



Level III Intensive Archaeological Survey for the Tatanka Ridge Wind Project

Deuel County, South Dakota

September 2019

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Deuel County, South Dakota

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Abstract

This report documents the Level III intensive archaeological survey completed by HDR on behalf of Tatanka Ridge Wind, LLC (Tatanka Ridge) for a proposed wind farm (Project) in Deuel County, South Dakota. The proposed Project will be up to 155 megawatts and will require a Large Wind Energy Conversion Systems permit from the South Dakota Public Utilities Commission (PUC). Review of this PUC permit includes review and concurrence of the Project's cultural resource work effort by the South Dakota State Historic Preservation Office (SHPO). HDR was contracted to complete a Level III intensive archaeological survey. The purpose of the Level III intensive archaeological survey was to identify archaeological resources within the Project Area that may be eligible for listing on the National Register of Historic Places (NRHP).

The Project Area includes all areas of potential ground disturbance. Components within the Project Area include wind turbines, electrical collector system, access roads, a substation, laydown yards, an operations and maintenance (OM) facility, and a transmission line. Prior to survey, HDR received GIS shapefiles of the proposed components and the boundary in which they would be contained. The Tatanka Ridge Boundary encompasses all PSDARProject components and this boundary was used to submit the South Dakota Archaeological Research Center (SDARC) Record Search request.

Record searches were conducted for the Project through SDARC in August and September 2018 and February 2019. Record searches focused on previously inventoried architectural structures, bridges, cemeteries, and previously identified archaeological sites within the Study Area, defined as the Tatanka Ridge Boundary plus a 1-mile buffer. According to files received, there are 40 previously identified archaeological sites, 18 previously inventoried architectural structures, one previously inventoried cemetery, and four previously inventoried bridges within the Project Study Area. Of these previously identified cultural resources, five of the archaeological sites, and none of the architectural structures, cemeteries, or bridges, intersect the current Project Area. In addition, the records search identified 13 previous surveys within the Study Area, four of which intersect the current Project Area.

In October and November 2018, and May and June 2019, HDR archaeologists conducted a Level III intensive archaeological survey of the Project Area. The 2018 surveyed areas represent a former Project layout with some components that are not included in the current Project Area. From 2018 to 2019, a total of 2,722 acres were surveyed. During the survey, six new archaeological sites were identified and eight previously identified sites were revisited. A summary of results is provided in the table below.

Of the six newly identified sites, four (39DE0146, 39DE0147, 39DE0148, 39DE0149) are Native American isolated finds and two are Native American artifact scatters. In South Dakota, isolated finds are considered not eligible for the NRHP. If SHPO concurs that these four sites are isolated finds and as such are not eligible for the NRHP, then no further work is recommended under the current Project design. The two newly identified Native American artifact scatters (39DE0150 and 39DE0151) are unevaluated for the NRHP and avoidance of these two sites is recommended. If sites 39DE0150 and 39DE0151 cannot be avoided by Project impacts, then evaluation is recommended to determine their NRHP eligibility.



In addition, eight previously identified sites were revisited. Of the previously identified sites, four sites (39DE0049, 39DE0092, 39DE0097, 39DE0108) are Native American artifact scatters, two sites (39DE0102, 39DE0107) are documented as Native American artifact scatters but can be considered Native American isolated finds, and two sites (39DE0101, 39DE0109) are Native American stone feature sites. Because of changes in Project design, sites 39DE0092 and 39DE0108 no longer intersect the Project Area; therefore, no further work is recommended for these two sites under the current Project design. The two Native American isolated finds (39DE0102, 39DE0107) are recommended not eligible for the NRHP. If SHPO concurs that these two sites are isolated finds and as such are not eligible for the NRHP, then no further work is recommended under the current Project design.

The remaining four previously identified sites are considered unevaluated for the NRHP. Of these, one site (39DE0049) consists of a Native American artifact scatter for which a location was not precisely mapped during the original recordation. HDR's investigations within the Project Area encountered no evidence of 39DE0049. As such, no further survey work within the site boundary is recommended under the current Project design. For unevaluated site 39DE0097 (also a Native American artifact scatter), avoidance of Project impacts is recommended. If site 39DE0097 cannot be avoided, then evaluation is recommended to determine the site's NRHP eligibility. For the two unevaluated, previously identified Native American stone feature sites (39DE0101, 39DE0109), HDR recommends avoidance of Project impacts to the site and a 50-foot buffer. If these two sites and the recommended 50-foot buffers cannot be avoided, then evaluation is recommended to determine NRHP eligibility.

This report presents the environmental and historical contexts, the background research, objectives, methods, fieldwork results, and management recommendations for the Level III intensive archaeological survey.



Summary of results and recommendations

Site no.	HDR field no.	Site type	NRHP recommendation	Management recommendation
39DE0146	HDR-002A	Native American isolated find	Not eligible	If SHPO concurs the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.
39DE0147	HDR-003A	Native American isolated find	Not eligible	If SHPO concurs the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.
39DE0148	HDR-004A	Native American isolated find	Not eligible	If SHPO concurs the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.
39DE0149	HDR-005A	Native American isolated find	Not eligible	If SHPO concurs the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.
39DE0150	HDR-007A	Native American artifact scatter	Not evaluated	Avoidance of Project impacts to site 39DE0150 is recommended. If the site cannot be avoided, evaluation is recommended to determine NRHP eligibility.
39DE0151	HDR-001B	Native American artifact scatter	Not evaluated	Avoidance of Project impacts to site 39DE0151 is recommended. If the site cannot be avoided, evaluation is recommended to determine NRHP eligibility.
39DE0049	N/A	Native American artifact scatter	Not evaluated	Project impacts to the site are not anticipated if impacts are limited to the Project Area as surveyed. If the Project Area within the site boundary is revised, archaeological survey of the revised Project Area is recommended.
39DE0092	N/A	Native American artifact scatter	Not evaluated	No impacts under the current Project design. If future Project impacts are anticipated to this site, evaluation is recommended to determine NRHP eligibility.
39DE0097	N/A	Native American artifact scatter	Not evaluated	Avoidance of Project impacts to site 39DE0097 is recommended. If the site cannot be avoided, evaluation is recommended to determine NRHP eligibility.
39DE0101	N/A	Native American stone circle	Not evaluated	Avoidance of Project impacts to site 39DE0101 and a 50-foot buffer is recommended. If site 39DE0101 and the 50-foot buffer cannot be avoided, evaluation is recommended to determine NRHP eligibility.



Site no.	HDR field no.	Site type	NRHP recommendation	Management recommendation
39DE0102	N/A	Native American artifact scatter	Not eligible	If SHPO concurs the site is not eligible for the NRHP, HDR recommends no further work and Project plans can proceed as designed.
39DE0107	N/A	Native American artifact scatter	Not eligible	If SHPO concurs the site is not eligible for the NRHP, HDR recommends no further work and Project plans can proceed as designed.
39DE0108	N/A	Native American artifact scatter	Not evaluated	No impacts under the current Project design. If future Project impacts are anticipated to this site, evaluation is recommended to determine NRHP eligibility.
39DE0109	N/A	Native American stone circle, unknown alignment, unknown cairn	Not evaluated	Avoidance of Project impacts to site 39DE0109 and a 50-foot buffer is recommended. If site 39DE0109 and the 50-foot buffer cannot be avoided, evaluation is recommended to determine NRHP eligibility.



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1.0 Introduction

This report documents the Level III intensive archaeological survey completed by HDR on behalf of Tatanka Ridge Wind, LLC (Tatanka Ridge) for a proposed wind farm (Project) in Deuel County, South Dakota (**Figure 1**). The proposed Project will be up to 155 megawatts and will require a Large Wind Energy Conversion Systems permit from the South Dakota Public Utilities Commission (PUC). Review of this PUC permit includes review and concurrence of the Project’s cultural resource work effort by the South Dakota State Historic Preservation Office (SHPO). HDR was contracted to complete a Level III intensive archaeological survey. The purpose of the Level III intensive archaeological survey was to identify any archaeological resources within the Project Area that may be eligible for listing on the National Register of Historic Places (NRHP).

The Project Area includes all areas of potential ground disturbance. Components within the Project Area include wind turbines, electrical collector system, access roads, a substation, laydown yards, an operations and maintenance (OM) facility, and a transmission line. Areas surveyed include: 62 proposed turbine locations (500-foot buffer around the proposed turbine locations); approximately 19 miles of associated access roads at 100 feet wide (50 feet to either side of the centerline); 87 miles of collector system at 100 feet wide (50 feet to either side of the centerline); 25 miles of crane paths at 100 feet wide (50 feet to either side of the centerline); two 10-acre laydown areas; one approximately 3-acre substation area; and one 5-acre OM area. In addition, the surveyed Project Area also includes approximately 6 miles of transmission line corridor (100 feet wide [50 feet to either side of the centerline]). The Project Area is 2,722 acres (**Table 1**).

Table 1. Project Area legal description

Township	Range	Sections
114N	50W	24–26, 36
114N	49W	19, 26, 29–36
114N	48W	31
113N	50W	1, 12
113N	49W	1–16, 22-23
113N	48W	5–10, 15–22

Prior to survey, HDR received GIS shapefiles of the proposed components and the boundary in which they would be contained. The Tatanka Ridge Boundary encompasses all Project components and this boundary was used to submit the South Dakota Archaeological Research Center (SDARC) Record Search request.

Record searches were conducted for the Project through SDARC in August and September 2018 and February 2019. Record searches focused on previously inventoried architectural structures, bridges, cemeteries, and previously identified archaeological sites within the Study Area, defined as the Tatanka Ridge Boundary plus a 1-mile buffer. According to files received, there are 40 previously identified archaeological sites, 18 previously inventoried architectural structures, one previously inventoried cemetery, and four previously inventoried bridges within the Project Study Area. Of these previously identified cultural resources, five of the

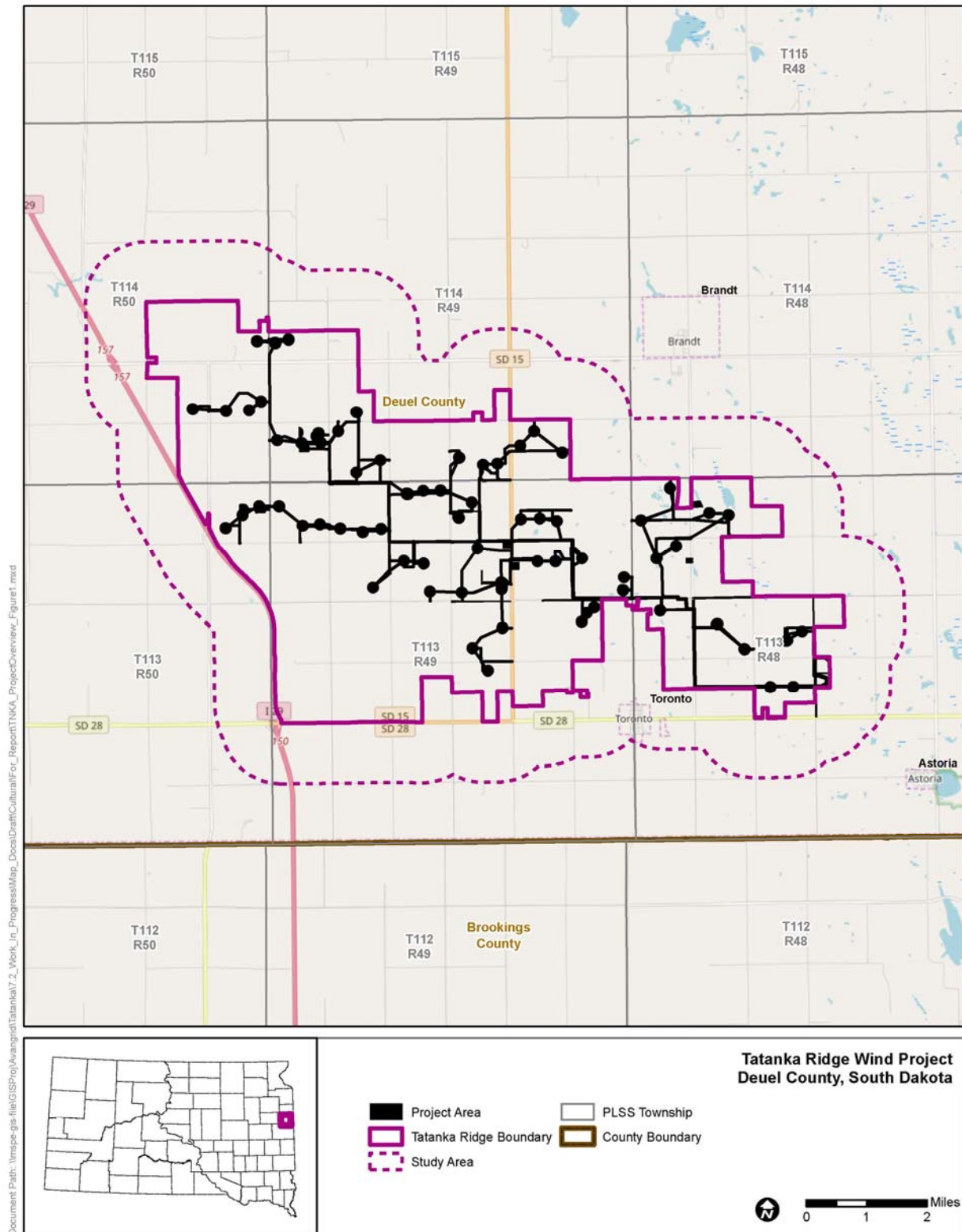


archaeological sites, and none of the architectural structures, cemeteries, or bridges, intersect the current Project Area. In addition, the records search identified 13 previous surveys within the Study Area, four of which intersect the current Project Area.

A Level III intensive archaeological survey, consisting of a pedestrian survey and shovel testing, was conducted within the Project Area to identify any new or previously identified archaeological resources eligible for listing on the NRHP. The Level III intensive archaeological survey was performed over the course of multiple mobilizations in October and November 2018, and in May and June 2019. The 2018 surveyed areas represent a former Project layout with some components that are not included in the current Project Area. Erika Eigenberger served as the cultural lead for the Project and Dylan Eigenberger served as the Principal Investigator. Fieldwork was performed by principal investigator Dylan Eigenberger and archaeologists Michelle Bramsen, Michael Justin, and Pamela Flynn, as well as field technicians Hannah Hensley, Lacy Smith, Katie Lueth, and Melissa Breyer. Erika Eigenberger and Dylan Eigenberger meet the Secretary of the Interior's Professional Qualification Standards for Archaeology as published in 36 CFR 61.

This report presents the environmental and historical contexts, the background research, objectives, methods, fieldwork results, and management recommendations for the Level III intensive archaeological survey.

Figure 1. Project overview



2.0 Record Search

Prior to conducting fieldwork, HDR conducted record searches for the Project through SDARC. HDR contacted SDARC on August 4 and September 4, 2018, and February 22, 2019, to acquire data for previously identified archaeological sites, miscellaneous cultural features, and surveys, as well as previously inventoried bridges, cemeteries, and structures within the Study Area, defined as the Tatanka Ridge Boundary plus a 1-mile buffer. On August 10 and September 5, 2018, and February 25, 2019, SDARC provided files to HDR. In addition to the cultural resources records search, HDR reviewed nineteenth-century General Land Office (GLO) maps corresponding with the Study Area.

2.1 Previous Cultural Resources Investigations

The cultural resources record search identified 13 cultural resources surveys within the Study Area (**Table 2** and **Appendix A**). Previous surveys were conducted for pipelines, communications towers, a transmission line, a highway project, a culvert replacement, an agricultural waste system, an underground cable, a wind farm, a dam project, and a shelterbelt project. Four of the previous surveys intersect the Project Area (**Table 2**). The majority of the Project Area has not been surveyed previously.

Table 2. Previous cultural resources investigations in Study Area

Report date	Report number	Report title	Author(s)
1984	ADE-0006	Archaeological Survey of Four Areas Near Brandt, Relating to a Proposed Underground Cable Installation, Deuel County, South Dakota	Winham, R. Peter
2004	ADE-0042	A Level III Cultural Resource Letter Report for a Shelterbelt Project, T113N, R48W, Section 22, Deuel County, South Dakota. Project No. 04DE076	Vaillancourt, Dana R.
2005	ADE-0045	A Level III Cultural Resource Letter Report for an Agricultural Waste System, T113N, R48W, Section 22, Deuel County, South Dakota. Project No. 05DE020	Vaillancourt, Dana R.
2008	ADE-0060	Level III Cultural Resources Inventory for the Rural Cellular Communications Brandt Rawland Communication Tower, Deuel County, South Dakota. Project No. SD0817SFR	Dorrance, Brett
2010	ADE-0061	Reconnaissance Cultural Research Investigation for the Mike Gorder Dam and Dugout, T114N, R50W, Section 14, Deuel County, South Dakota	Williams, Barry G.
2017	ADE-0069*	Class III Survey Report for 17.SD.PFW.051 Tony Quail Pipeline System Project Cultural Resources Inventory, Deuel County, South Dakota. A Class III Survey Report	Springer, Karri L.



Report date	Report number	Report title	Author(s)
2018	ADE-0071	An Intensive Cultural Resources Survey SDDOT Culvert Replacement Project P 0028(41)365, PCN 05UC, Deuel County, South Dakota. CIS No. 3154	Vogt, Cassie
2018	ADE-0073	A Level III Cultural Resources Survey for a Communications Tower at T113N R49W Section 14, Deuel County, South Dakota	Downing, Patricia
2010	ADE-0074*	Field Report: Intensive Level III Archaeological Survey of Iberdrola Renewable's Proposed Buffalo Ridge 3 Wind Farm Project in Deuel County, South Dakota	Florin, Frank
1973	ESD-0001*	An Archaeological Survey of the Proposed Watertown, South Dakota – Merville, Iowa 345 KV Transmission Line 1973, Brookings, Codington, Deuel, Lincoln, Minnehaha, Moody and Union Counties, South Dakota. Contract No. CX6000-3-0071	Sigstad, John S.
1982	ESD-0094*	Cultural Resource Investigations of the South Dakota Segment of the Northern Border Pipeline Project	Apley, Judith, Everett M. White, Robert A. Alex, Katherine Winham, Ben Rhodd, Charles E. Orser, Jr., Timothy Nowak, David B. Miller, Edward Lueck, Stephen Keller, Renee Keller, Thomas W. Haberman, Marie E. Brown, Kenneth L. Brown, Philip R. Bjork, Larry J
1990	ESD-0122	An Intensive Cultural Resources Survey of Sections of Three Proposed Northwestern Public Service Gas Pipeline Projects in Eastern South Dakota, Brown, Day, Spink, Grant, Deuel, Hamlin, Davison and Hutchinson Counties	Winham, R. Peter, William Ranney, and Timothy V. Gillen
2008	ESD-0407	An Intensive Cultural Resources Survey of SDDOT Project No. IM 029-5(31)141 PCN 6564, Four Staging Sites in Deuel and Brookings Counties, South Dakota. CIS No. 2186	Bruce, Terri

*Intersects Project Area

2.2 Previously Identified Archaeological Sites

According to files received from SDARC, there are 40 previously identified archaeological sites within the Study Area (**Table 3** and **Appendix A**). Of the 40 sites in the Study Area, 35 are prehistoric Native American, two are historic Euro-American, two are multi-component



(containing both prehistoric and historic artifacts and/or features), and one is of unknown cultural affiliation. Of the 40 sites in the Study Area, two have been determined not eligible for the NRHP; of the remaining 38 sites, 37 are unevaluated for the NRHP and one is unknown.

Six of the previously identified sites intersect the Project Area as currently defined (**Table 3**). These intersecting sites include four Native American artifact scatters (39DE0049, 39DE0097, 39DE0102, and 39DE0107), one Native American stone circle (39DE0101), and one site consisting of a Native American stone circle and an alignment, and cairn of unknown cultural affiliation (39DE0109). The six sites intersecting the Project Area are unevaluated for the NRHP.

Table 3. Previously identified archaeological sites in Study Area

Site no.	Site type	Township	Range	Section	NRHP recommendations/ comments
39DE0014	Historic farmstead; Euro-American artifact scatter and depression; Native American artifact scatter; Native American stone circle; Native American alignment; unknown cairn	113N	48W	20	Unevaluated
39DE0032	Native American artifact scatter	114N	50W	23	Unevaluated
39DE0033	Native American stone circle	114N	50W	23	Unevaluated
39DE0034	Native American artifact scatter	114N	50W	24	Unevaluated
39DE0035	Native American artifact scatter	114N	49W	32	Unevaluated
39DE0036	Native American artifact scatter	113N	49W	2	Unevaluated
39DE0037	Native American artifact scatter	113N	49W	1	Unevaluated
39DE0038	Native American artifact scatter	113N	48W	17	Unevaluated
39DE0039	Native American artifact scatter	113N	48W	16	Unevaluated
39DE0040	Archaic artifact scatter	113N	48W	25	Unevaluated
39DE0041	Native American artifact scatter	113N	48W	23	Unevaluated
39DE0044	Native American artifact scatter	114N	50W	23	Unevaluated
39DE0047	Native American artifact scatter	113N	48W	22	Not eligible
39DE0049*	Native American artifact scatter	113N	48W	7	Unevaluated
39DE0092	Native American artifact scatter	113N	49W	13	Unevaluated



Site no.	Site type	Township	Range	Section	NRHP recommendations/ comments
39DE0093	Native American artifact scatter	113N	49W	13	Unevaluated
39DE0094	Native American artifact scatter	113N	49W	23	Unevaluated
39DE0095	Native American artifact scatter	113N	49W	15	Unevaluated
39DE0096	Native American artifact scatter	113N	49W	15	Unevaluated
39DE0097*	Native American artifact scatter	113N	48W	20	Unevaluated
39DE0098	Native American cairn; Native American alignment	113N	48W	20	Unevaluated
39DE0099	Native American artifact scatter	113N	49W	15	Unevaluated
39DE0100	Native American artifact scatter	113N	48W	8	Unevaluated
39DE0101*	Native American stone circle	113N	48W	20	Unevaluated
39DE0102*	Native American artifact scatter	113N	48W	17	Unevaluated
39DE0103	Native American artifact scatter	113N	48W	8	Unevaluated
39DE0104	Native American artifact scatter	113N	48W	8	Unevaluated
39DE0105	Native American artifact scatter	113N	49W	13	Unevaluated
39DE0106	Native American artifact scatter; Euro-American artifact scatter; unknown cairn	113N	48W	18	Unevaluated
39DE0107*	Native American artifact scatter	113N	48W	17	Unevaluated
39DE0108	Native American artifact scatter	113N	48W	18	Unevaluated
39DE0109*	Native American stone circle; unknown alignment; unknown cairn	113N	48W	17	Unevaluated
39DE0110	Native American artifact scatter	113N	48W	17	Unevaluated
39DE0111	Native American artifact scatter	113N	48W	17	Unevaluated
39DE0112	Native American artifact scatter	113N	48W	17	Unevaluated
39DE0113	Native American artifact scatter	113N	48W	17	Unevaluated
39DE0122	Native American isolated find	113N	48W	15	Not Eligible



Site no.	Site type	Township	Range	Section	NRHP recommendations/ comments
39DE0123	Unknown cairn	113N	48W	27	Unevaluated
39DE0126	Historic farmstead; Euro-American artifact scatter	113N	48W	22	Unevaluated
39DE0129	Euro American artifact scatter	114N	48W	33	Unknown

*Intersects Project Area

2.3 Previously Inventoried Architectural Structures

SDARC's files revealed 18 previously inventoried architectural structures within the Study Area (**Table 4** and **Appendix A**). Architectural structures include farmsteads, agricultural buildings, churches, homes, a commercial building, a culvert, and a school. Of the 18 architectural structures, four are eligible for the NRHP and the remaining 14 have been determined not eligible. None of the architectural structures intersect the Project Area.

Table 4. Previously inventoried architectural structures in Study Area

SHPO no.	Property name/type	Township	Range	Section	NRHP status
DE00000008	Blom Prairie Lutheran Church	113N	48W	19	Eligible
DE00000009	House	113N	48W	30	Not Eligible
DE00000010	House	113N	48W	30	Not Eligible
DE00000067	Granary	114N	50W	35	Not Eligible
DE00000071	Blom Prairie Church Parsonage	113N	48W	30	Not Eligible
DE00000072	House	113N	48W	30	Not Eligible
DE00000073	House	113N	48W	30	Not Eligible
DE00000074	House	113N	48W	30	Not Eligible
DE00000075	House	113N	48W	30	Not Eligible
DE00000076	House	113N	48W	30	Not Eligible
DE00000077	House	113N	48W	19	Not Eligible
DE00000078	Café and Bar/Post Office	113N	48W	30	Eligible
DE00000087	Barn	113N	49W	13	Not Eligible
DE00000088	Farmstead	114N	49W	28	Not Eligible
DE00000090	Culvert	113N	48W	3	Not Eligible
DE00000094	Zion Evangelical Lutheran Church	114N	50W	27	Not Eligible
DE00000104	Farmstead	114N	50W	2	Eligible
DE00000107	Roosevelt School, District No. 14	113N	49W	14	Eligible

2.4 Previously Inventoried Cemeteries

The files provided by SDARC revealed the presence of one previously inventoried cemetery within the Study Area (**Table 5** and **Appendix A**). The cemetery has been determined not eligible for the NRHP. The cemetery does not intersect the Project Area.

Table 5. Previously inventoried cemeteries in Study Area

SHPO no.	Resource type	Township	Range	Section	Name	NRHP status
DE00000108	Cemetery	114N	49W	18	Roos Family Cemetery	Not Eligible

2.5 Previously Inventoried Bridges

The files provided by SDARC revealed the presence of four previously inventoried bridges within the Study Area (**Table 6** and **Figures 2.1–2.16**). One bridge is eligible and the remaining three bridges have been determined not eligible for the NRHP. None intersect the Project Area.

Table 6. Previously inventoried bridges in the Study Area

SHPO no.	Structure type	Township	Range	Section	Construction date	NRHP status
DE00000166	Steel slab bridge	114N	50W	35	c. 1940	Not Eligible
DE00000167	Box culvert	113N	50W	19	1940	Eligible
DE00000168	Steel girder bridge	113N	49W	19	1970	Not Eligible
DE00000170	Concrete T-beam culvert	113N	49W	21	1941	Not Eligible

2.6 Previously Identified Miscellaneous Cultural Resources

No miscellaneous cultural resources were identified during the records search.

2.7 General Land Office Research

Nineteenth-century GLO survey plat maps corresponding to the Study Area were reviewed in August 2018 and again in June 2019. Maps were accessed online through the Bureau of Land Management website at <http://www.gloreCORDS.blm.gov/>. The GLO survey maps were examined to identify areas that may have potential to contain historical era cultural resources.

Archaeological sites may be present where historical resources have been documented on the GLO maps. The GLO review identified no cultural (i.e., human-made) features in the Study Area.

2.8 Environment

The Project Area is located within the Coteau des Prairies physical division of the Central Lowlands physiographic region of the Great Plains (Malo 1997). The Coteau des Prairies is a highland area between the Minnesota River-Red River Lowlands to the east and the James River Lowland to the west. It is the most conspicuous landform in eastern South Dakota and is

part of a plateau that extends through North Dakota and continues into Canada. Elevation on the Coteau ranges from 2,000 feet above sea level on the north to approximately 1,600 feet on the south. The landform is covered with lakes and depressions and is drained to the south by the Big Stone River. During the Ice Age, the Coteau was covered by glaciers that deposited glacial drift over its surface (Malo 1997).

The Project Area also corresponds with the Prairie Coteau and Big Sioux Basin Level IV ecoregions as defined by the United States Geological Survey (Bryce et al. 1998). The Project Areas straddles the boundary of these two ecoregions along the southern border of Deuel County.

The Prairie Coteau ecoregion was formed as a result of stagnant glacial ice melting beneath a sediment layer. Topography is rolling and hummocky and is perforated with closely spaced semi-permanent and seasonal wetlands. Natural vegetation includes big and little bluestem, switchgrass, indiagrass, and blue grama. In the northeast section of the ecoregion, woodlands surround wetlands. Present-day land use includes pastureland in the rolling areas and small grain crops in the flat areas. The mean annual precipitation in this region is 20 to 22 inches. The average January high temperature is 21°F, while the average July high is 85°F. The average frost-free season lasts from 110 to 140 days (Bryce et al. 1998).

The Big Sioux Basin is a trough that penetrates to the core of the Prairie Coteau. Topography of the Big Sioux Basin was affected by pre-Wisconsin glaciation and later advances of the Wisconsin glacier that diverged around the basin. In contrast to the neighboring Coteau des Prairie ecoregion, the basin has a well-developed drainage network, and because of the relative scarcity of wetlands and the gentle topography, more tillable land is readily available. Native vegetation includes tall grass prairie, big and little bluestem, switchgrass, indiagrass, sideoats grama, and lead plant. Riparian vegetation includes willows and cordgrass to the north and more hardwoods to the south. Present-day land use consists mostly of tilled land for small grains, corn, sunflowers, and soybeans. The mean annual precipitation in this region is 20 to 22 inches. The average January high temperature is 22°F, while the average July high is 85°F. The average frost-free season lasts from 110 to 140 days (Bryce et al. 1998).

2.9 Archaeological Regions

The Project Area falls within the Upper Big Sioux and Northeast Lowland archaeological regions of South Dakota (Winham and Hannus 1991). In addition, the South Dakota Study Area is included in the more broadly defined Prairie Lake Region of the Northeastern Plains (Anfinson 1997). The Prairie Lake Region is in the center of the northeastern subarea of the Plains and encompasses most of southwestern Minnesota, northeastern South Dakota, and north-central Iowa (Anfinson 1997).

2.10 Cultural Contexts

Below is a summary of the cultural contexts relevant to the Project Area.

2.10.1 Paleoindian (10,000–6,000 BC)

The environment during this period was influenced by the retreating glacial ice sheet. The boreal forest that dominated the region during the late Pleistocene transitioned to a deciduous forest, and prairie vegetation started to advance into the region as the glacial ice sheet retreated north (Anfinson 1997). The Paleoindian period is characterized by human adaptation to hunting now-extinct late Pleistocene megafauna such as bison and mammoth, although subsistence resources likely included smaller mammals, fish, and vegetal foods (Winham and Hannus 1991; Anfinson 1997). Sites from this period are rare, but tend to be associated with activities near water resources (Winham and Hannus 1991). Diagnostic artifacts from this period are primarily projectile point variations including Clovis and Folsom lanceolate and fluted spear points. Expected site types include kill sites, butchery sites, camps, hearths, lithic procurement areas, lithic workshops, and isolated finds (Winham and Hannus 1991).

2.10.2 Plains Archaic (5,500–200 BC)

The environment during this period was distinguished by more arid climatic conditions and the expansion of prairie grasslands that displaced the previously forested areas (Winham and Hannus 1991; Anfinson 1997). The Pleistocene megafauna died out because of this change in climate, and peoples of the Plains Archaic period shifted to more semi-nomadic and seasonal resource procurement, foraging-based lifeways. Subsistence strategies during this period focused on bison; however, fish, small mammals, turtle, and waterfowl were exploited as well (Anfinson 1997). Toward the latter part of the Plains Archaic period, a cooler, moister climate returned and has remained relatively stable to the present (Anfinson 1997). Diversified technological innovations attesting to these foraging-based lifeways that appear during this period include tools for hunting, fishing, trapping, foraging, woodworking, and plant processing. New tool types include ground stone tools, side-notched and corner-notched projectile points, and the atlatl (Winham and Hannus 1991; Anfinson 1997). Expected site types for this period include short and long-term seasonal camps, burials, stone circles, bison kills, butchering and processing sites, and rock shelters (Winham and Hannus 1991).

2.10.3 Plains Woodland (200 BC–AD 1200)

Subsistence and settlement strategies did not change substantially during the Plains Woodland period from those employed during the Plains Archaic Period. Plains Woodland groups still tended to be semi-nomadic, utilizing a seasonal resource procurement strategy. Technologies introduced during this period include pottery, horticulture, the development of the bow and arrow, and the construction of earthworks in the form of low circular or conical mounds (Johnson and Johnson 1998; Winham and Hannus 1991). Diagnostic artifacts from this period include projectile points for both atlatl and bow and arrow use, and grit tempered, globular ceramics. Horticulture was developed during this period but was still relatively rare (Johnson and Johnson 1998). Expected site types include short- and long-term seasonal camps, burials and burial mounds, bison kills, and stone circles (Johnson and Johnson 1998).

2.10.4 Late Prehistoric/Plains Village (AD 900–1650)

By AD 900, cultural changes, including a subsistence-settlement strategy associated with gardening and rivers, and changes in the form and decoration of ceramics, began to manifest

within the region (Anfinson 1997). This period is characterized by an expansion of semi-permanent villages—sometimes fortified—located on river valley terraces, horticulture in the form of adjacent river bottom gardens, semi-subterranean houses, and large storage/trash pits. Diagnostic artifacts include smaller straight-sided and side-notched triangular projectile points and more complex ceramic designs and decoration. Expected site types for this period include long-term occupation, temporary hunting camps, and burials.

These changes in material culture during the Late Prehistoric/Plains Village period reflect a local variation of Mississippian culture spreading from the southeast, especially concentrated along the Missouri River trench. Two phases identified in the region are the Great Oasis Phase and the Olivet Phase of the Oneota Tradition. Great Oasis Phase (AD 900–1200) is characterized by temporary to semi-permanent villages located on shallow lakeshores, streams, and river floodplains, minimal reliance on horticulture, and primary reliance on bison (Anfinson 1997). The Oneota Tradition is characterized by shell-tempered ceramics, large horticultural villages with numerous storage pits, small un-notched projectile points, and catlinite pipes and plaques (Anfinson 1997). Mortuary practices for both phases include the use of burial mounds (Anfinson 1997; Henning 1998).

2.10.5 Protohistoric (AD 1650–1750)

The Protohistoric period is marked by the arrival of European trade goods to the region, followed by the arrival of European fur traders. By the latter part of the seventeenth century, European trade goods had made their way to the Missouri River in South Dakota (Zimmerman 1985). Early metal trade goods were used for making jewelry, knives, and projectile points. Later, better-manufactured items such as guns and brass and iron kettles were increasingly used for their primary functions (Zimmerman 1985).

Increased Euro-American settlement in the eastern United States caused large population shifts amongst Native American tribes as many groups were pushed to the West. Siouan speaking groups from Minnesota and Iowa began expanding deeper west into South Dakota and North Dakota, and by 1750, they had crossed the Missouri River (Zimmerman 1985). With the adoption of horses and guns, Siouan groups renewed their concentration on bison hunting and became the most powerful group in the Northern Plains (Zimmerman 1985). Prior to French contact, the Dakota Sioux controlled the western part of the Prairie Lake Region, while the eastern half was disputed between Dakota, Oto, Ioway, and possibly Illinois tribes (Anfinson 1997).

Thirteen Native American tribes have been identified as having affiliations within South Dakota during the Protohistoric period: Mandan, Hidatsa, Arikara, Crow, Comanche, Cheyenne, Shoshonean, Wiciyela Sioux/Dakota (Yankton, Yanktonai), Teton Sioux (Teton, Oglala, Brule, Miniconjou, Two Kettle, Sans Arc, Hunkpapa), Santee Sioux (Wahpeton, Sisseton, Mdewakantonwan, Wahpekute), Apache/Kiowa (Kiowa-Apache, Padouca/Gataka), Ioway (Oto/Omaha, Ponca), and Southern Ute (Winham and Hannus 1991).

By the latter half of the seventeenth century, Euro-American fur traders were encroaching into western Minnesota and eastern South Dakota. In 1679, Daniel Greysolon, the Sieur Dulhut, had established a base on Lake Mille Lacs in Minnesota, and that same year he dispatched three

men who were likely the first Europeans to enter South Dakota when the party reached the Coteau des Prairies near Big Stone Lake (Schell 1975). Over the next two decades, several excursions were made into the region by small parties of fur traders, and by 1701, French maps were showing graphic details of the geography of the area and the locations of Indian villages (Schell 1975). In 1738, an expedition by Pierre Gaultier de la Verendrye, a French explorer and fur trader, reached Mandan Villages in present-day North Dakota, and a subsequent expedition by his two sons reached the confluence of the Missouri River with the Bad River in central South Dakota (Schell 1975).

2.10.6 Historic Euro-American (AD 1750–Present)

The Historic Euro-American period is marked by the rise of the fur trade in the region followed by the expansion of Euro-American settlement.

2.10.7 Fur Trade (ca. AD 1750–1850)

Throughout the latter half of the eighteenth century, British fur traders from the Hudson's Bay Company and the Northwest Company penetrated into the Northern Plains from Canada, while an overcrowded fur trade in the Lower Missouri Basin spurred Spanish interests to push up the Missouri River from St. Louis (Schell 1975). Euro-American interest in this part of the country increased with the United States' purchase of the Louisiana Territory in 1803, and by 1804, the Lewis and Clark expedition, organized to explore and report on this new territory, entered what is now South Dakota (Schell 1975). During their time in South Dakota, Lewis and Clark visited with the Yankton and Teton Sioux, and the Arikara tribes (Schell 1975). Fur trade expanded considerably in South Dakota after the Lewis and Clark expedition. The greatest fur trade activity in the region occurred from 1815 to 1850. Buffalo hides became increasingly important trade items, and as the primary supplier of these hides, the prosperity of the Teton Sioux greatly increased (Schell 1975). The establishment, operation, and adaptation of gathering the hides of fur-bearing mammals in exchange for other goods and materials linked the Northern Plains to a world-wide economic and political system. Native Americans involved with the fur trade obtained American and European trade goods such as rifles, ammunition, tin and brass kettles, blankets, beads, flour, sugar, salt, coffee, and whiskey (Schell 1975).

2.10.8 Euro-American Settlement (ca. AD 1850–Present)

By the middle of the nineteenth century, migration to Oregon, California, and Utah along emigrant trails through the central Plains was increasing, and Euro-American settlers were encroaching upon eastern South Dakota (Schell 1975). To facilitate this westward migration and settlement, the United States established a series of military posts throughout the central plains. In South Dakota, Fort Pierre (repurposed from an old fur post) was established along the Missouri River in 1855 near present-day Pierre, and in 1856, Fort Randall was established further south along the Missouri River, near the present day Fort Randall Dam (Schell 1975).

Throughout the 1850s, the Native American groups in the region ceded large tracts of land in South Dakota and several Euro-American town sites were established along the Missouri and Big Sioux rivers (Schell 1975). In 1861, the Dakota Territory, including modern-day North Dakota and South Dakota, was organized, and throughout the 1860s, settlers slowly filtered into southeastern South Dakota, mostly along major river valleys (Schell 1974). Steamboat traffic

along the Missouri River greatly increased during this time as well, carrying freight and passengers to the gold fields of Montana. In 1865, construction began on three wagon roads through the Dakota Territory to facilitate greater access to the gold mines in Montana (Schell 1974). In 1874, gold was discovered in the Black Hills, and the subsequent gold rush set the stage for further settlement throughout the territory.

By the late 1870s, railroad expansion into the Dakota Territory spurred the Great Dakota Boom, which lasted from 1878 to 1887. Along with new railroad construction and the Black Hills gold rush, this land boom can be attributed to a mixture of excellent soil, favorable weather conditions in the region, the improvement of farm machinery, and successful promotional campaigns by the railroads, townsite interests, and real estate agents, which were designed to reverse the common belief that successful agriculture was impossible in the region (Schell 1974). South Dakota was granted statehood in 1889.

2.10.9 Native American Experience

Throughout the latter half of the nineteenth century, increased Euro-American settlement in the northern and central Plains brought considerable change to the Native American population in eastern South Dakota. In 1851, the Dakota ceded all of their land between the Mississippi and Big Sioux rivers in southwest Minnesota and eastern South Dakota (Gibbon 2003). In 1858, the Yankton Sioux ceded a large portion of eastern South Dakota to the United States and were assigned to a reservation tract of 400,000 acres along the Missouri River. The United States' policy of assimilation of Native Americans led to increased tensions between the federal government and Native Americans, which reached a breaking point in 1862 with the outbreak of the Dakota Conflict in southwest Minnesota (Gibbon 2003). Hostilities of the conflict ceased after six weeks, and approximately 3,000 Dakota fled west, while approximately 1,700 Dakota were held prisoner at Fort Snelling. Eventually, 38 Dakota were hanged for their alleged participation in the conflict, and the United States government negated all Dakota treaty rights, banishing most of the remaining Dakota from Minnesota (Gibbon 2003). To prevent a larger uprising by the Sioux in the region, the United States army launched expeditions throughout Minnesota and the Dakotas to punish the Dakota who fled west (Gibbon 2003). In 1863, the Dakota being held at Fort Snelling were removed to the Crow Creek Reservation along the Missouri River in South Dakota (Robinson 1904).

The tensions between the United States and Native American groups across the northern and central Plains reached a breaking point in the latter half of the nineteenth century, as the United States increased its military presence in the region and demanded land cessions to facilitate settlement in the region and protect the increasing numbers of prospectors on their way to the gold fields in the Black Hills and further west (Gibbon 2003). From the 1860s through the 1880s, a series of clashes, known as the Sioux Wars, between the United States military and various Native American groups raged across the northern Plains (Gibbon 2003). By the end of the 1880s, the traditional Native American way of life on the Plains had been irrevocably changed as the last of the major Native American resistance had been put down, the large bison herds vital to the Native American way of life on the Plains had been virtually wiped out, railroads through the region facilitated a large influx of settlers, and Native American groups were relegated to reservations (Gibbon 2003).

2.11 Deuel County History

Deuel County was created in 1862 by the territorial legislature. The county was named after Jacob S. Deuel, an early legislator. In the early 1870s the Winona and St. Peter Railroad made it to the county and a spur of the track ended at the county's main town of Gary (Thomas 2007). The county was organized with its present boundaries in 1878. The county seat was originally Gary, but changed to Clear Lake in 1890 (USDA 1997). Most of the Euro-American settlement occurred in the area in the 1870s primarily from Minnesota, Wisconsin, and New York.

Today, farming is the main enterprise in Deuel County, with approximately 65 percent of the acreage in cropland and 19 percent of the acreage in rangeland. Remaining land use includes pasture and hay production, urban development, and wildlife habitat. Crops include corn, oats, spring wheat, soybeans, and alfalfa. Livestock and livestock products are the main source of farm income (USDA 1997).

3.0 Research Design

3.1 Objectives

The Level III archaeological survey was performed to identify any new or previously identified archaeological resources that may be present in the Project Area. HDR's work complies with the *South Dakota Guidelines for Compliance with the National Historic Preservation Act and South Dakota Codified Law 1-19A-11.1*. (South Dakota State Historical Society 2012) and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (National Park Service 1983).

3.2 Methods

The Level III archaeological survey began with a visual inspection of the Project Area. Areas of the Project Area that were inundated, exhibited obvious disturbance by earthmoving or development (for example, road/highway rights-of-way, landscaped residential/farmstead yards, modern residential or industrial developments) were noted and documented with a digital camera. Systematic pedestrian survey of non-obviously disturbed areas was conducted along transects spaced at 15- to 30- meter intervals. Cut banks along streams, rodent burrow spoil piles, livestock trails, and other areas of exposed soil were examined throughout pasture areas (generally defined as currently or formerly grazed areas which do not readily demonstrate evidence of previous cultivation or disturbance). Close-interval survey (transects spaced at 1 meter or less) was performed in an approximately 15-meter (50-foot) area surrounding identified artifacts. All artifacts identified during pedestrian survey were described in the field notebook and documented with a digital camera. No artifacts were collected during this survey.

Previously identified sites within the Project Area were revisited to assess their current condition. Site boundaries were relocated and, if necessary, redefined using a Trimble global positioning system (GPS) unit with sub-meter accuracy and each site area was visually inspected via a systematic pedestrian survey with transects spaced at 5 meters or less. Each



site was documented with photographs and the current condition of each site (ground cover, presence of artifacts, level of disturbance, etc.) was noted.

Subsurface testing was conducted at select newly identified archaeological sites to confirm their status as isolated finds (artifact scatter with less than 10 items with no possibility of buried or other remains), and at previously identified sites in the Project Area where no surficial evidence of the site was evident within the recorded site area. Shovel tests were 30 to 40 centimeters (cm) in diameter and excavated until cultural sterile or disturbed soils were sufficiently documented. All excavated soils were screened through a 0.25-inch hardware cloth mesh. Shovel test data was recorded on standard forms and in the field notebook, which included the survey area locations, shovel test locations, shovel test depth, soil profile, soil texture and inclusions, and Munsell color. A Trimble GPS unit was used to record each shovel test location.

Pasture areas that exhibited conditions similar to those encountered at other Native American stone feature sites in the region, namely those areas with multiple well-sodded stones, were noted. Subsurface testing was not conducted in these areas over concerns of impacting possible stone features.

4.0 Survey Results

4.1 Survey Areas

The following survey results are presented by township, range, and section. The 2018 surveyed areas represent a former Project layout with some components that are not included in the current Project Area. Portions of the Project Area surveyed in 2018 are displayed on **Appendix A** (Figures A-1 through A-16) as HDR 2018 Survey Area. In contrast, the current Project Area corresponds with the Project components as displayed on **Figure 1** and **Appendix A** (Figures A-1 through A-16). Components within the Project Area include wind turbines, electrical collector system, access roads, a substation, laydown yards, an OM facility, and a transmission line. The Level III intensive archaeological survey included survey of all potential ground disturbance areas.

Township 114N, Range 50W, Section 24 (Appendix A, Figure A-2)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine S5; Turbine S5	Tilled field (90%)	Pedestrian survey	



Township 114N, Range 49W, Section 19 (Appendix A, Figure A-2)

Project component	Current land use and GSV	Survey method	Notes
Access roads, collector systems, and crane paths to Turbine S6 and Turbine S8; Turbin S6 and Turbine S8	Tilled cornfield (60%)	Pedestrian survey	

Township 114N, Range 50W, Section 26 (Appendix A, Figure A-1)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine L1; Turbine L1	Tilled field (90%)	Pedestrian survey	

Township 114N, Range 50W, Section 25 (Appendix A, Figure A-2)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine L2; Turbine L2	Harvested cornfield (25%)	Pedestrian survey	
Collector System between Turbine L2 and Turbine L3	Harvested cornfield (25%), cleared field (90%), and pasture (patchy 25%)	Pedestrian survey	
Access road, collector system crane path to Turbine L4; Turbine L4	Pasture (patchy 25%)	Pedestrian survey	
Access road, collector system, crane path between Turbine L4 and Turbine L3	Pasture (patchy 25%)	Pedestrian survey	
Turbine L3	Pasture (patchy 25%) and cleared field (90%)	Pedestrian survey	

Township 114N, Range 49W, Section 30 (Appendix A, Figure A-2)

Project component	Current land use and GSV	Survey method	Notes
Collector system along west edge of section	Harvested cornfield (25%), harvested soybean field (25%), and planted cornfield (95%)	Pedestrian survey	



Township 114N, Range 49W, Section 29 (Appendix A, Figure A-3)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine L9; Turbine L9	Cornfield (90%) and harvested cornfield (25%)	Pedestrian survey	Site 39DE0149 (HDR-005A) (Native American isolated find) identified.

Township 114N, Range 49W, Section 31 (Appendix A, Figure A-6)

Project component	Current land use and GSV	Survey method	Notes
Access road and collector system to Turbine L5; Turbine L5	Planted cornfield (80%)	Pedestrian survey	
Collector system and crane path between Turbine L5 and Turbine L6.	Planted cornfield (80%) and tilled field (90%)	Pedestrian survey	
Turbine L6	2019 – Planted cornfield (80%) and tilled field (90%) 2018 – Harvested soybean field (25–50%)	Pedestrian survey	
Access road, collector system, and crane path between Turbine L6 and Turbine L7; Turbine L7	2019 – Tilled field (90%) 2018 – Harvested soybean field (25–50%)	Pedestrian survey	
Access road, collector system, and crane path to Turbine L7	Tilled field (90%)	Pedestrian survey	
Former Project components	Harvested soybean field (25–50%) and planted cornfield (35%)	Pedestrian survey	

Township 114N, Range 49W, Section 32 (Appendix A, Figures A-6, A-7)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector systems, and crane path to Turbine L8; Turbine L8	Tilled field (80–90%)	Pedestrian survey	
Crane path to Turbine L10	Tilled field (80–90%) and tilled field (80%)	Pedestrian survey	
Collector system, access road, and crane path to Turbine L11; Turbine L11	Tilled cornfield (50%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Access road to Turbine L10	Tilled field (80%)	Pedestrian survey	
Turbine L10	Tilled field (80%) and tilled cornfield (50%)	Pedestrian survey	
Collector system along west edge of section	Tilled field (80–90%) and tilled field (80%)	Pedestrian survey	

Township 114N, Range 49W, Section 34 (Appendix A, Figure A-7)

Project component	Current land use and GSV	Survey method	Notes
Access road to Turbine I2	Existing driveway and cornfield (80%)	Pedestrian survey	
Collector system and crane path to Turbine I2; Turbine I2	Cornfield (80%)	Pedestrian survey	
Access road and collector system to Turbine I3; Turbine I3; access road to Turbine I4; Turbine I4; collector system and crane path between Turbine I3 and Turbine I4	Planted cornfields (80%)	Pedestrian survey	
Collector system and crane path to Turbine I4	Planted cornfield (80%) and pasture	Pedestrian survey	Multiple well-sodded stones present in pasture.

Township 114N, Range 49W, Section 35 (Appendix A, Figure A-8)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, crane path to Turbine J1; Turbine J1	Pasture (patchy 25%)	Pedestrian survey	Multiple well-sodded stones present in pasture.
Collector system and crane path between Turbine J1 and Turbine J2	Pasture (patchy 25%) and alfalfa field (patchy 15–25%)	Pedestrian survey	Multiple well-sodded stones present in pasture.
Turbine J2	Alfalfa field (patchy 15-25%)	Pedestrian survey	
Collector system between Turbine J2 and Turbine I5	Alfalfa field (patchy 15–25%), harvested soybean field (50%), harvested cornfield (70%), and harvested soybean field (90%)	Pedestrian survey	
Access road to Turbine I5; Turbine I5	Harvested cornfield (70%) and harvested soybean field (90%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Crane path between Turbine J1 and Turbine I5	Pasture (patchy 25%) and harvested soybean fields (90%)	Pedestrian survey	Multiple well-sodded stones present in pasture.

Township 113N, Range 50W, Section 1 (Appendix A, Figure A-6)

Project component	Current land use and GSV	Survey method	Notes
Access road to Turbine K0 and Turbine K1	Harvested cornfield (80%), harvested cornfield (35%), and planted cornfield (100%)	Pedestrian survey	
Turbine K0	Harvested cornfield (35%)	Pedestrian survey	
Collector system and crane path between Turbine K0 and Turbine K1	Harvested cornfield (35%), harvested cornfield (80%) and planted cornfield (100%)	Pedestrian survey	
Turbine K1	2019 – Harvested cornfield (35%), harvested cornfield (80%), planted cornfield (100%), and planted cornfield (75%) 2018 – Harvested soybean field (75%)	Pedestrian survey	
Collector system and crane path between Turbine K1 and Turbine K2	2019 – Harvested cornfield (80%), planted cornfield (75%), planted cornfield (100%), harvested cornfield (25%) 2018 – Harvested soybean field (75%)	Pedestrian survey	
Access road, collector system, and crane path to Turbine K2; Turbine K2	2019 – Harvested cornfield (25%) and planted cornfield (100%) 2018 – Harvested soybean field (75%) and planted cornfield (75%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Former Project components	Harvested soybean field (75%) and planted cornfield (75%)	Pedestrian survey	

Township 113N, Range 49W, Section 6 (Appendix A, Figure A-6)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine K3; Turbine K3	Harvested soybean field (80%)	Pedestrian survey	
Collector system between Turbine K3 and Turbine K4	Harvested soybean field (80%), harvested cornfield (25%), and harvested cornfield (25%)	Pedestrian survey	
Access road to Turbine K4	Harvested soybean field (75%) and harvested cornfield (25%)	Pedestrian survey	
Turbine K4	Harvested cornfield (25%), harvested soybean field (75%), and harvested cornfield (25%)	Pedestrian survey	
Collector system and crane path between Turbine K4 and Turbine K5; Turbine K5, access road, collector system, and crane path to Turbine K5	Harvested cornfield (25%)	Pedestrian survey	

Township 113N, Range 49W, Section 5 (Appendix A, Figures A-6, A-7)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine K6	Harvested soybean field (80%) and harvested cornfield (25%)	Pedestrian survey	
Turbine K6	Harvested soybean field (80%), harvested cornfield (25%), and harvested soybean field (90%)	Pedestrian survey	
Collector system and crane path between Turbine K6 and Turbine K7	Harvested cornfield (25%), hay field (25%), and harvested soybean field (90%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Turbine K7	Harvested cornfield (25%), harvested soybean field (90%), hay field (25%), harvested soybean field (90%), and low grassy area (0%),	Pedestrian survey	
Access road, collector system, and crane path between Turbine K7 and Turbine K8	Hay field (25%) and harvested soybean field (90%)	Pedestrian survey	
Turbine K8	Harvested cornfield (80%), hay field (25%), harvested soybean field (90%), and low grassy area (0%)	Pedestrian survey	
Access road, collector system, and crane path to Turbine K8	Hay field (25%) and harvested soybean field (90%)	Pedestrian survey	
Collector system along north edge of section	Harvested cornfield (50%), harvested cornfield (25%), and planted cornfield (90%)	Pedestrian survey	
Collector system along east edge of section	Planted cornfield (90%), harvested cornfield (75%), planted soybean field (80%), harvested cornfield (80%), low grassy area (0%), hay field (25%), harvested soybean field (90%), and planted cornfield (90%)	Pedestrian survey	

Township 113N, Range 49W, Section 4 (Appendix A, Figure A-7)

Project component	Current land use and GSV	Survey method	Notes
Collector system to Turbine H1; Turbine H1	2019 – Harvested cornfield (25%) 2018 – Harvested and planted cornfield (25%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path between Turbine H1 and Turbine H2; Turbine H2	2019 – Harvested cornfields (25%) 2018 – Harvested and planted cornfield (25%)	Pedestrian survey	
Access road, collector system, and crane path between Turbine H2 and Turbine H3; access road, collector system, and crane path to Turbine H3; Turbine H3	Harvested cornfield (25%)	Pedestrian survey	
Transmission line along south edge of SE 1/4 of section	Fallow field (50–75%)	Pedestrian survey	
Former Project components	Harvested and planted cornfield (25%)	Pedestrian survey	

Township 113N, Range 49W, Section 3 (Appendix A, Figure A-7)

Project component	Current land use and GSV	Survey method	Notes
Crane path to Turbine H5; collector system to Turbine H5 from half-section line; Turbine H5	Harvested cornfield (80%)	Pedestrian survey	
Access road and collector system to Turbine H4	Grassy area (25%) and harvested cornfield (80%)	Pedestrian survey	
Turbine H4	2019 – Harvested cornfield (80%) 2018 – Harvested cornfield (90%)	Pedestrian survey	
Access road and collector system between Turbine H4 and Turbine H5	2019 – Harvested cornfields (80%) 2018 – Harvested cornfield (90%)	Pedestrian survey	
Collector system along half-section line in N 1/2 of section	Harvested cornfields (80%)	Pedestrian survey	
Collector system along half-section line in S 1/2 of section	Harvested cornfield (90%), harvested soybean field (25%), and harvested wheat field (25%)	Pedestrian survey	
Collector system along west edge of NW 1/4 of section	Harvested cornfield (80%) and grassy area (25%)	Pedestrian survey	



Township 113N, Range 49W, Section 2 (Appendix A, Figure A-8)

Project component	Current land use and GSV	Survey method	Notes
Crane path to Turbine G1; Turbine G1	Harvested soybean field (90%)	Pedestrian survey	
Access roads, collection system, and crane path between Turbine G1 and Turbine G2	Harvested soybean field (90%)	Pedestrian survey	
Turbine G2	Harvested soybean field (90%) and harvested cornfield (25%)	Pedestrian survey	
Access road, collector system, and crane path between Turbine G2 and Turbine G3	Harvested soybean field (90%) and harvested cornfield (25%)	Pedestrian survey	
Access road to Turbine G3	Harvested cornfields (25%)	Pedestrian survey	
Turbine G3	Harvested cornfields (25%) and pasture (25%)	Pedestrian survey	Multiple well-sodded stones present in pasture.
Collector system to Turbine G3	Hay field (25%), pasture (25%), and harvested cornfield (25%)	Pedestrian survey	Multiple well-sodded stones present in pasture.

Township 113N, Range 48W, Section 6 (Appendix A, Figure A-9)

Project component	Current land use and GSV	Survey method	Notes
Access road to Turbine F2; Turbine F2	Alfalfa field (50%)	Pedestrian survey	
Collector system between Turbine F2 and Turbine F1	Alfalfa field (50%), tilled field (100%), and harvested cornfield (80%)	Pedestrian survey and shovel testing	Site 39DE0148 (HDR-004A) (Native American isolated find) identified.
Crane path to Turbine F1	Harvested cornfield (25%), tilled field (100%), and harvested cornfield (25%)	Pedestrian survey	
Crane path to Turbine F2 (from crane path to Turbine F1)	Tilled field (100%) and alfalfa field (50%)	Pedestrian survey	
Access road to Turbine F1; Turbine F1	Harvested cornfield (80%)	Pedestrian survey	
Collector system to Turbine F1	Tilled field (100%)	Pedestrian Survey	



Township 113N, Range 48W, Section 5 (Appendix A, Figure A-9)

Project component	Current land use and GSV	Survey method	Notes
Collector system to Turbine F4	Low wet fallow field (0%), low wet pasture (0%), cornfield (50–60%), and agricultural field (100%)	Pedestrian survey	
Crane path to Turbine F4	Cornfield (50–60%), agricultural field (100%)	Pedestrian survey and shovel testing	Site 39DE0146 (HDR-002A) (Native American isolated find) identified.
Access road to Turbine F4	Agricultural field (100%)	Pedestrian survey and shovel testing	Site 39DE0147 (HDR-003A) (Native American isolated find) identified.
Turbine F4	Agricultural field (100%) and low wet area	Pedestrian survey	
Former Project components in SW 1/4 of section	Planted cornfield (35–50%)	Pedestrian survey	
Former Project components in NW 1/4 of section	Harvested soybean field (90%) and low wet grassy area	Pedestrian survey	

Township 113N, Range 49W, Section 8 (Appendix A, Figures A-6, A-7)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine P1; Turbine P1	Harvested cornfield (25–50%)	Pedestrian survey	
Crane path along east edge of section	Tilled field (100%)	Pedestrian survey	

Township 113N, Range 49W, Section 9 (Appendix A, Figure A-7)

Project component	Current land use and GSV	Survey method	Notes
Access road to Turbine P5; Turbine P5	Harvested cornfield (25%)	Pedestrian survey	
Collector system and crane path to Turbine P5	Harvested cornfield (25%), low wet grassy area (0%), and harvested cornfield (25%)	Pedestrian survey	
Collector system and crane path to Turbine P3	Harvested cornfield (25%) and harvested soybean field (80%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Turbine P3	Harvested soybean field (25%), harvested cornfield (25%), and planted soybean field (80%)	Pedestrian survey	
Access road and collector system between Turbine P3 and Met Tower 1; Met Tower 1	Harvested soybean field (80%)	Pedestrian survey	
Collector system and crane path between Turbine P3 and Turbine P4; access road between Met Tower 1 and Turbine P4	Harvested soybean field (80%) and planted soybean field (90%)	Pedestrian survey	
Turbine P4	Planted soybean field (90%)	Pedestrian survey	
Access road and collector system to Turbine P3 and Turbine P4 from 191st Street	Planted soybean field (90%), harvested cornfield (25–75%), harvested soybean field (80%), and planted soybean field (90%)	Pedestrian survey	
Collector system and T-Line along north edge of section	Harvested cornfield (25%), planted soybean field (90%), harvested cornfield (25–75%), harvested cornfield (50%), low wet grassy area (patchy 25%), and planted cornfield (90%)	Pedestrian survey	

Township 113N, Range 49W, Section 10 (Appendix A, Figure A-7)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine P6; Turbine P6	Planted cornfield (75–90%)	Pedestrian survey	
Crane path between Turbine P6 and Turbine P7	Planted cornfield (75–90%) and harvested cornfield (25%)	Pedestrian survey	
Access road and collector system to Turbine P7	Harvested cornfield (25%)	Pedestrian survey	
Turbine P7	Harvested cornfields (25%)	Pedestrian survey	
Crane path to Turbine P7	Harvested cornfields (25%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Collector system between Turbine P6 and Turbine P8	Planted cornfield (75–90%), low, wet grassy area, harvested cornfield (25%), low wet grassy area, and harvested cornfield (35%)	Pedestrian survey	
Collector system to Turbine P8 from 192nd Street	2019 – Harvested cornfield (35%) 2018 – Planted cornfield (25–50%)	Pedestrian survey	
Turbine P8	2019 – Harvested cornfield (35%) 2018 – Planted cornfield (25–50%) and thin strip of wooded area (25%)	Pedestrian survey	
Access road and crane path to Turbine P8	2019 – Harvested cornfield (35%) 2018 – Planted cornfield (25–50%) and thin strip of wooded area (25%)	Pedestrian survey	
Collector system to Turbine P8 from SD Highway 15	2019 – Harvested cornfield (35%), low wet wooded area, harvested cornfield (35%), low wet grassy area, and harvested cornfield (35%) 2018 – Planted cornfield (25–50%)	Pedestrian survey	
Crane path along east edge of section	Harvested cornfield (35%), landscaped farmstead yard, mowed and likely landscaped grassy area, harvested cornfield (35%), low wet grassy area, harvested cornfield (35%), and wooded grassy area associated with former farmstead	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Collector system and T-Line along north edge of section	Harvested cornfield (25%), low wet grassy area, harvested cornfields (25%)	Pedestrian survey	
Laydown area	Harvested cornfield (25%)	Pedestrian survey	

Township 113N, Range 49W, Section 11 (Appendix A, Figure A-8)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine E1; Turbine E1	Harvested soybean field (90%)	Pedestrian survey	
Crane path along west edge of NW 1/4 of section	Harvested soybean field (90%)	Pedestrian survey	
Collector system and crane path between Turbine E1 and Turbine E2	Harvested soybean field (90%) and harvested cornfield (25%)	Pedestrian survey	
Turbine E2	Harvest cornfield (90%) and pasture (25%)	Pedestrian survey	
Access road and crane path to Turbine E2	Harvested soybean field (90%) and harvested cornfield (25%)	Pedestrian survey	
Collector system to Turbine E2 from 477 Ave	Pasture (25%) and harvested cornfield (25%)	Pedestrian survey	
Collector system and T-Line along north edge of section	Planted cornfield (90%), harvested cornfield (25%), planted cornfield (90%), and pasture (25%)	Pedestrian survey	Site 39DE0151 (HDR-001B) (Native American artifact scatter) identified. Multiple well-sodded stones present in pasture.
Crane path along east edge of NE 1/4 of section	Planted cornfield (90%)	Pedestrian survey	
T-Line along east edge of section	Pasture in NE corner of section (25%), planted cornfield (90%), pasture (25%), and harvested cornfield (50%)	Pedestrian survey	Multiple well-sodded stones present in pasture in NE corner of section.
Laydown area	Harvested soybean field (90%)	Pedestrian survey	



Township 113N, Range 49W, Section 12 (Appendix A, Figure A-8)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine E3; Turbine E3	Pasture (25%) and harvested cornfield (75%)	Pedestrian survey	Multiple well-sodded stones present in pasture.
Collector system (southern) to Turbine E3	Harvested cornfield (75%)	Pedestrian survey	
Access road, collector system, and crane path to Turbine E4; Turbine E4	Harvested field (50%)	Pedestrian survey	
Collector system along east edge of SE 1/4 of section	Harvested field (50%), pasture, harvested field (50%), and pasture	Pedestrian survey	Multiple well-sodded stones present in pasture areas.
Collector system along west edge of section	Pasture (25%), harvested cornfield, (75%), and harvested cornfields (25%)	Pedestrian survey	Multiple well-sodded stones present in pasture.
Collector system and T-Line along south edge of SW 1/4 of section	Harvested cornfield (25%)	Pedestrian survey	
Collector system and T-Line along south edge of SE 1/4 of section	Harvested soybean field (25%) and pasture	Pedestrian survey	Multiple well-sodded stones present in pasture.
Former Project components	Harvested soybean fields (25%) and pasture	Pedestrian survey	Multiple well-sodded stones present in pasture.

Township 113N, Range 48W, Section 7 (Appendix A, Figure A-9)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system and crane path to Turbine E5; Turbine E5	Harvested field (80%)	Pedestrian survey	The Project Area traverses previously identified site 39DE0049. No evidence of site found within the Project Area.
Collector system and crane path between Turbine E5 and Turbine E6	Harvested field (80%) and harvested cornfield (100%)	Pedestrian survey	A portion of the Project Area traverses previously identified site 39DE0049. No evidence of site found within the Project Area.
Access road, collector system, and crane path to Turbine E6; Turbine E6	Harvested cornfield (100%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Collector system to Turbine E5 from 192 Street	Harvested field (80%), Hay/fallow field, tilled field (100%), low wet pasture, and harvested cornfield (100%).	Pedestrian survey	A portion of the Project Area traverses previously identified site 39DE0049. No evidence of site found within the Project Area.
Collector system along south edge of section	Low wet fallow field, low wet pasture (10–20%), and pasture in SW corner of section	Pedestrian survey	Multiple well-sodded stones present in pasture in SW corner of section.
OM Option	Pasture	Pedestrian survey	Multiple well-sodded stones present in pasture.

Township 113N, Range 49W, Section 15 (Appendix A, Figure A-13)

Project component	Current land use and GSV	Survey method	Notes
Collector system to Turbine O3	Harvested cornfield (25%), harvested field (50%), and planted cornfield (90%)	Pedestrian survey	
Access road and crane path to Turbine O3. Turbine O3	Planted cornfield (90%)	Pedestrian survey	
Collector system between Turbine O3 and Turbine O4	Planted cornfield (90%) and planted cornfield (50%)	Pedestrian survey	
Access road, collector system, and crane path to Turbine O4; Turbine O4	Planted cornfield (50%)	Pedestrian survey	Site 39DE0150 (HDR-007A) (Native American artifact scatter) identified.
Former Project components along north edge of section	Hay field (50%), low wet grassy area surrounding a drainage, alfalfa field (25%), harvested soybean field (90%), and harvested cornfield (25%)	Pedestrian survey	

Township 113N, Range 48W, Section 18 (Appendix A, Figure A-15)

Project component	Current land use and GSV	Survey method	Notes
Collector system in NE 1/4 of section	Harvested corn (50%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Former Project components	Planted cornfields (25–50%) and harvested soybean field (80%)	Pedestrian survey	Project Area traverses a portion of previously identified site 39DE0108. No evidence of site found within the Project Area.

Township 113N, Range 48W, Section 17 (Appendix A, Figure A-15)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine C5; Turbine C5	2019 – Pasture and tilled field (100%) 2018 – Pasture and harvested cornfield (25–50%)	Pedestrian survey	Multiple well-sodded stones present in pasture areas.
Collector system and crane path between Turbine C5 and Turbine B1	2019 – Tilled field (100%) and pasture 2018 – Harvested cornfield (25–50%), harvested cornfield (25%), pasture, and harvested cornfield (25%)	Pedestrian survey	Multiple well-sodded stones present in pasture areas.
Access road, collector system, and crane path to Turbine B1; Turbine B1	Harvested cornfield (25%)	Pedestrian survey, shovel tests	Project Area includes previously identified sites 39DE0107 and 39DE0102.
Collector system along west edge of section	Tilled field (100%) and pasture	Pedestrian survey	Project Area includes a portion of previously identified site 39DE019. Multiple well-sodded stones present in pasture.

Township 113N, Range 48W, Section 16 (Appendix A, Figure A-16)

Project component	Current land use and GSV	Survey method	Notes
Collector system and crane path to Turbine B3	2019 – Agricultural field (70%) 2018 – Harvested soybean field (90%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Access road to Turbine B3	2019 – Cornfield (60%) and agricultural field (70%) 2018 – Harvested soybean field (90%)	Pedestrian survey	
Turbine B3	2019 – Cornfield (60%) 2019 – Harvested soybean field (90%)	Pedestrian survey	
Access road between Turbine B3 and Turbine B2	2019 – Cornfield (60%), agricultural field (70%), and agricultural field (70%) 2018 – Harvested soybean field (70%)	Pedestrian survey	
Collector system and crane path between Turbine B3 and Turbine B2	2019 – Agricultural field (70%) and agricultural field (100%) 2018 – Harvested soybean field (70%)	Pedestrian survey	
Turbine B2	2019 – Agricultural field (70–100%) 2018 – Harvested soybean field (90%)	Pedestrian survey	
T-Line along north edge of section	Planted cornfield (90%), Low and wet and sloped grassy and wooded area, planted cornfield (90%), grassy area (patchy 25%), and planted cornfield (95%)	Pedestrian survey	
T-Line along east edge of NE 1/4 of section	Planted cornfield (95%), pasture (patchy 25%), and harvested cornfield (50%)	Pedestrian survey	
T-Line along east edge of SE 1/4 of section	Harvested soybean field (90%) and non-native grassland	Pedestrian survey	



Township 113N, Range 49W, Section 22 (Appendix A, Figure A-13)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine O5; Turbine O5	Planted cornfield (90%)	Pedestrian survey	

Township 113N, Range 48W, Section 20 (Appendix A, Figure A-15)

Project component	Current land use and GSV	Survey method	Notes
Collector system along west edge of NW 1/4 of section	2019 – Tilled field (100%) and pasture 2018 – Harvested soybean field (90%) and pasture	Pedestrian survey	Project Area includes previously identified site 39DE0101. Multiple well-sodded stones present in pasture areas.
Collector system (east to west) along half-section line	2019 – Pasture, cornfield (60%), pasture, and tilled field (50%) 2018 – Pasture, grassy edge of shelterbelt, harvested cornfield (25%), harvested cornfield (35%), pasture, hay field (25%), and planted cornfield (35%)	Pedestrian survey	Site HDR-001A (Native American artifact scatter) identified. Site is likely an extension of previously identified site 39DE0097). Multiple well-sodded stones present in pasture areas.

Township 113N, Range 48W, Section 21 (Appendix A, Figure A-16)

Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine A1; Turbine A1	2019 – Agricultural field (100%) and harvested cornfield (50–90%) 2018 – Harvested soybean field (90%)	Pedestrian survey	
Access road, collector system, and crane path between Turbine A1 and Turbine A2	2019 – Agricultural field (100%) and harvested cornfield (50–90%) 2018 – Harvested soybean field (90%)	Pedestrian survey	



Project component	Current land use and GSV	Survey method	Notes
Access road, collector system, and crane path to Turbine A2. Turbine A2	2019 – Tilled field (100%) 2018 – Harvested soybean field (90%)	Pedestrian survey	
Former Project components along east edge of NE 1/4 of section	Harvested soybean field (90%) and pasture	Pedestrian survey	Multiple well-sodded stones present in pasture.

Township 113N, Range 48W, Section 22 (Appendix A, Figure A-16)

Project component	Current land use and GSV	Survey method	Notes
Collector system and T-Line along west edge of NW 1/4 of section	Harvested soybean field (25%), hay field (25–75%), harvested and planted cornfield (25–75%)	Pedestrian survey	
T-Line to substation	2019 – Harvested soybean field (25%) 2018 – Harvested soybean field (25%), sloped pasture (patchy 25%), and hay field (25–75%)	Pedestrian survey	
Access road to substation	Hay field (25–75%)	Pedestrian survey	
Collector system to substation	2019 – Cornfield (50%) 2018 – Harvested and planted cornfield (25–75%) and hay field (25–75%)	Pedestrian survey	
Substation	Hay field (25–75%)	Pedestrian survey	
Former project components in NW 1/4 of section	Sloped pasture (patchy 25%), low wet pasture (25%), and harvested soybean field (25%)	Pedestrian survey	
Former project components along west edge of SW 1/4 of section	Pasture (50%), hay field (25-50%), harvested soybean field (50%), sloped, low, wet area, and planted cornfield (50%)	Pedestrian survey	

Township 113N, Range 49W, Section 14 (Appendix A, Figure A-14)

Project component	Current land use and GSV	Survey method	Notes
Former Project component along north edge of section	Planted cornfield (35%)	Pedestrian	

Township 113N, Range 49W, Section 13 (Appendix A, Figure A-14)

Project component	Current land use and GSV	Survey method	Notes
Former Project components in NW 1/4 of section	Harvested soybean field (50–75%)	Pedestrian	Project Area includes previously identified site 39DE0092.

4.2 Archaeological Sites

During the survey, six new archaeological sites were documented and eight previously identified sites were revisited. Because of changes in Project design subsequent to fieldwork, sites 39DE0092 and 39DE0108 no longer intersect the Project Area

4.2.1 Site 39DE0146 (HDR-002A)

Site 39DE0146 is a Native American isolated find located in the NE 1/4, SW 1/4, SE 1/4 of Section 5, Township 113N, Range 48W (**Appendix A, Figure A-9**). The isolated find is located on a low rise in a general upland setting (**Photo 1** and **Figure 2**). Cobb Creek, an intermittent stream, is located approximately 295 meters to the southwest, and a livestock pond, created from a dammed, unnamed intermittent stream, is located north of the rise. Ground coverage at the time of investigation consisted of a tilled agricultural field with 100 percent GSV. The isolated find consists of one tested Swan River chert cobble, one Swan River chert flake, and one piece of shatter of unidentified chert, likely derived from local glacial till. Close-interval pedestrian survey of a 15-meter square around the isolated find uncovered no additional cultural materials.

One shovel test was placed at the location of the isolated find to determine the presence or absence of additional cultural materials or features and to assess subsurface integrity. Shovel test 1 exhibited a very dark brown (10YR 2/2) loamy clay plow zone that was present to a depth of 34 centimeters below surface (cmbs) where the dark yellowish brown (10YR 3/6) silty clay subsoil was reached. The shovel test was excavated to a depth of 51 cmbs. No cultural materials or features were encountered in the shovel test.

4.2.1.1 Summary and Recommendations

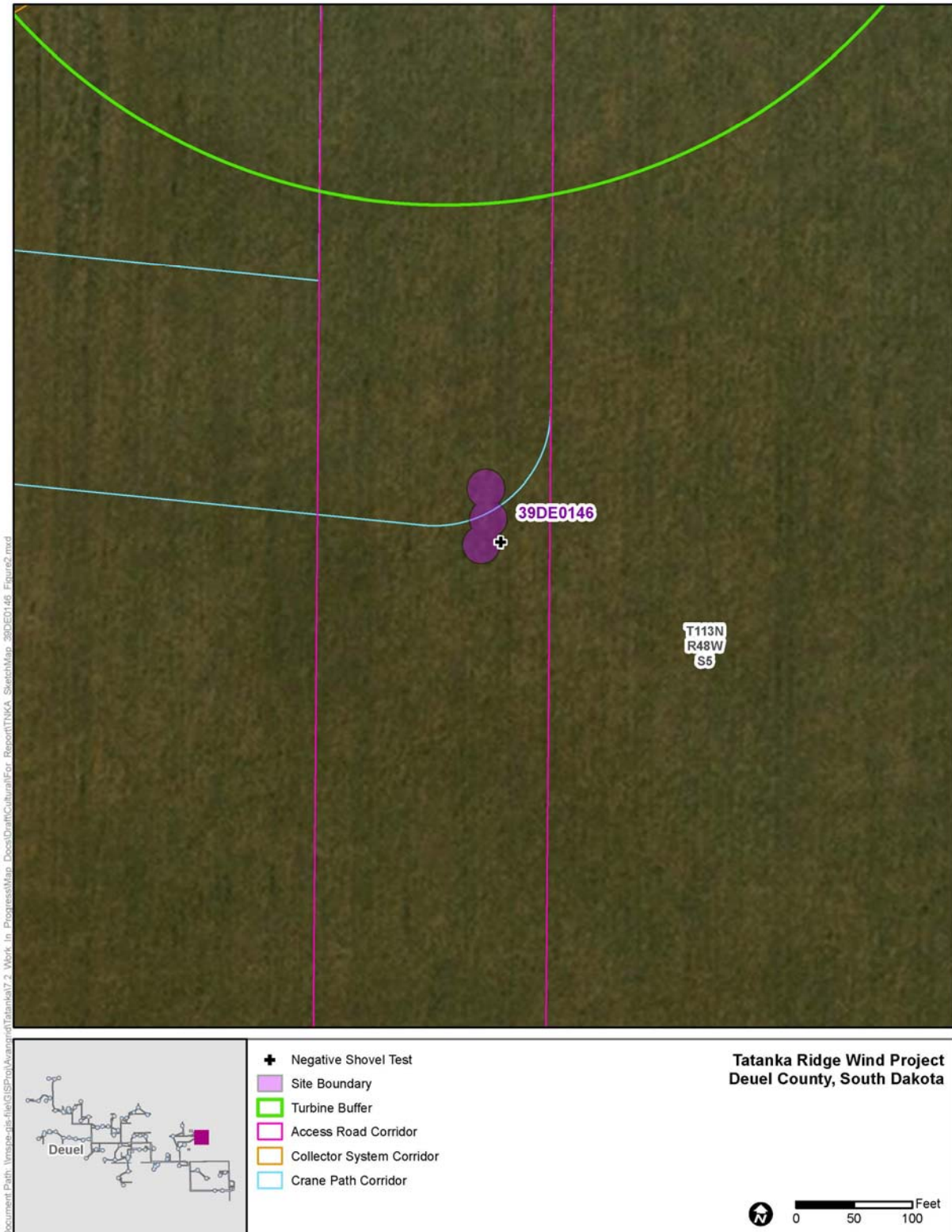
Site 39DE0146 is a Native American isolated find located in a cultivated agricultural field. No temporally or culturally diagnostic artifacts were observed. Shovel testing at the location revealed no cultural materials or features. The site exhibited no subsurface integrity because of intensive cultivation. Because isolated finds in South Dakota are by definition not eligible for listing on the NRHP, site 39DE0146 is recommended not eligible for listing on the NRHP under

any criteria. If SHPO concurs that the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.

Photo 1. Site 39DE0146 overview, view to the north



Figure 2. 39DE0146 site map



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4.2.2 Site 39DE0147 (HDR-003A)

Site 39DE0147 is a Native American isolated find located in the SW 1/4, SW 1/4, SE 1/4 of Section 5, Township 113N, Range 48W (**Appendix A, Figure A-9**). The isolated find is located on a low rise in a general upland setting (**Photo 2** and **Figure 3**). Cobb Creek, an intermittent stream, is located approximately 160 meters to the southwest, and a livestock pond, created from a dammed, unnamed intermittent stream, is located north of the rise. Ground coverage at the time of investigation consisted of a tilled agricultural field with 100 percent GSV. The isolated find consists of four lithic artifacts including one piece of chalcedony shatter, one tertiary flake composed of a basalt-like raw material, and two primary flakes composed of Swan River chert. Close-interval pedestrian survey uncovered no additional cultural materials.

One shovel test was placed at the location of the isolated find to determine the presence or absence of additional cultural materials or features, and to assess subsurface integrity. Shovel test 1 exhibited a very dark brown (10YR 2/2) loamy clay plow zone that was present to a depth of 23 cmbs where the dark yellowish brown (10YR 3/6) silty clay subsoil was reached. The shovel test was excavated to a depth of 41 cmbs. No cultural materials or features were encountered in the shovel test.

4.2.2.1 Summary and Recommendations

Site 39DE0147 is a Native American isolated find located in a cultivated agricultural field. No temporally or culturally diagnostic artifacts were observed. Shovel testing at the location revealed no cultural materials or features. The site exhibited no subsurface integrity because of intensive cultivation. Because isolated finds in South Dakota are by definition not eligible for listing on the NRHP, site 39DE0147 is recommended not eligible for listing on the NRHP under any criteria. If SHPO concurs that the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.

Photo 2. Site 39DE0147 overview, view to the south



Figure 3. 39DE0147 site map



4.2.3 Site 39DE0148 (HDR-004A)

Site 39DE0148 is a Native American isolated find located in the NE 1/4, NW 1/4, SE 1/4 of Section 6, Township 113N, Range 48W (**Appendix A, Figure A-9**). The isolated find is located on a flat plain in a general upland setting (**Photo 3** and **Figure 4**). An unnamed intermittent stream is located approximately 615 meters to the northwest. Ground coverage at the time of investigation consisted of a tilled agricultural field with 100 percent GSV. The isolated find consists of one tertiary flake composed of chalcedony. Close-interval pedestrian survey of a 15-meter square around the isolated find uncovered no additional cultural materials.

One shovel test was placed at the location of the isolated find to determine the presence or absence of additional cultural materials or features, and to assess subsurface integrity. Shovel test 1 exhibited a very dark gray (10YR 3/1) sandy silt loam plow zone that was present to a depth of 35 cmbs where the brown (10YR 4/3) silty sand with heavy gravel subsoil was reached. The shovel test was excavated to a depth of 45 cmbs. No cultural materials or features were encountered in the shovel test.

4.2.3.1 Summary and Recommendations

Site 39DE0148 is a Native American isolated find located in a cultivated agricultural field. No temporally or culturally diagnostic artifacts were observed. Shovel testing at the location revealed no cultural materials or features. The site exhibited no subsurface integrity because of intensive cultivation. Because isolated finds in South Dakota are by definition not eligible for listing on the NRHP, site 39DE0148 is recommended not eligible for listing on the NRHP under any criteria. If SHPO concurs that the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.

Photo 3. Site 39DE0148 overview, view to the south



Figure 4. 39DE0148 site map



4.2.4 Site 39DE0149 (HDR-005A)

Site 39DE0149 is a Native American isolated find located in the NE 1/4, SE 1/4, SW1/4, and the NW 1/4, SW 1/4, SE 1/4 of Section 29, Township 114N, Range 49W (**Appendix A, Figure A-3**). The isolated find is on the northwest-facing slope of a small rise overlooking an unnamed intermittent stream located approximately 95 meters to the north-northeast (**Photo 4 and Figure 5**). Ground coverage at the time of investigation consisted of a tilled cornfield with 90 percent GSV. The isolated find consists of four lithic artifacts including one secondary Swan River chert flake, one secondary quartz flake, one piece of Swan River chert shatter, and one scraper composed of Swan River chert. Close-interval pedestrian survey uncovered no additional cultural materials.

One shovel test was placed at the location of the isolated find to determine the presence or absence of additional cultural materials or features, and to assess subsurface integrity. Shovel test 1 exhibited a very dark grayish brown (10YR 3/2) silty clay plow zone that was present to a depth of 10 cmbs where a yellowish brown (10YR 5/4) clay loam with very dark grayish brown (10YR 3/2) banding (plow scars) horizon was reached that was present to a depth of 17 cmbs. Below the plow scars, the subsoil of yellowish brown (10YR 5/4) silt loam with small gravel was reached. The shovel test was excavated to a depth of 30 cmbs. No cultural materials or features were encountered in the shovel test.

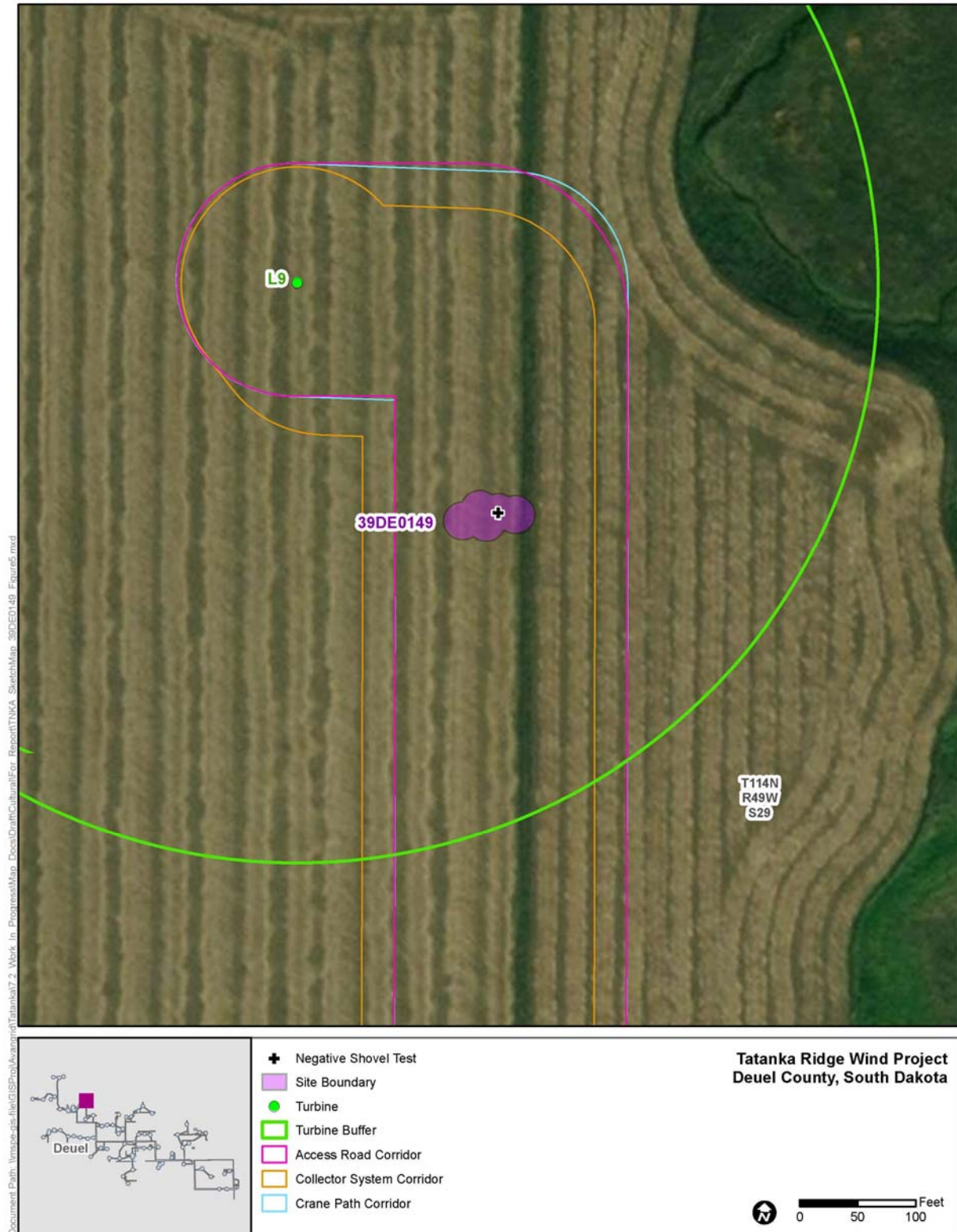
4.2.4.1 Summary and Recommendations

Site 39DE0149 is a Native American isolated find located in a cultivated agricultural field. No temporally or culturally diagnostic artifacts were observed. Shovel testing at the location revealed no cultural materials or features. The site exhibited no subsurface integrity because of intensive cultivation. Because isolated finds in South Dakota are by definition not eligible for listing on the NRHP, site 39DE0149 is recommended not eligible for listing on the NRHP under any criteria. If SHPO concurs that the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.

Photo 4. Site 39DE0149 overview, view to the north



Figure 5. 39DE0149 site map



4.2.5 Site 39DE0150 (HDR-007A)

Site 39DE0150 is a Native American artifact scatter located in the NE 1/4, SW 1/4, the SE 1/4, SW 1/4, and the SW 1/4, SE 1/4 of Section 15, Township 113N, Range 49W (**Appendix A, Figure A-13**). The scatter is located on a rise in a general upland setting with good views of the surrounding landscape (**Photo 5** and **Figure 6**). An unnamed intermittent stream is located 80 meters to the north. Ground coverage at the time of investigation consisted of a planted cornfield with 50 percent GSV.

The scatter consisted of 76 observed artifacts and included 68 pieces of lithic debitage, two lithic tools (both scrapers), two cores, and four tested cobbles. The lithic raw material of the majority of the artifacts was Swan River chert. Non-local raw material Knife River flint was also observed. A variety of other unidentified chert types, likely from locally derived glacial till, made up the remainder of the observed raw material types. Close-interval pedestrian survey around the artifacts was used to delineate the site boundary. No temporally or culturally diagnostic artifacts were observed.

4.2.5.1 Summary and Recommendations

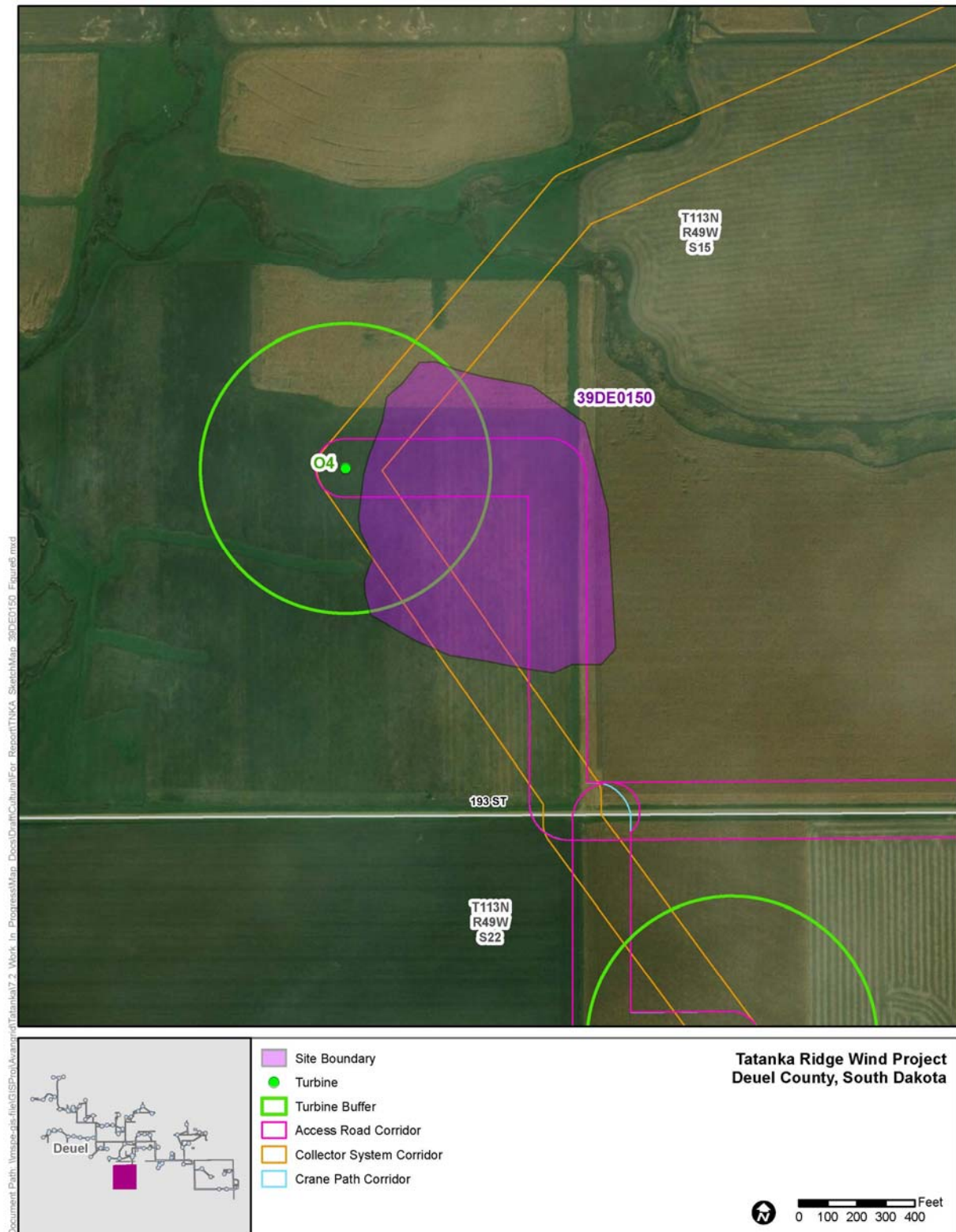
Site 39DE0150 is a Native American artifact scatter located in a cultivated agricultural field. The site was defined based on pedestrian survey. No further investigations were undertaken as part of this survey. As such, site 39DE0150 remains unevaluated for NRHP eligibility.

Avoidance of Project impacts to site 39DE0150 is recommended. If site 39DE0150 cannot be avoided, evaluation is recommended to determine the site's NRHP eligibility.

Photo 5. Site 39DE0150 overview, view to the north



Figure 6. 39DE0150 site map



4.2.6 Site 39DE0151 (HDR-001B)

Site 39DE0151 is a Native American artifact scatter located in the NW 1/4, NE 1/4, NE 1/4 of Section 11, Township 113N, Range 49W (**Appendix A, Figure A-8**). The scatter is located on a mostly flat plain in a general upland setting (**Photo 6** and **Figure 7**). An unnamed intermittent stream is located 300 meters to the southwest. Ground coverage at the time of investigation consisted of a planted cornfield with 90 percent GSV.

The scatter consisted of 19 observed artifacts and included 16 pieces of lithic debitage, two tools (including a side scraper and a biface), and one core. The lithic raw material of the majority of the artifacts was Swan River chert. The other raw material types observed are likely from locally derived glacial till. Close-interval pedestrian survey around the artifacts was used to delineate the site boundary. No temporally or culturally diagnostic artifacts were observed.

4.2.6.1 Summary and Recommendations

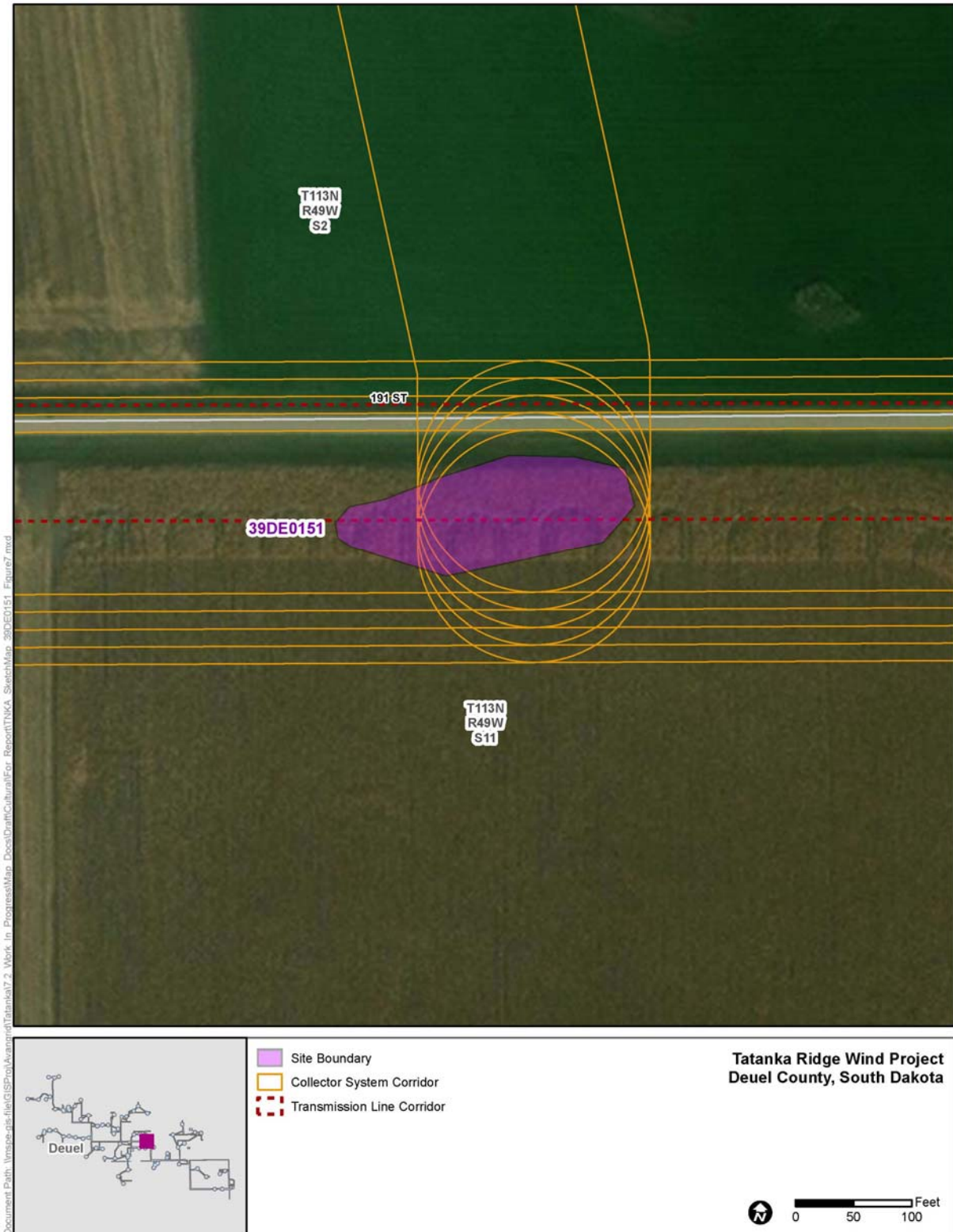
Site 39DE0151 is a Native American artifact scatter located in a cultivated agricultural field. The site was defined based on pedestrian survey. No further investigations were undertaken as part of this survey. As such, site 39DE0151 remains unevaluated for NRHP eligibility.

Avoidance of Project impacts to site 39DE0151 is recommended. If site 39DE0151 cannot be avoided, evaluation is recommended to determine the site's NRHP eligibility.

Photo 6. Site 39DE0151 overview, view to the west



Figure 7. 39DE0151 site map



4.2.7 Site 39DE0049

Site 39DE0049 is a Native American artifact scatter located in the NW 1/4 of Section 7, Township 113N, Range 48W (**Figure 8** and **Appendix A, Figure A-9**). The site is located within rolling terrain in a general upland setting. Cobb Creek is located approximately 400 meters to the east.

4.2.7.1 Previous Investigations

Site 39DE0049 was originally recorded in 1980 by the South Dakota State University Archaeology Lab (SDSU Archaeology Lab) for a pipeline project (SDSU Archaeology Lab 1980). At the time of the 1980 survey, the ground coverage was recorded as cropland/plowed fields. No GSV was noted. SDSU Archaeology Lab recorded the scatter as consisting of five artifacts including one chert flake, one piece of chert shatter, one orthoquartzite flake, one chalcedony flake, and one piece of Tongue River silicified sandstone shatter (SDSU Archaeology Lab 1980). Additional testing was documented as negative shovel tests every 10 meters in plowed fields and every 30 meters along a stream. Soil from the shovel tests was screened. No additional information regarding the site, including the exact location of survey and testing, was available (SDSU Archaeology Lab 1980). SDSU Archaeology Lab recommended site 39DE0049 as not eligible for the NRHP; however, no SHPO determination has been made regarding NRHP eligibility of the site. As such, site 39DE0049 is unevaluated for the NRHP.

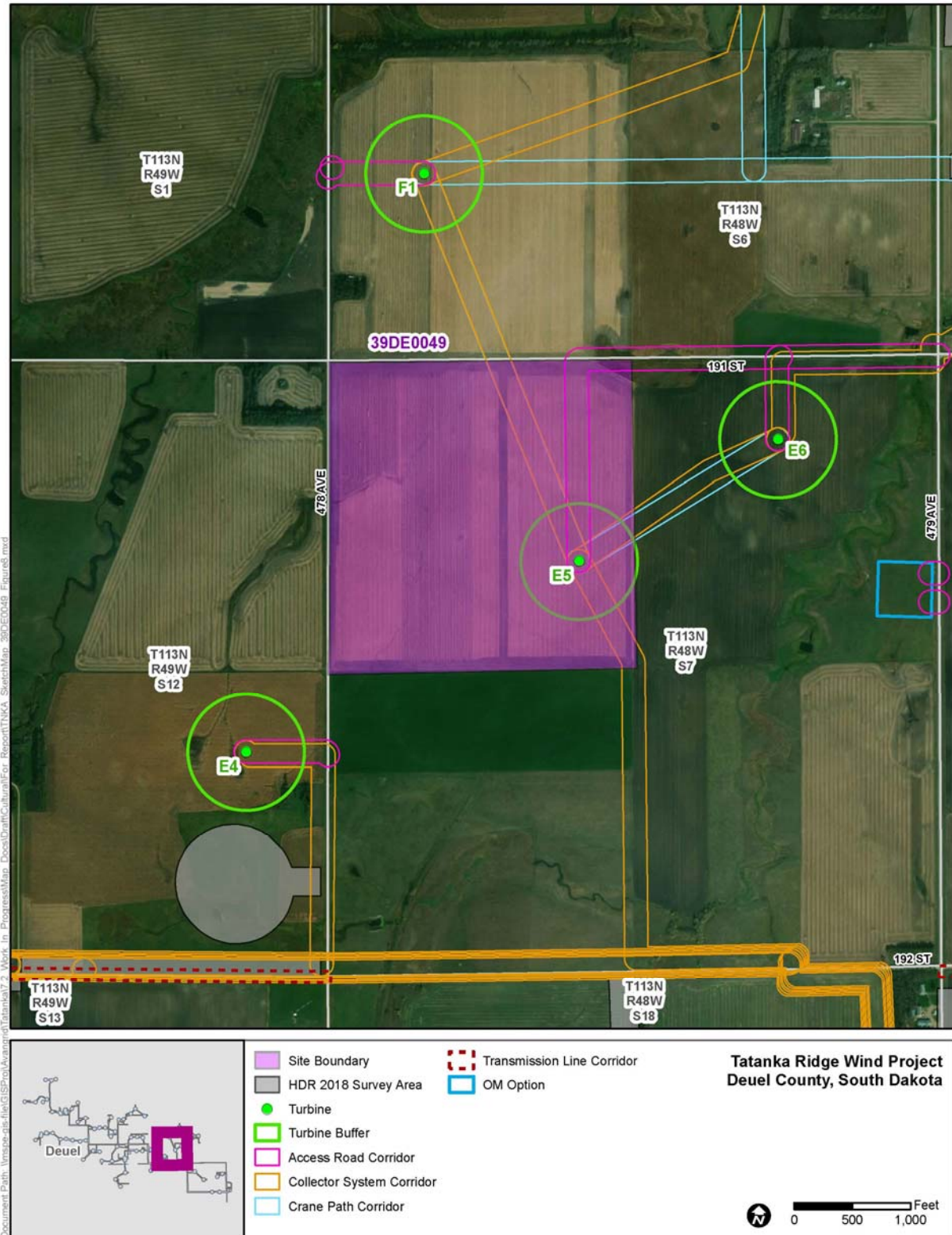
4.2.7.2 Current Investigations

The boundary for site 39DE0049 encompasses the whole NW 1/4 of Section 7, Township 113N, Range 48W. Ground coverage of the Project Area within this quarter section during the current investigation consisted of an agricultural field with 80 percent GSV. Pedestrian survey of the Project Area within this quarter-section during the current investigation did not reveal any cultural materials (**Figure 8**).

4.2.7.3 Summary and Recommendations

Site 39DE0049 is a Native American artifact scatter located at an indeterminate location within the NW 1/4 of Section 7, Township 113N, Range 48W. Pedestrian survey of the Project Area within this quarter-section during the current investigation did not reveal any cultural materials. Site 39DE0049 remains unevaluated for NRHP eligibility. Project impacts to site 39DE0049 are not anticipated if the impacts are limited to the area surveyed. If the Project Area within the site boundary is revised, archaeological survey of the revised Project Area is recommended.

Figure 8. 39DE0049 site map



4.2.8 Site 39DE0092

Site 39DE0092 is a Native American artifact scatter located in the SE 1/4, NW 1/4, NW 1/4 of Section 20, Township 113N, Range 48W (**Figure 9** and **Appendix A, Figure A-14**). The site is located on a relatively flat plain in a general upland setting. An unnamed intermittent stream is located approximately 767 meters to the northeast.

4.2.8.1 Previous Investigations

Site 39DE0092 was originally recorded in 2010 by Florin Cultural Resource Services for a prior wind farm project (Florin 2010a). At the time of the 2010 survey, the ground coverage consisted of cropland. No GSV was provided on the site form. Florin recorded the scatter as consisting of 15 artifacts including five primary flakes, one shatter, one other G4 flake, one utilized/retouched flake, one Stage 3 biface, one non-bifacial flake core, and five fire-cracked rocks (Florin 2010a). Lithic raw materials were recorded as primarily Swan River chert with small amounts of chalcedony, Tongue River silica, Knife River flint, granite, and unidentified chert. Artifacts were not collected and no further testing was done at the site (Florin 2010a). The site was not evaluated for NRHP eligibility.

4.2.8.2 Current Investigations

Close-interval pedestrian survey of the site area was conducted as part of the current investigation in 2018 (**Figure 9**). Ground coverage at the time of investigation consisted of a harvested soybean field with 50 to 75 percent GSV (**Photo 7**). No cultural materials were observed within the site area or within a 15-meter buffer around the site and no further testing was done.

4.2.8.3 Summary and Recommendations

Site 39DE0092 is a Native American artifact scatter located in a cultivated agricultural field. The site was defined based on pedestrian survey in 2010. No temporally or culturally diagnostic artifacts were observed at that time. No artifacts were observed during the current investigation in 2018. Further investigations were not conducted because the Project Area was revised and will not intersect the site. Site 39DE0092 remains unevaluated for NRHP eligibility. If future Project impacts are anticipated to this site, evaluation is recommended to determine the site's NRHP eligibility.

Photo 7. Site 39DE0092 overview, view to the southeast



Figure 9. 39DE0092 site map



4.2.9 Site 39DE0097

Site 39DE0097 is a Native American artifact scatter located in the SW 1/4, SW 1/4, NE 1/4, and the SE 1/4, SE 1/4, NW 1/4 of Section 20, Township 113N, Range 48W (**Figure 10** and **Appendix A, Figure A-15**). The site is located on a small rise in a general upland setting. An unnamed intermittent stream is located approximately 300 meters to the southeast.

4.2.9.1 Previous Investigations

Site 39DE0097 was originally recorded in 2010 by Florin Cultural Resource Services for a prior wind farm project (Florin 2010b). At the time of the 2010 survey, the ground coverage consisted of cropland with 60 percent GSV. Florin recorded the scatter as consisting of 14 artifacts including four primary flakes, four secondary flakes, two tertiary flakes, a broken flake, two pieces of shatter, and a bifacial flake core (Florin 2010b). Lithic raw materials were recorded as primarily Swan River chert with smaller amounts of Prairie du Chien chert and chalcedony. Artifacts were not collected and no further testing was done at the site (Florin 2010b). The site was not evaluated for NRHP eligibility.

4.2.9.2 Current Investigations

An artifact scatter was identified during the current survey while investigating the Project Area on the same landform approximately 25 meters due south of site 39DE0097 (**Figure 10**). This scatter was documented as HDR-001A. Ground coverage at the time of the investigation consisted of a cornfield with 60 percent GSV (**Photo 8**). The scatter consisted of approximately 37 artifacts including lithic debitage, cores, and two tools (both bifaces). Because of the close proximity of this scatter to the scatter identified by Florin in 2010, and based on their position on the same landform, it was determined that this was a continuation of the 2010-identified site. As such, a site boundary was delineated to include both artifact scatters as one site (**Figure 10**).

4.2.9.3 Summary and Recommendations

Site 39DE0097 is a Native American artifact scatter located in a cultivated agricultural field. The site was defined based on pedestrian survey over the course of two separate archaeological surveys conducted in 2010 and 2019 respectively. No further investigations were undertaken at the site as part of either survey. As such, site 39DE0097 remains unevaluated for NRHP eligibility.

Avoidance of Project impacts to site 39DE0097 is recommended. If site 39DE0097 cannot be avoided, evaluation is recommended to determine the site's NRHP eligibility.

Photo 8. Site 39DE0097 overview, view to the east



Figure 10. 39DE0097 site map



4.2.10 Site 39DE0101

Site 39DE0101 was previously identified as a Native American stone circle site located in the SW 1/4, SW 1/4, NW 1/4 of Section 20, Township 113N, Range 48W (**Figure 11** and **Appendix A, Figure A-15**). The site is located on gently rolling terrain in a general upland setting. An unnamed intermittent stream is located approximately 300 meters to the northwest

4.2.10.1 Previous Investigations

Site 39DE0101 was originally recorded in 2010 by Florin Cultural Resource Services for a prior wind farm project (Florin 2010c). At the time of the 2010 survey, the ground coverage consisted of short grass. No GSV was provided on the site form. Florin recorded a stone circle measuring 6 meters in diameter. No shovel testing was done at the site and site integrity was not assessed (Florin 2010c). The site was not evaluated for NRHP eligibility.

4.2.10.2 Current Investigations

Pedestrian survey of the site area was conducted as part of the current investigation in 2018 (**Figure 11**). Ground coverage at the time of investigation consisted of cattle-grazed pasture (**Photo 9**). Well-sodded stones that formed a circle were observed, as well as multiple other well-sodded stones that may be interpreted as other features. No further testing was conducted at the site.

4.2.10.3 Summary and Recommendations

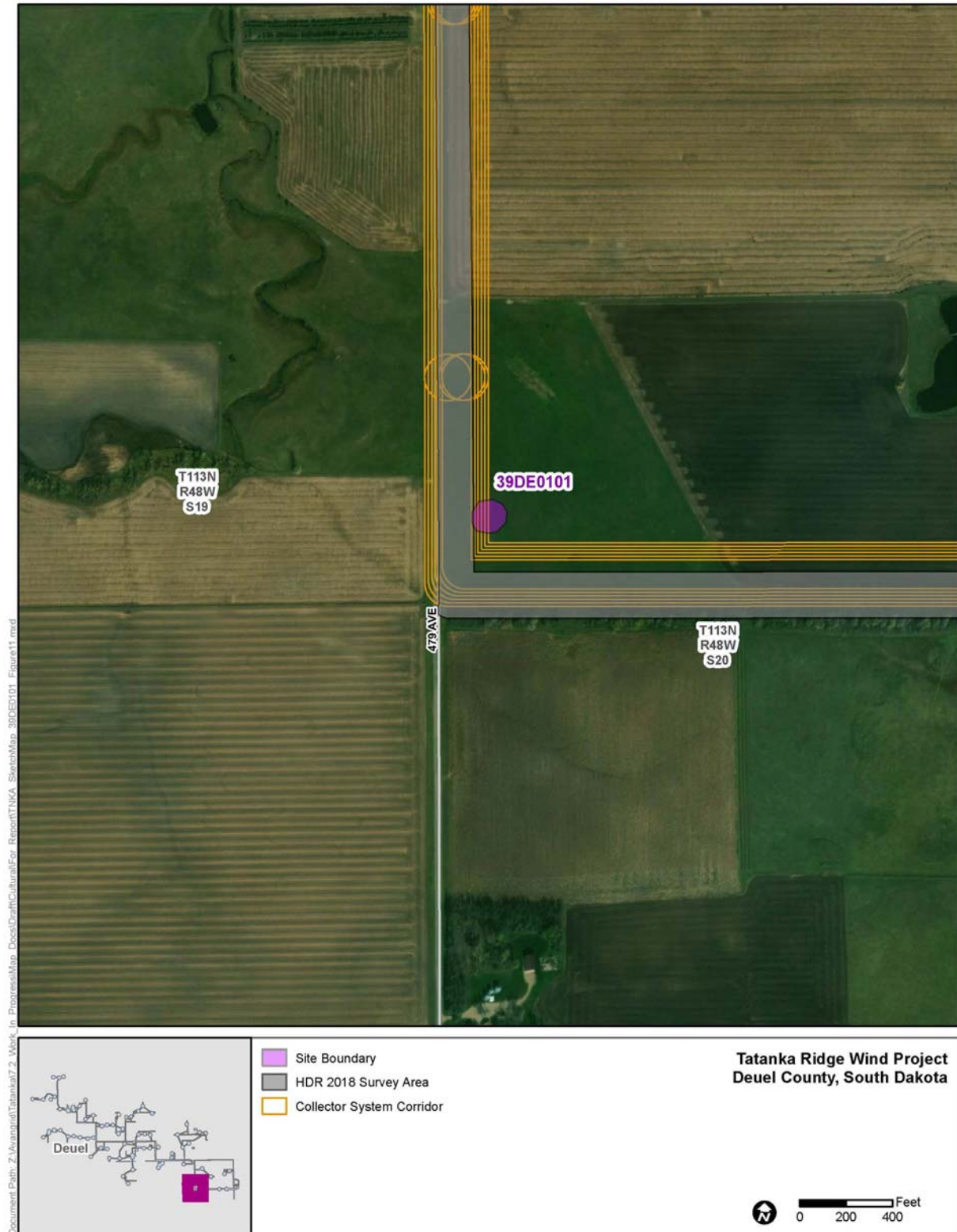
Site 39DE0101 was previously identified as a Native American stone circle site located within a cattle-grazed pasture. The site was defined based on pedestrian survey in 2010. Well-sodded stones that formed a circle along with multiple other well-sodded stones that may represent other features were observed within the site and in the surrounding pasture during the current investigation. This site has not been evaluated for NRHP eligibility.

Avoidance of Project impacts to site 39DE0101 and a 50-foot buffer is recommended. If site 39DE0101 and the surrounding pasture area cannot be avoided, evaluation is recommended to determine the site's NRHP eligibility.

Photo 9. Site 39DE0101 overview, view to the east



Figure 11. 39DE0101 site map



4.2.11 Site 39DE0102

Site 39DE0102 is a Native American artifact scatter located in the SE 1/4, SE 1/4, SE 1/4 of Section 17, Township 113N, Range 48W (**Figure 12** and **Appendix A, Figure A-15**). The site is located on relatively flat plain in a general upland setting. An unnamed intermittent stream is located approximately 460 meters to the northwest.

4.2.11.1 Previous Investigations

Site 39DE0102 was originally recorded in 2010 by Florin Cultural Resource Services for a prior wind farm project (Florin 2010d). At the time of the 2010 survey, the ground coverage consisted of cropland with 65 percent GSV. Florin recorded the scatter as consisting of five artifacts including one primary flake, one secondary flake, one piece of shatter, one other G4 flake, and one side scraper (Florin 2010d). Lithic raw materials were recorded as Knife River Flint with smaller amounts of Swan River chert and Red River chert. Artifacts were not collected and no further testing was done at the site (Florin 2010d). The site was not evaluated for NRHP eligibility.

4.2.11.2 Current Investigations

Close-interval pedestrian survey of the site area was conducted as part of the current investigation in 2018 (**Figure 12**). Ground coverage at the time of investigation consisted of a harvested cornfield with 25 percent GSV (**Photo 10**). No cultural materials were observed within the site area or within a 15-meter buffer around the site.

During investigations in 2019, one shovel test was placed within the site area to determine the presence or absence of additional cultural materials or features and to assess subsurface integrity. Shovel test 1 exhibited a very dark brown (10YR 2/2) clay loam plow zone that was present to a depth of 28 cmbs where the dark brown (10YR 3/3) clay subsoil was reached. The shovel test was excavated to a depth of 48 cmbs. No cultural materials or features were encountered in the shovel test.

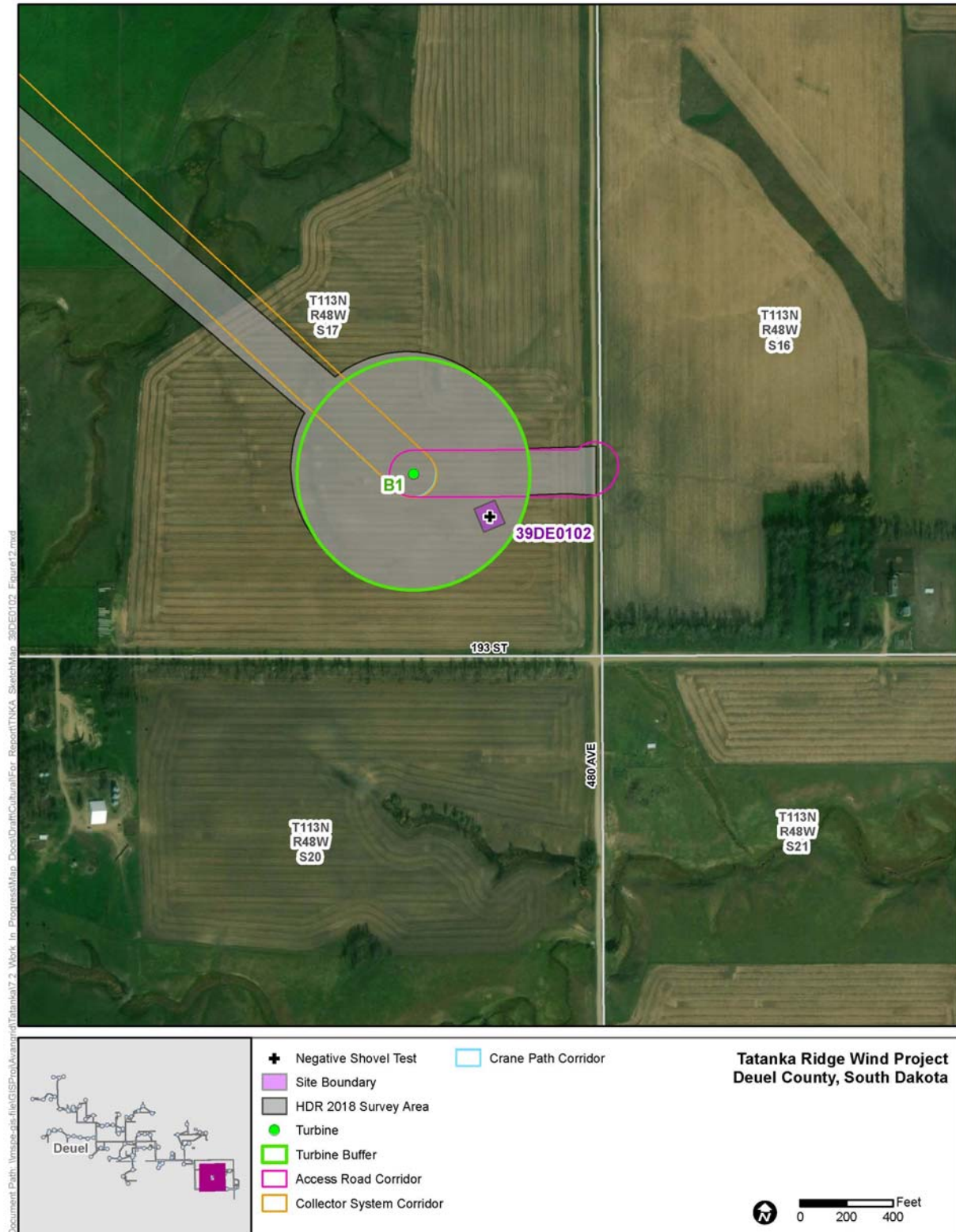
4.2.11.3 Summary and Recommendations

Site 39DE0102 is a Native American artifact scatter located in a cultivated agricultural field. The site was defined based on pedestrian survey in 2010. No temporally or culturally diagnostic artifacts were observed at that time. No artifacts were observed during the current investigation in 2018. Shovel testing at the site location in 2019 revealed no cultural materials or features. The site also exhibited no subsurface integrity because of intensive cultivation. Based on the small number of artifacts found and the lack of subsurface integrity, site 39DE0102 can be considered an isolated find. Because isolated finds in South Dakota are by definition not eligible for listing on the NRHP, site 39DE0102 is recommended not eligible for listing on the NRHP under any criteria. If SHPO concurs that the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.

Photo 10. Site 39DE0102 overview, view to the east



Figure 12. 39DE0102 site map



Document Path: \\mapserver\gis\proj\workspace\TatankaRidge\TatankaRidge\2018\ProgressMap_Docs\Draft\Cultural\For_Report\THKA_SketchMap_39DE0102_Figure12.mxd

4.2.12 Site 39DE0107

Site 39DE0107 is a Native American artifact scatter located in the SE 1/4, SE 1/4, SE 1/4 of Section 17, Township 113N, Range 48W (**Figure 13** and **Appendix A, Figure A-15**). The site is located on relatively flat plain in a general upland setting. An unnamed intermittent stream is located approximately 460 meters to the northwest.

4.2.12.1 Previous Investigations

Site 39DE0107 was originally recorded in 2010 by Florin Cultural Resource Services for a prior wind farm project (Florin 2010e). At the time of the 2010 survey, the ground coverage consisted of cropland with 65 percent GSV. Florin recorded the scatter as consisting of two artifacts including one primary flake and one piece of shatter (Florin 2010e). Lithic raw materials were recorded as Swan River chert and Knife River flint. Artifacts were not collected and no further testing was done at the site (Florin 2010e). The site was not evaluated for NRHP eligibility.

4.2.12.2 Current Investigations

Close-interval pedestrian survey of the site area was conducted as part of the current investigation in 2018 (**Figure 13**). Ground coverage at the time of investigation consisted of a harvested cornfield with 25 percent GSV (**Photo 11**). No cultural materials were observed within the site area or within a 15-meter buffer around the site.

During investigations in 2019, one shovel test was placed within the site area to determine the presence or absence of additional cultural materials or features and to assess subsurface integrity. Shovel test 1 exhibited a very dark brown (10YR 2/2) clay loam plow zone that was present to a depth of 23 cmbs where a very dark brown (10YR 2/2) clay loam mottled with dark brown (10YR 3/3) clay loam horizon was reached. This horizon was present to 40 cmbs where the dark brown (10YR 3/3) clay subsoil was reached. The shovel test was excavated to a depth of 53 cmbs. No cultural materials or features were encountered in the shovel test.

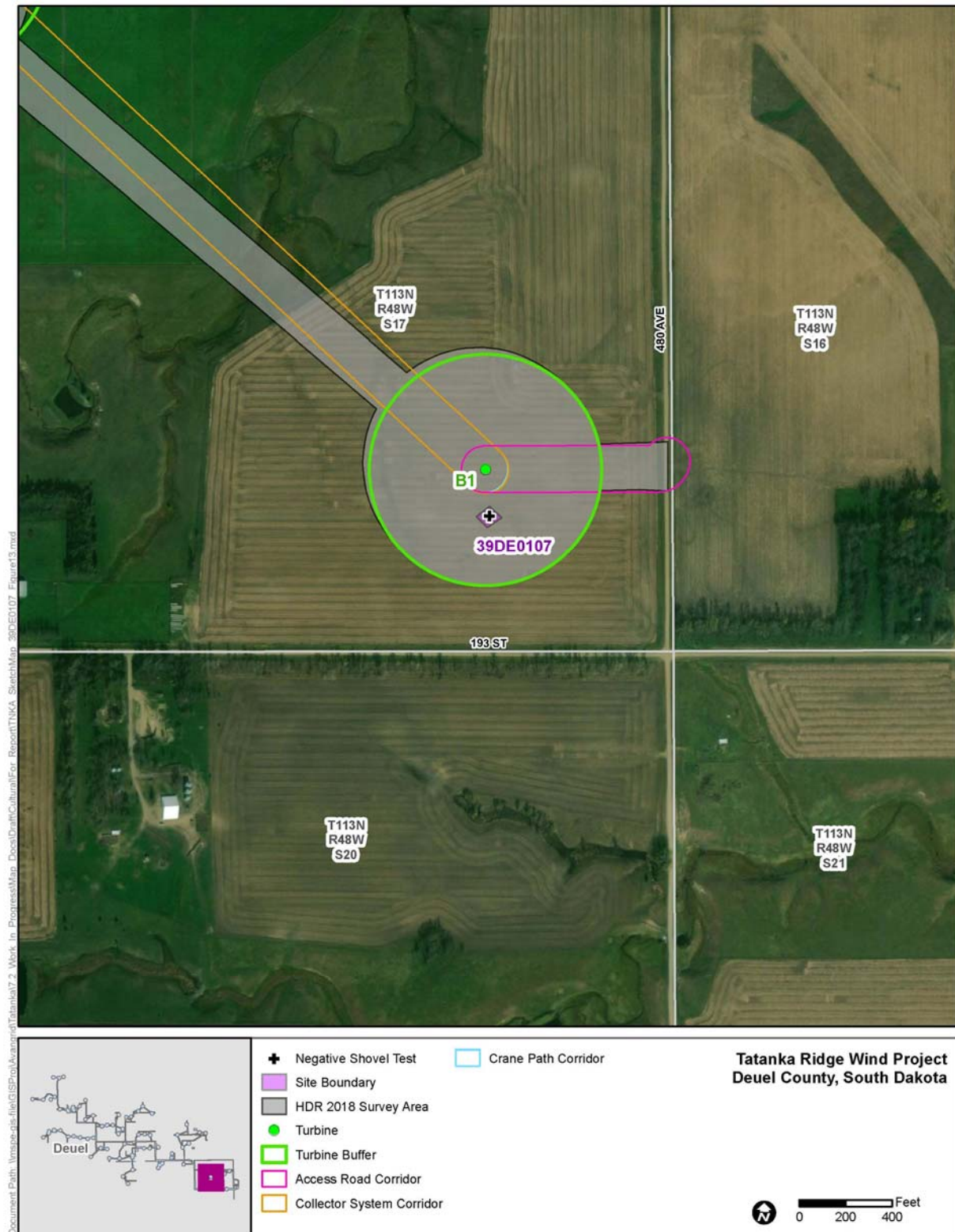
4.2.12.3 Summary and Recommendations

Site 39DE0107 is a Native American artifact scatter located in a cultivated agricultural field. The site was defined based on pedestrian survey in 2010. No temporally or culturally diagnostic artifacts were observed at that time. No artifacts were observed during the current investigation in 2018. Shovel testing at the site location in 2019 revealed no cultural materials or features. The site exhibited no subsurface integrity because of intensive cultivation. Based on the small number of artifacts found and the lack of subsurface integrity, site 39DE0107 can be considered an isolated find. Because isolated finds in South Dakota are by definition not eligible for listing on the NRHP, site 39DE0107 is recommended as not eligible for listing on the NRHP under any criteria. If SHPO concurs that the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.

Photo 11. Site 39DE0107 overview, view to the northwest



Figure 13. 39DE0107 site map



4.2.13 Site 39DE0108

Site 39DE0108 is a Native American artifact scatter located in the SW 1/4, NW 1/4, NE 1/4 and NW 1/4, SW 1/4, NE 1/4 of Section 18, Township 113N, Range 48W (**Figure 14** and **Appendix A, Figure A-15**). The site is located on relatively flat plain in a general upland setting. An unnamed intermittent stream is located approximately 35 meters to the west.

4.2.13.1 Previous Investigations

Site 39DE0108 was originally recorded in 2010 by Florin Cultural Resource Services for a prior wind farm project (Florin 2010f). At the time of the 2010 survey, the ground coverage consisted of cropland with 50 percent GSV. Florin recorded the scatter as consisting of seven artifacts including one primary flake, three pieces of shatter, two bipolar cores, and one offering stone (Florin 2010f). Lithic raw materials were recorded as primarily Swan River chert with smaller amounts of quartz, unidentified chert, and basalt. Artifacts were not collected and no further testing was done at the site (Florin 2010f). The site was not evaluated for NRHP eligibility.

4.2.13.2 Current Investigations

Close-interval pedestrian survey of the site area was conducted as part of the current investigation in 2018 (**Figure 14**). Ground coverage at the time of investigation consisted of a planted cornfield with 25 to 50 percent GSV (**Photo 12**). No cultural materials were observed within the site area and no further testing was done.

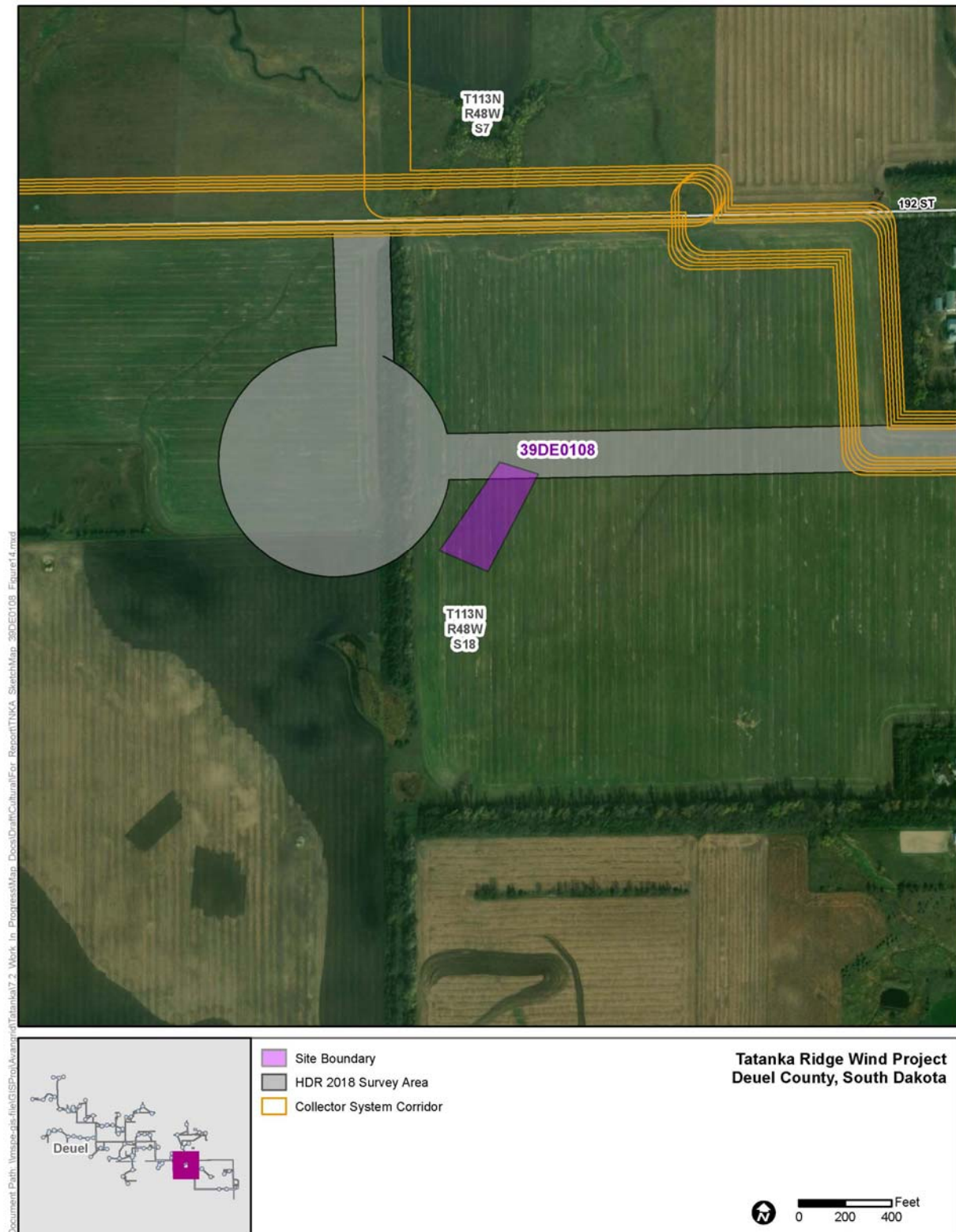
4.2.13.3 Summary and Recommendations

Site 39DE0108 is a Native American artifact scatter located in a cultivated agricultural field. The site was defined based on pedestrian survey in 2010. No temporally or culturally diagnostic artifacts were observed at that time. No artifacts were observed during the current investigation in 2018. Further investigations were not conducted because the Project Area was revised and will not intersect the site. Site 39DE0108 remains unevaluated for NRHP eligibility. If future Project impacts are anticipated to this site, evaluation is recommended to determine the site's NRHP eligibility.

Photo 12. Site 39DE0108 overview, view to the southwest



Figure 14. 39DE0108 site map



4.2.14 Site 39DE0109

Site 39DE0109 is a Native American stone feature site located in the SW 1/4, NW 1/4, NW 1/4, and NW 1/4, SW 1/4, NW 1/4 of Section 17, Township 113N, Range 48W (**Figure 15** and **Appendix A, Figure A-15**). The site is located on gently rolling terrain in a general upland setting. An unnamed intermittent stream is located approximately 385 meters to the south.

4.2.14.1 Previous Investigations

Site 39DE0109 was originally recorded in 2010 by Florin Cultural Resource Services for a prior wind farm project (Florin 2010g). At the time of the 2010 survey, the site form lists the ground coverage as cropland. No GSV was provided on the site form. Based on information provided in the site form, Florin recorded two stone circles, two cairns, and a possible Native American or Euro-American trail. Florin noted that the stones of the stone circles and cairns are partially buried in the ground, suggesting some antiquity (Florin 2010g). The trail was recorded as approximately 61 meters long and 1/3 meter wide. No shovel testing was done at the site and site integrity was not assessed (Florin 2010g). The site was not evaluated for NRHP eligibility.

4.2.14.2 Current Investigations

Pedestrian survey of the portion of the site area that intersects with the Project Area was conducted as part of the current investigation in 2019 (**Figure 15**). Ground coverage at the time of investigation consisted of pasture (**Photo 13**). Multiple well-sodded stones that may be represent stone features were seen throughout the pasture area in the vicinity of the site. No further testing was conducted at the site.

4.2.14.3 Summary and Recommendations

Site 39DE0109 is a Native American stone feature site located within a pasture area. The site was defined based on pedestrian survey in 2010. Multiple well-sodded stones that may represent features were observed within the site and in the surrounding pasture during the current investigation. This site has not been evaluated for NRHP eligibility.

Avoidance of Project impacts to site 39DE0109 and a 50-foot buffer is recommended. If site 39DE0109 and the surrounding pasture area cannot be avoided, evaluation is recommended to determine the site's NRHP eligibility.

Photo 13. Site 39DE0109 typical field conditions, view to the south



Figure 15. 39DE0109 site map



5.0 Conclusions and Recommendations

During the survey, six newly identified archaeological sites were documented and eight previously identified sites were revisited. A summary of results is provided in **Table 7**.

Of the six newly identified sites, four (39DE0146, 39DE0147, 39DE0148, 39DE0149) are Native American isolated finds and two are Native American artifact scatters. In South Dakota, isolated finds are considered not eligible for the NRHP. If SHPO concurs that these four sites are isolated finds and as such are not eligible for the NRHP, then no further work is recommended under the current Project design. The two newly identified Native American artifact scatters (39DE0150 and 39DE0151) are unevaluated for the NRHP and avoidance of these two sites is recommended. If sites 39DE0150 and 39DE0151 cannot be avoided by Project impacts, then evaluation is recommended to determine their NRHP eligibility.

In addition, eight previously identified sites were revisited. Of the previously identified sites, four sites (39DE0049, 39DE0092, 39DE0097, 39DE0108) are Native American artifact scatters, two sites (39DE0102, 39DE0107) are documented as Native American artifact scatters but can be considered Native American isolated finds, and two sites (39DE0101, 39DE0109) are Native American stone feature sites. Because of changes in Project design, sites 39DE0092 and 39DE0108 no longer intersect the Project Area; therefore, no further work is recommended for these two sites under the current Project design. The two Native American isolated finds (39DE0102, 39DE0107) are recommended not eligible for the NRHP. If SHPO concurs that these two sites are isolated finds and as such are not eligible for the NRHP, then no further work is recommended under the current Project design.

The remaining four previously identified sites are considered unevaluated for the NRHP. Of these, one site (39DE0049) consists of a Native American artifact scatter for which a location was not precisely mapped during the original recordation. HDR's investigations within the Project Area encountered no evidence of 39DE0049. As such, no further survey work within the site boundary is recommended under the current Project design. For unevaluated site 39DE0097 (also a Native American artifact scatter), avoidance of Project impacts is recommended. If site 39DE0097 cannot be avoided, then evaluation is recommended to determine the site's NRHP eligibility. For the two unevaluated, previously identified Native American stone feature sites (39DE0101, 39DE0109), HDR recommends avoidance of Project impacts to the site and a 50-foot buffer. If these two sites and the recommended 50-foot buffers cannot be avoided, then evaluation is recommended to determine NRHP eligibility.



Table 7. Summary of results and recommendations

Site no.	HDR field no.	Site type	NRHP recommendation	Management recommendation
39DE0146	HDR-002A	Native American isolated find	Not eligible	If SHPO concurs the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.
39DE0147	HDR-003A	Native American isolated find	Not eligible	If SHPO concurs the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.
39DE0148	HDR-004A	Native American isolated find	Not eligible	If SHPO concurs the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.
39DE0149	HDR-005A	Native American isolated find	Not eligible	If SHPO concurs the site is an isolated find and as such is not eligible for the NRHP, then HDR recommends no further work and Project plans can proceed as designed.
39DE0150	HDR-007A	Native American artifact scatter	Not evaluated	Avoidance of Project impacts to site 39DE0150 is recommended. If the site cannot be avoided, evaluation is recommended to determine NRHP eligibility.
39DE0151	HDR-001B	Native American artifact scatter	Not evaluated	Avoidance of Project impacts to site 39DE0151 is recommended. If the site cannot be avoided, evaluation is recommended to determine NRHP eligibility.
39DE0049	N/A	Native American artifact scatter	Not evaluated	Project impacts to the site are not anticipated if impacts are limited to the Project Area as surveyed. If the Project Area within the site boundary is revised, archaeological survey of the revised Project Area is recommended.
39DE0092	N/A	Native American artifact scatter	Not evaluated	No impacts under the current Project design. If future Project impacts are anticipated to this site, evaluation is recommended to determine NRHP eligibility.
39DE0097	N/A	Native American artifact scatter	Not evaluated	Avoidance of Project impacts to site 39DE0097 is recommended. If the site cannot be avoided, evaluation is recommended to determine NRHP eligibility.
39DE0101	N/A	Native American stone circle	Not evaluated	Avoidance of Project impacts to site 39DE0101 and a 50-foot buffer is recommended. If site 39DE0101 and the 50-foot buffer cannot be avoided, evaluation is recommended to determine NRHP eligibility.



Site no.	HDR field no.	Site type	NRHP recommendation	Management recommendation
39DE0102	N/A	Native American artifact scatter	Not eligible	If SHPO concurs the site is not eligible for the NRHP, HDR recommends no further work and Project plans can proceed as designed.
39DE0107	N/A	Native American artifact scatter	Not eligible	If SHPO concurs the site is not eligible for the NRHP, HDR recommends no further work and Project plans can proceed as designed.
39DE0108	N/A	Native American artifact scatter	Not evaluated	No impacts under the current Project design. If future Project impacts are anticipated to this site, evaluation is recommended to determine NRHP eligibility.
39DE0109	N/A	Native American stone circle, unknown alignment, unknown cairn	Not evaluated	Avoidance of Project impacts to site 39DE0109 and a 50-foot buffer is recommended. If site 39DE0109 and the 50-foot buffer cannot be avoided, evaluation is recommended to determine NRHP eligibility.

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2010c Site Form 39DE0101 comments dated May 20. On file at South Dakota Archaeological Research Center, Rapid City, South Dakota.

2010d Site Form 39DE0102 comments dated May 20. On file at South Dakota Archaeological Research Center, Rapid City, South Dakota.

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2010f Site Form 39DE0108 comments dated May 20. On file at South Dakota Archaeological Research Center, Rapid City, South Dakota.

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