

Memorandum

To	North Dakota Public Service Commission	Pages	2
Subject	Case Number PU-18-280 Emmons-Logan Wind Energy Center Modifications of Energy Conversion Facility and Site Plan		
From	Emmons-Logan Wind, LLC		
Date	June 6, 2019		

Introduction

Pursuant to Certification Relating to Order Provision Number 38, Emmons-Logan Wind, LLC (Emmons-Logan Wind) submits to the North Dakota Public Service Commission (Commission) this supporting documentation for proposed modifications to the Emmons-Logan Wind Energy Center (Project) and Project Site Plan (Attachments 1 through 3). Modifications include a minor shift in the location of turbine 96 and its associated access roads and collection lines resulting from (i) the proximity of turbine 96 to a tribal site and (ii) constructability issues identified by the construction contractor. Turbine 96 will be moved approximately 39.8 feet to the east-northeast. Additionally, minimal design revisions were made on collection lines and access roads for optimization (Attachment 2).

Project Site Plan Modifications

Attachment 2 illustrates locations of the Site Plan modifications. Emmons-Logan Wind notified landowners of the Site Plan modifications and no objections were received. As described below, sound levels and shadow flicker will be unaffected by the relocation of Turbine 96, and the Project Site Plan modifications occur in areas previously surveyed for wetlands, cultural, and tribal resources. Attachments 1 through 3 provide updated site plan maps.

Sound Levels

Emmons-Logan Wind contracted AECOM to update the acoustic assessment as a result of the turbine relocation. AECOM utilized the same methodology outlined in the Project's November 2018 Acoustic Assessment (Docket No. 60). The results of the updated acoustic assessment are consistent with those provided in the Project's May 1, 2019 Modifications of Energy Conversion Facility and Site Plan (Docket No. 111). There will not be an increase or decrease in sound levels at receptors.

Shadow Flicker

Emmons-Logan Wind contracted AECOM to update the shadow flicker assessment as a result of the turbine relocation. AECOM utilized the same methodology outlined in the Project's November 2018 Shadow Flicker Assessment (Docket No. 62). The results of the updated shadow flicker assessment are consistent with those provided in the Project's May 1, 2019 Modifications of Energy Conversion Facility and Site Plan (Docket No. 111). There will not be an increase or decrease in shadow flicker levels at receptors.

Wetlands

The Site Plan modifications will avoid any wetland impacts per wetland delineations completed by AECOM.

Cultural and Tribal Resources

The Site Plan modifications do not impact any cultural or tribal resources per a joint Class III Cultural Resources and tribal survey completed by AECOM. Emmons-Logan Wind will submit an amended Class III Cultural

Resources Inventory Report to the State Historical Society of North Dakota for review and concurrence. The concurrence letter will be filed with the Commission when received.

Other Impacts

The Site Plan modifications fall within areas previously covered by the avian, raptor, lek, and nest surveys and the whooping crane and bat habitat desktop assessments. The Site Plan modifications do not change the results of those studies, and there are no new impacts to native prairie or unbroken grasslands. Project Site Plan modifications resulted in negligible changes to the total Project impacts calculations presented in Table 1-4 of the Project Application (Docket No. 1). The Site Plan modifications will not impact the Commission's Exclusion and Avoidance Criteria as presented in Tables 3-1 and 3-2 of the Project Application.

Conclusion

The Project modifications comply with Commission's Exclusion, Avoidance, Selection, and Policy Criteria and are consistent with the Project's Findings of Fact, Conclusions of Law and Order.

Attachments:

1. Modified Energy Conversion Facility Site Plan Overview Map
2. Site Plan Modification Map Book
3. Modified Energy Conversion Facility Site Plan Map Book

EMMONS-LOGAN WIND ENERGY CENTER EMMONS AND LOGAN COUNTIES, ND

LEGEND

- County Road
- Existing 230 kV Heskett-Wishek Transmission Line
- Transmission Line
- County Boundary
- PLSS Township
- PLSS Section
- Occupied Residence - Participating Landowner
- ▼ Occupied Residence - Non-Participating Landowner
- ▨ *Non-participating Landowner
- ▨ **Non-participating Parcel

Project Features

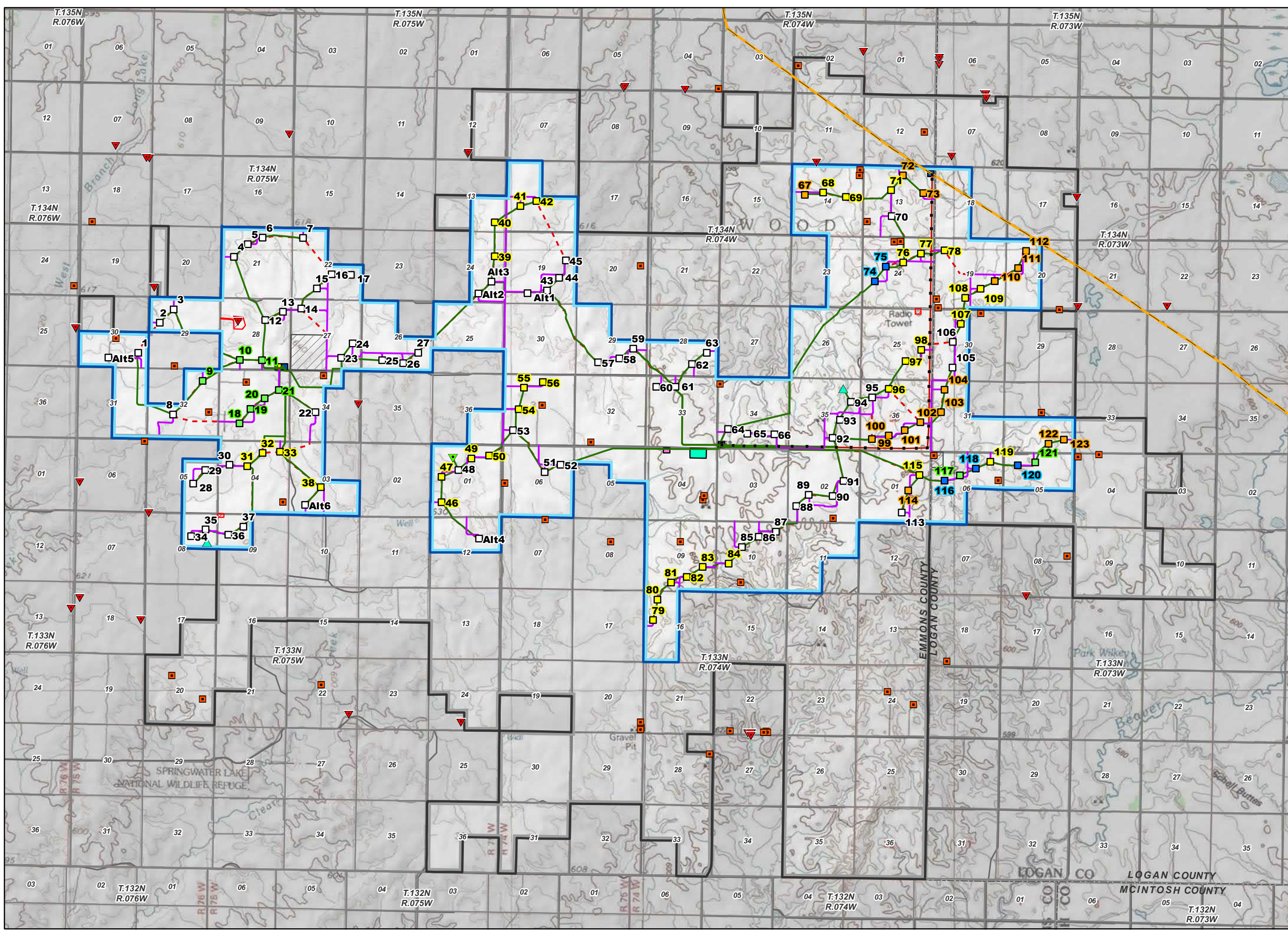
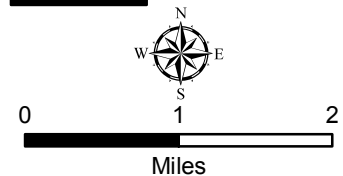
Turbines

- GE 1.715 MW 262HH
- GE 2.72 MW 262 HH
- GE 2.72 MW 262 HH, LTNE
- GE 2.72 MW 295 HH
- GE 2.72 MW 295 HH, LTNE
- ▲ Met Tower
- ▼ Alternative Met Tower

- Service Road
- Collection Line
- - Crane Path
- 230 kV Transmission Line Route
- 230 kV Transmission Line Corridor
- 230 kV Transmission Line Pole Location
- ▭ Original Emmons-Logan Wind Energy Center Project Area (64,563 Acres)
- ▭ Revised Emmons-Logan Wind Energy Center Project Area (28,097 Acres)
- Substation
- O&M Building
- Batch Plant
- Laydown Yard













*Non-participating Landowners outside of the Project Area are not shown on map.

**Owns land participating in the Project Area elsewhere.

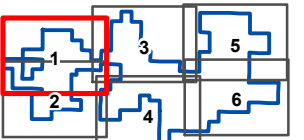


**EMMONS-LOGAN
WIND ENERGY CENTER
EMMONS AND LOGAN
COUNTIES, ND**

LEGEND

-  County Boundary
-  Existing Road
- Project Features**
-  Turbine - No Revisions
-  Met Tower
-  Service Road - No Revisions
-  Service Road - May 2019
-  Collection Line - No Revisions
-  Collection Lines Revised June 2019
-  Collection Line - May 2019
-  Emmons-Logan Wind Energy Center Project Area
-  Substation
-  O&M Building

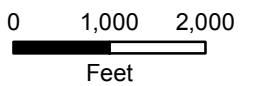
Disclaimer: Call-outs highlight locations of the more notable Site Plan modifications; whereas minor modifications that are imperceptible at the map scale can be viewed using the provided GIS shapefiles.



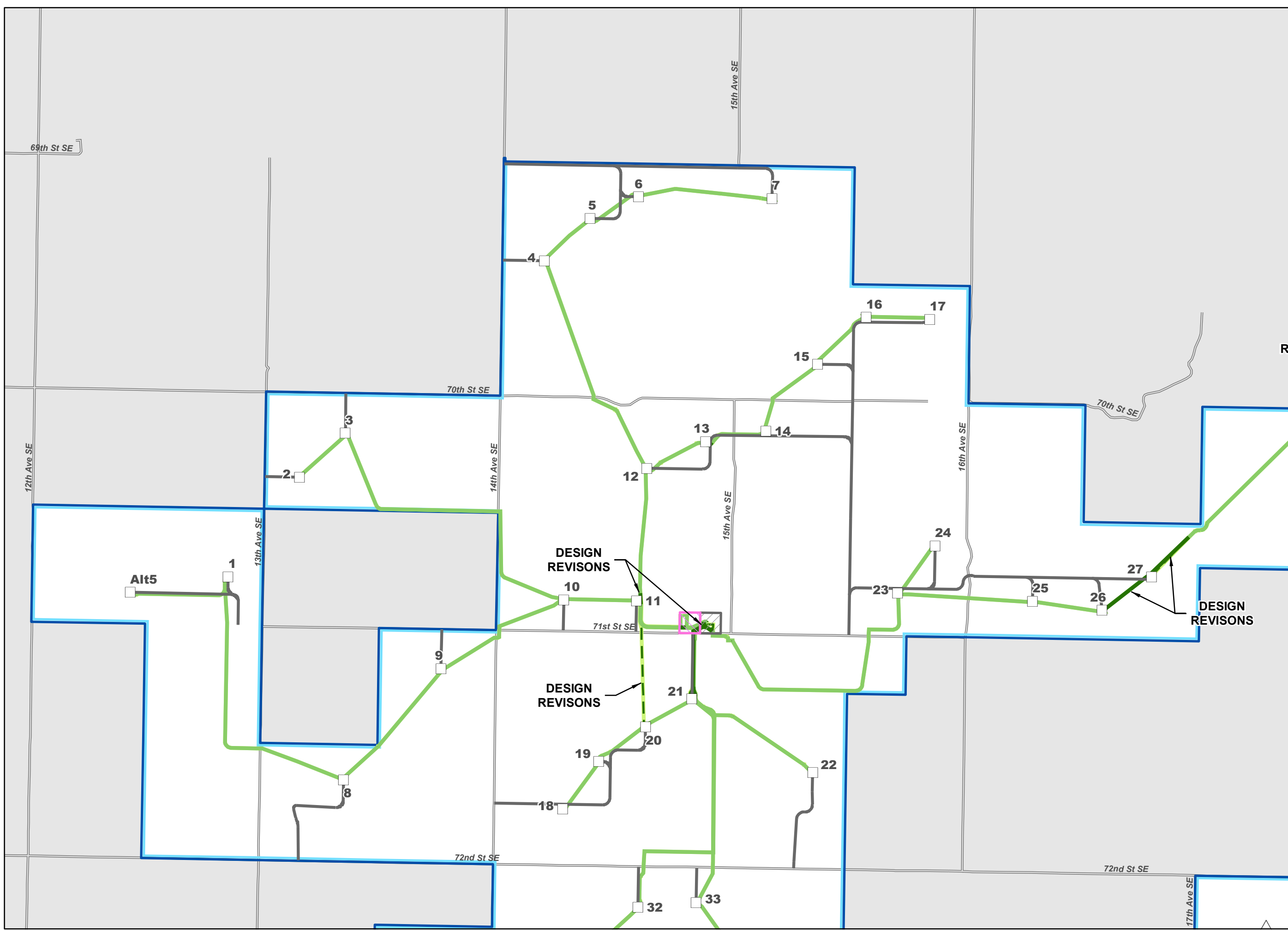
Map 1 of 6



Project Location



**Attachment 2
Sheet 1 of 6
Site Plan Modification
Map Book**



**EMMONS-LOGAN
WIND ENERGY CENTER
EMMONS AND LOGAN
COUNTIES, ND**

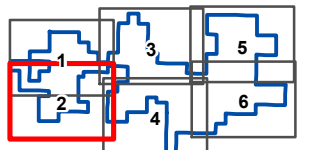
LEGEND

- County Boundary
- Existing Road

Project Features

- Turbine - No Revisions
- Met Tower
- Service Road - No Revisions
- Service Road - May 2019
- Collection Line - No Revisions
- Collection Lines Revised June 2019
- Collection Line - May 2019
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- Substation
- O&M Building

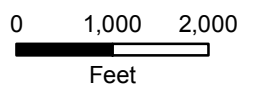
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Map 2 of 6

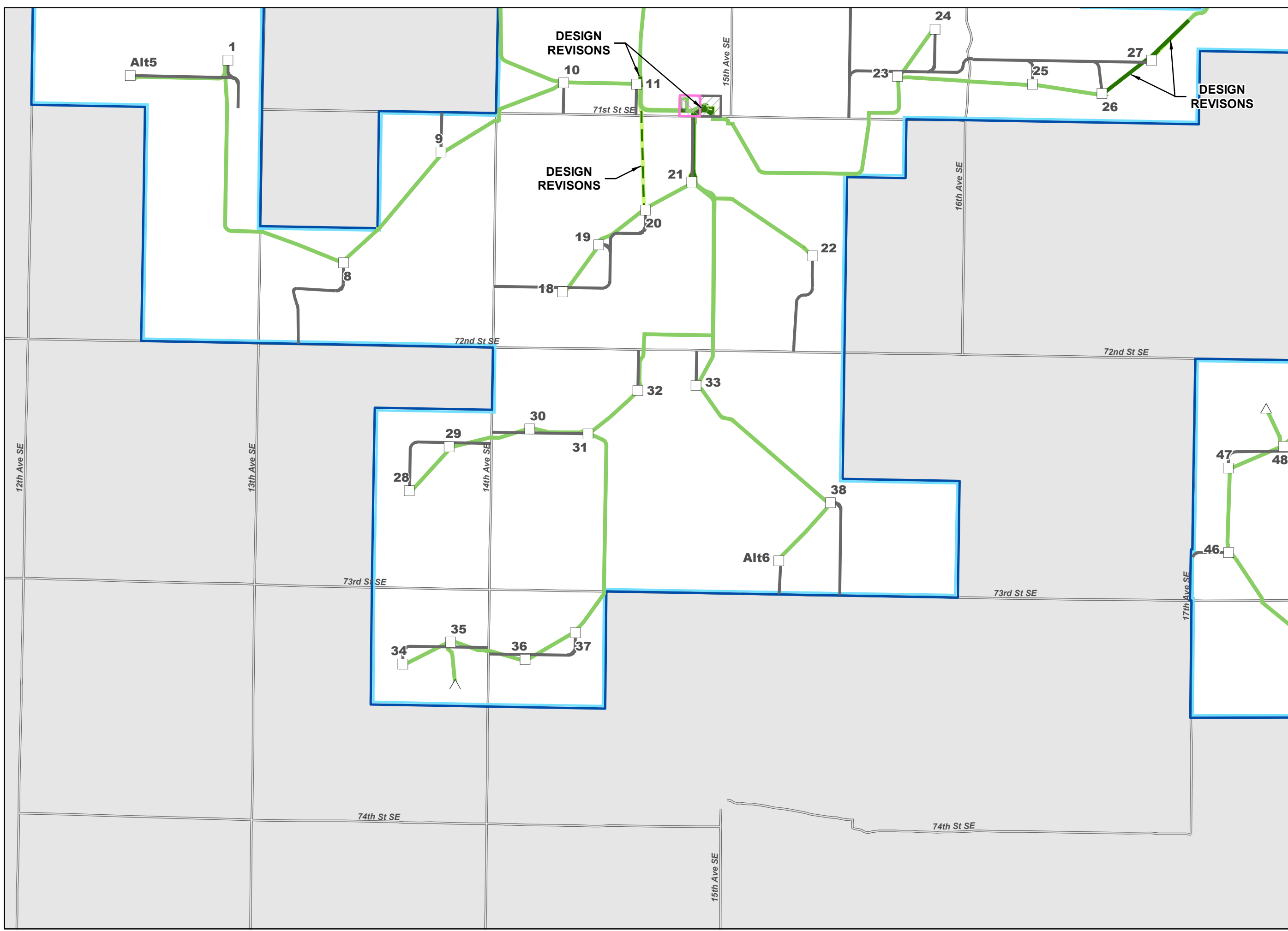


Project Location



**Attachment 2
Sheet 2 of 6**

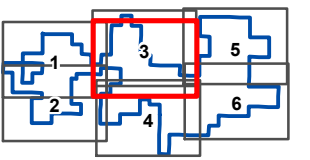
**Site Plan Modification
Map Book**



**EMMONS-LOGAN
WIND ENERGY CENTER
EMMONS AND LOGAN
COUNTIES, ND**

- LEGEND**
- County Boundary
 - Existing Road
- Project Features**
- Turbine - No Revisions
 - Service Roads Revised June 2019
 - Service Road - No Revisions
 - Service Road - May 2019
 - Collection Line - No Revisions
 - Collection Lines Revised June 2019
 - Collection Line - May 2019
 - Emmons-Logan Wind Energy Center Project Area
 - Substation

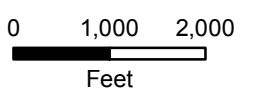
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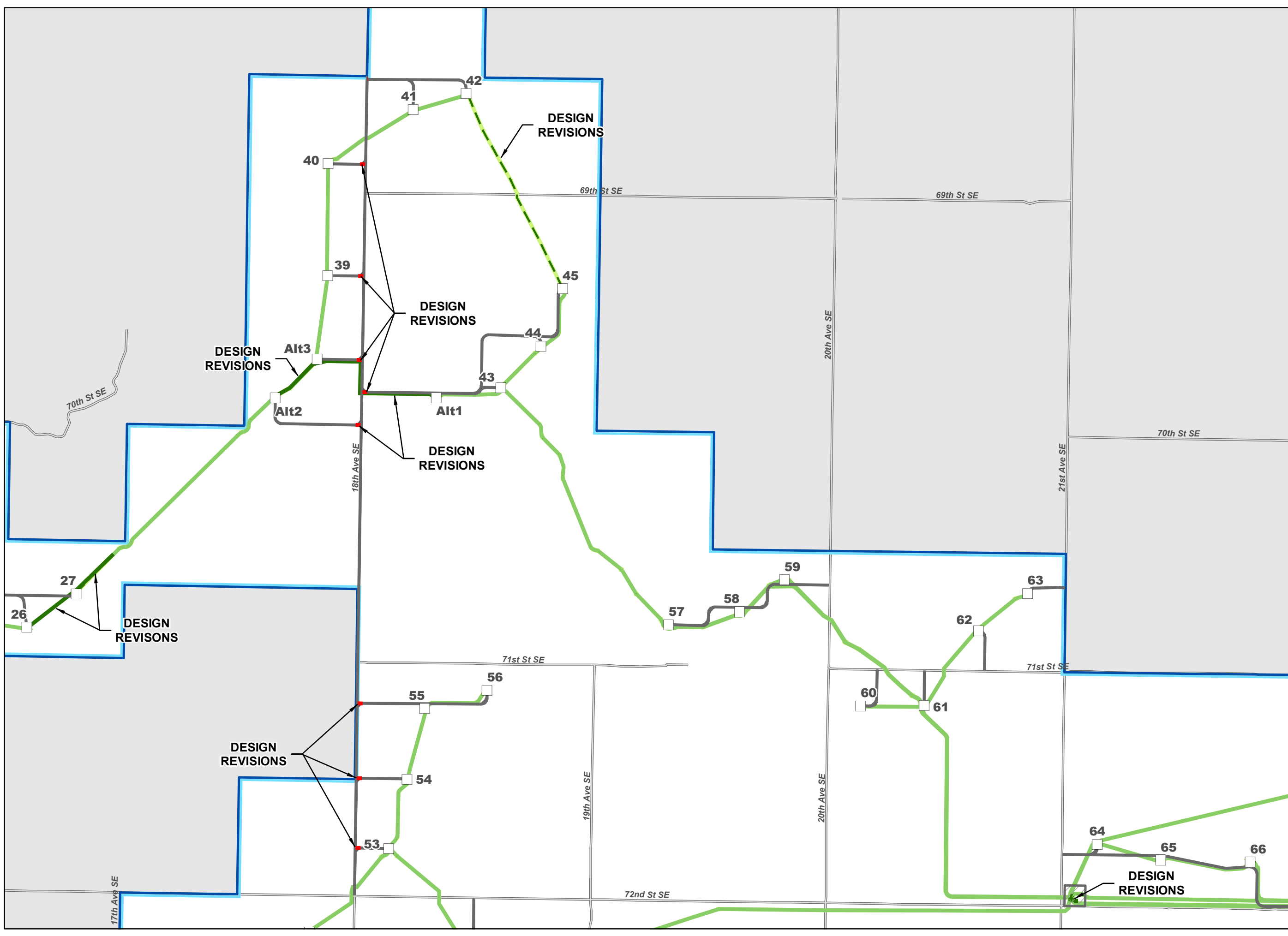
Map 3 of 6



Project Location



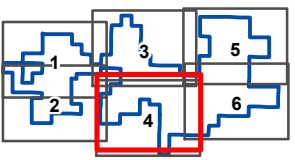
**Attachment 2
Sheet 3 of 6
Site Plan Modification
Map Book**



**EMMONS-LOGAN
WIND ENERGY CENTER
EMMONS AND LOGAN
COUNTIES, ND**

- LEGEND**
- County Boundary
 - Existing Road
 - Project Features**
 - Turbine - No Revisions
 - Met Tower
 - Service Roads Revised June 2019
 - Service Road - No Revisions
 - Service Road - May 2019
 - Collection Line - No Revisions
 - Collection Lines Revised June 2019
 - Collection Line - May 2019
 - Emmons-Logan Wind Energy Center Project Area
 - Substation

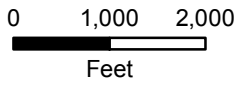
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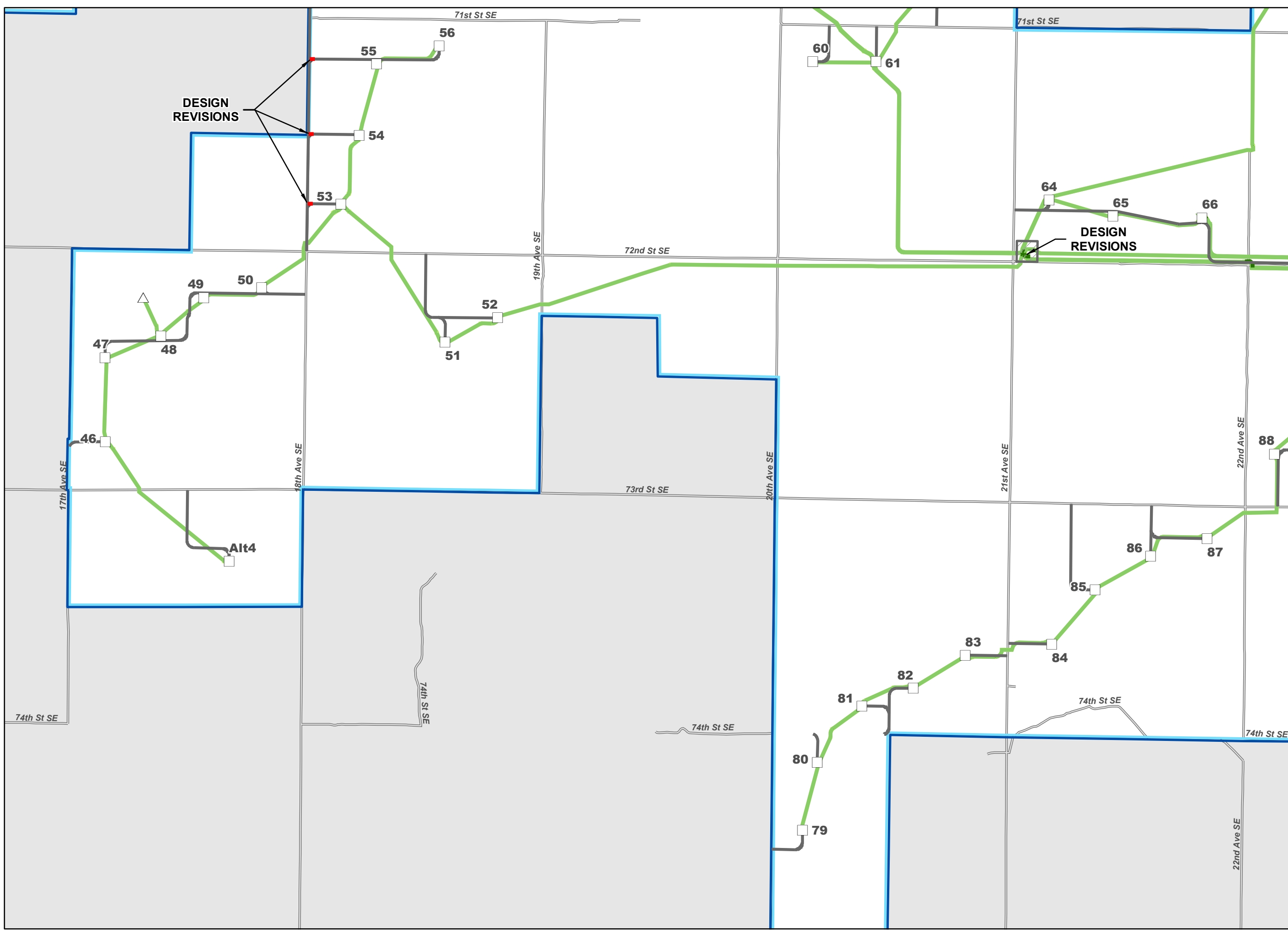
Map 4 of 6



Project Location





**Attachment 2
Sheet 4 of 6
Site Plan Modification
Map Book**














**EMMONS-LOGAN
WIND ENERGY CENTER
EMMONS AND LOGAN
COUNTIES, ND**

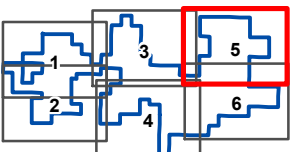
LEGEND

-  County Boundary
-  Existing Road

Project Features

-  Turbine - Revised June 2019
-  Turbine - No Revisions
-  Turbine - May 2019
-  Met Tower
-  Service Roads Revised June 2019
-  Service Road - No Revisions
-  Service Road - May 2019
-  Collection Line - No Revisions
-  Collection Lines Revised June 2019
-  Collection Line - May 2019
-  Emmons-Logan Wind Energy Center Project Area

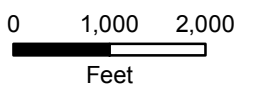
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Map 5 of 6

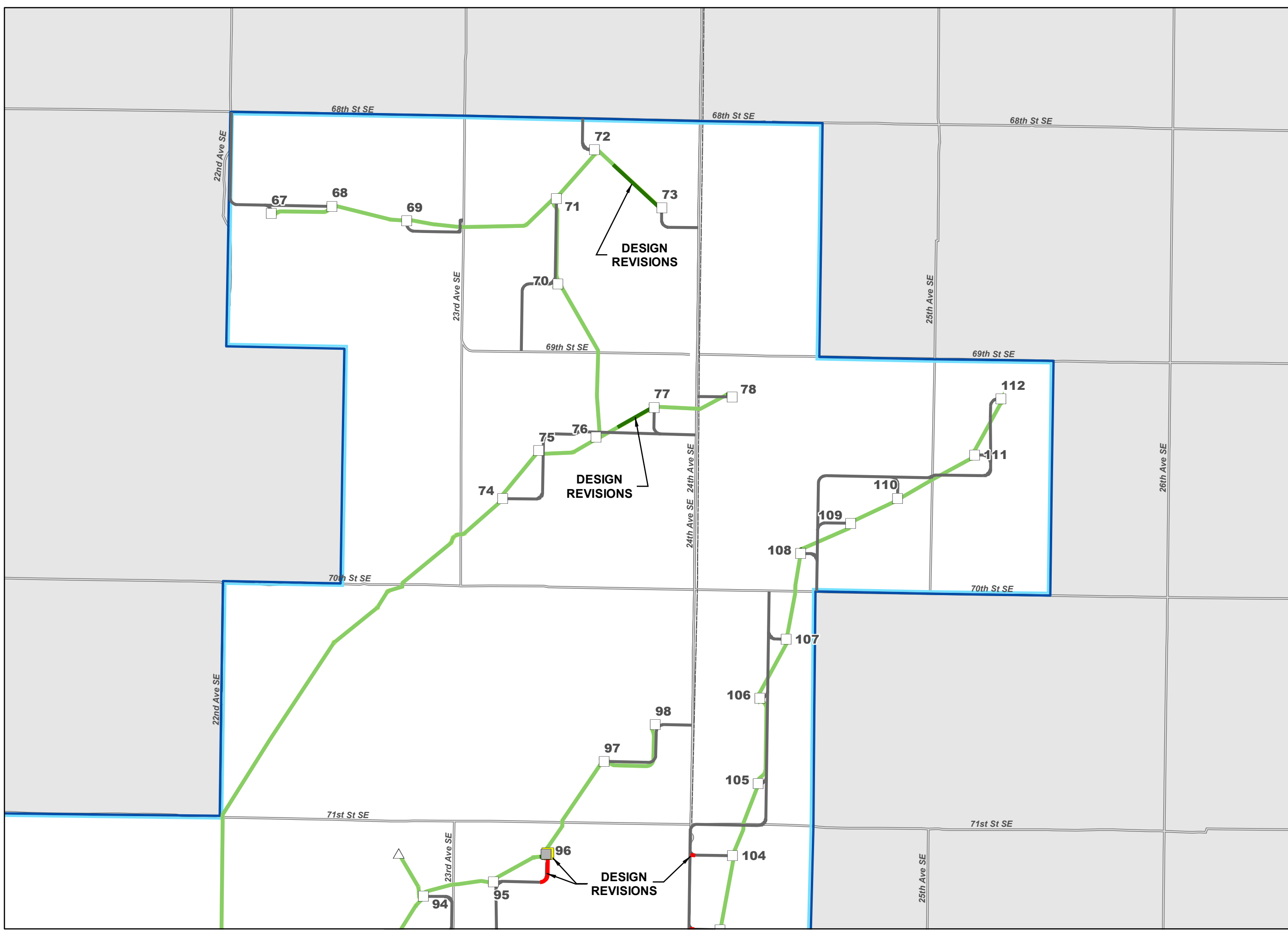


Project Location



**Attachment 2
Sheet 5 of 6**

**Site Plan Modification
Map Book**



**EMMONS-LOGAN
WIND ENERGY CENTER
EMMONS AND LOGAN
COUNTIES, ND**

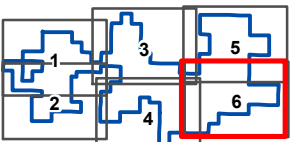
LEGEND

- County Boundary
- Existing Road

Project Features

- Turbine - Revised June 2019
- Turbine - No Revisions
- Turbine - May 2019
- Met Tower
- Service Roads Revised June 2019
- Service Road - No Revisions
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- Collection Line - No Revisions
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- Collection Line - May 2019
- Emmons-Logan Wind Energy Center Project Area
- Substation

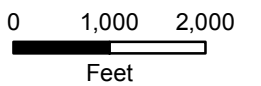
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Map 6 of 6

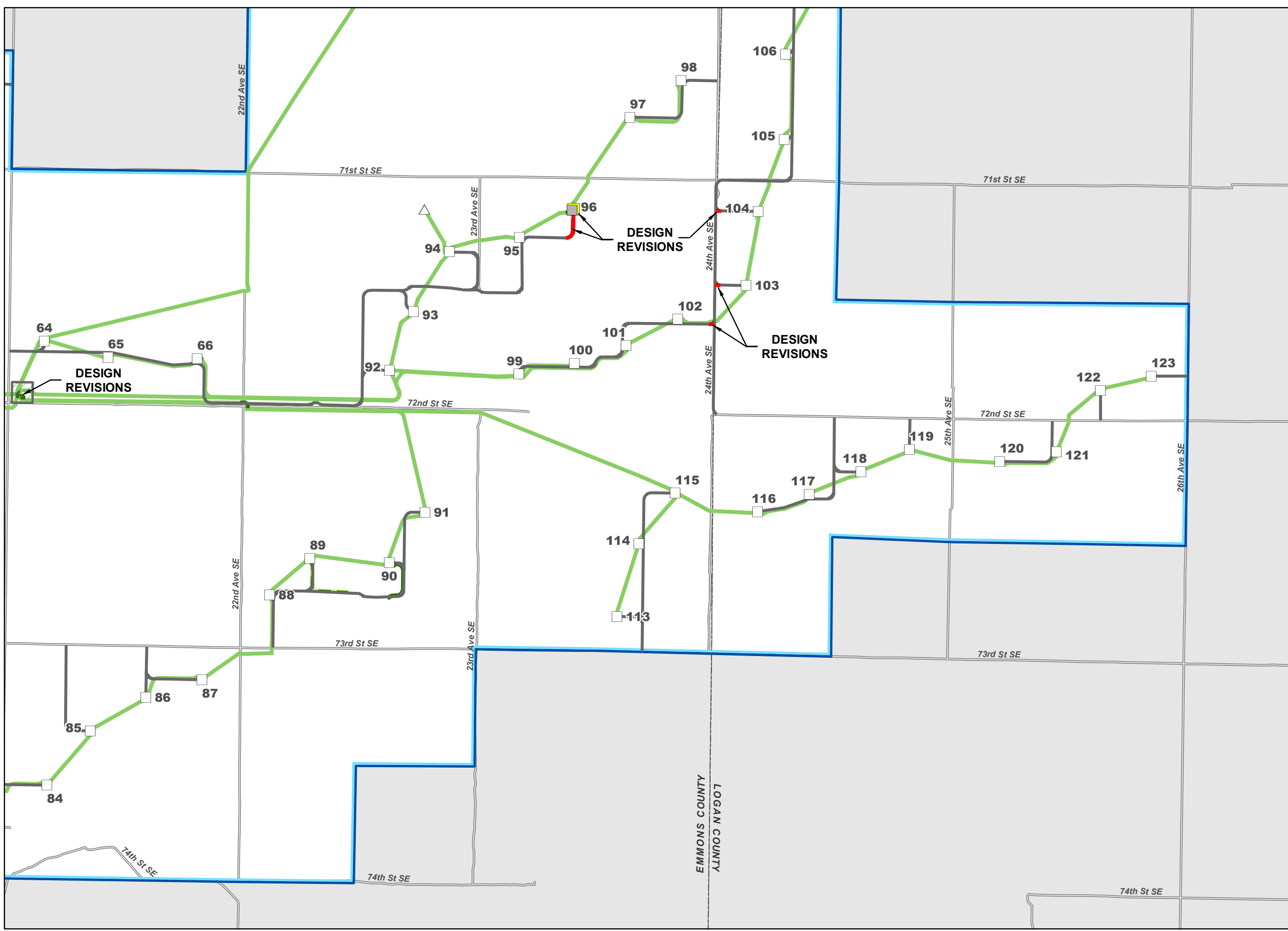


Project Location



**Attachment 2
Sheet 6 of 6**

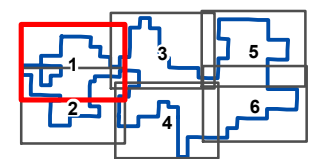
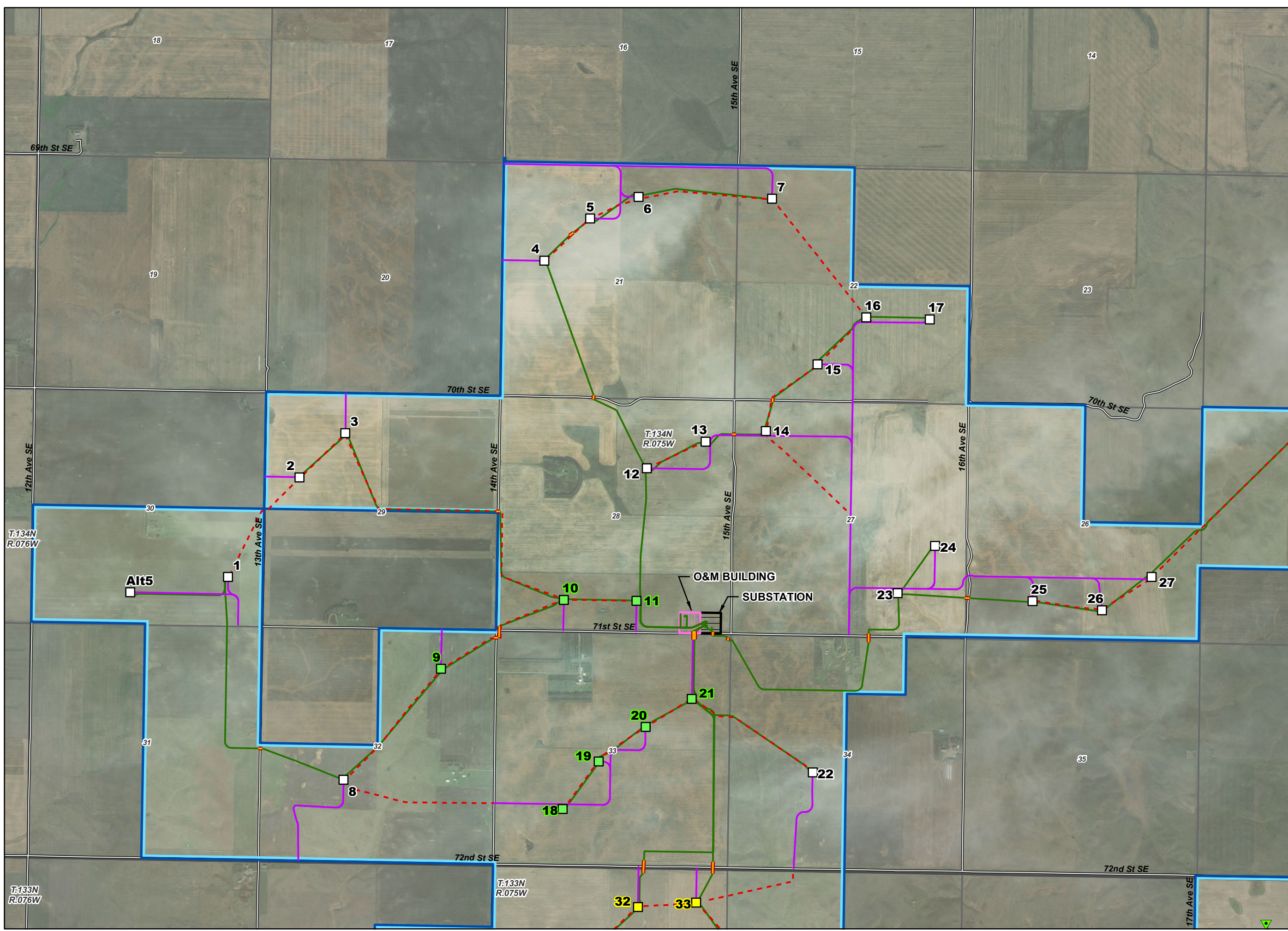
**Site Plan Modification
Map Book**



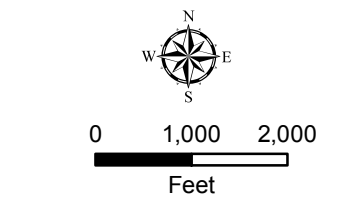
**EMMONS-LOGAN
WIND ENERGY CENTER
EMMONS AND LOGAN
COUNTIES, ND**

LEGEND

- County Boundary
- PLSS Township
- PLSS Section
- Existing Road
- Project Features**
- Turbines**
- GE 1.715 MW 262HH
- GE 2.72 MW 295 HH
- GE 2.72 MW 295 HH, LTNE
- Alternative Met Tower
- Service Road
- Collection Line
- Collection Line Bore Location
- Crane Path
- Emmons-Logan Wind Energy Center Project Area
- Substation
- O&M Building



Map 1 of 6



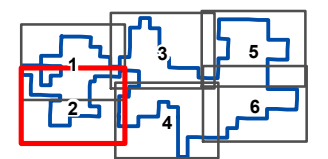
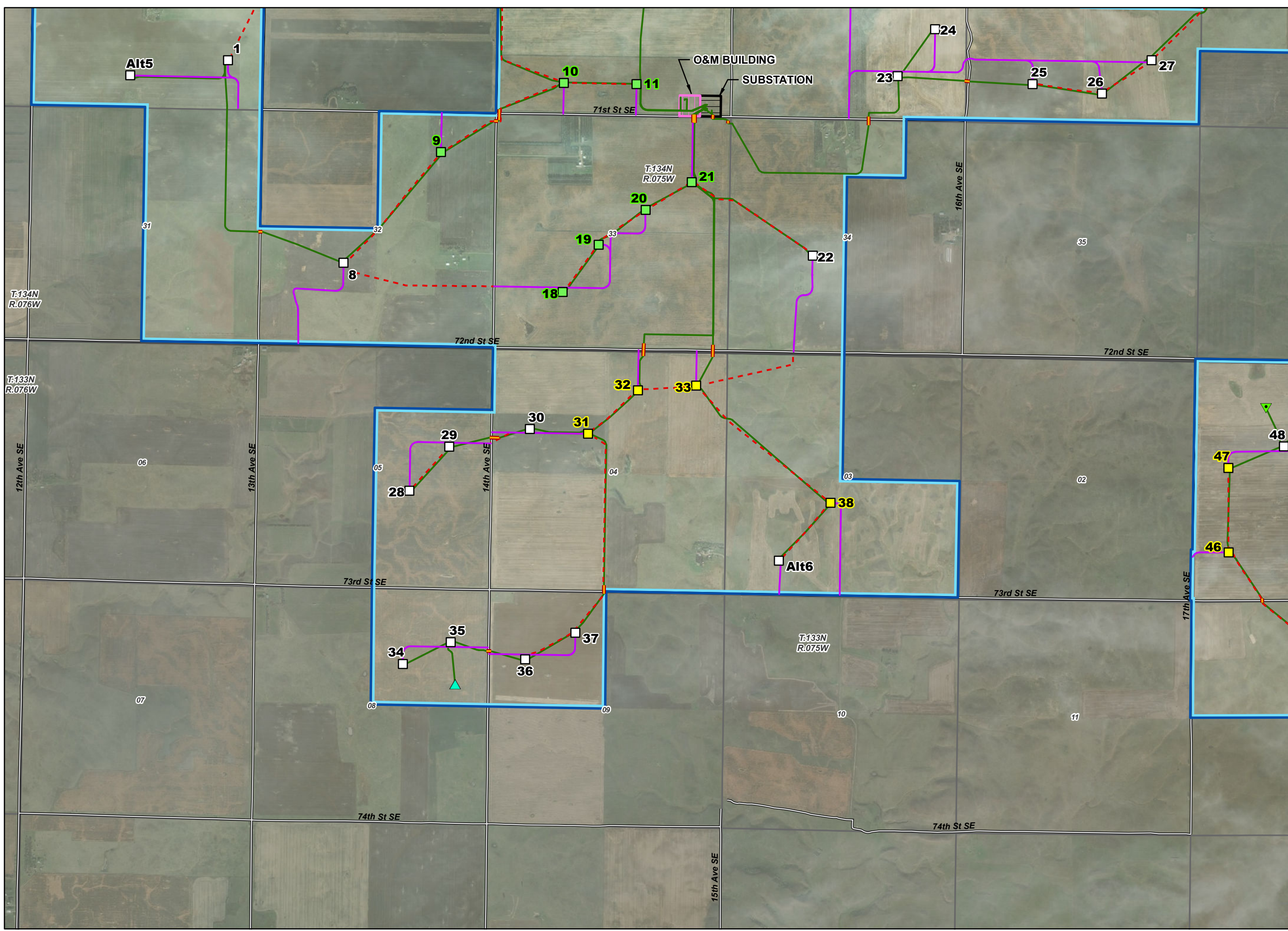
**EMMONS-LOGAN
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EMMONS AND LOGAN
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LEGEND

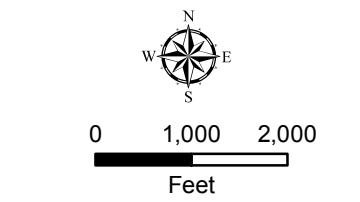
- County Boundary
- PLSS Township
- PLSS Section
- Existing Road

Project Features

- Turbines**
- GE 1.715 MW 262HH
 - GE 2.72 MW 295 HH
 - GE 2.72 MW 295 HH, LTNE
 - Met Tower
 - Alternative Met Tower
 - Service Road
 - Collection Line
 - Collection Line Bore Location
 - Crane Path
 - Emmons-Logan Wind Energy Center Project Area
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 - O&M Building



Map 2 of 6



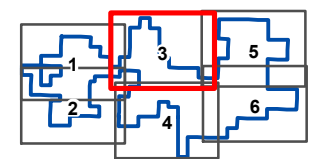
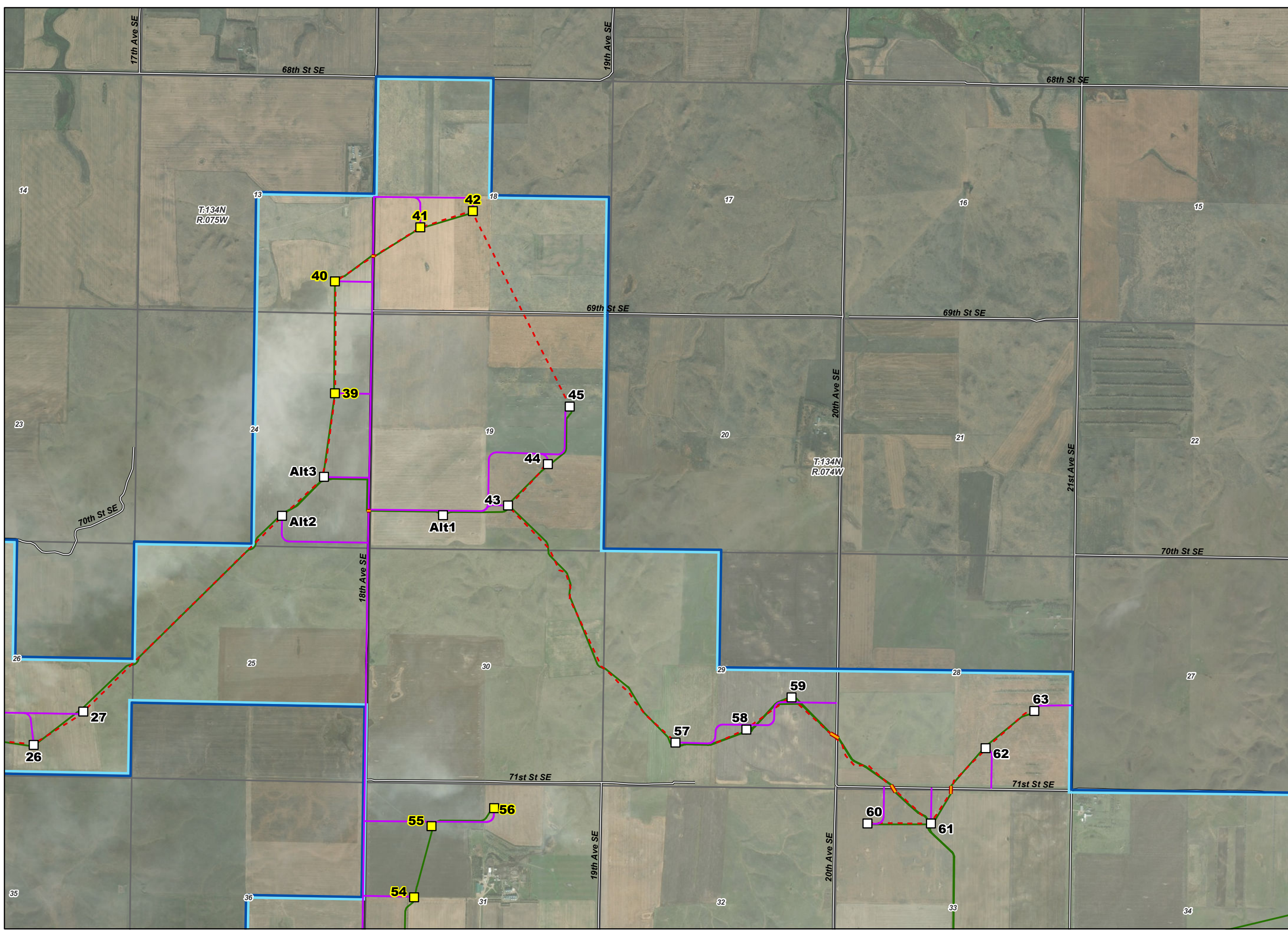
**EMMONS-LOGAN
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LEGEND

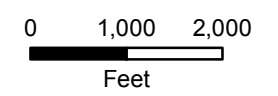
- County Boundary
- PLSS Township
- PLSS Section
- Existing Road

Project Features

- Turbines**
- GE 1.715 MW 262HH
- GE 2.72 MW 295 HH
- Service Road
- Collection Line
- Collection Line Bore Location
- Crane Path
- Emmons-Logan Wind Energy Center Project Area



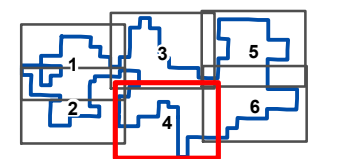
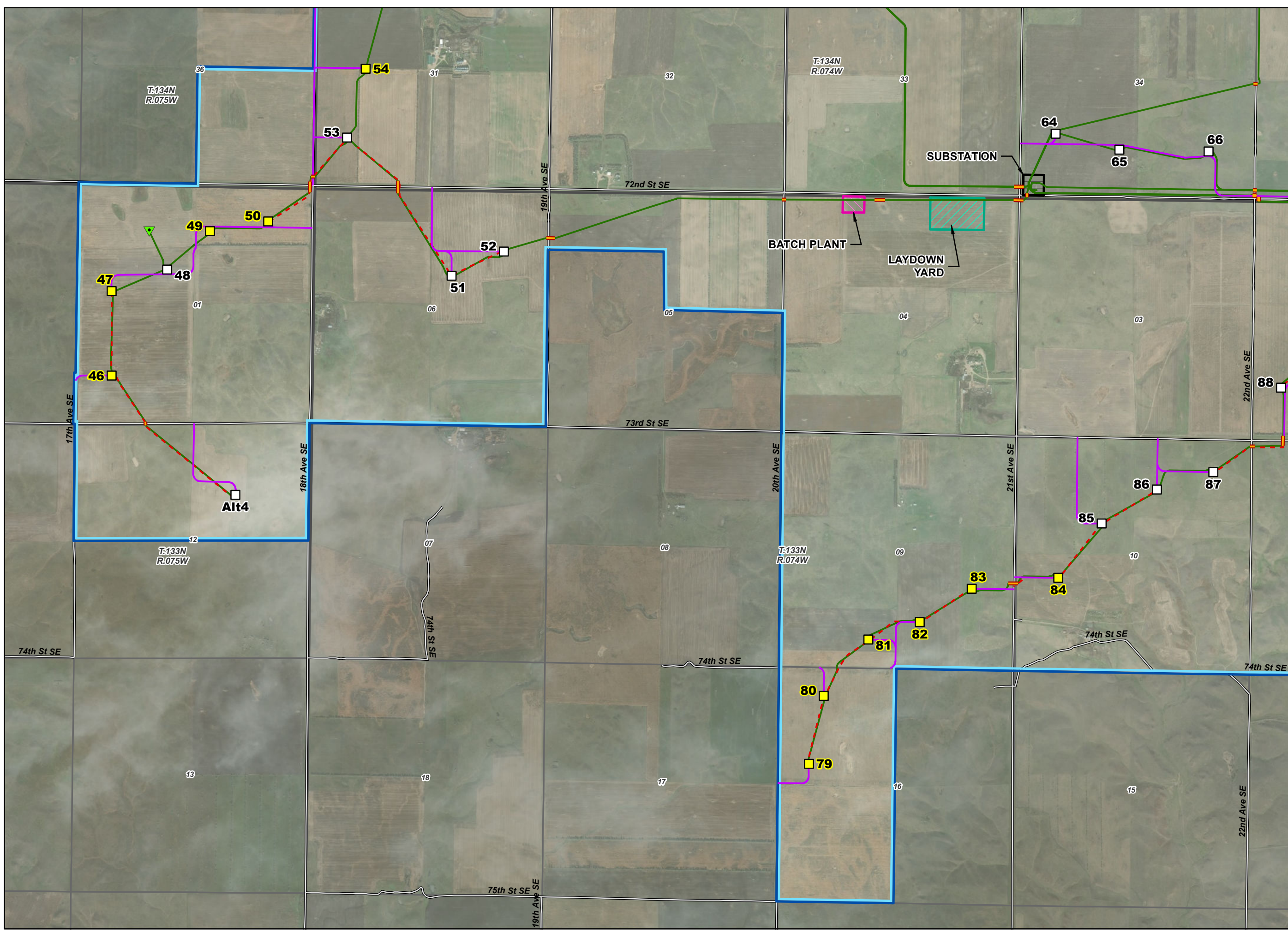
Map 3 of 6



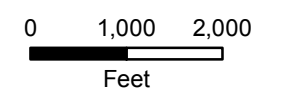
**EMMONS-LOGAN
WIND ENERGY CENTER
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LEGEND

- County Boundary
- PLSS Township
- PLSS Section
- Existing Road
- Project Features**
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- GE 1.715 MW 262HH
- GE 2.72 MW 295 HH
- Alternative Met Tower
- Service Road
- Collection Line
- Collection Line Bore Location
- Crane Path
- Emmons-Logan Wind Energy Center Project Area
- Substation
- Batch Plant
- Laydown Yard



Map 4 of 6



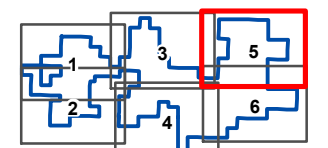
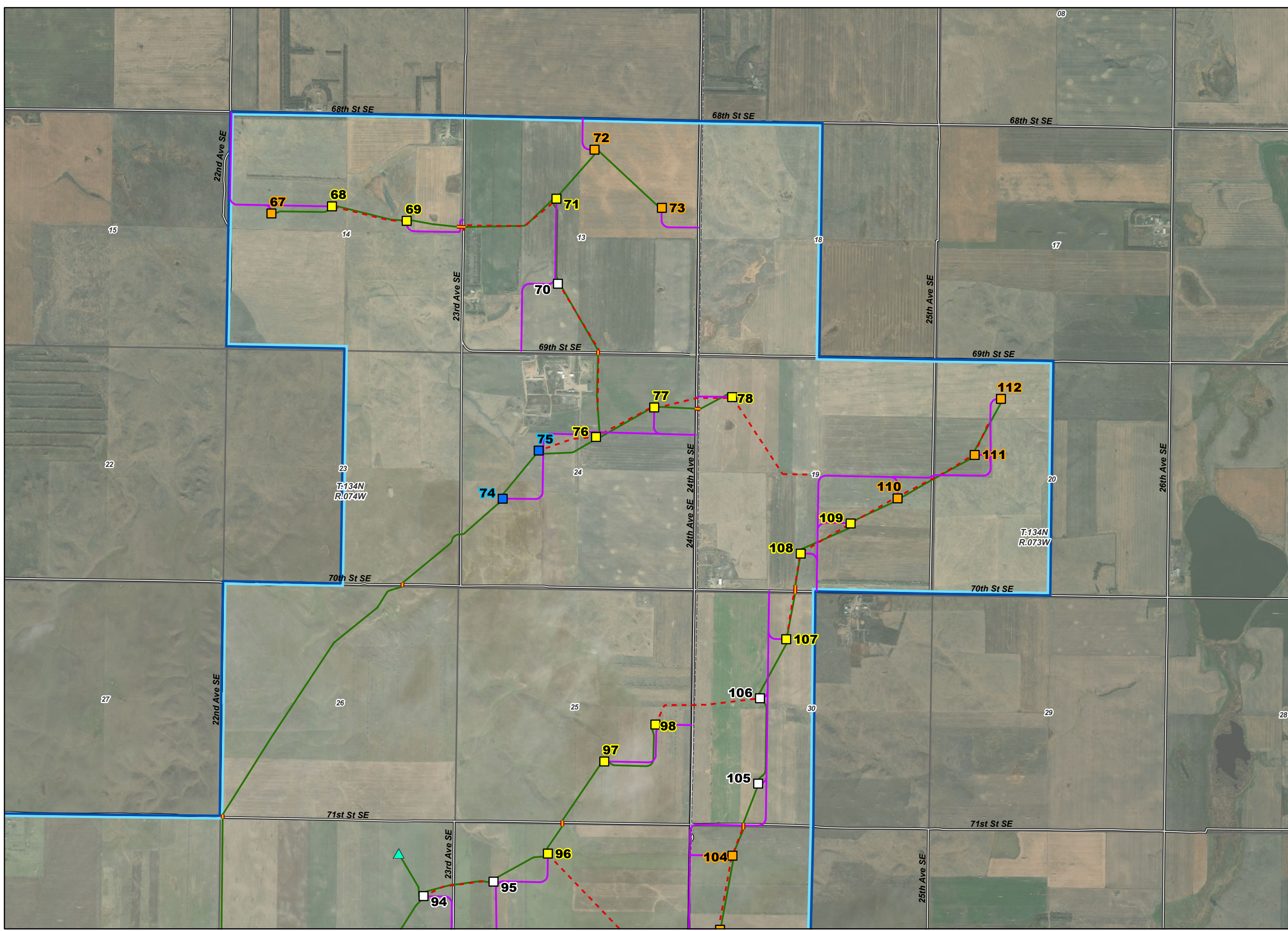
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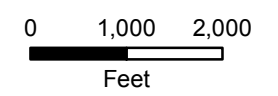
- County Boundary
- PLSS Township
- PLSS Section
- Existing Road

Project Features

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 - GE 2.72 MW 262 HH, LTNE
 - GE 2.72 MW 295 HH
 - Met Tower
 - Service Road
 - Collection Line
 - Collection Line Bore Location
 - Crane Path
 - Emmons-Logan Wind Energy Center Project Area



Map 5 of 6



**Attachment 3
Sheet 5 of 6
Modified Energy
Conversion Facility
Site Plan Map Book**



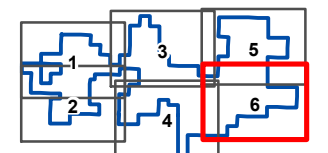
**EMMONS-LOGAN
WIND ENERGY CENTER
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LEGEND

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- PLSS Section
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Project Features

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 - GE 2.72 MW 295 HH, LTNE
 - Met Tower
 - Service Road
 - Collection Line
 - Collection Line Bore Location
 - Crane Path
 - Emmons-Logan Wind Energy Center Project Area



Map 6 of 6



Project Location

