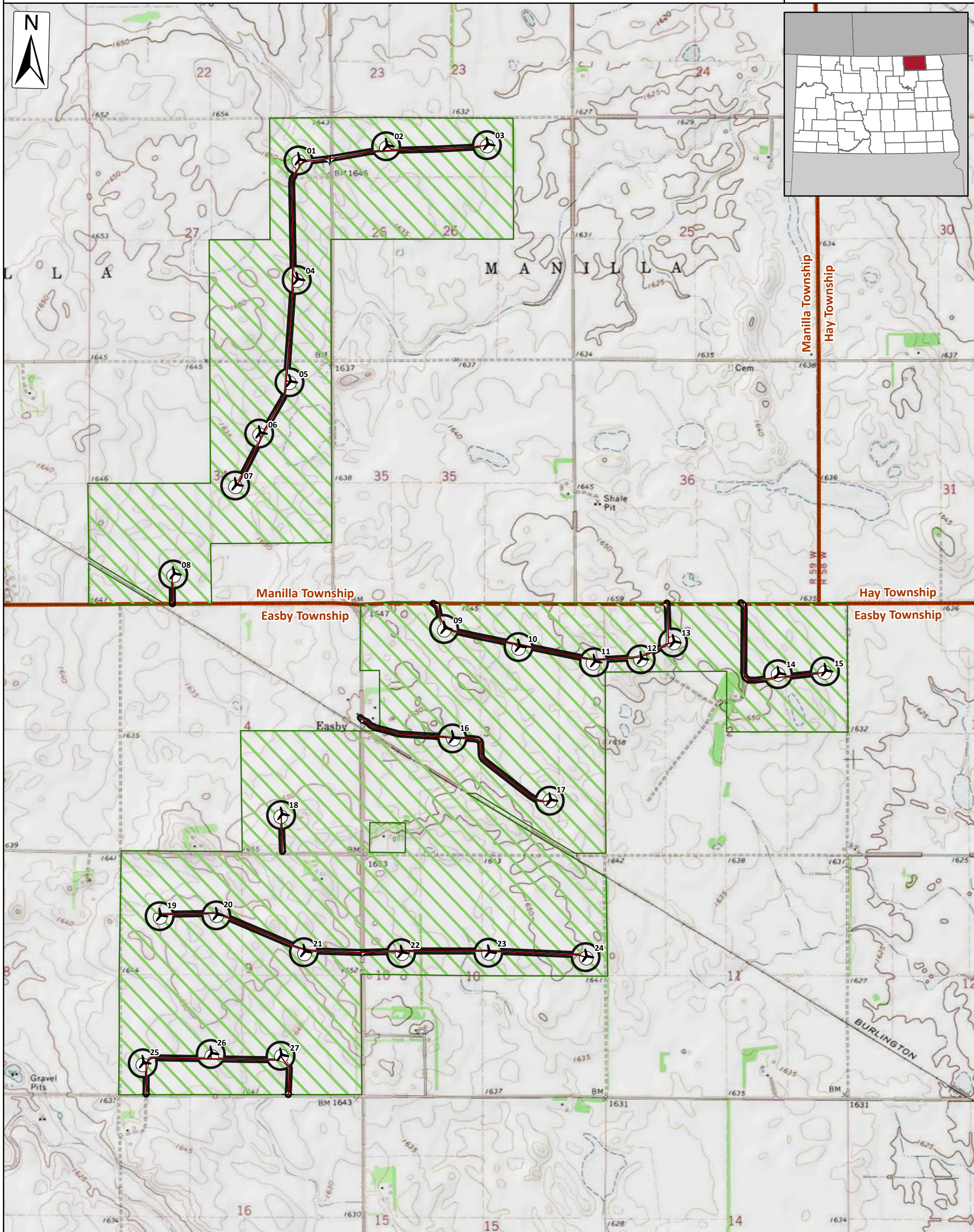


# Langdon Wind Project

Issue Date:  
3/1/2023

## Figure 1 - Site Overview

Cavalier County, North Dakota

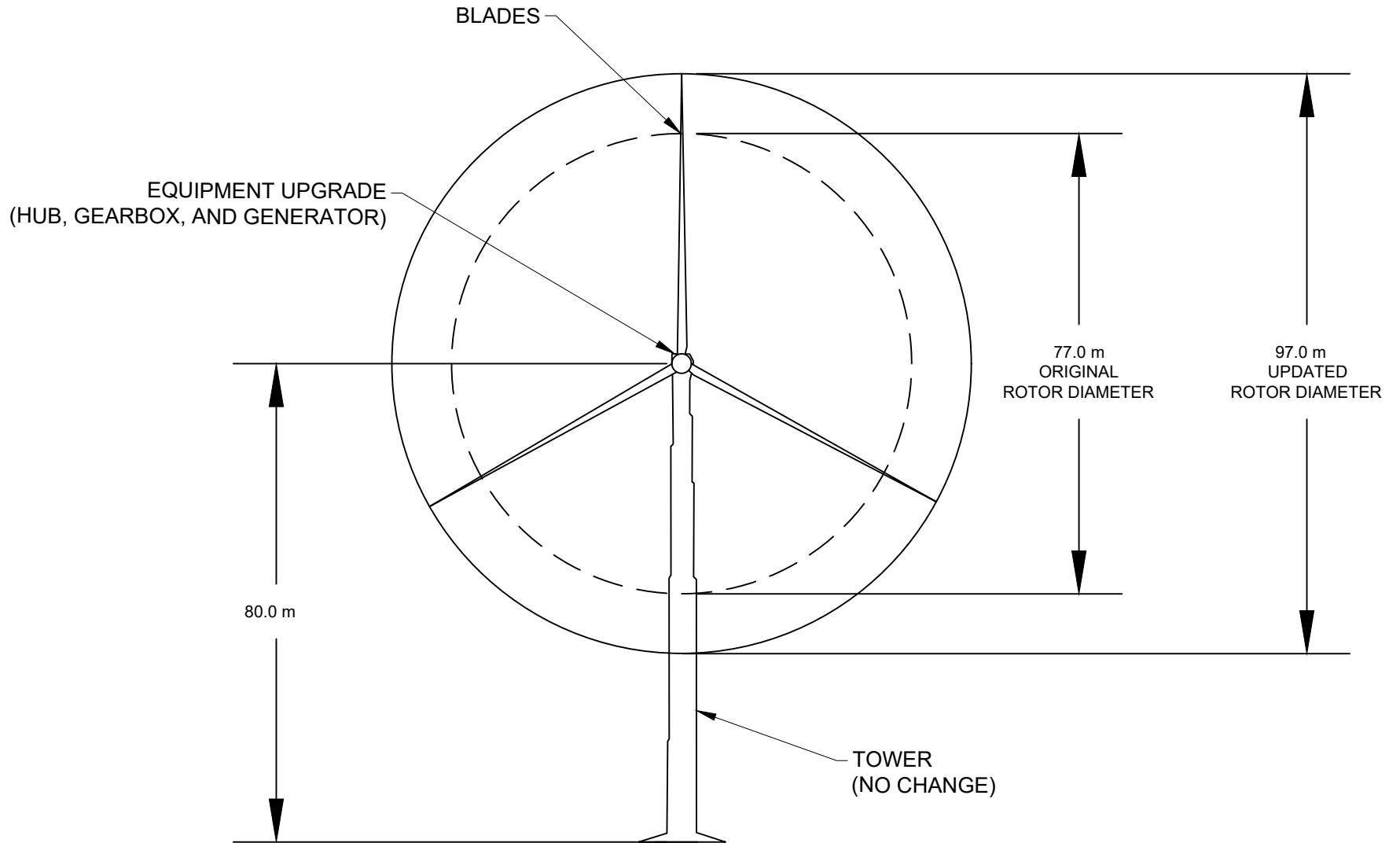


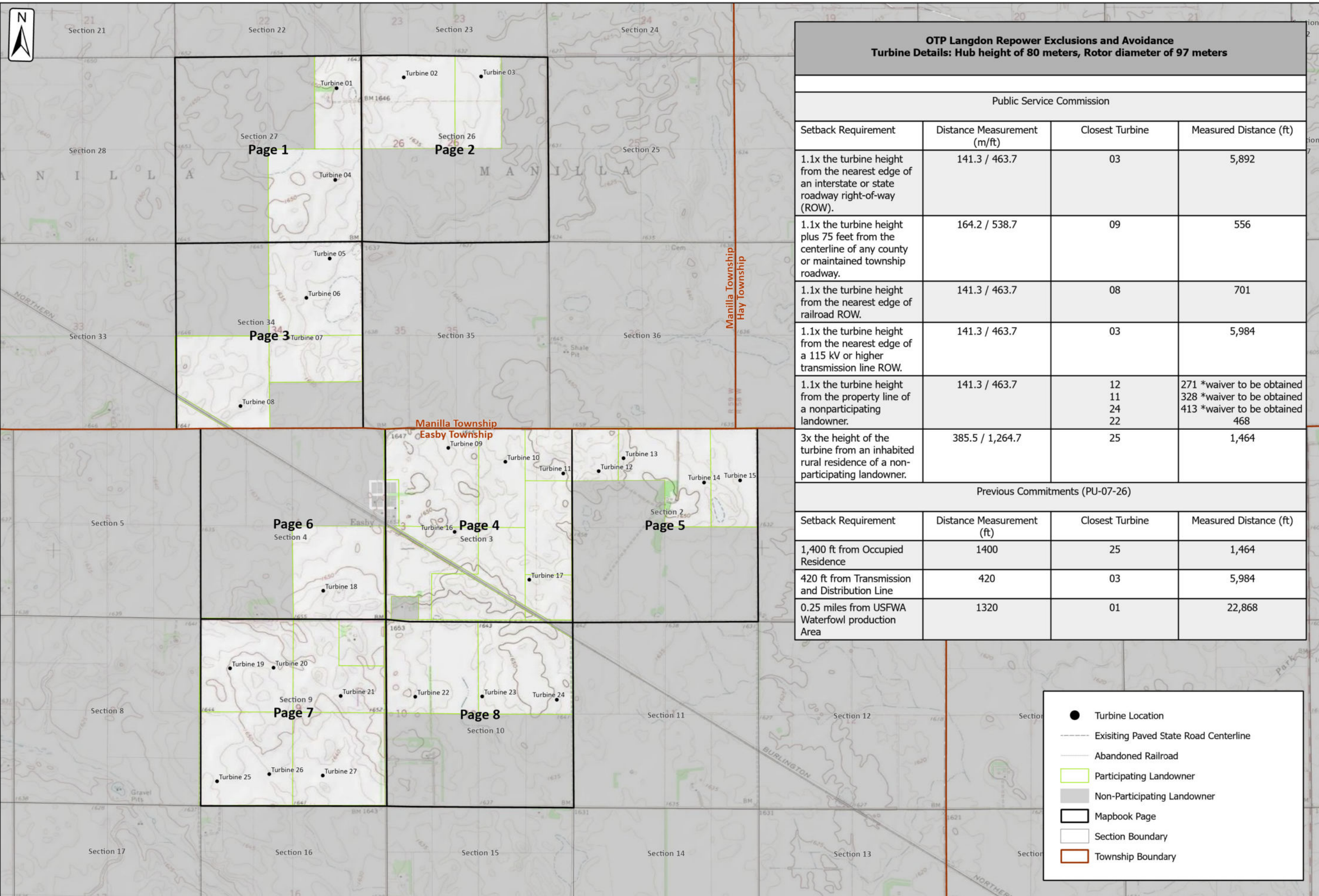
- Existing Turbine Locations
- Participating Parcels
- Existing Access Roads
- Township
- Disturbance Area (~72 acres)
- Environmental Study Area



0 0.5 1 Miles

# PROPOSED TURBINE UPGRADE





**OTP Langdon Repower Exclusions and Avoidance**  
**Turbine Details: Hub height of 80 meters, Rotor diameter of 97 meters**

**Public Service Commission**

Setback Requirement	Distance Measurement (m/ft)	Closest Turbine	Measured Distance (ft)
1.1x the turbine height from the nearest edge of an interstate or state roadway right-of-way (ROW).	141.3 / 463.7	03	5,892
1.1x the turbine height plus 75 feet from the centerline of any county or maintained township roadway.	164.2 / 538.7	09	556
1.1x the turbine height from the nearest edge of railroad ROW.	141.3 / 463.7	08	701
1.1x the turbine height from the nearest edge of a 115 kV or higher transmission line ROW.	141.3 / 463.7	03	5,984
1.1x the turbine height from the property line of a nonparticipating landowner.	141.3 / 463.7	12 11 24 22	271 *waiver to be obtained 328 *waiver to be obtained 413 *waiver to be obtained 468
3x the height of the turbine from an inhabited rural residence of a non-participating landowner.	385.5 / 1,264.7	25	1,464

**Previous Commitments (PU-07-26)**

Setback Requirement	Distance Measurement (ft)	Closest Turbine	Measured Distance (ft)
1,400 ft from Occupied Residence	1400	25	1,464
420 ft from Transmission and Distribution Line	420	03	5,984
0.25 miles from USFWA Waterfowl production Area	1320	01	22,868



2, 3, 4, 9, 10, 26, 27, 34	T160N R59W, T161N R59W	Manilla & Easby Township	Cavalier County, ND
SECTIONS	TOWNSHIP	TOWNSHIPS	COUNTY, STATE

**OTP Langdon Wind Repower Exclusions and Avoidance**

CLIENT: Otter Tail Power Company

SCALE: 0 500 1,000 Feet

DR: -- CH: --

P.M. --

BOOK: --

GIS FILE: --

DATE: 3/1/2023

FILE CODE: --

SHEET NO: --



RY GELLNER  
23176000

JOAN M  
IMHOFF  
23177000

JOAN M  
IMHOFF  
23182000

JOAN M  
IMHOFF  
23183000

BRUCE RODER  
23190000

BRUCE RODER  
23189000

Section 21

Section 21

Section 22

Section 22

92nd St NE

Section 22

Section 23

Section 23

Section 28

Section 27

Section 26

LORI EVANS  
23211000

STREMICK  
B & B  
23208000

JASON E  
SPANIER  
23206000

JASON E  
SPANIER  
23203000

BM 1646

- Turbine Location
- Occupied Residence
- Access Road
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- Railroad Right-of-Way Setback (1.1x Turbine Height)
- Landowner Occupied Residence Setback (1,400 ft)
- Non-Participating Landowner Property Line Setback (1.1x Turbine Height)
- Section Boundary
- Participating Landowner
- Non-Participating Landowner

Section 28

Section 27

JASON E  
SPANIER  
23209000

JASON E  
SPANIER  
23210000

MARVIN HECK  
23204000

Section 33

Section 34

JAMES SPANIER  
23243000

EDWIN PEARSON  
23242000

LOUIS  
MCGAUVRAN  
23248000

Section 27

Section 34

91st St NE

Section 26

Section 35

91st St NE

111th Ave NE Co Rd 33

01

02

04

05



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SECTIONS	2, 3, 4, 9, 10, 26, 27, 34
TOWNSHIP	T160N R59W, T161N R59W
TOWNSHIPS	Manilla & Easy Township
COUNTY, STATE	Cavalier County, ND

CLIENT: Otter Tail Power Company

**OTP Langdon Wind Repower Exclusions and Avoidance**



SCALE:	0 130 260
	Feet
DR:	CH
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GIS FILE:	
DATE:	3/1/2023
FILE CODE:	
SHEET NO:	1 of 8



JOAN M IMHOFF  
23183000

Section 22

Section 23

Section 23

Section 24

Section 27

Section 26

Section 23

Section 24

Section 27

Section 26

Section 26

Section 25

Section 34

Section 35

Section 35

Section 36

BRUCE RODER  
23190000

BRUCE RODER  
23189000

ROGER W KRAM  
23191000

VERNICE  
BALSDON  
23194000

JASON E  
SPANIER  
23206000

JASON E  
SPANIER  
23203000

JASON E  
SPANIER  
23202000

CHRISTALLE  
DALSTED  
23201000

LOUIS  
MCGAUVRAN  
23197000

MARVIN HECK  
23204000

MARVIN HECK  
23205000

LOUIS  
MCGAUVRAN  
23198000

LOUIS  
MCGAUVRAN  
23248000

LOUIS  
MCGAUVRAN  
23247000

LOUIS  
MCGAUVRAN  
23253000

- Turbine Location
- Occupied Residence
- Access Road
- Existing Overhead Electric Line
- Existing Paved State Road Centerline
- - - Existing Paved County Road Centerline
- + Abandoned Railroad
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- Section Boundary
- Participating Landowner
- Non-Participating Landowner



SECTIONS	2, 3, 4, 9, 10, 26, 27, 34
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TOWNSHIPS	Manilla & Easy Township
COUNTY, STATE	Cavalier County, ND

CLIENT: Otter Tail Power Company

**OTP Langdon Wind Repower Exclusions and Avoidance**



SCALE:	0 130 260 Feet
DR:	CH
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GIS FILE:	
DATE:	3/1/2023
FILE CODE:	
SHEET NO.:	2 of 8



LORI EVANS  
23214000

Section 28

JASON E  
SPANIER  
23209000

Section 27

JASON E  
SPANIER  
23210000

MARVIN HECK  
23204000

91st St NE

Section 26

JAMES SPANIER  
23237000

JAMES SPANIER  
23243000

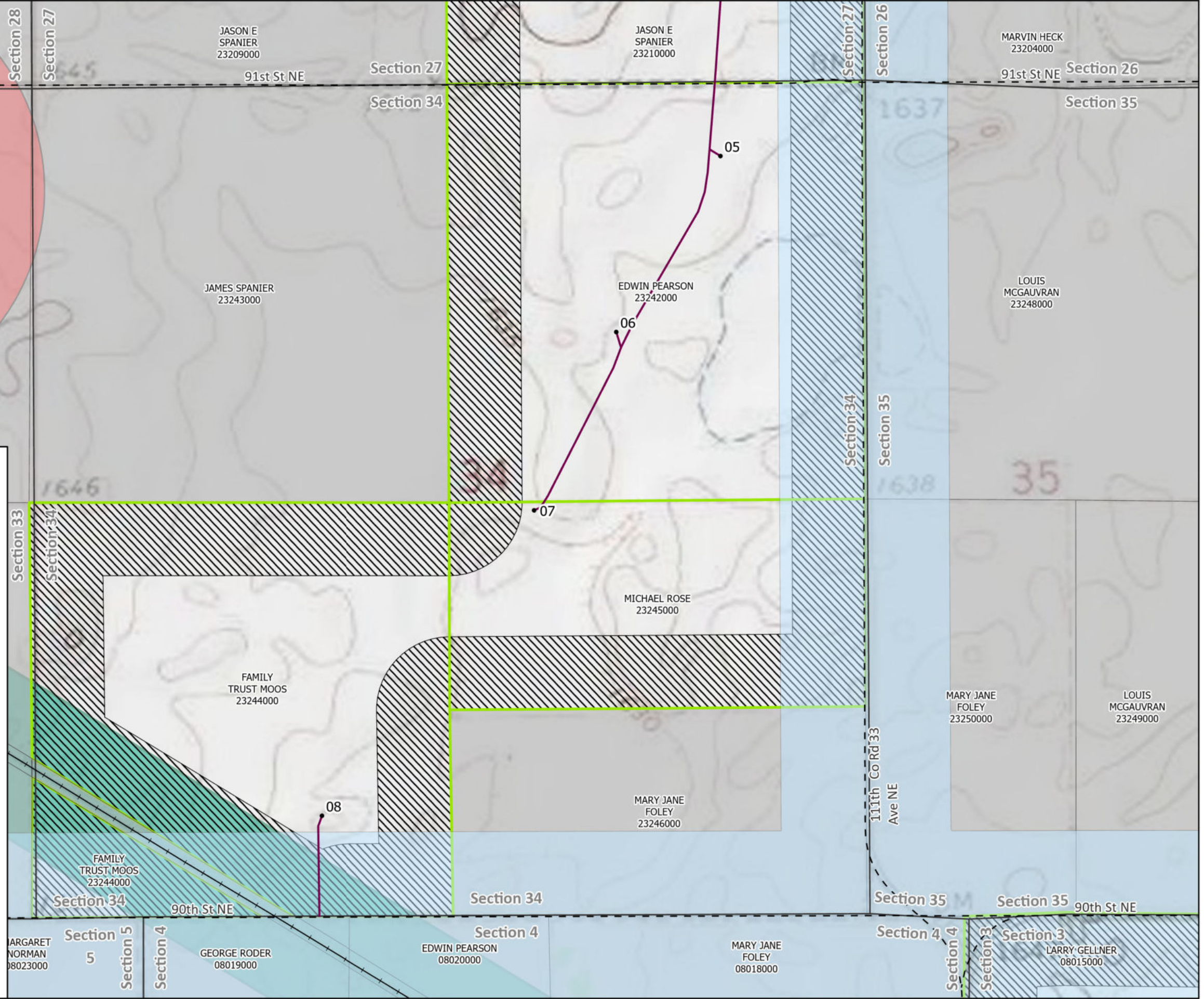
Section 34

EDWIN PEARSON  
23242000

LOUIS  
MCGAUVRAN  
23248000

Section 35

- Turbine Location
- Occupied Residence
- Access Road
- Existing Overhead Electric Line
- Existing Paved State Road Centerline
- - - Existing Paved County Road Centerline
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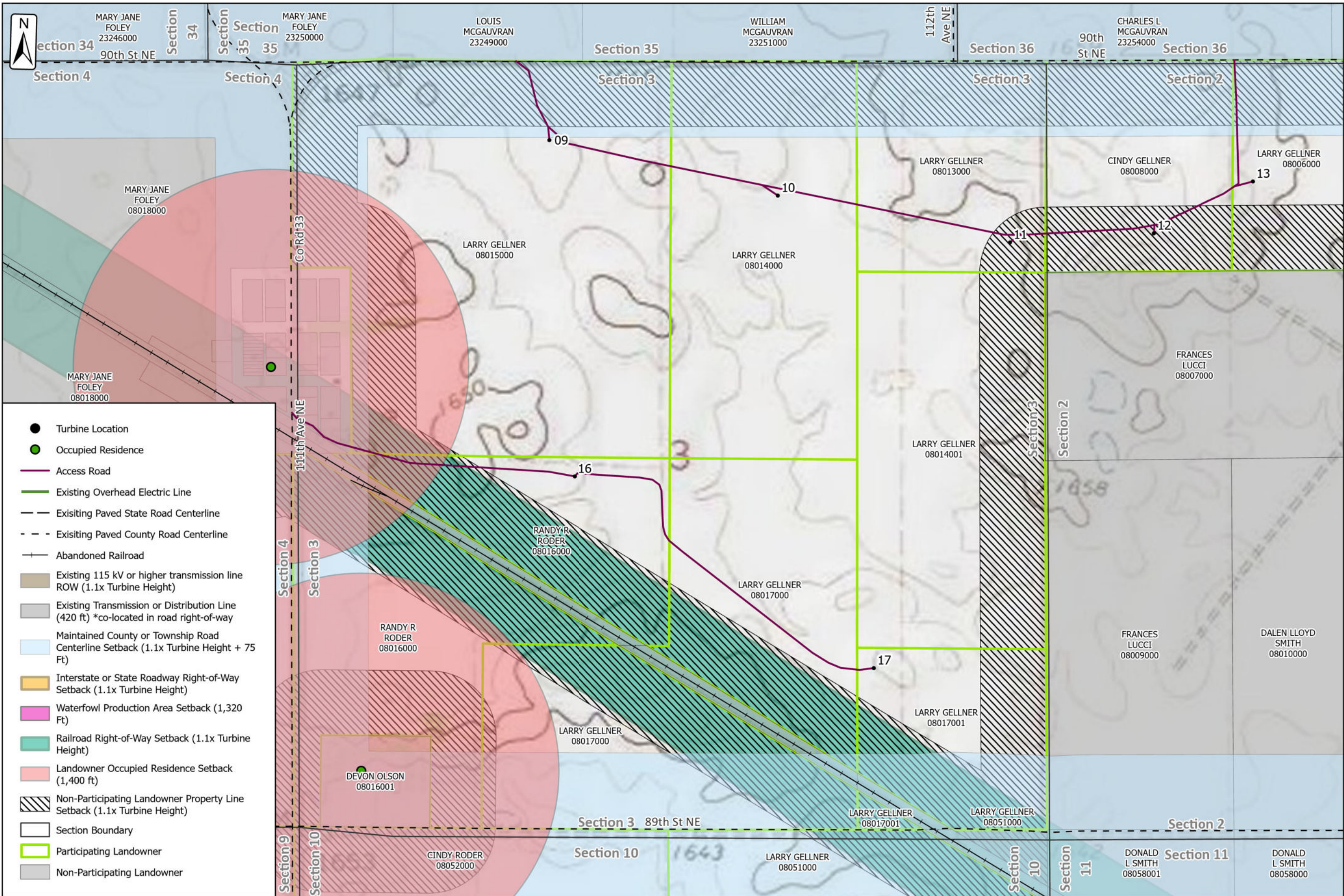
SECTIONS	2, 3, 4, 9, 10, 26, 27, 34
TOWNSHIP	T160N R59W, T161N R59W
TOWNSHIPS	Manilla & Easby Township
COUNTY, STATE	Cavalier County, ND

CLIENT: Otter Tail Power Company

## OTP Langdon Wind Repower Exclusions and Avoidance



SCALE:	0 130 260
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GIS FILE:	
DATE:	3/1/2023
FILE CODE:	
SHEET NO:	3 of 8



- Turbine Location
- Occupied Residence
- Access Road
- Existing Overhead Electric Line
- Existing Paved State Road Centerline
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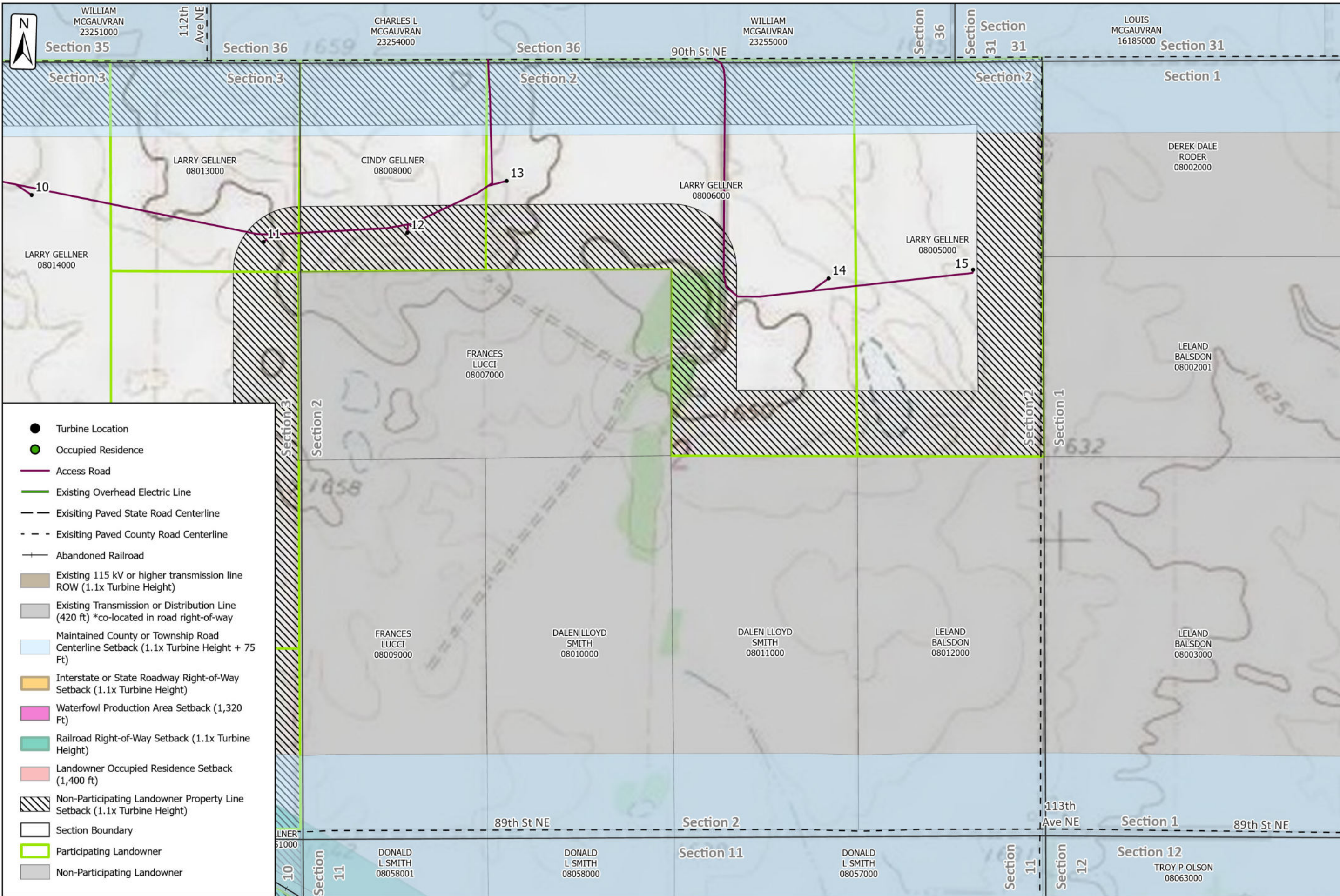
2, 3, 4, 9, 10, 26, 27, 34	T160N R59W, T161N R59W	Manilla & Easy Township	Cavalier County, ND
SECTIONS	TOWNSHIP	TOWNSHIPS	COUNTY, STATE

CLIENT: Otter Tail Power Company

**OTP Langdon Wind Repower Exclusions and Avoidance**



SCALE: 0 130 260 Feet
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BOOK: - -
GIS FILE: - -
DATE: 3/1/2023
FILE CODE: - -
SHEET NO: 4 of 8



- Turbine Location
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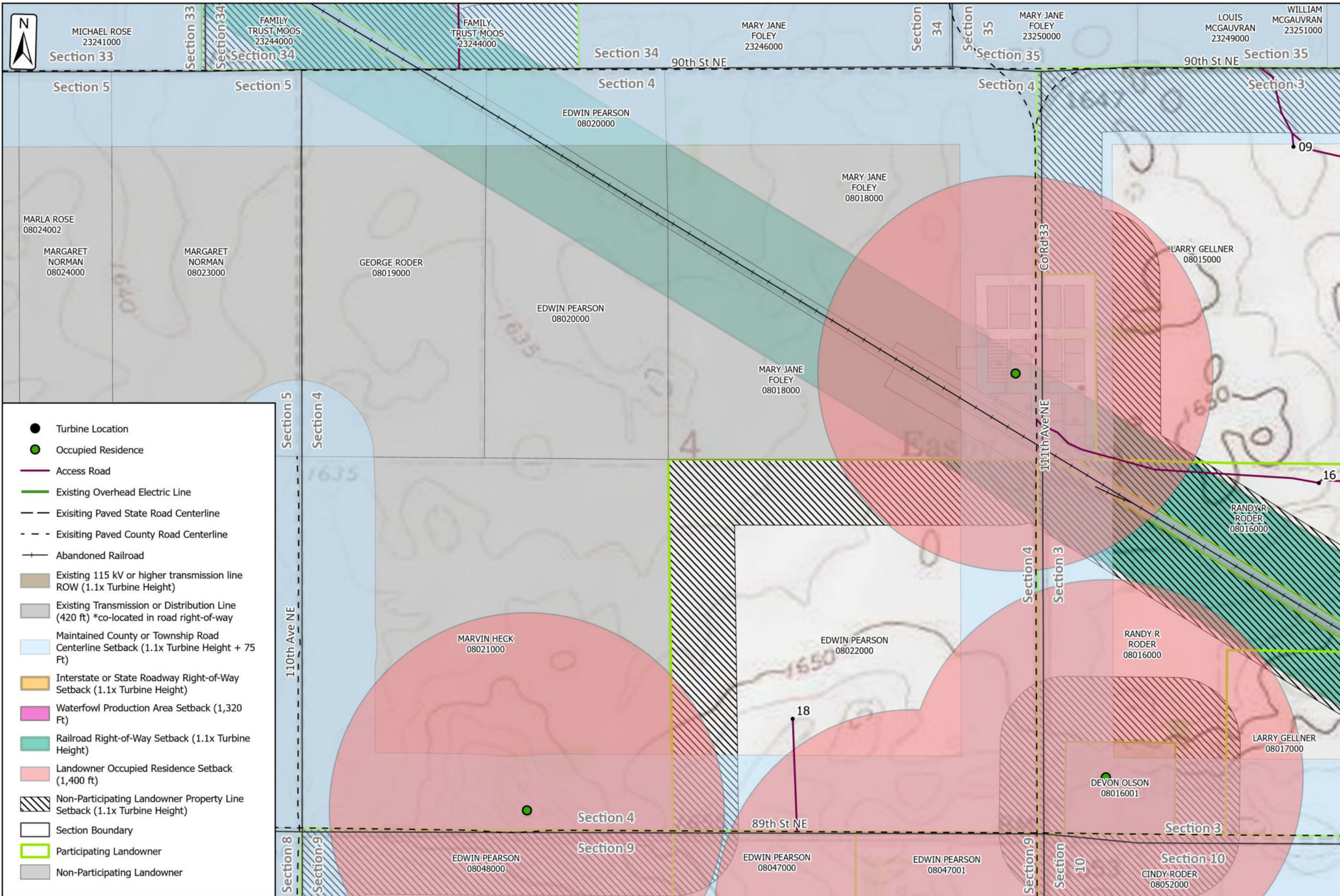


SECTIONS	2, 3, 4, 9, 10, 26, 27, 34
TOWNSHIP	T160N R59W, T161N R59W
TOWNSHIPS	Manilla & Easy Township
COUNTY, STATE	Cavalier County, ND

**OTP Langdon Wind Repower**  
**Exclusions and Avoidance**



CLIENT:	Otter Tail Power Company
SCALE:	0 130 260 Feet
DR:	CH
P.M.:	
BOOK:	
GIS FILE:	
DATE:	3/1/2023
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SHEET NO:	5 of 8



- Turbine Location
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2, 3, 4, 9, 10, 26, 27, 34	T160N R59W, T161N R59W	Manilla & Easby Township	Cavalier County, ND
SECTIONS	TOWNSHIP	TOWNSHIPS	COUNTY, STATE

CLIENT: Otter Tail Power Company

## OTP Langdon Wind Repower Exclusions and Avoidance

SCALE: 0 130 260 Feet
DR: -- CH: --
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BOOK: --
GIS FILE: --
DATE: 3/1/2023
FILE CODE: --
SHEET NO: 6 of 8



RNON CLARK  
08028000

KENNETH ANDERSON  
08029000

Section 5

110th Ave NE

MARVIN HECK  
08021000

Section 4

EDWIN PEARSON  
08022000

89th St NE

DEVON OLSON  
08016001

RANDY R RODER  
08016000

LARRY GELLNER  
08017000

Section 4

Section 3

Section 3

Section 8

89th St NE

Section 9

Section 10

KENNETH ANDERSON  
08042000

EDWIN PEARSON  
08048000

EDWIN PEARSON  
08047001

CINDY RODER  
08052000

19 20

EDWIN PEARSON  
08047000

21

22

- Turbine Location
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- Non-Participating Landowner

Section 8

Section 9

Section 9

Section 10

111th Ave NE

MARK RATZLAFF  
08049000

BRUCE RODER  
08050000

BRUCE RODER  
08053000

25

26

27

88th St NE

Section 9

MINNKOTA POWER COOPERATIVE  
08054000

Section 10

ROBERT LOWERY  
08092000

TROY P OLSON  
08091000

Section 16

BRUCE RODER  
08090000

Section 16

Section 15

RANDY R RODER  
08085000

Section 15

BRUCE RODER  
08080000



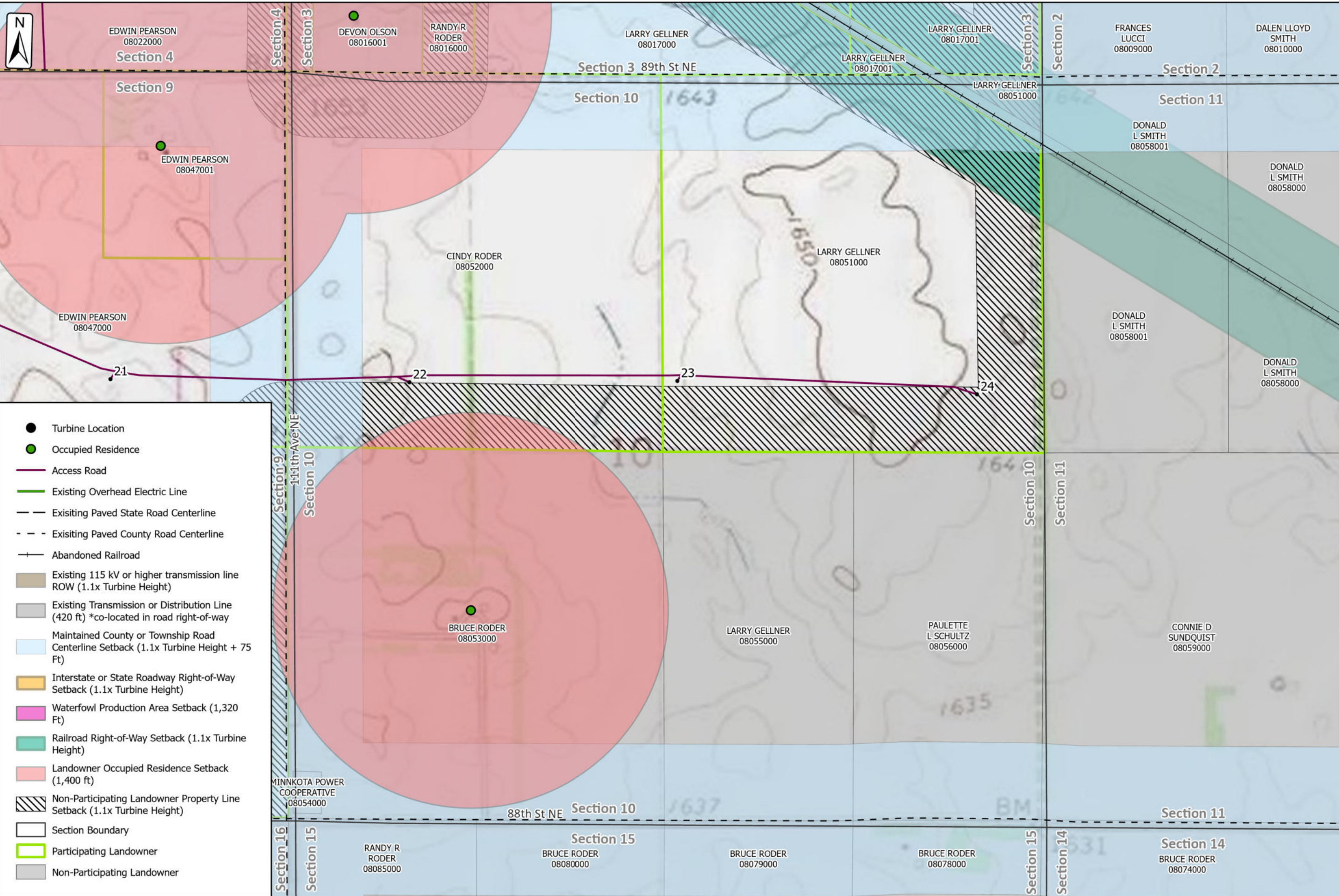
2, 3, 4, 9, 10, 26, 27, 34	T160N R59W, T161N R59W	Manilla & Easy Township	Cavelier County, ND
SECTIONS	TOWNSHIP	TOWNSHIPS	COUNTY, STATE

CLIENT: Otter Tail Power Company

**OTP Langdon Wind Repower Exclusions and Avoidance**



SCALE: 0 130 260 Feet
DR: -- CH: --
P.M.:
BOOK: --
GIS FILE: --
DATE: 3/1/2023
FILE CODE: --
SHEET NO: 7 of 8



- Turbine Location
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TOWNSHIP	T160N R59W, T161N R59W
TOWNSHIPS	Manilla & Easby Township
COUNTY, STATE	Cavalier County, ND

CLIENT:

Otter Tail Power Company

OTP Langdon Wind Repower

Exclusions and Avoidance

SCALE: 0 130 260

Feet

DR. -- CH. --

P.M. --

BOOK --

GIS FILE --

DATE: 3/1/2023

FILE CODE --

SHEET NO: 8 of 8