples that first settled the central plains of North Dakota. The common thread that will bind this project together is the spirit and culture of the Native American people and the history they've left behind. Preservation of the legacy that be stills the American Indians and their culture is of the utmost concern. Failure to uphold the honor and integrity would render this project a complete failure. It is not my intent to exploit the people, their culture, or their heritage in any way; in fact it is quite the contrary. The focus of this project will be to provide a means in which the Native American legacy can live on for generations to come. With the ideas, desires, input, and direction by members of the Three Affiliated Tribes, North Dakota State Parks and Recreation Department, Sierra Club, and various other agencies and organizations this project can be designed to realize the wants and needs of the Native peoples as well as serving the cultural, historical, and educational aspects for the public.

Preservation of the cultures and history of the people before us is critical. Strength, knowledge, and acceptance come through understanding, yet understanding comes through knowledge. By preserving the culture of the people that lived here before us we can begin to recognize similarities in our lives as people of the Great Plains. I feel these cultural realizations are import to us as students of our environment. This project will not only challenge me mentally and physically but it will challenge my entire being as who I have become throughout my life. I hope to gain a better understanding for the sociological concerns of cultures other than my own. I want this project to challenge my thoughts, feelings, and preconceived notions about everything I've been taught over the previous four years.

The breadth of this project is quite large. In fact, it is my concern that I will lose my focus and stray from the initial concept that has driven me to this point. Realizing and understanding the ways of the Plains Indian is important to our society as a whole. It is also important for me to treat this project with compassion. Exploitation of the Native Americans will not be tolerated, period. I believe there is a fine line between informing the public and completely alienating a culture with such pride and honor as the Native Americans of the Great Plains.

A User/Client Description

- a. The project will be designed for the people of the Three Affiliated Tribes, the North Dakota State Historical Society, North Dakota Park and Recreation Service, the Sierra Club, and the general public.
- b. Currently the State Historical Society owns and assumes responsibility for the areas.
 - i. All user groups include the people of the Three Affiliated Tribes, The North Dakota State Historical Society, North Dakota State Park and Recreation Service, the Sierra Club, and the general public.
 1. The requirement for the tribes is cultural preservation of their heritage.
 2. The requirements for the state of North Dakota are natural preservation as well as cultural sensitivity.
 3. The basic needs of the users must be met through shelter from the elements, restrooms, vehicular parking, and places to gather and rest.
 - ii. The requirements of each group are to meet the basic needs as well as establishing a functioning space.
 1. The project is designed for the Three Affiliated Tribes, the North Dakota State Historical Society, North Dakota State Park and Recreation Service, the Sierra Club, and the public who visit the site.
 2. Peak usage by visitors would occur primarily during the months of April through September.
 3. Vehicular parking lots need to be established. These lots will need to address the requirements set forth by the Americans with Disabilities Act.
 4. Restrictions within the site may include topography as well as public access throughout the site. The will be viewed as opportunities for design elements.
 5. The entire project is culturally sensitive in the regards to offending the proud heritage of the Native American people.

Major Project Elements

- a. Major project elements include an anthropological approach to the design process. Design elements may include a cultural interpretive center, replicated items such as earth lodges, and basic facilities for the visiting public that will include parking, restrooms, and shelters.
 - i. The major elements are dependent upon research and data collected throughout the design process.

Site Information: Macro to Micro Scale

- a. Double Ditch Indian Village
 - i. Site Information
 1. The project site is located in Burleigh County in central North Dakota.
 2. Bismarck serves as the county seat as well as the capital city of North Dakota. Double Ditch is located approximately 10 miles north of the city limits. Other towns in northern Burleigh County include Wilton, Baldwin and Regan.
 3. The specific site is located along the eastern edge of the Missouri River, which divides Burleigh and Morton counties.
 - ii. Double Ditch Indian Village was once home to nearly 10,000 inhabitants. This site is considered one of the largest archeological finds in North America. The village is believed to have been evacuated during the 1780-1781 smallpox epidemic that wiped out large portions of the plains Indians across the Midwest.
 - iii. A site inventory will be collected throughout the research process.
 1. Elements to be collected include, but are not solely limited to:
 - a. Historical/socio/political/economic:
 - i. Economic Base
 - ii. Demographics
 - iii. History
 - b. Geographic
 - i. The site is located along US Highway 1804 approximately 10 miles north of Bismarck.
 - ii. The 37-acre site is the major landmark within the area. Other notable spaces include the Seventh Day Adventist Academy, the Missouri River, Burnt Creek, and minor housing developments a few miles south of the site.
 - iii. The terrain is generally rolling hills with a peak elevation near 1,850 above sea level. Double Ditch Indian Village sits atop a steep bluff overlooking the Missouri River.

iv. The views across the site are wide and unrestricted. The north and south views are expansive and unbelievable. The view looking west across the river reveals a small housing development and vast expanses of agricultural land. Due to the rolling terrain, the eastern view is somewhat restricted. However, the limited views hide Highway 1804 that forms the eastern border of the site.

c. Physical

i. Ecological and environmental issues will all be addressed throughout the research process. Additionally, information will be collected regarding solar orientation, prevailing wind analysis, and annual precipitation.

ii. Vegetation across the site is predominantly mixed grass prairie with minimal trees. Samples collected from the site include Big Bluestem, Crested Wheat Grass, Little Bluestem, Foxtail Barley, Horsetail, Buffalo Grass, and Sideoats Grama.

iii. Data regarding the underlying geology, soil structure, and hydrology will all be collected during the research phase of this project.

Project Emphasis

a. The thesis will examine the interconnectedness of the ancient sites looking for a mirror to our need for connectedness in our own communities. Design metaphors, analogies, and or tectonics will be developed from the examination. Currently the direction of focus is broad. I have been in contact with members of the Three Affiliated Tribes and I am waiting for a response as to what their people would like to see done with the area. My thoughts are to develop the area to show a more interactive educational based site that allows visitors to experience the site, the culture, and the ways of the Mandan Indians.

A Plan for Proceeding

a. Definition of a research direction

i. Research and analysis will be a mixed method of quantitative and qualitative approaches.

1. A concurrent transformative strategy will be employed:

a. The strategy will be guided by the theoretical premise.

b. Implementation

i. Both quantitative and qualitative data will be gathered concurrently.

c. Priority will be assigned by the requirements of the theoretical premise.

d. Integration of the data will occur at several stages in the process of the research and will depend on the requirements of

- e. Analyzing, interpreting, and reporting of results will occur throughout the research process.
 - ii. Quantitative data, including but not limited to:
 - 1. Statistical Data:
 - a. Gathered and analyzed locally or obtained through instrumentation and or experiment:
 - i. Gathered directly or through an archival search.
 - iii. Qualitative data:
 - 1. Gathered from direct observation
 - 2. Gathered from local survey
 - 3. Gathered from an archival search
 - 4. Gathered from direct interviews
 - b. Design Methodology:
 - i. Two types
 - 1. Graphic analysis, all may be explored with the aid of software:
 - a. Interaction matrix
 - b. Interaction net
 - c. Venn diagramming
 - d. Morphological charting
 - e. Etc.
 - 2. Language based
 - b. Philosophical logic
 - i. Adduction-to bring forward as an argument or as evidence
 - ii. Deduction-concluding from a set of premises.
 - b. Phenomenology:
 - i. An examination of objects or events as they appear in an experience.
 - ii. See Emmanuel Kant
 - c. Dialectical
 - i. A logical argument
- c. Documentation of the Design Process
 - i. By digital means:
 - 1. Photography:
 - a. models
 - 2. Scanned images of sketches
 - 3. Digital drawings
 - ii. Sketchbooks

Schedule of Work:

August:

- 23-Classes Begin
- 30-1st Draft-Statement of Intent Due

September:

- 05-Labor Day-No Classes
- 08-Revised Statement of Intent Due

October:

- 10-Primary Critics Announced
- 16-Rough Draft Thesis Proposal Due
- 27-Revised Thesis Proposal Due

November:

- 11-Veteran's Day-No Classes
- 23-Draft Thesis Program due to Primary
- 24-25 Thanksgiving Holiday-No Classes
- 28-Draft of Thesis due to Primary Critic

December:

- 08-Final Thesis Program due to Primary
- 09-Last Day of Classes
- 10-22 Research at the State Historical Society, conduct interviews, meet with members of the Three Affiliated Tribes.

January:

- 01-09-Build Site Model
- 10-Classes Begin
- 16-MLK, Jr. Holiday-No Classes

February:

- 20-President's Day-No Classes

March:

- 06-10-Mid Semester Thesis Review
- 13-17-Spring Break

April:

- 14-17-Easter Break-No Classes
- 24-Thesis Project Due at 4:30pm
- 27-04 May-Final Thesis Reviews

May:

- 05-Last Day of Classes
- 11-Final Thesis Document Due at 4:30
- 12-Commencement

Previous Studio Experience

2nd Year

Fall: Matthew Chambers

- Ideal Landscape
- International Peace Garden Memorial to the World Trade Centers
- NDSU Downtown Plaza Design
- Sculpture Garden—an introduction to 3D VIZ Computer Modeling

Spring: Dennis Colliton

- Miniature Golf Hole Design and Model
- Sculpture Garden—an introduction to
- NDSU Arbor Walk
- NDSU Research and Technology Park
- Red River Waterfront Development

3rd Year

Fall: Matthew Chambers

- Car Park
- Oriska Arboretum
- Chicago Millennium Park
- Fargo Corridor Enhancement

Spring: Tim Kennedy

- 2 Point Perspective
- Rocking Horse Community Development
- Masonry and Stone Competition

4th Year

Fall: Tim Kennedy

- St. Paul Urban Renewal

Spring: Catherine Wiley

- San Francisco Tour
- Trucker's Inn Brownfield Reclamation
- Sand and Gravel Pit Reclamation

5th Year

Fall: Joshua Walter

- Red River Conservation Corridor

case studies

Mandan Park Rehabilitation Omaha, Nebraska

Mandan Park anchors the south end of Omaha's riverfront parks. The park offers a winding pleasure drive, steep wooded bluffs, and a historic overlook across the Missouri River.

Prior to the renovation of the park undesirable activities were commonplace and the overall condition of the park was poor. Additionally, there was small amounts of erosion from stormwater runoff along the major connecting road resulting in a compromised approach to the park. A town hall style meeting was held to hear the public's voice in the restoration of the park. Elements the public felt that were necessary to rejuvenate the park included facilities to attract families, more scenic and natural character which would establish it as a unique park in the city, preservation of the views across the Missouri River, and current public facilities including restrooms and recreational opportunities.



fig. 8-1 Mandan Overlook Master Plan
Received November 19, 2005
from: Big Muddy Workshop-Omaha, NE

The Big Muddy Workshop of Omaha took these recommendations and developed a comprehensive program to enhance the sense of place within Mandan Park. Elements added to the park included a replicated earth lodge, interpretive panels, and an interactive archeological dig area where children are able to find replicated fossils and compare them to drawings on an interpretive panel to learn more about the Native Americans that once inhabited the area. Additional development included well-developed primary and secondary trail systems throughout the park, picnic shelters, tables, grills, restrooms, and connections to adjacent parks on the north and south ends of the site. Native grasses and wildflowers were chosen to enhance the unique quality of the park and restore it to a more indigenous plant selection.

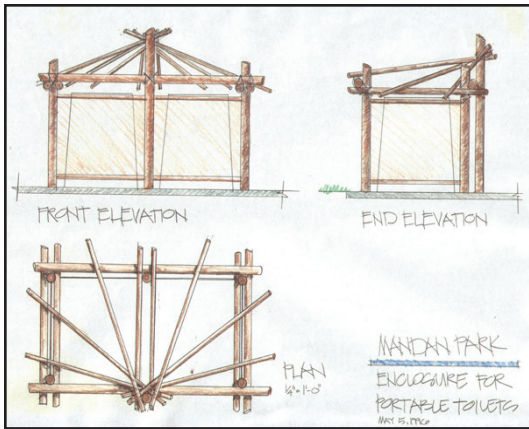


fig. 8-2 Site elements/Design Details
 Received November 19, 2005
 from: Big Muddy Workshop-Omaha, NE

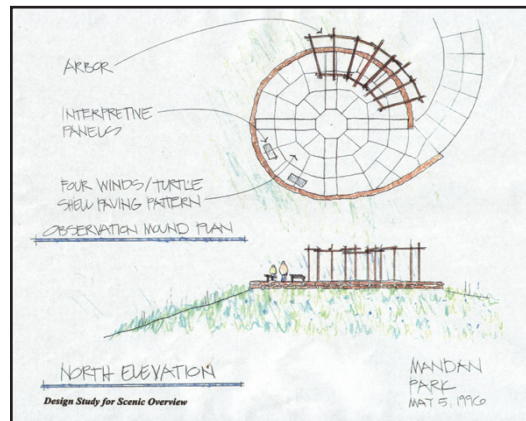


fig. 8-3 Site elements/Design Details
 Received November 19, 2005
 from: Big Muddy Workshop-Omaha, NE

Summary

The redevelopment of Mandan Park offers visitors the opportunity to explore the Native American culture in a hands-on setting. By providing these experiences children can learn through action and exploration. The overall design met the needs of the public and offers an opportunity to experience nature and the Native American heritage. Interaction and education are positive elements when considering a successful design for the public.

Trail of Dreams, Trail of Ghosts
Santa Fe, New Mexico

The Trail of Dreams, Trail of Ghosts is a pair of public parks, one at DeVargas Park the other at Frenchy's Park in Santa Fe, New Mexico. Both parks can be found along the former El Camino Real de Tierra Adentro, which is the trail Spanish settlers followed from Mexico in to what is currently southern California, Arizona and New Mexico. DeVargas Park is located in the downtown area; while Frenchy's park is a well-used park outside the city in a residential neighborhood.



fig. 8-4 Frenchy's Park, Santa Fe, NM
Landscape Architecture, Sept. 2004
pp. 124-126.



fig. 8-5 Sandblasted cultural images
Landscape Architecture, Sept. 2004
pp. 124-126.



fig. 8-6 Handprints in concrete
Landscape Architecture, Sept. 2004
pp. 124-126.

The concepts for the park were inspired by an ancient Native American bowl found at one of the sites. The colors, patterns, and materials contributed to the final design in which two intertwined spirals interact with light and the landscape. Images of two cultures intermixing can be found in the sandstone and steel surfaces that cover the walls of the exhibit. The images represent a story of how the two cultures, Native American and Spanish, became so integrated as a result of the people, trade goods, and stories along the trail. Images such as burros and tools that were introduced by the Spanish settlers have been sandblasted into the native sandstone as cultural reminders of the two separate but mutually intertwined groups.

Neighborhood residents were encouraged to take possession with the park by leaving their handprint in the pigmented concrete. This idea was inspired by a Native American blanket design in which red hands are sewn into black wool. The artist, Catherine Widgery wanted the pattern of anonymous handprints to have a lasting impact on the design or to "trace this moment, in recognition of all the travelers..."



fig. 8-7 Cultural Arbor
Landscape Architecture, Sept.
2004 pp. 124-126.

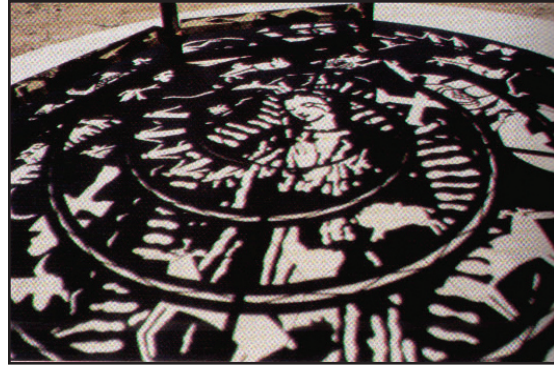


fig. 8-8 Cultural Arbor
Landscape Architecture, Sept.
2004 pp. 124-126.

Summary

This project is a fine example of inspiration and design influenced by contributing elements of the subject matter. Acknowledging the cultural heritage of both groups through interpretive images allows for a story to be told of how two separate cultures accepted each other, came together, and adopted new cultures. By allowing neighborhood residents to be an integral part of the project gave each of them a sense of ownership and responsibility towards the preservation of the park and overall appearance.

Garden of the First Nations

Montreal, Quebec

The Montreal Botanical Garden hosts the Garden of the First Nations, a 5.5 acre landscape that shows the relationship of the indigenous people to the flora of the natural landscapes of Quebec. The garden includes over 500 different species of plants, 300 of which are held in high regard by the First Nations as medicine.



fig. 8-9 Master Plan for the Garden of the First Nations
Landscape Architecture, December 2004. pp. 28-36

The artistic and scientific communities came together and collaborated with people of the First Nations to develop a concept that educated the guests about the culture and heritage of the many nations of indigenous people that first inhabited Quebec. The botanical garden has over one million visitors annually that can experience the significance of the landscape to the native cultures. Little to no physical impact of the natives on the land is visible today. This leads to a design that has "modest and discrete design interventions". The garden has 3 connected sections: a barren and rocky lake that mimics the landscapes north of the treeline in Quebec, and the two remaining forest areas are linked by a river.

Unique elements mark the entry to each section of the garden. These items are based on tools and cultural influences. The paths that meander through the park are designed so that return visitors to the gardens can experience the park differently with each visit. The need to move through the forest with minimal impact is emphasized by the deliberate organization of the spaces and trails. Many of the details throughout the park emphasize the variety of materials and patterns found in a natural forest. The visitor pavilion is designed in such a way that allows the stream and the forest to move through it.



fig. 8-10 A Collection of Totems
Landscape Architecture, December
2004. pp. 28-36



fig. 8-11 Visitor Pavilion
Landscape Architecture, Dec. 2004.
pp. 28-36

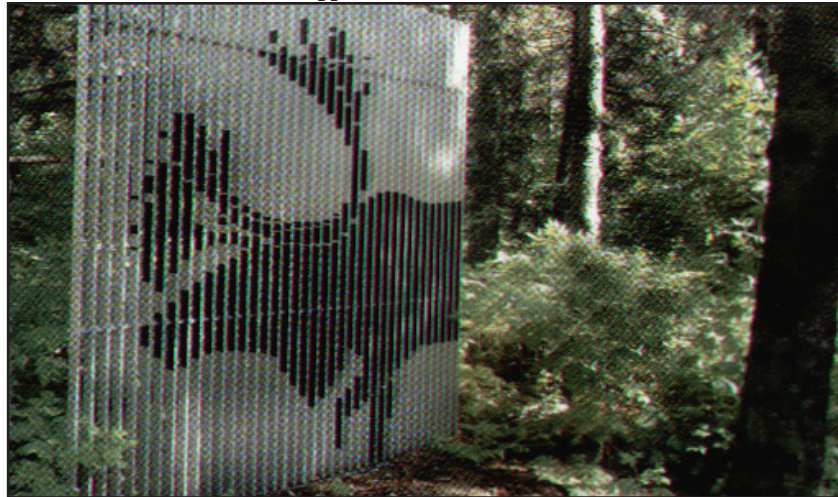


fig. 8-12 Moose Interpretive Panel
Landscape Architecture, Dec.
2004. pp. 28-36

Summary

The Garden of the First Nations success is due to the intricate use of detail and the designer's ability to convey the subtle beauty of the forest around. Allowing the guests to experience the garden differently with each visit will encourage multiple visits and a continued interest in the park.

Colman Park and Foxhill Park Seattle, Washington

Colman Park was originally designed by the Olmstead Brothers. The park follows a serpentine road and ends up being a starting point for a walkway that leads down to the shore. Major efforts have been put forth to reestablish native vegetation in several parks surrounding the Seattle area. The firm, Charles Anderson Landscape Architecture has been solely responsible for more than 10 such projects. The parks are also seen as an opportunity to environmentally educate the public.



fig. 8-13 Master Plan for Roxhill Park
Landscape Architecture, July 2004 pp.46-58.



fig. 8-14 "Cells" of Young Natural Vegetation
Landscape Architecture, July 2004 pp.46-58.

Native plant communities existed in some of Seattle's parks. Current efforts are promoting exclusive plant palettes that include only native vegetation that will strengthen the overall environment. Native plants chosen for these parks improve water quality which is a critical component in the delicate ecosystem of the once-endangered chinook salmon. Many of these parks include kiosks explaining the natural history and culture of the Pacific Northwest region. Visitors to the parks follow trail systems that lead them through rejuvenated landscapes into mature adult forests.

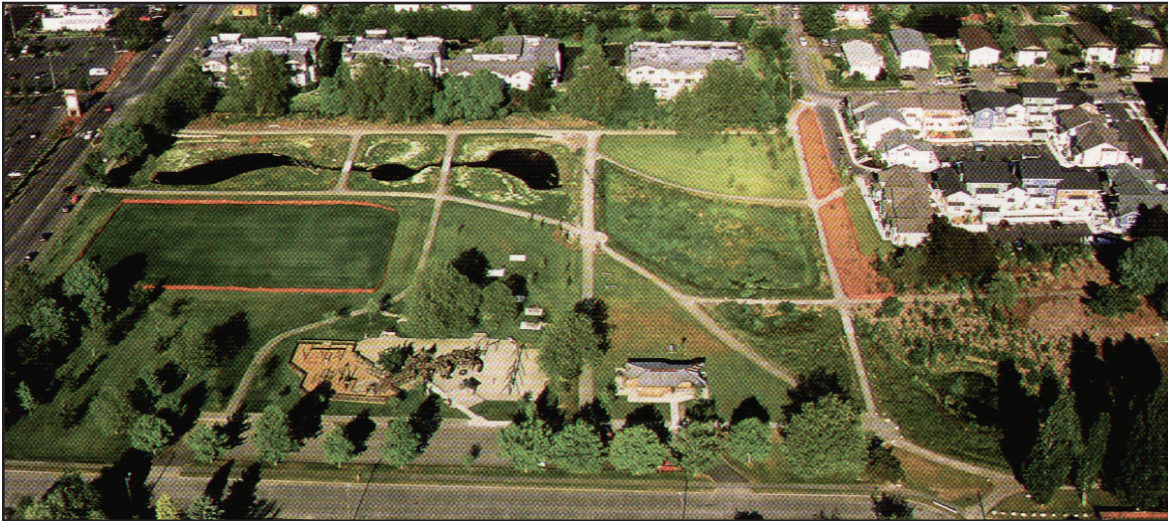


fig. 8-15 Naturally Supported Wetland at Roxhill Park
Landscape Architecture, July 2004 pp.46-58.

Summary

Natural plant selection for site improvements can offer a dramatic impact on the landscape. Recognizing the importance of native vegetation will help reinforce the design and enhance the ecosystem. Educating the public about the role native vegetation played in sculpting the landscape and the positive effects such vegetation can have on the environment is an important opportunity to explore. One key to sustainable design is the ability to reach the public and engage them within the entire site. By offering unique experiences the visitors will feel more involved and take something positive away from the environmental education opportunity.

Ohlone Greenway Berkeley, CA

The Ohlone Greenway is a popular trail system used by pedestrians, joggers, skateboarders, and bikers. The trail links three community art gardens and includes an ecological restoration home used in demonstrations and educational workshops. All three art gardens and the Berkeley EcoHouse converge at the same point. Local professionals volunteered their time and began to develop a plan for animating an adjacent section of the Ohlone greenway. The project was focusing on the installation of interpretive panels that reflected the local culture of the neighborhoods. This area of Berkeley was once part of the transcontinental railway and later a series of lines were used in streetcar traffic. Transportation became the theme for the first portion of interpretive panels throughout the greenway. Oral histories were conducted by volunteers to gather as much information about the rich cultures and the experiences of people who once inhabited the space. Other interpretational exhibits include a section that illustrates the significance of native vegetation in the landscape and the agriculture that once dominated the region. The major focal point of the greenway's enhancement is a 72-foot-long hand painted mural that depicts presettlement Native Americans, Spanish, the Gold Rush, World War II, and current issues impacting the environment. Volunteers conducted extensive research to ensure the validity of the information being depicted in the story. Visitors to the greenway are encouraged to "read" the graphics and experience the history of the Ohlone greenway.



figs. 8-16 Interpretive Panels
Landscape Architecture, July 2005
pp. 34-41.



figs. 8-17 Interpretive Panels
Landscape Architecture, July 2005
pp. 34-41.

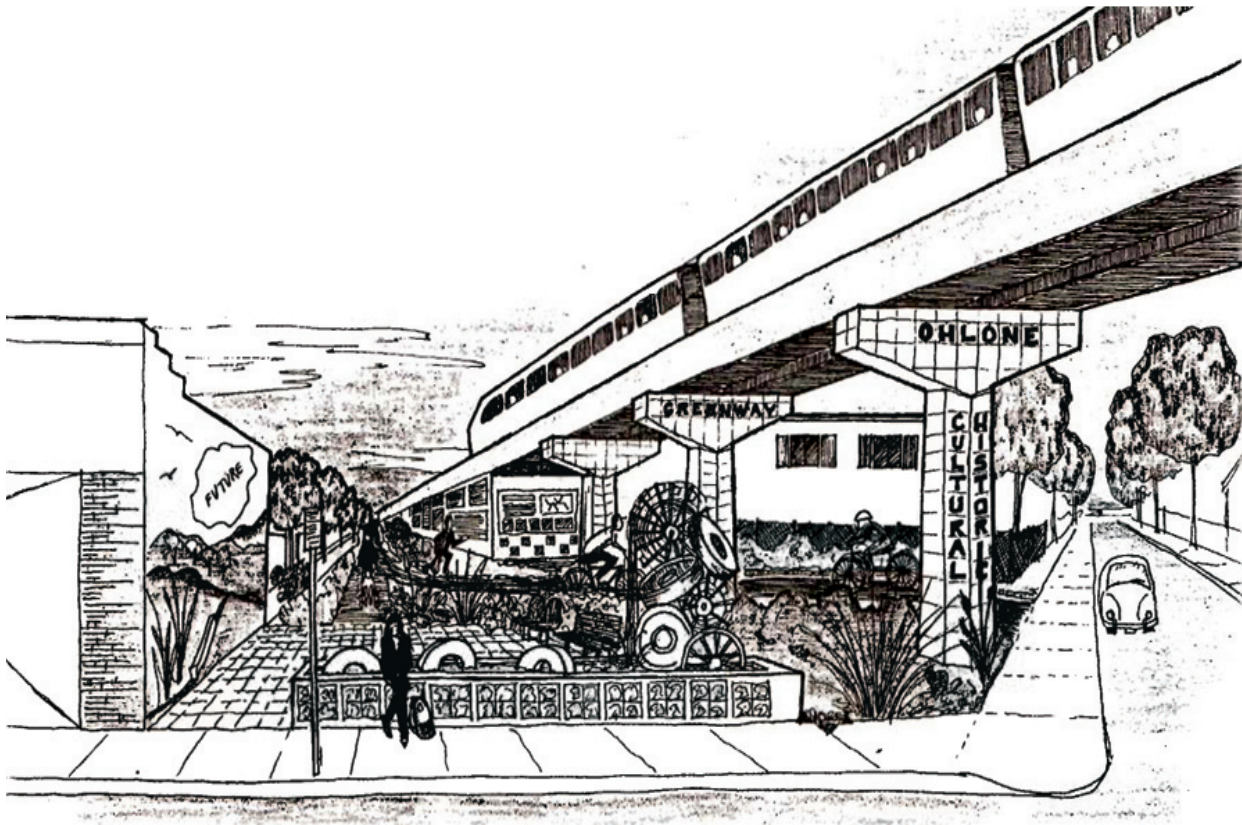


fig. 8-18 Sketch of a Node Along the Greenway
Landscape Architecture, July 2005 pp. 34-41.

Summary

The trail system does well to capitalize on the rich history of the site. Keys to the success of this project are elements that reflect the extensive culture and heritage of the people that once inhabited this region. By allowing the visitors an opportunity to "read" the stories of the native people they become engaged with the site and understand the changes throughout its rich history. The project draws from several opportunities that can encourage visitors to the area to continue returning again and again.

A Modern Version of a Nation

Window Rock, AZ

The Navajo culture of the modern era still exists much the way it did generations ago. One significant difference the people of today must cope with is State Highway 264 which runs east and west across the Navajo lands for more than 100 miles. This highway has created an opportunity for the Navajo people to maintain their culture and highlight their heritage.

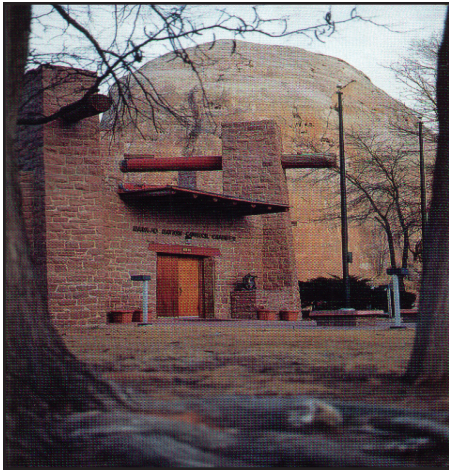


fig. 8-19 Council House, Preservation Magazine March/April 2002. pp. 60-65.

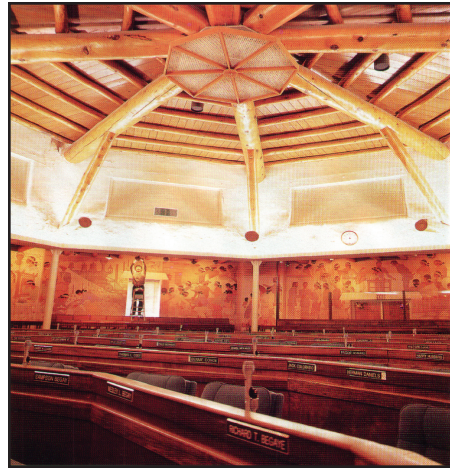


fig. 8-20 Council House, Preservation Magazine March/April 2002. pp. 60-65.

Buildings take on a revived Pueblo style both inside and out. The WPA-built Council House of the Navajo Nation has many traditional elements carried through the generations. Architecturally the building was built to mimic a Hogan, the traditional Navajo dwelling, with eight sides and the main door facing east. Native sandstone was used throughout the structure as well as hand-tooled wooden support structures that meet at the center of the ceiling. Many other buildings in Window Rock pay tribute to the Pre-Anglo past. Flat roofs and exposed rough hewn Ponderosa Pine logs throughout the interiors are commonly found tributes in architecture.

The Navajo Nation shares reservation land with the Hopi Native Americans as well. Both cultures are very open about their ancestral ways as a tribe. Many families have created a bed and breakfast type attraction that allows visitors to stay in a hogan with a cast iron stove, a bed, and quilts. The author of the article asked a woman how a visitor might learn more about the Navajo culture she simply replied "Talk with them, Navajo will often invite you into their home if you talk with them awhile."



fig. 8-21 Hubbell Trading Post. Preservation March/April 2002. pp 60-65.

The Hubbell Trading Post is also located along Highway 264. Established in 1876, this "must-stop" site offers visitors a chance to go through the interpretive center or watch Navajo weavers crafting their blankets and quilts. The post sells traditional hand-crafted Navajo pottery, silver jewelry, and rugs all made by local residents to meet the needs of the visitors. Over the years many of the traditional Navajo designs and colors have been modified to satisfy the wants of the Anglo-consumer.

Summary

Embracing the culture and way-of-life of their ancestors, the Navajo people of today open up their world to any and all that wish to understand it. A delicate balance has been created between preservation and capitalization. The Navajo people understand that tourists want to learn more about their ways and tourists bring revenue. A multicultural understanding exists throughout the Navajo Nation that reflects the traditional way of life as well as the impact left here by the white man.

National Museum of the American Indian Cultural Resource Center, Washington, D.C.

The fall of 2004 saw the grand opening of the National Museum of the American Indian (NMAI) on the National Mall in Washington, D.C. The architecture and symbolism was taken directly from Native American culture across the United States. The “behind-the-scenes” building that helps to maintain the National Museum is known as the Cultural Resource Center. This building holds a large portion of the Smithsonian Institution’s more than one million artifacts in the Native American collection.

The design of the building is very organic. Whenever possible ovals, curves, and meandering paths were used. The natural deciduous forest on the site was preserved to maintain a strong tie to nature and the out-of-doors. In the Native American culture recognition to the four cardinal points plays a role in the placement of the building and its entrances. As with most Native American structures the entrance to a building faces east to meet the rising new day. A central dome skylight suggests a reference to a smoke hole found in the earth lodges of the Mandan, Hidatsa, and Arikara tribes of the central Dakota plains. The building was designed so that American Indian visitors could hold ceremonies in the same facility their tribal artifacts like shields, pipes, spears, and dugout canoes are archived. The many curators of the museum approach the topic of Native Americans the same way, in that Native American’s are in fact the best interpreters of their cultures. Painstaking detail went in to accurately represent the sensitive cultures of the Native Americans.



fig. 8-22 Cultural Resource Center Ceremonial Room.
Preservation Magazine Sept./Oct.2002. pp 60-65.



fig. 8-23 Cultural Resource Center Lobby.
Preservation Magazine Sept./Oct.2002. pp 60-65.

Summary

The Cultural Resource Center of the National Museum of the American Indian is a fine example of stewardship of the people and their cultures. The CRC offers Native American visitors a chance to interact with the building and the artifacts so dear to their culture and heritage. Acknowledging the need for such a space is long overdue. Care and value are the utmost priority among the building's designers, curators, and archeologists. Every design element has been taken into consideration for the well-being of heritage and cultural preservation.

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Jason Tomanek



I would like to thank my wife Rachel for all the sacrifices she has endured throughout my years at NDSU. Without her I couldn't have done it. I owe my family and friends a debt of gratitude for all the love and support over the years. I would also like to thank Professor Angela Hansen and Professor Josh Walter for helping me get the most out my educational experience and guiding me through the program. To my classmates-I wish you all the best on your journey through life and your pursuit of your dreams. And of course to Dennis Colliton who believed in me from the beginning, thank you Dennis for all that you gave to the program.