

# Construction Inspection Report Cenex 10" Refined Fuels Pipeline PU-17-97



Prepared for:  
**North Dakota  
Public Service Commission**

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# Table of Contents

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**EXECUTIVE SUMMARY ..... II**

**1.0 BACKGROUND AND SCOPE..... 1-1**

    1.1 Introduction ..... 1-1

    1.2 Regulatory Purpose and Scope of Work ..... 1-1

**2.0 SITE INSPECTIONS ..... 2-1**

    2.1 Methods ..... 2-1

    2.2 On-Site Inspection Observations ..... 2-1

**3.0 ISSUES, RESOLUTIONS, AND RECOMMENDATIONS..... 3-1**

**4.0 SIGNATURES ..... 4-1**

**TABLES**

1. Observation Points

**FIGURES**

1-17 Construction Observation Locations

**APPENDICES**

A Photographs

# Executive Summary

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The North Dakota Public Service Commission (PSC) retained Wenck Associates, Inc. (Wenck) to complete site inspections during construction of the Cenex 10" Refined Fuels Pipeline (the Project) in Williams, Mountrail, and Ward Counties North Dakota (ND), constructed by Cenex Pipeline L.L.C. (Cenex). The purpose of the inspections was to ensure the project was constructed in compliance with the siting laws and rules and the applicable PSC Orders for the Project.

Construction involving soil disturbance for the Project began 5 June 2019 on Spread 2 by Loenbro and 10 June 2019 on Spread 1 by Frontier Services, Inc. (Frontier). Wenck inspectors were present during the initial topsoil stripping work for both crews. Follow-up inspections were completed 6 and 18 June and 2 and 3 July 2019. Details of these initial inspections were summarized in the Interim Topsoil Inspection Report previously submitted to the PSC (Wenck, July 2019). Wenck completed additional inspections of the Project area on 17 and 29 July, and 20 August 2019 and observed topsoil and subsoil removal and segregation done by both contractor crews on the two separate pipeline spreads. Details of these inspections were summarized in the Topsoil Removal Report previously submitted to the PSC (Wenck, September 2019).

Construction inspections were conducted on 17 and 29 July, 20 August, and 9 October 2019. Pipe depth was documented at multiple locations and the pipeline was installed with the depth of cover required by the Commission's Order. Horizontal Directional Drilling (HDD) was conducted where proposed. Wenck confirmed that construction activities were compliant with PSC Order Provisions during construction site inspections. Overall, construction of the project appeared to be in compliance with the applicable siting laws, rules, and PSC orders.

Per discussion with Cenex personnel, Wenck was made aware that final topsoil replacement of this project may not occur before the onset of winter freeze-up. If topsoil stockpiles are proposed to be left over the winter months, Wenck recommends additional erosion control measures be installed to protect topsoil stockpiles from long-term exposure during the typically wet spring months.

# 1.0 Background and Scope

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## 1.1 INTRODUCTION

The Cenex 10" Refined Fuels Pipeline (Project) in Williams, Mountrail, Ward counties, ND, is comprised of two spreads. Spread 1, constructed by Frontier, is approximately 59.2 miles in ND originating in Section 34, T156N, R97W, Williams County heading west and intersecting with the North Dakota and Montana border in Section 22, T153N, R104W, Williams County. Spread 1 ends in Richland County, Montana (MT). Spread 2, constructed by Loenbro, is approximately 90.5 miles originating in Section 35, T156N, R97W, Williams County heading east through Williams, Mountrail, and Ward Counties, ending at the CHS terminal approximately one mile west of Minot in Section 20, T155N, R83W, Ward County. The total distance of the pipeline is approximately 181.5 miles, of which 149.7 miles is in North Dakota.

The pipe for the Project will be 10-inch diameter steel pipe with 0.307 inches wall thickness for line pipe except at river and road crossing sites where the thickness will be 0.365 inches. The maximum operating pressure for the pipeline will be 1,440 pounds per square inch throughout the Project. The Project will include 13 main line valves, one pipeline pig launcher located at the terminal in Glendive, Montana, and one pig receiver located at the terminal in Minot, North Dakota. Valves will be located on either side of the following rivers: The Little Muddy, White Earth, and Little Knife. The pipeline will transport approximately 38,000 barrels of refined fuels per day but will have a maximum capacity of 60,000 barrels per day.

The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC), which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-17-97 on 14 March 2018, granting Certificates of Corridor Compatibility No. 202 and Route Permit No. 212 for the Project.

## 1.2 REGULATORY PURPOSE AND SCOPE OF WORK

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the Public Service Commission to determine 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. Construction inspections ensure that such projects are constructed 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.

The North Dakota PSC retained Wenck Associates, Inc. (Wenck) to complete construction inspections of the Project. Wenck's scope of work was to perform and document on-site inspections during the construction phase of the Project to verify that the project was constructed in compliance with the siting laws, siting rules, and applicable Commission Orders and to verify that the pipeline was installed with the depth of cover required by the Commission's Order. PSC Order Provision #11 for the Project states: "*Company understands and agrees that the pipeline will be buried to a minimum depth from the ground surface to the top of the pipe of 48 inches in range land, 48 inches for cultivated land, 48 inches at the bottom of the ditch for road crossings, and 72 inches across undeveloped section lines.*"

The inspection process included a review of the Application for Corridor Compatibility and Route Permit, the Project's Order, and other applicable documents. This report includes documentation of 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.

## 2.0 Site Inspections

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### 2.1 METHODS

Wenck staff completed on-site construction inspections of the Project between 17 July and 9 October 2019. The July and August construction inspections were in conjunction with topsoil inspections. Jeremy Hackley, Field Inspector, visited the project on 17 July and 9 October 2019, accompanied by Nute Bishop and Jeffrey Moss, Environmental Inspectors, KLJ. Sara Simmers, Project Manager, and Zach Leitner, Field Inspector, visited the Project on 29 July 2019, accompanied by Scott Lawson, Co-Owner, Frontier; Matt Oliver, Construction Superintendent, Frontier; and Nute Bishop, Environmental Inspector, KLJ. Matt Retka, Soil Classifier, and Zach Leitner, Field Inspector visited the Project on 20 August 2019, accompanied by Brian Sandefur, Environmental Inspector, KLJ; Matt Oliver, Construction Superintendent, Frontier; and Travis Gillett, Construction Superintendent, Loenbro.

The site was inspected visually by driving to access points and walking or driving within the Project right-of-way (ROW). Two pipeline contractor companies worked on two different spreads; Loenbro started and has continued to work on Spread 2 working east since 5 June 2019. Frontier started and has continued to work on Spread 1 working west since 10 June 2019. The project was inspected for proper topsoil removal, trench digging, pipe installation, trench filling, and topsoil re-spreading phases of the Project. Pipe depths, measured primarily from open trenches, were inspected to confirm proper depth at various locations. Geographically unstable areas, impacted wetlands, major water body crossings, as well as avoidance and exclusion areas were inspected to confirm construction methods. General construction procedures and erosion controls were also observed during the inspections. Digital photographs were taken showing typical Project infrastructure and documenting problem areas (**Appendix A**). Geographic coordinates were recorded at observation points or potential problem areas using a handheld Global Positioning Systems (GPS) (Garmin GPSMAP 60CSx; <10m accuracy; NAD83 datum and Trimble GEOXT, submeter accuracy, NAD83 datum) (**Table 1**).

### 2.2 ON-SITE INSPECTION OBSERVATIONS

#### **Spread 1-Frontier**

The first construction inspection was conducted on 17 July 2019. Mr. Hackley met with KLJ Environmental Inspector Nute Bishop. Pipe in trench measurements were appropriate in depth or deeper than required. Trench wall profiles showed that topsoil had been stripped appropriately (**Appendix A, Observation Point 142-143**). Archaeological sites were marked by stakes and avoided (**Appendix A, Observation Point 137-138b**). Wetlands that were impacted by construction were appropriately open-cut or bored under with appropriate erosion mitigation practices (**Appendix A, Observation Points 145**).

On 29 July 2019, Ms. Simmers and Mr. Leitner visited Spread 1 of the Project and met with Frontier Co-Owner, Scott Lawson, Construction Superintendent, Matt Oliver, and KLJ Environmental Inspector, Nute Bishop. Construction inspections were made where the Project intersected 5 other pipelines. Spotters were present while a backhoe carefully removed soil around the existing pipelines for proposed pipeline installment (**Appendix A, Observation Points 654a and 654b**).

On 20 August 2019, Mr. Retka and Mr. Leitner visited Spread 1 of the project and met with KLJ Environmental Inspector, Brian Sandefur and Frontier Construction Superintendent, Matt Oliver. Trenched pipe depth measurements were appropriate or deeper than required. Trench wall profiles showed that topsoil had been stripped appropriately. Discussions with Mr. Oliver included Frontier's plan to have Spread 1 completely stripped and reclaimed before the freeze-up (**Appendix A, Observation Points 2737 and 2738**).

On 9 October 2019, Mr. Hackley visited Spread 1 of the project and met with KLJ Environmental Inspector, Nute Bishop. The geographically unstable area located in the SW1/4 of Section 33, Township 154N, Range 103W was inspected. Contractors utilized the "Cut and Cover" method through this area, outlined in late-filed Exhibit No. 25, a report prepared by Terracon Consultants, Inc. of Billings, Montana (September 25, 2017). The "Cut and Cover" method is used when the pipeline can be aligned to be nearly perpendicular to the contours; the pipeline is buried beneath the shallow slip plane and backfilled. The area was graded back to approximate original contours (**Appendix A, Observation Points 209**). Erosion control was observed installed in a swale, consisting of erosion control blankets. Mr. Bishop stated that pipe installation was complete within the State of North Dakota for Spread 1 (**Appendix A, Observation Points 209 and 212**).

### **Spread 2-Loenbro**

On 17 July 2019, Mr. Hackley visited Spread 2 of the project and met with KLJ Environmental Inspector, Jeffrey Moss. Dakota skipper (*Hesperia docotae*) habitats were fenced off at 10 feet and taped off to give a 50-foot buffer. Contractors were to utilize horizontal directional drilling (HDD) where areas of the 50-foot buffer did not allow sufficient right-of-way for construction (**Appendix A, Observation Point 148-150b**). Near the Spread 2 kickoff, topsoil had been replaced and was awaiting aeration to be reclaimed (**Appendix A, Observation Point 153**). Archaeological sites were marked by stakes and avoided (**Appendix A, Observation Point 156**). Pipe in trench measurements were appropriate in depth or deeper than required. Trench wall profiles showed that topsoil had been stripped appropriately (**Appendix A, Observation Point 157**).

On 20 August 2019, Mr. Retka and Mr. Leitner visited Spread 2 of the Project and met with KLJ Environmental Inspector, Jeffrey Moss and Loenbro Field Superintendent, Travis Gillett. Wetlands were appropriately marked and straw wattles installed (**Appendix A, Observation Points 2727 and 2730**). Observations of an active HDD boring under 94th Ave NW in Section 33, Township 155N, Range 93W and review of the drill report showed a minimum of 5-foot cover (**Appendix A, Observation Point 2733**). Trenched pipe depth measurements were appropriate or deeper than required. Trench wall profiles showed that topsoil had been stripped appropriately (**Appendix A, Observation Point 2734**). Further observations were made of contractors laying pipe and preparing the utilization of HDD under Shell Creek. Mr. Moss discussed with Wenck staff about an area where unexpected cultural resources were observed and ROW construction had halted as per PSC Order Provision #15. Further discussions with Mr. Gillett concentrated on plans to work past freeze-up and PSC Order Provision #12 for winter topsoil handling.

On 9 October 2019, Mr. Hackley visited Spread 2 of the Project and met with KLJ Environmental Inspector, Jeffrey Moss. The geographically unstable area located in the NW1/4 of Section 3, Township 155N, Range 94W, Williams County, will be bored under, utilizing HDD. Construction has halted at this area due to unexpected archaeological findings. This finding has been reported as per PSC Order Provision #15 (**Appendix A, Observation Point 214a and 214b**). The geographically unstable area located in the N1/2

Of Section 27, Township 155N, Range 94W, Mountrail County, will be bored under in conjunction with an area of Dakota skipper habitat and will exit in the White Earth River Valley. The White Earth River will then be bored under. The last bore in this area will start in the White Earth River Valley, East bank, and travel up hill to connect with section of the spread that intersects with North Dakota Hwy 1804 (**Appendix A, Observation Point 218**). Trenched pipe depth measurements observed were approximately 48-inches (**Appendix A, Observation Point 217**). Several un-named water bodies were visited which were being bored under (**Appendix A, Observation Point 215 and 219**). A wetland which had been trenched through during a drier time of the season has since filled due to the persistent rains. Topsoil in this area has been redistributed and tilled by contractors. Mr. Moss commented that the landowner re-tilled and accidentally destroyed the original straw wattles that were installed. New straw wattles have been installed (**Appendix A, Observation Point 216**). Cenex rerouted the Project to avoid United States Air Force (USAF) easements per USAF request (August 25, 2015). This area has pipe strung and is awaiting trenching (**Appendix A, Observation Point 220a and 220b**).

In general, the contractors appear to have done a satisfactory job with project construction despite the persistent precipitation the region has experienced. Contractors have observed PSC Order Provision #16 for the Project stating: *"Company understands and agrees that construction must be suspended when weather conditions are such that construction activities will cause irreparable damage to roads or land, unless adequate protection measures are taken by Company."* Work was noted as being suspended multiple days due to unfavorable weather and the areas visited during the inspections appeared to be relatively clean.

## 3.0 Issues, Resolutions, and Recommendations

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Construction Inspections of the Cenex 10" Refined Fuels Pipeline (PU-17-97) have verified that the project is being constructed in compliance with siting laws, siting rules, and applicable Commission Orders. Measurements of pipe depth within trenches confirm that the pipeline is being installed with the depth of cover required. No major issues were observed during construction inspections. However, Wenck has made the following recommendations to the Project's Construction Superintendents to alleviate minor issues observed at the project:

- ▲ Continue to implement erosion control measures, especially if stockpiles are to be left over winter.
- ▲ Use timely chemical and/or physical control to suppress weeds within topsoil stockpiles to facilitate successful revegetation of the project during reclamation.
- ▲ Use spotters and carefully handle soil during subsequent trench backfilling to minimize subsoil/topsoil mixing, and to assure subsoil and topsoil remains segregated to the greatest extent feasible.
- ▲ Backfill the trench to assure the pipeline is buried with a minimum of 48 inches of cover, and to 72 inches of cover across unimproved section lines.

## 4.0 Signatures

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The services performed by Wenck staff for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgment and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.



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Sara Simmers, Project Manager

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10/23/2019

Date



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Matt Retka, Project Manager

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10/23/2019

Date





## 1. Observation Point Coordinates

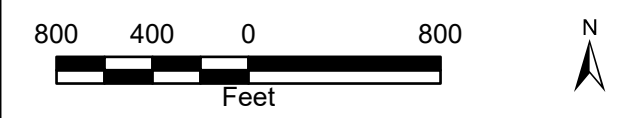
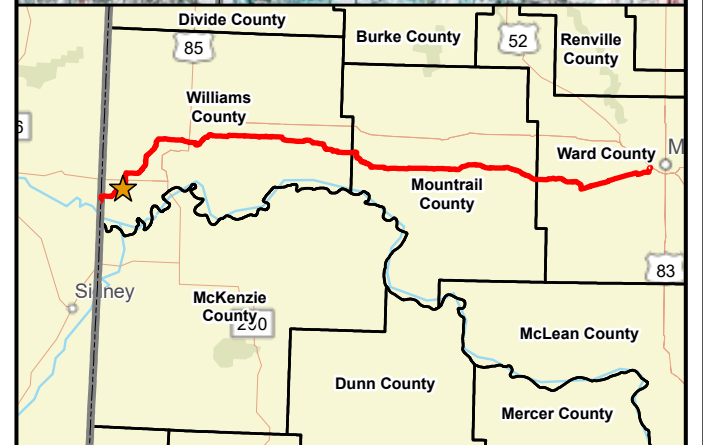
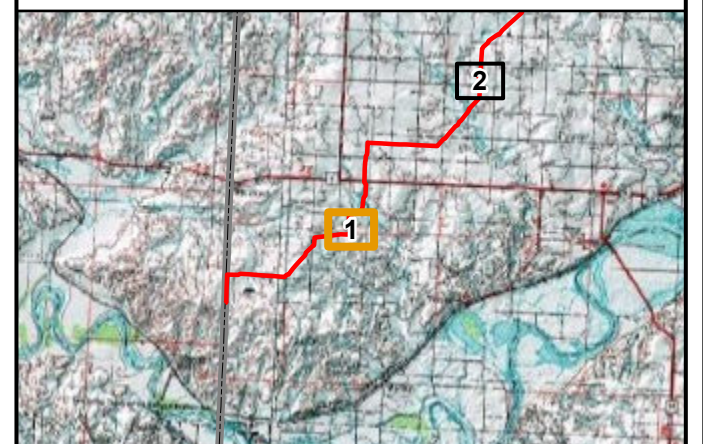
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138	48.29042	-103.54484	17-Jul-19
142	48.29914	-103.36725	17-Jul-19
143	48.29911	-103.36645	17-Jul-19
145	48.29871	-103.3371	17-Jul-19
148	48.24469	-102.80559	17-Jul-19
149	48.24564	-102.805	17-Jul-19
150	48.20914	-102.66808	17-Jul-19
153	48.28869	-103.12904	17-Jul-19
156	48.28743	-103.08066	17-Jul-19
157	48.28793	-103.06484	17-Jul-19
654	48.28949	-103.53953	29-Jul-19
2727	48.21254271	-102.030246	20-Aug-19
2730	48.22471597	-102.196252	20-Aug-19
2733	48.20782056	-102.655138	20-Aug-19
2734	48.21110279	-102.676314	20-Aug-19
2737	48.2024897	-103.835441	20-Aug-19
2738	48.19870267	-103.834265	20-Aug-19
209	48.112332	-103.939743	9-Oct-19
212	48.277135	-103.76938	9-Oct-19
214	48.283783	-103.021106	9-Oct-19
215	48.259973	-102.908813	9-Oct-19
216	48.255731	-102.848349	9-Oct-19
217	48.211989	-102.734508	9-Oct-19
218	48.215661	-102.734507	9-Oct-19
219	48.210979	-102.494748	9-Oct-19
220	48.195272	-101.972186	9-Oct-19

### Construction Observation Locations

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**Cenex Pipeline  
Figure 1**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations



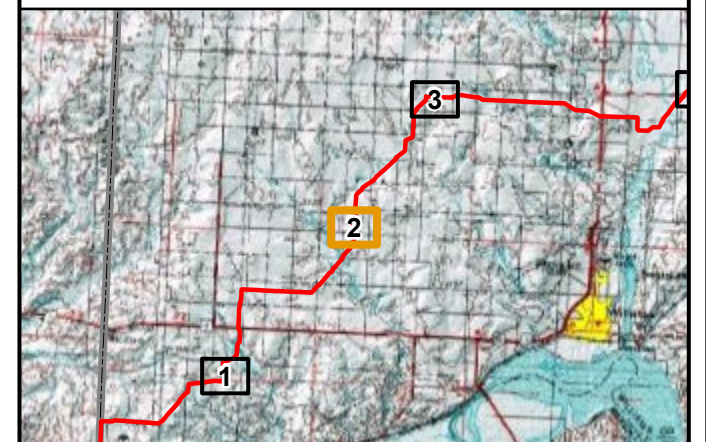
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Map 1 of 17

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Cenex Pipeline  
Figure 2

- ⊕ Construction Observation: Spread-1
- ⊕ Construction Observation: Spread-2
- Cenex Pipeline Centerline (PU-17-97)
- ▭ Section Boundary



2018 Aerial Photograph (Source: NAIP)

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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

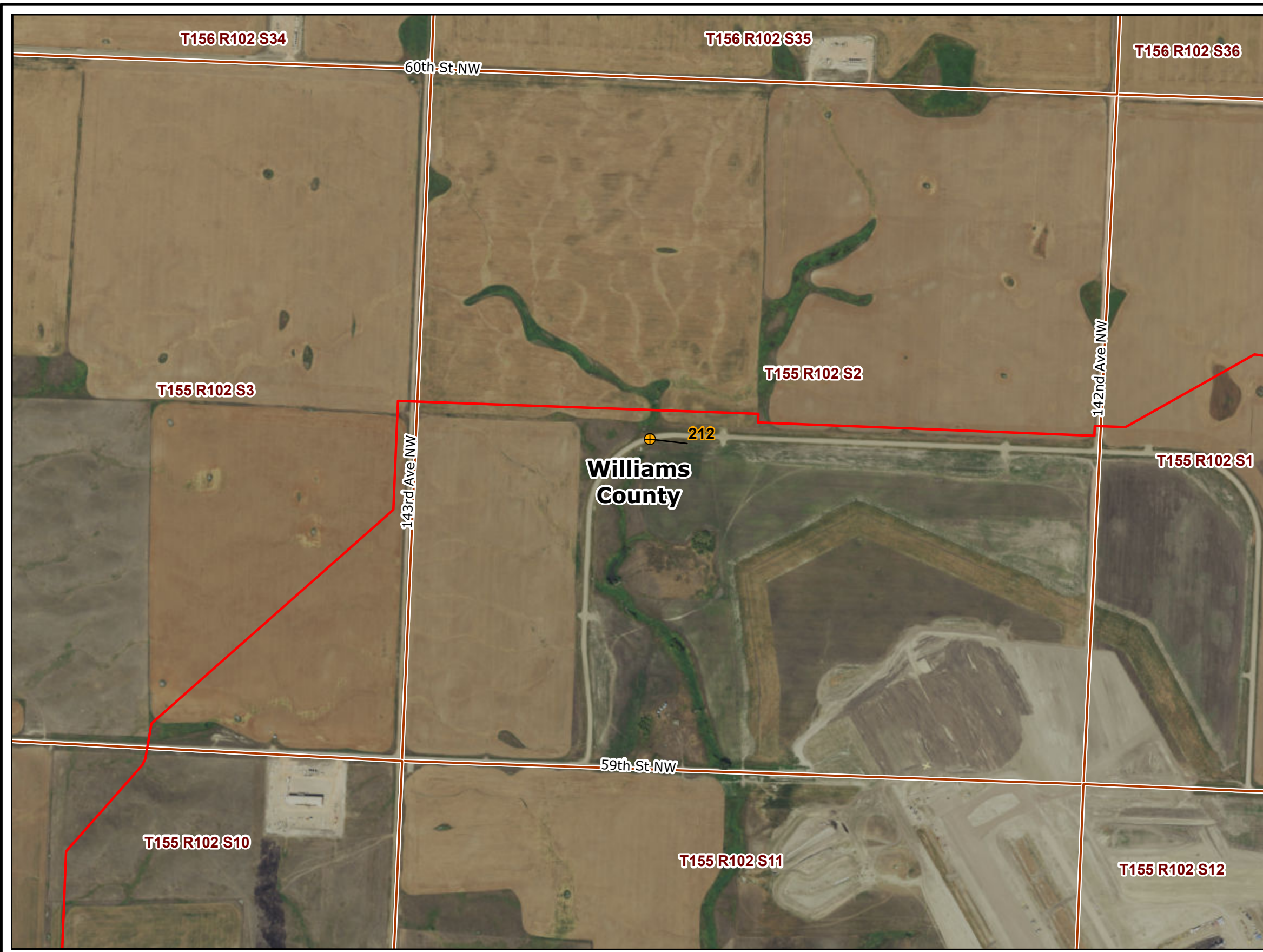
Construction Observation Locations



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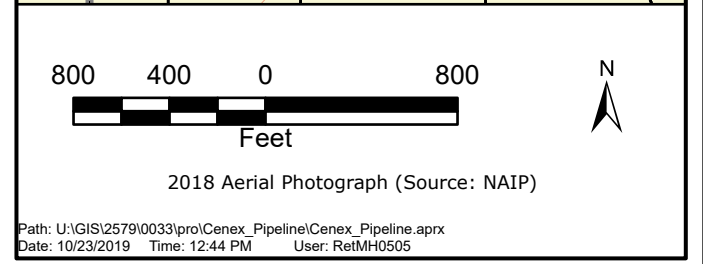
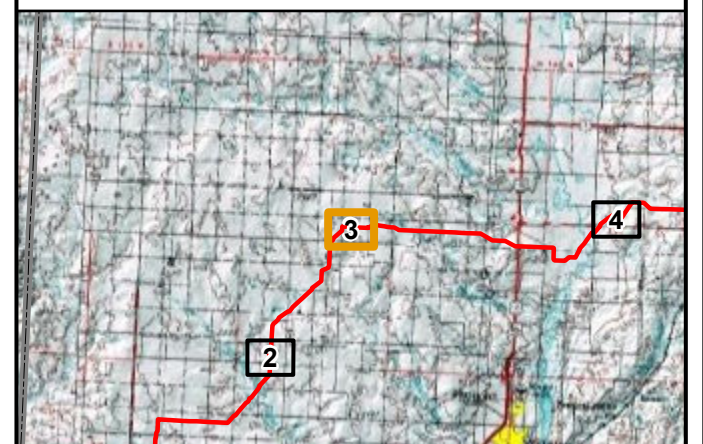
Map 2 of 17



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**Cenex Pipeline  
Figure 3**

- Construction Observation: Spread-1
- Construction Observation: Spread-2
- Cenex Pipeline Centerline (PU-17-97)
- Section Boundary



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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION  
Construction Observation Locations

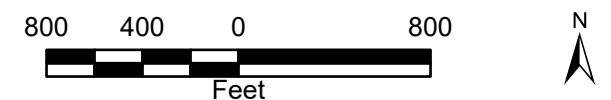
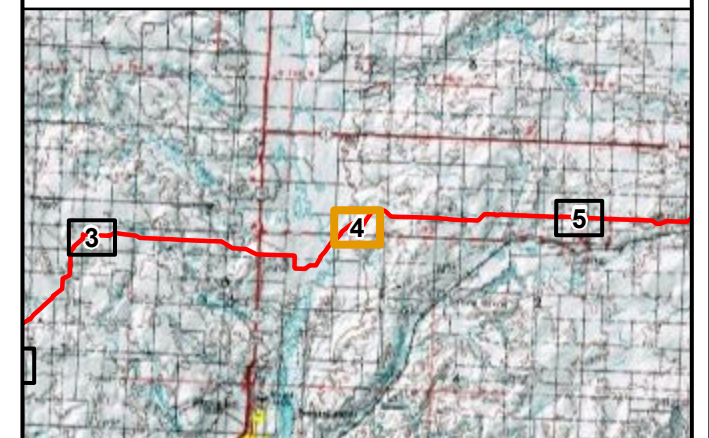


OCT 2019  
Map 3 of 17

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**Cenex Pipeline  
Figure 4**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







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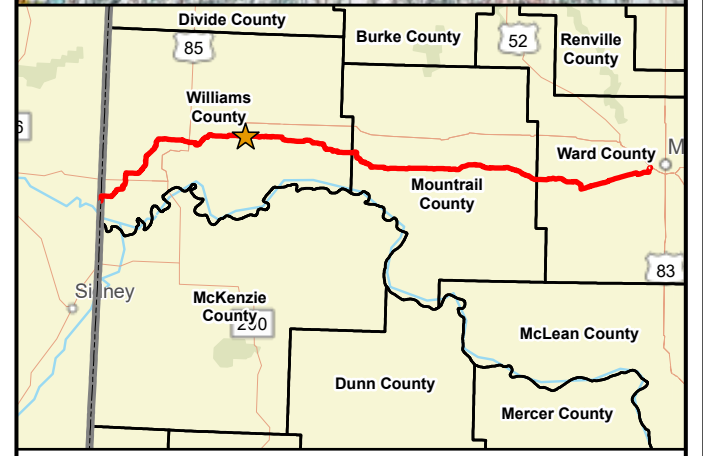
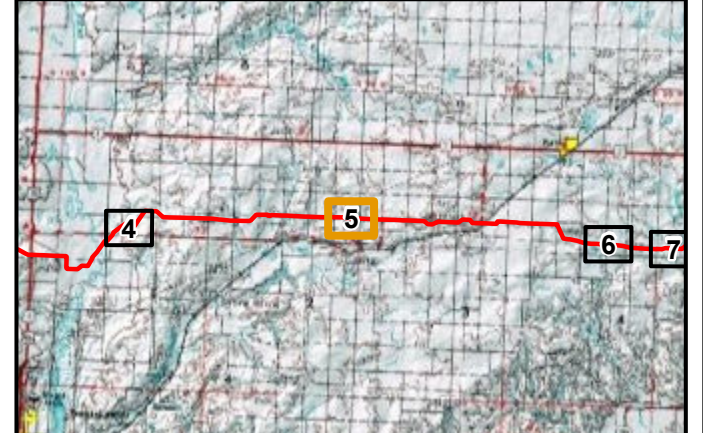
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Map 4 of 17

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**Cenex Pipeline  
Figure 5**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







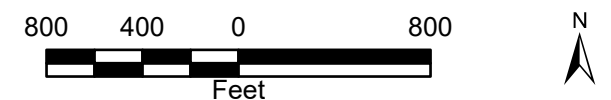
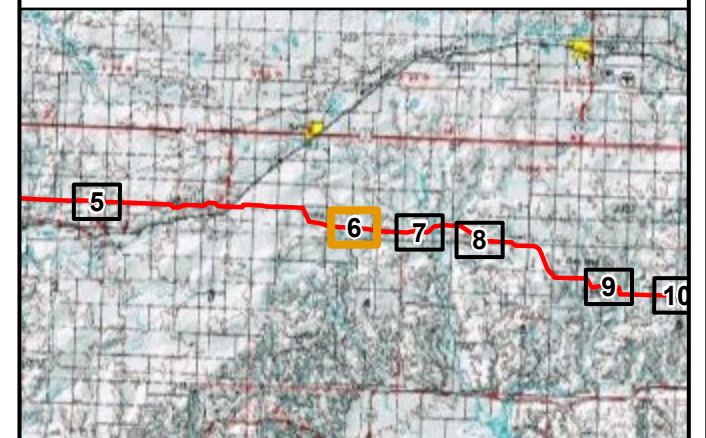
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Map 5 of 17

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**Cenex Pipeline  
Figure 6**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







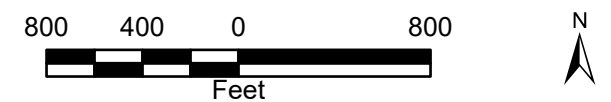
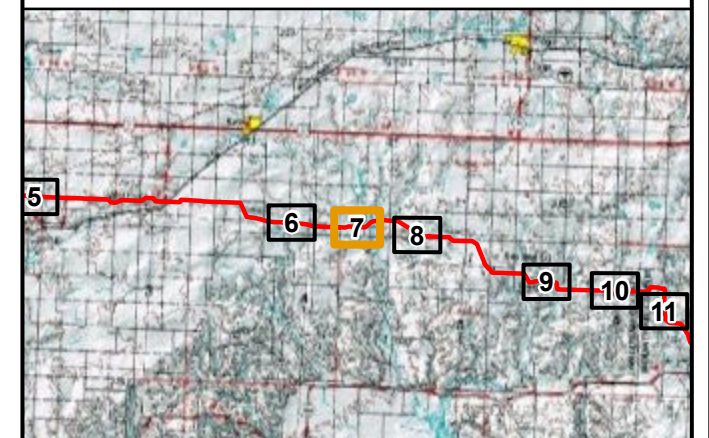
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Map 6 of 17

**North Dakota  
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**Cenex Pipeline  
Figure 7**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







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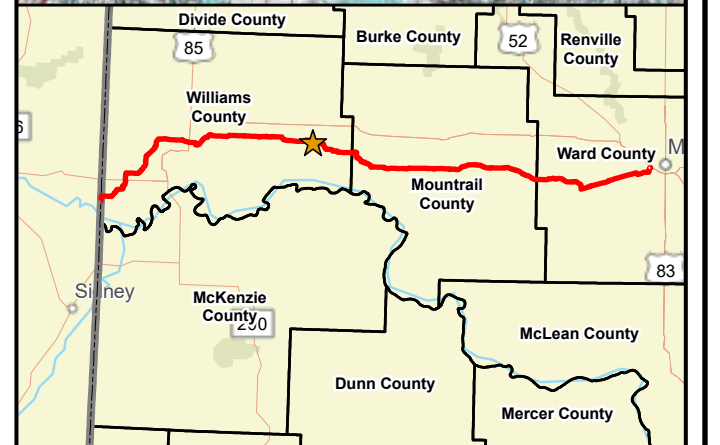
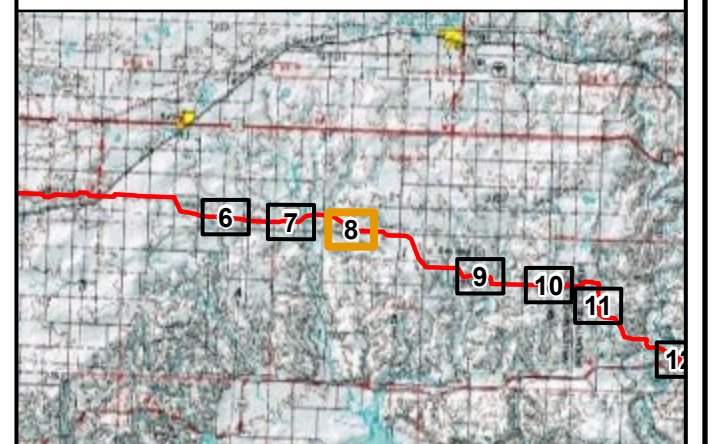
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Map 7 of 17

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**Cenex Pipeline  
Figure 8**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







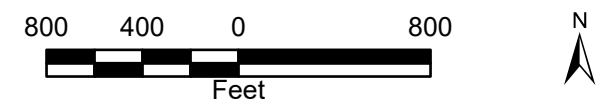
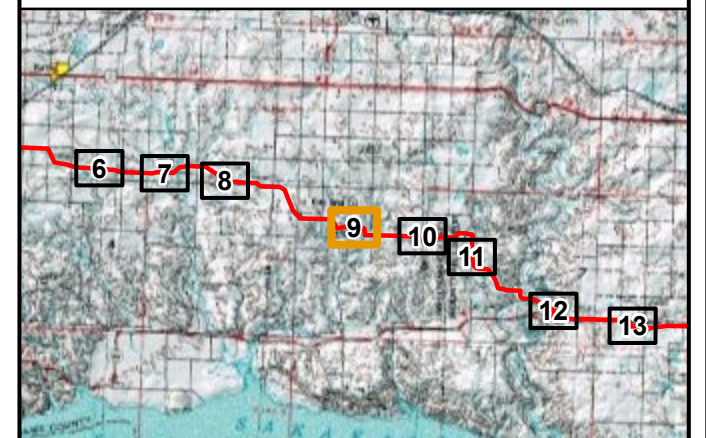
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Map 8 of 17

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**Cenex Pipeline  
Figure 9**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







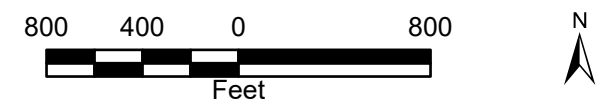
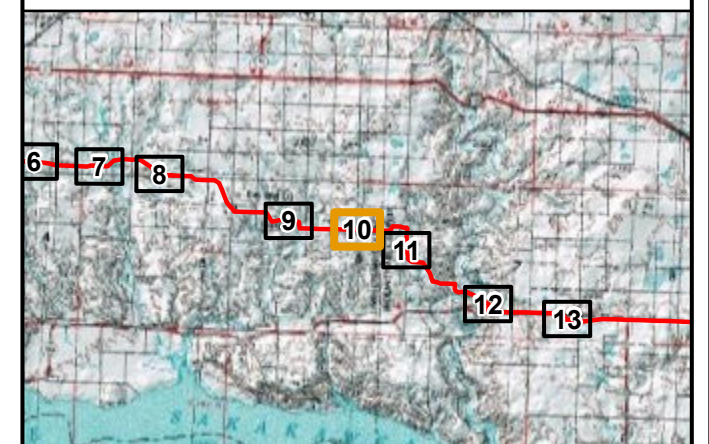
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Map 9 of 17

**North Dakota  
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**Cenex Pipeline  
Figure 10**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations



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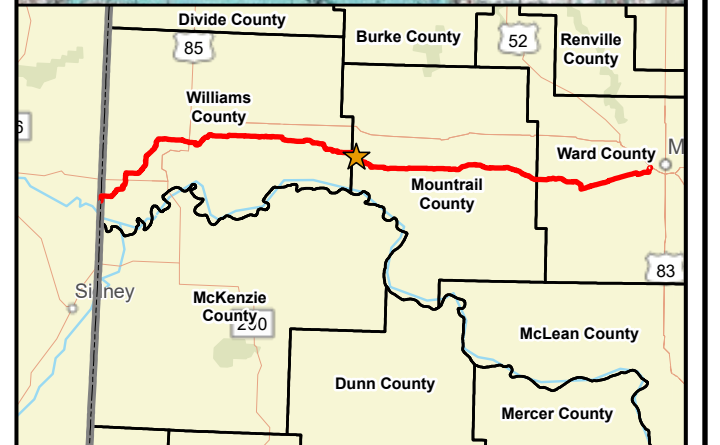
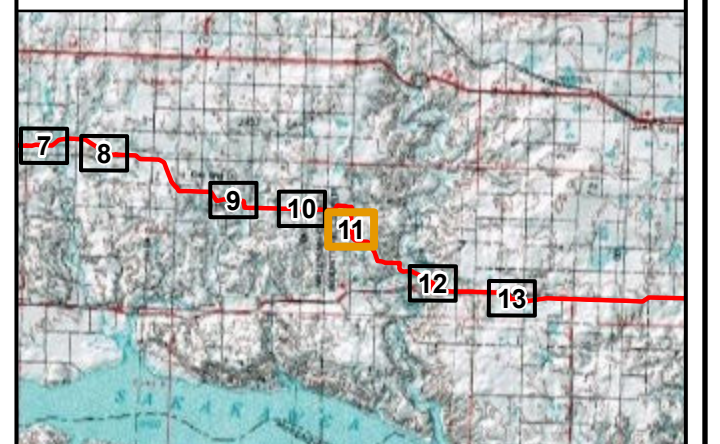
OCT 2019

Map 10 of 17

**North Dakota  
Public Service Commission**

**Cenex Pipeline  
Figure 11**

- ⊕ Construction Observation: Spread-1
- ⊕ Construction Observation: Spread-2
- Cenex Pipeline Centerline (PU-17-97)
- ▭ Section Boundary



2018 Aerial Photograph (Source: NAIP)  
Path: U:\GIS\2579\0033\pro\Cenex\_Pipeline\Cenex\_Pipeline.aprx  
Date: 10/23/2019 Time: 12:45 PM User: RetMH0505

PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations



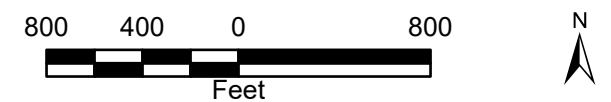
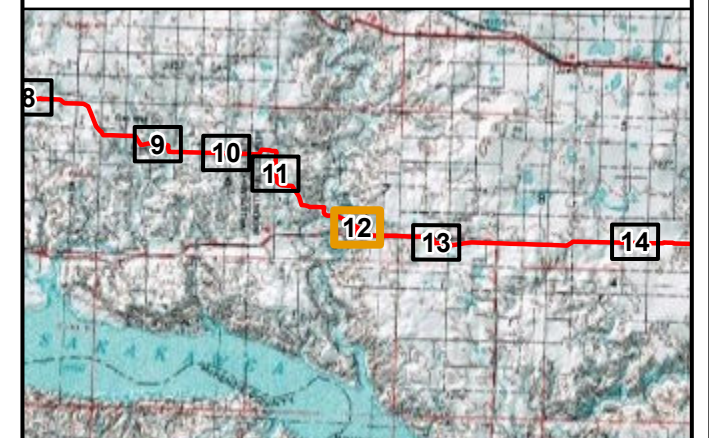
OCT 2019

Map 11 of 17

North Dakota  
Public Service Commission

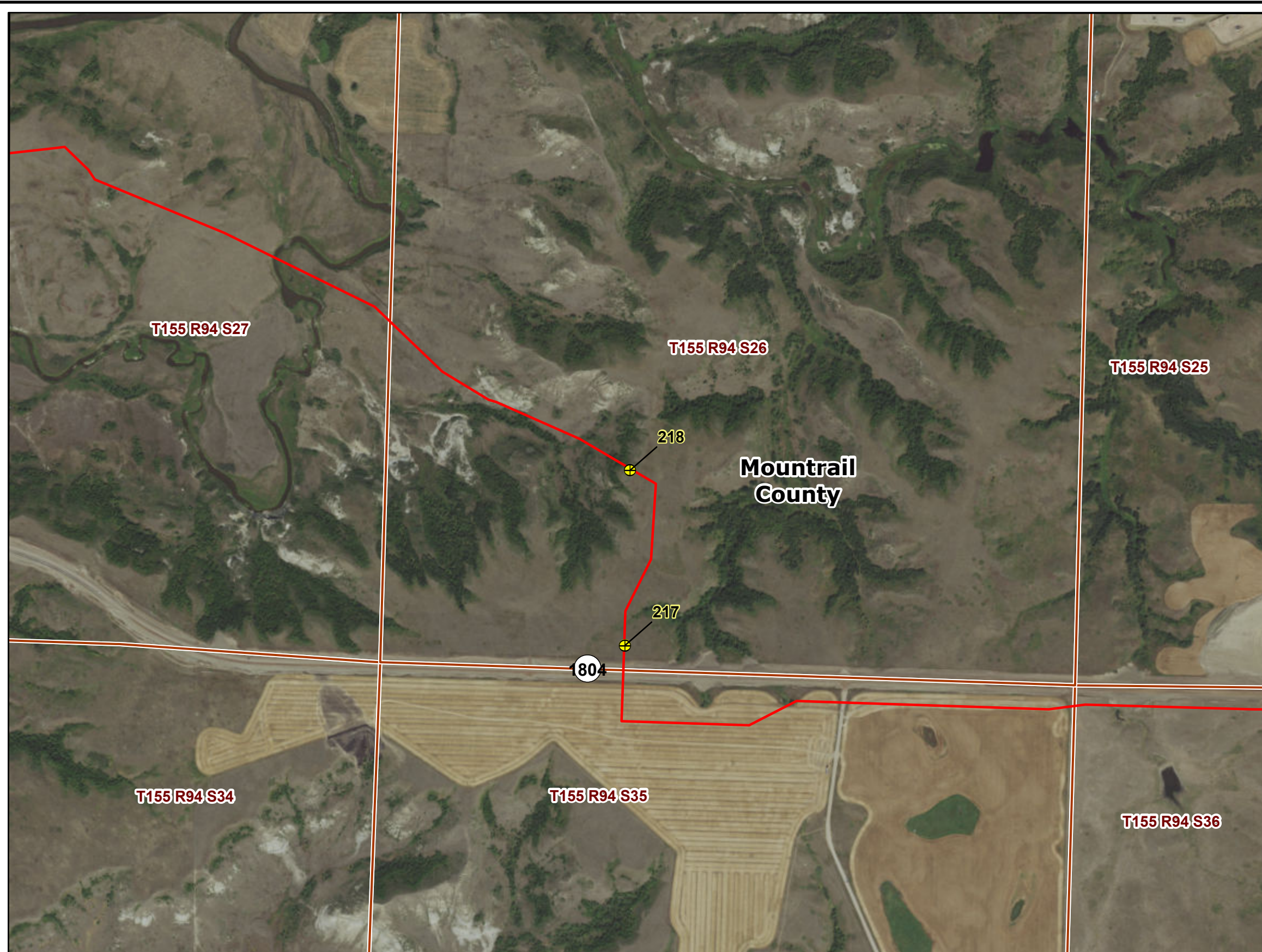
Cenex Pipeline  
Figure 12

- ⊕ Construction Observation: Spread-1
- ⊕ Construction Observation: Spread-2
- Cenex Pipeline Centerline (PU-17-97)
- ▭ Section Boundary



2018 Aerial Photograph (Source: NAIP)

Path: U:\GIS\2579\0033\pro\Cenex\_Pipeline\Cenex\_Pipeline.aprx  
Date: 10/23/2019 Time: 12:45 PM User: RetMH0505



PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







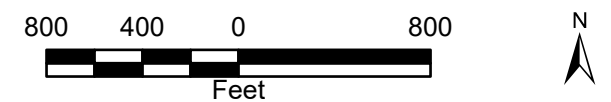
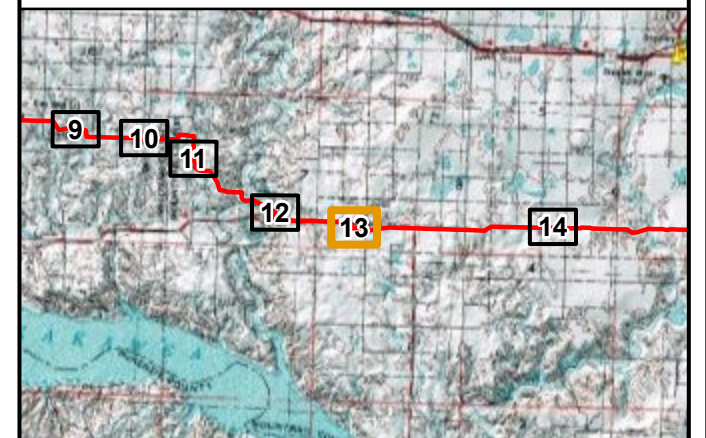
Responsive partner. Exceptional outcomes.

OCT 2019

Map 12 of 17

**Cenex Pipeline  
Figure 13**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

Path: U:\GIS\2579\0033\pro\Cenex\_Pipeline\Cenex\_Pipeline.aprx  
Date: 10/23/2019 Time: 12:45 PM User: RetMH0505



PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations



Responsive partner. Exceptional outcomes.

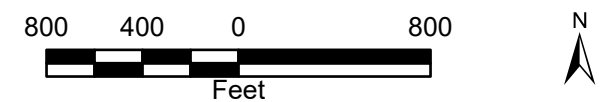
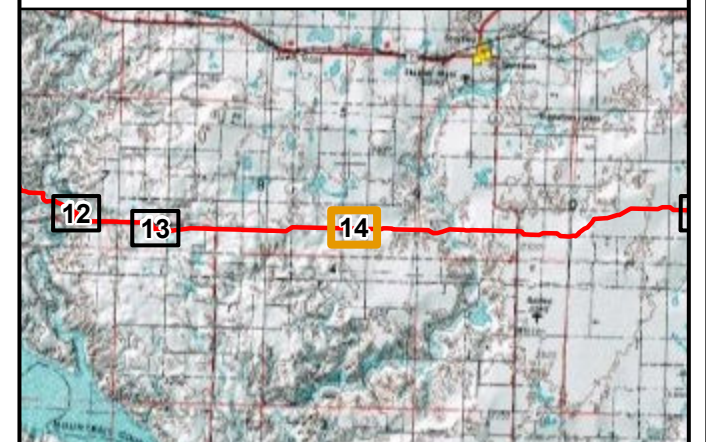
OCT 2019

Map 13 of 17

**North Dakota  
Public Service Commission**

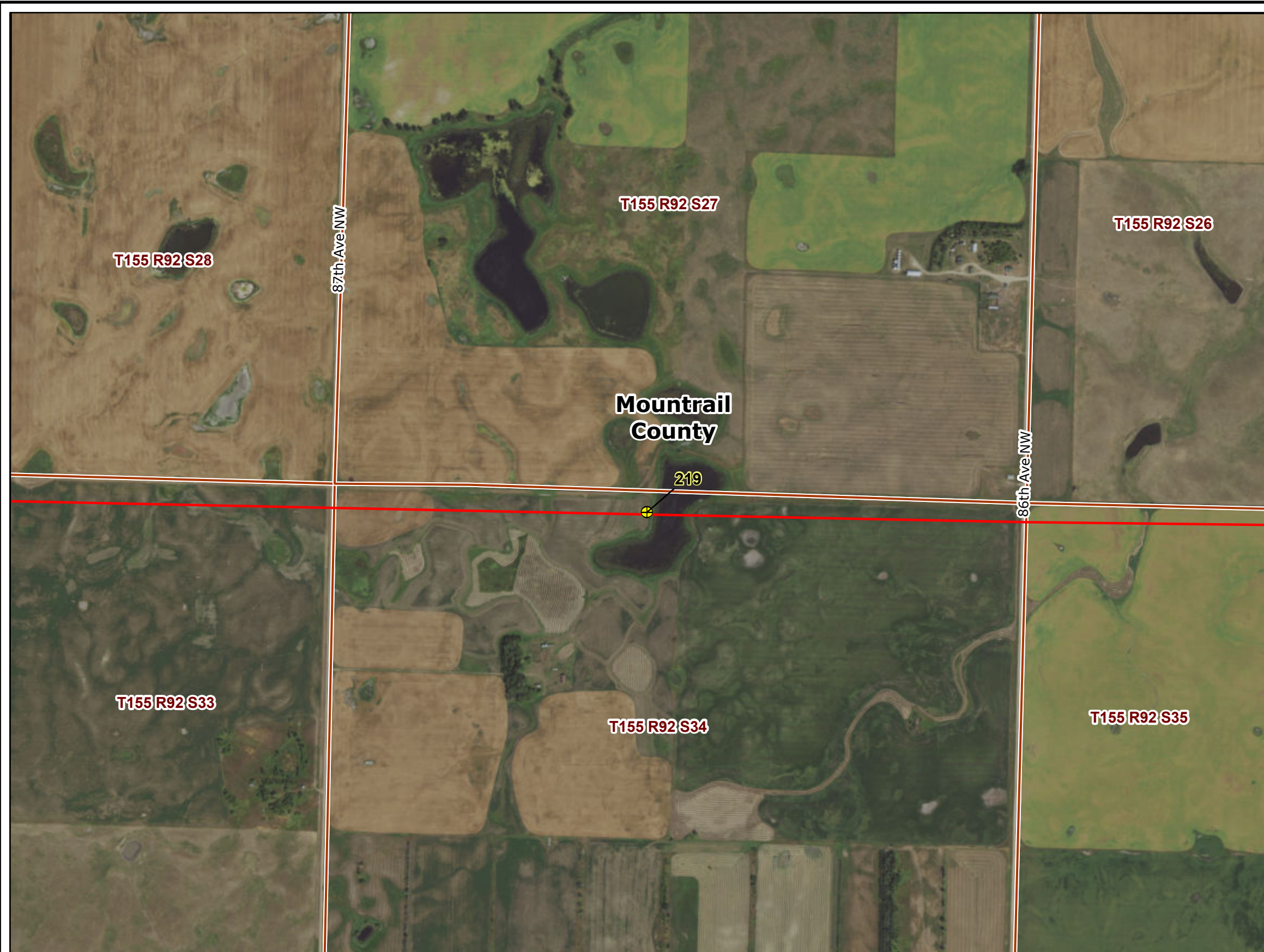
**Cenex Pipeline  
Figure 14**

- ⊕ Construction Observation: Spread-1
- ⊕ Construction Observation: Spread-2
- Cenex Pipeline Centerline (PU-17-97)
- ▭ Section Boundary



2018 Aerial Photograph (Source: NAIP)

Path: U:\GIS\2579\0033\pro\Cenex\_Pipeline\Cenex\_Pipeline.aprx  
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PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







Responsive partner. Exceptional outcomes.

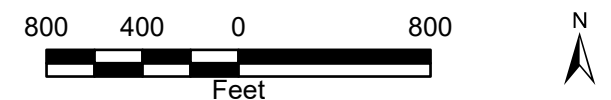
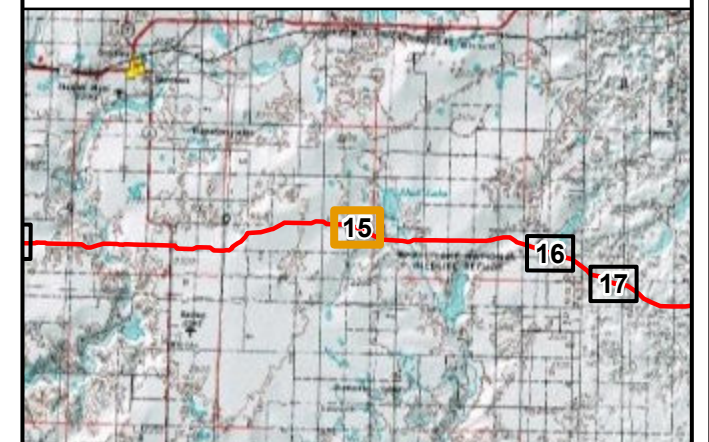
OCT 2019

Map 14 of 17

**North Dakota  
Public Service Commission**

**Cenex Pipeline  
Figure 15**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

Path: U:\GIS\2579\0033\pro\Cenex\_Pipeline\Cenex\_Pipeline.aprx  
Date: 10/23/2019 Time: 12:45 PM User: RetMH0505



PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







Responsive partner. Exceptional outcomes.

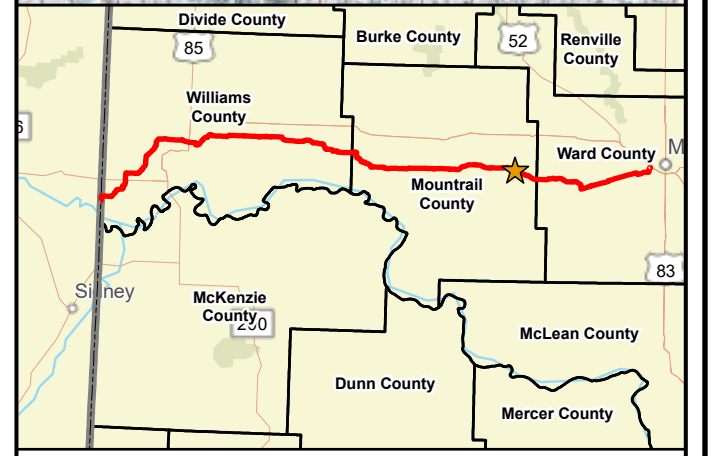
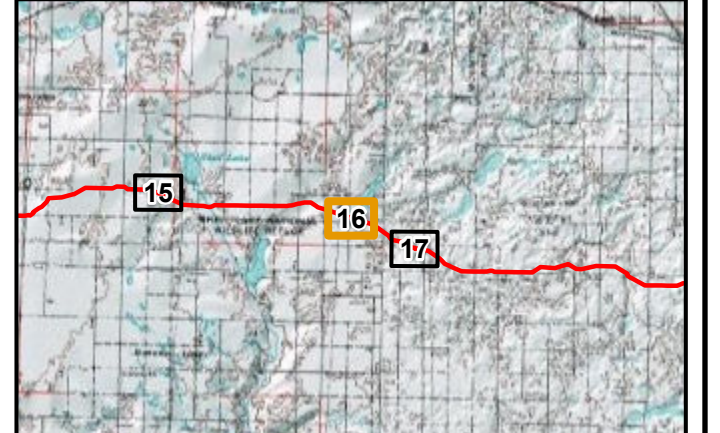
OCT 2019

Map 15 of 17

**North Dakota  
Public Service Commission**

**Cenex Pipeline  
Figure 16**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

Path: U:\GIS\2579\0033\pro\Cenex\_Pipeline\Cenex\_Pipeline.aprx  
Date: 10/23/2019 Time: 12:46 PM User: RetMH0505



PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations







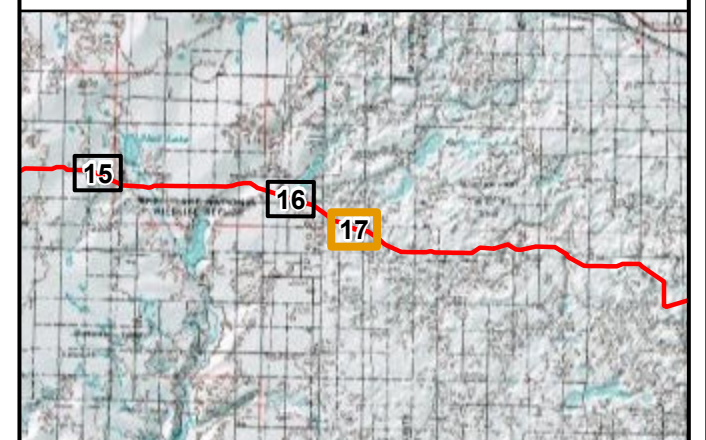
OCT 2019

Map 16 of 17

**North Dakota  
Public Service Commission**

**Cenex Pipeline  
Figure 17**

-  Construction Observation: Spread-1
-  Construction Observation: Spread-2
-  Cenex Pipeline Centerline (PU-17-97)
-  Section Boundary



2018 Aerial Photograph (Source: NAIP)

Path: U:\GIS\2579\0033\pro\Cenex\_Pipeline\Cenex\_Pipeline.aprx  
Date: 10/23/2019 Time: 12:46 PM User: RetMH0505



PU-17-97 CENEX PIPELINE CONSTRUCTION INSPECTION

Construction Observation Locations



OCT 2019

Map 17 of 17

Photographs




## Cenex - On-Site Photographs

	<p><b>Observation Point: 137</b>  Date Taken: July 17,2019  Direction Photo is Taken: Northwest  Station 3713+00 Spread 1</p> <p>Photo Description: Archaeological site with green stakes to represent boundary. Mower avoided area.</p> <p>Latitude: 48.29045  Longitude: -103.54486</p>
	<p><b>Observation Point: 138a</b>  Date Taken: July 17,2019  Direction Photo is Taken: Southwest  Station 3713+00 Spread 1</p> <p>Photo Description: Archaeological site avoided and staked.</p> <p>Latitude: 48.29042  Longitude: -103.54484</p>
	<p><b>Observation Point: 138b</b>  Date Taken: July 17,2019  Direction Photo is Taken: West  Station 3713+00 Spread 1</p> <p>Photo Description: Archaeological site avoided and staked.</p> <p>Latitude: 48.29042  Longitude: -103.54484</p>

## Cenex - On-Site Photographs

	<p><b>Observation Point: 142a</b>  Date Taken: July 17,2019  Direction Photo is Taken: Southeast  Station 4177+00 Spread 1</p> <p>Photo Description: Trench with pipe placement. Approximate pipe depth at 85 inches. Appropriately no evidence of topsoil in trench profile.</p> <p>Latitude: 48.29914  Longitude: -103.36725</p>
	<p><b>Observation Point: 142b</b>  Date Taken: July 17,2019  Direction Photo is Taken: Southwest  Station 4177+00 Spread 1</p> <p>Photo Description: Frontier contractors connecting trenched pipe to bored pipe under section road.</p> <p>Latitude: 48.29914  Longitude: -103.36725</p>
	<p><b>Observation Point: 143</b>  Date Taken: July 17,2019  Direction Photo is Taken: South  Station 4179+00 Spread1</p> <p>Photo Description: Pipe in trench, depth approximately 60 inches at Section Line. No evidence of topsoil in trench profile.</p> <p>Latitude: 48.29911  Longitude: -103.36645</p>

## Cenex - On-Site Photographs

	<p><b>Observation Point: 145</b>  Date Taken: July 17, 2019  Direction Photo is Taken: West  Station 4250+00 Spread 1</p> <p>Photo Description: View of wetland with timber mats in place. Mr. Bishop explained that this wetland would be bored under.</p> <p>Latitude: 48.29871  Longitude: -103.33710</p>
	<p><b>Observation Point: 654a</b>  Date Taken: July 29, 2019  Direction Photo is Taken: NA  Station 3726+00 Spread 1</p> <p>Photo Description: Ground view of soil removal where the Cenex pipeline intersected 5 other pipelines. Confirmed the depth of pipeline installation in the current construction area to be a minimum 48 inches</p> <p>Latitude: 48.28949  Longitude: -103.53953</p>
	<p><b>Observation Point: 654b</b>  Date Taken: July 29, 2019  Direction Photo is Taken: NA  Station 3726+00 Spread 1</p> <p>Photo Description: Ground view of soil removal where the Cenex pipeline intersected 5 other pipelines. Spotter present in photo for backhoe operator.</p> <p>Latitude: 48.28949  Longitude: -103.53953</p>

## Cenex - On-Site Photographs

**Observation Point: 2737**

Date Taken: August 20, 2019  
 Direction Photo is Taken: Southeast  
 Station 2723+00 Spread 1

Photo Description: Initial backfilling of trench. Subsoil appropriately used.

Latitude: 48.202490  
 Longitude: -103.835441

**Observation Point: 2738**

Date Taken: August 20, 2019  
 Direction Photo is Taken: South  
 Station 2710+00 Spread 1

Photo Description: Pipe depth at approximately 52-inches. Appropriately no topsoil in trench profile.

Latitude: 48.198703  
 Longitude: -10.834265



**Observation Point: 209**

Date Taken: October 9, 2019  
 Direction Photo is Taken: Northwest  
 Station 2192+00 Spread 1




Photo Description: Overlooking Geographical Unstable Area in SW1/4 Section 33, Township 154N, Range 103W. This includes an un-named tributary to Eightmile Creek in the foreground. A "Cut and Cover" method was presumably utilized in this area.

Latitude: 48.112332  
 Longitude: -103.939743

## Cenex - On-Site Photographs

	<p><b>Observation Point: 212</b>  Date Taken: October 9, 2019  Direction Photo is Taken: North  Station 3081+00 Spread 1</p> <p>Photo Description: Erosion control fabric placed in swale to mitigate against water erosion.</p> <p>Latitude: 48.277135  Longitude: -103.769380</p>
	<p><b>Observation Point: 148</b>  Date Taken: July 17, 2019  Direction Photo is Taken: East  Station 5712+00 Spread 2</p> <p>Photo Description: Dakota skipper (<i>Hesperia dacotae</i>) habitat fenced off 10 feet from avoidance area and taped off to give 50-foot buffer.</p> <p>Latitude: 48.24469  Longitude: -102.80559</p>
	<p><b>Observation Point: 149</b>  Date Taken: July 17, 2019  Direction Photo is Taken: South  Station 5706+00 Spread 2</p> <p>Photo Description: Bore pipe to go under wetland and Dakota skipper habitat.</p> <p>Latitude: 48.24564  Longitude: -102.80500</p>

## Cenex - On-Site Photographs

	<p><b>Observation Point: 150a</b>  Date Taken: July 17,2019  Direction Photo is Taken: South  Station 6132+00 Spread 2</p> <p>Photo Description: Dakota skipper habitat fenced off 10 feet from avoidance area and taped off to give 50-foot buffer.</p> <p>Latitude: 48.20914  Longitude: -102.66808</p>
	<p><b>Observation Point: 150b</b>  Date Taken: July 17,2019  Direction Photo is Taken: South  Station 6132+00 Spread 2</p> <p>Photo Description: Dakota skipper habitat fenced off 10 feet from avoidance area and taped off to give 50-foot buffer.</p> <p>Latitude: 48.20914  Longitude: -102.66808</p>
	<p><b>Observation Point: 153</b>  Date Taken: July 17,2019  Direction Photo is Taken: East  Station 4787+00 Spread 2</p> <p>Photo Description: Topsoil properly redistributed along ROW. Awaiting aeration before seeding.</p> <p>Latitude: 48.28869  Longitude: -103.12904</p>

## Cenex - On-Site Photographs

	<p><b>Observation Point: 156</b>  Date Taken: July 17, 2019  Direction Photo is Taken: East  Station 4906+00 Spread 2</p> <p>Photo Description: Archaeological site staked to show boundary. Site avoided.</p> <p>Latitude: 48.28743  Longitude: -103.08066</p>
	<p><b>Observation Point: 157</b>  Date Taken: July 17, 2019  Direction Photo is Taken: East  Station 4946+00 Spread 2</p> <p>Photo Description: Pipe depth approximately 60 inches. Trench profile appropriately shows no evidence of topsoil.</p> <p>Latitude: 48.28793  Longitude: -103.06484</p>
	<p><b>Observation Point: 2727</b>  Date Taken: August 20, 2019  Direction Photo is Taken: North  Station 7745+00 Spread 2</p> <p>Photo Description: Appropriately marked and avoided USFWS wetland easement. Contractors will utilize a boring for wetland and sectional road.</p> <p>Latitude: 48.212543  Longitude: -102.030246</p>

### Cenex - On-Site Photographs



**Observation Point: 2730**

Date Taken: August 20, 2019  
Direction Photo is Taken: Southeast  
Station 7325+00 Spread 2

Photo Description: Overlooking wetland with straw wattles for erosion control and timber mats.

Latitude: 48.224716  
Longitude: -102.196252



**Observation Point: 2733**

Date Taken: August 20, 2019  
Direction Photo is Taken: Northwest  
Station 6166+00 Spread 2

Photo Description: Contractors boring under road.

Latitude: 48.207821  
Longitude: -102.655138



**Observation Point: 2734**

Date Taken: August 20, 2019  
Direction Photo is Taken:  
Station 6107+00 Spread 2




Photo Description: Pipe depth at approximately 60-inches. Appropriately no topsoil in trench profile.

Latitude: 48.211103  
Longitude: -102.676314

## Cenex - On-Site Photographs

	<p><b>Observation Point: 214a</b>  Date Taken: October 9, 2019  Direction Photo is Taken: North  Station 5068+00 Spread 2</p> <p>Photo Description: Overlooking end of cleared ROW across Williams County Road 8 from Bore site. Construction temporarily halted due to unexpected archaeological findings.</p> <p>Latitude: 48.283783  Longitude: -103.021106</p>
	<p><b>Observation Point: 214b</b>  Date Taken: October 9, 2019  Direction Photo is Taken: East  Station 5068+00 Spread 2</p> <p>Photo Description: Overlooking Geographical Unstable Area in the NW1/4 of Section 3, Township 155N, Range 96W, to ROW continuation. HDD will be utilized in this area. Construction temporarily halted due to unexpected archaeological findings.</p> <p>Latitude: 48.283783  Longitude: -103.021106</p>
	<p><b>Observation Point: 215</b>  Date Taken: October 9, 2019  Direction Photo is Taken: West  Station 5393+00 Spread 2</p> <p>Photo Description: Overlooking stream and wooded area where HDD will be utilized.</p> <p>Latitude: 48.259973  Longitude: -102.908813</p>

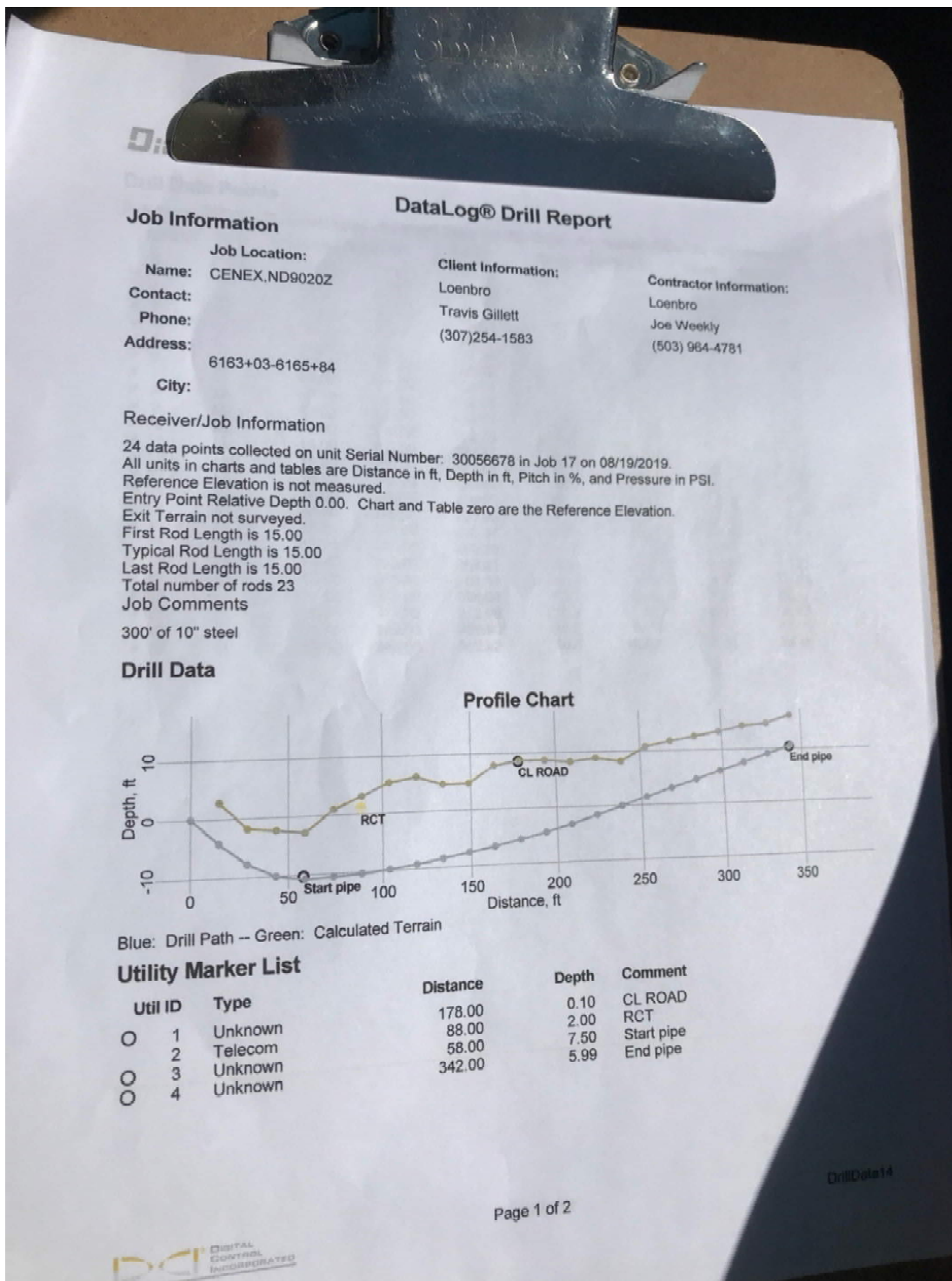
## Cenex - On-Site Photographs

	<p><b>Observation Point: 216</b>  Date Taken: October 9, 2019  Direction Photo is Taken: East  Station 5552+00 Spread 2</p> <p>Photo Description: Overlooking wetland with straw wattles. ROW was tilled by contractors and then again by landowner. This feature was trenched before persistent rains filled the basin.</p> <p>Latitude: 48.255731  Longitude: -102.848349</p>
	<p><b>Observation Point: 217</b>  Date Taken: October 9, 2019  Direction Photo is Taken: North  Station 5959+00 Spread 2</p> <p>Photo Description: Pipe in trench at approximately 48-inches.</p> <p>Latitude: 48.211989  Longitude: -102.734508</p>
	<p><b>Observation Point: 218</b>  Date Taken: October 9, 2019  Direction Photo is Taken: Northwest  Station 5945+00 Spread 2</p> <p>Photo Description: Overlooking White Earth River. This area will utilize 3 HDDs. Downhill from Observation Point, under the river, and up the hill in background continuing under a Geographical Unstable Area in N1/2 of Section 27, Township155N, Range 94W.</p> <p>Latitude: 48.215661  Longitude: -102.734507</p>

## Cenex - On-Site Photographs

	<p><b>Observation Point: 219</b>  Date Taken: October 9, 2019  Direction Photo is Taken: East  Station 6562+00 Spread 2</p> <p>Photo Description: Water feature bored under. Stakes show bore path to continued ROW.</p> <p>Latitude: 48.210979  Longitude: -102.494748</p>
	<p><b>Observation Point: 220a</b>  Date Taken: October 9, 2019  Direction Photo is Taken: Northwest  Station 7905+00 Spread 2</p> <p>Photo Description: Overlooking adjusted route for USAF easement. Pipe strung, awaiting trenching.</p> <p>Latitude: 48.195272  Longitude: -101.972186</p>
	<p><b>Observation Point: 220b</b>  Date Taken: October 9, 2019  Direction Photo is Taken: East  Station 7905+00 Spread 2</p> <p>Photo Description: Overlooking adjusted route for USAF easement. Pipe strung, awaiting trenching.</p> <p>Latitude: 48.195272  Longitude: -101.972186</p>

### Cenex - On-Site Photographs



[Above] HDD boring log from inspection of boring under 94<sup>th</sup> Ave NW in Section 33, T155N, R93W showing a minimum of 5-foot cover. Associated Observation Point: 2733 Date Taken: August 20, 2019 Station 6166+00 Spread 2



Responsive partner.  
Exceptional outcomes.