

A Class I and Class III Cultural Resource Inventory of the Dickinson Renewable Diesel Facility Wind Turbine Project, Stark County, North Dakota

SEPTEMBER 2021

PREPARED FOR

One Energy Solutions, LLC

PREPARED BY

SWCA Environmental Consultants

MANUSCRIPT DATA RECORD FORM

1. Manuscript Number:
2. SHPO Reference #:
3. Author(s): Laci L. Paul
4. Title: A Class I and Class III Cultural Resource Inventory of the Dickinson Renewable Diesel Facility Wind Turbine Project, Stark County, North Dakota
5. Report Date: September 8, 2021
6. Number of Pages: 38
7. Type – I, T, E, O: I
I=Inventory; T=Formal Testing; E=Excavation; O=Other
8. List formally tested or excavated sites (not probes): N/A
9. Acres: 39.87
10. List the legal description* and study unit. For study unit assignment, use the township tables in the *State Plan*, http://history.nd.gov/hp/stateplan_arch.html.
Study Units: LM, CB, KN, HE, SM, GA, JA, GR, NR, SR, SO, SH, YE

**For inventory, formal testing and excavation projects, list the CLASS III legal locations only.*

<u>County</u>	<u>Township</u>	<u>Range</u>	<u>Sections</u>	<u>Study Unit</u>
Stark	139N	97W	15	HE

**A CLASS I AND CLASS III CULTURAL RESOURCE
INVENTORY OF THE DICKINSON RENEWABLE DIESEL
FACILITY WIND TURBINE PROJECT, STARK COUNTY,
NORTH DAKOTA**

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SWCA Cultural Resources Report No. 21-394
SWCA Project No. 67406

September 2021

ABSTRACT

This report presents the results of a Class I and Class III cultural resource inventory conducted by SWCA Environmental Consultants (SWCA) on behalf of One Energy Solutions, LLC (One Energy), for the Dickinson Renewable Diesel Facility Wind Turbine Project (project). One Energy proposes to construct five wind turbines with associated access roads and underground electrical collection lines at the existing Marathon Dickinson Refinery. The project is located on privately owned land in Stark County, North Dakota. The reviewing agency is the North Dakota State Historic Preservation Office.

The North Dakota Public Service Commission is the lead regulatory agency under the North Dakota Energy Conversion and Transmission Facility Siting Act (excluding any applicable county or local requirements). SWCA's Class I and Class III inventory assists One Energy in meeting the cultural resource requirements for their Application for a Certificate of Site Compatibility for the proposed project to be submitted to the North Dakota Public Service Commission.

The Class I inventory was conducted on June 8, 2021, and the Class III inventory was conducted on June 30 and August 26, 2021, in Section 15, Township 139 North, Range 97 West. The June 2021 Class III inventory consisted of a 400 × 400-foot area surrounding each of the five proposed wind turbine locations, 100-foot-wide corridors centered on the proposed access road alignments, and 50-foot-wide corridors centered on the proposed collector lines, as well as laydown areas and temporary workspaces. After the June inventory was conducted, SWCA received updated locations for two turbines; therefore, the August survey consisted of a 400 × 400-foot area centered on the two shifted turbine locations minus any area that had been included within the June 2021 inventory. The total inventory area consisted of 45.07 acres; 5.20 acres were not inventoried because they are located within the existing Dickinson Refinery disturbance, or due to steepness of the slope within the inventory area being incompatible with the presence of intact cultural deposits. In total, 39.87 non-overlapping acres were inventoried for the proposed project.

During the inventory, SWCA updated one site (32SK795), visually inspecting and recording two segments of the railroad within the inventory area. One Energy proposes to use a bore or directional drill to install a collection line under Segment 2 of the railroad corridor with no impact to the track or associated track bed and corridor. One Energy proposes to use the existing railroad crossing at Segment 1 to access the project. The approach and connected two-track road will be improved, but no alterations to the track bed or railroad are proposed. The proposed work will not affect the integrity of the site; therefore, no further work is recommended for either segment for the current project. SWCA recommends a finding of *No Historic Properties Adversely Affected* and 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 and visual analysis on behalf of One Energy Solutions, LLC (One Energy), for the proposed Dickinson Renewable Diesel Facility Wind Turbine Project (project). One Energy proposes to construct five wind turbines with associated access roads and underground electrical collection lines at the existing Marathon Dickinson Refinery. The project is located on privately owned land in Stark County, North Dakota. The reviewing agency is the North Dakota State Historic Preservation Office (SHPO).

The North Dakota Public Service Commission (NDPSC) is the lead regulatory agency under the North Dakota Energy Conversion and Transmission Facility Siting Act (excluding any applicable county or local requirements). SWCA's Class I and Class III inventory assists One Energy in meeting the cultural resource requirements for their Application for a Certificate of Site Compatibility for the proposed project to be submitted to the NDPSC.

The Class I inventory was conducted on June 8, 2021, and the Class III inventory was conducted on June 30 and August 26, 2021, in Section 15, Township (T) 139 North (N), Range (R) 97 West (W) (Figure 1). The June 2021 Class III inventory consisted of a 400 × 400-foot area surrounding each of the five proposed wind turbine locations, 100-foot-wide corridors centered on the proposed access road alignments, and 50-foot-wide corridors centered on the proposed collector lines, as well as laydown areas and temporary workspaces. After the June inventory was conducted, SWCA received updated locations for two turbines; therefore, the August survey consisted of a 400 × 400-foot area centered on the two shifted turbine locations minus any area that had been included within the June 2021 inventory. The total inventory area consisted of 45.07 acres; 5.20 acres were not inventoried because they are located within the existing Dickinson Refinery disturbance, or due to steepness of the slope within the inventory area being incompatible with the presence of intact cultural deposits. In total, 39.87 non-overlapping acres were inventoried for the proposed project.

For the cultural resource inventory, Michael J. Retter served as Principal Investigator. The Class III inventory was completed by SWCA archaeologist Laci L. Paul. All field notes and photographs are on file at SWCA's Bismarck, North Dakota, office under project number 67406.

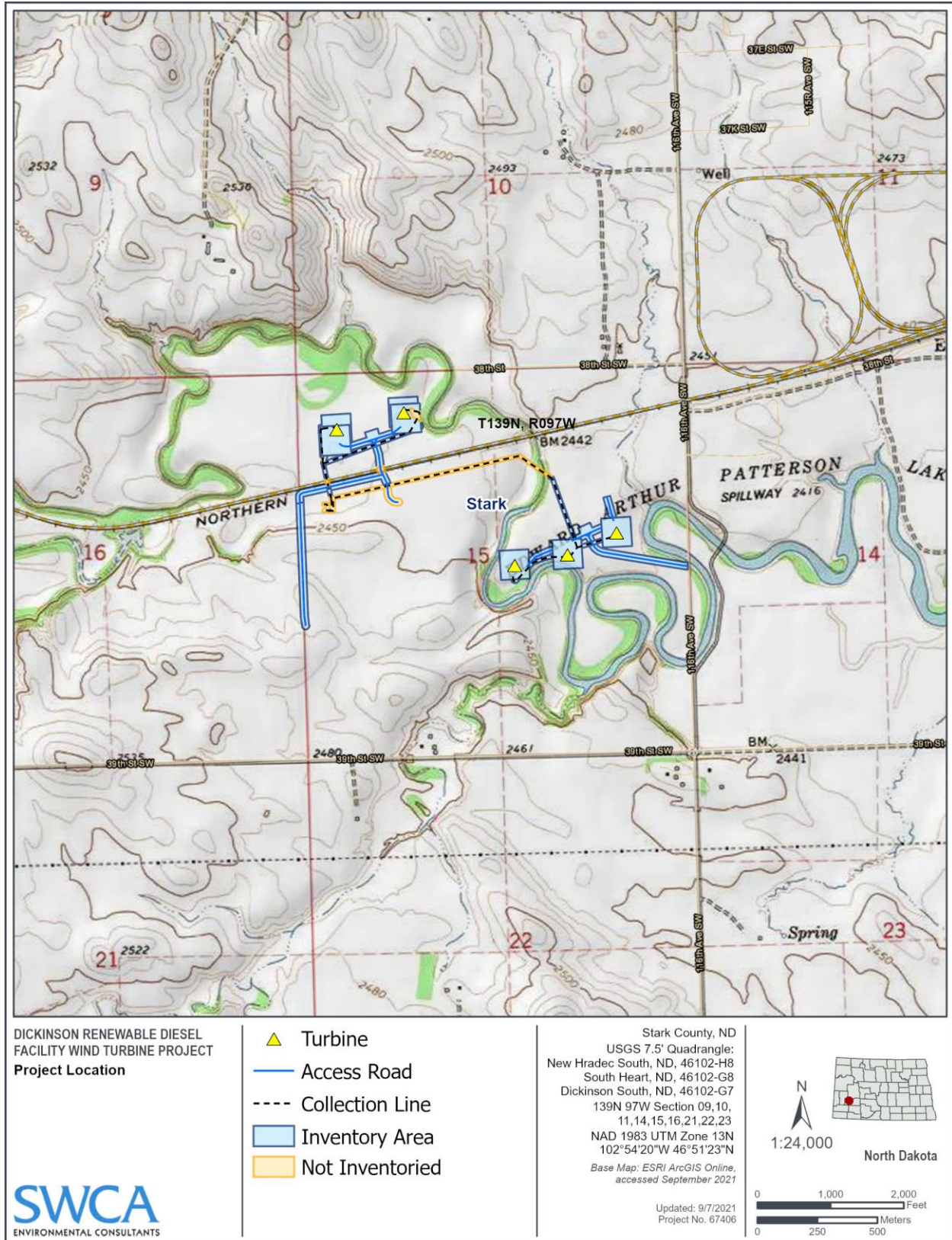


Figure 1. Project location map.

ENVIRONMENTAL SETTING

Topography

The inventory area is located in the unglaciated Missouri Plateau section of the Great Plains physiographic province in west-central North Dakota (Fenneman 1931). The unglaciated Missouri Plateau section is characterized by old plateaus, terrace lands, local badlands, and isolated mountains (Fenneman 1931). The inventory area is located within cultivated fields, rolling grasslands and a hay field that overlook the Heart River, which is located north, east, and south of the project (Figure 2).



Figure 2. Overview of the topography within the inventory area; tree line indicates the Heart River, facing northeast.

Hydrology

The inventory area is within the Heart River drainage system (North Dakota Geographic Information Systems 2021). The inventory area is drained by drainages and draws that flow into the Heart River, which meanders through the inventory area. The northern inventory area is located west of the river and the southern inventory area is located east of the river. The Heart River drains into Edward Arthur Patterson Lake west of Dickinson, approximately 1.3 miles east of the inventory area.

Geology

The geology of the inventory area is characterized by the Sentinel Butte Formation. The Sentinel Butte formation consists of gray/brown silt, sand, clay, sandstone, and lignite riparian and swamp sediments, up to 600 feet thick (Clayton 1980).

Soils

Nine soil series are present within the inventory area and Table 1 provides a summary of each series (Natural Resources Conservation Service 2020). The Arnegard loam and Havrelon Loam are the two most prominent soil types composing 71 percent of the soil within the inventory area. Arnegard Loam soils, situated on landforms characterized by slight slopes and within the inventory area as associated with alluvial flats, have the potential to contain buried archaeological deposits. Conversely, Havrelon Loams are associated with floodplain steps and are less likely to contain buried deposits due to their position away from the floodplain proper.

Table 1. Soil Series within the Inventory Area

Soil Series	Parent Material	Drainage	Slope	Percent of Inventory Area	Landform
Arnegard Loam	Loamy alluvium derived from sedimentary rock	Moderately well drained	0%–2%	33%	Alluvial flats, swales
Havrelon Loam	Fine-loamy alluvium derived from sedimentary rock	Well drained	0%–2%	38%	Floodplains steps
Havrelon, wooded-Fluvaquents complex	Alluvium	Very poorly drained	0%–2%	5%	Channels on floodplains
Manning-Schaller-Wabek	Coarse-loamy alluvium derived from sedimentary rock	Somewhat excessively drained	6%–15%	1%	Escarpments on stream terraces
Manning Fine Sandy Loam	Coarse-loamy alluvium derived from sedimentary rock	Somewhat excessively drained	2%–6%	2%	Stream terraces in river valleys
McKeen Loam	Stratified fine-loamy alluvium derived from sedimentary rock	Poorly drained	0%–1%	8%	Floodplain steps
Straw Loam	Fine-loamy alluvium derived from sedimentary rock	Well drained	0%–2%	8%	Floodplains
Vebar-Cohagen Fine Sandy Loam	Residuum weathered from sandstone	Well drained	6%–9%	3%	Hillslopes
Vebar-Parshall Fine Sandy Loams	Coarse-loamy residuum weathered from calcareous sandstone	Well drained	3%–6%	2%	Pediments

Flora and Fauna

The inventory area is situated within the northwestern Great Plains ecoregion, characterized by native grasslands over rolling plains (Figures 3 and 4) (Bryce et al. 1998). Vegetation typical to the northwestern Great Plains ecoregion includes such species as blue grama (*Bouteloua gracilis*), western wheatgrass (*Pascopyrum smithii*), little bluestem grasses (*Schizachyrium scoparium*), and prairie sandreed (*Calamovilfa longifolia*) (Bryce et al. 1998). Vegetation observed within the inventory area included such species as sweet clover (*Melilotus officinalis*), Kentucky bluegrass (*Poa pratensis*), Canada thistle (*Cirsium arvense*), prickly pear cactus (*Opuntia fragilis*), western snowberry (*Symphoricarpos occidentalis*), yarrow (*Achillea millefolium*), silver buffaloberry (*Shepherdia argentea*), fringed sagewort (*Artemisia frigida*), wild bergamot (*Monarda fistulosa*), crested wheatgrass (*Agropyron cristatum*), and goldenrod (*Solidago canadensis*).



Figure 3. Overview of the vegetation in the northern portion of the inventory area, facing northeast.



Figure 4. Overview of the vegetation in the southern portion of the inventory area, facing southeast.

Approximately 160 wildlife species are resident or seasonal visitors to the Missouri River ecosystem, and hundreds of native fish species live in the mainstem 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).

Environmental Constraints

The potential for preservation of archaeological materials within or adjacent to the inventory area is poor; the area has been heavily disturbed by modern agricultural practices, oil and gas activity, railroad infrastructure, and a buried fiber optic cable. The oil refinery situated between the north and south segments of the inventory area has impacted the area by improving roads, leveling ground surfaces, and adding additional electric lines to the inventory area. Additional impacts to the inventory area include grazing and erosion.

CULTURAL/HISTORICAL OVERVIEW

The prehistoric chronology for west-central North Dakota is typically divided into five major periods based on adaptive strategies and technological developments. These major periods are the Paleoindian, the Plains Archaic, the Late Prehistoric (which includes the Plains Woodland and the Plains Village traditions), the Protohistoric, and the Historic. At a minimum, humans have lived in western North Dakota since the end of the Pleistocene geologic epoch, based on occasional surface finds of Clovis and Folsom projectile points.

Dating of the Paleoindian period in the region ranges between 12,000 and 8,000 years before present (B.P.) (Frison 2001). The Paleoindian tradition is subdivided here into six main complexes: Clovis, Goshen, Folsom, Hell Gap/Agate Basin, Alberta/Cody, and Parallel Oblique Flaked.

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). Temporally overlapping with the Northwestern 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).

Lehmer (1971) defined the Plains Village tradition as possessing equal 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). A notable prehistoric site in Stark County near the Heart River is a multicomponent village site (32SK854), which has been recommended eligible for inclusion in the National Register of Historic Places (NRHP); however, this site does not occur near the current inventory area.

The historic chronology of western North Dakota currently contains 32 diverse themes. A representative sample includes fur trade; exploration; Native American reservations; commerce; education; energy development; farming; irrigation and conservation; and roads, trails, and highways (North Dakota State

Historic Preservation Office 2003). The characteristics of the Prehistoric and Historic periods are summarized in Figure 5.

From these overlapping series of prehistoric contexts and historical chronologies, a number of relevant and potentially relevant prehistoric and historic research themes are distillable in relation to the resource potential identified for the current inventory area. The types of prehistoric resources already identified within the area—cairns, cultural material scatters, stone circles, and isolated chipped stone—readily point to certain themes such as hunting and gathering, seasonal occupations, and possibly ceremonial activities. The types of historic sites and the historic use of the area points toward agriculture and westward expansion as the primary historic themes.

Years B.P.	Period	Climate	Characteristics	Complexes/Traditions
0	Historic	Warmer and dryer	Advent of written records	Euro-American settlement
100				
200	Protohistoric	Warmer, xeric	Euro-American trade goods introduced	Post-contact Coalescent
300				
350	Plains Archaic Tradition Plains Woodland Tradition Plains Village Tradition	Little Ice Age	Increased sedentism, horticulture, regional exchange networks with eastern populations, the elaboration of ceremonial activities and mortuary practices, mound burials, ceramics appear, small notched points, warfare	Coalescent
400				
450				
500				
550				
600		Warmer, mesic		Middle Missouri: Blackduck, Old Womans, Avonlea, Laurel, Besant
650				
700				
750				
800				
850		Warmer and xeric		Pelican Lake, McKean, Oxbow, Logan Creek/Mummy Cave
900				
950				
1,000				
1,050				
1,500				
2,000				
2,500				
3,000				
3,500				

Figure 5. Characteristics of cultural periods in North Dakota.

BACKGROUND RESEARCH

As part of the initial phase of this inventory, SWCA conducted a Class I file search of archaeological and historical literature and records for the project and surrounding 1-mile area on June 12, 2021. Researchers

searched relevant records holdings at the State Historical Society of North Dakota for information regarding previously conducted cultural resource inventories and previously recorded historic and prehistoric sites located within the 1-mile. Additionally, SWCA searched historical survey maps of the inventory area. The historic General Land Office survey map dated to 1914 shows no trails, structures, or features within the project (North Dakota State Water Commission 2021).

Based on the records search results, 12 previous cultural resource inventories and investigations were conducted within 1 mile of the project between 1980 and 2017 (Table 2). The inventories were conducted for oil and gas development of the area, including well pads, access roads, and pipelines, fiber optic cable, road and bridge improvement projects, and various reservoir and stream projects. The 12 inventories that have occurred within the 1-mile of the project have recorded an average of one resource for every 34.18 acres surveyed.

Thirty previously recorded cultural resources have been identified within 1 mile of the project and consist of six unknown Prehistoric cultural material scatter sites (32SK8, 32SK101, 32SK814, 32SK823, 32SK825, and 32SK826); three Late Prehistoric cultural material scatter sites (32SK822, 32SK824, and 32SK830); one historic railroad (32SK795); one historic railroad bridge (32SK1076); one unknown historic cultural material scatter/machinery/depression site (32SK9); two historic bridges (32SK853 and 32SK971); one unknown historic coal mine site lead (32SKX33); 12 unknown prehistoric chipped stone isolated finds (32SKX67, 32SKX68, 32SKX69, 32SKX70, 32SKX71, 32SKX192, 32SK193, 32SK194, 32SK195, 32SKX282, 32SKX283, and 32SK284); two Late Prehistoric projectile point isolated finds (32SKX66 and 32SKX72); and one Archaic projectile point (32SKX196) isolated find (Table 3). Two resources (32SK795 and 32SK1076) are recommended eligible for inclusion in the NRHP. Eight sites and one isolated find remain unevaluated for the NRHP. The remaining four sites and 15 isolated finds are not eligible for inclusion in the NRHP. 32SK795 is located within the inventory area and was revisited during the inventory.

Table 2. Previous Inventories

Manuscript Number	Location	Title	Author	Year
002772	Sections 14 and 15, T139N, R97W	A Cultural Resource Survey for Viegel Engineering, P.C., Heart River Rechannel, River Rechannel and Road Fill, Stark County, North Dakota	Rippeteau, B.	1980
004638	Section 7, T139N, R96W; Sections 11, 12, 14, 15, and 16, T139N, R97W	US Sprint Fiber Optic Cable Project Spokane, Washington to Fargo, Billings, Stark, Golden Valley, Morton, Kidder, Stutsman, Burleigh, and Cass County, North Dakota	Deaver, K	1988
004667	Sections 10, 11, 14, and 23, T139N, R97W	A Class III Cultural Resource Inventory of a Proposed 46 KV Transmission Line in Stark and Hettinger Counties, North Dakota	Persinger, R.	1988
005048	Section 7, T139N, R96W; Sections 12, 13, 14, 15, and 24, T139N, R97W	Edward Patterson Lake Cultural Resources Inventory Stark County, North Dakota	Floodman, M.	1990
006448	Sections 1, 12, 16, 22, 23, and 24, T139N, R97W	Southwest Pipeline Phase II Cultural Resources Inventory of Selected Segments, Hettinger, Slope, & Stark Counties, North Dakota: Belfield and New England Service Areas (Construction Segments 7-2 & 2-5A)	Kordecki, C.	1995
006650	Section 22, T139N, R97W	Southwest Pipeline Phase II Cultural Resources Inventory of Reroute Segments in Dunn, Hettinger, and Stark Counties, North Dakota: New Hradec, Belfield, and New England Service Areas (Construction Segments 7-1B, 7-2, and 2-5A)	Klinner, D.	1995

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Manuscript Number	Location	Title	Author	Year
008742	Sections 15 and 22, T139N, R97W	Stark County Bridge Replacement Project in Sections 15 and 22, T139N, R97W, North Dakota, Structure 45-116-11.0 UW #2418	Wermers, G.	2003
014003	Sections 15 and 16, T139N, R97W	A Class I and Class III Cultural Resource Inventory of the Dakota Prairie Refinery, Stark County, North Dakota	Picka, C.	2013
014471	Sections 3, 10, and 11, T139N, R97W	BOE Pipeline: A Class III Resource Inventory in Dunn and Stark Counties, North Dakota, Volumes 1 and 2	Robinson, A.	2013
015056	Sections 3, 10, 11, and 34, T139N, R97W	Dickinson Loop Pipeline - Addendum I: A Class III Cultural Resource Inventory for a Proposed Pipeline in Billings, Dunn, and Stark Counties, North Dakota	Stine, E.	2013
015448	Section 15, T139N, R97W	A Class I and Class III Cultural Resource Inventory of the Bridger Pipeline Heart River Bore Project for the Dakota Prairie Refinery, Stark County, North Dakota	Dunagan, T.	2014
017558	Sections 10, 11, 14, and 15, T139N, R97W	A Class I and Class III Cultural Resource Inventory of the Existing Dickinson to Calument Pipeline in Billings, Dunn, and Stark Counties, North Dakota	Hanley, R.	2017

Table 3. Previously Recorded Resources

Site Number	Site Type	Cultural Affiliation	NRHP Eligibility
32SK8	Cultural material scatter	Unknown Prehistoric	Unevaluated
32SK9	Cultural material scatter, depression, and machinery	Unknown Historic	Recommended not eligible
32SK101	Cultural material scatter	Unknown Prehistoric	Unevaluated
32SK795	Railroad	1880s Historic	Recommended eligible
32SK814	Cultural material scatter	Unknown Prehistoric	Unevaluated
32SK822	Cultural material scatter	Late Prehistoric	Unevaluated
32SK823	Cultural material scatter	Unknown Prehistoric	Unevaluated
32SK824	Cultural material scatter	Late Prehistoric	Unevaluated
32SK825	Cultural material scatter	Unknown Prehistoric	Recommended not eligible
32SK826	Cultural material scatter	Unknown Prehistoric	Unevaluated
32SK830	Cultural material scatter	Late Prehistoric	Unevaluated
32SK853	Bridge	Historic	Recommended not eligible
32SK971	Bridge	1942 Historic	Recommended not eligible
32SK1076	Railroad bridge	1800s Historic	Recommended eligible
32SKX33	Coal mine site lead	Unknown Historic	Unevaluated
32SKX66	Projectile point isolated find	Late Prehistoric	Recommended not eligible
32SKX67	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX68	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX69	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX70	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX71	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible

Site Number	Site Type	Cultural Affiliation	NRHP Eligibility
32SKX72	Projectile point isolated find	Late Prehistoric	Recommended not eligible
32SKX192	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX193	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX194	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX195	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX196	Projectile point isolated find	Archaic	Recommended not eligible
32SKX282	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX283	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible
32SKX284	Chipped stone isolated find	Unknown Prehistoric	Recommended not eligible

STATEMENT OF OBJECTIVES/RESEARCH DESIGN

Objectives

The anticipated goal of this inventory is to assist the NDPSC in the identification, evaluation, and management of identified cultural resource sites that might be affected by the proposed project. In general, the objectives of the inventory were to 1) identify cultural and historic resource sites within the inventory area; 2) make an initial recommendation regarding identified resource sites' eligibility for inclusion in the NRHP; and 3) make recommendations regarding the treatment of identified resources.

Expected Results

Small, localized prehistoric activity sites are common within the general region; however, due to the large amount of disturbance the potential for intact archaeological deposits is reduced within the inventory area. Potential for intact buried cultural deposits is highest in the northern portion of the inventory area, where grazing and a hay field are located. No significant subsurface historic resource sites are expected to be recorded as a result of this inventory. Identifiable historic resource sites, if encountered, would likely be represented by small historic material scatters associated with modern agricultural activities or road construction in the area.

FIELD METHODS

Fieldwork was designed so project archaeologists could record all appropriate and necessary data for the completion of the project report, to convey the inventory 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 inventory area using parallel linear transects with spacing not exceeding 15 meters (m). The ground surface was examined for artifacts, features, or other evidence of cultural occupation. Cut banks, eroded surfaces, and other areas with significant exposure were examined intensively throughout fieldwork.

When cultural resources are located, project archaeologists make an intensive effort to fully and accurately establish the extent and boundaries of newly identified and previously recorded sites. As such, sites are mapped using Trimble global positioning system (GPS) units with sub-meter accuracy. When detailed mapping or remapping is 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), are mapped with the Trimble GPS unit for post-processing into ArcMap 10.3 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, project personnel photograph sites in overview and for other data collection needs. Associated features and diagnostic artifacts are described, measured, and recorded using handheld GPS units and photographed, as appropriate. Field personnel note the environmental setting, context, topography, and geographical location for each cultural resource.

Site Evaluation

As standard practice, SWCA evaluates sites and their significance, as defined by the following criteria set forth in Title 36 Code of Federal Regulations 60.4 (National Park Service 1991).

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.

If a site is determined to be significant it will possess integrity of one or more of location, design, setting, materials, workmanship, feeling, and association and be determined eligible under one or more of the above-described criteria. If a site is determined to be not significant it is recommended not eligible because it does not meet the criteria of one or more of the above and it no longer possess integrity of one or more of location, design, setting, material, workmanship, feeling, and association.

Prehistoric Archaeological Sites

Prehistoric lithic scatters/campsites (sites without any structures or association with known significant events or persons) generally will not contain NRHP discussion for Criteria A, B, and C. Instead, for NRHP recommendation purposes, these properties are evaluated 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 be recommended not eligible for the NRHP from an archaeological perspective but may be considered important to cultures of Native American peoples as an event significant to that culture's history.

Evaluation of the significance of archaeological sites 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 to be significant generally contain an assemblage of cultural remains that reflects sufficient diversity to permit identification of activities and 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 structural ruins are evaluated primarily under Criteria A, B, and C. Historic trash scatters lacking associated features or structural ruins 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 allow confirmation of the period of site use. Sites with the most potential to address research questions contain associated features, structural ruins, 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 Sites or Components

Non-archaeological 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 architectural sites are evaluated as contributing or non-contributing in terms of physical and environmental integrity. Examples of historic architectural site types include linear historic features, such as transportation routes and water conduits, standing buildings, and structure sites, and potentially extend to any historic feature on an otherwise archaeological site. Historic architectural 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 architectural 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.

RESULTS

SWCA conducted an inventory of the inventory area on June 30 and August 26, 2021. Based on the density of previously identified cultural resources in relation to the amount of survey conducted within 1 mile of the project, SWCA anticipated no more than two cultural resources in the inventory area. During the inventory, SWCA personnel visually inspected, from the adjacent property, and newly recorded previously unrecorded segments of 32SK795 within the inventory area. The resource locations are illustrated in the map provided in Appendix A and copies of the North Dakota Cultural Resource Site Forms are provided in Appendix B (detached).

Vegetation within the inventory area consists of wheat row crop, sweet clover, Kentucky bluegrass, Canada thistle, prickly pear cactus, western snowberry, yarrow, silver buffaloberry, fringed sagewort, wild bergamot, crested wheatgrass, goldenrod, and other forbs and grasses typical of mixed-grass prairies. Ground surface visibility during the inventory was considered adequate to conduct pedestrian survey. Impacts to the inventory area include road improvements, a two-track road, horse grazing and trails, erosion, and nearby oil and gas development with an oil refinery situated between the northern and southern sections of the inventory area.

Previously Recorded Site

32SK795

Site Type:	Historic Railroad
Association:	1880–present
Site Size Segment 1:	24.66 × 15.24 m
Site Size Segment 2:	35.46 × 27.13 m
Surface Ownership:	Private
NRHP Recommendation:	Eligible
Management Recommendation:	No Adverse Affect/No Further Work

Site Description and Previous Recording

This update for 32SK795 consists of two east/west-trending segments of the historic Burlington Northern Santa Fe Railroad formerly known as the Northern Pacific Railway Company (Figures 6–9). Segment 2 is located approximately 0.8 mile west of where the current Burlington Northern railroad crosses 116th Ave SW and Segment 1 is approximately 0.15 mile further west on the railroad corridor in Stark County, North Dakota. All documentation for these segments was completed outside the current Burlington Northern Santa Fe right-of-way for safety purposes so the segments have been visually inspected. The site is located within rolling grassland topography, with agricultural fields to the north and an oil refinery to the south. Local vegetation consists of native prairie grasses within the railroad right-of-way. The site is in good condition. Though materials on the railroad have been updated in the recent past, the site retains overall integrity.

The two segments of railroad are part of the current Burlington Northern Santa Fe Railroad and were formerly part of the Northern Pacific Railroad. Other segments of the railroad were previously recorded in Stark County between 1988 and 2016, though this is the first recording of the current segments. In 2012, a recording was completed by SWCA on November 9 with segments of the railroad located in Sections 15 and 16, T139N, R97W. This recording recommends the railroad segments as eligible under only Criterion A, citing the importance of the railroad for western expansion and how the railroad opened remote areas of Stark County to Euro-American settlers. The location of those segments in proximity (both east and west) to the current recording demonstrate the importance of this railroad to the settlement of Stark County.

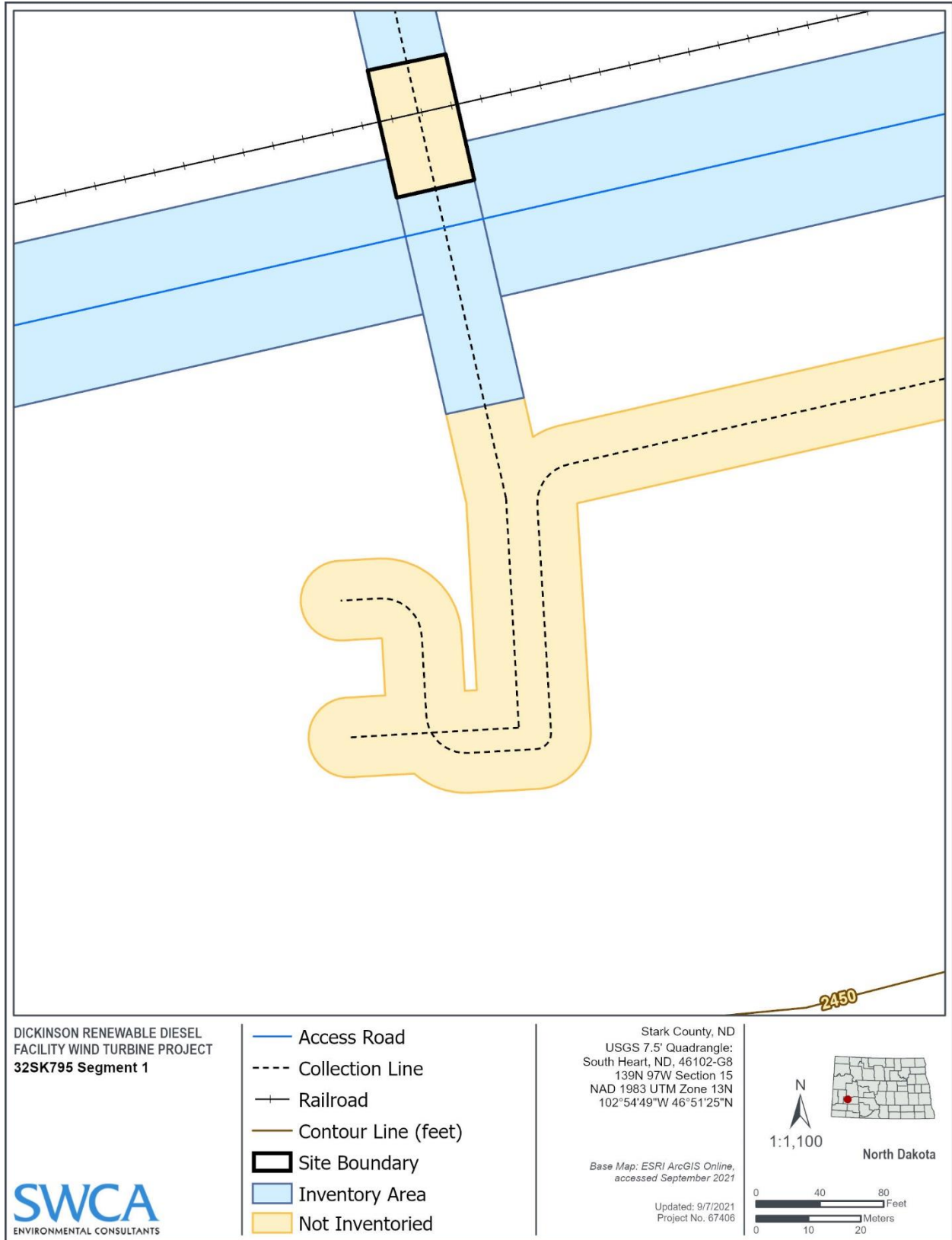


Figure 6. 32SK795 Segment 1 sketch map.

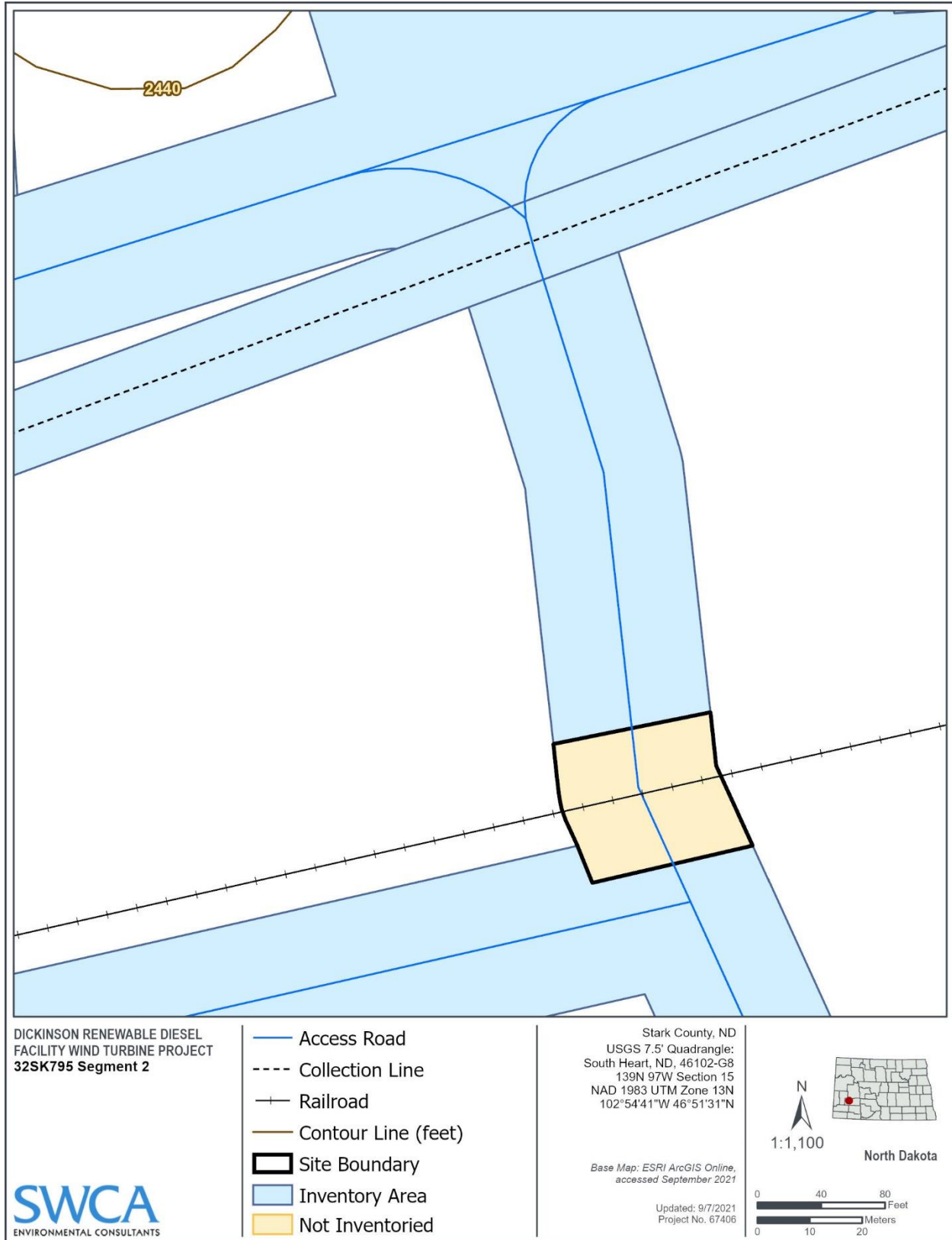


Figure 7. 32SK795 Segment 2 sketch map.



Figure 8. 32SK795 Segment 1 site overview, facing south.



Figure 9. 32SK795 Segment 2 site overview, facing north-northeast.

Survey Results

SWCA visited two segments of railroad that are part of 32SK795 on June 30, 2021. The segments appear to be in good condition and are still in use by Burlington Northern Railroad. Both segments consist of a single railroad on top of a tall berm, ranging from approximately 6 to 14 feet in height (Figures 8 and 9). The railroad consists of standard gauge, modern track on top of a bed of multi-colored granite stone (ballast) and associated river cobble subgrade berm/bed. The track consists of modern steel rail attached

to milled timber ties (sleepers). The rails along this stretch of the railroad have likely been replaced due to their appearance. Segment 1 has a built-up gravel and concrete private crossing for agricultural access. Only the portions of the railroad within the project survey corridor were recorded; however, the alignment extends beyond the survey corridor in both directions.

Historic Background

This branch of the Northern Pacific Railroad was constructed in 1880 when the Northern Pacific extended from Bismarck, North Dakota, to the Montana/North Dakota border (Schmidt and Vermeer n.d.). The Northern Pacific Railroad Company was created after a bill was signed by Abraham Lincoln in 1864 as part of a national push for transcontinental railroads to the Pacific Ocean. The Northern Pacific traverses the northern part of the country from Lake Superior to Puget Sound. Josiah Perham, a wealthy entrepreneur and an important figure in promoting the transcontinental railroad, was the first president of Northern Pacific. Perham eventually stepped down and Gregory Smith took over in 1865. Construction of the Northern Pacific Railroad began in August 1870 at Carlton, Minnesota, and reached Fargo, North Dakota, in June 1872. The line eventually reached Bismarck, North Dakota, in June 1873, but construction took a hiatus due to the Northern Pacific overextending its finances. This financial crisis caused ripples in the company, and there were three management changes within 6 years, from Gregory Smith to George Cass to Charles Wright to Frederick Billings. Under Billings, railroad construction finally resumed west from Bismarck in April 1879. The railroad eventually completed construction west of Beach, North Dakota, at the Montana/North Dakota border in November 1880 when it merged with a line heading east from the Montana Territory. The Northern Pacific enjoyed a period of great economic growth, transporting wheat, coal, cattle, and passengers. The success started a wave of branch line construction in 1882. By 1890, the Northern Pacific significantly grew by gathering numerous railroad company acquisitions and associated railroad lines. In 1893, further financial difficulties caused the Northern Pacific back into bankruptcy (Schmidt and Vermeer n.d.).

The Northern Pacific struggled through the early 1900s but continued constructing several branch lines. During World War I, the federal government temporarily nationalized the country's railroads from 1918 to 1919. After a profitable 1920s, the Northern Pacific steadily declined during the 1930s and had financial difficulties throughout the Great Depression. The United States entry into World War II helped propel the Northern Pacific to a rapid financial recovery. Post-World War II gave the Northern Pacific more financial difficulties leading to cut staff, abandoned line, and high rates. Competition with the growing trucking industry caused further changes with a transition from the steam engine to diesel. Eventually the Northern Pacific and Great Northern, among other companies, merged together in 1966 becoming the Burlington Northern Railroad (Schmidt and Vermeer n.d.).

This segment of the Northern Pacific corresponds with the development of the nearby town of Dickinson, North Dakota, originally known as Pleasant Valley. The Northern Pacific Railroad helped Dickinson to become the main trade center within a 150-mile radius (Dickinson Convention and Visitors Bureau 2021).

NRHP Eligibility Recommendation

The two segments of this branch of the Northern Pacific Railroad are eligible for inclusion in the NRHP under Criterion A for their role in opening up remote areas of Stark County for Euro-American settlement. These segments are especially significant in local and regional history for fostering the development of the town of Dickinson, North Dakota. The segments were also an influential part of greater southern North Dakota's entire railroad system. Railroads were built by corporations and not by individuals, hence no individual is associated with this segment of the Northern Pacific; therefore, the segment is not eligible under Criterion B. At the time of construction, the basic engineering methods used in the construction of a railroad were well established and, therefore, these segments do not exhibit distinctive characteristics that set them apart or represent the work of a master. Therefore, SWCA

recommends the segments not eligible under Criterion C. The railroad and its associated corridor is unlikely to yield information important in the history of the area; therefore, SWCA recommends the site not eligible under Criterion D.

Management Recommendation

32SK795 is a railroad that is recommended eligible for the NRHP. SWCA recommends that the sites be avoided by project impacts. One Energy proposes to use a bore or directional drill to install a collection line under Segment 2 of the railroad corridor and therefore will not impact the track bed or railroad. One Energy proposes to use the existing railroad crossing, which crosses Segment 1, and a connected two-track road to access the northern segment of the project. The existing two-track road will be improved, and the grade of the approach will be altered to aid in vehicle access, but no alterations to the track bed or railroad are proposed and the integrity of the site will not be affected. Therefore, SWCA recommends that the site will not be adversely affected, and no further work is recommended for this site for this project.

CONCLUSIONS

SWCA conducted a Class I and Class III inventory on behalf of One Energy in support of the proposed Dickinson Renewable Diesel Facility Wind Turbine Project in Stark County, North Dakota. During the inventory, SWCA updated one site (32SK795), visually inspecting and recording two segments of the railroad located within the inventory area. One Energy proposes to use a bore or directional drill to install a collection line under Segment 2 of the railroad corridor with no impact to the track or associated track bed and corridor. One Energy proposes to use the existing railroad crossing at Segment 1 to access the project. The approach and connected two-track road will be improved, but no alterations to the track bed or railroad are proposed. The proposed work will not affect the integrity of the site; therefore, no further work is recommended for either segment for the current project. SWCA recommends a finding of *No Historic Properties Adversely Affected* and the project to proceed as planned.

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APPENDIX A

Resource Location Map

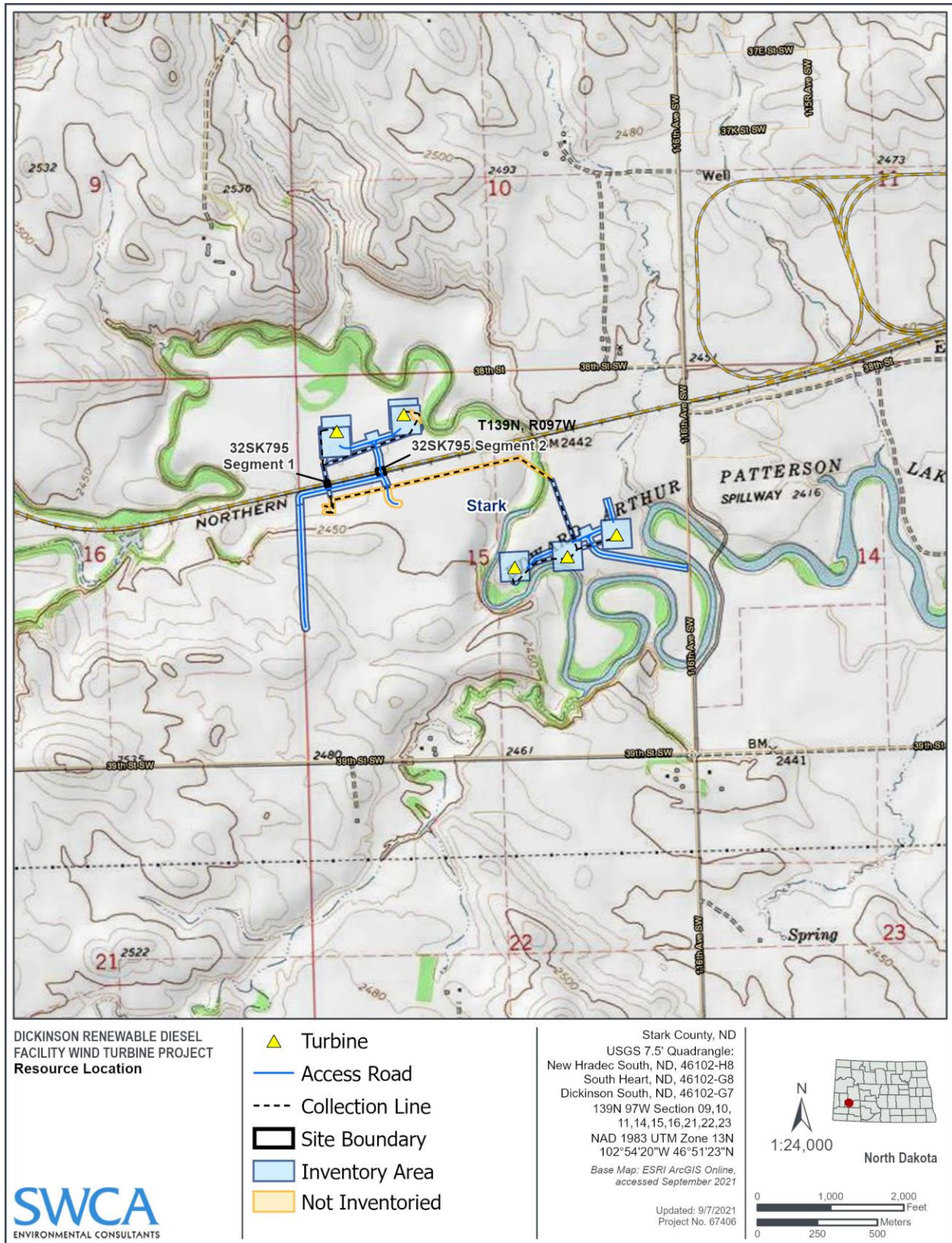


Figure A1. Resource location map at 1:24,000-scale.

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**APPENDIX B
(Detached)**

North Dakota Cultural Resource Site Forms

