# APPENDIX A

# PUC NOTICE

# AND

# CERTIFICATE OF NEED

414 Nicollet Mall
Minneapolis, Minnesota 55401-1993

September 18, 2007

Dr. Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 Seventh Place East, Suite 350
St. Paul, MN 55101

**Re: Notification of Intent to File Application Pursuant to Alternative Permitting Process**

**For a proposed 115 kV transmission line connecting the Nobles County Substation to the Fenton Substation (one of three 115 kV Transmission lines under Docket No. E002/CN-06-154)**

Dear Dr. Haar:

In accordance with Minnesota Rule 7849.5500, Subpart 2, Northern States Power Company, doing business as Xcel Energy, hereby notifies the Minnesota Public Utilities Commission (PUC) of its intent to submit an application for a route permit for the Nobles County to Fenton project (Project) following the alternative permitting procedures in Minnesota Rules 7849.5500 to 7849.5720.

The proposed Project would construct an approximately 22 mile 115 kV transmission line connecting the existing Nobles County Substation to the existing Fenton Substation

Xcel Energy plans to file the application in early October. We will work with PUC and Department of Commerce Staff to address any comments they have in order to expedite application acceptance and completion of the environmental assessment.

If you should have any questions, please contact me at (612) 330-6538.

Sincerely,

Thomas G. Hillstrom
Senior Permitting Analyst

cc: Jim Alders, Xcel
Chris Ayika, Xcel
Pam Rasmusen, Xcel
Lisa Agrimonti, Briggs & Morgan
Robert Cupit, MN PUC
Adam Sokolski, MN DOC

**Appendix A.1**

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

| | |
|---|---|
| LeRoy Koppendrayer | Chair |
| David C. Boyd | Commissioner |
| Marshall Johnson | Commissioner |
| Thomas Pugh | Commissioner |
| Phyllis A. Reha | Commissioner |

In the Matter of the Application for Certificates of Need for Three 115 kV Transmission Lines in Southwestern Minnesota

ISSUE DATE: September 14, 2007

DOCKET NO. E-002/CN-06-154

ORDER GRANTING CERTIFICATES OF NEED

## PROCEDURAL HISTORY

### I. Initial Proceedings

In 2005 Northern States Power Company d/b/a Xcel Energy (Xcel) informed the Commission of its proposal to build three 115 kilovolt (kV) transmission lines in southwestern Minnesota.[1] The Lyon County line would extend from the Lake Yankton Substation near Balaton, Minnesota, to a new substation near Marshall, Minnesota. The Murray/Nobles Counties line would extend from the Nobles County Substation northwest of Worthington, Minnesota, to the Fenton Substation near Chandler, Minnesota. And the Lincoln County line would extend from the Yankee Substation south of Hendricks, Minnesota, to the Minnesota/South Dakota boarder, meeting a new line extending from the Brookings County Substation near Brookings, South Dakota. Xcel's proposal would also entail modifying various electric substations in the region.

On May 23, 2006, Xcel asked to be exempted from providing certain information normally required for an application for a Certificate of Need. The Commission granted Xcel's request with conditions.[2]

On December 4, 2006, Xcel applied for Certificates of Need for the three 115 kV lines; Xcel supplemented that application on December 28. On February 7, 2007, the Commission accepted

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[1] See *In the Matter of the 2005 Minnesota Biennial Transmission Filing,* Docket No. E-999/TL-05-1739, Xcel's filing (Issue No. 2005 SW-N2, the Buffalo Ridge Incremental Generator Outlet additions).

[2] This docket, ORDER GRANTING EXEMPTIONS (July 24, 2007).



**Appendix A.2**

the application as substantially complete contingent upon the filing of certain additional data,[3] and provided for an Administrative Law Judge (ALJ) to develop the factual record required to determine whether the proposed transmission lines are needed.[4]

On February 12, 2007, Xcel filed the additional data required by the Commission.

On February 21 and 22, 2007, the Minnesota Department of Commerce (the Department) convened public meetings to address the scope of the analysis it would conduct in preparing the required Environmental Report for Xcel's proposal as required by Minnesota Rules, part 7849.0230. The Department issued its Environmental Report Scoping Decision on March 22.

On April 24, 2007, Xcel and the Department filed testimony, including the Department's Environmental Report.

On May 16 and 17, 2007, ALJ Beverly Jones Heydinger convened hearings to receive public comment in Slayton, Ivanhoe and Marshall, Minnesota. On May 22, the ALJ convened evidentiary hearings at the Commission's offices in St. Paul, Minnesota. Xcel subsequently filed proposed Findings of Fact, Conclusions of Law and Recommendation for all parties' consideration; the Department stated that it had no objection to the document's substance.

On June 21, 2007, the ALJ filed her own Findings of Fact, Conclusions of Law and Recommendation (ALJ's Report). No one took exception to the ALJ's Report.

The Commission met on August 23, 2007 to consider this matter. At that hearing Xcel stated that if the Commission would grant the necessary Certificates of Need for its proposed transmission lines, Xcel would promptly file applications for route permits and would seek to make its three proposed transmission lines operational by the Spring of 2009.

## II. The Parties and their Representatives

Xcel was represented by James P. Johnson, Xcel Energy Services Inc., 414 Nicollet Mall, 5th Floor, Minneapolis, Minnesota 55401, and by Michael C. Krikava and Lisa M. Agrimonti, Briggs and Morgan, P.A., 2200 IDS Center, 80 South 8th Street, Minneapolis, Minnesota 55402.

The Department was represented by Julia E. Anderson and Valerie M. Means, Assistant Attorneys General, 445 Minnesota Street, Suite 1400, St. Paul, Minnesota 55101.

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[3] ORDER ACCEPTING CERTIFICATE OF NEED APPLICATION AS SUBSTANTIALLY COMPLETE, CONTINGENT ON SUBMISSION OF ADDITIONAL DATA (February 7, 2007).

[4] NOTICE AND ORDER FOR HEARING (February 7, 2007).

## FINDINGS AND CONCLUSIONS

### I. Xcel's Proposed Project

In 2003, the Commission granted Xcel Certificates of Need to construct four high-voltage transmission lines that, coupled with the existing system, would achieve up to 825 megawatts (MW) of generation outlet transmission capacity in southwestern Minnesota.[5]

Shortly thereafter, Xcel states, it initiated the Buffalo Ridge Incremental Generation Outlet (BRIGO) Study to determine what additional system improvements would be needed to meet growing demand for wind generation development in the Buffalo Ridge area. Xcel states that demand for transmission capacity in the region will warrant the eventual construction of 345 kV transmission lines. Given the delay involved in designing, permitting and constructing such large lines, however, Xcel began exploring cost-effective interim remedies.

Xcel argues that the three 115 kV lines proposed in this docket should be undertaken as an interim step to provide a few hundred megawatts of additional generation outlet capacity until the higher voltage projects can be developed. In addition, Xcel states that the Lake Yankton/Marshall line would help meet a forecasted growth in demand for electricity in the City of Marshall and enhance the transmission system's ability to supply all the electricity demanded under a variety of circumstances.

### II. The Legal Standard

Anyone seeking to build in Minnesota more than 10 miles of a high-voltage transmission line with a capacity of 100 kV or more[6] must first obtain a Certificate of Need from the Commission demonstrating that the line is needed.[7] Because each of Xcel's proposed 115 kV lines exceeds these thresholds, Xcel will require a Certificate of Need for each line.

Minnesota Statutes § 216B.243 lists factors the Commission must consider when determining whether a line is needed. For example, the Commission must determine whether an applicant could meet the demand for electricity more cost-effectively through energy conservation and load-management measures,[8] and whether the applicant has given adequate consideration to obtaining energy from renewably sources.[9] Minnesota Rules Chapter 7849 codifies many of these factors.

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[5] *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for Certificates of Need for Four Large High Voltage Transmission Line Projects in Southwestern Minnesota*, Docket No. E-002/CN-01-1958, ORDER GRANTING CERTIFICATES OF NEED SUBJECT TO CONDITIONS (March 11, 2003).

[6] Minn. Stat. § 216B.2421, subd. 2(3).

[7] Minn. Stat. § 216B.243.

[8] Minn. Stat. § 216B.243, subd. 3.

[9] Minn. Stat. § 216B.243, subd. 3a.

Those rules are detailed, but in brief they require the Commission to consider the following:

- The probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states.
- A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record.
- By a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.
- The record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.[10]

As noted above, Minnesota Rules part 7849.0230 provides for the Commission to receive an Environmental Report to aid in its analysis.

Finally, when evaluating the need for a proposed facility the Commission must consider opportunities for installing small, efficient distributed generators that produce few emissions.[11]

## III. Analysis of Need

Xcel, the Department and the ALJ discuss the application in light of the certificate of need criteria. All three conclude that the proposed facilities are needed; their arguments are summarized below.

### A. Xcel has demonstrated that the need for the proposed facilities cannot be met more cost-effectively through energy conservation and load-management measures.

Xcel argues that efforts to control consumer demand for electricity will not obviate the need for any of the three proposed transmission lines. The City of Marshall has such programs in place, and additional programs are unlikely to make enough difference. Xcel denies that the needs for its proposed lines are driven by activities promoting the consumption of electricity. Moreover, no amount of programs to control demand would alter Xcel's statutory obligations under the RES to secure additional sources of wind power.

The Department supports Xcel's conclusions.

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[10] Minn. Rules 7849.0120.

[11] Minn. Stat. § 216B.2426, citing the definition of "distributed generation" at § 216B.169, subd. 1(c).

Based on the foregoing analysis, the ALJ concludes that Xcel has demonstrated that the energy conservation and load-management measures cannot displace the need for the proposed facilities. ALJ's Report, Findings of Fact 89 - 91.

### B. Xcel's proposal demonstrates due regard for the goal of obtaining electricity from renewable sources.

Xcel claims that its proposal is designed to permit electricity generated by wind power to flow to customers.

Xcel identifies five wind-related factors affecting the need for its proposed transmission lines. First, the newly-enacted Renewable Energy Standard (RES)[12] will require Xcel by 2020 to acquire 30 percent of the amount of electricity it sells at retail from qualified renewable sources, including 25 percent from wind power. Second, the Commission-prescribed resource planning process identifies wind power as the most cost-effective source of renewable generation. Third, developers of Community-Based Energy Development programs have already asked Xcel for more transmission capacity in the Buffalo Ridge area than Xcel can currently accommodate. Fourth, developers of wind power generators have asked the Midwest Independent Transmission System Operator, Inc., for permission to connect more wind-powered generation to the transmission grid in the Buffalo Ridge area than the grid can accommodate. Finally, no other part of Minnesota provides a better location for wind-powered generators than the Buffalo Ridge. Xcel cites all these dynamics to support the conclusion that its proposals are driven in large part by a desire to facilitate the use of electricity from renewable sources.

The Department supports Xcel's conclusions.

Based on the foregoing analysis, the ALJ concludes that Xcel's proposal demonstrates due regard for the goal of obtaining electricity from renewable sources. ALJ's Report, Findings of Fact 71 - 77.

### C. Withholding the requested Certificates of Need would likely harm the future adequacy, reliability and efficiency of the energy supply.

Xcel argues that the Lake Yankton/Marshall line is needed to ensure that electric service around the growing City of Marshall, Minnesota, continues to meet the reliability standards established by the North American Electric Reliability Corporation (NERC).[13]

While Xcel acknowledges that it offers its proposal merely as an interim measure, Xcel emphasizes that it remains mindful of its duty to make efficient use of resources. In particular, Xcel argues that the wind on Buffalo Ridge is the best source of windpower in the region, yet Xcel must curtail the operation of wind generators whenever their combined output exceeds the capacity of the region's transmission lines. Timely addition of transmission capacity would help make better use of these wind resources.

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[12] Minn. Stat. § 216B.1691; see Laws 2007, Chap. 3, § 1.

[13] Pursuant to the authority of the Energy Policy Act of 2005 (Pub.L. 109-058), the Federal Energy Regulatory Commission designated NERC the nation's "Energy Reliability Organization."

Ultimately Xcel argues that it requires Certificates of Need in order to fulfill its duties to provide reliable electric service and meet the new statutory obligations. While Xcel could pursue – and is pursuing – modifications to its plant that do not require a Certificate of Need in order to enhance transmission capacity, these modifications will not obviate the need for larger changes.

The Department supports Xcel's conclusions.

Based on the foregoing analysis, the ALJ concludes that denying Xcel Certificates of Need to build the proposed transmission lines would likely harm the adequacy, reliability and/or efficiency of the energy supply. ALJ's Report, Findings of Fact 67 - 96.

### D. The preponderance of the record evidence indicates that the proposed alternative is the most reasonable and prudent alternative.

The BRIGO study addresses more than a dozen alternatives for increasing the capacity for exporting electricity from Buffalo Ridge while also making electric service to Marshall more reliable. Alternatives under consideration included building a direct-current line out of Buffalo Ridge, modifying existing facilities, stringing additional transmission lines on existing towers, building an underground transmission line, and building new electric generators to offset the need for power from Buffalo Ridge. Based on this analysis Xcel concludes that the three proposed transmission lines are the best alternative based on factors such as capital costs, system electrical losses, technical performance and construction time.

Regarding timing, Xcel argues that new facilities can be built more quickly than existing facilities can be upgraded. Xcel would need to remove existing facilities from service before modifying them. Yet the very constraints that prompt the need for new lines also discourage Xcel from removing more than one line from service at a time. These same constraints do not apply to the construction of new facilities.

In many respects, Xcel argues, the alternatives explored in the BRIGO Study have comparable benefits. They tended to have similar environmental effects. Each alternative would produce some economic development in the area, creating new employment and tax revenues. And each of the proposed transmission line alternatives would produce similar reliability: According to Xcel, transmission lines tend to be available more than 99% of the time and with regular maintenance can last almost indefinitely.

While the Department finds fault in Xcel's analysis of electrical system losses, the Department's own analysis supports the view that Xcel's favored alternative would produce the least system losses. Ultimately the Department concludes that the record supports Xcel's conclusion that the proposed 115 kV transmission lines represent the most reasonable and prudent alternative.

Based on the analysis summarized above, the ALJ concludes that the preponderance of the record evidence indicates that the proposed alternative is the most reasonable and prudent alternative. ALJ Report, Findings of Fact 97-122.

**E. The preponderance of the record evidence indicates that the proposed alternative will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.**

Much of state policy reflects the principle that wind-powered electricity can help displace reliance on electricity from sources with more harmful effects.[14] But Xcel argues that this principle can be implemented only if the electricity can reach consumers. By enabling wind power to reach those who need it, the proposed facilities would benefit society in a manner that promotes the protection of the natural environment and human health.

Additionally, given the harms that would arise from a power failure in Marshall, Xcel argues that adding a transmission line to make electric service more reliable would benefit society in a manner that promotes the socioeconomic environment, including human health.

Whether or not the proposed facilities would induce future development in Marshall, Xcel provides evidence that the facilities would enable the development of additional wind-powered generators along Buffalo Ridge. The record shows that wind power developers have already contracted to provide more than 900 MW of power, which is more than Xcel says the current transmission system can reliably support. Adding transmission capacity would facilitate further development.

The Department agrees with Xcel's analysis. And based on the analysis summarized above, the ALJ concludes that the preponderance of the record evidence indicates that the proposed alternative will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health. ALJ Report, Findings of Fact 123-131.

**F. The record does not demonstrate that the design, construction, or operation of the proposed facilities would fail to comply with any applicable jurisdiction's policies, rules, or regulations.**

Xcel commits to complying with all relevant policies, rules and regulations from the federal, state and local governments, and even lists the regulatory requirements of which it is aware. The ALJ finds no evidence that any aspect of Xcel's proposal would conflict with any applicable legal standard. ALJ's Report, Findings of Fact 132.

**G. Requirements for environmental review have been fulfilled, and no alternative proposals appear to produce better environmental outcomes.**

Xcel's application contains a discussion of environmental consequences of its proposal and all considered alternatives, including the alternative not to build any new large energy facilities. In its Environmental Report, the Department concludes that –

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[14] Minn. Stat. §§ 216B.1612, 216B.169, 216B.1691, 216B.2423. See also *In the Matter of the Application of Northern State's Power Company for Approval of its 1998 Resource Plan*, Docket No. E-002/RP-98-32, ORDER MODIFYING RESOURCE PLAN, REQUIRING ADDITIONAL WIND GENERATION, REQUIRING FURTHER FINDINGS, AND SETTING STANDARDS FOR NEXT RESOURCE PLAN (February 17, 1999).

> . . . none of the alternatives considered have significantly fewer human, environmental or economic impacts than the proposed BRIGO Project. The existing lines or alternative corridor options appear to have similar or slightly greater environmental impacts, higher energy losses, and higher costs than the BRIGO Project. The non-build, conservation, and generation alternatives do not meet the need to create approximately 350 MW of additional transmission system capacity in the Buffalo Ridge region and resolve reliability issues in Marshall.[15]

The ALJ concludes that the Environmental Report fulfills all of the requirements established in the Scoping Decision of March 22, 2007, and reasonably supports the granting the Certificates of Need. ALJ's Report, Conclusion 9.

### H. The proposed facilities would increase opportunities for installing small, efficient distributed generators that produce few emissions.

The ALJ concludes that by expanding transmission capacity, Xcel's proposal would increases opportunities for installing small, efficient distributed generators that produce few emissions. ALJ's Report, Conclusion 10.

### I. Summary

Based on many of the facts discussed above, the ALJ concludes as follows:

> 134. The Project will ensure safe and reliable service to [Marshall]'s customers during peak periods. The Project will also provide transmission facilities that can be used by renewable-based generation. That energy can then be used by electric utilities to meet their load serving obligations in the State.
>
> 135. The need for the Project cannot be avoided through the use of energy conservation programs.
>
> 136. The Project will help meet regional energy needs, particularly the need for increased use of renewable energy.
>
> 137. The Project has not been motivated by any promotional activities. Rather, it is driven by the demand for additional transmission capacity for renewable generation and electrical system reliability needs.
>
> 138. The Project will increase reliability of the energy supply in Marshall and increase the supply of renewables-based generation available to Minnesota load serving entities.
>
> 139. The Project cannot be avoided through upgrading existing facilities, load-management programs or distributed generation.

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[15] Environmental Report (April 24, 2007) at 3.

140. The Project will comply with the policies, rules and regulations of applicable state and federal agencies and local governments.

141. The Project will improve electric service reliability for [Marshall] and its retail customers and for wind generation within the Buffalo Ridge region, improving the robustness of the transmission system.

142. The Project also meets the requirements of Minn. Stat. § 216B.243, subd. 3(10) [regarding Xcel's compliance with the Renewable Energy Standards]. The Project will further Xcel Energy's and other utilities' ability to meet the RES with additional wind generation from the Buffalo Ridge area.

ALJ's Report, Findings of Fact 134-142 (footnotes omitted). Finding that Xcel has satisfied the criteria set forth at Minnesota Statutes § 216B.243 and Minnesota Rules part 7849.0120, the ALJ recommends granting Xcel's application for Certificates of Need. ALJ's Report, Recommendations 13 - 15.

## IV. Commission Action

The Commission has examined the full record in this case, and its reading of the evidence leads to the same findings and conclusion reached by the ALJ. The Commission concurs in and adopts the ALJ's findings and conclusions.

Having secured Certificates of Need, Xcel will now need to obtain permits identifying the specific routes where Xcel may build the transmission lines. To ensure that Xcel makes timely progress toward completing building these lines, the Commission will direct Xcel to file a status report identifying the authorities from whom Xcel will seek route permits. Additionally, the Commission will direct Xcel to file applications for route permits no later than January 2008, and to take the necessary steps to bring the new lines into service by Spring 2009.

## ORDER

1. The Commission accepts and adopts the Findings of Fact, Conclusions of Law and Recommendation of the Administrative Law Judge, including the conclusion that the Environmental Report of April 24, 2007, fulfills the requirements of the Department's Scoping Decision of March 22, 2007.

2. The Commission grants a Certificate of Need for the proposed 115 kV transmission line in Lyon County between Lake Yankton Substation near Balaton, Minnesota to a new substation near Marshall, Minnesota.

3. The Commission grants a Certificate of Need for the proposed 115 kV line in Murray and Nobles Counties between Fenton Substation near Chandler, Minnesota and Nobles County Substation northwest of Worthington, Minnesota.

4. The Commission grants a Certificate of Need for the proposed 115 kV transmission line in Lincoln County between Yankee Substation south of Hendricks, Minnesota and the Minnesota/South Dakota border near Brookings County Substation near Brookings, South Dakota.

5. Xcel shall file a status report identifying the authorities from whom Xcel will seek route permits. Xcel shall file applications for route permits no later than January 2008, and shall take the necessary steps to bring the new lines into service by Spring 2009.

6. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

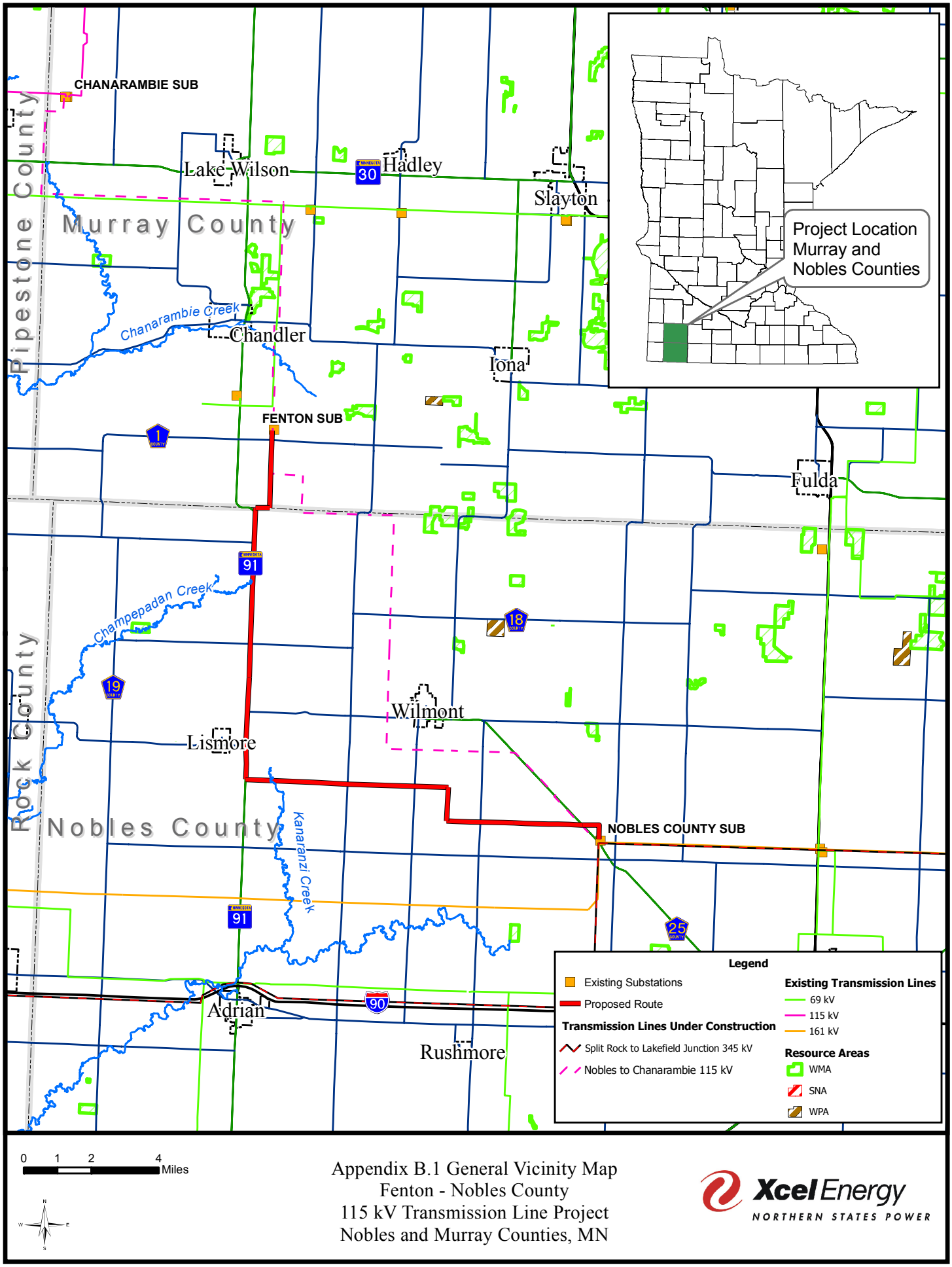
Burl W. Haar
Executive Secretary

(S E A L)

This document can be made available in alternative formats (i.e. large print or audio tape) by calling (651) 201-2202 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1 (800) 627-3529 or by dialing 711.

# APPENDIX B

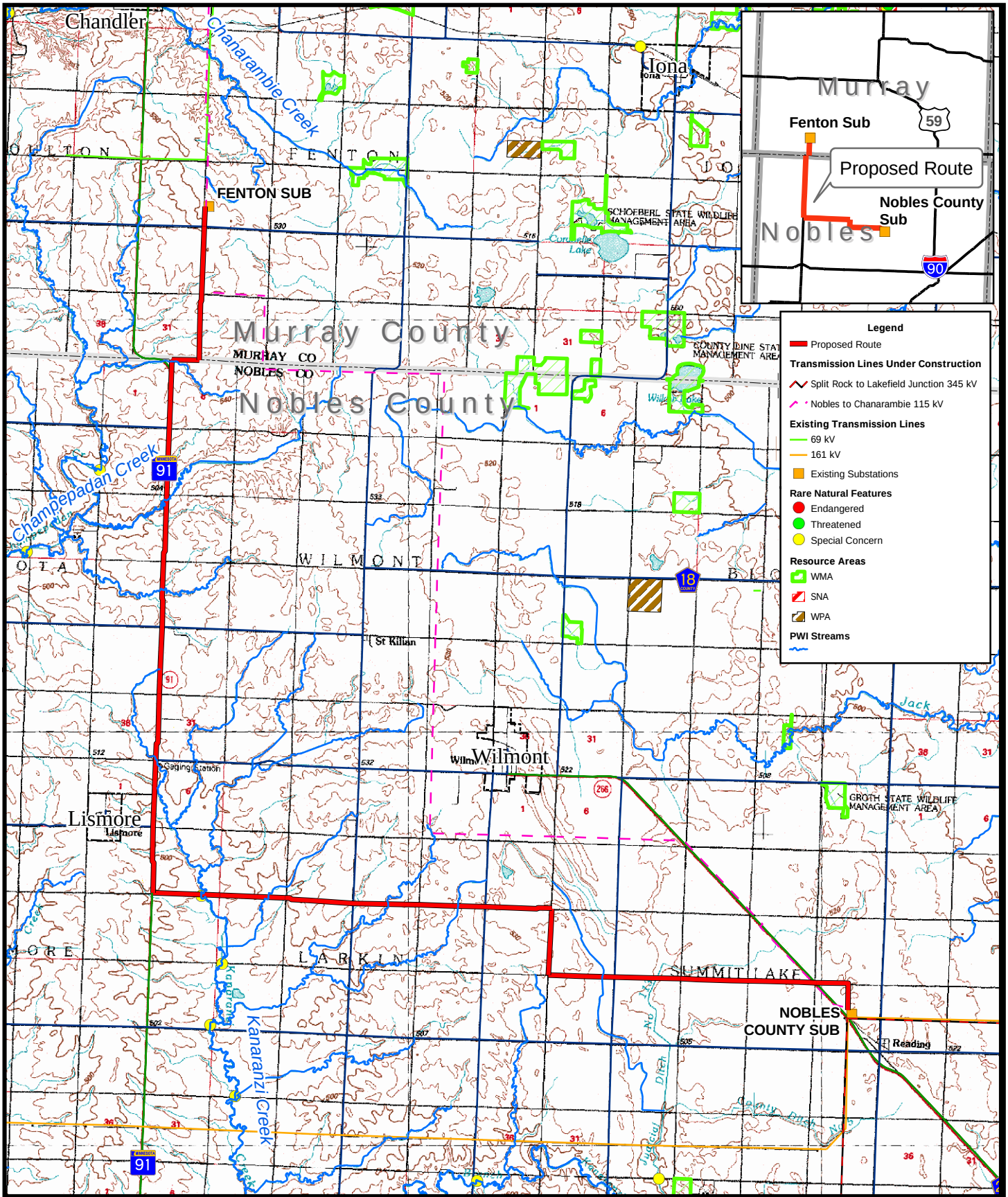
# MAPS




Appendix B.1 General Vicinity Map
Fenton - Nobles County
115 kV Transmission Line Project
Nobles and Murray Counties, MN

Xcel Energy
NORTHERN STATES POWER

Map Document: (N:\GIS\Proj\xcel\55365\map_docs\mxd\RouteApplication\Fenton_Nobles_GeneralVicinity.mxd)
10/1/2007 --




0 0.5 1 2 Miles

Appendix B.2 Project Location Map
Fenton - Nobles County
115 kV Transmission Line Project
Nobles and Murray Counties, MN

Xcel Energy
NORTHERN STATES POWER

Map Document: (N:\GIS\Projxcel\55365\map_docs\mxd\RouteApplication\Fenton_Nobles_ProjectLocation.mxd)
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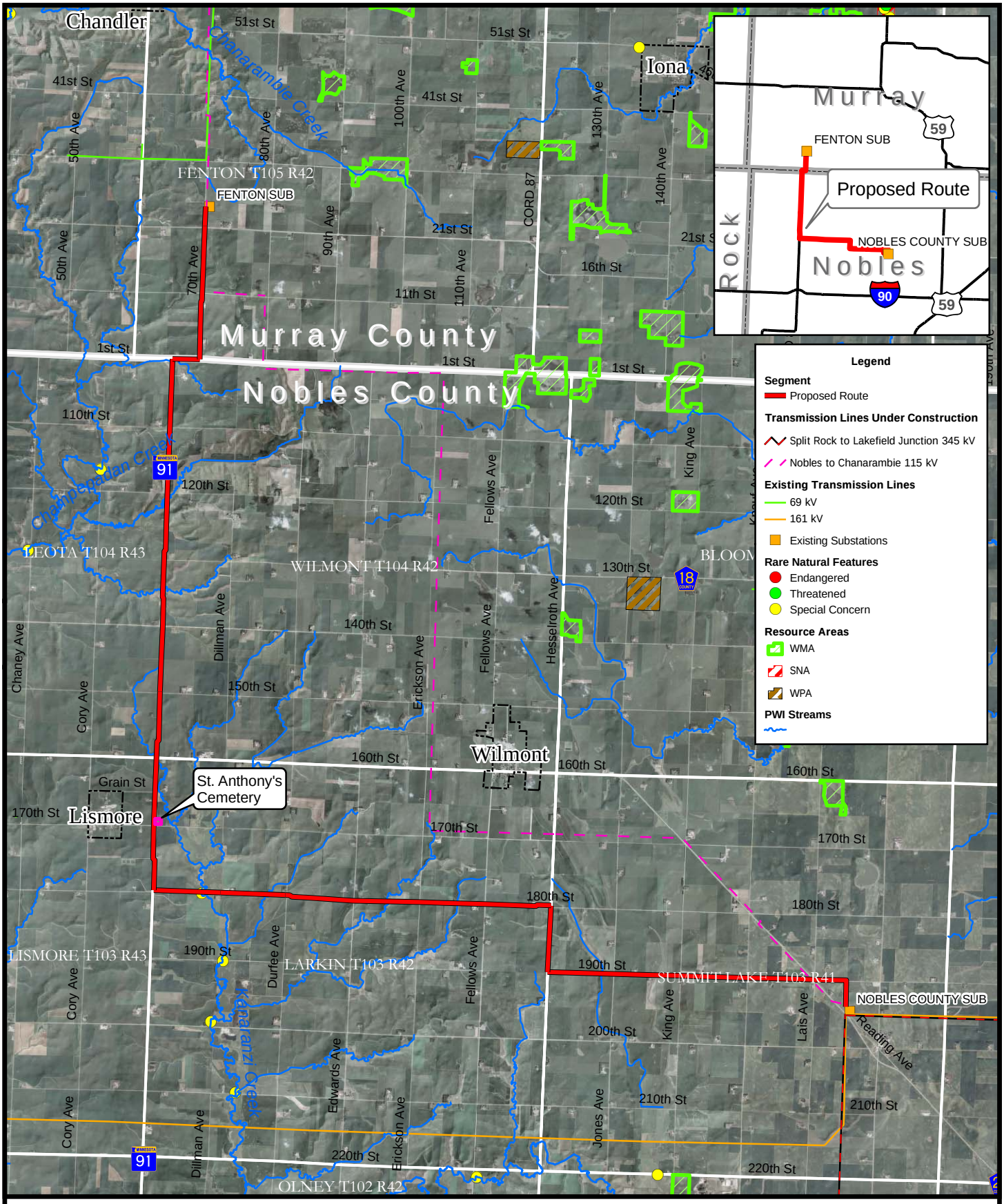


Appendix B.3 Project Location Map - Aerial
Fenton - Nobles County
115 kV Transmission Line Project
Nobles and Murray Counties, MN

Xcel Energy
NORTHERN STATES POWER

Map Document: (N:\GIS\Proj\xcel\55365\map_docs\mxd\RouteApplication\Fenton_Nobles_ProjectLocation_Aerial.mxd)
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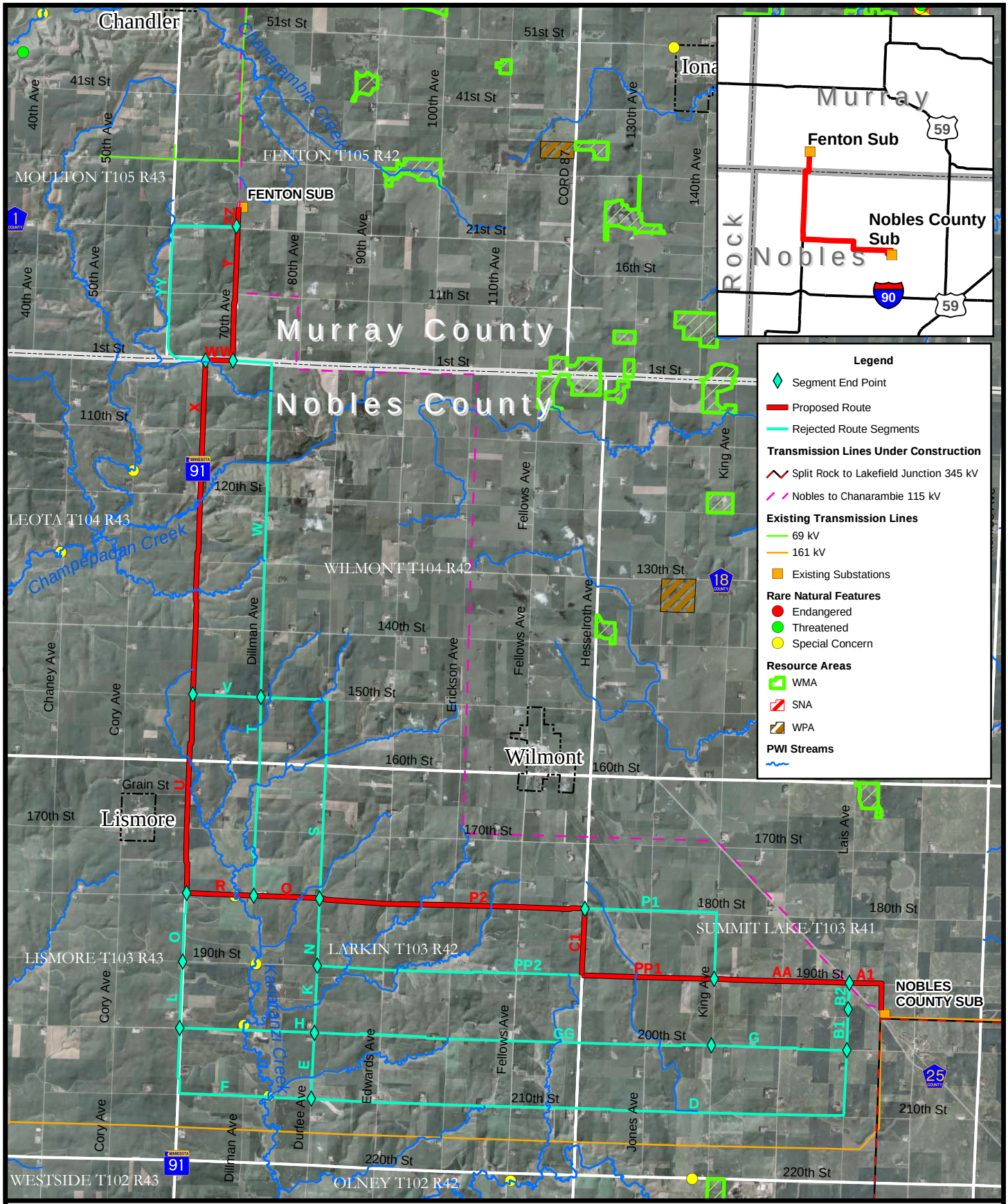


0 0.5 1 2 Miles

Appendix B.4 Route Segments Evaluated
Fenton - Nobles County
115 kV Transmission Line Project
Nobles and Murray Counties, MN

Xcel Energy
NORTHERN STATES POWER

Map Document: (N:\GIS Proj\xcel\55365\map_docs\mxd\RouteApplication\Fenton_Nobles_Rejected_Trans_Route_Alt.mxd)
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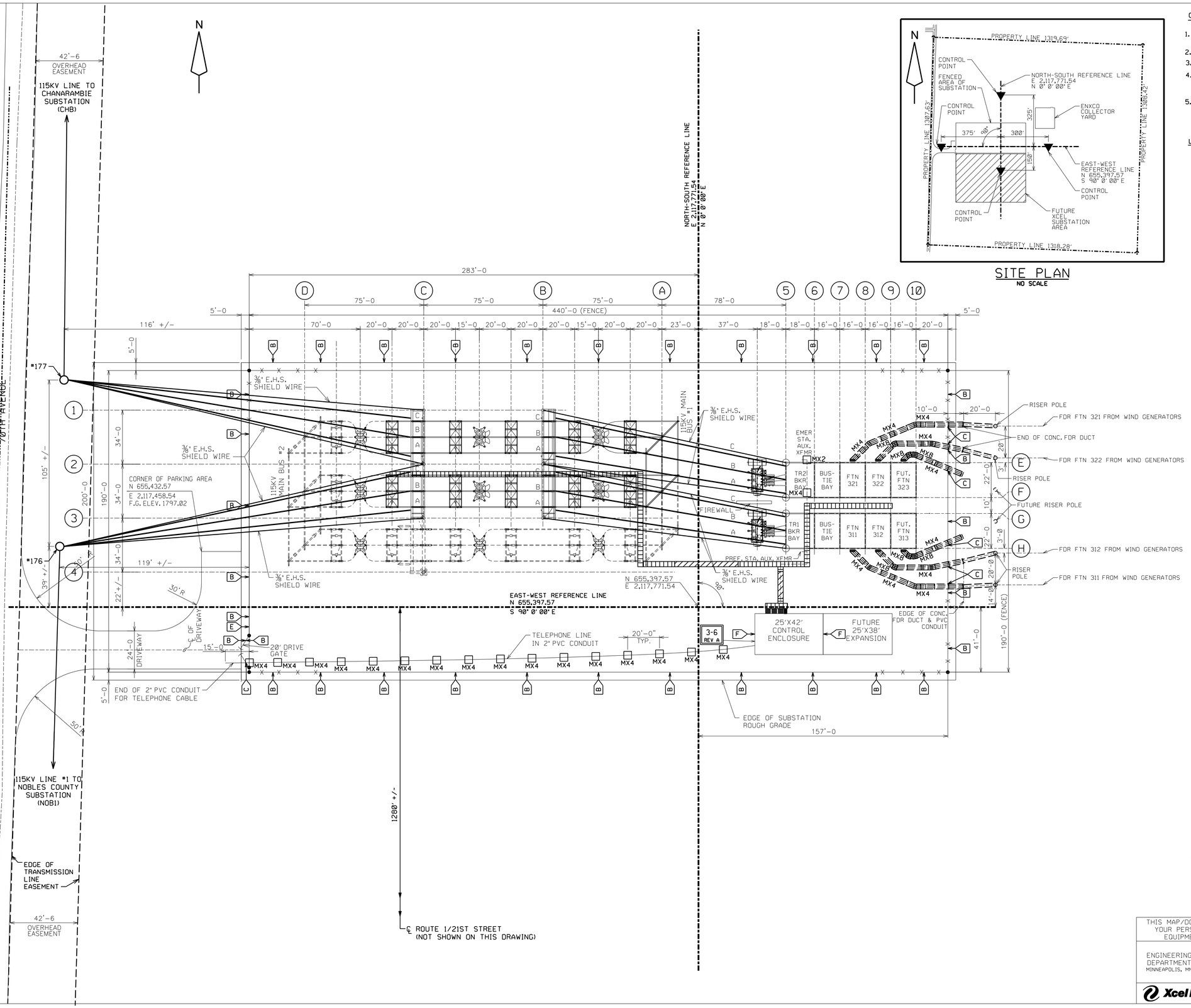





SITE PLAN
NO SCALE

GENERAL NOTES

1. LOCATION OF BENCH MARK FOR GRADE ELEVATION IS SPIKE ON EAST SIDE OF POWER POLES AS SHOWN ON DWG# NF-211570.
2. SUBSTATION ROUGH GRADE ELEVATION VARIES FROM 1797.5 TO 1795.5
3. SUBSTATION AREA ENCLOSED BY FENCE AND EXTENDING 5'-0" OUTSIDE.
4. FENCE - 7'-0" HIGH STEEL CHAIN LINK FABRIC AND 1'-0" HIGH VERTICAL HEIGHT BARBED WIRE ON TOP, MOUNTED AT A 45° ANGLE POINTED OUTSIDE OF SUBSTATION. IN ACCORDANCE WITH ENG & DSGN STD ED 4.09.03.
5. SEE STRUCTURAL STEEL DRAWINGS FOR LOAD REQUIREMENTS OF EXTERNAL AND INTERNAL STRAINS.

LEGEND

- [A] → OLD FENCE SIGN WORDED "WARNING, HAZARDOUS VOLTAGES INSIDE, KEEP OUT, CAN SHOCK BURN OR CAUSE DEATH". (THIS SIGN CAN NO LONGER BE ORDERED)
- [B] → FENCE WARNING SIGN (16-0092), PER ENG & DSGN STD ED 4.10.01. THE SIGNS ARE TO BE MOUNTED 5'-0" FROM GRADE TO TOP OF SIGN, 30-0" - 45'-0" APART AND NO MORE THAN 15'-0" FROM THE CORNERS. ONE SIGN SHOULD BE PLACED ON THE OUTSIDE OF EACH WALK GATE. TWO SIGNS SHOULD BE MOUNTED ON EACH DRIVE GATE, ONE ON THE INSIDE AND ONE ON THE OUTSIDE. (BACK TO BACK ON THE LEFT SIDE OR DRIVERS SIDE PANEL OF THE DOUBLE GATES).
- [C] → BURIED CABLE SIGN (16-0088), PER ENG & DSGN STD ED 4.10.06. THE SIGNS ARE TO BE MOUNTED ON EACH SIDE OF FENCE FABRIC, BACK TO BACK AND APPROXIMATELY 3'-6" FROM GRADE TO TOP OF SIGNS.
- [D] → BURIED CABLE SIGN MOUNTED ON POST (16-0095), PER ENG & DSGN STD ED 4.10.06.
- [E] → SUBSTATION IDENTIFICATION SIGN PER ENG & DSGN STD ED 4.10.02 (TOP) AND ADDRESS SIGN PER ENG & DSGN STD ED 4.10.03 (BOTTOM). THE TOP SIGN MOUNTED 5'-0" FROM GRADE TO TOP OF SIGN AND LOCATED ADJACENT TO WALK OR DRIVE GATES.
- [F] → BATTERY WARNING SIGN (S7-5454), PER ENG & DSGN STD ED 4.10.04. THE SIGNS ARE TO MOUNTED ON THE OUTSIDE OF EACH CONTROL HOUSE DOOR, APPROXIMATELY 5'-0" FROM THE BOTTOM OF THE DOOR TO THE TOP OF SIGN.

M-1 ☐ INDICATES CONCRETE MARKERS FOR DIRECT BURIED CABLE RUNS. E & D STD. EE 4.05.04.

MR1 ☐ INDICATES CONCRETE MARKERS FOR DIRECT BURIED CABLE RUNS OVER 600 VOLTS WITH SLOTS PAINTED RED. E & D STD. EE 4.05.04.

"ISSUED"
"FOR CONSTRUCTION"

FOR DRAWING REFERENCE AND REVISION INFORMATION SEE INDEX SHEET NH-211825



ENGINEERING DEPARTMENT MINNEAPOLIS, MN

CHANDLER, MN
# FENTON SUBSTATION
## LOCATION PLAN
FTN

Xcel Energy

SCALE 1"=30'

NH-185293

REV C

| CORP | SIGNIFICANT NUMBER |
|---|---|
| 1 | FTN |
| 2 | |
| 3 | |
| 4 | |
| 5A | |
| 5B | 6210 |
| 6 | |
| CL | |

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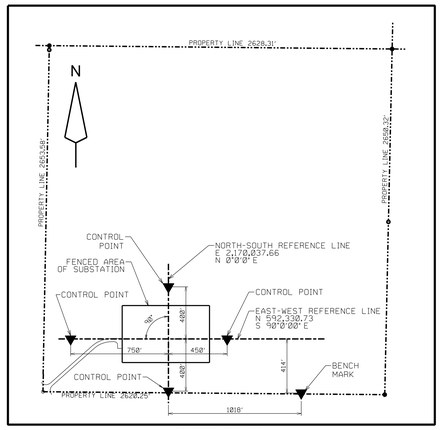


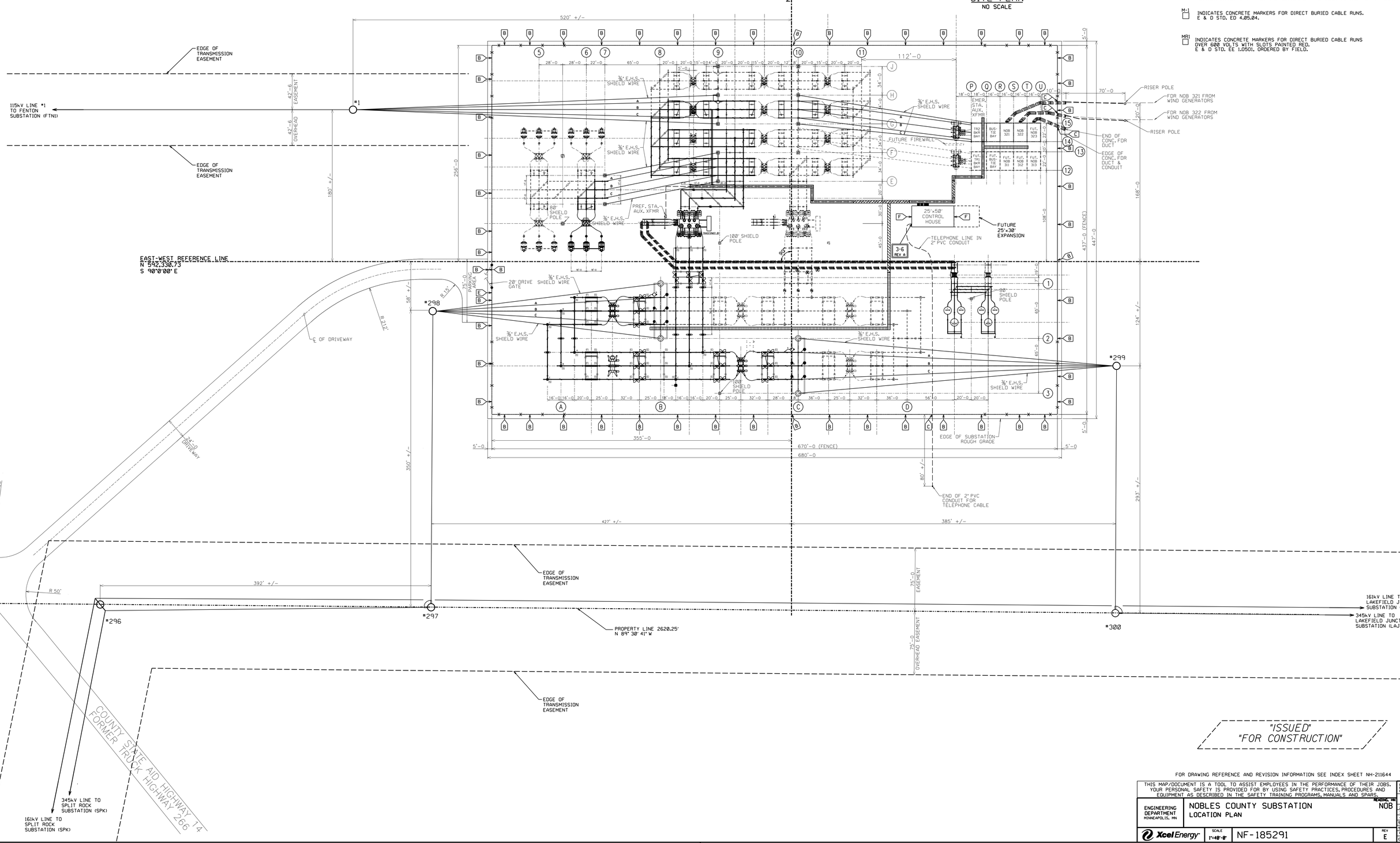

SITE PLAN
NO SCALE

GENERAL NOTES

1. LOCATION OF BENCH MARK FOR GRADE ELEVATION IS SPIKE ON EAST SIDE OF POWER POLE ASSUMED ELEVATION OF BENCH MARK IS 1724.37 AS SHOWN ON DWG.*NF-211549.
2. SUBSTATION ROUGH GRADE ELEVATION VARIES FROM 1715.00 TO 1711.27.
3. SUBSTATION AREA ENCLOSED BY FENCE AND EXTENDING 5'-0" OUTSIDE.
4. FENCE - 7'-0" HIGH STEEL CHAIN LINK FABRIC AND 1'-0" HIGH VERTICAL HEIGHT BARBED WIRE ON TOP, MOUNTED AT A 45° ANGLE POINTED OUTSIDE OF SUBSTATION. IN ACCORDANCE WITH ENG & DSGN STD ED 4.09.03.
5. SEE STRUCTURAL STEEL DRAWINGS FOR LOAD REQUIREMENTS OF EXTERNAL AND INTERNAL STRAINS.

LEGEND

- (A) → OLD FENCE SIGN WORDED "WARNING, HAZARDOUS VOLTAGES INSIDE, KEEP OUT, CAN SHOCK BURN OR CAUSE DEATH". (THIS SIGN CAN NO LONGER BE ORDERED)
- (B) → FENCE WARNING SIGN (16-0092), PER ENG & DSGN STD ED 4.10.01. THE SIGNS ARE TO BE MOUNTED 5'-0" FROM GRADE TO TOP OF SIGN, 30'-0" - 45'-0" APART AND NO MORE THAN 15'-0" FROM THE CORNERS. ONE SIGN SHOULD BE PLACED ON THE OUTSIDE OF EACH WALK GATE. TWO SIGNS SHOULD BE MOUNTED ON EACH DRIVE GATE, ONE ON THE INSIDE AND ONE ON THE OUTSIDE. (BACK TO BACK ON THE LEFT SIDE OR DRIVERS SIDE PANEL OF THE DOUBLE GATES).
- (C) → BURIED CABLE SIGN (16-0088), PER ENG & DSGN STD ED 4.10.06. THE SIGNS ARE TO BE MOUNTED ON EACH SIDE OF FENCE FABRIC, BACK TO BACK AND APPROXIMATELY 3'-6" FROM GRADE TO TOP OF SIGNS.
- (D) → BURIED CABLE SIGN MOUNTED ON POST (16-0095), PER ENG & DSGN STD ED 4.10.06.
- (E) → SUBSTATION IDENTIFICATION SIGN PER ENG & DSGN STD ED 4.10.02 (TOP) AND ADDRESS SIGN PER ENG & DSGN STD ED 4.10.03 (BOTTOM). THE TOP SIGN MOUNTED 5'-0" FROM GRADE TO TOP OF SIGN AND LOCATED ADJACENT TO WALK OR DRIVE GATES.
- (F) → BATTERY WARNING SIGN (57-5454), PER ENG & DSGN STD ED 4.10.04. THE SIGNS ARE TO MOUNTED ON THE OUTSIDE OF EACH CONTROL HOUSE DOOR, APPROXIMATELY 5'-0" FROM THE BOTTOM OF THE DOOR TO THE TOP OF SIGN.
- M → INDICATES CONCRETE MARKERS FOR DIRECT BURIED CABLE RUNS. E & D STD. ED 4.05.04.
- MRI → INDICATES CONCRETE MARKERS FOR DIRECT BURIED CABLE RUNS OVER 600 VOLTS WITH SLOTS PAINTED RED. E & D STD. EE 1.0501, ORDERED BY FIELD.




"ISSUED"
"FOR CONSTRUCTION"

FOR DRAWING REFERENCE AND REVISION INFORMATION SEE INDEX SHEET NH-211644

THIS MAP/DOCUMENT IS A TOOL TO ASSIST EMPLOYEES IN THE PERFORMANCE OF THEIR JOBS. YOUR PERSONAL SAFETY IS PROVIDED FOR BY USING SAFETY PRACTICES, PROCEDURES AND EQUIPMENT AS DESCRIBED IN THE SAFETY TRAINING PROGRAMS, MANUALS AND SPARS.

ENGINEERING DEPARTMENT MINNEAPOLIS, MINN

NOBLES COUNTY SUBSTATION
LOCATION PLAN

READING, MN NOB

Xcel Energy

SCALE 1"=48'-0"

NF-185291

REV E

| SYS | SIGNIFICANT NUMBER |
|---|---|
| | NOB |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5A | |
| 5B | 6210 |
| 6 | |
| CL | |

# APPENDIX C

# FAUNA

**APPENDIX C.1**

**COMMON MAMMAL SPECIES**

| Common Name | Scientific Name |
|---|---|
| Deer mouse | *Peromyscus maniculatus* |
| Eastern chipmunk | *Tamias striatus* |
| Eastern mole | *Scalopus aquaticus* |
| House mouse | *Mus musculus* |
| Meadow jumping mouse | *Zapus hudsonius* |
| Meadow vole | *Microtus pennsylvanicus* |
| Northern grasshopper mouse | *Onychomys leucogaster* |
| Plains pocket gopher | *Geomys bursarius* |
| Pronghorn | *Antilocapra americana* |
| Short-tailed shrew | *Blarina brevicauda* |
| Striped skunk | *Mephitis mephitis* |
| Thirteen-lined ground squirrel | *Spermophilus tridecemlineatus* |
| Virginia opossum | *Didelphis virginiana* |
| Woodchuck | *Marmota monax* |

**APPENDIX C.2**

**COMMON AVIAN SPECIES**

| Common Name | Scientific Name |
|---|---|
| American Coot | *Fulica americana* |
| American Goldfinch | *Carduelis tristis* |
| American Kestrel | *Falco sparverius* |
| American Robin | *Turdus migratorius* |
| American Woodcock | *Scolopax minor* |
| Bank Swallow | *Riparia riparia* |
| Barn Swallow | *Hirundo rustica* |
| Belted King Fisher | *Megaceryle alcyon* |
| Black Capped Chickadee | *Parus atricapillus* |
| Black-billed Cuckoo | *yellow-billed cuckoo* |
| Black-crowned Night Heron | *Nycticorax nycticorax* |
| Blue Grosbeak | *Guiraca caerulea* |
| Blue Jay | *Cyanocitta cristata* |
| Blue-winged Teal | *Anas discors* |
| Bobolink | *Dolichonyx oryzivorus* |
| Brewer's Blackbird | *Brewer's blackbird* |
| Brown Thrasher | *Toxostoma rufum* |
| Brown-headed Cowbird | *Molothrus ater* |
| Chimney Swift | *Chaetura pelagica* |
| Chipping Sparrow | *Spizella passerine* |
| Clay-colored Sparrow | *Spizella pallida* |
| Cliff Swallow | *Petrochelidon pyrrhonota* |
| Common Crow | *Corvus brachyrhynchos* |
| Common Flicker | *Colaptes auratus* |
| Common Grackle | *Quiscalus quiscula* |
| Common Yellowthroat | *Geothlypis trichas* |
| Dickcissel | *Spiza americana* |
| Downy Woodpecker | *Picoides pubescens* |
| Eastern Bluebird | *Sialia sialis* |
| Eastern Kingbird | *Tyrannus tyrannus* |
| Eastern Phoebe | *Sayornis phoebe* |

| Common Name | Scientific Name |
|---|---|
| Eastern Wood Pewee | *Contopus sordidulus* |
| Field Sparrow | *Spizella pusilla* |
| Franklin's Gull | *Larus pipixcan* |
| Grasshopper Sparrow | *Ammodramus savannarum* |
| Gray Partridge | *Perdix perdix* |
| Great Crested Flycatcher | *Myiarchus crinitus* |
| Great horned owl | *Bubo virginianus* |
| Grey Catbird | *Dumetella carolinensis* |
| Hairy Woodpecker | *Picoides villosus* |
| Horned Lark | *remophila alpestris* |
| House Sparrow | *Passer domesticus* |
| House Wren | *Troglodytes aedon* |
| Indigo Bunting | *Passerina cyanea* |
| Killdeer | *Charadrius vociferus* |
| Least Bittern | *Ixobrychus exilis* |
| Mallard | *Anas platyrhynchos* |
| Marsh Hawk | *Circus cyaneus* |
| Mourning Dove | *Zenaida macroura* |
| Northern Cardinal | *Cardinalis cardinalis* |
| Northern Oriole | *Icterus galbula* |
| Northern Rough-winged Swallow | *Stelgidopteryx serripennis* |
| Orchard Oriole | *Icterus spurius* |
| Purple Finch | *Carpodacus purpureus* |
| Purple Martin | *Progne subis* |
| Red Eyed Vireo | *Vireo olivaceus* |
| Red-headed woodpecker | *Melanerpes erythrocephalus* |
| Red-winged Blackbird | *Agelaius phoeniceus* |
| Ring-necked Pheasant | *Phasianus colchicus* |
| Rock Dove | *Columba livia* |
| Rose-breasted Grosbeak | *Pheucticus ludovicianus* |
| Savannah Sparrow | *Passerculus sandwichensis* |
| Song Sparrow | *Melospiza melodia* |
| Spotted Sandpiper | *Actitis macularius* |

| Common Name | Scientific Name |
|---|---|
| Starling | *Sturnus vulgaris* |
| Upland Sandpiper | *Bartramia longicauda* |
| Vesper Sparrow | *Pooecetes gramineus* |
| Western Kingbird | *Tyrannus verticalis* |
| Western Meadowlark | *Sturnella magna* |
| Willow Flycatcher | *Empidonax traillii* |
| Wood Duck | *Aix sponsa* |
| Yellow Warbler | *Dendroica petechia* |
| Yellow-billed Cuckoo | *Coccyzus americanus* |
| Yellow-headed Blackbird | *Xanthocephalus xanthocephalus* |

**APPENDIX C.3**

**COMMON AMPHIBIAN AND REPTILE SPECIES**

| Common Name | Scientific Name |
|---|---|
| American Toad | *Bufo americanus* |
| Blanding's Turtle | *Emydoidea blandingii* |
| Blue-spotted Salamander | *Ambystoma laterale* |
| Boreal Chorus Frog | *Pseudacris triseriata maculata* |
| Brown Snake | *Storeria dekayi* |
| Bullfrog | *Rana catesbeiana* |
| Bullsnake | *Pituophis melanoleucus* |
| Canadian Toad | *Canadian Toad* |
| Common Map Turtle | *Graptemys geographica* |
| Cricket Frog | *Acris crepitans* |
| Eastern Hognose Snake | *Heterodon platirhinos* |
| False Map Turtle | *Graptemys pseudogeographica* |
| Five-lined Skink | *Eumeces fasciatus* |
| Garter Snake | *Thamnophis sirtalis* |
| Great Plains Toad | *Bufo cognatus* |
| Green Frog | *Rana clamitans melanota* |
| Massasauga Rattlesnake | *Sistrurus catenatus* |
| Milk Snake | *Lampropeltis triangulum* |
| Mink Frog | *Rana septentrionalis* |
| Mudpuppy | *Necturus maculosus* |
| Northern Leopard Frog | *Rana pipiens* |
| Northern/Midland Water Snake | *Nerodia sipedon* |
| Ouachita Map Turtle | *Graptemys ouachitensis* |
| Painted Turtle | *Chrysemys picta* |
| Pickerel Frog | *Rana palustris* |
| Plains Garter Snake | *Thamnophis radix* |
| Prairie Skink | *Eumeces septentrionalis* |
| Racer | *Coluber constrictor* |
| Racerunner | *Cnemidophorus sexlineatus* |
| Rat Snake | *Elaphe obsoleta* |
| Redbelly Snake | *Storeria occipitomaculata* |

| Common Name | Scientific Name |
|---|---|
| Ringneck Snake | *Diadophis punctatus* |
| Smooth Green Snake | *Liochlorophis vernalis* |
| Smooth Softshell | *Apalone mutica* |
| Snapping Turtle | *Chelydra serpentina* |
| Spiny Softshell | *Apalone spinifera* |
| Spring Peeper | *Pseudacris crucifer* |
| Tiger Salamander | *Ambystoma tigrinum* |
| Timber Rattlesnake | *Crotalus horridus* |
| Western Chorus Frog | *Pseudacris triseriata triseriata* |
| Western Fox Snake | *Elaphe vulpina vulpina* |
| Western Hognose Snake | *Heterodon nasicus* |
| Wood Turtle | *Clemmys insculpta* |

# APPENDIX D

# AGENCY CORRESPONDENCE

# Minnesota Department of Natural Resources

Natural Heritage and Nongame Research Program, Box 25
500 Lafayette Road
St. Paul, Minnesota 55155-40__
Phone: (651) 259-5109 Fax: (651) 296-1811 E-mail: lisa.joyal@dnr.state.mn.us


RECEIVED

APR 17 2007

HDR Engineering, Inc.

April 13, 2007

Ms. Angela Piner
HDR Engineering, Inc.
701 Xenia Avenue South, Suite 600
Minneapolis, MN 55416

Re: Request for Natural Heritage information for vicinity of proposed Fenton to Nobles 115 kV Transmission Line

NHNRP Contact #: ERDB 20070629

| County | Township (N) | Range (W) | Sections |
|---|---|---|---|
| Murray | 105 | 42 | 20, 29, 32 |
| Nobles | 104 | 42 | 2, 3, 4, 5, 11, 14, 23, 26, 35 |
| | 103 | 42 | 1, 2 |
| | 103 | 41 | 4, 5, 6, 9, 10, 15, 22, 23 |

Dear Ms. Piner,

Please note that the Township, Range, and Section information that was submitted to us in your cover letter did not exactly match the project area as outlined on the map that was submitted with the letter. This review is for the construction between the Fenton and Nobles Substations as indicated on your map. Please contact me if the location description of your project area, as listed in the subject line of this letter, is in error.

I reviewed the Minnesota Natural Heritage database and concur with your assessment that there are no known occurrences of rare features within the project area, and that the proposed project is unlikely to adversely impact nearby rare features. I also agree that all streams in the construction area should be spanned in order to minimize disturbance to nearby Topeka Shiner habitat. Please be aware that review by the Natural Heritage and Nongame Research Program focuses only on *rare natural features*. It does not constitute review or approval by the Department of Natural Resources as a whole. If you require further information on the environmental review process for other natural resource-related issues, you may contact your Regional Environmental Assessment Ecologist, Todd Kolander, at (507) 359-6073. Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Lisa Joyal

Lisa A. Joyal
Endangered Species Environmental Review Coordinator

**Appendix D.1**

Minnesota Department of Natural Resources

261 Highway 15 South
New Ulm, MN 56073



May 22, 2007

Angela Piner
HDR Engineering, Inc
701 Xenia Avenue South, Suite 600
Minneapolis, MN 55416

Re: 115 kV Transmission Line Project

Dear Mrs. Angela Piner:

The Minnesota Department of Natural Resources (DNR) has reviewed the proposed 115 kV Transmission Line Project. We offer the following recommendation.

The utility project area covers Murray and Nobles Counties in western Minnesota. Based on the project location and review of the map provided, it appears the project will cross or possibly impact waters, streams or wetlands. Under Minnesota Statute103G.2455, Subdivision 1, the state, a political subdivision of the state, a public or private corporation, or a person, must have a DNR Public Waters Work Permit to construct, reconstruct, remove, abandon, transfer ownership of, or make any change in a reservoir, dam, or waterway obstruction on public waters; or change or diminish the course, current, or cross section of public waters, entirely or partially within the state, by any means, including filling, excavating, or placing of materials in or on the beds of public waters. The DNR hydrologist to contact for permit requirements in your project area will be Tom Kresco in the Windom office at 507-537-7258.

Minnesota Statute 84.415 requires that a license be obtained from the Department of Natural Resources for the passage of any utility over, under or across any state land or public waters. Public waters are any water bodies (lakes, rivers and some wetlands) identified as such on the Public Waters and Wetlands Maps. Public waters are designated as such to indicate which lakes, wetlands, and watercourses over which DNR Waters has regulatory jurisdiction. The statutory definition of public waters includes public waters and public waters wetlands. A crossing license application can be downloaded through DNR Lands and Minerals website at: http://www.dnr.state.mn.us/permits/utility_crossing/index.html
Questions regarding licensing requirements should be directed to Bob Hobart in the New Ulm Regional office at 507-359-6071.

Thank you for the opportunity to review this project and provide some early coordination comments. If you have any questions about this review please contact me at 507-359-6073.

Sincerely,

Todd Kolander
Regional Ecologist

ERDB 20070781

# Appendix D.2

MINNESOTA HISTORICAL SOCIETY
STATE HISTORIC PRESERVATION OFFICE



April 4, 2007

Ms. Laura Kennedy
HDR
701 Xenia Avenue South, Suite 600
Minneapolis, MN 55416

RE: Fenton to Nobles 115 kV transmission line tap project
Murray and Nobles Counties
SHPO Number: 2007-1436

Dear Ms. Kennedy:

Thank you for the opportunity to review and comment on the above project. It has been reviewed pursuant to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

We believe that there is a good probability that unreported archaeological properties might be present in the project area. Therefore, we recommend that a survey of the area be completed. The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation, and should include an evaluation of National Register eligibility for any properties that are identified.

If the project area can be documented as previously disturbed or previously surveyed, we will re-evaluate the need for survey. Previously disturbed areas are those where the naturally occurring post-glacial soils and sediments have been recently removed. Any previous survey work must meet contemporary standards.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36CFR800, procedures of the Advisory Council on Historic Preservation for the protection of historic properties. If this project is considered for federal assistance, or requires a federal license or permit, it should be submitted to our office with reference to the appropriate federal agency.

If you have any questions on our review of this project, please contact me at (651) 259-3456.

Sincerely,

Kelly Gragg-Johnson

Dennis A. Gimmestad
Government Programs and Compliance Officer

# Appendix D.3

HDR | ONE COMPANY *Many Solutions*℠

# Telephone Record

| | | | |
|---|---|---|---|
| Project: | Fenton – Nobles | Project No: | 55365 |
| Date: | July 3, 2007 | Subject: | Follow-up to the initial Agency Letter |
| Call to: | Wayne Smith, Director of Environmental Affairs, Nobles County | Phone No: | 507-376-3109 |
| Call from: | Emily Buss, HDR | Phone No: | (763) 278-5904 |

**Discussion, Agreement and/or Action:**

I left a message with Wayne Smith on Friday, June 29, 2007 to return my phone call. On Tuesday, July 3, 2007 Wayne returned my phone call. I asked whether or not he had received the initial letter and if he had any issues or concerns. Wayne mentioned he had worked with us before and was very pleased and kept the county informed of the projects. He did not have any comments at this time.

# Appendix D.4

HDR | ONE COMPANY *Many Solutions*℠

# Telephone Record

| | | | |
|---|---|---|---|
| Project: | Fenton-Nobles | Project No: | 55365 |
| Date: | 3/9/07 | Subject: | Fenton Letter |
| Call to: | Jean Christoffels-Murray Co. | Phone No: | 507-836-6148 x160 |
| Call from: | Angela Piner | Phone No: | 763-591-5478 |

**Discussion, Agreement and/or Action:**

Called regarding Fenton letter. Was wondering what else was wanted besides development information.

Stated we should consider potential property owner conflicts similar to what was experienced on other Fenton line.

Jean stated that the State regulations require that the Zoning Offices are notified for State permitted projects in their respective counties. Jean has been notified of wind development projects in the past. The statement made may well have been that there were not any new projects on the table that I had been recently notified of.

Stated to make sure we consider Randy Groves' comments on Highway expansion.

No preference for route except to keep in right-of-way as much as possible.

No issues as far as zoning.

Public hearing considerations - church night for area is Wednesday nights – do not schedule on this night!

## Appendix D.5

**HDR Engineering, Inc.**

701 Xenia Avenue South
Suite 600
Minneapolis, MN 55416

Telephone (76
Fax (763) 591
www.hdrinc.com

HDR | ONE COMPANY *Many Solutions*℠

# Telephone Record

| | | | |
|---|---|---|---|
| Project: | Fenton – Nobles | Project No: | 41695 |
| Date: | September 14, 2007 | Subject: | Information about proposed route |
| Call to: | Laurie Fairchild, USFWS | Phone No: | (612) 725-3548 ext. 214 |
| Call from: | Emily Buss, HDR | Phone No: | (763) 278-5904 |

**Discussion, Agreement and/or Action:**

Emily called Laurie on Friday, September 14, 2007 around 11:30 am. The discussion involved issues and areas to avoid along the proposed route and impacts to Topeka Shiners. Laurie described how sediment is not allowed to collect in the water from construction. Emily told her the stream would be spanned and Emily also asked if there were any permits required. Laurie responded by no permits were required due to spanning the stream and no direct impacts.

Laurie asked about any other easements being crossed along the proposed route and Emily explained there were no other issues in the area besides the Topkea Shiner stream.

Laurie requested a copy of the proposed route to assess the area for other concerns and she said she would get back with concerns or issues.

## Appendix D.6

**HDR Engineering, Inc.**

701 Xenia Avenue South
Suite 600
Minneapolis, MN 55416

Telephone (7
Fax (763) 591-5413
www.hdrinc.com

HDR | ONE COMPANY *Many Solutions*℠

# Telephone Record

| | | | |
|---|---|---|---|
| Project: | Fenton – Nobles | Project No: | 41695 |
| Date: | September 20, 2007 | Subject: | Information about the proposed route |
| Call to: | James Fox, Mn/DOT, Roadway Regulations Supervisor,- Transportation District 7 | Phone No: | (507) 831-8012 |
| Call from: | Emily Buss, HDR | Phone No: | (763) 278-5904 |

**Discussion, Agreement and/or Action:**

Jim Fox, the Roadway Regulations Supervisor for Mn/DOT's Transportation District 7 returned my phone call about 3:30 pm. During the conversation it became apparent that he had not received the March 2007 letter sent to his department requesting comment. He asked where the project was going and where the substations were located. I responded with the proposed route along Hwy 91 and east on 180th in between the existing Fenton and Nobles County Substation.

Jim explained how the project was located in two districts and gave me Geri Vick's (320) 214-3776 contact information. I sent an e-mail to Mr. Fox with a map PDF attachment, which he received.

Jim explained how he had met with Tim Lisson, Xcel recently (August 22nd, 2007) regarding a potential project in the area along Hwy 91. Jim explained how the ROW along Hwy 91 jogs from 40- 50' of ROW up to 95' of ROW in areas. He said the project would be difficult because Xcel will most likely want to put the poles and line in a straight line rather than moving around to accommodate ROW. I asked whether or not the width of ROW was necessarily the same on both sides of the highway. He said it varies and is not necessarily the same on both sides.

Jim said that at this point they would not have any more comments until the route is actually chosen by the state and would be involved with the state process. He said he would pass on the details and information to the District Engineer.

I told him I would contact him if I found out we needed more information. He said he would pass on the information and do the same.

## Appendix D.7

| Subject: MN/DOT Meeting | | **Meeting Notes** |
|---|---|---|
| Project: BRIGO Nobles to Fenton | Meeting Location: | Mn/DOT District 7 West Office, Windom, MN |
| Meeting Date: August 22, 2007 | | |

## ATTENDEES

Tim Lisson, Senior Land Rights Agent, Xcel Energy
Jim Fox, Roadway Regulations Supervisor, MN/DOT

## TOPICS DISCUSSED

(1) Reviewed the proposed preferred route along Hwy 91.

(2) Reviewed MN/DOT drawings and discussed the variable right of way widths along Hwy 91.
(A) The MN/DOT right of way varies from 45' from road centerline, to 90' from road centerline. Preliminary survey work is a must.

(3) Discussed access off of Hwy 91 for construction and maintenance purposes.
(A) Use existing approaches when possible.
(B) If additional access approaches are needed, identify all the locations on a plan and profile or quality mapping and Jim will accept **one** permit, instead of individual permits for each approach location.
(4) Discussed design- single pole, galvanized steel, davit arm structures.

## ACTION/NOTES

(1) Follow up meeting to be scheduled upon the completion of a preliminary plan and profile reflecting the specific structure locations. Jim has to see a proposal before he can make any decisions.

(2) Jim Fox expressed no initial concerns in regards to this project other than the variable MN/DOT right of way width along Hwy 91. After Xcel Energy supplies Jim with a plan and profile, he then would be able to identify any concerns or constraints relative to highway operations.

(3) Jim requests Xcel Energy to keep the centerline alignment as straight as possible adjacent to the MNDOT right of way.

**Buss, Emily D.**

**From:** Tom Kresko [Tom.Kresko@dnr.state.mn.us]
**Sent:** Tuesday, October 02, 2007 10:58 AM
**To:** Buss, Emily D.
**Subject:** Re: Xcel Fenton - Nobles 115 kV Transmission Line

Emily-

No concerns from the Waters Division of the DNR.

~tjk

Tom Kresko - Area Hydrologist
MN DNR - Waters Division
175 County Road 26
Windom, MN 56101-1868

office: (507) 831-2900 ext. 224
fax: (507) 831-2921
e-mail: tom.kresko@dnr.state.mn.us

>>> "Buss, Emily D." <Emily.Buss@hdrinc.com> 10/1/2007 9:13 AM >>>
Hi Tom,

Thank you so much for getting back to me last Friday, September 28th, 2007 regarding the water permits required for the project if applicable. Attached are the maps of the proposed route. Please let me know if you have further comments. Thank you for your time, I greatly appreciate it.

Thanks Again,
Emily

Emily Buss
Environmental Scientist

HDR ONE COMPANY | Many Solutions
701 Xenia Avenue South | Suite 600 | Minneapolis, MN | 55416
Phone: 763.278.5904 | Fax: 763.591.5413 | Email: Emily.Buss@hdrinc.com
<mailto:Emily.Buss@hdrinc.com>

# Appendix D.9

# APPENDIX E

# LANDOWNER LIST

# AND

# PUBLIC COMMENTS*

*Addresses have been redacted from comment forms due to privacy concerns

## Landowner List

| Name | Company |
|---|---|
| AARON D & BRIDGET KLUIS | |
| AILTS/JACQUELINE SUE | |
| ALAN D & SUSAN V KLUIS | |
| ANDERSON/NOEL W | |
| ARNOLD W GUNNINK REV TRUST | |
| B & R FARMS | |
| BALK/JAMES J | |
| BALK/JAMES J/& | |
| BALSTER/INEZ M | |
| BALSTER/JAMES L | |
| BECKMANN/DIANNE E/TRUSTEE | |
| BLOM/DICK A & PAULINE L | |
| BOOTS/DARYL | |
| BOOTS/ROBERT J & VERLA G | |
| BREDE/DOROTHY WADLE/& | |
| BROESDER/JOYCE J | |
| BROESDER/JOYCE J/& | |
| BRUCE A & BETTY L VANPEURSEM | |
| BRUNS/LEROY D/TRUSTEE | |
| BUSMAN FARMS INC | |
| BUSS/JAKE J/JR | |
| CARL K COORDES TRUST, % FARMERS NATIONAL CO | |
| CUPERUS/DONALD | |
| DEGROOT/ELAINE | |
| DEN BOER/JOHN L | |
| EAGEN/ELMORE M | |
| EISELE/IRENE | |
| ENGELKES/LLOYD/& | |
| ENNENGA/LEROY J | |
| FARRYL L KLUIS | |
| GARVIN & REBECCA VANSURKSUM | |
| GRONINGA/JOHN M | |
| GROTJOHN/LEWIS E/& | |
| GRUIS/GAIL A | |
| HARBERTS/DALE | |

| Name | Company |
|---|---|
| HARBERTS/ELIZABETH A | |
| HARBERTS/KEITH A & MARY K | |
| HARBERTS/MICHAEL T/& | |
| HEBIG/MILTON G & MARILYN | |
| HEBIG/ORVILLE /& | |
| HENDEL/DAVID J & JEAN R | |
| HENNING/ALAN J | |
| HENNING/CYRIL B/& | |
| HENNING/DAVID L | |
| HENRIKSEN/MARIE C | |
| HIERONIMUS/DONNA | |
| JAMES M & JOAN M KLUIS | |
| JOENS/PHILLIP L & AMBER L | |
| JOHNSON/RANDALL M & CAROL A | |
| JUENEMAN/DAVID L/ET AL | |
| KEPLER/BARBARA K/TRUST | |
| KERN/FREDERICK | |
| KERN/MARVIN J & FRANCES L | |
| KINGERY/BRUCE L & GAIL R | |
| KINGERY/LYLE & DOLORES | |
| KOOIMAN FARM CORP | |
| KOOIMAN FARM CORPORATION | |
| KOOIMAN LIVING TRUST | |
| KRUGER/RYAN M | |
| | LARKIN/TOWNSHIP OF |
| LESTER C SCHOOLMEESTER ET UX | |
| | LINCOLN PIPESTONE RURAL WATER |
| | LISMORE/CITY OF |
| LOONAN/GERALD | |
| LOONAN/GERALD/& | |
| LOONAN/VERA | |
| LORANG/MARK J | |
| LORANG/MARK J/& | |
| LORANG/MARK/& | |
| LUETTEL/RUTH ANN | |
| LUPKES/RANDALL D | |
| LUPKES/ROGER A & HENRIETTA J | |

| Name | Company |
|---|---|
| MADISON/ALLEN L & MICHELLE J | |
| MARIDELL DEBOER ROSE ET AL | |
| METZ/GENE & MARY ELLEN | |
| METZ/GENE A | |
| METZ/GENE A/& | |
| METZ/GILBERT | |
| METZ/LAVONNE | |
| METZ/MICHAEL J & MICHELLE M | |
| METZ/MICHAEL J/& | |
| MINNESOTA PUBLIC RADIO | |
| MITCHELL/KATHY | |
| MOSER/HARRY ALLEN /& | |
| MUSICK FARM COMPANY | |
| NORTHERN STATES POWER CO | |
| OBELE/MARY KATHERINE | |
| PENNING/JOHN H | |
| PETERBURS/DALE F & JUDITH | |
| PONTO/ELDEN | |
| PONTO/ELDEN C | |
| PONTO/GREGORY & SANDRA | |
| PONTO/RICHARD | |
| RABENBERG/DONALD & MARLENE | |
| REKER/GENE M | |
| RENKEN/ERVIN & JOHN R | |
| RENKEN/ERVIN H/& | |
| RIECKHOFF FAMILY PARTNERSHIP | |
| RIECKHOFF/WILLIAM F/ET AL | |
| RODRIGUE/GARY & JACQUELINE | |
| ROGERS/TIMOTHY F & MELISSA A | |
| RUST/KENNETH W/& | |
| SANDERSON/ARNOLD T/& | |
| SANKEY/BRYANT L & KIMBERLY D | |
| SCHAAP/BRIAN J & KARI L | |
| SCHEFFLER/ANDREW/TRUSTEE | |
| SCHMIESING/BRADLEY | |
| SIEVE TRUSTEE/LEON & DOLORES | |
| SIEVE/DONALD B | |

| Name | Company |
|---|---|
| SIEVE/DONALD L & YVONNE | |
| SIEVE/DONALD/ET AL | |
| SIEVE/JANET M | |
| SIEVE/MARY A | |
| SIEVE/THOMAS & CYNTHIA | |
| SIEVE/TOM & CINDY | |
| SLATER/GARY R & TERESA E | |
| SLATER/JAMES F & MARY J | |
| SLATER/JOHN | |
| SLATER/JOHN H | |
| SLATER/MARK W | |
| SLATER/MARK/ET AL | |
| SLATER/WILLIAM F & MONICA K | |
| | ST ANTHONY'S CATHOLIC CHURCH |
| STEVEN W LAIBLE ET UX | |
| STROUTH/GERARD JACOB | |
| SUEDKAMP/MARGARET | |
| | SUMMIT LAKE/TOWNSHIP OF |
| THEODORE VANPEURSEM | |
| THIEL/IRENE | |
| VAN PEURSEM/IVAN & MARILYN | |
| VAN PEURSEM/IVAN J & MARILYN | |
| VASKE/MARVIN & NANCY | |
| VERNON & BEATRICE STRAMPE | |
| VIRGINIA ANDERSON ET AL (3) | |
| VON HOLTUM/WILLIAM C /& | |
| VORTHERMS/SYLVESTER W/& | |
| VOSS/EUGENE/& | |
| VOSS/JAMES J & MILDRED | |
| VOSS/LLOYD | |
| WATRY/DANIEL M | |
| WATRY/LENORA M | |
| WIENEKE/JOHN L/& | |
| WIENEKE/MARVIN E | |

**Xcel Energy has received formal comments from:**

- Dave Hendle

Dave owns two parcels in the SW ¼ of Section 18 of Summit Lake Twp. His concerns were mostly about trees, he thought that the trees could be avoided by going on the other side of the road. He also indicated that he is involved in a deal that would include constructing wind turbines on Sections 18 and 19. No follow-up was needed.

- Ervin Renken

Ervin owns the property adjacent to the Nobles County Substation, and prefers the line to enter the substation from the north side of 190th Street or to enter the substation from the west avoiding 190th Street.

- Lorna Krueger, Lenore Farms

Lorna owns land south of Reading and therefore the project does not affect her. No follow-up was needed.

- Dale Petersburs

Left a message on September 11, 2007. No follow-up was needed.

# Appendix E.2

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 Kv TRANSMISSION LINE
## May 22, 2007 meeting
## COMMENT FORM

**FROM:**

| | |
|---|---|
| Name | Alan Kenning |
| Address | [redacted] |
| Representing | Wilmont Township |

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

**My concerns regarding this project are:**

How Many total lines will be built from the Rending Substation (Nobles) to the Fenton Substation ?

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 KV TRANSMISSION LINE
## September 12th, 2007 meeting
## COMMENT FORM

**FROM:**

| | |
|---|---|
| Name | Elmore Eagen |
| Address | [redacted] |
| | Adrian, MN 56110 |
| Representing | |

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

Larkin 7

**My concerns regarding this project are:**

Have you looked at going two miles up Edwards Ave from 180Th St to 160Th St and Then west to Hwy 91? That would keep it further from Lismore and wouldn't go right by Lismore cemetary. If it does go to Hwy 91 from 180Th St I am hoping it will be on the west side of Hwy 91. My homestead and Lismore cemetary are on the East side of Hwy 91.

* Also has trees along property + does not want trees removed.

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 KV TRANSMISSION LINE
## September 12th, 2007 meeting
## COMMENT FORM

**FROM:**

| | |
|---|---|
| Name | Brian Schaap |
| Address | [redacted] Lismore Mn |
| | |
| Representing | |

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

**My concerns regarding this project are:**

Don't Care to have Poles on my Side of Road.
Poles blocking my view
Concerned about Cell Phone Service

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 KV TRANSMISSION LINE
## September 12th, 2007 meeting
## COMMENT FORM

**FROM:**

| | |
|---|---|
| Name | ALVIN JOHN |
| Address | [redacted] |
| | |
| Representing | |

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

**My concerns regarding this project are:**

Information about wind development

E-Mail :t

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 KV TRANSMISSION LINE
## September 12th, 2007 meeting
## COMMENT FORM

**FROM:**

| | |
|---|---|
| Name | Tim Henning |
| Address | [redacted] Adrian |
| Representing | |

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

Larkin sect 18 SW 1/4

**My concerns regarding this project are:**

Underground Utilities on 19 East side

Fiber optics & rural water

Lots of telephone liner south of Lismore

Damages not yet settled from Previous Project

Not Graham!

Not Springtime Const

Sect 7 Larkin Prefers ~~South~~ North side

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

Town hall buildings may be better off bought and replaced

Is there a plan for another substation N + E of Reading? More wind development proposed.

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 KV TRANSMISSION LINE
## September 12th, 2007 meeting
## COMMENT FORM

**FROM:**

| | |
|---|---|
| Name | Roxanne Kemper - St. Anthony Church |
| Address | [redacted] |
| | |
| Representing | St Anthony Cemetery |

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

SW Corner Section VI – Larkin Township

**My concerns regarding this project are:**

The cemetery is on the corner - Hwy 91. It would create major problems if the poles/lines are located on East Side -

Also note that south of cemetery (on East Side 91) is rural water city hook-up.

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 KV TRANSMISSION LINE
## September 12th, 2007 meeting
## COMMENT FORM

**FROM:**

| | |
|---|---|
| Name | Gene Metz |
| Address | [redacted] |
| | Lismore MN |
| Representing | |

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

**My concerns regarding this project are:**

- To have an acreage along proposed line
- Rural water and existing lines also run along line route.

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 KV TRANSMISSION LINE
## September 12th, 2007 meeting
## COMMENT FORM

**FROM:**

| |
|---|
| Name Bruce Kruger Bruce Kruger |
| Address [redacted] |
| Representing |

Please note your property location. (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

Section 14 Summit Lake

**My concerns regarding this project are:**

My concern is when they cross over the other line what will the structure be and it will be a eye sore in that corner or the bruce wires in my feild

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

Xcel Energy
NORTHERN STATES POWER

# PROPOSED NOBLES TO FENTON 115 KV TRANSMISSION LINE
## September 12th, 2007 meeting
## COMMENT FORM

**FROM:**

| | |
|---|---|
| Name | Wayne Kooiman |
| Address | [redacted] |
| Representing | Kooiman Farm Corp. |

9-20-07

Please note your property location (Town, Range, section number are fine. You may also use the number printed above your name on the mailing label from Xcel Energy if you have it).

Sec - 06 Twp - 104 Range - 42
NW¼

**My concerns regarding this project are:**

Given the choice, I would rather not have the lines running on my property at all. Can't imagine anyone wanting them at all. Would rather have them on the west side of the road because I already have the electric lines on the east side. If the lines are coming on the east side anyway, would want to make sure that the pole is to the outside of the treeline that lines my driveway. If you notice, the REA had the courtesy to make sure their pole was outside my treeline, as to not obstruct my driveway ditch. So in other words, the pole needs to be north or south of the trees that line the driveway. Question: As of today we have NO telephone (cell phone or landline) interuption and no satellite dish interuption, NO TV antenna interuption - all works well. We have been told these problems will come.

Please return your comments to Tom Hillstrom, Xcel Energy, (see address on back) or email them to thomas.g.hillstrom@xcelenergy.com.

So how are these issues to be handled?

# APPENDIX F

# IMPACT TABLE

**APPENDIX F**
**SEGMENT IMPACT TABLE**

| Segments | Length (mi) | Homes 0-50 ft. | Homes 50-100 ft. | Homes 100 – 200 ft. | Homes 200-400 ft. | Topeka Shiner Streams Crossed | Wetland Crossings >1000 ft | PWI Crossed | Transmission Line Corridor Sharing (mi) | Road Corridor Sharing (mi) | Temporary Impacts (sq. feet) | Permanent Impacts (sq. feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 0.9 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 0.5 | 115,040 | 500 |
| B1 | 0.6 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 0.6 | 77,360 | 350 |
| A2 | 0.5 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 0.0 | 64,800 | 300 |
| D | 9.0 | 0 | 0 | 0 | 9 | No | No | 1 | 0 | 7.0 | 1,142,400 | 4,800 |
| E | 1.0 | 0 | 0 | 0 | 0 | No | No | 1 | 0 | 1.0 | 127,600 | 550 |
| F | 3.0 | 0 | 0 | 0 | 2 | Yes | No | 2 | 0 | 3.0 | 380,800 | 1,600 |
| GG | 6.0 | 0 | 0 | 30 | 5 | No | No | 3 | 0 | 6.0 | 761,600 | 3,200 |
| H | 2.0 | 0 | 0 | 0 | 2 | Yes | Yes | 1 | 0 | 2.0 | 255,200 | 1,100 |
| I | 0.6 | 0 | 0 | 0 | 1 | No | No | 0 | 0 | 0.4 | 77,360 | 350 |
| J | 1.0 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 2.0 | 127,600 | 550 |
| K | 1.0 | 0 | 0 | 0 | 1 | No | No | 1 | 0 | 1.0 | 127,600 | 550 |
| L | 1.0 | 0 | 1 | 1 | 2 | No | No | 0 | 0 | 1.0 | 127,600 | 550 |
| M | 2.0 | 0 | 0 | 0 | 2 | Yes | No | 1 | 0 | 2.0 | 255,200 | 1,100 |
| N | 1.0 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 1.0 | 127,600 | 550 |
| O | 1.0 | 0 | 0 | 0 | 2 | No | No | 0 | 0 | 1.0 | 127,600 | 550 |
| P2 | 4.0 | 0 | 0 | 1 | 3 | No | No | 2 | 0 | 4.0 | 508,400 | 2,150 |
| Q | 1.0 | 0 | 0 | 1 | 0 | No | No | 1 | 0 | 1.0 | 127,600 | 550 |
| R | 1.0 | 0 | 0 | 0 | 1 | Yes | No | 1 | 0 | 1.0 | 127,600 | 550 |
| S | 4.0 | 0 | 1 | 1 | 1 | No | No | 4 | 0 | 4.0 | 508,400 | 2,150 |
| T | 3.0 | 0 | 0 | 0 | 1 | No | Yes | 4 | 0 | 1.0 | 380,800 | 1,600 |
| U | 3.0 | 0 | 0 | 0 | 0 | No | No | 1 | 0 | 3.0 | 380,800 | 1,600 |
| V | 1.0 | 0 | 0 | 1 | 1 | No | No | 0 | 0 | 1.0 | 127,600 | 550 |
| W | 5.6 | 0 | 0 | 0 | 2 | No | No | 2 | 0 | 5.6 | 711,360 | 3,000 |
| X | 5.0 | 0 | 0 | 0 | 2 | No | Yes | 3 | 0 | 5.0 | 634,000 | 2,700 |
| Y | 2.0 | 0 | 0 | 0 | 1 | No | No | 0 | 0 | 2.3 | 255,200 | 1,100 |
| G | 2.0 | 0 | 0 | 1 | 2 | No | No | 0 | 0 | 2.0 | 255,200 | 1,100 |
| AA | 2.0 | 0 | 0 | 0 | 2 | No | Yes | 0 | 0 | 2.0 | 255,200 | 1,100 |
| PP2 | 4.0 | 0 | 0 | 0 | 5 | No | Yes | 2 | 0 | 4.0 | 508,400 | 2,150 |
| WW | 0.4 | 0 | 0 | 0 | 1 | No | No | 0 | 0 | 0.4 | 52,240 | 250 |
| YY | 3.5 | 0 | 0 | 0 | 1 | No | No | 0 | 0 | 3.5 | 443,600 | 1,850 |
| ZZ | 0.3 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 0.3 | 39,680 | 200 |
| B2 | 0.4 | 0 | 0 | 0 | 1 | No | No | 0 | 0 | 0.4 | 52,240 | 250 |
| PP1 | 2.0 | 0 | 0 | 0 | 1 | No | No | 1 | 0 | 2.0 | 255,200 | 1,100 |
| P1 | 3.0 | 0 | 0 | 0 | 1 | No | No | 1 | 0 | 3.0 | 380,800 | 1,600 |
| C1 | 1.0 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 1.0 | 127,600 | 550 |

## PROPOSED ROUTE IMPACT TABLE

| Segments | Length (mi) | Homes 0-50 ft. | Homes 50-100 ft. | Homes 100 – 200 ft. | Homes 200-400 ft. | Topeka Shiner Streams Crossed | Wetland Crossings >1000 ft | PWI Crossed | Transmission Line Corridor Sharing (mi) | Road Corridor Sharing (mi) | Temporary Impacts (sq. feet)[2] | Permanent Impacts (sq. feet)3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 1.0 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 0.50 | 127,600 | 500 |
| Q | 1.0 | 0 | 0 | 1 | 0 | No | No | 1 | 0 | 1.0 | 127,600 | 550 |
| R | 1.0 | 0 | 0 | 0 | 1 | Yes | No | 1 | 0 | 1.0 | 127,600 | 550 |
| P2 | 4.0 | 0 | 0 | 1 | 3 | No | No | 2 | 0 | 4.0 | 508,400 | 2,150 |
| U | 3.0 | 0 | 0 | 0 | 0 | No | No | 1 | 0 | 3.0 | 380,800 | 1,600 |
| X | 5.0 | 0 | 0 | 0 | 2 | No | Yes | 3 | 0 | 5.0 | 634,000 | 2,650 |
| Y | 2.0 | 0 | 0 | 0 | 1 | No | No | 0 | 1.0 | 2.0 | 255,200 | 1,100 |
| AA | 2.0 | 0 | 0 | 0 | 2 | No | Yes | 0 | 0 | 2.0 | 255,200 | 1,100 |
| WW | 0.4 | 0 | 0 | 0 | 1 | No | No | 0 | 0 | 0.4 | 52,240 | 250 |
| ZZ | 0.3 | 0 | 0 | 0 | 0 | No | No | 0 | 0.3 | 0.3 | 39,680 | 200 |
| PP1 | 2.0 | 0 | 0 | 0 | 1 | No | No | 1 | 0 | 2.0 | 255,200 | 1,100 |
| C1 | 1.0 | 0 | 0 | 0 | 0 | No | No | 0 | 0 | 1.0 | 127,600 | 550 |
| Totals | 22.7 | 0 | 0 | 1 | 10 | No | Yes | 9 | 1.3 | 22.2 | 2,891,120 | 12,300 |

1. The number of poles was determined using the average span between poles (500 ft), which was divided into the length of the route.
2. Temporary impacts were calculated by summing the impacts from the temporary construction road (20 foot width times the length of the route segment) with temporary impacts of 2,000 square feet per pole. This is a conservative number because the temporary pole impact would overlap with the construction road.
3. Permanent impacts were calculated assuming 50 square feet of impact per structure.