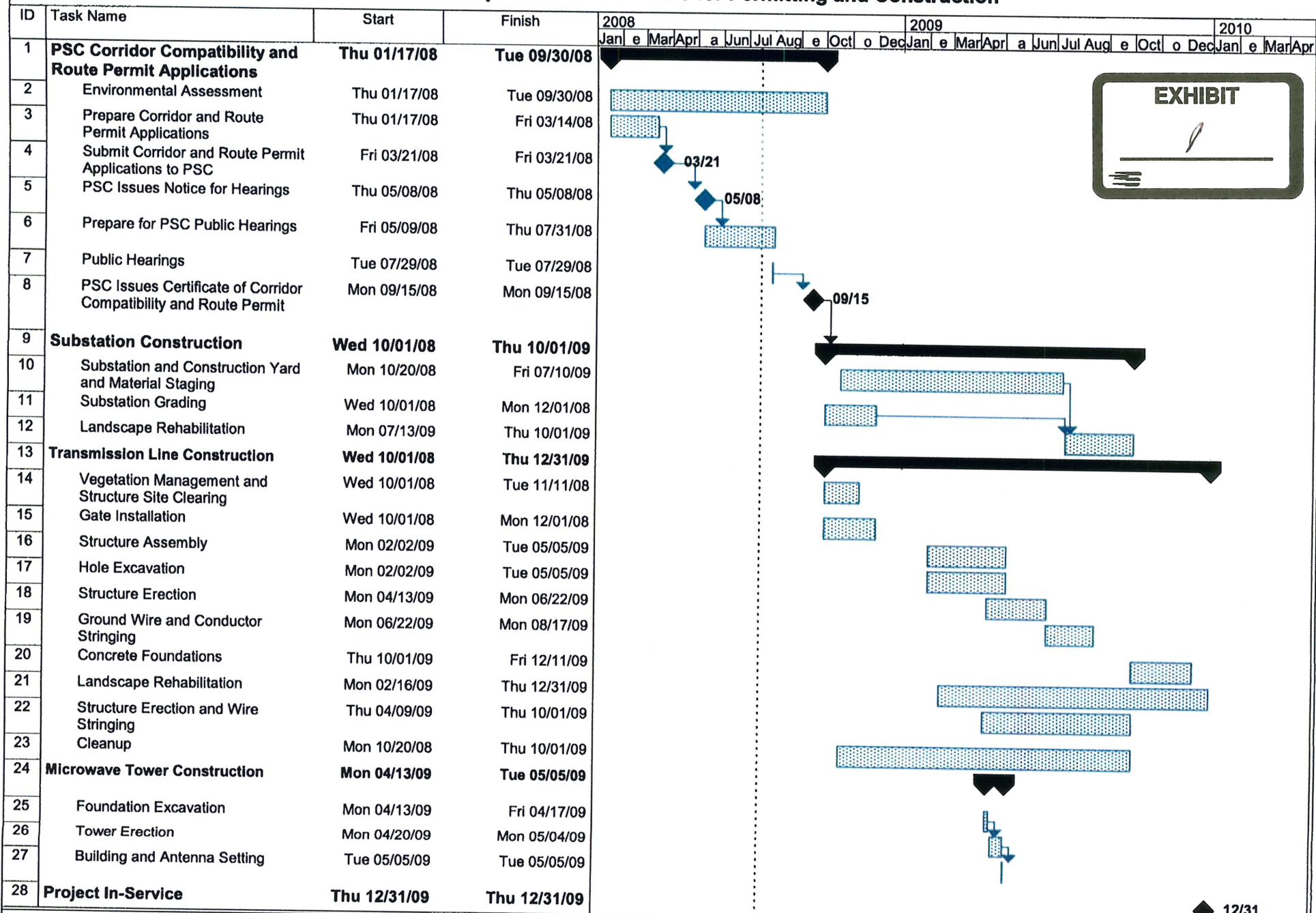


## Exhibit A-5. Proposed Time Schedule for Permitting and Construction



Task



Milestone

Summary

12/31

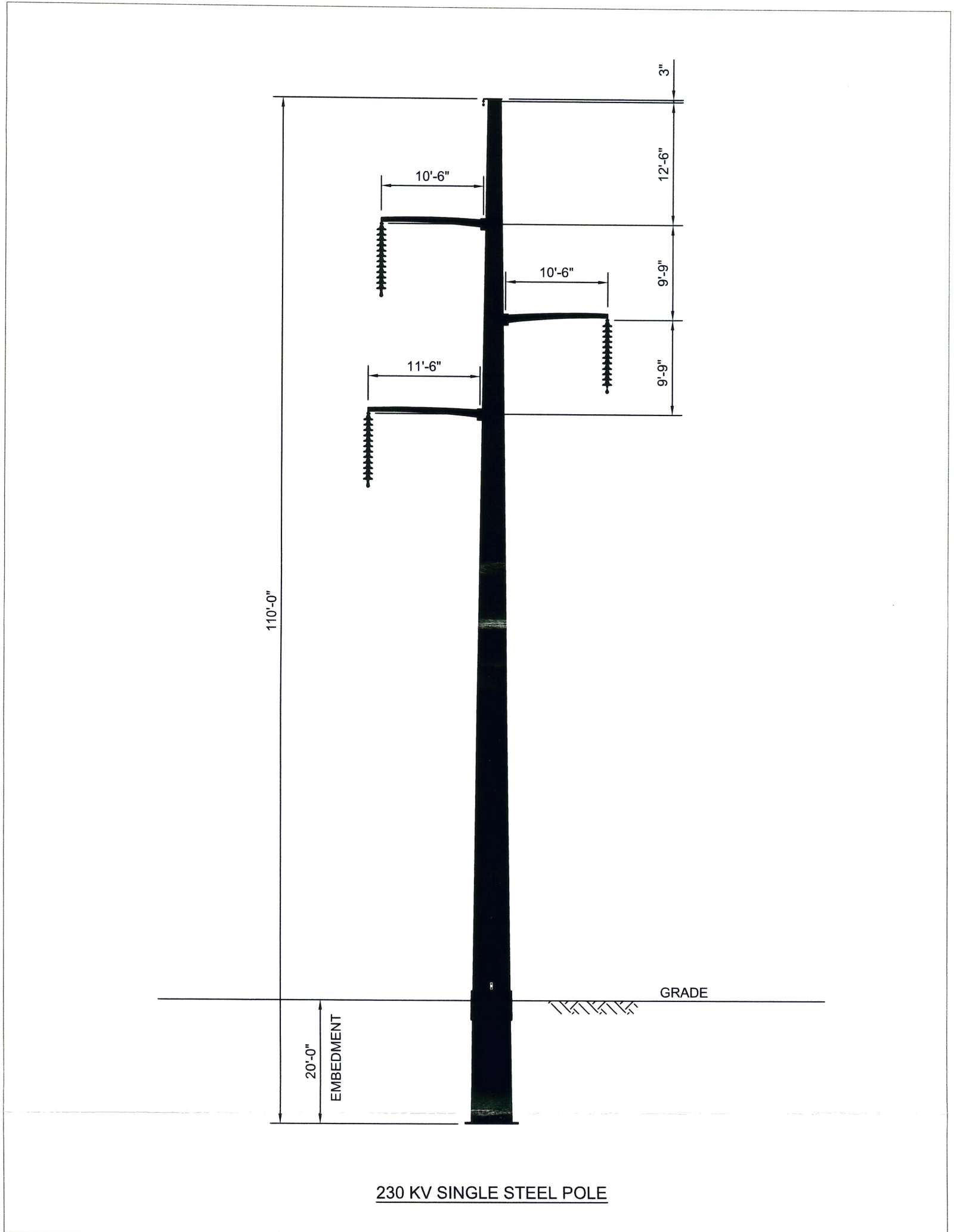
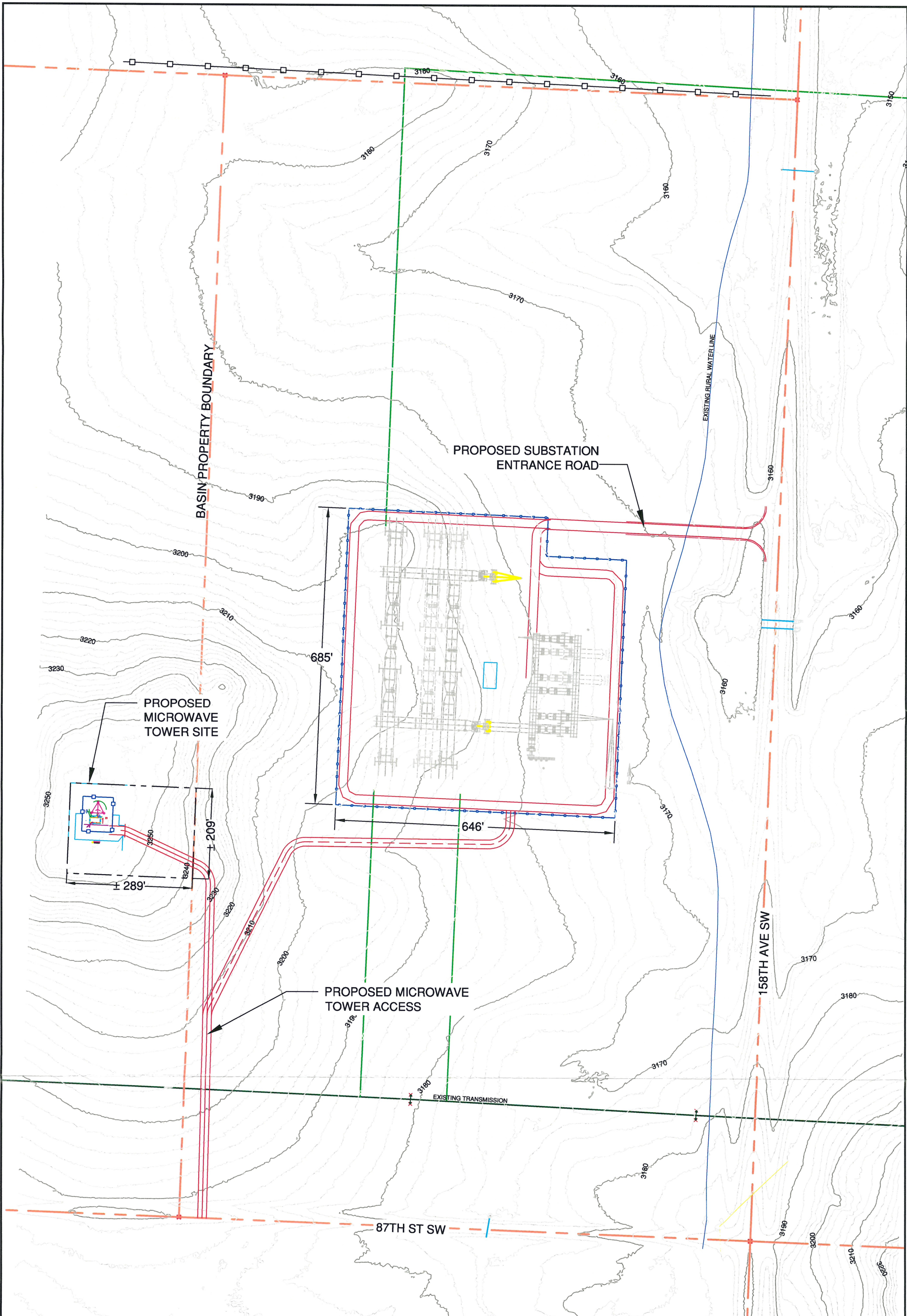
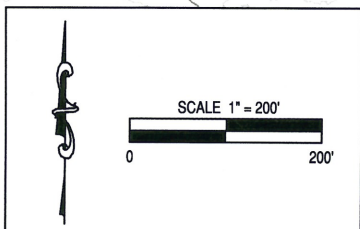


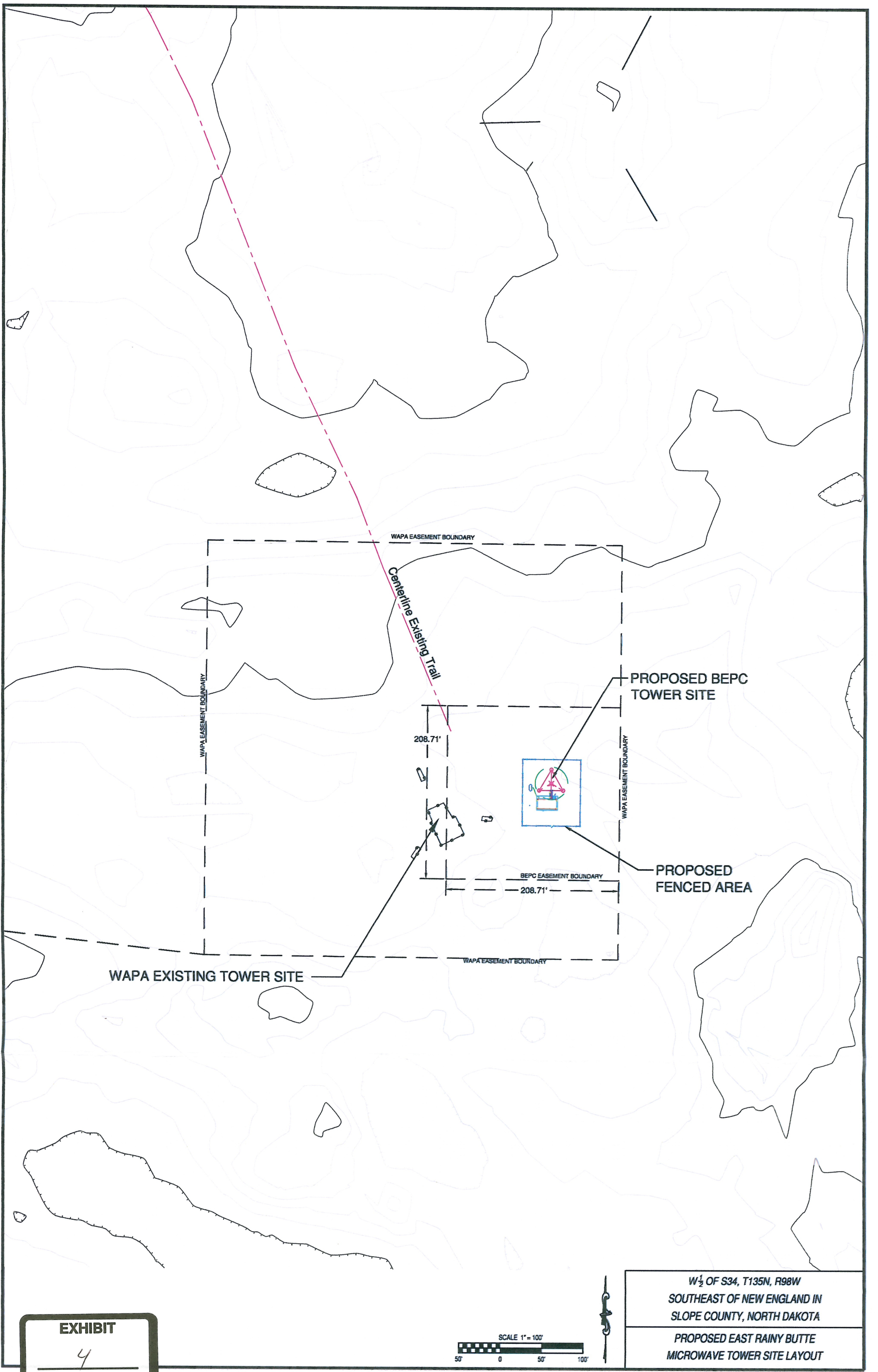
EXHIBIT  
 2



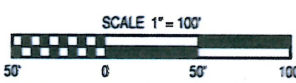
**EXHIBIT**  
3



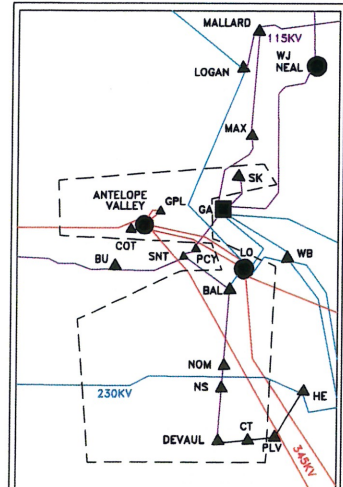
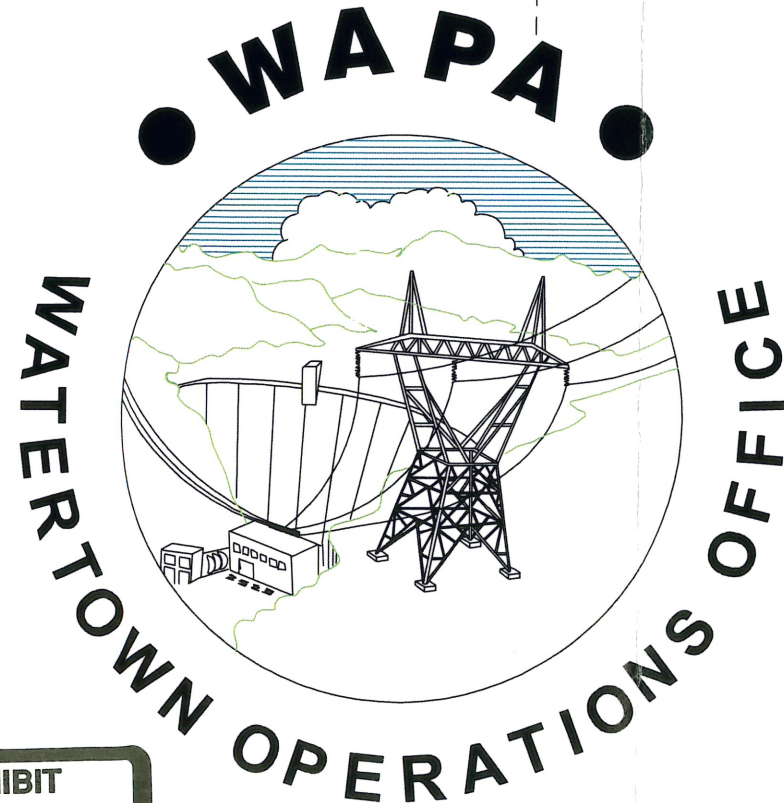
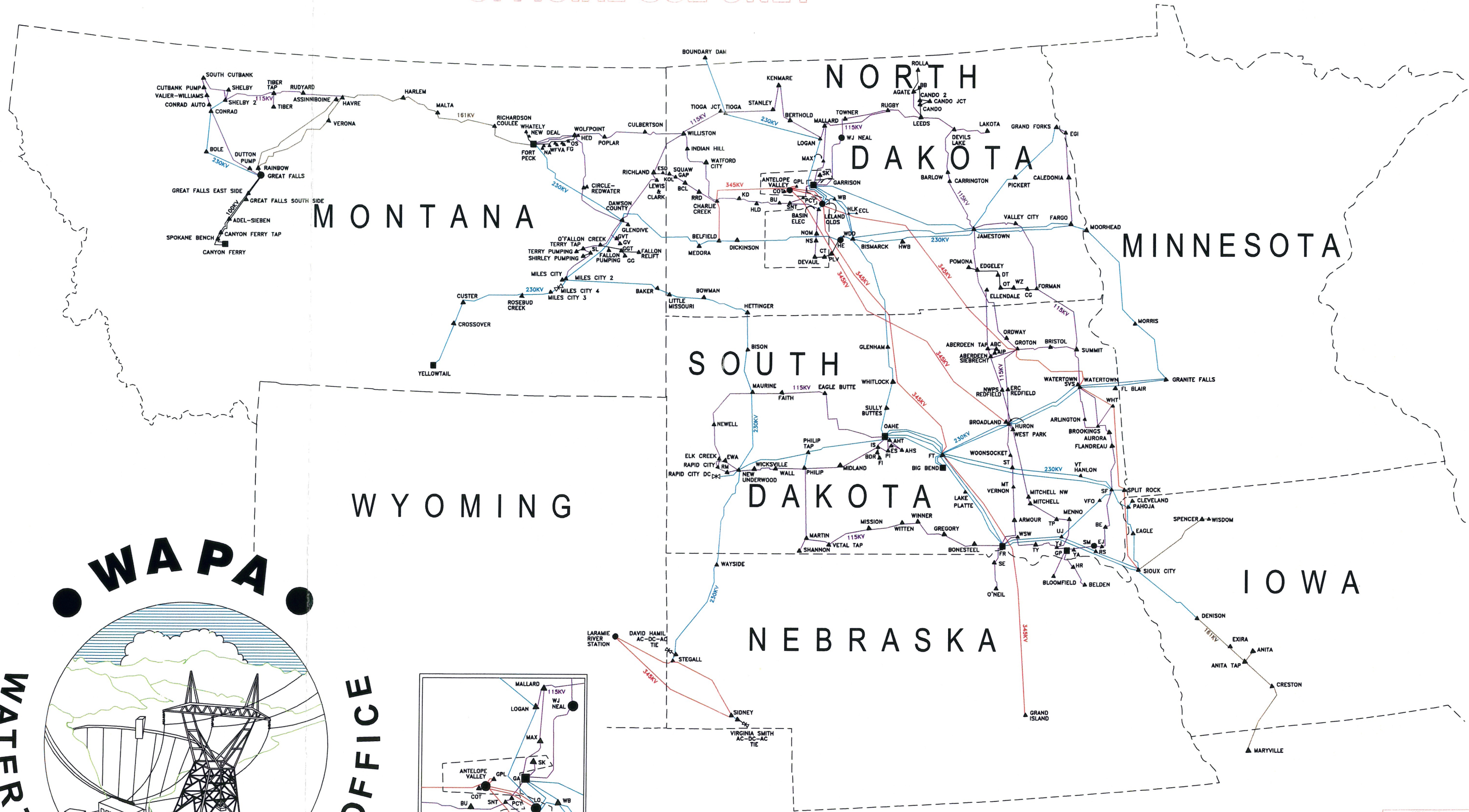
SW $\frac{1}{4}$  OF S15, T131N, R104W  
SOUTH OF RHAME IN  
BOWMAN COUNTY, NORTH DAKOTA  
PROPOSED RHAME SUBSTATION &  
MICROWAVE TOWER SITE LAYOUT



**EXHIBIT**  
4



W 1/2 OF S34, T135N, R98W  
SOUTHEAST OF NEW ENGLAND IN  
SLOPE COUNTY, NORTH DAKOTA  
PROPOSED EAST RAINY BUTTE  
MICROWAVE TOWER SITE LAYOUT



SYSTEM OPERATORS TELEPHONE NUMBERS

WATERTOWN OPERATIONS OFFICE	605-882-7300	EXT OR O&M No.	
GENERATION MANAGER	605-882-7550		7550
TRANSMISSION MANAGER	605-882-7552		7552
TRANSMISSION DISPATCH, NORTH AREA	605-882-7512		7512
TRANSMISSION DISPATCH, SOUTH AREA	605-882-7504		7504
SOUTH AREA LEAD DISPATCHER	605-882-7546		7546
NORTH AREA LEAD DISPATCHER	605-882-7544		7544

**DRAWING KEY**

—	69KV TRANSMISSION LINE
—	115KV TRANSMISSION LINE
—	161KV TRANSMISSION LINE
—	230KV TRANSMISSION LINE
—	345KV TRANSMISSION LINE
■	POWER PLANT
●	SUBSTATION

02/06	03/04	01/03
YEARLY UPDATE AND DRAFTING CHANGES	YEARLY UPDATE AND RENUMBERED PAGES AND DRAFTING CHANGES	YEARLY UPDATE AND RENUMBERED PAGES AND DRAFTING CHANGES
UC/DLK	UC/GL	UC/GL

UNITED STATES DEPARTMENT OF ENERGY  
WESTERN AREA POWER ADMINISTRATION  
CORPORATE SERVICES OFFICE - LAKEWOOD, COLORADO

**UPPER GREAT PLAINS REGION  
WATERTOWN OPERATIONS OFFICE  
OPERATING DIAGRAM OVERVIEW  
OPERATING DIAGRAMS**

DESIGNED B. SEIDELL RECOMMENDED \_\_\_\_\_  
DRAWN B. SEIDELL APPROVED \_\_\_\_\_  
CHECKED J. CROSTON/D. KLATT

5/88	WATERTOWN, SD	SYD - B - 1
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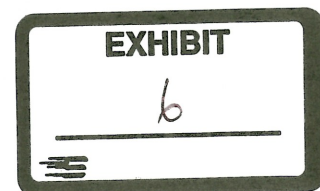
EXHIBIT

5

**BASIN ELECTRIC POWER COOPERATIVE**

**Belfield – Rhame 230kV Line Analysis**

**Prepared by:  
Basin Electric Power Cooperative  
Transmission Services Division  
Bismarck, ND  
April 9, 2007**



## 1.0 Executive Summary

The existing Little Missouri Substation load limit is 65MW with a potential increase to 85MW after capacitor additions at Dawson and Little Missouri planned for later this year. The existing limit also relies on an undervoltage load shedding (UVLS) scheme at the Little Missouri Substation. These results indicate the addition of the Belfield-Rhame 230kV line will allow the Integrated System to support approximately 140MW of Little Missouri Substation load and eliminate the need for the UVLS scheme. The project will add a 230kV terminal at the existing WAPA Belfield Substation. Rhame Substation will be a new facility on the existing Miles City-Hettinger 230kV line, located between Little Missouri Tap and Bowman Substation. The line will be approximately 70 miles long. The geographic location is provided in Figure #1.

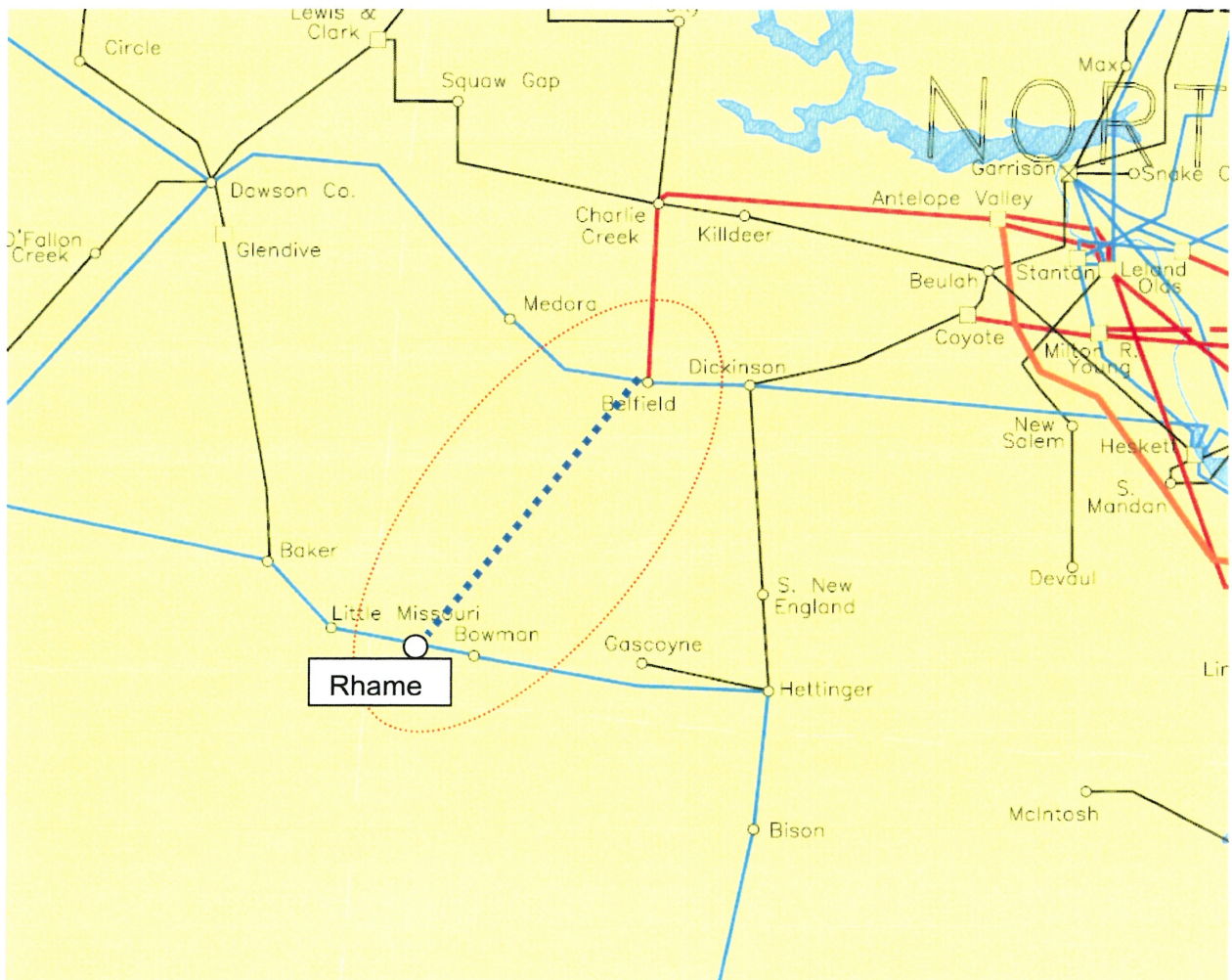


Figure #1 – Geographic Location

### Little Missouri Substation Peak Load

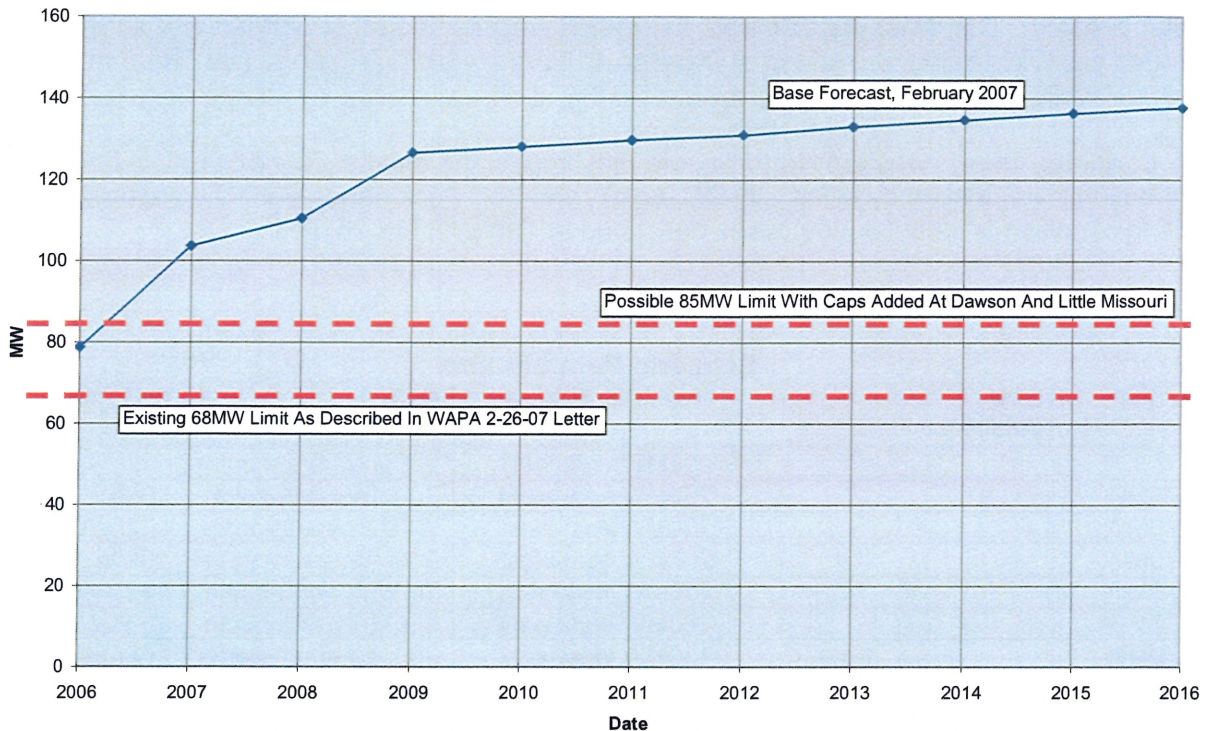


Table #1 – Little Missouri Load Forecast

## 2.0 Introduction

The purpose of this study is to analyze the impact of the latest load forecast for Little Missouri Substation. Based on a letter from WAPA to Basin Marketing dated February 26, 2007 the existing load limit is 68.5MW at 0.98 p.f. A copy of the letter is provided in Appendix A. Capacitor additions are planned for 2007, 40MVAR at Dawson Substation and 40MVAR at Little Missouri Substation. Preliminary analysis indicates when these capacitors are in service the load limit could rise to approximately 85MW. These limits are dependant upon an under voltage load shedding scheme.

The unconstrained base load forecast provided by Basin Marketing to Basin Transmission in January of 2007 show load levels in excess of the existing system capability.

This study is the first phase in a larger effort to analyze the impact of the recent load forecast. The next phase is an analysis of the northwest North Dakota area around Tioga. Finally the 2005 Midwest Electric Consumers Association load serving study will be updated with an analysis of the latest load forecasts.

### 3.0 Study Methodology

The base case is the 2011 heavy winter from the 2006 series. Western North Dakota load is winter peaking. The latest updates from the MAPP website and other updates are added. The planned capacitor banks are added at Dawson 115kV (2 x 20MVAR) and Little Missouri 115kV (2 x 20MVAR) buses.

The powerflow bias in western North Dakota may impact the results. The powerflow bias distribution is influenced by Miles City DC, B10T, and Fort Peck generation. To ensure the most limiting condition is identified the cases described in Table #2 are studied.

**Scenario Permutations**

Case #	Load	Line Addition	Miles City DC	B10T	Fort Peck Generation
1	70MW		200MW east-west	200MW north-south	132MW
2	70MW		200MW east-west	200MW north-south	10MW
3	70MW		200MW east-west	200MW south-north	132MW
4	70MW		200MW east-west	200MW south-north	10MW
5	70MW		150MW west-east	200MW north-south	132MW
6	70MW		150MW west-east	200MW north-south	10MW
7	70MW		150MW west-east	200MW south-north	132MW
8	70MW		150MW west-east	200MW south-north	10MW
9	140MW	Belfield-Rhame 230	200MW east-west	200MW north-south	132MW
10	140MW	Belfield-Rhame 230	200MW east-west	200MW north-south	10MW
11	140MW	Belfield-Rhame 230	200MW east-west	200MW south-north	132MW
12	140MW	Belfield-Rhame 230	200MW east-west	200MW south-north	10MW
13	140MW	Belfield-Rhame 230	150MW west-east	200MW north-south	132MW
14	140MW	Belfield-Rhame 230	150MW west-east	200MW north-south	10MW
15	140MW	Belfield-Rhame 230	150MW west-east	200MW south-north	132MW
16	140MW	Belfield-Rhame 230	150MW west-east	200MW south-north	10MW

Table #2 – Case Scenarios

The Miles City DC steady state powerflow model behavior complicates the steady state analysis. During solution iterations it blocks its power transfer during low voltage conditions. In block mode the steady state voltage usually recovers and the results appear to meet criteria. This only happens for east-west transfers. Therefore, in Miles City DC east-west transfer cases the Miles City DC model is replaced with a load with an equivalent MW and MVAR. For 200MW east-west operation the tie consumes 90MVAR, therefore a 200MW and 90MVAR load will be used. Shunt filter bank modeling is not changed.

RCDC Tie is scheduled 130MW east to west in all cases.

The Belfield-Rhame 230kV option is considered because other options are not feasible.

Little Missouri Substation is not suitable as the south terminal. The existing 230kV yard is a tap configuration. The terminals of the proposed 230kV line require a fully developed breaker

substation and therefore the Little Missouri Substation offers no expansion options. Also, a significant 115kV distribution system is being developed and a site remote from Little Missouri will offer 230kV connection redundancy.

Bowman Substation is a 230kV breakered ring bus. However the 230kV yard is physically congested due to its location in between the county road and the low voltage yard. A new 230kV terminal can not be added without a major reconstruction. Therefore Bowman Substation is not considered.

Since the adjacent existing substations are not expandable a new substation is proposed. The Rhame area is selected as it on the eastern edge of the proposed 115kV distribution system and near the area of future load growth. A one line diagram of the Rhame area 230kV and 115kV system is provided in Figure #2.

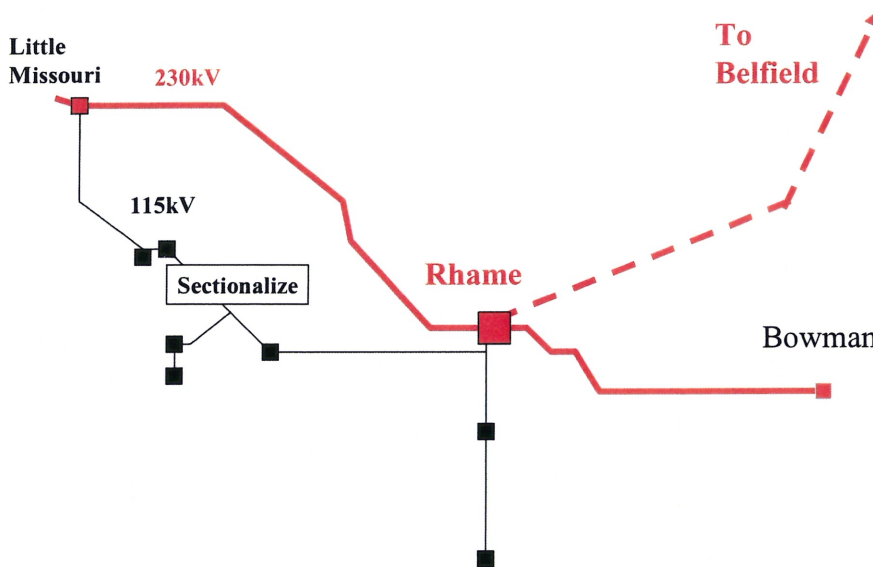


Figure #2 – Rhame Area

The 115kV system is planned to be sectionalized between Little Missouri and Rhame and is not anticipated to ever be operated in parallel. Rhame has a higher load serving capacity and area load should be encouraged to connect to it instead of Little Missouri.

The Belfield Substation 230kV yard is a main and transfer bus arrangement. A vacant 230kV bay position exists. Therefore a 230kV bay addition is practical.

The line mileage between Belfield and Rhame is approximately 70 miles. The assumed conductor is 1272 bittern with a thermal rating of 460MVA and a H frame arrangement. The electrical characteristics are as follows;  $R= 0.01011$ ,  $X= 0.10435$ ,  $B= 0.20235$ .

The forced outage list includes all of the 230kV and 345kV branches in western North Dakota plus the Tioga 230/115kV Transformer Trip with loss of the Tioga-Logan 230kV line and also the Leland Olds 345/230kV double outage. All of the buses and branches in the WAPA control area are monitored.

The study is performed in two steps.

Step 1:

The existing system with Little Missouri load at 70MW, 0.95 pf is studied with cases #1 through #8 identified in Table #2. This benchmarks the WAPA results and provides a point of reference for this analysis.

Step 2:

The Belfield-Rhame 230kV line is added. A total of 140MW of load is modeled with 40MW, 0.95 pf at the Little Missouri 115kV bus and 100MW, 0.95 pf at the Rhame 230kV bus. According to the February 2007 load forecast the maximum Little Missouri load approaches 140MW in 2016. The Table #2 cases #9 through #16 are analyzed with the proposed line and load.

#### 4.0 Steady State Results

A summary of results is provided in Table #3. Results of the analysis of the existing system with 70MW of load at Little Missouri confirm the results of the WAPA analysis. The Hettinger-Bowman 230kV outage causes a voltage collapse, even with the addition of the capacitors at Dawson and Little Missouri. The Medora-Belfield 230kV line outage also does not solve, but the MCDC ramp back will mitigate. Therefore the under voltage load tripping scheme is necessary. This occurs with Miles City DC at 200MW east-west and Fort Peck generation at 10MW. The Leland Olds double 345/230kV transformer outage (crosstrip) overloads the Belfield 345/230kV transformer in cases #2 and #4.

There are other issues identified in the Tioga area not directly related to the Little Missouri load. The Tioga 230/115kV transformer and the Williston-Tioga 115kV line overload for several outages. These problems can be mitigated by restricting B10T capacity. The Tioga area issues will be addressed in the next phase of the Western North Dakota study effort.

Existing System Little Missouri Load At 70MW					
Case #	Miles City DC	B10T	Fort Peck Gen	Results Summary	
				Outage	Violation – Rate C
1	200MW east-west	200MW north-south	132MW	AVS-CCrk 345	TIOGA4 4 230-TIOGA4 7 115 121.6 % OF 125.0 MVA TIOGA4 7 115-TIOGA7 7 115 111.3 % OF 108.9 MVA
2	200MW east-west	200MW north-south	10MW	System Intact	TIOGA4 4 230-TIOGA4 7 115 133% OF 100.0 MVA (RATE A)
				Hettinger-Bowman	Voltage Collapse
				AVS-CCrk 345	WILISTN7 115-TIOGA7 7 115 121.8 % OF 99.59 MVA TIOGA4 7 115-TIOGA7 7 115 135.5 % OF 108.9 MVA
				L.Olds Dbl Trans	BELFELDT 345-BELFELD4 230 106.1 % OF 313.0 MVA
3	200MW east-west	200MW south-north	132MW	L.Olds Dbl Trans	BELFELDT 345-BELFELD4 230 100.2 % OF 313.0 MVA
4	200MW east-west	200MW south-north	10MW	Hettinger-Bowman	Voltage Collapse
				L.Olds Dbl Trans	BELFELDT 345-BELFELD4 230 110.7 % OF 313.0 MVA
5	150MW west-east	200MW north-south	132MW	OK	
6	150MW west-east	200MW north-south	10MW	AVS-CCrk 345	TIOGA4 4 230-TIOGA4 7 115 100.5 % OF 125.0 MVA
7	150MW west-east	200MW south-north	132MW	L.Olds Dbl Trans	WILISTN7 115-TIOGA7 7 115 100.6 % OF 99.59 MVA
8	150MW west-east	200MW south-north	10MW	OK	

Table #3 – Existing System With Little Missouri Load At 70MW

The results of the Belfield-Rhame 230kV line with 140MW of Little Missouri/Rhame area load are summarized in Table #4. The voltage collapse response is eliminated.

The Belfield 345/230kV transformer overload is aggravated in cases with Miles City DC at 200MW east-west. In Case #12, the overload is 127% of 313MVA (rate C) during the Leland Olds transformer cross trip. Also, there are 100.9% and 104.3% rate C overloads during the Dickinson-Belfield and Dickinson-Heskett 230kV outages. Therefore, a Belfield transformer replacement or some sort of mitigation should be considered.

Tioga area problems exist. The additional Little Missouri area load tends to aggravate the north-south B10T case problems and mitigate the south-north B10T case problems. This area will be investigated in detail in the next phase of the western North Dakota Study.

<b>Belfield-Rhame 230kV Line And 140MW Load Added</b>					
Case #	Miles City DC	B10T	Fort Peck Gen	Results Summary	
				Outage	Violation – Rate C
9	200MW east-west	200MW north-south	132MW	AVS-CCrk 345	TIOGA4 4 230-TIOGA4 7 115 127.6 % OF 125.0 MVA WILISTN7 115-TIOGA7 7 115 105.3 % OF 99.59 MVA TIOGA4 7 115-TIOGA7 7 115 119.9 % OF 108.9 MVA
				L.Olds Dbl Trans	BELFELDT 345-BELFELD4 230 115.1 % OF 313.0 MVA
				Rhame-L.Miss	TIOGA4 4 230-TIOGA4 7 115 102.3 % OF 125.0 MVA
10	200MW east-west	200MW north-south	10MW	System Intact	TIOGA4 4 230-TIOGA4 7 115 134.2 % OF 100.0 MVA (RATE A)
				AVS-CCrk 345	WILISTN7 115-TIOGA7 7 115 132.4 % OF 99.59 MVA TIOGA4 7 115-TIOGA7 7 115 145.2% OF 108.9 MVA
				L.Olds Dbl Trans	BELFELDT 345-BELFELD4 230 126.3 % OF 313.0 MVA
				Rhame-L.Miss	TIOGA4 7 115-TIOGA7 7 115 109.5 % OF 108.9 MVA
11	200MW east-west	200MW south-north	132MW	L.Olds Dbl Trans	BELFELDT 345-BELFELD4 230 119.5 % OF 313.0 MVA
12	200MW east-west	200MW south-north	10MW	AVS-CCrk 345	COYOTE 3 345-COYOTE 7 115 101.0 % OF 172.0 MVA
				L.Olds Dbl Trans	BELFELDT 345-BELFELD4 230 131.0 % OF 313.0 MVA
13	150MW west-east	200MW north-south	132MW	OK	
14	150MW west-east	200MW north-south	10MW	AVS-CCrk 345	TIOGA4 4 230-TIOGA4 7 115 106.2 % OF 125.0 MVA
15	150MW west-east	200MW south-north	132MW	OK	
16	150MW west-east	200MW south-north	10MW	OK	

Table #4 – Belfield-Rhame 230kV With 140MW Load

## 5.0 – Conclusion

The Belfield-Rhame 230kV line provides enough support to enable the Little Missouri/Rhame area 140MW load forecast to be served without the need for single contingency under voltage load shedding. Based on January 2007 load forecast this capacity will be sufficient through 2016. The Belfield 345/230kV transformer overloads under certain conditions for the Leland Olds transformer cross trip, Dickinson-Heskett 230kV outage, or Dickinson-Belfield 230kV outage. A replacement or a mitigation should be investigated.

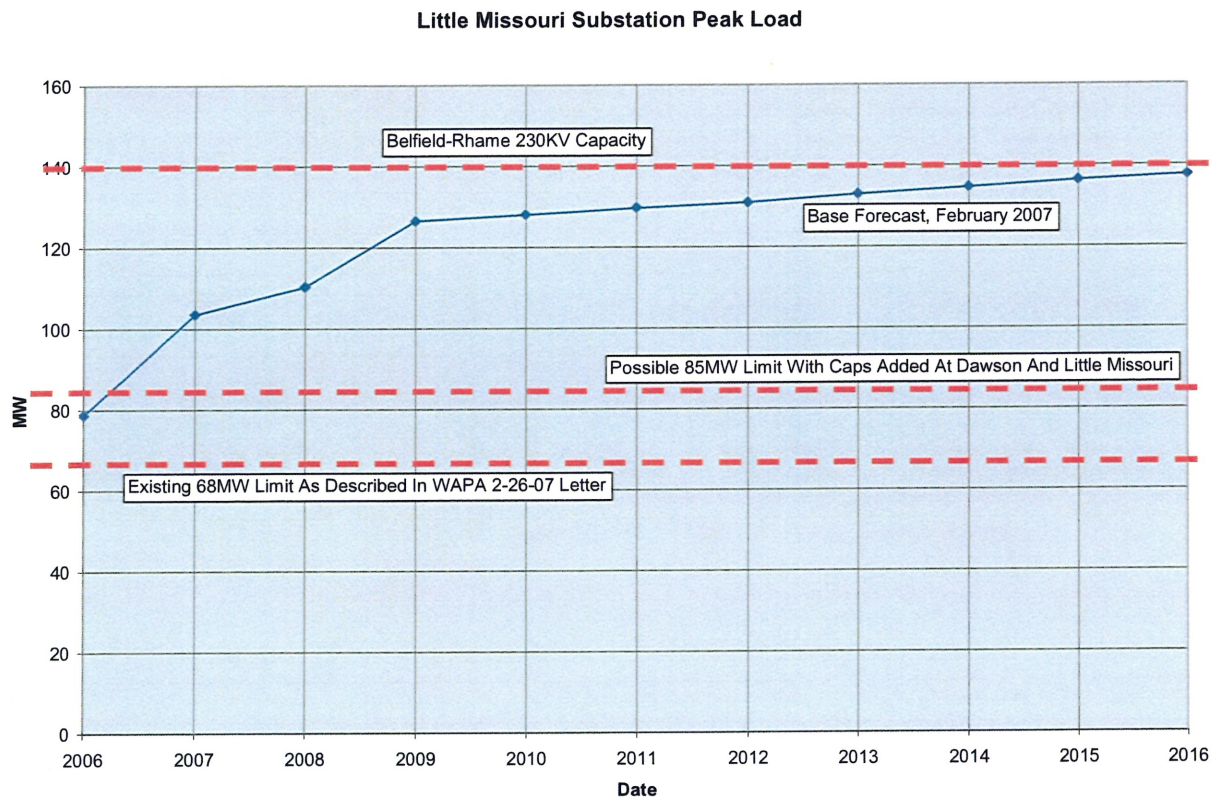


Table #5 – Load serving Capacity With Belfield-Rhame 230kV Line

The next phase of this effort is an analysis of the northwest North Dakota area around Tioga. The Belfield-Rhame 230kV impact will be reexamined in coordination with the upgrades identified with the northwest North Dakota study to ensure any cumulative effects are studied. Finally the 2005 Midwest Electric Consumers Association load serving study will be updated with an analysis of the latest load forecasts.

## 6.0 – Listing of Appendices

- Appendix A – WAPA February 26, 2007 letter addressing Little Missouri load capacity
- Appendix B – Powerflow Results

## Appendix A –



**Department of Energy**  
Western Area Power Administration  
Upper Great Plains Customer Service Region  
P.O. Box 35800  
Billings, MT 59107-5800

FEB 26 2007

B4402.BL

Mr. David Raatz  
Basin Electric Power Cooperative  
1717 East Interstate Avenue  
Bismarck, ND 58503

Dear Mr. Raatz:

This letter serves to inform Basin Electric and UMG&T of the updated maximum allowable load limit at the Little Missouri Substation. Western will subsequently provide an updated load limit prior to installation of 2 – 20-Mvar capacitor banks at the Dawson County Substation and the installation of the recommended 2 – 20-Mvar capacitor banks at the Little Missouri Substation. The Dawson County capacitor additions, being installed by Western, are presently scheduled to be in service early June 2007. Western understands that UMG&T is expediting the installation of the Little Missouri capacitors, and is awaiting further details on the scheduled installation of those banks.

As previously discussed, under-voltage load shedding (UVLS) protection must be installed at Little Missouri Substation to prevent potential voltage collapse of the 230-kV transmission system in the area given the current load level. The UVLS will allow additional load, as outlined below, to be served from the existing system, until such time as the Integrated System (IS) can be adequately expanded to serve the large load increases that you have noted in the recent load forecasts. Western normally does not utilize UVLS, however, insufficient lead time existed for Western to accommodate the recent load forecasts with other system changes or additions. Western has been coordinating with UMG&T in regards to the UVLS installation, which will trip the 115-kV feeder breakers at Little Missouri. Western further understands this installation will be completed March 1<sup>st</sup>, at which time the oil field customers wish to increase load above their present demand of approximately 46 MW.

Based on the present configuration and transformer tap of 235,750 kV (1.02 p.u.), the UVLS relay should be set to trip load if the 115-kV voltage drops below 0.90 p.u. (103.5 kV) for a duration of 5 seconds. It is our understanding that the UVLS scheme is designed to allow automatic arming or disarming at a specified load threshold via its internal logic and via operational arming and disarming via remote communication. Initially, Western requires that the UVLS scheme shall be armed continuously, and that the minimum load threshold setting be disabled. Western is still in the process of evaluating Operating Guides to allow disarming of the UVLS protection during non-stressed system conditions, e.g. light to modest system loads and transfers.

Based on completed installation of the UVLS protection scheme and worst case system stressed conditions (peak load, high transfer), the maximum Little Missouri load shall not exceed the following:

- **System Intact Limit = 70 MVA (63.0 MW @ 0.90 p.f.)**  
(Or, with Western's approval: 66.5 MW @ 0.95 p.f., or 68.5 MW @ 0.98 p.f.)
- **Post Contingent Limit = 50 MVA (45.0 MW @ 0.90 p.f.)**  
(Or, with Western's approval: 47.5 MW @ 0.95 p.f., or 49.0 MW @ 0.98 p.f.)

The post contingent load limit applies following the permanent loss of any section of the Miles City–Hettinger 230-kV circuit. Western will submit an Operating Procedure to Basin Electric and UMG&T prior to the installation of the UVLS protection scheme outlining the procedures for the restoration of the Little Missouri load following a load shed.

As noted above, some additional load (in MW) can be served depending upon the power factor that can be maintained. The load limits noted above at 0.90 p.f. shall be observed, unless prior approval is granted by Western based upon documentation from the customer that the improved power factors (> 0.90 p.f.) can be maintained.

It is imperative that any additional Basin Electric member load proposed to be served between Hettinger and Baker be identified and forecast due to the stressed nature of the IS in this area. Western's supporting system studies, which identified the above limits, included a 4.5-MW load increase to the underlying 57 kV, as provided by UMG&T.

Western will notify you when these limits may be increased during the upcoming months as a result of any combination of the following; capacitor additions at Dawson County and Little Missouri, additional review of any other potential remedial actions for the 230-kV contingencies, etc. Western will also be working on an expedited basis with Basin Electric's Transmission Services department to identify long-term transmission solution(s) to fully accommodate the latest load forecasts provided by Basin Merchant.

If you have any questions, please telephone Frank Jarvenpaa at (406) 247-7384, or Steve Sanders at (406) 247-7436.

Sincerely,



for

Edward P. Weber  
Transmission System Planning Manager

cc:

Mr. Michael Risan, Basin Electric Power Cooperative

Mr. Matthew Stoltz, Basin Electric Power Cooperative

Mr. Tom Barnett, Upper Missouri G&T

Ms. Cristy Hoferer, HDR, Inc.

bcc:

P. Wermerson, B4103.WT, Watertown, SD

J. Croston, B4105.WT, Watertown, SD

L. Linke, B4100.WT, Watertown, SD

B4402.BL

B4410.BL

# Appendix B –

## CASE #1

CELL NAME = 2B1A4A1,B10T=202 LM=70, LMCAPS, NC, NC, M=2EW, FP=132, PS 214NS

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
2_2B1A4A1 OUTAGE: ANTELOP3 345 -CHAR.CK3 345	TIOGA4 4 230-TIOGA4 7 115 TIOGA4 7 115-TIOGA7 7 115	121.6 % OF 125.0 MVA RATING 111.3 % OF 108.9 MVA RATING
4_2B1A4A1 OUTAGE: MEDORA 4 230 -BELFELD4 230	TIOGA4 4 230-TIOGA4 7 115 TIOGA4 7 115-TIOGA7 7 115 Outage initiates MCDC ramp which mitigates overloads	112.9 % OF 125.0 MVA RATING 101.0 % OF 108.9 MVA RATING
9_2B1A4A1 OUTAGE: DAWSONC4 230 -FTPECK 4 230	FTPECK 4 230-FTPECK 7 115 FtPeck Generation at 132MW causes overload	102.2 % OF 84.0 MVA RATING
10_2B1A4A1*NOT SOLVED* OUTAGE: DAWSONC4 230 -MI	CTYE4 230 ****DID NOT SOLVE**** Outage initiates MCDC ramp which enables solution	
11_2B1A4A1 OUTAGE: DAWSONC4 230 -MEDORA 4 230	TIOGA4 4 230-TIOGA4 7 115 Outage initiates MCDC ramp which mitigates overload	111.0 % OF 125.0 MVA RATING
12_2B1A4A1 OUTAGE: HETINGR4 230 -BOWMAN 4 230	TIOGA4 4 230-TIOGA4 7 115 Outage initiates MCDC ramp which mitigates overload	104.5 % OF 125.0 MVA RATING
17_2B1A4A1 OUTAGE: LTLMISS4 230 -BOWMAN 4 230	TIOGA4 4 230-TIOGA4 7 115 Outage initiates MCDC ramp which mitigates overload	101.5 % OF 125.0 MVA RATING
18_2B1A4A1 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	TIOGA4 4 230-TIOGA4 7 115 Tioga Trans Trip will mitigate	127.6 % OF 125.0 MVA RATING
22_2B1A4A1OUTAGE:L.OLDS 345/230 TRANS	BELFELD3 345-CHAR.CK3 345 RRL=263MVA, Thermal = 522MVA	114.4 % OF 263.0 MVA RATING

## CASE #2

CELL NAME = 2B1A4C1,B10T=212 LM=70, LMCAPS, NC, NC, M=2EW, FP=10, PS 214NS

STATUS	VIOLATED ELEMENT	PU
=====	=====	=====
SYSTEM INTACT	TIOGA4 4 230-TIOGA4 7 115	133 % OF 100.0 MVA RATING Rate A
OUTAGES:		
2_2B1A4C1 OUTAGE: ANTELOP3 345 -CHAR.CK3 345	WILISTN7 115-TIOGA7 7 115	121.8 % OF 99.59 MVA RATING
	TIOGA4 7 115-TIOGA7 7 115	135.5 % OF 108.9 MVA RATING
4_2B1A4C1*NOT SOLVED* OUTAGE: MEDORA 4 230 -BELFELD4 230	****DID NOT SOLVE**** Outage initiates MCDC ramp which enables solution	
10_2B1A4C1*NOT SOLVED* OUTAGE: DAWSONC4 230 -MI CTYE4 230	****DID NOT SOLVE**** Outage initiates MCDC ramp which enables solution	
11_2B1A4C1*NOT SOLVED* OUTAGE: DAWSONC4 230 -MEDORA 4 230	****DID NOT SOLVE**** Outage initiates MCDC ramp which enables solution	
12_2B1A4C1*NOT SOLVED* OUTAGE: HETINGR4 230 -BOWMAN 4 230	****DID NOT SOLVE**** Outage initiates MCDC ramp which enables solution	
17_2B1A4C1 OUTAGE: LTLMISS4 230 -BOWMAN 4 230	DAWSONC4 230-MEDORA 4 230	108.7 % OF 263.0 MVA RATING
	MEDORA 4 230-BELFELD4 230	115.4 % OF 263.0 MVA RATING
	TIOGA4 7 115-TIOGA7 7 115	106.2 % OF 108.9 MVA RATING
	Outage initiates MCDC ramp which mitigates overloads	
18_2B1A4C1 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	TIOGA4 7 115-TIOGA7 7 115	108.8 % OF 108.9 MVA RATING
	Tioga Trans Trip will mitigate	
22_2B1A4C1OUTAGE:L.OLDS 345/230 TRANS	BELFELDT 345-BELFELD3 345	106.1 % OF 313.0 MVA RATING
	BELFELDT 345-BELFELD4 230	106.1 % OF 313.0 MVA RATING
	BELFELD3 345-CHAR.CK3 345	127.1 % OF 263.0 MVA RATING
	RRL=263MVA, Thermal = 522MVA	

### CASE #3

CELL NAME = 2B1A4A6,B10T=-198 LM=70, LMCAPS, NC, NC, M=2EW, FP=132,PS 200SN

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
9_2B1A4A6 OUTAGE: DAWSONC4 230 -FTPECK 4 230	FTPECK 4 230-FTPECK 7 115 FtPeck Generation at 132MW causes overload	102.2 % OF 84.0 MVA RATING
10_2B1A4A6*NOT SOLVED* OUTAGE: DAWSONC4 230 -MI	CTYE4 230 ****DID NOT SOLVE**** Outage initiates MCDC ramp which enables solution	
12_2B1A4A6 OUTAGE: HETINGR4 230 -BOWMAN 4 230	MEDORA 4 230-BELFELD4 230 RRL=263MVA, Thermal = 522MVA	104.1 % OF 263.0 MVA RATING
18_2B1A4A6 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	BTHOLD 7 115 KENMARE7 115 STANLEY7 115 TIOGA4 7 115 TIOGA7 7 115 TIOGA4 4 230-TIOGA4 7 115 WILISTN7 115-TIOGA7 7 115 LOGAN 7 115-BTHOLD 7 115 BTHOLD 7 115-KENMARE7 115 Tioga Trans Trip will mitigate	0.871 VOLTAGE LOWER THAN 0.9 0.838 VOLTAGE LOWER THAN 0.9 0.851 VOLTAGE LOWER THAN 0.9 0.890 VOLTAGE LOWER THAN 0.9 0.888 VOLTAGE LOWER THAN 0.9 130.0 % OF 125.0 MVA RATING 120.2 % OF 99.59 MVA RATING 140.3 % OF 88.0 MVA RATING 138.9 % OF 88.0 MVA RATING
21_2B1A4A6 OUTAGE: LELAND04 230 -LOGAN 4 230	MALLARD7 115 LOGAN 7 115 DUNNING7 115 LOGAN TY 230 BTHOLD 7 115 KENMARE7 115 MALLARD7 115-MAX 7 115 WILISTN7 115-TIOGA7 7 115 GARRISN7 115-MAX 7 115 Boundary Dam Phase shifter would lock due to delta P, these violations are caused by phase shifter readjusting to 200MW s-n	0.892 VOLTAGE LOWER THAN 0.9 0.898 VOLTAGE LOWER THAN 0.9 0.863 VOLTAGE LOWER THAN 0.9 0.895 VOLTAGE LOWER THAN 0.9 0.896 VOLTAGE LOWER THAN 0.9 0.899 VOLTAGE LOWER THAN 0.9 129.3 % OF 132.0 MVA RATING 103.2 % OF 99.59 MVA RATING 134.0 % OF 132.0 MVA RATING
22_2B1A4A6OUTAGE:L.OLDS 345/230 TRANS	BELFELDT 345-BELFELD3 345 BELFELDT 345-BELFELD4 230 BELFELD3 345-CHAR.CK3 345 RRL=263MVA, Thermal = 522MVA	100.2 % OF 313.0 MVA RATING 100.2 % OF 313.0 MVA RATING 120.5 % OF 263.0 MVA RATING

# CASE #4

CELL NAME = 2B1A4C6,B10T=-199 LM=70, LMCAPS, NC, NC, M=2EW, FP=10,PS 200SN

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
2_2B1A4C6 OUTAGE: ANTELOP3 345 -CHAR.CK3 345	TIOGA4 4 230-LOGAN 4 230	101.8 % OF 264.0 MVA RATING RRL=263MVA, Thermal = 579MVA
4_2B1A4C6*NOT SOLVED* OUTAGE: MEDORA 4 230 -BELFELD4 230	****DID NOT SOLVE****	Outage initiates MDCD ramp which enables solution
10_2B1A4C6*NOT SOLVED* OUTAGE: DAWSONC4 230 -MI CTYE4 230	****DID NOT SOLVE****	Outage initiates MDCD ramp which enables solution
11_2B1A4C6*NOT SOLVED* OUTAGE: DAWSONC4 230 -MEDORA 4 230	****DID NOT SOLVE****	Outage initiates MDCD ramp which enables solution
12_2B1A4C6*NOT SOLVED* OUTAGE: HETINGR4 230 -BOWMAN 4 230	****DID NOT SOLVE****	
17_2B1A4C6*NOT SOLVED* OUTAGE: LTLMISS4 230 -BOWMAN 4 230	****DID NOT SOLVE****	
18_2B1A4C6 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	BTHOLD 7 115 KENMARE7 115 STANLEY7 115 TIOGA4 4 230-TIOGA4 7 115 MEDORA 4 230-BELFELD4 230 WILISTN7 115-TIOGA7 7 115 LOGAN 7 115-BTHOLD 7 115 BTHOLD 7 115-KENMARE7 115 KENMARE7 115-STANLEY7 115	0.870 VOLTAGE LOWER THAN 0.9 0.840 VOLTAGE LOWER THAN 0.9 0.857 VOLTAGE LOWER THAN 0.9 118.2 % OF 125.0 MVA RATING 101.2 % OF 263.0 MVA RATING 101.6 % OF 99.59 MVA RATING 144.8 % OF 88.0 MVA RATING 143.4 % OF 88.0 MVA RATING 101.0 % OF 97.1 MVA RATING Tioga Trans Trip will mitigate
21_2B1A4C6 OUTAGE: LELAND04 230 -LOGAN 4 230	MALLARD7 115 LOGAN 7 115 DUNNING7 115 LOGAN TY 230 BTHOLD 7 115 MALLARD7 115-MAX 7 115 GARRISN7 115-MAX 7 115	0.888 VOLTAGE LOWER THAN 0.9 0.896 VOLTAGE LOWER THAN 0.9 0.859 VOLTAGE LOWER THAN 0.9 0.893 VOLTAGE LOWER THAN 0.9 0.898 VOLTAGE LOWER THAN 0.9 130.5 % OF 132.0 MVA RATING 135.2 % OF 132.0 MVA RATING Boundary Dam Phase shifter would lock due to delta P, these violations are caused by phase shifter readjusting to 200MW s-n
22_2B1A4C6OUTAGE:L.OLDS 345/230 TRANS	BELFELDT 345-BELFELD3 345	110.7 % OF 313.0 MVA RATING

BELFELDT	345-BELFELD4	230	110.7 % OF	313.0 MVA RATING
BELFELD3	345-CHAR.CK3	345	132.7 % OF	263.0 MVA RATING
RRL=263MVA, Thermal = 522MVA				
ANTELOP3	345-CHAR.CK3	345	101.0 % OF	592.0 MVA RATING
CT limit =592MVA, Conductor thermal rating = 954MVA				

## CASE #5

CELL NAME = 2B1A1A1,B10T=180 LM=70, LMCAPS, NC, NC, MC=150WE, FP=132, PS 214NS

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
9_2B1A1A1 OUTAGE: DAWSONC4 230 -FTPECK 4 230	FTPECK 4 230-FTPECK 7 115	102.2 % OF 84.0 MVA RATING FtPeck Generation at 132MW causes overload
18_2B1A1A1 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	TIOGA4 4 230-TIOGA4 7 115	106.8 % OF 125.0 MVA RATING Tioga Trans Trip will mitigate

## CASE #6

CELL NAME = 2B1A1C1,B10T=189 LM=70, LMCAPS, NC, NC, MC=150WE, FP=10, PS 214NS

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
2_2B1A1C1 OUTAGE: ANTELOP3 345 -CHAR.CK3 345	TIOGA4 4 230-TIOGA4 7 115	100.5 % OF 125.0 MVA RATING
18_2B1A1C1 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	TIOGA4 4 230-TIOGA4 7 115	115.9 % OF 125.0 MVA RATING Tioga Trans Trip will mitigate

## CASE #7

CELL NAME = 2B1A1A6,B10T=-200 LM=70, LMCAPS, NC, NC, MC=150WE, FP=132,PS 200SN

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
9_2B1A1A6 OUTAGE: DAWSONC4 230 -FTPECK 4 230	FTPECK 4 230-FTPECK 7 115	102.2 % OF 84.0 MVA RATING
	FtPeck Generation at 132MW causes overload	
18_2B1A1A6 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	BTHOLD 7 115	0.856 VOLTAGE LOWER THAN 0.9
	KENMARE7 115	0.806 VOLTAGE LOWER THAN 0.9
	STANLEY7 115	0.804 VOLTAGE LOWER THAN 0.9
	TIOGA4 7 115	0.831 VOLTAGE LOWER THAN 0.9
	TIOGA7 7 115	0.827 VOLTAGE LOWER THAN 0.9
	TIOGA4 4 230-TIOGA4 7 115	151.8 % OF 125.0 MVA RATING
	WILISTN7 115-RICHLND7 115	101.2 % OF 88.0 MVA RATING
	WILISTN7 115-TIOGA7 7 115	153.4 % OF 99.59 MVA RATING
	LOGAN 7 115-BTHOLD 7 115	136.0 % OF 88.0 MVA RATING
	BTHOLD 7 115-KENMARE7 115	134.7 % OF 88.0 MVA RATING
	TIOGA4 7 115-TIOGA7 7 115	114.3 % OF 108.9 MVA RATING
	Tioga Trans Trip will mitigate	
21_2B1A1A6 OUTAGE: LELAND04 230 -LOGAN 4 230	MALLARD7 115	0.865 VOLTAGE LOWER THAN 0.9
	LOGAN 4 230	0.884 VOLTAGE LOWER THAN 0.9
	LOGAN 7 115	0.867 VOLTAGE LOWER THAN 0.9
	DUNNING7 115	0.835 VOLTAGE LOWER THAN 0.9
	LOGAN TY 230	0.864 VOLTAGE LOWER THAN 0.9
	BTHOLD 7 115	0.856 VOLTAGE LOWER THAN 0.9
	KENMARE7 115	0.851 VOLTAGE LOWER THAN 0.9
	STANLEY7 115	0.858 VOLTAGE LOWER THAN 0.9
	TIOGA4 7 115	0.877 VOLTAGE LOWER THAN 0.9
	TIOGA7 7 115	0.873 VOLTAGE LOWER THAN 0.9
	MALLARD7 115-MAX 7 115	131.6 % OF 132.0 MVA RATING
	WILISTN7 115-TIOGA7 7 115	138.3 % OF 99.59 MVA RATING
	GARRISN7 115-MAX 7 115	136.4 % OF 132.0 MVA RATING
	TIOGA4 7 115-TIOGA7 7 115	101.5 % OF 108.9 MVA RATING
	Boundary Dam Phase shifter would lock due to delta P, these violations are caused by phase shifter readjusting to 200MW s-n	
22_2B1A1A6OUTAGE:L.OLDS 345/230 TRANS	WILISTN7 115-TIOGA7 7 115	100.6 % OF 99.59 MVA RATING

## CASE #8

CELL NAME = 2B1A1C6,B10T=-200 LM=70, LMCAPS, NC, NC, MC=150WE, FP=10,PS 200SN

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
18_2B1A1C6 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	BTHOLD 7 115	0.863 VOLTAGE LOWER THAN 0.9
	KENMARE7 115	0.821 VOLTAGE LOWER THAN 0.9
	STANLEY7 115	0.826 VOLTAGE LOWER THAN 0.9
	TIOGA4 7 115	0.859 VOLTAGE LOWER THAN 0.9
	TIOGA7 7 115	0.856 VOLTAGE LOWER THAN 0.9
	TIOGA4 4 230-TIOGA4 7 115	141.8 % OF 125.0 MVA RATING
	WILISTN7 115-TIOGA7 7 115	137.3 % OF 99.59 MVA RATING
	LOGAN 7 115-BTHOLD 7 115	138.7 % OF 88.0 MVA RATING
	BTHOLD 7 115-KENMARE7 115	137.4 % OF 88.0 MVA RATING
	TIOGA4 7 115-TIOGA7 7 115	100.0 % OF 108.9 MVA RATING
	Tioga Trans Trip will mitigate	
21_2B1A1C6 OUTAGE: LELAND04 230 -LOGAN 4 230	MALLARD7 115	0.872 VOLTAGE LOWER THAN 0.9
	LOGAN 4 230	0.896 VOLTAGE LOWER THAN 0.9
	LOGAN 7 115	0.876 VOLTAGE LOWER THAN 0.9
	DUNNING7 115	0.842 VOLTAGE LOWER THAN 0.9
	LOGAN TY 230	0.873 VOLTAGE LOWER THAN 0.9
	BTHOLD 7 115	0.870 VOLTAGE LOWER THAN 0.9
	KENMARE7 115	0.869 VOLTAGE LOWER THAN 0.9
	STANLEY7 115	0.880 VOLTAGE LOWER THAN 0.9
	TIOGA7 7 115	0.898 VOLTAGE LOWER THAN 0.9
	MALLARD7 115-MAX 7 115	131.8 % OF 132.0 MVA RATING
	WILISTN7 115-TIOGA7 7 115	121.8 % OF 99.59 MVA RATING
	GARRISN7 115-MAX 7 115	136.5 % OF 132.0 MVA RATING
	Boundary Dam Phase shifter would lock due to delta P, these violations are caused by phase shifter readjusting to 200MW s-n	

## CASE #9

CELL NAME = 1B11A4A1,B10T=206 NC, LMCAPS, BL-RH140, NC, M=2EW, FP=132, PS 214NS

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
2_1B11A4A1 OUTAGE: ANTELOP3 345 -CHAR.CK3 345	TIOGA4 4 230-TIOGA4 7 115 WILISTN7 115-TIOGA7 7 115 TIOGA4 7 115-TIOGA7 7 115	127.6 % OF 125.0 MVA RATING 105.3 % OF 99.59 MVA RATING 119.9 % OF 108.9 MVA RATING
4_1B11A4A1 OUTAGE: MEDORA 4 230 -BELFELD4 230	TIOGA4 4 230-TIOGA4 7 115	103.6 % OF 125.0 MVA RATING Outage initiates MCDC ramp which mitigates overload
6_1B11A4A1 OUTAGE: DICKNSN4 230 -HESKETT4 230	BELFELD3 345-CHAR.CK3 345	106.7 % OF 263.0 MVA RATING CT Limit = 263MVA next is RLL at 359MVA
9_1B11A4A1 OUTAGE: DAWSONC4 230 -FTPECK 4 230	FTPECK 4 230-FTPECK 7 115 BELFELD3 345-CHAR.CK3 345	102.2 % OF 84.0 MVA RATING 100.0 % OF 263.0 MVA RATING CT Limit = 263MVA next is RLL at 359MVA
11_1B11A4A1 OUTAGE: DAWSONC4 230 -MEDORA 4 230	TIOGA4 4 230-TIOGA4 7 115	102.3 % OF 125.0 MVA RATING Outage initiates MCDC ramp which mitigates overload
13_1B11A4A1 OUTAGE: RHAME 230 -LTLMISS4 230	TIOGA4 4 230-TIOGA4 7 115	102.3 % OF 125.0 MVA RATING
18_1B11A4A1 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	TIOGA4 4 230-TIOGA4 7 115	129.8 % OF 125.0 MVA RATING Tioga Trans Trip will mitigate
22_1B11A4A1OUTAGE:L.OLDS 345/230 TRANS	BELFELDT 345-BELFELD3 345 BELFELDT 345-BELFELD4 230 BELFELD3 345-CHAR.CK3 345	115.1 % OF 313.0 MVA RATING 115.1 % OF 313.0 MVA RATING 137.9 % OF 263.0 MVA RATING CT Limit = 263MVA next is RLL at 359MVA

## CASE #10

CELL NAME = 1B11A4C1,B10T=216 NC, LMCAPS, BL-RH140, NC, M=2EW, FP=10, PS 214NS

STATUS =====	VIOLATED ELEMENT =====	PU =====
SYSTEM INTACT	TIOGA4 4 230-TIOGA4 7 115	134.2 % OF 100.0 MVA RATING Rate A
OUTAGES:		
2_1B11A4C1 OUTAGE: ANTELOP3 345 -CHAR.CK3 345	STANTON4 230-LELANDO4 230 Conductor rating = 577MVA DICKNSN4 230-BELFELD4 230 Conductor rating = 522MVA	100.9 % OF 526.0 MVA RATING 103.3 % OF 263.0 MVA RATING
	WILISTN7 115-TIOGA7 7 115	132.4 % OF 99.59 MVA RATING
	TIOGA4 7 115-TIOGA7 7 115	145.2 % OF 108.9 MVA RATING
4_1B11A4C1 OUTAGE: MEDORA 4 230 -BELFELD4 230	TIOGA4 7 115-TIOGA7 7 115	111.6 % OF 108.9 MVA RATING Outage initiates MCDC ramp which mitigates overload
5_1B11A4C1 OUTAGE: DICKNSN4 230 -BELFELD4 230	BELFELDT 345-BELFELD3 345 BELFELDT 345-BELFELD4 230	101.9 % OF 313.0 MVA RATING 101.9 % OF 313.0 MVA RATING Outage initiates MCDC ramp which mitigates overload
6_1B11A4C1 OUTAGE: DICKNSN4 230 -HESKETT4 230	BELFELDT 345-BELFELD3 345 BELFELDT 345-BELFELD4 230	106.3 % OF 313.0 MVA RATING 106.3 % OF 313.0 MVA RATING Outage initiates MCDC ramp which mitigates overload
11_1B11A4C1 OUTAGE: DAWSONC4 230 -MEDORA 4 230	TIOGA4 7 115-TIOGA7 7 115	109.3 % OF 108.9 MVA RATING Outage initiates MCDC ramp which mitigates overload
13_1B11A4C1 OUTAGE: RHAME 230 -LTLMISS4 230	MEDORA 4 230-BELFELD4 230 RRL=263MVA, Thermal = 522MVA TIOGA4 7 115-TIOGA7 7 115	104.2 % OF 263.0 MVA RATING 106.1 % OF 108.9 MVA RATING
18_1B11A4C1 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	TIOGA4 7 115-TIOGA7 7 115	109.5 % OF 108.9 MVA RATING Tioga Trans Trip will mitigate
22_1B11A4C1OUTAGE:L.OLDS 345/230 TRANS	BELFELDT 345-BELFELD3 345 BELFELDT 345-BELFELD4 230	126.3 % OF 313.0 MVA RATING 126.3 % OF 313.0 MVA RATING

# CASE #11

CELL NAME = 1B11A4A6,B10T=-199 NC, LMCAPS, BL-RH140, NC, M=2EW, FP=132,PS 200SN

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
5_1B11A4A6 OUTAGE: DICKNSN4 230 -BELFELD4 230	BELFELD3 345-CHAR.CK3 345 CT Limit = 263MVA next is RLL at 359MVA	104.1 % OF 263.0 MVA RATING
6_1B11A4A6 OUTAGE: DICKNSN4 230 -HESKETT4 230	BELFELD3 345-CHAR.CK3 345 CT Limit = 263MVA next is RLL at 359MVA	110.2 % OF 263.0 MVA RATING
9_1B11A4A6 OUTAGE: DAWSONC4 230 -FTPECK 4 230	FTPECK 4 230-FTPECK 7 115 FtPeck Generation at 132MW causes overload	102.2 % OF 84.0 MVA RATING
12_1B11A4A6 OUTAGE: HETINGR4 230 -BOWMAN 4 230	BELFELD3 345-CHAR.CK3 345 CT Limit = 263MVA next is RLL at 359MVA	101.3 % OF 263.0 MVA RATING
18_1B11A4A6 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	BTHOLD 7 115 KENMARE7 115 STANLEY7 115 TIOGA4 7 115 TIOGA7 7 115 TIOGA4 4 230-TIOGA4 7 115 WILISTN7 115-TIOGA7 7 115 LOGAN 7 115-BTHOLD 7 115 BTHOLD 7 115-KENMARE7 115 Tioga Trans Trip will mitigate	0.876 VOLTAGE LOWER THAN 0.9 0.844 VOLTAGE LOWER THAN 0.9 0.857 VOLTAGE LOWER THAN 0.9 0.896 VOLTAGE LOWER THAN 0.9 0.894 VOLTAGE LOWER THAN 0.9 127.8 % OF 125.0 MVA RATING 118.1 % OF 99.59 MVA RATING 139.2 % OF 88.0 MVA RATING 137.8 % OF 88.0 MVA RATING
21_1B11A4A6 OUTAGE: LELAND04 230 -LOGAN 4 230	MALLARD7 115 LOGAN 7 115 DUNNING7 115 LOGAN TY 230 BTHOLD 7 115 MALLARD7 115-MAX 7 115 WILISTN7 115-TIOGA7 7 115 GARRISN7 115-MAX 7 115 Boundary Dam Phase shifter would lock due to delta P, these violations are caused by phase shifter readjusting to 200MW s-n	0.891 VOLTAGE LOWER THAN 0.9 0.898 VOLTAGE LOWER THAN 0.9 0.862 VOLTAGE LOWER THAN 0.9 0.895 VOLTAGE LOWER THAN 0.9 0.897 VOLTAGE LOWER THAN 0.9 128.6 % OF 132.0 MVA RATING 101.7 % OF 99.59 MVA RATING 133.2 % OF 132.0 MVA RATING

22\_1B11A4A6OUTAGE:L.OLDS 345/230 TRANS

BELFELDT 345-BELFELD3 345	119.5 % OF	313.0 MVA RATING
BELFELDT 345-BELFELD4 230	119.5 % OF	313.0 MVA RATING
BELFELD3 345-CHAR.CK3 345	143.2 % OF	263.0 MVA RATING
CT Limit = 263MVA next is RLL at 359MVA		
ANTELOP3 345-CHAR.CK3 345	100.3 % OF	592.0 MVA RATING
CT limit =592MVA, Conductor thermal rating = 954MVA		

## CASE #12

CELL NAME = 1B11A4C6,B10T=-199 NC, LMCAPS, BL-RH140, NC, M=2EW, FP=10,PS 200SN

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
1_1B11A4C6 OUTAGE: BELFELD3 345 -CHAR.CK3 345	DICKNSN4 230-BELFELD4 230 RRL=263MVA, Thermal = 522MVA	102.6 % OF 263.0 MVA RATING
3_1B11A4C6OUTAGE:AVS-CHARCK 345 ALT SOLVE	COYOTE 3 345-COYOTE 7 115 DICKNSN4 230-BELFELD4 230 RRL=263MVA, Thermal = 522MVA DICKNSN4 230-HESKETT4 230 RRL=263MVA, Thermal = 522MVA TIOGA4 4 230-LOGAN 4 230 RRL=263MVA, Thermal = 579MVA	101.0 % OF 172.0 MVA RATING 126.4 % OF 263.0 MVA RATING 116.8 % OF 264.0 MVA RATING 105.3 % OF 264.0 MVA RATING
5_1B11A4C6 OUTAGE: DICKNSN4 230 -BELFELD4 230	BELFELDT 345-BELFELD3 345 BELFELDT 345-BELFELD4 230 Outage initiates MCDC ramp which mitigates overload	105.9 % OF 313.0 MVA RATING 105.9 % OF 313.0 MVA RATING
6_1B11A4C6 OUTAGE: DICKNSN4 230 -HESKETT4 230	BELFELDT 345-BELFELD3 345 BELFELDT 345-BELFELD4 230 Outage initiates MCDC ramp which mitigates overload	109.8 % OF 313.0 MVA RATING 109.8 % OF 313.0 MVA RATING
13_1B11A4C6 OUTAGE: RHAME 230 -LTLMISS4 230	DAWSONC4 230-MEDORA 4 230 MEDORA 4 230-BELFELD4 230 RRL=263MVA, Thermal = 522MVA	111.5 % OF 263.0 MVA RATING 118.3 % OF 263.0 MVA RATING
14_1B11A4C6 OUTAGE: RHAME 230 -BELFELD4 230	MEDORA 4 230-BELFELD4 230 RRL=263MVA, Thermal = 522MVA	100.2 % OF 263.0 MVA RATING
18_1B11A4C6 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	BTHOLD 7 115 KENMARE7 115 STANLEY7 115 TIOGA4 4 230-TIOGA4 7 115 LOGAN 7 115-BTHOLD 7 115 BTHOLD 7 115-KENMARE7 115 KENMARE7 115-STANLEY7 115 Tioga Trans Trip will mitigate	0.874 VOLTAGE LOWER THAN 0.9 0.846 VOLTAGE LOWER THAN 0.9 0.863 VOLTAGE LOWER THAN 0.9 116.3 % OF 125.0 MVA RATING 143.7 % OF 88.0 MVA RATING 142.3 % OF 88.0 MVA RATING 100.1 % OF 97.1 MVA RATING

21\_1B11A4C6 OUTAGE: LELANDO4 230 -LOGAN 4 230

MALLARD7 115	0.889	VOLTAGE LOWER THAN	0.9
LOGAN 7 115	0.897	VOLTAGE LOWER THAN	0.9
DUNNING7 115	0.860	VOLTAGE LOWER THAN	0.9
LOGAN TY 230	0.894	VOLTAGE LOWER THAN	0.9
BTHOLD 7 115	0.897	VOLTAGE LOWER THAN	0.9
MALLARD7 115-MAX 7 115	129.4	% OF 132.0 MVA RATING	
GARRISN7 115-MAX 7 115	134.0	% OF 132.0 MVA RATING	

Boundary Dam Phase shifter would lock due to delta P, these violations are caused by phase shifter readjusting to 200MW s-n

22\_1B11A4C6OUTAGE:L.OLDS 345/230 TRANS

BELFELDT 345-BELFELD3 345	131.0	% OF 313.0 MVA RATING
BELFELDT 345-BELFELD4 230	131.0	% OF 313.0 MVA RATING
ANTELOP3 345-CHAR.CK3 345	108.7	% OF 592.0 MVA RATING

CT limit =592MVA, Conductor thermal rating = 954MVA

## CASE #13

CELL NAME = 1B11A1A1,B10T=184 NC, LMCAPS, BL-RH140, NC, MC=150WE, FP=132, PS 214NS

STATUS =====	VIOLATED ELEMENT =====	PU =====
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OUTAGES:

9\_1B11A1A1 OUTAGE: DAWSONC4 230 -FTPECK 4 230 FTPECK 4 230-FTPECK 7 115 102.2 % OF 84.0 MVA RATING  
FtPeck Generation at 132MW causes overload

18\_1B11A1A1 OUTAGE: TIOGA4 4 230 -LOGAN 4 230 TIOGA4 4 230-TIOGA4 7 115 109.5 % OF 125.0 MVA RATING  
Tioga Trans Trip will mitigate

## CASE #14

CELL NAME = 1B11A1C1,B10T=191 NC, LMCAPS, BL-RH140, NC, MC=150WE, FP=10, PS 214NS

STATUS =====	VIOLATED ELEMENT =====	PU =====
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OUTAGES:

2\_1B11A1C1 OUTAGE: ANTELOP3 345 -CHAR.CK3 345 TIOGA4 4 230-TIOGA4 7 115 106.2 % OF 125.0 MVA RATING

18\_1B11A1C1 OUTAGE: TIOGA4 4 230 -LOGAN 4 230 TIOGA4 4 230-TIOGA4 7 115 118.6 % OF 125.0 MVA RATING  
Tioga Trans Trip will mitigate

22\_1B11A1C1OUTAGE:L.OLDS 345/230 TRANS BELFELD3 345-CHAR.CK3 345 106.2 % OF 263.0 MVA RATING  
CT Limit = 263MVA next is RLL at 359MVA

## CASE #15

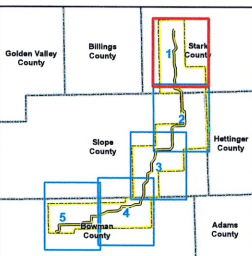
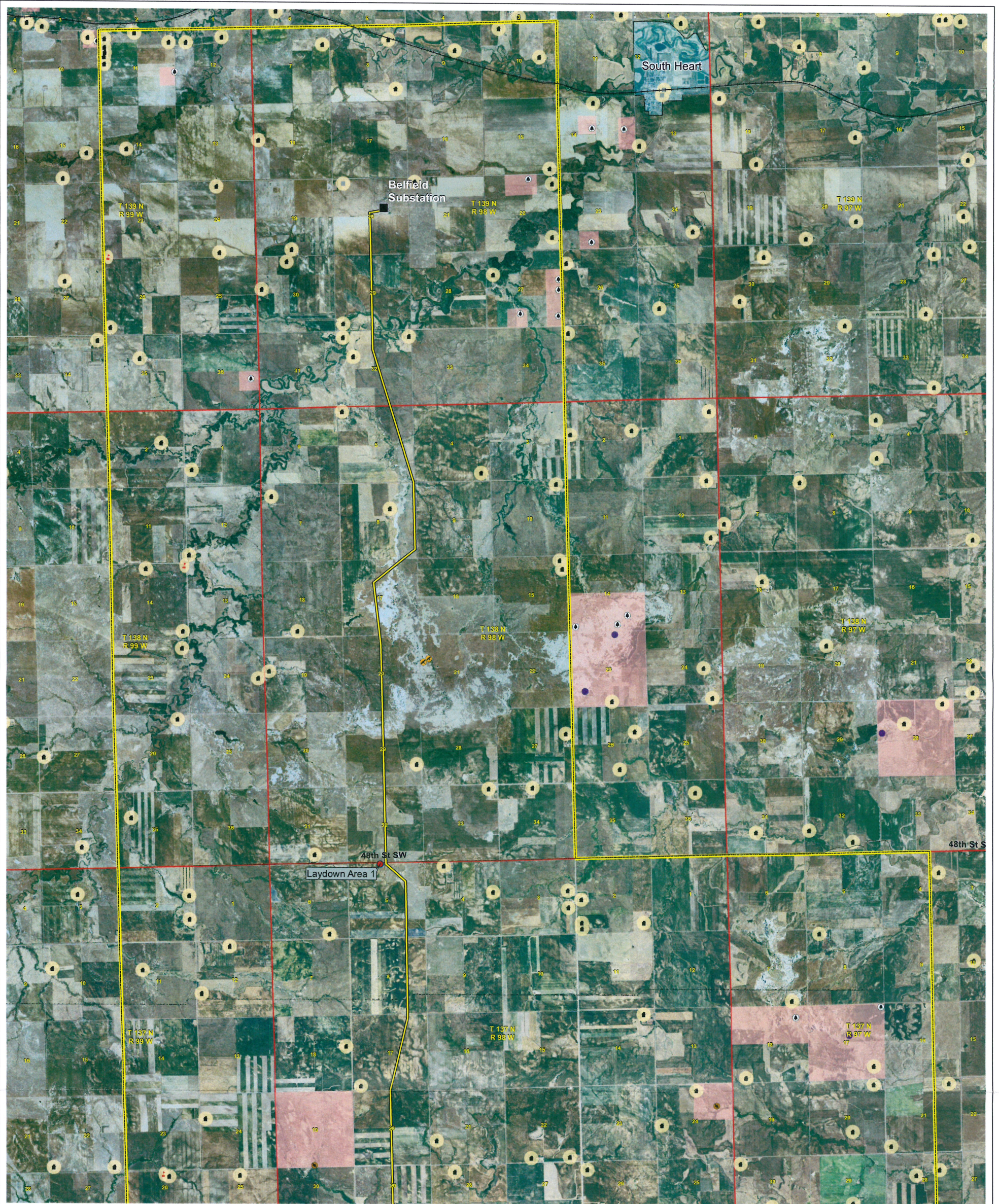
CELL NAME = 1B11A1A6,B10T=-200 NC, LMCAPS, BL-RH140, NC, MC=150WE, FP=132,PS 200SN

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
9_1B11A1A6 OUTAGE: DAWSONC4 230 -FTPECK 4 230	FTPECK 4 230-FTPECK 7 115	102.2 % OF 84.0 MVA RATING FtPeck Generation at 132MW causes overload
18_1B11A1A6 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	BTHOLD 7 115 KENMARE7 115 STANLEY7 115 TIOGA4 7 115 TIOGA7 7 115 TIOGA4 4 230-TIOGA4 7 115 WILISTN7 115-TIOGA7 7 115 LOGAN 7 115-BTHOLD 7 115 BTHOLD 7 115-KENMARE7 115 TIOGA4 7 115-TIOGA7 7 115	0.860 VOLTAGE LOWER THAN 0.9 0.813 VOLTAGE LOWER THAN 0.9 0.813 VOLTAGE LOWER THAN 0.9 0.840 VOLTAGE LOWER THAN 0.9 0.836 VOLTAGE LOWER THAN 0.9 149.2 % OF 125.0 MVA RATING 150.1 % OF 99.59 MVA RATING 135.4 % OF 88.0 MVA RATING 134.2 % OF 88.0 MVA RATING 111.5 % OF 108.9 MVA RATING Tioga Trans Trip will mitigate
21_1B11A1A6 OUTAGE: LELANDO4 230 -LOGAN 4 230	MALLARD7 115 LOGAN 4 230 LOGAN 7 115 DUNNING7 115 LOGAN TY 230 BTHOLD 7 115 KENMARE7 115 STANLEY7 115 TIOGA4 7 115 TIOGA7 7 115 MALLARD7 115-MAX 7 115 WILISTN7 115-TIOGA7 7 115 GARRISN7 115-MAX 7 115	0.871 VOLTAGE LOWER THAN 0.9 0.891 VOLTAGE LOWER THAN 0.9 0.873 VOLTAGE LOWER THAN 0.9 0.841 VOLTAGE LOWER THAN 0.9 0.870 VOLTAGE LOWER THAN 0.9 0.864 VOLTAGE LOWER THAN 0.9 0.859 VOLTAGE LOWER THAN 0.9 0.867 VOLTAGE LOWER THAN 0.9 0.886 VOLTAGE LOWER THAN 0.9 0.883 VOLTAGE LOWER THAN 0.9 130.6 % OF 132.0 MVA RATING 134.6 % OF 99.59 MVA RATING 135.3 % OF 132.0 MVA RATING Boundary Dam Phase shifter would lock due to delta P, these violations are caused by phase shifter readjusting to 200MW s-n

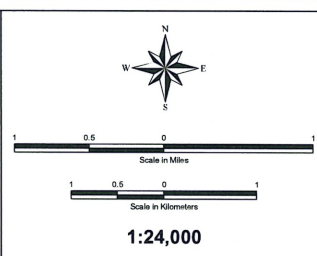
# CASE #16

CELL NAME = 1B11A1C6,B10T=-199 NC, LMCAPS, BL-RH140, NC, MC=150WE, FP=10,PS 200SN

STATUS =====	VIOLATED ELEMENT =====	PU =====
OUTAGES:		
18_1B11A1C6 OUTAGE: TIOGA4 4 230 -LOGAN 4 230	BTHOLD 7 115 KENMARE7 115 STANLEY7 115 TIOGA4 7 115 TIOGA7 7 115 TIOGA4 4 230-TIOGA4 7 115 WILISTN7 115-TIOGA7 7 115 LOGAN 7 115-BTHOLD 7 115 BTHOLD 7 115-KENMARE7 115	0.868 VOLTAGE LOWER THAN 0.9 0.828 VOLTAGE LOWER THAN 0.9 0.834 VOLTAGE LOWER THAN 0.9 0.868 VOLTAGE LOWER THAN 0.9 0.865 VOLTAGE LOWER THAN 0.9 139.2 % OF 125.0 MVA RATING 134.0 % OF 99.59 MVA RATING 138.2 % OF 88.0 MVA RATING 136.9 % OF 88.0 MVA RATING
	Tioga Trans Trip will mitigate	
21_1B11A1C6 OUTAGE: LELAND04 230 -LOGAN 4 230	MALLARD7 115 LOGAN 7 115 DUNNING7 115 LOGAN TY 230 BTHOLD 7 115 KENMARE7 115 STANLEY7 115 MALLARD7 115-MAX 7 115 WILISTN7 115-TIOGA7 7 115 GARRISN7 115-MAX 7 115	0.878 VOLTAGE LOWER THAN 0.9 0.882 VOLTAGE LOWER THAN 0.9 0.848 VOLTAGE LOWER THAN 0.9 0.879 VOLTAGE LOWER THAN 0.9 0.877 VOLTAGE LOWER THAN 0.9 0.877 VOLTAGE LOWER THAN 0.9 0.888 VOLTAGE LOWER THAN 0.9 130.7 % OF 132.0 MVA RATING 118.3 % OF 99.59 MVA RATING 135.4 % OF 132.0 MVA RATING
	Boundary Dam Phase shifter would lock due to delta P, these violations are caused by phase shifter readjusting to 200MW s-n	
22_1B11A1C6OUTAGE:L.OLDS 345/230 TRANS	BELFELD3 345-CHAR.CK3 345	111.3 % OF 263.0 MVA RATING
	CT Limit = 263MVA next is RLL at 359MVA	



LEGEND		Avoidance Areas		Exclusion Areas	
	Proposed Route		U.S. Fish and Wildlife Service National Wildlife Refuge		Golden Eagle Nest
	Laydown Area		National Grassland		Rare Animal Observation
	Proposed Microwave Tower		School With 500 ft. Buffer		Rare Ecological Community
	Substation		Residence or Other Structure With 500 ft. Buffer		Rare Plant Observation
	Township/Range		Place of Business With 500 ft. Buffer		Campground
	Section		Area With Natural Heritage Species Observations		Area With Natural Heritage Species Observations
	City/Town				



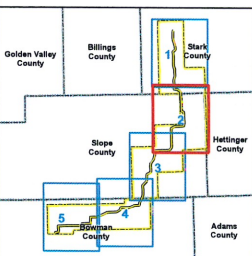
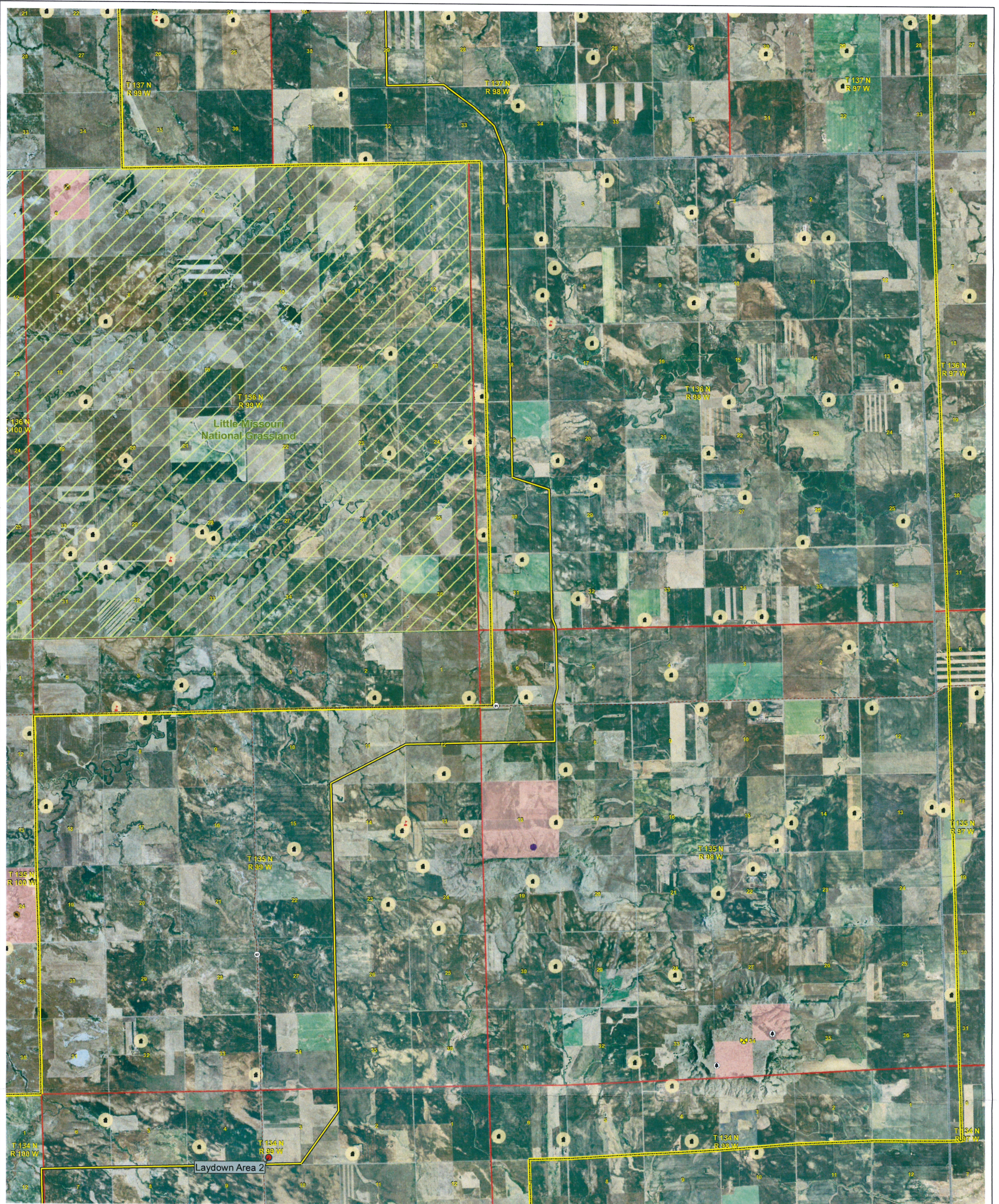
**Belfield to Rhame Transmission Project**

**Project Location**  
Map 1 of 5

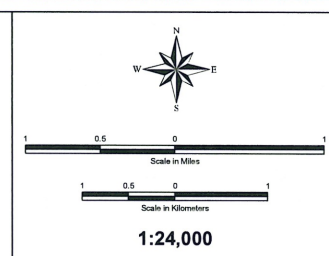
ENSR | AECOM

July 2008

**EXHIBIT**  
7



LEGEND		Avoidance Areas		Exclusion Areas	
	Proposed Route		U.S. Fish and Wildlife Service National Wildlife Refuge		Golden Eagle Nest
	Laydown Area		National Grassland		Rare Animal Observation
	Proposed Microwave Tower		School With 500 ft. Buffer		Rare Ecological Community
	Substation		Residence or Other Structure With 500 ft. Buffer		Rare Plant Observation
	Township/Range		Place of Business With 500 ft. Buffer		Campground
	Section				Area With Natural Heritage Species Observations
	City/Town				

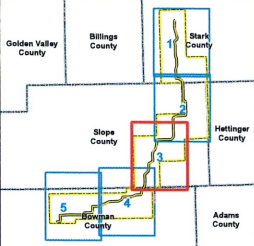
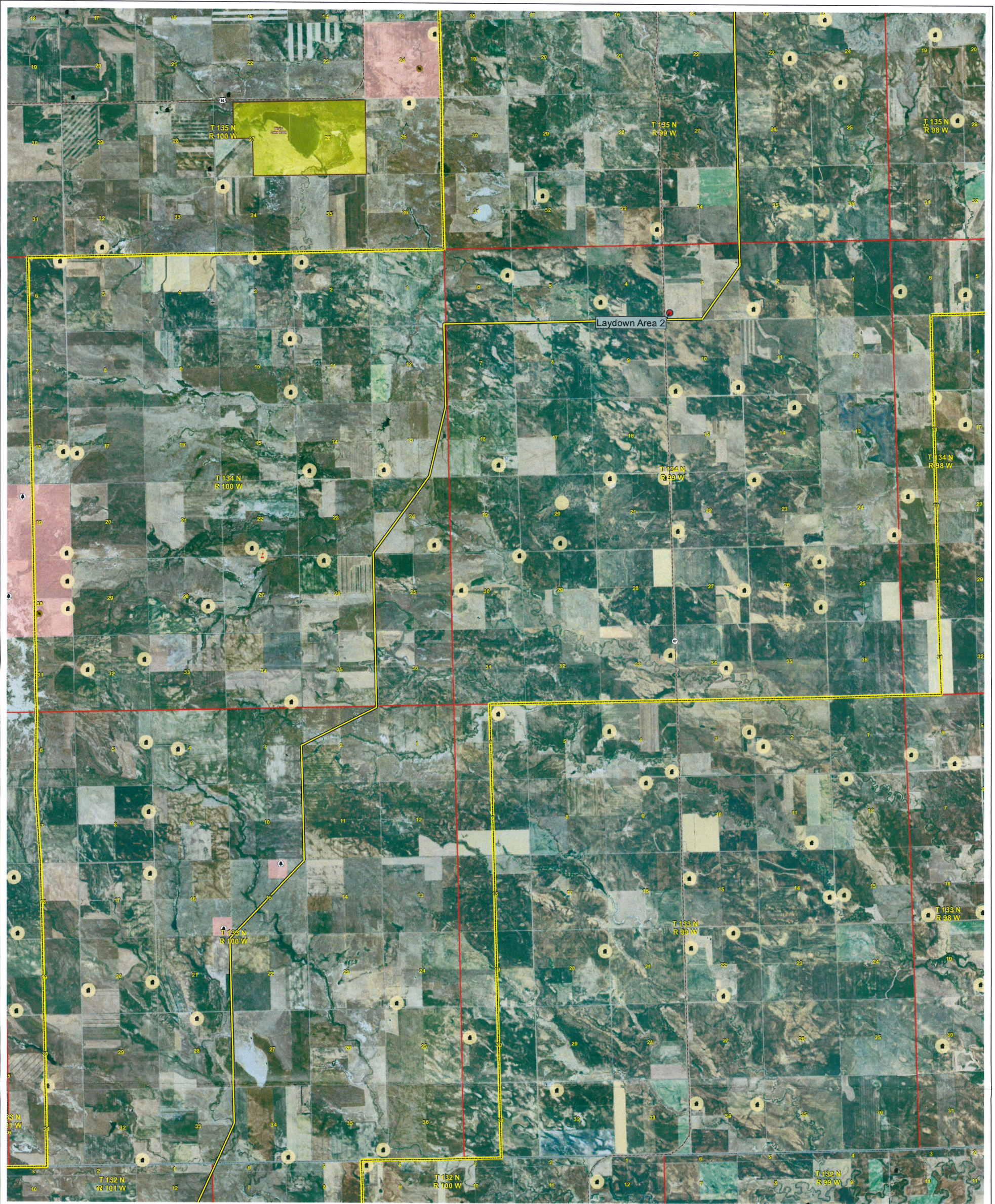


**Belfield to Rhame Transmission Project**

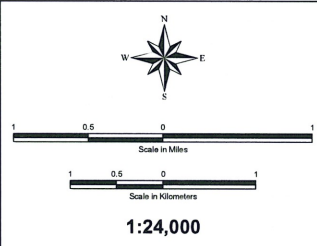
**Project Location**  
Map 2 of 5

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July 2008



LEGEND		Avoidance Areas		Exclusion Areas	
	Proposed Route		U.S. Fish and Wildlife Service National Wildlife Refuge		Golden Eagle Nest
	Laydown Area		National Grassland		Rare Animal Observation
	Proposed Microwave Tower		School With 500 ft. Buffer		Rare Ecological Community
	Substation		Residence or Other Structure With 500 ft. Buffer		Rare Plant Observation
	Township/Range		Place of Business With 500 ft. Buffer		Campground
	Section				Area With Natural Heritage Species Observations
	City/Town				

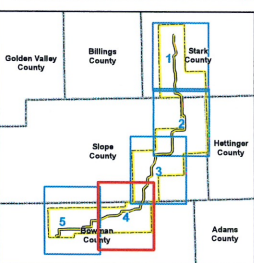
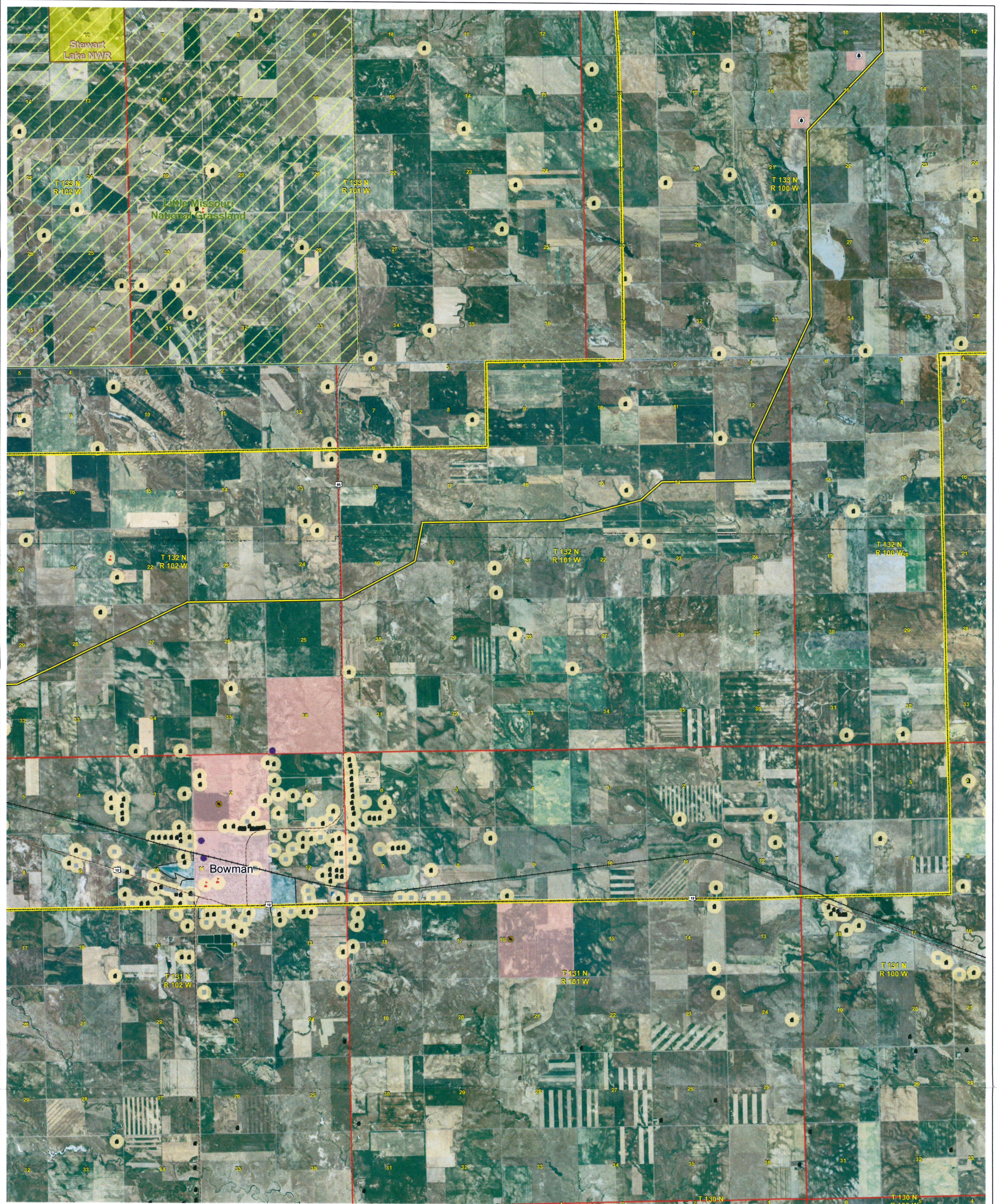


**Belfield to Rhame Transmission Project**

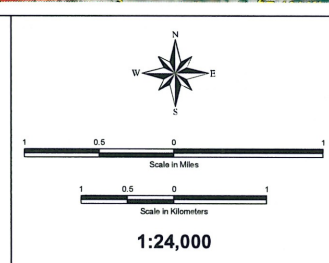
**Project Location**  
**Map 3 of 5**

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July 2008



LEGEND		Avoidance Areas		Exclusion Areas	
	Proposed Route		U.S. Fish and Wildlife Service National Wildlife Refuge		Golden Eagle Nest
	Laydown Area		National Grassland		Rare Animal Observation
	Proposed Microwave Tower		School With 500 ft. Buffer		Rare Ecological Community
	Substation		Residence or Other Structure With 500 ft. Buffer		Rare Plant Observation
	Township/Range		Place of Business With 500 ft. Buffer		Campground
	Section				Area With Natural Heritage Species Observations
	City/Town				

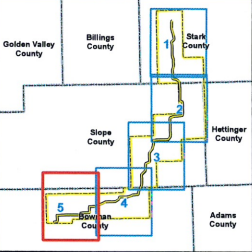
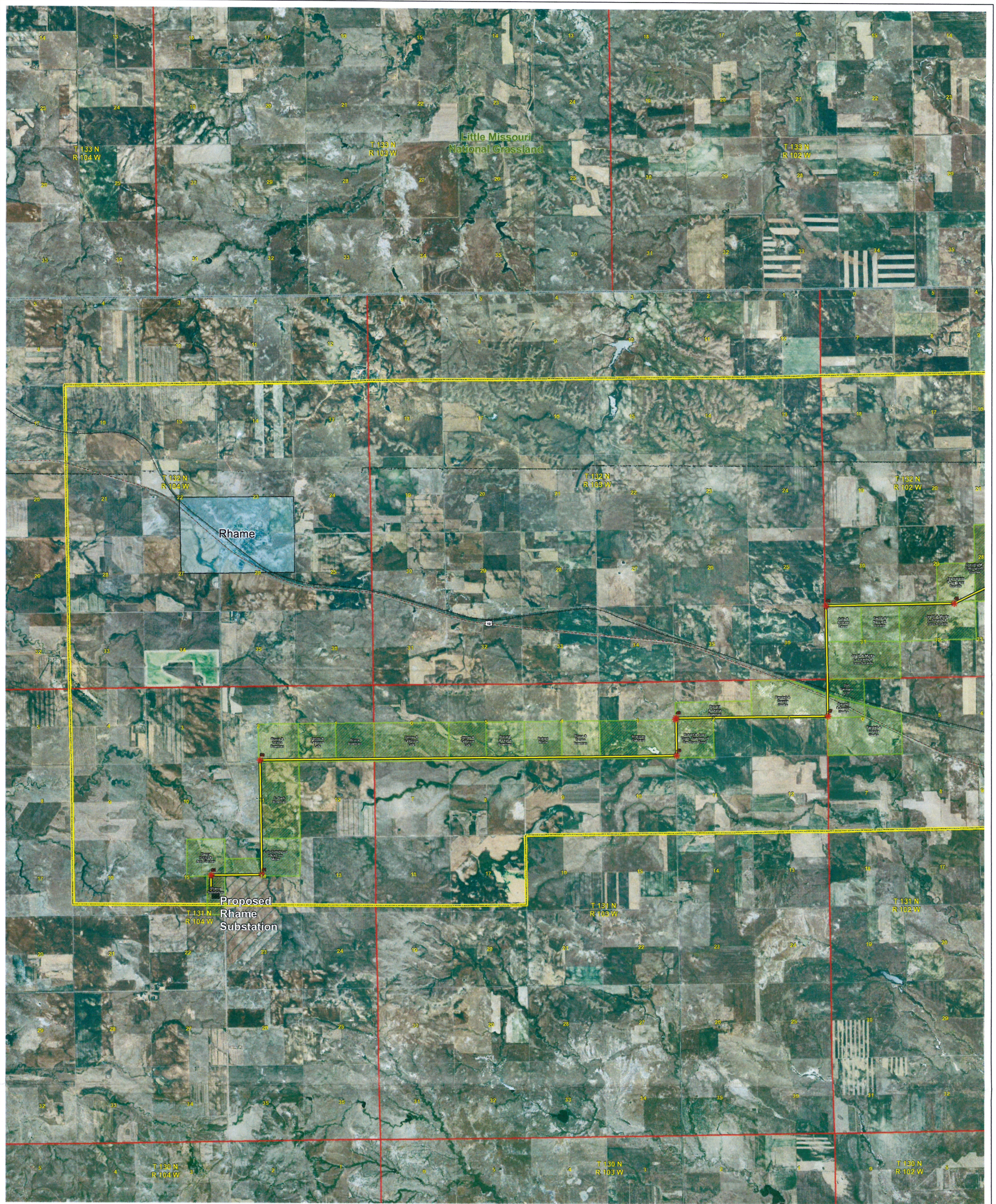


**Belfield to Rhame Transmission Project**

**Project Location**  
**Map 4 of 5**

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**LEGEND**

- Angle Points
- Substation
- Proposed Route
- Proposed Corridor
- Land Ownership Along Route
- Township/Range
- Section
- City/Town

Scale in Miles: 0, 0.5, 1

Scale in Kilometers: 0, 0.5, 1

**1:24,000**

**Belfield to Rhame Transmission Project**

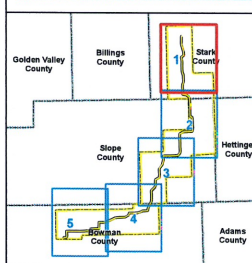
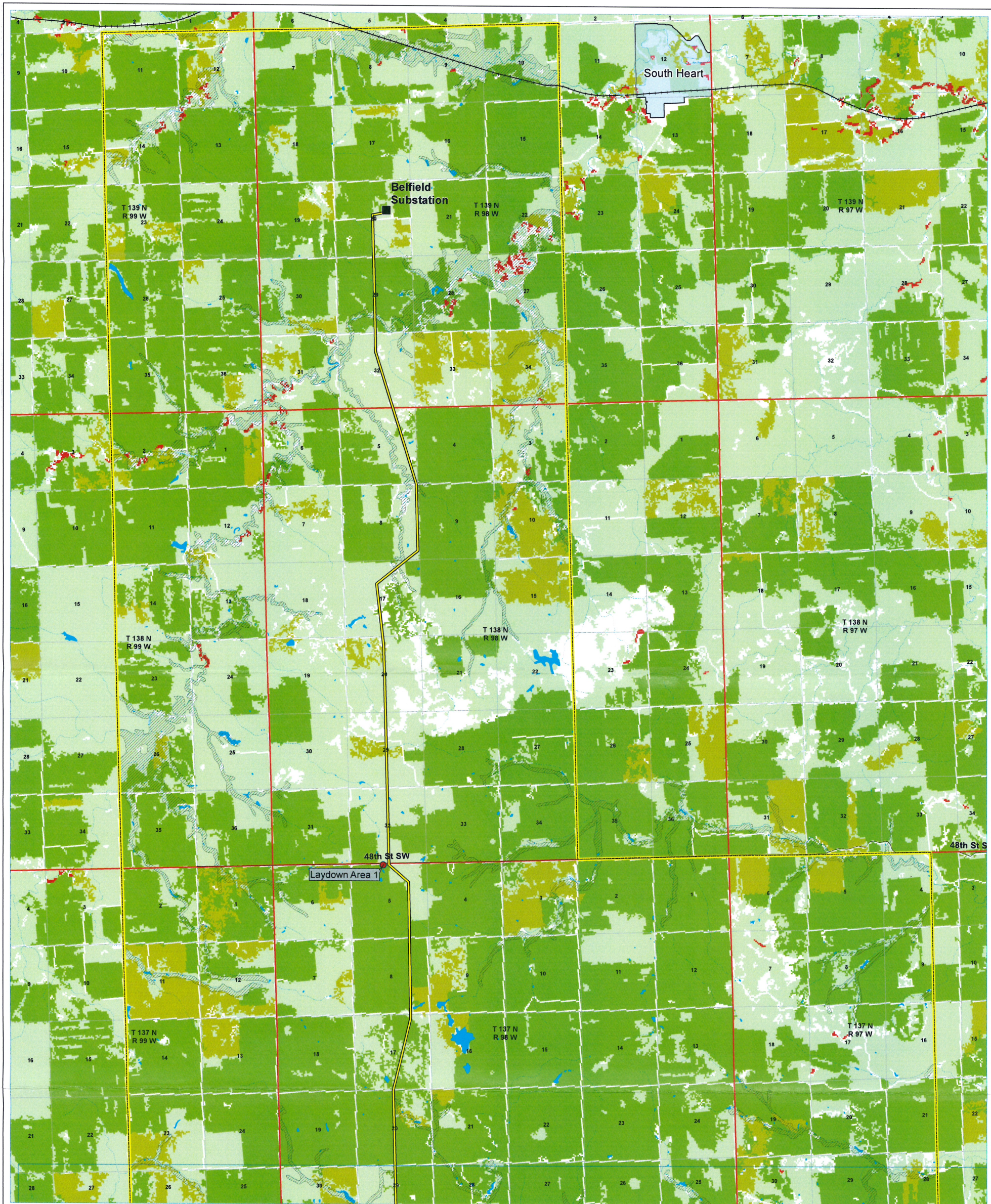
**BASIN ELECTRIC POWER COOPERATIVE**  
A Touchstone Energy Cooperative

**WESTERN AREA POWER ADMINISTRATION**

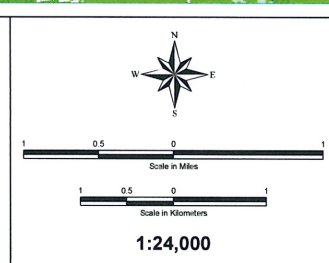
**Project Location Map 5 of 5**

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July 2008



LEGEND		FEMA ZONES	
	Proposed Route		Zone A
	Laydown Area		Zone AE
	Proposed Microwave Tower		Zone X500
	Substation		
	Township/Range		
	Section		
	City/Town		
	Barren/Developed		
	Cultivated Crops		
	Forested		
	Grassland		
	Pasture/Hay		
	Pond, Lake, or Wetland		
	Intermittent Stream		
	Perennial Stream		



**Belfield to Rhame Transmission Project**

**BASIN ELECTRIC POWER COOPERATIVE**  
A Touchstone Energy Cooperative

**WESTERN AREA POWER ADMINISTRATION**

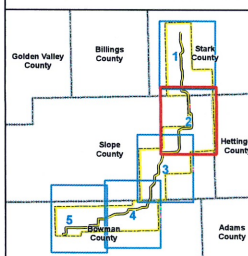
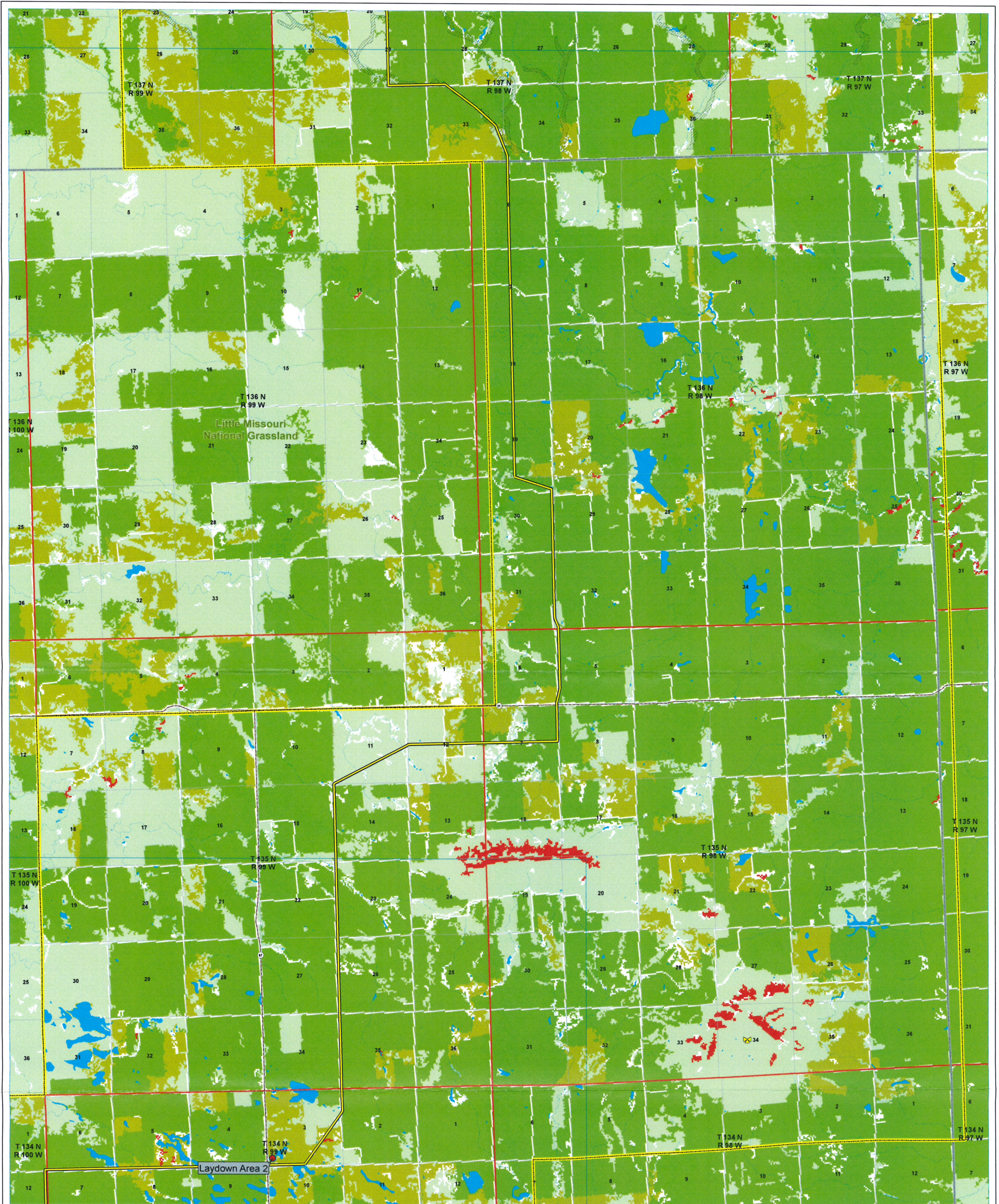
**Project Location**  
Map 1 of 5

ENSR | AECOM

July 2008

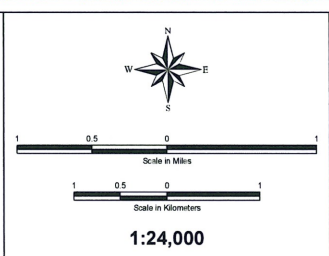
**EXHIBIT**

8



LEGEND	
	Proposed Route
	Laydown Area
	Proposed Microwave Tower
	Substation
	Township/Range
	Section
	City/Town
	Barren/Developed
	Cultivated Crops
	Forested
	Grassland
	Pasture/Hay
	Pond, Lake, or Wetland
	Intermittent Stream
	Perennial Stream

FEMA ZONES	
	Zone A
	Zone AE
	Zone X500

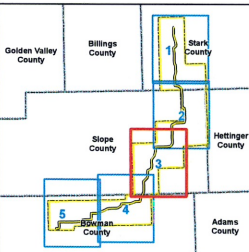
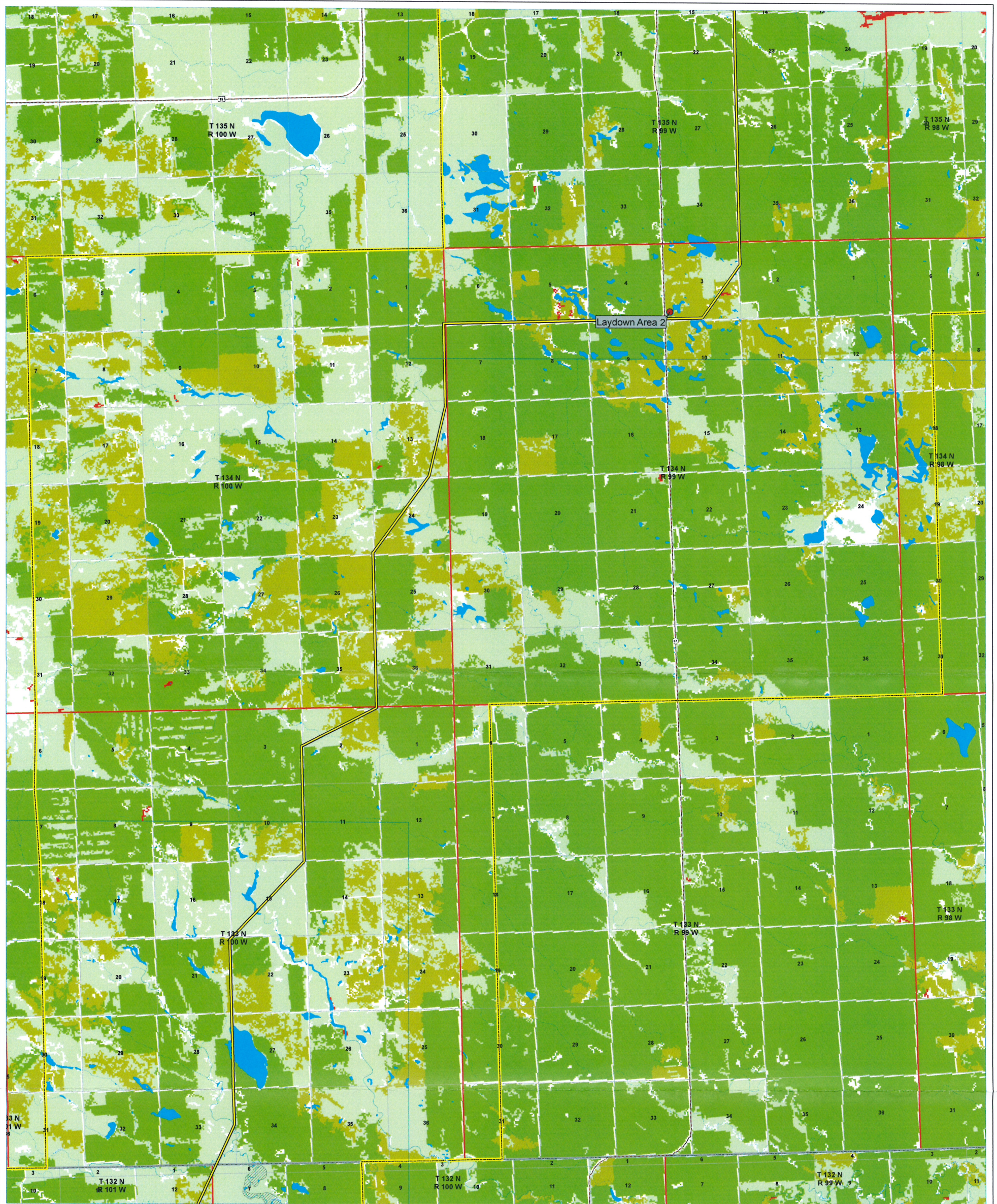


**Belfield to Rhame Transmission Project**

**Project Location**  
**Map 2 of 5**

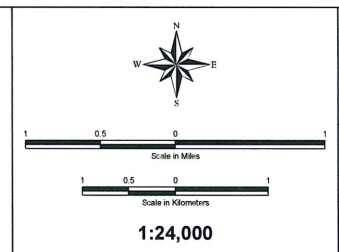
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LEGEND	
	Proposed Route
	Laydown Area
	Proposed Microwave Tower
	Substation
	Township/Range
	Section
	City/Town
	Barren/Developed
	Cultivated Crops
	Forested
	Grassland
	Pasture/Hay
	Pond, Lake, or Wetland
	Intermittent Stream
	Perennial Stream

FEMA ZONES	
	Zone A
	Zone AE
	Zone X500



**Belfield to Rhame Transmission Project**

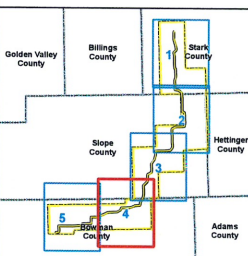
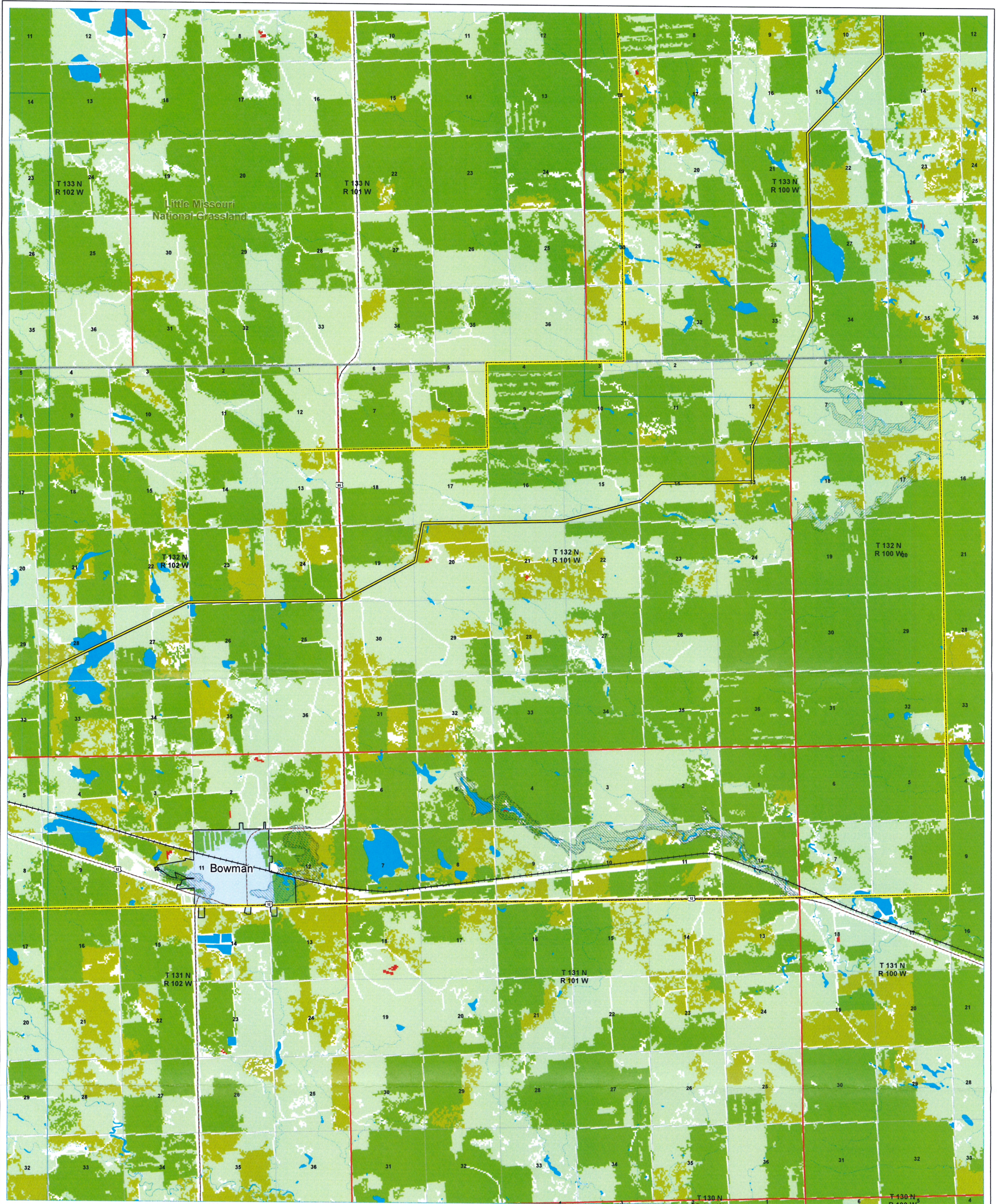
**BASIN ELECTRIC POWER COOPERATIVE**  
A Touchstone Energy Cooperative

**Western AREA POWER ADMINISTRATION**

**Project Location**  
**Map 3 of 5**

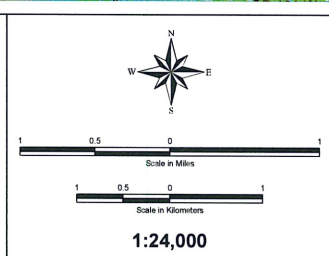
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LEGEND	
	Proposed Route
	Laydown Area
	Proposed Microwave Tower
	Substation
	Township/Range
	Section
	City/Town
	Barren/Developed
	Cultivated Crops
	Forested
	Grassland
	Pasture/Hay
	Pond, Lake, or Wetland
	Intermittent Stream
	Perennial Stream

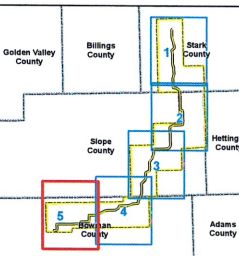
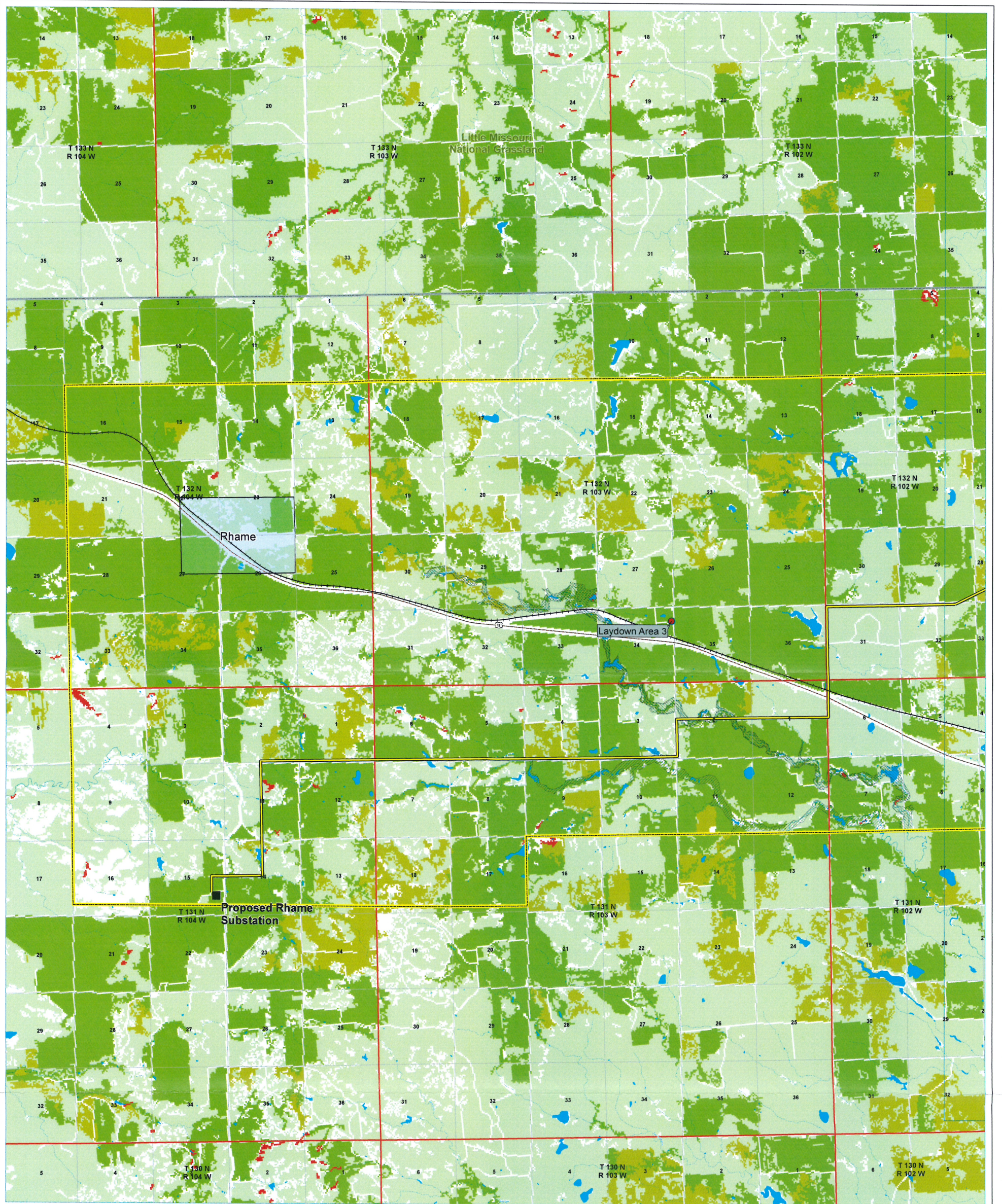
FEMA ZONES	
	Zone A
	Zone AE
	Zone X500



**Belfield to Rhame Transmission Project**

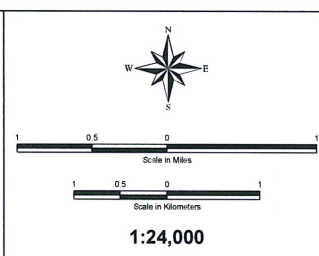
**Project Location**  
Map 4 of 5

ENSR | AECOM | July 2008



LEGEND	
	Proposed Route
	Laydown Area
	Proposed Microwave Tower
	Substation
	Township/Range
	Section
	City/Town
	Barren/Developed
	Cultivated Crops
	Forested
	Grassland
	Pasture/Hay
	Pond, Lake, or Wetland
	Intermittent Stream
	Perennial Stream

FEMA ZONES	
	Zone A
	Zone AE
	Zone X500

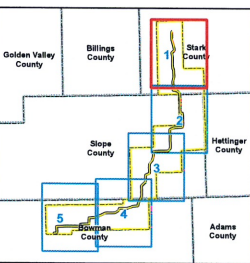
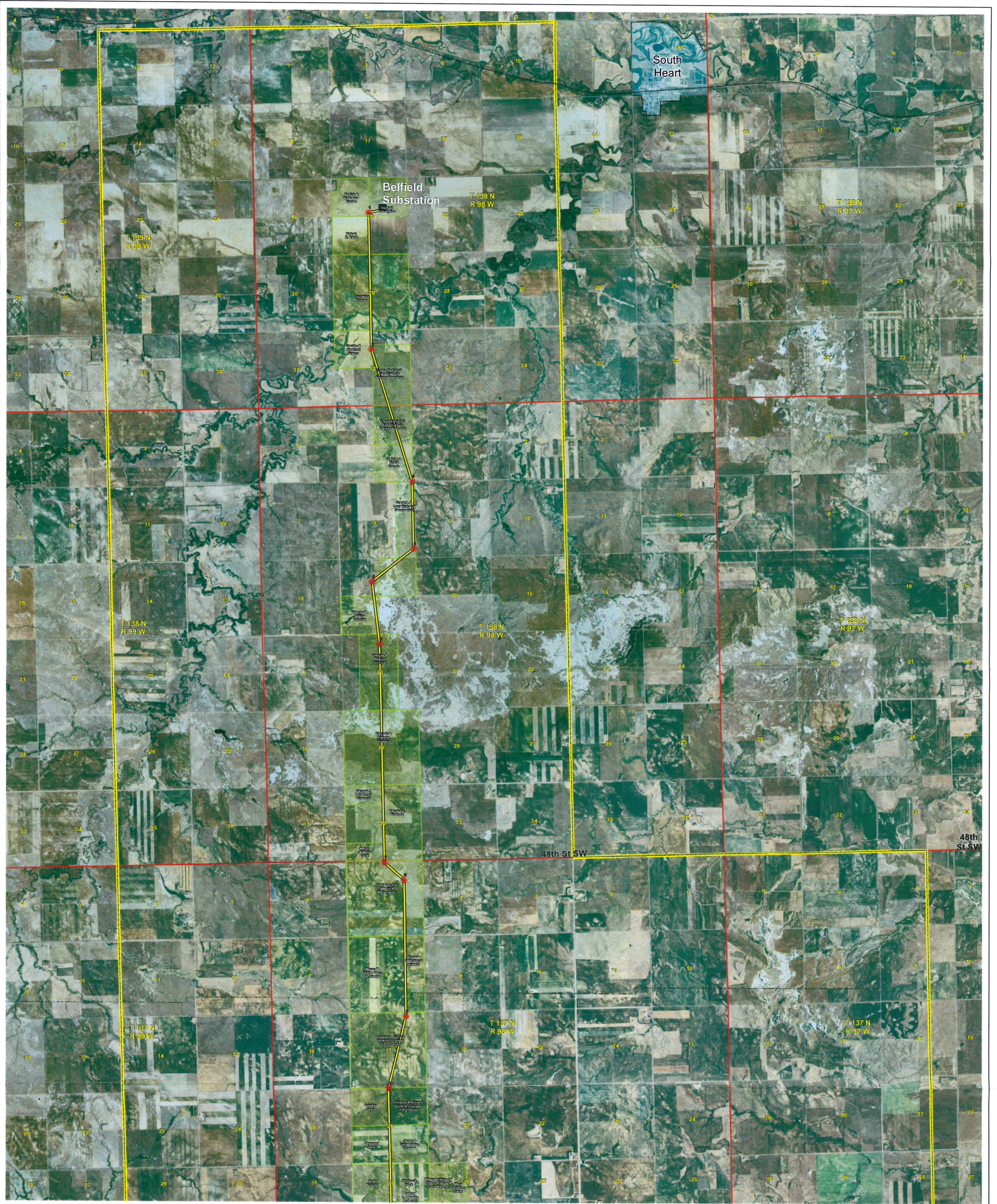


**Belfield to Rhame Transmission Project**



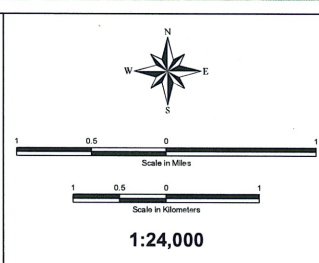
**Project Location  
Map 5 of 5**

ENSR | AECOM | July 2008



**LEGEND**

- \* Angle Points
- Substation
- Proposed Route
- Proposed Corridor
- Land Ownership Along Route
- Township/Range
- Section
- City/Town



**Belfield to Rhame Transmission Project**

**BASIN ELECTRIC POWER COOPERATIVE**  
A Touchstone Energy Cooperative

**WESTERN AREA POWER ADMINISTRATION**

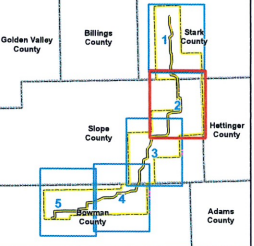
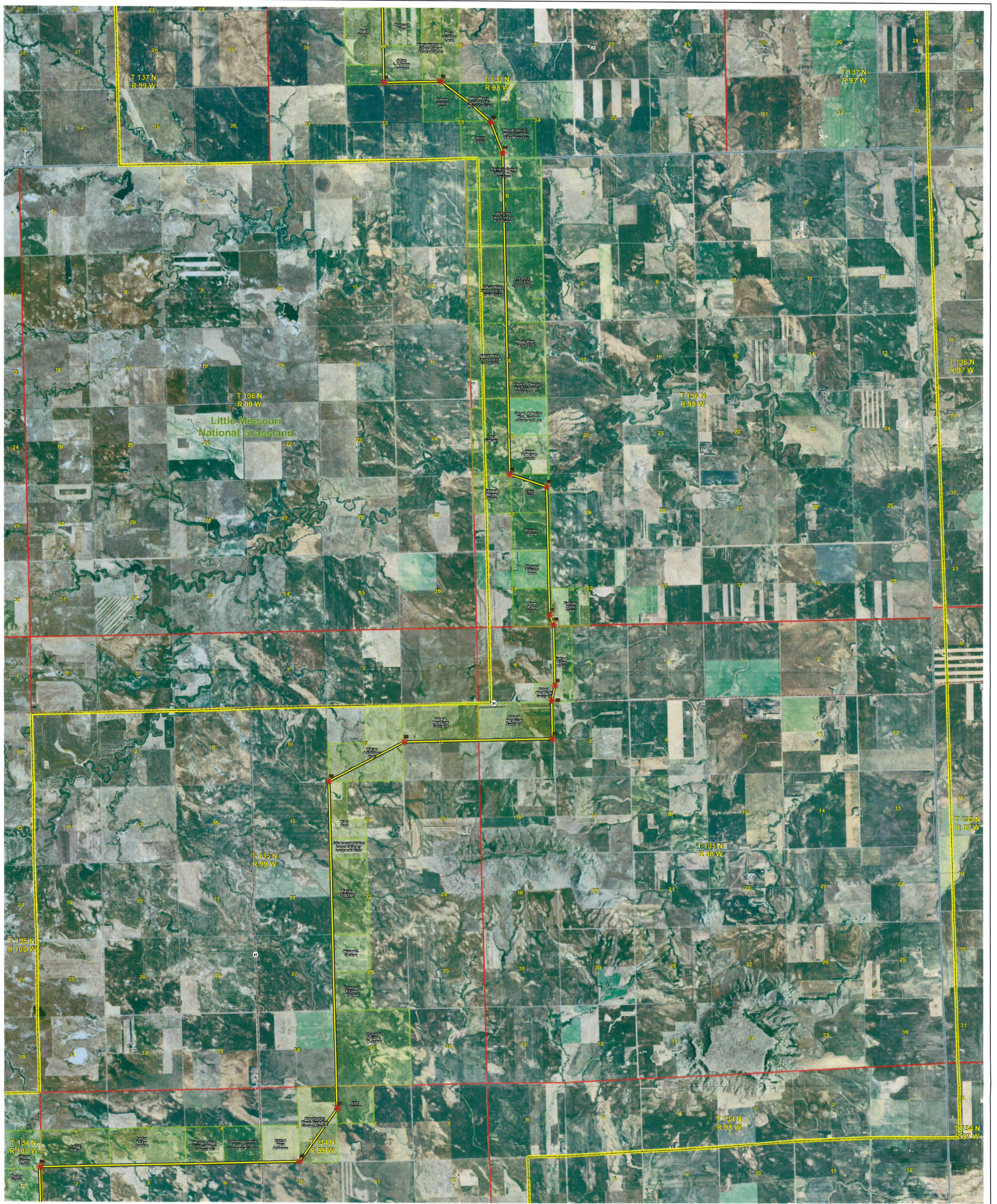
**Project Location**  
**Map 1 of 5**

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July 2008

**EXHIBIT**

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**LEGEND**

- Angle Points
- Substation
- Proposed Route
- Proposed Corridor
- Land Ownership Along Route
- Township/Range
- Section
- City/Town

**Scale**

Scale in Miles: 0, 0.5, 1

Scale in Kilometers: 0, 0.5, 1

**1:24,000**

**Belfeld to Rhame Transmission Project**

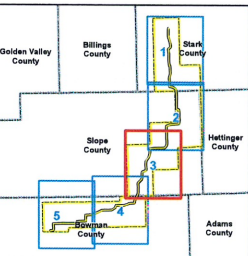
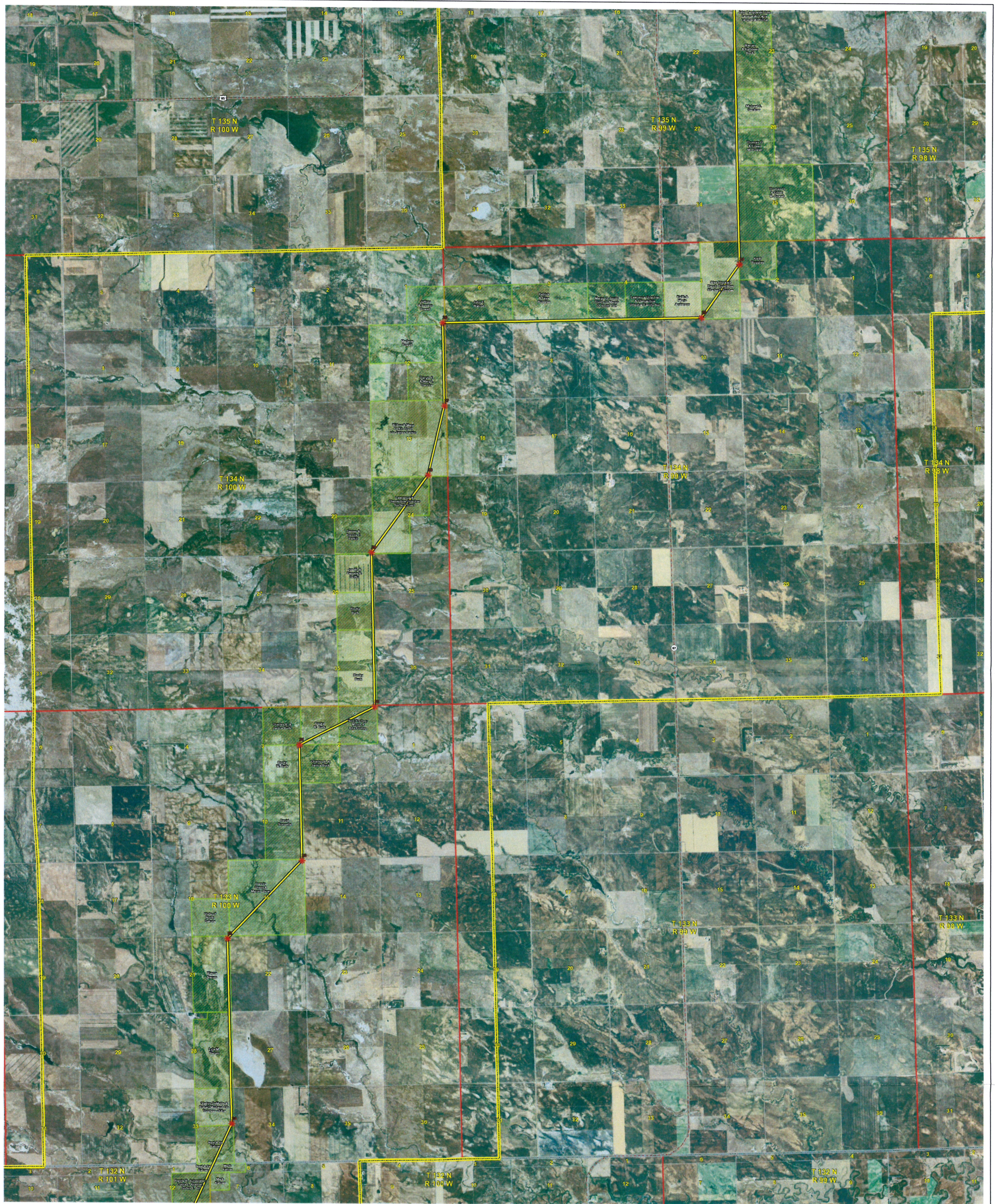
**BASIN ELECTRIC POWER COOPERATIVE**  
A Touchstone Energy Cooperative

**Western AREA POWER ADMINISTRATION**

**Project Location**  
**Map 2 of 5**

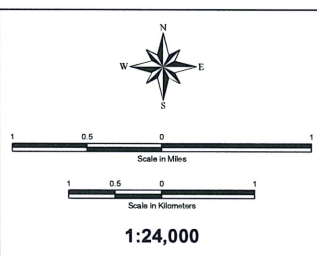
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July 2008



**LEGEND**

- \* Angle Points
- Substation
- Proposed Route
- Proposed Corridor
- Land Ownership Along Route
- Township/Range
- Section
- City/Town



**Belfield to Rhame Transmission Project**

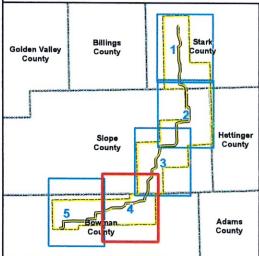
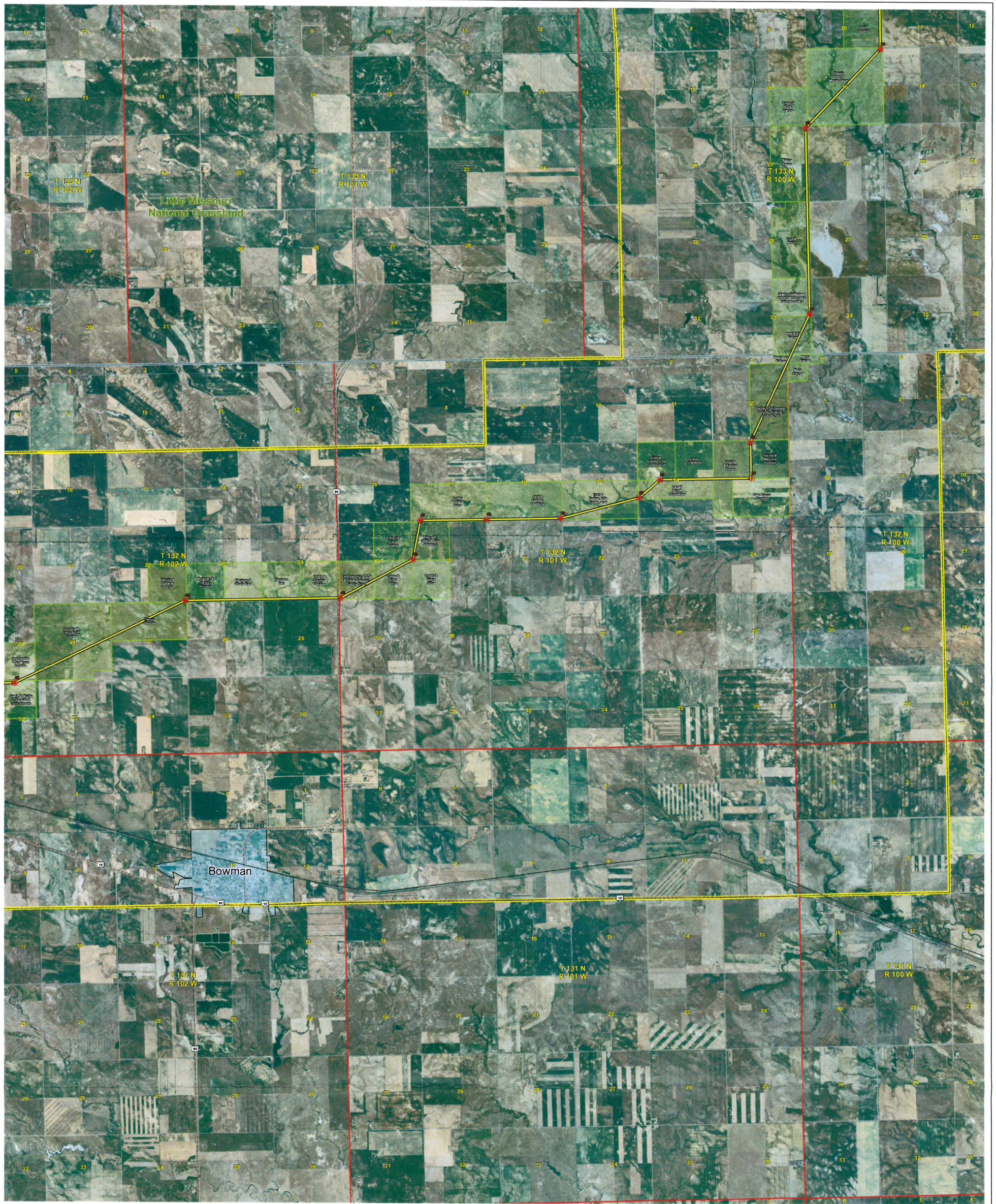
**BASIN ELECTRIC POWER COOPERATIVE**  
A Touchstone Energy Cooperative

**WESTERN AREA POWER ADMINISTRATION**

**Project Location**  
**Map 3 of 5**

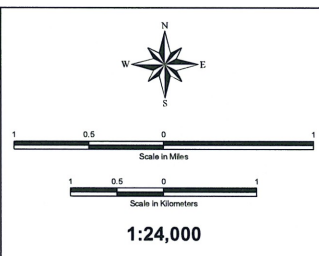
ENSR | AECOM

July 2008



**LEGEND**

- \* Angle Points
- Substation
- Proposed Route
- Proposed Corridor
- Land Ownership Along Route
- Township/Range
- Section
- City/Town



**Belfield to Rhame Transmission Project**

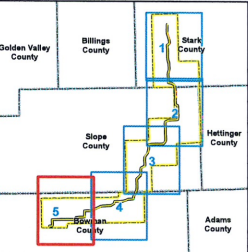
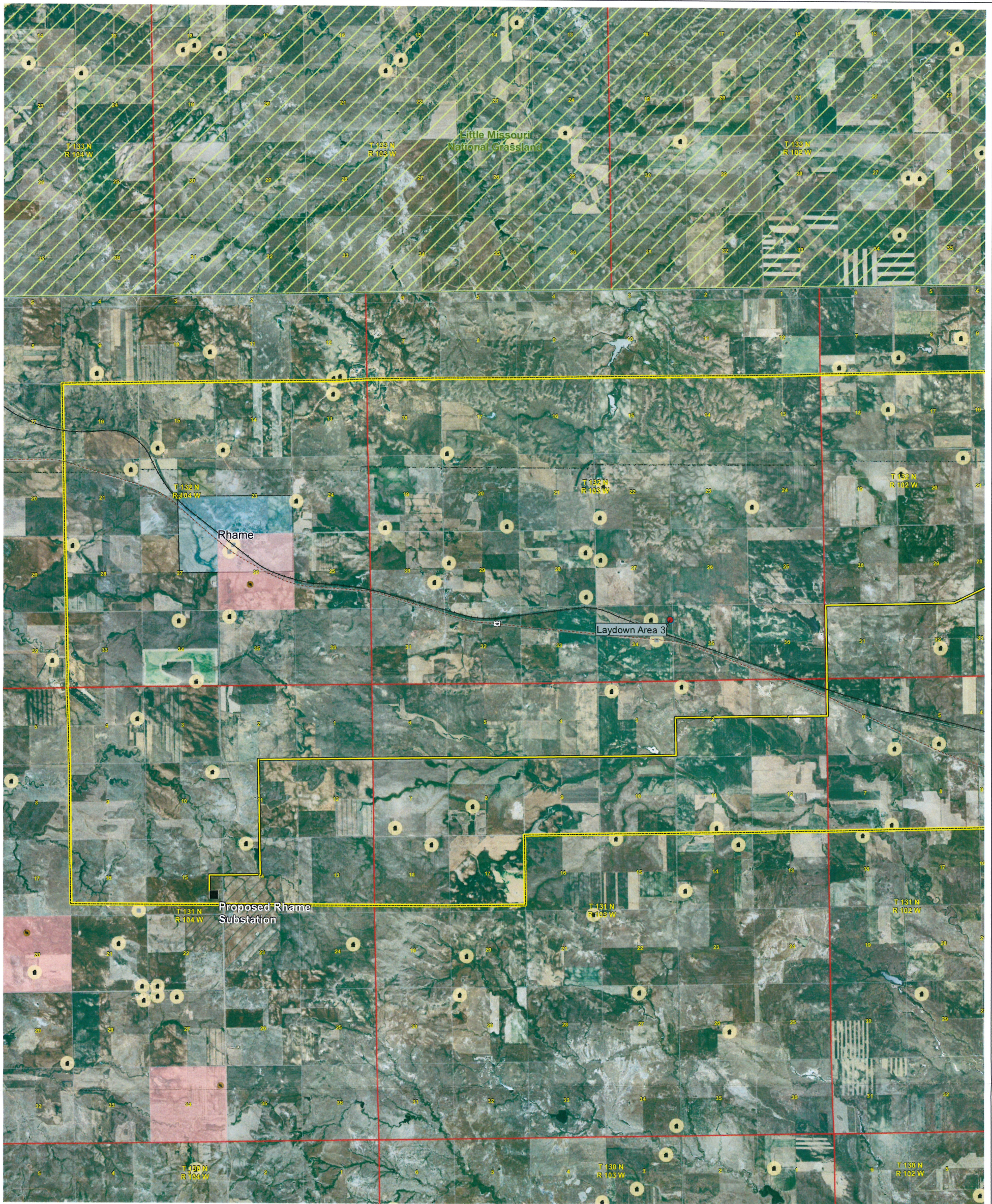
**BASIN ELECTRIC POWER COOPERATIVE**  
A Touchstone Energy Cooperative

**WESTERN AREA POWER ADMINISTRATION**

**Project Location**  
**Map 4 of 5**

ENSR | AECOM

July 2008



**LEGEND**

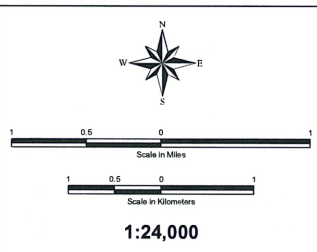
- Proposed Route
- Laydown Area
- Proposed Microwave Tower
- Substation
- Township/Range
- Section
- City/Town

**Avoidance Areas**

- U.S. Fish and Wildlife Service National Wildlife Refuge
- National Grassland
- School With 500 ft. Buffer
- Residence or Other Structure With 500 ft. Buffer
- Place of Business With 500 ft. Buffer

**Exclusion Areas**

- Golden Eagle Nest
- Rare Animal Observation
- Rare Ecological Community
- Rare Plant Observation
- Campground
- Area With Natural Heritage Species Observations



**Belfield to Rhame Transmission Project**

**Project Location**  
Map 5 of 5

ENSR | AECOM July 2008

Return Recorded Document to:  
Basin Electric Power Cooperative  
352 1<sup>st</sup> Street E, Suite D  
Dickinson, North Dakota 58601-5268



**PROJECT NO. 181**  
**PARCEL NO. 1270 & 1280**

### **TRANSMISSION LINE EASEMENT**

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, **Delores Beaudoin and Lydia Meduna, Trustees of the Leocadia Emmil Family Trust dated November 25, 1996** of the post office address 11435 Highway 10, Dickinson, North Dakota, whether one or more, hereinafter referred to as the "Grantor(s)" being the owner of, or having an interest in, land situated in the County of Stark, State of North Dakota, for the consideration of Ten Dollars (\$10.00) and other good and valuable consideration, receipt of which is hereby acknowledged, does hereby grant unto **Basin Electric Power Cooperative**, whose address is 1717 East Interstate Avenue, Bismarck, North Dakota 58503-0564, hereinafter referred to as "Grantee", and to its successors and/or assigns, the exclusive right for a term of ninety-nine (99) years for an electrical transmission line, to enter upon the lands of the Grantor(s) referred to and to place, construct, reconstruct, operate, repair, inspect, maintain, and replace thereon a line or system for the purpose of transmitting and/or distributing electricity, including all necessary fixtures, including poles, wires, all necessary attachments, and appurtenances thereto, including but not limited to any and all communications systems, equipment, lines, etc. which are now or might from time to time in the future be determined to be necessary or helpful with respect to operation, repair, monitoring, etc. of the transmission system, and to cut down, top, trim, control the growth, or eliminate trees or shrubbery within the Easement Area which might interfere with or endanger the said transmission line.

There will be no buildings, wells, hay or straw stacks or other structures placed in the Easement Area. The Grantor(s), his/her/their heirs, successors and/or assigns will have the right to plow, plant, cultivate, harvest or use in any manner said premises as long as the Grantor(s) does not interfere with any of the rights and privileges herein granted to the Grantee or endanger any property of either party. The Grantee will have the right of ingress and egress to and from Grantee's Easement including the right to utilize existing roads, trails and gates over and across Grantor's adjacent property for the purpose of carrying out the provisions of the easement and the right to install, maintain, and use gates in all fences which cross the Easement Area.

The electric transmission line easement is described as follows and as shown on Exhibit "A" attached hereto and made a part hereof:

**PARCEL #1270**  
NE1/4 SECTION 5-T138N-R98W

A STRIP OF LAND, 62.50 FEET ON EACH SIDE OF A CENTERLINE TO BE DESCRIBED, LOCATED IN THE NORTHEAST ONE-QUARTER OF SECTION 5 – TOWNSHIP 138 NORTH – RANGE 98 WEST OF THE FIFTH PRINCIPAL MERIDIAN, STARK COUNTY, NORTH DAKOTA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST ONE-QUARTER CORNER OF SAID SECTION 5; THENCE N88°20'21"W ON THE SOUTH LINE OF THE NORTHEAST ONE-QUARTER OF SECTION 5 A DISTANCE OF 834.79 FEET TO THE POINT OF BEGINNING OF SAID CENTERLINE:

THENCE, ON SAID CENTERLINE, N13°57'05"W A DISTANCE OF 2770.26 FEET TO THE NORTH LINE OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 5 AND THERE TERMINATING.

THE SIDELINES OF SAID STRIP TO BE LENGTHENED OR SHORTENED TO INTERSECT WITH PROPERTY AND SECTION LINES.

THE BASIS OF BEARINGS IS THE NORTH DAKOTA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. THE DISTANCES ARE IN TERMS OF GROUND DISTANCE.

THE ABOVE DESCRIBED PARCEL CONTAINS 167.89 RODS/ 7.95 ACRES, MORE OR LESS.

**PARCEL #1280**  
S1/2NE1/4; SE1/4 SECTION 32-T139N-R98W

A STRIP OF LAND, 62.50 FEET ON EACH SIDE OF A CENTERLINE TO BE DESCRIBED, LOCATED IN THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER AND THE SOUTHEAST ONE-QUARTER OF SECTION 32 – TOWNSHIP 139 NORTH – RANGE 98 WEST OF THE FIFTH PRINCIPAL MERIDIAN, STARK COUNTY, NORTH DAKOTA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH ONE-QUARTER CORNER OF SAID SECTION 32; THENCE S88°35'55"E ON THE SOUTH LINE OF THE SOUTHEAST ONE-QUARTER OF SECTION 32 A DISTANCE OF 1066.91 FEET TO THE POINT OF BEGINNING OF SAID CENTERLINE:

THENCE, ON SAID CENTERLINE, N13°57'05"W A DISTANCE OF 3865.44 FEET TO THE WEST LINE OF THE SOUTH ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 32 AND THERE TERMINATING.

THE SIDELINES OF SAID STRIP TO BE LENGTHENED OR SHORTENED TO INTERSECT WITH PROPERTY AND SECTION LINES.

THE BASIS OF BEARINGS IS THE NORTH DAKOTA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. THE DISTANCES ARE IN TERMS OF GROUND DISTANCE.

THE ABOVE DESCRIBED PARCEL CONTAINS 234.27 RODS/ 11.10 ACRES, MORE OR LESS.

It is further agreed as follows:

1. The Grantee will pay for all physical property damages, including crop damages, that may be caused in the surveying, building, operating, and maintaining of its transmission line over and across the property of the Grantor(s). Grantee further agrees to restore, as nearly as

practicable, the surface of the right of way to as good or better condition as existed immediately prior to construction operations.

2. The Grantor(s) agrees that all structures, poles, wires, and other facilities installed on the Easement Area at the Grantee's expense, will remain the property of the Grantee, and removable by the Grantee.
3. The Grantor(s) covenants and warrants that he/she/they are the owner(s) of the above-described lands subject to such defects, outstanding interests, liens or encumbrances as may now appear of record.
4. The rights of the Grantee hereunder may be assigned in whole or in part.
5. The term Grantee herein will be construed to include Grantee's agents, representatives, employees, contractors, and subcontractors.
6. For purposes of this Easement, the term "transmission line" will be a line not to exceed 230kV and may be owned, operated, and maintained by Grantee or a third party.
7. The Grantee will have the right to install and maintain anchors and guy wires when reasonably necessary, and the right of ingress and egress over other lands of Grantor(s) only as necessary to access the hereinabove described right-of-way.
8. The Grantee will have the right to leave the Easement Area for necessary travel around bodies of water, excessively wet ground or other physical barriers.
9. The Grantor(s) waives and releases all rights under and by virtue of the Homestead Exemption laws of the State of North Dakota.
10. Grantee agrees to indemnify and hold Grantor harmless from and against all third party claims which may result from the construction, operation and maintenance of said facilities, including, but not limited to, injuries to or deaths of persons or animals, court costs and reasonable attorneys' fees.
11. It is agreed that Grantor shall not grant or allow any parallel or longitudinal easements within Grantee's above-described easement.
12. Grantee shall not permit any employees, authorized agents, invitees, or any other person under the direction or control of Grantee to carry firearms or any weapon while on the easement. No hunting, camping, or open fires by Grantees employees, authorized agents, invitees or other persons under the direction or control of Grantee shall be permitted on the easement at any time. The use of explosives shall not be permitted on the easement. Grantee shall not permit any employees, authorized agents, invitees, or any other person under the direction or control of Grantee to use any type of alcohol or drugs while on the easement. Grantee shall notify all of its contractors, agents, employees and invitees that no firearms, alcohol, drugs, weapons, hunting, camping, or open fires are permitted on the easement.

This instrument and the benefits and obligations herein contained will inure to the benefit of and be binding and obligatory upon the heirs, executors, administrators, successors, and assigns of the parties hereto.

IN WITNESS WHEREOF, the Grantor(s) has set his/her/their hand this \_\_\_\_day of \_\_\_\_\_, 2007.

**Grantor: Leocadia Emmil Family Trust**

\_\_\_\_\_  
**Delores Beaudoin, Trustee**

\_\_\_\_\_  
**Lydia Meduna, Trustee**

ACKNOWLEDGMENT

STATE OF **North Dakota** }  
 }  
COUNTY OF **Stark** }

The foregoing instrument was acknowledged before me, the undersigned notary public, this \_\_\_\_\_ day of \_\_\_\_\_, 2007 by **Delores Beaudoin, Trustee** of the **Leocadia Emmil Family Trust.**

My commission expires:

\_\_\_\_\_  
Notary Public

STATE OF **North Dakota** }  
 }  
COUNTY OF **Stark** }

The foregoing instrument was acknowledged before me, the undersigned notary public, this \_\_\_\_\_ day of \_\_\_\_\_, 2007 by **Lydia Meduna, Trustee** of the **Leocadia Emmil Family Trust.**

My commission expires:

\_\_\_\_\_  
Notary Public

**EXHIBIT 'A'**  
**PARCEL 1270**

SEC. 5, T168N, R99W  
STARK COUNTY  
NORTH DAKOTA

1270  
LEOCADIA EMIL FAMILY TRUST  
NE 1/4 SEC. 5, T168N, R99W  
CENTERLINE LENGTH 2770.26'  
16.78 ACRES  
STA. 4052+39.21 TO STA. 4090+09.03

E-1321573.17

N-225948.77

PROPERTY  
STATION  
N-22595.9  
E-25948.77

43' SW

SEC. 001  
T168N, R99W

**SURVEYORS CERTIFICATE**

I, ALAN W. ERICKSON, A REGISTERED LAND SURVEYOR IN THE STATE OF NORTH DAKOTA, HEREBY CERTIFY THAT THIS SURVEY DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY BELIEF AND KNOWLEDGE. ANY ALTERATION OF THIS DOCUMENT WILL VOID THIS CERTIFICATION.

ALAN W. ERICKSON RLS 1202  
ULTEIG ENGINEERS, INC.  
1412 BASIN AVENUE  
BISMARCK, N.D. 58504

STATE OF NORTH DAKOTA  
COUNTY OF BURLEIGH

ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2007, BEFORE ME PERSONALLY APPEARED ALAN W. ERICKSON, KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING SURVEYOR'S CERTIFICATE AND HE ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME.

MARLYS MEIER, NOTARY PUBLIC  
BURLEIGH COUNTY, NORTH DAKOTA  
MY COMMISSION EXPIRES \_\_\_\_\_



SCALE: 1" = 1000'



UEI#307.278

**EXHIBIT 'A'**  
**PARCEL 1280**

SEC. 32 T109N R08W  
STARK COUNTY,  
NORTH DAKOTA

SEC. COR  
N 430577.42  
E 132167.25

PROPERTY LINE  
STA 4080.000 TO  
N 430577.42  
E 132167.25

SECTION LINE  
N 430577.42  
E 132167.25

1280  
THE OCADIA EMMI FAMILY TRUST  
SEC. 32 T109N R08W  
CENTERLINE LENGTH 3887.41  
26427 ROBSON ACRES  
STA 4080.000 TO STA 4287.73

SECTION LINE  
N 430577.42  
E 132167.25

SECTION CORNER  
N 430577.42  
E 132167.25

**SURVEYORS CERTIFICATE**

I, ALAN W. ERICKSON, A REGISTERED LAND SURVEYOR IN THE STATE OF NORTH DAKOTA, HEREBY CERTIFY THAT THIS SURVEY DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY BELIEF AND KNOWLEDGE. ANY ALTERATION OF THIS DOCUMENT WILL VOID THIS CERTIFICATION.

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1412 BASIN AVENUE  
BISMARCK, N.D. 58504

STATE OF NORTH DAKOTA  
SS  
COUNTY OF BURLEIGH

ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2007, BEFORE ME PERSONALLY APPEARED ALAN W. ERICKSON, KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING SURVEYOR'S CERTIFICATE AND HE ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME.

*pd for quarter  
160 acres*

MARLYS MEIER, NOTARY PUBLIC  
BURLEIGH COUNTY, NORTH DAKOTA  
MY COMMISSION EXPIRES \_\_\_\_\_



SCALE: 1" = 1000'

Date 5/6/08

Tracts 1270 & 1280

Landowner LYDIA MEDUNA, TRUSTEE OF THE  
LEOCADIA EMMIL FAM. TRST.

### Compensation Calculations

#### Transmission Easement

Total Footage 6,634

Pasture 7.95 acres @ \$605 per acre = \$ 4,810

Crop 11.10 acres @ \$770 per acre = \$ 8,547

Total compensation offer \$ 13,357

\$ 134.92 per year / \$ 16.87 per pole  
per owner \$ 22.49 per yr.

Date 11/30/07

Tracts 1270 & 1280

Landowner DELORIS BEANDOW & LYDIA MEDUNA-TRUSTEES  
OF LEOCADIA EMIL FARM TRST.

### Compensation Calculations- Crop Land

#### Transmission Easement

Total Footage 6,634'

Total Rods \_\_\_\_\_

Total Acres 19.05 @ \$700.00 per acre

\$13,335

332.  
~~4809.75~~

8547.

13879.75

7.95 acres of Pasture

11.10 acres of CRP

We want  
the easement to  
go back to the  
Section - 1/4 M West.

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**BASIN ELECTRIC  
POWER COOPERATIVE**

1717 EAST INTERSTATE AVENUE  
BISMARCK, NORTH DAKOTA 58503-0564  
PHONE 701-223-0441  
FAX: 701/224-5336



June 13, 2008

Leocadia Emmil Family Trust  
c/o Lydia Meduna  
393 1st Avenue SW  
Dickinson ND 58601

Dear Ms. Meduna:

Duey Marthaller and I have worked closely with Phil throughout the routing process. Phil always forwarded to us any requested route changes. We have discussed the route in your area many times. For all routing, we follow North Dakota Public Service Commission rules and guidelines.

In the paragraphs below, I will describe the basis for the proposed route in your area, address your request to move the line closer to the quarter line in Section 32, and explain how we established the value of the easement. At the Belfield Substation, we had to go east before going south because of land under easement for a proposed coal gasification plant.

As we go through Sections 20 and 29, we are adjacent to the quarter line, but not on it. We cannot continue down this line because we would be too close to the Thomas Metz farmstead in Section 8. Also, we would be crossing established cropland. The proposed route cannot go west because of farmsteads along section lines in Sections 32 and 5.

The proposed route enters Section 32 adjacent to the north-south quarter line. The route continues straight south until it gets past a low-lying area and some trees on the Tangen property. From this point, the route turns to the southeast for about two miles. This proposed route was selected because:

- The line distance is minimized because it is a straight line.
- Farmsteads are avoided.
- The line does not impact current land use.
- The line would not be easily visible from nearby farmsteads.

Phil forwarded your request to move the line west, closer to the quarter line. We believe this is not the best route for the following reasons:

- At least one additional angle structure would be required at a cost of approximately \$50,000.
- The line would have to go through rougher terrain in the NE quarter of Section 5.
- The line would be more directly visible from the Hurt residence.

Lydia Meduna  
June 13, 2008  
Page 2

- The linear distance of line on your property would be greater and require at least one additional structure on your property.
- We have secured easements on all adjoining properties. Moving the line would increase the impact on those properties.

Duey and I would be happy to meet with you and discuss in more detail. In addition, we can show you our drawing that shows exactly where the proposed structures would be located.

Our offer for this easement is about 10 percent higher than the appraised land value. We paid for a certified land value appraisal prior to starting this process. We are paying for a 125-foot strip of land, and we will be installing a single pole every 800 feet. The impact of this pole is minimal.

Please feel free to contact us in Bismarck or Dickinson anytime. We have enjoyed working with you and all landowners in this area. Our business cards are attached.

Sincerely,



Mike Murray  
Property & Right-of-Way Supervisor

/cb

cc: Duey Marthaller