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# A Class I and Class III Cultural Resource Inventory of the Bison Pipeline—Robinson Lake to Van Hook Rail Facility, Mountrail County, North Dakota

Prepared for

**Plains Pipeline, L.P.**

Prepared by

**SWCA Environmental Consultants**

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| COUNTY | TWP | RNG | SEC | SU |
|---|---|---|---|---|
| Mountrail | 153N | 91W | 23, 26, 27, 34, 35 | GA |
| Mountrail | 152N | 91W | 3, 4, 5, 9, 10, 16, 20, 21 | GA |

# A Class I and Class III Cultural Resource Inventory of the Bison Pipeline—Robinson Lake to Van Hook Rail Facility, Mountrail County, North Dakota

Submitted to:

**State Historical Society of North Dakota**

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SWCA Cultural Resource Report No. 14-671

**December 18, 2014**

# ABSTRACT

SWCA Environmental Consultants (SWCA) conducted a Class I and Class III cultural resource inventory on behalf of Plains Pipeline, L.P. (Plains Pipeline), in support of the Bison Pipeline—Robinson Lake to Van Hook Rail Facility (Bison Pipeline) project. The proposed Bison Pipeline is approximately 9.40 miles long and would be located on privately owned lands within, and just outside of, the exterior boundaries of the Fort Berthold Indian Reservation in Mountrail County, North Dakota. The proposed pipeline is located in Sections 23, 26, 27, 34, and 35, Township 153 North, Range 91 West; and Sections 3, 4, 5, 9, 10, 16, 20, and 21, Township 152 North, Range 91 West.

The regulatory agencies to be involved are 1) the North Dakota Public Service Commission under the North Dakota Energy Conversion and Transmission Facility Siting Act (excluding any applicable county or local requirements); 2) the U.S. Army Corps of Engineers through Section 404 of the Clean Water Act; 3) the U.S. Environmental Protection Agency Storm Water Program; and 4) the Mountrail County Planning and Zoning Department. Therefore, SWCA's Class I and III inventory of the project area assists Plains Pipeline in meeting the cultural resource requirements within the North Dakota Public Service Commission's Certificate of Corridor Compatibility and Route Permit application. Additionally, SWCA's inventory assisted Plains Pipeline in achieving compliance with Section 404 of the Clean Water Act, including the Nationwide Permit General Conditions pertaining to Section 106 of the National Historic Preservation Act and the Endangered Species Act. However, it is assumed that the project would attempt to avoid wetlands and at a minimum not exceed the threshold for permanent impact or crossing distance of potentially jurisdictional areas, requiring a pre-construction notification under Nationwide Permit 12. As such, the cultural resource inventory report is not being submitted to the U.S. Army Corps of Engineers for review at this time. This report was completed for submission to the State Historical Society of North Dakota to comply with the conditions of SWCA's State of North Dakota archaeological permit.

The Class I inventory was conducted for the Bison Pipeline on March 11, 2014, and updated on October 29 and November 19, 2014. The Class III inventory was conducted for the Bison Pipeline on April 10 and 11, May 6, October 1, and November 7, 2014. The pipeline was surveyed with a 200-foot-wide survey corridor centered on the 9.40-mile-long proposed pipeline centerline. An additional 164.61 acres was inventoried centered on 6.79 miles of abandoned alignment. In total, 414.12 acres were inventoried for the proposed pipeline location. The area containing the southern 0.6-mile segment of the pipeline had been previously inventoried (Mueller and Mueller 2011). In total, 246.63 acres were inventoried for the proposed pipeline location.

During the Bison Pipeline cultural resource inventory, SWCA archaeologists attempted to relocate two previously recorded site leads (32MNX60 and 32MNX113); and revisited two previously recorded sites (32MN818 and 32MN873). 32MN818 is a portion of a documented segment of the Soo Line Railroad. 32MN873 is a cairn site of unknown cultural or temporal origin. No additional cultural resources were identified in association with the previously recorded sites during the course of survey. 32MNX60 is a cultural material scatter site lead of unknown cultural or temporal affiliation. 32MNX113 is a site lead of an unknown type and

cultural affiliation. SWCA personnel newly recorded 32MN1316, a depression and stone feature site.

Both site leads remain unevaluated with regard to their National Register of Historic Places (NRHP) eligibility. Because site leads are simply recorded with quarter-section site boundaries, their exact location is unknown. SWCA archaeologists did not relocate the previously recorded resources during the Class III inventory, and have determined that the sites do not occur within the current survey area. 32MN818 had been previously determined to be a non-contributing portion of an eligible historic district. 32MN873 remains unevaluated with regard to its eligibility for inclusion to the NRHP. SWCA recommends that the resource be avoided by 50 feet. 32MN1316 is a depression and stone feature. The site is of an unknown cultural or temporal nature, and remains unevaluated with regard to its NRHP eligibility. It is therefore recommended that the site be avoided by 50 feet. Plains Pipeline has avoided the resource by 50 feet by project design. Based on these inventory results, and with the above stipulations, it is recommended that a determination of *No Significant Sites Affected* and *No Historic Properties Affected* be granted for the project to proceed as planned.

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# INTRODUCTION

SWCA Environmental Consultants (SWCA) conducted a Class I and Class III cultural resource inventory on behalf of Plains Pipeline, L.P. (Plains Pipeline) in support of the Bison Pipeline—Robinson Lake to Van Hook Rail Facility (Bison Pipeline) project. The proposed Bison Pipeline is approximately 9.40 miles long and would occur on privately owned lands within, and just outside of, the external boundaries of the Fort Berthold Indian Reservation in Mountrail County, North Dakota (Figures 1a–1d). The proposed pipeline is located in Sections 23, 26, 27, 34, and 35, Township (T) 153 North (N), Range (R) 91 West (W); and Sections 3, 4, 5, 9, 10, 16, 20, and 21, T152N, R91W. A full listing of legal locations of the project area is provided in Table 1.

The regulatory agencies to be involved are 1) the North Dakota Public Service Commission under the North Dakota Energy Conversion and Transmission Facility Siting Act (excluding any applicable county or local requirements); 2) the U.S. Army Corps of Engineers (USACE) through Section 404 of the Clean Water Act; 3) the U.S. Environmental Protection Agency Storm Water Program; and 4) the Mountrail County Planning and Zoning Department. Therefore, SWCA's Class I and III inventory of the project area assists Plains Pipeline in meeting the cultural resource requirements within the North Dakota Public Service Commission's Certificate of Corridor Compatibility and Route Permit application. Additionally, SWCA's inventory assisted Plains Pipeline in achieving compliance with Section 404 of the Clean Water Act, including the Nationwide Permit General Conditions pertaining to Section 106 of the National Historic Preservation Act and the Endangered Species Act. However, it is assumed that the project would attempt to avoid wetlands and at a minimum not exceed the threshold for permanent impact or crossing distance of potentially jurisdictional areas, requiring a pre-construction notification under Nationwide Permit 12. As such, the cultural resource inventory report is not being submitted to the USACE for review at this time. This report was completed for submission to the State Historical Society of North Dakota to comply with the conditions of SWCA's State of North Dakota archaeological permit.

Fieldwork was conducted for the Bison Pipeline on April 10 and 11, May 6, October 1, and November 7 and 22, 2014. The pipeline was surveyed with a 200-foot-wide survey corridor centered on the 9.40-mile-long proposed pipeline centerline. An additional 164.61 acres were inventoried centered on 6.79 miles of abandoned alignment. In total, 414.12 acres were inventoried for the proposed pipeline location. The area containing the southern 0.6-mile segment of the pipeline had been previously inventoried (Mueller and Mueller 2011).

For the cultural resource investigation William Harding served as principal investigator. Fieldwork was conducted by SWCA archaeologists Craig Picka, Aidan McCarty, Michelle Homan, and Theresa Kilcullin. All field notes and photographs are on file at SWCA's Bismarck, North Dakota, office under project number 28514.

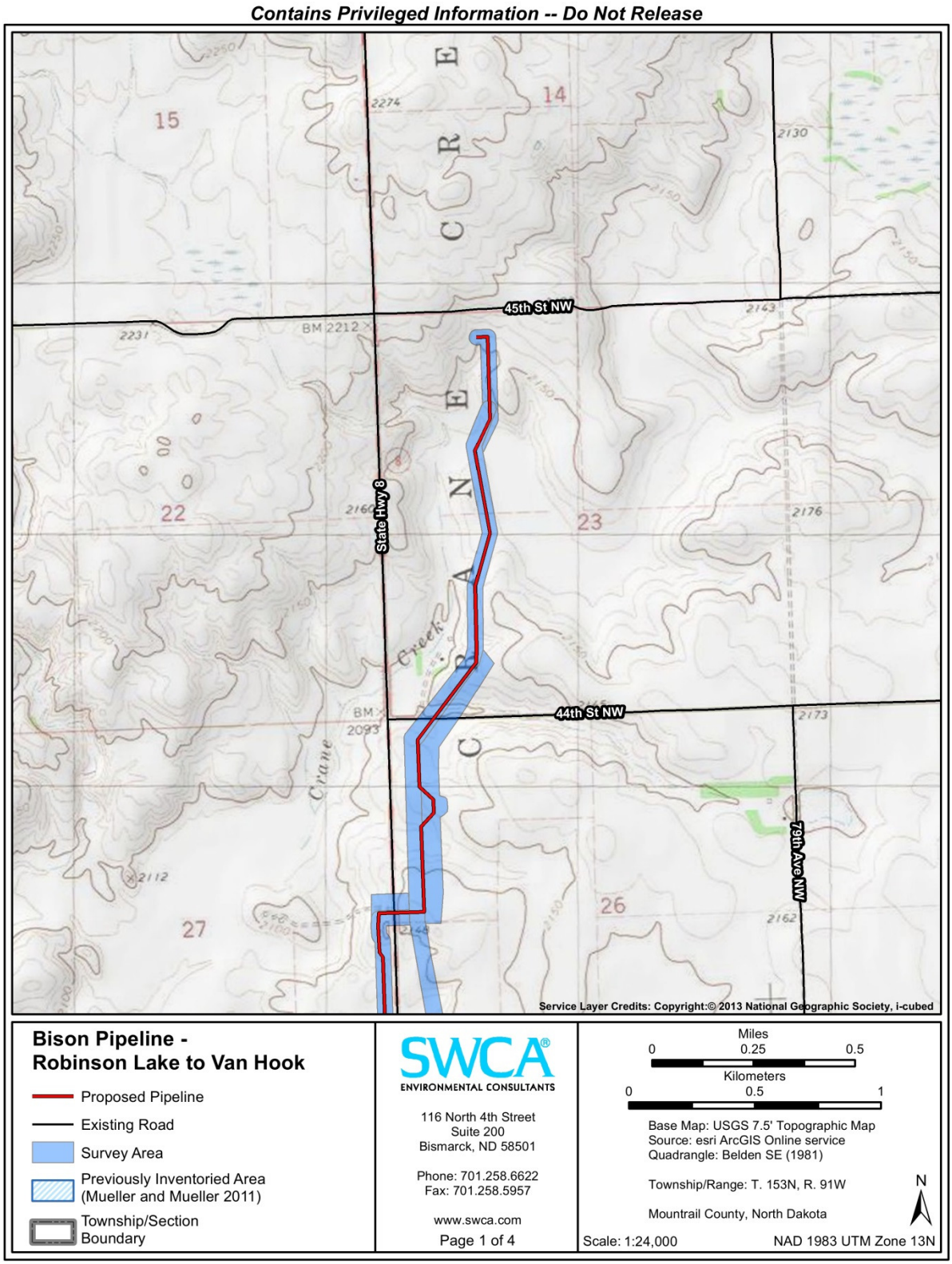


**Figure 1a. Project area map 1 of 4 at 1:24,000-scale.**

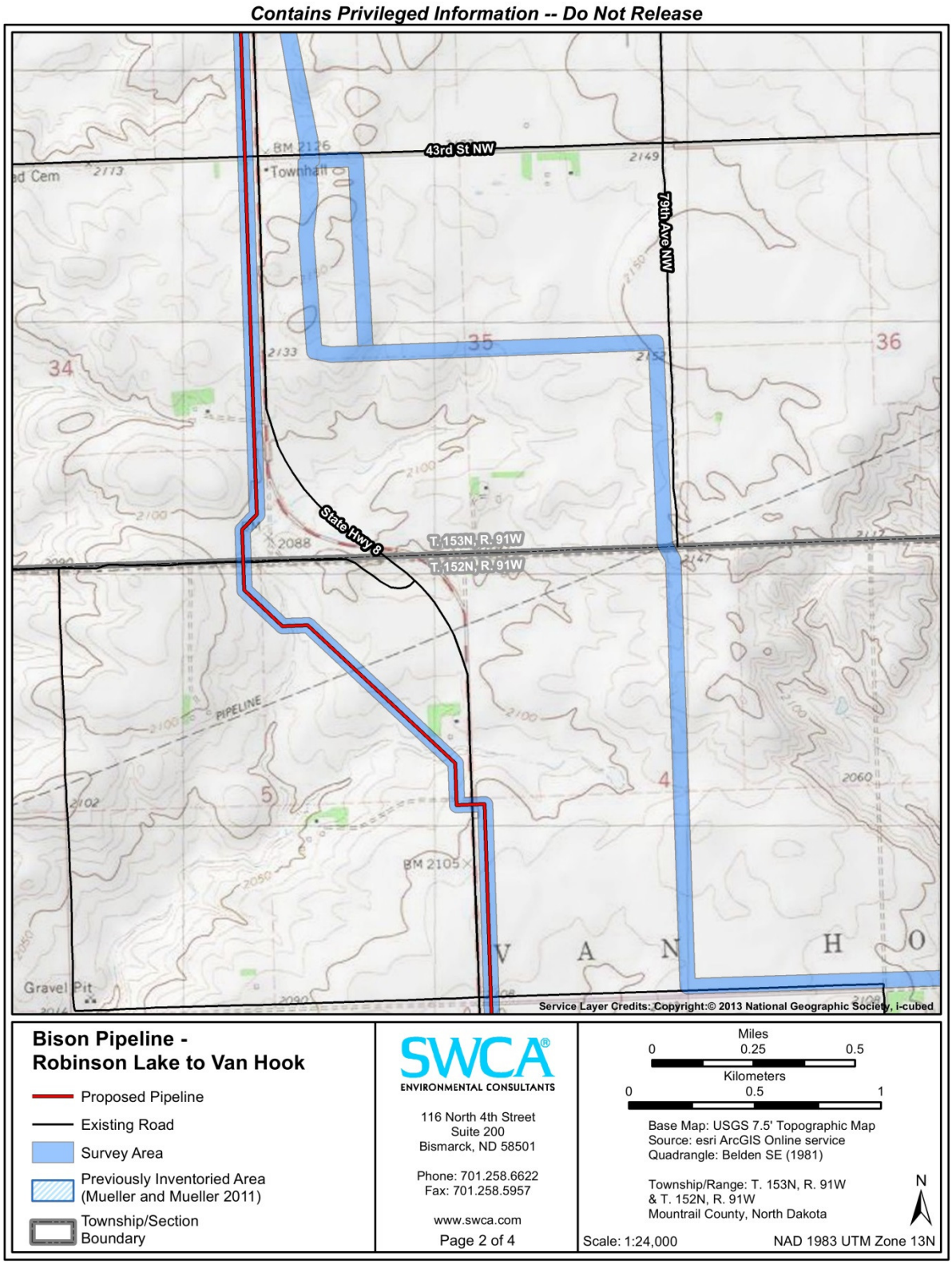


**Figure 1b. Project area map 2 of 4 at 1:24,000-scale.**

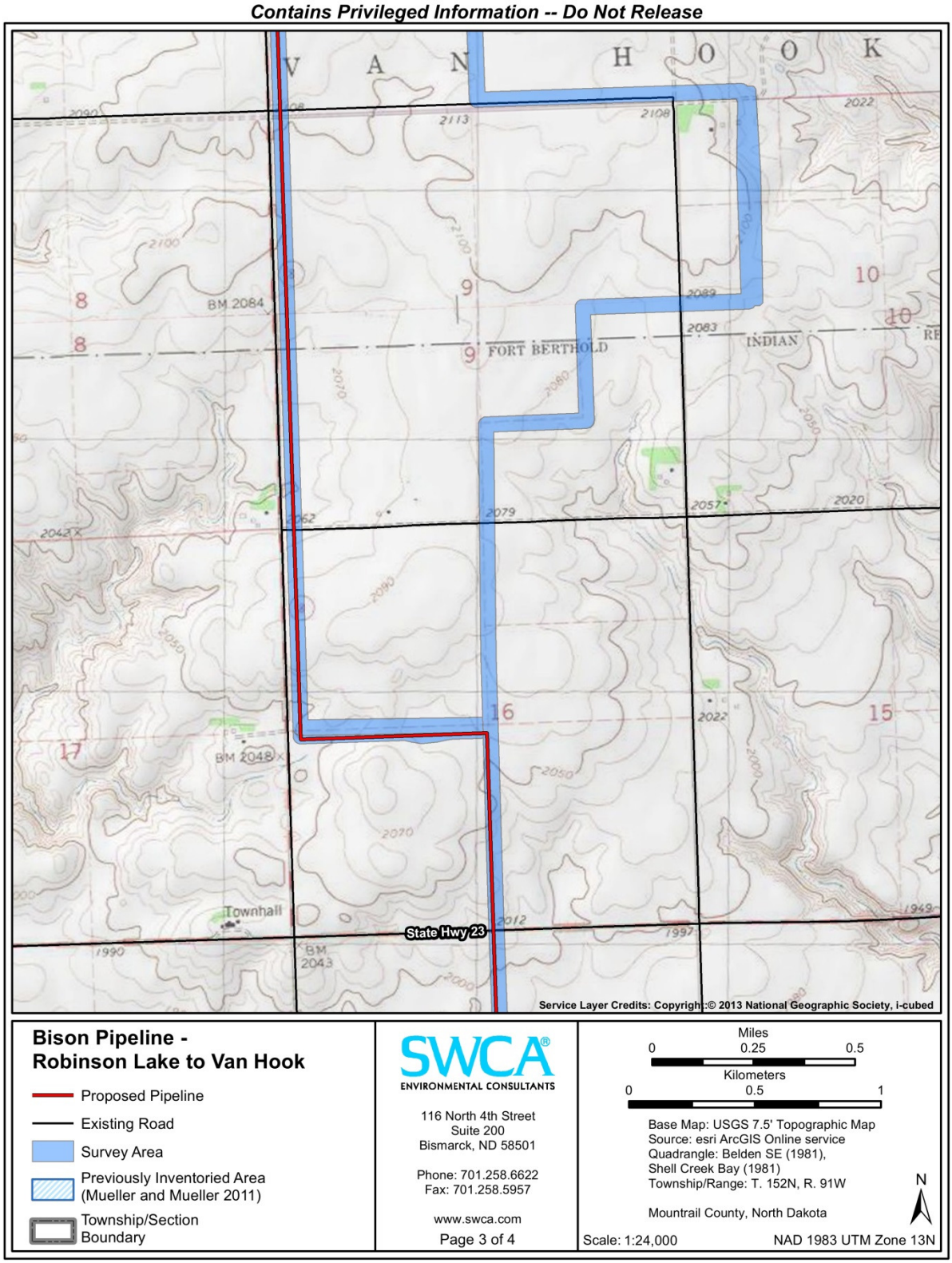


**Figure 1c. Project area map 3 of 4 at 1:24,000-scale.**

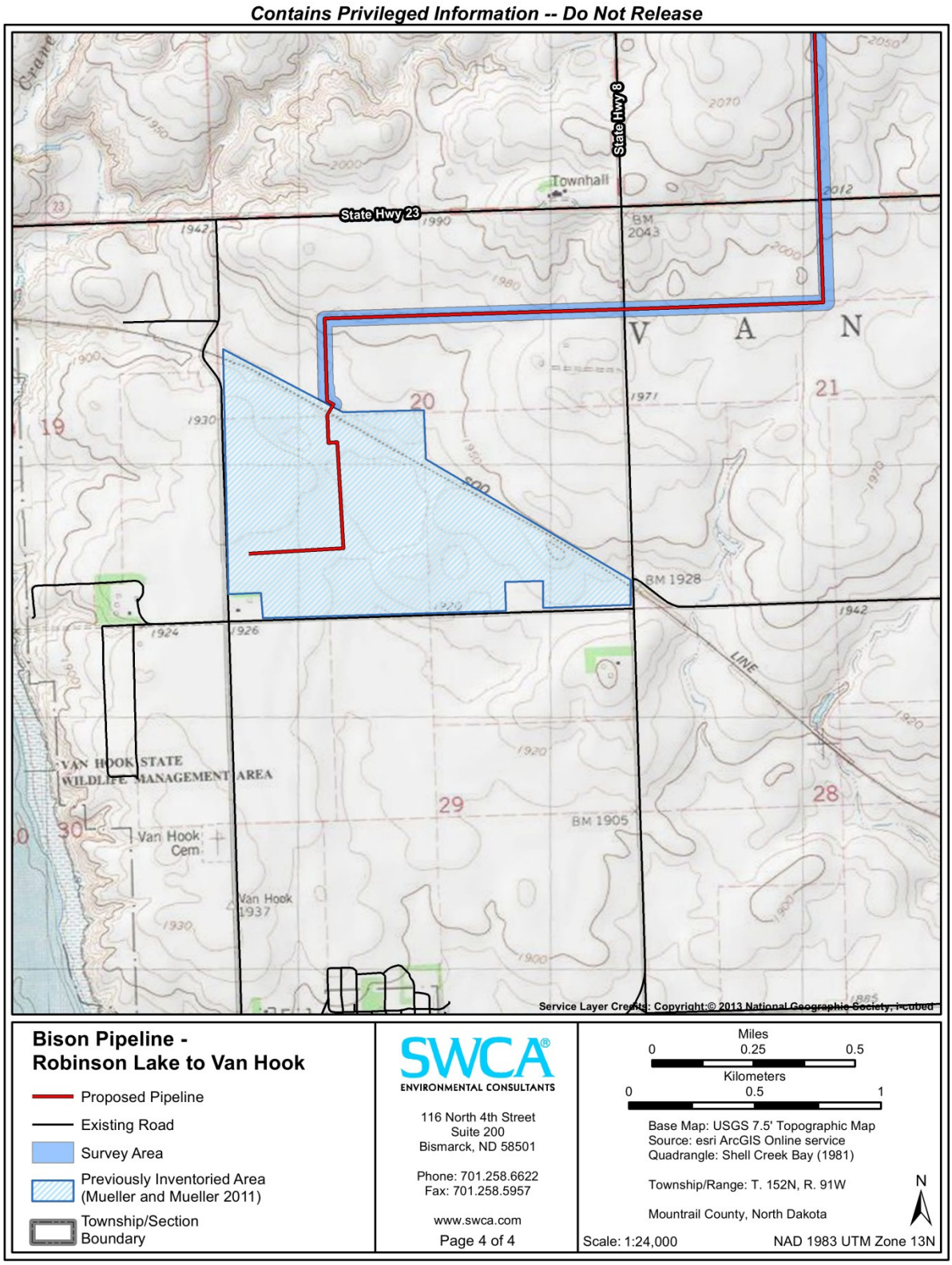


**Figure 1d. Project area map 4 of 4 at 1:24,000-scale.**

**Table 1. Project Area Legal Locations in Mountrail County, North Dakota**

| Township | Range | Section | Aliquots |
|---|---|---|---|
| 153N | 91W | 23 | S½ SW¼ SW¼, NE¼ SW¼ SW¼, E½ NW¼ SW¼, NW¼ NE¼ SW¼, W½ SE¼ NW¼, E½ SW¼ NW¼, SW¼ NE¼ NW¼, |
| | | 26 | W½ NW¼ NW¼, W½ SW¼ NW¼, SW¼ SW¼ |
| | | 27 | SE¼ SE¼ NE¼, E½ NE¼ SE¼, E½ SE¼ SE¼ |
| | | 34 | E½ NE¼ NE¼, E½ SE¼ NE¼, E½ NE¼ SE¼, E½ SE¼ SE¼ |
| | | 35 | E½ SE¼ SE¼, E½ NE¼ SE¼, S½ SE¼ NE¼, S½ SW¼ NE¼, S½ SW¼ NW¼, SW¼ NW¼, NW¼ NW¼ |
| 152N | 91W | 3 | SW¼ SW¼ SW¼ |
| | | 4 | S½ SE¼ SE¼, S½ SW¼ SE¼, NW¼ SW¼ SE¼, W½ NW¼ SE¼, W½ SW¼ NE¼, W½ NW¼ NE¼ |
| | | 5 | E½ NE¼ NW¼, W½ NE¼ NW¼, NE¼ SE¼ NE¼, W½, SE¼ NE¼ SE¼ SW¼ NE¼, E½ NE¼ SE¼ |
| | | 9 | W½ SW¼ SE¼, NE¼ SW¼ SE¼, NW¼ SE¼ SE¼, W½ NE¼ SE¼, S½ SE¼ NE¼, W½ NW¼ NW¼, W½ SW¼ NW¼, W½ NW¼ SW¼, W½ SW ¼ SW ¼ |
| | | 10 | E½ NW¼ NW¼, SW¼ SW¼ NW¼ |
| | | 16 | E½ NE¼ SW¼, E½ SE¼ SW¼, W½ SW¼ NE¼, W½ NW¼ NE¼, E½ NE¼ NW¼, E½ SE¼ NW¼, W½ SW¼ SE¼, W½ NW¼ SE¼, N½ NW¼ SW¼, N½ NE ¼ SW¼, E½ NE¼ SW¼, E½ SE¼ SW¼, W½ NW¼ SE¼, W½ SW¼ SE¼ |
| | | 20 | S½ NE¼ NW¼, E½ SE¼ NW¼, E½ SW¼ NW¼, NE¼ SE¼ NW¼, S½ NW¼ NE¼, N½ SW¼ NE¼, S½ NE¼ NE¼, S½ NE¼ NE¼, N½ SE¼ NE¼, |
| | | 21 | N½ SW¼ NW¼, S½ NW¼ NW¼, N½ SE¼ NW¼, S½ NE¼ NW¼, NE¼, NE¼, NW¼, W½ NW¼ NE¼, |

# PROJECT SETTING

## TOPOGRAPHY

The project area is located in the glaciated Missouri Plateau section of the Great Plains physiographic province (Fenneman 1931) in west-central North Dakota (Figure 2). The glaciated Missouri Plateau section is characterized by old plateaus and isolated mountains (Fenneman 1931). The southern portion of the project occurs in the rolling hummocks and potholes of the Missouri Coteau Ecoregion (Bryce et al. 1998). The project area is situated northeast of the Sanish Peninsula to the north of the Van Hook Arm of Lake Sakakawea, roughly 1.0 mile northeast, 1.6 miles northwest, and 1.7 miles north of the Lake Sakakawea portion of the Missouri River and approximately 5.2 miles west of New Town, North Dakota. Elevation ranges from 1,930 to 2,152 feet (588 to 656 meters [m]).

**Figure 2. Overview depicting general topography of the project area, facing south.**

## CLIMATE

The climate for west-central North Dakota is temperate. Based on climatic data collected from Stanley 3 NNW, North Dakota, between 1971 to 2000, January is the coldest month with a mean daily temperature of 5.7 degrees Fahrenheit (°F) and July is the warmest month with a mean daily temperature of 66.4°F (National Climatic Data Center [NCDC] 2014). Temperature extremes on record range from -42°F at the coldest to 105°F at the warmest. The project area receives approximately 159 frost-free days (28°F or above) with the first frost around September 10 and the last spring frost around May 22 (NCDC 2014). On average, the area receives 20.0 inches of precipitation per year (NCDC 2014). The wettest month is June, with an average of 3.88 inches of precipitation received; February is the driest, with only 0.49 inch of precipitation received on average. On average, 45.3 inches of snow are received annually, with the highest accumulations (7.66 inches, on average) received in January (NCDC 2014). The highest monthly snowfall on record occurred in November 1975 at which time 27.7 inches of snow fell. Overall, west-central North Dakota, like much of the northwestern Great Plains, is characterized by a moderate to cool climate, with cold, dry winters and mild to warm, dry to moderately wet summers.

## HYDROLOGY

Several small, unnamed drainages crisscross the project area. The project area drains into Crane Creek, approximately 0.7 mile west-southwest of the survey area. Crane Creek empties into the Lake Sakakawea portion of the Missouri River approximately 0.7 mile from the project area.

## GEOLOGY

In general, the geology of the project area is primarily characterized by the Paleocene-aged Glacial Sediment-Collapsed/Draped Transition Sediments (this is the majority of the project), with a small portion of Glacial Sediment-Glacial Sediment Draped Over Pre-existing Topography and Coleharbor Formation-River Sediment- Collapsed River Sediment (Clayton 1980). These strata consist of unbedded, unsorted mixtures of clay, silt, sand, and pebbles, and a few cobbles and boulders, and are up to 100 feet (30 m) thick (Clayton 1980).

## SOILS

Fifteen soil series are present in the project area (Natural Resources Conservation Service 2014). The soil types found in the project area range from excessively drained sandy and gravelly glaciofluvial deposits found on hills, knolls, and ridges to very poorly drained alluvium found on depressions and flats. The project area is dominated by two soil types, Williams-Bowbells loams and Williams-Zahl-Zahill complex, both of which are well-drained fine loamy tills found on rises and knolls. Table 2 summarizes the soils within the project area in order of prevalence.

**Table 2. Soil Series by Prevalence within the Bison Pipeline Project Area**

| Soil Series | Parent Material | Drainage | Slope | Landform |
|---|---|---|---|---|
| Bowbells-Tonka Complex | Fine-loamy till | Well drained | 0%–3% | Rises |
| Tonka Silt Loam | Alluvium over till | Poorly drained | 0%–1% | Depressions |
| Williams-Zahl Loams | Fine-loamy till | Well drained | 3%–6%, 6%–9% | Rises, knolls |
| Williams-Zahl-Zahill Complex | Fine-loamy till | Well drained | 6%–9% | Knolls |
| Zahl-Williams Loams | Fine-loamy till | Well drained | 9%–60% | Ridges |
| Lehr Loam | Glaciofluvial deposits | Somewhat excessively drained | 2%–6% | Rises |
| Williams-Bowbells Loams | Fine-loamy till | Well drained | 0%–3% | Rises |
| Wabek-Leh-Appam Complex | Sandy and gravelly glaciofluvial deposits | Excessively drained | 9%–25% | Hills, ridges |
| Parnell Silty Clay Loam | Alluvium | Very poorly drained | 0%–1% | Depressions |
| Vebar-Flasher-Zahl Complex | Coarse-loamy residuum weathered from calcareous sandstone | Well drained | 9%–15%, 6%–25% | Hills, ridges |
| Divide Loams | Glaciofluvial deposits | Somewhat poorly drained | 0%–2% | Outwash plains |
| Bowbells Loams | Fine-loamy till | Moderately well drained | 0%–3% | Swales |
| Hamerly Loam | Fine-loamy till | Somewhat poorly drained | 0%–2% | Flats |

| Soil Series | Parent Material | Drainage | Slope | Landform |
|---|---|---|---|---|
| Zahl-Max-Arnegard Loams | Fine-loamy till | Well drained | 15%–60% | Ridges |
| Bowdle Loam | Sandy and gravelly glaciofluvial deposits | Well drained | 0%–2% | Terraces |

Source: Natural Resources Conservation Service (2014).

## FLORA AND FAUNA

The project area is situated within the northwestern Great Plains ecoregion, characterized by native grasslands over rolling plains. Much of the inventory area is within cultivated agricultural fields containing mainly wheat (*Triticum* spp.) stubble (Figure 3), though small portions of the inventory also cross native prairie. Present vegetation in non-agricultural portions of the project area includes such species as porcupine grass (*Heterostipa spartea*), western wheatgrass (*Pascopyrum smithii*), yellow coneflower (*Ratibida pinnata*), fringed sagebrush (*Artemisia frigida*), goat's beard (*Tragopogon porrifolius*), and silver buffaloberry bushes (*Shepheria argentea*). Cultivated agricultural portions of the project area consist of wheat.

**Figure 3. Overview of cultivated agricultural fields in the project area, facing west.**

Approximately 160 wildlife species are resident or seasonal visitors to the Missouri River ecosystem, and hundreds of native fish species live in the mainstream and tributaries. Some of the animal species that would have been common and available for human use in the Missouri River Valley area—both prehistorically and historically—include fur-bearing mammals such as beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), eastern cottontail (*Sylvilagus floridanus*), elk (*Cervus canadensis*), moose (*Alces alces*), mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), pronghorn (*Antilocapra americana*), and bison

(*Bison bison*), as well as bird and waterfowl species such as mallard (*Anas platyrhynchos*), Canada goose (*Branta canadensis*), sharp-tailed grouse (*Tympanuchus phasianellus campestris*), golden eagle (*Aquila chrysaetos*), and bald eagle (*Haliaeetus leucocephalus*) (Seabloom et al. 1978). At present, one federally listed threatened species resides in the area—piping plover (*Charadrius melodus*)—and three federally listed endangered species inhabit the area: the least tern (*Sternula antillarum*), whooping crane (*Grus americana*), and gray wolf (*Canis lupus*) (U.S. Fish and Wildlife Service 2014). Additionally, Sprague's pipit (*Anthus spragueii*) resides in the area and is a federal candidate for endangered species listing (U.S. Fish and Wildlife Service 2014).

### ENVIRONMENTAL CONSTRAINTS

Preservation of archaeological materials within in or adjacent to the project area has been affected largely by erosion, including ongoing aeolian and hydrological processes, and rodent burrowing. Secondary sources of impact to archaeological resources include agricultural development and livestock grazing. Some oil and gas development has occurred in the proximity of the project area, and is presently increasing as demand for domestic energy sources has grown in recent years. In some places, these varied land uses have resulted in increased ground visibility and removal of overburden, allowing for the identification of numerous sites and an interpretation of high site density. In other cases, though, it has simply removed the archaeological materials and resulted in an interpretation of low site densities. In combination, these factors may have disrupted the contexts of a moderate percentage of cultural materials.

## CULTURAL/HISTORICAL OVERVIEW

### PREHISTORIC CONTEXTS

The following discussion incorporates a variety of sources to develop a prehistoric overview for the work conducted for this project and includes information from the Garrison Study Unit (GSU) in which the project area is located (Gregg and Bleier 2008). As of 2007, 3,303 archaeological sites were identified in the GSU, the majority of which were identified on ridges (40.5 percent); hills, bluffs, and knolls (24.0 percent); and terraces (10.4 percent) (Gregg and Bleier 2008).

#### Paleoindian Tradition (ca. 11,500–7,900 years before present [B.P.])

Although speculation exists regarding the possibility of earlier habitation of the Great Plains, the Paleoindian tradition is the oldest of the region, and, in general, is associated with a hunting and gathering adaptation (Gregg 1985). The Paleoindian tradition is subdivided here into six main complexes: Clovis, Goshen, Folsom, Hell Gap/Agate Basin, Alberta/Cody, and Parallel Oblique Flaked. Fourteen Paleoindian archaeological resources have been identified in the GSU (Gregg and Bleier 2008). Paleoindian sites in the GSU include, but are not limited to, the Beacon Island site (32MN234A), the Beacon Island Agate Basin site (32MN234), the Moe site (32MN101), and 32ME946.

The Clovis complex (ca. 11,500–10,800 B.P.]), defined by large, fluted lanceolate projectile points, is the earliest unequivocal complex in North America. Clovis artifacts have been found

with megafauna, such as mammoth, in buried contexts in the Southwest and Great Plains (Grayson and Meltzer 2002); although megafauna were probably dietary constituents, it is debated to what degree Early Paleoindians pursued large game (Cannon and Meltzer 2004; Grayson and Meltzer 2002). In the South Dakota Badlands, the Lange-Ferguson site yields the best evidence for proboscidean exploitation (Hannus 1990). Here, modified mammoth bones are directly associated with a flake, and three projectile points were recovered from deposits similar to those containing mammoth, indicating that Clovis hunter-gatherers either killed the animals or scavenged their carcasses (Hannus 1990). Skeletal remains from a single mammoth were unearthed during building construction in 1988 near Powers Lake within the GSU. These remains were shallowly buried, were not radiocarbon dated, and were not appraised for the potential of associated cultural remains (Gregg and Bleier 2008). Few Clovis sites have been recorded in the region. Clovis artifacts were recovered from two sites; a single Clovis point base was recovered from 32ME946 (Floodman 1988), and Clovis points have been recovered from the Beacon Island Agate Basin site (Ahler 2003).

Goshen (ca. 10,900–10,100 B.P.) is a technological complex first identified at Hell Gap, Wyoming (Irwin 1967, 1971), but it is also found at Mill Iron, Montana, Carter-Kerr/McGee, Wyoming, and the Jim Pitts site, located in the South Dakota Black Hills (Sellet 2001). Goshen is poorly understood—the basally thinned, unfluted projectile points share affinities with both Clovis and Folsom, but are also similar to Southern Plains Plainview points. In stratified deposits, Goshen materials typically underlie Folsom (Frison et al. 1996). Plainview or Goshen points were recovered from the Moe site in the GSU (Gregg and Bleier 2008).

The Folsom complex (ca. 10,900–10,200 B.P.) is typified by distinctive fluted lanceolate projectile points. With most large grazers extinct by Folsom times and grasslands dominating the Great Plains, bison populations flourished, providing resources for Folsom hunters (Frison 1991). However, many high-elevation Folsom sites also demonstrate broad diets of diverse small prey (Hill 2007). Probable structures recorded at the Mountaineer and Barger Gulch sites in Colorado suggest long-term occupations in mountain settings (Stiger 2006; Surovell and Waguespack 2007). In North Dakota, there are numerous documented Folsom sites (Gregg 1985), including the Bobtail Wolf (32DU955A), Big Black (32DU955C), and Young-Man-Chief (32DU955D) sites (Root 2000; Shifrin 2000; William 2000). These sites are interpreted as camps, quarries, and lithic workshops where Knife River flint was procured and used for tool production. In the GSU, Folsom points were recovered from the Moe (32MN101) and Beacon Island Agate Basin (32MN234) sites (Gregg and Bleier 2008).

Both the Agate Basin (ca. 10,500–10,000 B.P.) and Hell Gap (ca. 10,000–9,500 B.P.) technocomplexes are typified by lanceolate projectile points with thick lenticular cross-sections (Frison 1991). Based on morphological similarities and stratigraphic evidence, Hell Gap is technologically descended from Agate Basin. Agate Basin and Hell Gap hunter-gatherers were probably specialized bison hunters. Sites like Agate Basin II (Hill 2001) and Casper (Todd et al. 1997) indicate more frequent extraction of marrow and within-bone nutrients, suggesting a greater focus on planning than previously evident. Some sites associated with this tradition have been recorded in North Dakota and South Dakota, but these mainly consist of isolated and surface finds (Gregg 1985). One of the most significant Paleoindian sites in the GSU is the Beacon Island Agate Basin site (Ahler 2003). Agate Basin

points have also been recovered from the Moe site, and an isolated Knife River flint Agate Basin point was recorded at 32ME946 (Gregg and Bleier 2008).

Alberta (9800–9000 B.P.) is a poorly dated technology that probably descends from Hell Gap and is documented at the Hell Gap, Wyoming, and Hudson-Meng, Nebraska, sites (Agenbroad 1978; Frison 1991). Hudson-Meng is one of the largest documented bison kill sites and suggests that Alberta people focused on bison hunting (Agenbroad 1978); however, more recent work suggests that humans were not responsible for killing the bison and that they died of a natural event (Todd and Rapson 1999). The Cody Complex (9200–8800 B.P.), which includes stemmed/shouldered Eden and Scottsbluff projectile points and the distinctive Cody knife, apparently arose from Alberta (Frison 1991). These sites are widespread across the northwestern and central Great Plains, with components at the Wyoming Horner I, Finley, and Medicine Lodge Creek sites (Frison and Todd 1986; Frison and Walker 2007) and the Mammoth Meadows, Myers-Hindman, and MacHaffie sites in Montana (Davis 1993). Such sites indicate that Cody adaptations were diverse and utilized large fauna as well as small prey and floral resources (Frison et al. 1996; Galvan 2007). Alberta/Cody sites have been recorded in North Dakota and South Dakota. In fact, Hudson-Meng contains extensive Knife River flint, showing a strong connection to the Missouri River region. A single Scottsbluff point was recorded at the Moe site, and Metcalf et al. (1988) recorded a probable Alberta point as an isolated find near Scorio Creek.

The Parallel Oblique Flaked complex is a catch-all grouping of Paleoindian projectile point types (Gregg 1985) including Angostura, Milnesand, Browns Valley, Lusk, Allen, and Frederick; these range in age from around 9400 to 7900 B.P. All types are lanceolate with parallel oblique flaking. Bison kill-butcheries became rare on the northwestern and northern Great Plains after approximately 8000 B.P. (Frison 1998), perhaps due to severe ecological deterioration that could no longer support large bison populations. Complex excavated and surface sites have been recorded in the Dakotas, including sites on the Missouri River. In the GSU, six archaeological resources defined under the general "Plano" category have been identified (Gregg and Bleier 2008).

**Plains Archaic Tradition (ca. 8000–1500 B.P.)**

The transition from Paleoindian to Archaic is archaeologically visible as an abrupt shift to large notched projectile points (Frison 1991), perhaps indicating a shift to atlatl propelled darts from hand-thrown spears. This transition is also associated with warming/drying trends that prompted diverse subsistence adaptations among hunter-gatherers (Carlson 1994). Ground stone appears in the Archaic, suggesting a greater focus on processing floral resources. In conjunction with the appearance of pithouses and storage pits in the western intermontane basins, this suggests a shift in subsistence base, a reduction in overall residential mobility, and more predictable seasonal rounds (Frison 1991). In the GSU, 96 Archaic archaeological resources have been identified. Thirty-one of these are from unspecified associations (Gregg and Bleier 2008). Important Archaic-age sites in the GSU include the Mondrian Tree site (32MZ58) and the Moe site (32MN101).

The Logan Creek/Mummy Cave complex (5600–4000 B.P.) is the earliest example of large side-notched projectile points on the northern Great Plains. The blending of the Logan Creek

and Mummy Cave for this complex is due to regionally varied nomenclature used among archaeologists for similar archaeological complexes (Gregg 1985). Settlement types associated with this complex include bison kills, transient camps, and some stone circle sites. Four archaeological resources containing large side-notched projectile point varieties have been identified in the GSU (Gregg and Bleier 2008).

The Oxbow complex (5000–4000 B.P.), typified by side-notched, deeply concave-based projectile points, is concentrated in northern Montana, Alberta, and Saskatchewan (Hannus 1994:180) but is also quite common in North and South Dakota, with numerous sites along the Missouri River and its tributary system. Oxbow subsistence apparently centered on bison and sites include bison impoundments and jumps, encampments on stream terraces, stone circles, and processing areas (Hannus 1994; Reeves 1969). However, numerous birds and small mammals were probably exploited (Aaberg et al. 2006:174). Some northern Great Plains sites further yield evidence of complex cultural behavior including bundle burials with elaborate grave goods (Bryan 1991). Four Oxbow archaeological resources have been identified in the GSU (Gregg and Bleier 2008).

The McKean complex (ca. 4500–3400 B.P.) encompasses three distinct sub-phases—the McKean lanceolate, Duncan, and Hannah. The McKean complex is widespread across the Great Plains, and sites from this period can be found associated with bison kills, stone circles, lithic caching, and seasonal settlements (Frison 1991). Slab-lined pit hearths are common, as are ground stone artifacts suggesting a greater reliance on plant resources (Carlson 1994; Frison 1991). McKean complex sites often demonstrate evidence of lithic raw material exchange, including Swan River chert, Tongue River silicified sediment, and Knife River flint (Gregg 1985). In the GSU, 23 archaeological resources dating to the McKean complex have been identified (Gregg and Bleier 2008).

Pelican Lake (ca. 3000–2700 B.P.), typified by broad, thin corner-notched projectile points, is likely a descendant of McKean and is found across the northern and central Great Plains (Frison 1991). This wide spatial distribution may indicate significant population growth in response to the favorable moist conditions of the Sub-Atlantic episode (Reeves 1983). Numerous communal bison kills, such as Head-Smashed-In (Frison 1991), indicate communal bison hunting, but this does not suggest it was an exclusive feature of their subsistence. Rather, Pelican Lake populations probably relied on a broad-based economy across diverse ecozones (Hannus 1994). Thirty-four Pelican Lake archaeological resources have been identified in the GSU (Gregg and Bleier 2008).

**Plains Woodland Tradition (ca. 2000–450 B.P.)**

Temporally overlapping with the northwestern Great Plains Late Archaic, the Plains Woodland tradition is characterized by increased sedentism, garden horticultural activity, expanding regional exchange networks with eastern Woodland populations (Adena and Hopewell), and the elaboration of ceremonial activities and mortuary practices, specifically mound burials (Griffin 1967). Significant technological advances such as bow and arrow and ceramics-use are also apparent (Gregg 1985); however, the fundamental subsistence strategies of the Plains Woodland did not drastically differ from their Archaic predecessors (Zimmerman 1985). It is assumed that this tradition saw the beginning of horticultural

practices in the region. For the purposes of this study the complexes that are classed as belonging to the Plains Woodland include Besant, Sonota, Laurel, Avonlea, Old Woman's, and Blackduck. The Besant and Sonota components are well represented in the GSU (Gregg and Bleier 2008). Of the 184 Woodland sites in the GSU, 119 are unspecified, and 37 are Besant and/or Sonota age sites (Gregg and Bleier 2008).

The Besant complex (ca. 2000–1500 B.P.), typified by small to medium-sized side-notched triangular projectile points, represents the earliest presence of ceramics in North Dakota, probably resulting from eastern woodland influence (Walde 2006). Besant ceramics are more common in the eastern half of the Dakotas; the vessels show a basic conoidal shape and suggest lump modeling manufacture with some coarse cording (Wood and Johnson 1973). Besant sites show extensive use of Knife River flint (Reeves 1970). Site types include stone circle sites, habitations on stream and river terraces, and bison kills. Numerous communal kill sites, including the Ruby bison pound in Wyoming (Frison 1991), suggest that Besant people were sophisticated bison hunters. The Sonota complex (1850–1350 B.P.) appears to be a possible sub-complex of Besant, but differs in that burial mounds are common at Sonota sites (Reeves 1983; Wood 1967). These mounds include rectangular subfloor pits/tombs with dismembered bodies and, commonly, articulated bison remains (Johnson and Johnson 1998). The presence of associated exotic artifacts is often cited as evidence of Hopewell influence on Middle Plains Woodland populations (Johnson and Johnson 1998). In the GSU, 37 Besant/Sonota archaeological resources have been identified, including at 32DU2, the Twin Buttes site (32DU32/32ME617), and 32ME254.

Sites from the Laurel complex (2100–850 B.P.) are generally found in the eastern portions of North Dakota, northern Minnesota, and southern Canada. Laurel pottery and mound building are fairly distinct, but lithics associated with this complex tend to be various and lack a particular style (Gregg 1985).

Avonlea complex (ca. 1800–1000 B.P.) sites occur across the northern Great Plains and are contemporaneous with Besant. This complex includes a variety of site types, including stone circles, bison kills, and rock shelter habitations (Reeves 1970). Avonlea represents the first regional complex to produce arrow points exclusively, suggesting a transition to bow and arrow technology (Frison 1988). Avonlea point types are small and indistinctly side-notched. Saskatchewan Basin Complex: Early Variant pottery has been found at Avonlea sites (Byrne 1973). Avonlea subsistence in the north relied heavily on communal bison procurement, but in their southern range bison hunting was supplemented by smaller game (e.g., pronghorn), fish, and seasonal plant exploitation (Smith and Walker 1988). Avonlea sites are relatively rare in the Dakotas (Vickers 1994). In North Dakota, the Evans site (32MN301) contained Avonlea projectile points and ceramics (Schneider and Kinney 1978). Only one Avonlea-aged archaeological resource was identified in the GSU.

Rare in North Dakota is the Old Woman's complex (A.D. 700–1300). This complex is contemporary with the Plains Village tradition, so it would seem likely that many associated sites would be granted the latter designation (Gregg 1985).

The Blackduck complex (A.D. 1150–450) derives from northern Minnesota and was concentrated in southern Manitoba. It is contemporary with both Avonlea and Old Woman's

complexes, and with Extended and Terminal Middle Missouri traditions. Some evidence of possible Blackduck pottery has been found along the Missouri River, which suggests trade between the Missouri River villagers and the Blackduck people to the north (Joyes 1970).

**Plains Village Tradition (ca. 1050–350 B.P.)**

Lehmer (1971) defined the Plains Village tradition as possessing the following diagnostic traits: equal reliance on horticulture and hunting and gathering strategies; semi-permanent villages near the Missouri River floodplain; earthlodges; large storage and refuse pits; distinctive ceramics; abundant end scrapers and arrow points; bison scapula hoes; and a well-developed bone tool industry. The Plains Village Tradition is divided into the Middle Missouri tradition (A.D. 969–1500) and the Coalescent tradition (A.D. 1300–1650), discussed below. Fifteen Plains Village archaeological resources have been identified in the GSU (Gregg and Bleier 2008).

Three primary Middle Missouri variants are recognized: Initial Middle Missouri (A.D. 969–1297), Extended Middle Missouri (A.D. 1075–1443), and Terminal Middle Missouri (A.D. 1300–1500) (Eighmy and LaBelle 1996). These represent a continuation and intensification of Northern Plains Woodland lifeways and their appearance coincides with the onset of the Medieval Warm Period (Bryson et al. 1970) when a moisture increase likely permitted horticulture in areas previously characterized by tenuous farming conditions (Wood 2001).

The Initial Middle Missouri Variant (IMMV) is thought to have developed as an outgrowth of the Great Oasis (Tiffany 2007) or via the arrival of eastern populations already exploiting a Plains Village lifeway (Lehmer 1971). The IMMV was concentrated in the southern portions of the Middle Missouri region and characterized by highly fortified villages of large, semi-subterranean rectangular houses (Lehmer 1971; Winham and Calabrese 1998).

The Extended Middle Missouri Variant (EMMV) is concentrated in the northern portions of the Middle Missouri region (Lehmer 1971). EMMV groups resided in small villages of semi-subterranean rectangular houses; southern villages were more often fortified than those in the north (Wood 2001). It is unclear whether the EMMV replaced the IMMV or represents a contemporaneous offshoot of the IMMV. Origins aside, it is assumed that IMMV populations were eventually absorbed into EMMV populations. The final expression of this tradition was the Terminal Middle Missouri (Winham and Calabrese 1998:282). These sites were concentrated in a smaller geographic area along the Missouri River in southern North Dakota and characterized by fewer but much larger villages (Wood 2001). Sites again contained long, rectangular semi-subterranean houses but were highly fortified (Wood 2001). A continuation of the Middle Missouri Tradition is recognized historically as the Siouan-speaking Mandan and Hidatsa (Wood 2001).

The Coalescent period is temporally divided into Initial (650–350 B.P.), Extended (500–300 B.P.), and Post-Contact Coalescent (300 B.P.–Historic period) (Johnson 1998; Lehmer 1971). The Coalescent Tradition is thought to represent a geographic movement of Central Plains Tradition village-dwelling populations to the Missouri River Valley in South Dakota (Blakeslee 1993). Central Plains Traditions might have migrated from Nebraska and Kansas in response to drought brought on by the Pacific climatic episode (Lehmer 1971). Similar to

Middle Missouri Tradition groups, Coalescent populations practiced an economy split between mixed cultigen horticulture and bison hunting (Johnson 1998).

Initial Coalescent Variant sites are located on bluffs overlooking the Missouri River and its drainages in southern South Dakota. Populations lived in fortified villages consisting of subrectangular to circular/oval earthlodges and often surrounded by complex fortifications (Johnson 1998). Violence amongst Coalescent groups is evidenced at the Crow Creek site (39BF11) where approximately 486 individuals were killed in the village fortification ditch around 625 B.P. (Willey and Emerson 1993). Crow Creek is interpreted as evidence of internecine warfare amongst Initial Coalescent groups over land competition (Zimmerman and Bradley 1993) or, conversely, as evidence of warfare between immigrant Coalescent groups and resident Middle Missouri Tradition peoples (Johnson 1998). The Extended Coalescent Variant apparently descended from the Initial Coalescent sometime in the fifteenth century A.D. Sites are concentrated along the Missouri River and its tributaries in central and northern South Dakota (Krause 2001). Extended Coalescent sites are far more abundant than during the Initial Coalescent and are characterized by a dispersed, unfortified village structure of circular earthlodges (Johnson 1998; Krause 2001; Lehmer 1971). The Extended Coalescent Variant evolved into the Post-Contact Coalescent during the Protohistoric and Historic periods; the Coalescent Tradition is recognized as the Arikara (Krause 2001). The last post-contact village was Like-a-Fishhook Village, occupied by the Arikara, Mandan, and Hidatsa; it was abandoned in 1886 when groups relocated to the Fort Berthold Indian Reservation (Smith 1972).

## HISTORIC CONTEXTS

### European Trade and Exploration (1738–1858)

Perhaps the earliest attempts at exploring the northern Great Plains came as a result of the ventures of Pierre Gaultier de Varennes Siure de la Verendrye (Dill 1983). His travels from New France into North Dakota led him as far as the Missouri River (somewhere near Bismarck), then led to subsequent expeditions by his sons, who went farther south into South Dakota (near Pierre) and west towards the Black Hills. While the elder la Verendrye met the Mandan, his sons encountered the Arikara and other tribes in South Dakota. Their reports heightened interest in the region and the possibilities that existed for trade with its inhabitants.

Following the la Verendryes, a modest fur trade developed in the region, but until the expedition of Captains Meriwether Lewis and William Clark returned successfully from their voyage up the Missouri, the region was considered a wild unknown (Schulenberg 1957). Lewis and Clark established winter quarters with the Hidatsa and Mandan near the Knife River (near present-day Stanton), founding Fort Mandan, the first permanent U.S. settlement in North Dakota. It was at their winter quarters that the pair secured the services of Charbonneau and his wife Sakakawea as guides to lead them through the Rocky Mountains (Works Progress Administration [WPA] 1938).

In 1807, Manuel Lisa established a short-lived post at the mouth of the Bighorn, and by 1809 his St. Louis Missouri Fur Company was building posts among most of the tribes all along the Missouri River. Other notable companies, such as the Northwest Company, Hudson Bay Company, the Columbia Fur Company, and the American Fur Company, soon followed suit

(Schulenberg 1957). The life of these posts tended to be short, but they did much to influence the tribes who frequented the Missouri River in both North and South Dakota. Fort Union—at the confluence of the Yellowstone and Missouri Rivers—was the last of the great posts, and its waning during the late 1850s saw the fur trade in the Dakotas in its last throes.

In addition to the tribes that arose from the Middle Missouri and Coalescent traditions (Mandan, Hidatsa, and Arikara), countless other tribes used the northern Great Plains and the Missouri River since before European contact.

The Assiniboine were known to frequent the northern Missouri River (mainly near the confluence with the Yellowstone), and were active in the fur trade throughout the eighteenth and nineteenth centuries. As well, the Cheyenne were pushed westward by the Chippewa during the middle of the eighteenth century and took up at least a temporary settlement period on the Missouri River. At least one earthlodge village has been attributed to the Cheyenne in eastern North Dakota, and some Cheyenne villages on the Missouri River were located between the Mandan to the north, and the Arikara to the south, where they built earthlodges and pursued horticulture and buffalo hunting (Schlesier 1968).

The Plains Cree and Plains Chippewa also frequented the northern Missouri—mainly near the confluence with the Yellowstone, but also near Fort Clark. Both tribes traded actively with the Mandan and Hidatsa. The Crow, although more westerly in their territory, were related to the Hidatsa and would often trade and visit with the Missouri River tribes (Schulenberg 1957).

Based on linguistic evidence, the Sioux (or Dakota) originated from the southwest Great Lakes region (DeMallie 2001a). The timing of the migration is unclear, but ceramic evidence suggests that the Dakota were living on the plains several centuries before the arrival of Europeans (Hanson 1998). Based on linguistics, it is thought that the Assiniboine split from the Sioux sometime before the mid-seventeenth century (Hanson 1998). The Teton Dakota are divided into seven sub-tribes, including comprising the Oglala, Brule, Sans Arc, Hunkpapa, Blackfeet, Miniconjou, and Two Kettles (Hanson 1998). According to DeMallie (2001a), by the mid-eighteenth century, the Teton Dakota hunted bison in the area east of the Missouri River, their movements limited in part by the Arikara stronghold along the Missouri River. However, a series of smallpox epidemics from 1771 to 1781 devastated the Arikara villages (Johnson 1998) and permitted the Teton Dakota to move west of the Missouri River. Like the Teton Dakota, the Yankton and Yanktonai Dakota occupied the prairies east of the Missouri River and north into Minnesota in the mid-seventeenth century (DeMallie 2001a). By the mid-nineteenth century, the Yankton and Yanktonai occupied the prairies east of the Missouri River from the mouth of the Big Sioux River in the south to the Red River in the north (DeMallie 2001b).

### Native American Reservations, Allotment, and Reorganization

The Reservation Period began in the 1860s and continues into today. This time period contains numerous accounts of government actions to stop tribal ceremonialism, forced boarding school education of Native American children, and attempts at termination and relocation to solve the "Indian Problem" in the Dakotas. Disease, traders, missionaries, and new technology had significant impacts on the Native American people living in the region. Populations declined dramatically due to the introduction of infectious diseases, such as

smallpox (Limerick 1987). Many Americans, hungry for land, believed that the Native Americans did not need the vast expanses of prairie that were under their control, and wanted to see the government open up the land for settlement. This sentiment was in many ways echoed by the federal government which also believed it was appropriate for native peoples to learn skills and adopt lifestyles familiar to Euro-Americans (e.g., large-scale farming, blacksmithing, and construction) (Hoxie et al. 2001). Native Americans within and near the project area were no exception to this general trend, which resulted in circumscription of Native American peoples onto bounded reservations, which opened up lands for Euro-American settlement of previously native-occupied territory (Limerick 1987).

Relocation of Native American peoples to the new reservations followed treaty ratification, but was a slow process. With the passage of the Fort Laramie Treaty in 1851, the U.S. Government established several forts along the Missouri River. One of these forts, Fort Berthold, was occupied by U.S. Calvary from 1864, until its destruction by Sioux Warriors in 1867 (North Dakota Department of Public Instruction [NDDPI] 2002). The fort was then re-established 18 miles downriver and become known as Fort Stevenson, located in the modern day town of Garrison, North Dakota. The Three Affiliated Tribes and other Native American societies were transformed by the presence of the U.S. military and steamboats carrying settlers and supplies into this region (NDDPI 2002). The presence of Indian agency personnel residing on the reservation after 1868, day schools being opened on reservations, and the establishment of the Fort Berthold Indian Reservation under the Executive Order of 1870 forever changed the Three Affiliated Tribes (NDDPI 2002). By 1888, under the policy of allotment in severalty, most of the residents of Like-A-Fishhook Village were encouraged to set up residences elsewhere on the reservation, one of them becoming Elbowoods. Elbowoods was located on the northeast side of the river and served as the center for the reservation until its destruction during the construction of the Garrison Dam (NDDPI 2002).

The result of the debate over the "Indian Problem" continued, and not just in North Dakota, but across the United States. At the end of the nineteenth Century, the United States formally adopted a policy of allotment in severalty, a policy epitomized in the General Allotment Act of 1887 (also known as the Dawes Act). With the pressure on government officials from settlers who wanted reservation land open for settlement and social groups promoting the "civilization" of Native Americans, allotment in severalty was a solution that seemed to please all parties (with the exception perhaps of the Indians themselves who were not often consulted on Indian Policy). For expansionists, it allowed for additional Euro-American settlement by freeing up non-allotted lands for homesteading. For those sympathetic to the Indian cause, the belief in the civilizing effect of private property and commercial enterprise made allotment seem like a favorable way to end the "savage" ways of the western Indian (Limerick 1987).

Others were less favorable towards the idea of allotment. A delegation of Creek Indians was sent to address the House of Representatives in 1882, with regards to the U.S. allotment policy. The Creek delegation presented evidence that among many tribes for whom allotment in severalty had already taken place, populations had decreased, the amount of land being farmed had diminished, and overall the lives of the Indians had been worsened (U.S. House of Representatives 1882). Although voices of dissent were present, they were too few, when

compared to the strong voices of allotment supporters. The Dawes Act was initially seen as a great success, and the policy soon began to spread to the other tribes across the country.

The concept of allotment and the "civilizing" of the American Indian preceded the Dawes Act by several centuries. The discourse of some of the earliest treaties, enacted under colonial governments in the seventeenth century, includes the idea of introducing Native Americans to a sedentary lifestyle, Christianity, and agriculture (Miles 1999). Although mention of individually allotted land did appear in discussions of Indian Policy in both colonial governments and in early United States Policy, it was not until the middle of the nineteenth century that allotment was included in any treaties or acts with Indian groups. The earliest treaties to include allotment policies were formed in the 1830s, during President Andrew Jackson's administration. Initially, these policies were voluntary, with title to the land being offered with brief trust periods during which the land was tax exempt. In most cases, these treaties included language allowing the government to revoke the patents, should the holder break certain conditions associated with their "Americanization," such as excessive drinking, or practicing traditional religious practices (Froehling 1993).

The act establishing allotments on the Fort Berthold Indian Reservation was signed on December 14, 1886, almost 2 months before the passing of the Dawes Act. The Act of December 14, 1886, signed by federal representatives, and representatives of the Gros Ventres, the Mandan, and the Arikara, states that the tribes had:

> …vastly more land in their present reservation than they need or will make use of, and are desirous of disposing of a portion thereof in order to obtain the means necessary to enable them to become wholly self-supporting by the cultivation of the soil and other pursuits of husbandry. (Kappler 1904:425)

Under the articles of the Act of December 14, 1886, the Arikara, Gros Ventres, and the Mandan ceded large portions of their reservation to the U.S. Government for an annuity to help support the tribes. The Act also called for the survey of the former reservation and the allotment of the land to individuals and families of the three tribes. The distribution of the allotments provided 160 acres to each head of family, 80 acres to each single person over 18 years of age, 80 acres to every orphan child under 18 years of age, and 40 acres to each other person under 18 years of age (Kappler 1904). Each head of household chose the location of their allotment and the allotments of their children. The allotments of orphans were selected by an Indian Agent. Unlike many allotment acts which opened all non-allotted land to immediate non-native settlement, the Act of December 14, 1886, left all non-allotted lands in trust for a period of 25 years. The purpose of this trust was to provide for future generations of Mandan, Arikara, and Gros Ventres to receive allotments on their former reservation (Kappler 1904).

The titles to the allotted lands were also held in trust by the U.S. Government. While allotments were chosen by, and under the control of, the individual head of household, the actual land patent was held in trust by the U.S. Government for 25 years. At the end of the 25-year trust period, a fee patent would be issued to the allottee and the land would officially become taxable private property. This trust period was meant to allow the Native Americans to establish themselves on their land before it became taxable property, and to prevent the

immediate sale of the land to Euro-American settlement. If the head of household passed away before the end of the trust period, the allotted land would be divided evenly amongst his or her heirs (Kappler 1904).

Though the trust period was meant to prevent the dispossession of the allotted lands, additional legislation regarding allotment lands was passed beginning in the early twentieth century that allowed land to be removed from trust before the 25-year trust period had elapsed. The first of these acts was passed on May 27, 1902. This act allowed for the sale of inherited land, which required the removal of the land from the trust. Inheritance was not determined by the will of the deceased, but by territorial law, which stated that inherited land was divided evenly among the heirs (Froehling 1993; Kappler 1904). The death of the original allottee sometimes resulted in more than 10 heirs to a property. Dividing this land evenly among the heirs resulted in parcels so small that they were useless for farming, or for leasing. Even when considered together, the land was rarely sufficient to meet the needs of the family, and so land sale was the most economic option for the use of the land. In the short term, the sale of inherited land was a favorable solution for both the government and the allottees, but it resulted in further alienation of Native American land, and scattered families far afield, as the loss of the land forced them to leave the area in search of employment.

A second act that impact Native American land sales was the Burke Act, passed in 1906. The Burke Act allowed an allottee to remove land from the trust and be issued a fee patent if the allottee was proven to be "competent" (Froehling 1993). There were no set standards or guidelines to measure "competency," leaving the agent in charge, or the "boss farmer" to determine competency based on whatever criteria they saw fit. Like many of the regulations regarding allotment, the idea was intended (at least on the surface) to be beneficial to the Native Americans. The Burke Act would allow the allottees to free themselves of any government restrictions on their land, and become free farmers like their neighbors. The result, similar to the inherited land act, was that large acreages of land were sold off for quick cash, often to pay off debts incurred to local merchants.

In 1907, an additional decision by congress allowed for the sale of land of allottees determined to be "non-competent" by the Indian Agent (Froehling 1993). The land would be sold, and an annuity provided for the original allottee. As with the determination of competency, there were no set criteria for determining someone as non-competent and the decision was left entirely at the discretion of the agent.

In 1910, another act was passed to create allotments of the remaining open lands within the boundaries of the former reservation. This act made provisions for the establishment of additional allotments based on the non-surveyed lands held in trust by the U.S. Government within the former Fort Berthold Indian Reservation. New allotments were established as well as additional land added to already existing allotments. The area selected for these new allotments was limited to the area south and west of the Missouri River or located in select townships north and east of the Missouri River. The Act of 1910 allowed the U.S. Government the right to remove some land from allotment for establishing schools, a government operated ranch to provide for the three tribes, and any land containing coal deposits. The Act of 1910 removed the last of the non-allotted land held in trust by the

government. After the new allotments were established, all remaining land was open to U.S. settlement under the various Homestead Acts (Kappler 1929).

Between 1895 and 1929, 3,401 allotments were made as part of the various allotment policies affecting the Mandan, the Arikara, and the Gros Ventres. Although the allotment of Fort Berthold was initiated under the Act of 1886, the first allotments were not distributed until 1900. In 1900, 949 allotments were established, almost all of which were located along the Missouri River. In 1910, another 765 were established, both along the river, and in the neighboring foothills. In 1912 and 1913, under the revised allotment Act of 1910, 1,131 allotments were established. Most of these were located on open range land rather than along the river. Although U.S. settlement was allowed under the Act of 1910, an additional 556 allotments were established in the 1920s, mostly for children who had not previously received allotments (McCullough 1948). The United States Policy of Allotment in Severalty officially ended with passing of the Indian Reorganization Act in 1934.

The Mandan, the Arikara, and the Gros Ventres reorganized in 1936 as the "Three Affiliated Tribes." The tribes live in different portions of the reservation, but act under a single governing council. During the 1930s and 1940s, agriculture and stock raising were the two largest industries on the Fort Berthold Indian Reservation. Many Native Americans living on Fort Berthold supplemented ranching and farming with the hunting of wild game, working for the Indian Agency, or leasing lands to non-native ranchers and farmers. Renting and leasing land was an important source of income for most households on the reservation. Lease agreements took a variety of forms but included both sharecropping and fee rentals. Between 1942 and 1945 more than one-third of the annual income for households on the reservation was generated through rental and lease agreements.

In the GSU, five Hidatsa, one Arikara, one Chippewa, one Mandan, and 21 unspecified historic Native American archaeological resources have been identified (Gregg and Bleier 2008).

**The Homestead Boom and the Ethnic Settlement of North Dakota (1868–1915)**

Even outside of the reservation lands, where open public land was available for settlement, the true rush for homesteads in North Dakota did not take place until 1885 and was spurred by the extension of the Northern Pacific Railroad (Northern Pacific) across the Red River from Minnesota (WPA 1938). The first homestead in North Dakota was filed in 1868, which was the only homestead filed until 1871. The earliest settlers in were a mixture of American-born settlers from diverse locations across the United States. Midwestern farmers, struggling on small rented lands in the Midwest, eyed the open plains, looking for the opportunity to claim their own lands. Single men, looking for an escape from hard labor in mines, oil fields, and factories, looked to the plains for new opportunities for work on farms, ranches, or the railroads (Hudson 1976).

The Great Dakota Boom from 1878 to 1885 represented the first wave of large-scale settlement in North Dakota. The "boom" was driven by several factors including the expansion of the railroad into the state, increased industrialization and population pressure in the eastern states, and improved technologies in processing "spring wheat," a crop that was well adapted to conditions on the northern plains. In 1873, the bankruptcy of Northern Pacific

forced them to sell off most of their land holdings in the state, which, combined with the land available through the Homestead Act, made the northern Great Plains an enticing location for settlers from the East Coast and the Midwest (Wilkins and Wilkins 1977).

The land west of the Missouri River did not see much settlement prior to the 1890s, and the major settlement of this region did not start in any great numbers until between 1900 and 1910. In general, those homesteaders who selected lands along the Missouri River were able to do some crop farming, but the majority of homesteads were arranged as ranch operations for sheep or cattle. These areas were far from uninhabited, with many of the Plains Indians settled on reservations near the river, stage lines extending to mining operations in the Black Hills and Montana, and cowboys and cattlemen driving herds from Texas to pasture on the plains grassland. Initially, settlement in the western part of the state was limited to areas along the river, where steamboat access could provide supplies, and a means of transporting crops and herds for sale in larger markets. When the railroads crossed the Missouri into the western part of the state, North Dakota saw a second homestead boom, from 1898 to 1915, driven by settlers seeking the last available free homestead land.

In addition to the homesteading, which brought an increasing number of people to western North Dakota, the discovery of large deposits of lignite coal further boosted interest in the development of northwestern North Dakota, and the surrounding area (WPA 1938). Although slow at first, the mining industry started to flourish during the 1930s; to this day it remains a major focus of activity that drives the economy of both the county and the state.

Ethnic Settlement

Unlike the first wave of settlement (1878–1885), which consisted primarily of Americans and Canadians of British, Scottish, and French descent resettling from the Midwest and the eastern states, the second wave (1898–1915) was dominated by foreign-born settlers arriving in large numbers from across Europe. Motivated by the lack of available land in most European countries, along with economic systems that equated land with status, the United States and their new liberal land policies attracted many Europeans to immigrate to the United States. Helping fuel this immigration, U.S. railroad companies actively advertised in Europe to entice settlers to purchase available land grants and settle along newly created rail lines (Hoover 2005; Hudson 1976). Environmental conditions in the northern Great Plains were not attractive to all European immigrants, but immigration from across northern Europe resulted in many communities dominated by large ethnic populations, bringing with them their traditional agricultural practices, architecture, and cultural traditions. Unlike the first wave of settlers, the immigrants from eastern Europe tended to settle in cultural homogenous communities preserving the language and cultural practices of their homeland.

*German-Russians*

One of the largest ethnic groups in the Great Plains, the German-Russians established communities across the Great Plains, including the Dakotas, Nebraska, Colorado, and Montana. The German-Russians immigrated to the United States from two different regions of eastern Russia: the Volga region and the region to the north of the Black Sea (Hudson 1976). Originally from large agricultural communities in Germany, these groups first immigrated to Russia in 1763, when the German-born Empress Catherine the Great invited the Germans to develop the largely empty Russian Steppes, granting them limited autonomy

and exemption from military service. The Germans established small close-knit communities in Russia, which allowed them to retain many of their cultural traditions (Baltensperger 1983; Hoover 2005).

In 1871, Czar Alexander II withdrew many of the privileges granted to the German settlers including exemption from military service. As a result, many of the Germans chose to leave Russia to settle in the newly opened American West. The German-Russians attempted to create the same close-knit communities they had left in Russia, establishing small towns across the American West. The Volga Germans mostly settled in Kansas and Nebraska, while the Black Sea Germans settled in North Dakota and South Dakota (Koop 1986). Within their close communities, the German-Russians maintained many of their traditions, something that occasionally set them apart from neighboring communities.

Although ethnically German, the German-Russian settlers were religiously diverse, including Catholics, Lutherans, Mennonites, and Hutterites (Hoover 2005). The German-Russians represent the largest European ethnic group to settle in Dunn County, North Dakota. German-Russian settlers moved into North Dakota in large numbers after 1880, although it took them somewhat longer to settle as far northwest as Dunn County. Settlers would often relocate several times throughout the Midwest and even in eastern or southern North Dakota before finally moving to permanent homesteads in the northwestern part of the territory. The strong sense of community felt by the German-Russians and the frequent re-migration across North Dakota meant that most German-Russians had families and friends in all of the neighboring communities (Hudson 1976).

The similar environment of the Russian steppe provided a level of experience most ethnic groups in the area did not have. This can be seen in their architectural styles, which made use of available resources to build sturdy homes without an ample supply of lumber. The German-Russian architecture used a combination of clay mixed with straw and manure, rammed earth blocks, and timber, when available, to build strong, multiple-room homes. Another method used clay bricks known as Batsa. The use of Batsa continued even after the German-Russians adopted American architectural styles, using the clay bricks as wall insulation between wood-framed walls (Koop 1986).

*Scandinavians*

Settlers from Sweden, Denmark, and Norway were present in large numbers in northwestern North Dakota. By 1910 there were nearly 30,000 Swedes in North Dakota, and four times as many Norwegians (Hudson 1976). Scandinavian immigration after 1850 was driven by overcrowding in the rural parts of those countries, and encouraged by United States commercial interests, specifically by railroad companies looking to populate towns in the ever expanding American West. Most Scandinavians moved first to the Midwest, settling in Wisconsin or Illinois, before moving on to establish homesteads in North Dakota during the "Dakota Boom" of the 1870s and 1880s (Hoover 2005; Hudson 1976). Unlike the German-Russians, who settled in large groups forming whole communities, most Scandinavian settlements grew over time, with a few settlers moving to an unsettled area, and writing letters to friends and family to encourage additional settlers (Hudson 1976).

The single-pen gable roofed style was common for both Norwegian and Swedish settlers, who prior to coming to America were united under one crown, as the United Kingdoms of Sweden and Norway, from 1814 to 1905. Availability of materials often dictated the form that Scandinavian homes took in North Dakota; in areas lacking timber resources, sod built structures were often constructed, and even in areas with limited timber, sod roofs were common features on both log and wood-framed houses. The quality of timber available for home construction made some types of traditional log notching difficult, and dovetail notching, with the spaces between logs filled with some type of mortar, dominated Scandinavian-American homes was dovetail notching with the spaces between logs filled with some type of mortar.

*Other Ethnic Groups*

While Scandinavian and German-Russians represented the two largest ethnic groups in western North Dakota, ethnic groups from other parts of the world were present, albeit in smaller numbers. Canadian immigrants, particularly from Ontario, moved to North Dakota in large numbers between 1875 and 1880, with the largest groups settling in the northeast and north-central portions of the state along the Canadian border. Most of these settlers were the children of immigrants themselves, their families having arrived from Great Britain a generation before. Germans, Bohemians, Luxembourgians, and Icelanders also settled in North Dakota, though most never settled in concentrated communities (Hudson 1976).

**Agricultural Development and the Growth of North Dakota Farming (1890–1920)**

The dominant crop grown in North Dakota during the early years of settlement was spring wheat. Spring wheat is a dark, coarse grain that was easy to grow in drier climates, but was difficult to process for use in a form appealing to most consumers (Danborn 1998). Towards the end of the nineteenth century, a new way of processing spring wheat into what was known as Minnesota patent flour was developed. This new process significantly increased demand for this hardy crop. Many of the agricultural practices used to develop the crop were similar to growing other forms of wheat, and the farming practices already in place across the Midwest were adopted by new settlers in North Dakota. Distinctive to spring wheat farming, many believed that using broadcast seeders was more favorable to the crop than using the more traditional grain drills. Other equipment used to produce spring wheat was similar to equipment used for other crops in the region, including plows, cultivators, seeders and harvesters (Coulter 1910).

Demand for wheat and other agricultural projects increased dramatically across the country during the first decades of the twentieth century. Between 1910 and 1914, increased demand fueled by the growth of urban populations across the United States and increased immigration and settlement due to the westward expansion led to dramatic increases in prices on agricultural products. Declining production in Europe during World War I encouraged the federal government to heavily promote increases in agricultural production (Opie 2004; Wilkins and Wilkins 1977). The government fixed wheat prices during the war, which encouraged farmers to expand their holdings and increase their crop yields. By the 1920s, North Dakota was one of the largest producers of wheat in the United States (Etulain and Malone 1989). These practices would come to haunt the American farmer in the 1920s, when

dramatic decreases in crop values would result in harsh economic conditions across the Great Plains (Wilkins and Wilkins 1977).

### Confined-Range Ranching on Fort Berthold (1891–1953)

While agriculture played an important role across the state, the land west of the Mississippi was dominated by ranching and livestock production. Following the Civil War, the growth of urban populations in the east resulted in an increased demand for beef production. The restriction of Native American tribes to reservations opened up vast tracts of grassland in the Great Plains and the expansion of the railroad into these areas facilitated the transportation of livestock to larger markets (McLaughlin 1994; Wilkins and Wilkins 1977). Taking advantage of these favorable conditions, several large ranches were established in central and western North Dakota. Two of the largest operations along the Missouri River in North Dakota were the Birdhead Ranch and the Long X Ranch (McLaughlin 1994).

By the turn of the century, the expansion of homestead settlement had reached the areas west of the Missouri. Homesteaders and ranchers were immediately at odds over the use of land, with homesteaders fencing off and restricting access to what was once open range land. Between 1900 and 1910, the number of farms west of the Missouri increased from 5,096 to 28,826. With open range land in diminishing quantity, the undeveloped lands on the Fort Berthold Indian Reservation that had access to water, abundant grasses, and trees for shelter along the Missouri River, became increasingly attractive to the eyes of American ranchers; however, the boundaries of the reservation were protected, and not open to Euro-American settlement (McLaughlin 1994).

Some ranchers had begun illegally grazing livestock on reservation lands during the nineteenth century, but by the end of the century, ranchers had found a way of legally grazing their livestock on the reservation. The Act of February 28, 1891 (26 Stat. 794) was an amendment of the Dawes Act which allowed Indian allottees who were unable to use lands due to age or disability to lease their lands with the approval of the tribal authority. Over the next few years, some of the restrictions on the use of this land were relaxed, but the leasing was still managed by the Bureau of Indian Affairs (BIA) with the funds used to support government programs on the reservation (McLaughlin 1994; Parker 2011). Ranchers took advantage of these leased lands to continue the practice of open ranching, a method that was becoming impossible outside of the reservation boundaries.

The grazing of livestock on the Fort Berthold Indian Reservation by Euro-American ranchers was not the same as the open range ranching of the past. In many ways the methods used in what is referred to as “confined-range ranching” borrowed elements from both open range grazing and ranch farming. Similar to open range ranching, seasonal crews were used to herd and tend livestock on the leased reservation lands; and livestock was allowed to graze in common lands, with several round-ups a year to keep track of cattle for breeding, and for sale (McLaughlin 1994). During round-ups, cattle were kept in large corrals established at seasonal line camps on the reservation. Unlike the open range ranching of the past, grazing was limited to broad leasing areas on the reservation; leasing areas that were fenced to avoid livestock from wandering onto privately owned land.

In 1916, the Office of Indian Affairs divided the Fort Berthold Indian Reservation into three grazing units and changed the leasing costs to a rate per acre, rather than per head of cattle. This type of ranching continued until the Office of Indian Affairs made changes in the mid-1930s and persisted in a similar fashion until the 1950s. Over the years, ranchers saw many benefits of using leased reservation lands. The use of cheap leases on prime grassland on the reservation allowed many ranchers to better weather the difficult years of the 1920s and 1930s, with many of the original ranchers becoming successful and prominent businessmen in the state. Leased grazing, while certainly beneficial to Euro-American cattlemen, and to the Office of Indian Affairs and BIA offices that provided for Fort Berthold, was not entirely favorable for those living on the reservation. Overgrazing became a serious concern for those on the reservation, and while they had limited means to control overgrazing through restrictions on herd sizes, many of these were overlooked by Euro-American ranchers and the government (McLaughlin 1994; Parker 2011). The Native Americans themselves grazed livestock on their reservation lands, kept separate from the lands leased by Euro-American ranchers, and conflicts between the two occasionally occurred. The construction of Garrison Dam in 1953 flooded most of the prime grazing lands along the river, and put a stop to confined-range grazing on leased lands. What little pasture land remained along the river was subdivided and allocated to Native American stockmen to compensate for losses caused by flooding (McLaughlin 1994).

**Depression, Recovery, and the Damming of the Missouri River (1921–1953)**

Economic decline came early to North Dakota, with many farmers seeing troubles as early as 1921. North Dakota famers were heavily dependent on wheat production, which led to great prosperity during World War I when the price of wheat was fixed by the federal government. During these prosperous years, many farmers mortgaged their properties and invested their prosperous earnings on expanding the land they had under cultivation. Following World War I, with demand low and the federal government releasing control of wheat prices, the price of wheat plummeted, falling from more than $2.00 per bushel in 1920 to less than $1.00 per bushel in 1921 (Opie 2004). Prices continued to fall during the 1920s and farmers across the Midwest and Great Plains states found themselves in deep financial distress. With farmers unable to pay their mortgages, banks across the state began to fail, adding to the economic turmoil. By the time drought and the effects of the Great Depression began to ravage the rest of the United States, the situation in North Dakota was already dire (Wilkins and Wilkins 1977).

During the years of early settlement across North Dakota, farmers formed cooperatives. Cooperatives helped farmers pool their resources to purchase or rent expensive equipment, share the use of grain elevators, and to help stabilize prices. While these cooperatives had helped support farmers during the first decade of the twentieth century, they were incapable of buoying the losses caused by the falling prices in the 1920s. Many established cooperatives that had thrived during the boom years, but failed during the 1920s and 1930s, including the Equity Cooperative Exchange which went bankrupt in 1923 and the North Dakota Wheat Growers Association which closed in 1931 (Wilkins and Wilkins 1977). Many farmers were forced to abandon their lands, moving to urban areas to find work. Other farmers, anticipating better times ahead, purchased failing farms to expand their holdings. Fearing a mass acquisition of farming land by outside corporate interests, the state government passed the

Anti-Corporate Farming Act of 1932, which prohibited corporations from engaging in farming and agriculture in the state. While this act prevented outside corporate farms from acquiring these failed farms, it did not prevent family farms from acquiring massive holdings (Hoffman and Libecap 1990; Leahy 2003; Wilkins and Wilkins 1977). North Dakota's agricultural industry did not recover until the 1940s when wartime demand for crops increased prices, creating resurgence in agricultural activity.

**Pick Sloan and the Development of the Missouri River (1940–Present)**

Following the Great Depression, new demands for power, irrigation, economic development, and flood control in the northern Great Plains focused greater attention on the Missouri River. Starting in the early 1940s, a series of legislative measures and agency plans were developed to address the difficult task of harnessing the Missouri River. Initial efforts were directed towards establishing a Missouri Valley Authority (MVA), similar to the successful Tennessee Valley Authority which had created dams that provided rural electrification for the southern states. The concept of an MVA did not meet with a favorable response from the local citizens or government officials, who feared losing control of the Missouri River to the federal government. After several attempts to resurrect the plan, the idea of an MVA was lost (Harvey 1996; Linenberger 1998). Nevertheless, continued flooding along the river and the lack of electricity on rural farms eventually drove the communities on the river to embrace some kind of federal actions to manage the river. Two separate plans were proposed to legislation.

The first plan presented to legislation was the Pick Plan, named after Lewis Pick, the director of the Missouri River Office of the USACE. It focused on flood control and navigation improvement, calling for the USACE to construct 1,500 miles of levees, five multi-purpose dams and reservoirs along the mainstem of the river, and other dams on various tributaries of the river (Harvey 1996; Linenberger 1998). Pick's plan conflicted with the alternate plan proposed by William Glenn Sloan, director of the Billings, Montana, office of the U.S. Bureau of Reclamation. Sloan's Plan, which had been several years in the making, was initially created in response to the severe droughts during the 1930s. Following the droughts, the Dakotas, Wyoming, and Montana appealed to the U.S. Bureau of Reclamation to construct irrigation works. Sloan created a plan, focusing primarily on providing irrigation and hydroelectric power, calling for the creation of dams and reservoirs on tributaries in the upper Missouri Basin (Harvey 1996).

In October 1944, representatives from the USACE and the U.S. Bureau of Reclamation met and agreed on a combined plan, called the Pick-Sloan Plan. Six intents for the management of the Missouri River were created under this plan. These intents included providing hydroelectric power, flood control, and surplus water supply; facilitating navigation; and supplying areas for public use, including fish and wildlife and recreation (Ferrell 1993). President Franklin D. Roosevelt signed the act on December 22, 1944. Under this plan, both agencies would have influence over hydroelectric power; the U.S. Bureau of Reclamation would have responsibility for all irrigation issues, and the USACE would have responsibility over the mainstem dams (Billington et al. 2005). The development of the mainstem system of dams was authorized under the Pick-Sloan Flood Control Act of 1944 (Public Law 78-534) (Ferrell 1993). Along with the previously constructed Fort Peck Reservoir in Montana, five

dams were to be constructed and overseen by the USACE. The dams to be constructed included Gavin's Point (located immediately west of Yankton, South Dakota), Fort Randall (located just north of the Nebraska-South Dakota border), Big Bend (located immediately upstream from the tail waters of Fort Randall), Oahe (located upstream from Pierre, South Dakota), and Garrison (located north of Stanton, North Dakota (Figure 4).

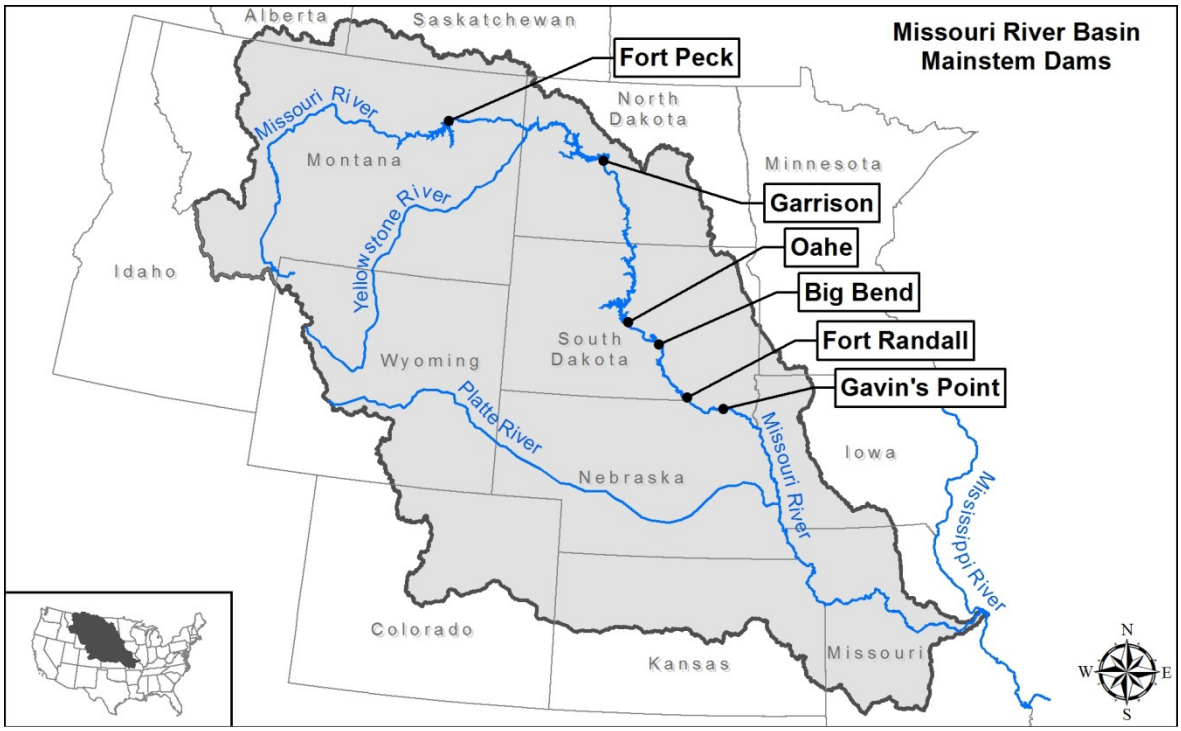


**Figure 4. Missouri River mainstem dams.**

The creation of the Pick-Sloan reservoirs displaced thousands of Native Americans from their lands along the Missouri River. By some counts, the five mainstem dams displaced approximately 900 Native American families. All the mainstem dams in North and South Dakota (except Gavin's Point Dam) flooded some of the most productive tribal lands. Garrison Dam/Lake Sakakawea, completed in 1953, inundated more than 152,360 acres, a quarter of the Fort Berthold Indian Reservation, and forced the relocation of over half of the reservation population (Morris 1990). The BIA reported in 1948 that 257 of the 357 homes in the Fort Berthold Indian Reservation would be destroyed by the project (McCullough 1948). The inundation also cost the tribe the majority of its timber and wild game resources—most of which relied on the natural bottomlands of the Missouri River. Similarly, the Oahe Reservoir inundated hundreds of thousands of acres at the Standing Rock and Cheyenne River Reservations. The Big Bend and Fort Randall Dams were also significant in impacting Native American families on the Yankton, Lower Brule, and Crow Creek Reservations; the dams flooded over 20,000 acres of tribal land, with the majority (approximately 17,000 acres) of those acres on the Crow Creek and Lower Brule Reservations, where over 120 families were displaced against their will (Lawson 1982).

Although the Three Affiliated Tribes living on the Fort Berthold Indian Reservation were not included in the initial discussions about the dam, they demanded that the federal government

compensate them for the land that would be lost when the dam was completed. They requested that the government provide them with an equivalent acreage of land to what would be lost from the flooding, permission to graze their cattle on USACE lands along the banks of the lake, 20,000 kilowatt/hours per year of electricity generated by the dam, and first right to collect timber felled during the flooding (Griffen 1996). Their requests were rejected, although the federal government provided some compensation for their loss. They were given $5,105,625 for lost lands (approximately $33 per acre), were denied grazing access to the lands adjacent to the lakes, did not receive any free electricity, and were not allowed to collect fallen timber (Griffen 1996). The tribes would eventually get an additional 7.5 million dollars in compensatory funds, but overall, the deal fell far short of what they had requested.

The USACE has continued to develop its relationship with the tribes. In 1987, the Joint Tribal Advisory Committee released its final report concerning the impact that the Pick-Sloan Plan had on the tribes. The tribes within the Omaha district soon afterward requested an "Indian Desk" at the USACE. In 1992 this request was fulfilled and the USACE developed a position for a full-time Native American liaison (USACE 2013).

### Development of Transportation (1864–Present)

Early settlement in North Dakota followed along the expansion of the rail lines, with the railroad companies establishing towns to support the settlement of the vast expanse of the Great Plains. By the early twentieth century, little had changed, and the railroad continued to dominate settlement and transportation across the state, with settlers reliant upon the railroads for importing supplies, and for exporting products of their farms and ranches to more lucrative markets. At the same time, the system of roads and trails, in place before a single track of rail was placed in North Dakota, continued to operate, albeit marginalized by the expanding rail networks (Wilkins and Wilkins 1977).

As early as 1848, officials in Washington were beginning to consider the possibility of creating a network of railroads across the country. Three routes were initially proposed for alignments crossing from the Atlantic Ocean to the Pacific Ocean. The northernmost route proposed crossed the Great Plains from Minnesota to Oregon crossing through Fort Union in the Dakota Territory. Congress authorized the northern route and in 1864, President Lincoln signed a charter for the Northern Pacific. To help fund the railroad project, the Northern Pacific received a massive land grant from the government, amounting to 40 sections per mile through the Dakota Territory (Tweton and Jelliff 1976).

Although Washington had interest in completing the northern route, finding investors to back the 2,000-mile journey proved more difficult. Northern Pacific was unable to secure sufficient financial backing until 1869, the same year that the Union Pacific Railroad completed their transcontinental route. Financial troubles continued to plague the railroad and by 1873, with the line completed from Duluth to Bismarck, the investment company funding the construction was bankrupt. In 1875, the Northern Pacific reorganized under the leadership of Frederick Billings, and with strong revenues from the completed part of the line, the Northern Pacific was able to secure the financial support to continue construction, completing its path to the Pacific in 1881. Between 1881 and 1887, the Northern Pacific continued to expand its

operations in North Dakota building several branch lines to reach the important agricultural and population centers across the state (Tweton and Jelliff 1976).

The second major railroad to begin construction in North Dakota was the Great Northern Railroad. Starting as the St. Paul and Pacific Railroad in 1857, Congress supplied a similar grant to the railroad company and construction began heading west from St. Paul, Minnesota. Like the Northern Pacific, the St. Paul and Pacific had trouble securing the financial support for the project, going bankrupt in 1872. Under the direction of James J. Hill, the St. Paul and Pacific began construction again in 1878. Rather than building straight west, Hill expanded branch lines across North Dakota and Minnesota and by the 1890s, Hill's railroad had more miles of track in North Dakota than the Northern Pacific. The railroad finally reached the Pacific Ocean in 1893 and the name was changed to the Great Northern Railroad (Tweton and Jelliff 1976).

A third railroad, the Minneapolis, St. Paul & Sault St. Marie, or the "Soo," built a track across North Dakota in 1883. The primary focus of the Soo was to access grain farmers in the northern part of the state, providing connections for agricultural goods to both the Northern Pacific and the Great Northern rail lines. With the three railroads completed, North Dakota settlers had a means to transport wheat crops to milling centers in Minnesota or to larger markets across the country. The railroad also supplied a means to support expanded settlement across the state, with important depots at Grand Forks, Bismarck, and Fargo becoming prominent buildings driving economic activity (Tweton and Jelliff 1976; Wilkins and Wilkins 1977).

Although railroads supported the expanded settlement during the Dakota Boom, the state was also crossed by a series of roads and trails that expanded into a broad network during the twentieth century. Some of the earliest roads in the state were developed by the military, connecting forts established to monitor the activities of Native Americans, and to protect Euro-American interests in the area. These roads were heavily travelled by the military, by postal carriers, and by early settlers. In the winter months, when snow covered much of the state, these trails were often travelled by sled (Carlson and Sprunk 1979). When North Dakota became a state in 1889, the state constitution made it a requirement to have a two-thirds majority for the approval of state road construction. This meant that the responsibility for road construction was mostly left to the counties. Early roads mostly followed the local topography, providing the most direct route between destinations. Later roads, established during the settlement booms, generally followed section lines. In 1899 in an effort to regulate road construction and provide some standards, the state legislature declared that section roads would be considered public land and that the roads should measure at least 33 feet (2 rods) wide (Carlson and Sprunk 1979).

Leaving the counties responsible for road construction proved sufficient until the arrival of the automobile in the early twentieth century. The automobile increased the demand for roads across the state, and demand for existing roads to be better maintained to remain passable. Access to funding became the determining factor in road construction, with roads often built disproportionally to the actual demand. Lack of funding in some areas led to lapses in maintenance, which in turn led to washouts, collapsed bridges, and heavy rutting. The poor conditions of roads across the state attracted the attention of A. L. Fellows, the state engineer,

who voiced his concern about road conditions in 1906. However, it would take several years before that concern turned into action (Carlson and Sprunk 1979).

In 1909, State Senator George A. Welch introduced a bill that would allow North Dakota to receive federal funding for the construction of "demonstration" roads. These roads were federally funded experiments that tested new road building materials and engineering methods. These demonstration roads were only constructed in Bismarck, but it was the beginning of a state-level interest in road conditions that would continue throughout the early twentieth century (Carlson and Sprunk 1979). In 1911, the state authorized the State Engineer's office to provide plans for road construction to any county that requested it, and in 1913, the State Engineer was tasked with approving all bridge designs prior to construction. The year 1913 also marked the creation of the South Dakota State Highway Commission. The Commission was established to give the State Engineer the authority to oversee all road construction. It also required that maps be created that showed the location of all roads, culverts, and bridges (Carlson and Sprunk 1979).

The federal government also took steps to assist the states in road construction. In 1916, the Federal Aid Road Act made funding available for creating and maintaining roads. Funding through this act was limited at first, but in the 1920s, interest in developing a federal highway system resulted in additional federal allocations. Due to an ambitious and perhaps exaggerated assessment of the number of roads in North Dakota, it received a disproportionate amount of federal funding in the 1920s (Carlson and Sprunk 1979). The state ranked 36$^{th}$ (out of 48) in population, but 16$^{th}$ in road funding. As a result of this funding, the state proposed the creation and improvement of an extensive series of paved, graveled, and graded roads. Most of these roads were concentrated in the eastern and central portions of the state. In the western counties such as Dunn, Mercer, and McKenzie, most roads remained little more than rutted two-tracks.

In 1924, the Rand McNalley Company created an Auto-trails map, attempting to provide an easier means of navigating the highway systems across the country. The Auto-trails used blazed markers to identify highways that could be followed between destinations. To many early twentieth century motorists, driving was as about recreation as it was transportation, and as such, the early auto trails were intended to enhance the driving experience. Roads did not always take the most direct routes between cities, but would wind through scenic locations and historical landmarks. The intent was also to improve tourism across the country. The Auto-trail system was quickly replaced in 1925 when congress passed the Federal Highway Act which established a numbered highway system, most of which followed similar alignments to the old Auto-trail system (Wilkerson 2000). Several of the numbered highways continued to use their Auto-trail names.

During the Great Depression, road projects at the local level dropped significantly. Federal assistance helped buoy the losses of local funding with New Deal Programs continuing to provide support for road and bridge projects. The lack of local funding for road projects continued through World War II. Coupled with the lack of available labor during the war, many of North Dakota's roads fell into disrepair. During the 1940s, the government began to crack down on several states, including North Dakota, for the conditions of its roads, threatening to cut off funding if the existing roads were not better maintained. In an effort to

assert more control over road projects across the country, Congress passed the Federal Highway Act in 1944, which changed the approach to funding road construction, setting aside money specifically to maintain a federal highway system (Carlson and Sprunk 1979).

## BACKGROUND RESEARCH

SWCA conducted a background search of archaeological and historical literature and records for the project area and surrounding 1-mile area on March 11, 2014, and an updated search on October 29 and November 19, 2014, as part of the initial phase of this investigation. Researchers searched relevant records holdings at the State Historical Society of North Dakota and other available sources for information regarding previously recorded historic and prehistoric sites located within the project area. A search of General Land Office maps and records did not return any results within the study area (North Dakota State Water Commission 2014).

Results of the background search identified 22 previous cultural resource inventories conducted within the project area between 1975 and 2013. The 22 previous cultural resource inventories were conducted in support of oil and gas projects, municipal utility projects, and transportation/highway improvement projects. A bibliographic listing of the previously conducted cultural resource inventories is provided in Appendix A.

Based on the file search results, 10 previously recorded cultural resources are located within 1 mile of the project area (Table 3). The 10 previously recorded cultural resources include two prehistoric stone circle sites (32MN699 and 32MN700); two historic foundations (32MN1035 and 32MN1036); one historic railroad site (32MN818); one historic schoolhouse (32MN869); and one cairn site (32MN873), two cultural material scatter site leads (32MNX60, 32MNX112), and one site lead (32MNX113) of unknown cultural or temporal origin. Of the 10 previously recorded cultural resources, three are recommended not eligible for inclusion to the National Register of Historic Places (NRHP) (32MN869, 32MN1035, and 32MN1036), one is a non-contributing element of an NRHP-eligible site (32MN818), and six remain unevaluated with regard to their NRHP eligibility (32MN699, 32MN700, 32MN873, 32MNX60, 32MNX112, 32MNX113).

Results of the Class I inventory identified four previously recorded cultural resources (32MN873, 32MN818, 32MNX113, and 32MNX60) within the proposed project area. Results for these four cultural resources are discussed below.

**Table 3. Previously Recorded Sites Identified within 1 Mile of Project Area**

| Site Number | Site Type | Cultural Affiliation | NRHP Eligibility |
|---|---|---|---|
| 32MN699 | Stone Circle | Unknown Prehistoric | Unevaluated |
| 32MN700 | Stone Circle | Unknown Prehistoric | Unevaluated |
| 32MN818 | Railroad | Historic | Eligible/Non-Contributing Segment |

| Site Number | Site Type | Cultural Affiliation | NRHP Eligibility |
|---|---|---|---|
| 32MN869 | Architectural/ Schoolhouse | Unknown Historic | Not Eligible |
| 32MN873 | Cairn | Unknown | Unevaluated |
| 32MN1035 | Foundation | Unknown Historic | Not Eligible |
| 32MN1036 | Foundation | Unknown Historic | Not Eligible |
| 32MNX60 | Cultural Material Scatter/Site Lead | Unknown | Unevaluated |
| 32MNX112 | Cultural Material Scatter/Site Lead | Unknown | Unevaluated |
| 32MNX113 | Unknown/Site Lead | Unknown | Unevaluated |

NRHP = National Register of Historic Places

## FIELDWORK METHODS

Fieldwork was designed so that project archaeologists could collect all appropriate and necessary data for the completion of the project report of results and recommendations, and to ensure accurate completion of site forms for all resources encountered.

In accordance with the scope of work, archaeologists surveyed the 200-foot-wide inventory corridor using parallel linear transects with spacing not exceeding 30 m. The ground surface was examined for artifacts, features, or other evidence of cultural occupation. Eroded surfaces, rodent burrows, and other areas with significant exposure were examined intensively throughout fieldwork, especially where previously recorded cultural resources existed. In areas with a high probability of cultural resources, survey transects were reduced to 10 m to maintain adequate visibility. Bare ground surface visibility during the project varied from 5 to 50 percent across most portions of the project area, increasing up to 90 percent in some agricultural fields.

Where cultural resources were located, project archaeologists made an intensive effort to fully and accurately establish the extent and boundaries of newly recorded sites. As such, sites were mapped using sub-meter accurate Trimble global positioning system (GPS) units. When detailed mapping or remapping was required, all linear site features, such as site boundaries, roads, and fence lines, as well as point features, such as the site datum, cultural features, artifact concentrations, diagnostic artifacts and tools, and other necessary data, were mapped with the Trimble GPS unit for post-processing into ArcMap 10.0 shapefiles, and for plotting onto associated U.S. Geological Survey 7.5-minute quadrangles to ensure accuracy and to produce required location maps of all sites and resources.

In addition to site mapping, associated features and diagnostic artifacts were described, measured, recorded using a handheld GPS unit, and photographed as appropriate. Field personnel noted environmental setting, context, topography, and geographical location for each cultural resource. No collection or subsurface testing was conducted during the inventory.

## SITE EVALUATION

SWCA evaluated sites and their significance, as defined by criteria set forth in Title 36 Code of Federal Regulations 60.4 (National Park Service 1991), which are as follows.

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B) That are associated with the lives of persons significant in our past; or
>
> C) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D) That have yielded, or may be likely to yield, information important in prehistory or history.

A site may meet one or more of the four eligibility criteria listed above, but if it is considered to not retain sufficient integrity, it may be recommended not eligible for inclusion to the NRHP.

### Prehistoric Archaeological Sites

Prehistoric lithic scatters/campsites (sites without any structures or association with known significant events or persons) generally are not considered eligible for NRHP inclusion under Criteria A, B, and C. Instead, for NRHP recommendation purposes, these properties are discussed for their potential to yield information significant to prehistory or the archaeological record under NRHP Criterion D. Special cases generally apply to Criterion A, where a prehistoric site type (such as a stone circle site) may not be recommended eligible for listing in the NRHP from an archaeological perspective, but may be considered important to cultures of Native American peoples.

Evaluation of archaeological site significance under Criterion D considers general characteristics such as the nature, size, and diversity of the site assemblage; the potential presence or absence of subsurface cultural deposits; the nature of any features within the site (construction techniques, building materials, structural integrity); and the age range reflected by the site assemblage. Sites considered significant generally contain an assemblage of cultural remains that reflects sufficient diversity to permit identification of activities and to allow confirmation of the period of site use. Sites with the most potential to address research questions about human lifeways contain associated features, structures, and/or relatively intact and dateable artifacts.

### Historic Archaeological Sites or Components

Historic sites containing or consisting of preserved features or structures are evaluated primarily under Criteria A, B, and C. Historic trash scatters lacking associated features or structures are primarily evaluated under Criterion D. In general, these types of sites represent ephemeral prospecting or stock management activities, but they lack identifiable or important association with specific persons or events of regional or national history (Criteria A and B), and they lack the formal and structural attributes necessary to qualify as eligible under Criterion C. The evaluation of significance of historic archaeological sites under Criterion D focuses on the capacity of the sites or components to yield significant information regarding knowledge of history during the period(s) of site significance. Evaluation of the significance of historic sites considers general characteristics such as the nature, size, and diversity of the site assemblage; the potential presence or absence of subsurface cultural deposits; the nature of any features within the site; construction techniques; building materials; structural integrity; and the age range reflected by the site assemblage.

Historic sites considered to be significant under Criterion D generally contain an assemblage of cultural remains that reflects sufficient diversity to permit identification of activities and to allow confirmation of the period of site use. Sites with the most potential to address research questions contain associated features, structures, and relatively intact and datable artifacts. Significant sites are those that could impart information not available solely from historical documents. Although archival research may provide an essential form of information, often historical records are inaccurate or incomplete. For example, examination of construction techniques or household assemblages can provide information on economic slumps, reuse of structures for other than original purposes, and re-occupation cycles. As a result, insight may be gained into questions about human lifeways that are often asked in archaeology, but rarely specified directly in historical documentation.

### Non-Archaeological Historic Sites or Components

Non-archaeological historic sites or sites with non-archaeological components are those primarily assessed for NRHP eligibility under Criteria A, B, and C, rather than Criterion D and typically are not subject to subsurface testing. Individual segments of significant historic sites are evaluated as contributing or non-contributing in terms of physical and environmental integrity. Examples of historic site types include linear historic features, such as transportation routes and water conduits, standing building and structure sites, and potentially extend to any historic feature on an otherwise archaeological site, such as traditional cultural property features. Historic and ethnographic sites evaluated for potential contribution to history or cultural traditions for reasons beyond their possible future research value tend to have different evaluation and management considerations than archaeological sites. Typically, the integrity of historic sites is addressed using the guidelines presented in National Register Bulletin 15 (National Park Service 1991), which defines the seven elements of integrity as location, design, setting, materials, workmanship, feeling, and association. As such, properties are basically evaluated in consideration of their physical integrity and the integrity of their surroundings. Traditional cultural properties are also considered under the guidelines of National Register Bulletin 38 (Parker and King 1998).

# INVENTORY RESULTS

SWCA conducted a Class III inventory for the Bison Pipeline on April 10 and 11, May 6, October 1, and November 7 and 22, 2014. Vegetation within the project area consisted of wheat stubble, porcupine grass, western wheatgrass, yellow coneflower, fringed sagebrush, goat's beard, and silver buffaloberry bushes, allowing for approximately 5 to 50 percent bare ground surface visibility at the time of survey; ground surface visibility increased up to 90 percent in some fallow agricultural fields. Surface soil across the site is primarily dark brown silty clay loam. Impacts to the project area include agricultural use, vehicle travel on numerous roads crossing the project area, and oil and gas development.

During the current inventory, SWCA personnel attempted to relocate two previously recorded site leads (32MNX60 and 32MNX113); and revisited two previously recorded sites (32MN818 and 32MN873). 32MN818 is a portion of a documented segment of the Soo Line Railroad. 32MN873 is a cairn site of unknown cultural or temporal origin. 32MNX60 is a cultural material scatter site lead of unknown cultural or temporal affiliation. 32MNX113 is a site lead of an unknown type and cultural affiliation. SWCA archaeologists newly recorded one site (32MN1316) consisting of a square depression with stones lining its eastern and western edges.

## PREVIOUSLY RECORDED SITES

### 32MN818

| | |
|---|---|
| Site Type: | Canadian Pacific Railway Soo Line |
| Association: | Historic, 1952–Present |
| Site Size: | 150 by 35 feet (5,250 feet$^2$) |
| NRHP Recommendation: | Eligible, Non-Contributing |
| Management Recommendation/Project Effect: | Avoid, Horizontal Directional Drill/No Effect |

**Site Description and Previous Recording**

32MN818 is a segment of the Max-New Town spur of the Soo Line (currently named the CPR 131), now owned and operated by Canadian Pacific Railway, located on a gently rolling plain situated in an upland grassland ecosystem (Figures 5 and 6). Vegetation in the site area is sparse, allowing for 99 percent bare ground surface visibility at the time of survey. Vegetation in the north of the site is dominated by Kentucky bluegrass (*Poa pratensis*a), smooth brome (*Bromus inermis*), and dock (*Rumex* sp.). Surface soil consists of dark brown sandy clay loam.

***Contains Privileged Information -- Do Not Release***

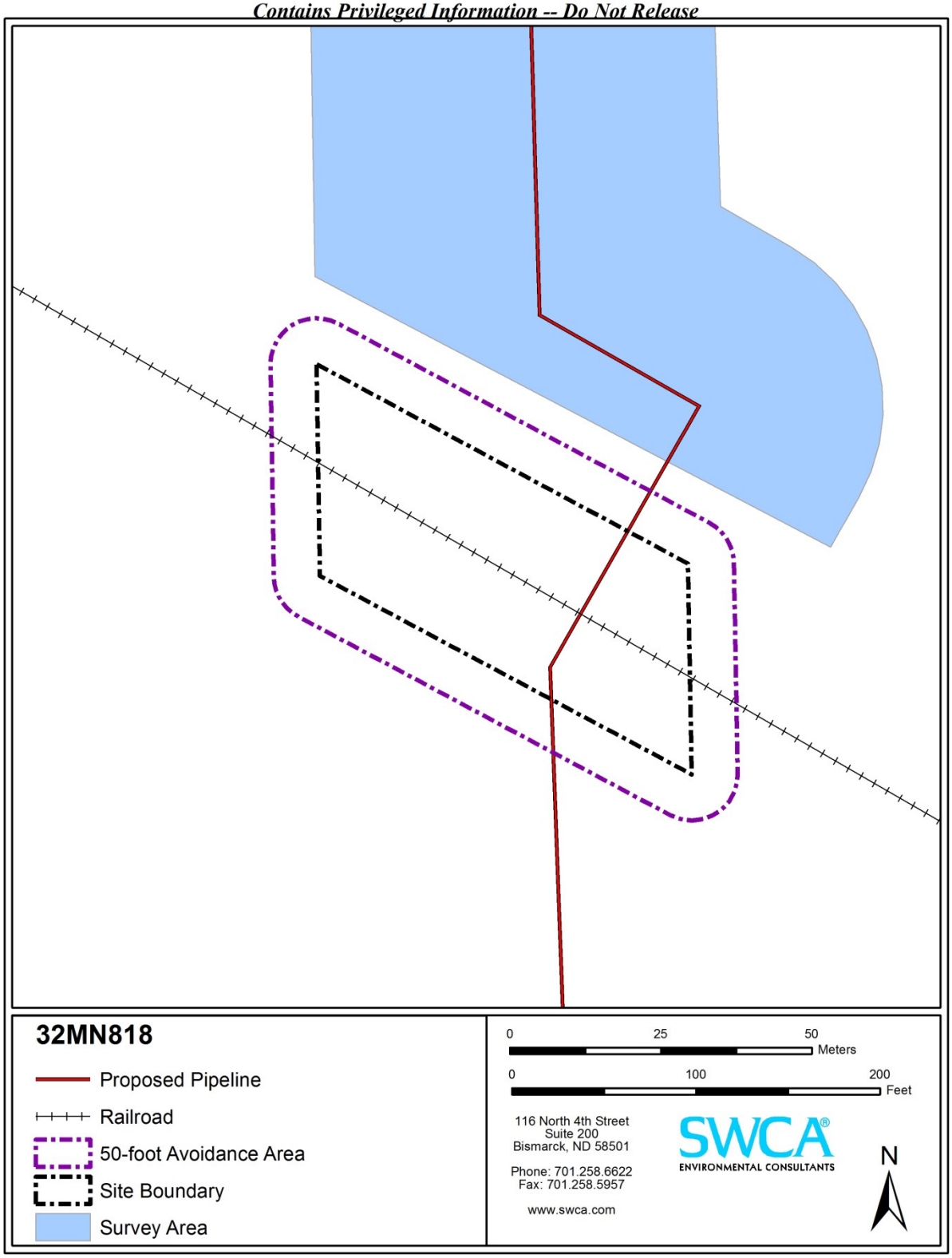


**Figure 5. 32MN818 site sketch map.**

**Figure 6. 32MN818 site overview, facing southwest.**

This particular segment of the Max-New Town spur of the Soo Line (CPR 131), was first recorded in 2011 as part of the Canadian Pacific New Town Siding. The segment recorded was a 1.5-mile-long section of actively maintained single track with wooden ties on ballast composed of a mixture of crushed black basalt and river cobbles. The ballast pile is approximately 1 foot 6 inches to 2 feet high. The majority of the segment is located in a cut, reaching a maximum height of approximately 12 feet with an average depth of 8 to 10 feet.

The recorded segment is part of a reroute of the Minneapolis St. Paul & Sault Ste. Marie Railway (Soo Line) between Garrison and New Town. The original 1914 line was inundated by the construction of the Garrison Dam and the current alignment was constructed in 1952 (Schmidt and Vermeer 2009).

**Survey Results**

SWCA revisited the previously recorded segment on May 6, 2014. The segment consists of a 150-foot-long (northwest/southeast) by 35-foot-wide (northeast/southwest) section of railroad. The railroad itself comprises a single set of standard-gauge steel tracks attached to wooden cross ties set into a gravel-ballasted berm. At the time of survey, the portion of the site within the current project area was under construction. The nature of the construction was indeterminable. The ballast is made up of imported basalt and crushed river-rock gravels. The cross ties are treated lumber that measure 8 feet 6 inches long by 9½ inches wide and are set into the gravel berm at approximately 1-foot intervals. The steel rails are 6½ inches tall with a 5½-inch web; the rail head is 3 inches wide; and the rail foot is 6 inches wide. The rail sections are welded together (continuous welded rail) and attached to the cross ties via rail spikes and tie-plates set on top of the ties. Although the original recorders evaluated this segment as not eligible for the NRHP, following North Dakota's historic railroad context

(Schmidt and Vermeer 2000), this segment is non-contributing to the overall significance of the railroad. Modernization and general maintenance of the berm, cross ties, and rails have impacted the site's integrity with regard to materials, which, in turn, impacts the site's integrity of association and design.

**Historic Background**

An in-depth history of the development of railroads in North Dakota, including the Minneapolis St. Paul & Sault Ste. Marie Railway (Soo Line), has been complied by Schmidt and Vermeer (2009). A review of Schmidt and Vermeer indicates that portions of the original Soo Line were inundated by the construction of the Garrison Dam. The current alignment was constructed in 1952, during a reroute of the railway in preparation of the dam. This railroad had been laid from Prairie Junction, North Dakota, to Sanish, North Dakota (later rerouted to New Town in 1952), and was completed in 1914 as part of the western extent of the Bismarck line. Overall, the Soo Line played an important role in supporting the construction of the Garrison Dam, and the transportation of materials and personnel during World War I, World War II, and the Korean War, although this segment is only associated with the latter part of the Korean War since it was built in 1952. The Soo Line has been a major source of employment in North Dakota since its construction. The railway has changed ownership several times since its original construction; however, the Canadian Pacific Railroad became the majority owner in 1990 (Schmidt and Vermeer 2009).

**NRHP Eligibility Recommendations**

32MN818 is a previously recorded alignment consisting of a series of small branch lines called the Bismarck line (which contains the Max-New Town spur of the Soo Line), and which connected with the main Minneapolis St. Paul & Sault Ste. Marie Railway (Soo Line). This particular segment of the Bismarck line is currently named the CPR 131, Max to New Town. Because this site is a small segment connected historically to the broader Bismarck line it falls in the historic context. The railway historic district is therefore recommended as eligible for the NRHP under Criterion A. Canadian Pacific Railway operations in Mountrail County played an important role in opening up transportation to remote parts of the county and surrounding area. Additionally, the railroad did directly contribute to the development of agriculture and passenger transportation in the region and led to significant expansion and economic growth. The Soo Line played an important role in supporting the construction of the Garrison Dam, and the transportation of materials and personnel during World War II and the Korean War. It also served North Dakota by providing access to both Euro-American and Canadian markets for goods. SWCA concurs with the previous findings and recommends 32MN818, as a whole, continue to be considered eligible for listing to the NRHP under Criterion A.

In accordance with the results of the North Dakota context, railroads are not typically considered eligible for nomination under Criterion B, because they were generally the product of corporations, rather than significant individuals (Schmidt and Vermeer 2009). SWCA found no exception to this guidance for 32MN818 and therefore recommends that the site be considered not eligible for nomination to the NRHP under Criterion B. Similarly, railroads in North Dakota are generally considered not eligible for nomination to the NRHP under Criterion C, because they are representative of existing technology well established in other

parts of the country and therefore do not represent significant or distinguishable features that embody a distinct type of engineering or construction (Schmidt and Vermeer 2009). SWCA found no evidence that 32MN818 is an exception to this guidance and therefore recommends that the site be considered not eligible for nomination to the NRHP under Criterion C. The deposition on-site and the lack of surface artifacts indicate that the site is unlikely to yield information important in history; therefore, the segment is recommended not eligible for inclusion to the NRHP under Criterion D.

**Management Recommendations**

This segment of 32MN818 is recommended to be a non-contributing element to an NRHP-eligible resource; however, SWCA recommends that as an active railroad the site should be avoided through the use of a horizontal directional drill beneath the site.

**32MN873**

| | |
|---|---|
| Site Type: | Cairn |
| Association: | Unknown Prehistoric |
| Site Size: | 10 by 10 m (100 $m^2$) |
| NRHP Recommendation: | Unevaluated |
| Management Recommendation/Project Effect: | Avoidance (50 feet)/No Effect |

**Site Description and Previous Recordings**

32MN873 is a prehistoric cairn site located on a prominent rise approximately 4 m west of the right-of-way of North Dakota Highway 8 (Figures 7 and 8). The site is located immediately west of a northwest-trending barbed wire fence and electrical transmission line. Vegetation in the area consists of smooth brome, western wheatgrass, cudweed sagewort, and Kentucky bluegrass, allowing for a bare ground surface visibility of less than 5 percent at the time of survey. Surface soils in the area consist of dark brown silty clay loam.

32MN873 was originally recorded by Ed Stine in April 2011. The site consisted of a single cairn composed of 29 well-sodded stones with heavy lichen growth. The feature measured 2.0 m north/south by 2.0 m east/west. No additional cultural materials were identified. The site was left unevaluated with regard to its NRHP eligibility pending further testing and tribal consultation.

***Contains Privileged Information -- Do Not Release***

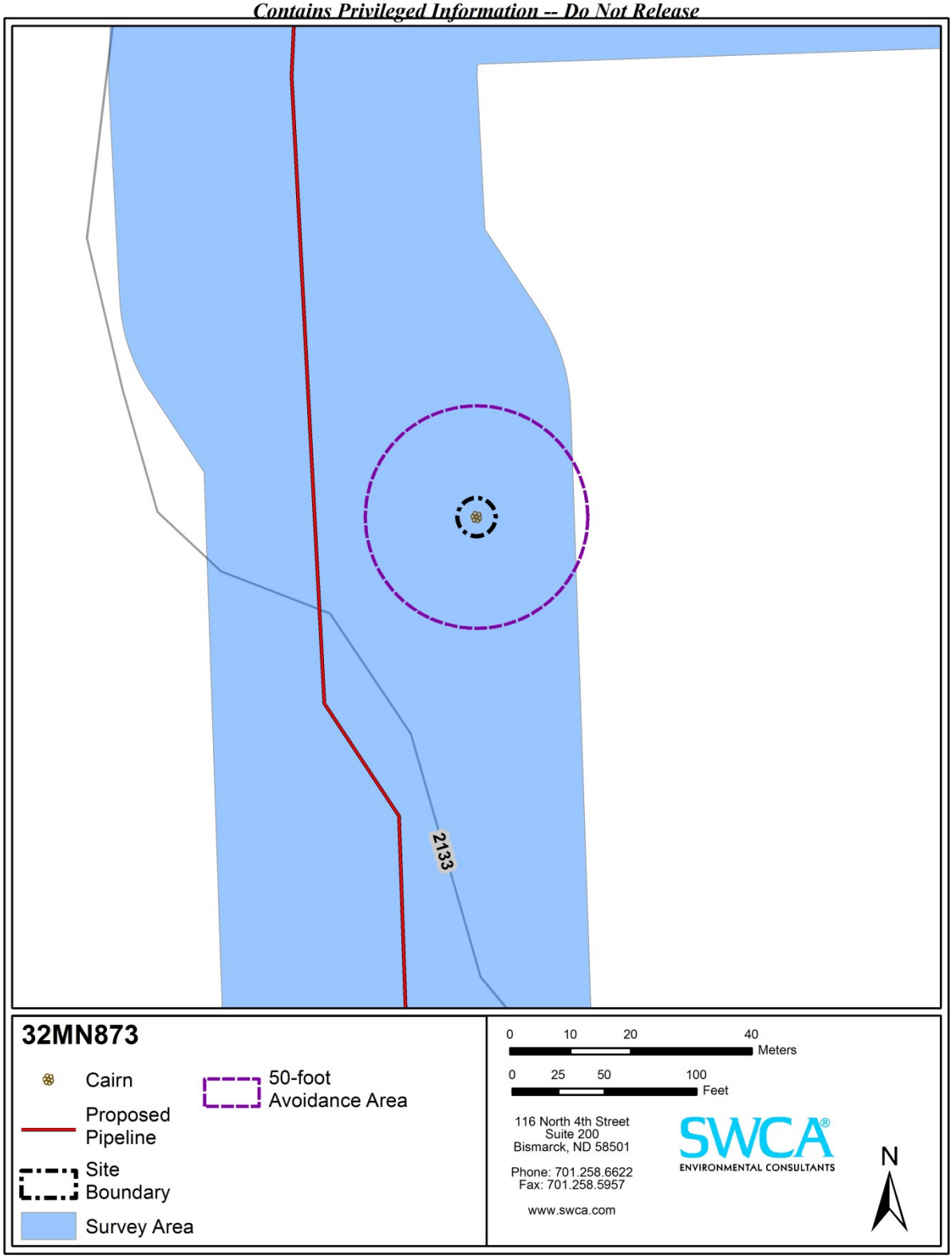


**Figure 7. 32MN873 site sketch map.**

**Figure 8. 32MN873 site overview, facing north.**

**Survey Results**

SWCA revisited 32MN873 on October 1, 2014. Archaeologists identified no change to the site. The original feature was relocated and consists of approximately 29 well-sodded stones exhibiting heavy lichen growth. The feature measures 2.0 m north/south by 2.0 m east/west. Vegetation in the area consists of mixed native prairie grasses, allowing for a bare ground surface visibility of less 5 percent at the time of survey. Surface soils in the site area consist of dark brown silty clay loam.

**NRHP Eligibility Recommendations**

The site is in good condition, and has remained unchanged since its initial recording. The site was left unevaluated with regard to its NHRP eligibility due to the possibility of buried cultural materials, and the presence of a stone feature that may be considered of a sacred nature. The site remains in good condition with minimal impacts due to the presence of a barbed wire fence and electrical transmission line immediately east of the site. Though the integrity of setting has been affected by the modern fence and electrical lines, the site retains integrity of location and feeling. As such, due to the presence of a feature that may be considered of a sacred nature, it is recommended to remain unevaluated for eligibility in the NRHP under Criterion A pending tribal consultation. Due to the nature of the feature, and the possibility of buried cultural materials, it is recommended that the site remain unevaluated under Criterion D, pending further testing.

**Management Recommendations**

SWCA recommends that all ground-disturbing activities avoid the site by 50 feet. Plains Pipeline has proposed to shift the pipeline alignment to the west to ensure proper avoidance.

Therefore, the project will have no effect on the resource and no further work is recommended at this time.

## NEWLY RECORDED SITE

### 32MN1316

| | |
|---|---|
| Site Type: | Depression, Stone Feature |
| Association: | Unknown |
| Site Size: | 15.58 by 16.04 m (207.81 $m^2$) |
| NRHP Recommendation: | Unevaluated |
| Management Recommendation/Project Effect: | Avoidance/No Effect |

### Site Description

32MN1316 is located on a small terrace on the south-southwest slope of a knoll situated amongst rolling grasslands (Figures 9 and 10). The site is located approximately 200 m east of Highway 8, and 150 m east of an electrical transmission line. Vegetation in the area consists of western wheatgrass, prairie coneflower, and smooth brome, allowing for bare ground surface visibility of less than 5 percent at the time of survey (Figure 9). Surface soils consist of dark brown silty loam.

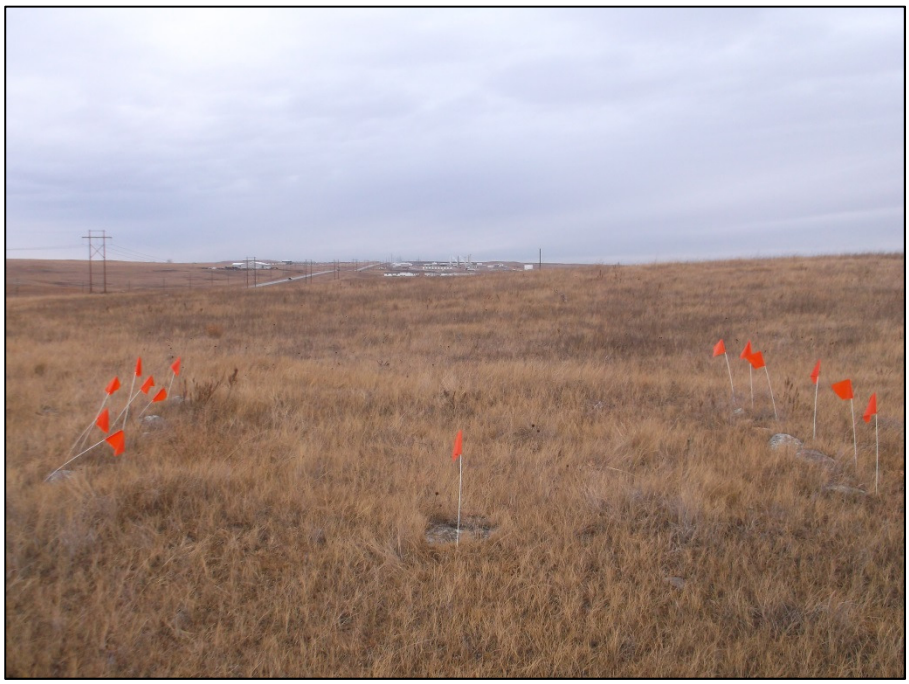

**Figure 9. 32MN1316 site overview, facing north.**

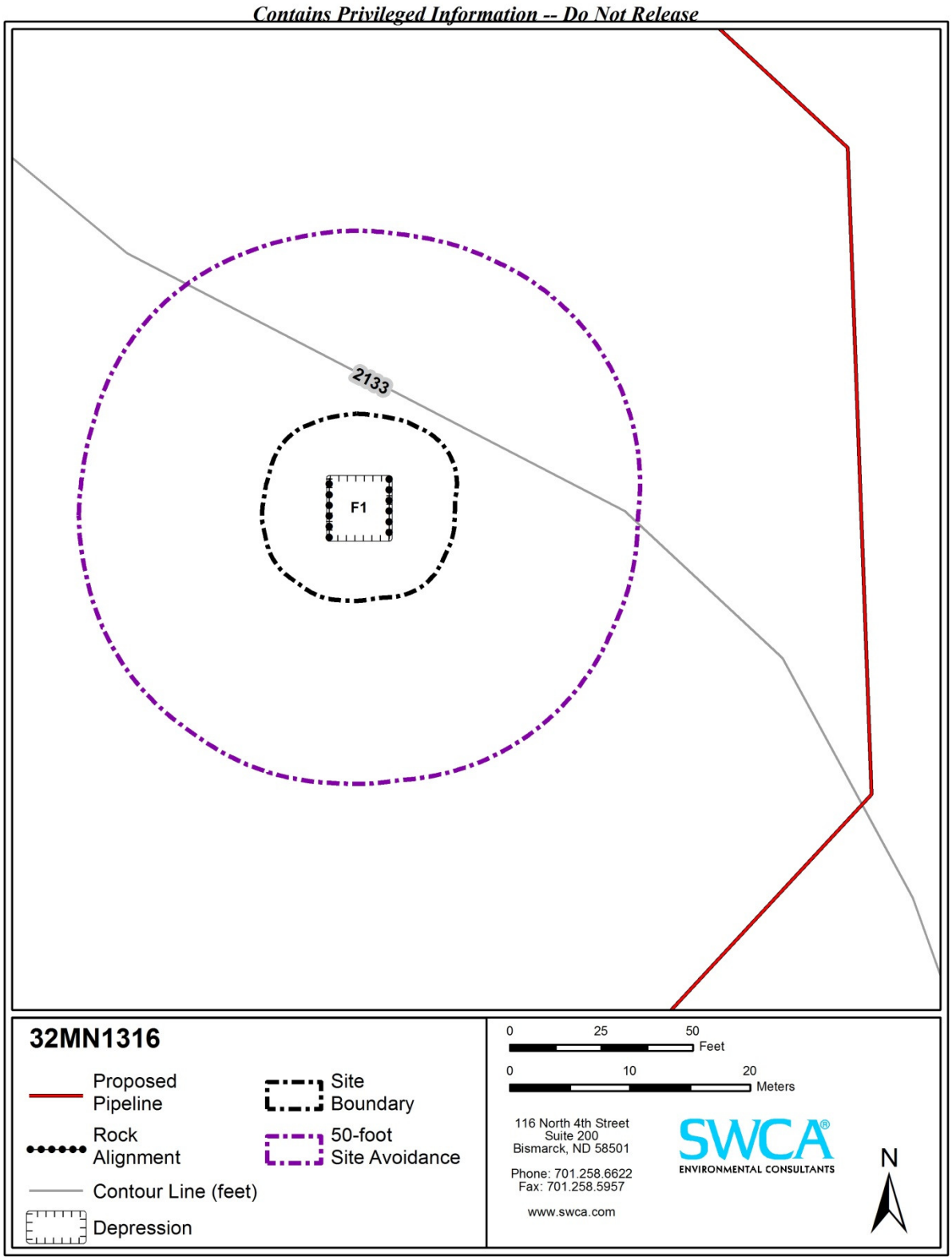


**Figure 10. 32MN1316 site sketch map.**

**Survey Results**

SWCA archaeologists newly recorded 32MN1316 on November 22, 2014. The site consists of a single shallow, square depression with stones lining the east and west sides. The feature measures 5 m east/west by 5 m north/south and 10 centimeters deep. The western edge of the depression is lined with 10 stones, the east with eight. The moderately sodded stones range in size from 8 to 30 centimeters, and exhibit 60 percent lichen growth. A single flagstone is located in the center of the south wall. Due to limited information, the site should be considered to be of an unknown cultural or temporal origin, pending further evaluative testing.

**Historic Background Research**

A Bureau of Land Management General Land Office records search for the NW¼ of Section 26, T153N, R91W, indicates that a sale-cash entry of 80 acres was granted to F. Dwight Bradbury on April 1, 1912 (Bureau of Land Management 2014 [1912]: Accession No. 256138). A search of available records did not reveal any additional information.

**NRHP Eligibility Recommendations**

32MN1316 is in good condition with no standing structures. The site retains integrity of location, materials, design, and feeling. The integrity of setting has been impacted by highway construction, agricultural activities, and nearby oil and gas development. Tribal consultation would be required to determine if the stone feature is of a sacred nature, consequently it is recommended the site remain unevaluated under Criterion A, pending tribal consultation. Historic research found no evidence to suggest the site was associated with any person that made significant contributions to the history of the region; therefore, 32MN1316 is not eligible for inclusion in the NRHP under Criterion B. Additionally, the site lacks any features that could be considered representative of a type or construction or the work of a master; therefore, the site is not eligible for inclusion in the NRHP under Criterion C. Due to limited information, and the possibility of buried deposits, it is recommended that the site remain unevaluated under criterion D, pending subsurface testing.

**Management Recommendations**

SWCA recommends that all ground-disturbing activities avoid the site by 50 feet. Plains Pipeline has proposed to shift the pipeline alignment to the east to ensure proper avoidance. Therefore, the project will have no effect on the resource and no further work is recommended at this time.

**SITE LEADS NOT RELOCATED**

Two previously recorded site leads (32MNX60 and 32MNX113) are located within the current survey area (see attached Appendix C). 32MNX60 is a prehistoric cultural material scatter and 32MNX113 is a site lead on an unknown nature and cultural affiliation. Although attempts were made to relocate the two previously recorded site leads, they were not relocated within the current inventory area. The sites may exist outside of the current survey area. Therefore, no further work is recommended for the two resources.

# CONCLUSIONS

The Class III inventory was conducted for the Bison Pipeline on April 10 and 11, May 6, October 1, and November 7 and 22, 2014. The pipeline was surveyed with a 200-foot-wide survey corridor centered on the 9.40-mile-long proposed pipeline centerline. An additional 164.61 acres was inventoried centered on 6.79 miles of abandoned alignment. In total, 414.12 acres were inventoried for the proposed pipeline location.

During the Bison Pipeline cultural resource inventory, SWCA archaeologists attempted to relocate two previously recorded site leads (32MNX60 and 32MNX113); and revisited two previously recorded sites (32MN818 and 32MN873). 32MN818 is a portion of a documented segment of the Soo Line Railroad. 32MN873 is a prehistoric cairn site. 32MNX60 is a cultural material scatter site lead of unknown cultural or temporal affiliation. 32MNX113 is a site lead of an unknown type and cultural affiliation. SWCA archaeologists newly recorded 32MN1316, a depression and stone feature.

Both site leads remain unevaluated with regard to their NRHP eligibility. Because site leads are simply recorded with quarter-section site boundaries, their exact location is unknown. SWCA archaeologists did not relocate the previously recorded resources during the Class III inventory, and have determined that the sites do not occur within the current survey area. 32MN818 was previously determined to be a non-contributing portion of an eligible historic district according to the NRHP. 32MN873 is a prehistoric cairn site first recorded in 2011. The site remains unevaluated with regard to its eligibility for inclusion to the NRHP. SWCA recommends that the resource be avoided by 50 feet. 32MN1316 is a depression and stone feature. The site is of an unknown cultural or temporal nature, and remains unevaluated with regard to its NRHP eligibility. It is therefore recommended that the site be avoided by 50 feet. Plains Pipeline has avoided the resource by 50 feet by project design. Based on these inventory results, and with the above stipulations, it is recommended that a determination of *No Significant Sites Affected* and *No Historic Properties Affected* be granted for the project to proceed as planned.

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# APPENDIX A

## Previous Cultural Resource Inventories within 1 Mile of the Project Area

## Bibliographic Listing of Previous Cultural Resource Inventories within 1 Mile of the Project Area in Mountrail County, North Dakota

| Manuscript Number | Location | Title | Author | Year |
|---|---|---|---|---|
| 000080 | Section 16, T152N, R91W | Archaeological Inventory Missouri River Reach Between Fort Benton, Montana, and Sioux City, Iowa | T. Adamczyk | 1975 |
| 003376 | Section 29, T152N, R91W | Van Hook Recreation Area 300' Setback and Olson's Second Addition Survey, Mountrail County, North Dakota | V. Gnabasik | 1983 |
| 003821 | Section 30, T152N, R91W | Phase I Intensive Cultural Resource Inventory of Select Recreational Areas in the Western Portion of Lake Sakakawea, North Dakota, Dunn, McKenzie, Mountrail, and Williams Counties (Contract# DACW 45-81-C-0222) | T. Van Hoy, R. Nathan, D. Kuehn, A. Simon | 1983 |
| 04097 | Section 27, T153N, R90W | A Cultural Resource Inventory of the Soil Conservation Service's McNamera and Ehlert RAMP Sites, Mountrail County, North Dakota (UW# 921) | D. Kuehn | 1986 |
| 004690 | Sections 20, 21, 28, 29, T152N, R91W | Mountrail County Road Project CDE-M111(801)311 Cultural Resource Inventory (UW #1173A) | J. Borchert, D. Kuehn | 1989 |
| 005325 | Sections 19, 28, 29, T152N, R91W | Cultural Resource Reconnaissance of U.S. Army Corps of Engineers Land Alongside Lake Sakakawea in Mountrail County, North Dakota | R. Winham, K. Lippincott, E. Lueck | 1987 |
| 006449 | Section 22, T153N, R90W | North Dakota Department of Transportation Safety Project Cultural Resource Review 1992-1994 | J. Borchert | 1995 |
| 007363 | Section 30, T152N, R91W | Van Hook Arm Parking Lot Improvements: A Class III Cultural Resource Inventory, Mountrail County, ND | J. Morrison | 1999 |
| 010264 | Section 13, T153N, R90W | EOG Resources Wayzetta 1-13H: A Class III Cultural Resource Inventory in Mountrail County, North Dakota | E. Stine | 2007 |
| 010359 | Sections 13, 15, 22, 23, 24, 25, 26, 27, 34, 35, 36, T153N, R90W | Class III Cultural Resource Inventory of the Stanley Pipeline and Gas Plant, Mountrail Co., ND | J. Tyberg, K. Fariello | 2007 |

| Manuscript Number | Location | Title | Author | Year |
|---|---|---|---|---|
| 011246 | Section 21, T152N, R91W | Highway 23: A Class III Cultural Resource Inventory in Mountrail and Ward Counties, ND | J. Snortland | 2009 |
| 011272 | Section 19, T152N, R91W | Vixen Federal 1-19-30H and Phoenix 1-18H Well Pads and Access Road: A Class III Cultural Resource Inventory, Mountrail Co., ND | E. Anderson | 2009 |
| 011751 | Section 30, T152N, R91W | Torpedo Well Locations 1-7 and Access Road: Class III Cultural Resource Inventory, Mountrail County, ND | J. Morrison | 2011 |
| 012127 | Section 29, T152N, R91W | ARRA Broadband Initiative Project North Dakota 1105-A40, New Town and Mandaree Exchanges EZ Grant #907: A Class III Cultural Resource Inventory, Dunn, McKenzie and Mountrail Counties, ND | D. Klinner | 2011 |
| 012029 | Sections 5, 9 16, 17, 18, 19, 20, 21, 28, 29, 30, T152N, R91W | New Town Area 2 Water Supply Project: Class III Cultural Resource Inventory, Mountrail Co., ND, and Addendum | J. Morrison | 2010 |
| 012382 | Section 27, T153N, R90W | A Class III Cultural Resource Inventory, Hauge Borrow Pit, Mountrail Co., ND | R. Rothaus | 2011 |
| 012450 | Sections 4, 5, 8, 9, 16, 17, T152N, R91W | Highway 8: A Class III Cultural Resource Inventory in Mountrail Co., ND | E. Stine | 2011 |
| 012602 | Sections 19, 20, 21, 28, T152N, R91W | Class III Inventory for the Proposed Canadian Pacific New Town Siding, Mountrail County, North Dakota | M. Mueller, A. Mueller | 2011 |
| 012794 | Sections 16, 17, 18, 19, 20, 21, T152N, R91W | Highway 23 Right-of-Way Survey from New Town (RP 49.92) to the Ward County Line (RP 78.4): A Class III Cultural Resource Inventory in Mountrail County, North Dakota | B. Suess, W. Burns | 2011 |
| 013185 | Section 26, T153N, R90W | Post Construction Inspection Report for Review of the Cultural Resources at EOG VS3 Stanley for EOG/FCC NEPA Compliance, located approximately 7 Miles Northwest of Parshall, ND | S. Sabitka | 2010 |

| Manuscript Number | Location | Title | Author | Year |
|---|---|---|---|---|
| 014298 | Section 14, T153N, R90W | A Class I and Class III Cultural Resources Inventory of the Wayzetta #28-1424H, #29-1424H, and #38-1424H Well Pad and Access Road, Mountrail County, North Dakota | M. Homan | 2013 |
| 014731 | Sections 4, 5, T152N, R91W | Fox Material Source Area: A Class III Cultural Resource Inventory in Mountrail County, North Dakota | E. McCann | 2013 |

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# APPENDIX B
# (Detached)
# North Dakota Site Forms

# APPENDIX C
# Resource Location Maps