

Basin Electric Naset to Northshore 230 kV Transmission Line Project

Topsoil Removal Inspection Report

Docket Number: PU-21-49

Prepared for North Dakota Public Service Commission



September 2021

Topsoil Removal Inspection Report

September 2021

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1 Executive Summary

The North Dakota Public Service Commission (PSC) retained Barr Engineering Co. (Barr) to complete site inspections for the construction of the Nest to Northshore 230kV Transmission project in Mountrail County, North Dakota, constructed by Basin Electric Power Cooperative (Basin). The purpose of the inspections is to ensure the project is constructed in compliance with siting laws and rules and the applicable PSC Orders for the project.

A pre-construction conference call was held for the Project on 2 September 2021. Barr attended the call and reviewed project documents to become familiar with the Project and PSC Orders for the Project. Construction involving soil disturbance began 13 September 2021. Barr was present to observe topsoil segregation by Farden Construction, Inc. (Contractor) at the onset of the Project.

During the site inspection, topsoil segregation was observed by two operators as work started on one spread at the location of the new Northshore substation north of New Town, ND. Minor subsoil disturbance was noted during topsoil removal but was immediately corrected by equipment operators. Barr observed that topsoil depth varied in places on the ROW and spoke with project managers and operators to ensure that equipment operators use care during continuing topsoil removal.

2 Background and Scope

2.1 Introduction

The Neset to Northshore 230kV Transmission is a 230-kilovolt transmission line originating at the Neset substation near White Earth, North Dakota and ending at the new Northshore substation north of New Town, North Dakota. Refer to project siting application for detailed route information.

The transmission line for the project is designed to carry 230-kilovolt electrical power to the new substation. The Project is under the jurisdiction of the North Dakota PSC, which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-20-49 on 23 June 2021, granting Certificates of Corridor Compatibility No. 222, and Route Permit No. 232 for the Project.

2.2 Regulatory Purpose and Need

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) charges the Public Service Commission with determining that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Inspections during construction ensure that such projects are built in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Orders.

2.3 Scope of Work

The North Dakota Public Service Commission retained Barr Engineering Co. to perform topsoil removal inspections of the Project. Barr's scope of work was to complete and document an on-site topsoil removal inspection at the onset of the construction phase of the project to determine that topsoil is properly removed and segregated and that the contractor demonstrated proficiency in topsoil removal and segregation in compliance with the Commission's Order. This report contains site visit observations and a summary of findings and issues that should be addressed for the Project to be considered complete and in full compliance.

3 Findings of Site Inspection

3.1 Methods

Andrew Unbehaun, Project Manager/Field Inspector for Barr visited the Project site on 13 September 2021 to witness topsoil removal and segregation at the start of construction on the Project. Jason Schuelke, chief on-site inspector for Basin, and Tyler Bosch, Field Coordinator for Basin, accompanied Barr staff on the visit. Schuelke oversees daily work by construction contractors to ensure the work is being completed according to applicable codes and approved work plans and procedures.

The site was visually inspected by driving to the equipment staging area then walking the portion of the Project right-of-way (ROW) that was to be cleared first. Farden Construction, Inc. (Farden) is the contractor performing soil removal, grading, and soil replacement for Basin. Contractor equipment operators were observed during topsoil removal to check that topsoil was properly removed and segregated during the start of the construction process. Digital photographs were taken at observation points showing typical soil removal or potential problem areas. Geographic coordinates were recorded at observation points using a handheld Global Navigation Satellite System (GLONASS) device (iPhone 8; <5m accuracy; WGS84 datum).

3.2 On-Site Inspection Observations

Mr. Unbehaun met with Mr. Schuelke and Mr. Bosch at the location of the new Northshore station. Once access points had been established, equipment operators for Farden began stripping topsoil from the substation construction area starting in the northwest corner of the substation location. Operators were observed to maintain close surveillance of topsoil depth and changes as topsoil was scraped by two dual-engine soil scrapers. The operators removed topsoil in small lifts until topsoil depth as identified. Topsoil depth was mostly consistent in the areas cleared during the inspection with scrapers occasionally disturbing minor amounts of subsoil during scraping. The subsoil disturbance was immediately identified by the operators and topsoil removal depth was adjusted to prevent further subsoil inclusion in topsoil removal. Removed topsoil was stockpiled on the southeast corner of the substation location during initial removal. See Appendix A, Observation Maps 1-13 for photographs and locations of topsoil removal.

The contractors demonstrated proficiency in removing and segregating topsoil at the start of Project construction. Basin inspectors appeared to have a strong relationship with the contractor and were involved in ensuring soil was segregated and stored properly. Work areas visited during the inspection were kept free of debris and waste, and movement of vehicles was kept within project boundaries.

4 Issues to Resolve and Recommendations

Issues	Recommendations
Minor disturbance of subsoil during topsoil removal	Continue to monitor topsoil depth during scraping and adjust scraper depth accordingly to avoid including subsoil in the topsoil removal.

5 Signatures

The services performed by Barr staff for this project have been conducted in a manner consistent with the technical skill and degree of care exercised by professionals currently practicing in this discipline under similar time and budget constraints. Findings and recommendations represent our professional judgement and are based on available information and accepted practices. No warranty is implied or expressed beyond this.



Andrew Unbehau, Project Manager

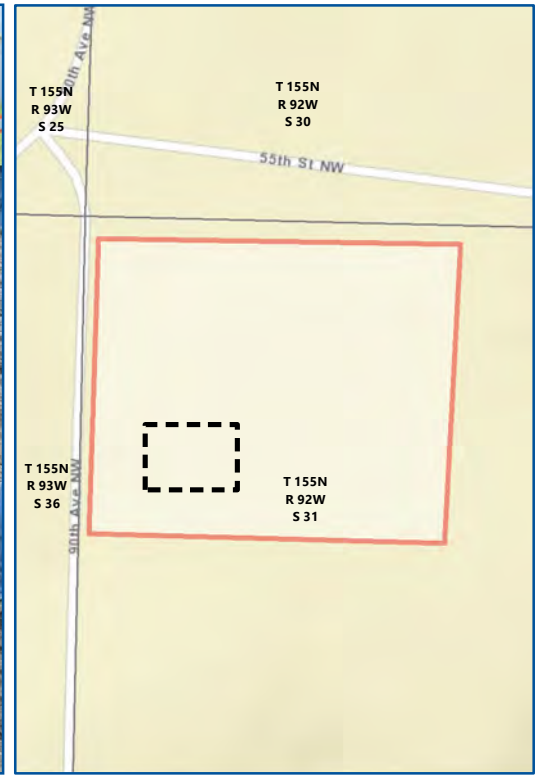
September 28, 2021

Date

Appendices

Appendix A

Photo Log and Observation Maps



Map 1 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota

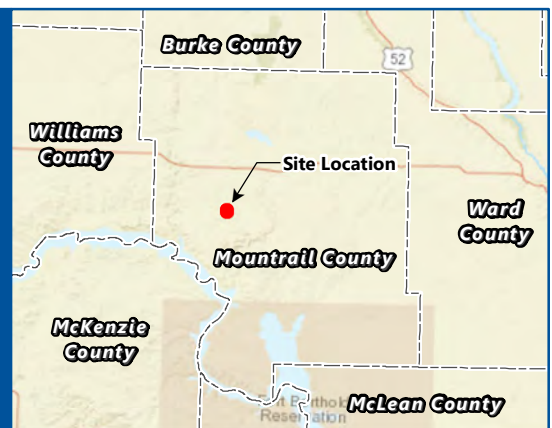
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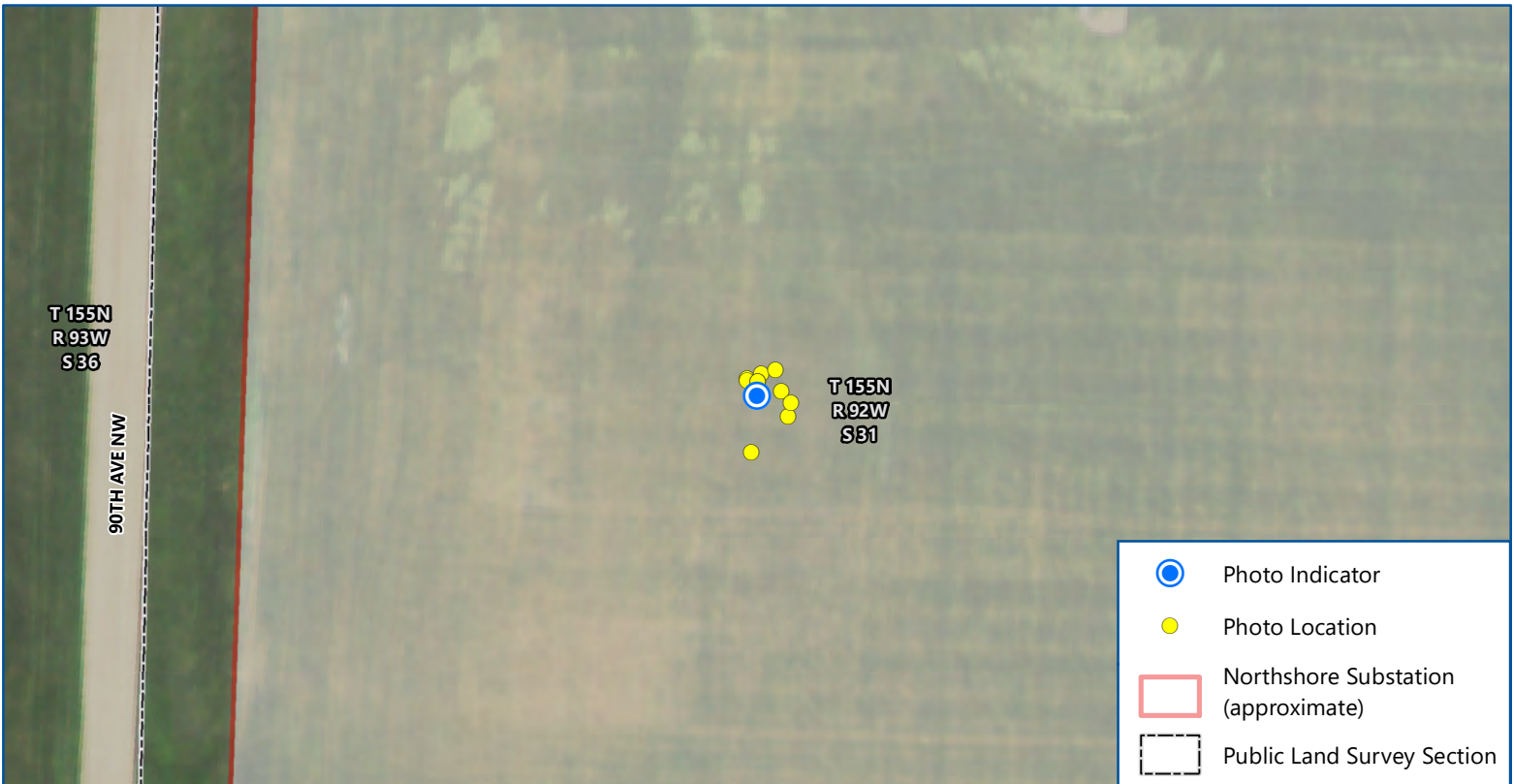
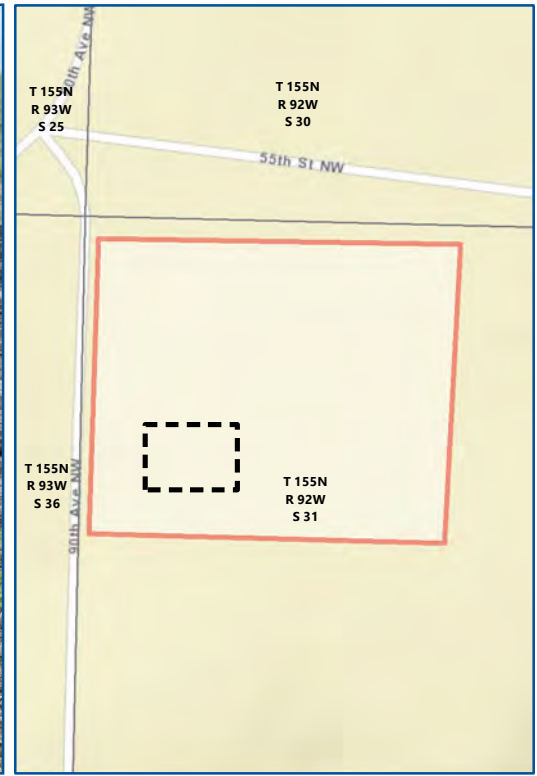
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 Coordinates are in the WGS84 datum.





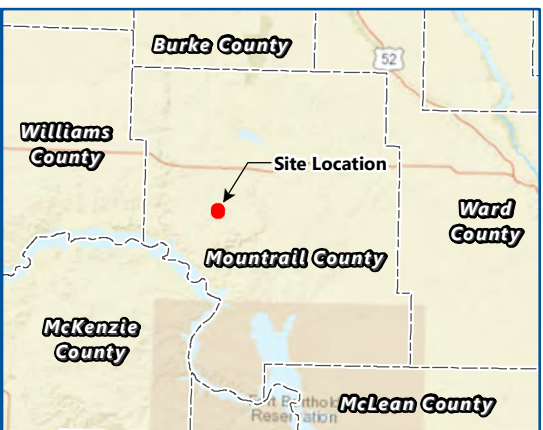
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-  Photo Location
-  Northshore Substation (approximate)
-  Public Land Survey Section

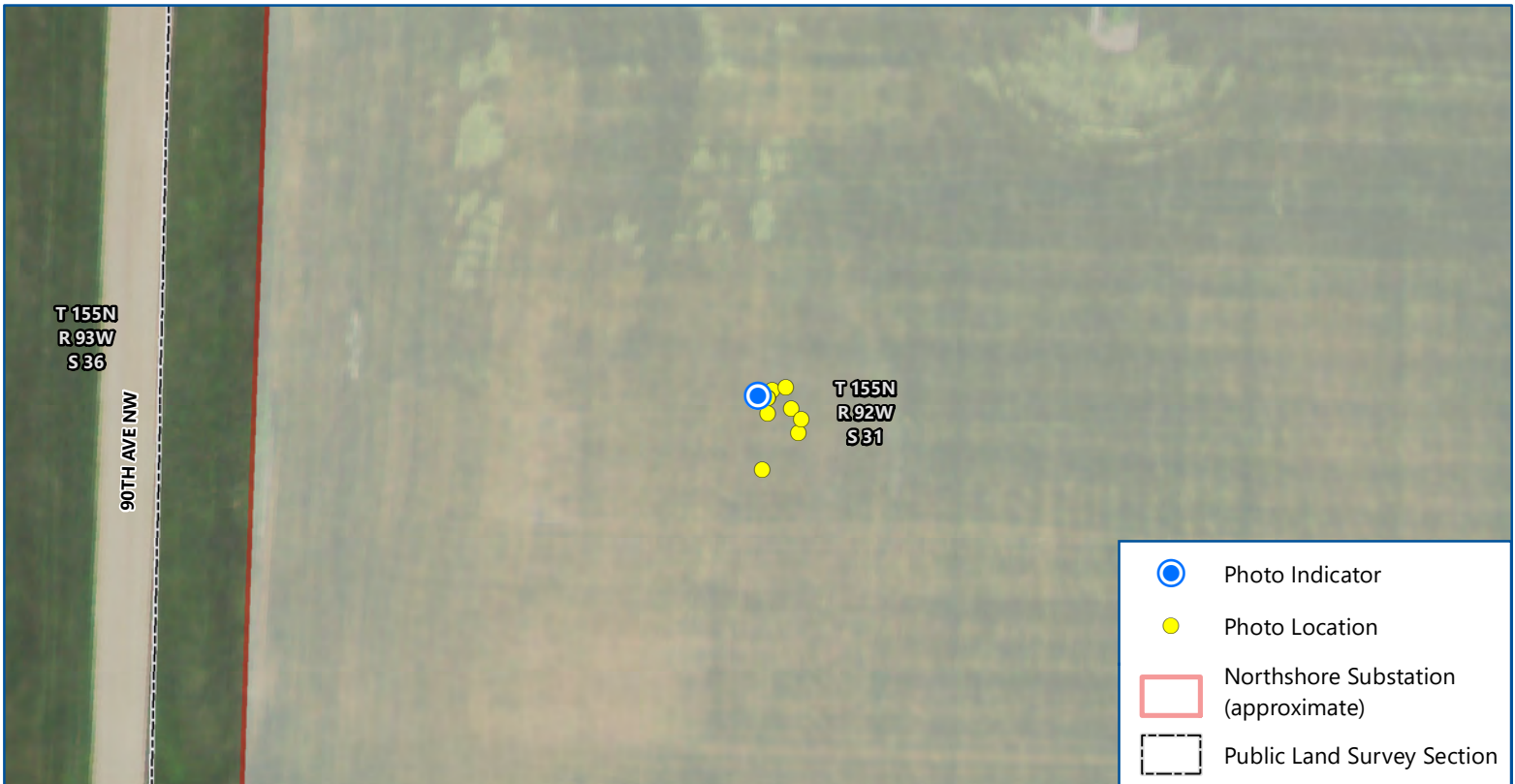
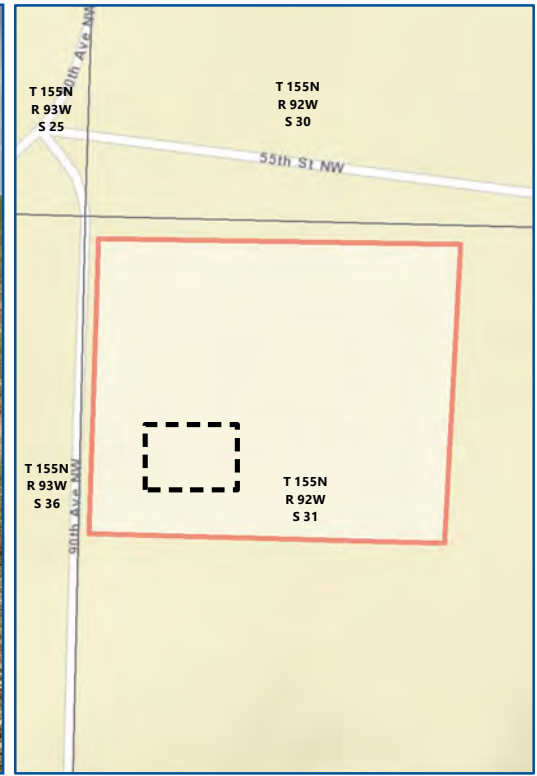
Map 2 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota


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 Imagery: USDA FSA (2020)


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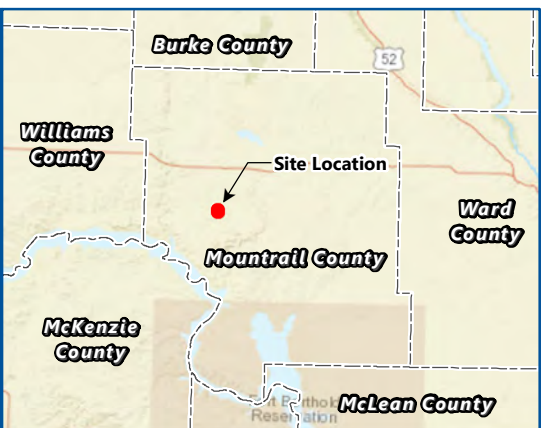


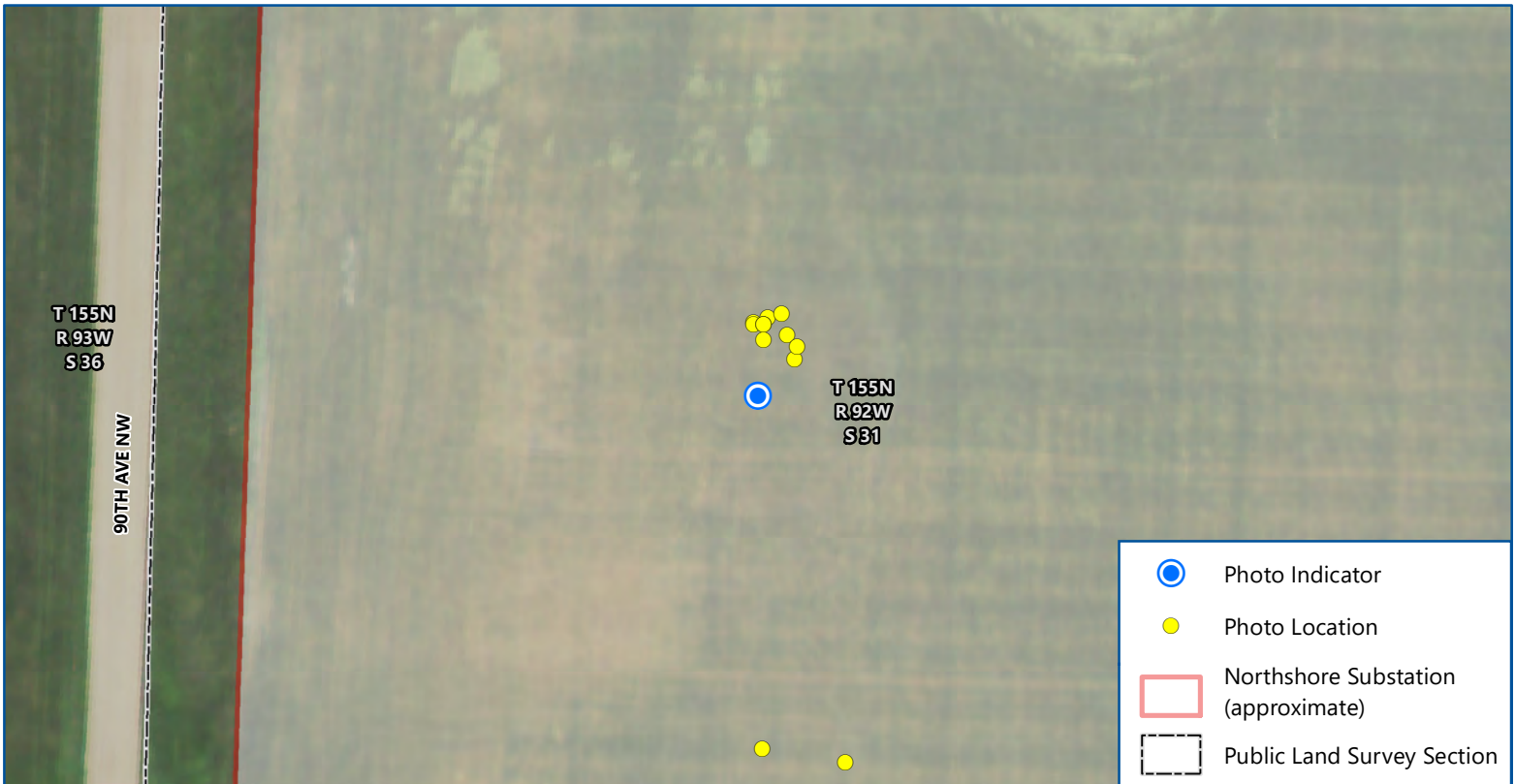
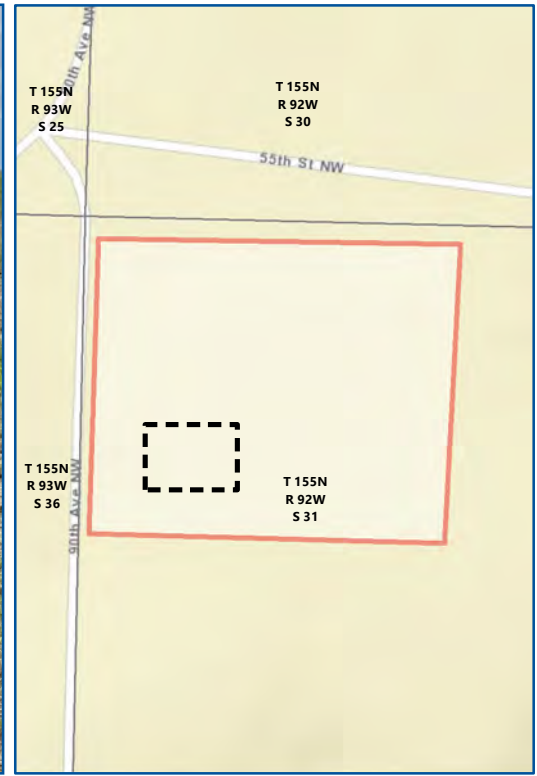






Map 3 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota


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 Imagery: USDA FSA (2020)


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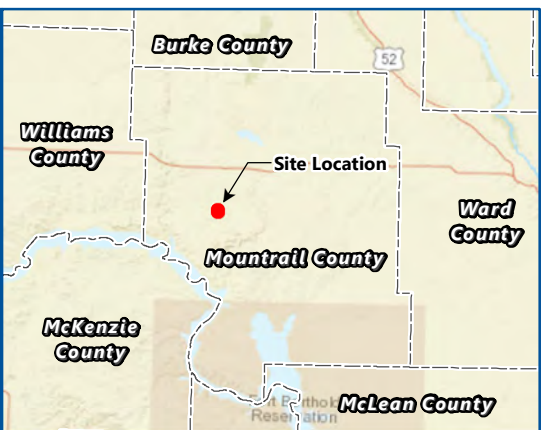
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-  Photo Location
-  Northshore Substation (approximate)
-  Public Land Survey Section

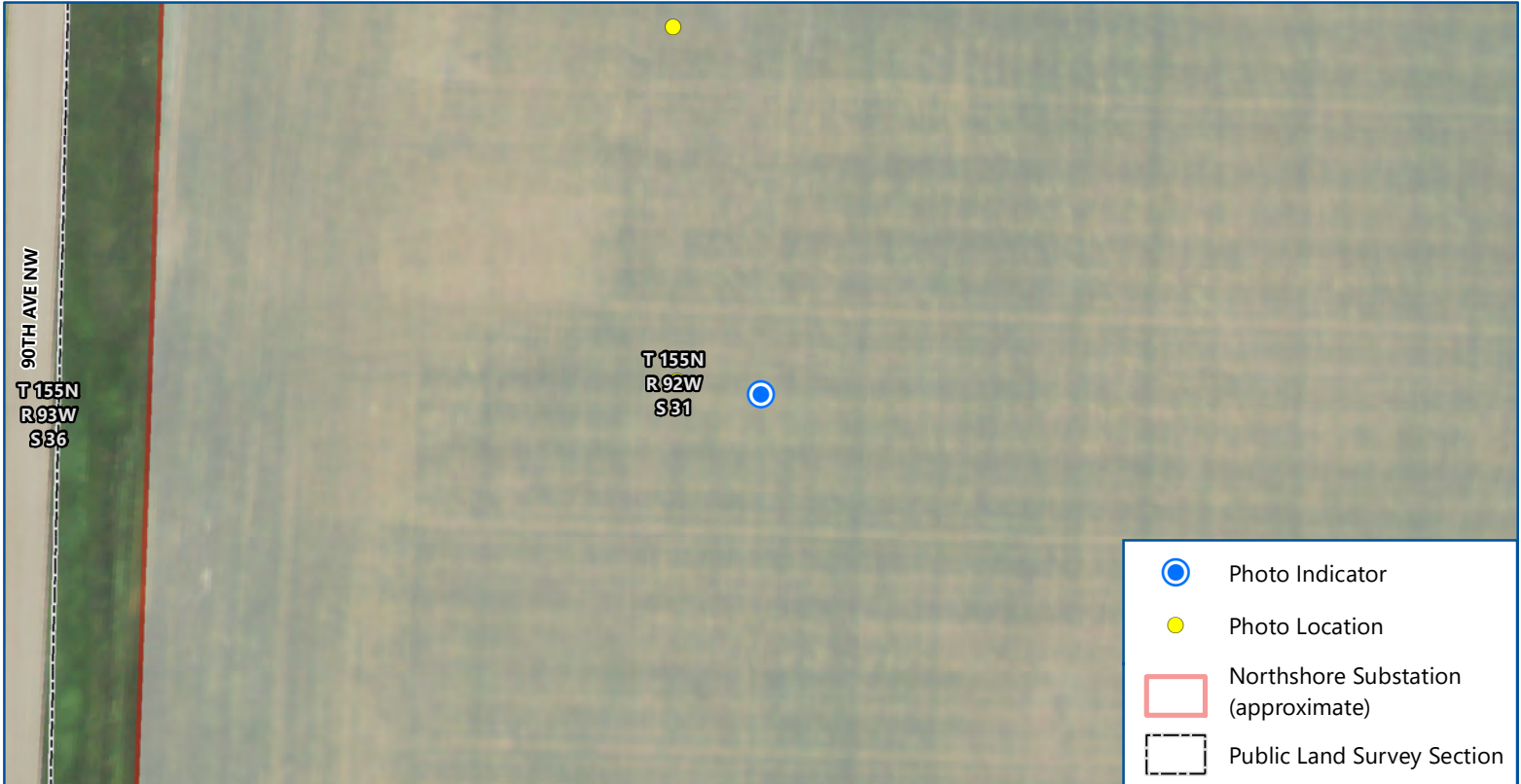
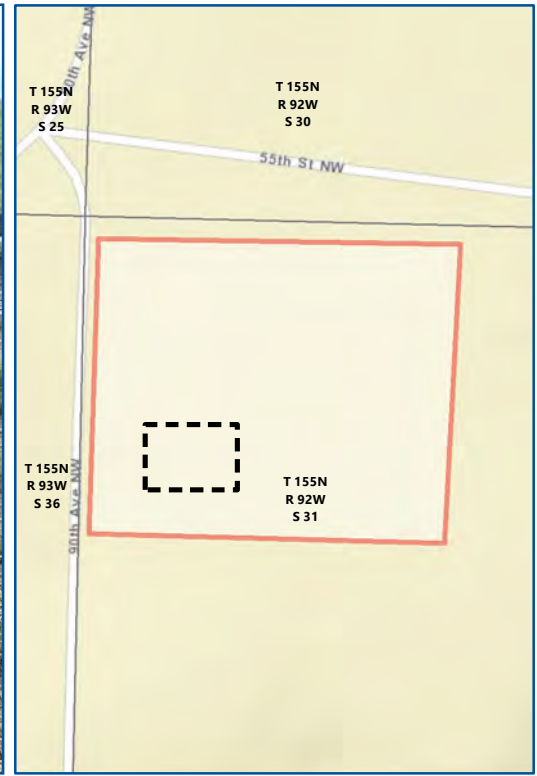
Map 4 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota


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 Imagery: USDA FSA (2020)


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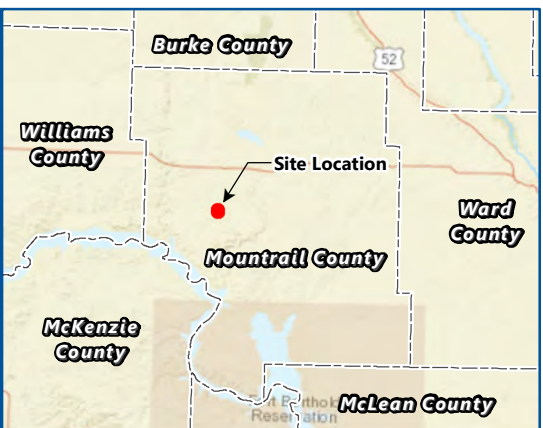


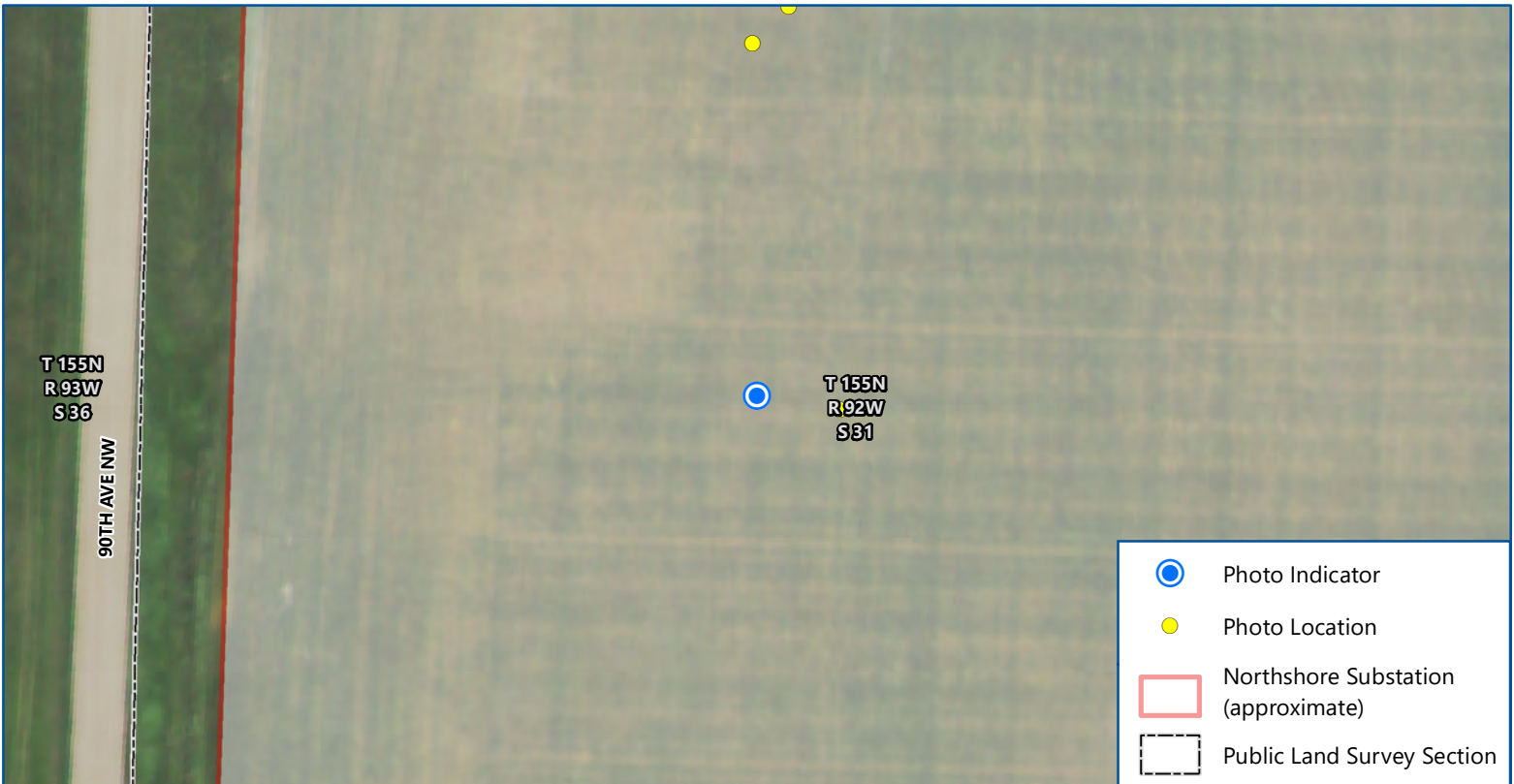
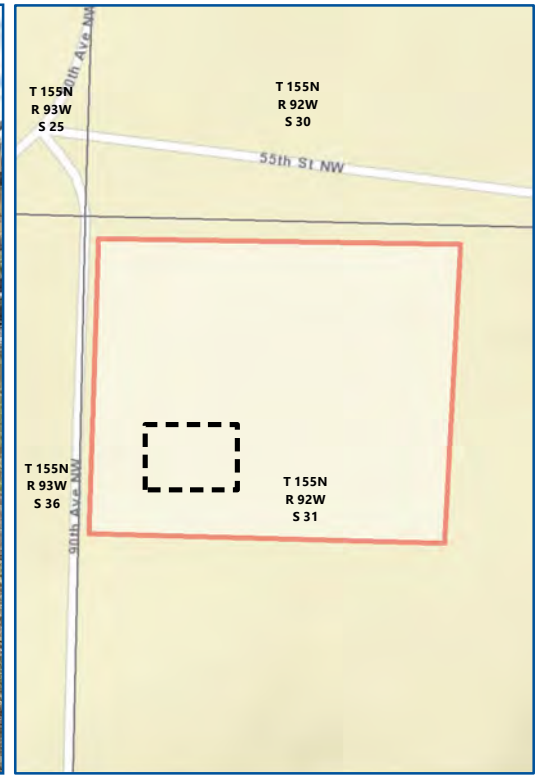





Map 5 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota


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 Imagery: USDA FSA (2020)


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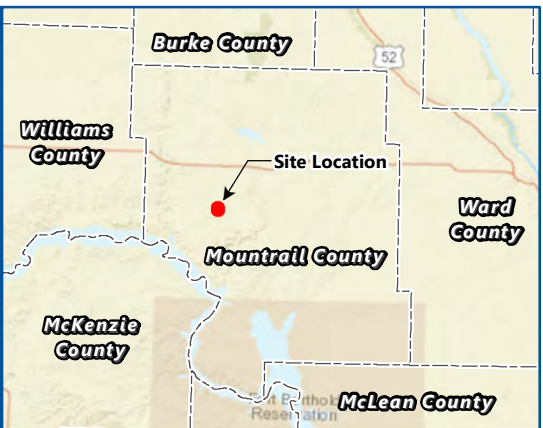
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-  Northshore Substation (approximate)
-  Public Land Survey Section

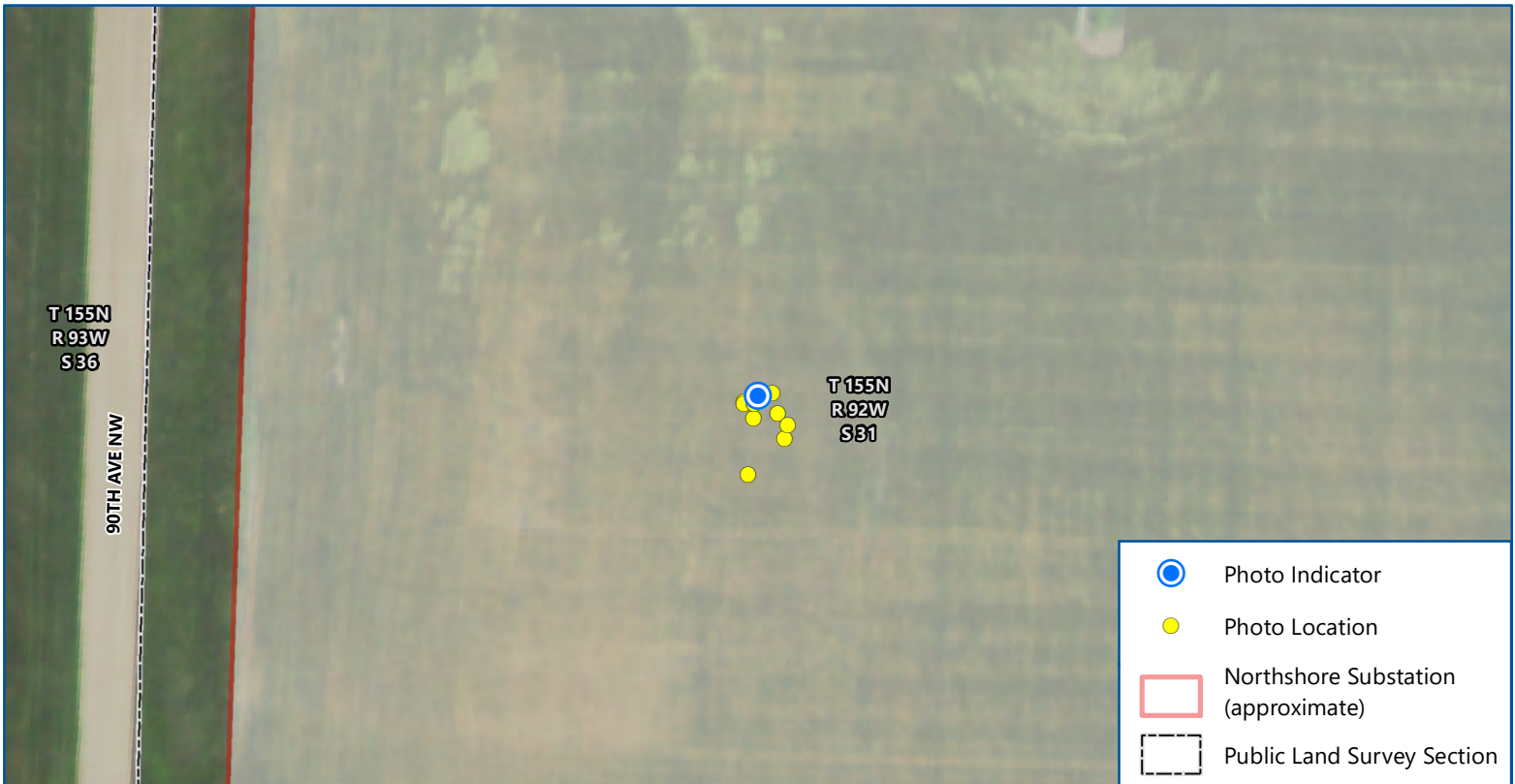
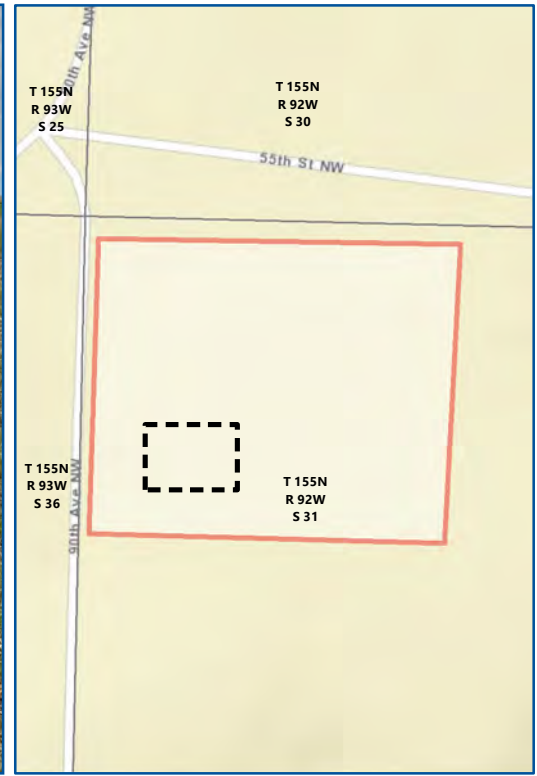
Map 6 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota


 0 100
 Feet
 Imagery: USDA FSA (2020)

Date: 9/13/2021
 Photo Direction: East
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 Coordinates are in the WGS84 datum.





Map 7 of 13

BASIN ELECTRIC

230KV TRANSMISSION LINE

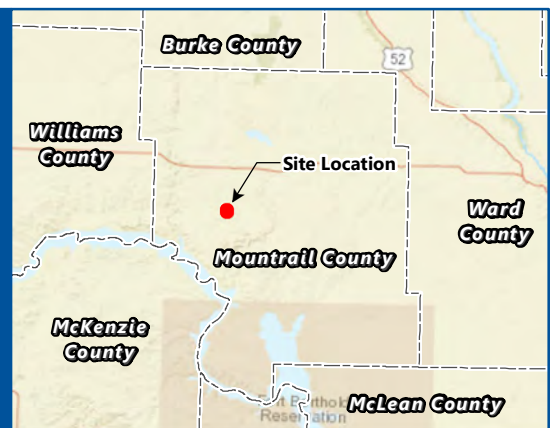
North Dakota Public Service Commission
Mountrail County, North Dakota

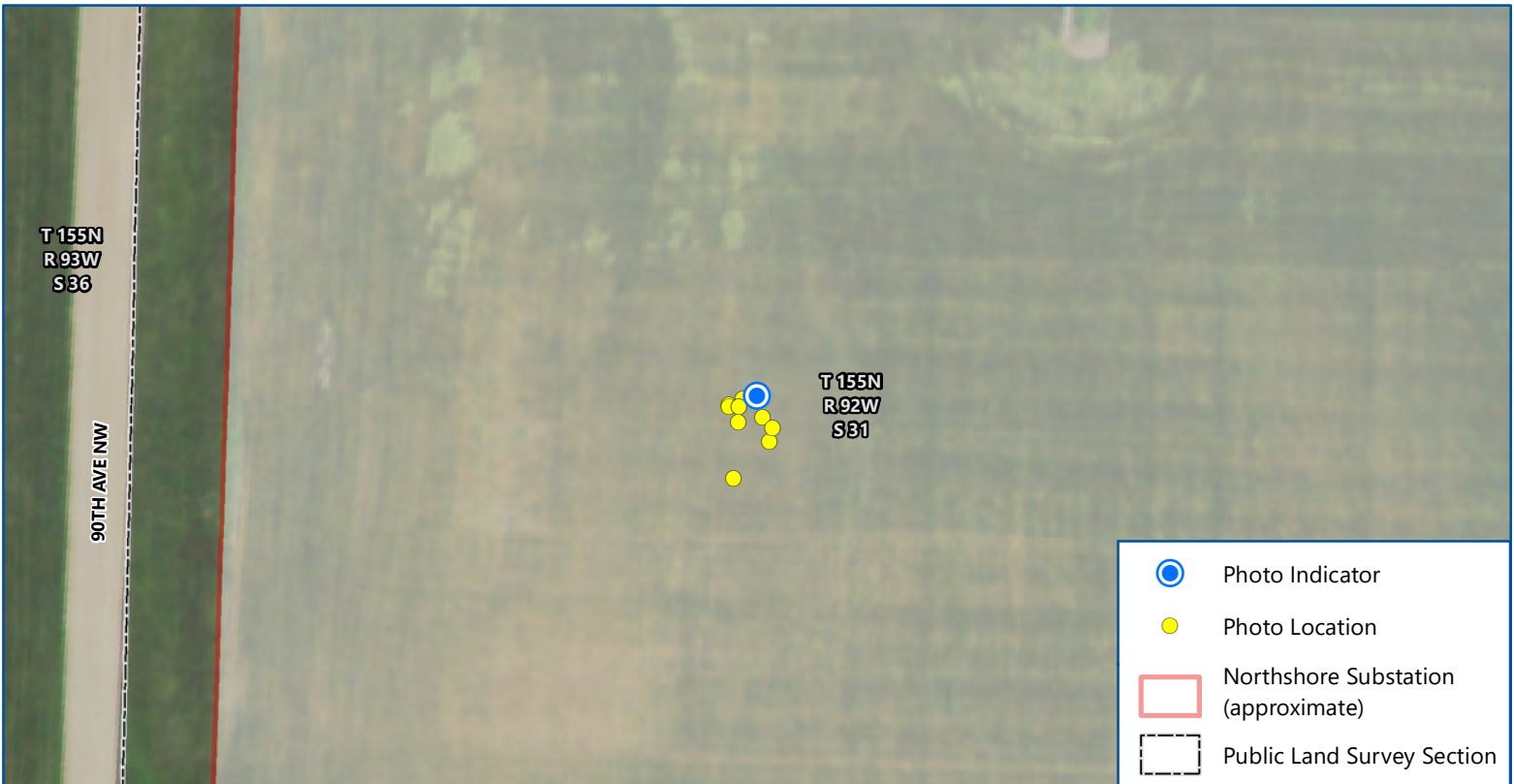
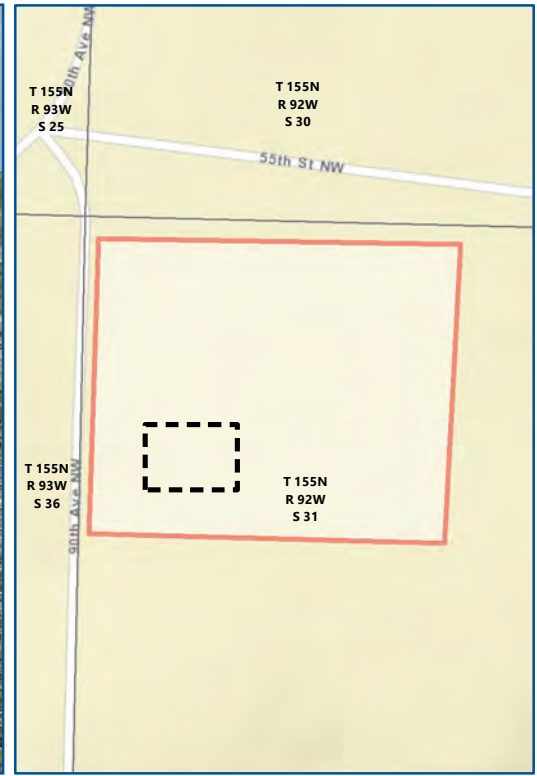
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Imagery: USDA FSA (2020)

Date: 9/13/2021
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 Coordinates are in the WGS84 datum.





Map 8 of 13

BASIN ELECTRIC

230KV TRANSMISSION LINE

North Dakota Public Service Commission

Mountrail County, North Dakota

0 100
Feet

Imagery: USDA FSA (2020)

Date: 9/13/2021

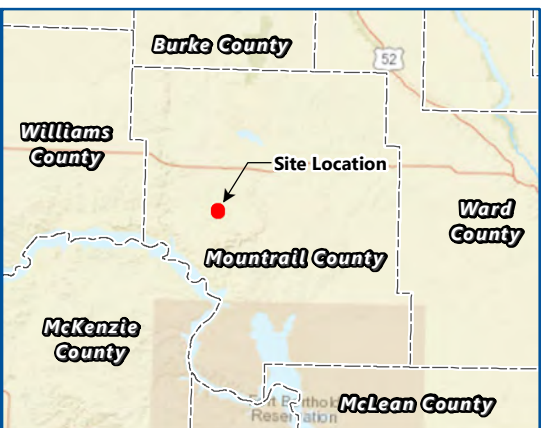
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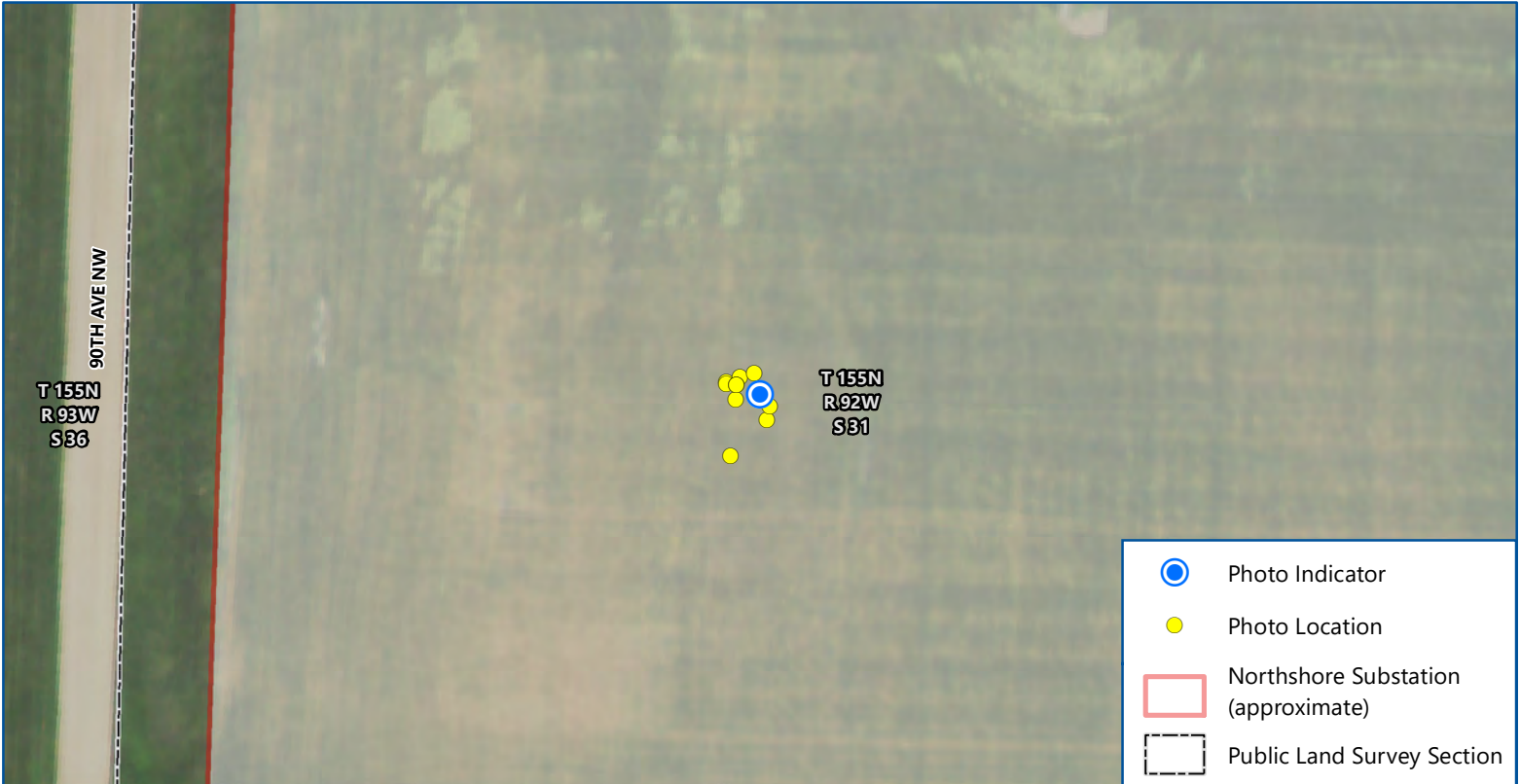
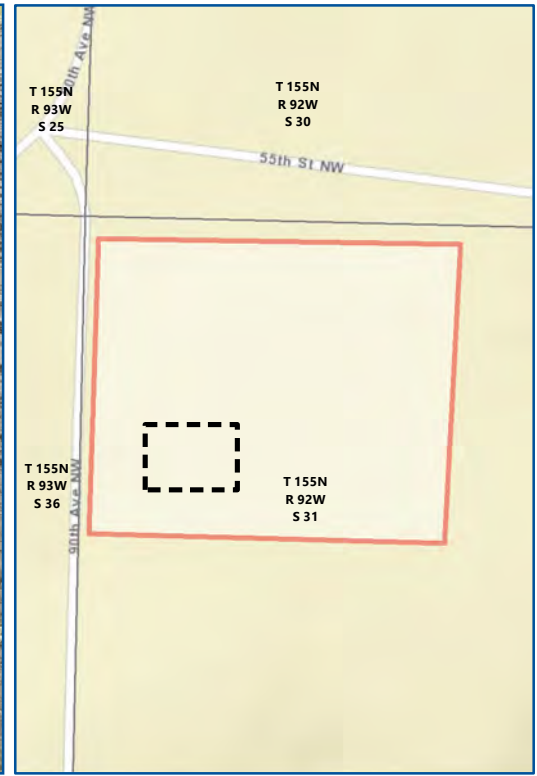
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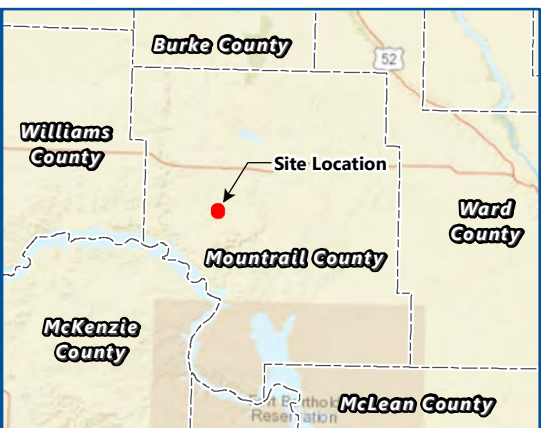
Map 9 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota

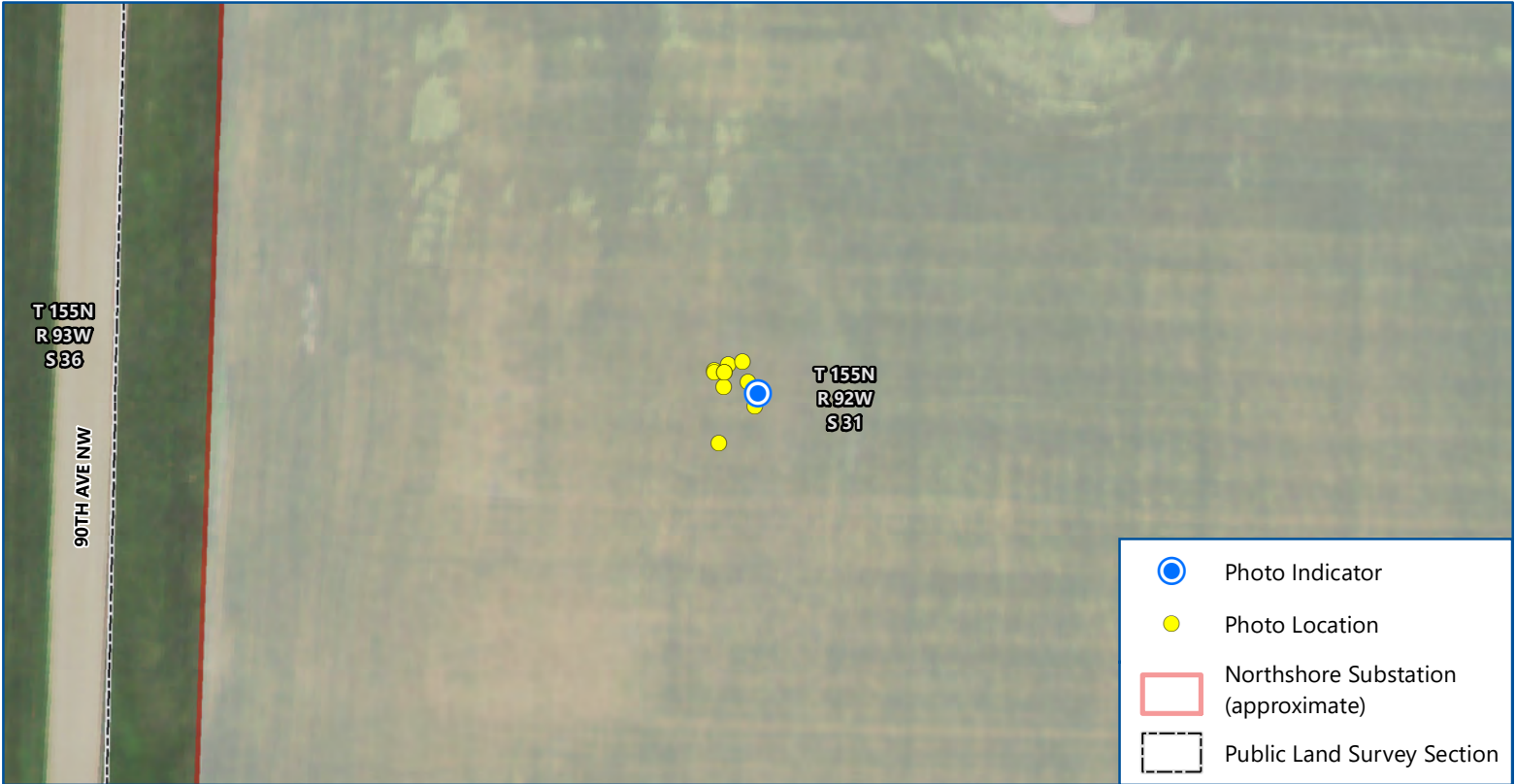
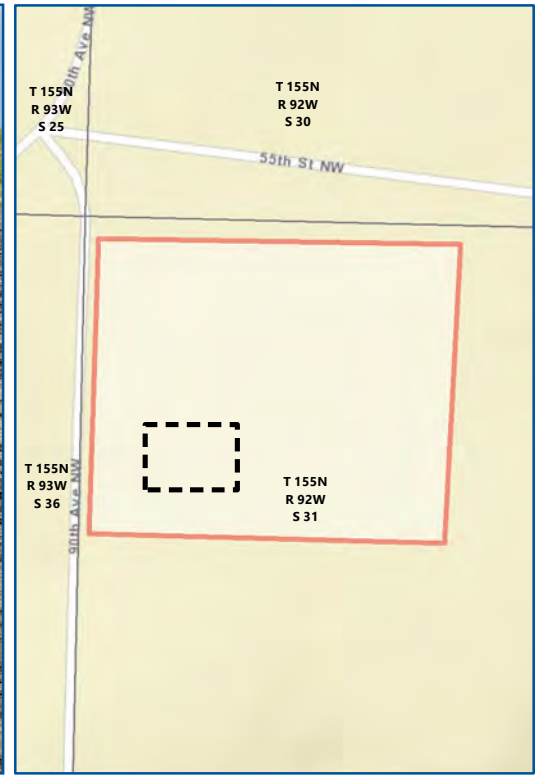
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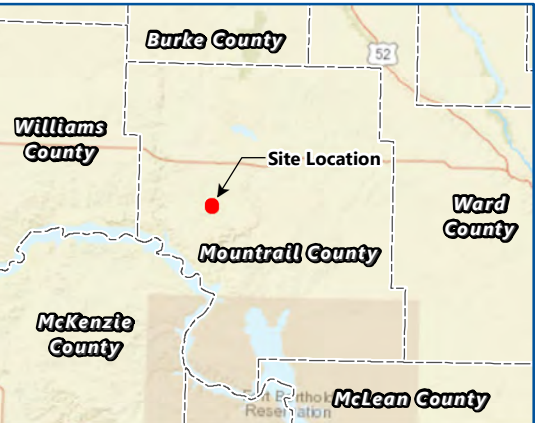
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-  Public Land Survey Section

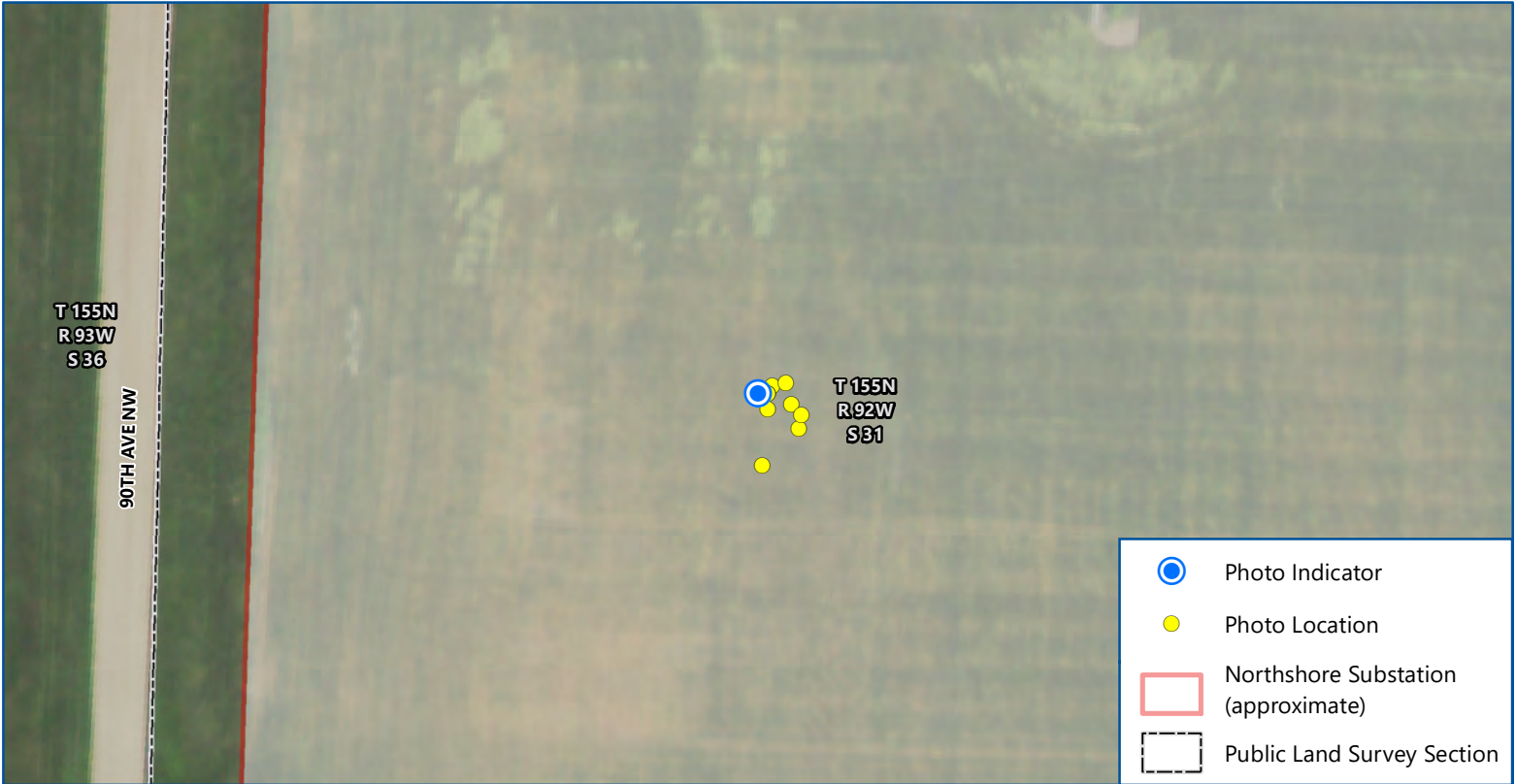
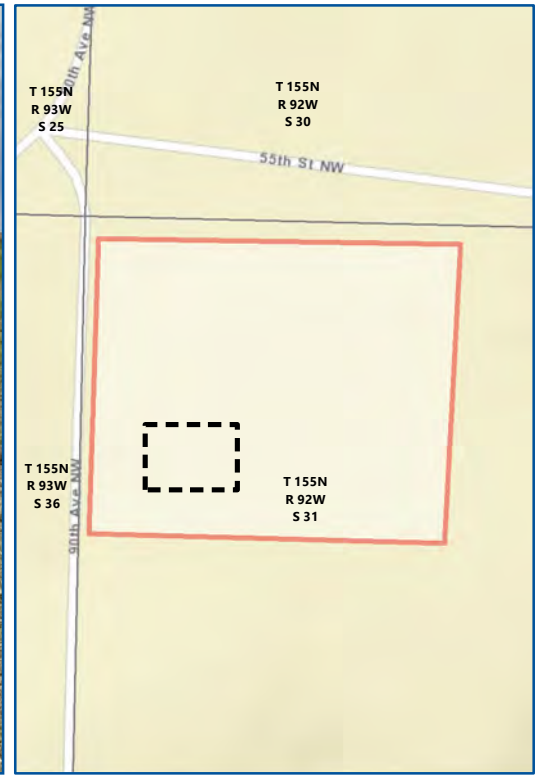
Map 10 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota






 0 100
 Feet
 Imagery: USDA FSA (2020)

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Coordinates are in the WGS84 datum.





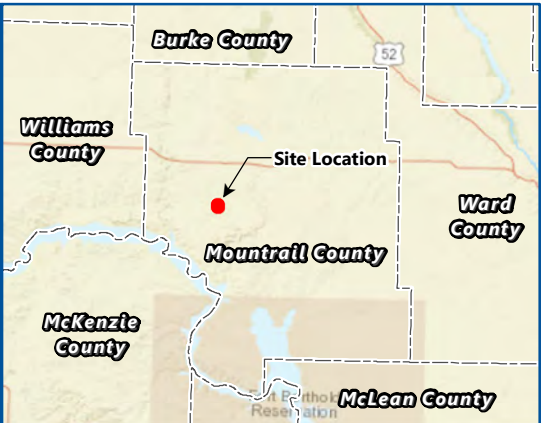
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-  Northshore Substation (approximate)
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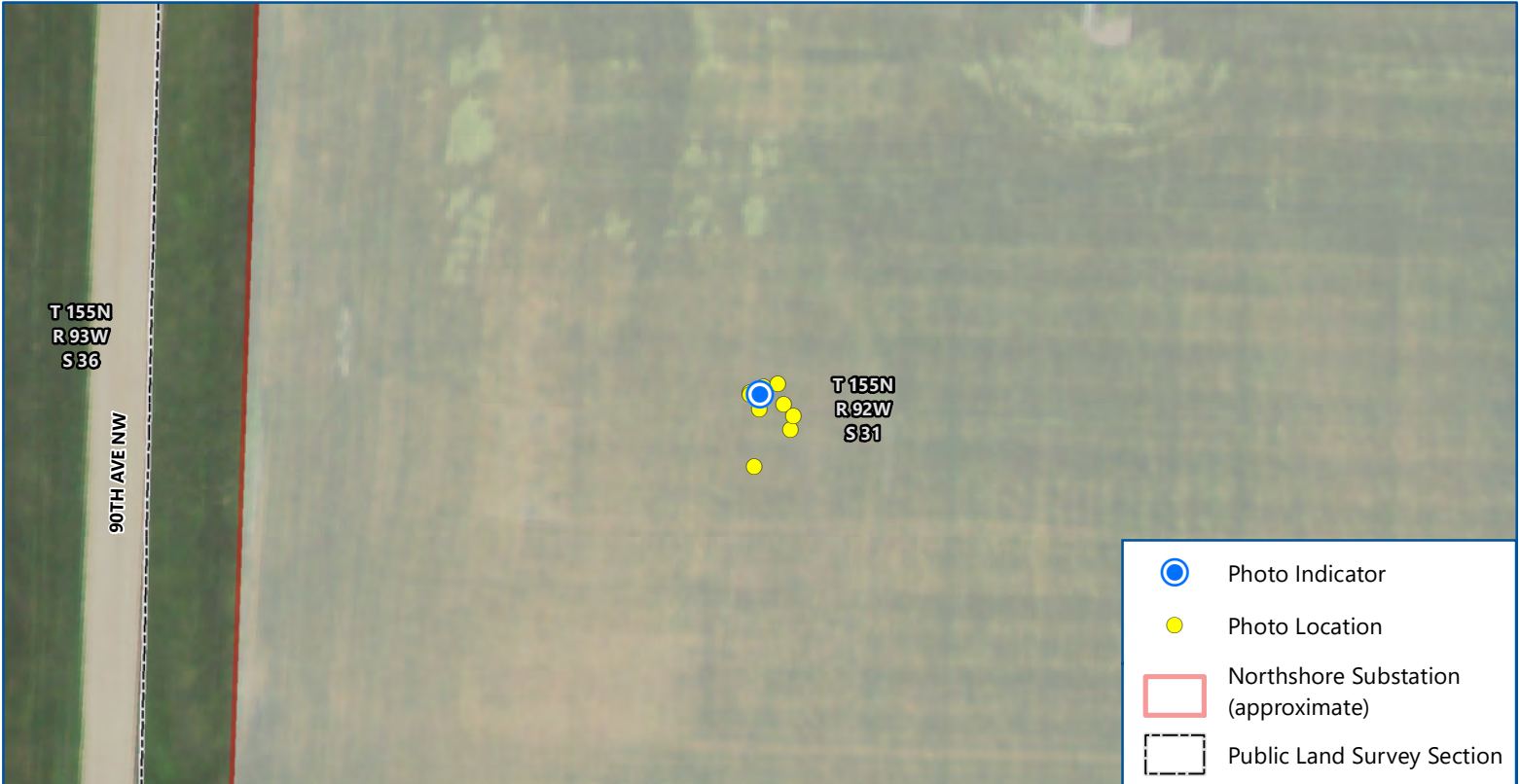
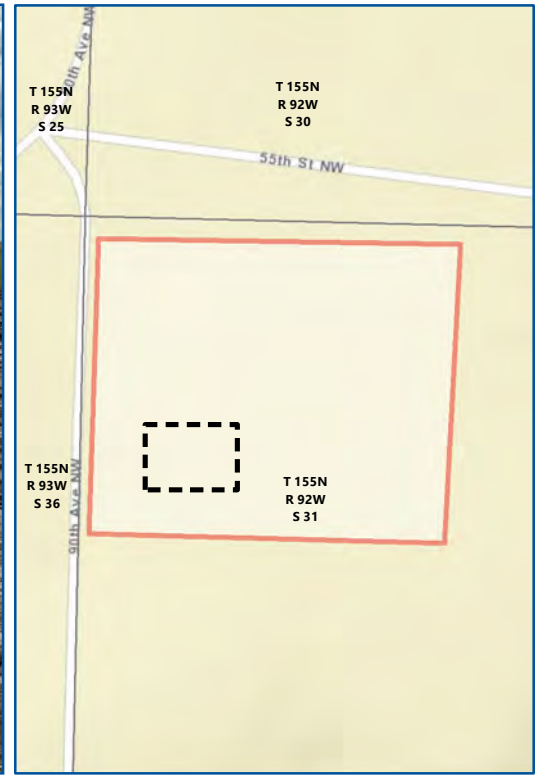
Map 11 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota


 0 100
 Feet
 Imagery: USDA FSA (2020)


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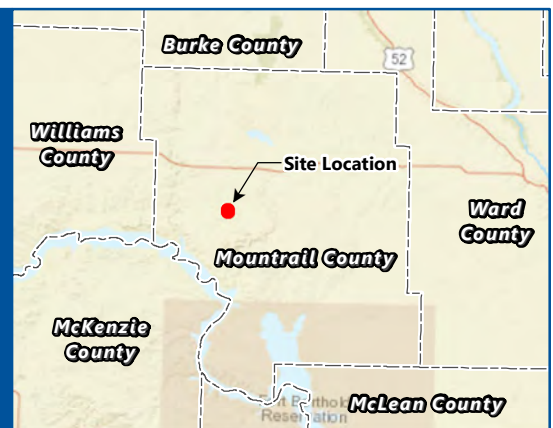


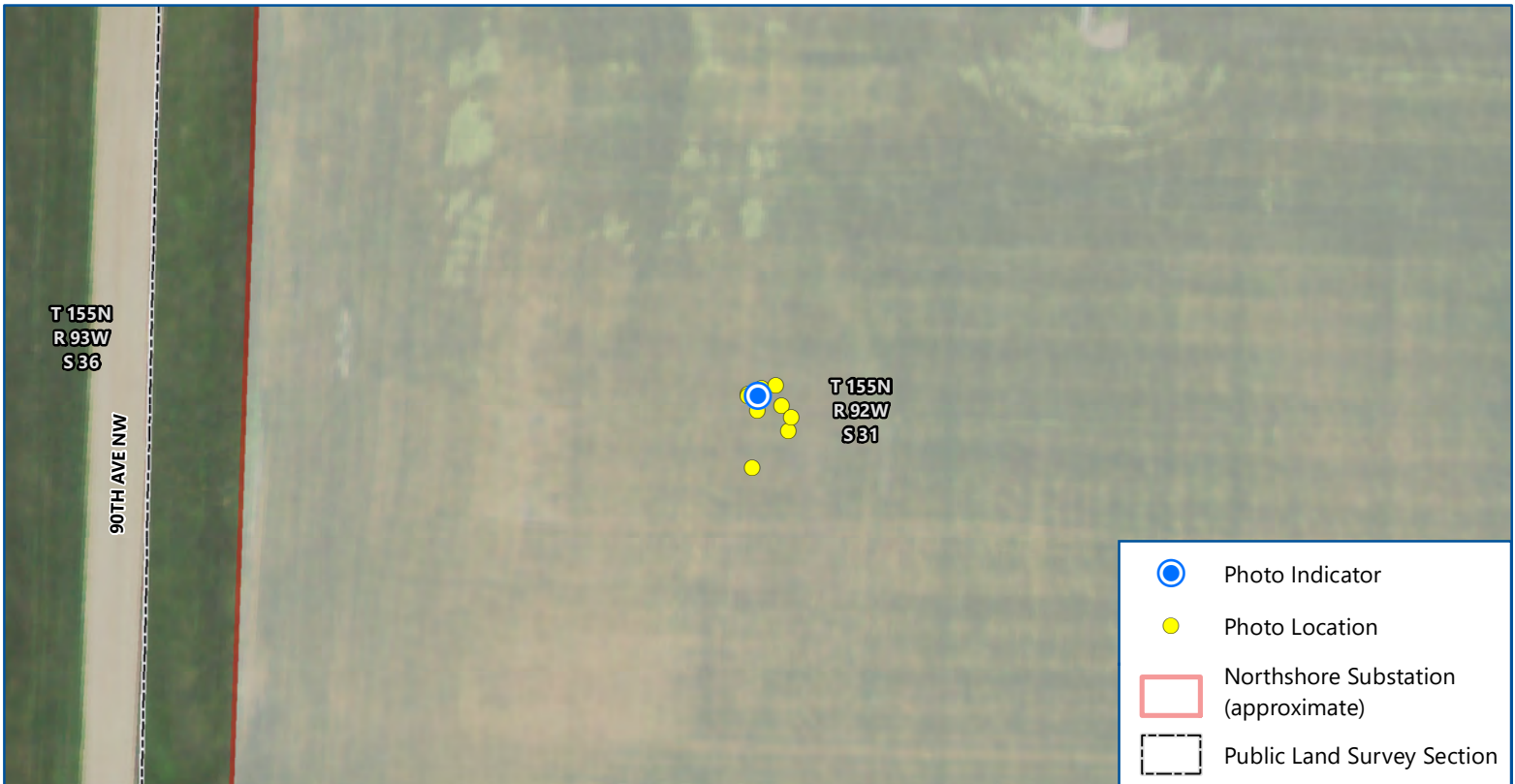
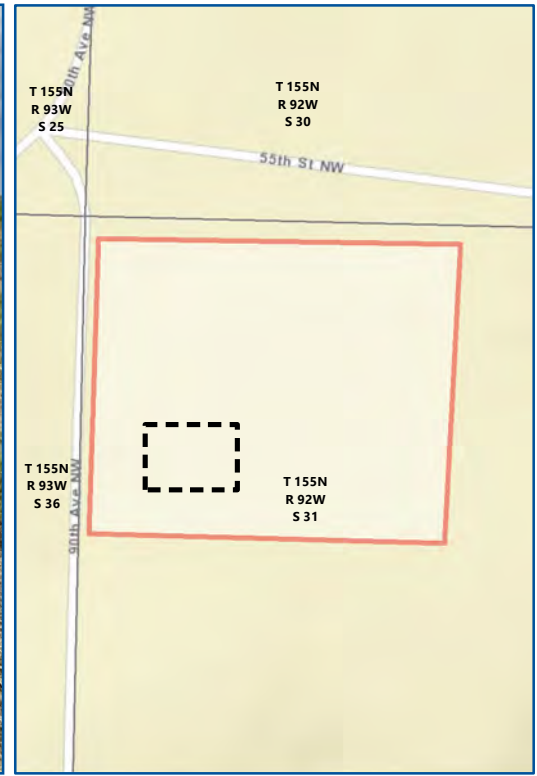
Map 12 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota


 0 100
 Feet


Imagery: USDA FSA (2020)

Date: 9/13/2021
 Photo Direction: East
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 Coordinates are in the WGS84 datum.





Map 13 of 13
BASIN ELECTRIC
230KV TRANSMISSION LINE
 North Dakota Public Service Commission
 Mountrail County, North Dakota


 0 100
 Feet
 Imagery: USDA FSA (2020)

Date: 9/13/2021
 Photo Direction: South
 Comment:

Latitude: 48.210453
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 Coordinates are in the WGS84 datum.

