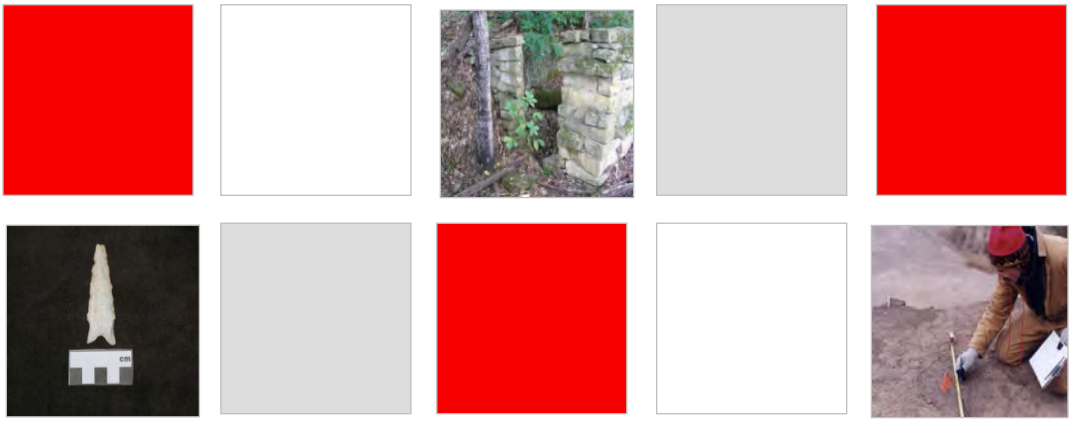
Appendix H

Phase Ia Literature Review and Natural Heritage Information System Review Request

In accordance with Minnesota Rules, part 7829.0500 and Minnesota Statutes Chapter 13, Xcel Energy has designated Appendix H – Phase Ia Literature Review and Natural Heritage Information System Request as **NONPUBLIC DATA – NOT FOR PUBLIC DISCLOSURE** because it contains sensitive cultural resource and natural heritage information. The Minnesota State Historic Preservation Office Manual for Archaeological Projects in Minnesota provides for restricted access to sensitive cultural resource information. Similarly, the natural heritage information is nonpublic under Minn. Stat. § 84.0872. The Minnesota Department of Natural Resources also restricts its dissemination by license agreement. Given the nature of this information, the entirety of the document has been redacted in this public version. A summary of findings is available in Sections 8.7 and 8.21 of the Application.



Xcel Energy, Inc.

Phase Ia Literature Search for the Pleasant Valley Wind Farm Repower Project

Dodge and Mower Counties, Minnesota

PREPARED BY

Merjent, Inc.
1 Main Street SE, Suite 300
Minneapolis, Minnesota 55414

Stephen Larsen

William M. Harding
Principal Investigator

March 2022

TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

ACRONYM LIST

BCE	before common era
BLM	Bureau of Land Management
CE	Common era
GIS	Geographic Information System
GLO	General Land Office
Merjent	Merjent, Inc.
MnDNR	Minnesota Department of Natural Resources
MnDOT	Minnesota Department of Transportation
MnSHPO	Minnesota State Historic Preservation Office
MW	megawatt
N	north
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSA	Office of the State Archaeologist
Project	Pleasant Valley Wind Farm Repower Project
R	range
T	township
W	west
Xcel Energy	Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy

EXECUTIVE SUMMARY

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (Xcel Energy) contracted with Merjent, Inc. (Merjent) to conduct a Phase Ia literature search of the Pleasant Valley Wind Farm Repower Project (Project) area and 1-mile buffer consisting of 79,060 acres. In January 2022, Merjent conducted the literature review of cultural resources reports, archaeological sites, and historic architectural sites provided by the Minnesota State Historic Preservation Office (MnSHPO) and Minnesota Office of the State Archaeologist, as well as 19th century General Land Office maps, Trygg Historical Maps, and historic aerial photography. Additionally, on February 1 and 2, 2022, Xcel Energy sent project notification letters to eleven Native American Tribes with identified interest in the Project area, as well as the Minnesota Indian Affairs Council, requesting comments on the Project.

The literature review identified one cultural resources report, three historic architectural inventories, three archaeological sites, and 22 historic architectural sites. Merjent recommends Phase I archaeological survey in all areas of proposed Project ground disturbance outside of areas that have been previously surveyed. Additionally, no impacts on historic architectural sites were identified during the initial construction and continued operation of the existing wind farm. If there is physical alteration to a structure or building during the course of construction, then Merjent recommends that Xcel Energy sponsor a Phase II architectural survey of that structure or building to evaluate the resource, and consult with MnSHPO regarding a determination of effects and any necessary avoidance, minimization, or mitigation measures.

1.0 PROJECT DESCRIPTION

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (Xcel Energy) owns and operates the Pleasant Valley Wind Energy Facility in Mower and Dodge Counties, Minnesota. The original Site Permit for the 100-turbine, 200-megawatt (MW) large wind energy conversion system was issued by the Minnesota Public Utilities Commission on February 10, 2014. Xcel Energy is proposing to repower all 100 turbines (Project), which will increase energy production from the facility, improve overall reliability, and extend the service life of the turbines. Xcel Energy will apply for an amendment to the existing Site Permit during the second quarter of 2022.

The Project would extend the life of the wind farm and include adding longer blades (rotors) and upgrading other components within 86 turbines and replacing the entire nacelle for 14 turbines. Repowering would change the turbine rating from 2.0 MW to 2.2 MW. The purpose of the Project is to improve turbine technology and to maximize energy yield. Longer blades provide an increase in the rotor swept area, which results in a corresponding increase in the nominal production capacity of the Project. No new turbines would be added to the existing wind farm as part of the Project and the Project is expected to extend the life of the wind farm for 25 years.

The previously permitted locations of turbines, access roads, collection lines, and other supporting infrastructure will remain the same. A full-sized crane will be used to remove the old rotors and nacelles and install the new components. Some minor upgrading of public roadways and intersections may be required to allow for delivery of the replacement rotors and nacelles to each turbine location. A temporary staging/laydown yard will be constructed within agricultural lands to stage the turbine components prior to installation. Xcel Energy will widen existing turbine access roads to allow for use by heavy construction equipment, including cranes, for installing the new rotors and nacelles. The widened access roads will be restored to pre-construction conditions following the repower. Xcel Energy anticipates construction to begin in the third quarter of 2024.

2.0 LITERATURE REVIEW STUDY AREA

The proposed Project traverses Dexter, Sergeant, Red Rock, Marshall, Waltham and Pleasant Valley Townships in Mower County, Minnesota as well as Vernon and Hayfield Townships in Dodge County, Minnesota (Figure 1). The literature search includes the proposed Project boundary and a 1-mile extension around it; this area encompasses the entire Study Area.

TABLE 2.0-1

Pleasant Valley Wind Farm Repower Project Study Area

County	Township Name	Township	Range	Sections included in Study Area
Mower	Marshall	102N	16W	3-5
	Dexter	103N	16W	2-36
	Red Rock	103N	17W	1-3, 10-15, 23-25, 36
	Sargeant	104N	16W	1-36
	Waltham	104N	17W	1-16, 21-28, 34-36
Dodge	Vernon	105N	16W	7, 16-21, 28-33
	Hayfield	105N	17W	12-14, 23-36

3.0 METHODOLOGY

This literature search constitutes an analysis of protected datasets on file at the Minnesota State Historic Preservation Office (MnSHPO) and the Minnesota Office of the State Archeologist (OSA). Merjent archaeologist Erika Eigenberger received the results of a data request of known archaeological sites and historic structures within the Study Area from MnSHPO in January 2022. Due to restricted in-person access at the MnSHPO, copies of previous cultural resources reports on file at MnSHPO are limited to digital copies that can be requested by accession number only. Additional data regarding previous cultural resources surveys was obtained from known archaeological site forms and online resources. OSA maintains a secured online dataset of known and suspected archaeological sites, which is regularly updated and referenced (OSA Portal). Ms. Eigenberger reviewed the files of the OSA Portal and downloaded copies of all known sites within the Study Area.

Merjent also reviewed 19^{h} century General Land Office (GLO) maps and notes on file with the Bureau of Land Management (BLM, 2022), Trygg Historical Maps (Trygg, 1964), and aerial photographs from 1938 and 1954 on file with the OSA.

Since geographic information system (GIS) shapefiles of archaeological survey locations and archaeological site boundaries are not available from MnSHPO or OSA, Ms. Eigenberger digitized survey and site locations (Tables 5.1-1 and 5.2-1, respectively) based on digital files provided by MnSHPO and available on the OSA Portal. Merjent also received a list of historic architectural structures within the requested Study Area (Table 5.3-1). Merjent digitized structure locations and provided them with this report. Finally, Merjent archaeologist Stephen Larsen reviewed background materials on file at Merjent, and publicly available data sources available online for information about Mower and Dodge Counties and the ecological setting of the Study Area.

Additionally, on February 1 and 2, 2022, Xcel Energy sent project notification letters to eleven Native American Tribes with identified interest in the Project area, as well as the Minnesota Indian Affairs Council, requesting comments on the Project.

4.0 ENVIRONMENTAL AND CULTURAL BACKGROUND

As defined by the Ecological Classification System developed by the Minnesota Department of Natural Resources (MnDNR) and U.S. Forest Service, the Project is in the Oak Savanna subsection of the Minnesota and Northeast Iowa Morainal section of the Eastern Broadleaf Forest province (MnDNR, 2022a). The Oak Savanna subsection consists of a series of end moraines. It is bounded by a large block of deciduous forest to the north, hardwood forest to the east, moraine ridges to the south, and open prairie to the west.

4.1 TOPOGRAPHY

Topography within the Oak Savanna subsection is generally gently rolling, comprising Late Wisconsin end moraines, small, steep stagnation moraines, and outwash. There are few lakes within the subsection (MnDNR, 2022a).

4.2 HYDROLOGY

The Oak Savanna subsection contains few lakes (MnDNR, 2022a). The portion of the subsection that contains the Project is within the Root River Watershed (NRCS, 2022). The Root River begins

on the western edge of the watershed and flows east approximately 80 miles to the Mississippi river. The Root River Watershed drains an area of 1,659 square miles (MnDNR, 2022b).

4.3 GEOLOGY

Bedrock within the Oak Savanna subsection consists of Ordovician and Devonian dolomite covered by up to 100 feet of glacial drift. Bedrock is locally exposed in the eastern edge of the subsection in dissected stream valleys (MnDNR, 2022a; Morey, 1976).

4.4 SOILS

Soils within the Oak Savanna subsection consist of primarily Mollisols, which correlate with flat ridgetops in upland prairie and broad depressions in wetland prairies, and Alfisols which correlate with savanna and forested areas (NRCS, 2022).

Soil series mapped by the NRCS potentially provide clues but should be recognized as having considerable limitations in archaeological applications (Holliday, 2004). Although these soil types generally have depth and consistently occur on level upland areas, agricultural activities have likely diminished the potential for intact subsurface cultural deposits across the Project area.

4.5 FLORA AND FAUNA

Few remnants of pre-settlement vegetation remain within the Oak Savanna subsection as agriculture is currently the predominant land use. Pre-settlement vegetation consisted of mostly bur oak savanna on moraine ridges and dissected ravines with areas of maple-basswood in steep, dissected ravines, and tallgrass prairie on gently rolling portions. Edible native plants within the subsection included acorns, prairie turnip, water lily, and other aquatic flora.

Pre-settlement fauna were dominated by deer, elk, and scattered bison in the uplands. White-tailed deer and small animals were abundant along river valleys. Wetlands and lakes within the subsection provided fish, mussels, and waterfowl. (MnDNR, 2022; Gibbon et al., 2002).

4.6 CULTURAL AND HISTORICAL OVERVIEW

Culturally, the Project is within the Minnesota Archaeological sub-region 3 (Southeast Riverine). The Southeast Riverine region covers the southeast corner of Minnesota in all or part of Dodge, Fillmore, Goodhue, Houston, Mower, Olmsted Wabasha, and Winona counties. (Gibbon et al., 2002).

4.6.1 Pre-Contact Period (10,900 BCE-1650 CE)

The first inhabitants of Minnesota are known as Paleo-Indians (10,900 to 7,500 years Before the Common Era [BCE]). These people were highly nomadic hunter-gatherers, moving in small bands in search of food and other subsistence resources; however, in the Late Glacial and Early Holocene forests of Minnesota, Paleo-Indians likely relied more on gathering and the hunting of a variety of smaller animals. Paleo-Indian sites are small and relatively ephemeral and are commonly identified with the recovery of distinctive spear tips that occur across much of North America (Gibbon et al., 2002).

The Paleo-Indian peoples were followed by Archaic Tradition hunter-gatherers. At the end of the Ice Age, around 10,000 years BCE, the climate became warmer and drier, which led to major

changes in plant and animal communities. Spruce forests followed the retreating glacial ice northward and were replaced by a new landscape comprised of extensive lakes and rivers. Many large-game species became extinct.

Archaic Tradition hunters-gatherers (7,500 to 500 BCE) adapted to this new environment, becoming less nomadic and shifting their focus to smaller game such as deer and elk, the abundant fish and shellfish in the numerous lakes and rivers, and wild plants such as nuts and berries (Gibbon et al., 2002). Archaic sites are identified by large notched and stemmed projectile points. Immense sedimentation during the early part of the Archaic, corresponding with the Early and Middle Holocene periods, resulted in many Archaic Tradition sites being deeply buried under river valley deposits; therefore, these sites are not usually evident in surficial contexts (Gibbon et al., 2002).

The Woodland Tradition followed the Archaic Tradition. In Minnesota, the Woodland culture is separated into two periods, the earlier Initial Woodland period (ca. 500 BCE to 500 years into the Common Era [CE]), and the later Terminal Woodland period (500 to 1650 CE; Gibbon et al., 2002).

The frequent surficial expression of Woodland site locations, coupled with burial mounds that frequently mark their place, has resulted in more frequent documentation and excavation of Woodland sites. Due to this higher frequency of identification, many Woodland sites have also been grouped into specific regional archaeological cultures (Gibbon et al., 2002; Gibbon, 2012).

The Initial Woodland period is primarily marked by the emergence of Pre-contact ceramic traditions and burial mounds. Regional archaeological cultures of the Initial Woodland period include Howard Lake, Malmo, Elk Lake, and Laurel (Gibbon et al., 2002; Gibbon, 2012).

The Terminal Woodland period has been defined throughout eastern and central Minnesota, the Red River Valley, and portions of the Dakotas (Gibbon, 2012). During this time period, populations began to increase, which in turn led to an increase in size and number of Pre-contact sites. Burial mounds became more prevalent and the cultural material artifacts began shifting to smaller, unnotched triangular projectile points and thinner ceramic vessels that were more globular in shape. Agriculture and wild rice harvests also increased (Gibbon et al., 2002; Gibbon, 2012).

In the northern portion of the state, ceramic types and burial practices indicate specific regional archaeological cultures, including Kathio, Blackduck, and Psinomani. In the southern portion of the state, primarily comprised of deciduous forests and prairie, some cultures adopted the cultivation of maize and the construction of effigy burial mounds (Gibbon et al., 2002; Gibbon, 2012).

Around approximately 1,000 CE, Mississippian populations from Cahokia, near St. Louis, Missouri, began to extend their influence northward into the Upper Mississippi River Valley and evidence suggests that there were attempts at colonization. Archaeologists tend to regard some southern Minnesota Terminal Woodland cultures as the northern expression of a “Mississippian” lifeway, distinguished by distinctive ceramic styles, larger and more diverse artifact assemblages, and evidence of maize production. In southern Minnesota, three Mississippian complexes have been identified: Silvernale, Oneota, and Plains Village (Gibbon et al. 2002). It was the Mississippian peoples in the south, and the Terminal Woodland peoples in the north, who had contact with the first Europeans to explore Minnesota in the mid-17th century (Gibbon et al. 2002; Gibbon 2012).

4.6.2 Contact Period (1650-1837 CE)

The Contact Period includes American Indian and Euro-American contexts. The OSA subdivides the American Indian context into "Indeterminate" or "Eastern Dakota," and the Euro-American context into "Indeterminate," "French," "British," and "Initial US" (OSA, 2009). This section focusses on developing a context for those sites investigated during the project. The remaining information provides a temporal framework as a context.

Euro-American fur traders and settlers encountered the Dakota (also known as Sioux) and Ojibwe (also known as Chippewa) Native American peoples when they moved into traditional lands in what is now Minnesota. Several other Native American tribes, including the Assiniboine moved west in the early 1600s, soon after the explorers and traders entered the region (Holmquist, 1981). The Dakota lived in village-centered societies in the southern portion of Minnesota while the Ojibwe were organized into independent migratory bands in the northern portion of Minnesota. (Gibbon, 2012:205).

The first mention of the Dakota of the West was in 1679-1680. Hennepin (1903) was told by the Dakota of the East that 50 to 75 miles above present-day Minneapolis lived the Nations Tintonha (Inhabitants of the Meadows).

By the late seventeenth and eighteenth centuries, the image that develops from the literature regarding the Dakota is one of small village groups bonded by common language and customs (DeMallie, 2001). Dakota villages were bands that traveled around independently of each other and the dispersion of the Dakota of the East into many small villages likely related to the need for each group to use the resources of the area most efficiently, particularly the wild rice.

In the mid-seventeenth century, the eastern Dakota groups hunted bison in the mixed grassland-forest area east of the Mississippi River. War with other groups, notably the Illinois, Fox, and other Central Algonquian tribes, all of whom had access to guns and who hunted bison, may have caused the Dakota to hunt west of the Mississippi River. Also, by the mid-seventeenth century, the Ojibwe began to move west from Sault Sainte Marie to regions they inhabited at the time of Euro-American contact. Initially the Dakota and Ojibwe warred, but eventually came to peaceful terms (for the most part) and the Dakota allowed the Ojibwe to hunt in their territory and act as middlemen in trade with the French (DeMallie, 2001).

By the early eighteenth century, traders built several posts and forts within Dakota territory, including one at Duluth and Fort l'Huillier on the Blue Earth River, a tributary of the Minnesota River (DeMallie 2001). Fort l'Huillier was abandoned in 1702 and the Dakota lacked direct contact with the French for the next 20 years (DeMallie 2001). During this time, the Dakota depended on Fox and Ojibwe as intermediaries for trade. First in 1714 and again in 1721, the Fox made peace with the Dakota, not only for trade purposes, but also as an alliance against the Ojibwe who were expanding southwest from Lake Superior (Edmunds and Peyser, 1993). Following the acquisition of the horse, the westward expansion of the Dakota continued in the early 1800s. This was the period in which the classic western Dakota culture developed.

After the Treaty of Paris in 1763, the British quickly set up fur trading posts throughout Minnesota. The British fur trading economy was centered at Grand Portage, where traders would bring their furs and leave with other valuable trade goods. Jonathon Carver explored the upper Mississippi River in the 1760s. After the Revolutionary War of 1776, competition between the United States and British companies intensified throughout Minnesota. In 1803, the Louisiana land purchase established United States lands extending from the Atlantic to the Rocky Mountains. The War of

1812 saw a demise in the British fur traders due to the United States denying business licenses to British traders.

Early British and United States citizens conducted the first fully documented land survey of Minnesota in the mid-18th and early 19th centuries. By 1806, Zebulon Pike had explored portions of the Mississippi River. Missionaries began to arrive in the early 19th century, primarily along the Minnesota River. The American Fur Company was founded by John Jacob Astor in 1811, after which numerous fur trading posts were quickly established throughout the state. At the confluence of the Minnesota and Mississippi River, Fort Snelling was constructed in 1819 to protect the new United States' investments in the area. Large-scale fur trade resulted in a major decline in the native beaver populations and by 1842, the fur trade in Minnesota came to an end when the American Fur Company came to its demise (Dobbs, 1989). After the passing of the fur trading industry, land was opened to Euro-American settlers and the Dakota were settled on reservations. The poorly-managed reservation system precipitated the Dakota War of 1862.

5.0 LITERATURE REVIEW RESULTS

In January 2022, Merjent conducted a Phase Ia Literature Review for the Project Study Area. Merjent reviewed archaeological site forms, historic structure forms, and cultural resource reports on file at MnSHPO and OSA. Additionally, nineteenth century GLO maps, Trygg historical maps, and historic aerial photography were reviewed.

5.1 PREVIOUS SURVEYS

Table 5.1-1 and Figure 2 show that one archaeological inventory and three architectural history inventories have been conducted within the Study Area. These studies are associated with the construction of the Pleasant Valley Wind Farm (Arzigian and Holtz-Leith, 2014), and state sponsored architectural history reconnaissance surveys (Frame, 1981; Roberts, 1985; Hess et al., 1990). Arzigian and Holtz-Leith (2014) is a series of surveys that started in 2010 and were completed in 2013. Frame (1981), Roberts (1985), and Hess et al. (1990) are solely architectural history inventories focused on buildings and structures; therefore, survey locations of these investigations were not included within the figures for this report, although those buildings and structures within the Study Area that were recorded as a result of the inventories are included in the figures.

TABLE 5.1-1

Previous Surveys within the Study Area

Report Number	Report Title	Author/Year
Unknown	Phase I Archaeological Survey the Pleasant Valley Wind Farm, Dodge and Mower Counties, Minnesota	Arzigian and Holtz-Leith/2014
DO-81-01H	Historic Resources of Dodge County (Partial Inventory)	Frame/1981
MW-85-1H	National Register of Historic Places Reconnaissance Survey of Mower County	Roberts/1985
XX-90-1H	Final Report for The Historic Stage Roads Project	Hess, Roise and Company/1990

5.2 PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

Table 5.2-1 and Figure 2 show three documented archaeological sites in the Study Area. The archaeological sites include one lithic scatter, one precontact single artifact find spot, and one

historic ghost town. National Register of Historic Places (NRHP) eligibility for each site is provided in Table 5.2-1 below. National Register of Eligibility Recommendations are from the initial recorder/consultation. They do not reflect MnSHPO concurrences or federal agency determinations.

The Study Area is primarily within the Unknown Site Potential/Poorly Surveyed layer of the Mn-Model (Phase 4) Survey Implementation Model (MnDOT, 2022) with areas of Low Potential/Well Surveyed and High Site Potential/Poorly Surveyed layers. Approximately 79,060 acres are within the Study Area; the overall site density in the Study Area is low and may not reflect the likely intense Native American or early Euro-American land use. The impacts of 150 years of cultivation, the general absence of archaeological survey in the Study Area, and artifact collection are possible reasons for this low density. Merjent expects that more archaeological sites are present near water sources within the Study Area should formal surveys occur outside of previously surveyed areas.

[NONPUBLIC DATA BEGINS...

TABLE 5.2-1

Previously Recorded Archaeological Sites within the Study Area

Site Number	Site Name	Township	Range	Section	Context	Site Type	NRHP Status
[redacted]							

...NONPUBLIC DATA ENDS]

5.3 PREVIOUSLY RECORDED HISTORIC STRUCTURES

Table 5.3-1 and Figure 2 show 22 documented historic architectural structures in the Study Area. These structures include five schools, four bridges, three churches, two houses, two stores, one gas station, one fire department, one bank, one highway, one grain elevator, and one town hall. All 22 historic architectural structures are unevaluated for inclusion on the NRHP according to the information provided by MnSHPO. Accurate locational information beyond the Public Land Survey System section number was not provided for several of the properties, therefore, these properties are listed in Table 5.3-1 but not included within Figure 2.

TABLE 5.3-1

Previously Recorded Historic Architectural Sites within the Study Area

Site Number	Site Name	Township	Range	Section	NRHP Eligibility
MW-DER-001	Renova Store	T103N	16	33	Unevaluated
MW-DER-003	German Lutheran Church	T103N	16	33	Unevaluated
MW-DER-004	school	T103N	16	32	Unevaluated
MW-DER-005	school	T103N	16	32	Unevaluated
MW-DER-008	Bridge 2517	T103N	16	29	Unevaluated
MW-DER-009	Bridge 2518	T103N	16	24	Unevaluated
MW-DEX-001	First State Bank of Dexter	T103N	16	13	Unevaluated
MW-DEX-002	Dexter Elevators	T103N	16	13	Unevaluated
MW-DEX-003	Standard Station	T103N	16	13	Unevaluated
MW-DEX-004	Dexter Public School	T103N	16	13	Unevaluated

TABLE 5.3-1

Previously Recorded Historic Architectural Sites within the Study Area

Site Number	Site Name	Township	Range	Section	NRHP Eligibility
MW-DEX-005	house	T103N	16	9	Unevaluated
MW-SAR-001	general store	T104N	17	36	Unevaluated
MW-SAR-002	fire department	T104N	16	31	Unevaluated
MW-SNT-001	St. Johann Evangelical Lutheran Church	T104N	17	27	Unevaluated
MW-SNT-002	Evanger Lutheran Church	T104N	16	26	Unevaluated
MW-SNT-004	District School No. 111	T104N	17	21	Unevaluated
MW-SNT-008	Bridge 1725	T104N	16	19	Unevaluated
MW-WAL-001	school	T104N	16	19	Unevaluated
MW-WAL-002	house	T104N	16	16	Unevaluated
MW-WAM-003	Waltham Town Hall	T104N	17	16	Unevaluated
MW-WAM-011	Bridge L05076	T104N	17	9	Unevaluated
XX-ROD-022	Trunk Hwy 56	T104N	17	9	Unevaluated

Merjent reviewed 19th century GLO maps and notes on file with the BLM (Figure 3; BLM, 2022) and Trygg historical maps (Trygg, 1964). The maps show no structures, roads, or improvements within the Study Area. The GLO notes mention that the land within the Study Area is generally flat or gently rolling first rate prairie.

Merjent reviewed aerial photographs taken from 1938 and 1954 on file with the OSA. The Study Area in the photographs is predominately agricultural fields and similar to current conditions. By 1938, many of the present-day farmsteads, roads, and field drainages are already established. The Chicago, Milwaukee, & St. Paul Railroad appears in both the 1938 and 1954 photographs but has since been decommissioned and removed.

5.4 PLATTED AND UN-PLATTED CEMETERIES

A search of OSA files revealed a total of four cemeteries (two platted and two un-platted) occur within the Study Area. One platted cemetery occurs in Township (T) 103 North (N), Range (R) 17 West (W), Section 12 (BF, DL, And James M. Tanner Family Cemetery) and one platted cemetery occurs in T104N, R16W, Section 31 (St. John's Lutheran Cemetery). One un-platted cemetery occurs in T103N, R16W, Section 29 (Trinity Evangelical Lutheran Church and Cemetery) and one un-platted cemetery occurs in T104N, R17W, Section 22 (Waltham Cemetery 2/2). Title 36 Code of Federal Regulation Part 60.4 states that "ordinarily cemeteries… or graves of historical figures…. will not be considered eligible for inclusion for the National Register unless they are integral parts of districts that do meet one of the criteria (Criteria a to d) or meet one of the seven criteria considerations (Considerations a to g)." Instead, cemeteries are protected under state laws. In Minnesota, this is Statute 307.08 Damages; Illegal Molestation of Human Remains; Burials; Cemeteries; Penalty; Authentication.

6.0 SUMMARY AND RECOMMENDATIONS

The Phase Ia literature review for the Study Area identified one previous cultural resource investigation and three historic architectural inventories. Three previously recorded archaeological sites and 22 historic architectural sites were identified within the Study Area. No sites or structures are listed in or have been determined eligible for listing in the NRHP. In

addition, two platted and two un-platted cemeteries were identified within the Study Area; as noted in Section 5.4, cemeteries are not eligible for NRHP listing but are protected by Minnesota state law. Although Project construction plans include limited ground disturbance outside of previously surveyed areas, the results of this literature review show there is potential for undiscovered archaeological sites within the literature review Study Area. Therefore, Merjent recommends Phase I archaeological survey be conducted in all areas of proposed Project ground disturbance that have not been previously surveyed.

In the event that proposed construction activities would directly impact a standing, historic-period structure greater than 45 years old, Merjent recommends that Xcel Energy sponsor an architectural history of that structure and evaluation of eligibility for inclusion in the NRHP. The evaluation should be provided to the MnSHPO to make a determination of effects and, if applicable, the MnSHPO should work with Xcel Energy through avoidance, minimization, or mitigation activities.

7.0 REFERENCES CITED

Arzygian, Constance and Wendy K. Holtz-Leith. 2014. Phase I Archae3ological Survey of the Pleasant Valley Wind Farm, Dodge and Mower Counties, Minnesota. Mississippi Valley Archaeology Center, University of Wisconsin-La Crosse.

Bureau of Land Management (BLM). 2022. General Land Office Records. Available online at: https://glorecords.blm.gov/. Accessed January 2022.

DeMallie, Raymond J. 2001. Sioux Until 1850. In Plains Volume 13 Part 2 of 2 edited by Raymond DeMallie, pp. 718-760. Handbook of North American Indians, Vol. 13, Part 2 of 2, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Dobbs, C. 1989. Historical Context Outlines: the Contact Period Contexts (CA. 1630 A.D. – 1820 A.D.). Institute for Minnesota Archaeology. Minneapolis, Minnesota.

Edmunds, R. David and Joseph L. Peyser. 1993. The Fox Wars: The Mesquakie Challenge to New France. University of Oklahoma Press, Norman.

Frame, Robert M. III. 1981. Historic Resources of Dodge County (Partial Inventory), National Register of Historic Places Inventory Nomination Form. Minnesota Historical Society.

Gibbon, G. 2012. Archaeology of Minnesota: The Prehistory of the Upper Mississippi River Region. University of Minnesota Press, Minneapolis.

Gibbon, G.E., C.M. Johnson, and E. Hobbs. 2002. Minnesota's Environment and Native American Culture History. Available online: https://www.dot.state.mn.us/mnmodel/P3FinalReport/chapter3.html#ch342. Accessed January 2022.

Hennepin, Louis. 1903. A New Discovery of a Vast Country in American (1698); Reprinted from the second London Issues of 1698; with Facsimiles of the Original Title Pages, Maps and Illustrations. Reuben G. Thwaites, ed. 2 vols. A.C. McClurg, Chicago.

Hess, Roise and Company. 1990. Final Report for The Historic Stage Roads Project. Minnesota Historical Society.

Holliday, V.T. 2004. Soils in Archaeological Research. Oxford University Press, Oxford.

Holmquist, J.D. (ed). 1981. They Chose Minnesota: A Survey of the State's Ethnic Groups. Chicago: Minnesota, Historical Society Press, St. Paul.

Minnesota Department of Natural Resources (MnDNR). 2022. Oak Savanna Subsection. Available online: https://www.dnr.state.mn.us/ecs/251Bb/index.html. Accessed January 2022.

Minnesota Department of Natural Resources (MnDNR). 2022a. Coteau Moraines Subsection. Available online at: https://www.dnr.state.mn.us/ecs/251Bb/index.html. Accessed January 2022.

Minnesota Department of Natural Resources (MnDNR). 2022b. Watershed Reports. Available online at: https://www.dnr.state.mn.us/whaf/about/watershed-reports.html. Accessed January 2022.

Minnesota Department of Transportation (MnDOT). 2022. MnModel, Minnesota Statewide Archaeological Predictive Model. Available online at: http://www.dot.state.mn.us/mnmodel/index.html. Accessed January 2022.

Morey, G.B. 1976. Geologic map of Minnesota, bedrock geology, M-24. Available online at: https://geo.btaa.org/catalog/0c29bf68-634f-49f9-a174-ce8203e6965f. Accessed January 2022.

Natural Resources Conservation Service Minnesota. 2022. MN NRCS Root River Watershed. Available online at: https://www.nrcs.usda.gov/wps/portal/nrcs/mn/technical/dma/rwa/nrcs142p2_023617/. Accessed January 2022.

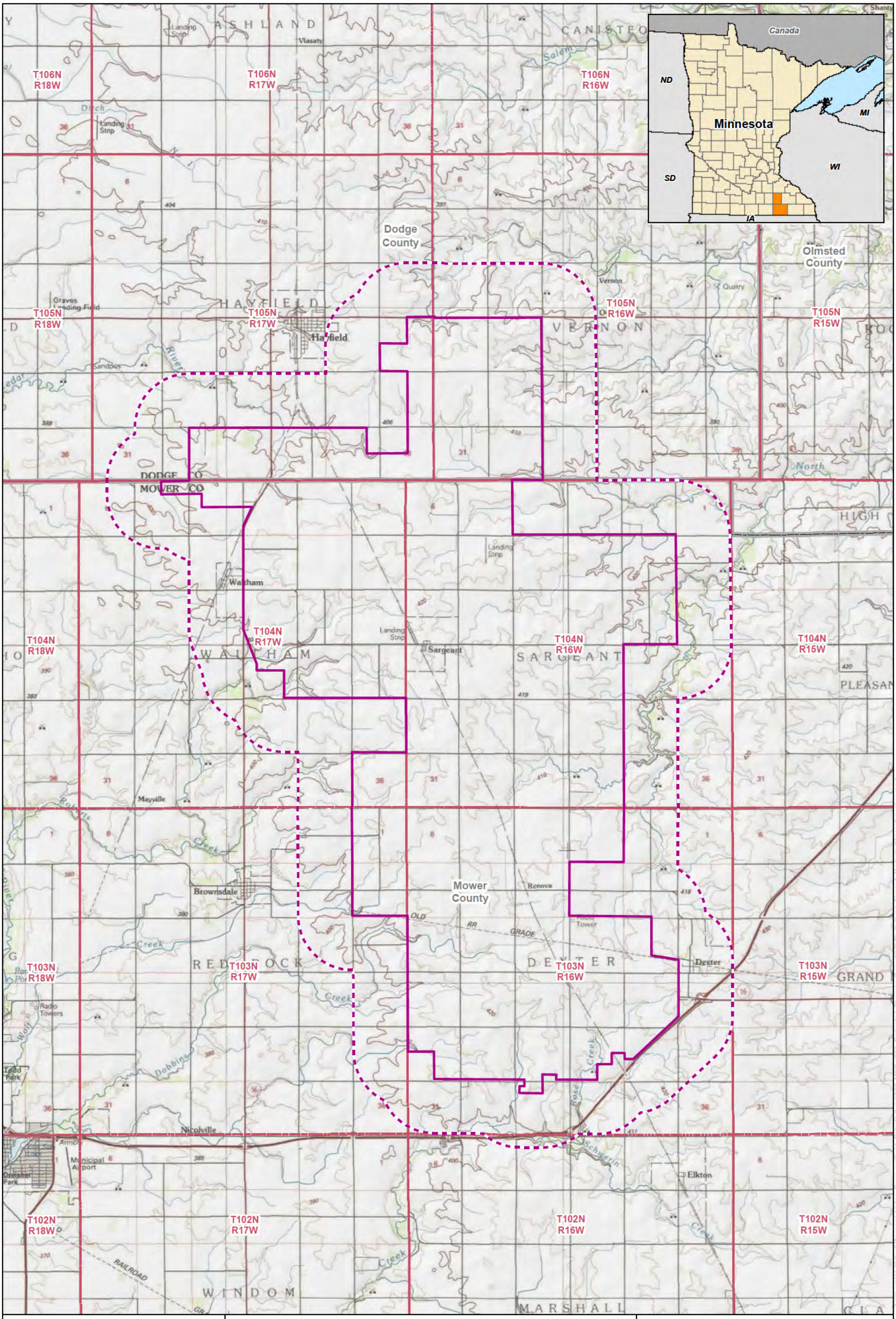
Office of the State Archaeologist (OSA). 2009. Minnesota Archaeological Site Form. Archaeology 14:1-40.

Roberts, Norene A. 1985. National Register Survey of Mower County Report. Historical Research, Inc.

Trygg, J.W. 1964. Trygg Historical Map 2. Ely, Minnesota

APPENDIX A

Figures



0 5,000 10,000 Feet
1:100,000

Merjent

For Environmental Review Purposes Only

Figure 1: Project Location
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

- Project Area
- Literature Search Study Area
- Township Boundary
- County Boundary

Source: Z:\Clients\U_X\Xcel\Pleasant_Valley_Repower\Field_Data\Cultural\002_MXDs\003_Redacted_Phase1a_Report\XPVR_Cultural_Figure1_RedactedProjectLocation.mxd Date: (4/26/2022)

[NONPUBLIC DATA BEGINS...

PUBLIC DOCUMENT - NONPUBLIC DATA HAS BEEN EXCISED

[redacted]

0 1,000 2,000 Feet

1:24,000

N W E S

For Environmental Review Purposes Only

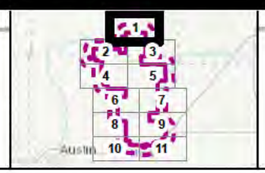
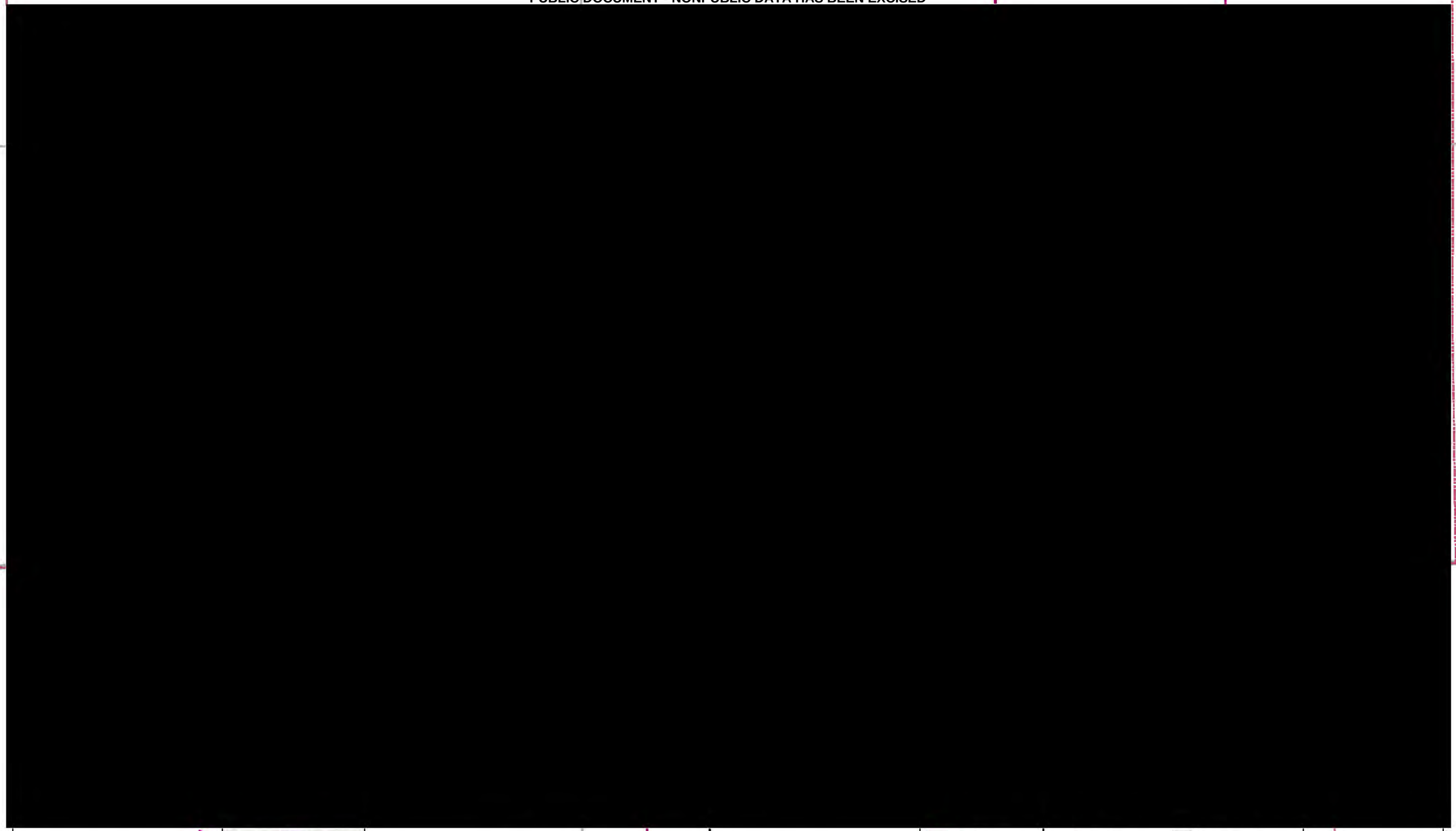


Figure 2.1: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Previous Survey
Turbine
Access Road
Quad Map
Township Boundary
County Boundary

merjent



0 1,000 2,000 Feet
1:24,000
N W E S
For Environmental Review Purposes Only

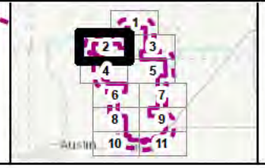


Figure 2.2: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
SHPO Architectual Structure
Previous Survey
Turbine
Access Road
Quad Map
Township Boundary
County Boundary

merjent

0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

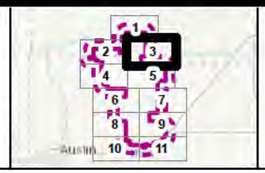


Figure 2.3: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
SHPO Architectual Structure
Previous Survey
Turbine
Access Road
Quad Map
Township Boundary
County Boundary

merjent

[redacted]

0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

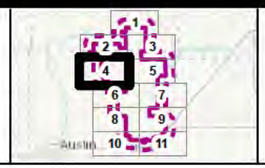


Figure 2.4: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
SHPO Architectual Structure
OSA Cemetery
Previous Survey
Turbine
Access Road
Quad Map
Township Boundary
County Boundary

merjent

0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

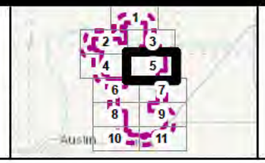
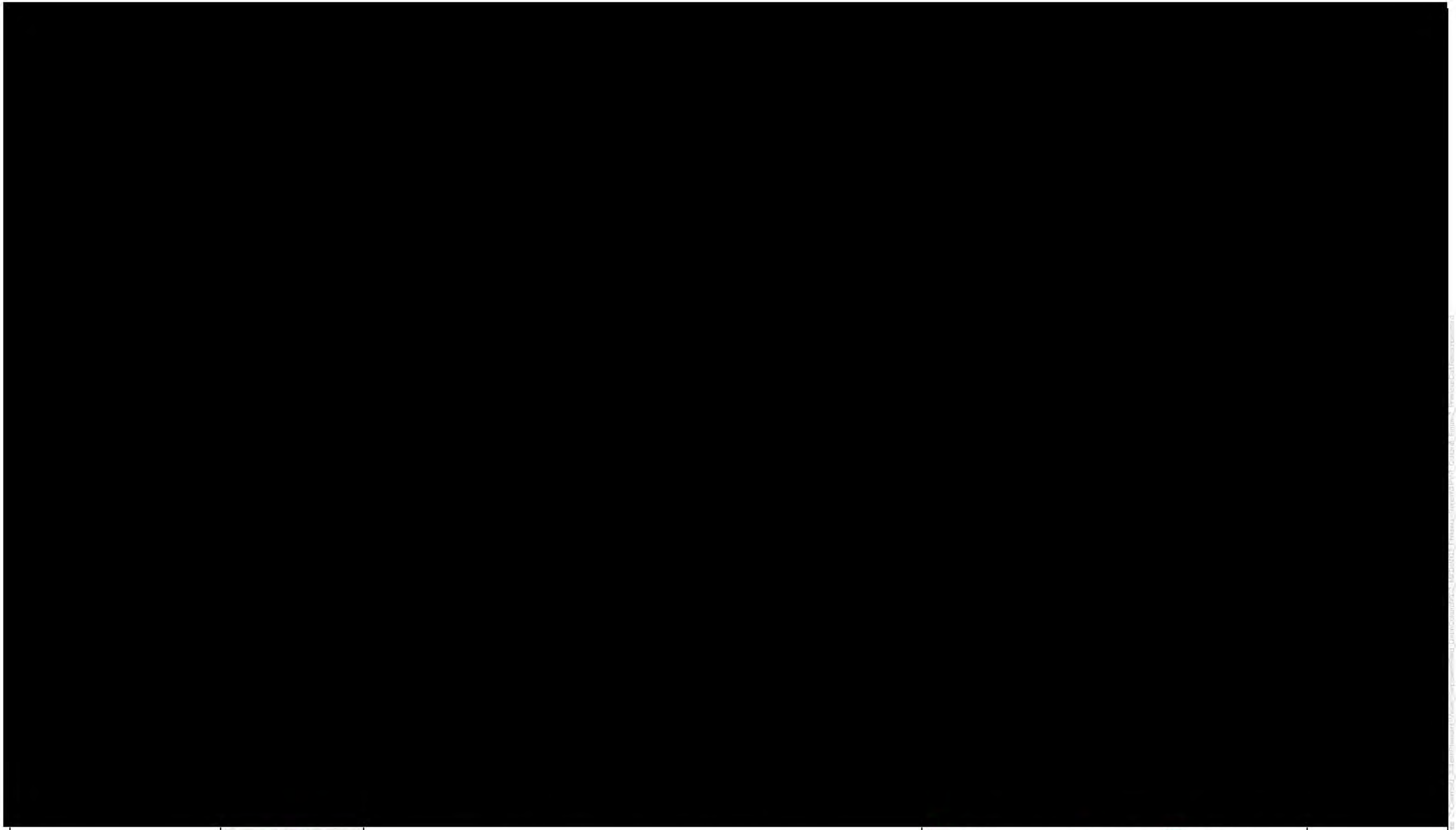


Figure 2.5: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
SHPO Architectual Structure
Previous Survey
Turbine
Access Road
Quad Map
Township Boundary
County Boundary

merjent



0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

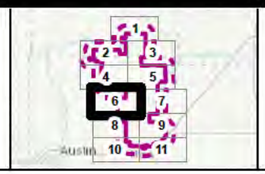


Figure 2.6: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
SHPO Architectual Structure
OSA Cemetery
Previous Survey
Turbine
Access Road
Quad Map
Township Boundary
County Boundary

merjent

[redacted]

0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

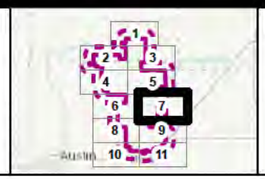


Figure 2.7: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

- Project Area
- Literature Search Study Area
- SHPO Architectual Structure
- Previous Survey
- Turbine
- Access Road
- Quad Map
- Township Boundary
- County Boundary

merjent

[redacted]

0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

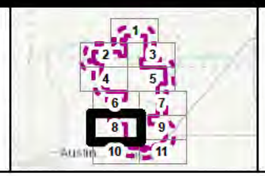


Figure 2.8: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

- Project Area
- Literature Search Study Area
- OSA Cemetery
- Previous Survey
- Turbine
- Access Road
- Quad Map
- Township Boundary
- County Boundary

merjent

[redacted]

0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

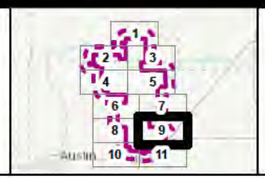


Figure 2.9: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
SHPO Architectual Structure
OSA Archaeological Site
Previous Survey
Turbine
Access Road
Quad Map
Township Boundary
County Boundary

merjent

0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

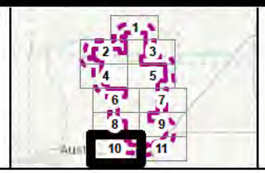
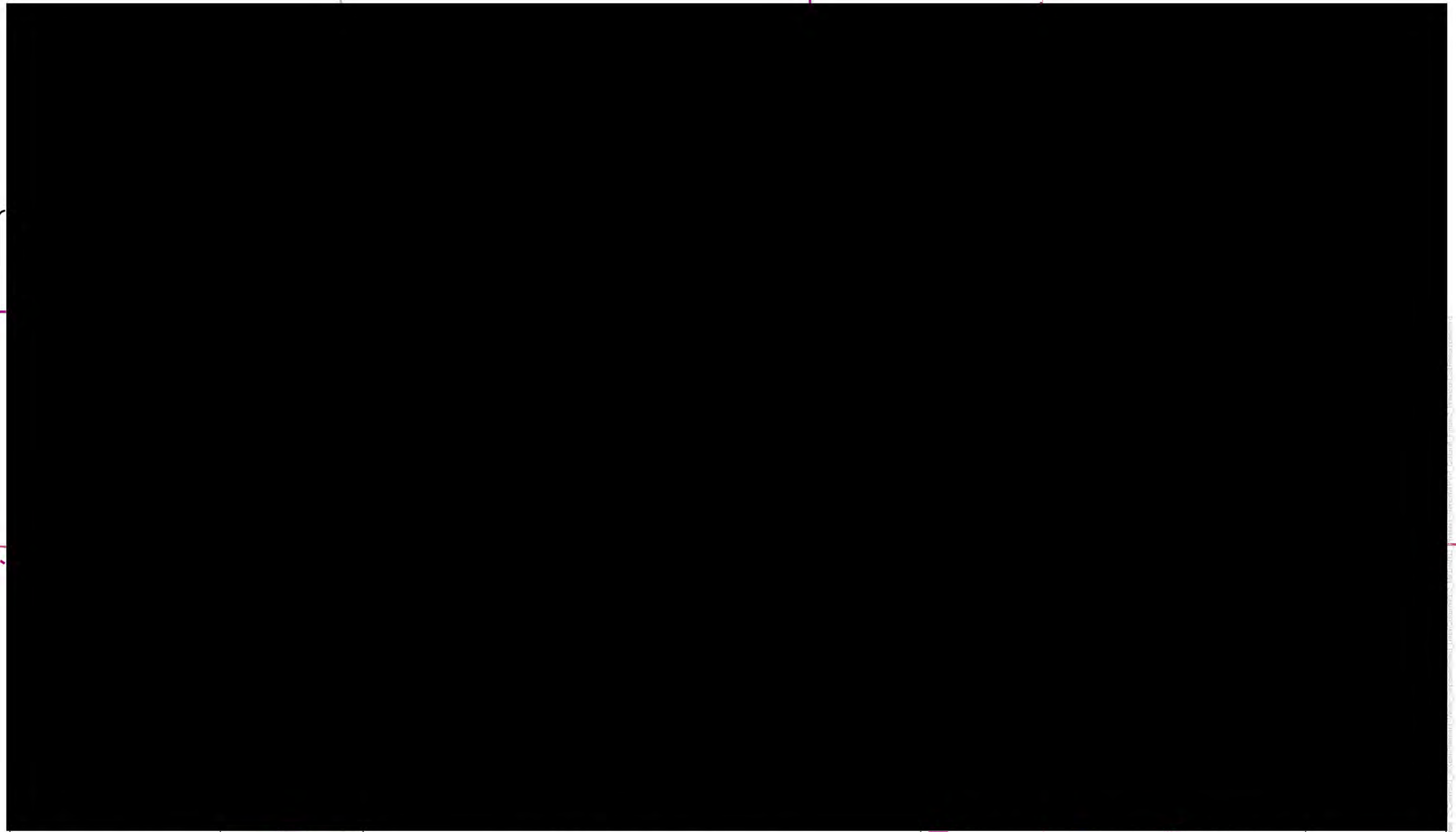


Figure 2.10: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

- Project Area
- Literature Search Study Area
- SHPO Architectual Structure
- OSA Archaeological Site
- OSA Cemetery
- Previous Survey
- Turbine
- Access Road
- Quad Map
- Township Boundary
- County Boundary

merjent



0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

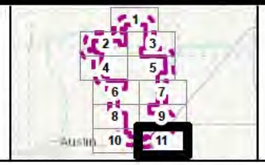


Figure 2.11: Previous Cultural Resources
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
SHPO Architectual Structure
OSA Archaeological Site
Previous Survey
Turbine
Access Road
Quad Map
Township Boundary
County Boundary

merjent

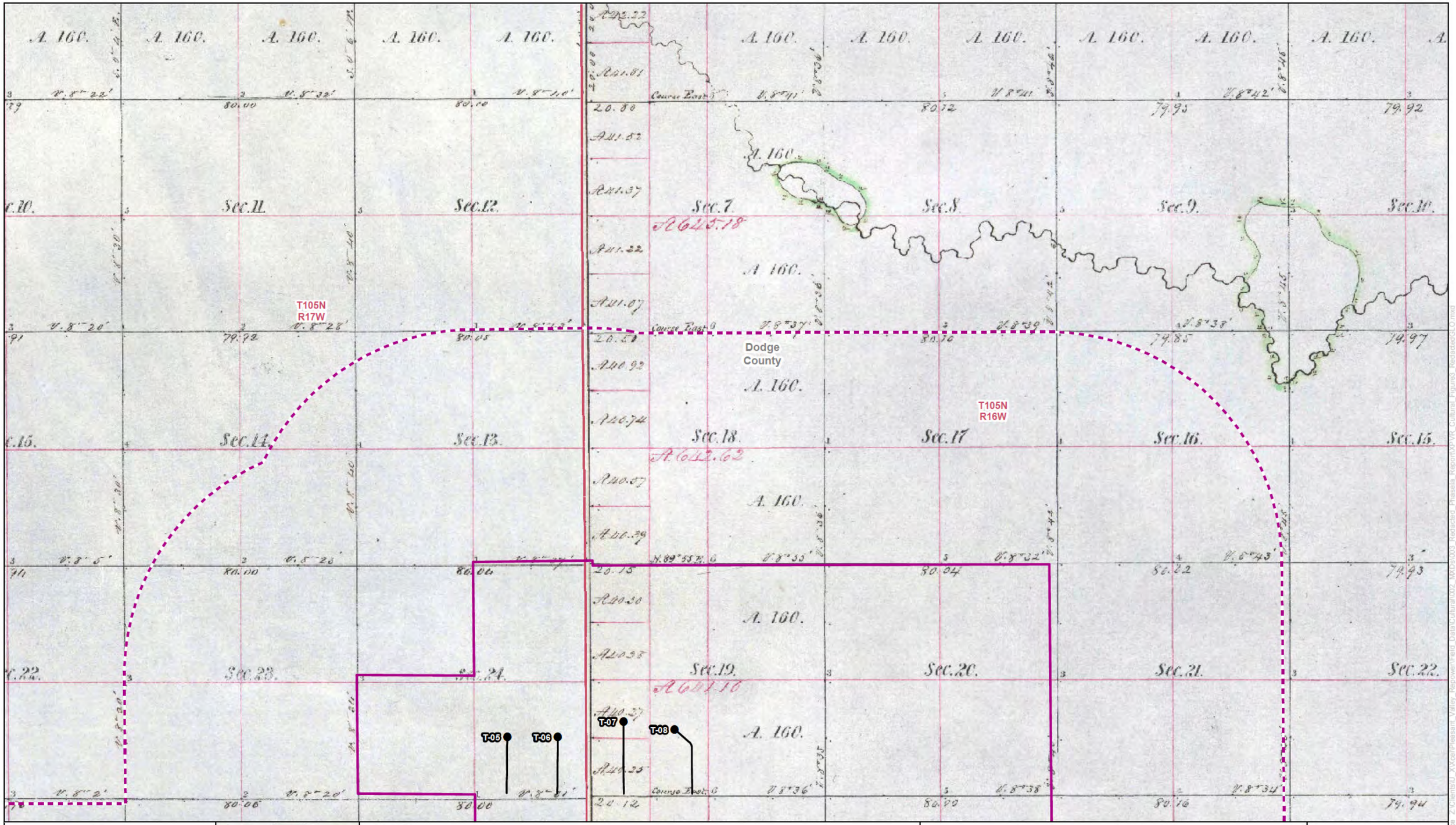
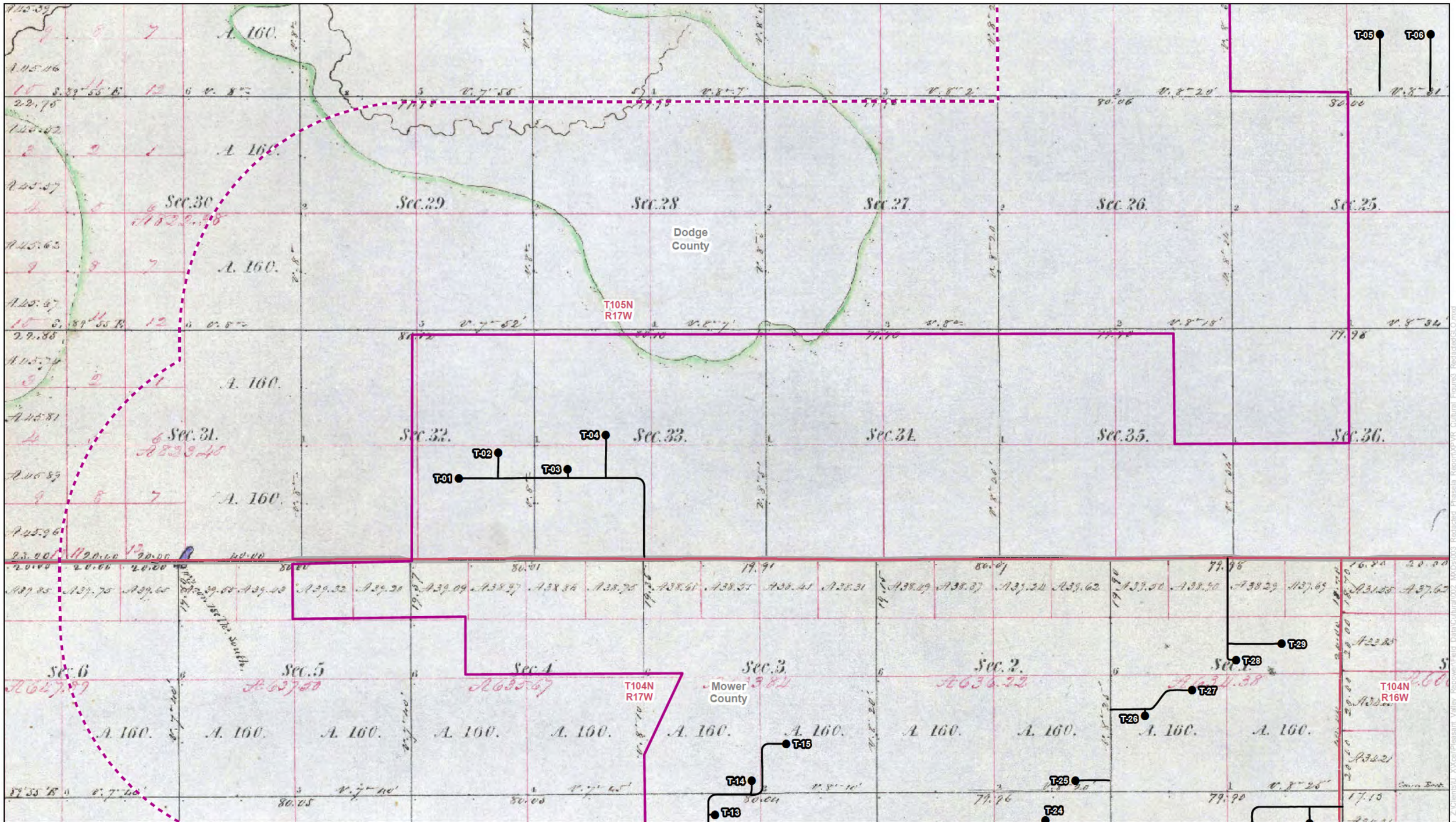


Figure 3.1: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

merjent

Source: Z:\Clients\0_XX\Xcel\Pleasant_Valley_Repower\Field_Data\Cultural\002_MXDs\003_Redacted_Phase\a_Report\APVR_Cultural_Figure3_RedactedGLO.mxd
Date: (4/26/2022)



0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

Figure 3.2: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary

merjent

Source: Z:\Clients\0_XXcel\Pleasant_Valley_RepowerField_Data\Cultural\02_MXDs\03_Redacted_Phase\a_Report\APVR_Cultural_Figure3_RedactedGLO.mxd
Date: (4/28/2022)

T-05
T-06
T-07
T-08
T-09
T-10
T-11
T-12
T-30

T105N R17W
T105N R16W
T104N R16W
T104N R15W

Dodge County
Mower County
Olmsted County

Sec.30
Sec.29.
Sec.28.
Sec.27.
Sec.26
Sec.25.
Sec.31.
Sec.32.
Sec.33
Sec.34.
Sec.35.
Sec.36.
Sec.6
Sec.5
Sec.4
Sec.3
Sec.2.
Sec.1.

A. 160.

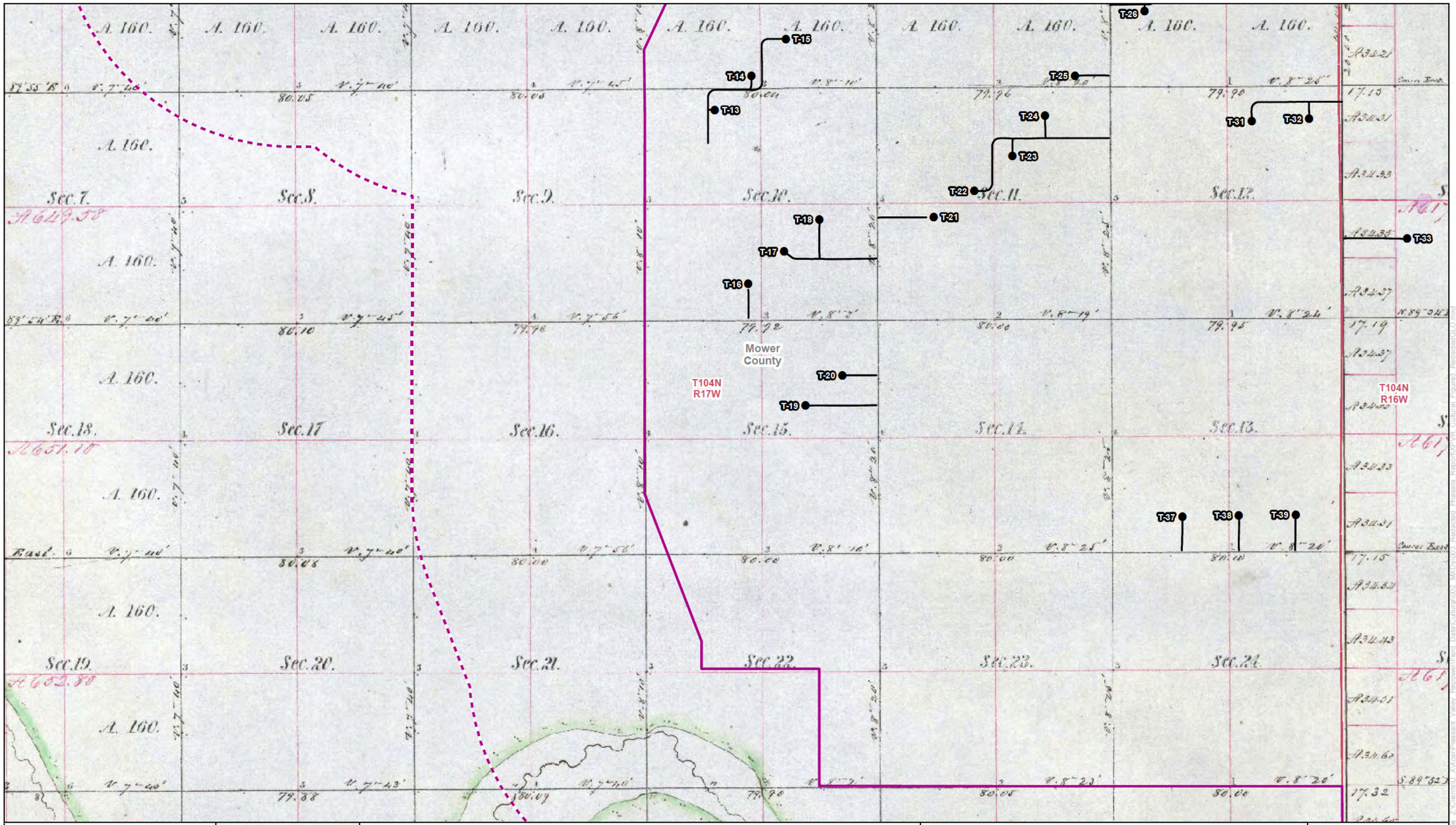
0 1,000 2,000 Feet
1:24,000
For Environmental Review Purposes Only

Figure 3.3: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary

merjent

Source: Z:\Clients\0_XX\Xcel\Pleasant_Valley_Repower\Field_Data\Cultural\007_MXD\8003_Redacted_Phase\a_Report\PVR_Cultural_Figure3_RedactedGLO.mxd
Date: (4/26/2022)



0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

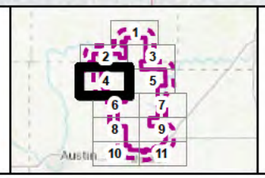


Figure 3.4: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary

merjent

Source: Z:\Clients\0_XXcel\Pleasant_Valley_RepowerField_Data\Cultural\02_MXDs\003_Redacted_Phase\a_Reports\Figure3_RedactedGLO.mxd
Date: (4/25/2022)

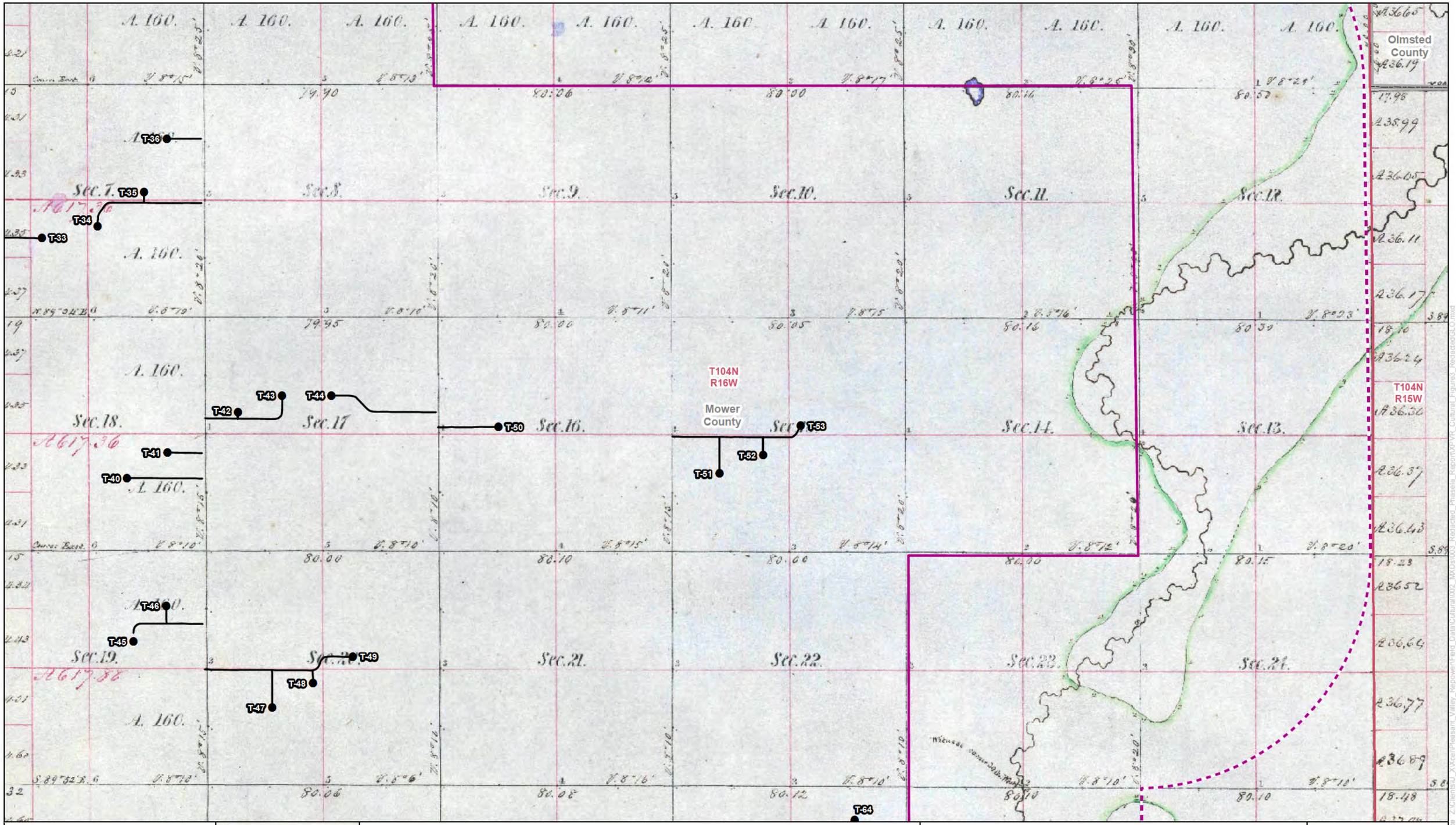
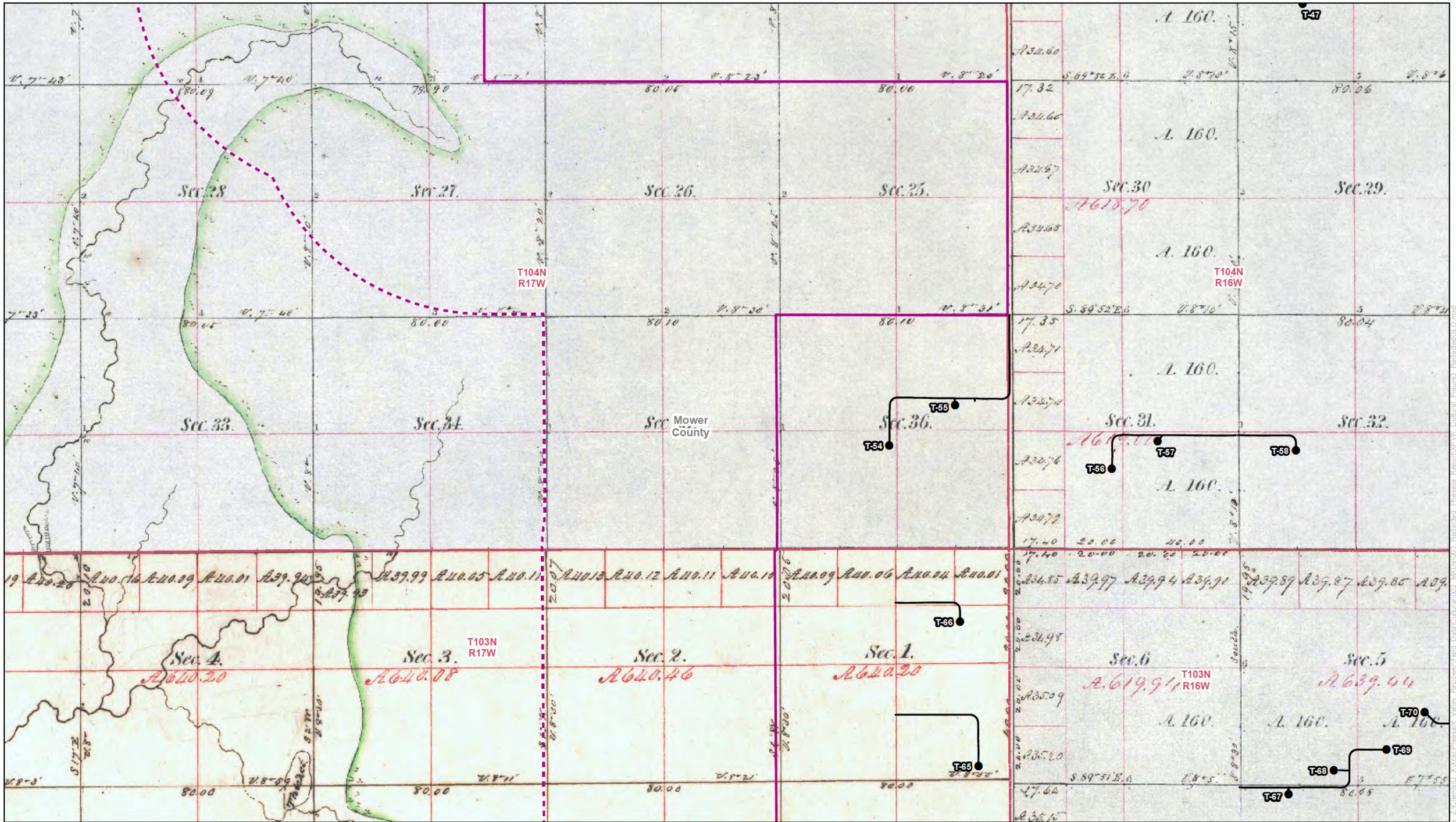


Figure 3.5: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary

merjent

Source: Z:\Clients\U_XV\Cli\Pleasant_Valley_Repower\Field_Data\cultural\002_MXDs\003_Redacted_Phase\a_1_Phase\a_Report\PVR_CulturalFigures_RedactedGLO.mxd
Date: (4/26/2022)



0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

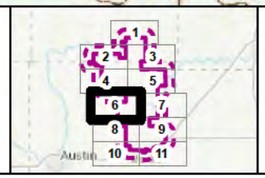


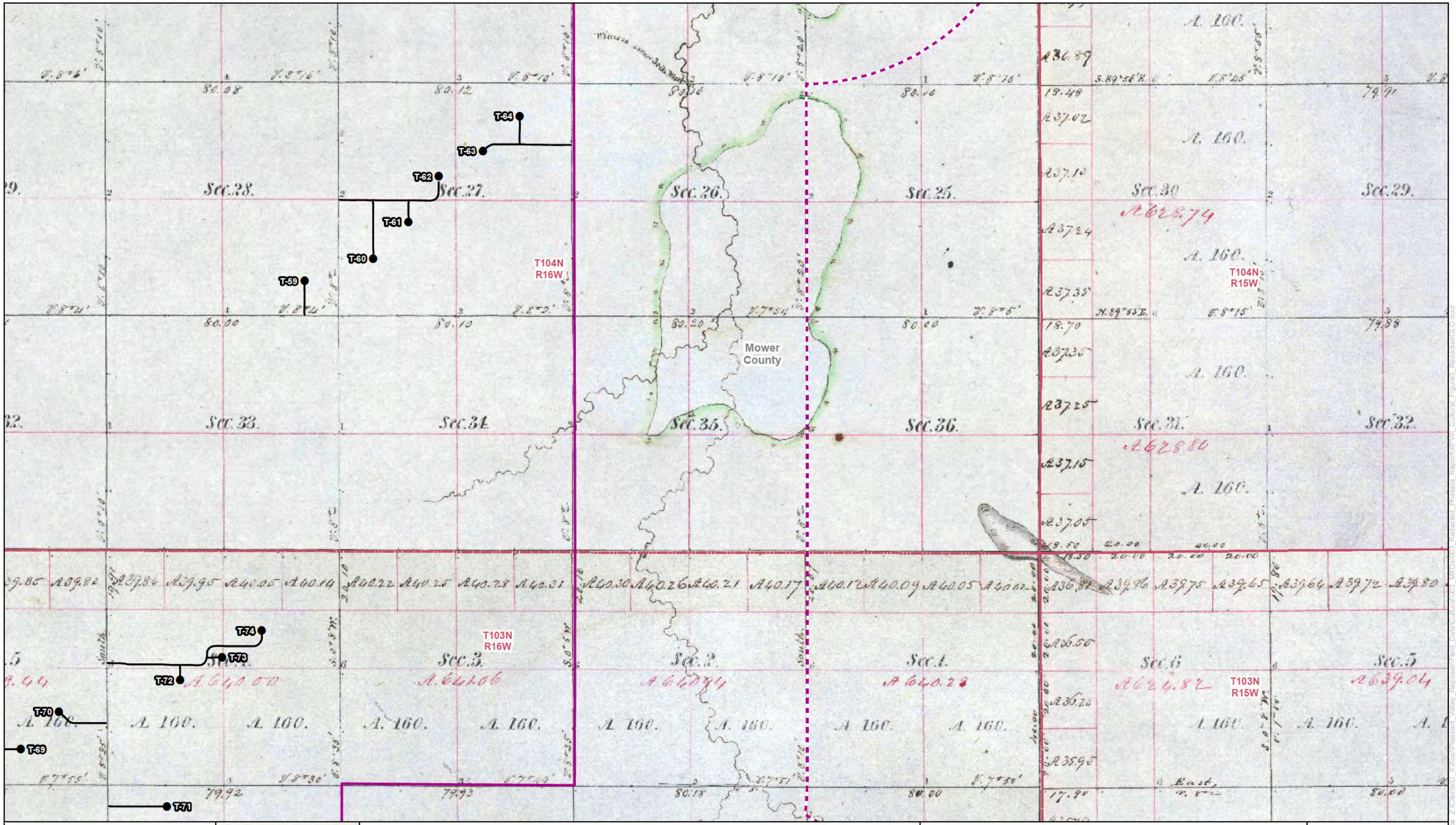
Figure 3.6: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary

merjent

Source: Z:\Clients\0_XXCel\Pleasant_Valley_RepowerField_Data\Cultural\002_MXDs\003_Redacted_Phase\a_Repo

Date: (4/28/2022)



0 1,000 2,000 Feet
1:24,000

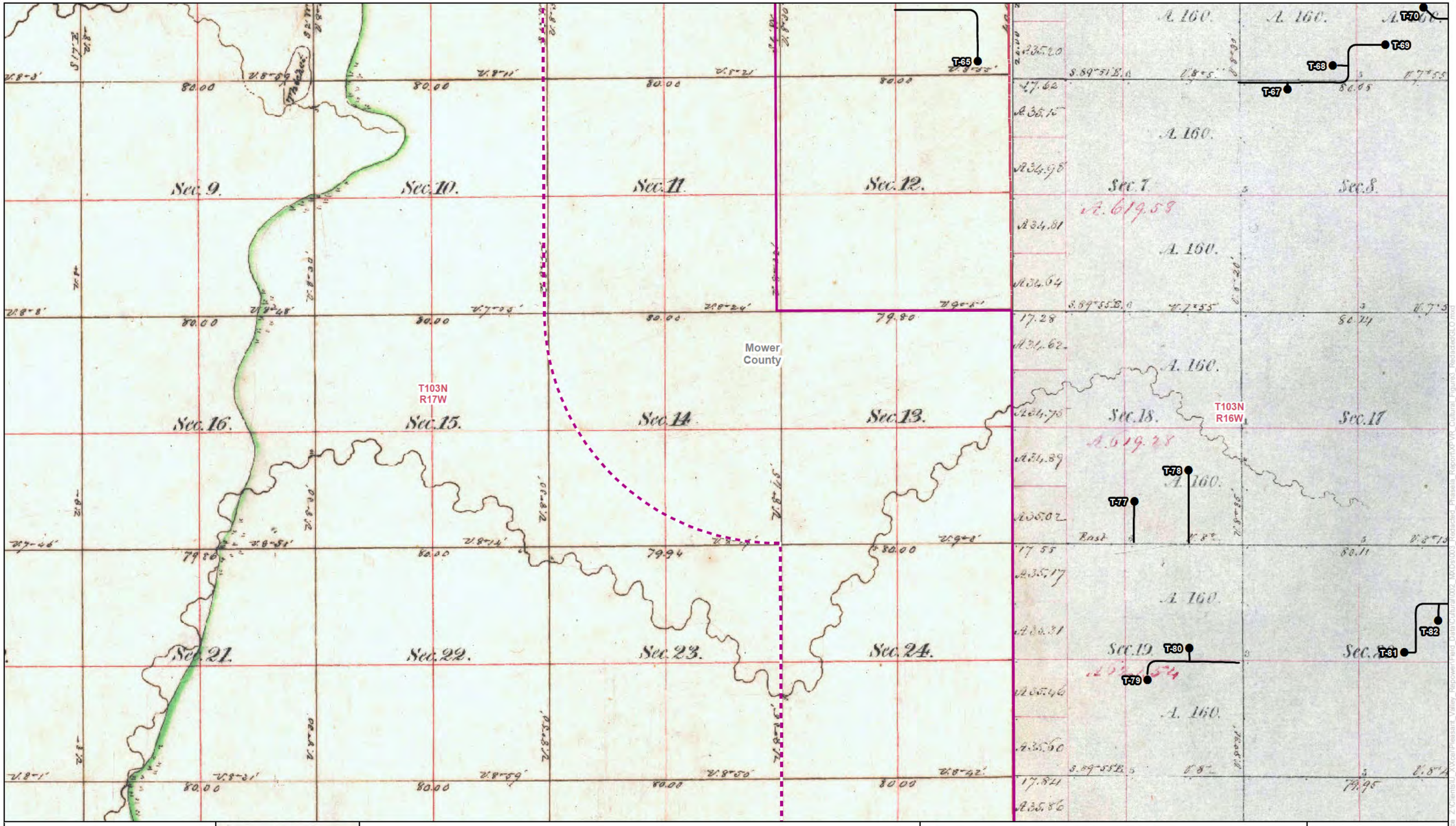
For Environmental Review Purposes Only

Austin

Figure 3.7: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary

merjent



0 1,000 2,000 Feet
1:24,000

N W E S

For Environmental Review Purposes Only

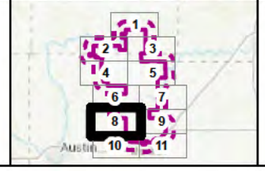


Figure 3.8: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary

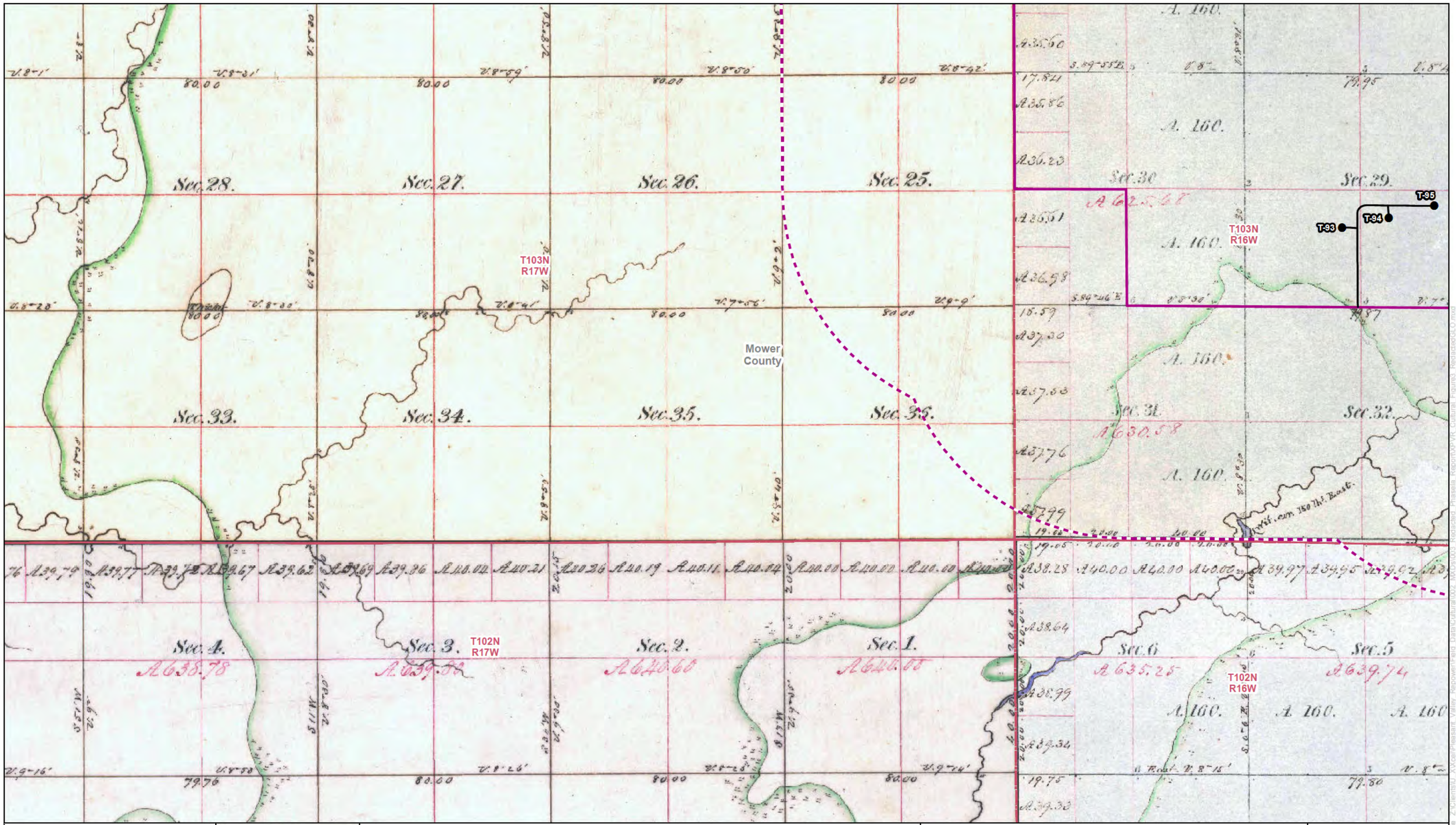
merjent

Source: Z:\Clients\0_XX\Xcel\Pleasant_Valley_Repower\Field_Data\Cultural\002_MXD\S003_Redacted_Phase\s_Report\PVR_Cultural_Figure3_RedactedGLO.mxd
Date: (4/26/2022)

T-69
T-70
T-71
T-75
T-76
T-81
T-82
T-83
T-84
T-85
T-86
T-87
T-88
T-89
T-90
T-91
T-92
Sec.9.
Sec.10.
Sec.11
Sec.12.
Sec.7.
Sec.8
Sec.16.
Sec.15.
Sec.14.
Sec.13.
Sec.18.
Sec.17
Sec.21
Sec.22.
Sec.23.
Sec.24
Sec.19
Sec.20.
A. 160.
A623.08
A623.66
A627.62
Mower County
T103N R16W
T103N R15W
0 1,000 2,000 Feet
1:24,000
For Environmental Review Purposes Only
N
W
E
S
Austin
Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary
merjent

Figure 3.9: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Source: Z:\Clients\Xcel\Pleasant_Valley_Repower\Field_Data\Cultural\002_MXDs\003_Redacted_Phase\a_Report\PVR_Cultural_Figure3_RedactedGLO.mxd
Date: (4/26/2022)



0 1,000 2,000 Feet
1:24,000

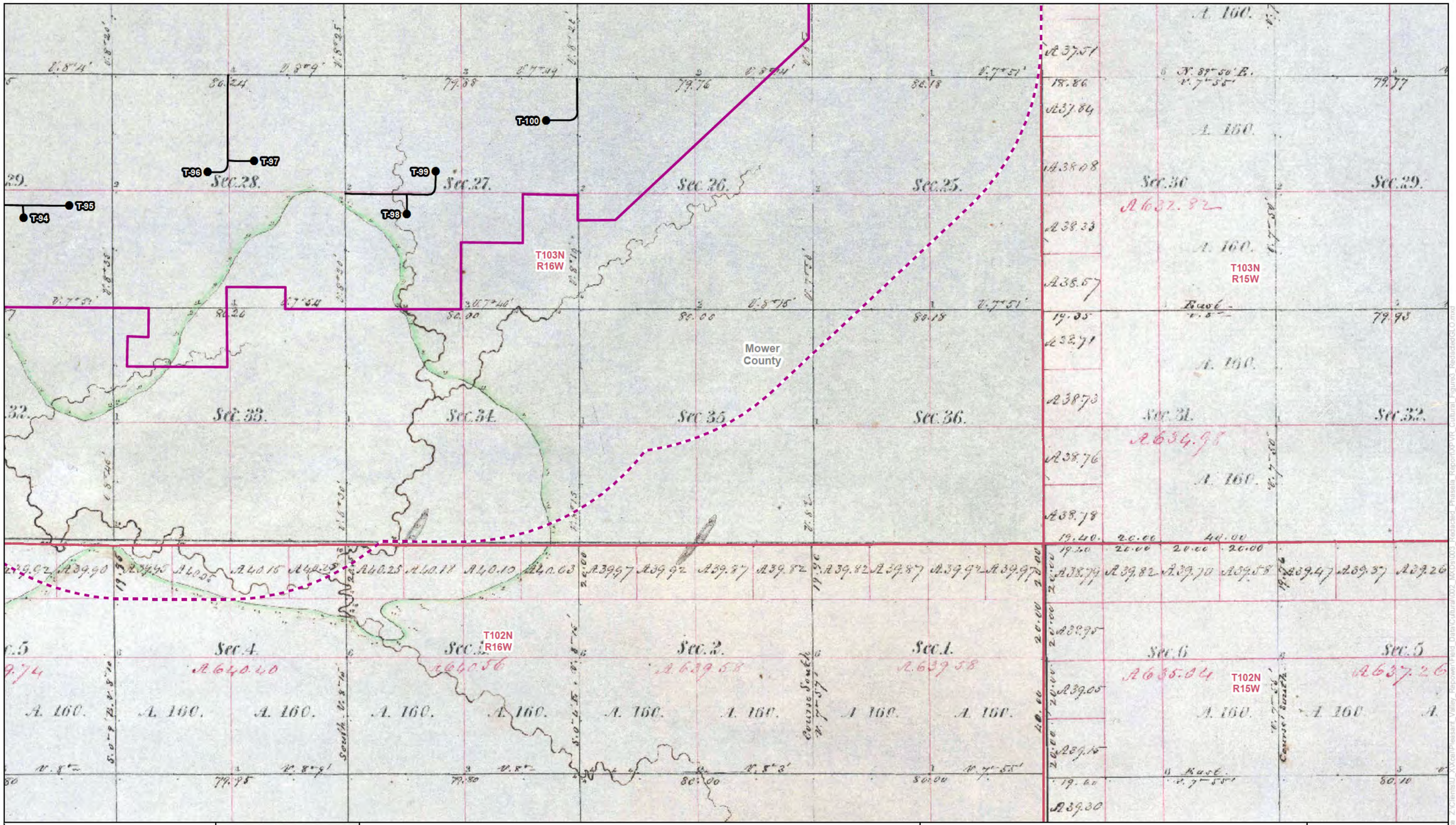
For Environmental Review Purposes Only

Figure 3.10: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

- Project Area
- Literature Search Study Area
- Turbine
- Access Road
- Township Boundary
- County Boundary

merjent

Source: Z:\Clients\Xcel\Pleasant_Valley_Repower\Field_Data\Cultural\02_MXD\S003_Redacted_PrairieLand_ReportMXD\PVR_CulturalFigure3_RedactedGLO.mxd
Date: (4/28/2022)



0 1,000 2,000 Feet
1:24,000

For Environmental Review Purposes Only

Figure 3.11: 1853-1855 General Land Office Map
Xcel Energy
Pleasant Valley Wind Repower Project
Dodge and Mower Counties, Minnesota

Project Area
Literature Search Study Area
Turbine
Access Road
Township Boundary
County Boundary

merjent

Source: Z:\Clients\Xcel_PV\Cultural\002_MX\Cultural_Figures_Redacted\Phasela_Report\Phasela_ReportMXD\PVR_Cultural_Figure3_RedactedGLO.mxd
Date: (4/25/2022)

Via Email

March 7, 2022

Ms. Lisa Joyal
Endangered Species Review Coordinator
NHIS Data Distribution Coordinator
Division of Ecological and Water Resources
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155

Email: lisa.joyal@state.mn.us

Re: Natural Heritage Data Review of the Proposed Pleasant Valley Wind Farm Repower Project Mower and Dodge Counties, Minnesota

Dear Ms. Joyal:

On behalf of Northern States Power Company (NSP), a Minnesota corporation, doing business as Xcel Energy, Merjent, Inc. (Merjent) queried the Minnesota Natural Heritage Information System (NHIS) Rare Features Data to conduct a natural heritage data review for the proposed Pleasant Valley Wind Farm Repower Project (Project).

Merjent holds a license agreement[1] with the Minnesota Department of Natural Resources (MnDNR) to access electronic NHIS Rare Features Data. NHIS Rare Features Data was delivered by MnDNR to Merjent on February 15, 2022, and was used for this Natural Heritage Data Review by a trained and experienced Merjent biologist. The following provides a brief background of Pleasant Valley Wind Farm and a description of the proposed Project, results of the NHIS query, and an assessment of potential impacts to rare natural features and state-listed species. Based upon this information and review, Merjent respectfully requests that the MnDNR review and concur with this Natural Heritage Data Review for the Project.

Background

On February 10, 2014, the Commission issued an order (the 2014 Site Permit) amending an existing site permit allowing Pleasant Valley Wind, LLC (PVW), a wholly owned subsidiary of Renewable Energy Systems Americas, Inc. (RES Americas) to construct the Pleasant Valley Wind Farm in Dodge and Mower Counties. The 2014 Site Permit allowed construction of up to a 200 megawatt (MW) Large Wind Energy Conversion

[1] License Agreement LA-1066 executed on November 10, 2021

System (LWECS) and associated facilities. On November 18, 2015, after construction of the wind farm was completed, the ownership of the Pleasant Valley Wind Farm transferred from PVW to Xcel Energy.

Xcel Energy is seeking an amendment of the 2014 Site Permit to allow Xcel Energy to repower all 100 Vestas V100 turbines (Repower), which will increase energy production from the facility, improve overall reliability, and extend the service life of the turbines. The existing Vestas V100 turbine rotors are 100 meters (328.1 feet) in diameter; Xcel Energy proposes to repower all 100 turbines with 110-meter rotors.

The purpose of the Repower Project is to improve turbine technology, maximize energy yield, and extend service life of the turbines. New blades provide an increase in the rotor swept area, which, when coupled with the upgraded generators, results in a corresponding increase in the nominal production capacity of the Project from 200 MW to roughly 217.2 MW, an 8 percent increase.

Project Description

Xcel Energy is requesting modification of the Project boundary permitted in 2014, which consisted of approximately 70,000 acres. The Repower Project infrastructure is physically located on approximately 45,449 acres of privately owned and mostly leased land in Dodge and Mower Counties (Project Area; Table 1), generally northwest of Interstate 90, northeast of Austin, and south/southeast of the Town of Hayfield (Figure 1 – Project Location). All of these acres are located within the previously evaluated and permitted boundary for the original Project (Figure 2 – Project Boundary Modification). Typical landscapes within the reduced Wind Farm area consist largely of agricultural fields and wind energy infrastructure.

Table 1
Project Location

County Name	Township Name	Township	Range	Sections
Mower	Dexter	103N	16W	3 - 9, 14 - 30, and 33
	Red Rock	103N	17W	1, 12
	Sargeant	104N	16W	5 - 11, 14 - 22, and 27 - 34
	Sargeant/City of Sargeant	104N	16W	18 and 19
	Waltham	104N	17W	1 - 5, 10 - 15, 22 - 24, and 36
Dodge	Hayfield	105N	17W	24, 25, and 32 - 36
	Vernon	105N	16W	19, 20, and 29 - 32

Previously permitted turbine access roads for the wind farm will remain in the same locations and may be temporarily widened to accommodate equipment. A large construction crane will be used to remove and replace rotors and hubs and upgrade or replace nacelles. Repowering of the existing turbines generally will require a temporary 400-foot radius workspace around each turbine and an approximately 300-foot by 60-foot crane assembly area adjacent to the existing access road (Figure 3 – Project Area and Facilities).

Natural Heritage Review

In a letter dated February 1, 2022, Xcel Energy requested comments on the Project from the MnDNR. The MnDNR is currently reviewing the Project; a formal response has not yet been received.

<u>MnDNR-mapped Native Prairie</u>
There are five MnDNR-mapped native prairie areas within the Project Area, all of which are the Mesic Prairie (Southern) prairie type, totaling 95.4 acres. Three of the five MnDNR-mapped native prairie areas

are also Minnesota Biological Survey (MBS) Sites of Biodiversity Significance (SOBS) ranked as high, and two are MBS SOBS ranked as moderate (see below). There are no MnDNR railroad prairie rights-of-way in or adjacent to the Project Area.

The temporary construction workspaces associated with the Project will not impact MnDNR-mapped native prairie. Prior to the start of construction, Xcel Energy will conduct a survey of the Project Area to identify native prairie and will prepare a Native Prairie Protection Plan for the Project; any unmapped native prairie identified as part of that survey effort will be avoided by modifying the construction workspace.

Native Plant Communities

There are seven native plant communities (NPCs) within the Project Area, made up of three different NPC types. Table 2 presents the MBS's NPC types that occur within the Project Area and the number of acres of each NPC type. The temporary workspaces associated with the Repower Project will not impact these NPCs.

Table 2
Native Plant Community Types within the Project Area

Native Plant Community Type	Number of NPCs within Project Area	Acres
Southern Wet-Mesic Hardwood Forest	1	31.4
Mesic Prairie (Southern)	5	95.4
Southern Mesic Oak-Basswood Forest	1	18.8
Total	**7**	**145.6**

Sites of Biodiversity Significance

There are no MBS SOBS ranked as outstanding within the Project Area. Table 3 presents a summary of the MBS SOBS with rankings of below, moderate, or high that occur within the Project Area. The temporary construction workspace for Turbine 86 intersects one mapped MBS SOBS ranked as below (Dexter 16), which is a former railroad grade; however, the land use at this location was converted between 2017 and 2019 from a narrow corridor of forest/shrub habitat to actively cultivated cropland. Agricultural production in the immediate Project vicinity may experience minor short-term impacts from the use of the workspace during construction, but these impacts would resolve when construction is complete. The remaining construction workspaces associated with the Project will not impact any MBS SOBS.

Table 3
Sites of Biodiversity Significance within the Project Area

Site of Biodiversity Significance Rank	Number of Sites Within Project Area	Acres
Below	8	144.3
Moderate	3	105.3
High	2	84.7
Total	**13**	**334.3**

State-listed Species[2]

Merjent reviewed the MnDNR NHIS for state-listed threatened and endangered species that are known to occur within 1 mile of the proposed Project. Table 4 summarizes the records found during the review of the NHIS data.

Table 4
State-Listed Species Impact Assessment

Common Name *Scientific Name*	Habitat	State Status	Potential Impacts
Edible Valerian *Valeriana edulis* var. *ciliata*	Moist, sunny, calcareous habitat, including calcareous fens, wet meadows, and moist prairies	THR	Not applicable – the Project will not impact suitable habitat for this species.
Wild Quinine *Parthenium integrifolium*	Restricted to mesic habitats in remnant prairies and savannas of the type that developed in the southeastern portion of the state	END	Not applicable – the Project will not impact suitable habitat for this species.
Tuberous Indian-plantain *Arnoglossum plantagineum*	Largely restricted to native, mesic prairies in the southern portion of the state, with many of these habitats found on old railroad rights-of-way	THR	Not applicable – the Project will not impact any MnDNR-mapped native prairie
Sullivant's Milkweed *Asclepias sullivantii*	Restricted to undisturbed wet and mesic tallgrass prairies	THR	Not applicable – the Project will not impact any MnDNR-mapped native prairie
Western Prairie Fringed Orchid *Platanthera praeclara*	Found almost exclusively in remnant native plant communities	END [a]	Not applicable – the Project will not impact any remnant plant communities [b]
Loggerhead Shrike *Lanius ludovicianus*	Lives in areas of upland grasslands and sometimes in agricultural areas where short grass vegetation and perching sites such as hedgerows, shrubs, and small trees are found; nests in trees or brush	END	Not applicable – the Project will not require tree or shrub clearing
Poweshiek Skipperling *Oarisma poweshiek*	Occupies wet to dry native prairie habitats	END [a]	Not applicable – the Project will not impact any MnDNR-mapped native prairie [b]

[a] Although this species is also federally listed, it was not identified as potentially occurring in the Project area by the USFWS Information for Planning and Consultation system.

[b] This record is associated with an SNA located outside of the Project Area and, as noted above, is also absent from the USFWS species list for the Project Area.

As shown in Table 2 above, the workspaces associated with the Repower Project will not impact suitable habitat for state-listed threatened and endangered species that are known to occur within 1 mile of the proposed Project. Further, as noted above, prior to the start of construction Xcel Energy will conduct a survey of the Project Area to identify native prairie and will prepare a Native Prairie Protection Plan for

[2] The MnDNR also maintains a listing of special concern species. Special concern species are not legally protected, but are uncommon in Minnesota or have unique or highly specific habitat requirements and deserve careful monitoring of its status.

the Project; any unmapped native prairie identified as part of that survey effort will be avoided by modifying the construction workspace.

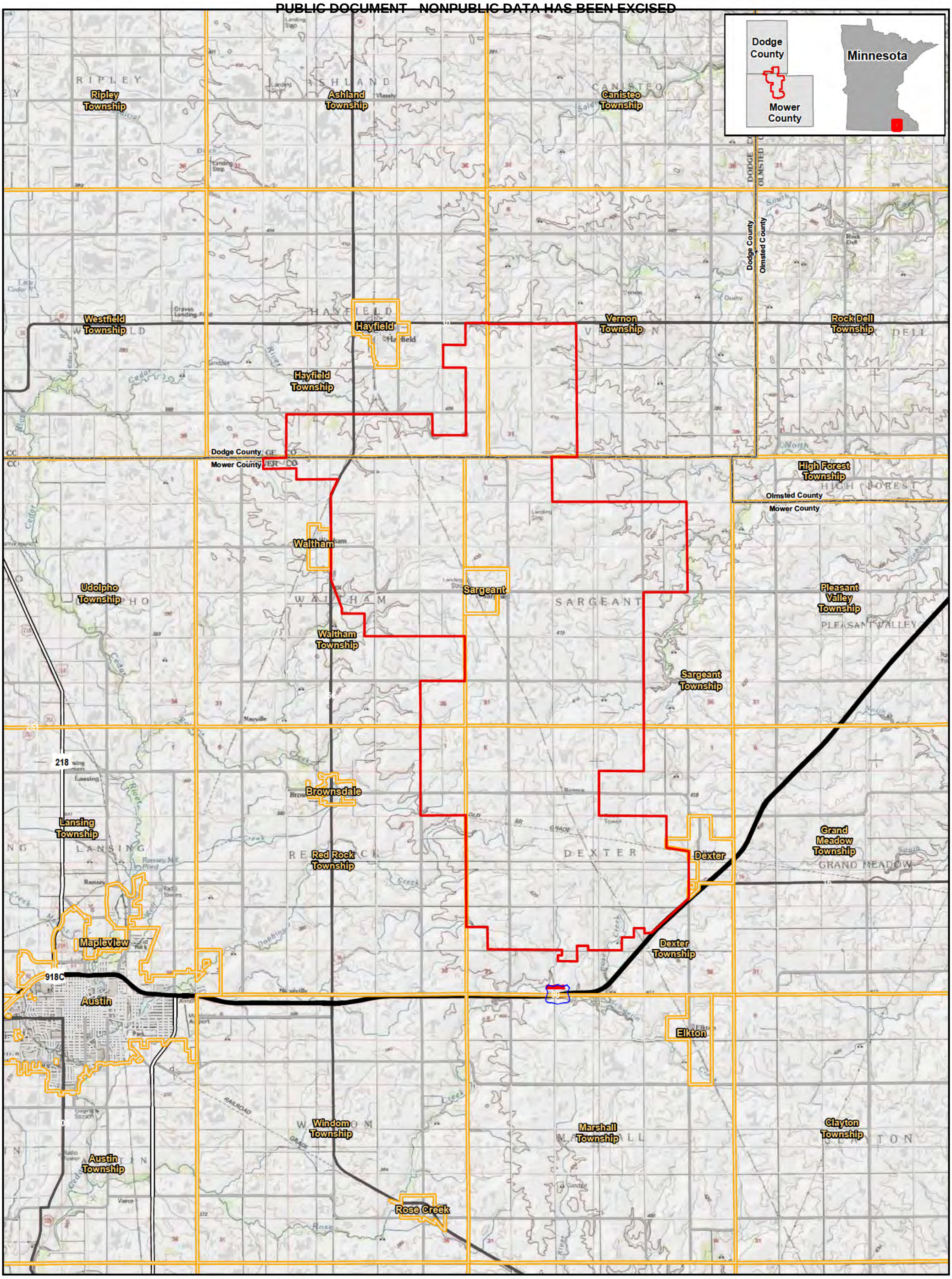
Based on the lack of suitable habitat within the temporary construction workspaces for the Repower Project and the implementation of the measures described above, we believe the Project will not impact state-listed species or rare natural resources. On behalf of Xcel Energy, Merjent respectfully requests that the MnDNR review and concur with this Natural Heritage Data Review for the Project within 30 days of receipt of this submittal.

Should you have any questions or comments regarding this matter, please contact me at 612-746-3666, or at angela.durand@merjent.com.

Sincerely,

Angela Durand
Senior Environmental Analyst
Merjent, Inc.

Enclosure: Figure 1 – Project Location Map
Figure 2 – Project Boundary Modification
Figure 3 – Project Area and Facilities



Xcel Energy®
RESPONSIBLE BY NATURE™

0 1 2 3 Miles

1:125,000

For Environmental Review Purposes Only

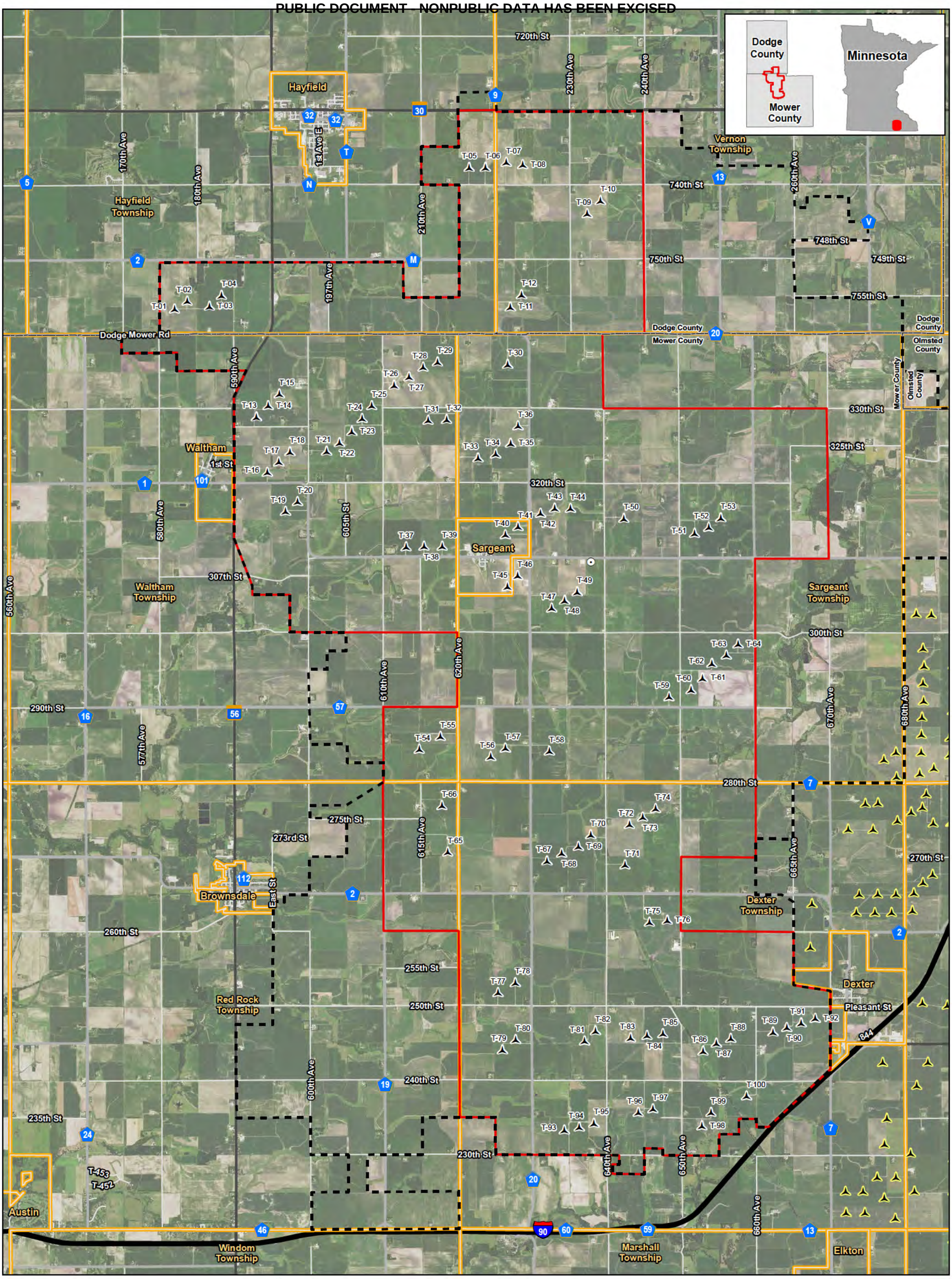
Data Source: Xcel Energy, US Census, MDOT, MDNR, 2019 NAIP

Figure 1
Project Location
Pleasant Valley Wind Farm
Repower Project

Mower and Dodge Counties, Minnesota

- Project Boundary
- City/Township
- County Boundary

PUBLIC DOCUMENT - NONPUBLIC DATA HAS BEEN EXCISED



Xcel Energy®
RESPONSIBLE BY NATURE®

0 1 2 Miles

1:75,000

N

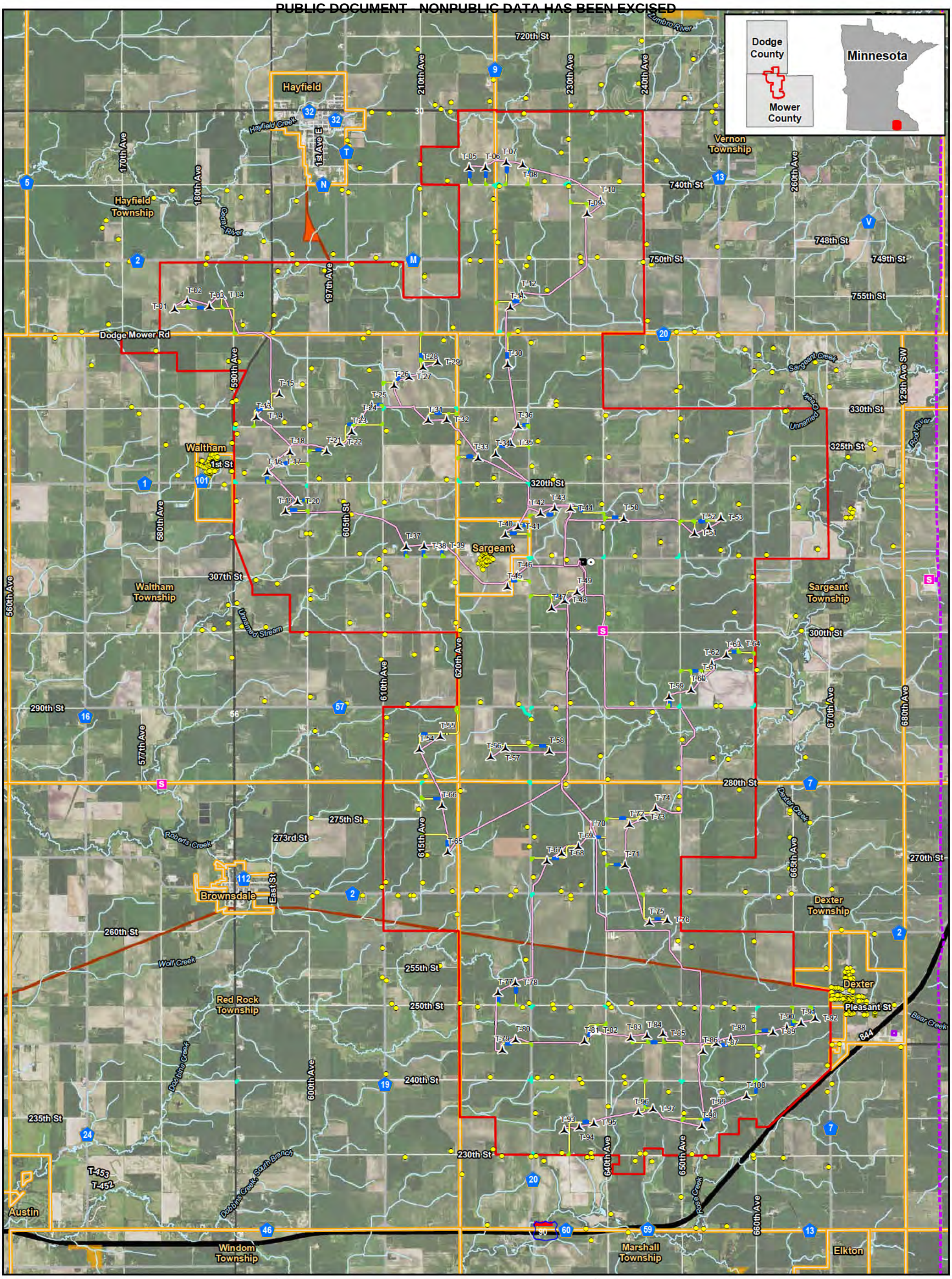
For Environmental Review Purposes Only

Data Source: Xcel Energy, US Census, MDOT, MDNR, 2019 NAIP

Figure 2
Project Boundary Modification
Pleasant Valley Wind Farm
Repower Project

Mower and Dodge Counties, Minnesota

- Turbine (110m rotor diameter)
- Existing Wind Project
- Permanent Met Tower
- Proposed Project Boundary
- 2014 Project Boundary
- City/Township
- County Boundary



Xcel Energy®
RESPONSIBLE BY NATURE™

0 1 2 Miles

1:75,000

For Environmental Review Purposes Only

Data Source: Xcel Energy, US Census, MDOT, MDNR, 2019 NAIP

Figure 3
Project Area and Facilities
Pleasant Valley Wind Farm
Repower Project

Mower and Dodge Counties, Minnesota

- Turbine (110m rotor diameter)
- Residential Structure (within 1 mile of Project Boundary)
- Permanent Met Tower
- Dairyland Coop Substation
- Access Road
- Collection Line
- Existing 345 kV Transmission Line
- River/Stream
- Project Boundary
- Project Substation
- O&M Area
- Access Road Improvements
- Crane Assembly Area
- Public Road Improvements
- City/Township
- Wildlife Management Area
- Scientific & Natural Area
- Lake, Pond or Reservoir