Contract Publication Series 22-309

INTENSIVE CULTURAL RESOURCE INVENTORY OF COLLECTION LINE REROUTES ASSOCIATED WITH THE ØRSTED NORTH AMERICA, INC., BADGER WIND PROJECT IN LOGAN COUNTY, NORTH DAKOTA

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by
Colin R. Ferriman, MA, RPA 15859
and Morgan Thurman, MA, RPA 5302

Prepared for

State Historical Society of North Dakota

Under contract with

DNV Energy USA, Inc.

Prepared by

cra
cultural resource analysts, inc

West Virginia | Wyoming
Indiana | Tennessee | Virginia

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CRA Project No.: Y220137

I certify the information provided in this report is correct, accurate, and meets all applicable State Historical Society of North Dakota standards.
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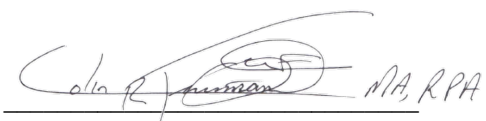

Colin R. Ferriman, MA, RPA 15859
Principal Investigator

August 2, 2022

ABSTRACT

Cultural Resource Analysts, Inc., was contracted by DNV Energy USA, Inc., to conduct a file search and an intensive cultural resource inventory of two collection line reroutes associated with the proposed Ørsted North America, Inc., Badger Wind Farm in Logan and McIntosh Counties, North Dakota. This project is supplementary and related to the Class III cultural resource inventory of the Badger Wind Project that was completed by Atwell, LLC, and a cultural resource inventory associated with project redesigns completed by Cultural Resource Analysts, Inc., in May of 2022, as well as an architectural survey also completed by Cultural Resource Analysts, Inc., in March of 2022.

The current project consists of two possible collection line reroutes that have been redesigned from the originally planned path. This intensive cultural resource inventory examined both proposed collection corridors that collectively cover 15.5 linear acres. This cultural resource inventory was completed in compliance with the National Historic Preservation Act.

Existing developments in and around the project area locations included gravel crown and ditch roads, two-track roads, fences, overhead power lines, existing buried telephone lines, historic and modern farm buildings, agricultural fields, field clearing piles, borrow pits, and modern hunting blinds.

One isolated (32LOX75) find and two non-sites were encountered in the course of this inventory. All of the resources encountered are recommended not eligible for inclusion in the National Register of Historic Places. No avoidance or further work are recommended.

On front cover:

Upper image: Overview of puddles within ephemeral drainage crossed by the southern collection line reroute looking south. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Lower image: Overview of cow herd standing near the southern collection line reroute looking north. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

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I. INTRODUCTION

Cultural Resource Analysts, Inc. (CRA), was contracted by DNV Energy USA, Inc. (DNV), to complete a cultural resource investigation of two rerouted collection line corridors associated with infrastructure redesigns for the proposed Ørsted North America, Inc., Badger Wind Project in Logan and McIntosh Counties, North Dakota. For the purposes of this report the collection lines are individually referred to as the northern collection line and the southern collection line. This project is supplementary and related to the original Badger Wind cultural resource inventory that was completed by Atwell, LLC (Atwell), in 2022 (Wilk et al. 2022), and a secondary cultural resource inventory focused on project component redesigns that was conducted by CRA in May 2022 (Thurman and Weston 2022), as well as an architectural inventory also completed by CRA in 2022 (Dickerson and Ball 2022).

For the current undertaking the project area is defined as the physical area of potential effect (APE) plus the records review study area. The records review study area includes all sections containing the proposed project components, plus a 1-mi buffer (Table 1). The physical APE is encompassed by the inventory area which is based on the proposed centerline of each collector line plus a 100 ft buffer (50 ft either side of center). The inventory areas are associated with redesigned collection line components that extend beyond previously accepted inventory. The project proponent has not decided which collection line reroute to select; therefore, both line corridors were inventoried. The northern collection line measures 0.45 mi in length and the southern measures 0.81 mi. All of the project components are located on privately owned lands. The inventory area for the northern line consisted of 5.6 linear acres and the southern line encompassed an area of 9.9 linear acres. The total inventory area for this project was 15.5 linear acres (Figure 1).

This intensive cultural resource inventory and subsequent report were completed to support compliance with the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA) prior to ground-disturbing activities associated with the proposed redesigned collection lines. Fieldwork for this project was conducted under the North Dakota 2022 Annual Permit received on December 28, 2021. Fieldwork was conducted and supervised by the principal investigator Colin R. Ferriman. Fieldwork was conducted between July 20 and 21, 2022 and consisted of pedestrian survey, shovel testing, and resource recordation.

Table 1. Project Location

Township	Range	Section(s)	Collection Line Reroute	Approximate Legal Locations	Land Ownership
133N	71W	5	North Line	SE/NE/SW/SW/SE, S2/N2/SE/SW/SE, NW/SE/SW/SE/SE, C/SE/SW/SE/SE, SE/SE/SW/SE/SE, SW/SW/SE/SE/SE	Private
133N	71W	8	North Line	E2/W2/NE/NE/NE, SW/SE/NE/NE/NE	Private
133N	71W	5	South Line	SW/SW/SW/SW/SE	Private
133N	71W	8	South Line	W2/NW/NW/NW/NE, SE/NW/NW/NW/NE, W2/SE/NW/NW/NE, E2/SE/SW/NW/NE, SW/SW/SE/NW/NE, W2/NW/NE/SW/NE, C/NE/SW/NE, N2/SE/NE/SW/NE, N2/S2/NW/SE/NE	Private
133N	71W	9	South Line	N2/S2/NW/SW/NW	Private

Project Description

The overall proposed project consists of the Badger Wind Farm and its associated infrastructure, which in its entirety covers approximately 31,514 acres (49 sq mi). This proposed project will have a nameplate capacity of up to 251.6 megawatts and consists of an array of wind turbines, each with an associated transformer. Proposed facilities include the following: up to 74 wind turbines; all-weather access roads to each turbine site; one collection substation (approximately 2 acres); underground

electrical collection lines and fiber optic cables that connect each turbine to the substation; an operations and maintenance (O&M) facility (approximately 2 acres); a temporary concrete batch plant location (up to 3 acres); a temporary marshaling yard (up to 10 acres); a temporary laydown yard (up to 15 acres); temporary turning radii; an Aircraft Detection Lighting System (ADLS) tower; up to three permanent meteorological towers (MET); and one generation transmission line that will not exceed 0.75 mi in length.

II. ENVIRONMENTAL SETTING

The current project area consists of two linear survey areas northwest of Wishek, North Dakota in Logan County. The project area is located on the eastern edge of the Southern Missouri River Study Unit, which is within the Glaciated Missouri Plateau Subsection of the Missouri Plateau Section of the Great Plains Physiographic Province (Gregg et al. 2021). Specifically, this area lies in the Upland Plains portion of the Southern Missouri River Study Unit. This area is typified by soils that developed from glacial outwash that form a thin mantle from the rim of the Missouri River Trench out onto the upland plain that lies away from the Missouri River. The uplands east of the river are characterized by rolling knob and kettle terrain punctuated by numerous pothole lakes and sloughs. This section presents the general environmental setting of the project areas (Figures 2–10).

The nearest major water source is Beaver Lake, which is approximately 1.4 mi north of the project area. Three paralleling ephemeral unnamed drainages flow northeast-southwest across the southern linear inventory corridor.

The land use in this region is split between cultivated fields, where corn, wheat, hay, and soybeans are grown, and pasture used for livestock grazing. The uncultivated areas are largely characterized by mixed prairie grass with sparse prairie shrubs and wildflowers.

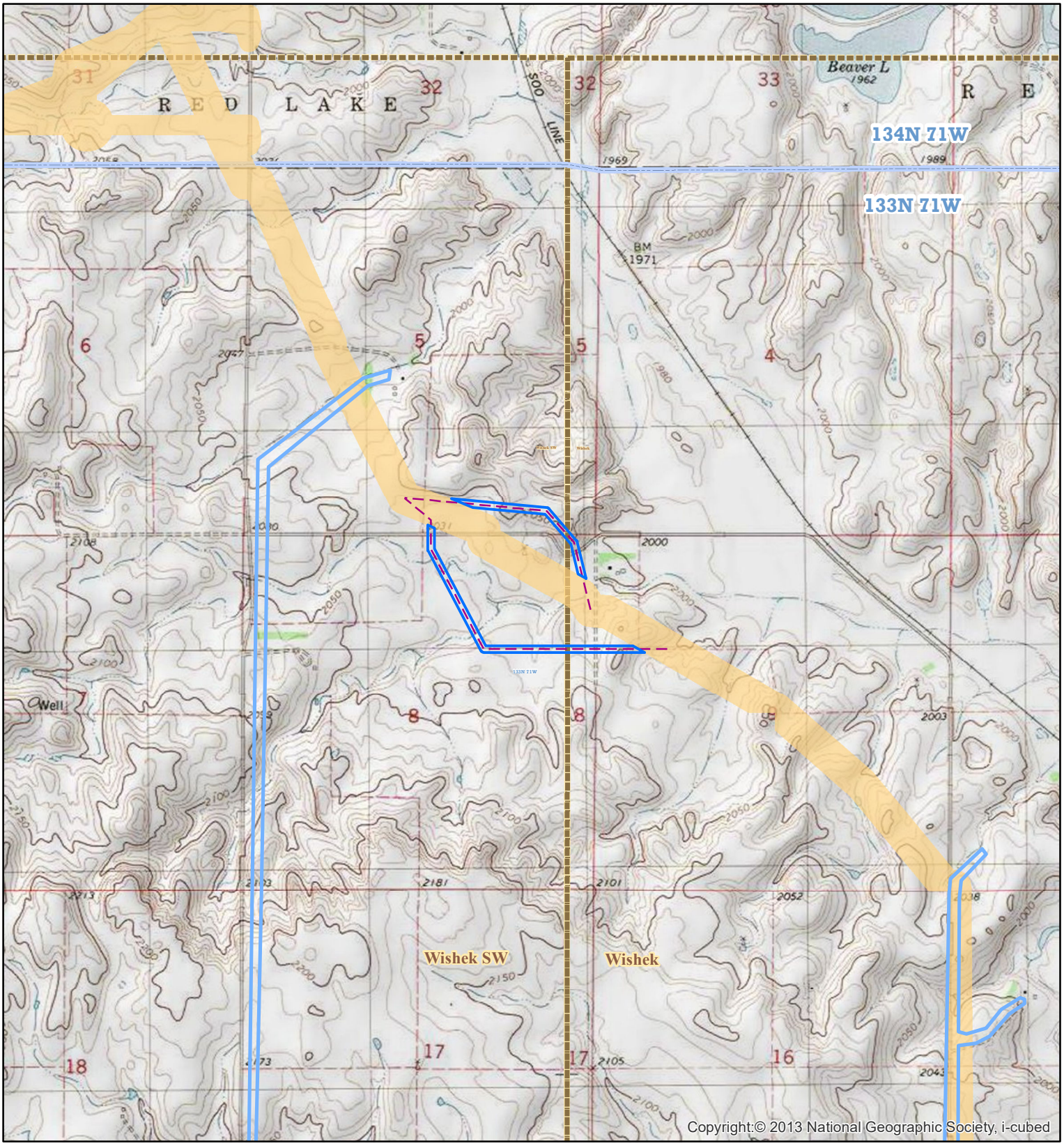
Based on the Web Soil Survey database, which is maintained by the Natural Resources Conservation Service (NRCS), sediments within the project area are generally loams overlying horizons of clay loams, with a smaller proportion of the area characterized as loams overlying gravelly or sandy loams (NRCS 2022). The most common soil series present consist of Typic Calciustolls, Typic and Pachic Argiustolls, and Typic and Pachic Haplustolls (NRCS 2022). These soils are very deep, well drained soils formed from glacial till and/or alluvium on glacial plains and moraines. CRA's field observations generally match the NRCS summations, and are discussed further in the Results section below.

Current Land Use and Existing Built Environment

Existing developments in and around the project area include gravel crown and ditch roads, two-track roads, fences, overhead power lines, existing buried telephone lines, historic and modern farm buildings, agricultural fields, field clearing piles, and modern hunting blinds. Specific existing developments pertinent to each inventory area will be summarized in the Inventory Results. The current land use for the project area is split between cultivated soybean fields and pasture land for livestock grazing.

III. CULTURAL/HISTORIC OVERVIEW

A wide variety of archaeological sites are found throughout North Dakota. These are associated with all time periods from the Paleoindian through the Historic. This project area lies on the eastern edge of the Southern Missouri River Study Unit as defined by the State Plan (Gregg et al. 2021). As a result, a generalized overview of the archaeological periods known in North Dakota is presented in this section.



Inventory Area
Collector Line
Previous Inventory (Digitized)
Previous Inventory from Atwell
Township/Range
Quadrangle

Badger Wind Project Collector Line
July 2022 Inventory

0 4,400 Feet
0 1,400 Meters

N
1:24,000
1 inch = 2,000 feet
1 inch = 610 meters

cra
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248 West Brundage St., Sheridan, Wyoming 82801
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CONFIDENTIAL

Prepared By: MAT	Date: 8/2/2022
Project Number: Y220137	Project Name: Badger Wind Project

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Coordinate System:
UTM NAD 83 Zone14N

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Figure 2. Project overview of north collection line reroute west end, looking east southeast. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Figure 3. Project overview of north collection line reroute overlooking soybean field, looking west. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Figure 4. Project overview of north collection line reroute crossing round grassy hills, looking southeast. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Figure 5. Project overview of north collection line reroute east end terminates in the below soybean field, looking south. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Figure 6. Project overview of south collection line reroute from west end, looking south. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Figure 7. Project overview of south collection line reroute where it crosses an ephemeral drainage, looking northwest. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Figure 8. Project overview of south collection line reroute from fallow cow pasture on near east end towards soybeans field, looking west. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Figure 9. Project overview of south collection line reroute from near east end, looking west across fallow cow pasture. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Figure 10. Project overview of the south collection line reroute east end terminates below fallow grassy rolling fields looking east. Photograph has not been modified. Photograph taken by Colin R. Ferriman, July 20, 2022.

Paleoindian Period (11,500–7900 BP)

Resources that date directly to the Paleoindian period are not common, but temporally diagnostic projectile points dating to this period have been identified in North Dakota. These include Agate Basin, Clovis, Cody, Folsom, Hell Gap, and Scottsbluff points (Gregg and Bleier 2016:6.37; Gregg et al. 2016:5.43; Swenson and Beier 2016:7.23). Identifiable settlement types related to this period are rare, but lithic caches and hunting sites are known, and settlement locations appear to be associated with uplands, valley rims, or valley sideslopes (Gregg and Bleier 2016:6.37).

Plains Archaic Period (8000–1500 BP)

Early Plains Archaic projectile points are similar to those of the Paleoindian period with similar lithic reduction flaking techniques, changing only with the addition of side notches. Early Archaic sites are rare with most sites dating to the Middle and Late Archaic (Gregg and Beier 2016:6.40). Oxbow, McKean, Duncan, and Hanna points represent Middle Plains Archaic components. Intact deposits dating to the Middle Archaic are the earliest components that are found consistently throughout North Dakota (Gregg et al. 2016). Late Plains Archaic components are indicated by Yonkee and Sandy Creek style points. Sites and isolated finds with diagnostic projectile points in North Dakota contain examples spanning the Early, Middle, and Late Plains Archaic periods (Gregg et al. 2016). Middle and Late Plains Archaic deposits are found in a relatively young sedimentary context, which correlates with erosion in the uplands from a subsequent drought. Plains Archaic artifacts are frequently found in upland settings, as well as in terrace and riverbank locations that were also likely occupied in later periods (Gregg et al. 2016).

Plains Woodland Period (circa 2000–450 BP)

The development of biomass spiked twice during the Plains Woodland period. This created environmentally favorable conditions that coincided with the peak of the Besant/Sonota culture of the Middle Plains Woodland period and Late Plains Woodland period to the Early Plains Village period (Gregg and Beier 2016:6.42–6.43). Sites dating to these periods are numerous in North Dakota. Ceramic technologies and evidence of trading activities associated with lithic materials are notable throughout the Middle Plains Woodland period (Gregg et al. 2016). In general, Knife River Flint was transported westward and obsidian eastward (Gregg et al. 2016).

Plains Village Period (circa 1050–350 BP)

Prior to AD 1780, hunting camps and temporary settlements were common. Field camps were established along drainages (Gregg et al. 2016). In the middle of the Plains Village period, undeveloped sediments indicate a time of drought. Correlating with these periods of drought are diminished subsistence resources and evidence of conflict between neighboring groups (Gregg et al. 2016). The first arriving European Americans noted that besides hunting, the Plains Villagers grew corn, melons, pumpkins, and beans. Several ceramic styles occurred during this period that are identified by vessel forms and types of decoration. These are associated with the Knife River phase and Scattered Village complex (Gregg et al. 2016).

Equestrian/Fur Trade Period (AD 1738–1880)

The Fur Trade and European American exploration throughout the nineteenth century brought about many changes in the traditional culture of Native American groups. The Fort Berthold Reservation was established in 1870 for the Mandan, Hidatsa, and Arikara as they moved to the area away from hostile equestrian nomadic tribes (Gregg et al. 2016). Metal tools and implements obtained via trade became integrated with traditional tools made from stone, bone, wood, shell, and clay. The gun became commonly used alongside the bow and arrow. Hunting parties set up temporary camps during different seasons of the year, and these settlements functioned as the field camps of pedestrian hunter-gatherers. Many of these locations, unless repeatedly reoccupied or marked by stone circles, probably contain little in the way of identifiable material. The horse-mounted hunting and gathering peoples subsisted on bison; however, wild plant foods, other wild animal foods, and garden produce received in exchange with settled village gardeners also were part of the diet (Gregg et al. 2016).

Intertribal trade that occurred during the Equestrian period has its beginning in pre-contact times. The Hidatsa traded with the Crow, Dakotas, Cheyenne, and others to the south and southwest (Gregg et al. 2016). Fur trade between Native Americans and European Americans within the area began circa 1826. In addition to trading, there are a number of written and ethnographic accounts of horse-mounted Native American groups using the area in what is now North Dakota, including the Assiniboine, Cheyenne, Crow, Dakota, Hidatsa, and Mandan. Fort Union and Fort Buford trading posts played a central role in supplying trade items to the nomadic groups of the region (Gregg and Beier 2016:6.50; Gregg et al. 2016:5.64).

Reservation Era (AD 1880–present)

Between 1850 and 1870, the United States government created reservations to separate the Native Americans and the influx of European American settlers. Where the Native Americans were once able to move freely, they were then restricted to designated areas. In 1887, the Dawes Act divided tribal land into individual land allotments as a means of assimilating Native Americans into European American society. By using individual land allotments as a means of breaking tribal culture, the United States government sought to cease their way of life and force conversion to Christianity, farming, and

education of children at boarding schools. Children were taken from their families and placed in boarding schools (Indian schools), such as the Fort Stevenson Indian School, Bismarck Indian School, St. Labre Indian School in Montana, and the Carlisle Indian School in Pennsylvania. At these schools, Native American students were prohibited from using their language, practices, and culture; there was a strict emphasis on assimilating to European American culture. The Dawes Act has left a negative legacy concerning the treatment and assimilation of Native American peoples (State Historical Society of South Dakota 2021).

Today, reservations have tribal governments, which administer many governmental, economic, health, welfare, and educational programs. Tribes residing on the reservations maintain a strong living culture that continues to span generations (Mandan, Hidatsa, and Arikara Nation 2012).

Homesteading in the Dakotas (AD 1860–1930)

The first homestead patent in North Dakota was filed in 1868. The homestead rush began in 1885 as a result of the extension of the Northern Pacific Railroad across the Red River from Minnesota. The discovery of deposits of lignite coal and oil and gas resources increased the number of people moving to North Dakota. The mining and oil and gas industries took hold in the 1930s. Today, these industries remain major components of the local economy. Within rural North Dakota, historic sites are typically related to early farming and ranching activities (Baer et al. 2011). In the 1920s and 1930s, as many droughts impacted the area, homesteads failed and were purchased by the Federal Government as part of the Resettlement and Bankhead Jones Acts. In North Dakota many of these tracts of land became components of the Little Missouri National Grasslands (National Park Service 2016).

IV. RESEARCH GOALS

The goals of the inventory were three-fold and developed to comply with the legal mandates of the NHPA as amended and the NEPA. The first goal was to establish if cultural resources exist that may be affected by the proposed project either directly or indirectly; the second was to determine the significance of these resources; and the third was to recommend measures that would appropriately mitigate adverse effects to significant resources.

V. METHODS

Literature Search Results

An official file search was conducted on July 19, 2022 at the Archaeology & Historic Preservation File Room at the Heritage Center and State Museum utilizing the records of the North Dakota State Historical Society (NDSHS) and State Historic Preservation Office (SHPO). This file search was conducted in order to identify any previously conducted investigations and previously recorded cultural resources that have occurred within or within 1 mi of proposed project infrastructure locations. The file search identified five manuscripts (reports) resulting from previous cultural resource investigations conducted within, or within 1 mi of the inventory area locations (Table 2). In addition, CRA in May of 2022 completed a sixth inventory that was not listed in the file search due to its recentness. This inventory focused on redesigned components of the Badger wind project and it was accepted by NDSHS on July 26, 2022 (Petersen 2022; Thurman and Weston 2022). These previous investigations occurred between 2008 and 2022 (Table 2). These previous investigations were conducted for a variety of undertakings, including communications projects, water development projects, road improvements, and wind energy infrastructure projects.

The file search originally identified two previously recorded sites and two site leads within 1 mi of the inventory area. (Table 3) (North Dakota State Historic Preservation Office 2021). The two archaeological sites consist of the Soo Line Railroad and a historic farmstead complex (32LO033 and 32LO166). The two site leads consist of the historic Sully Writing Rock/Sully Camp site (32LO0009) and a historic homestead (32LO0055).

Table 2. Previously Conducted Inventories within and near the Project Areas.

Manuscript Number	Manuscript Title	Primary Author	Year
10427	A Class Cultural Resource Inventory of the Five BEK Exchanges in Burleigh, Kidder, Logan, and Stutsman Counties, North Dakota: Regan Exchange, Wing Exchange, Tuttle Exchange Pettinbone Exchange, and Wisheck Exchange	Wade Burns	2008
14407	Logan-McIntosh-Emmons Phase 4: Expansion Project Rural Distribution Lines 2013 Class II-III Cultural Resources Inventories South Central Regional Water District, North Dakota. SCWD Contract No. 2013-3	Michael A. Jackson	2013
16882	South Central Water District SCWD 2015-1 CO3 Additional Changes: Class II and III Cultural Resource Inventories, Kidder and Logan Counties, North Dakota	Rigden A. Glaab	2016
17820	South Central Water District 2015-1 North Logan - Kidder County Pipeline (May/June 2017 Additional Changes): Class II and Class III Inventories, Kidder, Logan, and McIntosh Counties, North Dakota	Rigden A. Glaab	2018
19623	Class I Literature Review and Class II Architectural Reconnaissance Inventory for the Proposed Badger Wind Project in Logan and McIntosh Counties, North Dakota	John Dickerson and Robert Ball	2022
220020	2022 Intensive Cultural Resource Inventory of Targeted Component of the Ørsted North America, Inc., Badger Wind Project, Logan and McIntosh Counties, North Dakota	Morgan Thurman and Jason D. Weston	2022

Table 3. Previously Identified Cultural Resources near the Project Areas.

Site No.	Township/ Range	Section	Site Type	Site Description	NRHP Eligibility	Within Inventory Area / Direct APE?
32LO00033	[redacted]	[redacted]	Site	Soo Line Railroad	Unevaluated	No
32LO00166	[redacted]	[redacted]	Site	Historic Farmstead Complex	Not Eligible	No
32LOX0009	[redacted]	[redacted]	Site Lead	Sully Writing Rock/Sully Camp	Unevaluated	No
32LOX0055	[redacted]	[redacted]	Site Lead	Historic Homestead	Unevaluated	No

Historical Background Research

In addition to the file search, the background research for this project included examination of the 1883–1885 General Land Office (GLO) plat maps of the project area locations (North Dakota State Water Commission 2022). The GLO plat maps covering the project area illustrated one unnamed historic road that crossed T133N/R71W and the northeast corner of T133N/R72W. Satellite imagery from Google Earth indicates that this road has likely been destroyed by agricultural cultivation and construction of the modern road system. Additionally, no historic roads or trails were observed during the fieldwork for this project. No other manmade features or settlements were illustrated.

A search of the GLO land patent records at the (Bureau of Land Management [BLM] 2022) was conducted to identify the origins of historic occupation within or near the project area locations. The GLO Land Patent Records revealed 15 land patents issued within or near the project area. These patents were issued between 1891 and 1923 (Table 4). Three patents were issued to individuals via the 1820s Sales Cash Act and five were issued through the 1862 Homestead Act. The remaining seven patents we all issued to the Northern Pacific Railroad Company under the 1864 North Pacific Railroad Grant. The 1820 Sales Cash Act required settlers to pay in cash at the time of land purchase, but it lowered the

number of required acres to purchase from 160 to 80 and the price per acre was set at $1.25 (Clark 2011:376). The 1862 Homestead Act specified that a patent on 160 acres of land would be granted pending the land was improved and occupied for five years (Cassity 2007:23, 195). The 1864 North Pacific Railroad Land Grant specified that in exchange for the provision of twenty sections or 12,800 acres to the mile in States and double that amount in territories the Northern Pacific Railroad Company would cover the majority of the costs associated with surveying, selection, and conveying the grant lands (Schwinden 1950:27-31). The intent of this grant was to aid in the purpose of constructing an east-to-west-traversing railroad and associated telegraph line north of the 45th parallel (Schwinden 1950:22).

Based on the previously identified sites, it was expected that prehistoric sites would consist of sparse lithic scatters and stone circles. Previously identified historic sites, plat maps, and land patent records indicate that historic sites would likely consist of homesteads and early twentieth-century artifact scatters related to homesteading and farming activities. Overall site density was expected to be low. The cultural resources located near the project area locations do not suggest the presence of a prehistoric or historic district or landscape.

Table 4. GLO Land Patents within and near the Project Areas.

Township	Range	Section	Patentee	Date	Accession Number	Authority
133N	71W	8	Farnam, William L	12/11/1923	926227	1862 Homestead Act
133N	71W	8	Harter, Stella M.	5/6/1912	264157	1820 Cash Sale Act
133N	71W	8	Klein, Jacob G.	4/28/1910	127278	1862 Homestead Act
133N	71W	8	Pitterson, Etta M./Harter, Etta M.	10/5/1911	228186	1862 Homestead Act
132N	71W	7	Northern Pacific Railroad Co	12/26/1895	NDMTAA 000055	1864 Northern Pacific RR Land Grant
133N	71W	8	Pitterson, John P.	9/16/1904	ND1760.045	1862 Homestead Act
133N	71W	8	Wigren, Oscar	6/26/1917	589453	1862 Homestead Act
132N	71W	8	Weiner, Solomon	10/12/1891	ND0040.458	1820 Cash Entry Sale
132N	71W	8	Wiltman, Israel	10/12/1891	ND0040.459	1820 Cash Entry Sale
132N	71W	17	Northern Pacific Railroad Co	12/26/1895	NDMTAA 000055	1864 Northern Pacific RR Land Grant
132N	71W	21	Northern Pacific Railroad Co	12/26/1895	NDMTAA 000055	1864 Northern Pacific RR Land Grant
132N	71W	29	Northern Pacific Railroad Co	12/26/1895	NDMTAA 000055	1864 Northern Pacific RR Land Grant
133N	71W	5	Northern Pacific Railroad Co	1/11/1896	NDMTAA 000031	1864 Northern Pacific RR Land Grant
133N	71W	9	Northern Pacific Railroad Co	1/11/1896	NDMTAA 000031	1864 Northern Pacific RR Land Grant
132N	71W	30	Northern Pacific Railroad Co	5/27/1907	NDMTAA 000600	1864 Northern Pacific RR Land Grant

Survey Methodology

This intensive cultural resource inventory consisted of 15.5 linear acres. The inventory corridors for both collection line reroutes were buffered by 100 ft (50 ft either side of center) which divided the acreage between the north collection line reroute of 5.6 acres and 9.9 acres for the southern collection line reroute. Fieldwork for this inventory was undertaken on July 20 and 21, 2022, by Colin R. Ferriman, who served as principal investigator. Weather during fieldwork was hot and sunny. Surface visibility at the time of fieldwork ranged from 0 to 100 percent, with pasture areas averaging at very low visibility (approximately 10 percent), and much higher visibility in the cultivated soybean fields (approximately 60 percent). At each survey location, surface visibility was assessed to determine the need for subsurface testing.

This inventory was carried out in accordance to the North Dakota SHPO guidelines and cultural resource definitions (NDSHS 2020). Because of variable vegetation and surface visibilities, pedestrian transects were spaced no more than 10 m apart, and field personnel examined subsurface exposures, such as road cuts, drainage cuts, ant mounds, animal burrows, trails, and other disturbances, for signs of buried cultural materials. A Trimble GeoXT GPS unit with sub-meter accuracy was utilized for navigation and the mapping of cultural resources.

Artifacts were identified using common local chronologies and references standard for use in North Dakota. Cultural resources located during the inventory were recorded and photographed in accordance with the North Dakota SHPO guidelines (NDSHS 2020). All close up photographs included a visual reference or scale bar to establish the photographic scale. When possible, all artifacts were placed on a photograph mat board in the field to ensure an even non-distracting background. No artifacts were collected during this inventory.

Shovel testing was conducted in areas of dense vegetation where surface visibility averaged less than 30 percent, and where the landform had the potential for buried cultural materials to occur. Shovel tests were placed in areas where sediments appeared likely to be intact. All shovel test pits were dug in accordance with natural stratigraphic levels. All excavated sediments and/or soils were screened through 0.25-inch (0.64-cm) hardware cloth. Sediment examination during shovel testing followed an abbreviated soil analysis as outlined in the United States Department of Agriculture's (USDA) Soil Survey Manual (Soil Science Division Staff 2017). The recorded data included the moist soil color, as established by Munsell Soil Color Charts (2000), and soil texture, as defined by the Soil Survey Manual (Soil Science Division Staff 2017). Soil texture was determined by the standard wet test of sediment for ribbon development, which indicates clay, sand, and silt proportions. The presence or absence of pebbles was noted, as was the presence or absence of bedrock or subsurface cultural materials. Shovel tests were terminated upon encountering bedrock or after three culturally sterile levels. The information from the shovel test was collected on standardized shovel test forms. In order to accurately identify sediment types within the project area, archaeologists referred to the Web Soil Survey, an online database that is maintained by the NRCS (2022).

VI. INVENTORY RESULTS

One newly identified isolated find and two historic non-sites (NS) were identified, documented, and evaluated through this inventory. Additionally, 14 shovel tests were excavated in high site probability areas (i.e., on the first terraces above ephemeral drainages or in areas of low ground visibility, primarily the upland fallow fields and round grassy hills).

32LOX75

Isolated find 32LOX75 consists of a historic square clear-glass bottle base. This isolated find is located the southern edge of a low, rocky ridgeline overlooking a broad east-to-west-trending valley that is traversed by at least three ephemeral drainages (Figures redacted). Sediments consist of very gravelly sandy loams. Vegetation consists of very dense grasses and forbs, affording a ground visibility of 20 percent. The isolate is located on private lands. There were no visible impacts to the isolate. 73rd Street SE runs east-west at the base of the ridge.

The bottle base has a HAZEL-ATLAS GLASS CO. maker's mark that dates to between 1920 and 1964 (Toulouse 1971), as well as a possible serial number "3K4245." It measures 5.25-x-5.25 inches (Figure redacted). No other cultural materials were found. This isolate is wholly within the inventory area. No avoidance or further work is recommended.

Non-Sites

NS-1

NS-1 is a field clearing pile with structural and natural materials within it. The structural materials consist of cement foundation and trough components that are in a secondary dump context. The trough measures 3 ft wide at the top and 30 inches wide at the bottom, is 8 ft long, and is made from 2-inch-thick concrete. The stairs are weathered concrete measuring 5 ft long by 2.5 ft wide. The overall pile is 8 ft tall and 17 ft in diameter, consisting of about half concrete and half round field stones. Some brown ware sewer piping and a modern T-post are also located in the pile, as well as cinderblocks and yellow bricks. The pile is located in a fallow field among low, rounded, rolling hills (Figures redacted).

NS-2

NS-2 consists of two gravel borrow pits of undetermined age and function (Figures redacted). During the survey, a local farmer stopped along the road and indicated the pits likely dated to between the 1940s and the 1960s and were possibly associated with road construction and maintenance. The farmer did not give his name. No artifacts were noted. Both pits were excavated mechanically. The vegetation has overgrown the larger of the two pits, possibly indicating that it is older than the other. The smaller pit has a defined gravel talus pile devoid of vegetation. A fallen marker for a buried telephone line was observed in the area between the two pits, suggesting there could be subsurface infrastructure in the area. These pits are directly across the road from site 32LO0166, which is located approximately 40 m to the southwest (Figure redacted). No temporal or functional relation between the site (Wilk et al 2021) and the pits could be established, and it is likely these are separate, unrelated resources.

Results of Shovel Testing

The vegetation within the fallow fields and immediately to the south of the 73rd Street SE road right-of-way was dense, resulting in a surface visibility of approximately 10 percent. Therefore, in addition to examining numerous cow trails and animal burrows in these areas, a series of shovel tests were excavated. Additionally, shovel tests were excavated on the first terrace on either side of the three ephemeral drainages that are proposed to be crossed by the southern collection line reroute (Figure 19). These areas were identified as having the highest probability for a cultural resource location. These drainages primarily traversed soybean fields, and the surface visibility in these areas was variable, ranging from 40 to 100 percent.

All 14 shovel tests were negative for cultural materials (Table 5). The shovel tests placed in the low land areas and along the drainages exhibited homogenous soil profiles that had well-defined O/A horizons characterized as dark soils. The O/A horizons overlaid a lighter B horizon. Shovel tests excavated at the base, along the slopes, and on top of the rolling uplands exhibited shallow O/A horizons that contained numerous sub-angular and round gravels, as well as mottled soils. These shovel tests frequently encountered dense unsorted gravels and regolith.

Accounting for the significant amount of previous disturbance within the project area (i.e., recently tilled and planted soybean fields, the road, and other infrastructure), as well as the negative findings of the surface inventory, the negative subsurface results, and the overall low density of previously identified surrounding sites, it is unlikely that there are surface or subsurface cultural materials located within the project areas.

Table 5. Shovel Test Results

Shovel Test	Level cmbs	Description
1	0–18	10YR 2/2 very dark brown loam with thick root mat and well developed peds.
	18–50	10YR 3/3 dark brown loam friable with a few 5% round gravels
2	0–15	10YR 2/2 very dark brown loam with thick root mat and well developed peds.
	15–43	10YR 4/2 dark grayish brown clay loam
3	0–12	10YR 2/2 very dark brown clay loam with thick root mat one round surface gravel
	12–23	10YR 4/2 dark grayish brown clay loam terminated with a large round rock
4	0–20	10YR 2/2 very dark brown loam 90% mottled with 10YR 4/3 brown loam 10%
	20–37	10YR 4/3 fine sandy loam
	37–46	YRYR 5/3 brown clay loam with a few CaCO2 flecks
5	0–22	10YR 4/2 dark grayish brown sandy loam 50% mottled with 10YR 4/3 brown sandy loam 50%
	22–58	10YR 4/3 brown sand
6	0–23	10YR 2/2 very dark brown loam with well-formed peds and with 5% rounded and sub angular gravels.
	23–41	10YR 4/3 brown sand
7	0–24	10YR 2/2 very dark brown loam with thick root mat and well developed peds.
	24–31	10YR 4/2 dark grayish brown loam with a few CaCO2 flecks
8	0–21	10YR 2/2 very dark brown loam with thick root mat and well developed peds.
	21–35	10YR 4/2 dark grayish brown loam friable with a few CaCO2 flecks
9	0–21	10YR 2/2 very dark brown loam with thick root mat and well developed peds.
	21–38	10YR 4/2 dark grayish brown sandy loam
10	0–23	10YR 4/2 dark grayish brown gravelly sandy loam with 60% sub angular and round gravels and regolith
	23–34	10YR 5/2 grayish brown gravelly sandy loam with 60% sub angular and round gravels and regolith
11	0–15	10YR 2/2 very dark brown loam with a few 2% round and sub angular gravels
	15–32	10YR 4/3 brown sandy loam with 5% round and sub angular gravels
12	0–11	10YR 23/2 very dark brown gravelly sandy loam with 60% round and sub angular gravels
	11–21	10YR 4/3 brown gravelly sandy loam with 80% sub angular and round gravels and regolith
13	0–13	10YR 4/3 brown gravelly sandy loam with 80% sub angular and round gravels and regolith
14	0–37	10YR 2/2 very dark brown loam with well-formed peds
	37–59	10YR 4/2 dark grayish brown loam

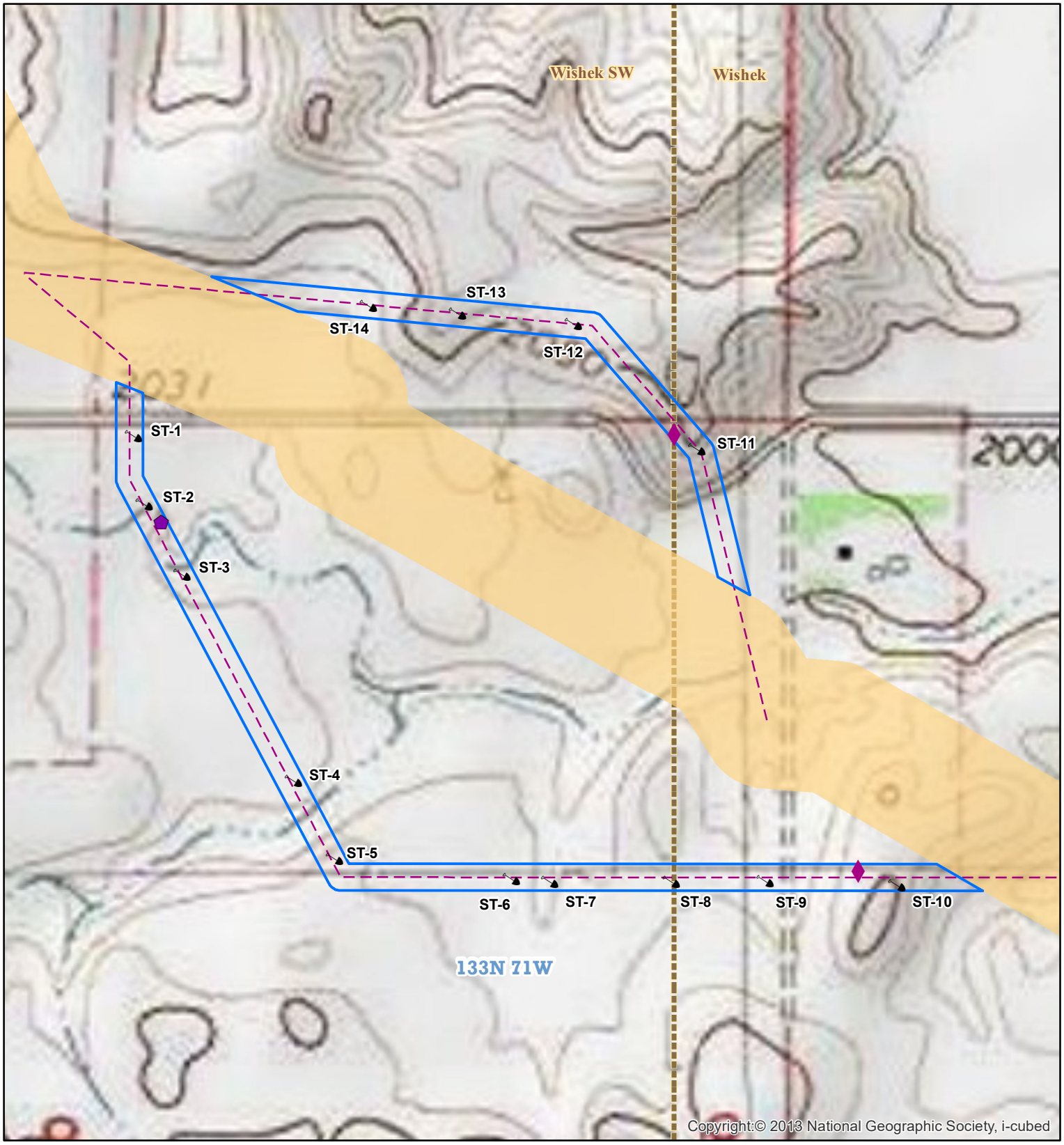
VII. CONCLUSIONS AND RECOMMENDATIONS

Based on the previously identified sites, it was expected that prehistoric sites would consist of lithic scatters and stone circles. Previously identified historic sites, plat maps, and land patent records indicate that historic sites would likely consist of homesteads and early twentieth-century artifact scatters related to homesteading and farming activities. Overall site density was expected to be low.

Weather during fieldwork was hot and sunny. Ground visibility was variable depending upon the inventory area location, ranging from 0 to 100 percent. Subsurface testing was conducted within intact sediments where surface visibility was low. No cultural materials were observed in the subsurface tests, road cuts, animal burrows, or other disturbances. Existing and past disturbances associated with construction and maintenance of the public roads and ditches, as well as agricultural activity, reduced the potential for encountering intact surface and subsurface cultural resources. This indicates a low potential for intact buried cultural materials to be present. The type of cultural resources expected during the intensive cultural resource inventory were encountered, and a low site density was observed as anticipated. Confidence in meeting the objective of the intensive cultural resource inventory is high.

Recommendations

One newly identified isolated find (32LOX75) and two non-sites (NS-1 and NS-2) were encountered during the inventory. The isolated find consists of a single HAZEL-ATLAS glass bottle base. The isolated find is recommended as not eligible for inclusion in the NRHP. No avoidance or further work is recommended.



Inventory Area
Subsurface Test
Cutbank
Rodent Burrow
Collector Line
Previous Inventory from Atwell
Township/Range
Quadrangle

Badger Wind Project Collection Line
July 2022 Inventory

Figure 11: Subsurface Tests Location Map

0 1,160 Feet
0 320 Meters

N
1:6,000
1 inch = 500 feet
1 inch = 152 meters

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Prepared By: MAT	Date: 8/3/2022
Project Number: Y220137	Project Name: Badger Wind Project

Coordinate System:
UTM NAD 83 Zone14N

For Official Use Only:
Disclosure of site locations prohibited (43 CFR 7.18)

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