

# **Property Line Setback Assessment – Belle River Wind Project**

# Report

## **Property Line Setback Assessment – Belle River Wind Project**

**Prepared by:**

AECOM

105 Commerce Valley Drive West, Floor 7

Markham, ON, Canada L3T 7W3

[www.aecom.com](http://www.aecom.com)

905 886 7022

tel

905 886 9494

fax

**Project Number:**

60321891

**Date:**

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## Acronyms and Abbreviations

Belle River Wind .....	SP Belle River Wind LP
GIS.....	Geographical Information System
m .....	Metres
m/s .....	Metres per second
m <sup>2</sup> .....	Metres squared
MOECC.....	Ontario Ministry of the Environment and Climate Change
MW.....	Megawatts
O. Reg.....	Ontario Regulation
Project.....	Belle River Wind Project
PSA.....	Project Study Area
REA.....	Renewable Energy Approval

# 1. Introduction

## 1.1 Purpose

The Property Line Setback Assessment was prepared to address Section 53 of Ontario Regulation 359/09 (O. Reg. 359/09). Section 53 requires a written assessment to identify any impacts to business, infrastructure, properties or land use activities resulting from a turbine location being proposed at a distance equal to or less than the hub height of the turbine (99.5 m) from an adjacent property line.

This report has been prepared to assess proposed wind turbine locations within the Belle River Wind Project (“Project”) that do not meet the minimum setback from neighbouring properties that are not participating in the Project. This setback is equal to the height of the wind turbine hub and is measured from the centre of base of the wind turbine to the lot line of the adjacent (non-participating) properties.

AECOM analyzed twenty-five (25) turbines within the Belle River Wind Project to evaluate any anticipated impacts to businesses, infrastructure, properties and land use activities and, where required, present mitigation measures to address any potential adverse impacts.

## 1.2 Legislation

As mentioned above, Section 53 of O. Reg. 359/09 outlines the setback requirements for Class 4 wind facilities such as the Belle River Wind Project. Section 53 (1) (b) states that no person shall construct, install or expand a wind turbine as part of a Class 4 wind facility unless:

*“the distance between the base of the wind turbine and all boundaries of the parcel of land on which the wind turbine is constructed, installed or expanded is equivalent to, at a minimum, the height of the wind turbine, excluding the length of any blades.” (O. Reg. 359/09)*

This Property Line Setback Assessment fulfills Section 53 (3) which states that Section 53 (1) (b) does not apply if,

- a) *“the distance between the base of the wind turbine and all boundaries of the parcel of land on which it is constructed, installed or expanded is equivalent to, at a minimum, the length of any blades plus 10 metres; and*
- b) *as part of an application for the issue of a renewable energy approval or a certificate of approval in respect of the construction, installation or expansion of the wind turbine, the person who is constructing, installing or expanding the wind turbine submits a written assessment,*
  - i. *demonstrating that the proposed location of the wind turbine will not result in adverse impacts on nearby business, infrastructure, properties or land use activities, and*
  - ii. *describing any preventative measures that are required to be implemented to address the possibility of any adverse impacts mentioned in subclause (i)”. (O. Reg. 359/09)*



## 1.3 Project Description

The Belle River Wind Project (“the Project”) is being proposed by SP Belle River Wind LP, by its general partner, SP Belle River Wind GP Inc. (Belle River Wind). Belle River Wind is a joint venture limited partnership owned by affiliates of Pattern Renewable Holdings Canada ULC (Pattern Development) and Samsung Renewable Energy Inc. (Samsung Renewable Energy).

Belle River Wind is proposing to develop a wind project in the Town of Lakeshore in the County of Essex, Ontario. The Project will be located on public and private lands south of the community of Belle River. The Project is generally bounded by County Road 42 and the Canadian Pacific Railway line to the north, Lakeshore Road 111 to the west, Highway 401 and South Middle Road to the south, and Comber Sideroad to the east. The area encompassed by these boundaries is referred to as the Project Study Area (“PSA”). **Figure 1** shows a map of the PSA.

The Project will use wind to generate energy through the use of commercial wind turbine technology. The proposed wind turbine technology for this Project is expected to be a Siemens SWT-3.2-113 turbine (see example in **Figure 2**). With a total nameplate capacity of 100 megawatts (“MW”), the Project will be categorized as a Class 4 wind facility (according to the Ontario Ministry of the Environment and Climate Change’s (“MOECC”) *Technical Guide to Renewable Energy Approvals* (2013)) and will be in compliance with the requirements outlined for such facilities.

A summary of key information regarding the wind turbine generators is provided in **Table 1**.

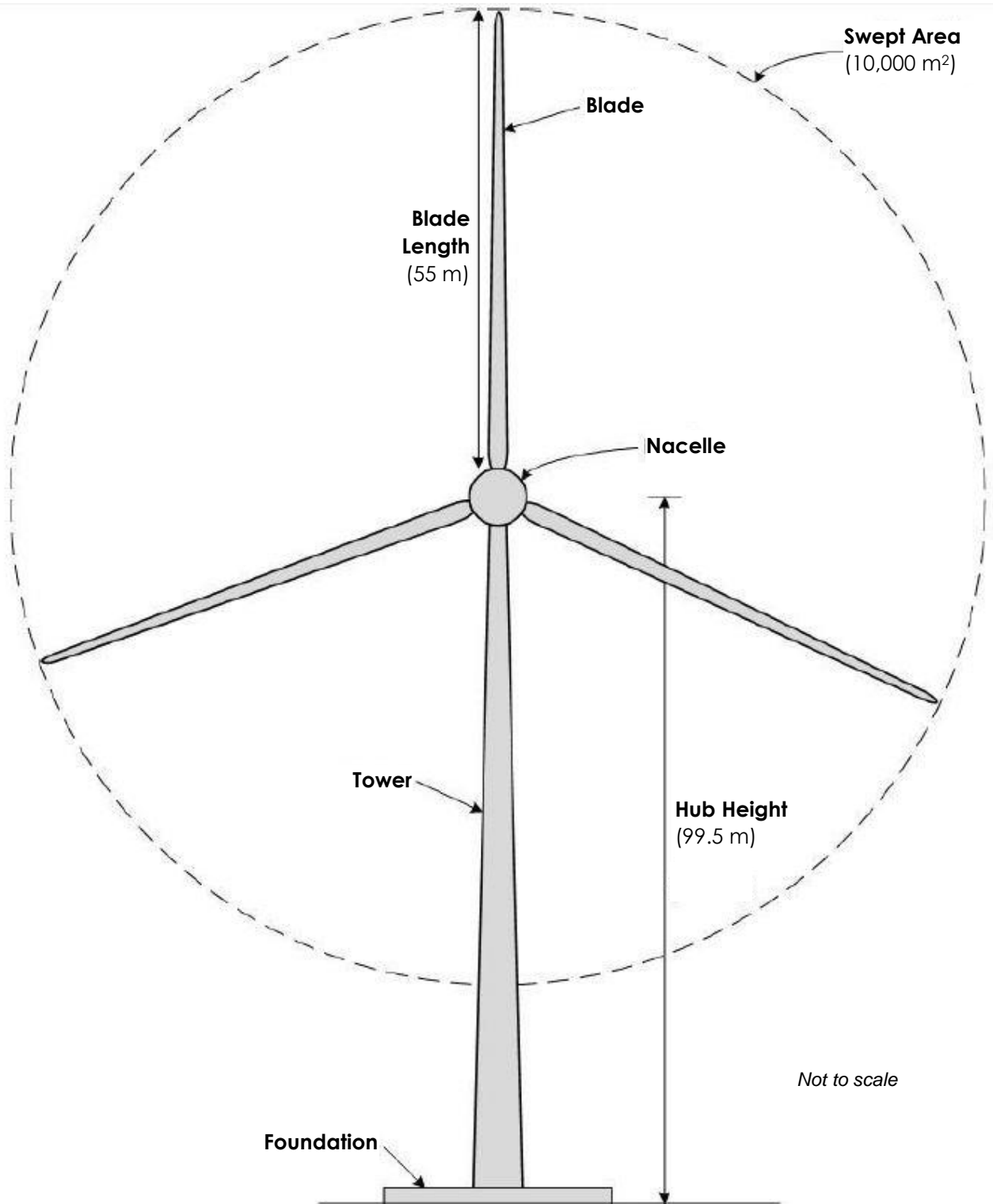
**Table 1: Summary of Key Wind Turbine Generator Information**

Wind Turbine Generators	
Make and Model	Siemens SWT-3.2-113
Total Number Permitted	49 turbines
Approximate Number Constructed	44 turbines
Nominal Turbine Power	2.257 to 3.2 MW
Number of Blades	3
Blade Length	55 metres (m)
Hub Height	99.5 m
Rotor Diameter	113 m
Cut-in Wind Speed	3 to 5 metres per second (m/s)
Cut-out Wind Speed	32 m/s
Rated Wind Speed	12 to 13 m/s
Swept Area	10,000 metres squared (m <sup>2</sup> )
Foundation Dimensions	25 m diameter

For this Project there are twenty-five (25) turbines which require further assessment to identify any potential impacts associated with siting the turbines closer than the turbine hub height (99.5 m) from a property line. Note, based on the turbine model listed in **Table 1** the minimum setback from a property line would be 65 m (blade length + 10 m). For any turbines sited closer to a property line than 65 m, an agreement is required as per O. Reg. 359/09.

Figure 1: Study Area in Ontario



**Figure 2: Basic Wind Turbine Specifications**

## 2. Analysis

This report identifies turbines that were sited less than 100.5 m from a lot line through desktop analysis and field confirmation. It also provides: an analysis of surrounding land uses; identification of potential impacts on surrounding land uses; and applicable mitigation measures for such impacts. Although the wind turbine hub height is 99.5 m, the analysis includes an additional 1 m beyond the requirements to account for any potential errors with Geographical Information System (GIS) mapping and data. A detailed description of the methodology for this analysis is provided below:

1. **Desktop Analysis of Setback Distances**

AECOM used GIS base layers provided by Belle River Wind to identify the distance in metres (m) between the base of the wind turbines and the adjacent property line. Based on a turbine hub height of 99.5 m, AECOM conducted an assessment of all turbines located within 100.5 m of a property line (Turbines 8, 12-13, 15-16, 28, 30, 34, 36, 40-41, 44-46, 51-53, 55, 57-58, 201, 205-206, 215, 219).

2. **Field Confirmation of Setback Analysis**

AECOM field staff conducted a windshield survey of the properties assessed in the desktop analysis to confirm any new or demolished buildings that may not have been reflected in the GIS base layers. The field staff also determined the land uses of adjacent properties for each assessed property.

3. **Analysis of Surrounding Land Uses**

AECOM conducted a review of the Essex County Official Plan (2014), the Town of Lakeshore Official Plan (2010) and the Town of Lakeshore Zoning By-law (2014) to confirm the land use characteristics of properties adjacent to the assessed property.

4. **Identifying Potential Impacts on Surrounding Land Uses and Mitigation Measures**

AECOM reviewed the potential impacts to surrounding land uses as a result of turbine operation at a distance less than 100.5 m from adjacent property lines. Where potential impacts are identified, the report includes recommend measures to mitigate such impacts. The following sections provide a summary of the potential impacts and mitigation measures for each turbine.

### 2.1 Description

The wind turbines assessed in this report are located between 66.52 m to 100.03 m from non-participating property lines as depicted in **Appendix A** (Turbine Details and Photo Table) and **Appendix B** (Turbine Maps). The adjacent lands for all of the assessed turbines are entirely used for agricultural purposes, the majority of which is field crops. The Town of Lakeshore Official Plan (2010) designates the adjacent properties as Agricultural and the Town of Lakeshore Zoning By-law (2014) zones the properties as Agriculture. Land uses on the adjacent properties to the assessed wind turbines are restricted to agricultural uses and agriculturally-related uses.

### 2.2 Potential Effects

Adverse impacts to the adjacent properties from the reduced setback may include damage to field crops as a result of turbine failure. However, this potential impact already exists at a 99.5 m setback and is not significantly increased by a setback reduction of up to 32.98 m.

## **2.3 Mitigation Measures and Net Effects**

Potential adverse impacts to adjacent properties would be mitigated by applying standard preventative measures that follow best management practices such as:

- Certification of the wind turbine by professional engineers
- Regular maintenance and monitoring of the wind turbine
- Wind turbine shutdown protocols during extreme weather.

Applying these preventative measures would address any potential adverse impacts resulting from a setback distance less than the turbine's hub height of 99.5 m.

## **3. Conclusion**

Based on the analysis of the twenty-five (25) turbines requiring justification for the reduced property line setback, there are no anticipated adverse impacts for the reduced setbacks once the standard preventative measures based on best management practices have been applied. None of the assessed turbines will be sited less than 65 m from an adjacent property and therefore no agreements with landowners are required.

## 4. References

Ontario Ministry of the Environment and Climate Change (MOECC), 2014:

Ontario Regulation 359/09. Renewable Energy Approvals under Part V.0.1 of the *Environmental Protection Act*.

Ontario Ministry of the Environment and Climate Change (MOECC), 2013:

Draft Technical Guide to Renewable Energy Approvals. Accessed December 2014. Available:  
<https://www.ontario.ca/environment-and-energy/technical-guide-renewable-energy-approvals>.

Town of Lakeshore, 2010:

Town of Lakeshore Official Plan. Approved by the Ontario Municipal Board November 2010.

Town of Lakeshore, 2014:




Town of Lakeshore Zoning By-law. Council adopted January 2010, Modified September 2014.

# Appendix A

## Turbine Details and Photos Table






Appendix A. Turbine Details and Photos Table

Turbine ID	UTM Coordinates		Host Land Parcel		Turbine Distance from Non-Participating Lot Line (m)	Direction of Neighbouring Land Parcel from Turbine	Neighbouring Land Parcel		Town of Lakeshore Official Plan Designation	Town of Lakeshore Zoning By-law	Field Notes	Photos
	X	Y	#	Street			#	Street				
8	360066.00	4680128.00	1423	Concession 2	78.50	Northeast	1421	2nd Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	-
12	360252.00	4678849.00	1637	2nd Concession Rd	95.24	South	1727	2nd Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
13	360195.00	4678053.00	1795	2nd Concession Rd	100.03	North	1749	2nd Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbines on non-participating properties as shown on the orthographic mapping in Appendix B.	
15	360191.00	4677676.00	1879	2nd Concession Rd	72.47	North	1835	2nd Concession Rd	Agricultural	A*		
16	361669.00	4679095.00	-	-	77.10	West	1564	2nd Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
					77.73	South	1601	3 <sup>rd</sup> Concession Rd	Agricultural	A*		

Note: \* A=Agriculture






Appendix A. Turbine Details and Photos Table

Turbine ID	UTM Coordinates		Host Land Parcel		Turbine Distance from Non-Participating Lot Line (m)	Direction of Neighbouring Land Parcel from Turbine	Neighbouring Land Parcel		Town of Lakeshore Official Plan Designation	Town of Lakeshore Zoning By-law	Field Notes	Photos
	X	Y	#	Street			#	Street				
28	364545.00	4680776.00	1273	County Rd 31	72.48	West	-	-	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
30	362997.00	4680677.00	1278	3rd Concession Rd	67.08	North	610	Highway 2	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
					85.11	East	-	-	Agricultural	A*		
34	364101.00	4677811.00	1751	County Rd 31	66.99	North	1721	County Rd 31	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	




Note: \* A=Agriculture

Appendix A. Turbine Details and Photos Table

Turbine ID	UTM Coordinates		Host Land Parcel		Turbine Distance from Non-Participating Lot Line (m)	Direction of Neighbouring Land Parcel from Turbine	Neighbouring Land Parcel		Town of Lakeshore Official Plan Designation	Town of Lakeshore Zoning By-law	Field Notes	Photos
	X	Y	#	Street			#	Street				
36	365712.00	4677470.00	1842	County Rd 31	79.04	North	1776	County Rd 31	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
40	365866.00	4679546.00	1451	6th Concession Rd	94.30	West	1435	6th Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
41	365744.00	4679900.00	1429	6th Concession Rd	85.80	Northeast	1399	6th Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
					66.92	North	-	-	Agricultural	A*		




Note: \* A=Agriculture

Appendix A. Turbine Details and Photos Table

Turbine ID	UTM Coordinates		Host Land Parcel		Turbine Distance from Non-Participating Lot Line (m)	Direction of Neighbouring Land Parcel from Turbine	Neighbouring Land Parcel		Town of Lakeshore Official Plan Designation	Town of Lakeshore Zoning By-law	Field Notes	Photos
	X	Y	#	Street			#	Street				
44	367070.00	4679766.00	1352	Lakeshore Rd 129	92.05	East	1499	7th Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
45	367036.00	4679190.00	-	-	83.10	East	1549	7th Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
					92.23	North	1450	6th Concession Rd	Agricultural	A*		
46	367031.00	4678608.00	-	-	88.94	Northeast	1565	7th Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	

Note: \* A=Agriculture




Appendix A. Turbine Details and Photos Table

Turbine ID	UTM Coordinates		Host Land Parcel		Turbine Distance from Non-Participating Lot Line (m)	Direction of Neighbouring Land Parcel from Turbine	Neighbouring Land Parcel		Town of Lakeshore Official Plan Designation	Town of Lakeshore Zoning By-law	Field Notes	Photos
	X	Y	#	Street			#	Street				
51	361641.00	4680760.00	1346	2nd Conc Rd	66.52	North	1214	2nd Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
					95.13	Northeast	472	Highway 2	Agricultural	A*		
					66.90	East	2357	County Rd 42	Agricultural	A*		
52	370341.00	4680174.00	4525	Highway 2	83.23	West	-	-	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
53	363514.33	4679229.24	-	-	72.84	North	-	-	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	

Note: \* A=Agriculture





Appendix A. Turbine Details and Photos Table

Turbine ID	UTM Coordinates		Host Land Parcel		Turbine Distance from Non-Participating Lot Line (m)	Direction of Neighbouring Land Parcel from Turbine	Neighbouring Land Parcel		Town of Lakeshore Official Plan Designation	Town of Lakeshore Zoning By-law	Field Notes	Photos
	X	Y	#	Street			#	Street				
55	367296.00	4680399.00	1353	7th Conc Rd	79.43	North	3023	County Rd 42	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
					90.49	West	1340	6 <sup>th</sup> Concession Rd	Agricultural	A*		
57	370541.00	4678833.00	4849	5th Concession Rd	67.57	West	4289	5th Concession Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
58	369664.00	4678864.00	-	-	92.80	South	-	-	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
201	357368.00	4680164.00	841	W Belle River Rd	92.73	South	-	-	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	-

Note: \* A=Agriculture

Appendix A. Turbine Details and Photos Table

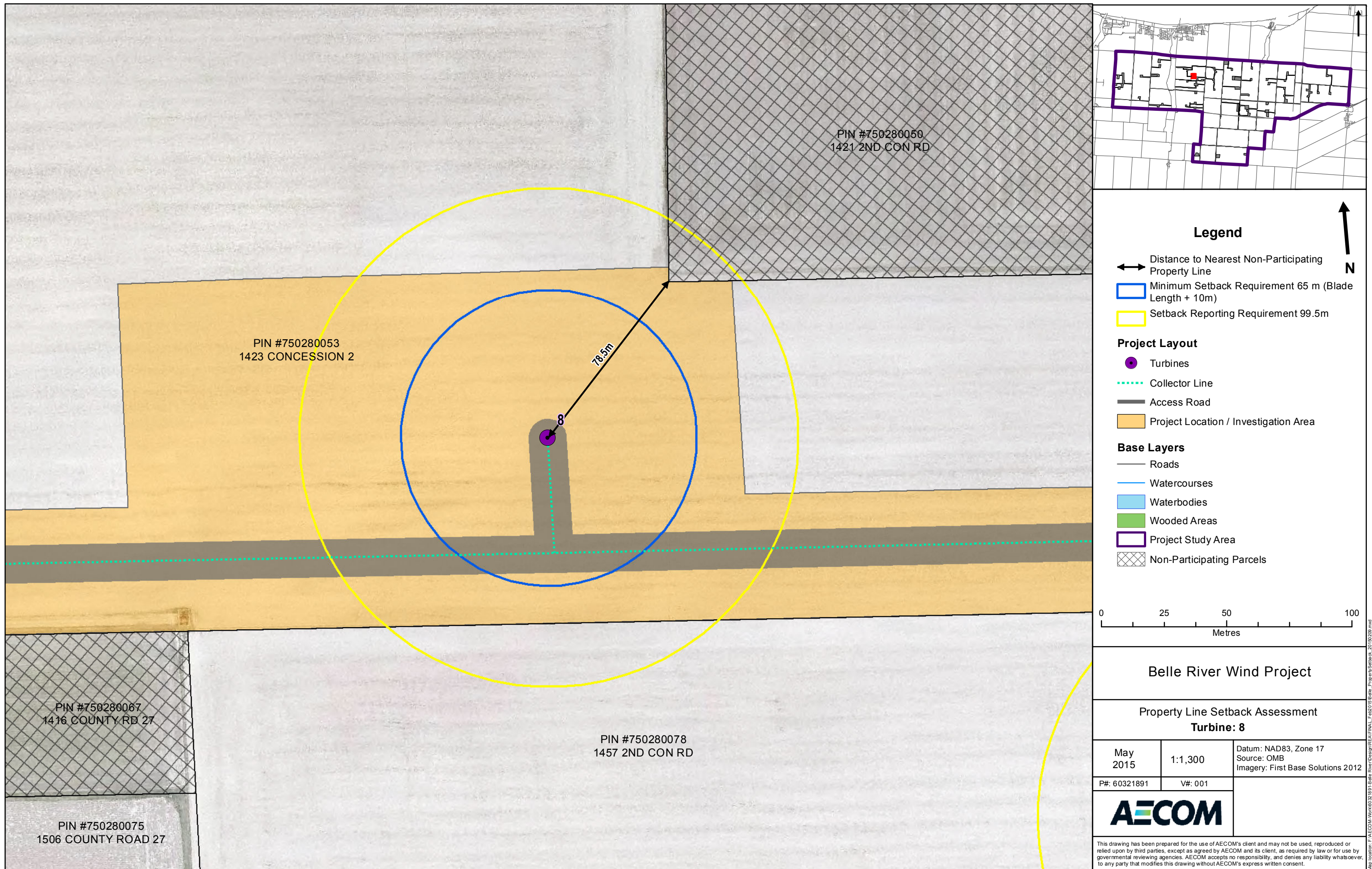
Turbine ID	UTM Coordinates		Host Land Parcel		Turbine Distance from Non-Participating Lot Line (m)	Direction of Neighbouring Land Parcel from Turbine	Neighbouring Land Parcel		Town of Lakeshore Official Plan Designation	Town of Lakeshore Zoning By-law	Field Notes	Photos
	X	Y	#	Street			#	Street				
205	356095.00	4680131.00	833	Lakeshore Rd 115	79.86	South	865	Lakeshore Rd 115	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
206	357677.00	4677986.00	1141	W Belle River Rd	74.92	West	1132	Lakeshore Rd 115	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	-
					83.52	West	1112	Lakeshore Rd 115	Agricultural	A*		
215	355891.00	4678494.00	1094	3rd Concession Rd	94.98	East	1111	16-17 Sideroad	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	
219	357352.00	4677811.00	1179	W Belle River Rd	78.17	South	1195	W Belle River Rd	Agricultural	A*	No structures (i.e., barns, storage buildings, stables) are present within 100.5 m of the turbine on non-participating properties as shown on the orthographic mapping in Appendix B.	-

Note: \* A=Agriculture

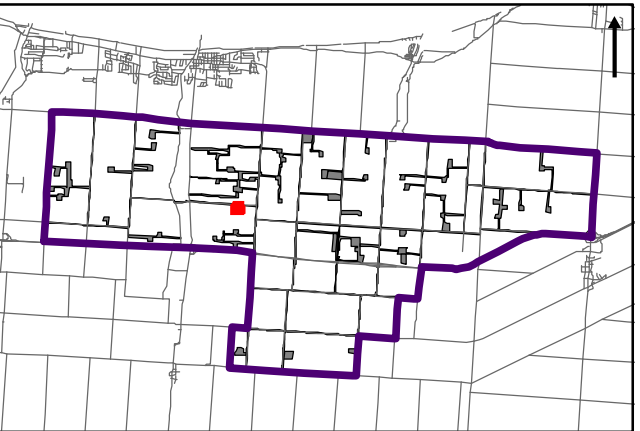
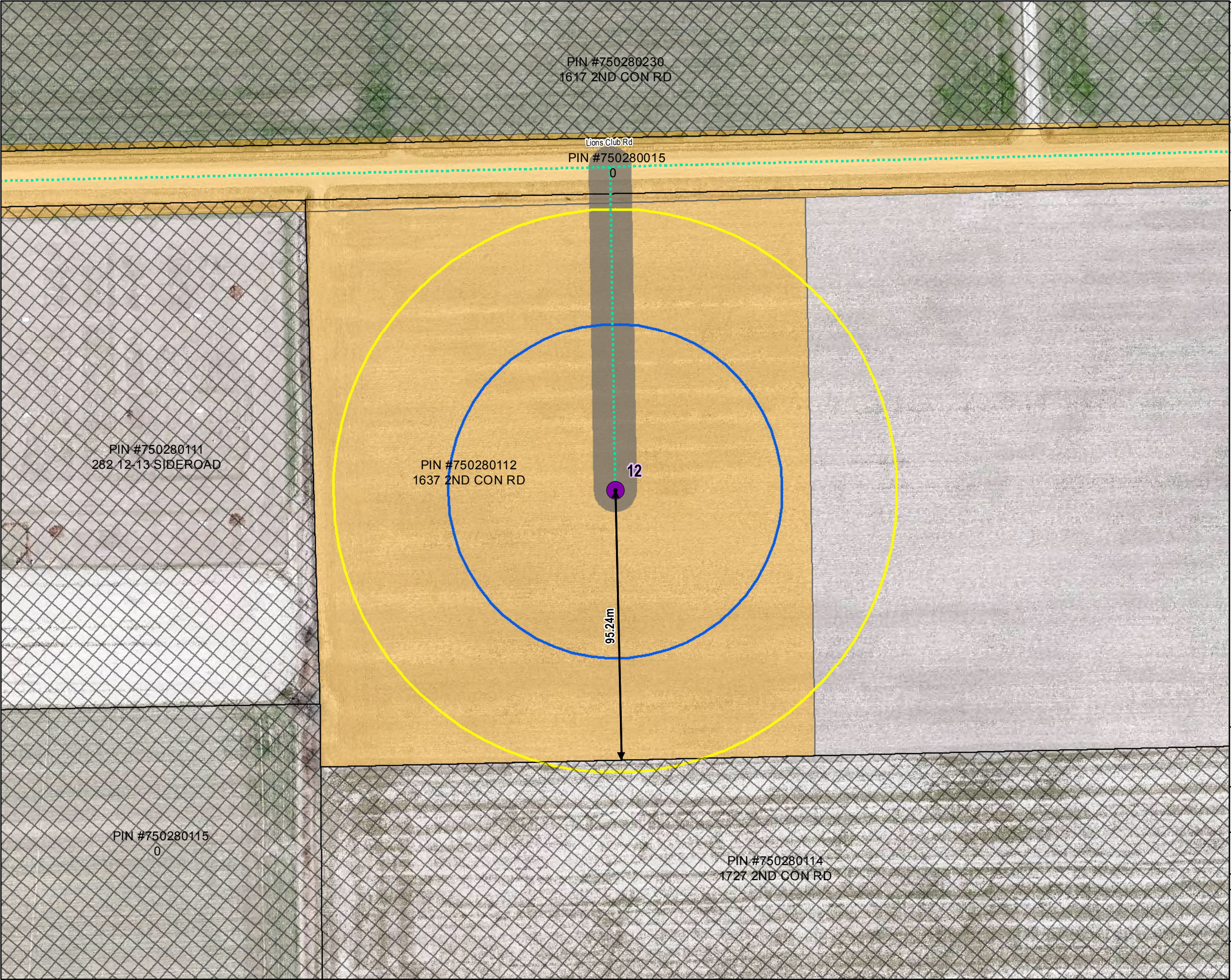
# Appendix B

## Turbine Maps









Legend

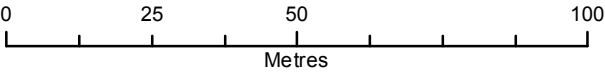
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

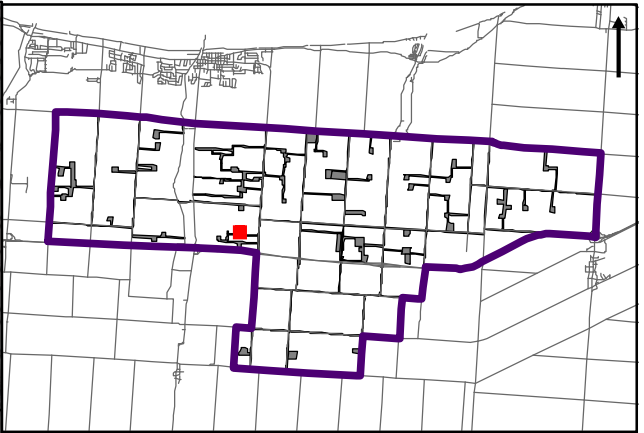
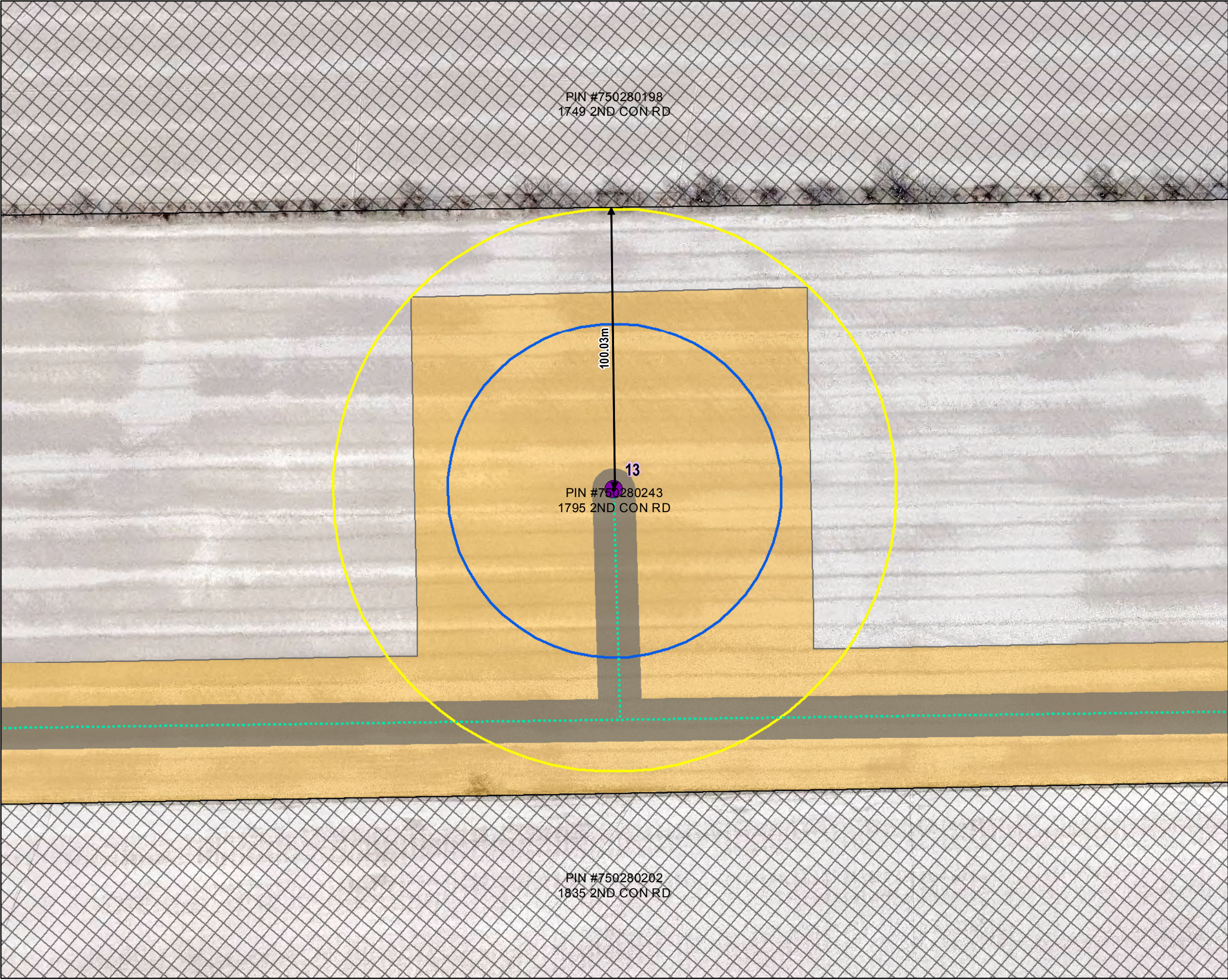
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Turbine: 12

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Legend

↔

Distance to Nearest Non-Participating Property Line

□

Minimum Setback Requirement 65 m (Blade Length + 10m)

□

Setback Reporting Requirement 99.5m

Project Layout

●

Turbines

⋯

Collector Line

—

Access Road

■

Project Location / Investigation Area

Base Layers

—

Roads

—

Watercourses

■

Waterbodies

■

Wooded Areas

□

Project Study Area

▨

Non-Participating Parcels

02550100

Metres

N

Belle River Wind Project

Property Line Setback Assessment  
Turbine: 13

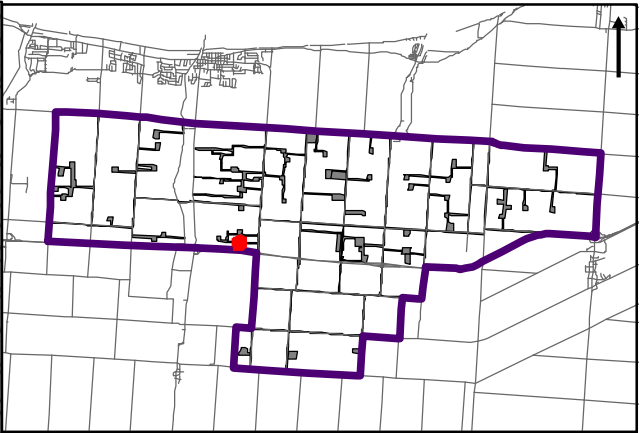
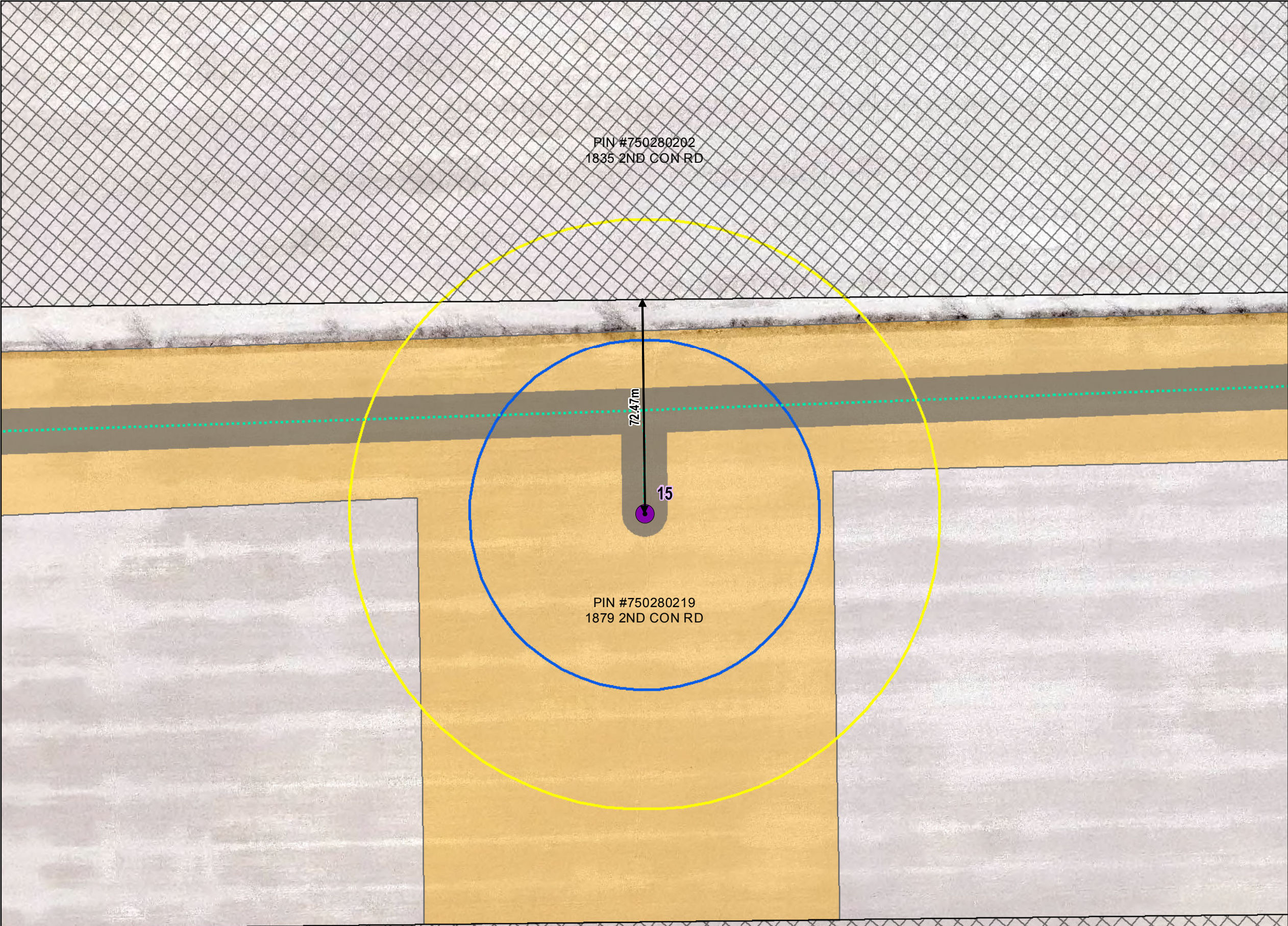
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P#: 60321891	V#: 001	

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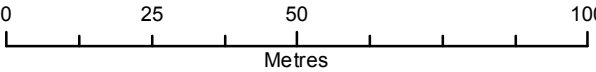
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 15

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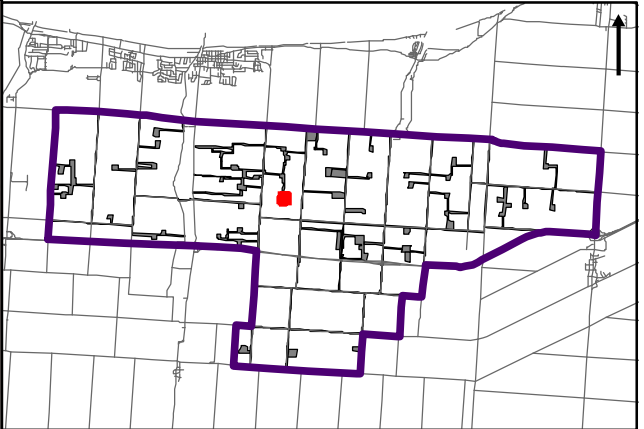
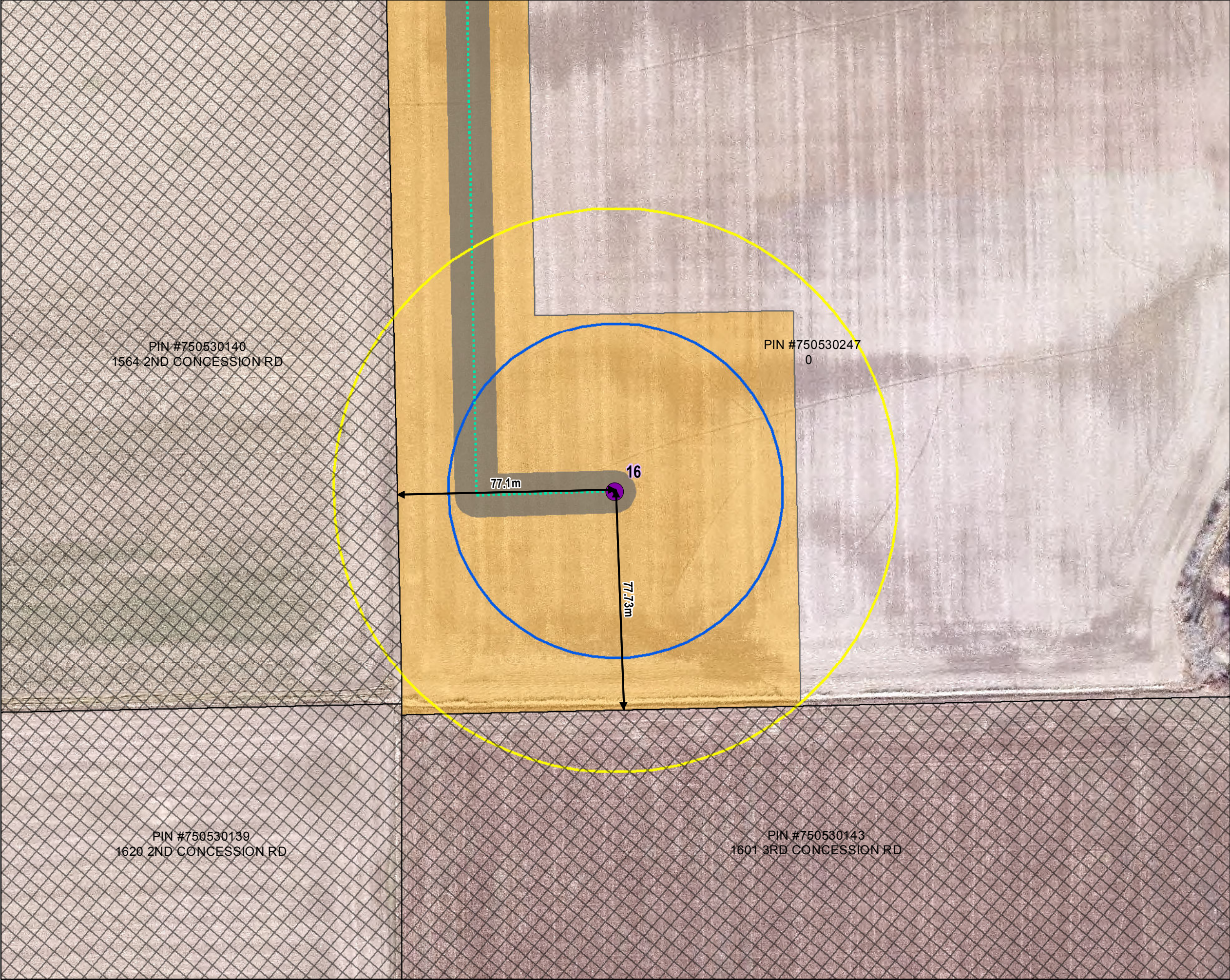
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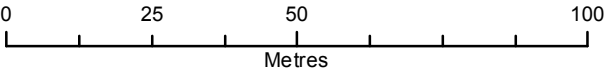




- Legend**
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

- Project Layout**
- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

- Base Layers**
- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 16

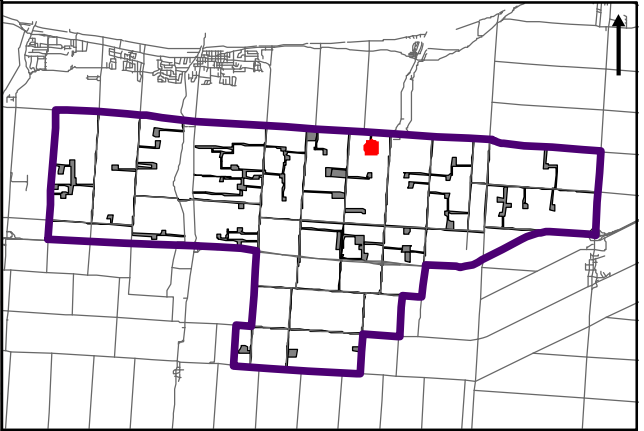
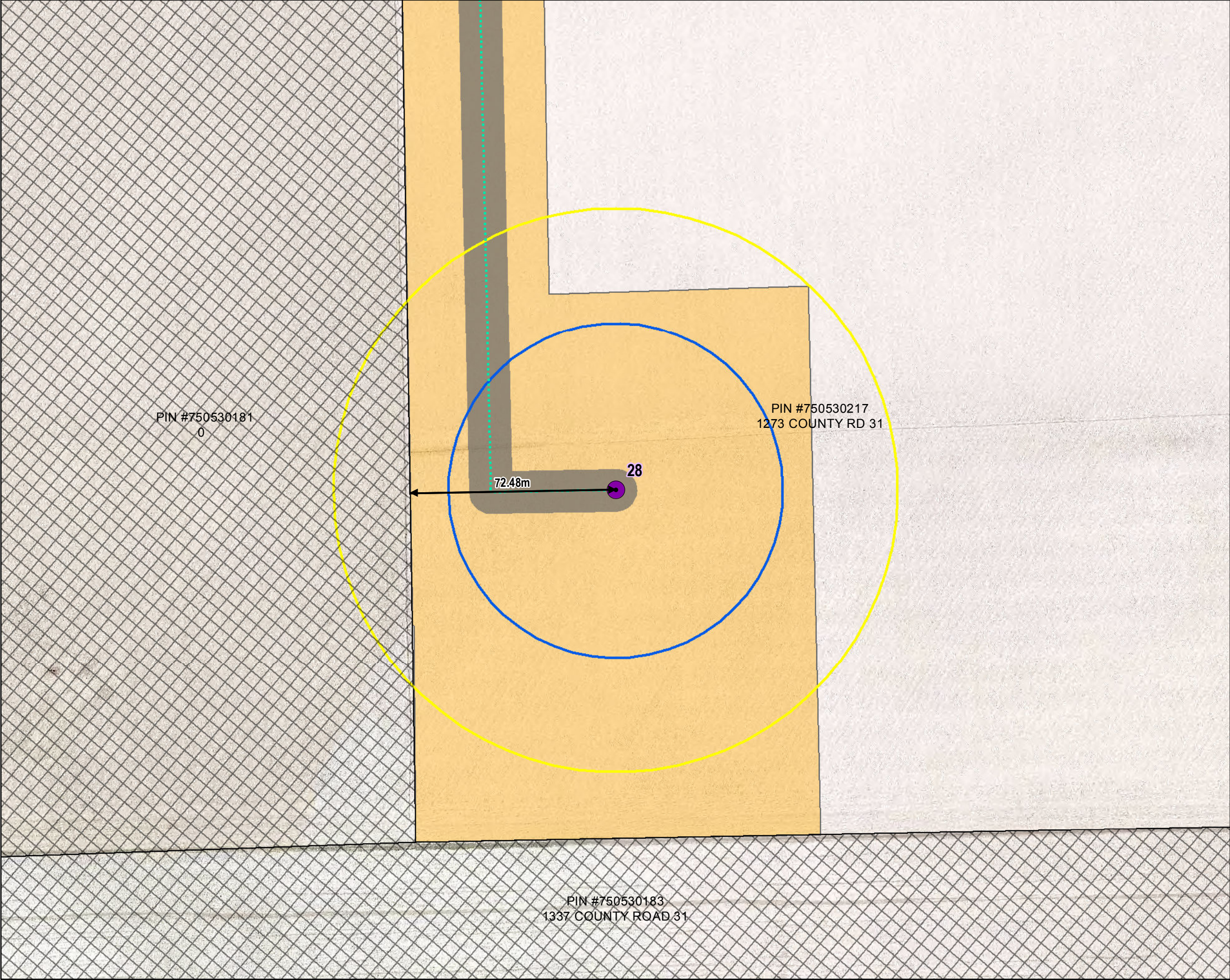
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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Map Location: F:\AECOM\Work\60321891-Belle River\Design\REAFINAL\_Feb2015\Belle\_PropertySetback\_20150208.mxd  
Date Saved: 2/25/2015 12:29:01 PM





### Legend

↔

Distance to Nearest Non-Participating Property Line

□

Minimum Setback Requirement 65 m (Blade Length + 10m)

□

Setback Reporting Requirement 99.5m

### Project Layout

●

Turbines

---

Collector Line

---

Access Road

■

Project Location / Investigation Area

### Base Layers

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Roads

---

Watercourses

■

Waterbodies

■

Wooded Areas

□

Project Study Area

▨

Non-Participating Parcels

0 25 50 100

Metres

↑

N

Belle River Wind Project

Property Line Setback Assessment

Turbine: 28

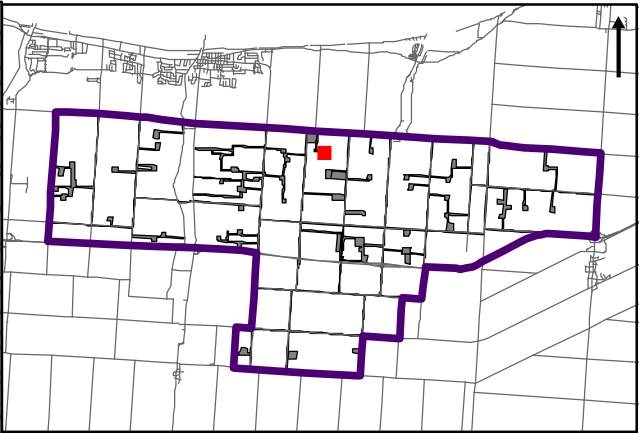
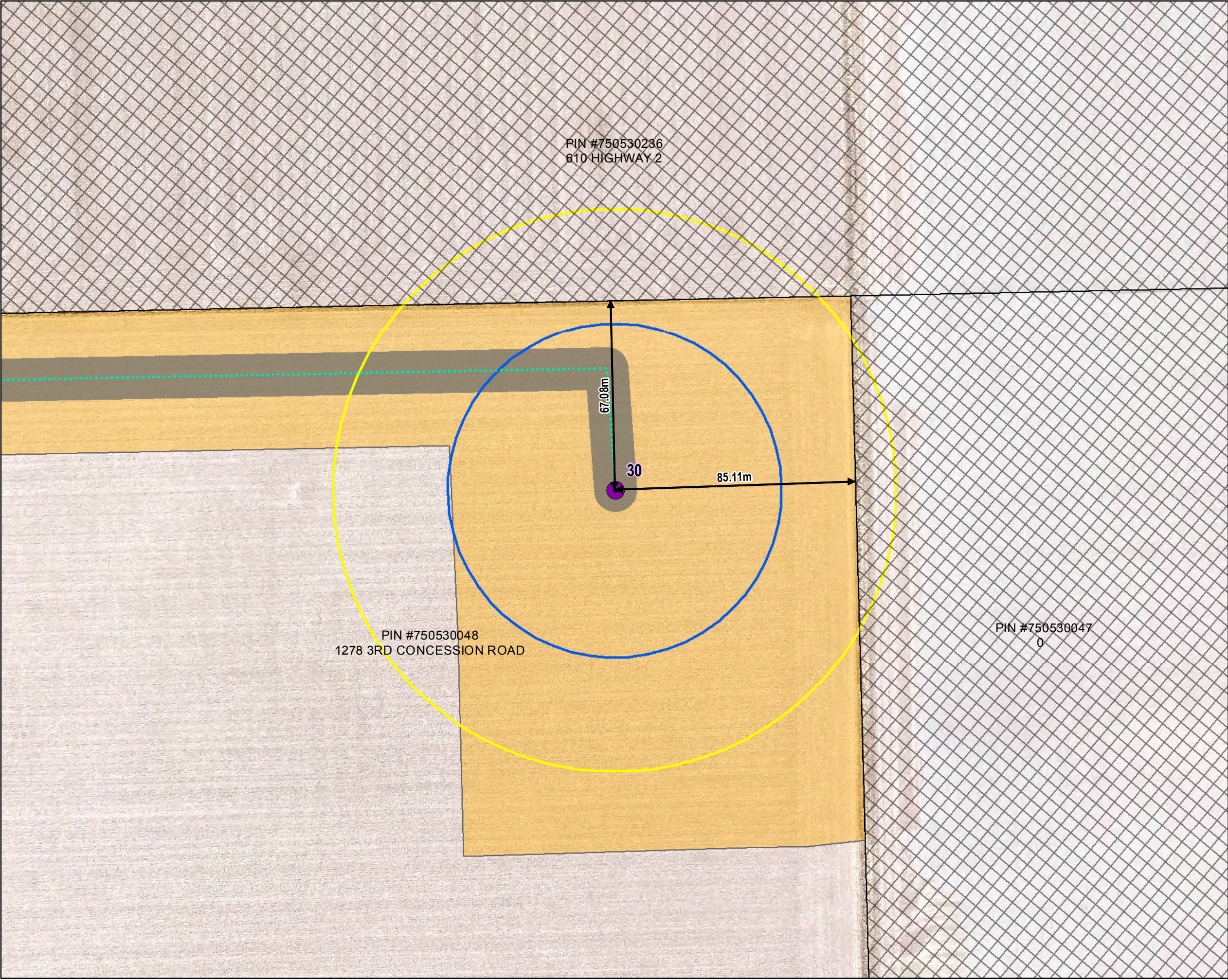
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	

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Map Location: F:\AECOM\Work\60321891-Belle River\Design\REAFINAL\_Feb2015\Belle\_PropertySetback\_20150228.mxd

Date Saved: 2/25/2015 12:29:01 PM





**Legend**

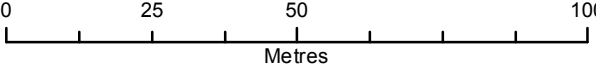
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

**Project Layout**

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

**Base Layers**

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



**Belle River Wind Project**

**Property Line Setback Assessment  
Turbine: 30**

May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
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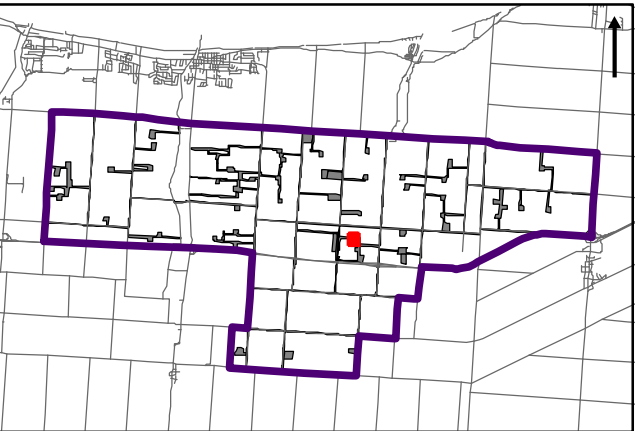
P#: 60321891	V#: 001
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Map Location: F:\AECOM\Work\60321891-Belle River\Design\REA\FINAL\_Feb2015\Belle\_River\_PropertySetback\_20150228.mxd  
Date Saved: 2/25/2015 12:39:01 PM





Legend

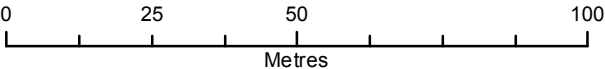
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 34

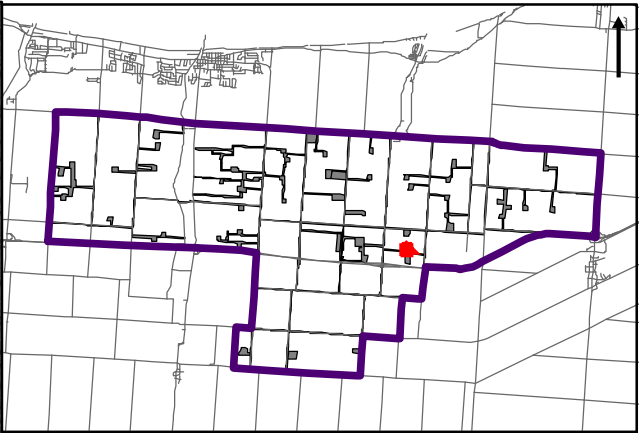
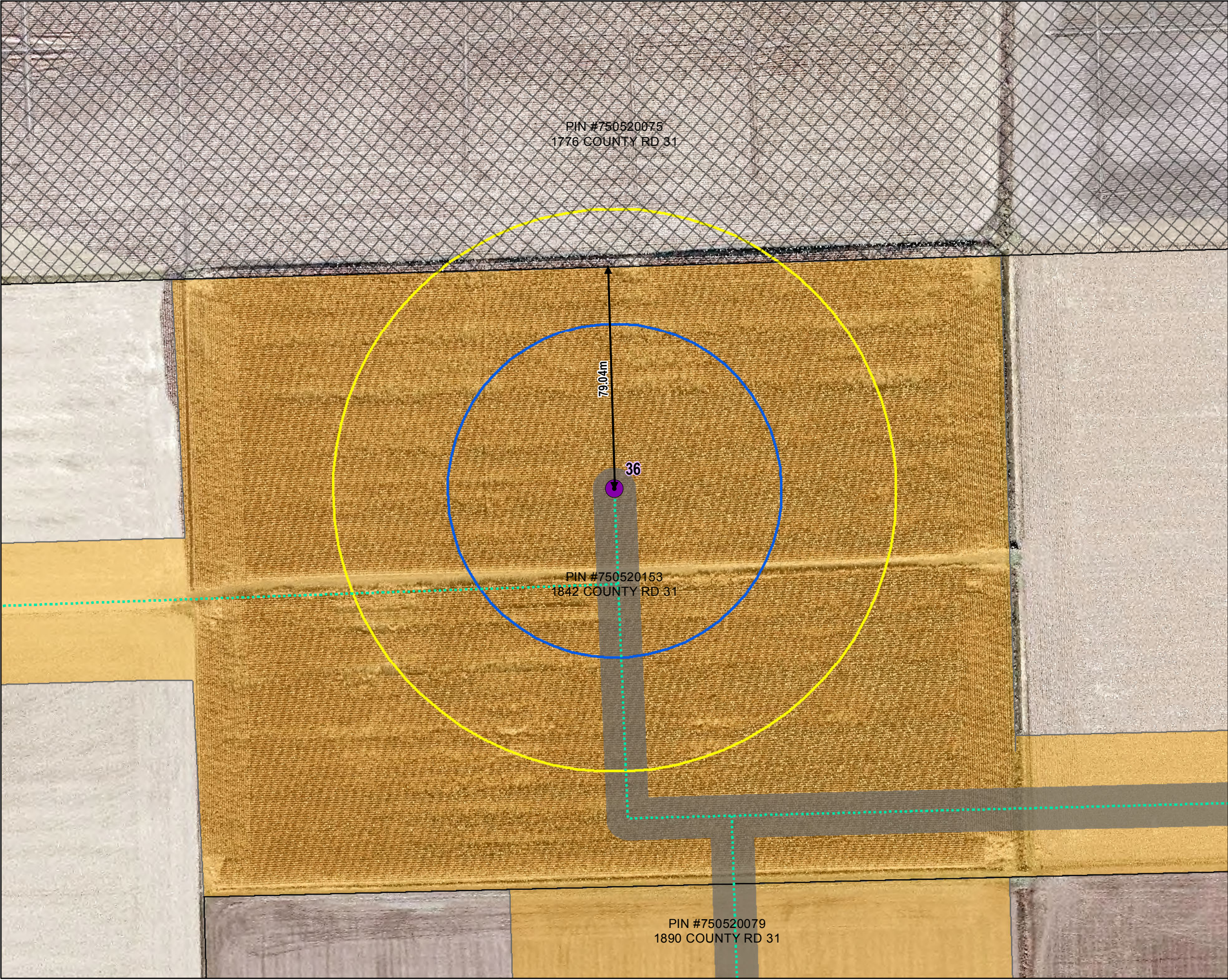
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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Map Location: F:\AECOM\Work\60321891-Belle River\Design\REAFINAL\_Feb2015\Belle\_PropertySetback\_20150228.mxd  
Date Saved: 12/25/2015 12:39:01 PM





**Legend**

↔ Distance to Nearest Non-Participating Property Line

Minimum Setback Requirement 65 m (Blade Length + 10m)

Setback Reporting Requirement 99.5m

**Project Layout**

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

**Base Layers**

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels

0 25 50 100  
Metres

**Belle River Wind Project**

**Property Line Setback Assessment**  
**Turbine: 36**

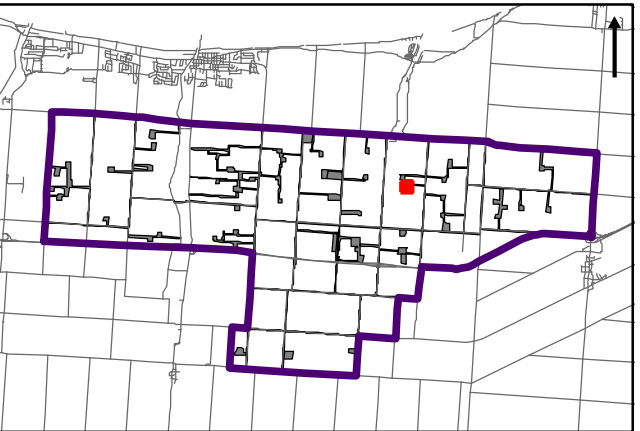
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	

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Date Saved: 2/25/2015 12:39:01 PM





Legend

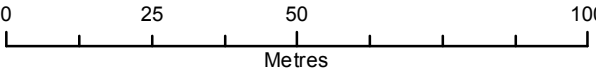
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 40

May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
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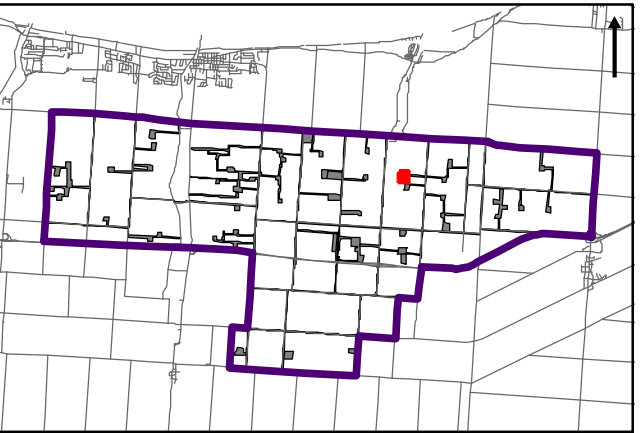
P#: 60321891	V#: 001
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**Legend**

Distance to Nearest Non-Participating Property Line

Minimum Setback Requirement 65 m (Blade Length + 10m)

Setback Reporting Requirement 99.5m

**Project Layout**

Turbines

Collector Line

Access Road

Project Location / Investigation Area

**Base Layers**

Roads

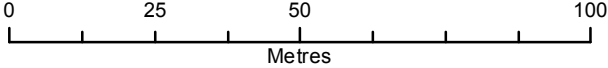
Watercourses

Waterbodies

Wooded Areas

Project Study Area

Non-Participating Parcels



**Belle River Wind Project**

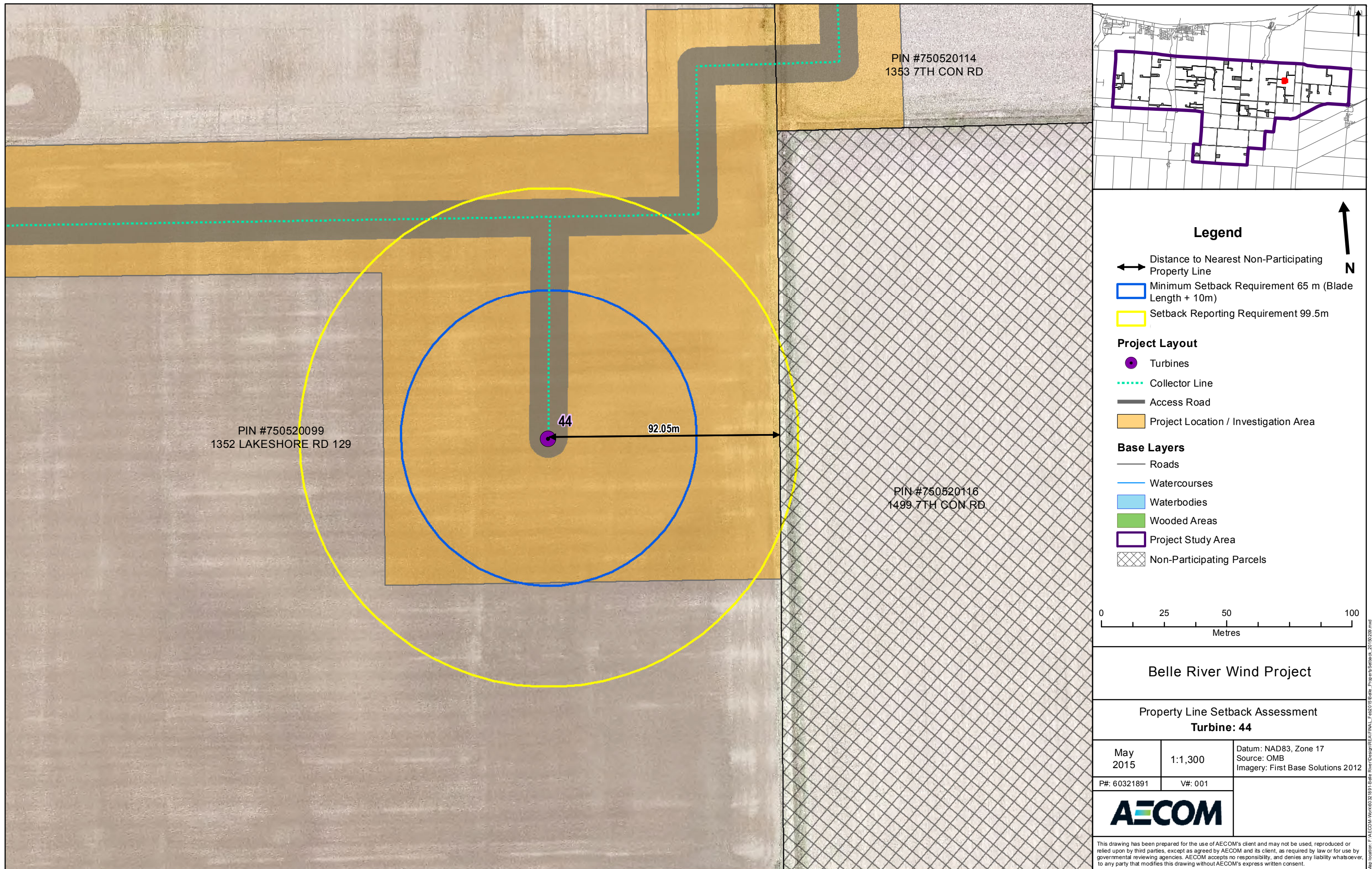
**Property Line Setback Assessment**  
**Turbine: 41**

May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	

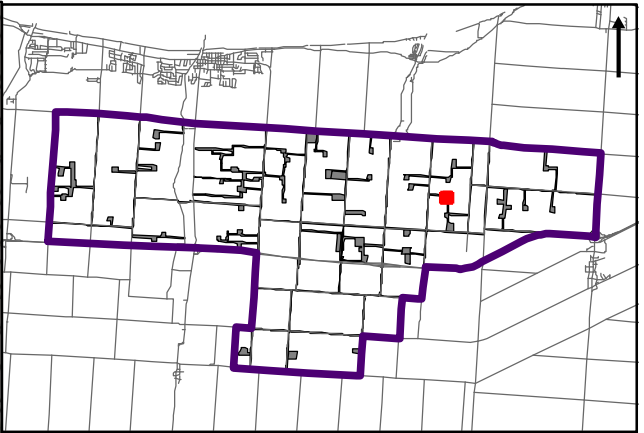
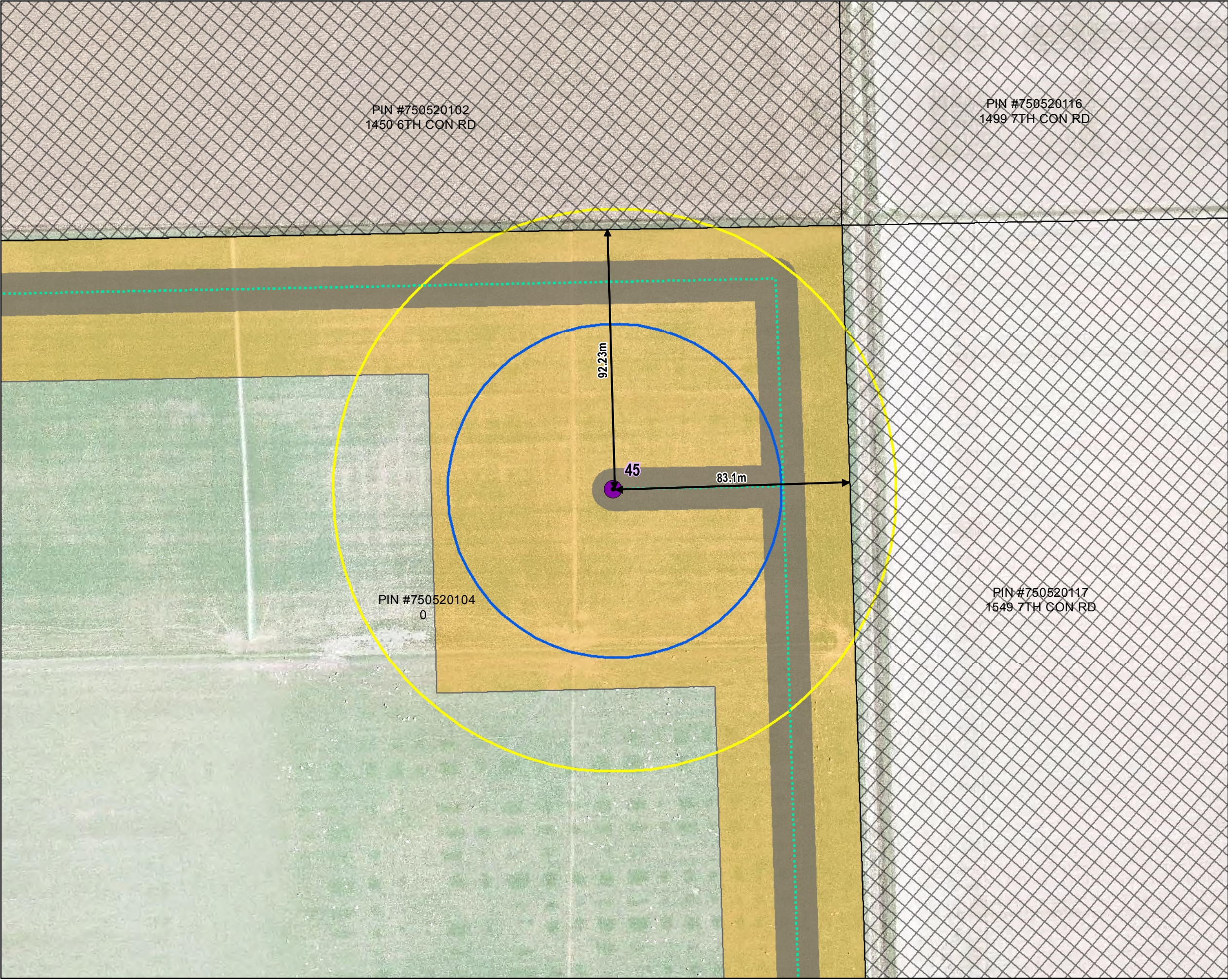
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Date Saved: 2/25/2015 12:29:01 PM









Legend

↔

Distance to Nearest Non-Participating Property Line

□

Minimum Setback Requirement 65 m (Blade Length + 10m)

□

Setback Reporting Requirement 99.5m

Project Layout

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Turbines

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Collector Line

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Access Road

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Project Location / Investigation Area

Base Layers

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Roads

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Watercourses

■

Waterbodies

■

Wooded Areas

□

Project Study Area

□

Non-Participating Parcels

02550100

Metres

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N

Belle River Wind Project

Property Line Setback Assessment

Turbine: 45

May 2015

1:1,300

Datum: NAD83, Zone 17  
Source: OMB  
Imagery: First Base Solutions 2012

P#: 60321891

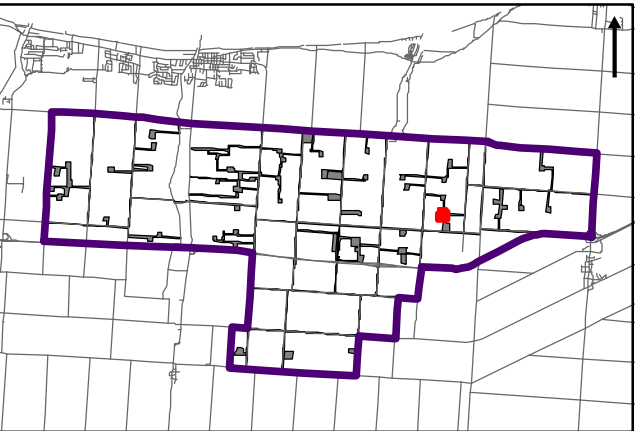
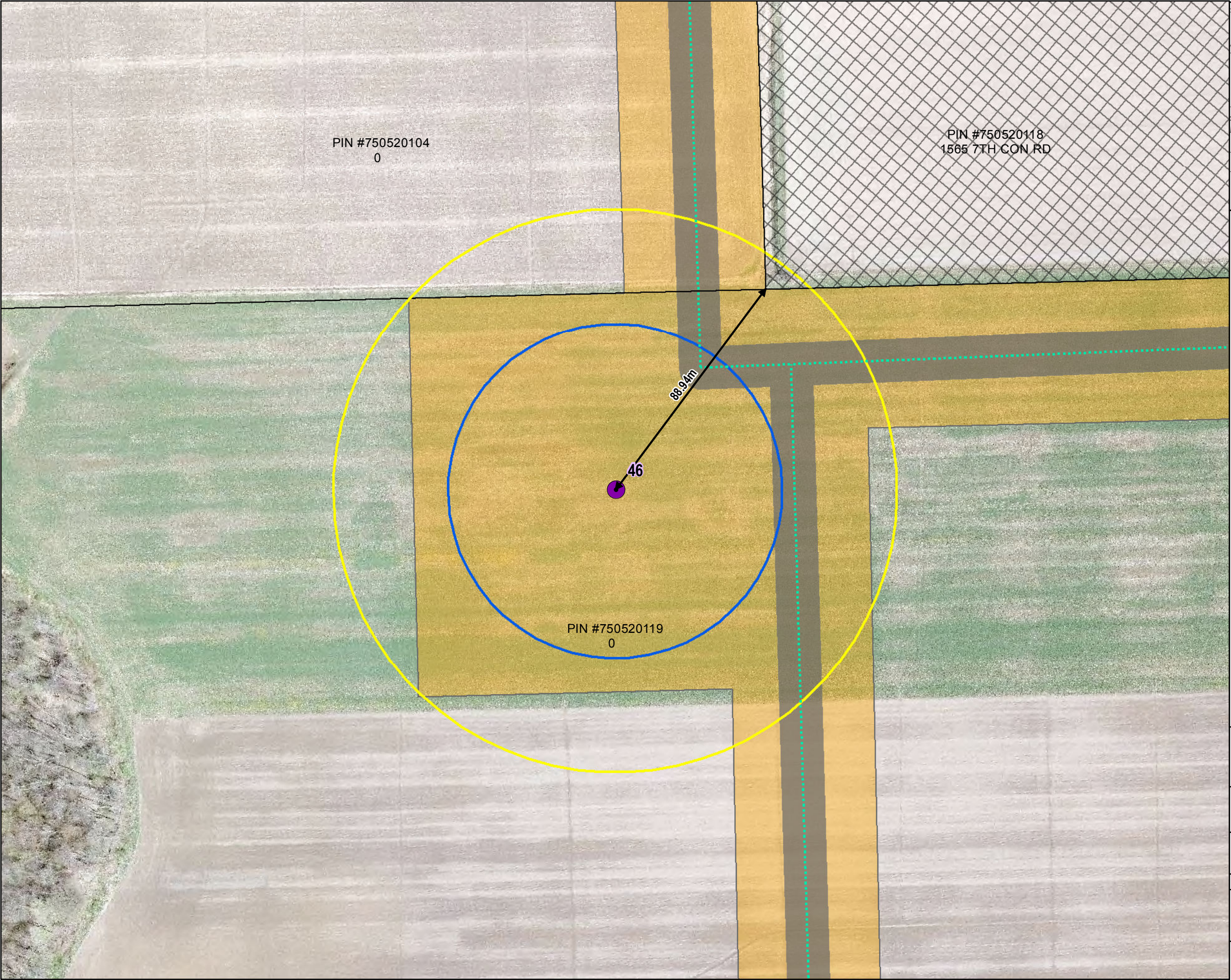
V#: 001

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Map Location: F:\AECOM\Work\60321891-Belle River\Design\FINAL\_Feb2015\Belle\_PropertySetback\_20150208.mxd  
Date Saved: 2/25/2015 12:29:01 PM





**Legend**

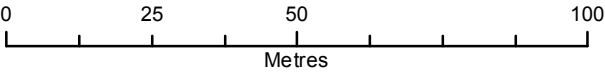
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

**Project Layout**

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

**Base Layers**

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



**Belle River Wind Project**

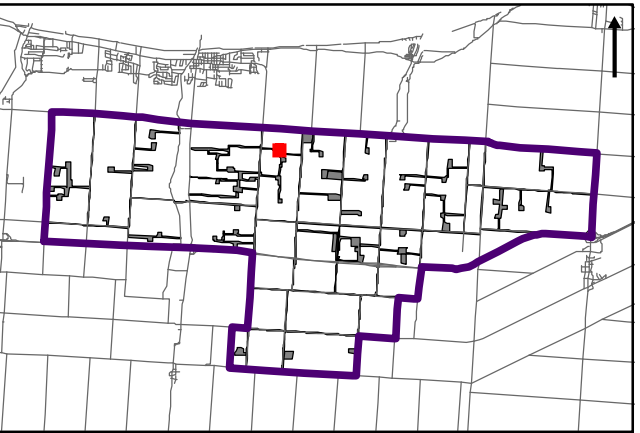
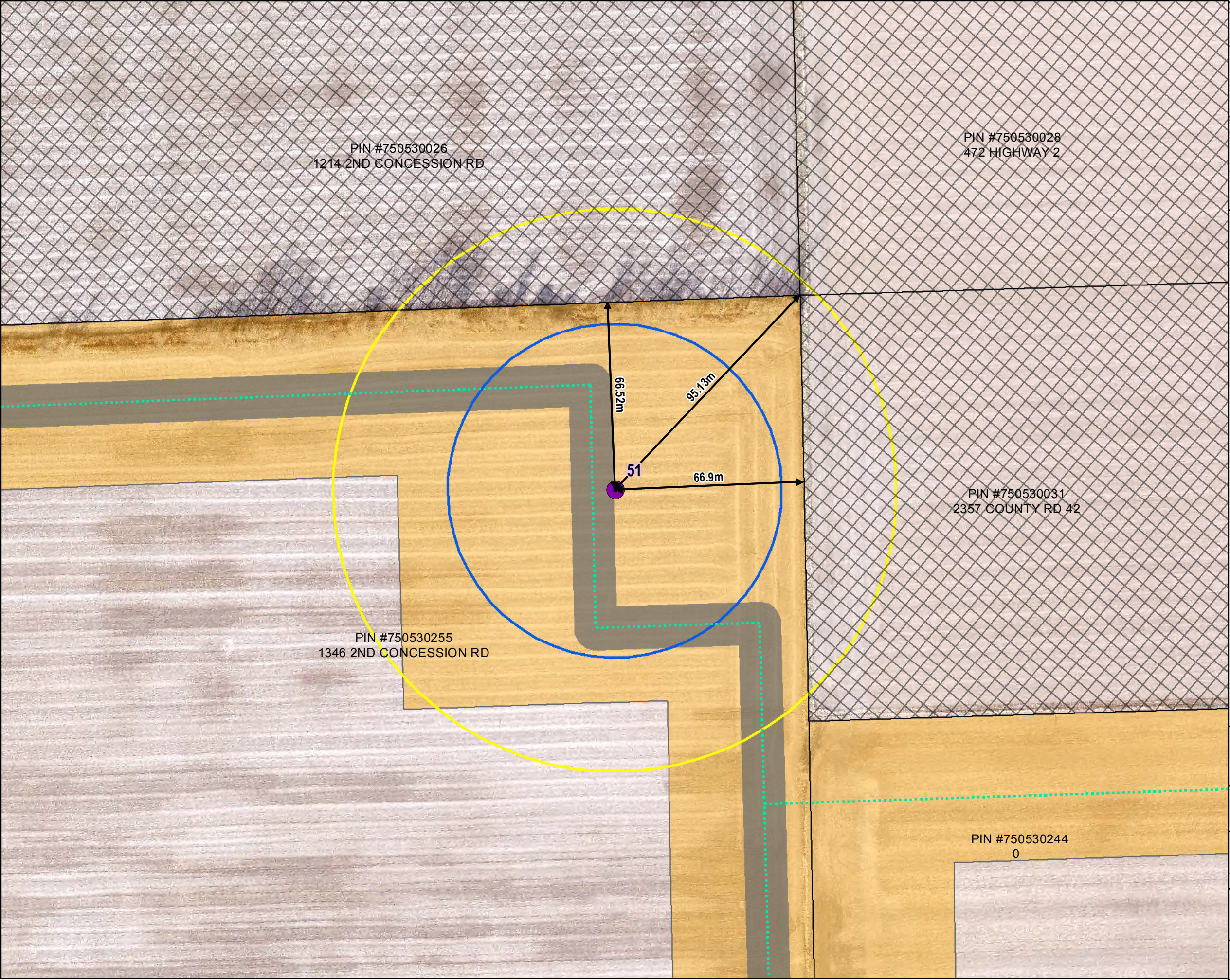
**Property Line Setback Assessment  
Turbine: 46**

May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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**Legend**

↔ Distance to Nearest Non-Participating Property Line

Minimum Setback Requirement 65 m (Blade Length + 10m)

Setback Reporting Requirement 99.5m

**Project Layout**

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

**Base Layers**

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels

0 25 50 100  
Metres

**Belle River Wind Project**

**Property Line Setback Assessment**  
**Turbine: 51**

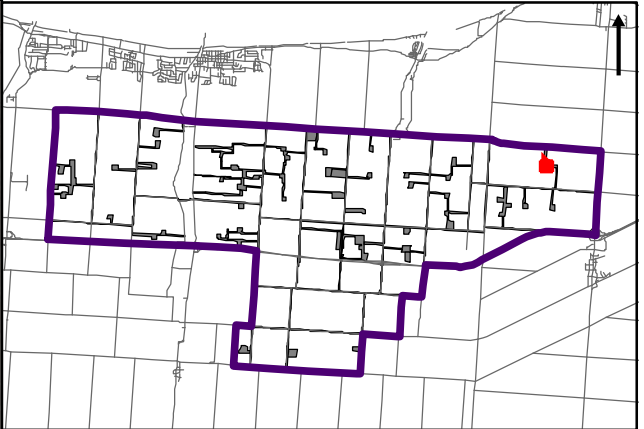
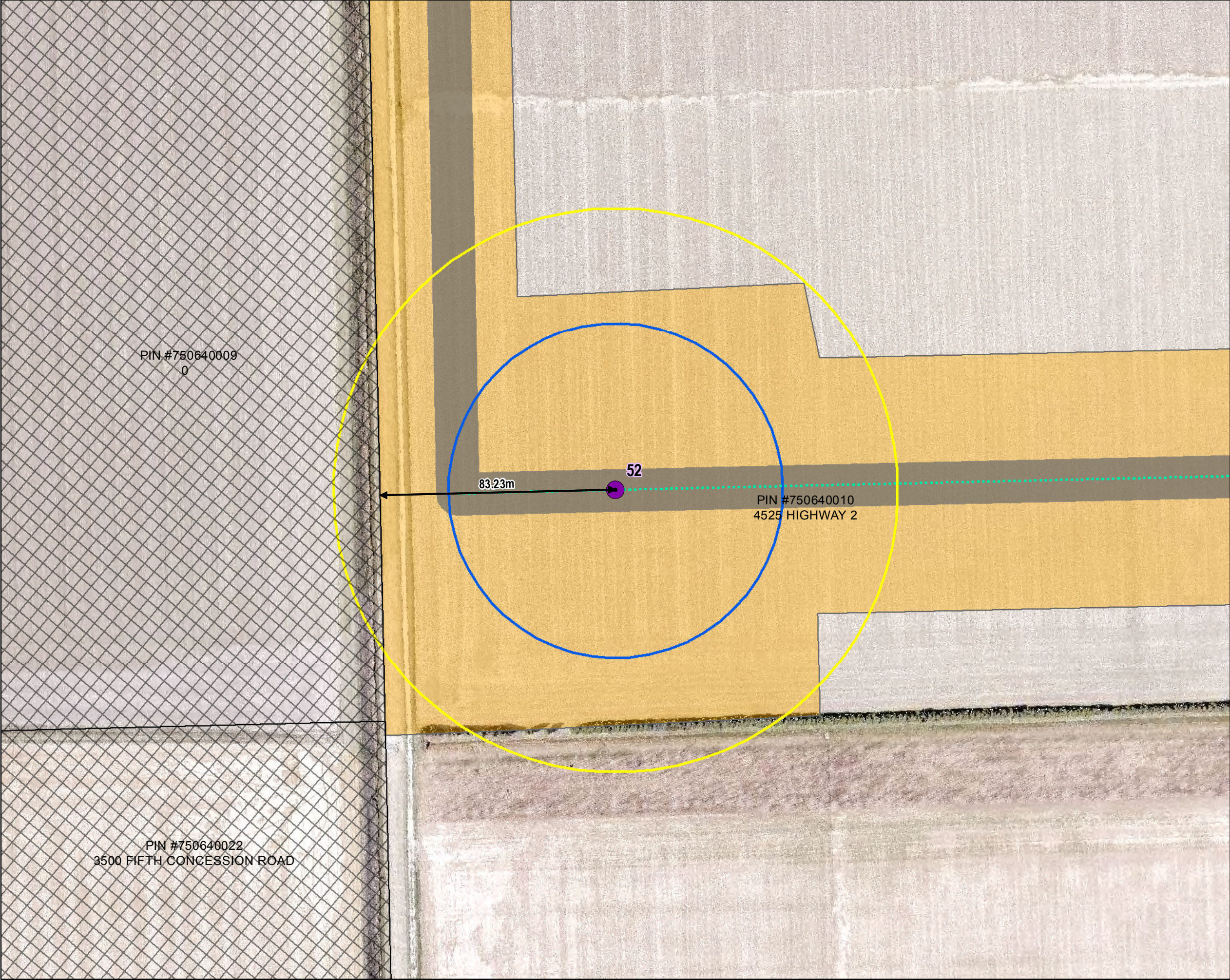
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	

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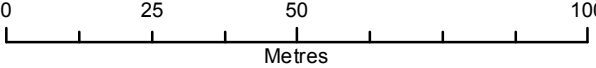
- ↔

Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

- Turbines
- ⋯

Collector Line
- Access Road
- Project Location / Investigation Area

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 52

May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
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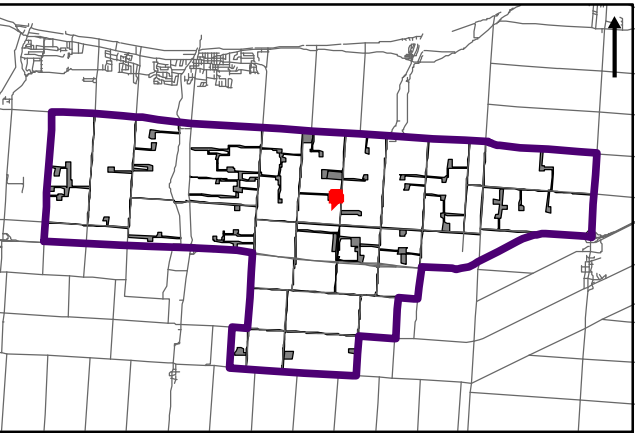
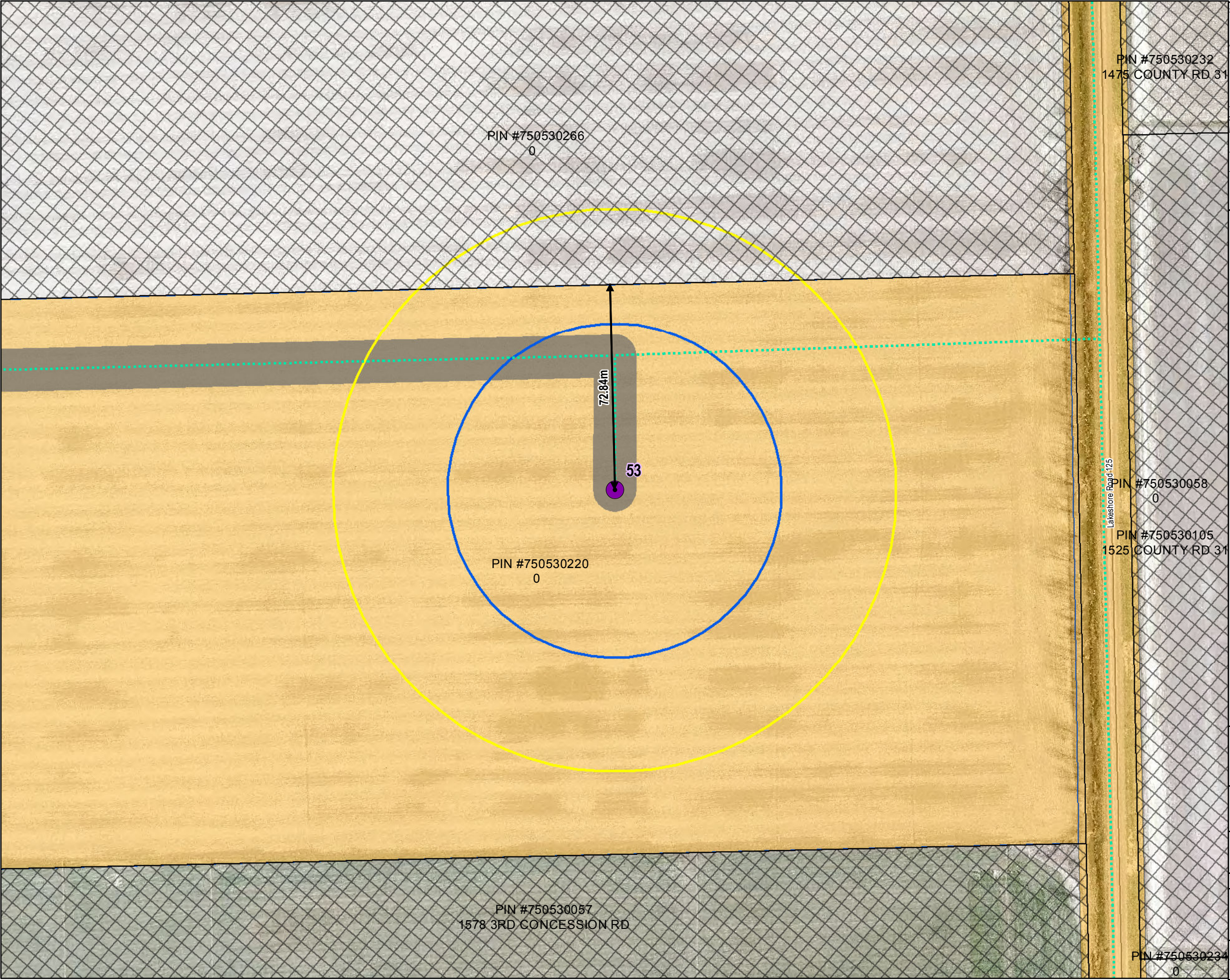
P#: 60321891	V#: 001
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Map Location: F:\AECOM\Work\60321891-Belle River\Design\FINAL\_Feb2015\Belle\_PropertySetback\_20150228.mxd  
Date Saved: 2/25/2015 12:29:01 PM





Legend

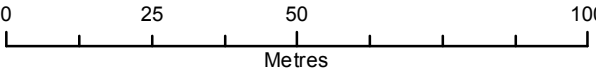
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 53

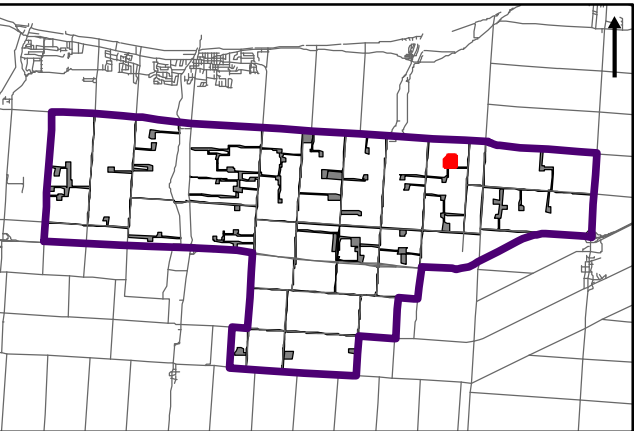
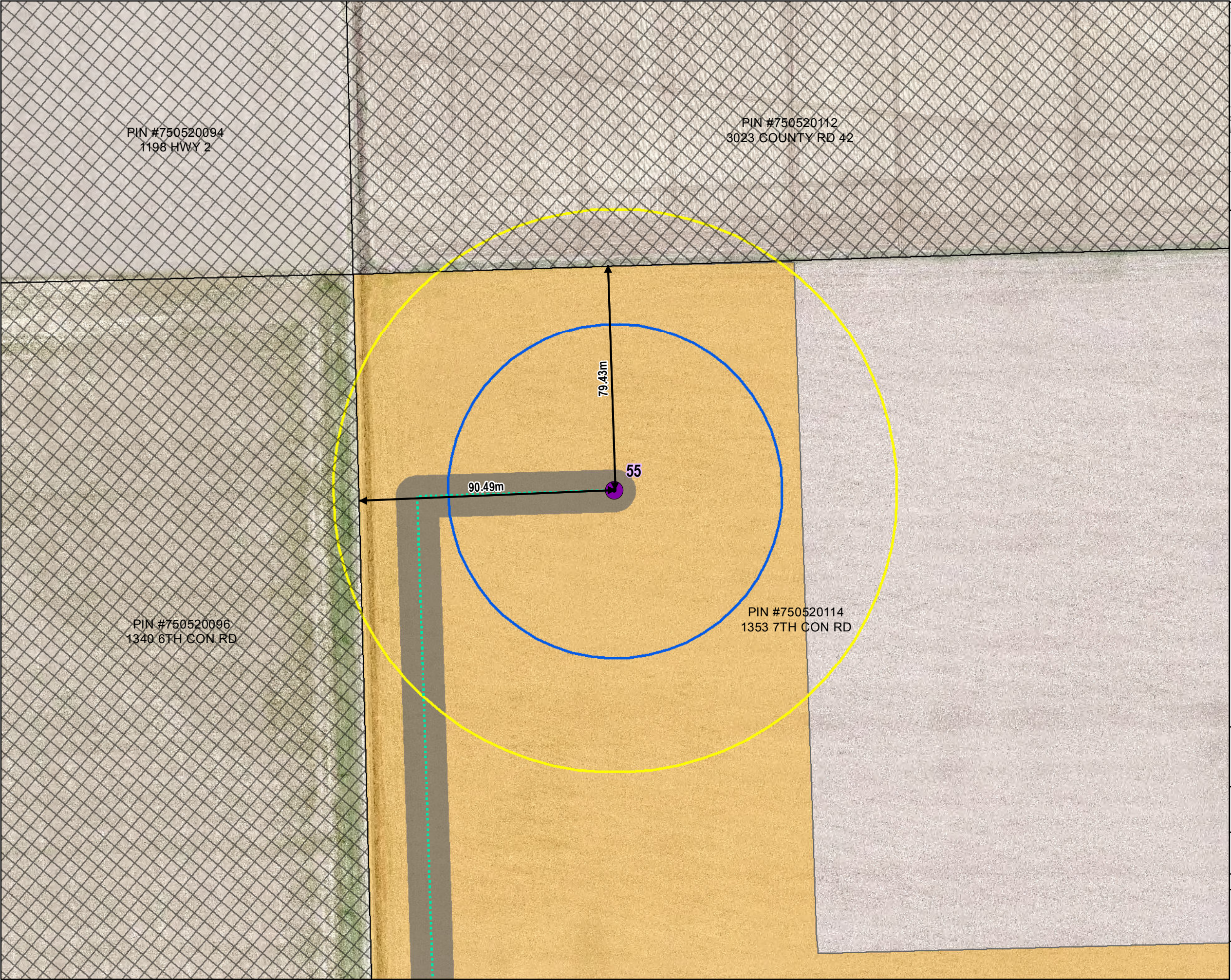
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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Date Saved: 2/25/2015 12:39:01 PM





Legend

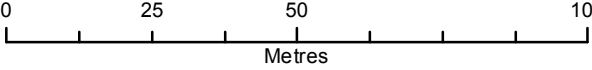
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 55

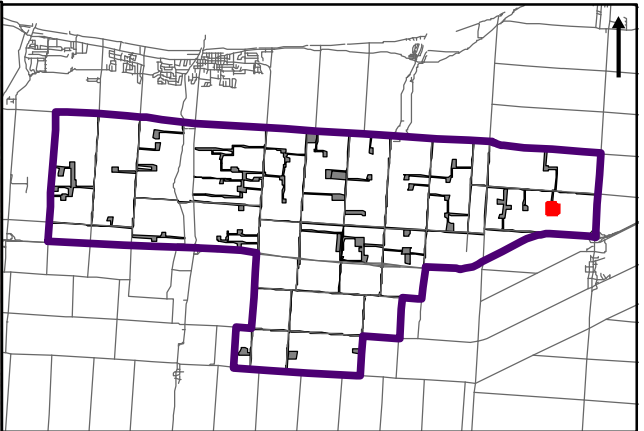
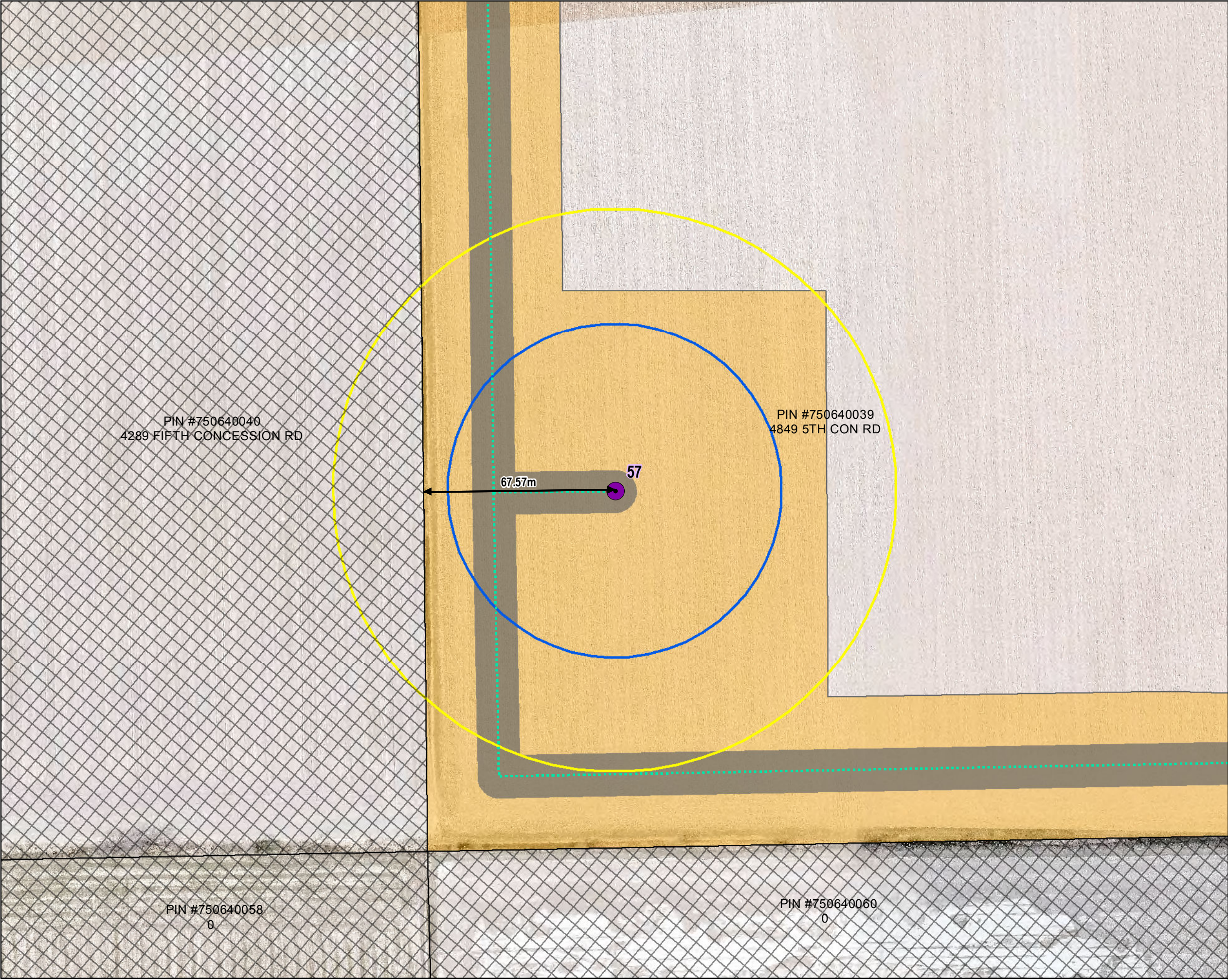
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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Date Saved: 2/25/2015 12:29:51 PM





Legend

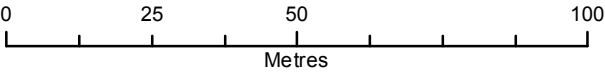
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 57

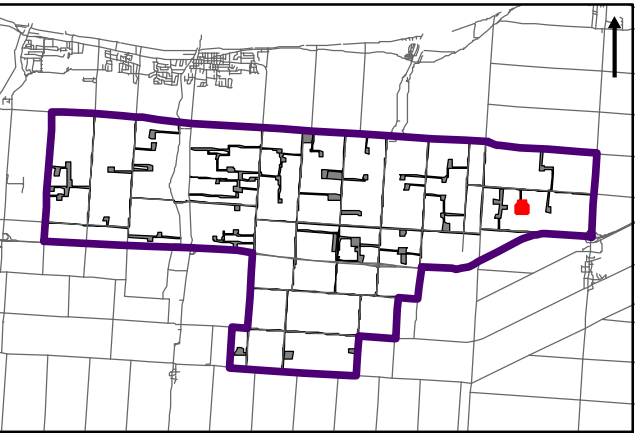
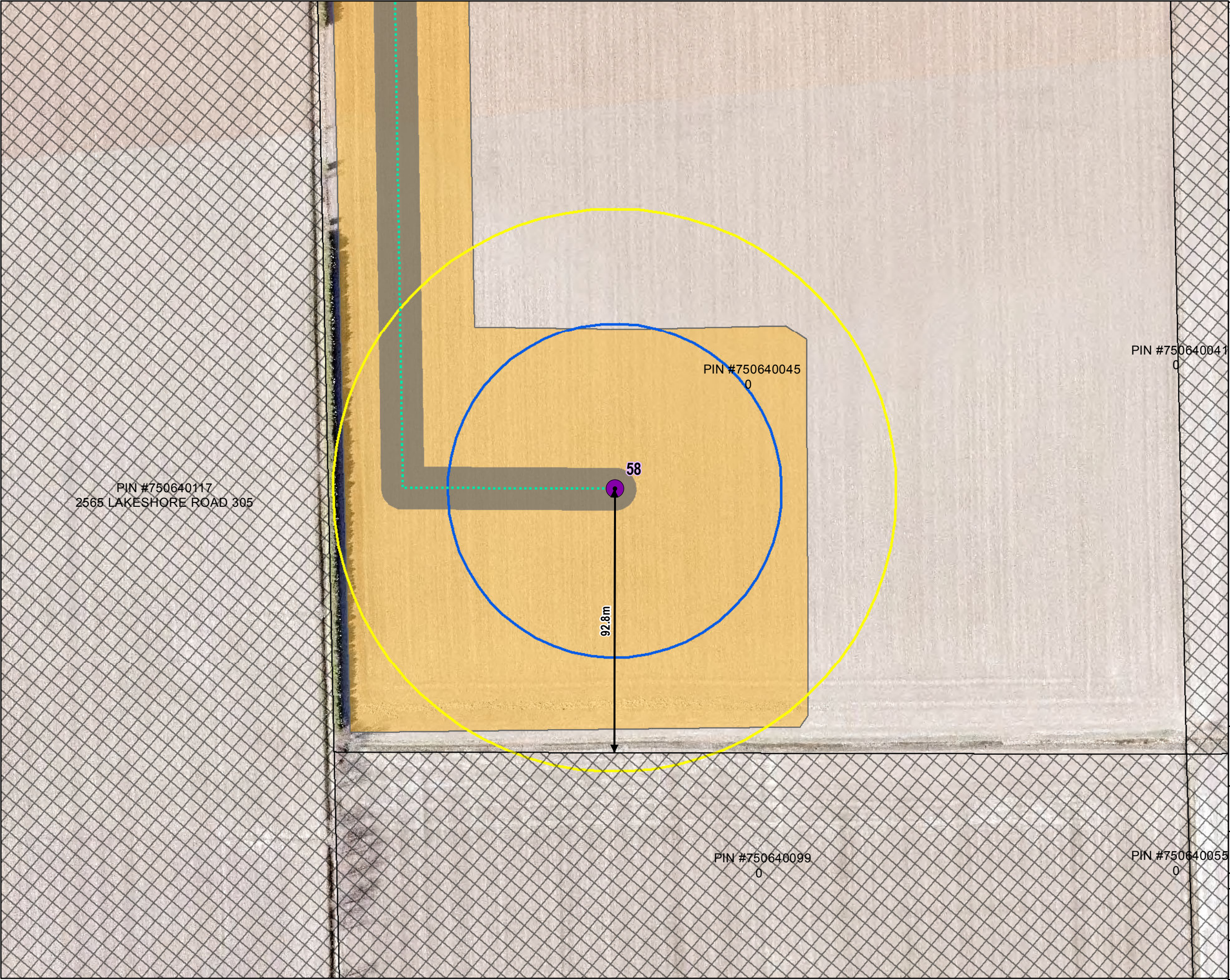
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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Date Saved: 2/25/2015 12:29:01 PM





Legend

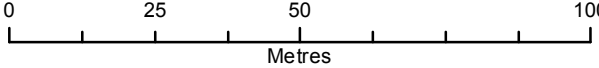
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 58

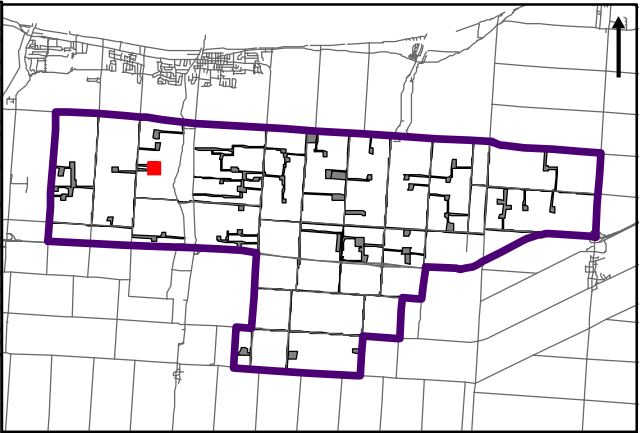
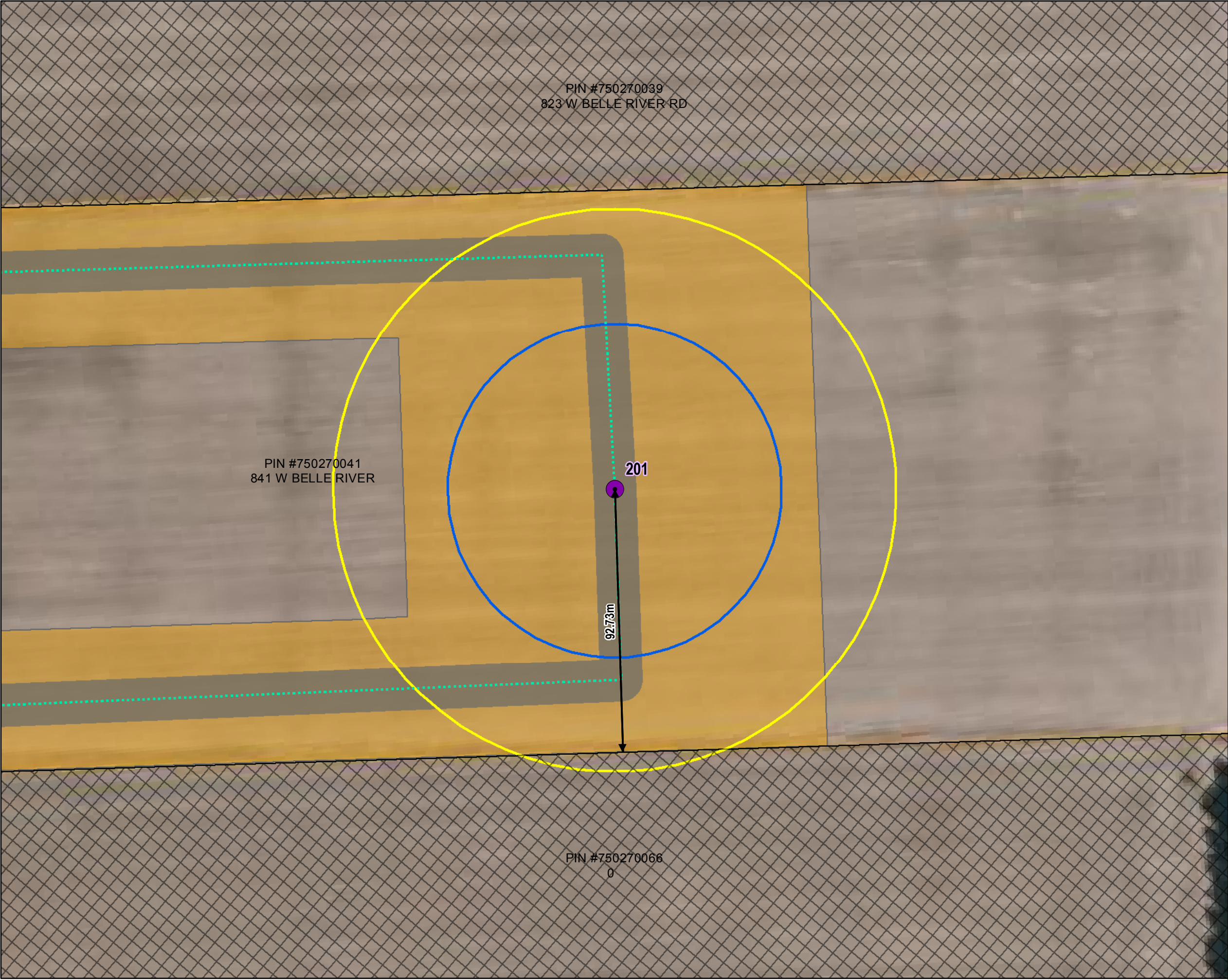
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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Map location: F:\AECOM\Work\60321891-Belle River\Design\REAFINAL\_Feb2015\Belle\_PropertySetback\_20150228.mxd  
Date Saved: 2/25/2015 12:29:01 PM





**Legend**

↔ Distance to Nearest Non-Participating Property Line

Minimum Setback Requirement 65 m (Blade Length + 10m)

Setback Reporting Requirement 99.5m

**Project Layout**

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

**Base Layers**

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels

0 25 50 100  
Metres

**Belle River Wind Project**

**Property Line Setback Assessment**  
**Turbine: 201**

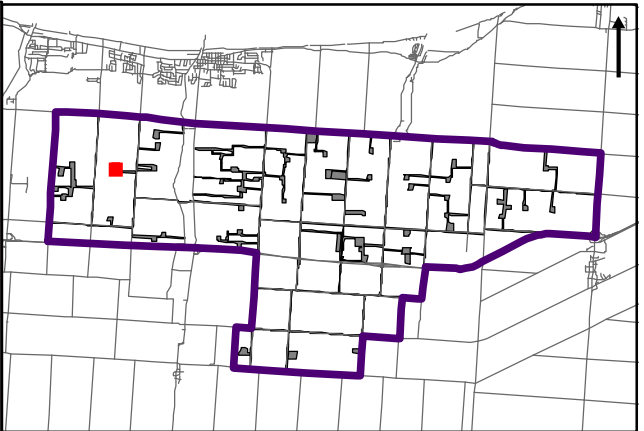
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	

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Map location: F:\AECOM\Work\60321891-Belle River\Design\REA\FINAL\_Feb2015\Belle\_PropertySetback\_20150228.mxd  
Date Saved: 2/25/2015 12:39:01 PM





**Legend**

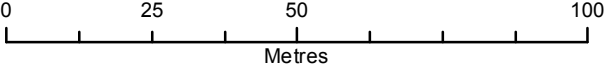
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

**Project Layout**

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

**Base Layers**

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



**Belle River Wind Project**

**Property Line Setback Assessment  
Turbine: 205**

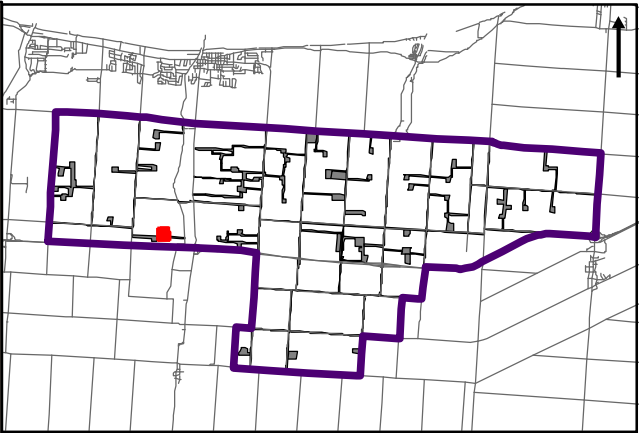
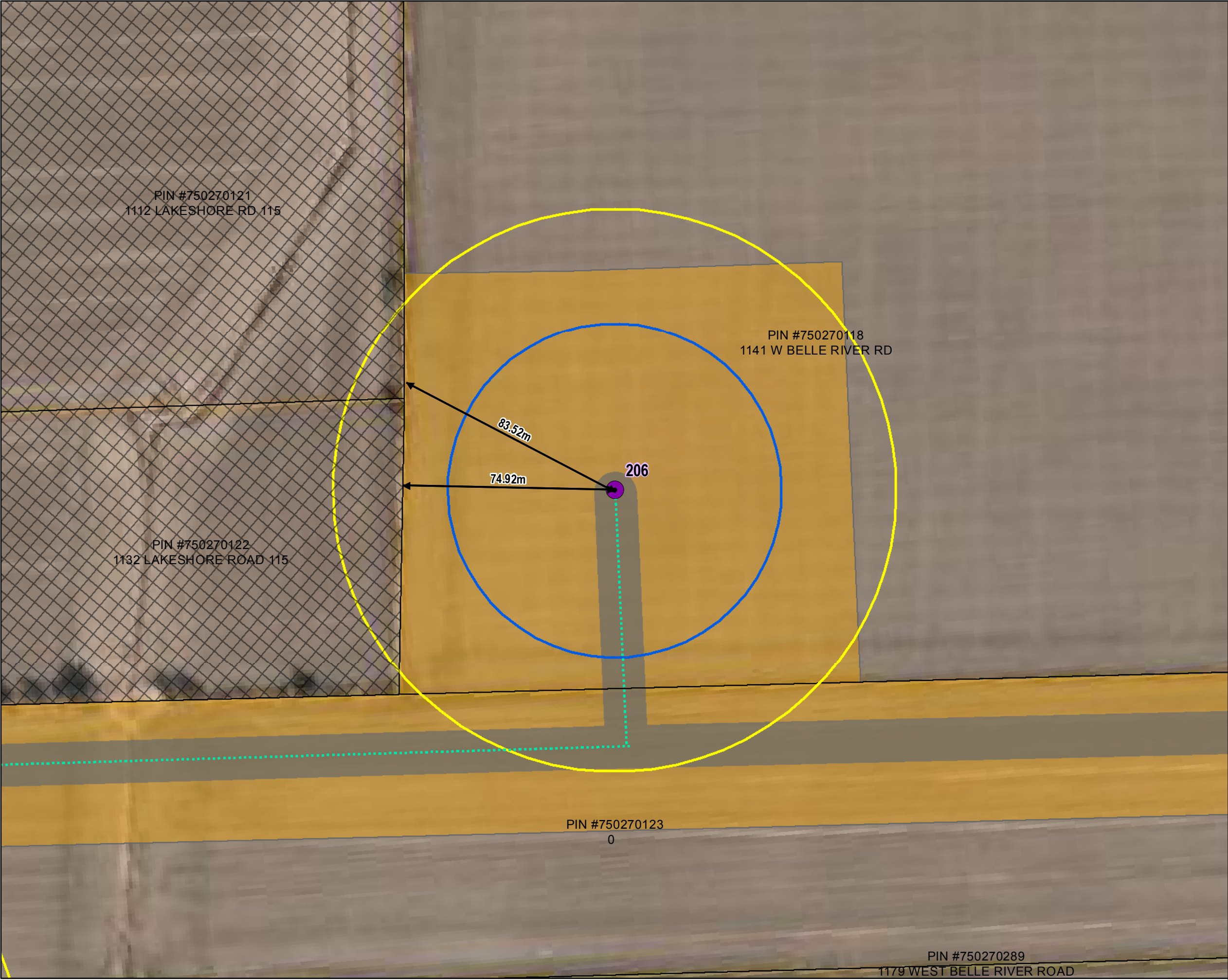
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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Map Location: F:\AECOM\Work\60321891-Belle River\Design\REA\FINAL\_Feb2015\Belle\_PropertySetback\_20150228.mxd  
Date Saved: 2/25/2015 12:39:01 PM





Legend

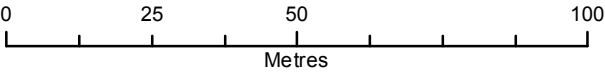
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 206

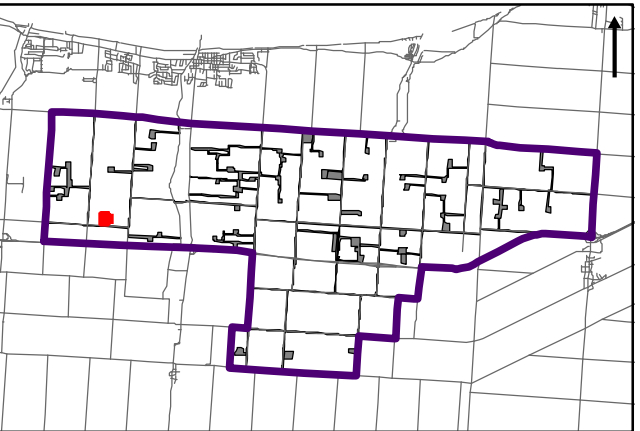
May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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**Legend**

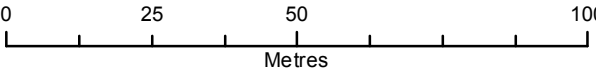
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

**Project Layout**

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

**Base Layers**

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



**Belle River Wind Project**

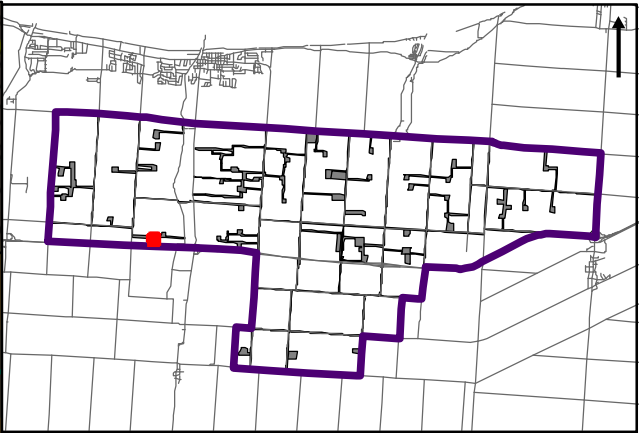
**Property Line Setback Assessment  
Turbine: 215**

May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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Legend

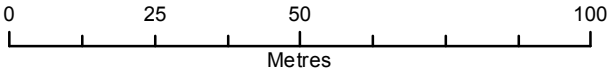
- Distance to Nearest Non-Participating Property Line
- Minimum Setback Requirement 65 m (Blade Length + 10m)
- Setback Reporting Requirement 99.5m

Project Layout

- Turbines
- Collector Line
- Access Road
- Project Location / Investigation Area

Base Layers

- Roads
- Watercourses
- Waterbodies
- Wooded Areas
- Project Study Area
- Non-Participating Parcels



Belle River Wind Project

Property Line Setback Assessment  
Turbine: 219

May 2015	1:1,300	Datum: NAD83, Zone 17 Source: OMB Imagery: First Base Solutions 2012
P#: 60321891	V#: 001	



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