



May 17, 2012

Mr. Terry Ellsworth
US Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501

Mr. John Schumacher
Conservation Section
North Dakota Game and Fish Department
100 North Bismarck Expressway
Bismarck, ND 58501-5095

**Re: Minnkota Power Cooperative's Center to Grand Forks 345 kV Transmission Line
Project – Stick Nests Surveys**

Dear Terry and John:

Minnkota Power Cooperative, Inc. (Minnkota) has proposed an approximate 260-mile 345-kilovolt transmission line from the Milton R. Young Station near Center, North Dakota to the Prairie Substation adjacent to Grand Forks, North Dakota, called the Center to Grand Forks (CGF) Project.

In March 2010, and March 2012 surveys for stick nests, including bald eagle nests, were conducted as part of the routing process. The closest bald eagle nest is about 1,000 feet from the project (based on the April 25, 2012 layout), which is well outside of the 660 foot eagle nest setback distance recommended by USFWS.

There are no federally threatened or endangered species of birds within the project area that are known to build stick nests. Non-eagle/non-ESA stick nests within the project area are regulated according to the MBTA, which allows for the destruction of inactive nests (without birds or eggs), provided that no possession occurs as part of the destruction of the inactive nest.

Sincerely,

A handwritten signature in black ink that reads "Michael Hennes".

Michael Hennes
Minnkota Project Manager

cc: John Graves, Minnkota
Brian Hunker, HDR
Scott Krych, HDR

Enclosure: Stick Nest Survey Report (March 2012)

Minnkota Power

MPC COOPERATIVE, INC.

Your Touchstone Energy® Partner



Raptor Nest Survey Addendum



Center to Grand Forks 345 kV Line

Prepared For:
Minnkota Power Cooperative, Inc

Prepared By:
HDR Engineering, Inc.

March 2012



ONE COMPANY | Many Solutions®

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1.0 INTRODUCTION AND SUMMARY

On March 22, 2012 two HDR Engineering, Inc. (HDR) biologists—Scott Krych and Aaron Diehl—conducted stick nest surveys for the proposed right-of-way of the Center to Grand Forks 345 kV Transmission Line Project (Project). The Project is located between the Center Substation near Center, North Dakota and the Prairie Substation near Grand Forks, North Dakota.

The March 22, 2012 surveys were centered on the approximately 250 mile long project right-of-way and included a 2,000 foot wide area of review for raptor nests and a one-mile wide area of review for eagle nests. Data collected during the March 22, 2012 raptor nest surveys (March 2012 surveys) serves as an addendum to March 29-30, 2010 raptor nest surveys (March 2010 surveys) that were conducted by Melissa Lundberg and Aaron Diehl as part of the project routing process.

March 2012 surveys took place from a fixed-wing aircraft piloted by Larry Gebhardt, Minnkota Power Cooperative, Inc (Minnkota) pilot. Surveys were conducted prior to “leaf-out” at a general height of about 100 to 300 feet above ground level.

The March 2012 raptor nest data may be used to identify inactive stick nests that may need to be cleared within the right-of-way (excluding eagle nests) as part of 2012 project construction and to ensure appropriate construction buffers around eagle nests. Since birds may continue to build new nests or inhabit existing nests during the breeding season, an environmental inspector is anticipated to monitor the status of active nests during construction.

The March 2012 surveys found no bald eagle nests within the 660 foot eagle nest setback distance recommended by the US Fish and Wildlife Service. During March 2012 surveys, two bald eagle nests were located within 0.5 miles of the project ROW/laydown areas (see description below). The closest of these nests is about 1,000 feet from the project, which is well outside of the 660 foot eagle nest setback distance recommended by US Fish and Wildlife Service.

Bald Eagle Nests

Section 5 of Florance Township (T147N, R63W), Foster County (Figure 29)

- **March 2010**

During the March 2010 surveys, one active bald eagle nest was recorded in Section 5 of Florance Township, Foster County. The nest was located in a mature tree within a windrow about 900 feet south of the section line. Two birds occupied the nest during the March 2010 surveys. This nest represented a new record that had not been recorded in GIS databases of the North Dakota Game and Fish Department or North Dakota Parks and Recreation Department

- **March 2012**

The active bald eagle nest in Section 5 of Florance Township was revisited during the March 2012 surveys. The nest is still in excellent condition. No bird was seen sitting on the nest, but a mature bald eagle was perched about 1,200 feet south of the nest in the same windrow. This nest is located about 1,850 feet south of the edge of the ROW.

Section 16 of Romness Township (T147N, R58W), Griggs County (Figure 36)

During March 2012 surveys, an active bald eagle nest was recorded in a live cottonwood tree in the Sheyenne River riparian area in Section 16 of Romness Township in Griggs County. This nest is located about 500 feet north of State Highway 45 and about 1,000 feet northwest of the entrance to laydown area E3. This nest is located about 3.4 miles southeast of the Project's crossing of the Sheyenne River.

Bald Eagle Observations

Eight bald eagles were observed during the March 2012 surveys, of which six were observed along the Sheyenne River. During March 2012 surveys, Rosefield Slough in Eddy County was also revisited to identify if any roosting patterns carried forward from the March 2010 Survey

Rocky Run and Rosefield Slough, Eddy County (Figure 25)

- **March 2010**

During the March 2010 surveys a group of five eagles were perched in tree rows adjacent to Rocky Run and Rosefield Slough, Eddy County (Section 28, T148N, R67W).

- **March 2012**

During March 2012 surveys the area within one mile of this location was reviewed for eagle activity. No eagles were observed at or in the general vicinity of this location during March 2012 surveys.

Sheyenne River Crossing, Griggs County (Figure 35 and 36)

- **March 2010**

No bald eagle activity was noted along the Sheyenne River in Griggs County during March 2010 surveys.

- **March 2012**

During the March 2012 surveys bald eagle activity was noted in the general vicinity of the proposed Sheyenne River crossing in Section 6, T147N, R58W of Griggs County. Two perched bald eagles and one soaring bald eagle was noted within one mile of the Sheyenne River crossing. Additionally, two perched bald eagles and one nesting bald eagle were noted near ND 45, about 3 miles southeast of the ROW.

Stick Nests

Twenty-five stick nests were identified during the March 2012 Survey, of which 13 of the stick nests are large enough to possibly be raptor nests. No nesting activity was observed on any of the 25 nests during the March 2012 surveys. One non-raptor nest is located within the ROW, four possible raptor nests are within 330 feet of ROW edge (outside of ROW), and three possible raptor nests are from 330 feet to 660 feet of the ROW.

Stick nests within ROW

- There is one non-raptor stick nest located within the ROW (Figure 26).

Possible raptor nests within 330 feet of ROW edge (outside of ROW)

- There are six possible raptor nests that are within 660 feet of the ROW edge:
 - Sec 13, T142N, R81W, Burleigh County (Figure 3)
 - Sec 24, T142N, R81W, Burleigh County (Figure 3)
 - Sec 8, T147N, R74W, Sheridan County (Figure 17) – nest 1
 - Sec 8, T147N, R74W, Sheridan County (Figure 17) – nest 2

Possible raptor nests from 330 feet to 660 feet of ROW edge

- Sec 6, T147N, R60W, Griggs County (Figure 33)
- Sec 14, T149N, R57W, Nelson County, (Figure 40)
- Sec 26, T147N, R78W, Sheridan County (Figure 13)

2.0 REGULATORY FRAMEWORK

2.1 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) is a statute that protects 1,006 bird species within the United States, making it unlawful to pursue, capture, kill, or possess any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and Russia (and several other countries of the former Soviet Union). Most birds (outside of introduced species and non-migratory game birds) within the US and the Project area are protected under the MBTA. This protection extends to most avian species, except non-migratory game birds such as pheasants, grouse, quail, or any species introduced into the U.S. such as pigeons and house sparrows. More specifically, the Act prohibits activities that, in effect, result in direct taking or nest destruction, and not habitat. The MBTA protects from activities that “pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatsoever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention...for the protection of migratory birds...or any part, nest, or egg of any such bird,” (16 USC 703), unless these activities are permitted by regulatory means.

Because the MBTA is a strict liability statute, proof of intent to harm or kill a migratory bird is not required for an action to be considered a criminal offense. Thus, the USFWS is able to exercise its jurisdiction and prosecute persons and entities that in good faith failed to adequately consult with the agency and develop reasonable measures to prevent the incidental take of migratory birds.

2.2 Bald and Golden Eagle Protection Act

The federal Bald and Golden Eagle Protection Act of 1940 (BGEPA; 16 USC 668–668c, as amended) is administered by the USFWS and was enacted to protect bald and golden eagles, their nests, eggs, and parts (e.g., feathers or talons). The BGEPA states that no person shall take, possess, sell, purchase, barter, offer for sale, purchase or barter, transport, export, or import any bald or golden eagle alive or dead, or any part, nest or egg without a valid permit to do so (USFWS, n.d.). The BGEPA also prohibits the take of bald and golden eagles unless pursuant to regulations. Take is defined by the BGEPA as an action “to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.” Disturb is defined in the BGEPA as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (USFWS, n.d.). In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles were not present. Permits are issued to Native Americans to possess eagle feathers for religious purposes, and salvaged eagle carcasses can be sent to the National Eagle Repository in Colorado where they are redistributed to Native Americans. Although the bald eagle was removed from the Endangered Species List in June 2007, it is still federally protected under the BGEPA and Migratory Bird Treaty Act. In addition, the

National Bald Eagle Management Guidelines were published in conjunction with delisting by the USFWS in May 2007 to provide provisions to continue to protect bald eagles from harmful actions and impacts.

In 2009, the USFWS issued a final rule on new permit regulations that would allow some disturbance of eagles “in the course of conducting lawful activities” (74 FR 46836–46879). USFWS’s description of its 2009 rule suggests that physical take of an eagle will only be authorized if every avoidance measure has been exhausted. Removal of nests will still generally be permitted only in cases where the nest poses a threat to human health, or where the removal would protect eagles. Explanations of the rule on USFWS’s website specify that take permits may be issued when “necessary for the protection of...other interests in any particular locality”. The discussion expands the definition of such public and private interests to include utility infrastructure development and maintenance. Considerations for issuing take permits include the health of the local and regional eagle populations, availability of suitable nesting and foraging habitat for any displaced eagles, and whether the take and associated mitigation provides a net benefit to eagles (74 FR 46836–46879). (<http://www.fws.gov/midwest/Eagle/guidelines/bgpepa.html>).

2.3 US Fish and Wildlife Service Communication

USFWS made recommendations regarding nesting birds in a response letter received by Minnkota on June 2, 2009. The bald eagle and raptor nest surveys have been conducted in consideration of the recommendations quoted below.

US Fish and Wildlife Service Bald Eagle Recommendations

We recommend conducting surveys to identify bald eagle nests along the proposed route in winter/early spring before trees have leaves that could screen possible nests. To avoid/minimize impacts to nesting bald eagles from transmission line construction activities, the Service recommends (1) keeping a distance between the activity and the nest (distance buffers: 660 feet if the activity will be visible from the nest; 330 feet if the activity will not be visible from the nest.) Clearing, external construction, and landscaping between 330 feet and 660 feet should be done outside breeding season. (2) maintaining preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) avoiding certain activities during breeding season. The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest trees and provide for alternative or replacement nest trees. The Service’s May 2007, National Bald Eagle Management Guidelines contain detailed information on protecting bald eagles from disturbance due to human activity. The guidelines can be accessed on the Service’s website:

(<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>).

US Fish and Wildlife Service Migratory Bird Recommendation

Schedule constructions for late summer or fall/early winter so as not to disrupt waterfowl or other wildlife during the breeding season February 1 to July 15). If work is proposed to take place during the breeding season or at any other time which may result in the take of migratory birds or active nests, the Service recommends that the project proponent arrange to have a qualified biologist conduct a field survey of the affected habitats to determine the absence or presence of nesting migratory birds.

If nesting migratory birds are found, we request you contact this office, suspend construction, or take other measures, such as maintaining adequate buffers, to protect the birds until the young have fledged. The Service further recommends that field surveys from nesting birds, along with information regarding the qualifications of the biologist(s) performing surveys, and any avoidance measures implemented at the project site, be thoroughly documented and that such documentation be shared with the Service and maintained on file by the project proponent at least until such time as construction on the proposed project has been completed.

3.0 METHODOLOGY— BALD EAGLE AND RAPTOR NEST SURVEYS

3.1 Survey Protocol

Survey Methods

An aerial survey from a fixed-wing aircraft was conducted on March 22, 2012, prior to “leaf-out” or “bud-break” which facilitated observation of nests within trees. One pass was flown along the 150-foot right-of-way at a general height of between 100 feet and 300 feet above ground level. Additional passes were made in instances where higher potential habitat was detected (e.g., wooded riparian areas adjacent to the Missouri River and the Sheyenne River) and where 2010 surveys recorded nest locations or eagle activity. Weather was clear with good visibility during the 2012 aerial surveys. Two HDR biologists, in addition to the pilot, conducted the surveys. A laptop computer with aerial photography was synched to a GPS unit during the flyover. GPS information was used to digitize stick nest locations in ArcPad during the flyover. Accuracy of nest locations within the 2,000 foot wide small stick nest survey area is estimated to be about 30 feet. Accuracy of eagle nests is estimated to be about 20 feet.

Survey Visibility Distances

- **Large Stick Nests:** From the aircraft, visibility of large objects such as bald eagle nests, were visible within 0.5 miles on either side of the flight path, resulting in a survey area that is one mile wide.
- **Small Stick Nests:** From the aircraft, small stick nests such as raptor nests, crow nests, and mourning dove nests were visible within 1,000 feet of the flight path, resulting in a survey area of 2,000 feet wide.
- **Individual Eagles:** From the aircraft, individual bald eagles that were perched or soaring were visible, at minimum, within 1,000 feet of the flight path, resulting in a minimum survey area of 2,000 feet wide.

Nests locations were recorded using a GPS synched to aerial photography. Nest location are shown on Figures 1 to 50. Data was also recorded on the attached Raptor Nest Identification Forms (Appendix A) and summarized in Table 4-1 and Table 4-2. Data was collected according to the standards discussed in Section 3.2, below.

3.2 Raptor Nest Identification and Documentation

New Nests

New nests were assigned a unique 10-digit, alphanumeric identification number. Each identification number is structured to indicate location. Three alpha/numeric characters indicate the township number and whether the township is north or south of the base line (N or S). These are followed by another three alphanumeric characters that indicate the range number and whether the range is east or west of the base line (E or W). The next two (numeric) characters refer to the section and the final two (numeric) characters represent a sequential number for all known and inventoried nests within that section. Many raptors do not nest in the winter, thus most nests observed during the

2010 and 2012 surveys appeared to be inactive. However, when birds were observed on or near a nest the species was noted when possible.

11N 54E 21 01

{Township} {Range} {section} {nest no.}

For example: nest number 11N54E2101 is located in Township 11 North, Range 54 East, Section 21, and this is the first nest identified within Section 21.

Nest Location

For each location surveyors:

- Entered the township, range, section and ¼ section; for example: 111N 62W Section 5, NE 1/4
- Entered the county name
- Entered the UTM Zone of the nest location
- Entered the northing UTM coordinate (7 characters)
- Entered the easting UTM coordinate (6 characters)
- Entered the approximate nest site elevation in feet. (NOT nest height, but the elevation of the terrain)
- Entered the name of the appropriate USGS 7.5-inch quadrangle

Nest Condition

Nest condition was recorded, when feasible, with the following classification system:

- GONE: Past surveys have indicated a nest, but no remnants of the nest can be found
- REMNANTS: Scant material remains and is not usable unless fully rebuilt
- POOR: Nest is dilapidated and in need of major repair to be used
- FAIR: Nest is not dilapidated, but needs significant repair in order to be used
- GOOD: Nest is in need of only minor attention in order to be used
- EXCELLENT: Nest is able to be used with little or no attention or maintenance
- UNKNOWN: The nest is obviously present, i.e., a tree cavity or rock cavity, but because of its location, no determination can be made

Date Observed

The date of the nest observation was recorded in month/day/year format (MM/DD/YYYY). This format applies to the date of the first observation and the dates of all future observations.

Observed By

The name of the person making the first observation of this nest was recorded.

Ownership

Land ownership was recorded as listed below:

- P: Private land
- S: State land
- F: Federal land
- OTHER: Other – specify

Nest Substrate and Exposure

Surveyors recorded the following information when feasible:

- Recorded (in feet) the height of the substrate (ridge, tree, etc.) upon or in which the nest is located above the surrounding terrain
- Recorded (in feet) the height of the nest on or in the substrate, i.e., height of tree nest above the ground; height of ridge nest on ridge; height of pillar nest above the surrounding terrain
- Recorded the general direction of nest exposure, i.e., N, NE, S, SW, WNW, etc.
- Recorded the type of substrate upon which nest is built; for example, tree species, live or dead, rock outcrop, riparian area, windrow, or manmade structure

Vegetation Type

Surveyors, when feasible, recorded the general habitat type and vegetation found around the nest site; for example, grassland, woodland, cultivated cropland, pasture, or riparian.

3.3 Remarks

Surveyors recorded any unique features, physical relationships to other nests, proximity to human disturbances, or other pertinent observations.

4.0 SURVEY RESULTS

4.1 Bald Eagle Nests

Project ROW

No bald eagle nests were recorded within the ROW or within 660 feet of the edge of the project ROW, which is the construction buffer distance indicated by USFWS in Section 2.3. Two bald eagle nests were identified within 0.5 miles of the ROW/laydowns areas.

Within 0.5 Miles of ROW/Laydown Area

Section 5 of Florance Township (T147N, R63W), Foster County (Figure 29)

- **March 2010**

During March 2010 surveys, one active bald eagle nest was recorded in a windrow in Section 5 of Florance Township in Foster County, about 900 feet south of the section line. Two birds occupied the nest during the March 2010 surveys. This nest represented a new record that had not been recorded in GIS databases of the North Dakota Game and Fish Department or North Dakota Parks and Recreation Department

- **March 2012**

The active bald eagle nest in Section 5 of Florance Township was revisited during the March 2012 surveys. The nest is still in excellent condition. No bird was seen sitting on the nest, but a mature bald eagle was perched in the same windrow, near the nest. This nest is located about 1,850 feet south of the ROW.

Section 16 of Romness Township (T147N, R58W), Griggs County (Figure 36)

During March 2012 surveys, an active bald eagle nest was recorded in a live cottonwood tree in the Sheyenne River riparian area in Section 16 of Romness Township in Griggs County. This nest is located about 500 feet north of State Highway 45 and about 1,000 feet northwest to the entrance of laydown area E3

4.2 Bald Eagle Observations

Survey Results

A total of 8 individual bald eagles were observed during the March 2012 surveys. No bald eagles were observed within the ROW. Table 4-1 summarizes the eagles sited near the routes.

Table 4-1. Bald Eagle Observations – Within and Adjacent to ROW

Distance	Bald Eagle Behavior	Number of Observations
Within 660 Feet to ROW Edge	Perched	1
Within 660 Feet to 0.5 miles of ROW Edge	Perched	1
>0.5 miles from ROW edge	Perched	4
	Soaring	1
	Nesting	1
Total Bald Eagles Observed		8

4.3 Possible Raptor Stick Nests and Possible Non-raptor Stick Nests

Survey Results

At total of 25 individual stick nests (excluding eagle nests) were observed during surveys. Thirteen of these nests are possible raptor nests, and 12 are possible non-raptor nests. Table 4-2 summarizes the raptor nests near the ROW. These nests are shown on the Figures 1 to 50.

Table 4-2. Possible Raptor* and Non-Raptor Nests – Within and Adjacent to ROW

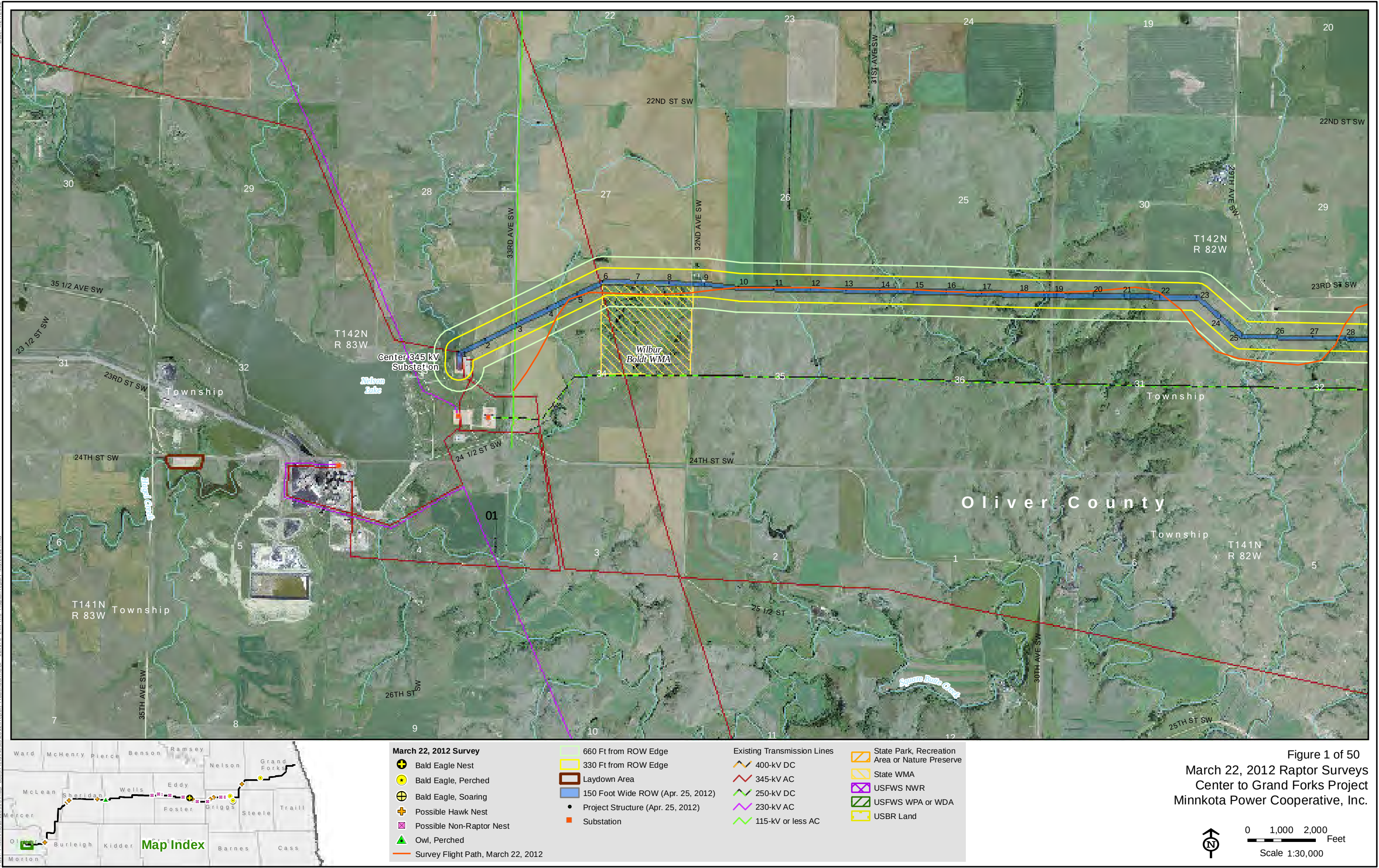
Distance	Possible Raptor Nest*	Possible Non-raptor Nest
Within ROW	0	1
ROW edge to 330 Feet from ROW edge	7	2
330 ft to 660 Feet from ROW edge	3	5
Greater than 660 Feet from ROW Edge	6	4
Total Nests Observed	13	12

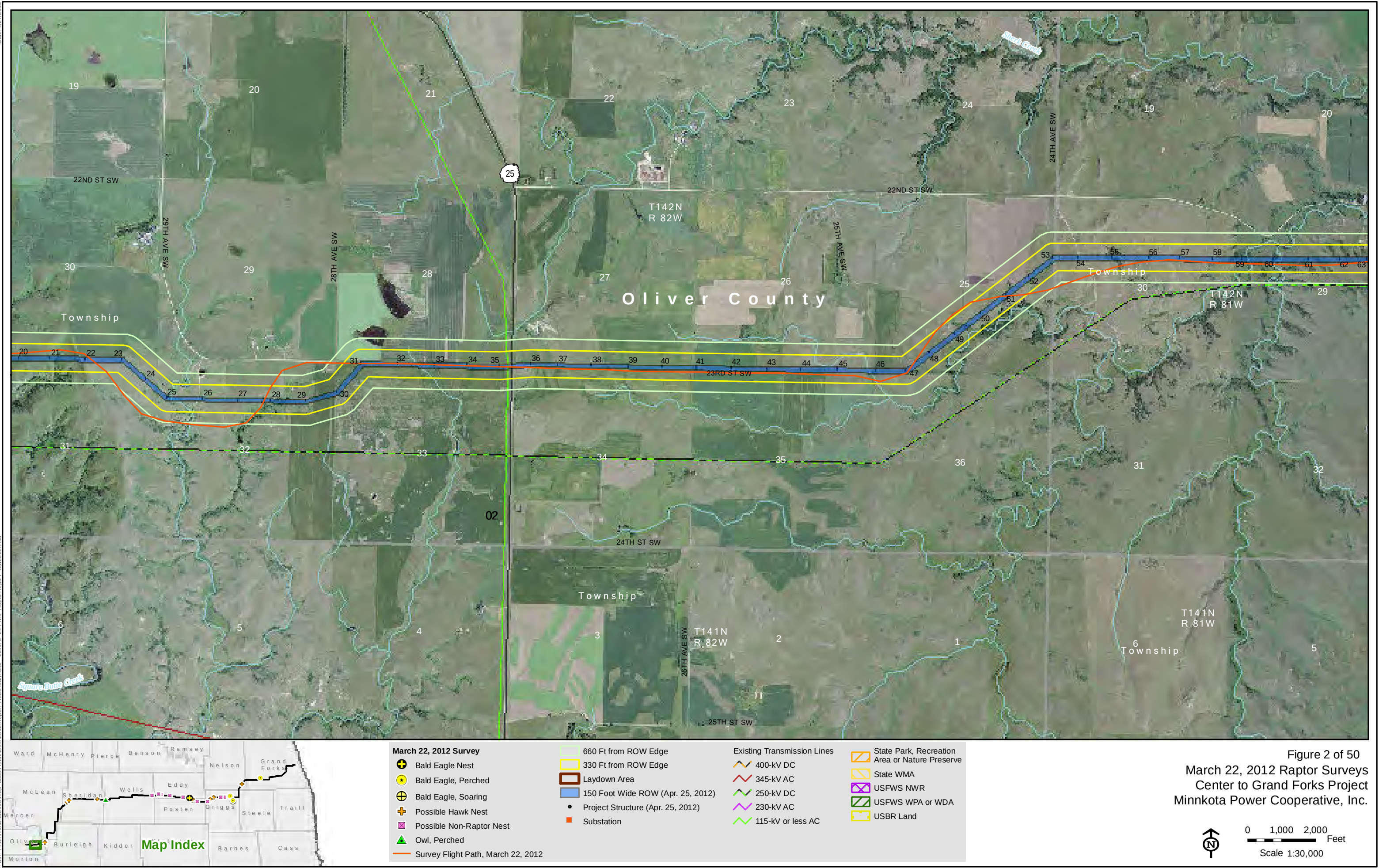
*Does not include eagle nests

5.0 QUALIFICATIONS

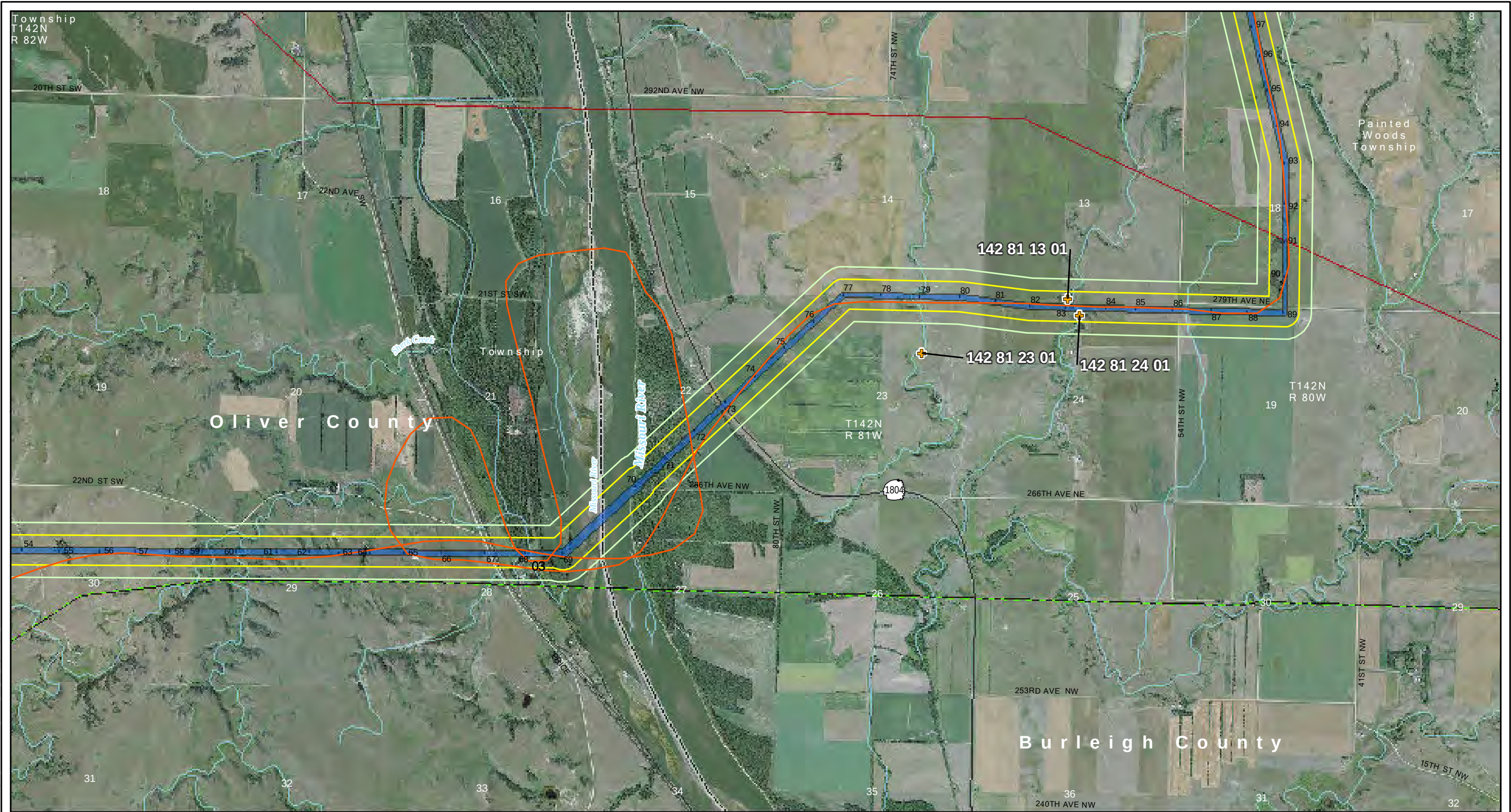
Name Project Role	Education And Professional Experience
Aaron Diehl Environmental Scientist Taylor University MS—Environmental Science Taylor University BS—Environmental Biology	Mr. Diehl is an environmental scientist for HDR. He has seven years of experience in the environmental field, and more than five years of experience working on permits and applications for the energy industry. Mr. Diehl has worked on applications and permits for transmission line, wind energy, and transportation projects, which includes NEPA documents, Certificate of Need applications, and Route Permit applications. He also has experience in wetland delineations, threatened and endangered species surveys, avian surveys, and ArcView GIS.
Scott Krych Environmental Scientist Mankato State University BA—Biology	Mr. Krych has more than 22 years of experience in the environmental consulting field. Mr. Krych is an environmental scientist with extensive experience providing environmental compliance services and regulatory oversight for transmission projects, wind energy, pipeline projects, and other large construction projects throughout the country. He has developed data collection techniques and prepared documents necessary to comply with the National Environmental Policy Act, Endangered Species Act compliance, and other local, state, and federal regulatory permitting programs. He has conducted numerous avian, invertebrate, and botanical surveys for endangered, threatened, and sensitive species throughout the country. Mr. Krych has conducted aerial eagle nest and stick nest surveys for over 15 years from both fixed wing and helicopter platforms. He has developed habitat assessments and resource reports for inclusion in NEPA documents, to comply with the Endangered Species Act, and multiple state environmental compliance processes.

Figures—Nest Surveys

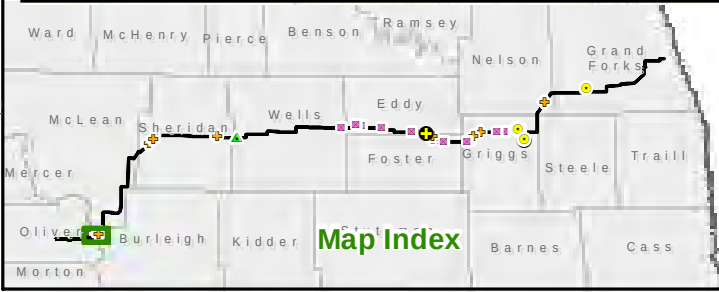




Date: 4/27/2012



Path: Y:\Minneapolis\11090\map_docs\fieldnotes\2012\Report Addendum\CGF_11x17L_24k_mb_RaptorReport_Mar2012.mxd



March 22, 2012 Survey

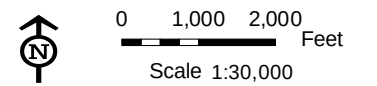
- Bald Eagle Nest
- Bald Eagle, Perched
- Bald Eagle, Soaring
- Possible Hawk Nest
- Possible Non-Raptor Nest
- Owl, Perched
- Survey Flight Path, March 22, 2012

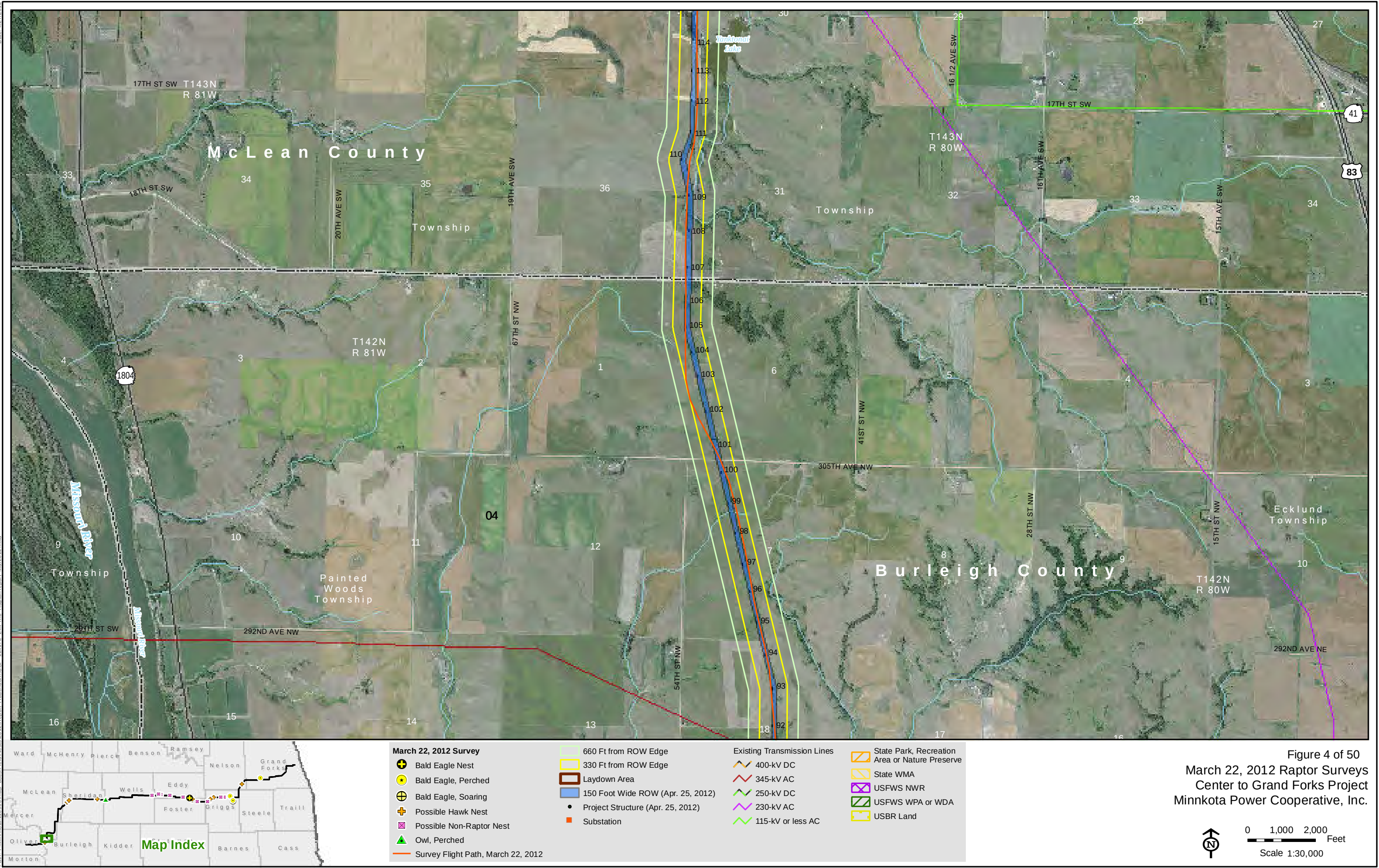
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

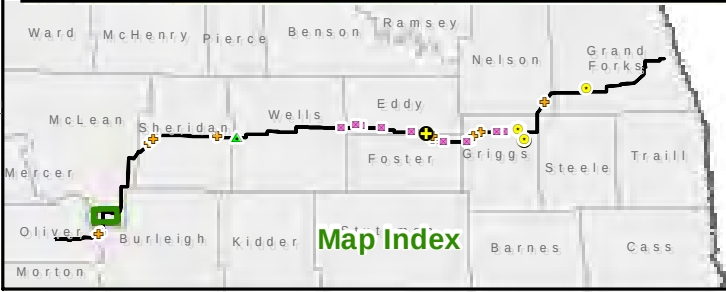
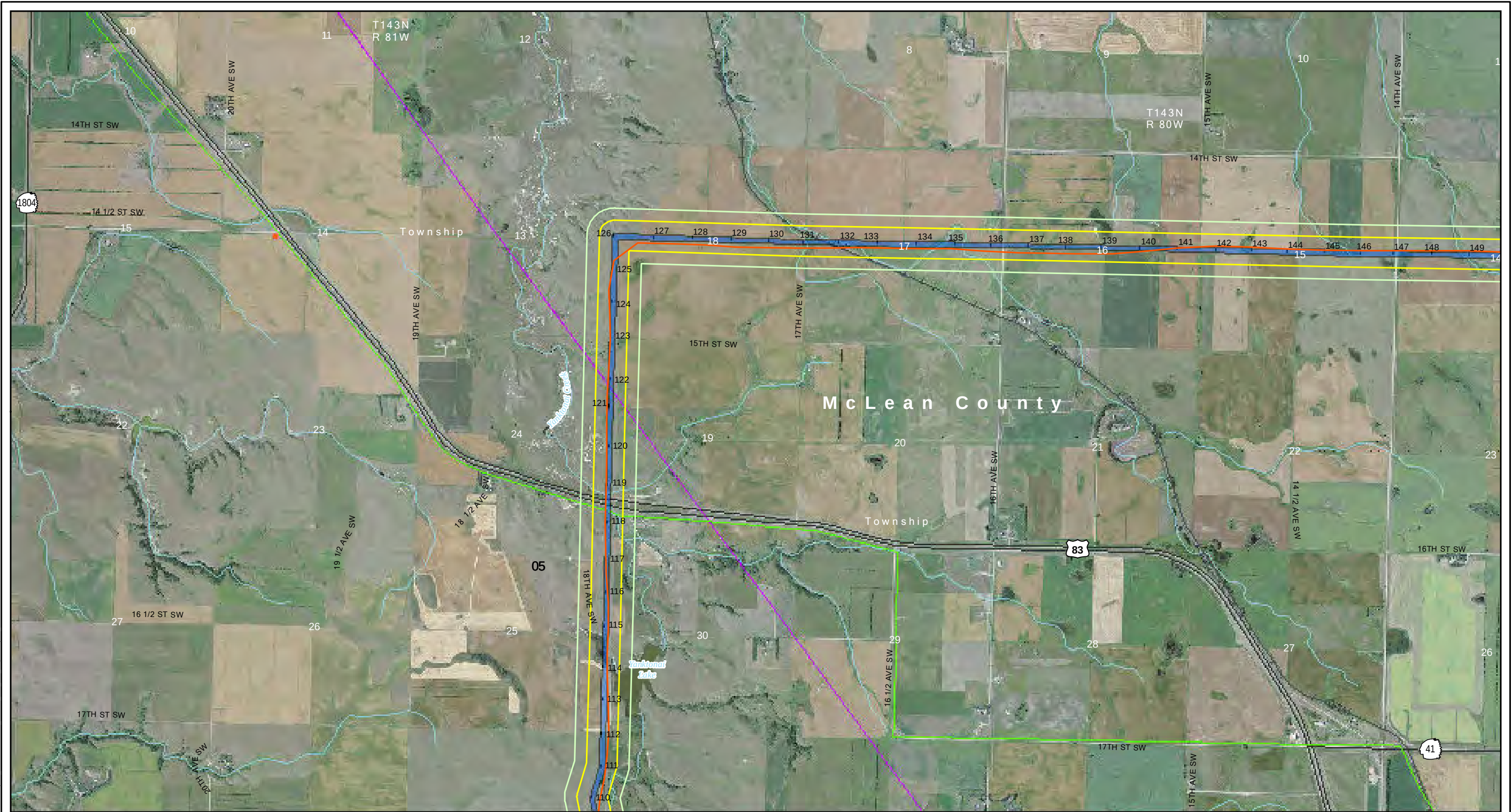
- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 3 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.







March 22, 2012 Survey

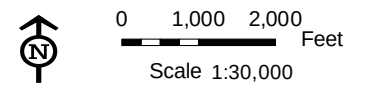
- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

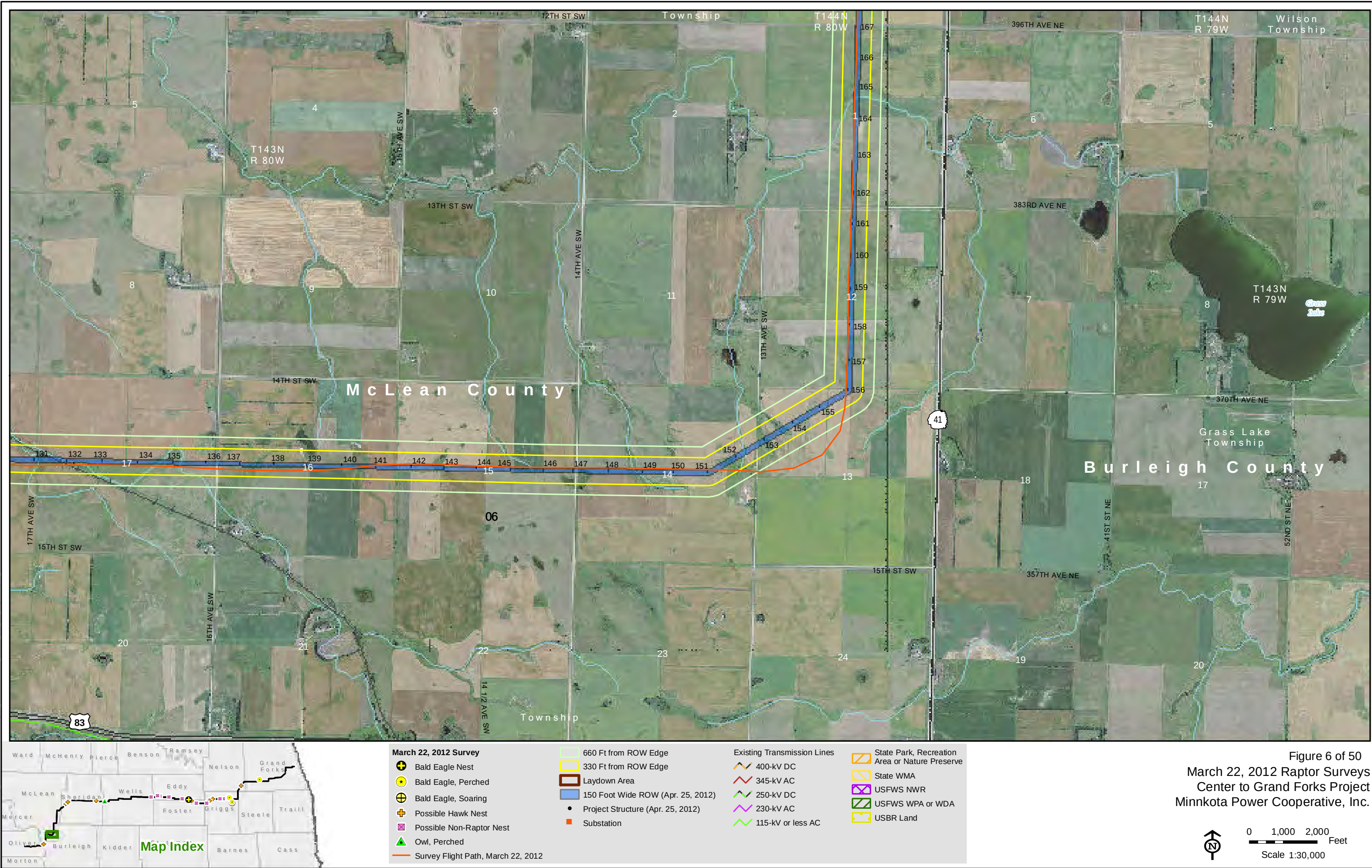
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

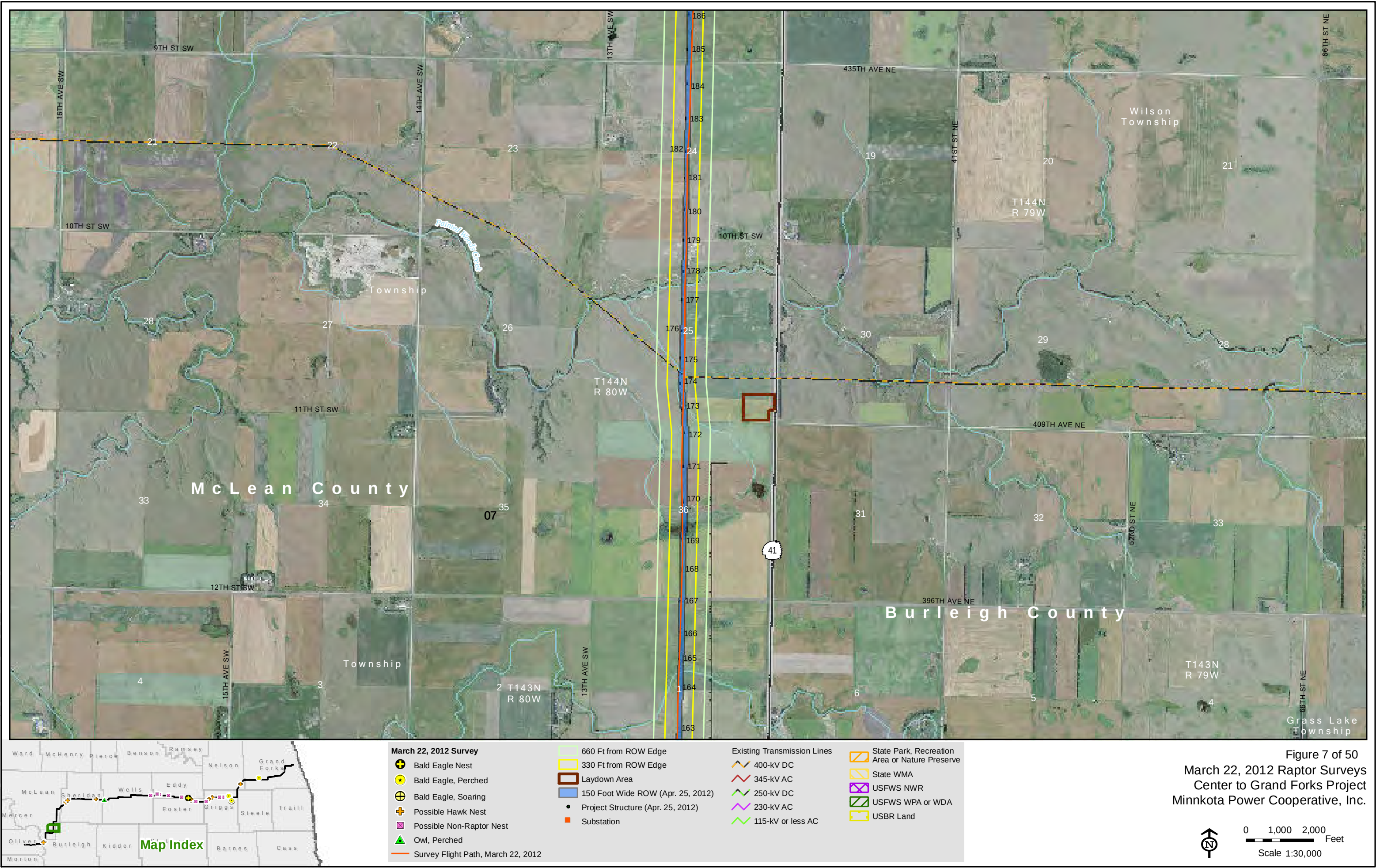
- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

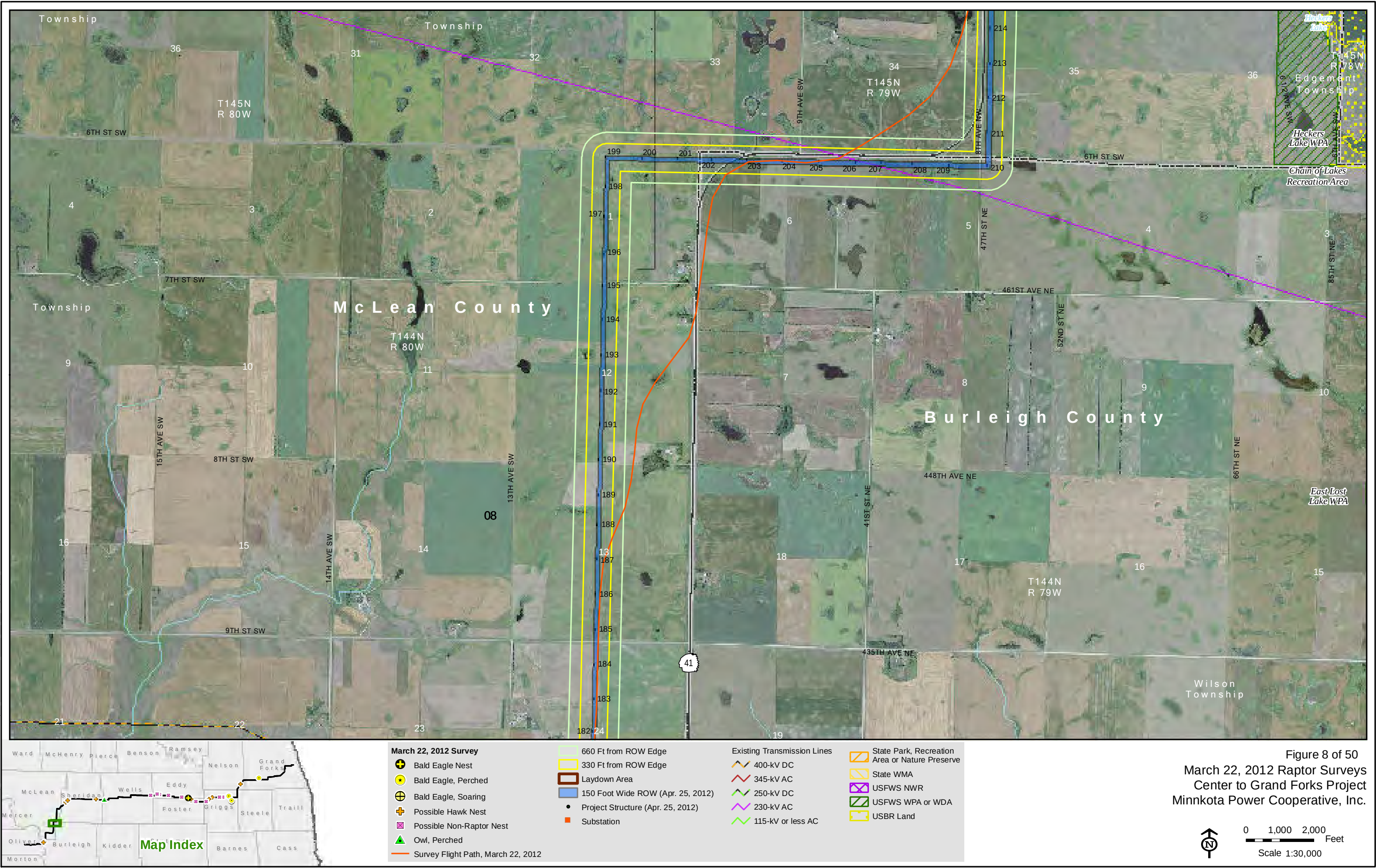
- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

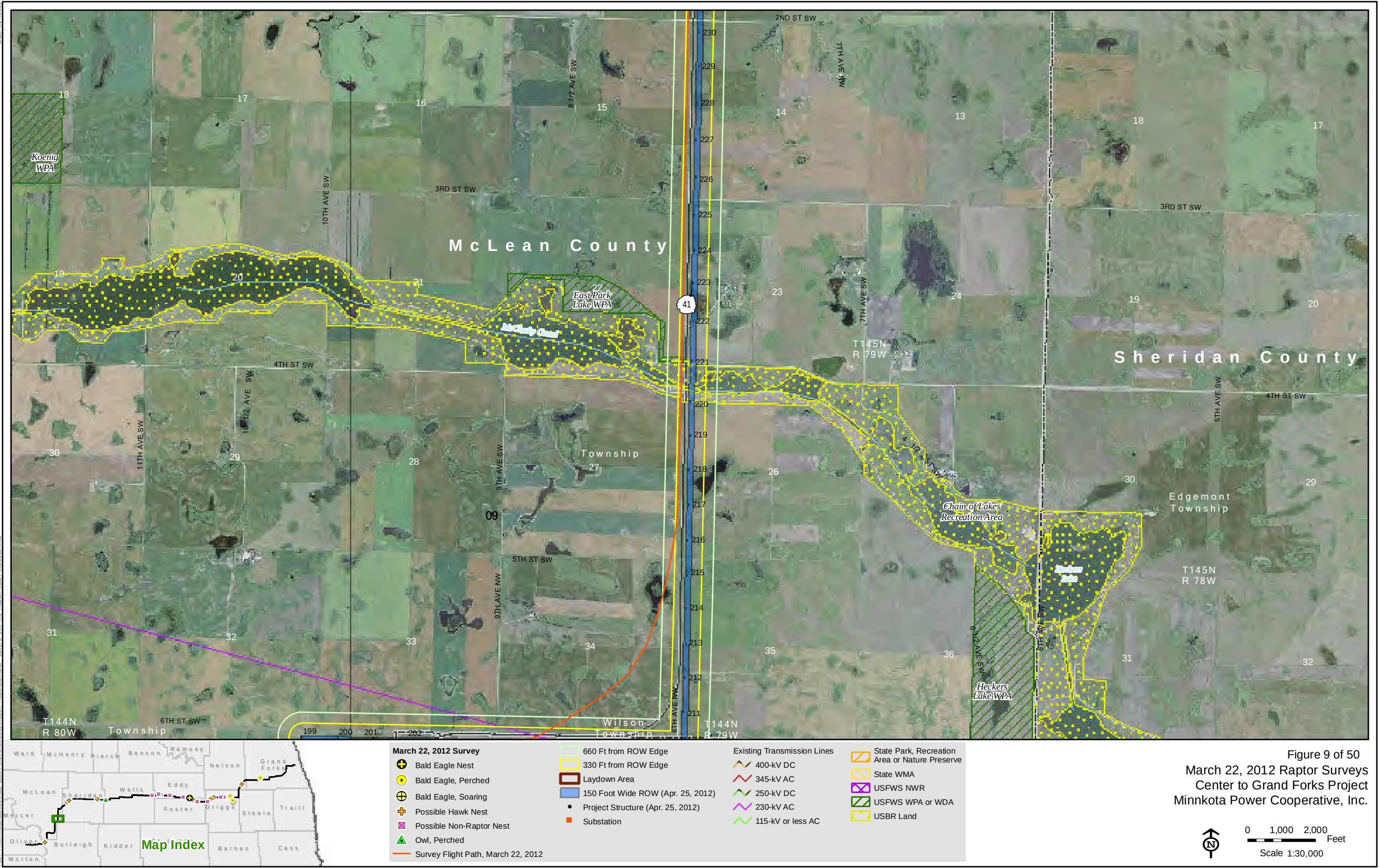
Figure 5 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.



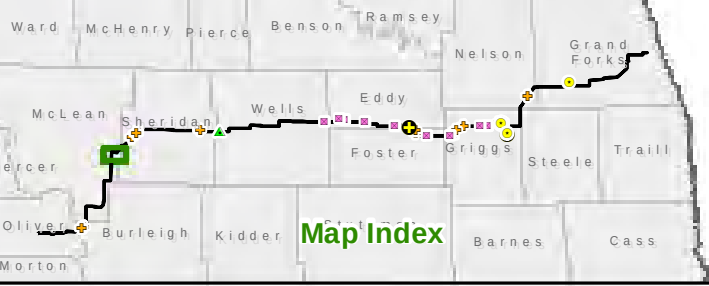
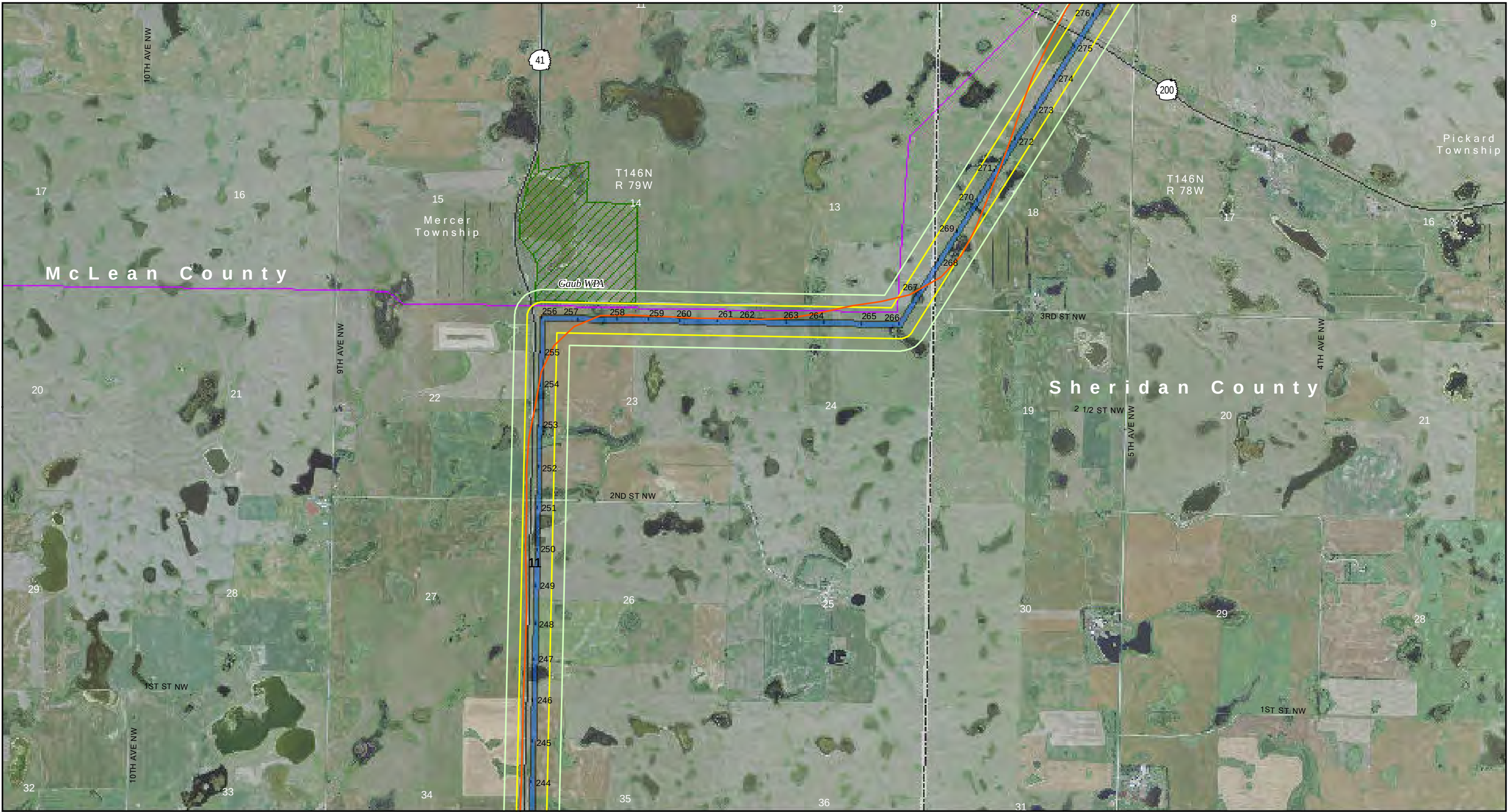








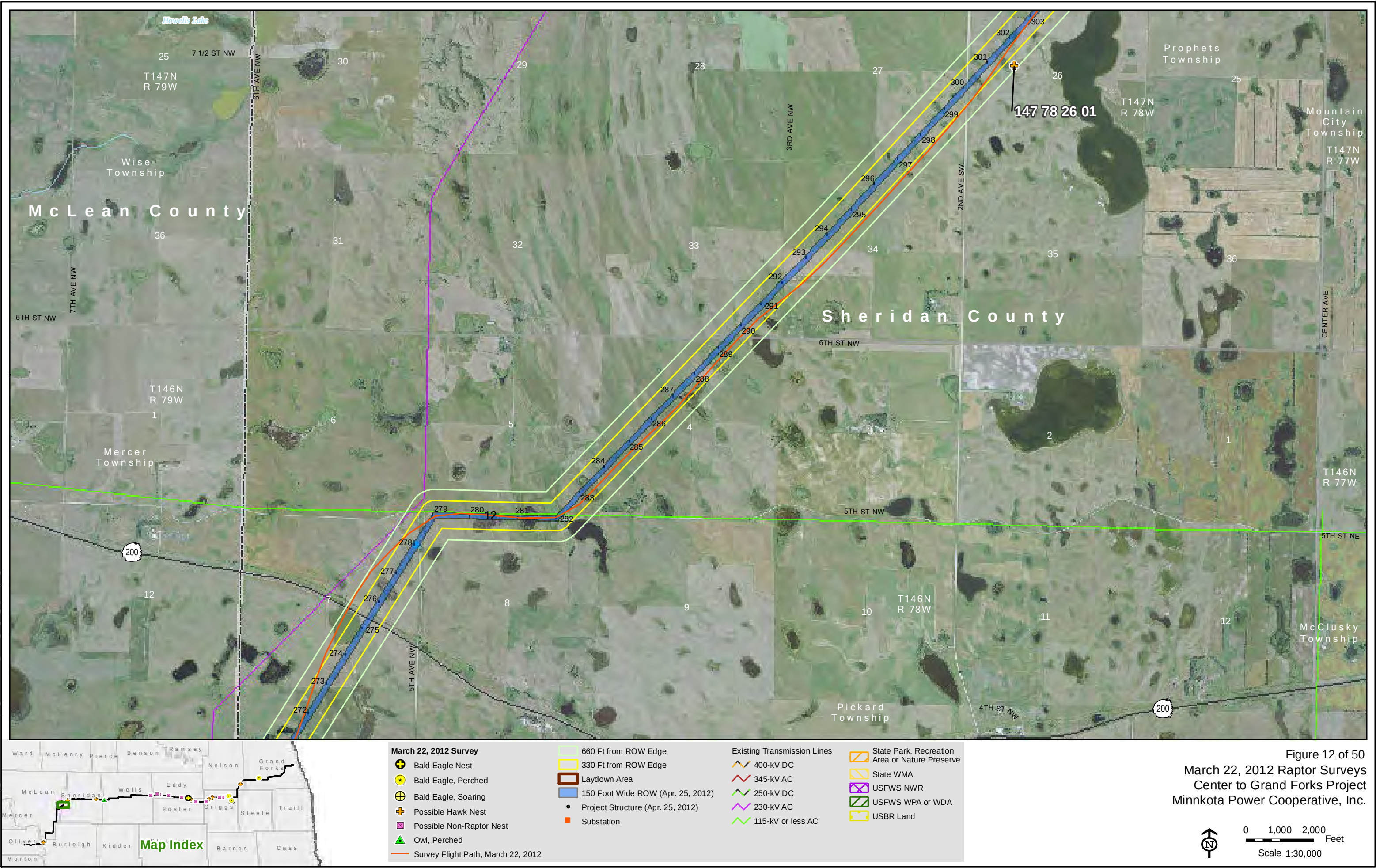


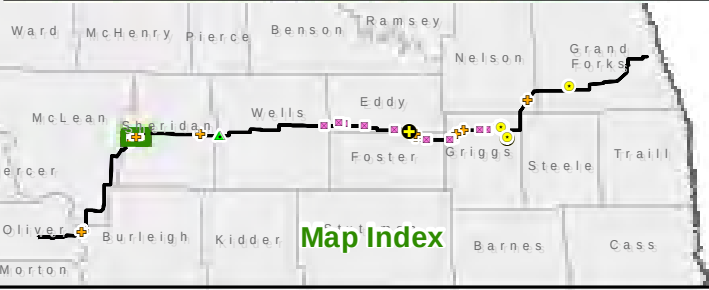
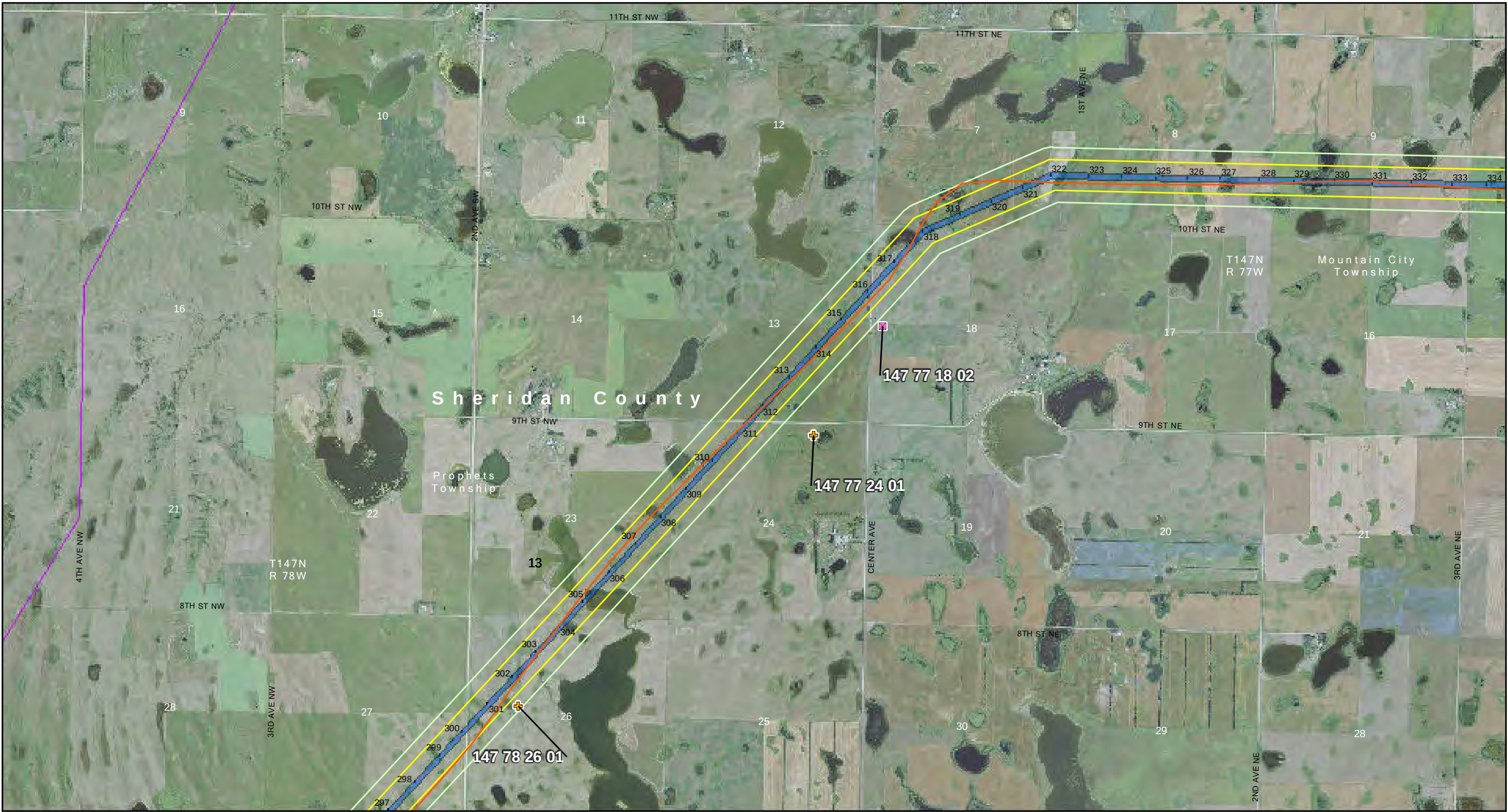


March 22, 2012 Survey	660 Ft from ROW Edge	Existing Transmission Lines	State Park, Recreation Area or Nature Preserve
⊕ Bald Eagle Nest	330 Ft from ROW Edge	400-kV DC	State WMA
⊙ Bald Eagle, Perched	Laydown Area	345-kV AC	USFWS NWR
⊕ Bald Eagle, Soaring	150 Foot Wide ROW (Apr. 25, 2012)	250-kV DC	USFWS WPA or WDA
⊕ Possible Hawk Nest	● Project Structure (Apr. 25, 2012)	230-kV AC	USBR Land
⊕ Possible Non-Raptor Nest	■ Substation	115-kV or less AC	
▲ Owl, Perched			
— Survey Flight Path, March 22, 2012			

Figure 11 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000





March 22, 2012 Survey

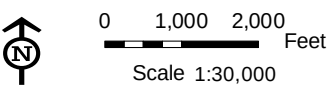
- ⊕ Bald Eagle Nest
- Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

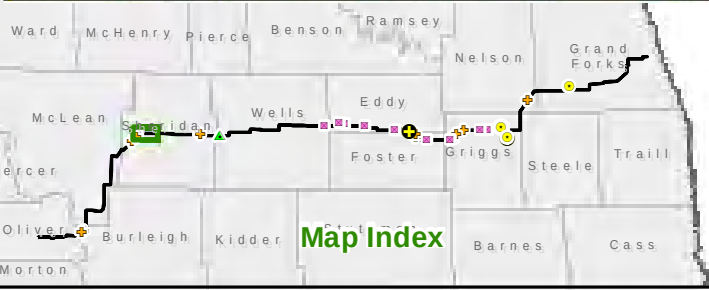
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 13 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.





March 22, 2012 Survey

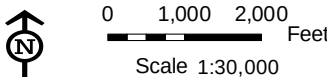
- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ⊕ Owl, Perched
- Survey Flight Path, March 22, 2012

- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 14 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.



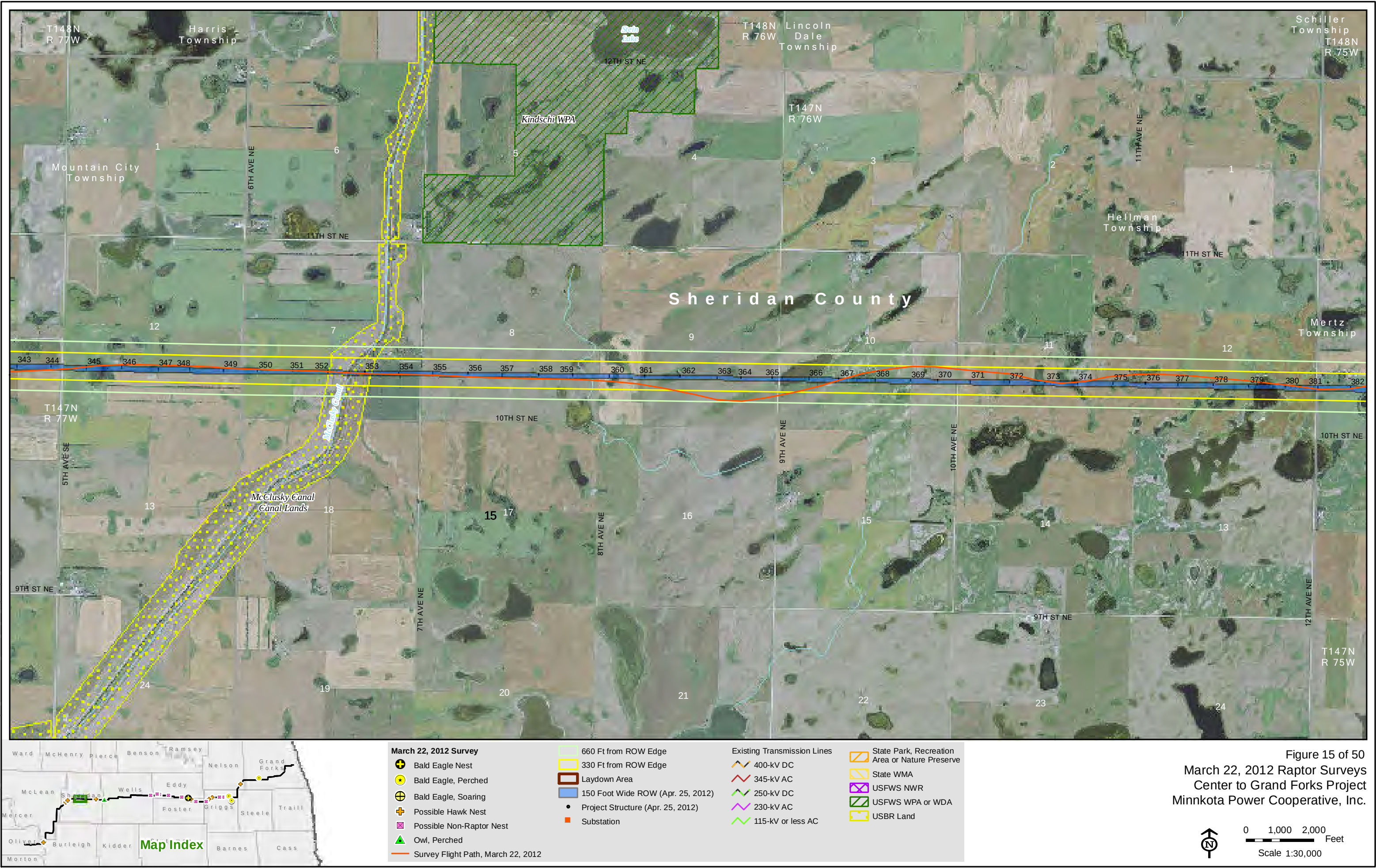
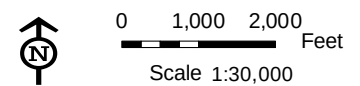
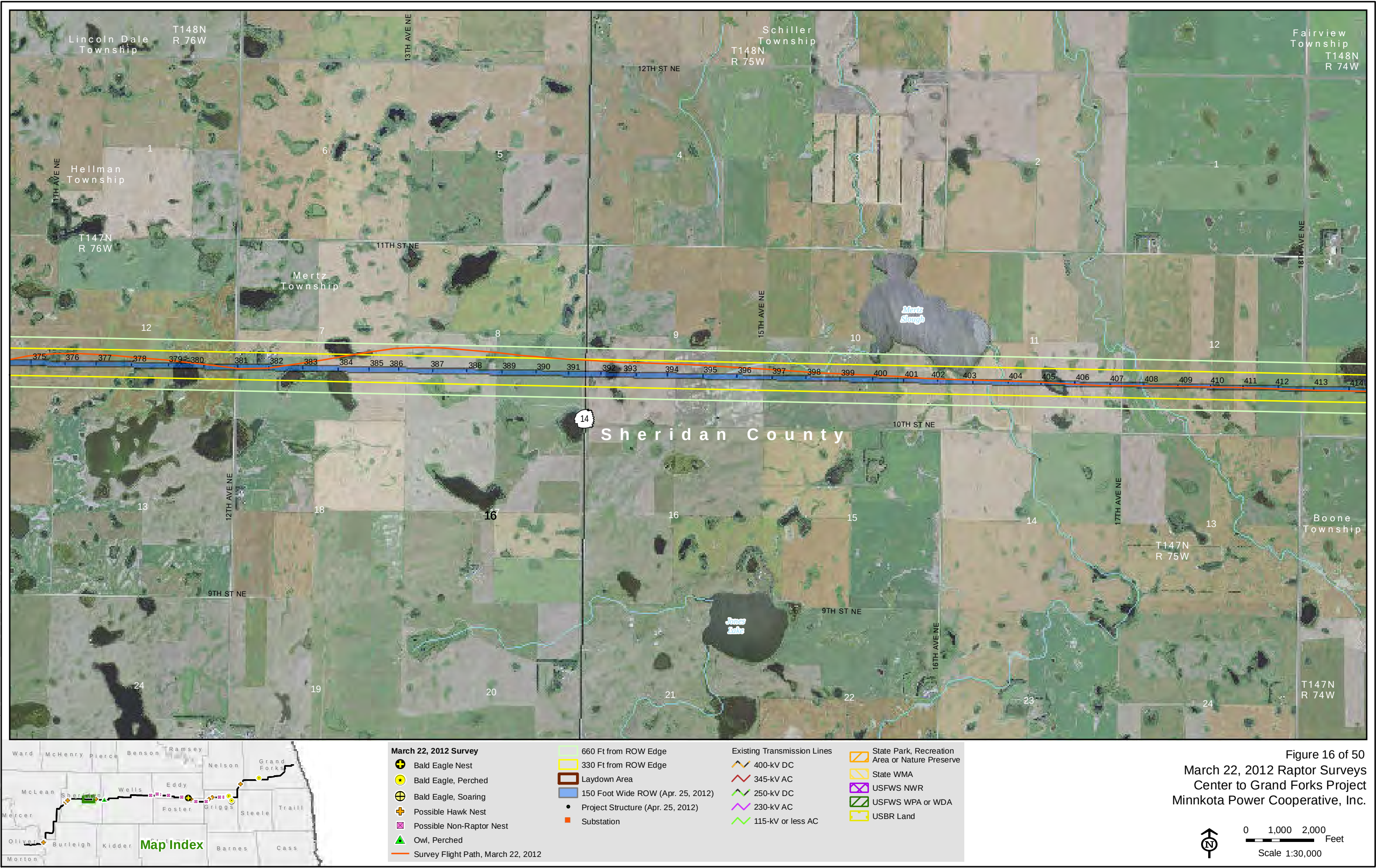
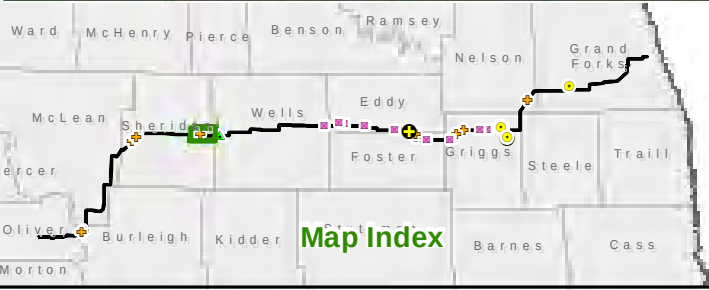
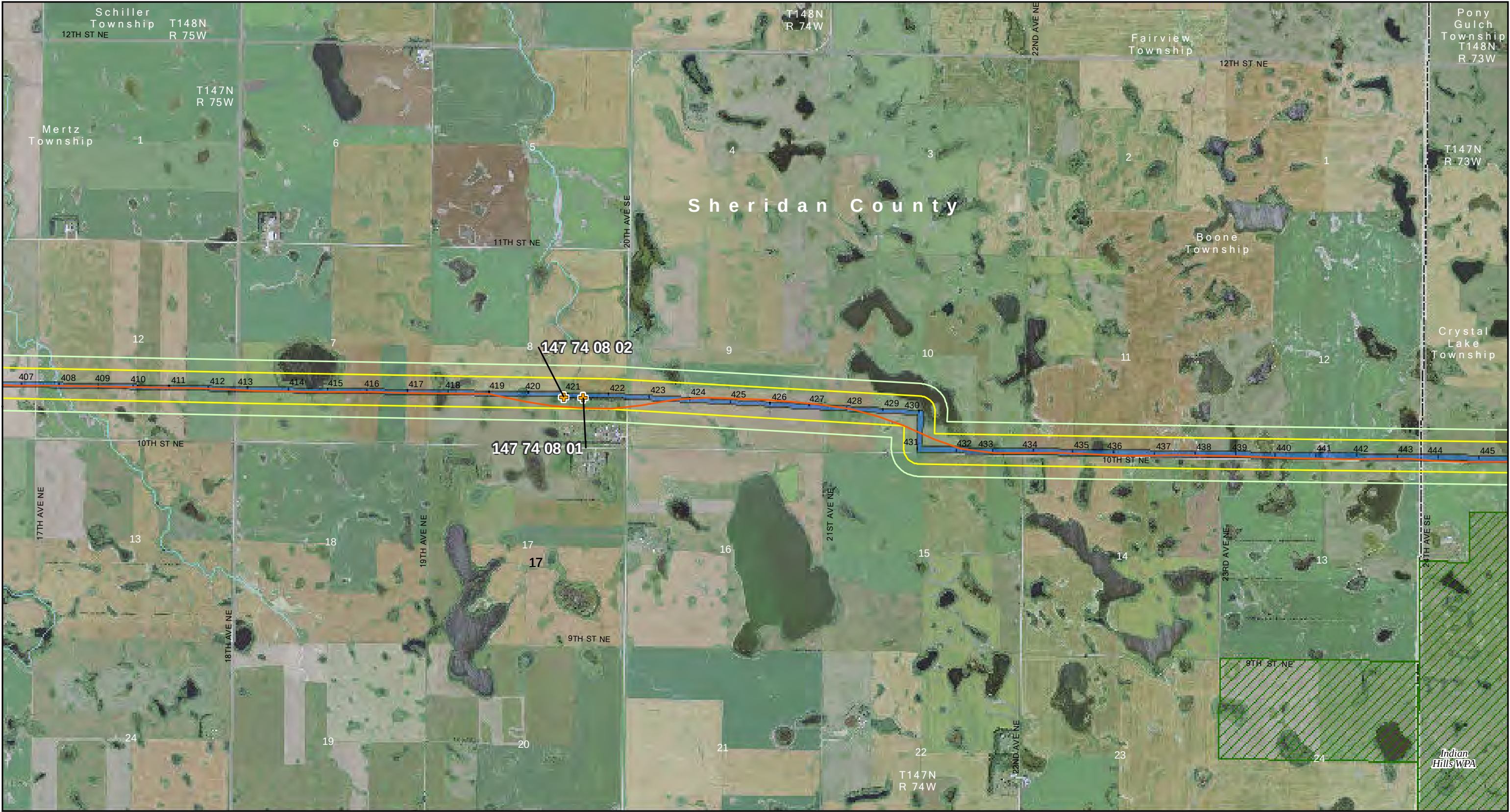


Figure 15 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.







March 22, 2012 Survey

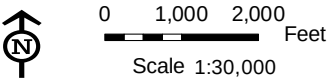
- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

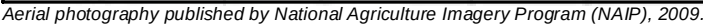
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

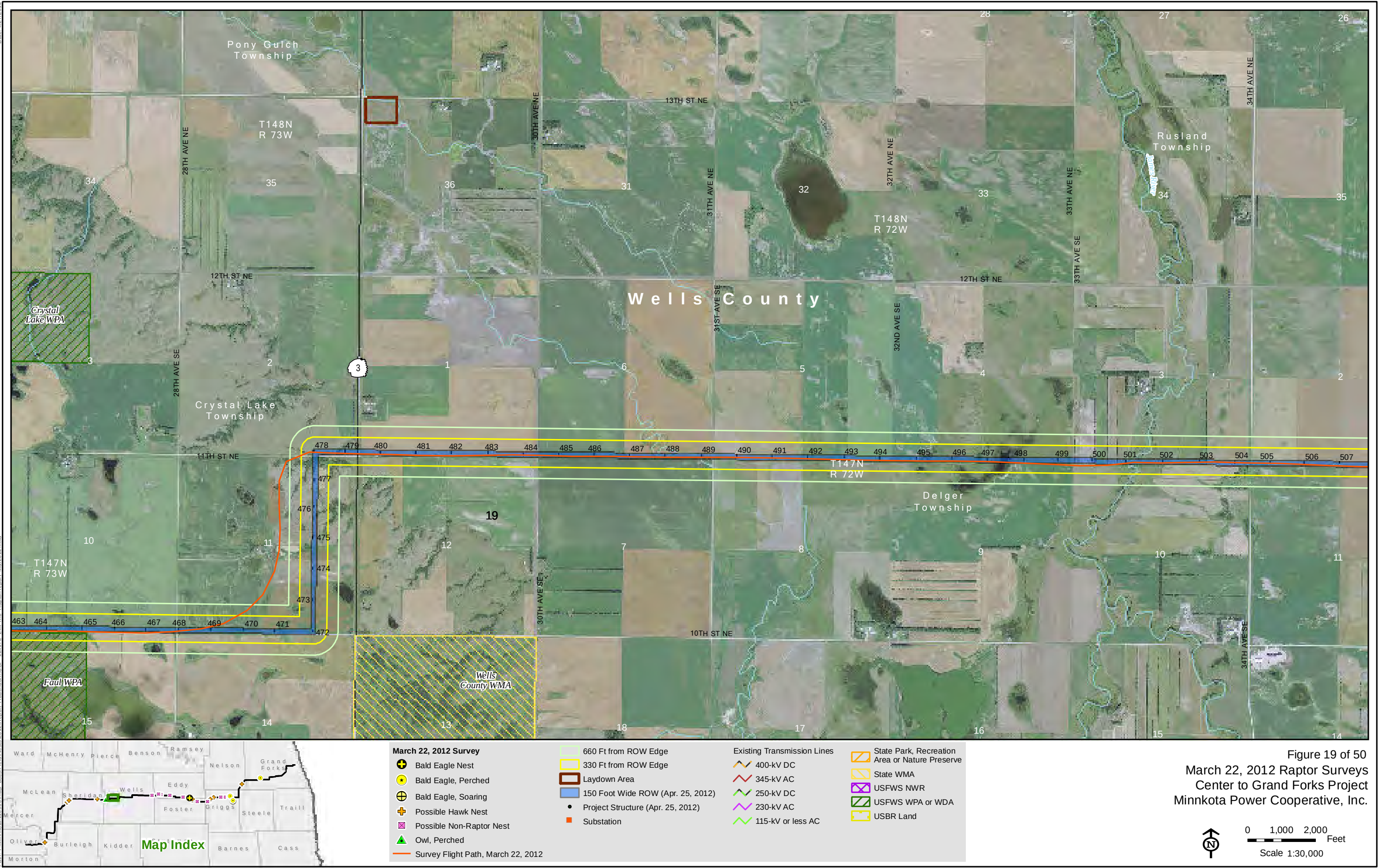
- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 17 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.







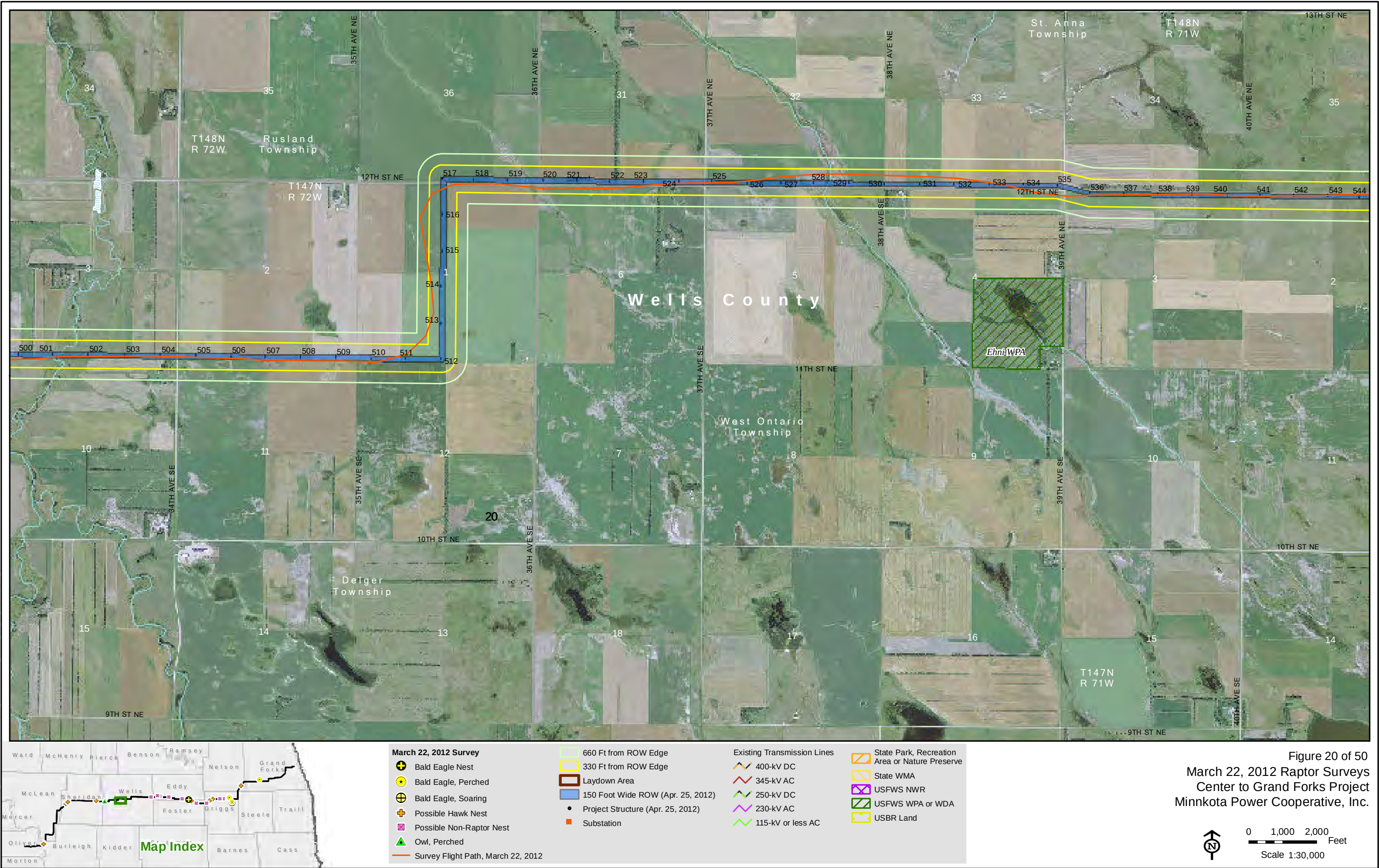
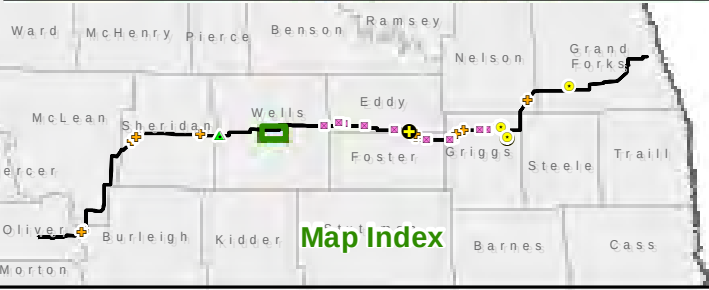
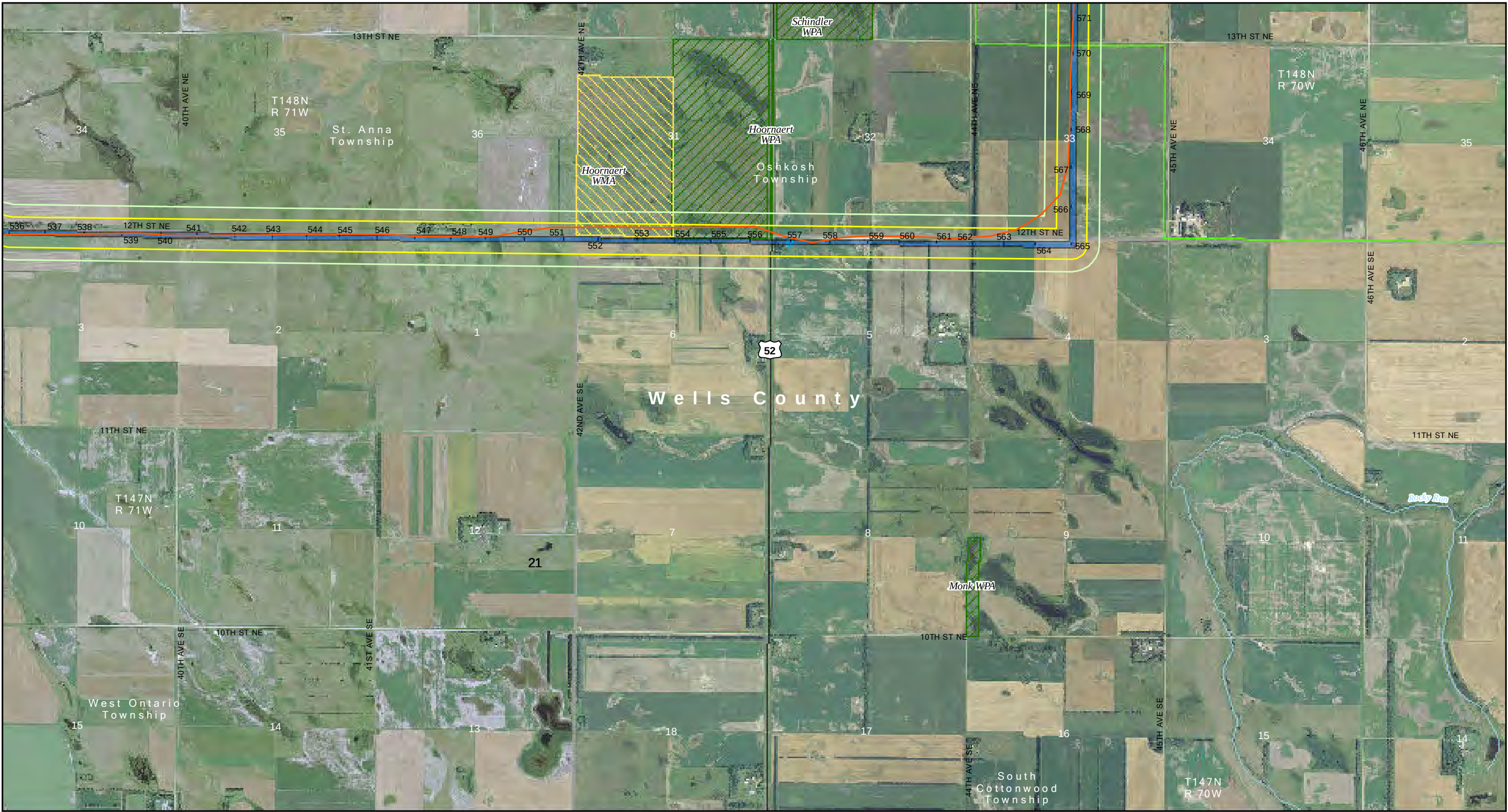


Figure 20 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

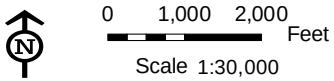
- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

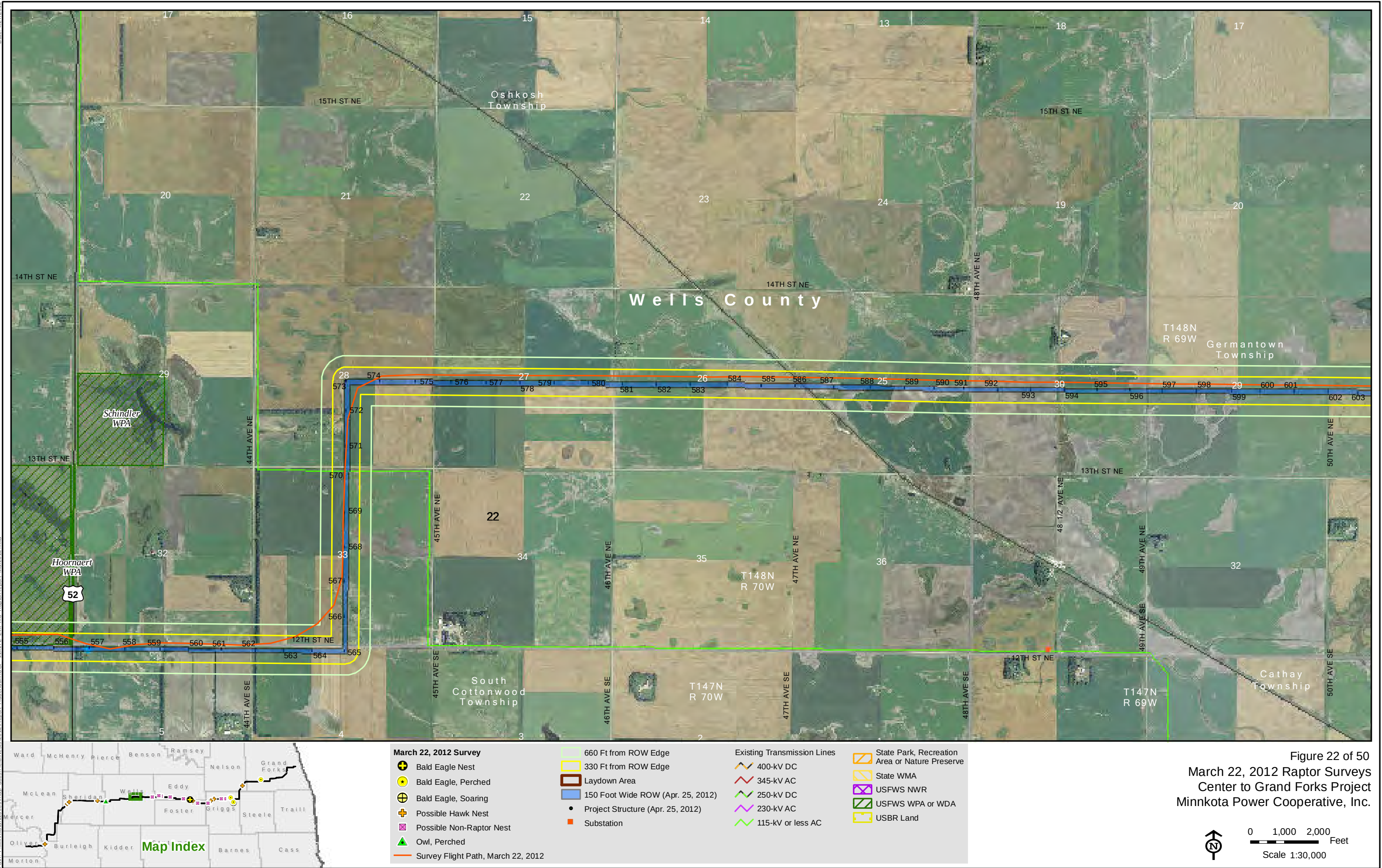
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

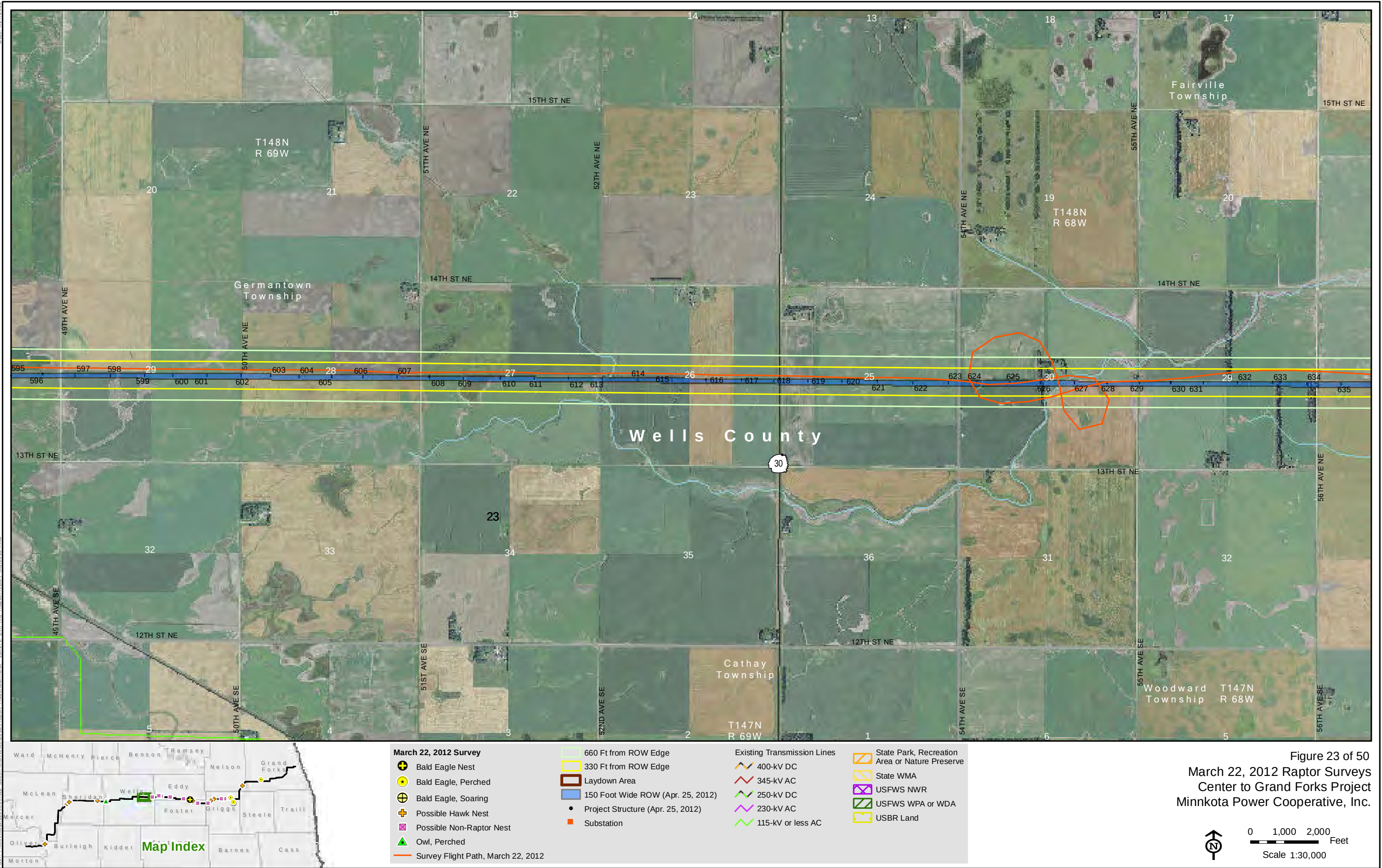
- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

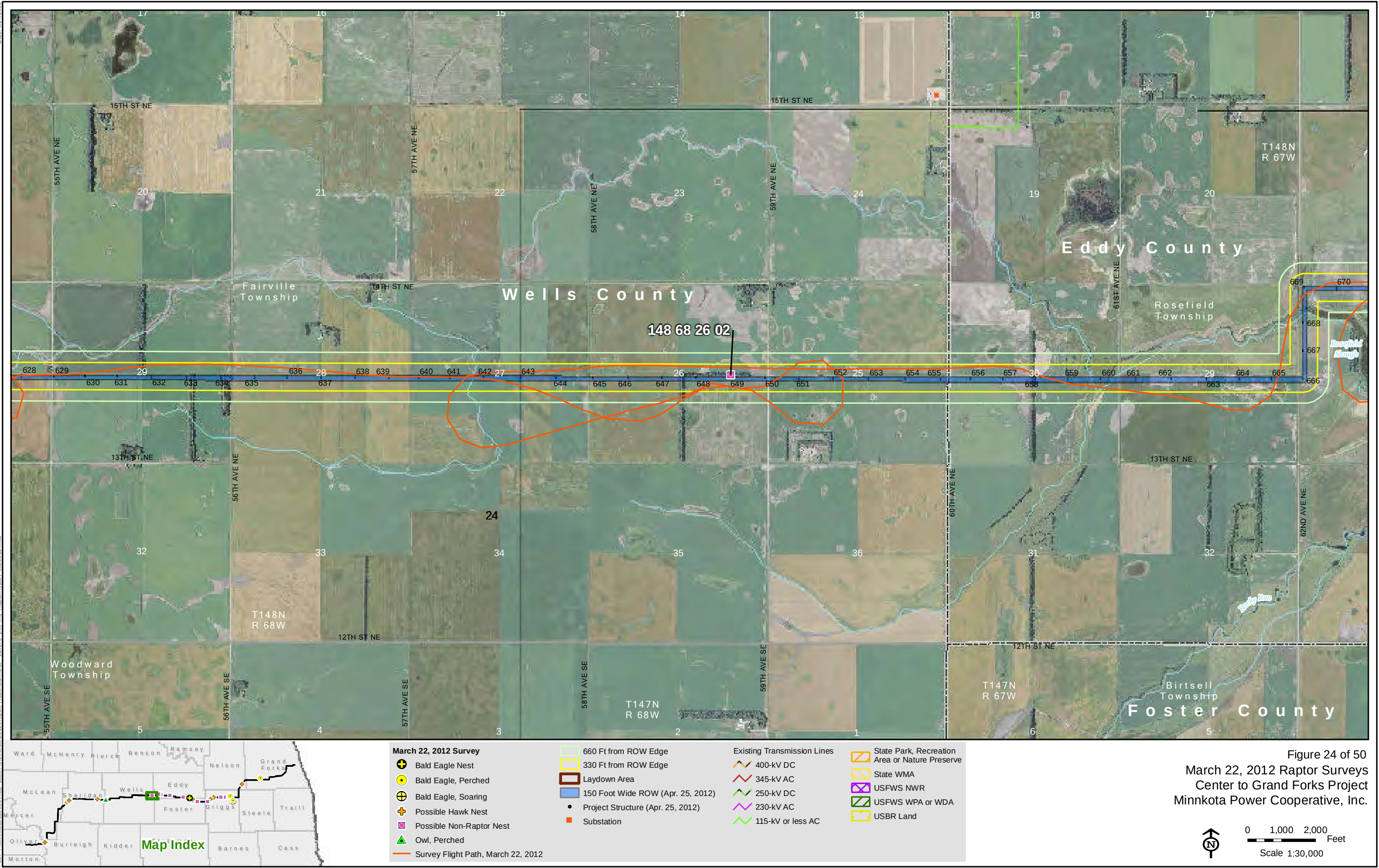
- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

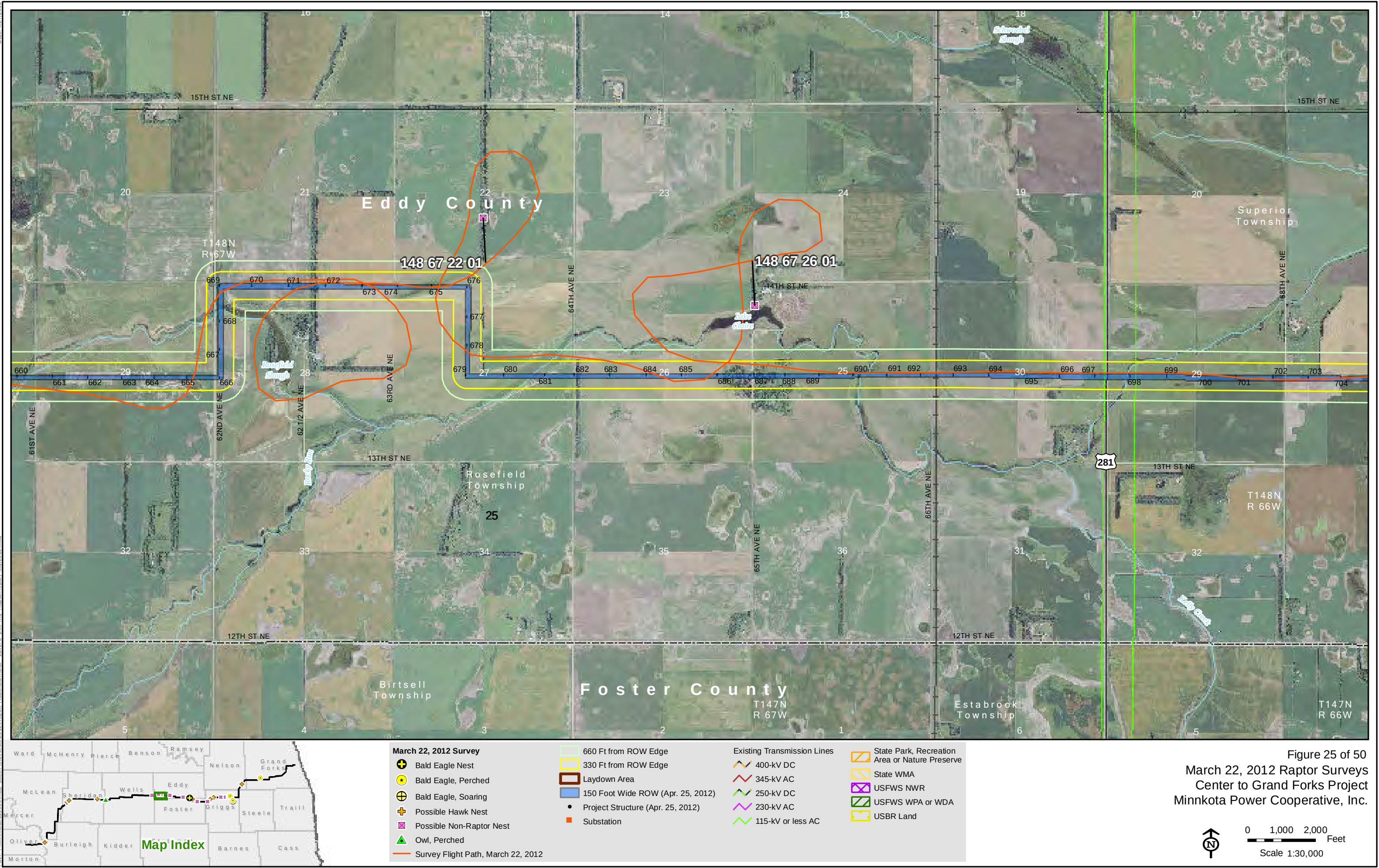
Figure 21 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

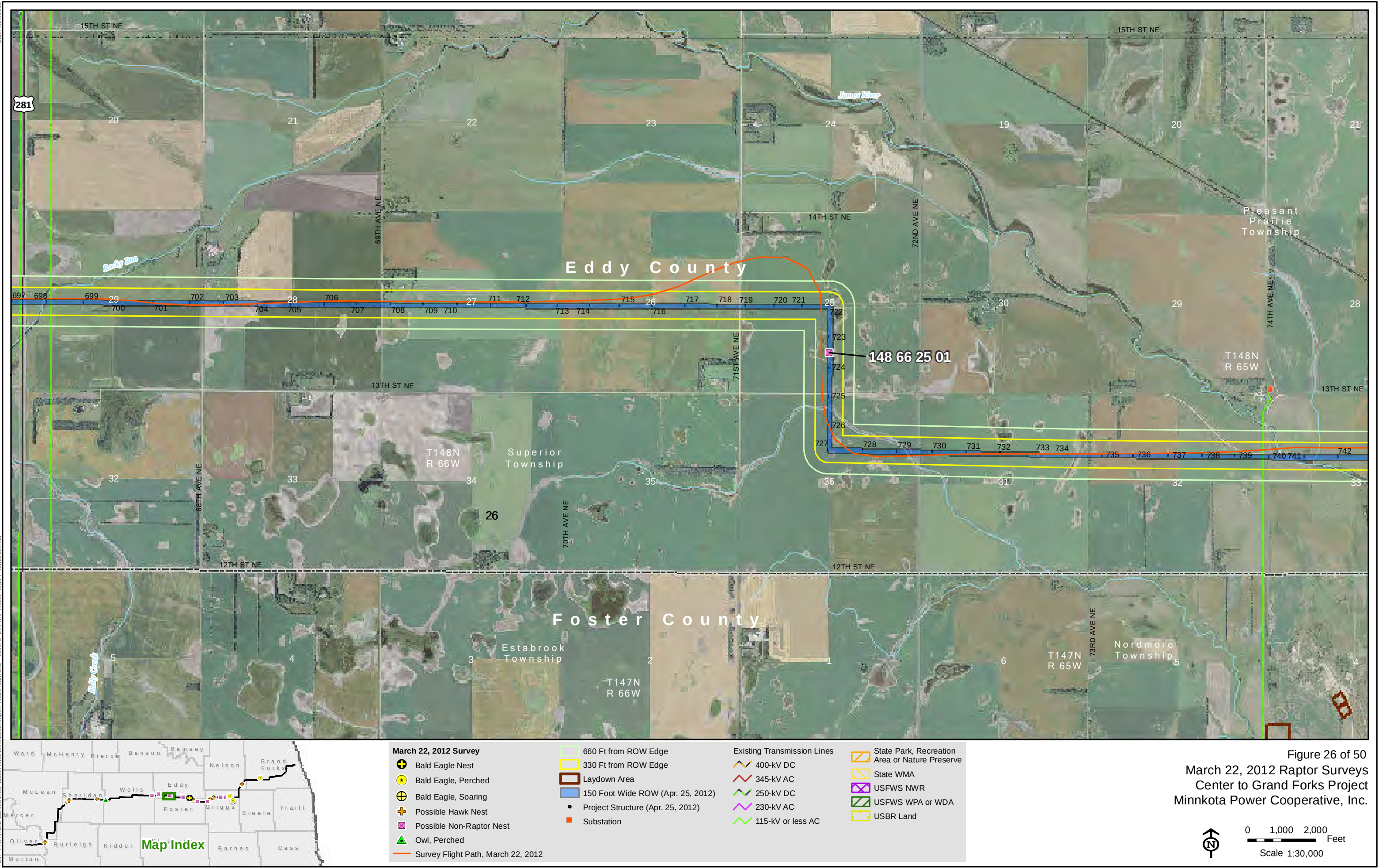


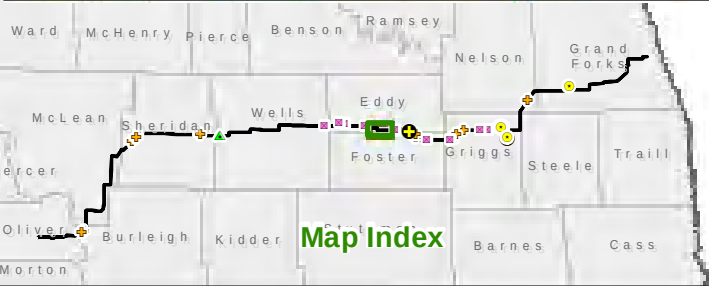
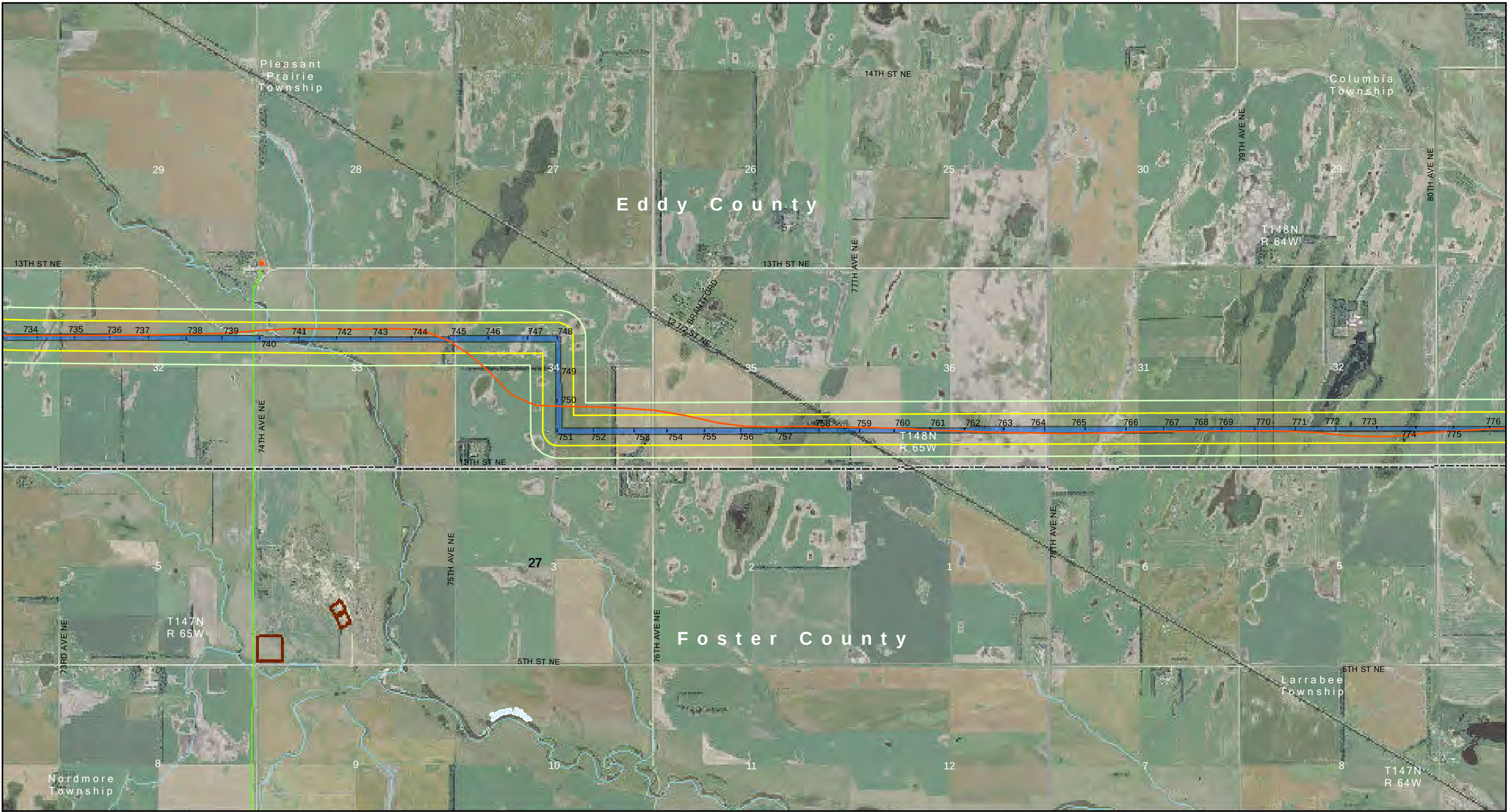












March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched

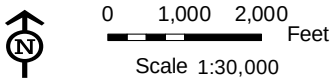
— Survey Flight Path, March 22, 2012

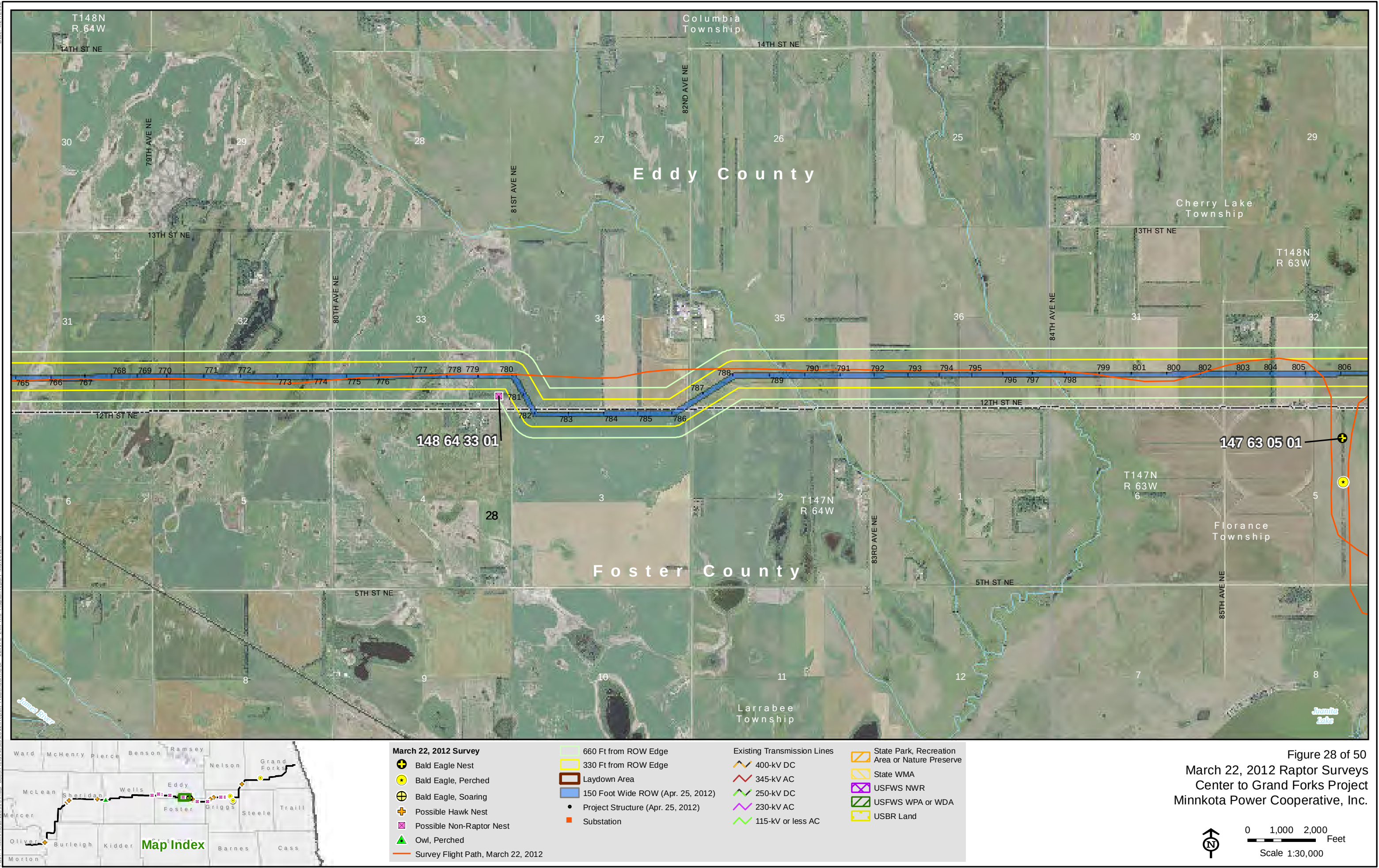
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 27 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.





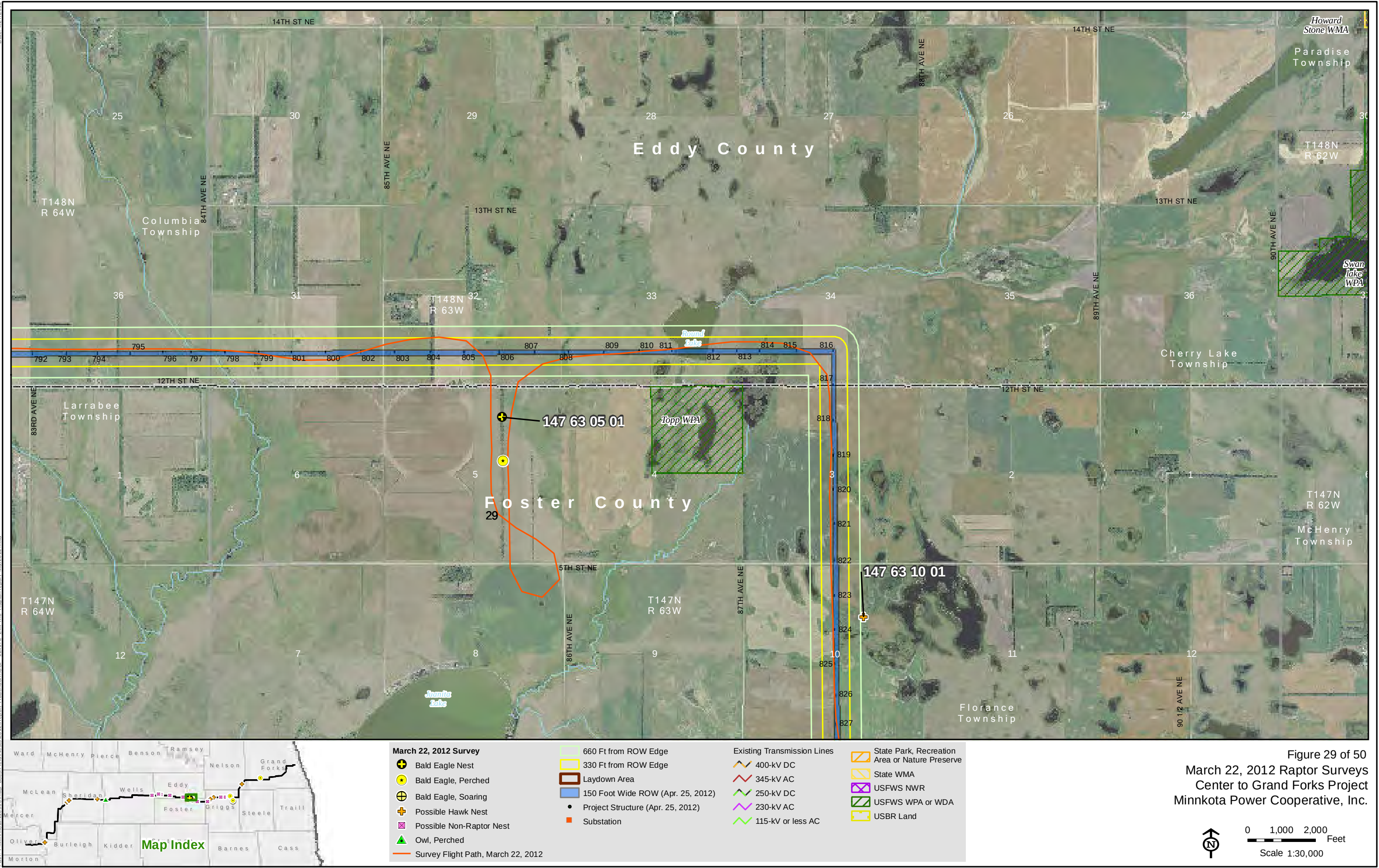
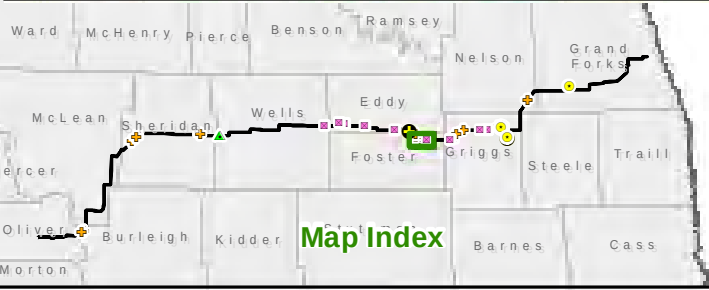
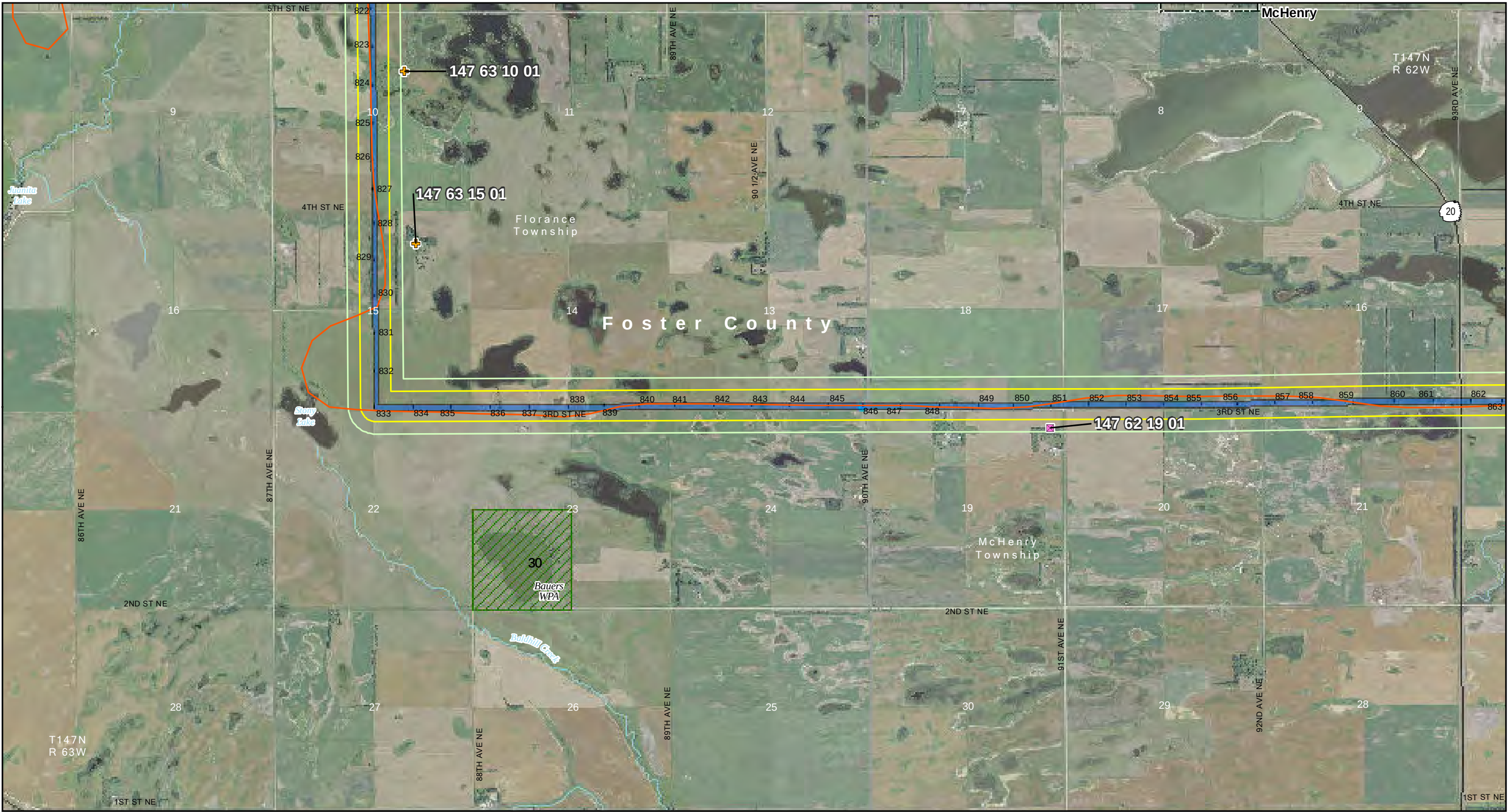


Figure 29 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.



March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

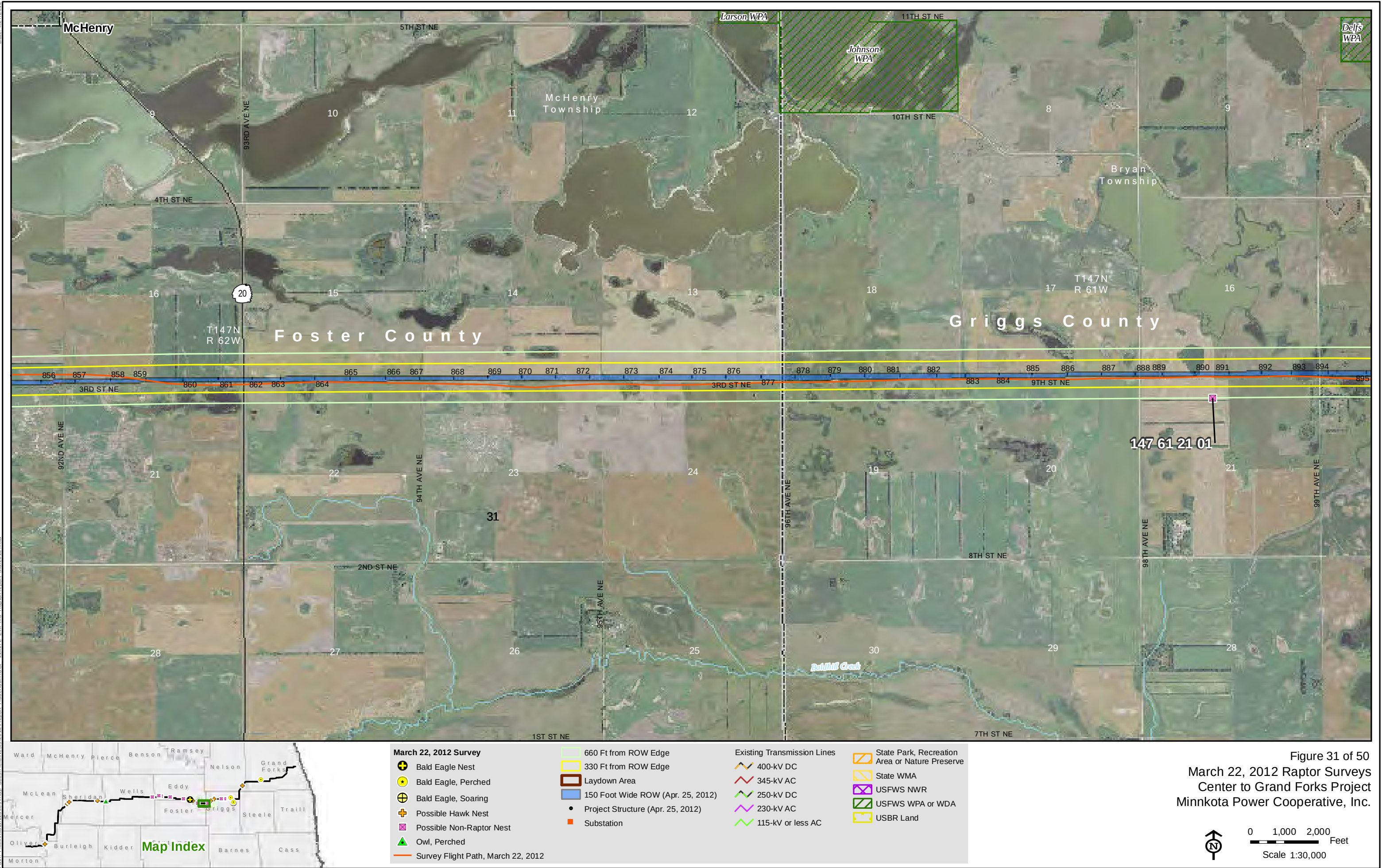
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

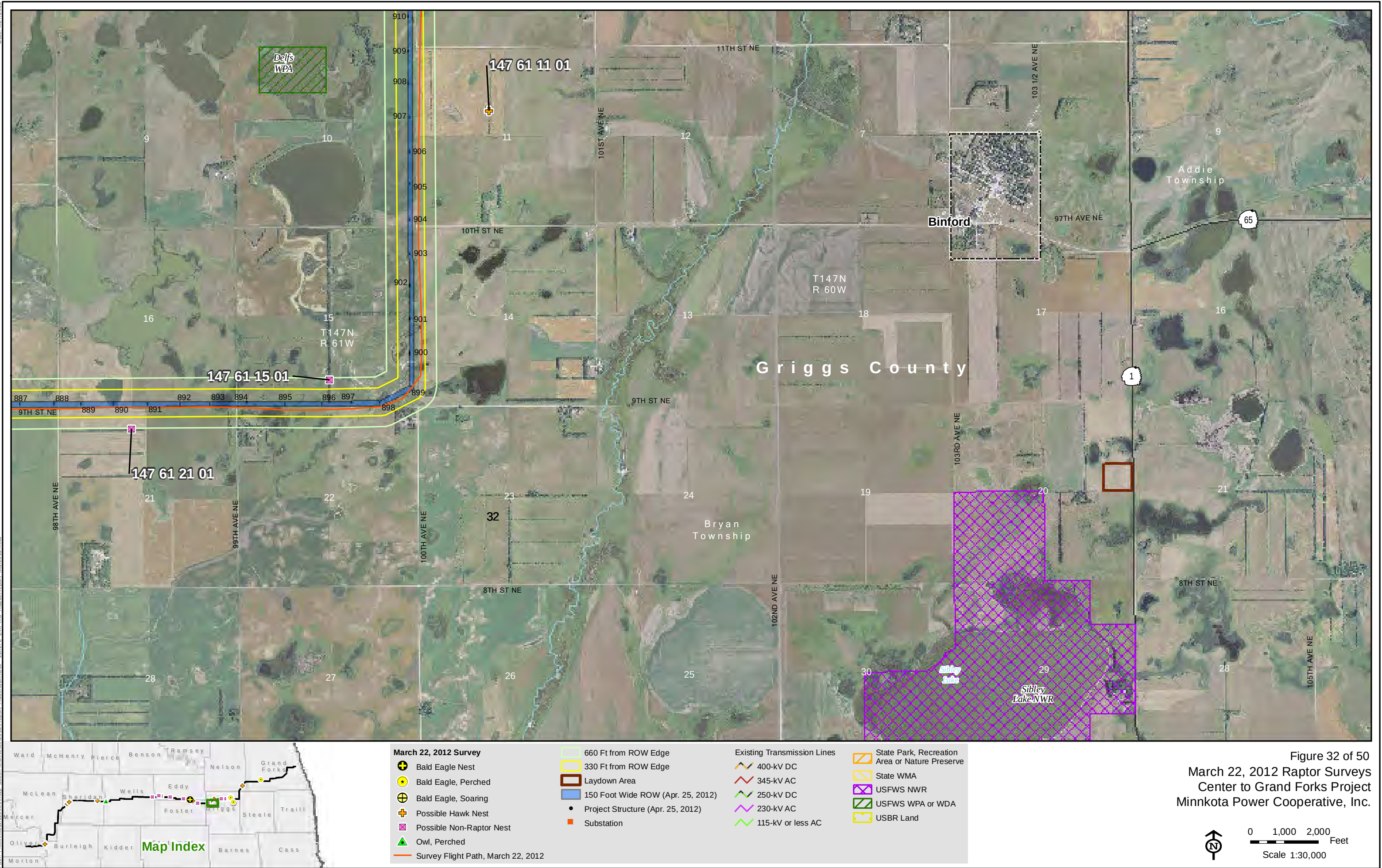
- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

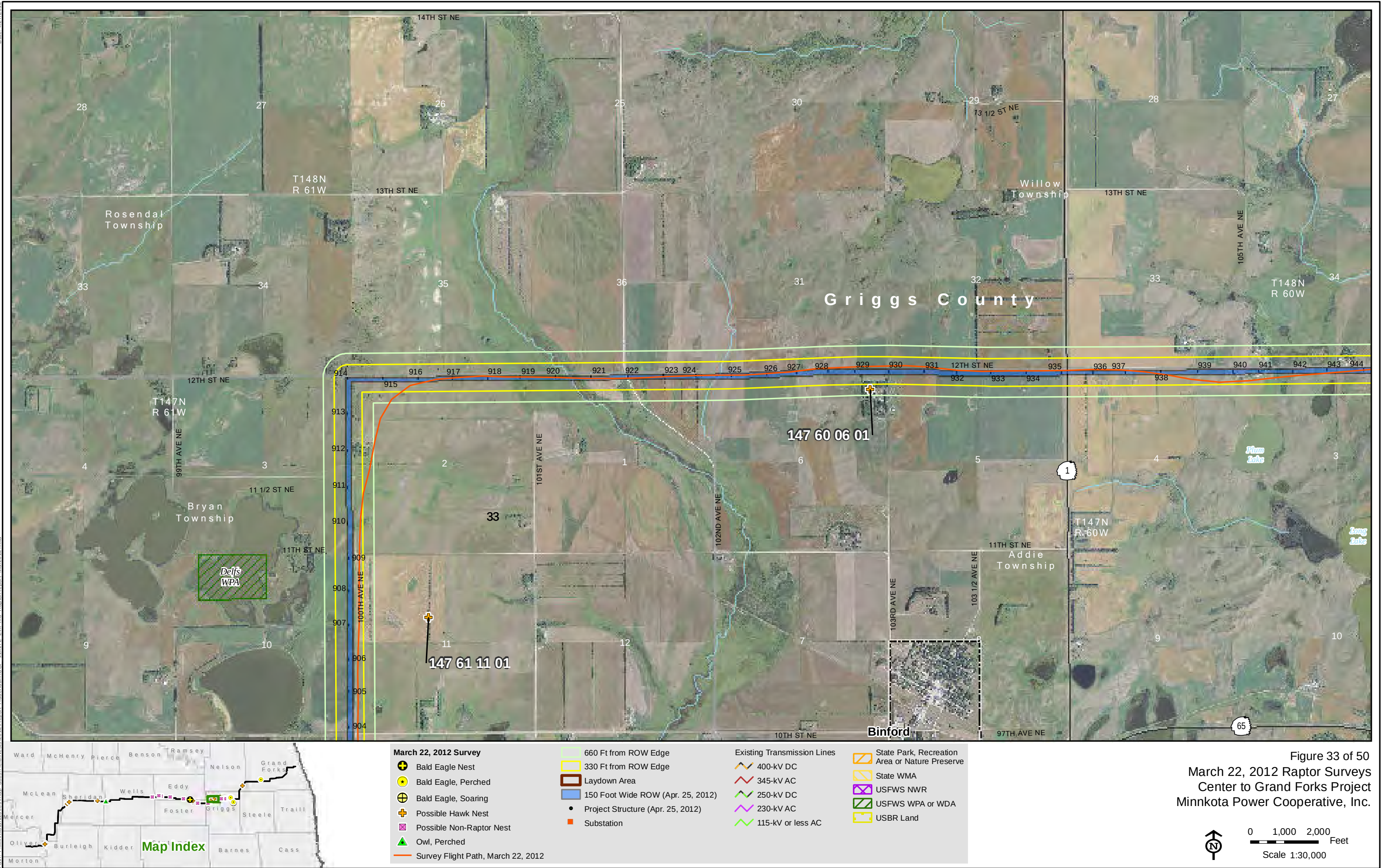
- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

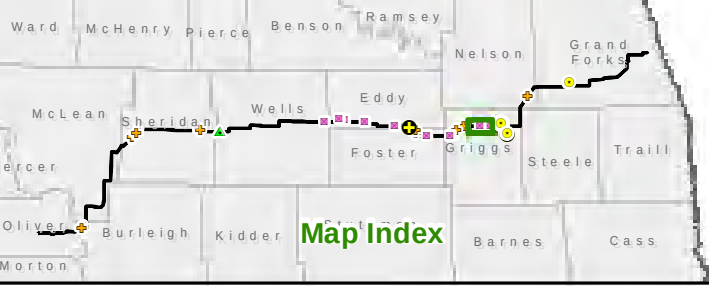
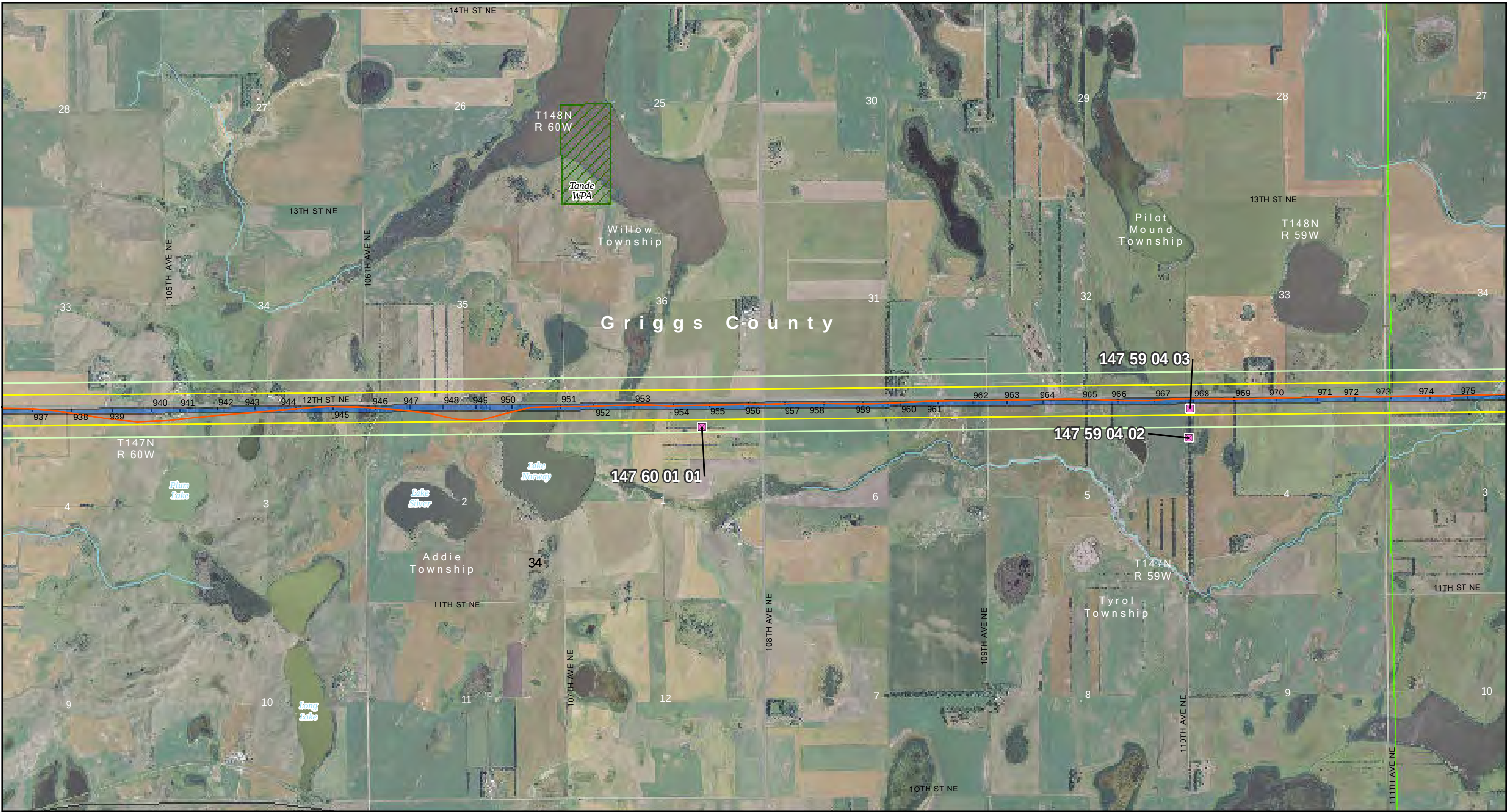
Figure 30 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000





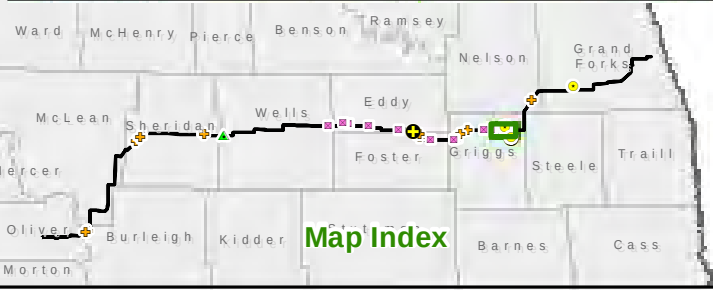
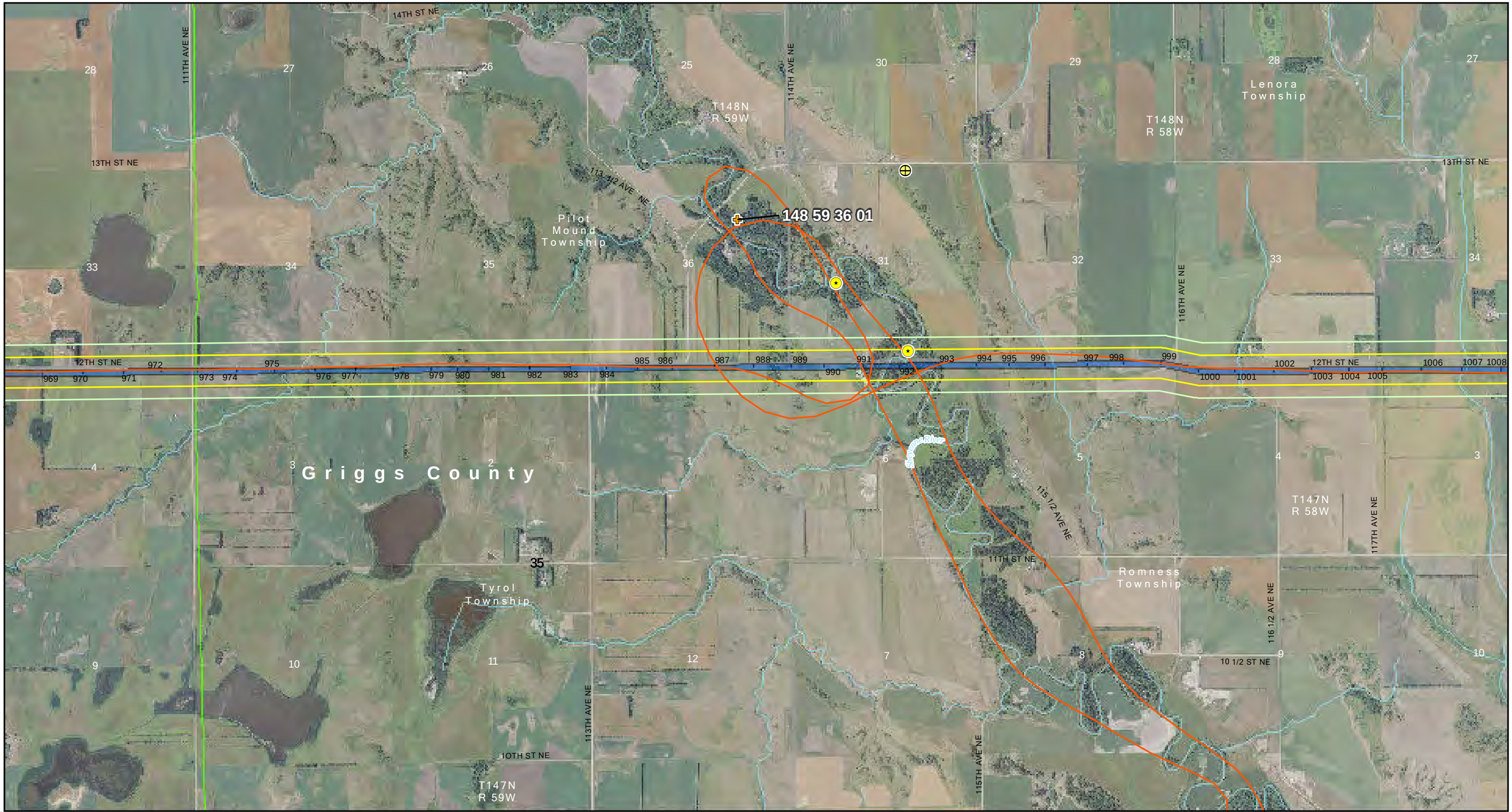




March 22, 2012 Survey	660 Ft from ROW Edge	Existing Transmission Lines	State Park, Recreation Area or Nature Preserve
⊕ Bald Eagle Nest	330 Ft from ROW Edge	400-kV DC	State WMA
⊙ Bald Eagle, Perched	Laydown Area	345-kV AC	USFWS NWR
⊕ Bald Eagle, Soaring	150 Foot Wide ROW (Apr. 25, 2012)	250-kV DC	USFWS WPA or WDA
⊕ Possible Hawk Nest	• Project Structure (Apr. 25, 2012)	230-kV AC	USBR Land
⊕ Possible Non-Raptor Nest	■ Substation	115-kV or less AC	
▲ Owl, Perched			
— Survey Flight Path, March 22, 2012			

Figure 34 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

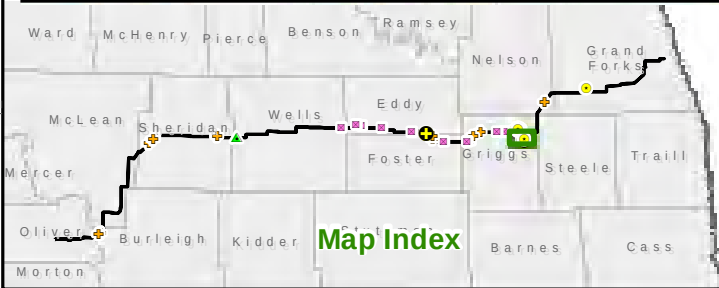
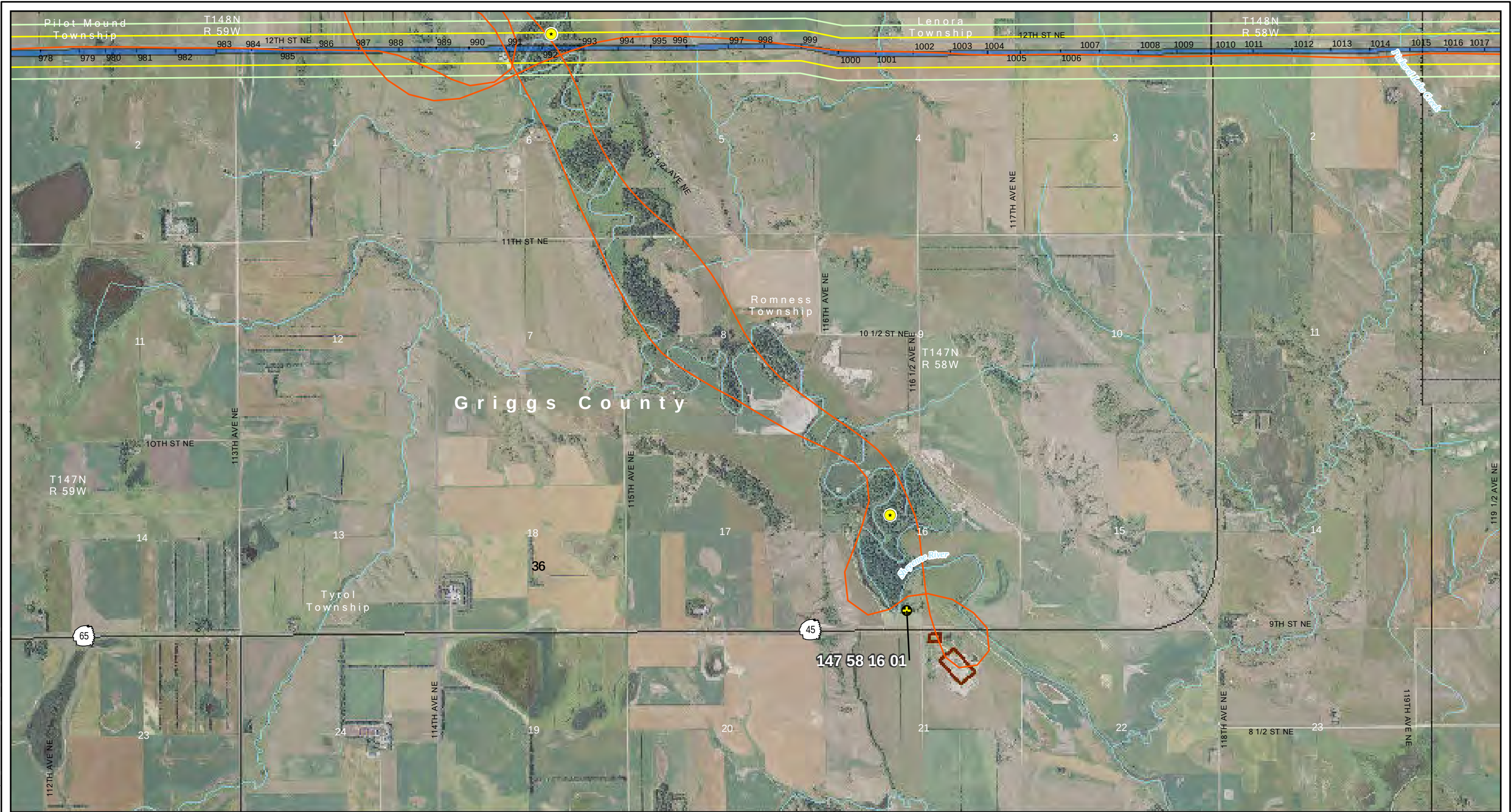
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 35 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

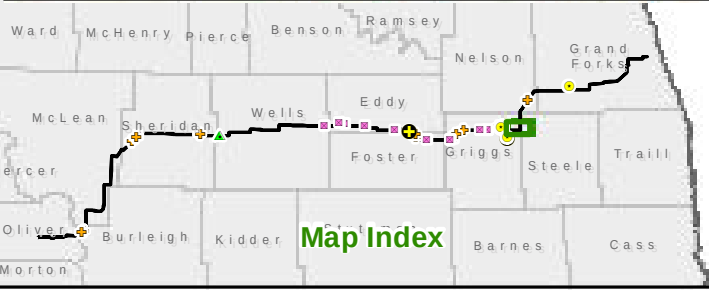
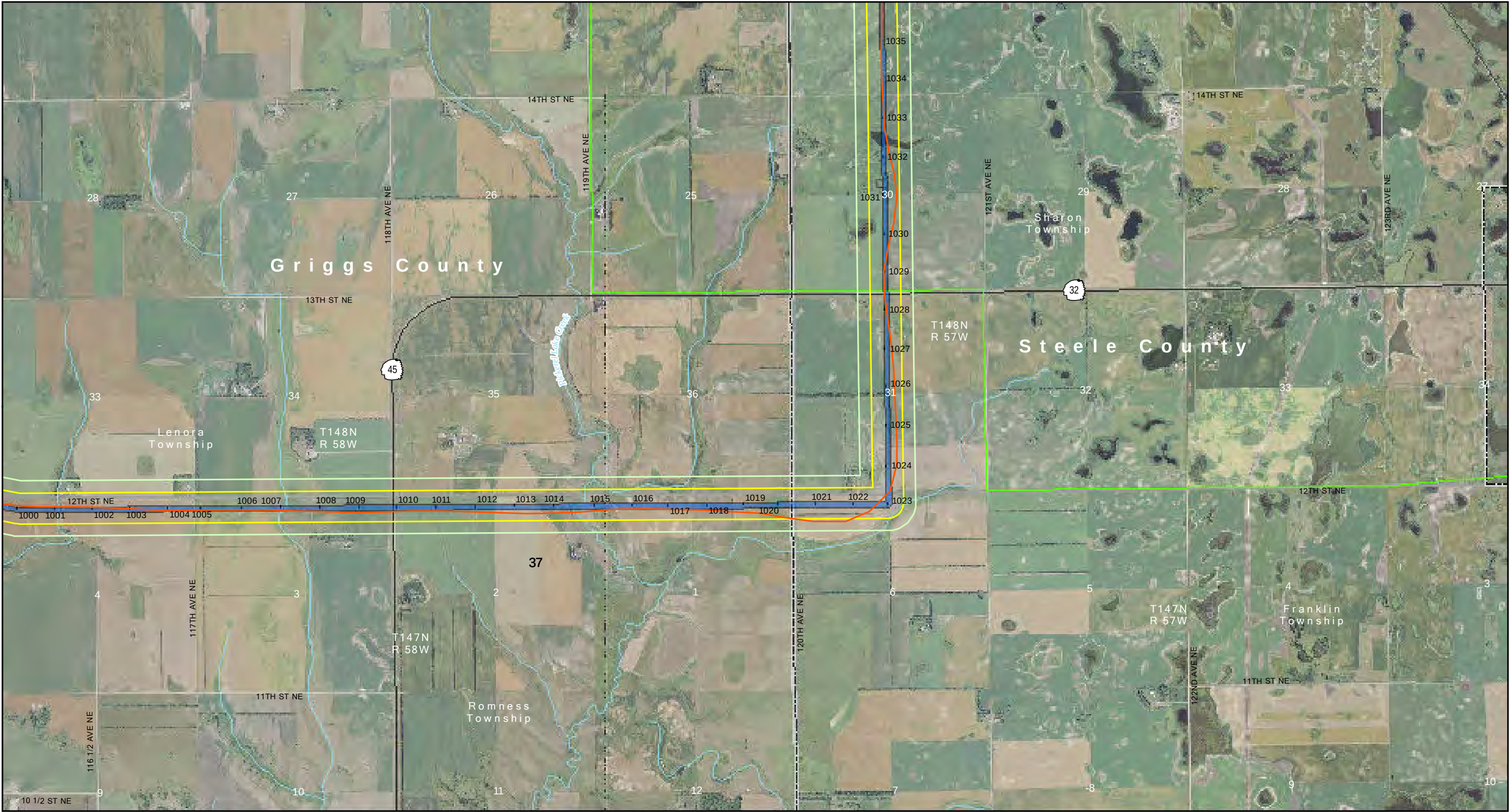
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 36 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

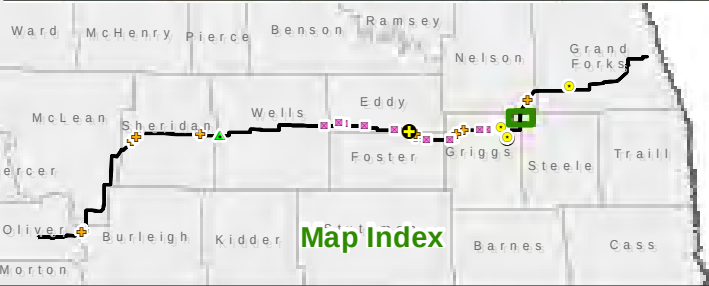
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 37 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

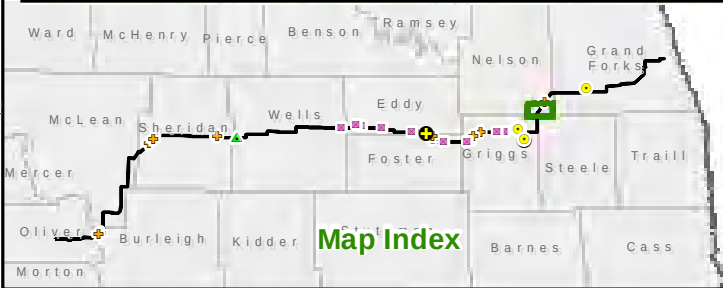
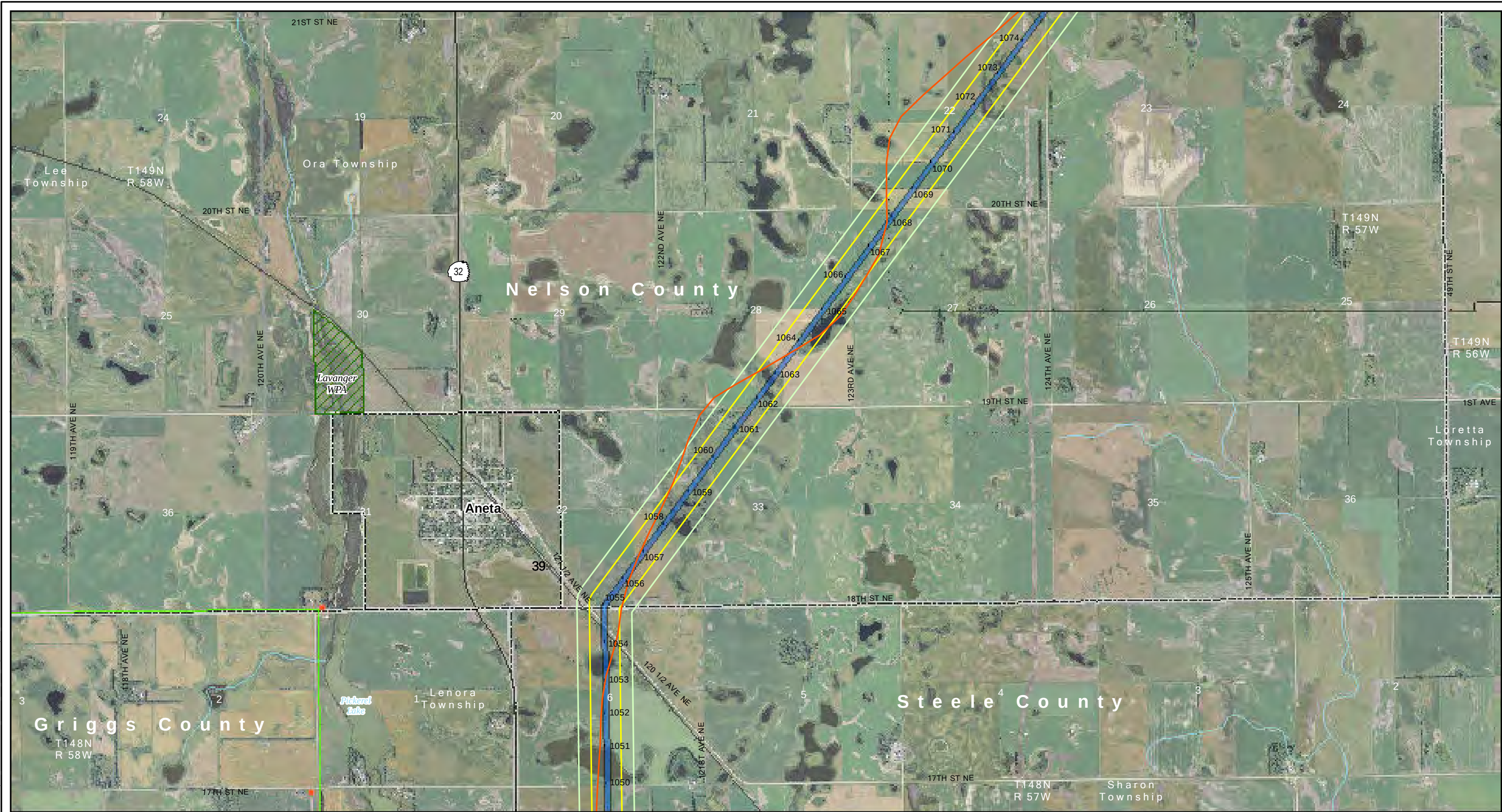
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 38 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

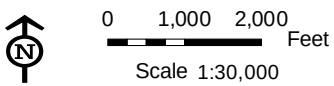
- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

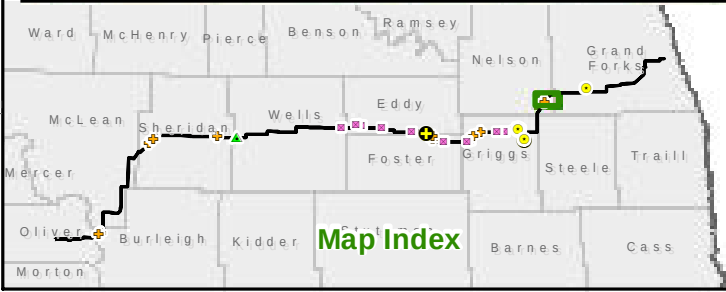
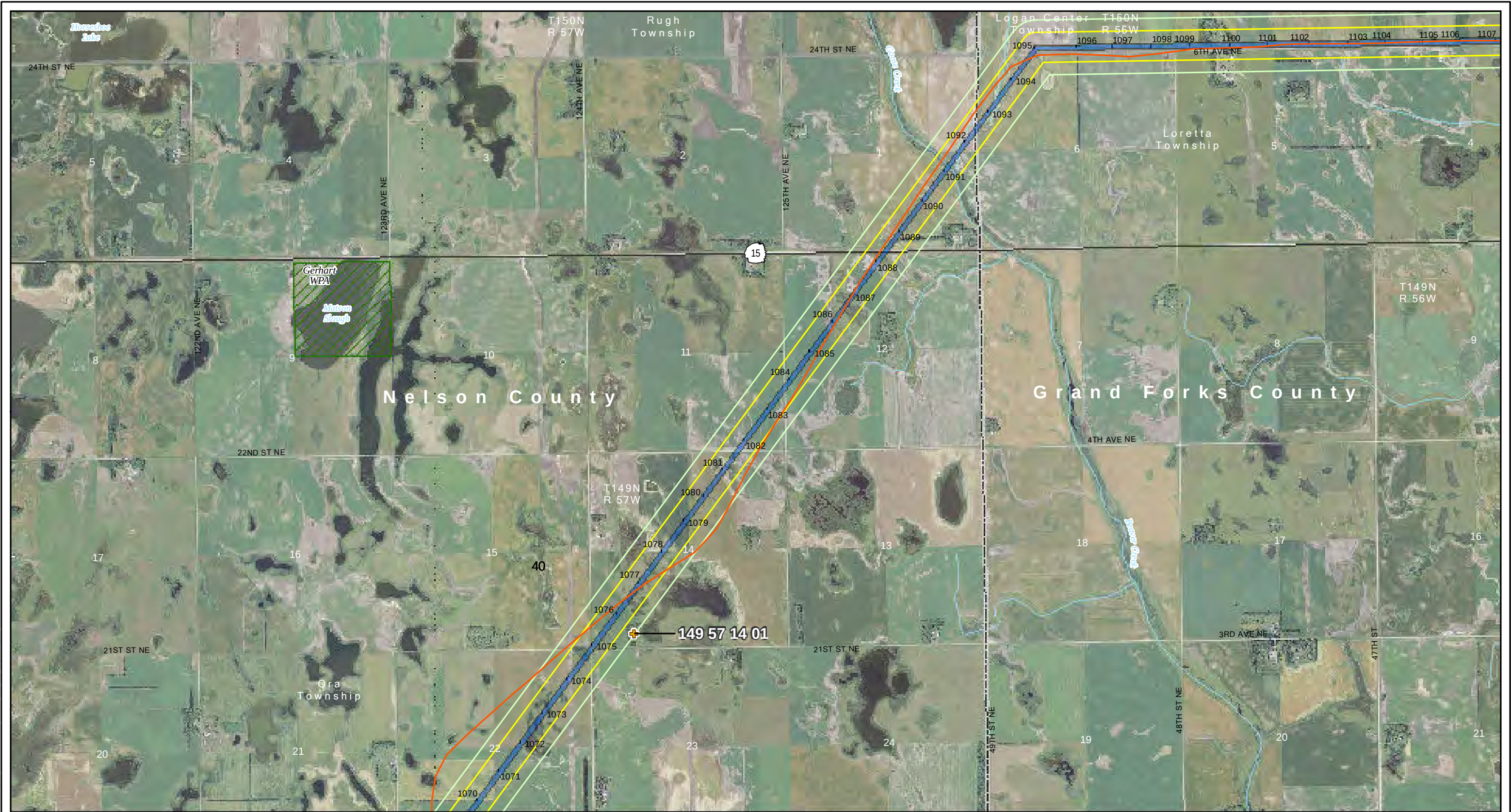
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 39 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.





March 22, 2012 Survey

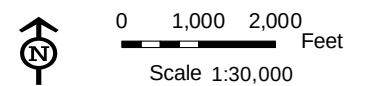
- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

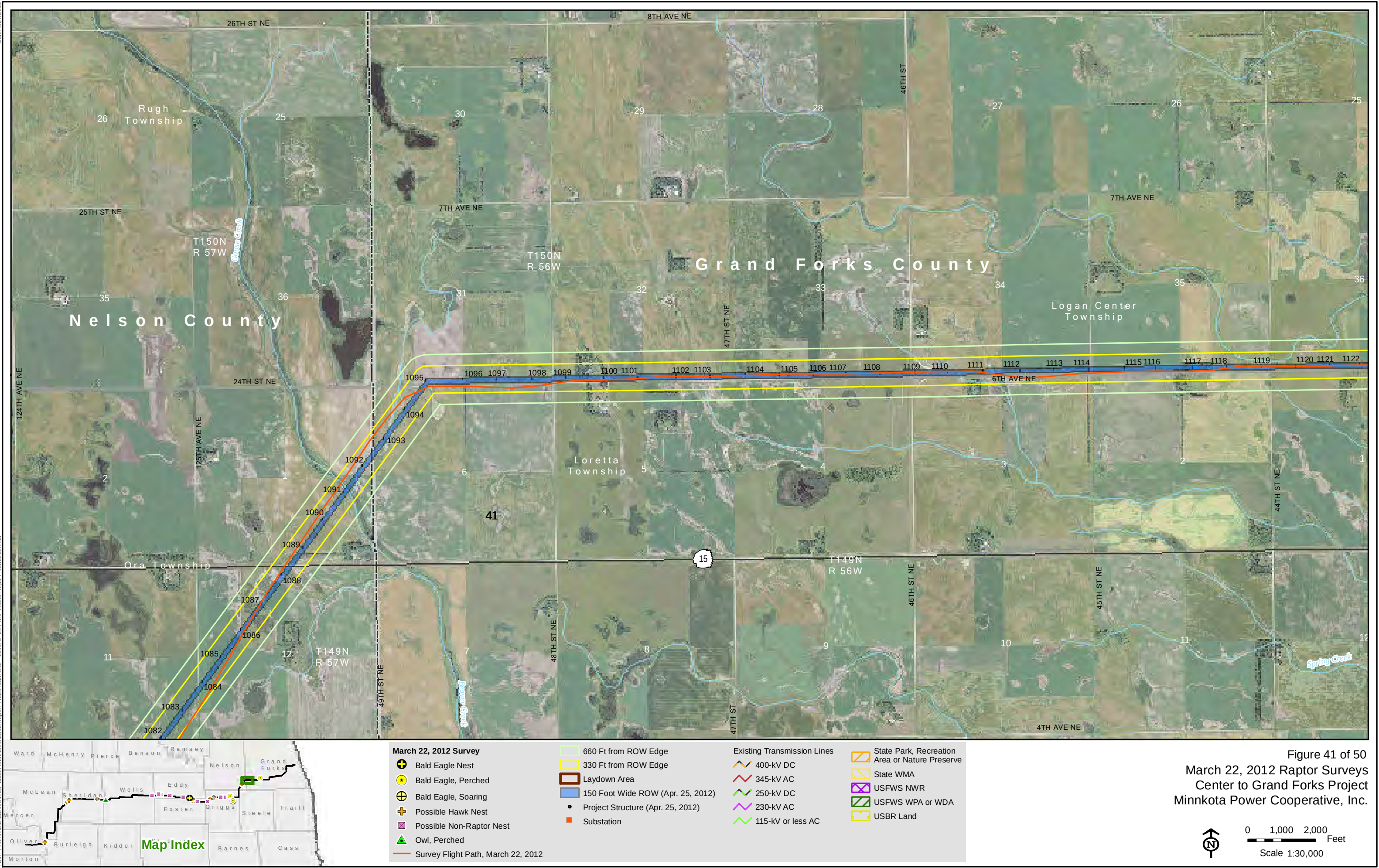
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

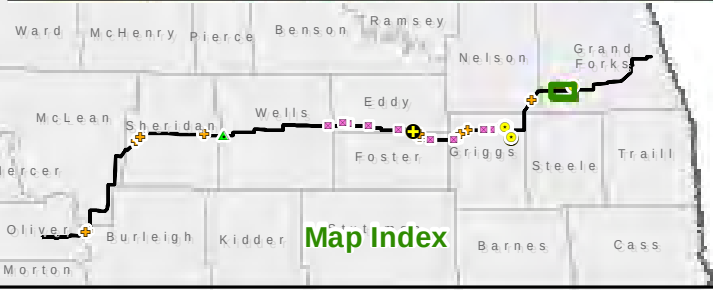
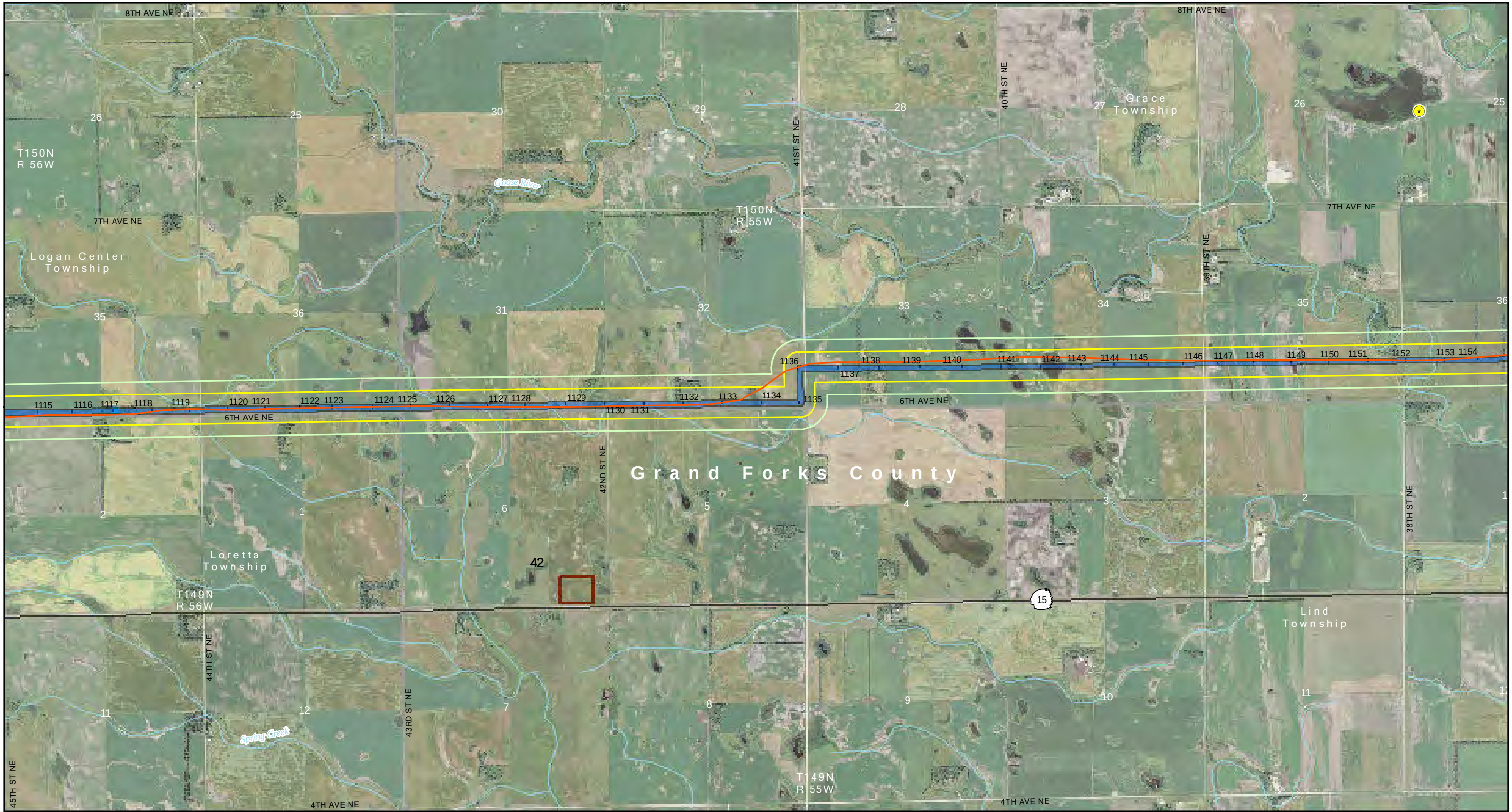
- Existing Transmission Lines**
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 40 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.







March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

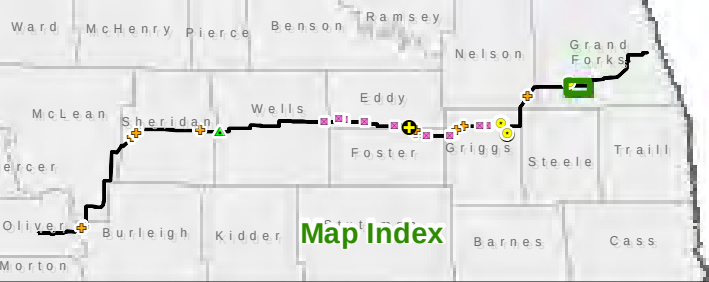
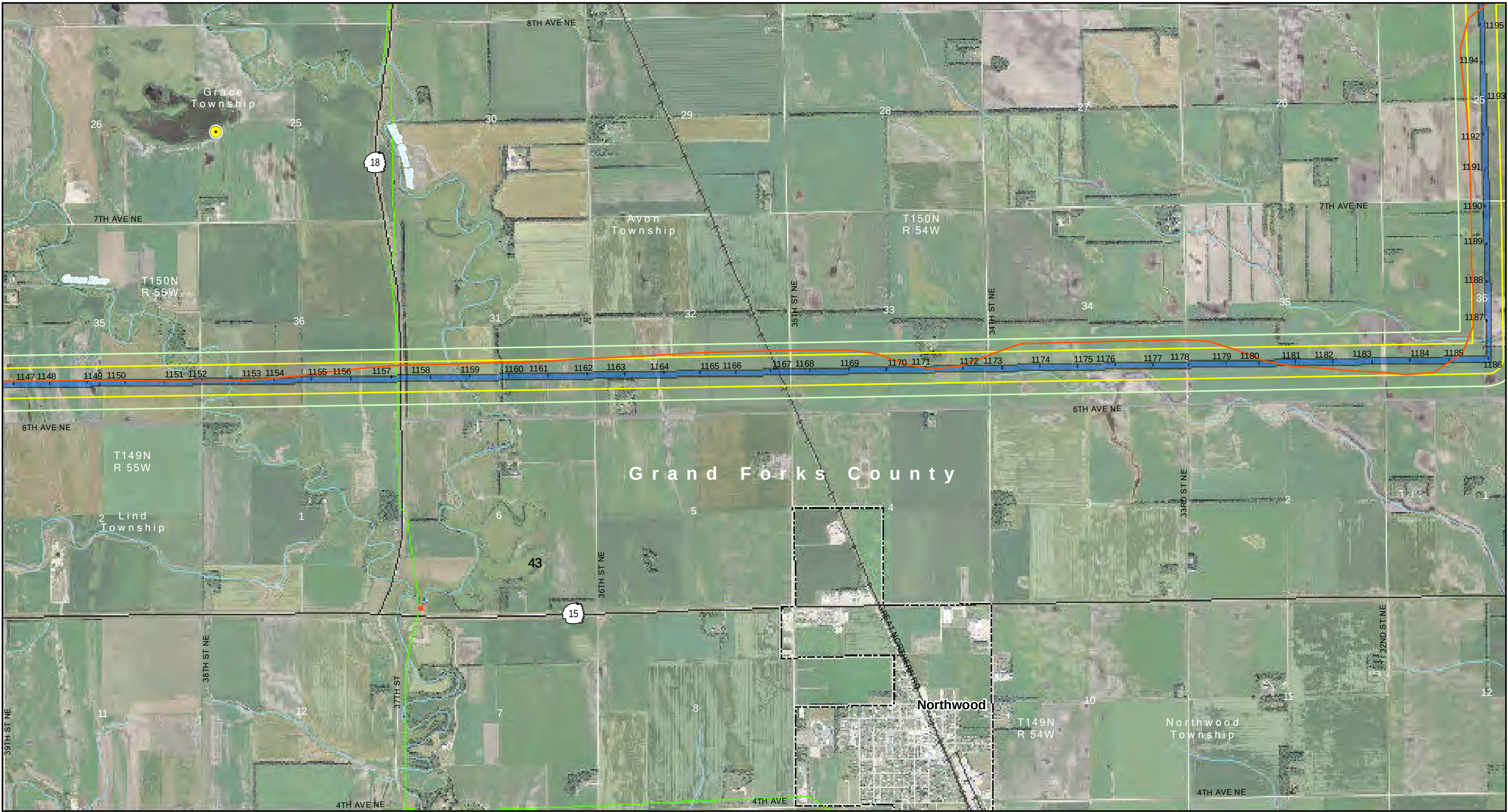
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 42 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

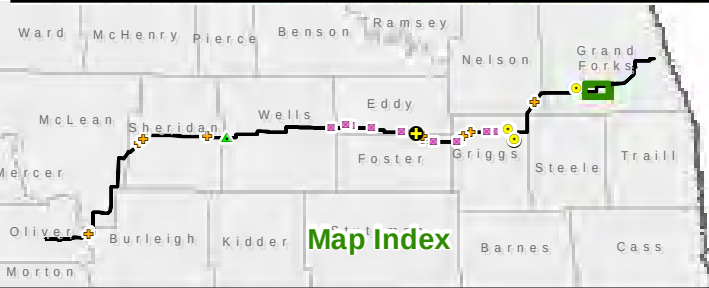
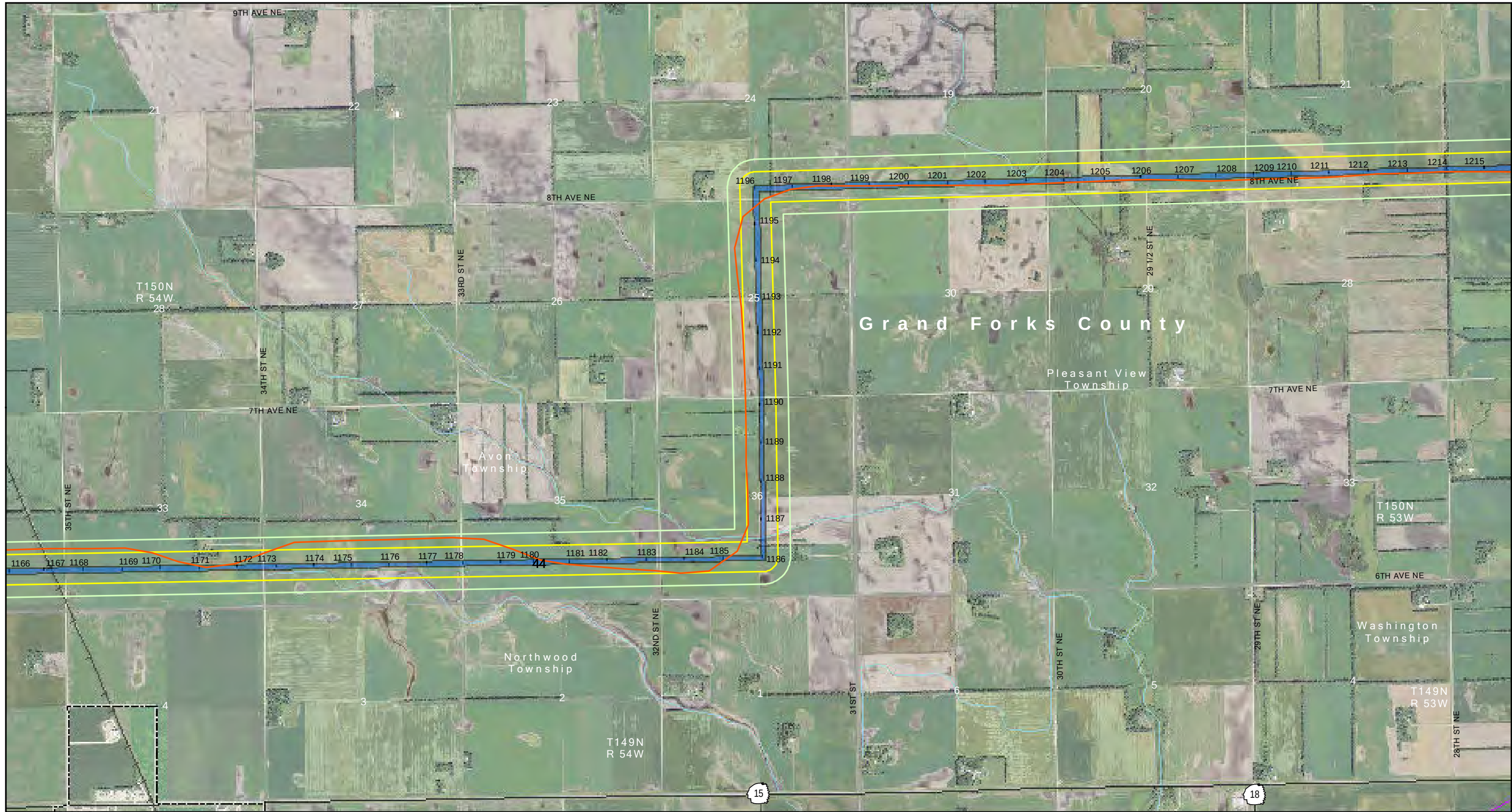
0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey	660 Ft from ROW Edge	Existing Transmission Lines	State Park, Recreation Area or Nature Preserve
⊕ Bald Eagle Nest	330 Ft from ROW Edge	400-kV DC	State WMA
⊙ Bald Eagle, Perched	Laydown Area	345-kV AC	USFWS NWR
⊕ Bald Eagle, Soaring	150 Foot Wide ROW (Apr. 25, 2012)	250-kV DC	USFWS WPA or WDA
⊕ Possible Hawk Nest	• Project Structure (Apr. 25, 2012)	230-kV AC	USBR Land
⊕ Possible Non-Raptor Nest	■ Substation	115-kV or less AC	
▲ Owl, Perched			
— Survey Flight Path, March 22, 2012			

Figure 43 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

- Bald Eagle Nest
- Bald Eagle, Perched
- Bald Eagle, Soaring
- Possible Hawk Nest
- Possible Non-Raptor Nest
- Owl, Perched
- Survey Flight Path, March 22, 2012

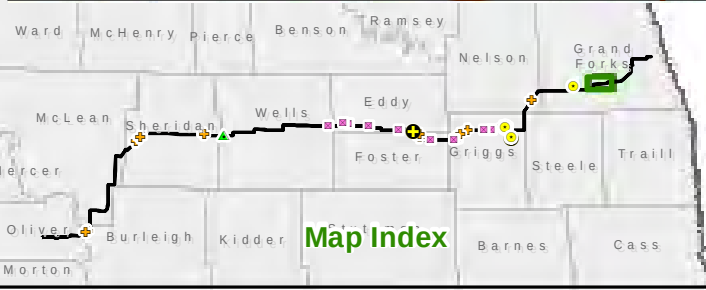
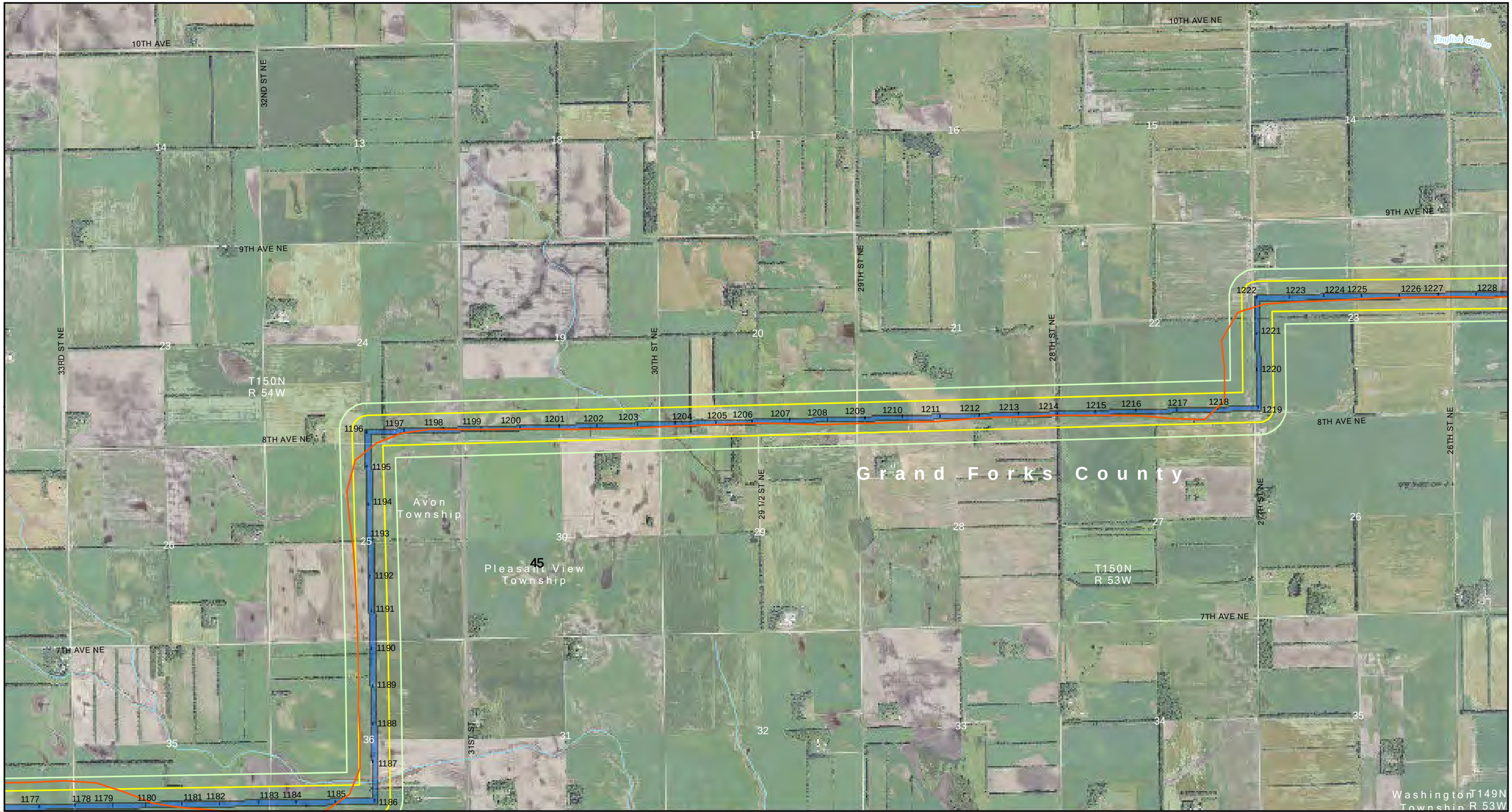
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 44 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

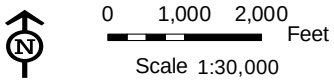
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

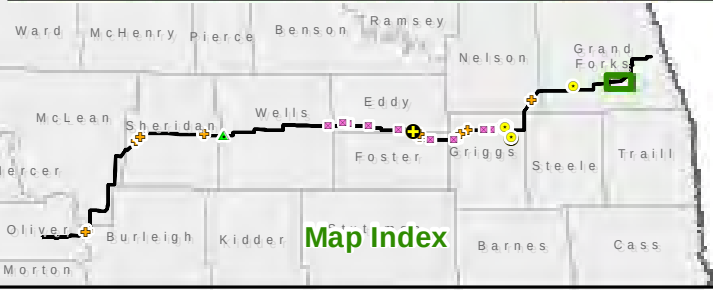
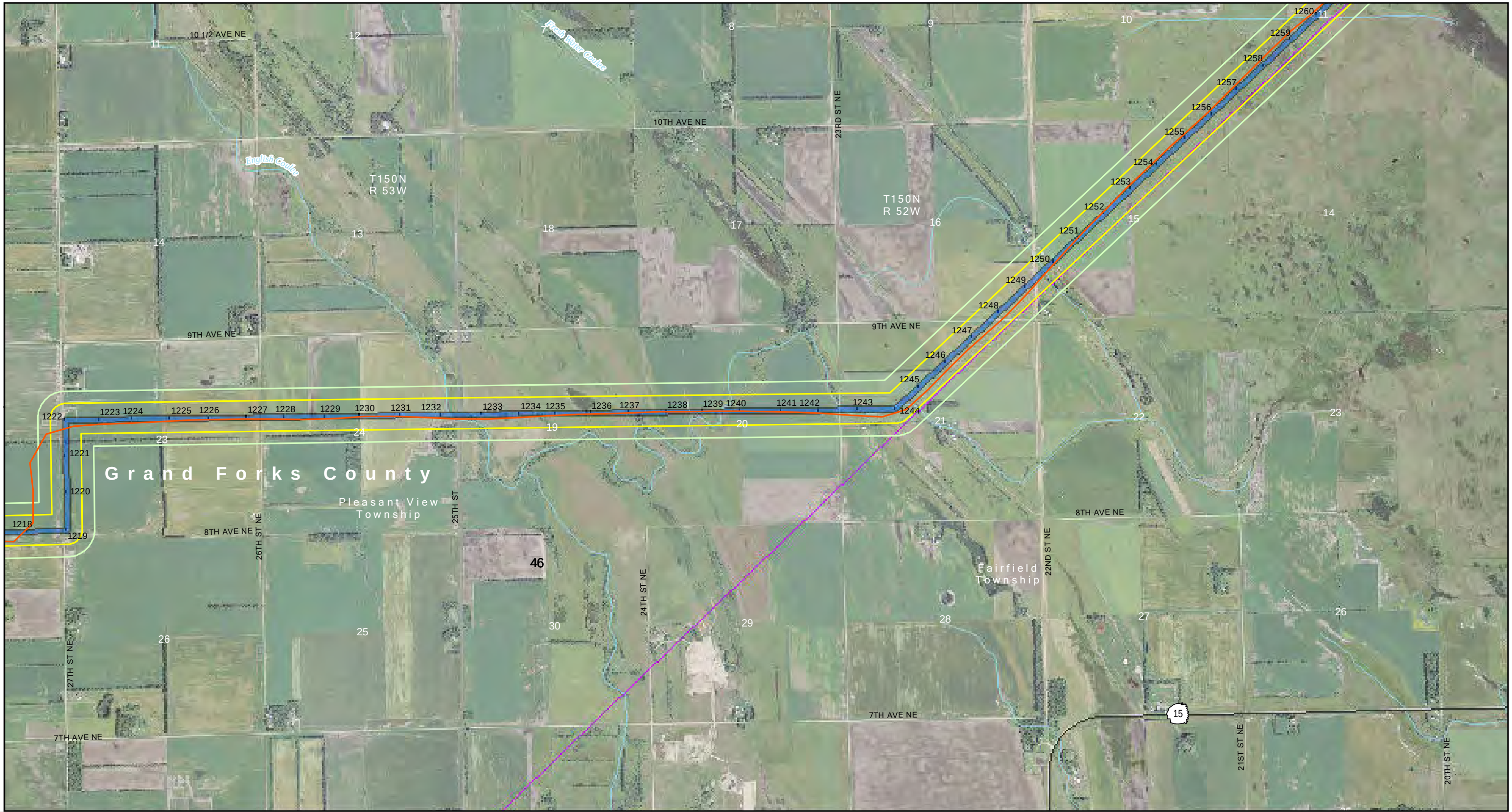
Existing Transmission Lines

- 400-kV DC
- 345-kV AC
- 250-kV DC
- 230-kV AC
- 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 45 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.





March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

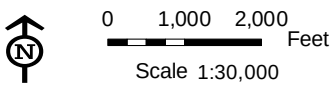
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

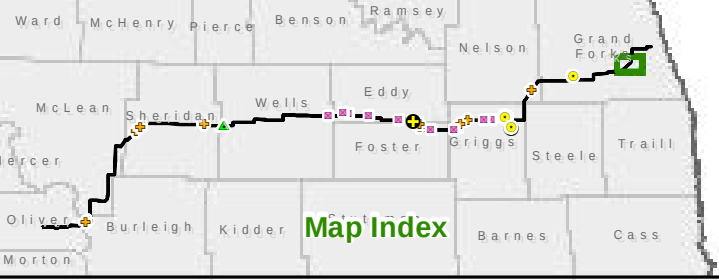
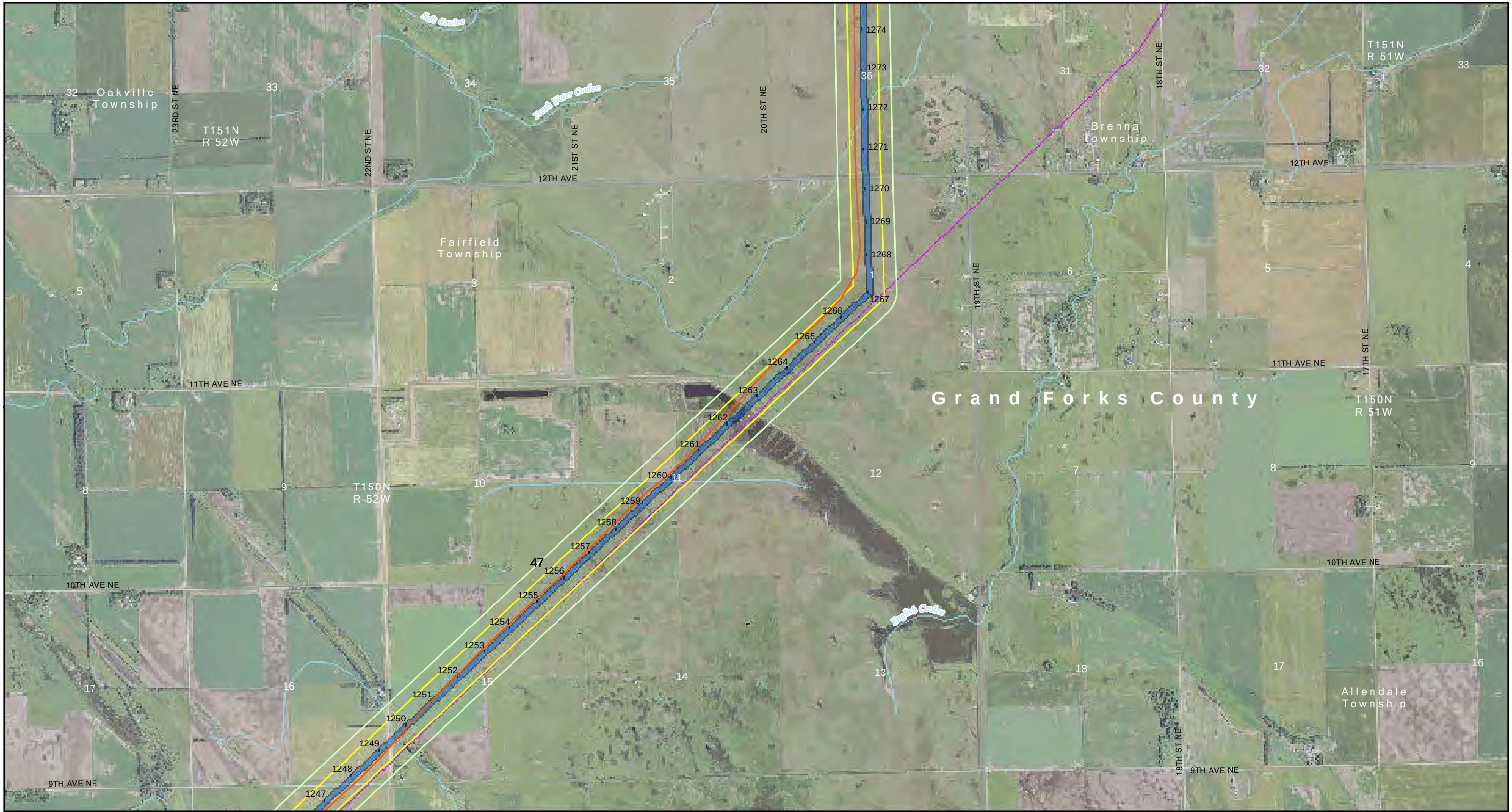
Existing Transmission Lines

- 400-kV DC
- 345-kV AC
- 250-kV DC
- 230-kV AC
- 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 46 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.





March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

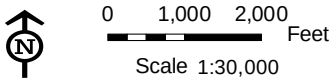
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

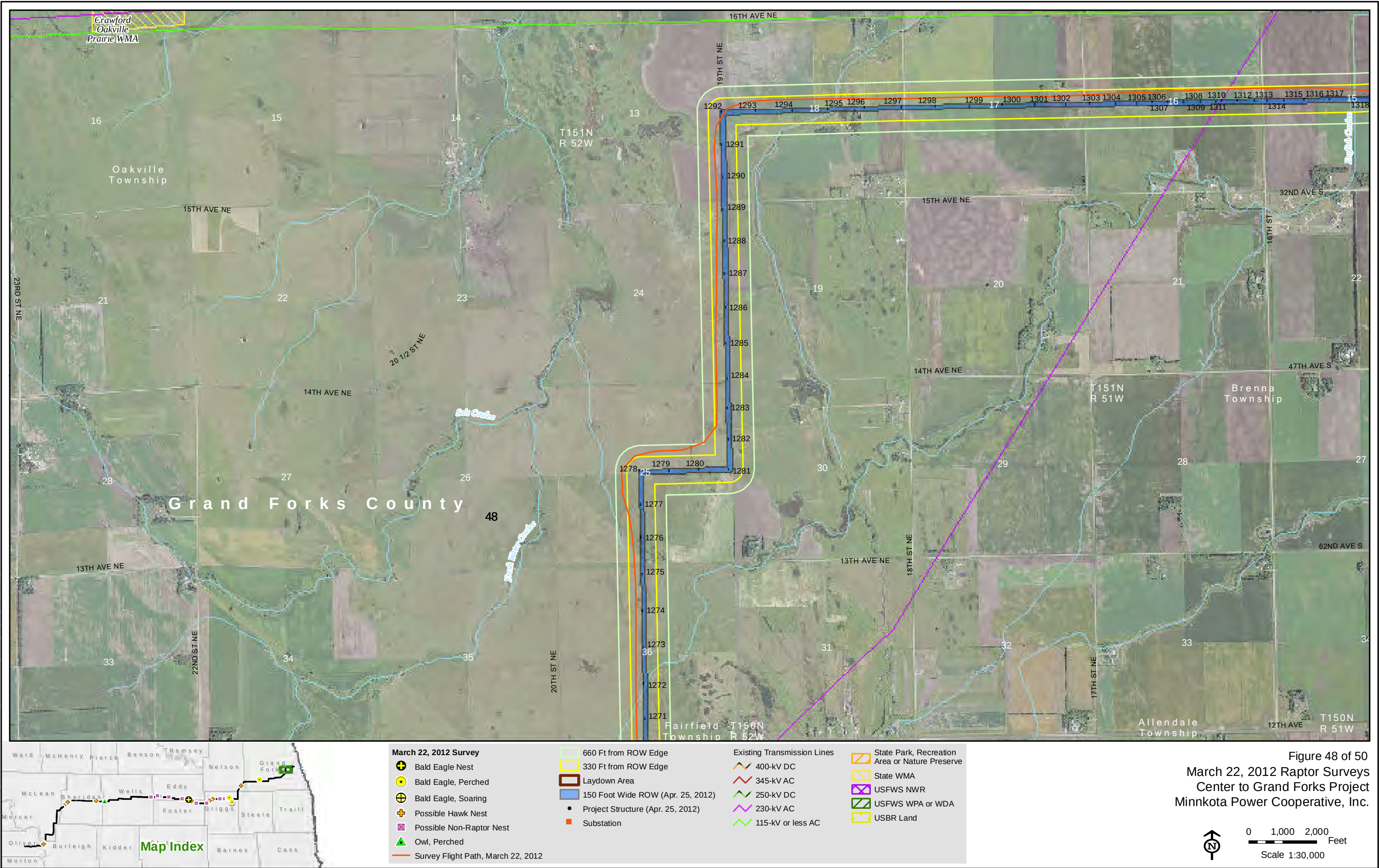
Existing Transmission Lines

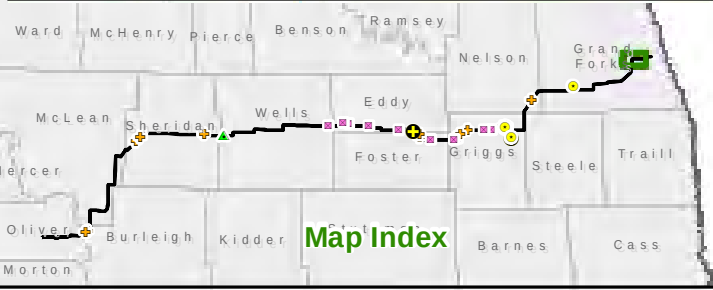
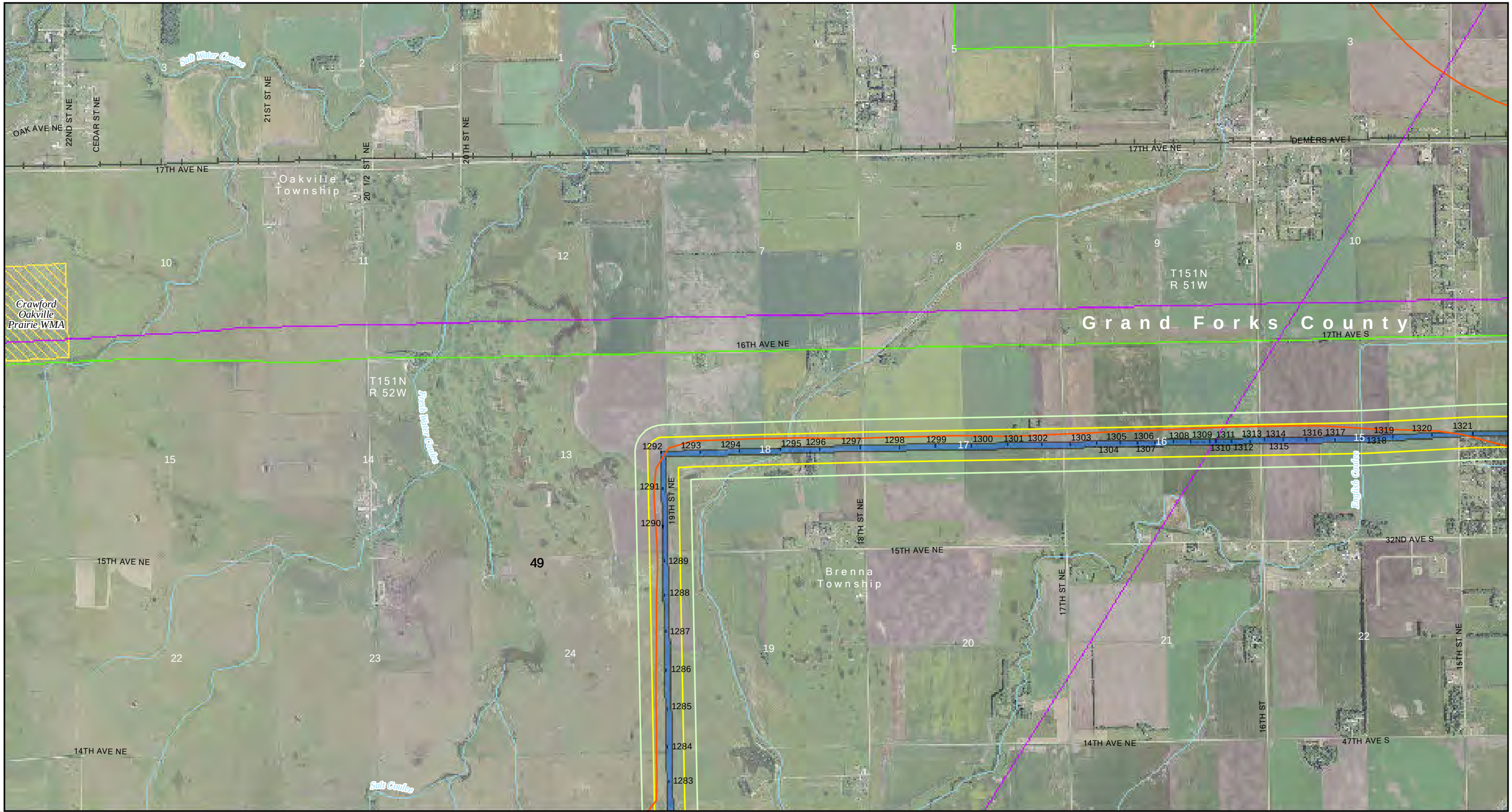
- 400-kV DC
- 345-kV AC
- 250-kV DC
- 230-kV AC
- 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 47 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.







March 22, 2012 Survey

- ⊕ Bald Eagle Nest
- ⊙ Bald Eagle, Perched
- ⊕ Bald Eagle, Soaring
- ⊕ Possible Hawk Nest
- ⊕ Possible Non-Raptor Nest
- ▲ Owl, Perched
- Survey Flight Path, March 22, 2012

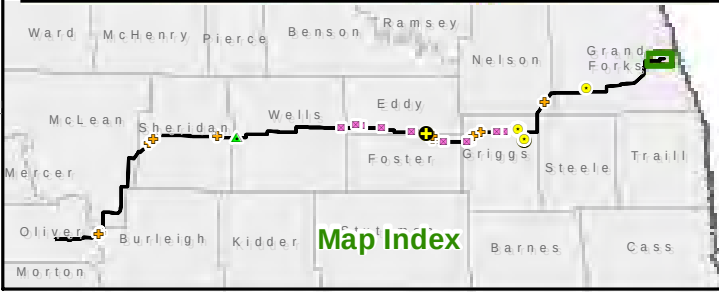
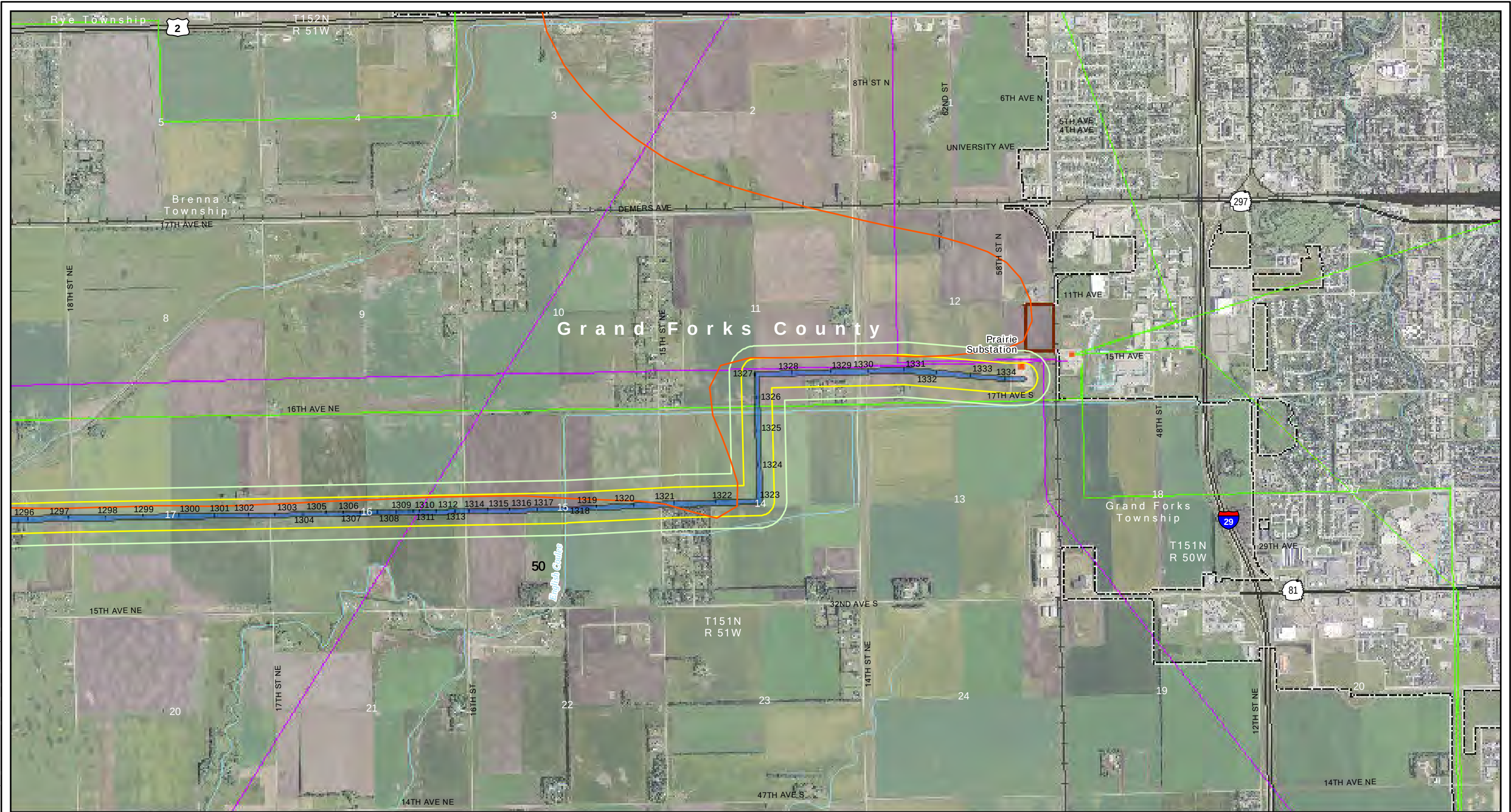
- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

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March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1,000 2,000 Feet
Scale 1:30,000



March 22, 2012 Survey

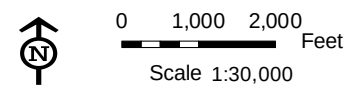
- Bald Eagle Nest
- Bald Eagle, Perched
- Bald Eagle, Soaring
- Possible Hawk Nest
- Possible Non-Raptor Nest
- Owl, Perched
- Survey Flight Path, March 22, 2012

- 660 Ft from ROW Edge
- 330 Ft from ROW Edge
- Laydown Area
- 150 Foot Wide ROW (Apr. 25, 2012)
- Project Structure (Apr. 25, 2012)
- Substation

- Existing Transmission Lines
- 400-kV DC
 - 345-kV AC
 - 250-kV DC
 - 230-kV AC
 - 115-kV or less AC

- State Park, Recreation Area or Nature Preserve
- State WMA
- USFWS NWR
- USFWS WPA or WDA
- USBR Land

Figure 50 of 50
March 22, 2012 Raptor Surveys
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.



Appendix A—Raptor Nest Identification Forms and Eagle Roost Form

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147 63 05 01 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Bald Eagle Nest

Location: Northing: 5270200.868 Easting: 520992.841

Elevation _____

Land Ownership ☒ P ☐ S ☐ F ☐ Other _____

USGS 7.5 Quad Name _____

County Foster County, ND

Geographic Area: _____

Management Area: _____

Activity: _____

Date/Time: 3/22/2012

Species (if known): Bald Eagle

Nest Description: _____

Nest Substrate: Stick

Tree Diameter (if applicable) _____

Nest Site Elevation: _____

Nest Condition: Excellent

Vegetation Type: tree row in ag field - large wetland to south

Proximity to Human Disturbance: _____

Remarks/Comments: Physical Relationship to Other Nests

Notes:

NAD 1983 UTM 14N
Active eagle nest
during 3/29/2010
survey. No eagle on
nest during 3/22/2012,
but adult eagle
perched 1,200 feet
south of nest on
3/22/2012.

Map/Photo

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147581601 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Bald

Eagle Nest

Location: Northing: <u>5266159.378</u> Easting: <u>570611.656</u> NAD 1983 UTM 14N		Notes: <u>Active bald eagle nest in live cottonwood tree in riparian area of Sheyenne River. Surrounding landcover is pasture and tilled fields.</u>
Elevation: _____		
Land Ownership: ☒ P ☐ S ☐ F Other: _____		
USGS 7.5 Quad Name: _____		
County: <u>Griggs County, ND</u>		
Geographic Area: _____		Map/Photo
Management Area: _____		
Activity: <u>Nesting</u>		
Date/Time: <u>3/22/2012</u>		
Species (if known): <u>Bald Eagle</u>		
Nest Description: _____		
Nest Substrate: <u>Stick</u>		
Tree Diameter (if applicable): _____		
Nest Site Elevation: _____		
Nest Condition: <u>Excellent</u>		
Vegetation Type: <u>Riparian cottonwood</u>		
Proximity to Human Disturbance: <u>450 ft N of ND 45</u>		
Remarks/Comments: Physical Relationship to Other Nests		

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

BALD EAGLE ROOST SURVEY DATA FORM

Observer: A. Diehl, S. Krych

Date: 3/22/2012

Time: _____

Weather (Cloud Cover, Wind Speed/Direction, Temperature): 20% clouds, 10 mph wind, ~50°F

Location (Township/Range/Section OR Description of Location)	Number of Eagles Observed	Age Class (A,J,U) ¹	Habitat Type
<u>Sec 5, T147N, R63W</u>			
Example: T100 R30 S3 OR 2.0 miles SE of New Ulm just west of Shag Road and RR Alignment	<u>1</u>	<u>A</u>	
COMMENTS: <u>Bald eagle perched in tree row located</u>			
COMMENTS: <u>about 1,200 feet south of eagle</u>			
COMMENTS: <u>nest.</u>			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

5269807.138N

521000.327E

NAD 1983 UTM 14N

¹ A= Adult, J= Juvenile, U= Unknown

BALD EAGLE ROOST SURVEY DATA FORM

Observer: A. Diehl, S. Krych

Date: 3/22/2012

Time: _____

Weather (Cloud Cover, Wind Speed/Direction, Temperature): 20% clouds, 10 mph wind, ~50°F

Location (Township/Range/Section OR Description of Location)	Number of Eagles Observed	Age Class (A,J,U) ¹	Habitat Type
<u>Sec 17, T147N, R58W</u>	<u>2</u>	<u>A, J</u>	
Example: ~~T109 R50 S3~~ OR 2.0 miles SE of New Ulm just west of Shag Road and RR Alignment			
COMMENTS: <u>Perched adult and juvenile bald eagles</u>			
COMMENTS: <u>along Sheyenne River.</u>			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

5266941.654N

570476.490 E

NAD 1983 UTM 14N

¹ A= Adult, J= Juvenile, U= Unknown

BALD EAGLE ROOST SURVEY DATA FORM

Observer: A. Diehl, S. Krych

Date: 3/22/2012

Time: _____

Weather (Cloud Cover, Wind Speed/Direction, Temperature): 20% clouds, 10 mph wind, ~50°F

Location (Township/Range/Section OR Description of Location)	Number of Eagles Observed	Age Class (A,J,U) ¹	Habitat Type
<u>Sec 31, T148N, R58W</u>			
Example: T100 R30 S3 OR 2.0 miles SE of New Ulm just west of Shag Road and RR Alignment	<u>1</u>	<u>A</u>	
COMMENTS: <u>Perched bald eagle along Sheyenne River</u>			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

5271426.215N

567118.629 E

NAD 1983 UTM 14N

¹ A= Adult, J= Juvenile, U= Unknown

BALD EAGLE ROOST SURVEY DATA FORM

Observer: A. Diehl, S. Krych

Date: 3/22/2012

Time: _____

Weather (Cloud Cover, Wind Speed/Direction, Temperature): 20% clouds, 10mph wind, 50° F

Location (Township/Range/Section OR Description of Location)	Number of Eagles Observed	Age Class (A,J,U) ¹	Habitat Type
<u>Sec 31, T148N, R58W</u>			
Example: T109 R30 S3 OR 2.0 miles SE of New Ulm just west of Shag Road and RR Alignment	<u>1</u>	<u>J</u>	
COMMENTS: <u>Perched bald eagle along Sheyenne River</u>			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

5270877.690N
567704.216 E
NAD 1983 UTM 14N

¹ A= Adult, J= Juvenile, U= Unknown

BALD EAGLE ROOST SURVEY DATA FORM

Observer: A. Diehl, S. Krych

Date: 3/22/2012

Time: _____

Weather (Cloud Cover, Wind Speed/Direction, Temperature): 20% clouds, 10 mph wind, ~50°F

Location (Township/Range/Section OR Description of Location)	Number of Eagles Observed	Age Class (A, J, U) ¹	Habitat Type
<u>Sec 31, T148N, R58W</u>		<u>J</u>	
Example: T109 R30 S3 OR 2.0 miles SE of New Ulm just west of Chag Road and RR Alignment	<u>1</u>	<u>J</u>	
COMMENTS: <u>Bald eagle soaring near Steyenne River</u>			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

5272341.166 N

567682.044 E

NAD 1983 UTM 14N

¹ A= Adult, J= Juvenile, U= Unknown

BALD EAGLE ROOST SURVEY DATA FORM

Observer: A. Diehl, S. Krych

Date: 3/22/2012

Time: _____

Weather (Cloud Cover, Wind Speed/Direction, Temperature): 20% clouds, 10mph wind, ~50°F

Location (Township/Range/Section OR Description of Location)	Number of Eagles Observed	Age Class (A,J,U) ¹	Habitat Type
<u>Sec 25, T150N, R81W</u>			
Example: T100-R30-S3 OR 2.0 miles SE of New Ulm just west of Shag Road and RR Alignment	<u>1</u>	<u>A</u>	
COMMENTS: <u>Perched in dead tree along large wetland</u>			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			
COMMENTS:			

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

5292717.986 N

601696.749 E

NAD 1983 UTM 14N

¹ A= Adult, J = Juvenile, U= Unknown

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 149 57 14 01 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

5285383.309 580948.336 NAD 1983 UTM 14N

Location: Northing: _____ Easting: _____ Notes: _____

Elevation _____

Land Ownership: ☒ P ☐ S ☐ F Other _____

USGS 7.5 Quad Name _____

County Nelson County, ND

Geographic Area: _____

Management Area: _____

Activity: _____

Date/Time: 3/22/2012

Species (if known): _____

Nest Description: _____

Map/Photo

Nest Substrate: stick

Tree Diameter (if applicable) _____

Nest Site Elevation: _____

Nest Condition: Excellent

Vegetation Type: trees near ~~water~~ grassland

Proximity to Human Disturbance: _____

Remarks/Comments: Physical Relationship to Other Nests

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147600601 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

Location: Northing: <u>5270458.254</u> Easting: <u>548649.675</u>	Notes: <u>NAD 1983 UTM 14N</u>
Elevation: _____	<u>nest first observed</u>
Land Ownership: ☒ P ☐ S ☐ F Other _____	<u>3/29/2010.</u>
USGS 7.5 Quad Name _____	
County <u>Griggs County, ND</u>	
Geographic Area: _____	
Management Area: _____	
Activity: <u>Inactive</u>	
Date/Time: <u>3/22/2012</u>	
Species (if known): _____	
Nest Description: _____	Map/Photo
Nest Substrate: <u>Stick</u>	
Tree Diameter (if applicable) _____	
Nest Site Elevation: _____	
Nest Condition: <u>Good</u>	
Vegetation Type: <u>Windrow</u>	
Proximity to Human Disturbance: <u>adjacent to farmstead</u>	
Remarks/Comments: Physical Relationship to Other Nests	

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 148593601 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

5271945.089 566318.079 NAD 1983 UTM 14N	
Location: Northing: _____ Easting: _____	Notes: _____
Elevation _____	Riparian area along Shenenne River.
Land Ownership ☒ P ☐ S ☐ F Other _____	
USGS 7.5 Quad Name _____	
County <u>Griggs County, ND</u>	
Geographic Area: _____	
Management Area: _____	
Activity: _____	
Date/Time: <u>3/22/2012</u>	
Species (if known): _____	
Nest Description: _____	Map/Photo
Nest Substrate: <u>stick</u>	
Tree Diameter (if applicable) _____	
Nest Site Elevation: _____	
Nest Condition: <u>Excellent</u>	
Vegetation Type: <u>Riparian trees near Shenenne River</u>	
Proximity to Human Disturbance: _____	
Remarks/Comments: Physical Relationship to Other Nests	

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147611101 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

5268412.427 544693.469	
Location: Northing: _____	Easting: _____
Notes: _____	
Elevation _____	
Land Ownership: ☒ P ☐ S ☐ F ☐ Other _____	
USGS 7.5 Quad Name _____	
County <u>Griggs County, ND</u>	
Geographic Area: _____	
Management Area: _____	
Activity: _____	
Date/Time: <u>3/22/2012</u>	
Species (if known): _____	
Nest Description: _____	Map/Photo
Nest Substrate: <u>stick</u>	
Tree Diameter (if applicable) _____	
Nest Site Elevation: _____	
Nest Condition: <u>Good</u>	
Vegetation Type: <u>tree row and ag fields</u>	
Proximity to Human Disturbance: _____	
Remarks/Comments: Physical Relationship to Other Nests	
RECORD ALL POINTS AND CORRIDORS ON GPS UNIT	

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147631501 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

Location: Northing: <u>5267006.057</u> Easting: <u>524330.915</u> Notes: <u>NAD 1983 UTM 14N</u>	
Elevation _____	
Land Ownership ☒ P ☐ S ☐ F Other _____	
USGS 7.5 Quad Name _____	
County <u>Foster County, ND</u>	
Geographic Area: _____	
Management Area: _____	
Activity: _____	
Date/Time: <u>3/22/2012</u>	
Species (if known): _____	
Nest Description: _____	Map/Photo
Nest Substrate: <u>stick</u>	
Tree Diameter (if applicable) _____	
Nest Site Elevation: _____	
Nest Condition: <u>Good</u>	
Vegetation Type: <u>tree clump near grass/ag land</u>	
Proximity to Human Disturbance: _____	
Remarks/Comments: Physical Relationship to Other Nests	

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 1476310 01 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

Location: Northing: 5268406.175 Easting: 524238.263 Notes: NAD 1983 UTM 14N

Elevation _____

Land Ownership: (P) S F Other _____

USGS 7.5 Quad Name _____

County Foster County, ND

Geographic Area: _____

Management Area: _____

Activity: _____

Date/Time: 3/22/2012

Species (if known): _____

Nest Description: _____

Map/Photo

Nest Substrate: Stick

Tree Diameter (if applicable) _____

Nest Site Elevation: _____

Nest Condition: Excellent

Vegetation Type: Clump of trees in ag land

Proximity to Human Disturbance: _____

Remarks/Comments: Physical Relationship to Other Nests

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147740801 Date: 3/22/2012
Observed by: A. Diehl, S. Krych
Affiliation: _____

Hawk

Location: Northing: <u>5268335.044</u> Easting: <u>415513.526</u> Notes: <u>NAD 1983 UTM 14N</u>	
Elevation: _____	First observed <u>3/29/2010</u>
Land Ownership: ☒ P ☐ S ☐ F Other _____	
USGS 7.5 Quad Name _____	
County <u>Sheridan County, ND</u>	
Geographic Area: _____	
Management Area: _____	
Activity: <u>Inactive</u>	
Date/Time: <u>3/22/2012</u>	
Species (if known): _____	
Nest Description: _____	Map/Photo
Nest Substrate: <u>Stick</u>	
Tree Diameter (if applicable) _____	
Nest Site Elevation: _____	
Nest Condition: <u>Good</u>	
Vegetation Type: <u>tree clump near ag and wetlands</u>	
Proximity to Human Disturbance: _____	
Remarks/Comments: Physical Relationship to Other Nests	

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147 78 26 01 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

Location: Northing: 5264634.316 Easting: 380900.193

Elevation _____

Land Ownership: ☒ P ☐ S ☐ F ☐ Other _____

USGS 7.5 Quad Name _____

County Sheridan County, ND

Geographic Area: _____

Management Area: _____

Notes: First observed
3/29/2010

Activity: Inactive

Date/Time: 3/22/2012

Species (if known): _____

Nest Description: large nest

Map/Photo

Nest Substrate: stick

Tree Diameter (if applicable) _____

Nest Site Elevation: _____

Nest Condition: Excellent

Vegetation Type: tree in grassland area

Proximity to Human Disturbance: _____

Remarks/Comments: Physical Relationship to Other Nests

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147 77 24 01 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

Location: Northing: 5266831.294 Easting: 383295.884 Notes: NAD 1983 UTM 14N

Elevation _____

Land Ownership: ☒ P ☐ S ☐ F Other _____

USGS 7.5 Quad Name _____

County Sheridan County, ND

Geographic Area: _____

Management Area: _____

Activity: _____

Date/Time: 3/22/2012

Species (if known): _____

Nest Description: _____

Map/Photo

Nest Substrate: Stick

Tree Diameter (if applicable) _____

Nest Site Elevation: _____

Nest Condition: Good

Vegetation Type: Small clump of trees

Proximity to Human Disturbance: _____

Remarks/Comments: Physical Relationship to Other Nests

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 142811301 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

5219527.331 356769.804		NAD 1983 UTM 14N
Location: Northing: _____	Easting: _____	Notes: _____
Elevation: _____		
Land Ownership: ☒ P ☐ S ☐ F Other: _____		First recorded
USGS 7.5 Quad Name: _____		5/17/2011
County: <u>Burleigh County, ND</u>		
Geographic Area: _____		
Management Area: _____		
Activity: _____		
Date/Time: <u>3/22/2012</u>		
Species (if known): _____		
Nest Description: _____	Map/Photo	
Nest Substrate: <u>stick</u>		
Tree Diameter (if applicable): _____		
Nest Site Elevation: _____		
Nest Condition: <u>Excellent</u>		
Vegetation Type: <u>trees by creek / grassland</u>		
Proximity to Human Disturbance: _____		
Remarks/Comments: Physical Relationship to Other Nests		

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 142812401 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

5219394.249 356865.972
Location: Northing: _____ Easting: _____ Notes: _____

Elevation _____

Land Ownership: ☒ P ☐ S ☐ F Other _____

USGS 7.5 Quad Name _____

County Burleigh County, ND

Geographic Area: _____

Management Area: _____

Activity: _____

Date/Time: 3/22/2012

Species (if known): _____

Nest Description: _____

Map/Photo

Nest Substrate: stick

Tree Diameter (if applicable) _____

Nest Site Elevation: _____

Nest Condition: Good

Vegetation Type: Creek near grassland

Proximity to Human Disturbance: _____

Remarks/Comments: Physical Relationship to Other Nests

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 142812301 Date: 3/22/2012

Observed by: A. Diehl, S. Krych

Affiliation: _____

Hawk

5219082.985 355575.983	
Location: Northing: _____	Easting: _____
Elevation _____	Notes: <u>Large stick nest</u>
Land Ownership ☒ P ☐ S ☐ F Other _____	
USGS 7.5 Quad Name _____	
County <u>Burleigh County, ND</u>	
Geographic Area: _____	
Management Area: _____	
Activity: _____	
Date/Time: <u>3/22/2012</u>	
Species (if known): _____	
Nest Description: _____	Map/Photo
Nest Substrate: <u>stick</u>	
Tree Diameter (if applicable) _____	
Nest Site Elevation: _____	
Nest Condition: <u>Excellent</u>	
Vegetation Type: <u>tree clump near stream</u>	
Proximity to Human Disturbance: _____	
Remarks/Comments: Physical Relationship to Other Nests	

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT

RAPTOR AND BALD EAGLE NEST LOCATION

Raptor Inventory Data Sheet

Raptor Nest ID 147 74 08 02 Date: 4/26/2012

Observed by: J. McGuire

Affiliation: _____

Hawk

<u>5268339.244</u> <u>415357.708</u> <u>NAD 1983 UTM 14N</u>	
Location: Northing: _____ Easting: _____	Notes: _____
Elevation: _____	<u>Active nest in</u> <u>2012, possibly</u> <u>Swainson's Hawk</u>
Land Ownership: ☒ S ☐ F Other _____	
USGS 7.5 Quad Name _____	
County: <u>Sheridan County, ND</u>	
Geographic Area: _____	
Management Area: _____	
Activity: _____	
Date/Time: <u>4/26/2012</u>	
Species (if known): _____	
Nest Description: _____	Map/Photo _____
Nest Substrate: _____	
Tree Diameter (if applicable): _____	
Nest Site Elevation: _____	
Nest Condition: <u>Excellent</u>	
Vegetation Type: <u>tree row near ag field</u>	
Proximity to Human Disturbance: _____	
Remarks/Comments: Physical Relationship to Other Nests	

RECORD ALL POINTS AND CORRIDORS ON GPS UNIT