

# **Dakota Carbon Pipeline Project**

## ***Topsoil Removal Inspection Report***

***Docket Number: PU-21-150***

Prepared for North Dakota Public Service Commission



October 2021

# Topsoil Removal Inspection Report

October 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 Dakota Carbon Pipeline project in Mercer County, North Dakota, constructed by the Dakota Gasification Company. (DGC). 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 30 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 15 October 2021. Barr was to present to observe topsoil segregation by Willow Creek Companies (Contractor) at the onset of the Project.

During the site inspection, topsoil segregation was observed by multiple operators as work started on one spread near west of Antelope Valley Station near Beulah, ND. Minor subsoil disturbance was noted during topsoil removal but was immediately corrected by spotters and equipment operators. Barr observed that topsoil depth varied in places on the ROW and spoke with project managers and operators to ensure that spotters and equipment operators use care during continuing topsoil removal.

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## 2 Background and Scope

### 2.1 Introduction

The Dakota Carbon Pipeline will be a 12-inch pipeline originating at the Great Plains Synfuels plant located near Beulah, North Dakota with 6-inch lateral lines that will carry carbon dioxide (CO<sub>2</sub>) to third-party entities to facilitate the geologic storage or sequestration of the CO<sub>2</sub>.

The pipe for the Project is designed to carry up to 200 million standard cubic feet per day of CO<sub>2</sub>. The maximum allowable operating pressure for the pipeline will be 2,700 pounds per square inch gauge (psig), at a design temperature of 120 degrees Fahrenheit. 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-21-150 on 28 July 2021, granting Certificates of Corridor Compatibility No. 223, and Route Permit No. 233 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.

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## 3 Findings of Site Inspection

### 3.1 Methods

Andrew Unbehaun, Project Manager/Field Inspector for Barr visited the Project site on 15 October 2021 to witness topsoil removal and segregation at the start of construction on the Project. Danny Esparza, superintendent for Willow Creek, accompanied Barr staff on the visit. Esparza oversees daily work by construction contractors to ensure the work is being completed according 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. Willow Creek Companies is the contractor constructing the pipeline for DGC. Contractor equipment operators and spotters 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 foreman Danny Esparza at the DGC contractor parking area. Mr. Esparza and Mr. Unbehaun then proceeded to the Project construction area. Once access points had been established, equipment operators for Willow Creek began stripping topsoil from the area west of ND Highway 15 . Operators and spotters were observed to maintain close surveillance of topsoil depth and changes as topsoil was scraped by two bulldozers and one excavator. The operators slowly scraped topsoil to identify topsoil depth. Topsoil depth varied in the observed area, and in some locations, small amounts of subsoil were disturbed during topsoil removal. The subsoil disturbance was immediately identified by the operators and spotters and topsoil removal depth was adjusted to prevent further subsoil inclusion in topsoil removal. Removed topsoil was stockpiled on the north side of the Right of Way during initial removal. Observations were made that wetlands and other environmentally sensitive areas were clearly marked and topsoil removal stopped at the markers to mitigate against impacts from construction. See Appendix A, Observation Maps 1-5 for photographs and descriptions of topsoil removal.

The contractors demonstrated proficiency in removing and segregating topsoil at the start of Project construction. Work areas visited during the inspection were kept free of debris and waste, and movement of vehicles was kept within ROW boundaries.

## 4 Issues to Resolve and Recommendations

Issues	Recommendations
<b>Minor disturbance of subsoil during topsoil removal</b>	Continue to utilize spotters and ensure operators are focusing on maintaining equipment blades at topsoil depth as removal continues.

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## 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.



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Andrew Unbehau, Project Manager

October 29th, 2021

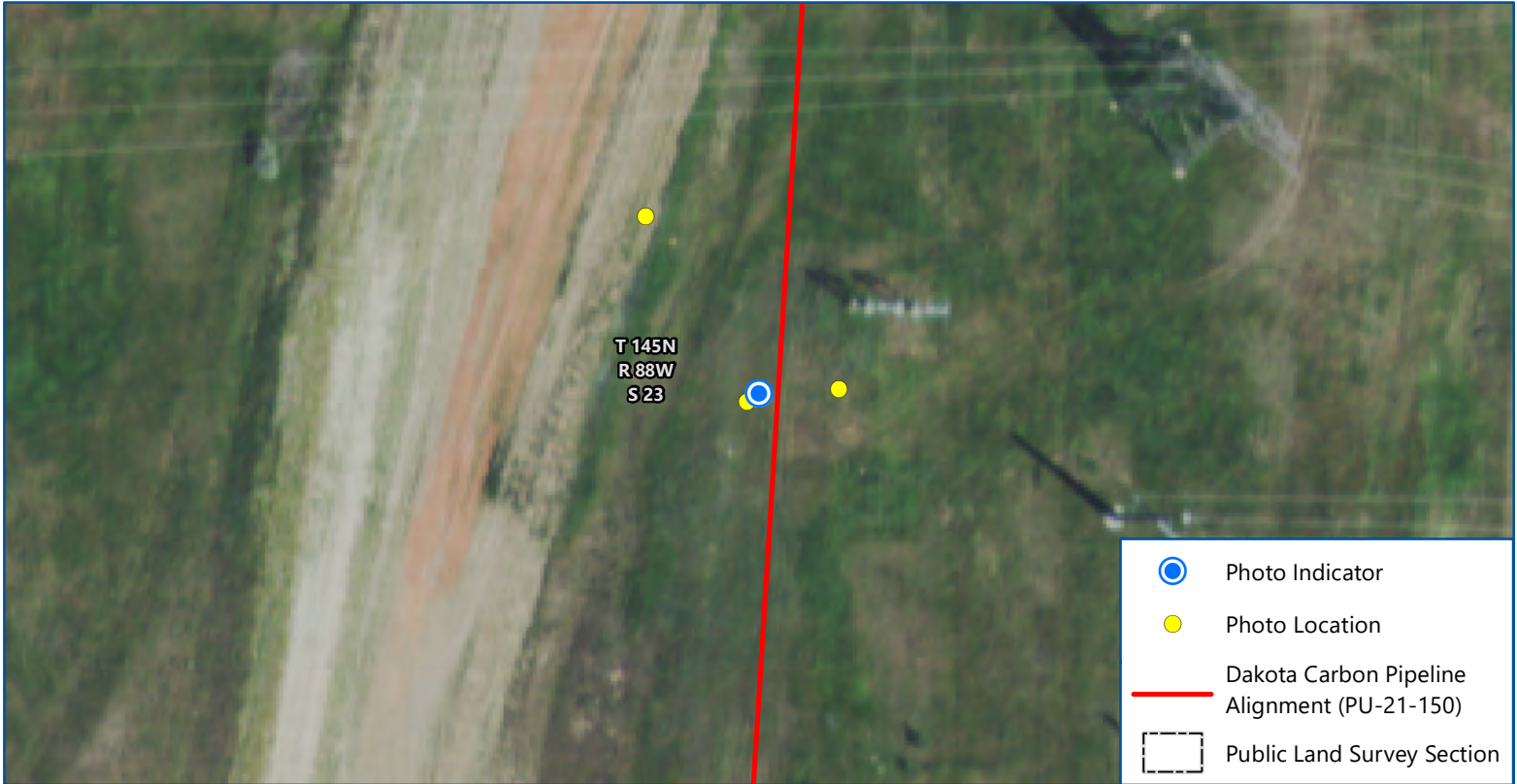
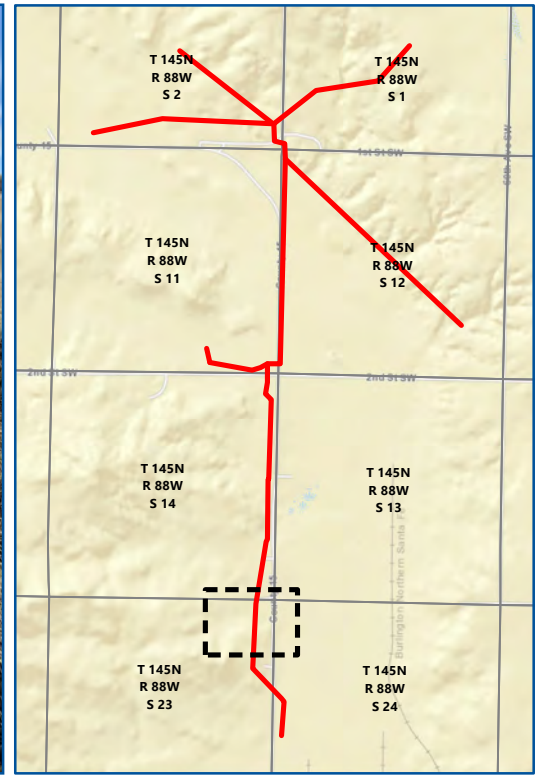
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Date

## Appendices

## **Appendix A**

### **Photo Log and Observation Maps**



Map 1 of 8  
**DAKOTA CARBON PIPELINE  
 TOPSOIL REMOVAL INSPECTION**  
**PU-21-150**

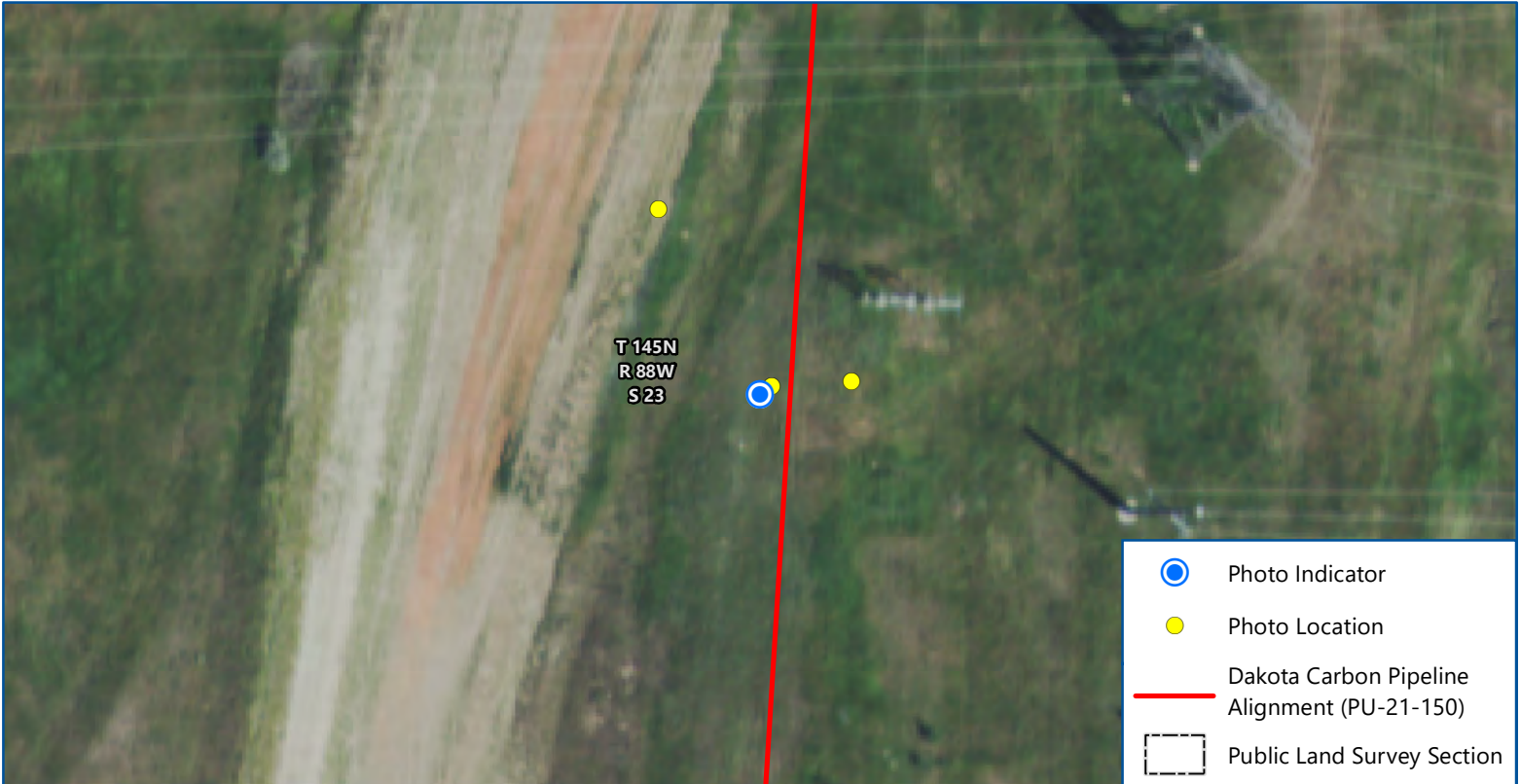
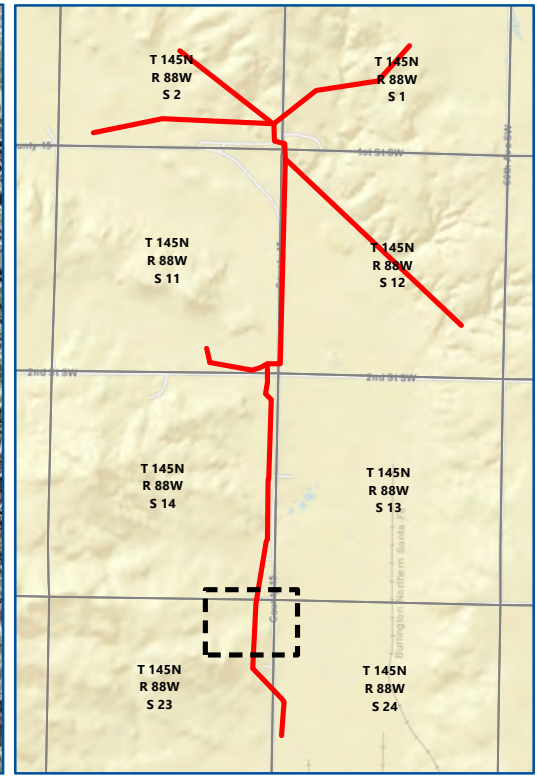
North Dakota Public Service Commission  
 Mercer County, North Dakota

Imagery: USDA FSA (2020)

Date: 10/15/2021  
 Photo Direction: South  
 Comment: Initial top soil scrape.

Latitude: 47.370241  
 Longitude: -101.845787  
 Coordinates are in the WGS84 datum.





Map 2 of 8

**DAKOTA CARBON PIPELINE  
TOPSOIL REMOVAL INSPECTION**

**PU-21-150**

North Dakota Public Service Commission  
Mercer County, North Dakota

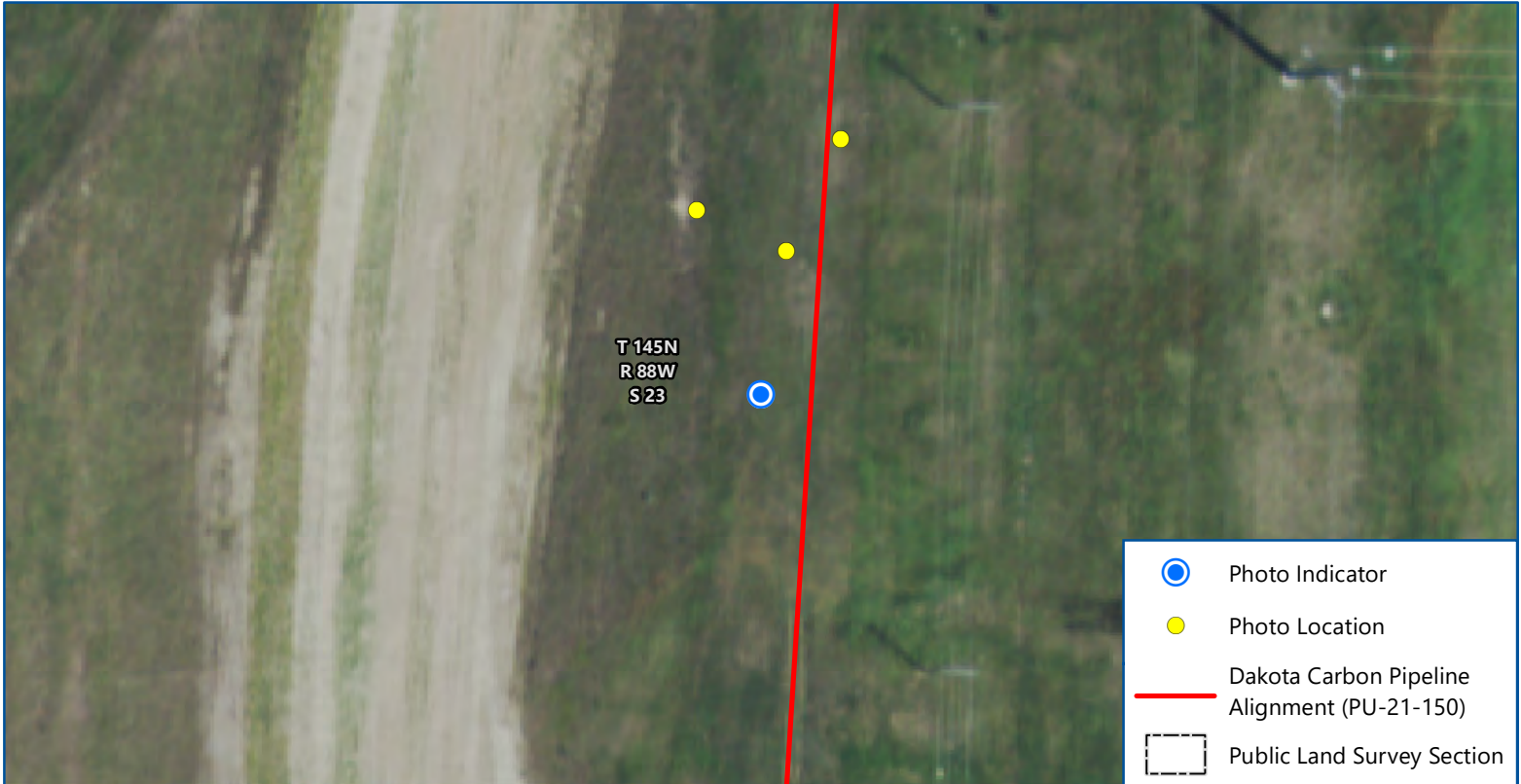
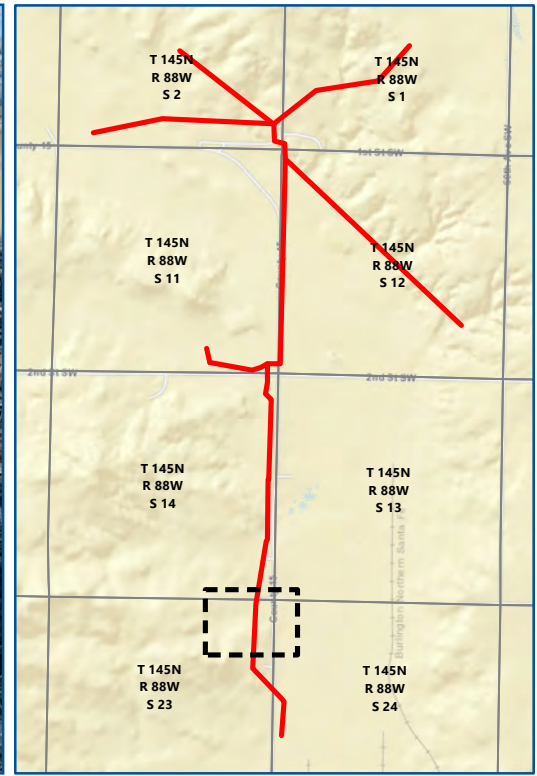
Feet

Imagery: USDA FSA (2020)

Date: 10/15/2021  
 Photo Direction:  
 Comment: Scoria present in top soil, likely from previous mine reclamation.

Latitude: 47.370228  
 Longitude: -101.845811  
 Coordinates are in the WGS84 datum.





Map 3 of 8

**DAKOTA CARBON PIPELINE  
TOPSOIL REMOVAL INSPECTION**

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North Dakota Public Service Commission  
Mercer County, North Dakota

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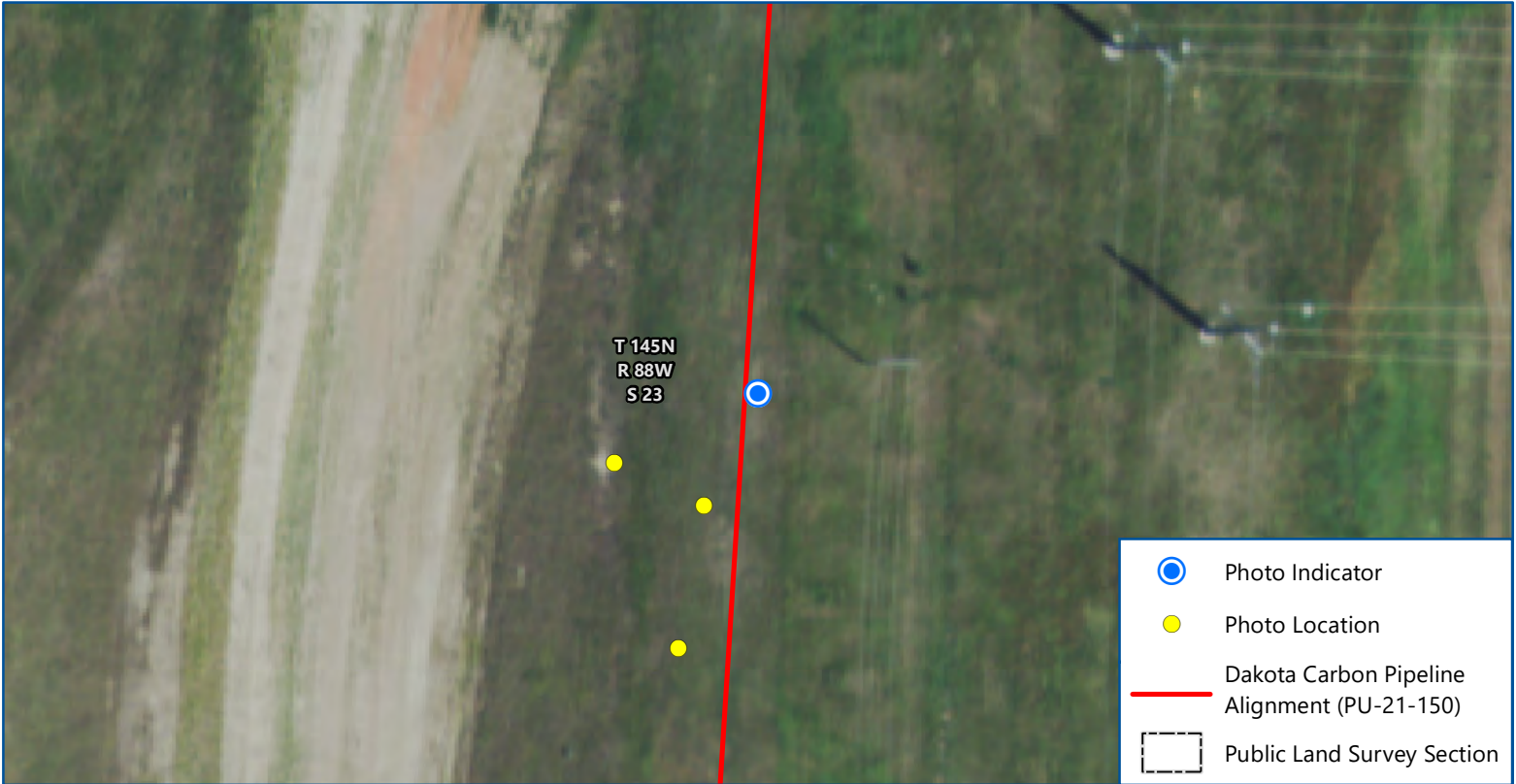
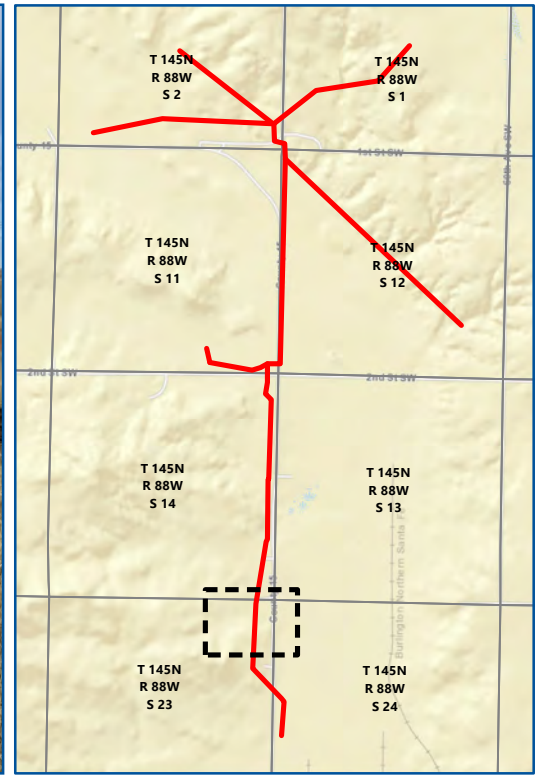
0      100  
Feet

Imagery: USDA FSA (2020)

Date: 10/15/2021  
 Photo Direction: North  
 Comment: Stripping occurring in layers.

Latitude: 47.369173  
 Longitude: -101.845896  
 Coordinates are in the WGS84 datum.





Map 4 of 8  
**DAKOTA CARBON PIPELINE  
 TOPSOIL REMOVAL INSPECTION**  
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 North Dakota Public Service Commission  
 Mercer County, North Dakota

N

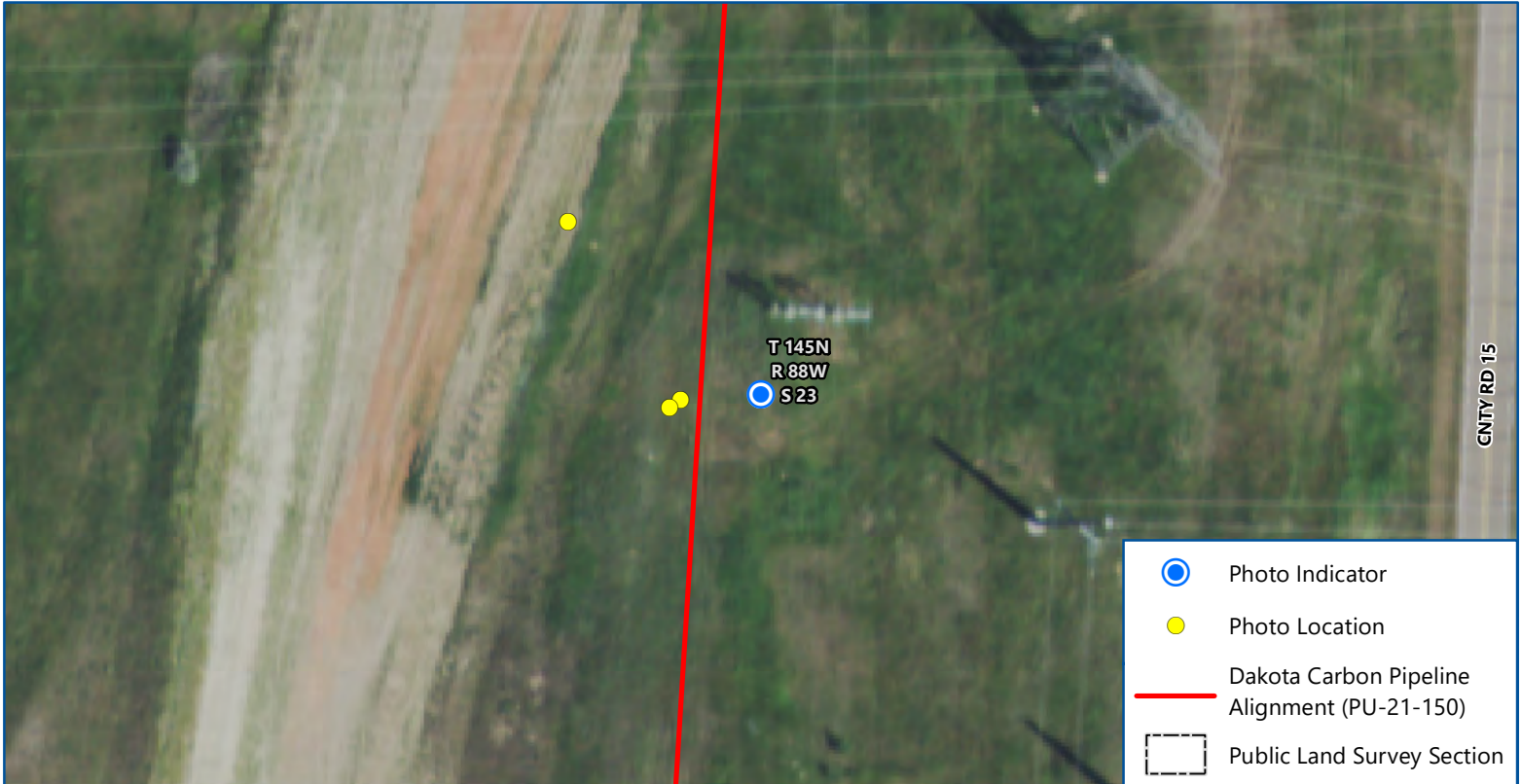
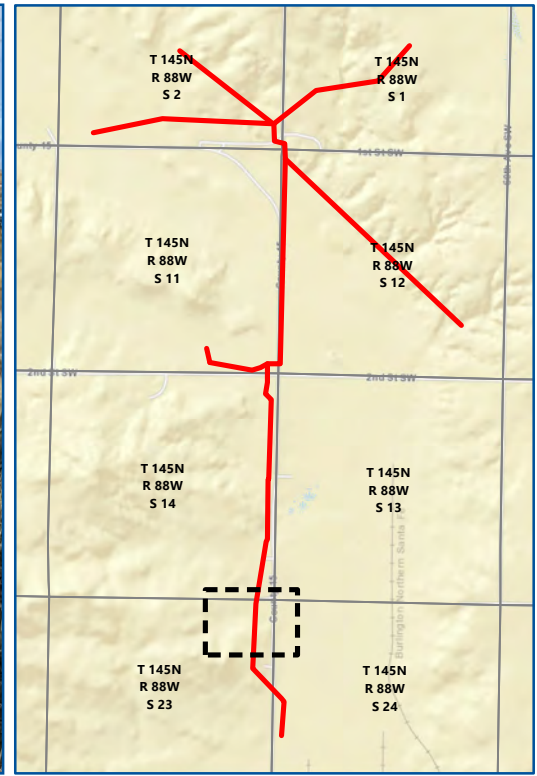
0      100  
 Feet

Imagery: USDA FSA (2020)

Date: 10/15/2021  
 Photo Direction: West  
 Comment: Spotters in use during stripping.

Latitude: 47.369551  
 Longitude: -101.845745  
 Coordinates are in the WGS84 datum.





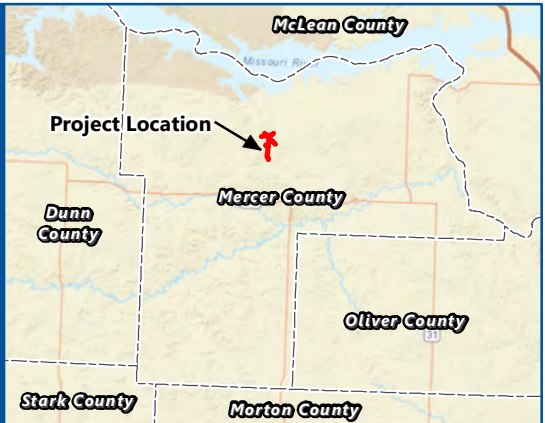
Map 5 of 8  
**DAKOTA CARBON PIPELINE  
 TOPSOIL REMOVAL INSPECTION**  
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 North Dakota Public Service Commission  
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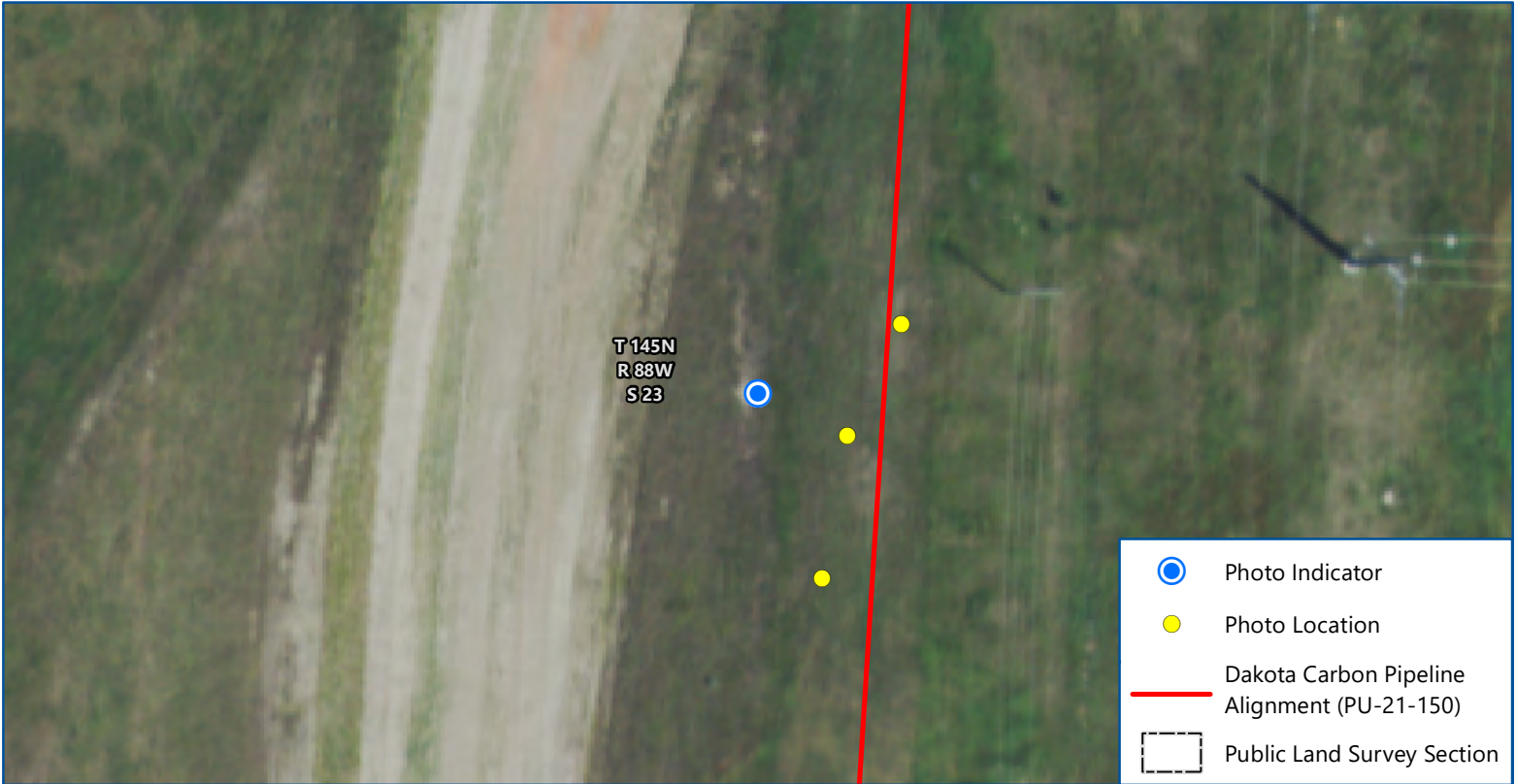
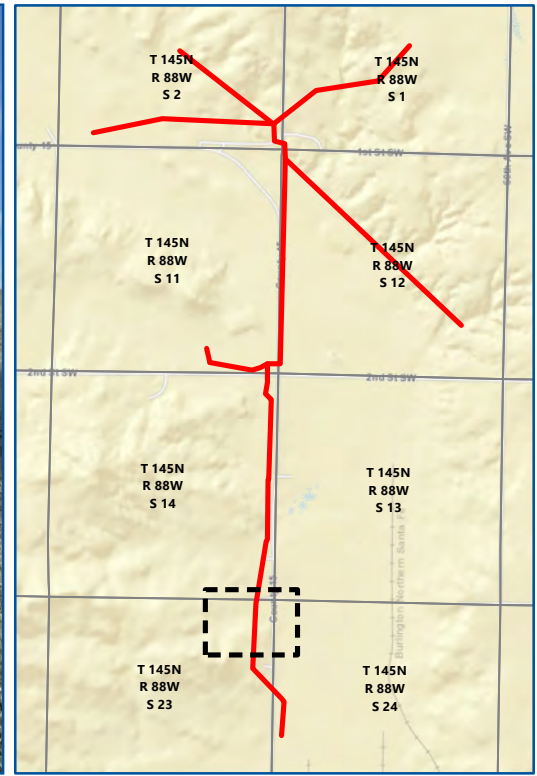
0 100  
 Feet

Imagery: USDA FSA (2020)

Date: 10/15/2021  
 Photo Direction: Northwest  
 Comment: Track hoe used to strip sensitive areas.

Latitude: 47.370253  
 Longitude: -101.845614  
 Coordinates are in the WGS84 datum.



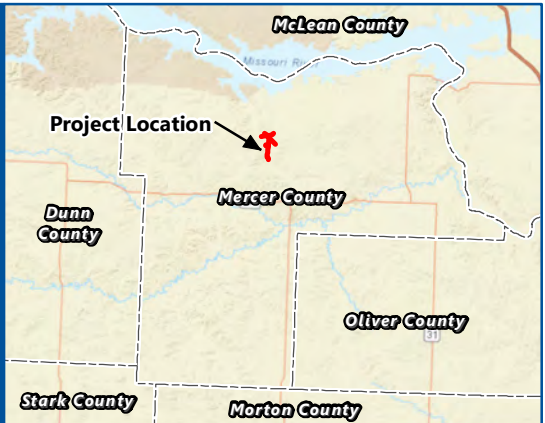


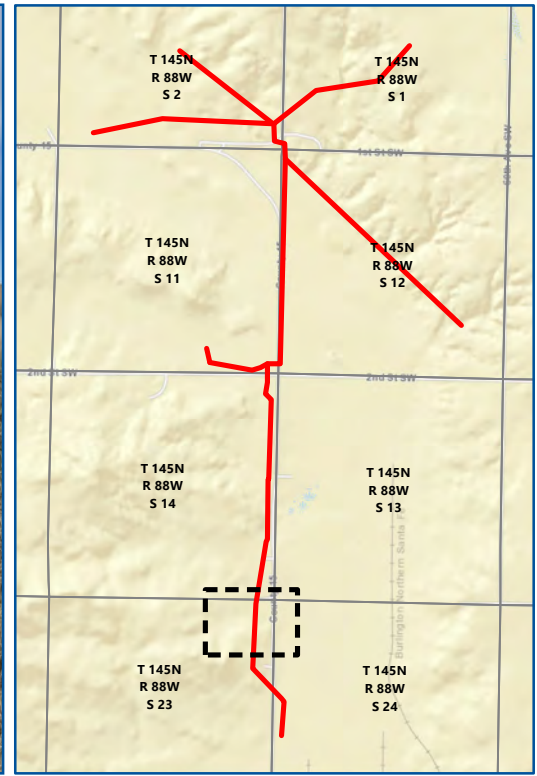
Map 6 of 8  
**DAKOTA CARBON PIPELINE  
 TOPSOIL REMOVAL INSPECTION**  
**PU-21-150**  
 North Dakota Public Service Commission  
 Mercer County, North Dakota

0 100  
 Feet  
 Imagery: USDA FSA (2020)

Date: 10/15/2021  
 Photo Direction: South  
 Comment: Topsoil segregation during removal.

Latitude: 47.369441  
 Longitude: -101.84605  
 Coordinates are in the WGS84 datum.







Map 7 of 8

**DAKOTA CARBON PIPELINE  
TOPSOIL REMOVAL INSPECTION**

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North Dakota Public Service Commission  
Mercer County, North Dakota





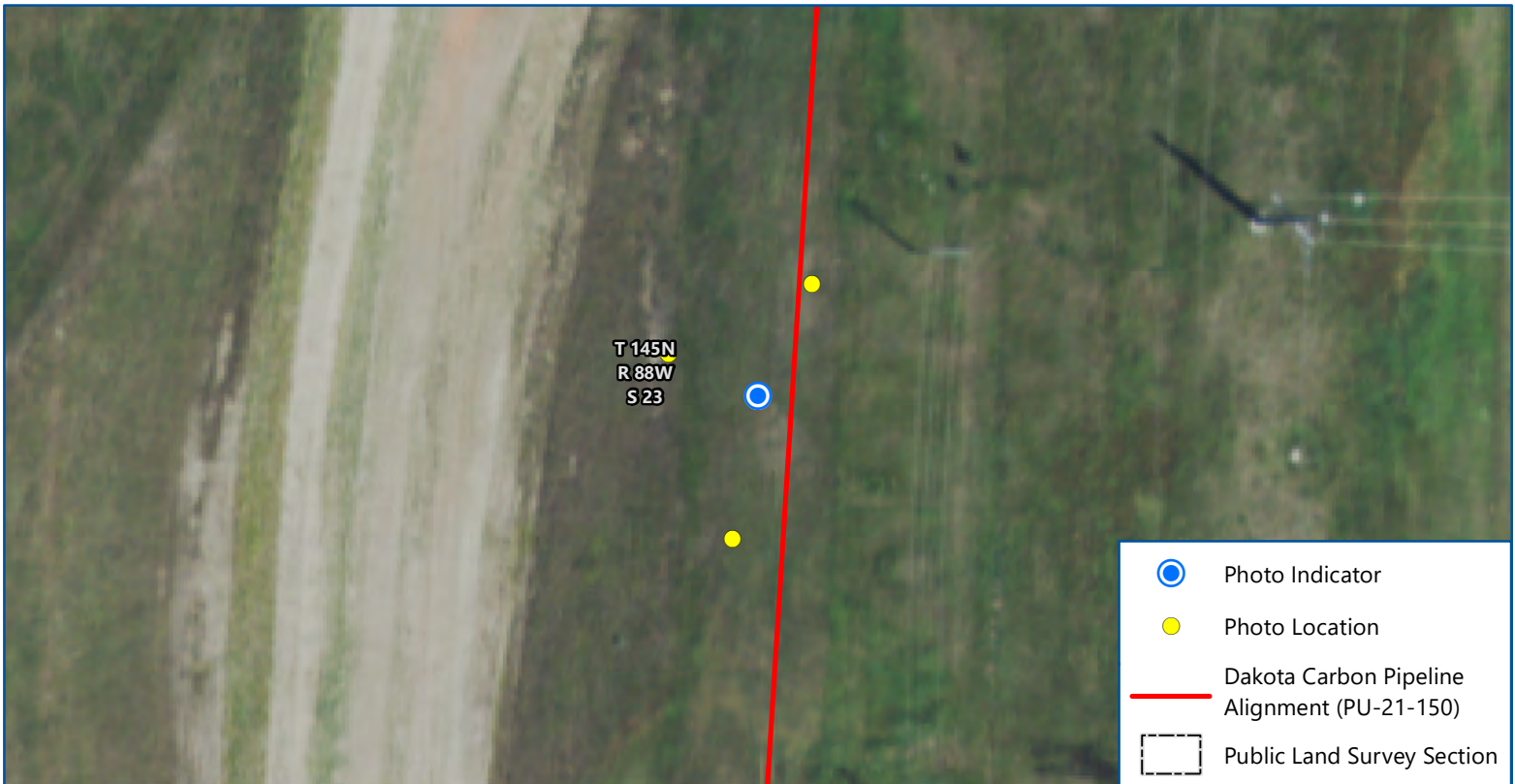
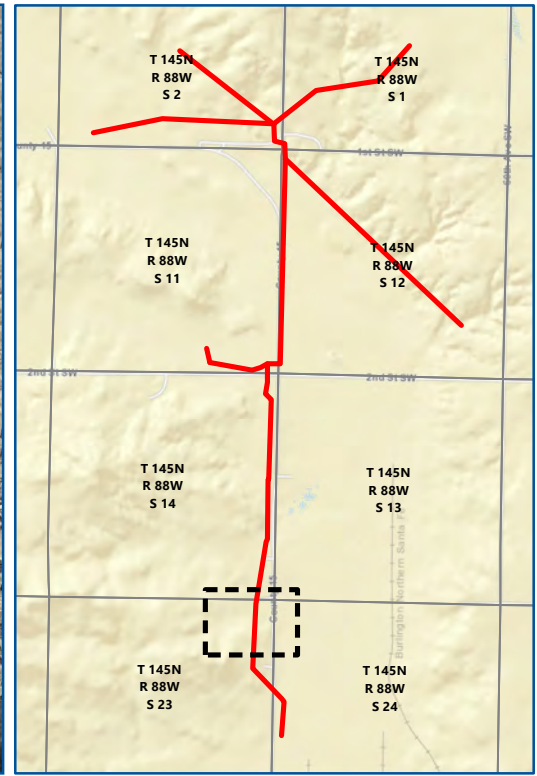
Feet

Imagery: USDA FSA (2020)

Date: 10/15/2021  
 Photo Direction: Southeast  
 Comment: Topsoil removal at first section of pipeline right of way.

Latitude: 47.370496  
 Longitude: -101.846045  
 Coordinates are in the WGS84 datum.





Map 8 of 8  
**DAKOTA CARBON PIPELINE  
 TOPSOIL REMOVAL INSPECTION**  
**PU-21-150**  
 North Dakota Public Service Commission  
 Mercer County, North Dakota

0 100  
 Feet

Imagery: USDA FSA (2020)

Date: 10/15/2021  
 Photo Direction: West  
 Comment: Subsoil just visible in areas of topsoil removal.

Latitude: 47.369384  
 Longitude: -101.845853  
 Coordinates are in the WGS84 datum.

