



PU-21-048
Bridger Pipeline, LLC
South Bend 16-inch Crude Oil
Pipeline
Reclamation Inspection Report

File No. 227705201

May 23, 2024

Prepared for:

North Dakota Public Service Commission
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1.0 EXECUTIVE SUMMARY

The North Dakota Public Service Commission (PSC) retained Stantec Consulting Services Inc (Stantec) to complete a reclamation and revegetation inspection following the completion of the Bridger Pipeline (Project) constructed by Bridger Pipeline, LLC (Bridger). The purpose of the inspection was to ensure the project was constructed in compliance with the citing laws and rules and the applicable PSC Orders for the Project and includes the requirements for restoration and repair of infrastructure affected by Project construction, reclamation, and reseeding.

The Project construction commenced on June 22, 2022 and concluded in December 2022. Reclamation restoration activities were initiated in late 2022, as documented in the Construction Inspection Report (PU-21-048 Docket No. 78). The as-built construction inspection occurred April 25-26, 2023. Stantec conducted the on-site reclamation inspections that occurred on May 13-15, 2023. This report includes documentation from the most recent inspection and the status of reclamation and revegetation efforts to date.

Reclamation along most areas of the project was satisfactory. The right of way (ROW) was observed to be recontoured to the surrounding landscape and topography as near as possible. Generally, areas under cultivation appeared comparable to the outside of ROW cropland, with little-to-no occurrences of weedy species. Desirable species were observed throughout hay land and rangeland observation points, with some points containing weedy species. However, revegetation inspections of the Project revealed some issue areas along the ROW. There were observed instances of eroded soils leading to inadequate plant growth which warrants revegetation activities before the project can be considered practicably restored to the condition as it existed prior to the beginning of construction.



2.0 BACKGROUND AND SCOPE

2.1 INTRODUCTION

Bridger Pipeline LLC has constructed the South Bend Crude Oil Pipeline in Golden Valley and McKenzie Counties in North Dakota. The transmission pipeline route within North Dakota stretches between Eighty Eight Oil Company's (EEOC) existing Johnson's Corner Terminal to the Montana border, and is approximately 81 miles long. Much of this route is through the US Forest Service-Little Missouri National Grasslands, with the corridor including a mix of public and private parcels.

2.2 PURPOSE

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. Post-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 PSC Findings of Fact, Conclusions of Law, and Order (Order). The PSC retained Stantec to complete a reclamation and revegetation inspection of the Project following construction completion and as-built inspections.

2.3 METHODS AND SCOPE OF INSPECTION

2.3.1 Project Scope Identification

Stantec's scope of work was to perform and document a reclamation and revegetation inspection after one full growing season no less than one year from the anniversary date of completion of fertilization and seeding. The last Construction Status report submitted for the project by Bridger in March of 2023 noted re-seeding was partially complete at that time and that remaining areas would be re-seeding in the spring of 2023 (Docket No. 85). This report includes, but is not limited to, documentation of site visit observations, and a summary of findings, issues that should be addressed for the Project to be considered complete and in compliance and a follow-up of areas of concern identified in the as-built construction inspection (PU-21-048 Docket No. 86).

Stantec's intent was to ensure the Projects obligations of compliance with reclamation and restoration specifications found in the Findings of Fact, Conclusions of Law and Order, Certifications Relating to Order Provisions. These "Project Specifications" are listed in Table 1. Project Specifications originated mainly from the Certification Relating to Order Provisions.



Table 1- Project Specification Scope Table

Order Provision 18	<i>Company understands and agrees that it shall, as soon as practicable upon the completion of the construction of the transmission facility, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction.</i>
Order Provision 19	<i>Company understands and agrees that all pre-existing township and county roads and lanes used during construction must be repaired or restored to a condition that is equal to or better than the condition prior to the construction of the transmission facility and that will accommodate their previous use, and that areas used as temporary roads or working areas during construction must be restored to their original condition.</i>
Order Provision 20	<i>Company understands and agrees that reclamation, fertilization, and reseeding is to be done according to the Natural Resources Conservation Service recommendations, unless otherwise specified by the landowner and approved by the Commission.</i>
Order Provision 21	<i>Company will fulfill its obligation for reclamation and maintenance of the approved transmission facility right-of-way, transmission facility, and associated facilities continuing throughout the life of the transmission facility.</i>
Order Provision 22	<i>Company will repair all fences and gates removed or damaged during all phases of construction and operation of the transmission facility.</i>
Order Provision 23	<i>Company will repair or replace all drainage tile broken or damaged as a result of construction and operation of the transmission facility.</i>
Order Provision 24	<i>Company agrees to comply with the Tree and Shrub Mitigation Specifications, attached.</i>
Order Provision 25	<i>Company understands and agrees that it shall remove all waste that is a product of construction and operation, restoration, and maintenance of the site, and properly dispose of it on a regular basis.</i>

2.3.2 On-Site Inspection

Reed Scott, Stantec Natural Resource Scientist, inspected the Project route on May 13-15, 2024. The pipeline route was inspected by driving to ROW access points adjacent to public roads and walking the ROW where accessible. Observation points containing geographic coordinates and describing reclamation/revegetation status were recorded on a tablet utilizing internal satellite triangulation software paired with a Global Positioning System (GPS) (**Appendix A**). Digital photographs were taken with the tablet to geotag photo locations and associate all collected data from each Observation Point (Figures 1-21). Only portions of the Project were inspected and not all areas of the ROW were observed. A total of 48 inspection photographs were taken showing representative conditions of the project across varying land uses of the ROW (**Appendix A**).



3.0 RESULTS OF SITE INSPECTION

The following subsections outline findings from the inspection pertaining to the land uses of the ROW.

3.1 CROPLAND

The Project ROW crosses numerous parcels of cropland, either bisecting or following the outer boundaries of the fields. Most crop fields were under tillage or recently planted during the time of the survey. Healthy growing crop was documented at **Observation Point 29**. No visual grain yield estimate or stand height comparisons were made. Overall, the physical characteristics of the crops and cropland in the reclaimed ROW were consistent to the surrounding, undisturbed land at **Observation Points 3, 4, 22, 24, 29 (Appendix A)**. All cropland observations were trash and debris-free.

The soil in most cropland appeared to have been adequately replaced and was matching existing topography. Soil erosion was evident at **Observation Point 1 and Observation Point 2** documents a straw wattle in the ditch that is full of sediment that would benefit from being cleaned out or adding additional erosion control measures. Populations of annual weeds, predominantly prickly Russian thistle (*Salsola tragus*) and kochia (*Bassia scoparia*), were common along some areas in the ROW but were generally not a concern.

3.2 HAY LAND

The Project ROW crosses numerous parcels of idle land presumably used for hay production, covered by perennial and annual vegetation. It is presumed these hay lands are not normally subjected to livestock grazing or cultivation (**Appendix A; Observation Points 13, 14, 43, 44**). Stantec inspected vegetation in hay land but cannot confirm what may have been seeded in the ROW. Stantec observed the presence of native grass western wheatgrass (*Pascopyrum smithii*) and sideoats grama (*Bouteloua curtipendula*), which may have been seeded. Other non-native species observed include biennial primrose (*Oenothera biennis*), field bindweed (*Convolvulus arvensis*), sweet clover (*Melilotus officinalis*), alfalfa (*Medicago sativa*), lambsquarter (*Chenopodium album*), foxtail barley (*Hordeum jubatum*), downy brome (*Bromus tectorum*), common ragweed (*Artemisia artemisiifolia*), crested wheatgrass (*Agropyron cristatum*), and smooth brome (*Bromus inermis*). Overall, vegetation cover was 70 to 100% in ROW areas both at the geographical coordinates of the photo observation, and from adjacent visual assessments along ROW extents, and are similar to the adjacent undisturbed land.

Observation Points 13 and 14 documented substantial populations of prickly Russian thistle, while the surrounding area contained only alfalfa.



3.3 RANGELAND

The Project ROW crosses grassland presumably used as rangeland for grazing or CRP and displayed no evidence of haying (**Appendix A; Observation Points 5-9, 15-21, 23, 25-28, 30-42, 45-48**). Stantec inspected vegetation in rangeland but cannot confirm what species may have been seeded in the ROW. Common native species observed include sideoats grama, crested wheatgrass, western wheatgrass, stiff goldenrod (*Solidago rigida*), annual sunflower, and additional indiscernible grass species. The indiscernible grass species are presumably native seedlings and appear to be drill-seeded.

On-site inspections confirmed the establishment and/or presence of numerous other species throughout the ROW that are not native. These species include kochia, lambsquarter, prickly Russian thistle, yellow and white sweet clover, alfalfa, and smooth brome. Potential issue areas (**Observation Points 5, 15, 20, 23, and 31-37**) include poorly vegetated areas in the ROW due to recent seeding and/or slow vegetation establishment. In most other areas, the restoration of vegetative cover was comparable to undisturbed rangeland surrounding the ROW. Late-successional species coverage in the ROW is expected to become more established with time and moisture, assuming continued establishment of seeded areas and normal climatic conditions.

3.4 NOXIOUS AND ANNUAL WEEDS

Annual weeds are far more prevalent within the Project ROW than noxious weeds with prickly Russian thistle being predominant. Prickly Russian thistle was observed in abundance at **Observation Points 7, 9, 13 (Appendix A)**.



Table 2- Species Observed in Reclaimed ROW

Land Use	Vegetative Class					
	Grasses		Forbs		Weeds	
	Native	Non-Native	Native	Non-Native	Native	Non-Native
Cropland	NA	NA	NA	NA	NA	Kochia Prickly Russian thistle
Hay Land	Western wheatgrass Sideoats grama	Smooth brome Downy brome Crested wheatgrass	Annual sunflower	Alfalfa Yellow sweet clover Lambsquarter	NA	Prickly Russian thistle Field bindweed Kochia Lambsquarter
Rangeland	Seeded species Sideoats grama	Smooth brome	Annual sunflower Silver sage Sagewort	Yellow sweet clover White sweet clover	NA	Kochia Lambsquarter

3.5 STREAM/WETLAND CROSSINGS

One stream/wetland crossing (Cherry Creek) was observed where the HDD crossing method was used (**Appendix A; Observation Points 11-13**). The boring area was observed to be appropriately reclaimed and contained adequate topsoil replacement. Vegetation was still establishing but was colonizing with acceptable perennial vegetation where planted seeds are often slow to establish.



3.6 ROADS AND MAINTENANCE

Gravel roads crossed by the ROW had been bored underneath to avoid cuts and were in good condition. All fences and fenceposts appeared to have been fixed and/or replaced, and no access roads were found to remain. Overall, the ROW was maintained in good condition.

3.7 AS-BUILT INSPECTION CONCERNS

The as-built inspection documented subsidence and erosion control measures were recommended at the Cherry Creek crossing to prevent sediment washing into the creek. Though some work may have been done here and there was no evidence of subsidence along the ROW, continued soil erosion and lack of vegetation cover persists at **Observation Points 15-18**. Regrading/recontouring was recommended in the as-built inspection at select locations correlating to **Observation Points 32, 39, 40, 41** in this report. These locations appear to have been regraded/recontoured prior to final seeding. Proposed re-seeding activities are presumed to have been conducted to NRCS recommendations, however, it is unknown if any deviations were made upon the request of landowners and Stantec is unaware of any PSC approvals to do so.

Bridger appears to have addressed several Order Provisions identified in Stantec's As-Built Inspection report, through subsequent docketed submittals to the PSC after the 2023 as-built inspection. However, Stantec cannot confirm Bridger has fulfilled all project requirements, including submittal of the Tree and Shrub Mitigation Plan.



4.0 ISSUES AND RECOMMENDATIONS

4.1 VEGETATION MONITORING

Seeded and desired grass species comprised a majority of absolute cover in most of the inspected ROW areas. Some areas appear to be slower to establish from seeding due to slopes, erosion, land use, or naturally saline soils. Native species can be slow to colonize recently disturbed land since competition for available nutrients in the reclaimed soil with annual weed species is high. Future monitoring could be conducted to ascertain if absolute cover of desired species increases over time to fully determine if affected areas are restored to the condition as it existed prior to the beginning of Project construction.

4.2 WEED MANAGEMENT

Weed management is recommended throughout portions of the ROW. Thistle was observed in abundance at **Observation Points 7, 9, 13**. Kochia was also observed is recommended to be sprayed once in the spring when the plants emerge, and later in the summer when late-germinating plants begin emerging (NDSU Extension Service, 2016). Kochia and prickly Russian thistle have seed viability of ~1 year, so adequate control for one growing season may significantly reduce weed presence in following years. Other annual weeds should be monitored along the ROW in hay lands and rangelands per landowner preferences. Stantec recommends one or two years of mowing or herbicide application in June or July prior to weed seed ripening. This would reduce the annual weed seed bank within a year or two and allow the desired grass cover to better establish.

4.3 SOIL EROSION & REVEGETATION

Soil erosion was evident at multiple locations along the project ROW, including **Observation Points 1, 15-18 and 35**, resulting in lack of pre-project vegetation cover. This issue was most extensive adjacent to Cherry Creek in Section 6, Township 149 North and Range 97 West, where evidence of rill erosion and bare ground was common coinciding with relatively steep slopes. Stantec recommends re-stabilizing the slopes here and installing erosion BMPs to mitigate soil erosion along with re-seeding efforts. The extent of current erosion suggests that previous seed has likely washed away, and Stantec recommends installing fabric, mulch, or use of other methods to properly stabilize steeper slopes in conjunction with re-seeding.




5.0 SIGNATURES

The conclusions in this Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from the ND PSC and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the ND PSC in accordance with Stantec's contract with the ND PSC. While the Report may be provided to applicable authorities having jurisdiction and others for whom the ND PSC is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.



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Senior Soil Scientist

May 23, 2024

Date



6.0 REFERENCES

North Dakota Public Service Commission (ND PSC). 2024. Online Case Search. Available from:
http://www.psc.nd.gov/database/company_case_list.php. Accessed May 2024.

North Dakota State University (NDSU) Extension Service. 2016. Kochia – Weed of the Year. North Dakota State University Extension Service, Fargo, North Dakota. Available from:
<https://www.ndsu.edu/agriculture/sites/default/files/2021-05/38-Koch.pdf>. Accessed May 2024.






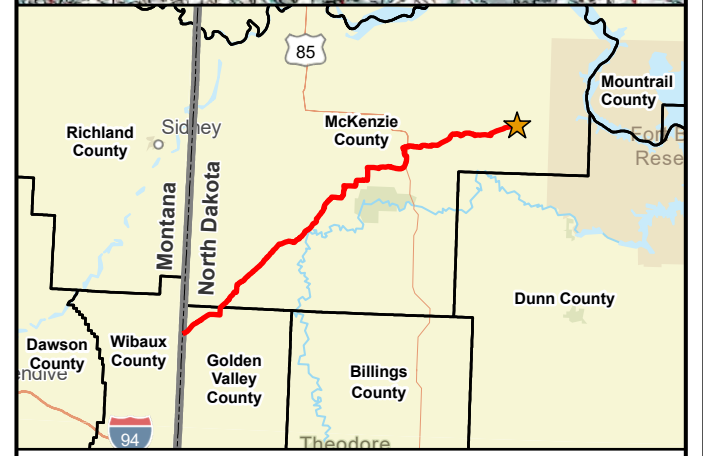
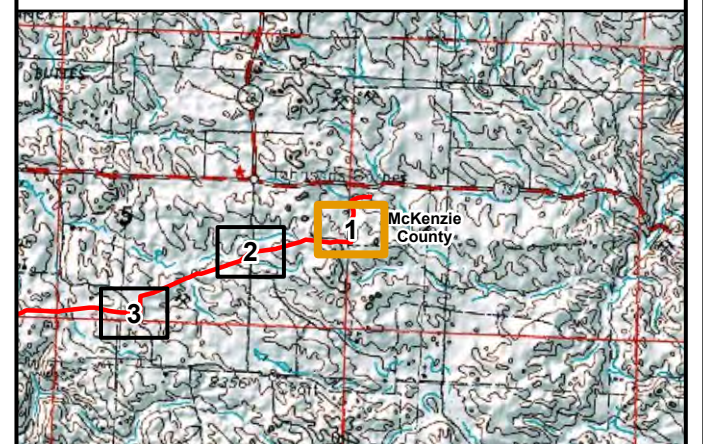
FIGURES

**Figure 1-21: Reclamation/Revegetation Observation
Locations Map**

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**Bridger Pipeline
Figure 1**

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations



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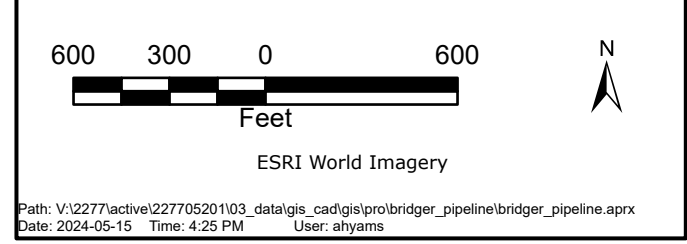
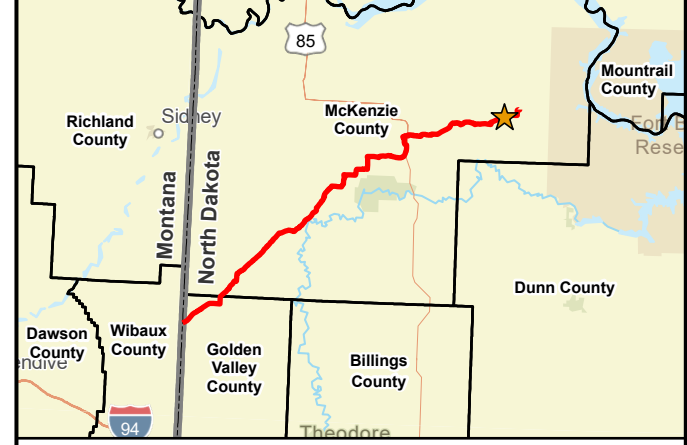
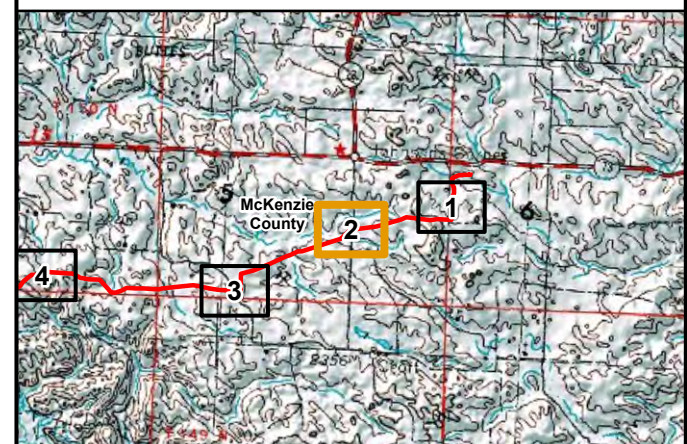
Map 1 of 21



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**Bridger Pipeline
Figure 2**

- R Reclamation Observation Point Location
- Bridger Pipeline Centerline (PU-21-48)
- Section Boundary



PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






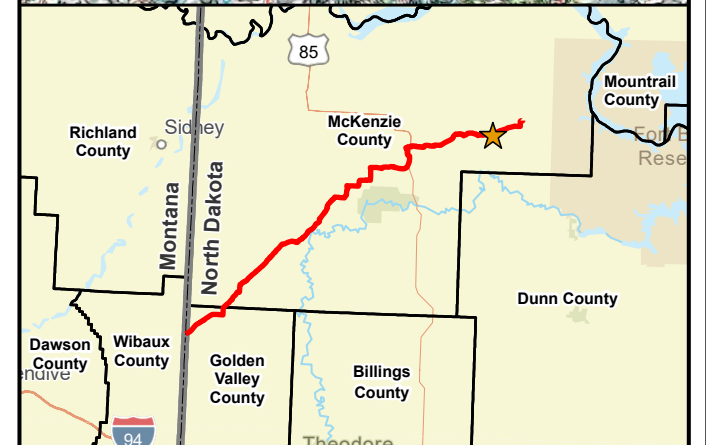
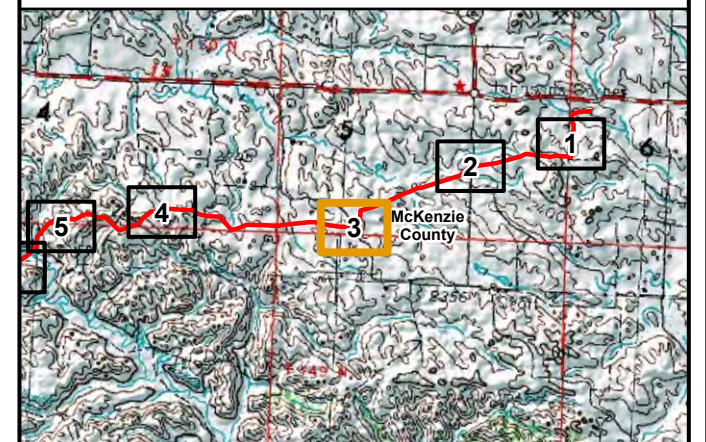
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Bridger Pipeline
Figure 3

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






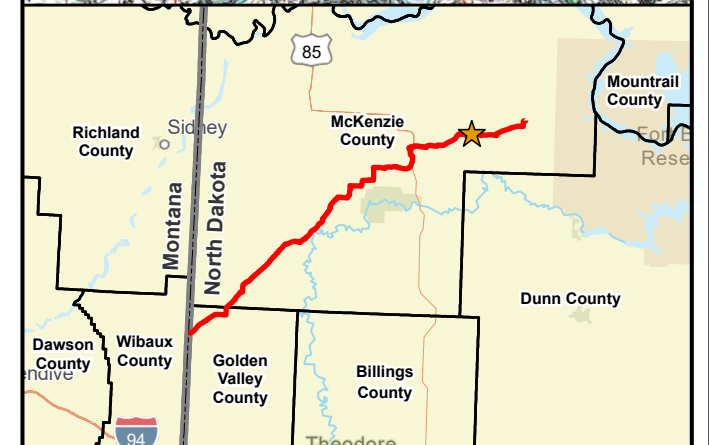
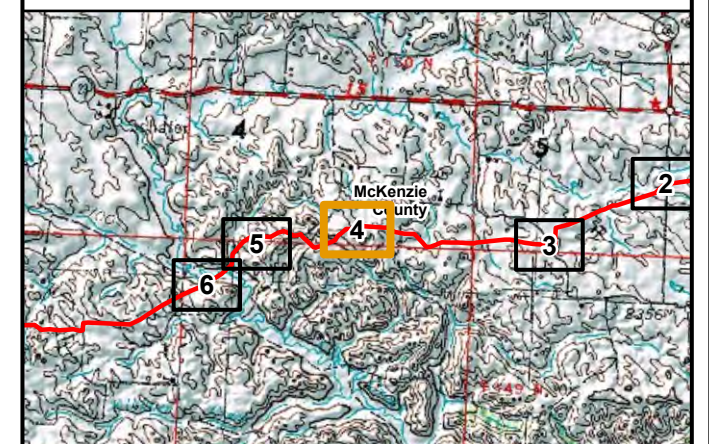
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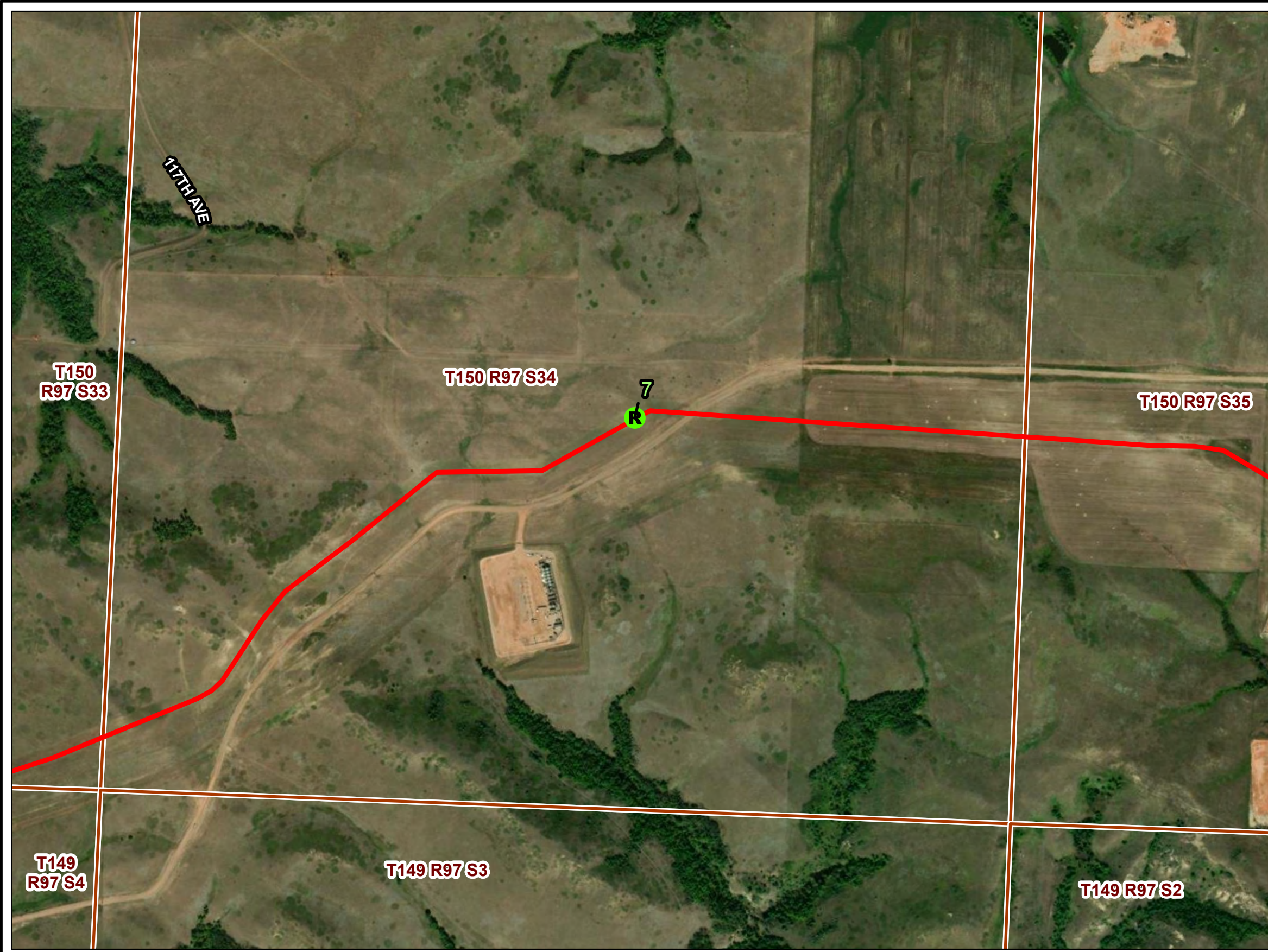
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Bridger Pipeline
Figure 4

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION




Reclamation Observation Locations

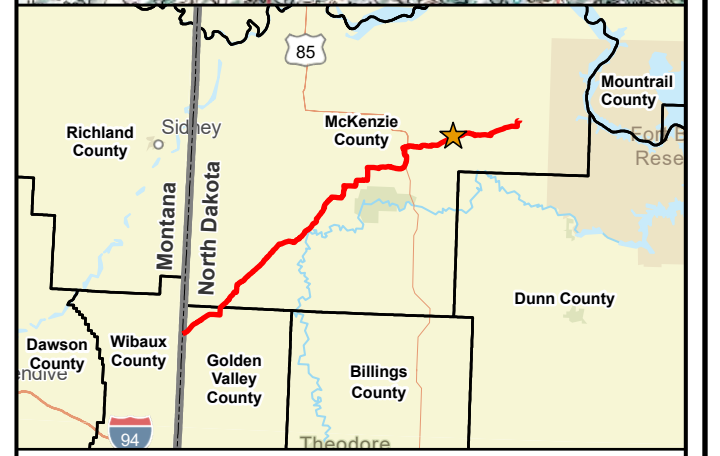
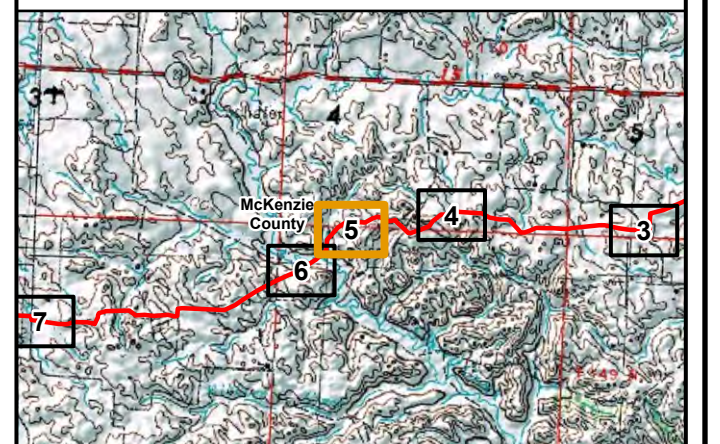


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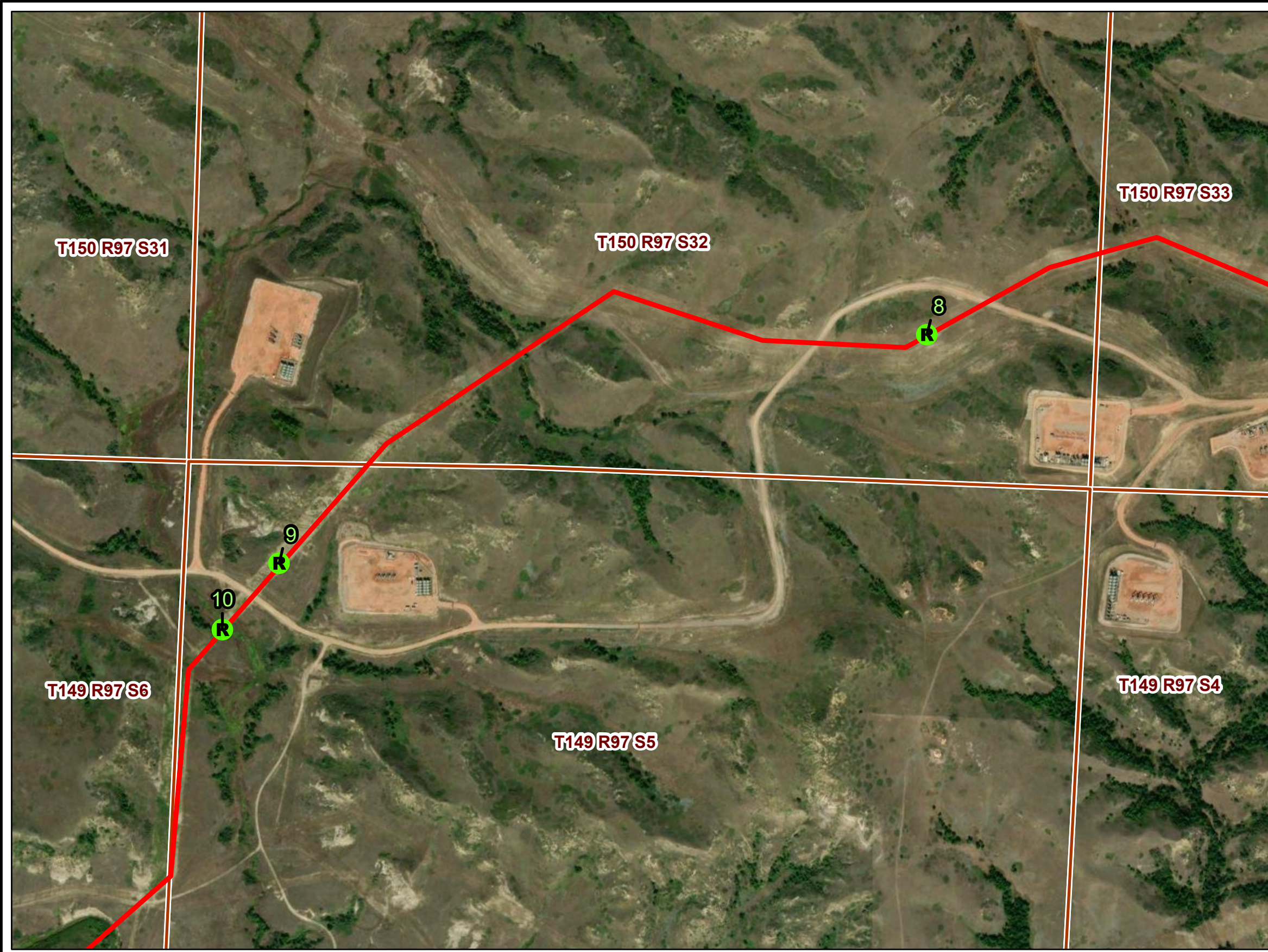
Map 4 of 21

**Bridger Pipeline
Figure 5**

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION




Reclamation Observation Locations

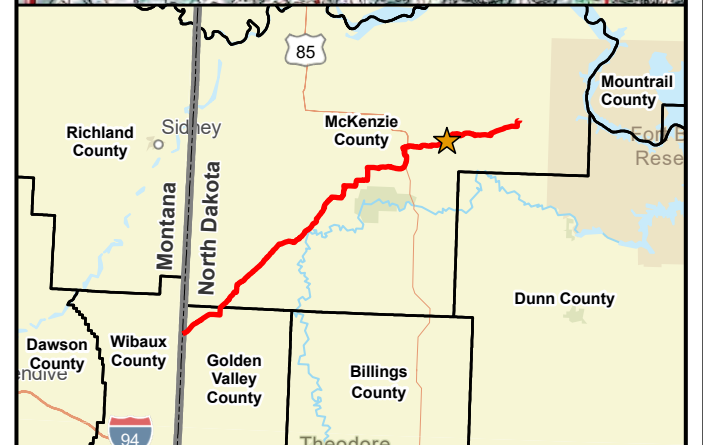
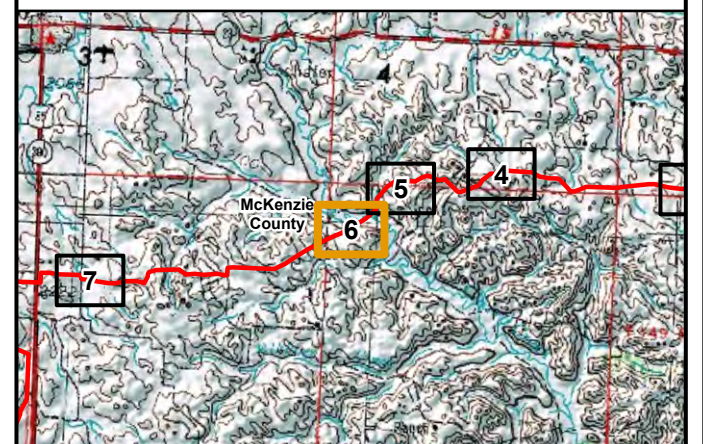


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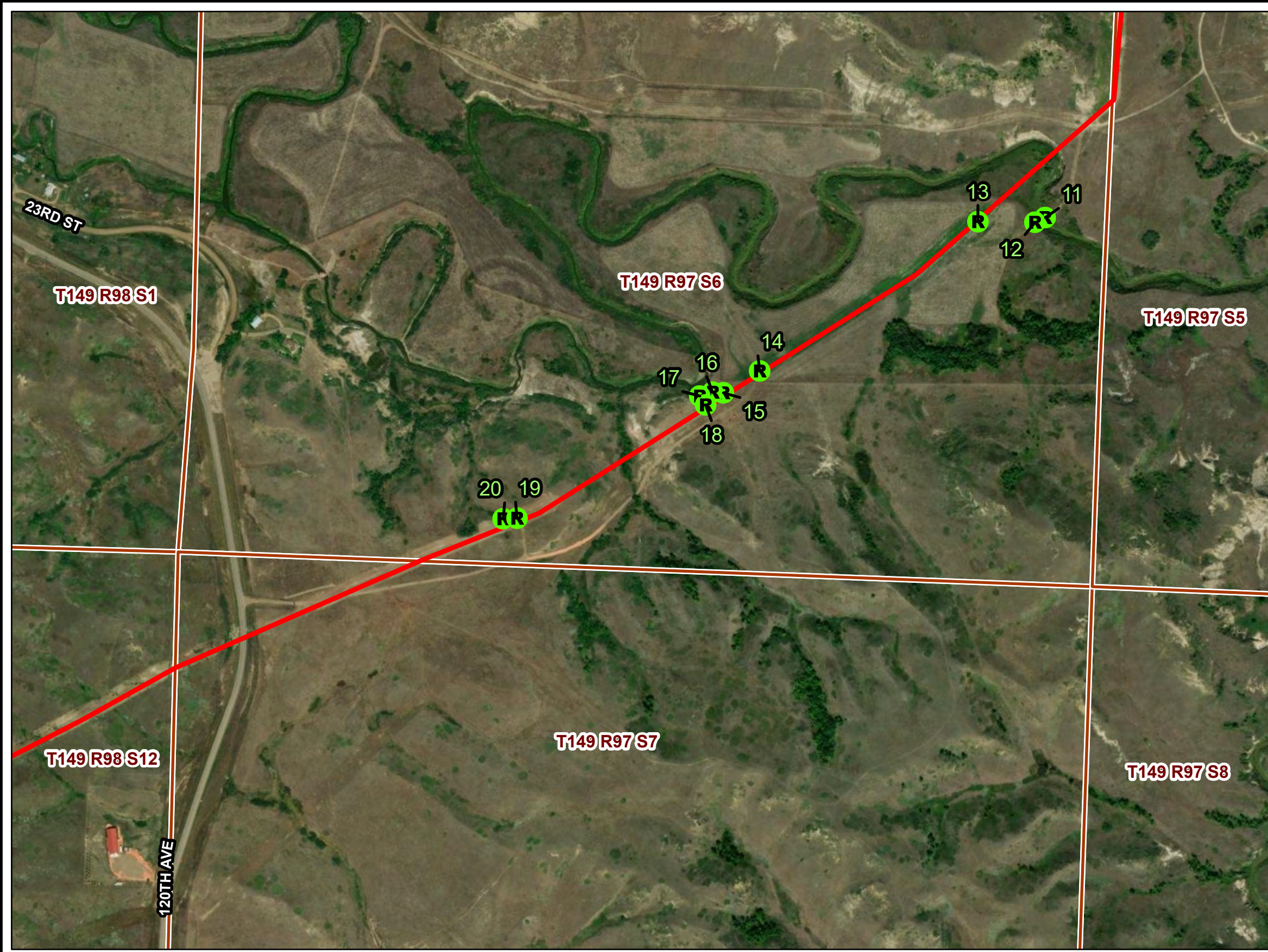
Map 5 of 21

**Bridger Pipeline
Figure 6**

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






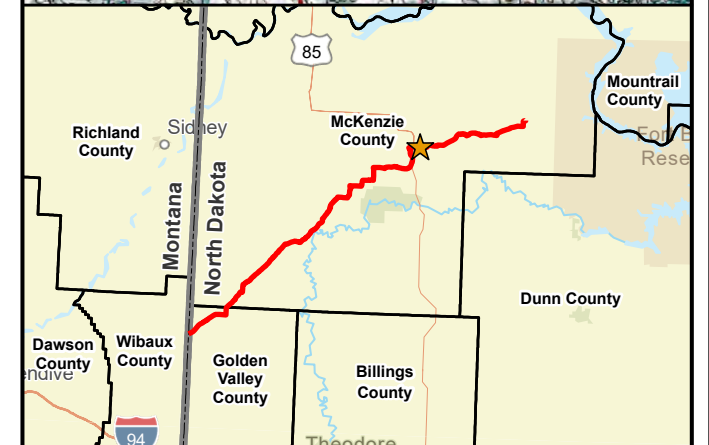
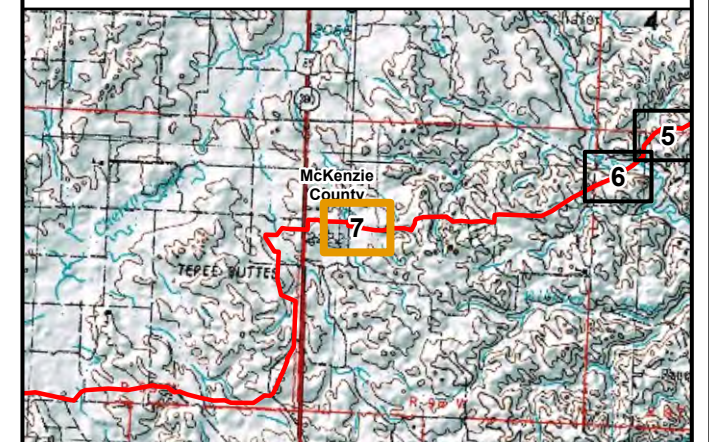
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Bridger Pipeline
Figure 7

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations



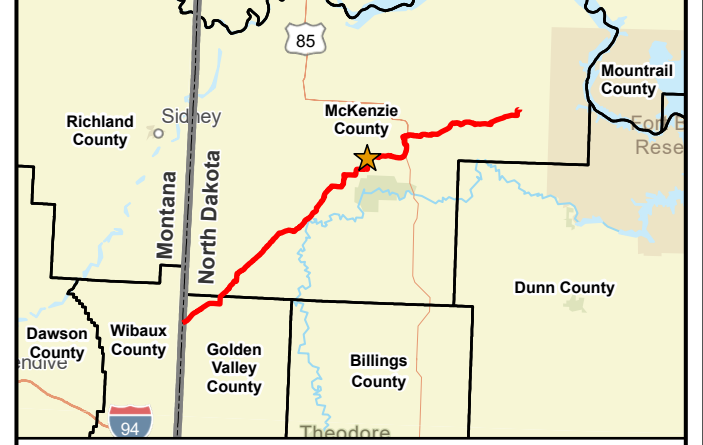
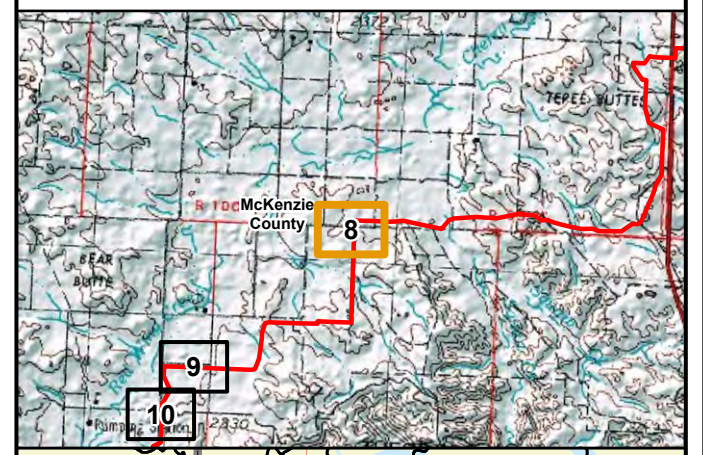
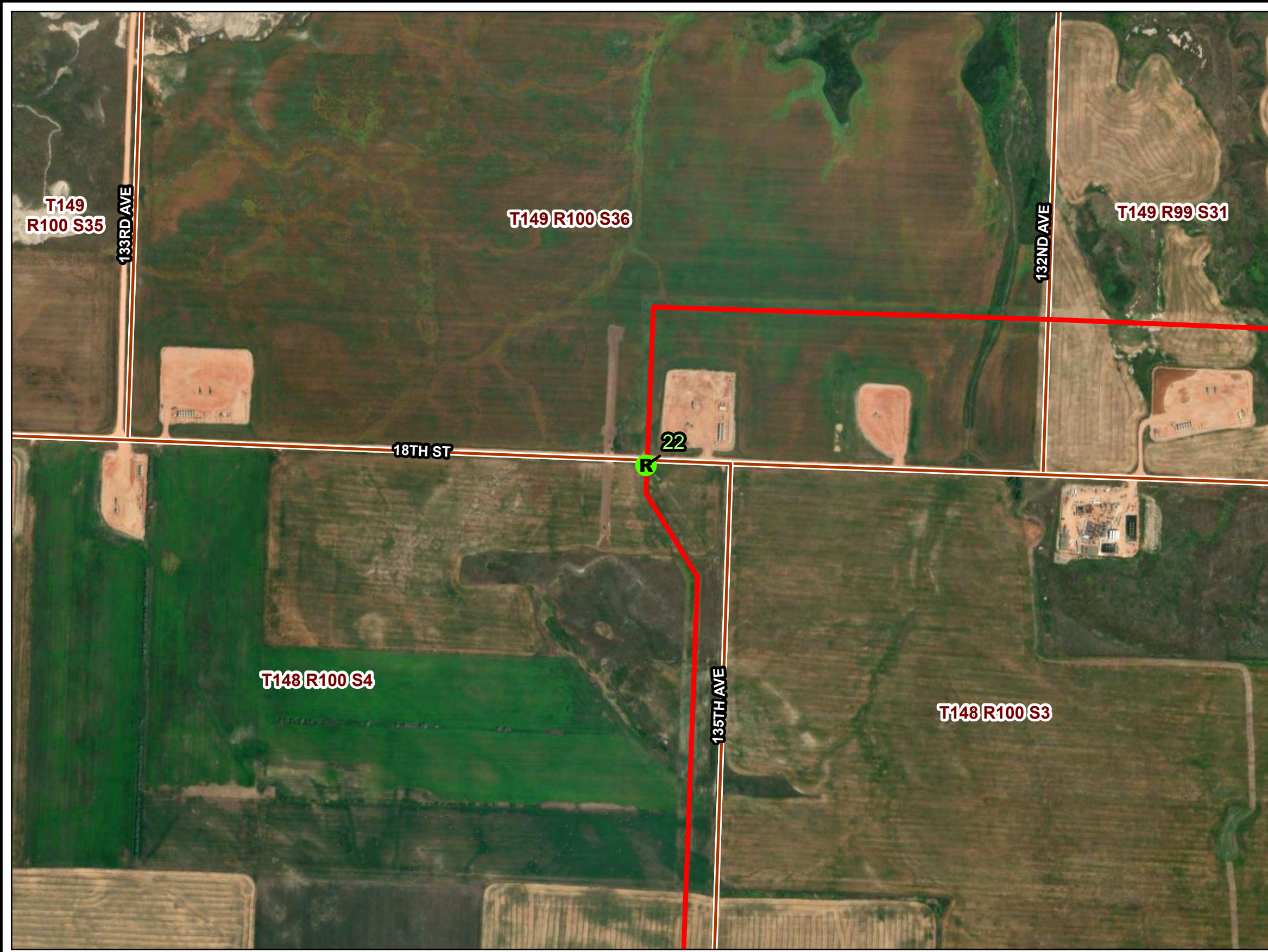
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Bridger Pipeline
Figure 8

- Reclamation Observation Point Location
- Bridger Pipeline Centerline (PU-21-48)
- Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations



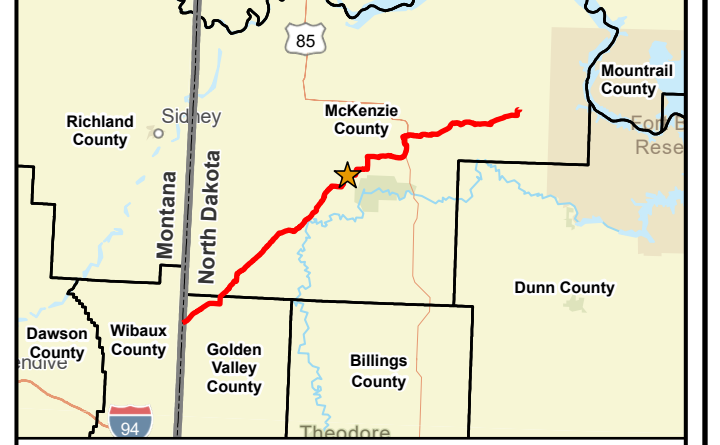
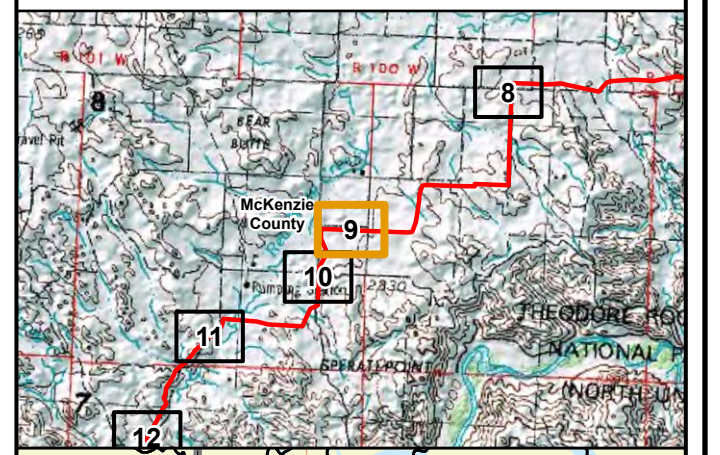
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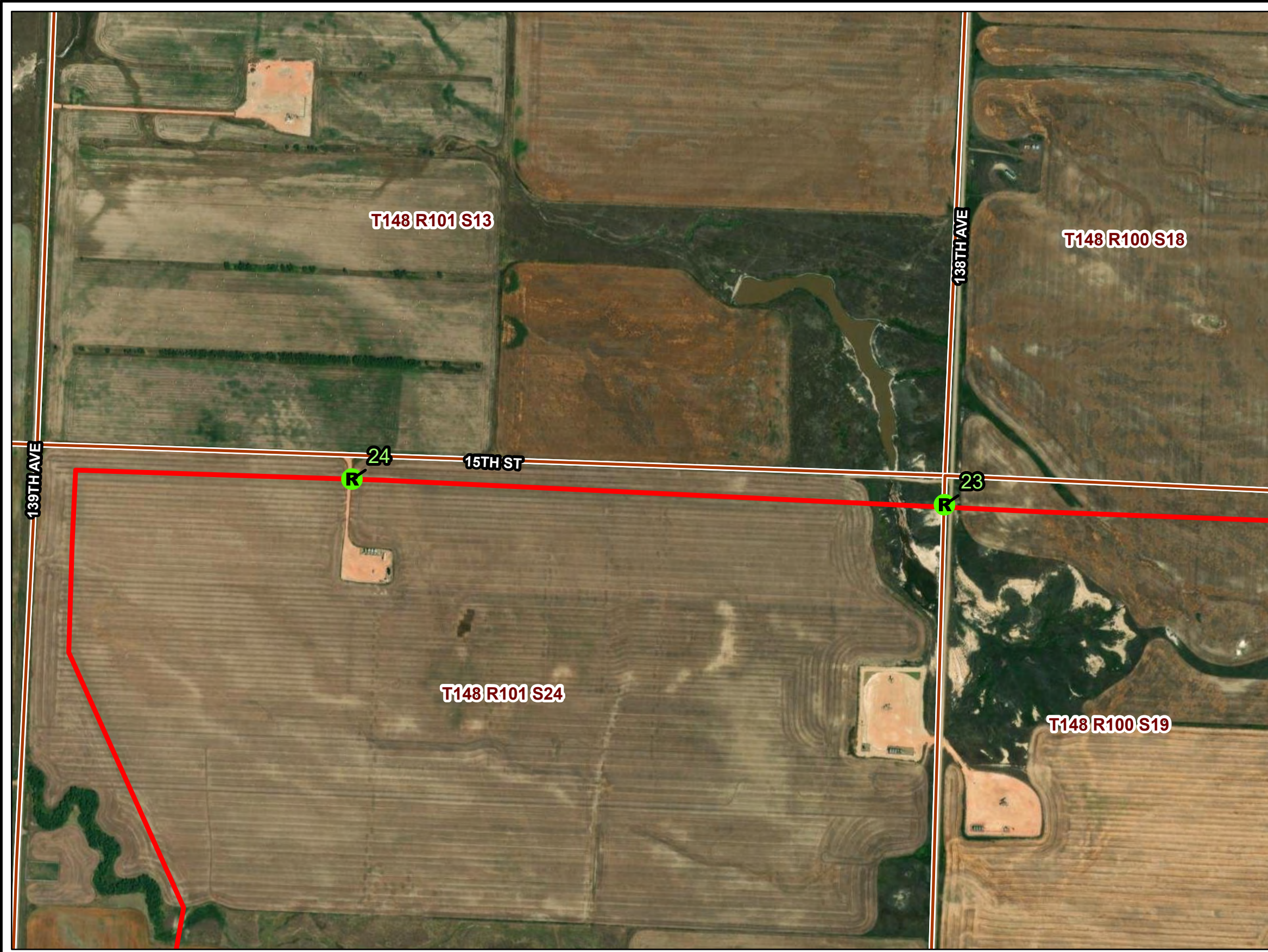
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Public Service Commission

Bridger Pipeline
Figure 9

- Reclamation Observation Point Location
- Bridger Pipeline Centerline (PU-21-48)
- Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






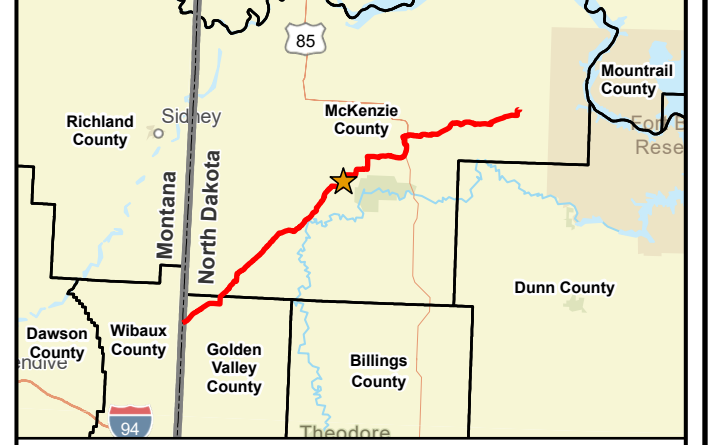
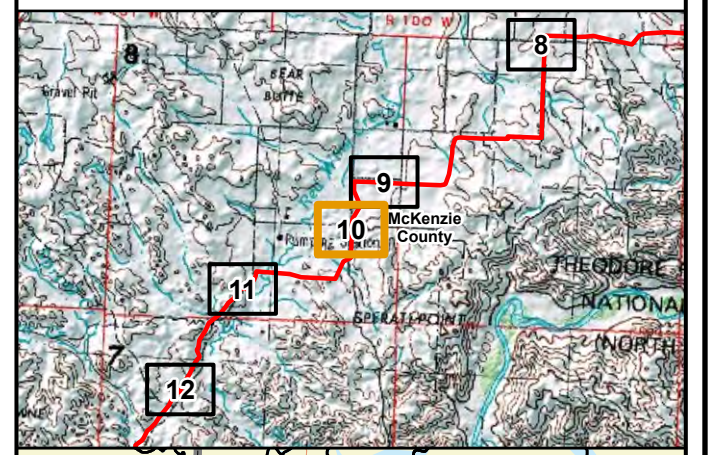
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**Bridger Pipeline
Figure 10**

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



Path: V:\2277\active\22770520\103_data\gis_cad\gis\proj\bridger_pipeline\bridger_pipeline.aprx
Date: 2024-05-15 Time: 4:26 PM User: ahayms

PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






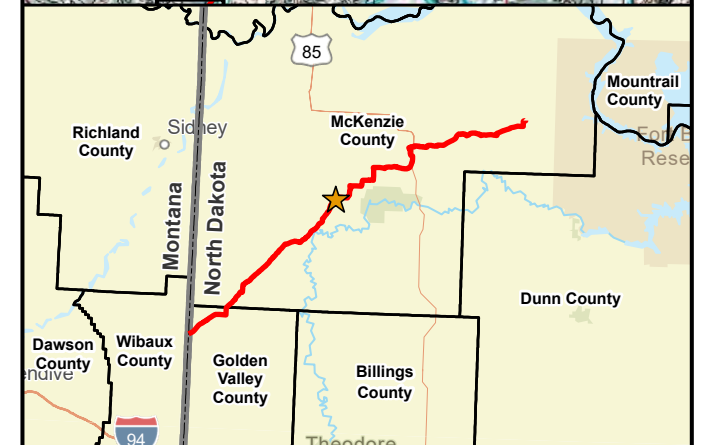
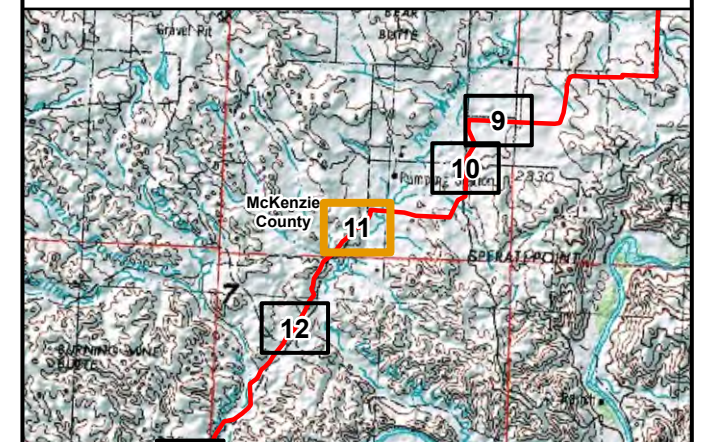
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Public Service Commission

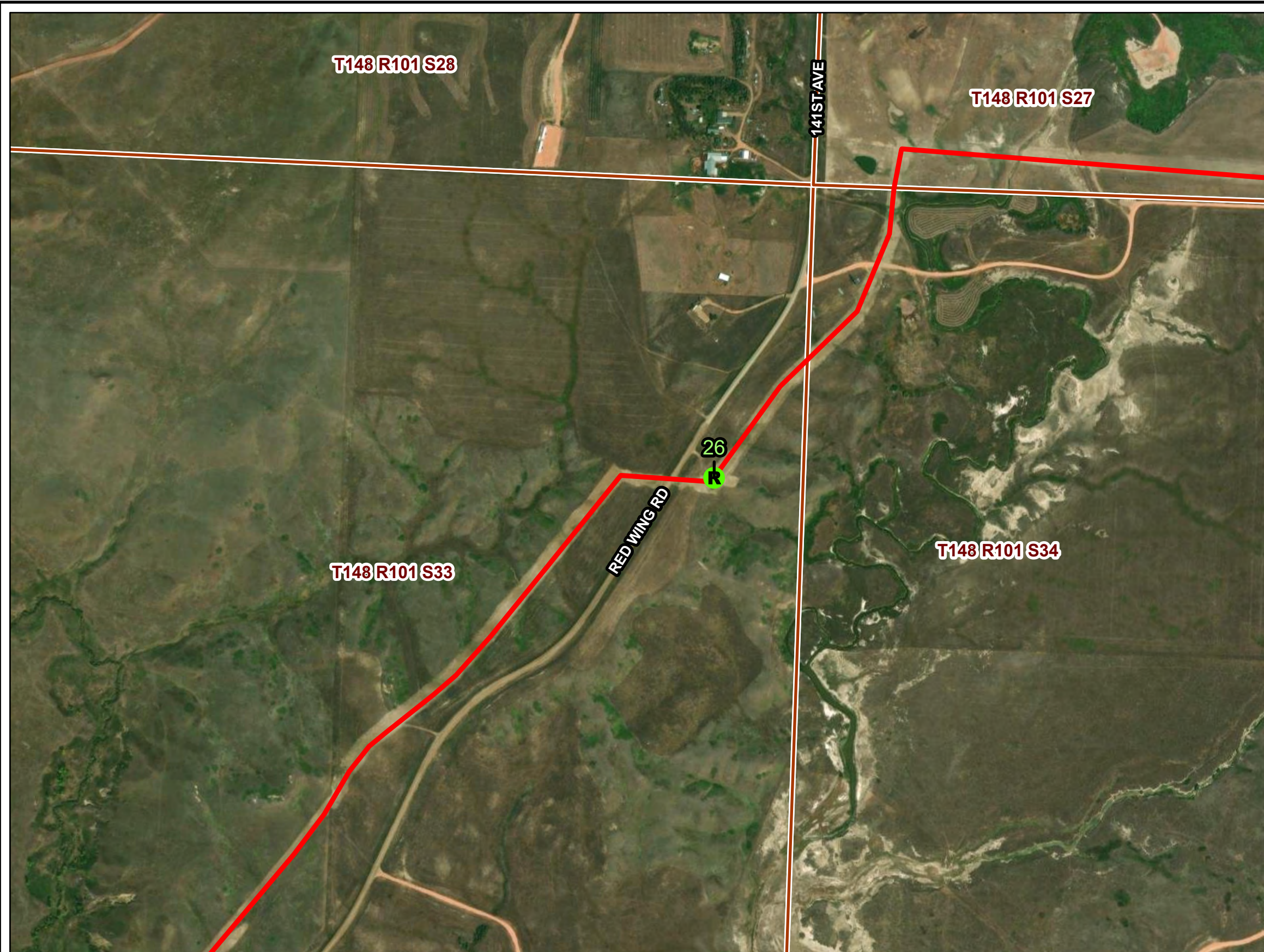
Bridger Pipeline
Figure 11

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



ESRI World Imagery

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Date: 2024-05-15 Time: 4:26 PM User: ahyams



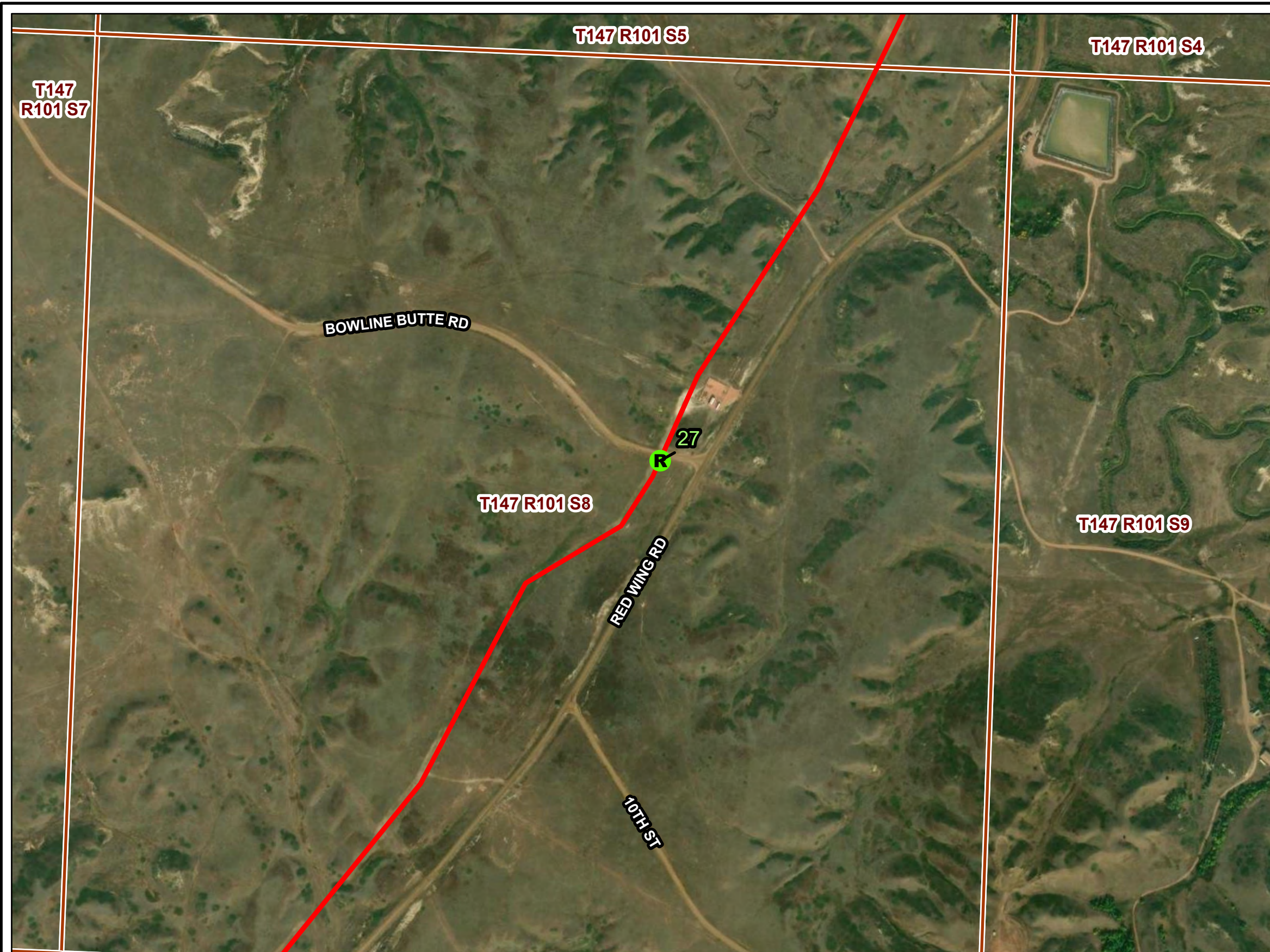
PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations



MAY 2024

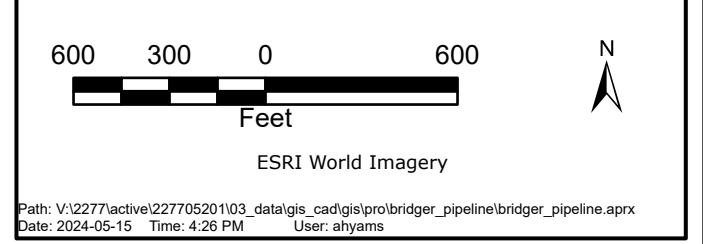
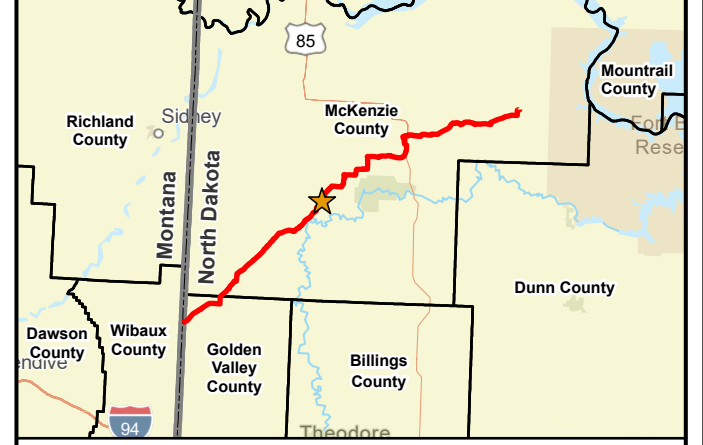
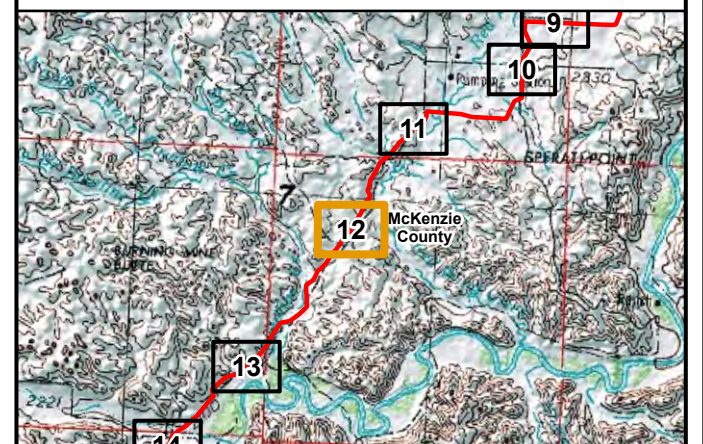
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Public Service Commission**

**Bridger Pipeline
Figure 12**

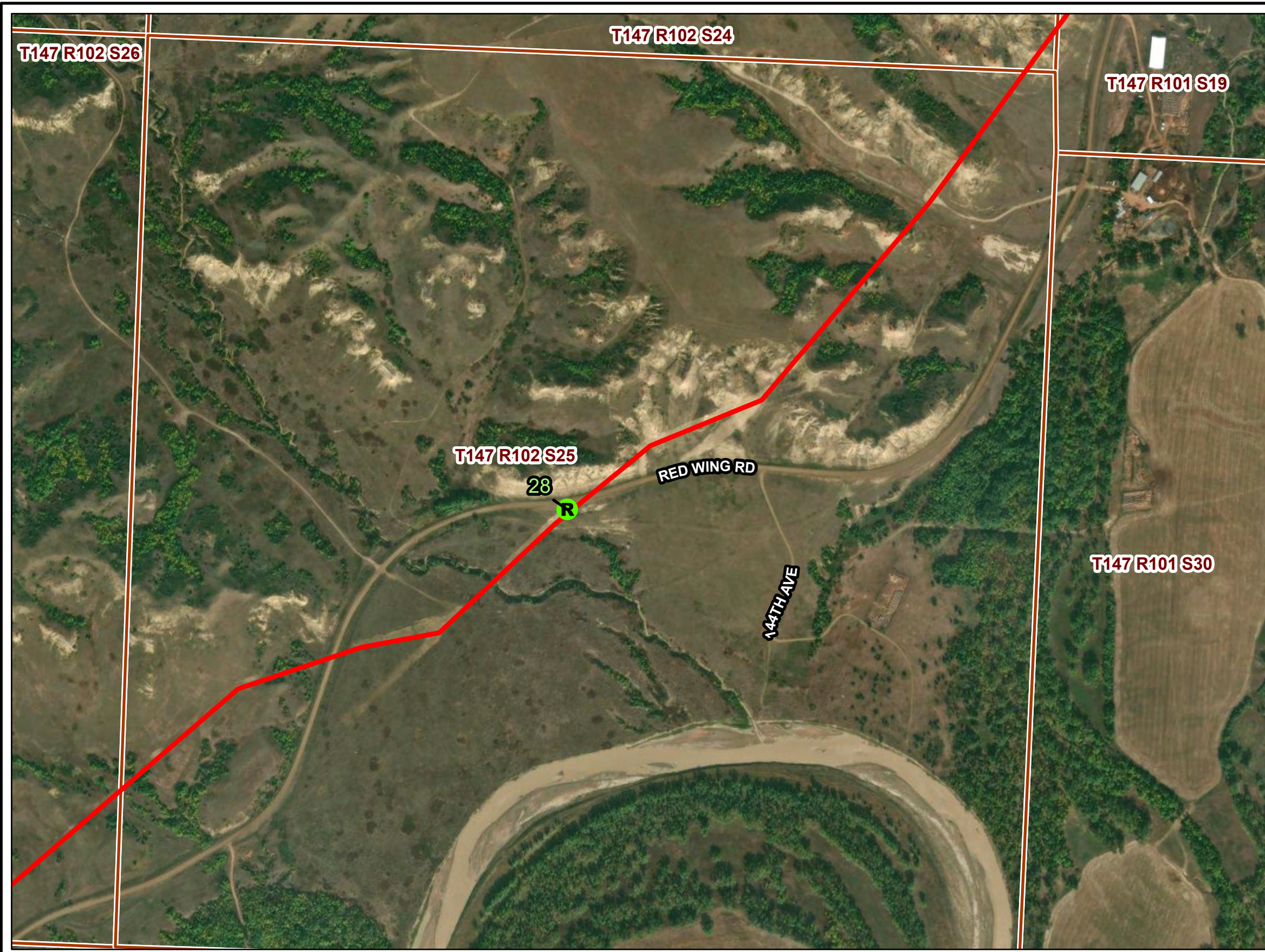
- R Reclamation Observation Point Location
- Bridger Pipeline Centerline (PU-21-48)
- Section Boundary



PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION
Reclamation Observation Locations



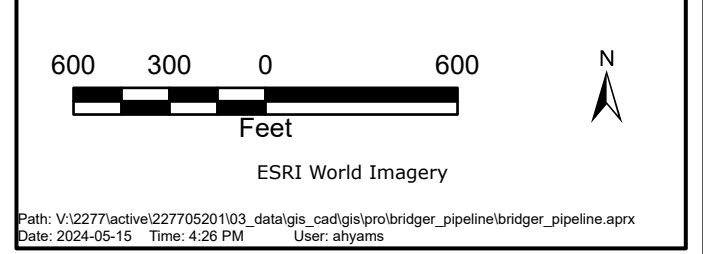
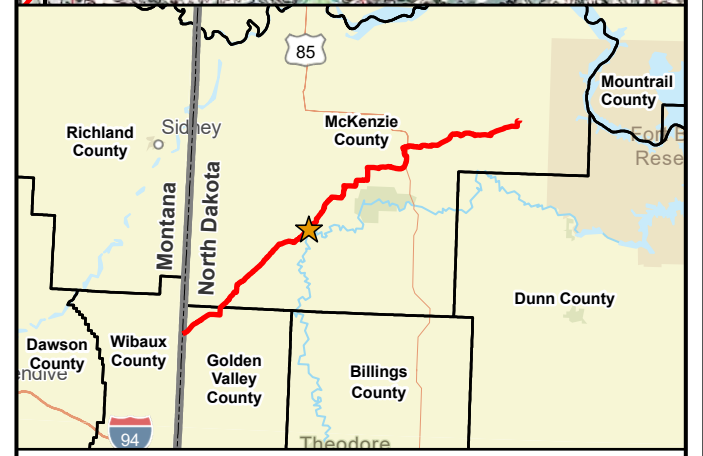
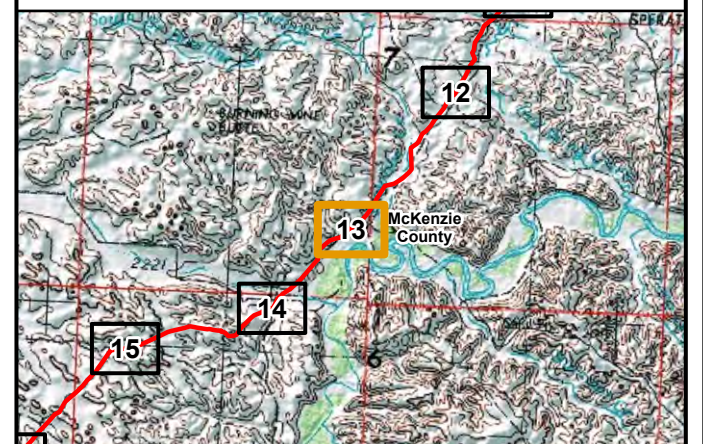
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**Bridger Pipeline
Figure 13**

- R Reclamation Observation Point Location
- Bridger Pipeline Centerline (PU-21-48)
- Section Boundary






Path: V:\2277\active\22770520\103_data\gis_cad\gis\pro\bridger_pipeline\bridger_pipeline.aprx
Date: 2024-05-15 Time: 4:26 PM User: ahyams

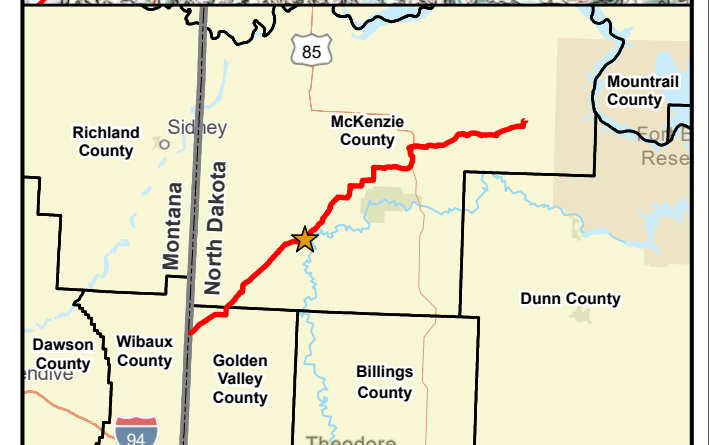
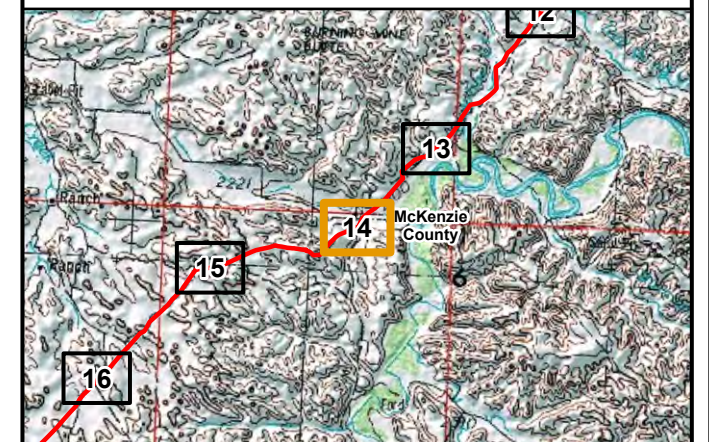
PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION
Reclamation Observation Locations



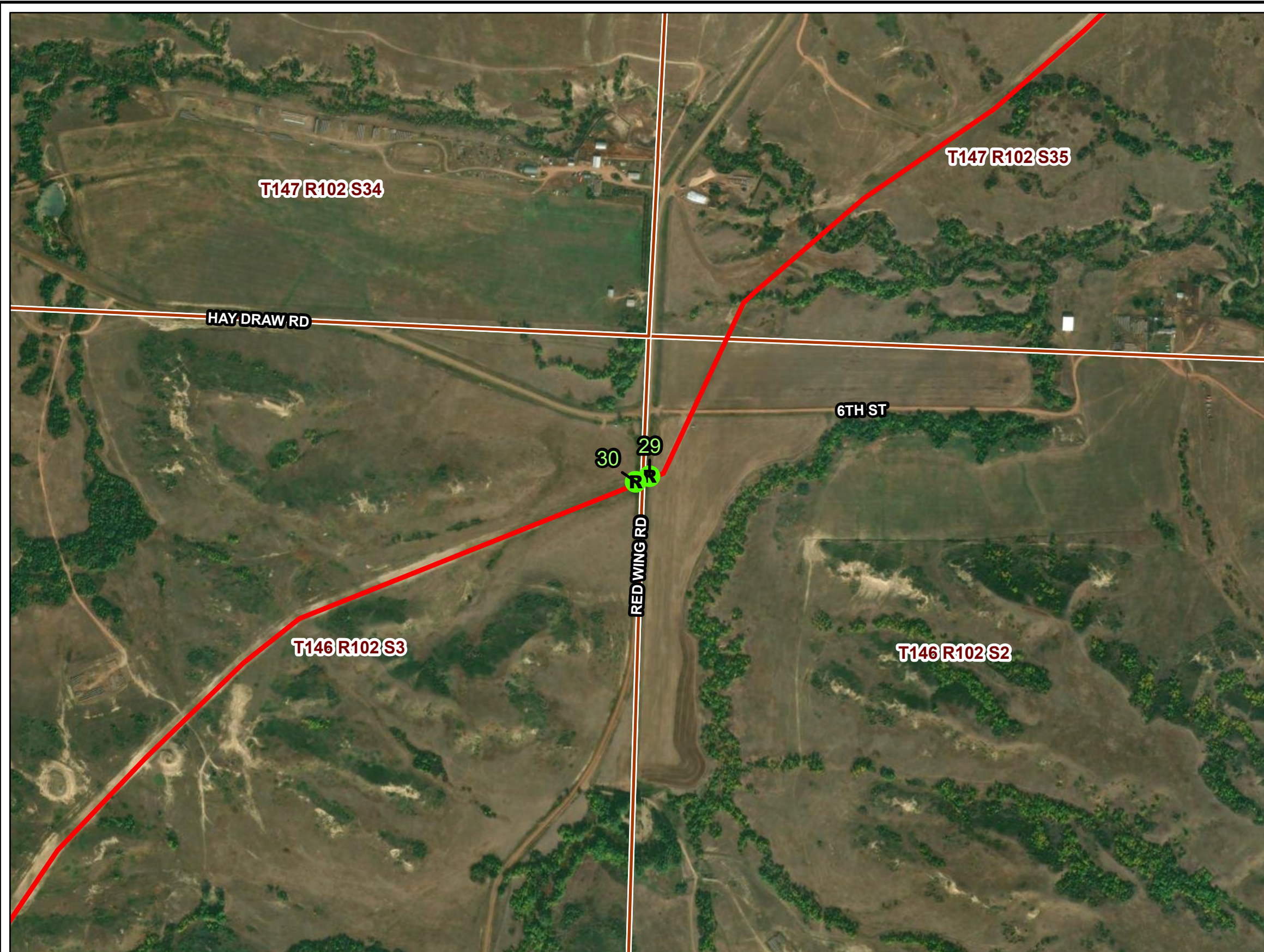
MAY 2024
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**Bridger Pipeline
Figure 14**

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



ESRI World Imagery
Path: V:\2277\active\22770520\103_data\gis_cad\gis\proj\bridger_pipeline\bridger_pipeline.aprx
Date: 2024-05-15 Time: 4:26 PM User: ahyams



PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION




Reclamation Observation Locations

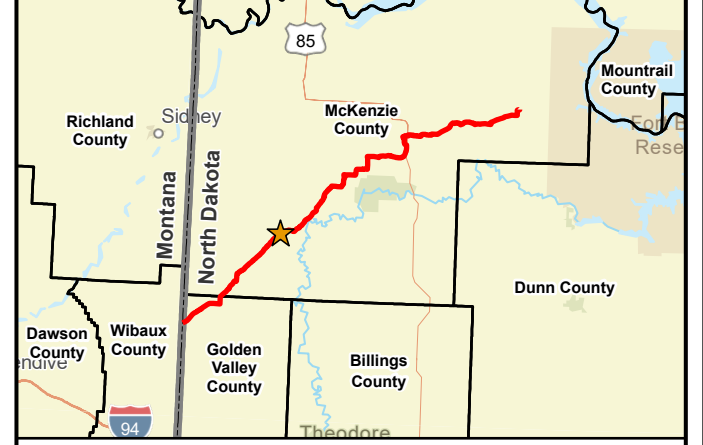
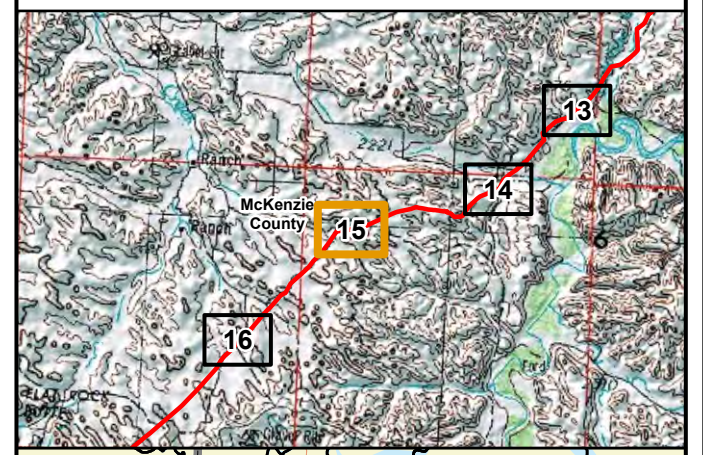


MAY 2024

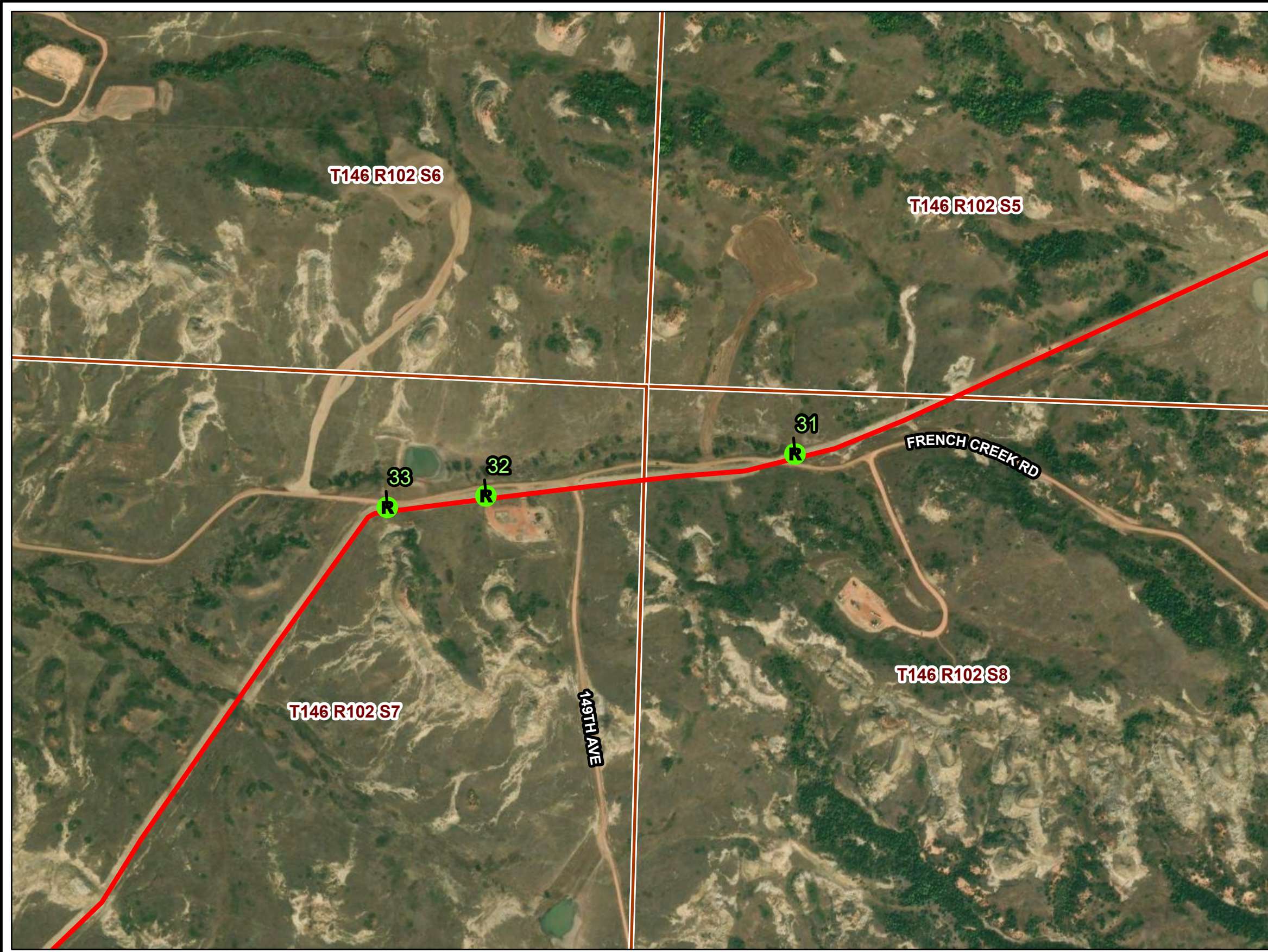
Map 14 of 21

**Bridger Pipeline
Figure 15**

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION




Reclamation Observation Locations

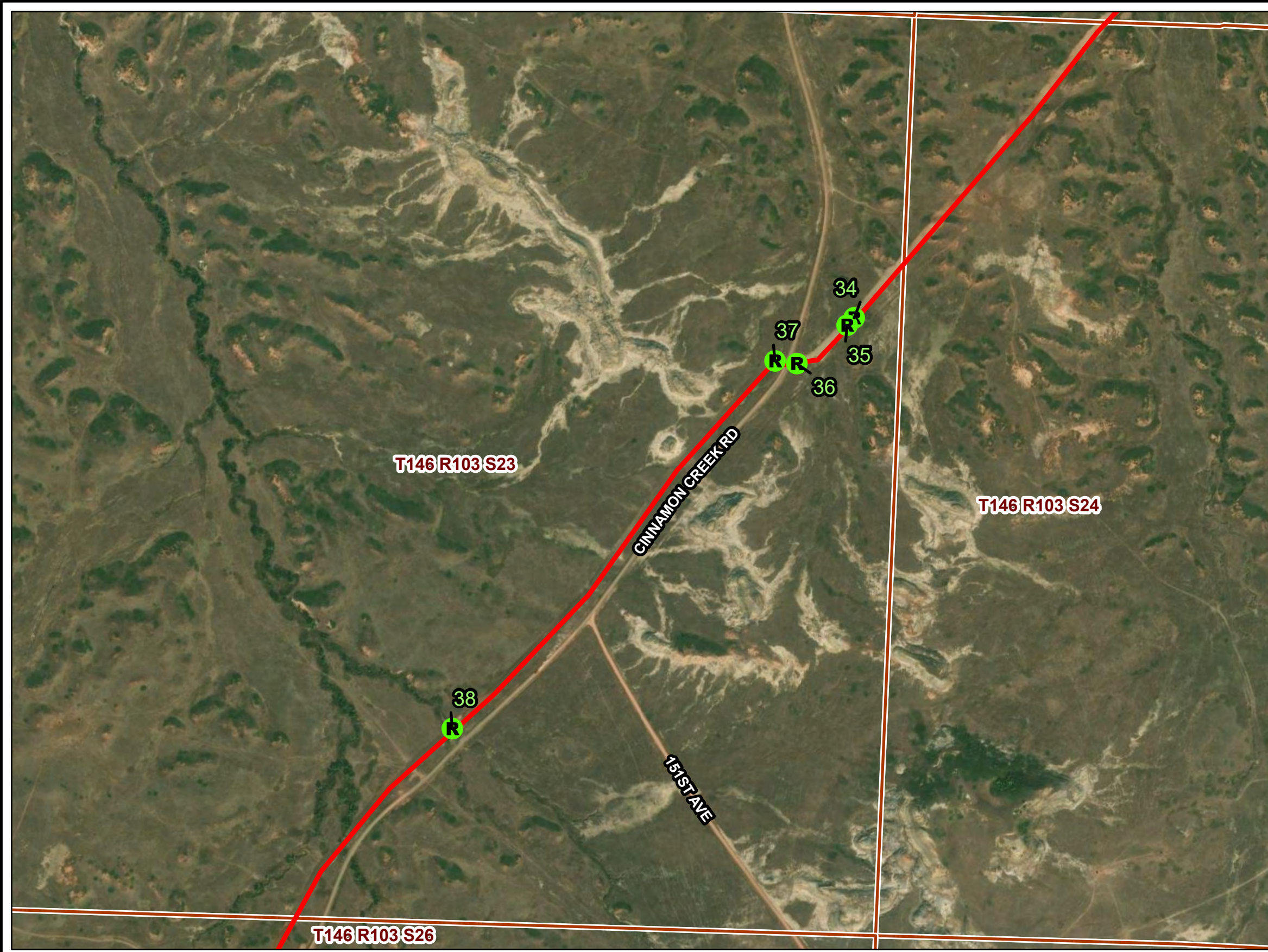
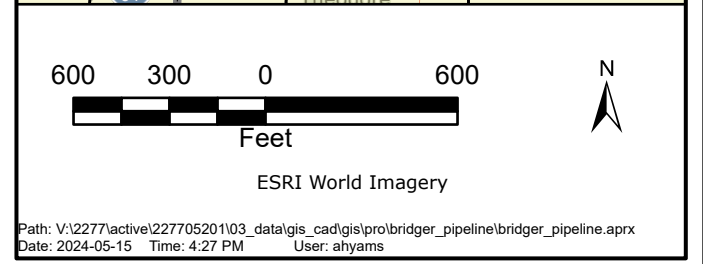
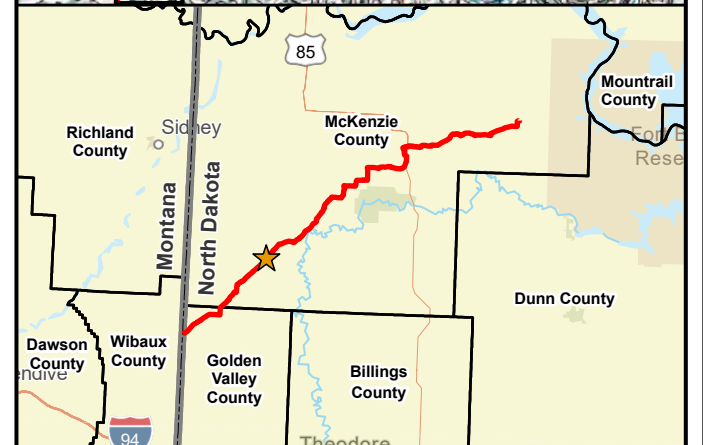
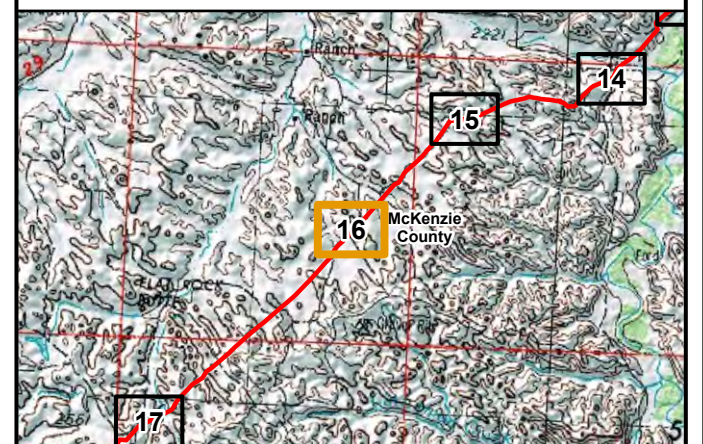


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**Bridger Pipeline
Figure 16**

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






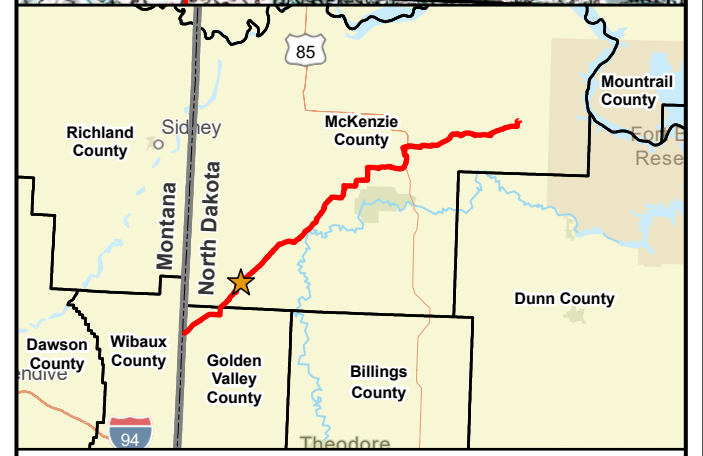
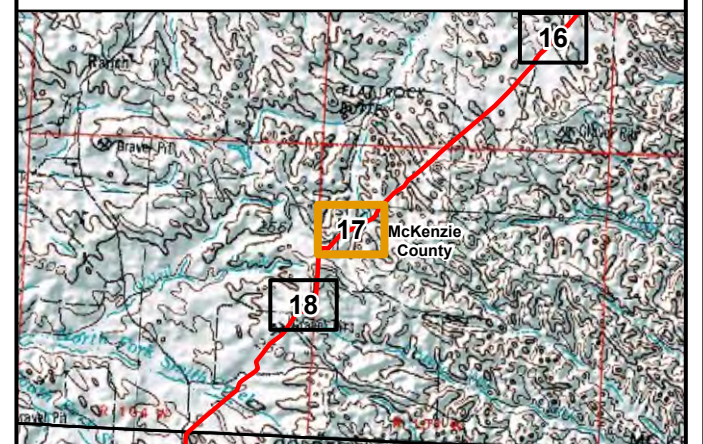
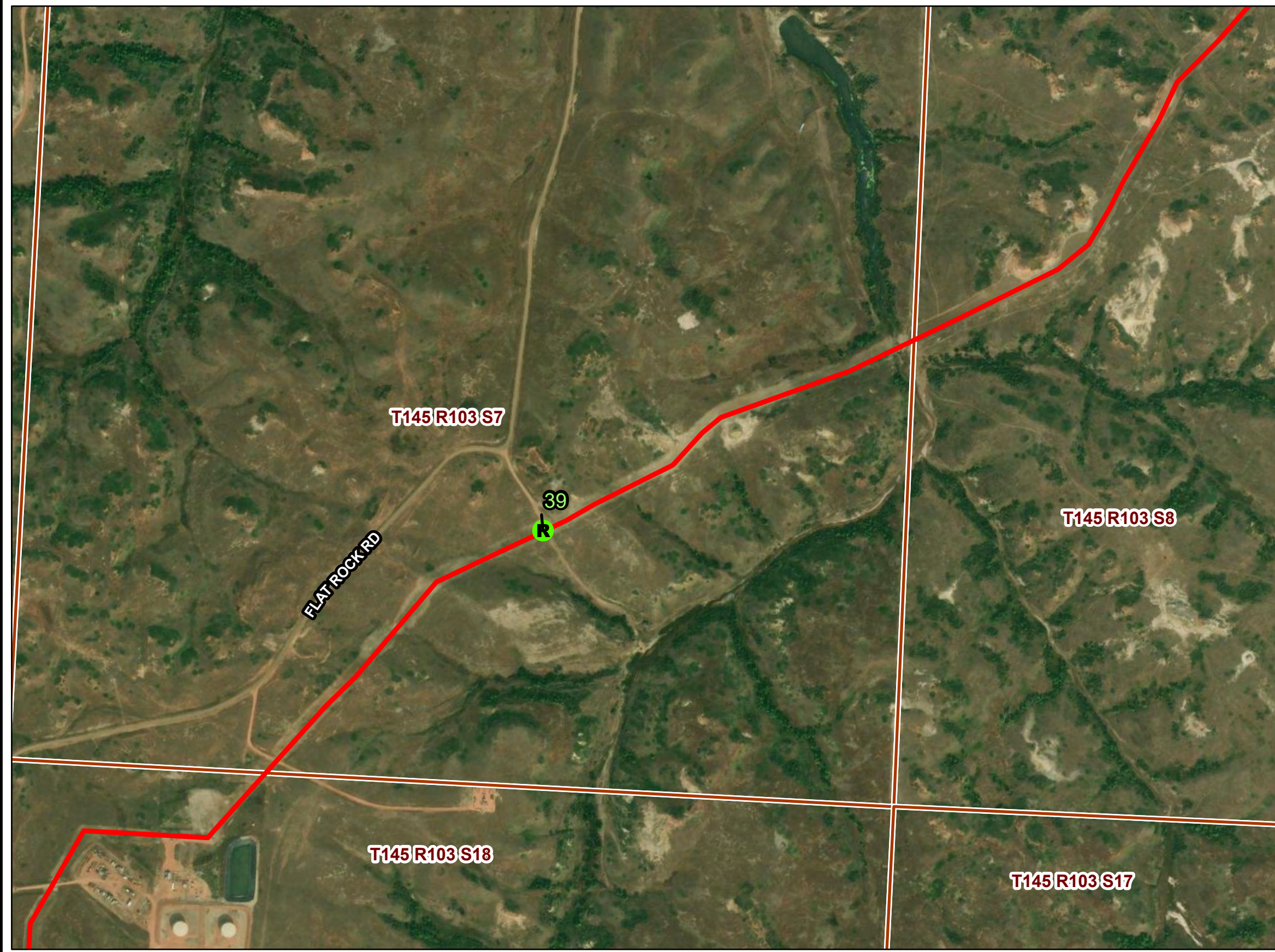
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Public Service Commission**

**Bridger Pipeline
Figure 17**

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



Path: V:\2277\active\22770520\103_data\gis_cad\gis\pro\bridger_pipeline\bridger_pipeline.aprx
Date: 2024-05-15 Time: 4:27 PM User: ahayms

PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






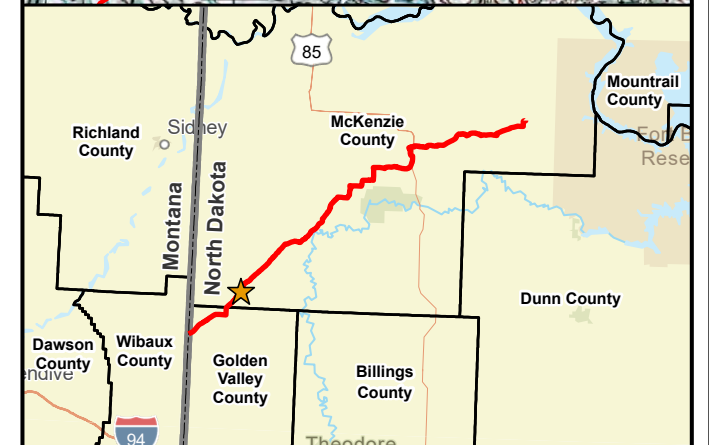
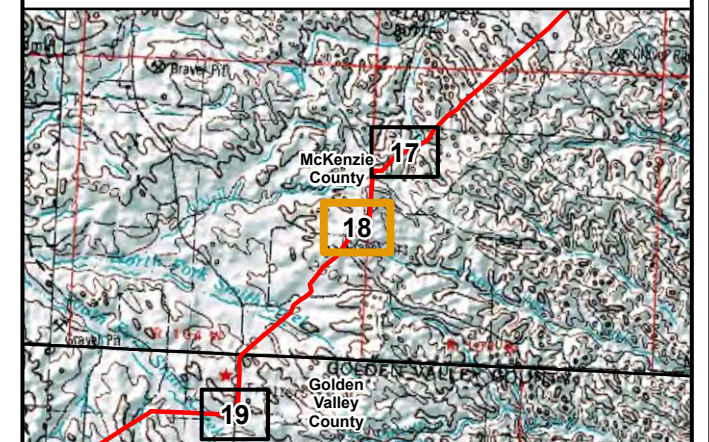
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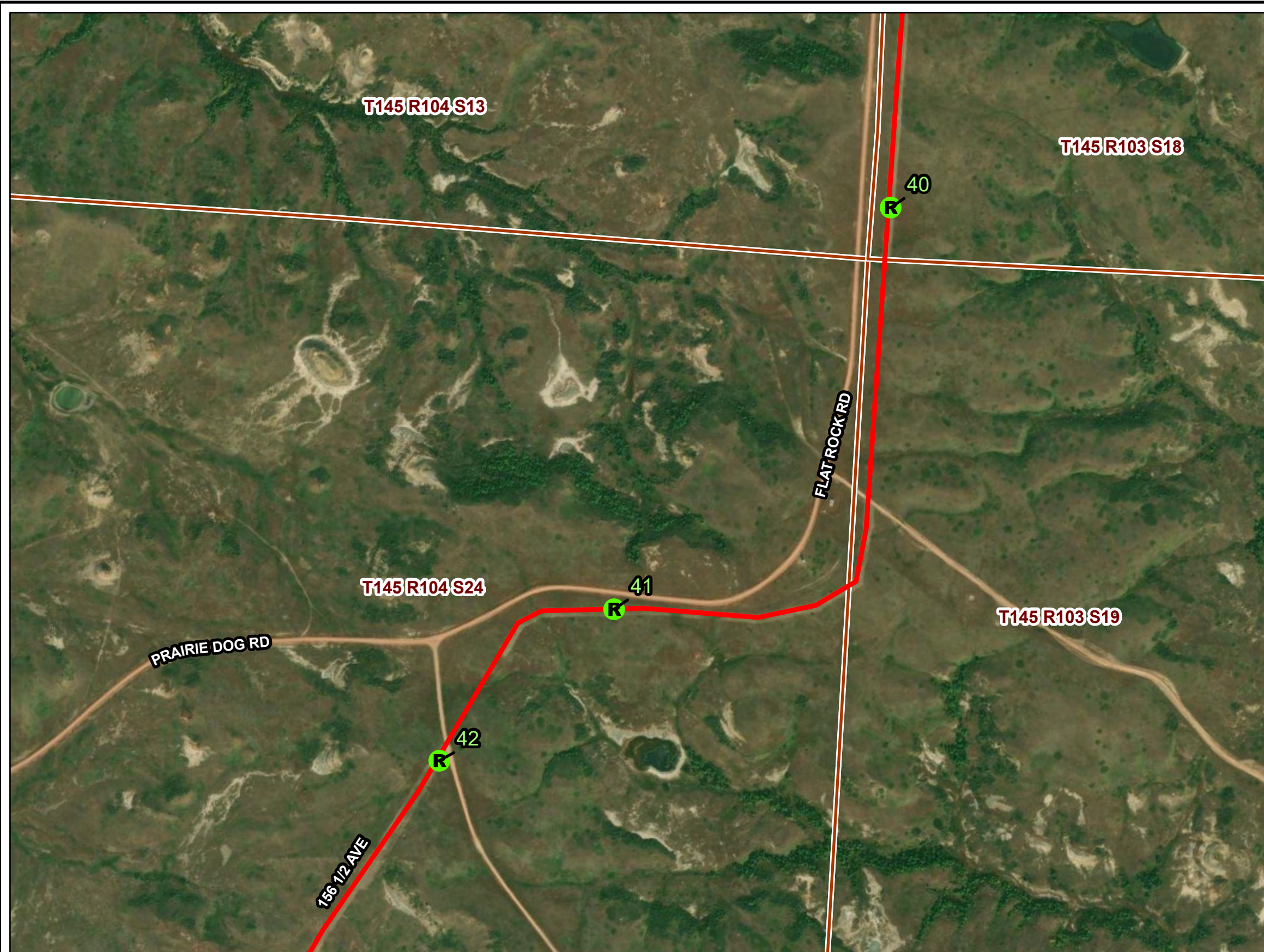
North Dakota
Public Service Commission

Bridger Pipeline
Figure 18

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



Path: V:\2277\active\22770520\103_data\gis_cad\gis\proj\bridger_pipeline\bridger_pipeline.aprx
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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






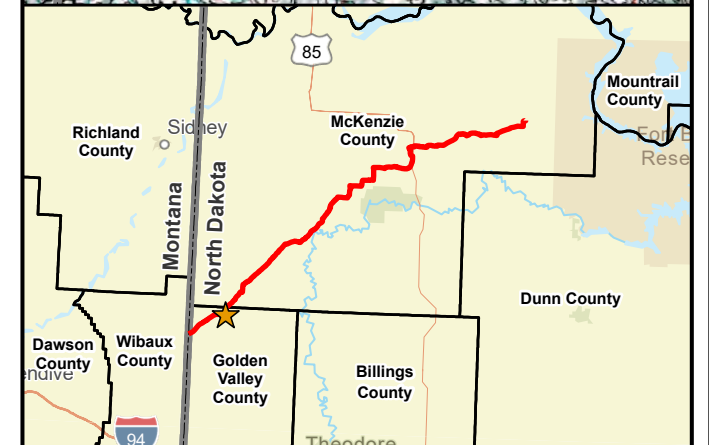
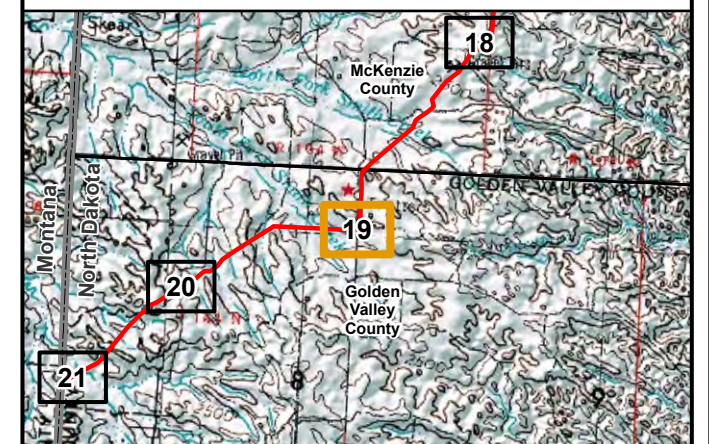
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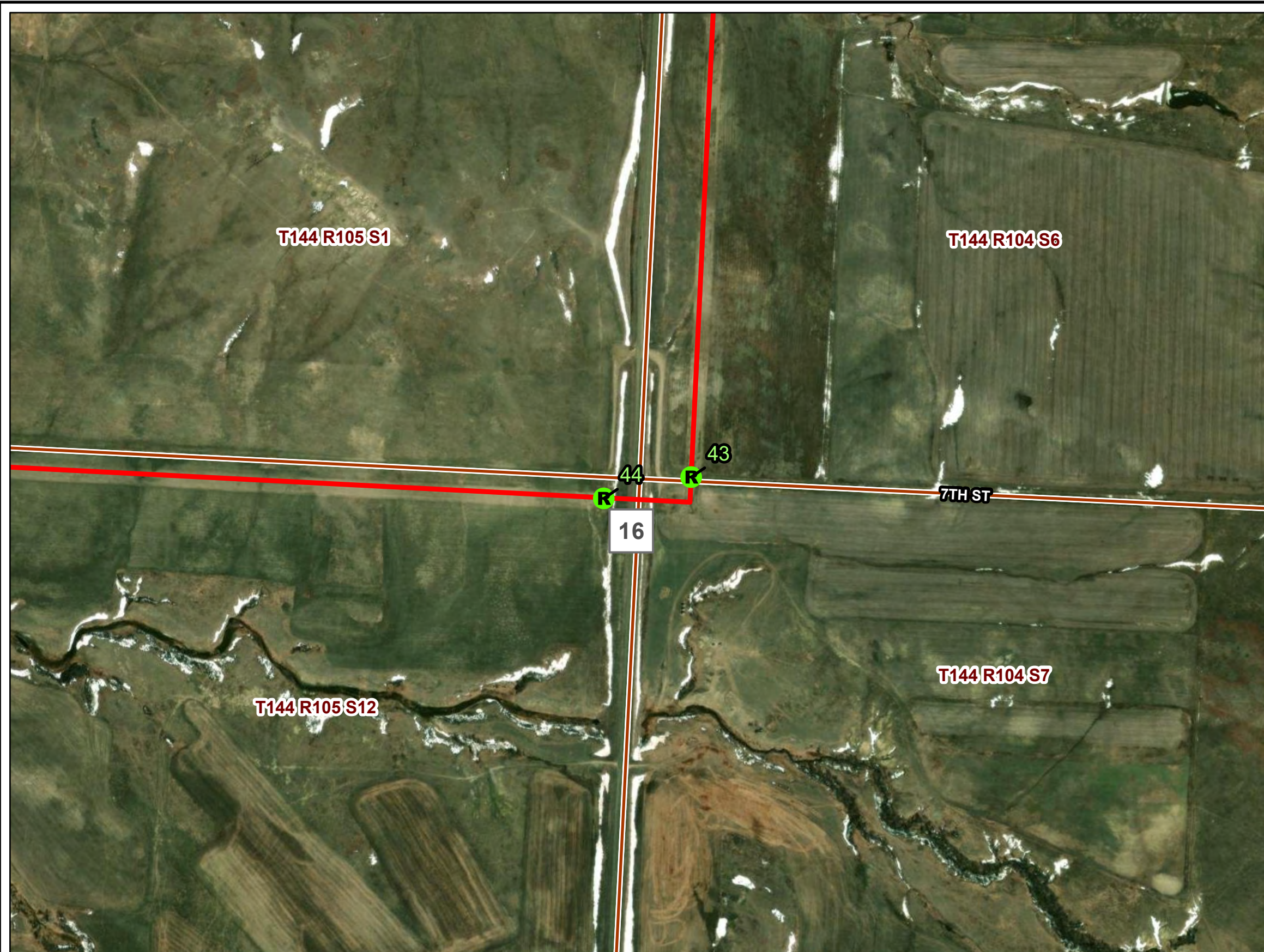
North Dakota
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Bridger Pipeline
Figure 19

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



Path: V:\2277\active\22770520\103_data\gis_cad\gis\proj\bridger_pipeline\bridger_pipeline.aprx
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PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






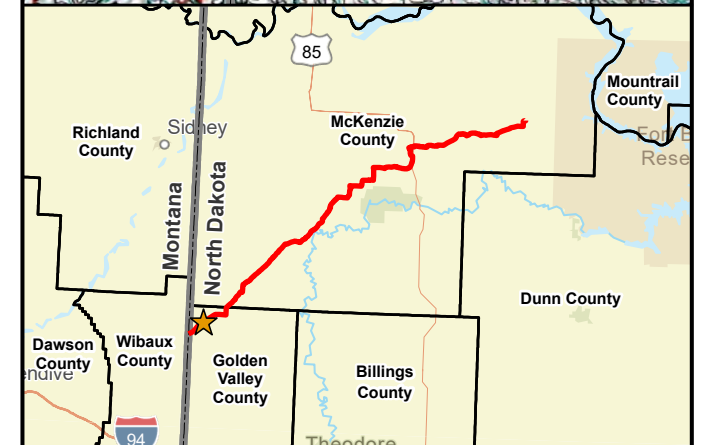
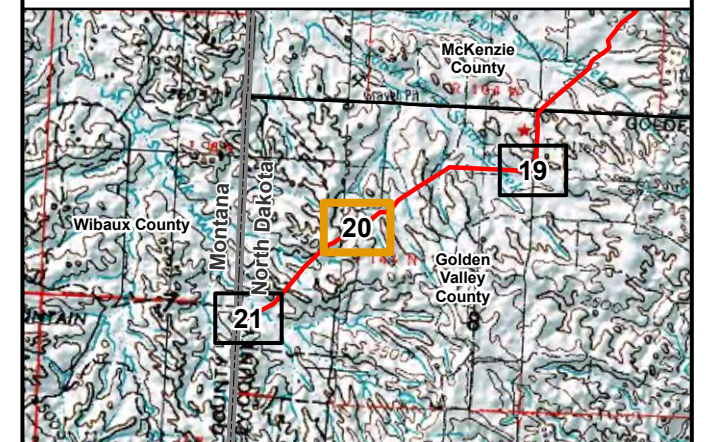
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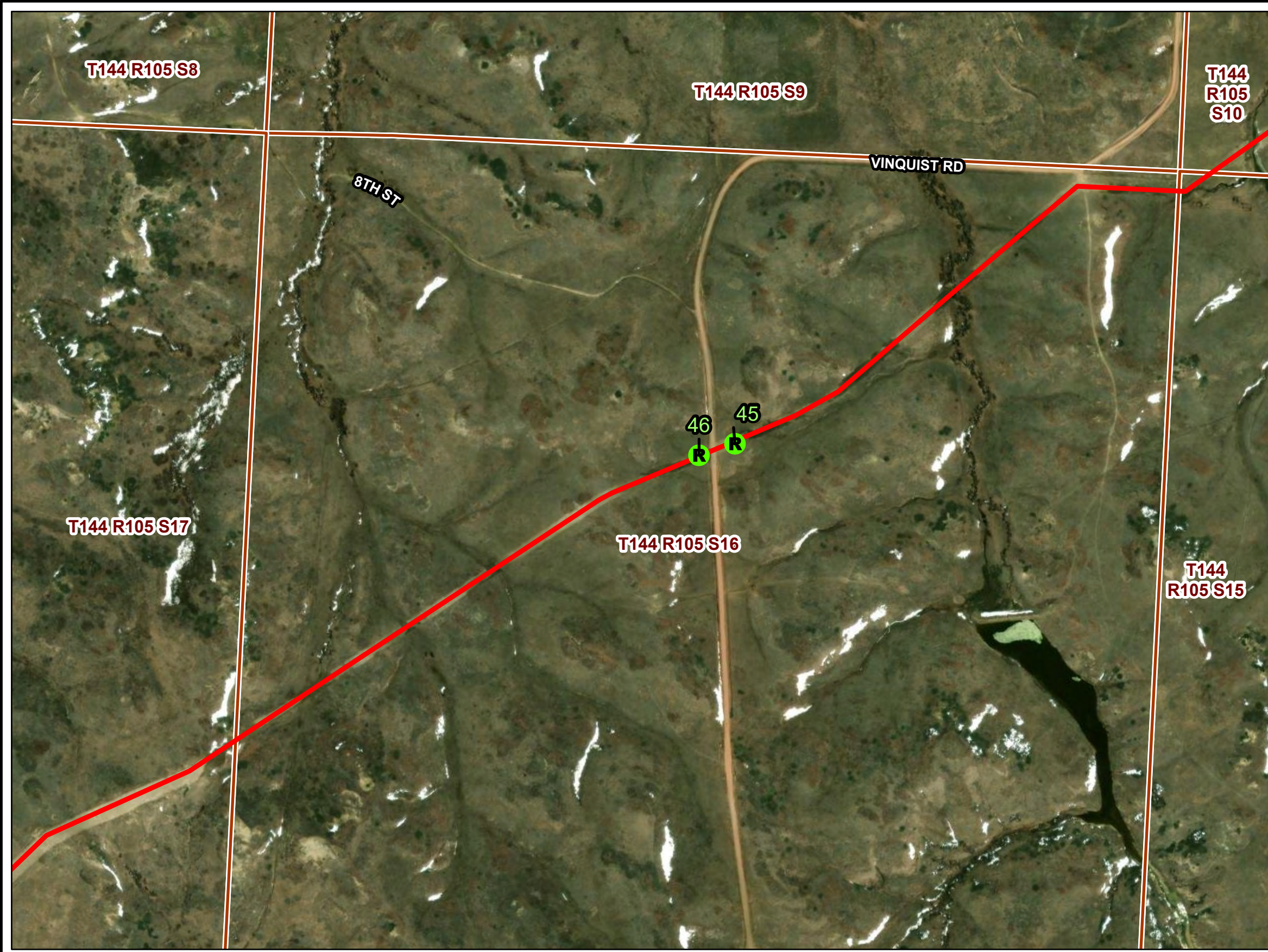
North Dakota
Public Service Commission

Bridger Pipeline
Figure 20

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



ESRI World Imagery
Path: V:\2277\active\22770520\103_data\gis_cad\gis\pro\bridger_pipeline\bridger_pipeline.aprx
Date: 2024-05-15 Time: 4:27 PM User: ahyams



PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations






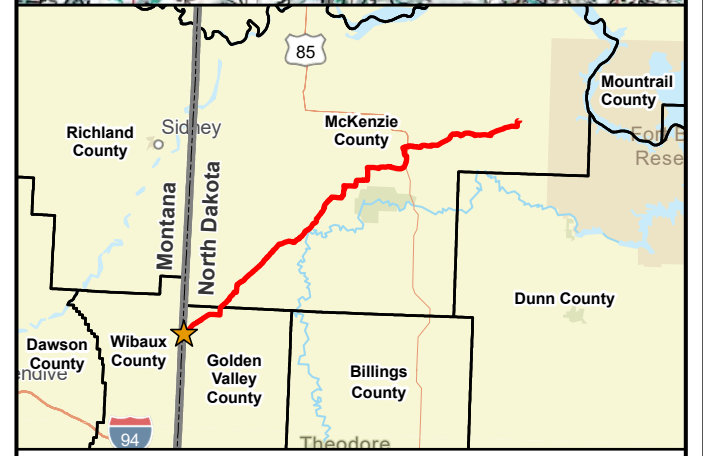
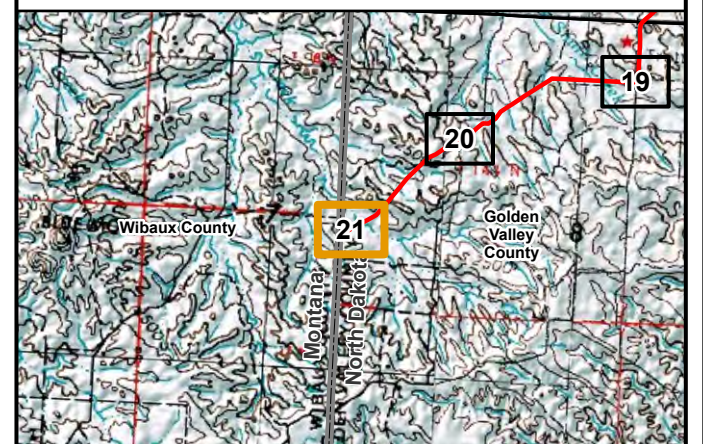
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Bridger Pipeline
Figure 21

-  Reclamation Observation Point Location
-  Bridger Pipeline Centerline (PU-21-48)
-  Section Boundary



Path: V:\2277\active\22770520\103_data\gis_cad\gis\proj\bridger_pipeline\bridger_pipeline.aprx
Date: 2024-05-15 Time: 4:27 PM User: ahayms



PU-21-48 BRIDGER PIPELINE RECLAMATION INSPECTION

Reclamation Observation Locations




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APPENDIX A

Field Observation Coordinates and Photolog

Photo Log: May 13-15, 2024– ND PCS Bridger Pipeline PU-21-048

	<p>Photo ID: 1</p> <p>Direction Photo is Taken: North</p> <p>Photo Description: Sheet and gully erosion persisting in unvegetated area. Re-seeding and erosion control recommended.</p> <p>Latitude: 47.79290085</p> <p>Longitude: -102.89823562</p>
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	<p>Photo ID: 2</p> <p>Direction Photo is Taken:</p> <p>Photo Description: Add straw wattle BMPs or clean out existing wattles of sediment as they are filling up.</p> <p>Latitude: 47.7866884</p> <p>Longitude: -102.8988168</p>
--	---


	<p>Photo ID: 3</p> <p>Direction Photo is Taken: West</p> <p>Photo Description: Soil shows no sign of pipeline scar in crop field.</p> <p>Latitude: 47.7866838</p> <p>Longitude: -102.89885952</p>
---	--

Photo Log: May 13-15, 2024– ND PCS Bridger Pipeline PU-21-048

	<p>Photo ID: 4</p> <p>Direction Photo is Taken: East</p> <p>Photo Description: Pipeline scar not visible in crop ground, previously wheat.</p> <p>Latitude: 47.78287245</p> <p>Longitude: -102.94122069</p>
	<p>Photo ID: 5</p> <p>Direction Photo is Taken: East</p> <p>Photo Description: Annual brome, Russian thistle, ragweed dominant. Cannot tell if it has been seeded. May need to be reseeded.</p> <p>Latitude: 47.76353602</p> <p>Longitude: -102.99413123</p>
	<p>Photo ID: 6</p> <p>Direction Photo is Taken: West</p> <p>Photo Description: Brome, annual brome, Russian thistle dominant. Crested wheatgrass dominant outside of corridor.</p> <p>Latitude: 47.76358826</p> <p>Longitude: -102.99576826</p>

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048



Photo ID: 7

Direction Photo is Taken: Southwest

Photo Description: Vegetation establishing. Brome dominant. Abundant Russian thistle. Some wheatgrass and needle grass species growing.

Latitude: 47.76718398

Longitude: -103.07836955



Photo ID: 8

Direction Photo is Taken: Southwest

Photo Description: Vegetation visible in planted rows. 15% bare ground. Perennial seeded grasses with annuals intermixed.

Latitude: 47.76334523

Longitude: -103.11591015



Photo ID: 9

Direction Photo is Taken: Northeast

Photo Description: Vegetation seeded and establishing in rows. Western wheatgrass, side oats, Russian thistle dominant. 30% bare ground.

Latitude: 47.75939322

Longitude: -103.13087569

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048



Photo ID: 10

Direction Photo is Taken: Southwest

Photo Description: Vegetation slow to re-establish south of road, north of incised feature. Heavy clay soils.

Latitude: 47.7583154

Longitude: -103.13214953



Photo ID: 11

Direction Photo is Taken: Southwest

Photo Description: Vegetation establishing. Crested wheatgrass, brome, sweetclover dominant along Cherry Creek access road. 25% bare ground north of creek. 5% bare ground south of creek.

Latitude: 47.75250569

Longitude: -103.13466638



Photo ID: 12

Direction Photo is Taken: Northeast

Photo Description: Grassland area revegetation trending towards pre-project conditions along Cherry Creek access road.

Latitude: 47.75242436

Longitude: -103.13490214

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048



Photo ID: 13

Direction Photo is Taken: Southwest

Photo Description: Alfalfa coming up, very sparse in some areas. Russian thistle is very abundant in some areas where alfalfa is thin.

Latitude: 47.75240213

Longitude: -103.13623711



Photo ID: 14

Direction Photo is Taken: Northeast

Photo Description: Looks to be seeded, some grass coming up in rows. Abundant bare ground and abundant annuals in hay land. Hydrophyllaceae and Russian thistle dominate.

Latitude: 47.74992752

Longitude: -103.14121842



Photo ID: 15

Direction Photo is Taken: Southwest

Photo Description: Significant bare ground. Rill erosion starting. Dominated by chenopodiaceae species, mustards, and annual asters, very little grass. Planting furrows not readily apparent.

Latitude: 47.74956316

Longitude: -103.14204973

Photo Log: May 13-15, 2024– ND PCS Bridger Pipeline PU-21-048



Photo ID: 16

Direction Photo is Taken: N/A

Photo Description: Straw wattles overtopped. Clean out and add more BMPs. Silt fence would be more suitable.

Latitude: 47.74956835

Longitude: -103.14230208



Photo ID: 17

Direction Photo is Taken: Northeast

Photo Description: Significant rill erosion along steeper slope. Straw wattles not placed or functioning properly. Silt fence would work better.

Latitude: 47.74950227

Longitude: -103.14259769



Photo ID: 18

Direction Photo is Taken: Southwest

Photo Description: Topsoil eroding along ROW.

Latitude: 47.7493645

Longitude: -103.14245834

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048



Photo ID: 19

Direction Photo is Taken: Northeast

Photo Description: Vegetation coming in better on areas lesser slopes.

Latitude: 47.74747469

Longitude: -103.14677681



Photo ID: 20

Direction Photo is Taken: Southwest

Photo Description: Some erosion at low point. Seeded grasses are coming in rows sparsely.

Latitude: 47.74745611

Longitude: -103.14709954



Photo ID: 21

Direction Photo is Taken: East

Photo Description: Sideoats grama and smooth brome establishing. Bare soil visible and prevalent in spots.

Latitude: 47.7303916

Longitude: -103.26130195

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048

	<p>Photo ID: 22</p> <p>Direction Photo is Taken: Southeast</p> <p>Photo Description: Soil is appropriately contoured in crop field.</p> <p>Latitude: 47.67449017</p> <p>Longitude: -103.42094649</p>
---	---

	<p>Photo ID: 23</p> <p>Direction Photo is Taken: West</p> <p>Photo Description: Seeded rows visible, substantial bare ground, naturally saline soils.</p> <p>Latitude: 47.63125315</p> <p>Longitude: -103.48105783</p>
--	---


	<p>Photo ID: 24</p> <p>Direction Photo is Taken: East</p> <p>Photo Description: Soil contouring looks good. No sign of pipeline scar.</p> <p>Latitude: 47.63129435</p> <p>Longitude: -103.49490513</p>
---	---

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048

	<p>Photo ID: 25</p> <p>Direction Photo is Taken: South</p> <p>Photo Description: Area has been grazed. Planted rows are not apparent. Perennial grasses are establishing. Bindweed, biennial primrose, ragweed, pennycress, prostrate vervain, and Russian thistle exist in moderate quantities.</p> <p>Latitude: 47.61706873</p> <p>Longitude: -103.50157508</p>
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	<p>Photo ID: 26</p> <p>Direction Photo is Taken: Northeast</p> <p>Photo Description: Seeded vegetation establishing well.</p> <p>Latitude: 47.59803379</p> <p>Longitude: -103.54710973</p>
--	---


	<p>Photo ID: 27</p> <p>Direction Photo is Taken: South</p> <p>Photo Description: Seeded vegetation establishing well. Sideoats grama dominant.</p> <p>Latitude: 47.56749737</p> <p>Longitude: -103.57410746</p>
---	--

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048



Photo ID: 28

Direction Photo is Taken: Southwest

Photo Description: Vegetation visible in rows, slowly establishing.

Latitude: 47.52445736

Longitude: -103.61985108



Photo ID: 29

Direction Photo is Taken: Northeast

Photo Description: Healthy crop growing. No sign of pipeline scar.

Latitude: 47.50058609

Longitude: -103.65142283



Photo ID: 30

Direction Photo is Taken: Southwest


Photo Description: Vegetation visible in rows, establishing well.

Latitude: 47.50049003

Longitude: -103.65174332

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048

	<p>Photo ID: 31</p> <p>Direction Photo is Taken: Northeast</p> <p>Photo Description: Vegetation visible in rows, slowly establishing. BMPs in place and functioning properly.</p> <p>Latitude: 47.48715024</p> <p>Longitude: -103.71206157</p>
---	---

	<p>Photo ID: 32</p> <p>Direction Photo is Taken: West</p> <p>Photo Description: Vegetation visible in rows, slowly establishing. Significant bare ground.</p> <p>Latitude: 47.48628441</p> <p>Longitude: -103.71920421</p>
--	---




	<p>Photo ID: 33</p> <p>Direction Photo is Taken: Southwest</p> <p>Photo Description: Appears to be recently contoured and seeded. Abundant bare ground.</p> <p>Latitude: 47.48603762</p> <p>Longitude: -103.72148725</p>
---	---

Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048

	<p>Photo ID: 34</p> <p>Direction Photo is Taken: Northeast</p> <p>Photo Description: Areas of bare ground. Seeded vegetation coming in in rows.</p> <p>Latitude: 47.45496368</p> <p>Longitude: -103.75868307</p>
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	<p>Photo ID: 35</p> <p>Direction Photo is Taken: Southwest</p> <p>Photo Description: Rill soil erosion starting to take place.</p> <p>Latitude: 47.45484281</p> <p>Longitude: -103.75883899</p>
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	<p>Photo ID: 36</p> <p>Direction Photo is Taken: Northeast</p> <p>Photo Description: Areas of bare ground. Seeded vegetation coming in in rows.</p> <p>Latitude: 47.45420728</p> <p>Longitude: -103.75997116</p>
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Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048



Photo ID: 37

Direction Photo is Taken: Southwest

Photo Description: Areas of bare ground. Seeded vegetation coming in in rows.

Latitude: 47.45423412

Longitude: -103.7604824



Photo ID: 38

Direction Photo is Taken: Southwest

Photo Description: Vegetation visible in rows, slowly establishing. BMPs in place and functioning properly.

Latitude: 47.4482191

Longitude: -103.76761745



Photo ID: 39

Direction Photo is Taken: Southwest

Photo Description: Vegetation re-establishing in planted rows within rangeland.

Latitude: 47.39156286

Longitude: -103.85095807

Photo Log: 227705201 – ND PCS Bridger Pipeline PU-21-048

	<p>Photo ID: 40</p> <p>Direction Photo is Taken: North</p> <p>Photo Description: Seeded vegetation establishing well in pasture.</p> <p>Latitude: 47.3738586</p> <p>Longitude: -103.86270387</p>
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	<p>Photo ID: 41</p> <p>Direction Photo is Taken: East</p> <p>Photo Description: Seeded vegetation establishing well.</p> <p>Latitude: 47.36735986</p> <p>Longitude: -103.86868593</p>
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	<p>Photo ID: 42</p> <p>Direction Photo is Taken: Southwest</p> <p>Photo Description: Seeded vegetation establishing well in rangeland.</p> <p>Latitude: 47.36486194</p> <p>Longitude: -103.87257681</p>
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Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048


	<p>Photo ID: 43</p> <p>Direction Photo is Taken: North</p> <p>Photo Description: Vegetation established in hay ground. Alfalfa and smooth brome dominant.</p> <p>Latitude: 47.31212211</p> <p>Longitude: -103.91709905</p>
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	<p>Photo ID: 44</p> <p>Direction Photo is Taken: West</p> <p>Photo Description: Alfalfa fully established in hay ground.</p> <p>Latitude: 47.31172703</p> <p>Longitude: -103.91909227</p>
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	<p>Photo ID: 45</p> <p>Direction Photo is Taken: Northeast</p> <p>Photo Description: Seeded vegetation establishing nicely.</p> <p>Latitude: 47.29324494</p> <p>Longitude: -103.99210053</p>
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Photo Log: May 13-15, 2024 – ND PCS Bridger Pipeline PU-21-048

	<p>Photo ID: 46</p> <p>Direction Photo is Taken: Southwest</p> <p>Photo Description: Seeded vegetation establishing nicely.</p> <p>Latitude: 47.29303585</p> <p>Longitude: -103.99292325</p>
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	<p>Photo ID: 47</p> <p>Direction Photo is Taken: Northeast</p> <p>Photo Description: Seeded grass visible in rows.</p> <p>Latitude: 47.26315469</p> <p>Longitude: -104.04261429</p>
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	<p>Photo ID: 48</p> <p>Direction Photo is Taken: Northeast</p> <p>Photo Description: Grass is establishing nicely. Western wheatgrass and sideoats grama dominant.</p> <p>Latitude: 47.26225091</p> <p>Longitude: -104.04477934</p>
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