

Appendix D

Phase Ia Cultural Resources Literature Review

PUBLIC

In accordance with Minnesota Rules, part 7829.0500, and Minnesota Statutes Chapter 13, the Applicants have designated portions of Appendix D 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. Given the need to include nonpublic information, the Applicants have prepared and are electronically filing both NONPUBLIC and public versions of Appendix D.



barr.com

January 22, 2026

Lucy Harrington
State Historic Preservation Office
Minnesota Department of Administration
50 Sherburne Avenue, Suite 203
St. Paul, Minnesota 55155

Re: Request for Review: Phase Ia Literature Review Report for the Xcel Energy Northwest Maple Grove 115 kV Transmission Project in Hennepin County, Minnesota

Dear Ms. Harrington:

On behalf of Xcel Energy (Xcel), Barr Engineering Co. (Barr) completed a Phase Ia cultural resources literature review and report (Phase Ia) of the proposed route for the Northwest Maple Grove 115 kV Transmission Project in Maple Grove, Minnesota (the Project). Maple Grove is experiencing a significant increase in electric use due to the growth of new housing, businesses and neighborhoods. To continue delivering reliable electricity and to accommodate the community's growth, Northern States Power Company, doing business as Xcel Energy, (the Applicant) is proposing to construct a 115/34.5 kV substation on the west side of Interstate 94 and a two-mile 115 kV transmission line connecting the new substation with an existing 115 kV transmission line west of the existing Elm Creek substation.

A Route Permit must be obtained from the Minnesota Public Utilities Commission (Commission) before high voltage transmission lines like the proposed Project can be built. The Applicant plans to submit a Route Permit application in early 2026.

The Phase Ia was completed in advance of filing the RPA in an effort to understand how the Project may impact cultural resources, and to provide baseline information that Xcel can utilize as Project design is advanced. At this time, we are requesting comments from your office regarding the results of the literature review and any next steps you recommend.

Please let me know if you have any questions and/or require any additional information to complete your review, and we look forward to your response. If you would like to request a meeting, please call 1-612-342-8902 or send an email to NWMapleGrove@xcelenergy.com.

Sincerely

A handwritten signature in blue ink that reads "Veronica Parsell".

Veronica Parsell
Senior Cultural Resources Specialist
Barr Engineering

Enc: Phase Ia Literature Review Report



Phase Ia Cultural Resources Literature Review

Xcel Energy Northwest Maple Grove 115 kV Transmission Project



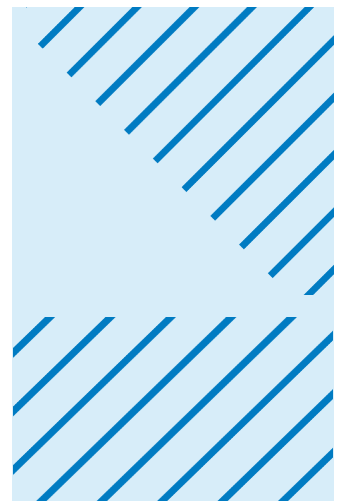
Prepared for
Xcel Energy

Prepared by
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January 2026

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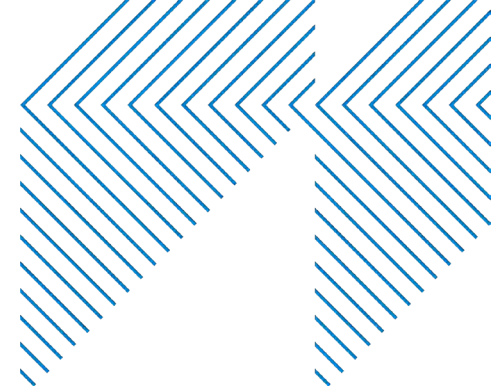
Certification

Author and Principal Investigator

A handwritten signature in blue ink that reads "Veronica Parsell".

Veronica Parsell, M.A.
RPA #: 3532690

January 19, 2026
Date



Phase Ia Cultural Resources Literature Review

January 2026



Contents

- Executive Summary 1
- 1 Introduction 3
 - 1.1 Project Overview 3
- 2 Background Research..... 7
 - 2.1 Literature Review 7
 - 2.1.1 National Historic Landmarks List 8
 - 2.1.2 National Register of Historic Places 8
 - 2.1.3 Archaeological Site Files..... 8
 - 2.1.4 Historic Cemeteries..... 9
 - 2.1.5 Historic Architecture Inventory Files 10
 - 2.1.6 Previous Cultural Resource Investigations 13
 - 2.1.7 Historic Maps and Aerials 14
 - 2.2 Environmental Context..... 16
 - 2.2.1 Precontact Site Suitability 16
 - 2.2.2 Soils 16
 - 2.3 Cultural Contexts..... 18
 - 2.3.1 Precontact Cultural Setting 18
 - 2.3.2 Native American Cultural Setting 19
 - 2.3.3 Historic Cultural Setting 20
- 3 Applicable Regulations and Guidelines 22
 - 3.1 Federal Regulations 22
 - 3.2 State Regulations..... 22
- 4 Conclusions and Recommendations 23
- 5 References..... 24



Tables

Table 1	Documented Archaeological Sites within 1-mile of the Route Width.....	8
Table 2	Historic Cemeteries within 1-mile of the Route Width.....	9
Table 3	Documented Historic Architectural Resources within the Route Width.....	10
Table 4	Previous Cultural Resource Investigations within 1-mile of the Route Width.....	13
Table 5	Soil Types within the Route Width.....	17

Figures

Figure 1	Project Location	5
Figure 2	Project Overview	6
Figure 3	Previously Documented Cultural Resources within 1 Mile of the Route Width	12

Appendices

Appendix A	Project Specifications and Example Photographs
Appendix B	Documented Historic Architecture within 1-Mile of the Route Width
Appendix C	Historic Maps and Aerials

Executive Summary

In response to a request from Xcel Energy (Xcel), Barr Engineering Co. (Barr) completed a Phase Ia cultural resources literature review (Phase Ia) for the proposed Northwest Maple Grove 115 kilovolt (kV) Transmission Project in Maple Grove, Hennepin County, Minnesota (the Project). The Project involves construction of an approximately two-mile-long, 115 kV double-circuit transmission line from a new West Maple Grove Substation located on the west side of Interstate 94 to an interconnect point (or “tap”) on an existing 115 kV line on the south side of County Highway 81 west of the existing Elm Creek Substation. The Project is located in Sections 4, 5, and 8, Township 119N, Range 22W on the Anoka, Minnesota 7.5’ USGS topographic quadrangle (1993). Xcel is submitting a route permit application (RPA) for the Project to the Minnesota Public Utilities Commission (PUC) late this year. This Phase Ia was completed concurrent with the RPA in an effort to understand how the Project may impact cultural resources, and to provide baseline cultural resources information that Xcel can utilize as Project design is advanced.

The Project involves constructing an approximately two-mile-long, new 115 kV double-circuit, alternating current transmission line from a new 115/34.5 kV substation, the West Maple Grove Substation, on the west side of Interstate 94, to a proposed tap point. The new transmission line will parallel the right-of-way (ROW) along the west side of Interstate 94 for 0.5 miles before turning east. It will then roughly follow the ROW along 105th Ave North for 1.5 miles, where it will then tie into an existing 115 kV line (line 0827) along County Highway 81, west of the existing Elm Creek Substation.

A literature review was completed for the Project in September 2024 and supplemented in August 2025 through a review of the Minnesota Office of the State Archaeologist (OSA) online Portal as well as a review of Minnesota’s Statewide Historic Inventory Portal (MnSHIP). Barr focused on identifying documented cultural resources within the route width for the Project, which is the area in which the PUC authorizes a permittee to place their proposed transmission line facilities. For this Project, the Xcel proposes a variable route width ranging from 200 feet in areas where modifications to existing lines may be required, 500 feet along the proposed new alignment, and up to 1,000 feet around the proposed West Maple Grove Substation.

The literature review found no documented archaeological resources within the route width. One historic cemetery (the Maple Grove/Rush Creek Cemetery), mapped in the OSA Portal at the Public Land Survey System (PLSS) “40” level, is shown overlapping a portion of the route width. However, a review of available maps and aerials indicates that this cemetery is actually located well outside of the route width, on the north side of County Highway 81. One additional cemetery, South Maple Grove Cemetery, has an unknown location and is therefore mapped in the OSA Portal at the 36-square-mile PLSS Township level. It is therefore possible, though unlikely, that South Maple Grove Cemetery is located within the route width. There are nine historic architectural resources within the route width. This includes resource XX-RRD-GNR014, the Minneapolis and Northwestern Railroad Corridor, which is eligible for the NRHP. Within 1-mile of the Project, 39 historic architectural resources have been documented.

Impacts to cultural resources within the route width may occur where ground disturbance is necessary for Project construction and maintenance. Each new structure foundation will result in approximately 80 square feet of ground disturbance. The new substation will consist of up to 13.5 acres of ground disturbance. However, other portions of the Project consist of connecting a new 115 kV double-circuit in-and-out transmission line into Xcel’s existing line 0827 between Elm Creek and Hassan Substations. Ground disturbance related to this aspect of the Project will be minimal; therefore, this portion of the Project is not anticipated to result in impacts to cultural resources.

PUC-issued route permits generally include recommendations regarding cultural resources, and permit conditions may include conducting a Phase Ia literature review, Phase I archaeological survey, or an archaeological assessment for the Project. Coordination with the Minnesota SHPO will help determine the need for additional cultural resource studies in relation to the Project.

1 Introduction

In response to a request from Xcel Energy (Xcel), Barr conducted a Phase Ia cultural resources literature review (Phase Ia) prior to the construction of an approximately two-mile-long, new 115 kV double-circuit, alternating current transmission line from a new 115/34.5 kV substation, the West Maple Grove Substation, on the west side of Interstate 94, to a proposed tap point. The new transmission line will parallel the right-of-way (ROW) along the west side of Interstate 94 for 0.5 miles before turning east. It will then roughly follow the ROW along 105th Ave North for 1.5 miles, where it will then tie into an existing 115 kV line (line 0827) along County Highway 81, west of the existing Elm Creek Substation. The Project is located in Sections 4, 5, and 8, Township 119N, Range 22W on the Anoka, Minnesota 7.5' USGS topographic quadrangle (1993) (Figure 1). Construction of the Project is anticipated to last approximately one year, starting in Q4 2026, with the Project anticipated to be in service in the last quarter of 2028.

Xcel is submitting a route permit application (RPA) for the Project to the Minnesota Public Utilities Commission (PUC) in December 2025. This Phase Ia was completed concurrent with the RPA in an effort to understand how the Project may impact cultural resources, and to provide baseline cultural resources information that Xcel can utilize as Project design is advanced.

Background research was completed through a review of the Minnesota Office of the State Archaeologist (OSA) online Portal as well as a review of MnSHIP, Minnesota's Statewide Historic Inventory Portal. The records review focused on a 1-mile (mi) study area around the route width. Barr gathered information about previously documented cultural resources as well as the environmental and cultural context of the region to assess the potential for the Project to contain undocumented cultural resources.

Key personnel committed to the Project include archaeological Principal Investigator Ms. Veronica Parsell. Mr. Aaron Birr completed the report graphics.

This report presents the results of the background research in Section 2. Section 3 outlines the applicable regulations and guidelines governing the Project. Section 4 provides the conclusions and recommendations. The references cited in this report appear in Section 5. Appendix A contains specifications and example photographs of anticipated infrastructure to be installed for the Project, Appendix B contains a table of documented historic architectural resources within 1-mile of the route width, and Appendix C contains historic maps and aerials of the Project area.

1.1 Project Overview

The Project is needed to provide additional transmission capacity to mitigate current capacity issues due to a significant increase in electric demand from new homes, businesses, and neighborhoods in the Twin Cities northwest suburbs, and to improve electric system reliability throughout the region as more renewable energy resources are added to the electric system in and around the region. The loading on existing lines in the area immediately affected by the Project currently ranges from 55 to 80 percent (optimal loading is 50 percent), which in turn is causing contingency/N-1 risk on the feeders in this area; the Project will mitigate this risk. Xcel plans to begin Project construction upon regulatory approval and anticipates that the Project will start addressing the needs of the Twin Cities northwest suburbs upon commercial operation in 2028.

A new 115 kV double-circuit in-and-out transmission line will be connected into Xcel's existing line 0827 between Elm Creek and Hassan Substations. The new 115 kV double-circuit transmission line will connect to the West Maple Grove Substation, built to meet growing demand. These lines are comprised

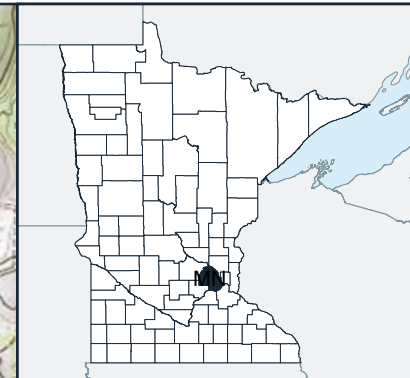
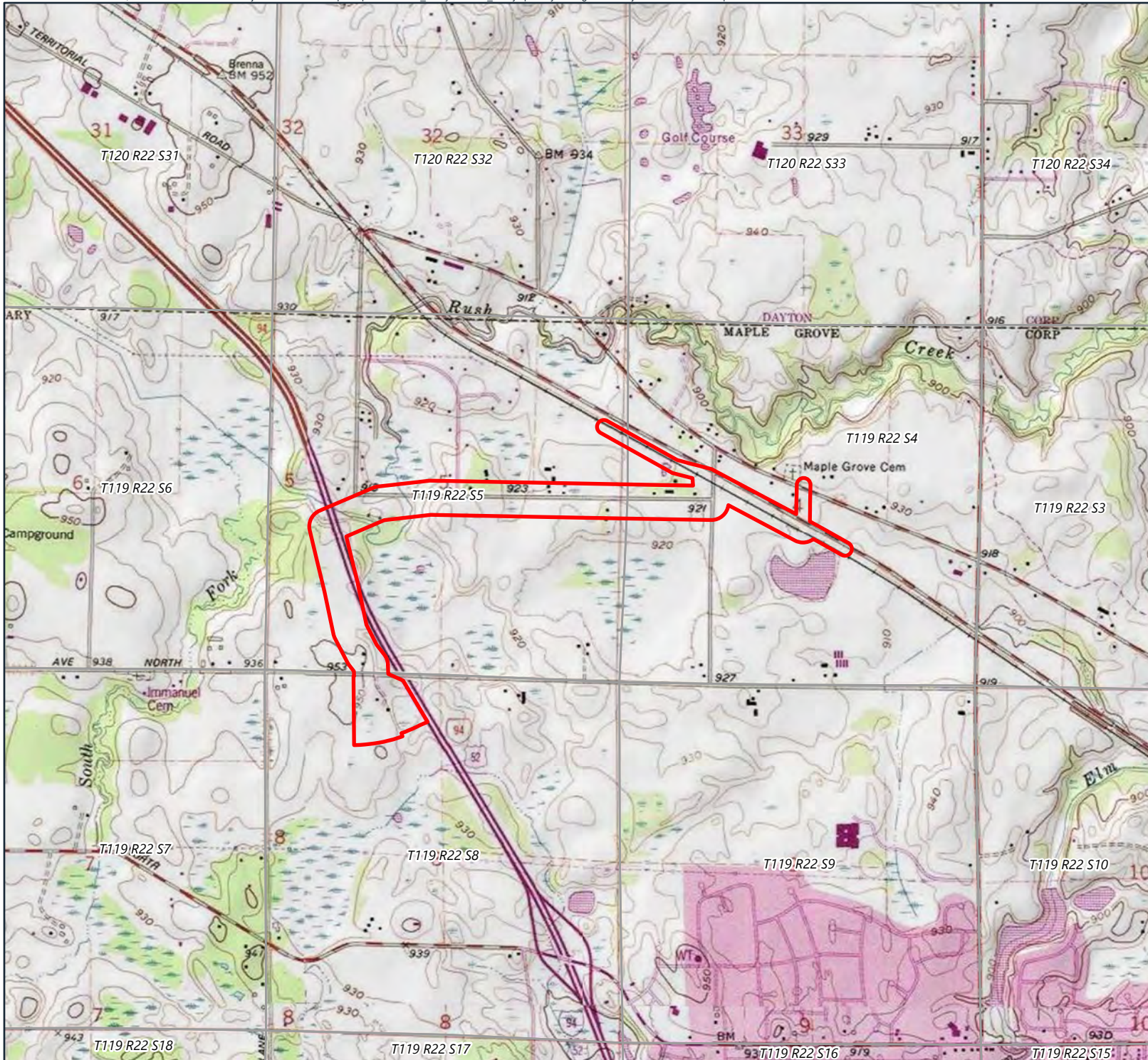
of individual structures that support the lengths of conductors made of steel and aluminum braided cable, typically around one inch in diameter, along with two optical ground wires (OPGW). The OPGWs function as both a shield wire to be used for lightning protection as well as a fiber optic communication line. This type of shield wire requires special splicing and extra splice boxes to be placed on transmission poles intermittently. Transmission lines are built in teams of three wire groupings; each individual grouping is called a phase. A group of three phases is called a circuit. Each phase can be a single wire or multiple wires called a bundle. This new double-circuit line will contain a two-wire bundle for each phase. Each conductor bundle is supported at every structure by an insulator (Appendix A1).

The Project includes the installation of approximately 30 to 35 new 115 kV tower structures using a combination of structure types (Appendix A2). Each new structure foundation will result in approximately 80 square feet of ground disturbance. The typical structures will be a monopole, silver/galvanized or brown/weathering steel, double-circuit structure (Appendix A3). Tangent and angle structures will be used to brace line post insulators. Dead-end and cut-in structures will have davit arms. Distribution underbuild (lower-voltage conductors installed below the 115 kV conductors on the same structures) is anticipated for a partial section of the Project.

The Project parallels existing infrastructure for 100 percent of its length, including 1.6 miles (84 percent) along existing roads and 0.3 miles (16 percent) where the anticipated alignment parallels road, rail, and existing transmission line. When paralleling existing road ROW, Xcel would place structures on adjacent private property with a 20-foot offset from the existing road ROW, subject to easements with landowners and road authority design requirements that could affect the offset distance.

The Project would also include construction of a new substation. The new West Maple Grove Substation will be a 115/34.5 kV substation located 1.5 miles west of the existing Elm Creek Substation. This substation is planned to be located on a 13.5-acre parcel of land purchased from the city of Maple Grove by Xcel; this area is being referred to as the "West Maple Grove Substation Area".

The West Maple Grove Substation is being designed with sufficient space to accommodate both the initial infrastructure and future expansions; therefore, ground disturbance throughout the entire 13.5-acre parcel is anticipated. Initially, the substation will feature six transmission circuit breakers to support the connection of two transmission lines and two distribution transformers. In its ultimate configuration, the substation will be capable of housing up to thirteen transmission circuit breakers, enabling the connection of four transmission lines and three distribution transformers. The facility will be situated on a graded and fenced site within the West Maple Grove Substation Area. The fenced portion of the site will be approximately 3.5 acres. Within this fenced-in portion of the site there will be one building that will be 10 to 12 feet tall and structural columns to support the equipment ranging from 60 to 84 feet tall. Lighting will be mounted on poles or structures at 12 to 30 feet high. Lighting is only activated during scheduled maintenance or emergency work; otherwise, the substation remains dark to reduce light pollution. Fixtures include full cutoff LED fixtures to prevent upward light spill and shielded luminaires to direct light only where needed. Typical maintained illuminance is 0.5–1 foot-candles for general access and 5–10 foot-candles for detailed work areas. Also included in the 13.5-acre West Maple Grove Substation Area are access roads, maintenance roads, a stormwater pond and landscaping/vegetative screening (Figure 2).



 Route Width

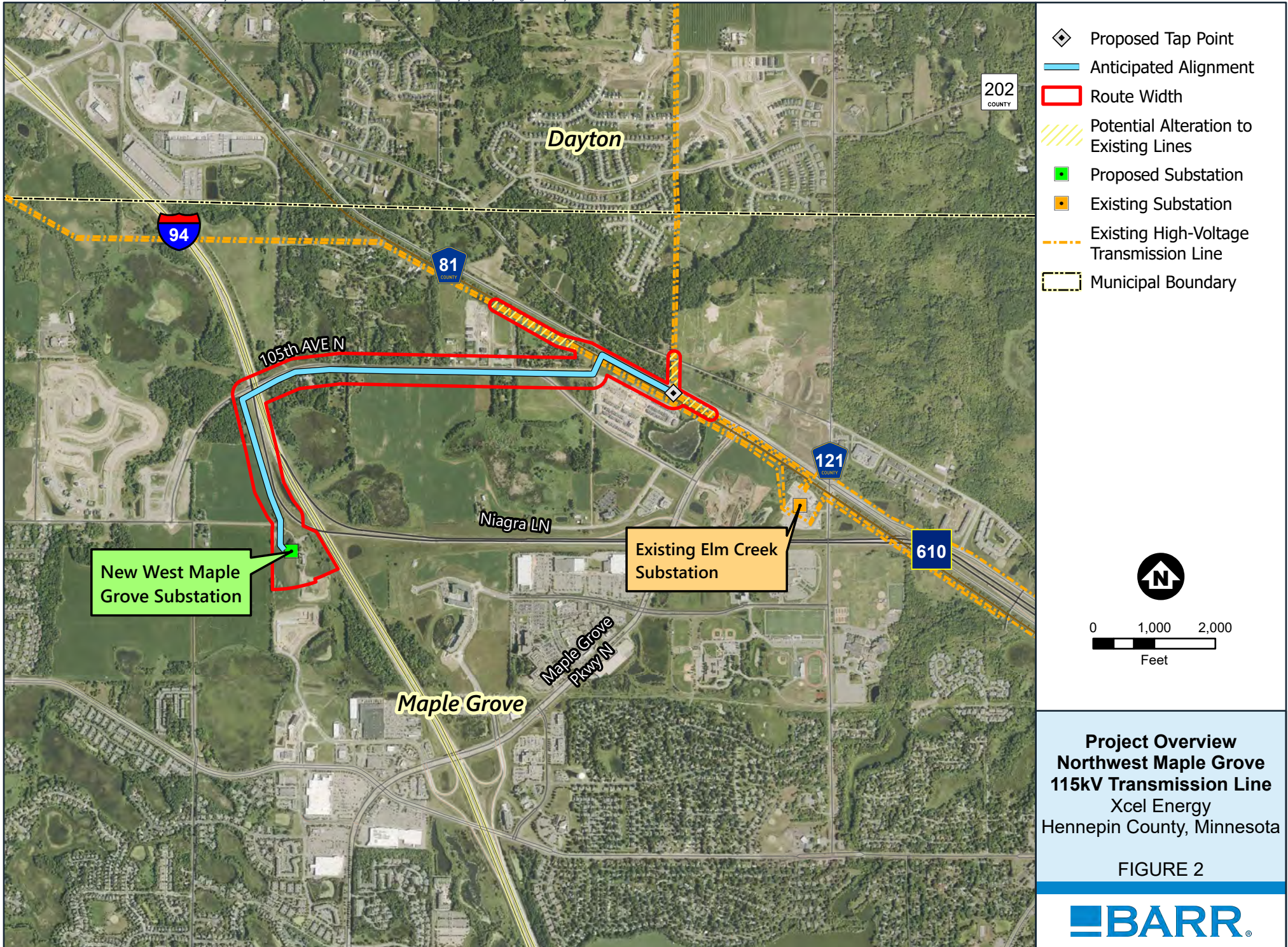


0 1,000 2,000
Feet

Project Location
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

FIGURE 1





2 Background Research

The objective of the literature review is to identify any cultural resources present in or adjacent to the Project, as well as assess the effects of the Project on these resources, if identified. Barr's cultural resources review focused on identifying archaeological and historic architectural resources.

Archaeological resources are defined as any site location that contains material remains of past human life or activities, or other places and/or items that possess cultural importance to individuals or a group. Historic architectural resources include "buildings, bridges, tunnels, statues, and other structures that create tangible links to the American past, whether in relation to historical events and people, traditional ways of life, architectural design, or methods of construction"¹.

Once identified through documentary research and/or fieldwork, archaeological sites and historic architectural resources are evaluated for National Register of Historic Places (NRHP) eligibility based on the following criteria.

"The quality of significance in American history, architecture, archaeology, engineering and culture is present in the districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- a. *That are associated with the events that have made a significant contribution to the broad patterns of our history; or*
- b. *That are associated with the lives of persons significant in our past; or*
- c. *That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
- d. *That have yielded or may be likely to yield, information important in prehistory or history"* (36 CFR 60.4)."

The purpose of this section is to provide a basic context through which to evaluate the results of Barr's research. This section briefly outlines the environmental and cultural background of the region in and around Hennepin County, Minnesota.

2.1 Literature Review

The literature review was directed toward identifying previously recorded archaeological sites, historic architectural resources, and other cultural resources. Barr reviewed the Minnesota OSA Portal for archaeological site location information. MnSHIP, Minnesota's Statewide Historic Inventory Portal, was also reviewed for information pertaining to historic architectural resources. Barr focused on previously recorded resources within 1-mi of the Project, and included a review of the following resources:

- National Historic Landmark list;
- NRHP list;
- Archaeological Site Files;
- Historic Architectural Inventory Files;
- Historic Cemeteries (as documented in the OSA Portal);
- Historic maps and aerial photographs.

¹ <https://www.nps.gov/orgs/1027/architecture.htm>

The data viewed through MnSHIP and the OSA Portal indicate that no previously recorded archaeological sites have been documented within the route width. However, nine documented historic architectural resources are located within the route width. Within 1-mi of the route width, eight archaeological sites and 39 historic architectural resources have been recorded (Figure 3).

2.1.1 National Historic Landmarks List

No National Historic Landmarks are located within the route width or a 1-mi buffer.

2.1.2 National Register of Historic Places

One resource has been evaluated and determined eligible for the NRHP. Resource XX-RRD-GNR014, the Minneapolis and Northwestern Railroad Corridor, represents the railroad right-of-way in Hennepin, Wright, and Stearns Counties, between a junction with the St. Paul and Pacific Main Line at Van White Boulevard in Minneapolis and a junction with the St. Vincent Extension in St. Cloud. It was determined eligible for the NRHP in 2018 (Schmidt 2024). This resource is located along the eastern end of the route width, where it parallels a series of existing transmission lines, some of which may be altered as part of the current Project.

The Minneapolis and Northwestern Railroad Corridor, historically known as the Minneapolis and Northwestern Railroad Company, later the St. Paul Minneapolis and Manitoba Railway Company, and eventually the Great Northern Railway Company, is an important component of Minnesota's historical transportation infrastructure. Constructed between 1882 and 1956, the corridor played a pivotal role in connecting early population centers and facilitating the movement of agricultural and industrial commodities, notably granite from the St. Cloud area, which became accessible for large-scale shipping only after the railroad's arrival (Schmidt 2024). The corridor is eligible for the NRHP under Criterion A for its association with significant events in transportation history, particularly its contribution to the development of Minnesota's railroad network and its influence on settlement and economic growth. The corridor retains sufficient integrity in terms of location, feeling, and association, despite some alterations to its setting and materials, thereby qualifying it as an NRHP-eligible historic district.

The corridor's extensive length and historical complexity have led to various segments of the corridor being documented separately under distinct inventory numbers, reflecting different phases of evaluation, ownership, and historical significance. Resource XX-RRD-00010 within the route width is one such example of this occurrence. The most recent inventory form, XX-RRD-GNR014, consolidates these earlier evaluations into a single comprehensive document, streamlining the historical record and providing a unified assessment of the corridor's eligibility for the NRHP (Schmidt 2024).

2.1.3 Archaeological Site Files

The OSA Portal indicates that eight archaeological sites have been documented within 1-mi of the route width (Table 1). None of these sites are located within or adjacent to the route width.

Table 1 Documented Archaeological Sites within 1-mile of the Route Width

Site Number	Site Name	Site Type	NRHP Eligibility	Location
21HE0186	Osseo High School Site	Precontact lithic isolate	Unevaluated	within 1 mile

Site Number	Site Name	Site Type	NRHP Eligibility	Location
21HE0320	Gellerman	Precontact lithic scatter	Recommended Not Eligible	within 1 mile
21HE0321	DMR I	Precontact lithic scatter	Unevaluated	within 1 mile
21HE0322	DMR II	Precontact lithic isolate	Unevaluated	within 1 mile
21HE0323	Meloche I	Precontact lithic scatter	Unevaluated	within 1 mile
21HE0324	Meloche II	Precontact camp site	Unevaluated	within 1 mile
21HE0325	Meloche III	Precontact lithic isolate	Unevaluated	within 1 mile
21HEb	none	Alpha Site - unknown historic site	Unevaluated	within 1 mile

2.1.4 Historic Cemeteries

A review of the 2011 data on Minnesota's unrecorded historical cemeteries (Vermeer and Terrell 2011), as available through the OSA Portal, shows four historic cemeteries within 1-mile of the route width, including two historic cemeteries overlapping the route width or a portion of the route width (Table 2). The Maple Grove/Rush Creek Cemetery (MN Cem ID 20851) is mapped at the Public Land Survey System (PLSS) "40" level in the OSA Portal. While this provides the location of the cemetery at the PLSS quarter-quarter section level, it is not an accurate representation of the cemetery property boundaries. The Maple Grove/Rush Creek Cemetery has well-defined parcel boundaries that are outside of the route width, on the north side of County Highway 81. One additional cemetery, South Maple Grove Cemetery (MN Cem ID 20933), has an unknown location and is therefore mapped in the OSA Portal at the 36-square-mile PLSS Township level. It is therefore possible, though unlikely, that South Maple Grove Cemetery is located within the route width. Two additional cemeteries, as mapped in the OSA Portal, are located within 1-mile of the route width. These include the Immanuel United Methodist Cemetery (MN Cem ID 20855) and the Koehler Family Cemetery (MN Cem ID 20934).

Table 2 Historic Cemeteries within 1-mile of the Route Width

MN Cemetery ID	Cemetery Name	Mapping Accuracy	Cemetery Location	Notes
20933	South Maple Grove Cemetery	Township-level	Unknown	
20851	Maple Grove/Rush Creek Cemetery	PLS Forty-level	Known	Small pioneer cemetery established in 1861 More than 525 interments

MN Cemetery ID	Cemetery Name	Mapping Accuracy	Cemetery Location	Notes
20855	Immanuel United Methodist Cemetery	PLS Forty-level	Known	More than 275 interments
20934	Koehler Family Cemetery	Section-level	Unknown	Pope notes, "on Hwy 101 north of 97th Ave N"

2.1.5 Historic Architecture Inventory Files

The MnSHIP Portal indicates that 39 historic architectural resources have been documented within 1-mi of the route width (Appendix B). Of these, nine resources are located within the route width. Documented historic architectural resources in the route width include three farmsteads, two houses, two bridges, one Trunk Highway, and one railroad corridor that has been documented multiple times and therefore has multiple historic inventory numbers (Table 3). The vast majority of these resources are unevaluated for the NRHP; however, resource XX-RRD-GNR014, the Minneapolis and Northwestern Railroad Corridor, was determined eligible for the NRHP in 2018 (Schmidt 2024). See Section 2.1.2 for a detailed discussion of this resource.

Table 3 Documented Historic Architectural Resources within the Route Width

Historic Inventory Number	Resource Name/Type	Date Constructed (if known)	NRHP Eligibility
HE-MGC-00005	Glendon Unke Farmstead	1910	Unevaluated
HE-MGC-00007	House	1905	Unevaluated
HE-MGC-00008	Farmstead		Unevaluated
HE-MGC-00009	House, Arts and Crafts Style	1925	Unevaluated
HE-MGC-00060	Roeder Farmstead, Arts and Crafts Style	1933	Unevaluated
HE-MGC-00089	Township Bridge		Unevaluated
HE-MGC-00111	Bridge L8083		Unevaluated
XX-ROD-00185	US Trunk Highway 52	1955, 1920	Unevaluated
XX-RRD-00010*	Osseo Branch Line/ St. Paul Minneapolis & Manitoba /Great Northern Railroad (part of Resource XX-RRD-GNR014)		Considered Eligible

Historic Inventory Number	Resource Name/Type	Date Constructed (if known)	NRHP Eligibility
XX-RRD-GNR014	Minneapolis and Northwestern Railroad Corridor		Considered Eligible

*Resource XX-ROD-00010 represents a segment of the Minneapolis and Northwestern Railroad Corridor (XX-RRD-GNR014)

[NONPUBLIC DATA BEGINS]

[NONPUBLIC DATA ENDS]

2.1.6 Previous Cultural Resource Investigations

Barr did not complete an in-person records check at the Minnesota State Historic Preservation Office (SHPO). Instead, Barr reviewed cultural resource data electronically via MnSHIP and the OSA Portal. This data often indicates whether a survey report was completed in conjunction with the identification of a cultural resource. Negative survey report information is not included. As a result, the location of any previous investigations where survey results were negative for cultural resources is not readily available. Nevertheless, the data summarized here is believed to be adequate for the purposes of this literature review.

Available data from OSA and MnSHIP indicates that within 1-mi of the Project area, at least seven previous cultural resource investigations have occurred (Table 4). A large portion of the route width was surveyed for archaeological resources in 2011 by Summit Environmental Solutions prior to the expansion of Trunk Highway (TH) 610 (O'Brien et al. 2011). Portions of the route width were surveyed for historic architectural resources in 1994 prior to construction of TH610 (Schweigert 1994), and in 2018 prior to work on Interstate 94 (Granger and Kelly 2018).

Table 4 Previous Cultural Resource Investigations within 1-mile of the Route Width

Report Year	Report Authors	Report Title	Resources Investigated	In Route Width?
2011	O'Brien, M., R. Hutter, J. Jerve, M. Madson, L. Ollila, A. Schmidt, and T. Varilek	Phase I and II Cultural Resources Studies for the Trunk Highway 610 Construction Project, Maple Grove, Hennepin County, Minnesota	21He0320	Yes
2000	Harrison, C.	Report on Cultural Resource Reconnaissance Conducted for the I-94/TH 610 West and East Alternative Urban Areawide Reviews (AURs), City of Maple Grove, Hennepin County, Minnesota	21He0320 21He0321 21HE0322 21HE0323 21HE0324 21HE0325	Yes
1993	Ketz, A.	Archaeological Reconnaissance Survey for the Osseo High School Site, Osseo ISD #279	21He0186	No
1994	Schweigert, K.	Cultural Resource Survey of Proposed Trunk Highway 610 in Maple Grove and Brooklyn Park, Hennepin County, Minnesota	HE-MGC-005 HE-MGC-057 HE-MGC-058 HE-MGC-059 HE-MGC-063	Yes

Report Year	Report Authors	Report Title	Resources Investigated	In Route Width?
2018	Granger, S. and S. Kelly	Phase I and II Architecture-History Investigation, I-94 Unbonded Concrete Overlay (UBOL) and Other Improvements, Rogers to Maple Grove, Hennepin County	HE-MGC-060 HE-MGC-089	Yes

2.1.7 Historic Maps and Aerials

Several available historic maps and aerial photographs were referenced for information pertaining to the historic use of the Project area between 1856 and 1972 (BLM 1856; Dahl 1898; Westby1913; Wright 1873; Regents of the University of Minnesota 2015; USGS 1902, 1955, 1967; 1972) (Appendix C).

2.1.7.1 Historic Maps

The 1856 General Land Office (GLO) map shows the route width located in an unpopulated area (BLM 1856). Several streams and wetlands are present in the vicinity, as is an early road just northeast of the Project (Appendix C1). By 1873, settlement in and around the Project area is apparent (Wright 1873). At least three roads are now located within the route width as are two houses, and Schoolhouse No. 42 is shown just outside of the route width (Appendix C2). Property owners within the route width include Charles Saussele, Fred Bonn, Ferdinand Radings, Henry Burlecamp, William Evans, John Mitchell, M.K. Pike, and others (Wright 1873). The route width is mostly unchanged in 1898. Several more houses are present within the route width, and property owners are largely unchanged (Dahl 1898). The route width is located in "Part of School District No. 42", and Maple Grove/Rush Creek Cemetery is now depicted outside of Project boundaries (Appendix C3). The Great Northern Railroad has also been constructed and runs through a portion of the route width. The "Maple Grove Post Office" is also depicted in or directly adjacent to the Project (Dahl 1898).

The 1902 Anoka, Minnesota 1:62,500 USGS topographic map shows the small town of Maple Grove at the northern end of the route width (Appendix C4). Rush Creek meanders through the Project area and appears to cross a portion of the route width (USGS 1902). At least two residences and the Great Northern Railroad are also within the route width. The 1913 Atlas Map does not depict structure locations; however, it shows that land ownership has been consolidated in and around the Project (Appendix C5). Landowners now include E.L. Roberts, C. Sauselle, V. Unke, F. Radintz, B.F. Loflin, D.J. Sauselle, C.F. Ziebarth, and others (Westby 1913). The Maple Grove Post Office is still depicted in the route width, as is Rush Creek and the Great Northern Railroad.

The 1955 Anoka, Minnesota USGS 7.5' topographic quadrangle shows limited new development in and around the route width; additional housing construction appears to be the biggest change (Appendix C6). At least six houses are located within the route width. Several wetlands are shown in and around the Project, and Rush Creek still travels through the west side of the route width (USGS 1955). The 1967 Anoka, Minnesota USGS 7.5' topographic quadrangle shows no changes from 1955, aside from the depicting the proposed location of Interstate (I) 94 through the western end of the route width (Appendix C7). By 1972, I-94 has been constructed, and the Great Northern Railroad is now shown as the

Burlington and Northern Railroad (Appendix C8). Limited other changes are apparent in and around the Project (USGS 1972).

2.1.7.2 Historic Aerials

Historic aerials from 1945 through 1971, as available through the University of Minnesota's Historical Aerial Photographs Online (Regents of the University of Minnesota 2015) were reviewed to gain an understanding of the historic use of the Project area for the past approximately 80 years.

In 1945, limited development is apparent in and around the Project area (Appendix C9). The Great Northern Railroad runs through the eastern end of the route width, and several farmsteads are visible in the route width as well. Rush Creek appears to have a natural meander across the Project area. The Project setting is generally rural and agricultural. Not much has changed by 1957. The Project setting remains rural and agricultural (Appendix C10). Several wetlands related to Rush Creek are visible, and the development in and around the Project appears mainly the same as it did in 1945. The 1964 aerial shows some changes to Rush Creek as well as some additional residential construction in the route width (Appendix C11). However, the Project area is still largely rural and undeveloped. By 1971, I-94 has been constructed through the western end of the route width (Appendix C12). No other major changes are apparent in or around the Project.

2.2 Environmental Context

Barr reviewed Chapters 3 and 8 of the MnModel Phase 3, prepared by the Minnesota Department of Transportation (MnDOT), for information pertaining to the Project area's physiography, climate, and flora and fauna (Gibbon et al. 2002; Hobbs et al. 2002). The MnModel Phase 3 indicates that the route width is located in the Central Lakes Deciduous Archaeological Region (Region 4), which covers most of central Minnesota (Gibbon et al. 2002). Following the Ecological Classification System utilized in MnModel Phase 3, the Project area is further located within the Big Woods Subsection of the Minnesota and NE Iowa Morainal Section of the Eastern Broadleaf Forest Province (Gibbon et al. 2002; Hobbs et al. 2002).

The Big Woods Subsection is characterized by a large block of deciduous forest present at the time of Euro-American settlement (MN DNR 2025). Topography is gently to moderately rolling, and the primary landform is a loamy, mantled moraine formed by the Des Moines lobe of the late Wisconsin glaciation. Circular, level-topped hills with smooth side slopes dominate the landscape, with broad level areas between the hills that contain closed depressions with lakes and peat bogs. The "Big Woods" consisted of Northern red oak, sugar maple, basswood, and American elm (MN DNR 2025). Wet prairies were also interspersed with forest throughout the landscape. Soils are predominantly loamy and range from loam to clay loam formed by the calcareous glacial till of the Des Moines lobe, with depth to bedrock ranging between 100 and 400 feet.

The climate of this region ranges from 78 to 82 degrees Fahrenheit in the summer to 12 to 24 degrees in the winter. The growing season is approximately 160 days per year in the south, and the region's average annual precipitation is between 22 and 28 inches (Gibbon et al. 2002).

Late Holocene fauna would have historically included deer, bison, and elk. Fish and waterfowl would have been abundant, and wild rice and acorns would have also been prevalent (Gibbon et al. 2002).

2.2.1 Precontact Site Suitability

A review of the *MnModel Phase 4*, prepared by the MnDOT and available for reference through the OSA Portal, indicates that portions of the route width have high potential for containing Woodland period precontact archaeological sites, while the remaining portions of the project have low potential for Woodland period precontact archaeological sites. The MM4 landform model shows the route width is predominantly located on a Plain landform in a Stagnant Ice landscape (MDA State Archaeologist 2022a).

2.2.2 Soils

Soil information was obtained from the U.S. Department of Agriculture-Natural Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database (NRCS 2025).

Soils within the route width are dominated by loams and clay loams. Silt loams, clay loams, and muck are also present in smaller amounts (Table 5). Approximately half of the soils in the route width are classified as well drained or moderately well drained; the remaining soils are classified as poorly drained, somewhat poorly drained, or very poorly drained. For the most part, the poorly drained soils are also predominantly hydric or hydric. A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile. Hydric soils are typically associated with lowlands and wetlands and are rated by their proportion of hydric soil in the map unit (100 percent for a hydric soil and 66 to 99 percent for a predominantly hydric soil).

Predominant soil types in the route width include Glencoe, Nessel, and Cordova soils. Glencoe soils consist of very deep, very poorly drained soils formed in loamy sediments from till; typically found in closed depressions on moraines (NRCS 2014). Nessel soils are very deep, moderately well drained soils that formed in loamy calcareous glacial till on glacial moraines (NRCS 2006). Cordova soils consist of very deep, poorly drained soils that formed in loamy calcareous glacial till on ground moraines and till plains (NRCS 2011).

Table 5 Soil Types within the Route Width

Map Unit Symbol	Map Unit Name	Drainage Classification	Hydric Rating
L37B	Angus loam, 2 to 6 percent slopes	Well drained	Non-hydric
L40B	Angus-Kilkenny complex, 2 to 6 percent slopes	Well drained	Non-hydric
L23A	Cordova loam, 0 to 2 percent slopes	Poorly drained	Predominantly hydric
L45A	Dundas-Cordova complex, 0 to 3 percent slopes	Somewhat poorly drained	Predominantly non-hydric
L24A	Glencoe clay loam, 0 to 1 percent slopes	Very poorly drained	Hydric
L36A	Hamel, overwash-Hamel complex, 0 to 3 percent slopes	Somewhat poorly drained	Somewhat Hydric
L49A	Klossner soils, depressional, 0 to 1 percent slopes	Very poorly drained	Hydric
L35A	Lerdal loam, 1 to 3 percent slopes	Somewhat poorly drained	Predominantly non-hydric
L22C2	Lester loam, 6 to 10 percent slopes, moderately eroded	Well drained	Non-hydric
L41E	Lester-Kilkenny complex, 16 to 22 percent slopes	Well drained	Non-hydric
L41C2	Lester-Kilkenny complex, 6 to 10 percent slopes, moderately eroded	Well drained	Non-hydric
L44A	Nessel loam, 1 to 3 percent slopes	Moderately well drained	Non-hydric
L27A	Suckercreek loam, 0 to 2 percent slopes, frequently flooded	Very poorly drained	Predominantly hydric
W	Water	n/a	n/a

2.3 Cultural Contexts

Archaeological sites in the Central Lakes Deciduous Region tend to be associated with lakes and major rivers throughout time. Precontact sites, including small campsites, specialized activity sites, and larger village sites, are found along major rivers and larger lakes (Gibbon et al. 2002). At contact with Euro-Americans, Santee Dakota groups occupied the eastern part of the Central Lakes Deciduous Region, and other Dakota groups, such as the Yankton and Yanktonai, controlled the western part. The Ojibwe began to move into the northern part of the region in the mid-1700s and controlled this area by the early 1800s (Gibbon et al. 2002). Historic Native American villages were generally located near major sources of water and/or wild rice beds. By the late 1600s, French traders had entered the region and established posts on some major lakes and rivers, a pattern generally followed by later Euro-American settlers (Gibbon et al. 2002).

The following summaries provide a context through which to examine the cultural history of the Project area. These contexts are based on information found in MnModel Phase 3 (Gibbon et al. 2002), *Archaeology of Minnesota: The Prehistory of the Upper Mississippi River Region*. (Gibbon 2012) and available Euroamerican county and state histories (Blegen 1963; Brunt 1922; Clark 1989).

Archaeological sites are well documented in Hennepin County relative to other counties in the region. To date, 644 sites have been documented within the county, which is approximately 607 square miles (MDA State Archaeologist 2022a). Upland areas along lake and river shores would have been conducive to precontact occupation in the greater vicinity of the Project area.

2.3.1 Precontact Cultural Setting

The precontact occupation of southern Minnesota has been divided into three taxonomic periods, based on the material culture present at a site and the subsistence patterns interpreted from the artifact assemblage (Gibbon et al. 2002). These are defined by geographic region in Minnesota and include Paleoindian, Archaic, and Woodland. Within the Central Lakes Deciduous Archaeological Region, in which the Project area is located, sites dating to each of these time periods have been identified.

The Paleoindian period encompasses the cultural remains of the earliest recorded occupations in the region. Paleoindian sites date to early postglacial times, after 12,000 BP (years Before Present), and the fewest number of sites in the Central Lakes Deciduous Archaeological Region date to this time period, consisting mostly of surface finds. Paleoindian sites are generally identified through the presence of fluted projectile points, a characteristic artifact type for the Paleoindian period. Although Paleoindian projectile points are some of the most widely distributed types across North America, they are underrepresented in Minnesota (Gibbon et al. 2002). In the Central Lakes Deciduous Archaeological Region, sites are concentrated along lakes and major rivers. For instance, Site 21AN8/A.H. Anderson Site on Howard Lake produced a concentration of fluted points (Gibbon et al. 2002). Plano points have been identified throughout the region, while stemmed points are concentrated in the western portion of the region and eastern narrow leaf and concave base point are mostly found in the east (Gibbon et al. 2002).

The Archaic period is identified by archaeologists as the timespan when more localized seasonal settlement and subsistence patterns replaced the broad seasonal migration patterns of the Paleoindian period. In Minnesota, the beginning of the Archaic period coincides with a warmer, drier postglacial environment. Spruce forests retreated north with the glaciers, and melting glacial ice formed large lakes and rivers. As a result, Archaic period subsistence included more aquatic resources, such as fish and shellfish, as well as smaller game and the foraging of wild plants (Gibbon et al. 2002). Archaic period

sites in the western Central Lakes Deciduous Region, like Paleoindian sites, are concentrated around lakes and rivers. Burial sites (e.g. 21GR4, 21PO3, 21PO13) are mainly found in the western portion of the region (Gibbon et al. 2002).

The innovation of ceramic technology and the emergence of burial mounds, which were present by 200 B.C., generally define the transition to the Woodland period. By A.D. 500, the bow and arrow were developed, and wild rice harvesting became more important for subsistence. In the Central Lakes Deciduous Archaeological Region, larger habitation sites were concentrated around lakes as lifeways became less nomadic. Special activity sites were also focused primarily along major rivers and lakes. Ceramics common to this region include Mamo, Howard Lake, Brainerd, St. Croix, Onamia, Blackduck, Kathio, and Clam River (Gibbon et al. 2002).

At contact, the Santee Dakota, Cree occupied the eastern Central Lakes Deciduous Archaeological Region and the Yankton and Yanktonai Dakota occupied the west. By the mid-1700s, the Ojibwe moved to the northern portion of the region, but did not occupy much of the southern portion, including the Project area. By the late seventeenth century, French fur traders began to settle in the region, followed shortly thereafter by Anglo-American fur traders (Gibbon et al. 2002).

2.3.2 Native American Cultural Setting

The Project is located on land that was home to the Dakota (Očhéthi Šakówiŋ and Wahpekute), although other tribes were likely present as well (<https://native-land.ca/>). Minnesota is the Dakota homeland. Prior to Euroamerican settlement, the Dakota were plentiful and prosperous in Minnesota. As Euroamerican settlers expanded into these states, the Dakota were subjected to war and disease. Following the Dakota War in 1862, the Dakota underwent forced removal (MDA State Archaeologist 2022b).

The Project is located within the boundaries of the 1851 Dakota Land Cession Treaties, also referred to as the 1851 Treaties with the Dakota at Traverse des Sioux and Mendota (Weber 2025). These two treaties represented the near-complete loss of Dakota land in Minnesota to the United States. Over 35 million acres were lost through these treaties, with the Dakota maintaining only a strip of land 20 miles wide on the north and south sides of the Minnesota River (MIAC and MHS 2011).

The 1851 Treaty of Traverse des Sioux ceded land from the Sisseton and Wahpeton bands of the Dakota to the U.S. government. By 1851, land within the Sisseton and Wahpeton bands' territory had been overhunted and depleted of animals, particularly bison, that the Dakota relied on for food and trade. While many of the Sisseton and Wahpeton Dakota leaders did not support land cession treaties, a consensus was eventually reached that they believed would help supplement their struggling hunting and gathering economy, as the land cession treaty offered annuity payments (Becker 2020). When signed, the treaty ceded 24 million acres for \$1,665,000. A reservation, consisting only of a ten-mile-wide area on each side of the Minnesota River (20 miles wide in total), was retained for the tribes (Weber 2025). In addition, the U.S. government kept more than 80 percent of the money, leaving the Dakota to receive the interest on the amount, at five percent for 50 years (MHS 2012). The Dakota Leaders also signed the "Traders Papers," which unfairly siphoned substantial funds from the treaty to pay alleged Dakota debts to settler fur traders (Becker 2020).

After the Treaty of Traverse de Sioux was signed by the upper bands of the Dakota, the treaty delegation travelled to the lower bands of the Dakota. The Treaty of Mendota was also signed in 1851, between the Mdewakanton and Wahpekute bands of Dakota. At the time, the Mdewakanton and Wahpekute were not as in need of food and goods to support their tribes as the upper bands were. The Mdewakanton and

Wahpekute leaders asked that annuity from the Treaty of 1837 be paid before further discussion could occur, and they also attempted to change the boundaries of the proposed reservation. Under this treaty, the bands were to receive annual annuities of \$1,410,000 (Decarlo 2025). The bands were given one year to move to the same reservation land along the Minnesota River outlined in the Treaty of Traverse des Sioux (Weber 2025). However, following the U.S.-Dakota War of 1862, Congress revoked all treaties made with the Dakota, who were then forcibly removed from the state. The four present-day Dakota reservations in Minnesota were reestablished in their current locations by acts of Congress in 1886 (MIAC 2025).

While the following narrative focuses on historic Euroamerican activities within present-day Minnesota, it is important to acknowledge that Native American nations played a vital part of Minnesota's history and continue to influence its culture today. Nations including the Dakota, Ojibwe, and others have demonstrated resilience and resistance in the face of concerted efforts to remove them from their land and culture. Despite these attempts at removal, many native peoples continued to return to their homeland. We acknowledge the circumstances that led to the forced removal of Native American tribal members in Minnesota and honor their history and resilience.

2.3.3 Historic Cultural Setting

At the end of the American Revolution, the U.S. acquired all of the land east of the Mississippi River in the Second Treaty of Paris (Blegen 1963). This acquisition included the north-central, northeast, and east-central portions of Minnesota. In 1803, the United States acquired the majority of what was to become Minnesota from France as part of the Louisiana Purchase (Blegen 1963). After spending most of the first half of the nineteenth century changing hands between Spain, France, and the U.S., the region was formed into the Minnesota Territory in 1849. Nine years later it became the thirty-second state (Blegen 1963). Between 1805 and 1867, a series of treaties between the federal government and tribes including the Dakota, Ojibwe, Ho-Chunk, Menominee, Sac, and Fox resulted in the opening of Minnesota to Euroamerican settlement (Minnesota Indian Affairs Council et al. 2011).

2.3.3.1 Statehood

As Minnesota entered the Union in 1858, tensions between the North and South were coming to a head over the issue of slavery. When the Civil War started in 1861, Minnesota largely supported the Union, and provided approximately 22,000 troops to the war effort (Blegen 1963). By the second year of the war, Minnesota was facing its own war: the Dakota War (Blegen 1963). The war was a result of growing tensions between the Dakota and the U.S. government over violations of the Treaty of Traverse des Sioux and the Treaty of Mendota, as well as unacceptable payments by Indian agents. Due to an impasse over negotiations, a Dakota hunting party attacked and killed five white settlers, leading to the attack of settlements throughout the Minnesota River valley (Blegen 1963). These battles continued for several months, until most of the Dakota were captured. Eventually, 38 Dakota were hanged, the largest one-day execution in U.S. history (Blegen 1963). By April of 1863, the remaining Dakota in the region were expelled to South Dakota and Nebraska (Blegen 1963).

After the Civil War, thousands of Americans came to Minnesota to take advantage of the state's cheap and fertile land (Brunt 1922). Largely due to advertisements by the railroad industry, the state's population quickly tripled (Brunt 1922). Many of these new settlers came to the area to farm and cut timber, becoming the backbone of the state's early economy (Brunt 1922). To further economic success, local Grange chapters were established (Brunt 1922). The organization had great political influence on important farming matters and also provided education on new farming methods.

By the end of the nineteenth century, Minnesota's industrial development began to take shape (Clark 1989). The state became one of the first to develop hydroelectric power with the building of a hydroelectric power plant in Saint Anthony Falls. The discovery of iron in the Mesabi Range and the Vermilion Range near Lake Superior in the 1880s established Minnesota's iron mining industry (Clark 1989).

2.3.3.2 Hennepin County

Hennepin County is named after Father Louis Hennepin, a French Franciscan missionary and explorer who chronicled the region in the late seventeenth century (Hennepin County 2025). French fur traders were among the earliest Europeans to traverse the territory, followed by military expeditions and settlers in the early nineteenth century (Neill 1881). The construction of Fort Snelling in 1820 at the confluence of the Mississippi and Minnesota Rivers marked a pivotal moment, as treaties negotiated during this time opened the land for settlement and commerce. These developments laid the foundation for Minneapolis, which grew around the falls of St. Anthony on the Mississippi River, harnessing the river's power for lumber and flour milling industries (Hennepin County 2025).

Organized in 1852, six years before Minnesota achieved statehood, Hennepin County quickly emerged as a center of economic and cultural activity (Neill 1881). Minneapolis became the county seat and flourished as a hub for industry, transportation, and trade, driven by its strategic location along the Mississippi River and later by the expansion of railroads. While the city developed into a major urban center, rural portions of the county maintained an agricultural economy well into the nineteenth century. Today, Hennepin County is the most populous county in Minnesota, with Minneapolis at its core as a leading center for commerce, education, and the arts (Hennepin County 2025).

2.3.3.3 Maple Grove

Situated in the north-central part of Hennepin County, Maple Grove began as a sparsely populated area that is now considered a vibrant suburban community (Maple Grove nd). European settlement began in 1851 when Louis Gervais and Pierre Bottineau staked claims, soon followed by other settlers such as W. E. Evans and Harvey Abel (Maple Grove Historical Preservation Society nd). The township was officially organized in 1858, and early development included the construction of homes, a church, and a town hall by 1855 (Ostendorf 2024). The abundance of maple trees gave the community its name and provided a source for maple syrup production, an important early industry (Ostendorf 2024).

Maple Grove transitioned from a rural township to a suburban community during the mid-twentieth century. Incorporated as a village in 1954 and later as a city in 1974, Maple Grove experienced rapid growth following the construction of Interstate 94 and other major highways in the 1970s (Maple Grove Historical Preservation Society nd). Today, Maple Grove has a population of over 70,000 residents and serves as a major retail and residential hub in the Twin Cities metropolitan area (Maple Grove nd).

3 Applicable Regulations and Guidelines

This section describes the regulations and guidelines that require consideration of project-related effects to cultural resources.

3.1 Federal Regulations

Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR 800 (Section 106) require federal agencies to assess the effect(s) of their projects on cultural resources eligible for or listed in the NRHP (i.e., historic properties). Section 106 applies to any federal agency undertaking that has the potential to affect NRHP-eligible or listed cultural resources, should they be present. This federal agency action may include permitting, funding, or other approval of project activities. Currently the Project does not have federal involvement and is therefore not considered an undertaking subject to Section 106.

3.2 State Regulations

The Project requires a route permit from the Minnesota PUC. As outlined in Minnesota Rules, Chapter 7850, the application for a route permit must include a description of the effects of the project on archaeological and historic resources.

Additional state laws governing cultural resources include the Minnesota Historic Sites Act (Minnesota Statutes, sections 138.661 to 138.669) and the Field Archaeology Act (Minnesota Statutes, sections 138.31 to 138.42). The Minnesota Historic Sites Act (Minnesota Statutes, sections 138.661 to 138.669) requires that state agencies consult with the SHPO before undertaking or licensing projects that may affect properties listed on the State or National Registers of Historic Places. The Minnesota Field Archaeology Act (Minnesota Statutes, sections 138.31 to 138.42) establishes the position of State Archaeologist and requires State Archaeologist approval and licensing for any archaeological work that takes place on non-federal public property.

Under the Minnesota Private Cemeteries Act (Minn. Stat. §307.08, Subdivision 10), when human burials with Native American ancestry are known or suspected to exist in a project area, the landowner or developer must submit construction and development plans to the OSA and the Minnesota Indian Affairs Council (MIAC) for their review before the plans are finalized and prior to any disturbance within the burial area. Per Minn. Stat. §307.08, Subdivision 10, the OSA and MIAC have 45 days to make recommendations for the preservation in place or removal of the human burials or remains that may be endangered by construction or development activities. Additionally, if human remains are encountered during construction, Minn. Stat. §307.08 states that construction at that location must be halted immediately and local law enforcement and the Office of the State Archaeologist (OSA) contacted. Construction cannot proceed at that location until authorized by local law enforcement and the OSA.

4 Conclusions and Recommendations

Xcel will be submitting a RPA to the PUC for a two-mile-long, new 115 kV double-circuit, alternating current transmission line from a new 115/34.5 kV substation, on the west side of Interstate 94 to a proposed tap point in Maple Grove, Hennepin County, Minnesota.

Barr, on behalf of Xcel, completed a Phase Ia cultural resources literature review for the Project in an effort to understand how the Project may impact cultural resources, and to provide baseline cultural resources information that Xcel can utilize as Project design is advanced.

A records check completed through a review of the OSA Portal and MnSHIP found no previously recorded archaeological sites and nine historic architectural resources within the route width for the Project. The records check also indicates that portions of the route width were surveyed in 2011 prior to construction activities on TH 610. The previously recorded historic architectural resources consist of farmsteads, houses, bridges, a Trunk Highway, and a railroad corridor that has been documented multiple times and therefore has multiple historic inventory numbers. The railroad corridor, which has been consolidated as resource XX-RRD-GNR014 representing the Minneapolis and Northwestern Railroad Corridor, is considered eligible for the NRHP. However, as existing transmission line infrastructure is already present and parallels the railroad in this area, the Project is not anticipated to adversely affect this resource.

Each new structure foundation will result in approximately 80 square feet of ground disturbance. The new substation will consist of up to 13.5 acres of ground disturbance. Impacts to archaeological and historic resources have the potential to occur in the areas where new ground disturbance will occur. Additional impacts can result from transmission line location and operation, such as placement within view of a resource (typically a historic building or structure) that results in a negative effect on the setting, feeling, and/or association of said resource in the viewshed. This issue is especially pertinent when considering historic resources for which the surrounding environment plays a crucial role in defining their character and significance. Archaeological resources are most likely to be located on or near elevated landforms near permanent water sources. Historic resources have, for the most part, been identified within the local vicinity.

PUC-issued route permits generally include recommendations regarding cultural resources, and permit conditions may include conducting a Phase Ia literature review, Phase I archaeological survey, or an archaeological assessment for the Project. Coordination with the Minnesota SHPO will help determine the need for additional cultural resource studies in relation to the Project.

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Appendix A

Project Specifications and Example Photographs

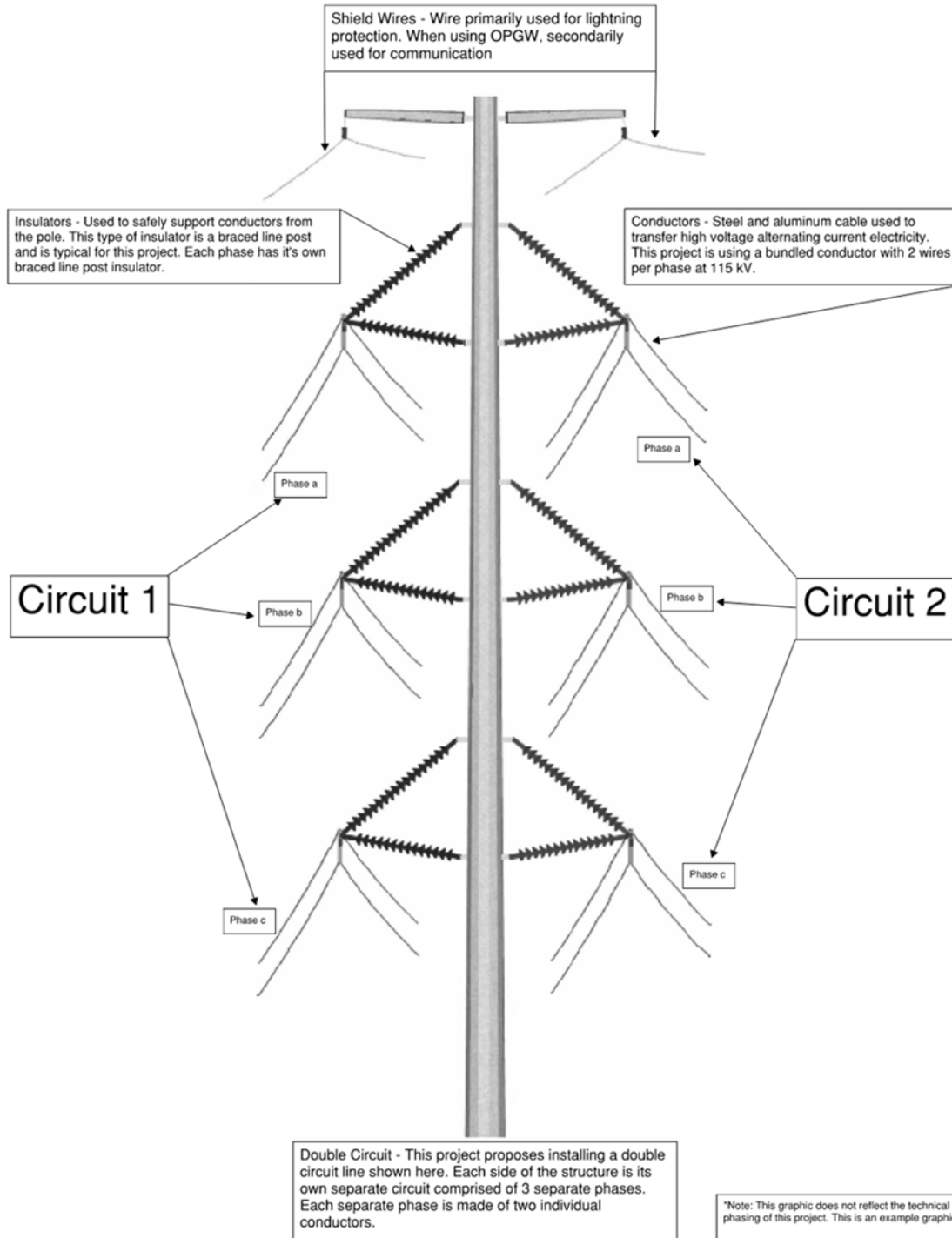
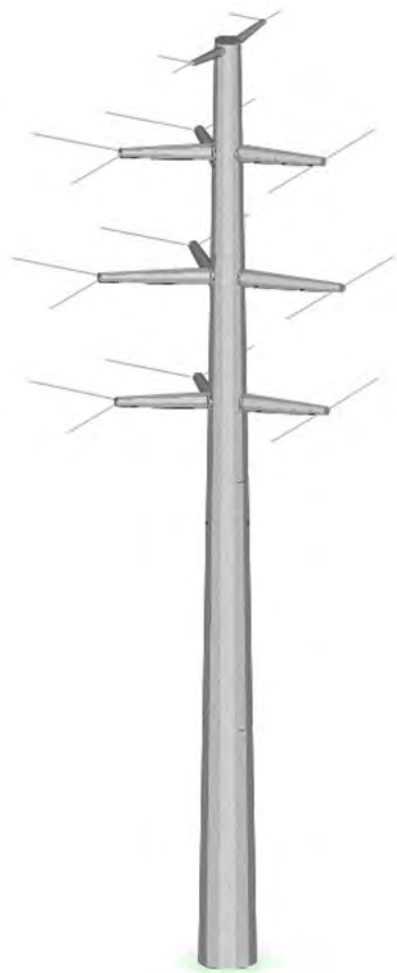


Image Courtesy Xcel Energy

Typical Double-Circuit Structure
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Appendix A1





Cut-in



Tangent



Dead-end



Underbuild

Images Courtesy Xcel Energy

Typical 115 kV Structures
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Appendix A2





**115 kV Steel Double-Circuit Monopole
Structure: Silver/Galvanized Steel**



**115 kV Steel Double-Circuit Monopole
Structure: Brown/Weathering Steel**

Images Courtesy Xcel Energy

**Typical 115 kV
Structure Composition**
Northwest Maple Grove
115kV Transmission Line
Xcel Energy

Appendix A3



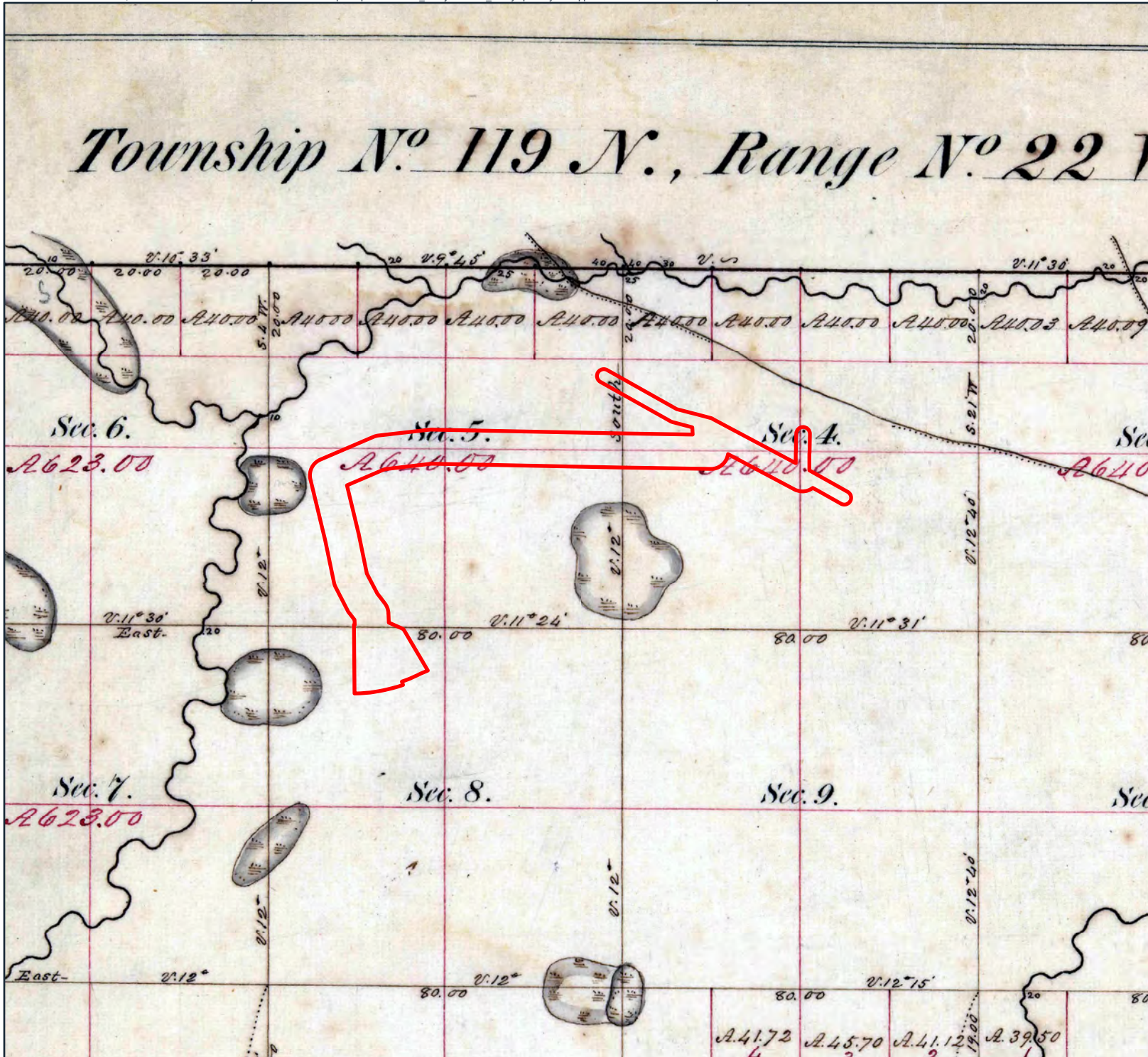
Appendix B


Documented Historic Architecture within 1-Mile of the Route Width

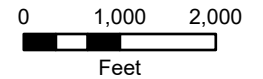
Inventory Number	Resource Type	Date Constructed (if known)	SHPO Evaluated?	NR-listed?	In Route Width?
HE-MGC-00005	Glendon Unke Farmstead	1910	No	No	Yes
HE-MGC-00007	House	1905	No	No	Yes
HE-MGC-00008	Farmstead		No	No	Yes
HE-MGC-00009	House, Arts and Crafts Style	1925	No	No	Yes
HE-MGC-00060	Roeder Farmstead, Arts and Crafts Style	1933	No	No	Yes
HE-MGC-00089	Township Bridge		No	No	Yes
HE-MGC-00111	Bridge L8083		No	No	Yes
XX-ROD-00185	US Trunk Highway 52	1955, 1920	No	No	Yes
XX-RRD-00010	Osseo Branch Line/ St. Paul Minneapolis & Manitoba /Great Northern RR		No	No	Yes
XX-RRD-GNR014	Minneapolis and Northwestern Railroad Corridor		Yes	No	Yes
HE-DYC-00018	M&NW/StPM&M/GN W Side Line (Osseo Branch): Dayton Segment	1882	No	No	No
HE-DYC-00020	Farmstead		No	No	No
HE-DYC-00024	Farmstead		No	No	No
HE-DYC-00025	M&NW/StPM&M/GN W Side Line (Osseo Branch): Rush Creek Trestle	1938	No	No	No
HE-DYC-00026	D. Chase House; Vernacular style	1870	No	No	No
HE-DYC-00050	Bridge 8817		No	No	No
HE-MGC-00004	Leonard Radintz Farmstead	1881, 1905	No	No	No
HE-MGC-00006	A.C.H. Schutte Farmstead	1895	No	No	No
HE-MGC-00024	Jones/Vigoren Farmstead	1915	No	No	No
HE-MGC-00025	Balvin Farmstead	1930, 1910	No	No	No
HE-MGC-00026	Maple Grove School	1920	No	No	No
HE-MGC-00027	Lynde/McLeod Farmstead	1880	No	No	No
HE-MGC-00030	House		No	No	No
HE-MGC-00031	Farmstead, Classical Revival Style	1912	No	No	No
HE-MGC-00039	House		No	No	No
HE-MGC-00044	H.C. Larson House		No	No	No
HE-MGC-00054	Richard Radintz Farmstead		No	No	No
HE-MGC-00055	Lynde Greenhouse/Compost	1975	No	No	No
HE-MGC-00056	Kottke Farmstead	1908, 1931	No	No	No
HE-MGC-00057	Radintz Farmstead, Ranch Style	1900, 1950	No	No	No
HE-MGC-00058	Robert Radintz House, Ranch Style	1975	No	No	No
HE-MGC-00059	Dale Berthiaume House	1953	No	No	No
HE-MGC-00062	Paul Radintz Farmstead		No	No	No
HE-MGC-00063	Alfred Radintz Farmstead	1931, 1952	No	No	No
HE-MGC-00064	Martin Farmstead, Arts and Crafts Style		No	No	No
HE-MGC-00066	Karrow Farmstead	1925	No	No	No
HE-MGC-00069	Bridge No. 6272	1909	No	No	No
HE-MGC-00082	Bridge 27959		No	No	No
HE-MGC-00112	Bridge L8084		No	No	No

Appendix C

Historic Maps and Aerials



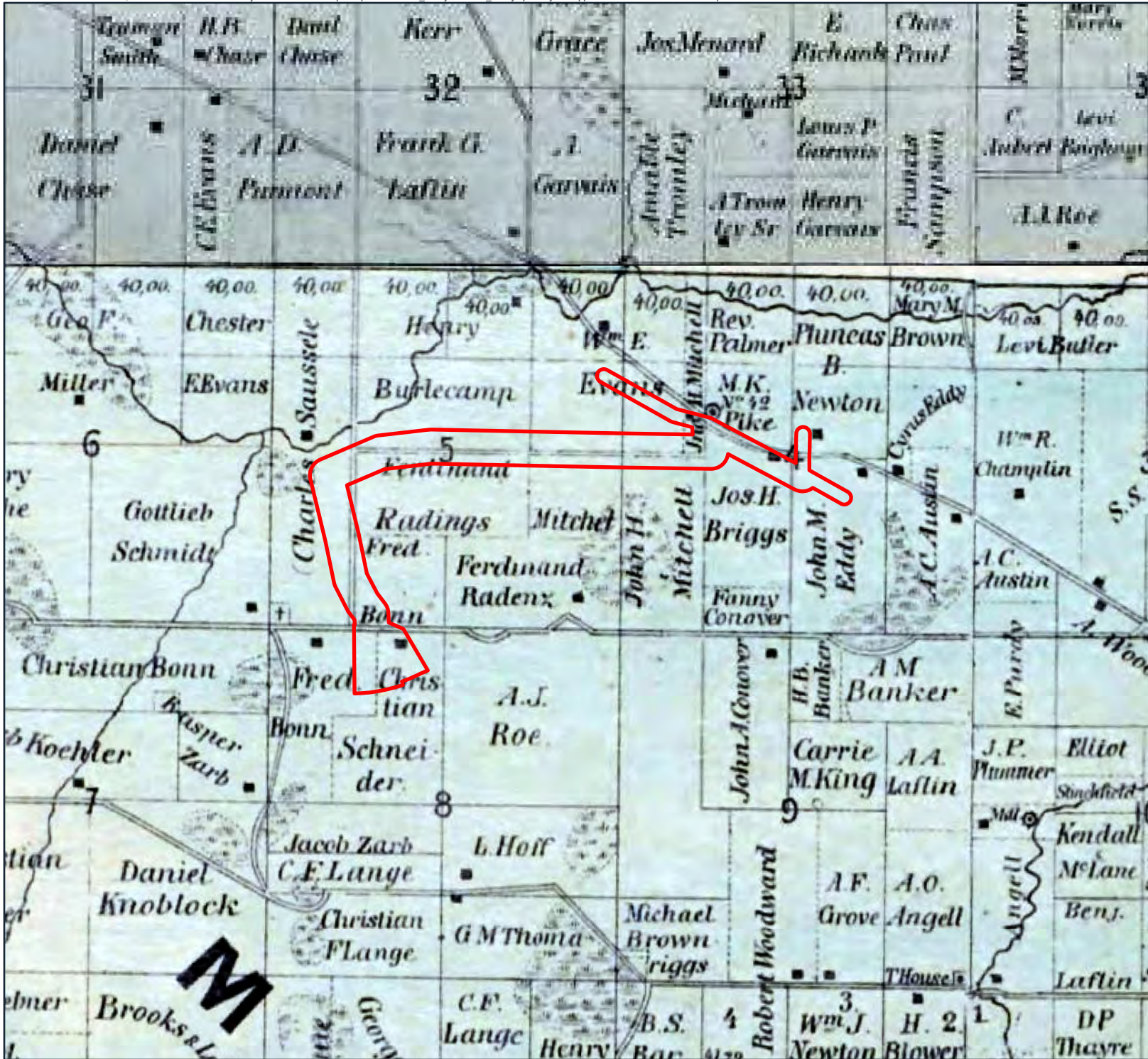
 Route Width



1856 GLO Map
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

APPENDIX C1





 Route Width

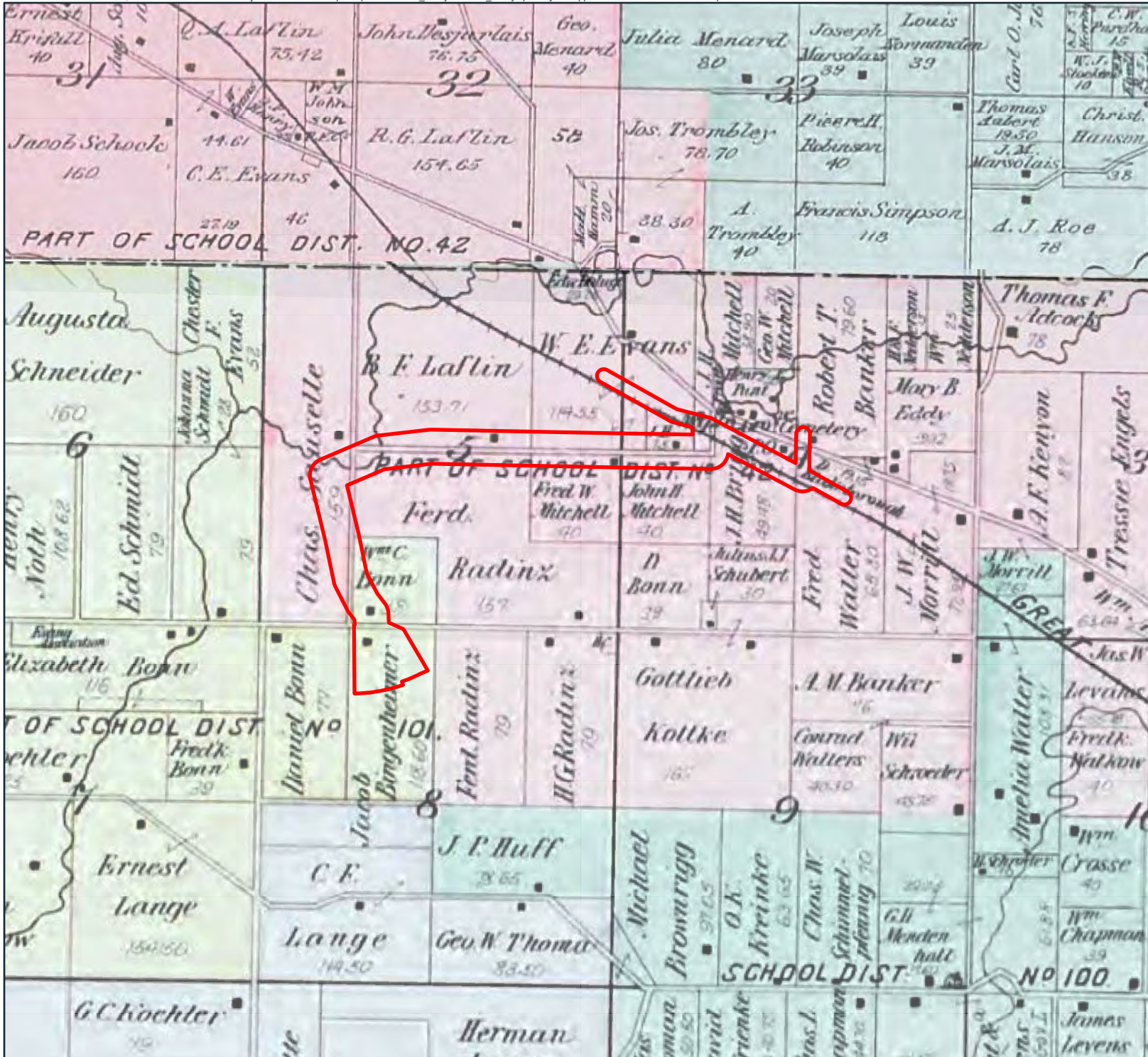


0 1,000 2,000
Feet

1873 Atlas Map
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

APPENDIX C2





 Route Width

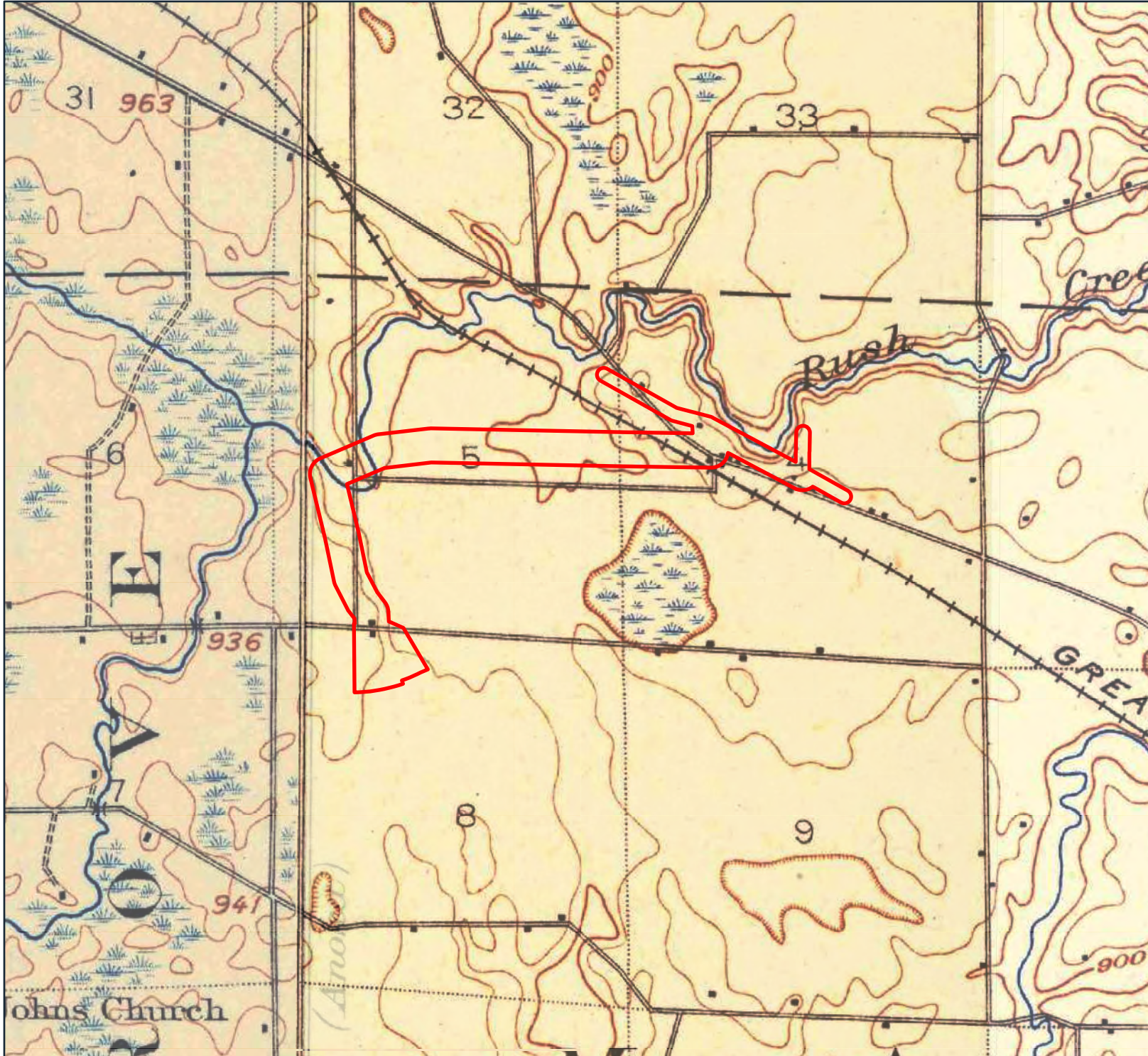



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Feet

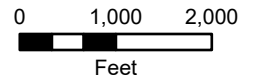
1898 Atlas Map
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

APPENDIX C3





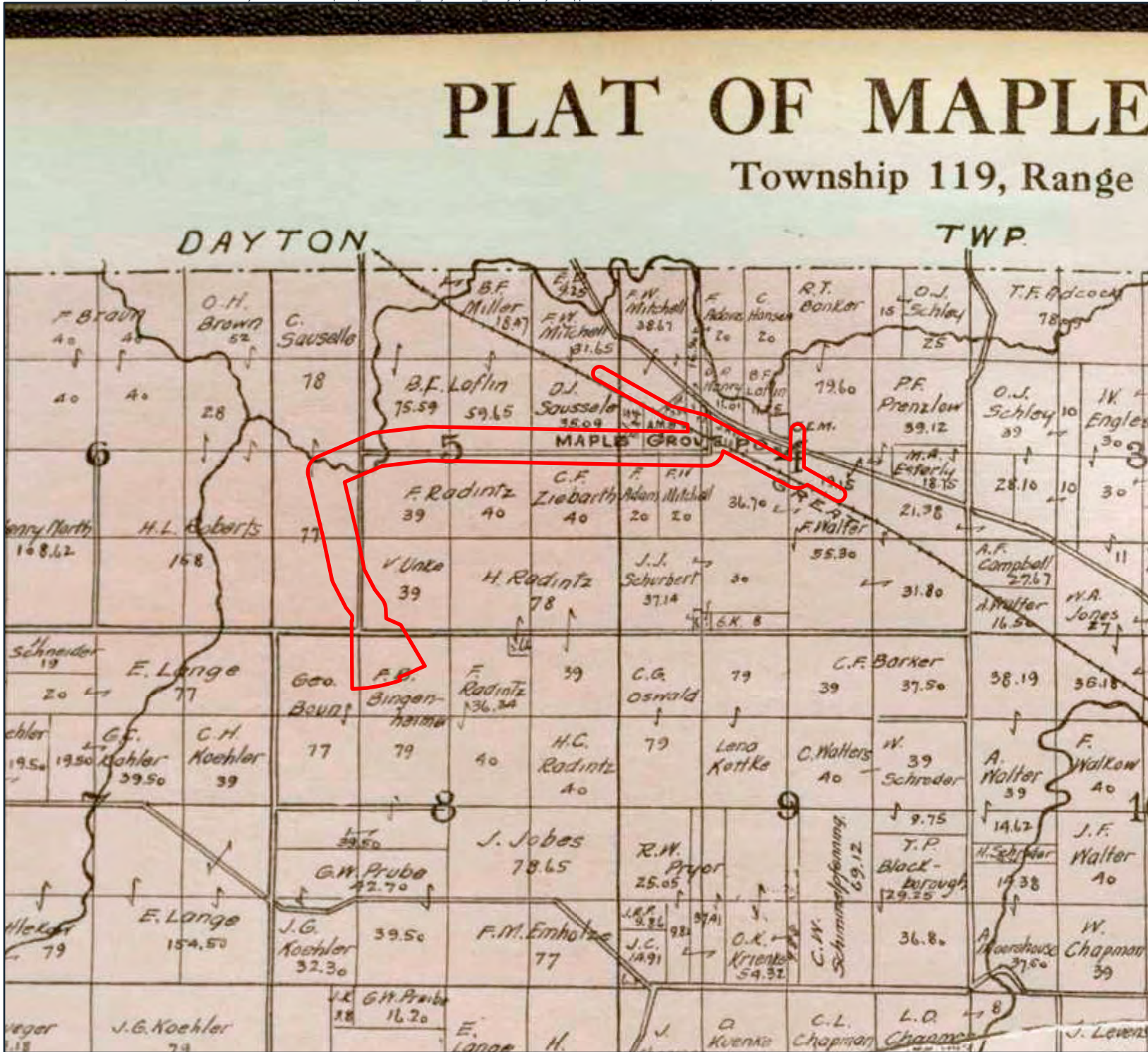
 Route Width



1902 Topographic Map
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

APPENDIX C4





Route Width

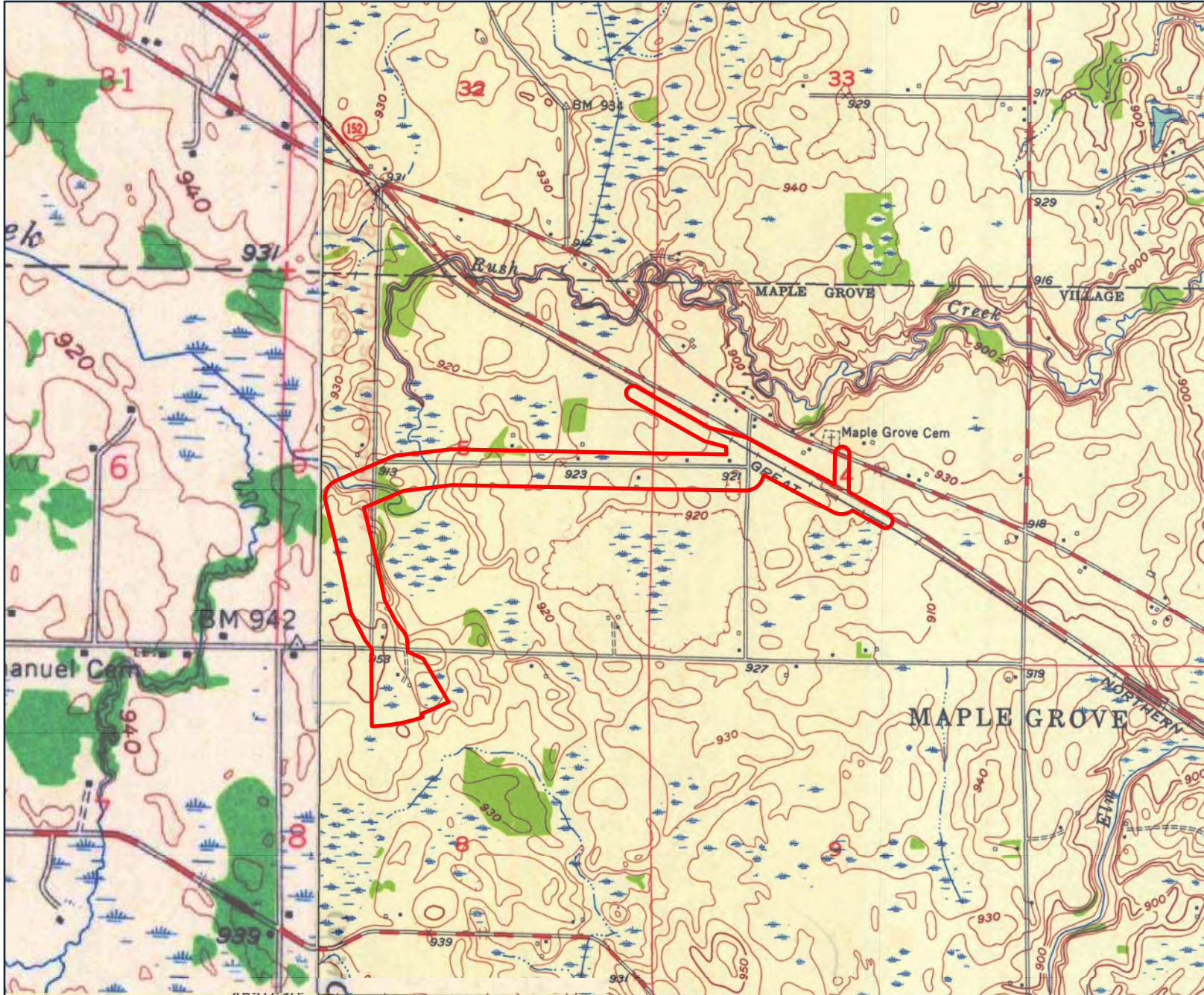


0 1,000 2,000
Feet

1913 Atlas Map
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

APPENDIX C5





 Route Width

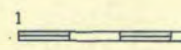


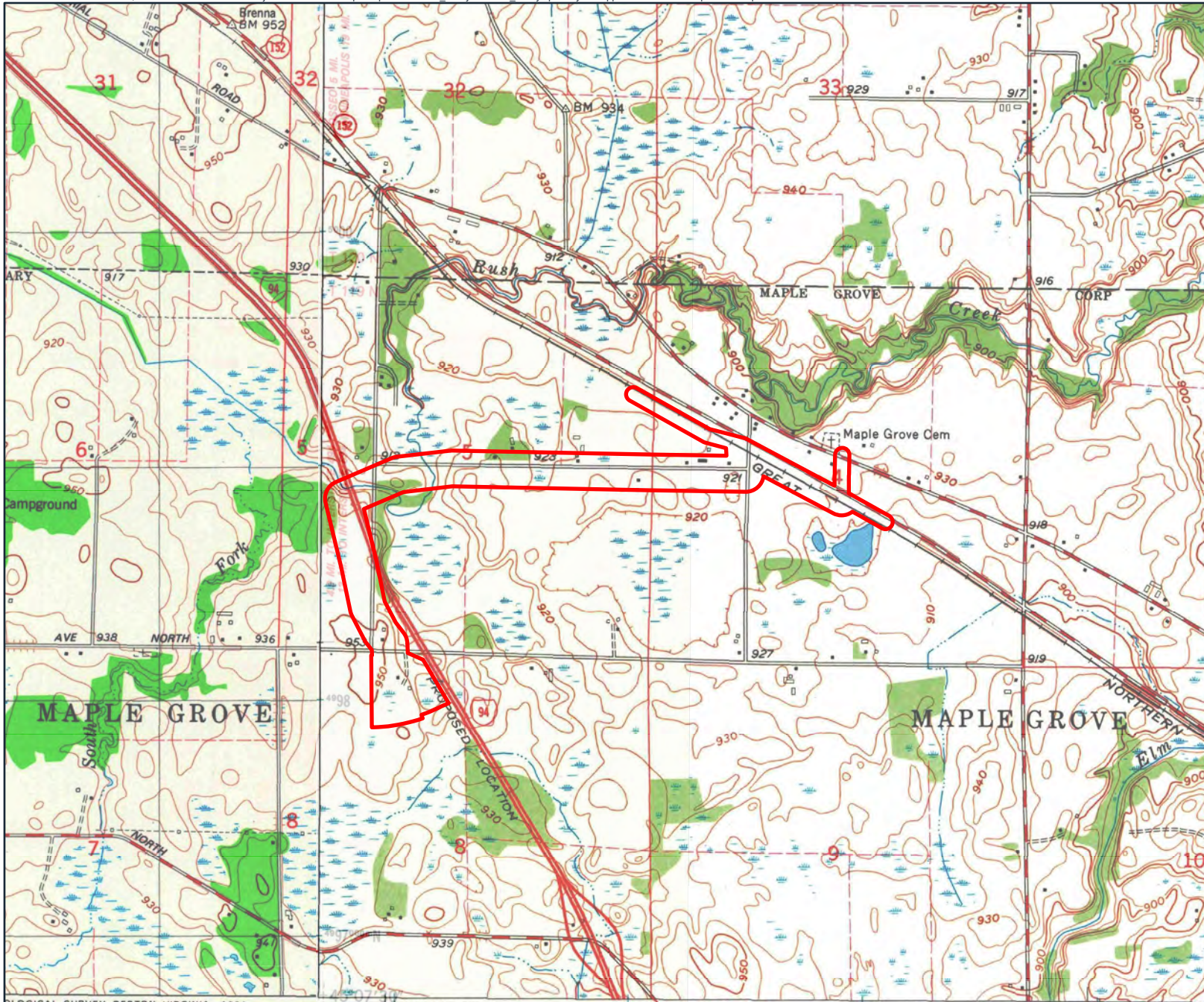
0 1,000 2,000
Feet

1955 Topographic Map
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

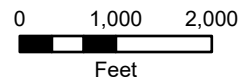
APPENDIX C6

Mapped, edited, and published by the Geological Survey
Control by USGS, USC&GS, USCE, and Minnesota Geodetic Survey
Topography from aerial photographs by Kelsh plotter





Route Width



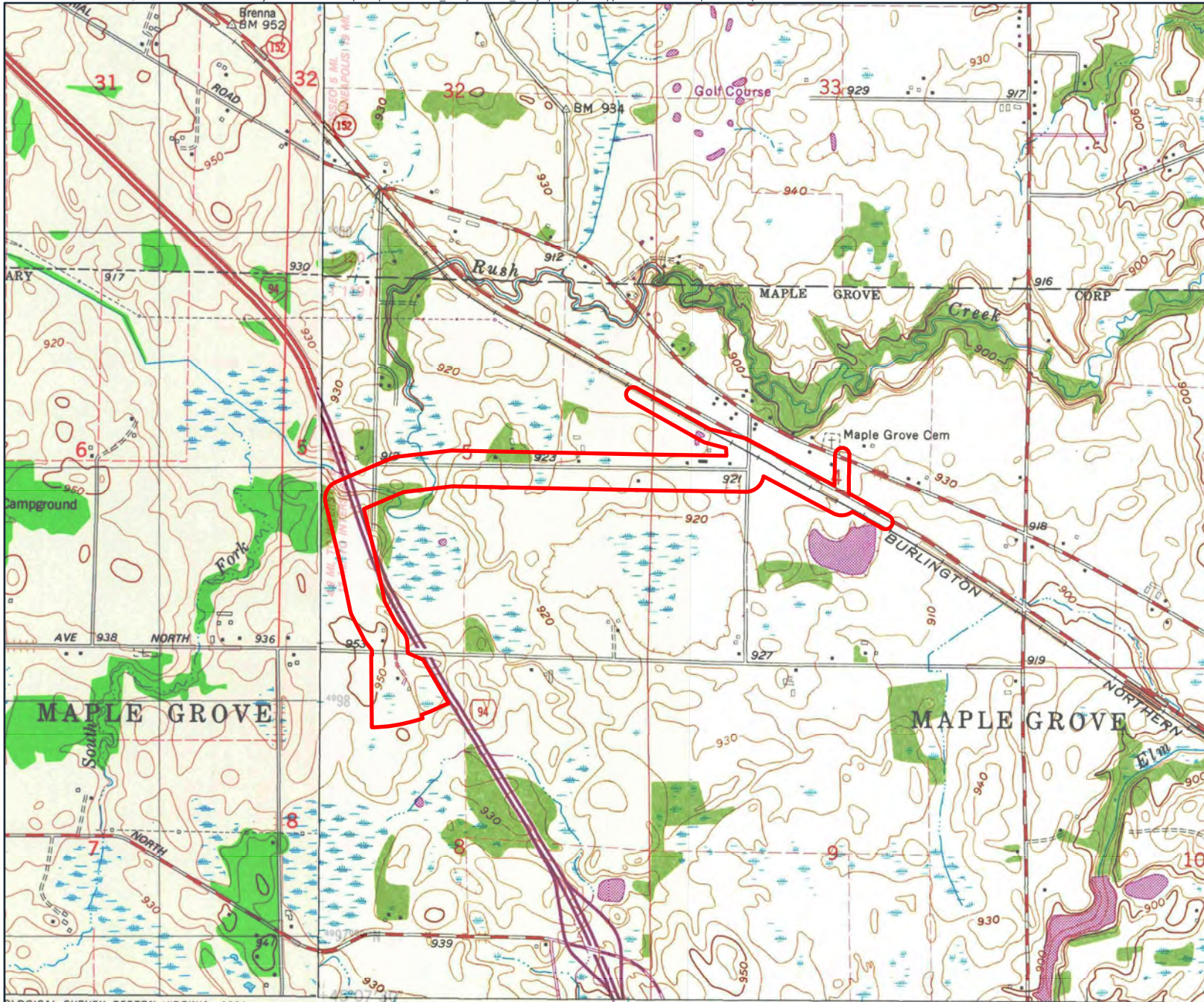
1967 Topographic Map
Northwest Maple Grove
115kV Transmission Line
 Xcel Energy
 Hennepin County, Minnesota

APPENDIX C7

LOGICAL SURVEY, RESTON, VIRGINIA—1981
 460000mE
 93°30' 2 130 000 FEET 462 OSSEO 4.4 MI. 463 27'30"

ROAD CLASSIFICATION
 Light-duty road, hard or improved surface
 Mapped, edited, and published by the Geological Survey
 Control by USGS, USC&GS, USCE, and Minnesota Geodetic Survey
 Topography by photogrammetric methods from aerial photographs





Route Width



0 1,000 2,000
Feet

1972 Topographic Map
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

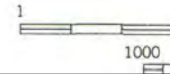
APPENDIX C8

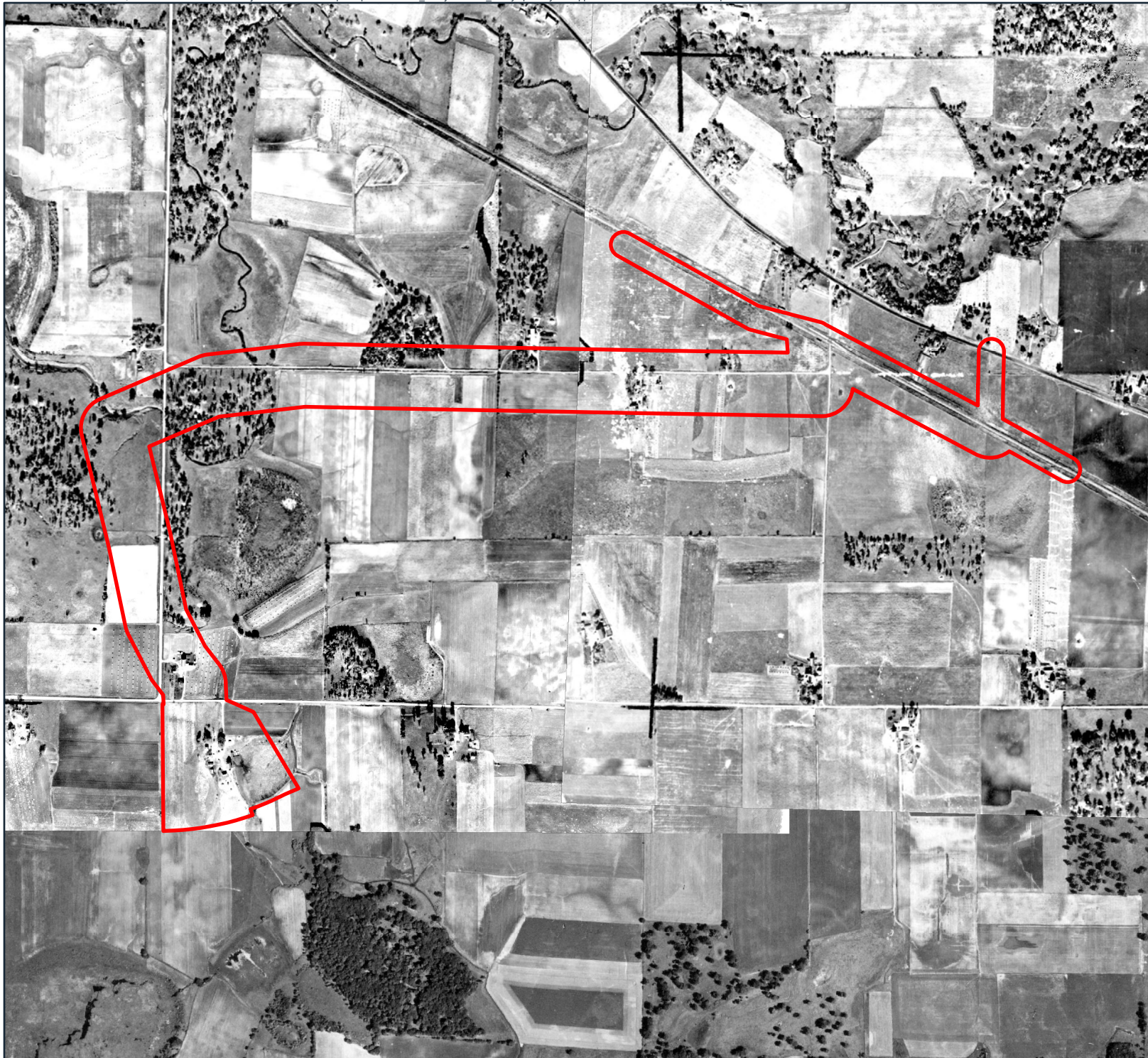
NOV 20 1981

LOGICAL SURVEY, RESTON, VIRGINIA—1981
460000mE 93°30' 2 130 000 FEET 463 27'30"

3.1 MI. TO INTERSTATE 494
11 MI. TO INTERSTATE 694

ROAD CLASSIFICATION
 Light-duty road, hard or improved surface
 Mapped, edited, and published by the Geological Survey
 Control by USGS, USC&GS, USCE, and Minnesota Geodetic Survey
 Topography by photogrammetric methods from aerial photographs





 Route Width




0 500 1,000
Feet

1945 Aerial
Northwest Maple Grove
115kV Transmission Line
Xcel Energy
Hennepin County, Minnesota

APPENDIX C9





 Route Width

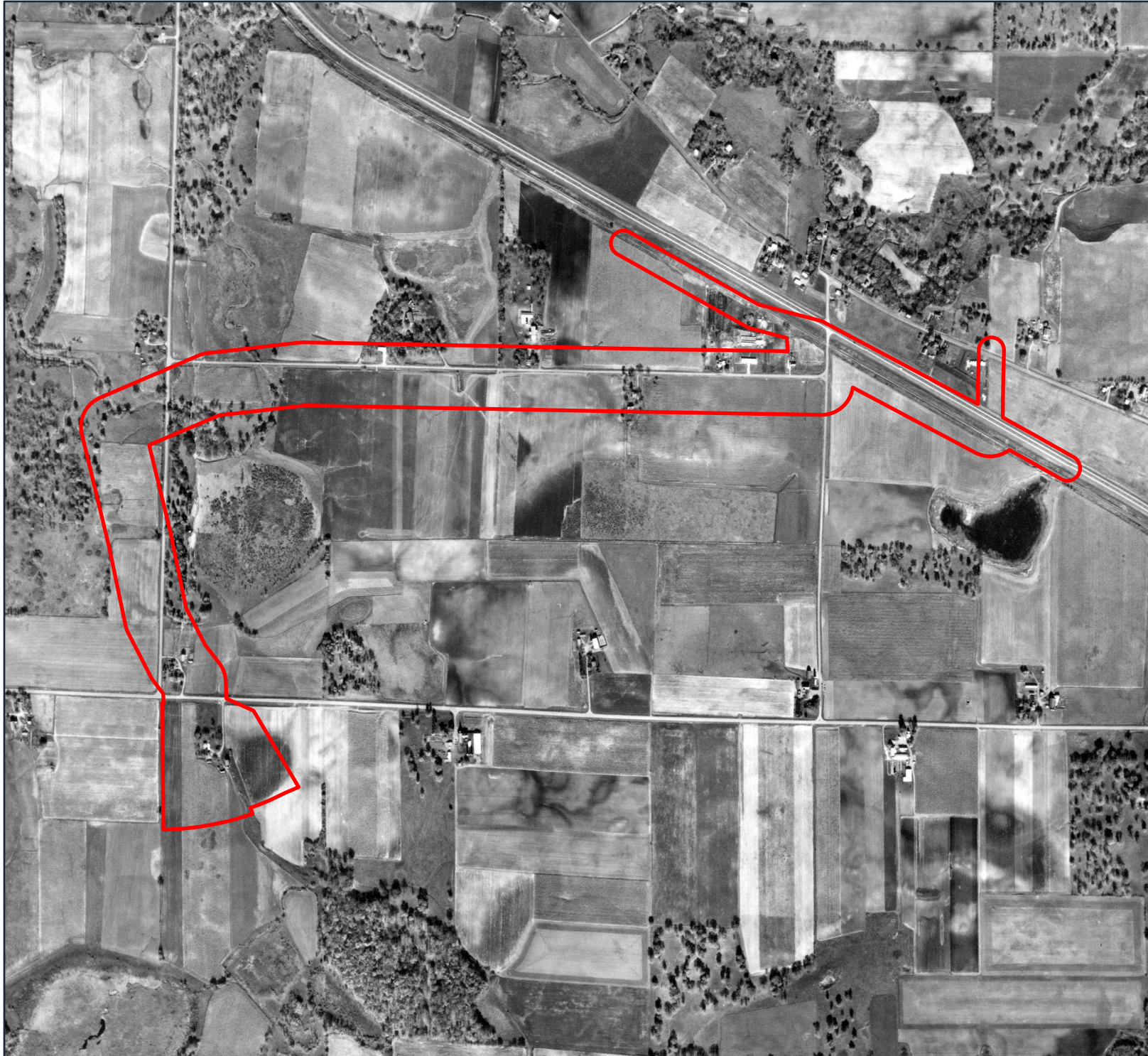


0 500 1,000
Feet

**1957 Aerial
Northwest Maple Grove
115kV Transmission Line**
Xcel Energy
Hennepin County, Minnesota

APPENDIX C10





 Route Width




0 500 1,000
Feet

**1964 Aerial
Northwest Maple Grove
115kV Transmission Line**
Xcel Energy
Hennepin County, Minnesota

APPENDIX C11





 Route Width



0 500 1,000
Feet

**1971 Aerial
Northwest Maple Grove
115kV Transmission Line**
Xcel Energy
Hennepin County, Minnesota

APPENDIX C12

