Fredericks Law Firm LLC

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May 31, 2024

VIA FEDERAL EXPRESS

Mr. Adam Renfandt
Analyst, Public Utilities Division
ND Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

RE: Information Request Response
Thunder Butte Pipeline Project, Case No. PU-24-086

Mr. Renfandt:

Thunder Butte Pipeline, LLC (TBPL) filed a Consolidated Application for a Certificate of Corridor Compatibility and Route Permit for the Thunder Butte Pipeline Project ("project") dated January 5, 2024. The project has been assigned Case Number PU-24-086. An Amended Consolidated Application was filed February 19, 2024 identifying the new location of the proposed midline pump station.

Rather than the location identified in the Amended Consolidated Application was filed February 19, 2024, TBPL is now proposing to relocate the midline pump station to a different location. This letter serves as a second Amended Consolidated Application to provide information on TBPL's proposed new location for the midline substation. This Amended Consolidated Application supersedes the previously provided information regarding the location for the substation. TBPL requests that the information previously submitted under TBPL's first Amended Consolidated Application be discarded and superseded by this submittal. Under this second Amended Consolidated Application, TBPL is proposing to relocate the midline pump station to a location approximately 7.5 miles northwest of Plaza, North Dakota, in Section 1, Township 153 North, Range 88 West as shown on the attached figures.

The Commission issued an information request dated March 6, 2024, which contained 16 questions and/or requests for information. This document and attachments have been prepared to address these 16 questions and/or requests for information. This document also provides updated information and figures relevant to TBPL's second Amended Consolidated Application. Please refer to the Consolidated Application dated January 5, 2024 for all additional information

regarding the project; no other changes have resulted from modification of the proposed location for the midline pump station.

Please find attached six hard copies of this letter and its attachments and a compact disc with this letter and its 3 attachments in PDF format and the corresponding GIS Shapefiles.

- Attachment 1 - Updated maps showing the new location of the proposed midline pump station: Figure 1, Project Overview Map; 3 sets of maps showing the Exclusion Areas, Avoidance Areas, and Route Selection Criteria Considered; and an updated black and white Newspaper Map.
- Attachment 2 - Updated Consolidated Application Sections 16.2, 16.2, and 16.3 with updated Tables 4 and 5.
- Attachment 3 - Weed Management Plan.

In accordance with N.D.AC. 69-06-05(4) all of the foregoing will be served upon the Ward and Mountrail County Auditors. Enclosed with this letter is a Certificate of Service for such action.

If you have any questions, please let me know.

Sincerely,

Peter J. Breuer

Peter J. Breuer
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Attachments (2)
Cc: Ward County Auditor
Mountrail County Auditor

REQUESTS FOR INFORMATION AND TBPL'S RESPONSES

The Commission issued an information request dated March 6, 2024, which contained 16 questions and/or requests for information. This document and its attachments have been prepared to address these 16 questions and/or requests for information.

Under a second Amended Consolidated Application, TBPL is proposing to relocate the midline pump station to a location approximately 7.5 miles northwest of Plaza, North Dakota, in Section 1, Township 153 North, Range 88 West. This document and attachments provide updated information and figures relevant to TBPL's second Amended Consolidated Application.

1: Please update Tables 4 and 5 to indicate whether the features are located within the project corridor (i.e., the 200-foot corridor). For Table 4 indicate why there is no reasonable alternative to avoid such features, and what mitigation measures the company intends to implement to minimize and mitigate adverse impacts resulting from the location, construction, and operation of the pipeline in those locations.

Response: Updated Tables 4 and 5 indicating whether the features are located within the project corridor (i.e., the 200-foot corridor) are provided in Attachment 1 of this document. The existing pipeline was built in the 1960s; therefore, there is no reasonable alternative to avoid such features, and what mitigation measures the company intends to implement to minimize and mitigate adverse impacts resulting from the location, construction, and operation of the pipeline in those locations.

2: Update sections 16.1.1 through 16.1.11 and sections 16.2.1 through 16.2.8 to be responsive to the 200-foot corridor area. The updated Exclusion Areas, Avoidance Areas, and Route Selection Criteria map sets are provided in Attachment 2 of this document and the GIS layers are provided in the attached CD. The updated map sets identify whether features are located within the 200-foot project corridor. The updated map sets also show the proposed new location for the midline pump station. The proposed 2.0-acre new substation location is approximately 7.5 miles northwest of Plaza, North Dakota, in Section 1, Township 153 North, Range 88 West.

Response: Updated sections 16.1.1 through 16.1.11 and sections 16.2.1 through 16.2.8 to be responsive to the 200-foot project corridor area are provided in Attachment 1 of this document.

3: Section 16.2.2 indicates there are several USFWS Waterfowl Production Areas and ND Game and Fish PLOTS lands located within the project corridor and/or study area (i.e., the 1-mile-wide area), yet these are not indicated as avoidance areas or discussed on Table 4 or within section 16. Please update accordingly.

Response: An updated Section 16.2.2 and updated Table 4 are provided in Attachment 1 of this document. Attachment 2 includes updated Avoidance Areas figures showing the USFWS Waterfowl Production Areas (WPAs) and ND Game and Fish Private Lands Open to Sportsmen (PLOTS) lands within the project corridors and study areas for both the existing pipeline and the proposed pipeline. There are no WPAs or PLOTS lands within the project corridor of the proposed pipeline; however, there are two WPAs within the study area for the proposed pipeline. There are

several WPAs within the project corridor of the existing pipeline; however, there are no PLOTs lands within the project corridor of the existing pipeline. The existing pipeline was built in the 1960s; therefore, there is no reasonable alternative to avoid such features, and what mitigation measures the company intends to implement to minimize and mitigate adverse impacts resulting from the location, construction, and operation of the pipeline in those locations.

4: Per Table 4, one occupied residence is located within 500 feet of the route. Has a waiver from this residence been obtained? Will the company file the waiver with the Commission?

Response: The one occupied residence identified in Table 4 is an existing house located approximately 462 from the centerline of the existing pipeline. The existing pipeline was built in the 1960s and conversion of the existing pipeline will not require disturbances or construction activities within 500 feet of the occupied residence. Prior to construction, TBPL will obtain a waiver from the landowner and the waiver will be filed with the Commission.

4: Section 16.3.5 indicates that there is one place of business located within 500 feet of the route, yet Table 4 does not list this as an avoidance area. Please update the table with this information. Has a waiver from this business been obtained? Will the company file the waiver with the Commission?

Response: Section 16.3.5 and the Avoidance Areas maps were revised to clarify that this feature is not a business within 500 feet. This feature is a saltwater disposal well; therefore, a waiver is not expected to be required. Conversion of the existing pipeline will not require disturbances or construction activities within 500 feet of this facility.

5: Did the company locate any unoccupied structures within 500 feet of the route, and if yes, how did they determine they were unoccupied?

Response: Based on field surveys and communications with landowners, there are no unoccupied structures within 500 feet of the route.

6: Please confirm that all the "Farm Units" located on the Route Selection Criteria map set are not residences or otherwise occupied.

Response: The Route Selection Criteria map set was updated to change the legend from “Farm Units” to “Occupied Residences”, as appropriate, and the updated maps are provided in Attachment 2 of this document. Based on field surveys and communications with landowners, there are no Farm Units that are occupied residences within 500 feet of the route.

7: Are the two existing block valves capable of remote operations?

Response: The two e existing block valves are both manually operated valves and not capable of remote operations.

8: How did the company determine that no block valves were required upstream or downstream of the East Fork Shell Creek? What benefit would placement of a block valve upstream and

downstream of this creek provide in minimizing adverse impacts to the environment?

Response: There are two existing block valves on the existing pipeline. One of the existing block valves is upstream of the East Fork Shell Creek and the other existing block valve is downstream of the creek to minimize adverse impacts to the environment.

9: Will the Noxious Weed Plan be submitted and approved to any county agency? If so, what is the status of the approvals?

Response: Please find the Weed Management Plan in Attachment 3. The plan will be submitted to the county weed agencies; however, county agency approvals are not anticipated to be required.

10: Please update all maps that the company submitted in its amended information filing to show the 200-foot corridor. Include the municipal wells; all residences, businesses, and schools located within 500 feet of the proposed route; and all geologically unstable areas (e.g. abandoned coal mines, gravel pits, landslide areas, etc.) on the Avoidance Area map set. Please include the associated GIS layers.

Response: Updated map sets depicting Exclusion Areas, Avoidance Areas, and Route Selection Criteria within the 200-foot corridor are provided in Attachment 2 of this document and the GIS layers are provided in the attached CD. One occupied residence was identified approximately 462 feet from the centerline of the existing pipeline. There are no additional occupied residences/ structures, schools, places of business, or municipal wells within 500 feet of the proposed route. Conversion of the existing pipeline will not require disturbances or construction activities within 500 feet of the occupied residence. Prior to construction, TBPL will obtain a waiver from the landowner and the waiver will be filed with the Commission.

There are no geologically unstable areas (e.g. abandoned coal mines, gravel pits, landslide areas, etc.) within of the 200-foot project corridors for the proposed pipeline or the existing pipeline.

Please note that the Exclusion/Avoidance data pertaining to the cultural resource layers are not displayed on these maps due to the sensitive nature of the resources. The NON-PUBLIC cultural resource report, maps and GIS layers were provided to the Commission as a separate submittal with the Application to Protect Information on March 25, 2024.

11: How did the company determine that the Hiddenwood Lake Aquifer was not a municipal water supply or a source for drinking water from a well?

Response: Based on available data sources, no municipal water supply wells or private drinking water wells were identified in the portion of the Hiddenwood Lake Aquifer within the study area. Based on the Final Environmental Impact Statement for the Mandan, Hidatsa, and Arikara Nation's Proposed Clean Fuels Refinery Project (U.S. Bureau of Indian Affairs and U.S. Environmental Protection Agency 2009), groundwater in the portion of the aquifer within the study area is of very poor quality and is not suitable for drinking water. Generally, water in this aquifer is a sodium sulfate bicarbonate type with high quantities of sulfate, iron, and dissolved solids.

12: Provide an amended black and white project location map as depicted in Appendix G of the original application to reflect the new pump station location.

Response: The black and white project location map as depicted in Appendix G has been amended to reflect the proposed new location of the midline pump station. The updated newspaper map is provided in Attachment 2 of this document.

13: In its October 26, 2023, letter, the ND Game and Fish recommended that the company perform aerial surveys for raptor nests prior to construction and that a 0.5-mile construction buffer be implemented around active eagle nest sites. Will the company follow these recommendations, and if yes, when will they conduct the aerial survey?

Response: Yes. If construction will occur between February 1 and July 15, an aerial raptor survey will be performed extending 0.5 mile from the construction right-of-way before construction begins and TBPL will implement a 0.5-mile construction buffer around active eagle nest sites. If eagles are observed within 1.0 mile of an active work area, all construction within 1.0 mile of the sighting will be modified or curtailed until the bird(s) have left the area, USFWS will be consulted on how to proceed, and the NDGF and the TAT Fish and Wildlife Division will be notified.

14: Please provide copies of all environmental and habitat field survey reports that were conducted and whether additional surveys will need to be conducted based on the location of the new pump station.

Response: A copy of the wetland delineation was provided in Appendix F of the Consolidated Application dated January 5, 2024. The field survey area for this wetland delineation included the new location of the midline pump station. The soil types were also evaluated in the wetland delineation.

A redacted version of the Class III survey report for cultural resources was provided in Appendix E of the Consolidated Application dated January 5, 2024. The NON-PUBLIC cultural resource report, maps and GIS layers were provided to the Commission as a separate submittal with the Application to Protect Information on March 25, 2024.

No additional environmental or habitat field surveys are anticipated to be needed. The vegetation in the 200-foot corridor is predominantly cultivated crops. The directional drilling method will be used for the crossing of the East Fork Shell Creek to minimize potential impacts to jurisdictional wetlands and riparian vegetation.

15: How far is the bald eagle nest from the relocated pump station, and is this an active nest? What mitigation measures will be implemented to minimize adverse impacts to this bald eagle nest? Why is the company not proposing to move the pump station farther from it?

Response: Under a second Amended Consolidated Application, TBPL is proposing to relocate the midline pump station to a new location. The proposed new location is approximately 7.5 miles northwest of Plaza, North Dakota, in Section 1, Township 153 North, Range 88 West.

Based on review of the NDGF eagle nest database, the bald eagle nest is approximately 2 miles northwest of the proposed new location for the midline pump station.

Mitigation measures to be implemented to minimize adverse impacts to this bald eagle nest include avoiding removal of trees and the use of the horizontal directional drilling method for the crossing of the East Fork Shell Creek. If construction will occur between February 1 and July 15, an aerial raptor survey will be performed extending 0.5 mile from the construction right-of-way before construction begins and TBPL will implement a 0.5-mile construction buffer around active eagle nest sites. If eagles are observed within 1.0 mile of an active work area, all construction within 1.0 mile of the sighting will be modified or curtailed until the bird(s) have left the area, USFWS will be consulted on how to proceed, and the NDGF and the TAT Fish and Wildlife Division will be notified.

16: Please provide a 10-year spill history for this pipeline and the operators.

Response: No spills have occurred over that last 10 years. The existing pipeline has been out of service and under nitrogen blanket for over 10 years. The proposed pipeline has not yet been constructed and TBPL has not had any operating pipeline or other assets for this project.

CERTIFICATE OF SERVICE

The following documents were filed with the North Dakota Public Service Commission (Commission) on May 31, 2024, via Federal Express (please see attached Tracking Numbers).

1. Six hard copy of Thunder Butte Pipeline, LLC's letter and attachments with responses to the Commission's questions and/or requests for information and a compact disc with TBPL's letter and attachments in PDF format.

One hard copy and an associated compact disc of the foregoing in PDF format with was also placed with Federal Express for service upon the following:

Ward County Auditor
Ms. Marisa Haman
225 3rd Street SE
2nd Floor
Minot, ND 58701

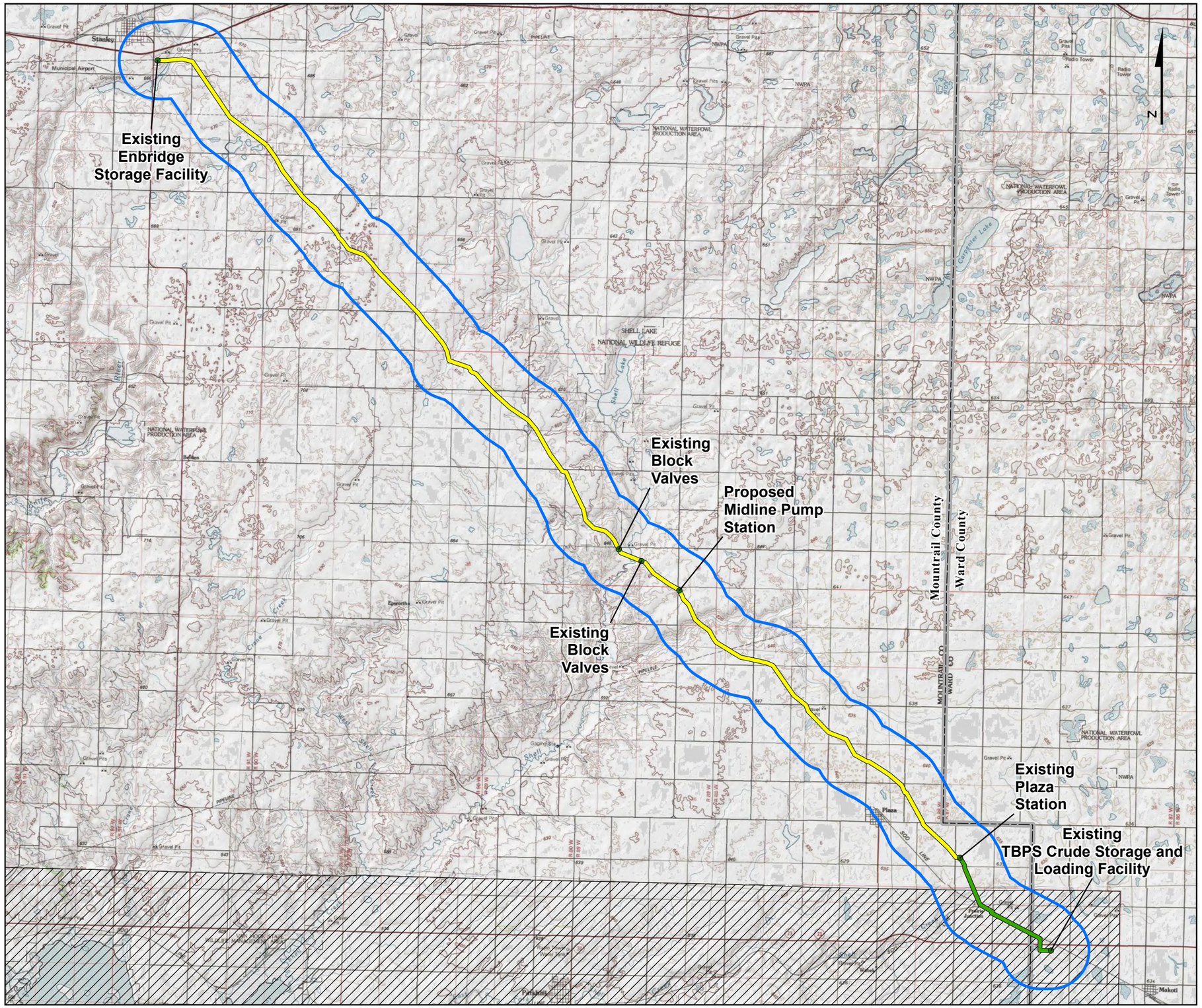
Mountrail County Auditor
Ms. Stephanie Pappa
101 N Main Street
Stanley, ND 58784

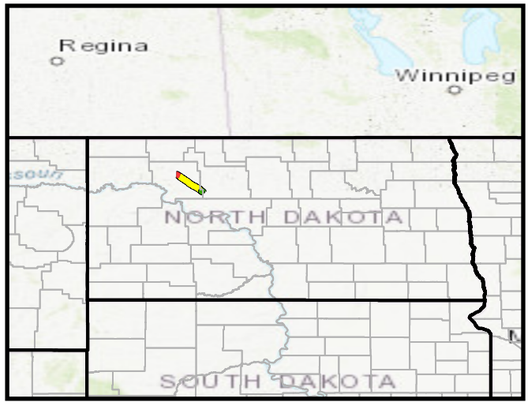
Kathryn Cloutier, M.S.

Project Manager
Arcadis U.S. Inc.
630 Plaza Drive
Highlands Ranch, CO 80129
kathryn.cloutier@arcadis.com

ATTACHMENT 1

Updated maps showing the new location for the proposed midline pump station: Figure 1, Project Overview Map, Exclusion Areas, Avoidance Areas, and Route Selection Criteria Considered, a black and white Newspaper map





Legend

- Existing Enbridge Pipeline
- Proposed New Pipeline
- 1 Mile Buffer
- Fort Berthold Indian Reservation Boundary
- County Boundary

0 2.5 5 Miles

GRAPHIC SCALE

NOTE:
1. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) STANLEY, STANLEY SE, PALERMO, TAGUS SE, BLAISDELL, TAGUS, SIKES DAM, BELDEN, EPWORTH NW, SHELL LAKE, PLAZA NE, PLAZA NW, BELDEN SW, BELDEN SE, EPWORTH, EPWORTH SE, PLAZA, PLAZA SE, NEW TOWN, SHELL CREEK BAY, PARSHALL, PARSHALL NE, WABEK, MAKOTI, WISCONSIN. OBTAINED FROM ESRI IMAGE SERVICE.

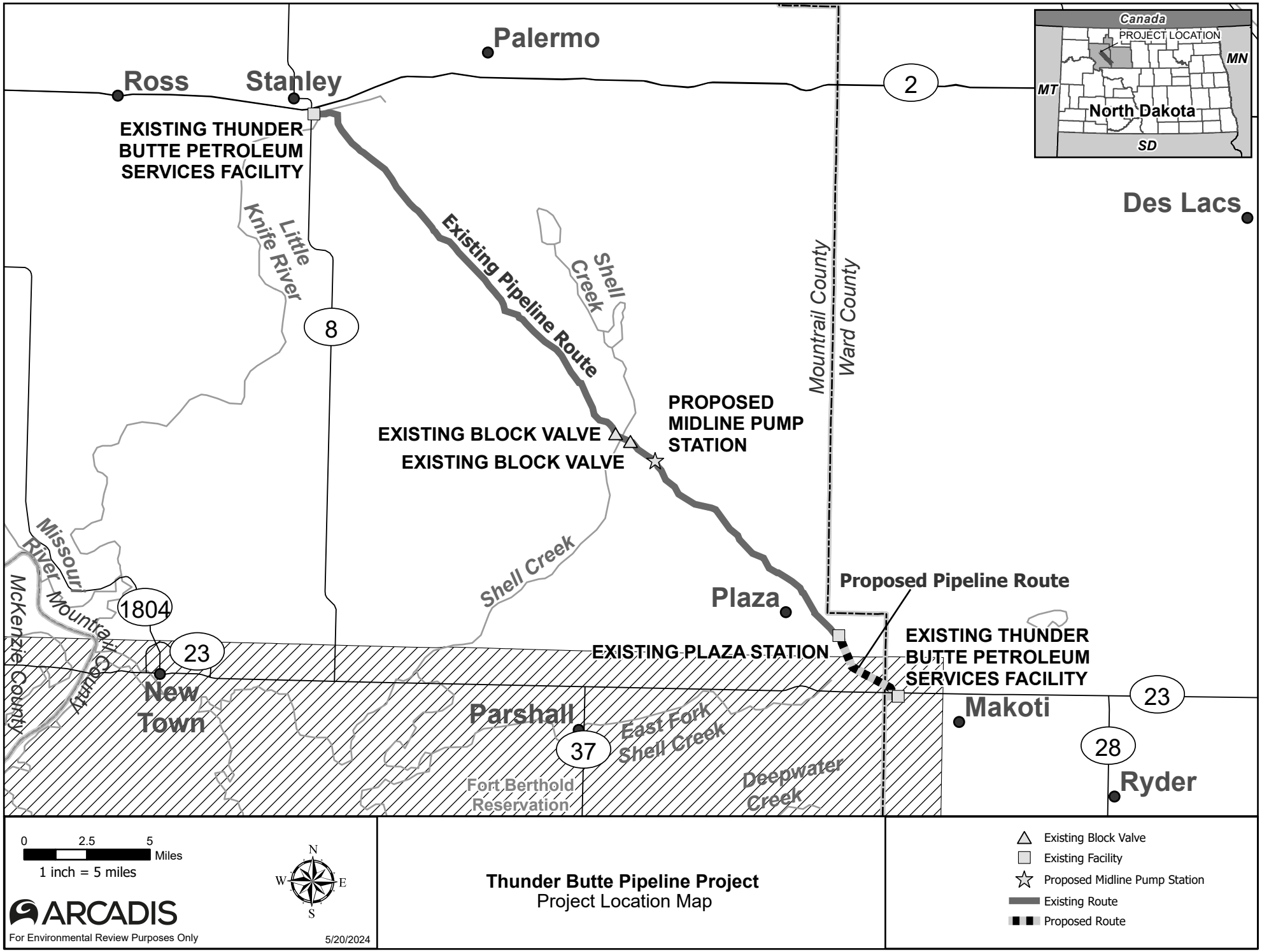
Thunder Butte Pipeline Project
Mountrail and Ward
Counties, North Dakota

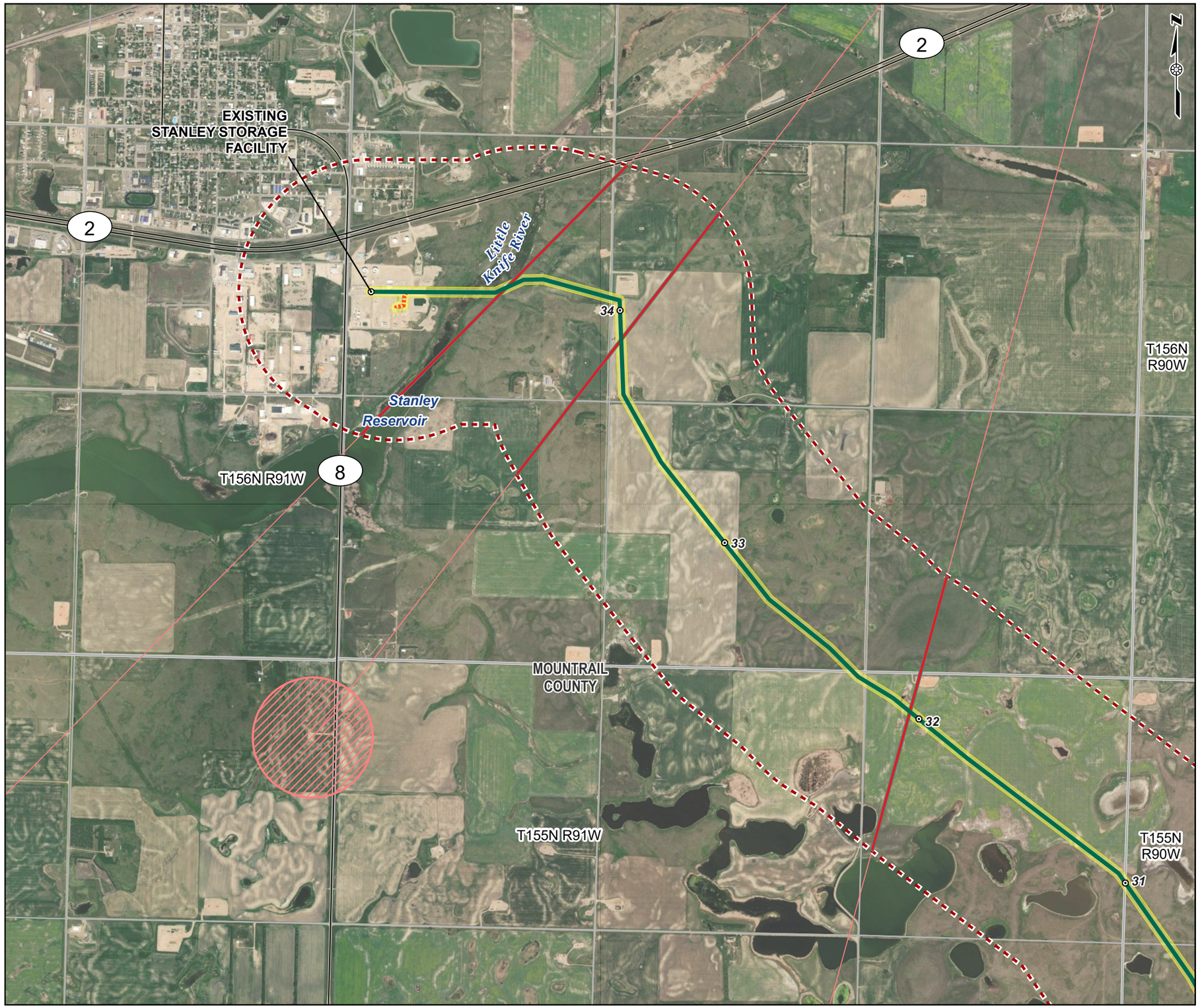
FIGURE 1
PROJECT OVERVIEW MAP

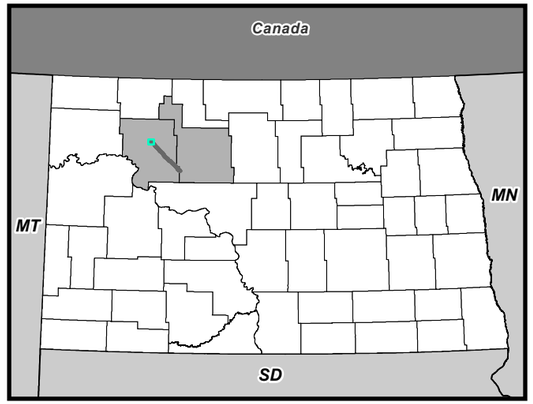
PN:CO002338.0001
Date: 5/17/2024

ARCADIS

Date: 5/17/2024 User Name: MNugent
Document Path: T:_EPP\Makoti_pipeline\pro\Makoti_Pipeline\Makoti_Pipeline_Rev.aprx


Palermo
Ross
Stanley
2
Canada
PROJECT LOCATION
MN
MT
North Dakota
SD
EXISTING THUNDER BUTTE PETROLEUM SERVICES FACILITY
Des Lacs
Little Knife River
Existing Pipeline Route
Shell Creek
Mountrail County
Ward County
8
PROPOSED MIDLINE PUMP STATION
EXISTING BLOCK VALVE
EXISTING BLOCK VALVE
Missouri River
McKenzie County
Mountrail County
Shell Creek
Plaza
Proposed Pipeline Route
1804
23
EXISTING PLAZA STATION
EXISTING THUNDER BUTTE PETROLEUM SERVICES FACILITY
New Town
Parshall
Makoti
23
37
East Fork Shell Creek
28
Fort Berthold Reservation
Deepwater Creek
Ryder
0
2.5
5
Miles
1 inch = 5 miles
N
W
E
S
ARCADIS
For Environmental Review Purposes Only
5/20/2024
Thunder Butte Pipeline Project
Project Location Map
Existing Block Valve
Existing Facility
Proposed Midline Pump Station
Existing Route
Proposed Route





Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- IBCM Direct Line (30 feet)
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
1. PLEASE SEE REFERENCE DETAILS IN SECTION 16, CONSOLIDATED APPLICATION.
2. WORLD IMAGERY IS OBTAINED FROM ESRI WORLD IMAGERY SERVICE.
3. PROJECTION IS NAD 1983 STATE PLANE NORTH DAKOTA N FIPS 3301 (US FEET). THE SCALE IS: 1:24,000.

THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 1 OF 9

PN:CO002338.0001

Date: 5/20/2024

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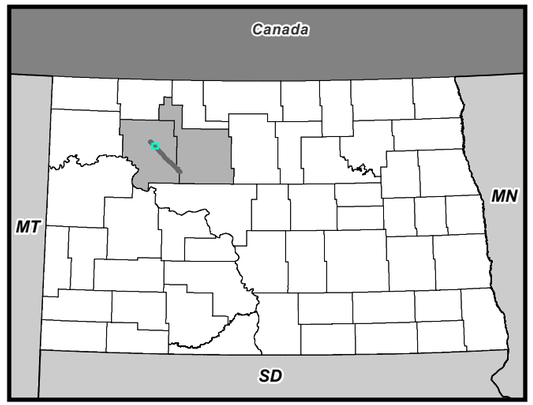

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- IBCM Direct Line (30 feet)
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 2 OF 9

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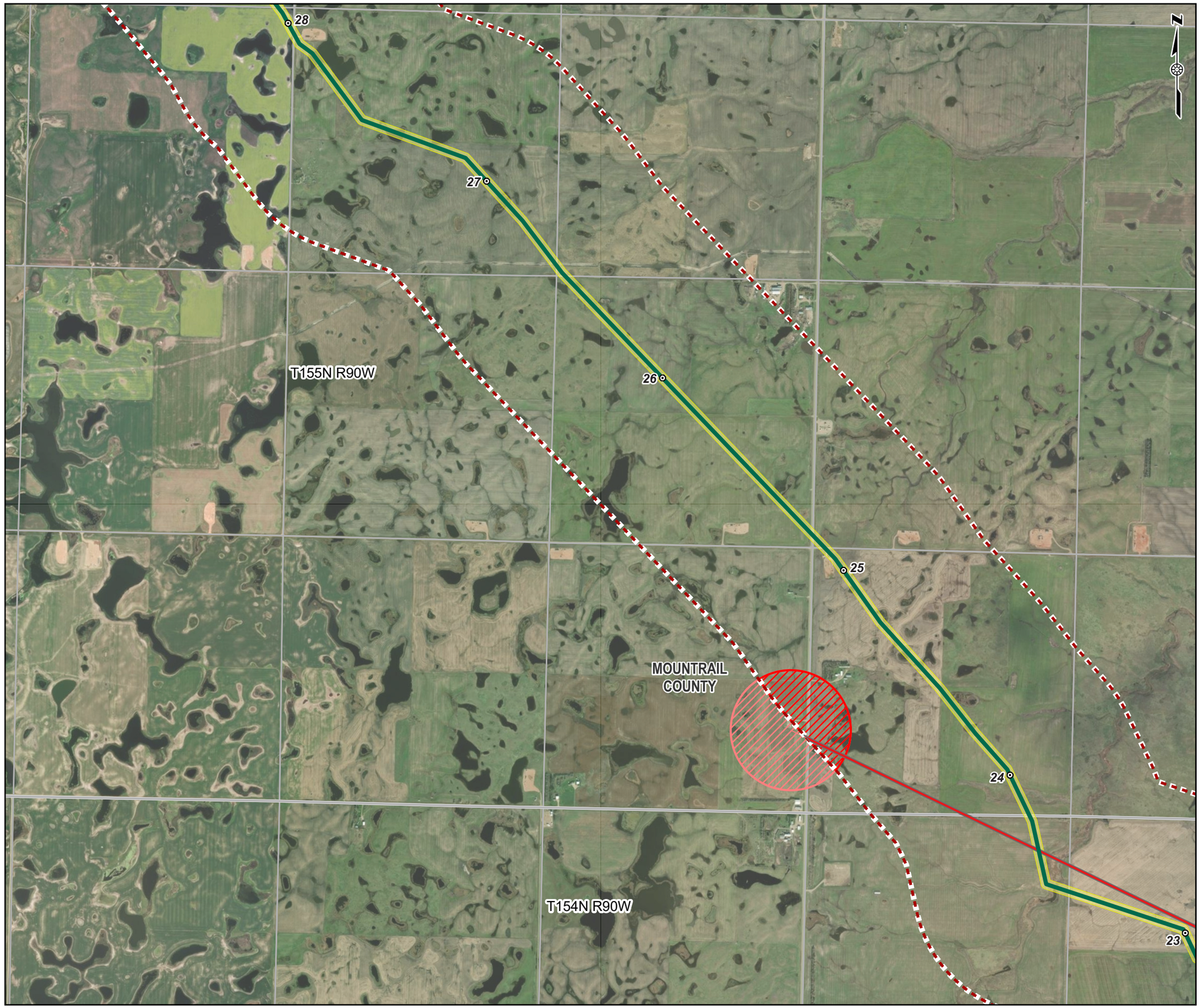

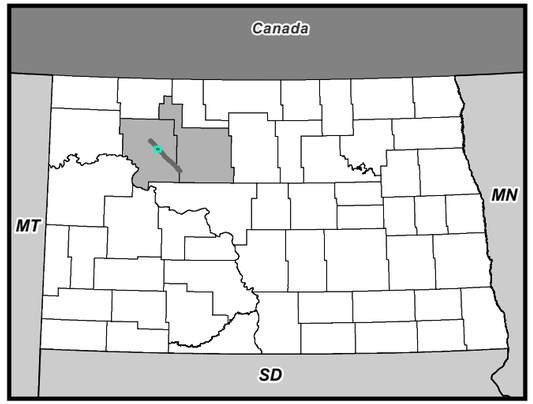

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- IBCM Exclusion Area (1200 feet)
- IBCM Direct Line (30 feet)
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 3 OF 9

PN:CO002338.0001

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T154N R90W

MOUNTRAIL COUNTY

24

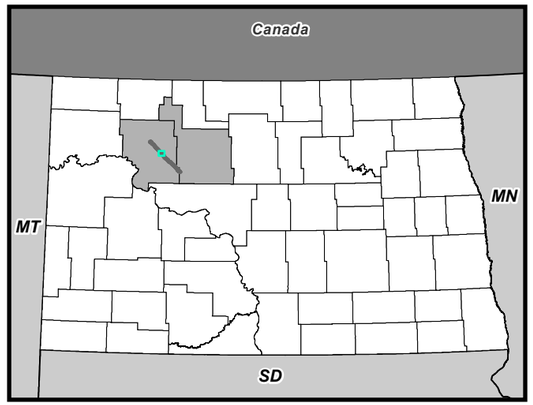
23

22

21

20

N



Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS - National Wildlife Refuge
- IBCM Exclusion Area (1200 feet)
- IBCM Direct Line (30 feet)
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 4 OF 9

PN:CO002338.0001

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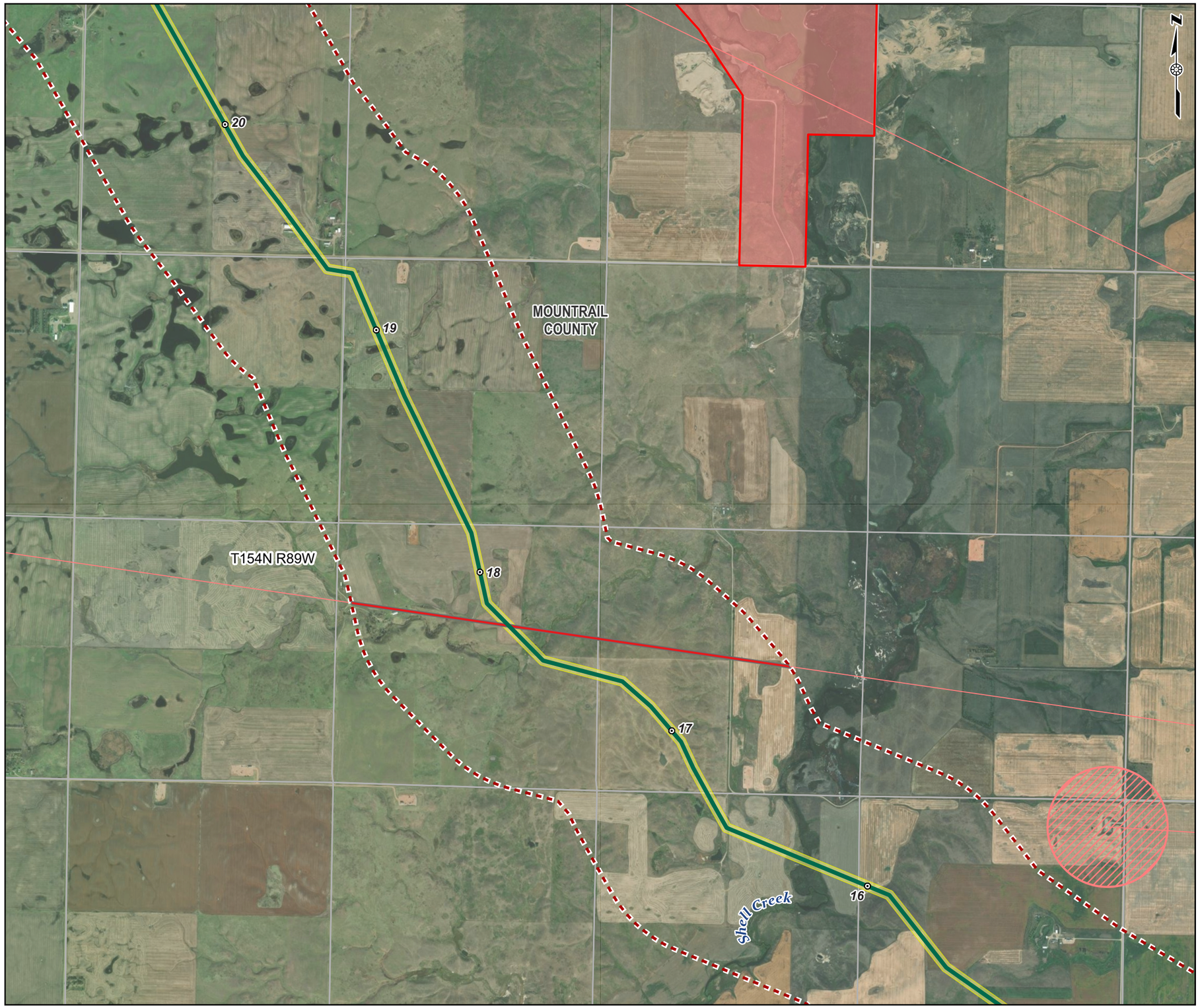

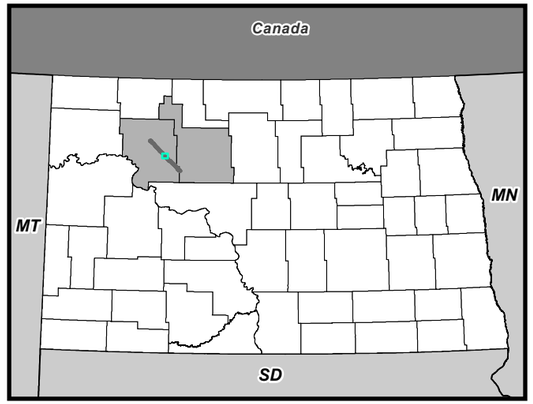

Legend

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- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
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- IBCM Direct Line (30 feet)
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 5 OF 9

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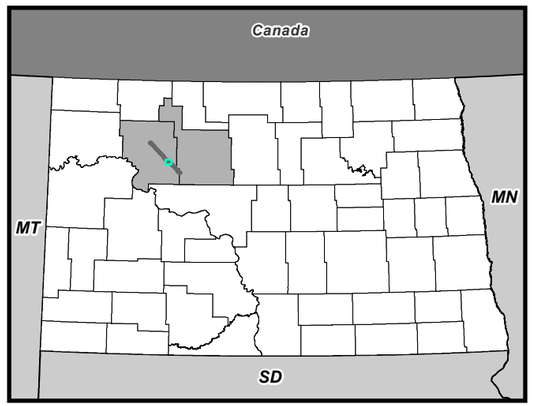

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- IBCM Direct Line (30 feet)
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 6 OF 9

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ARCADIS

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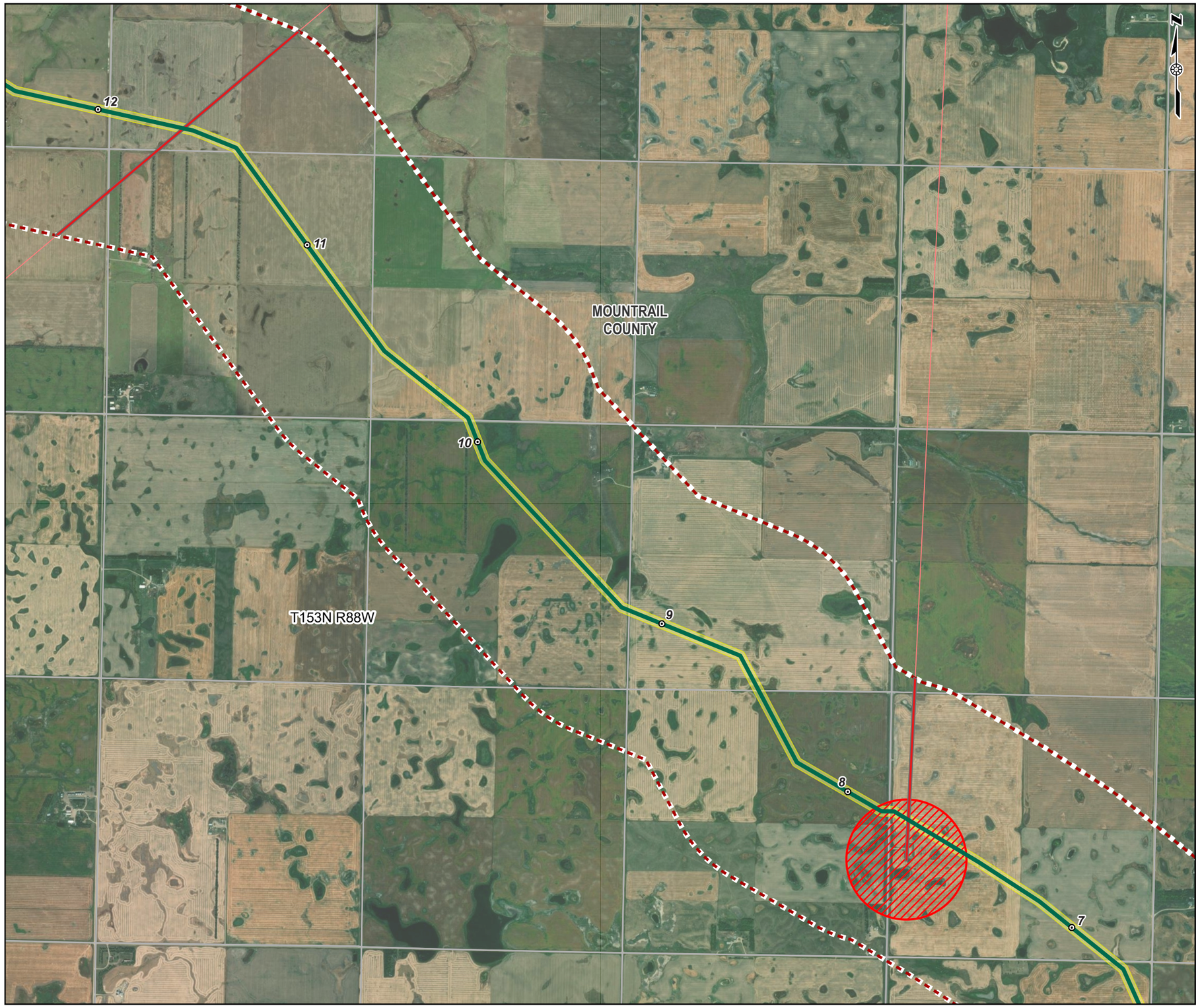

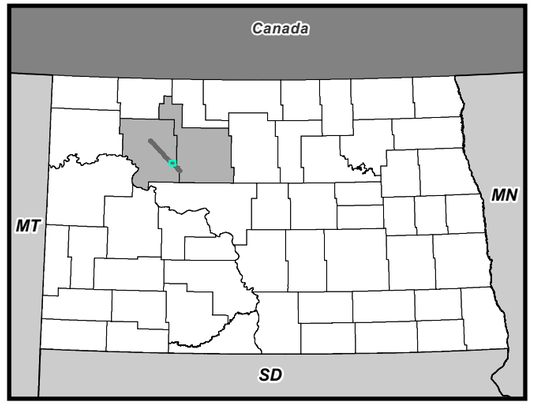

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- IBCM Exclusion Area (1200 feet)
- IBCM Direct Line (30 feet)
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
1. PLEASE SEE REFERENCE DETAILS IN SECTION 16, CONSOLIDATED APPLICATION.
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3. PROJECTION IS NAD 1983 STATE PLANE NORTH DAKOTA N FIPS 3301 (US FEET). THE SCALE IS: 1:24,000.

THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 7 OF 9

PN:CO002338.0001
Date: 5/20/2024

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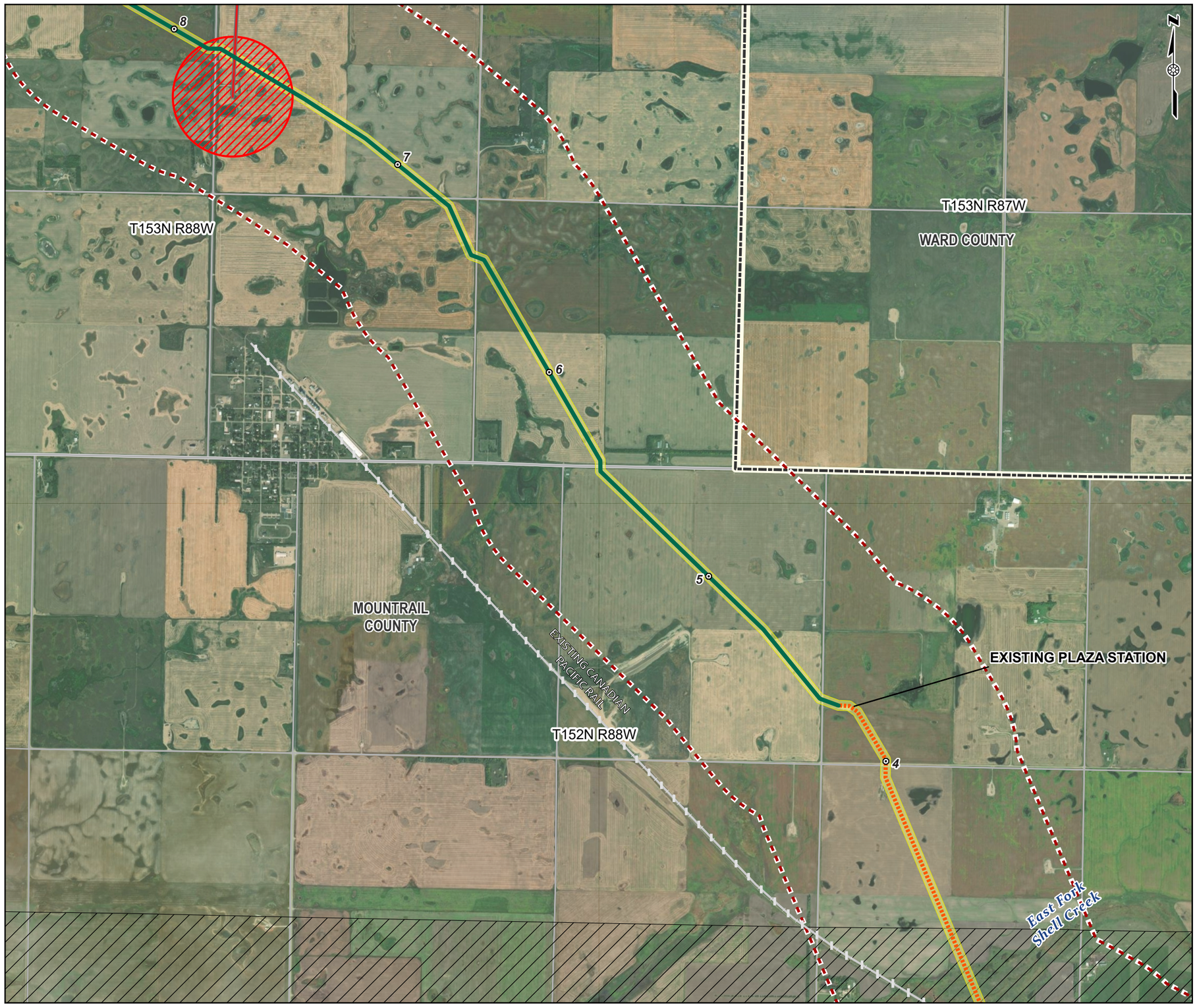

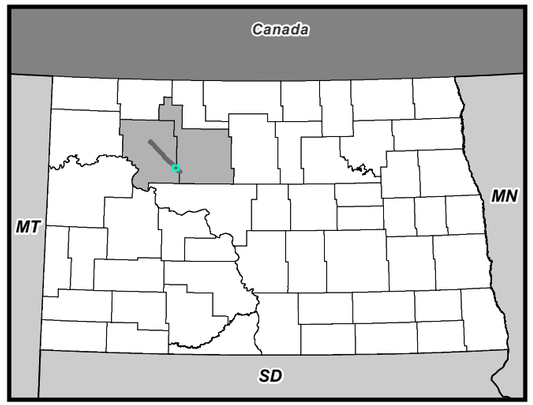

Legend

- Milepost
- Existing Canadian Pacific Railway
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- IBCM Exclusion Area (1200 feet)
- IBCM Direct Line (30 feet)
- Fort Berthold Indian Reservation Boundary
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL AND WARD COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 8 OF 9

PN:CO002338.0001

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EXISTING PLAZA STATION

4

EXISTING CANADIAN PACIFIC RAIL

T152N R88W

East Fork Shell Creek

T152N R87W

3

WARD COUNTY

2

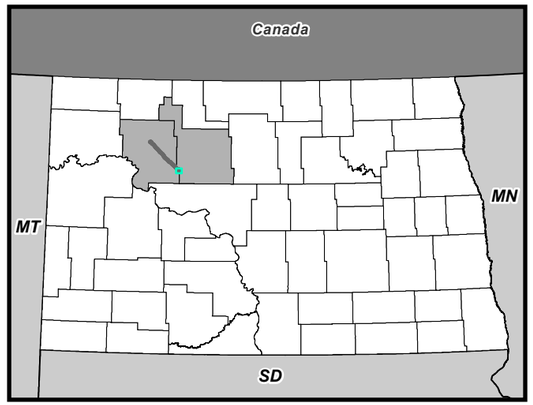
1

23

MOUNTRAIL COUNTY

EXISTING TBPS FACILITY

N



Legend

- Milepost
- Existing Canadian Pacific Railway
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- IBCM Exclusion Area (1200 feet)
- IBCM Direct Line (30 feet)
- Fort Berthold Indian Reservation Boundary
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL AND WARD COUNTY, NORTH DAKOTA

EXCLUSION AREAS
DETAIL SHEET 9 OF 9

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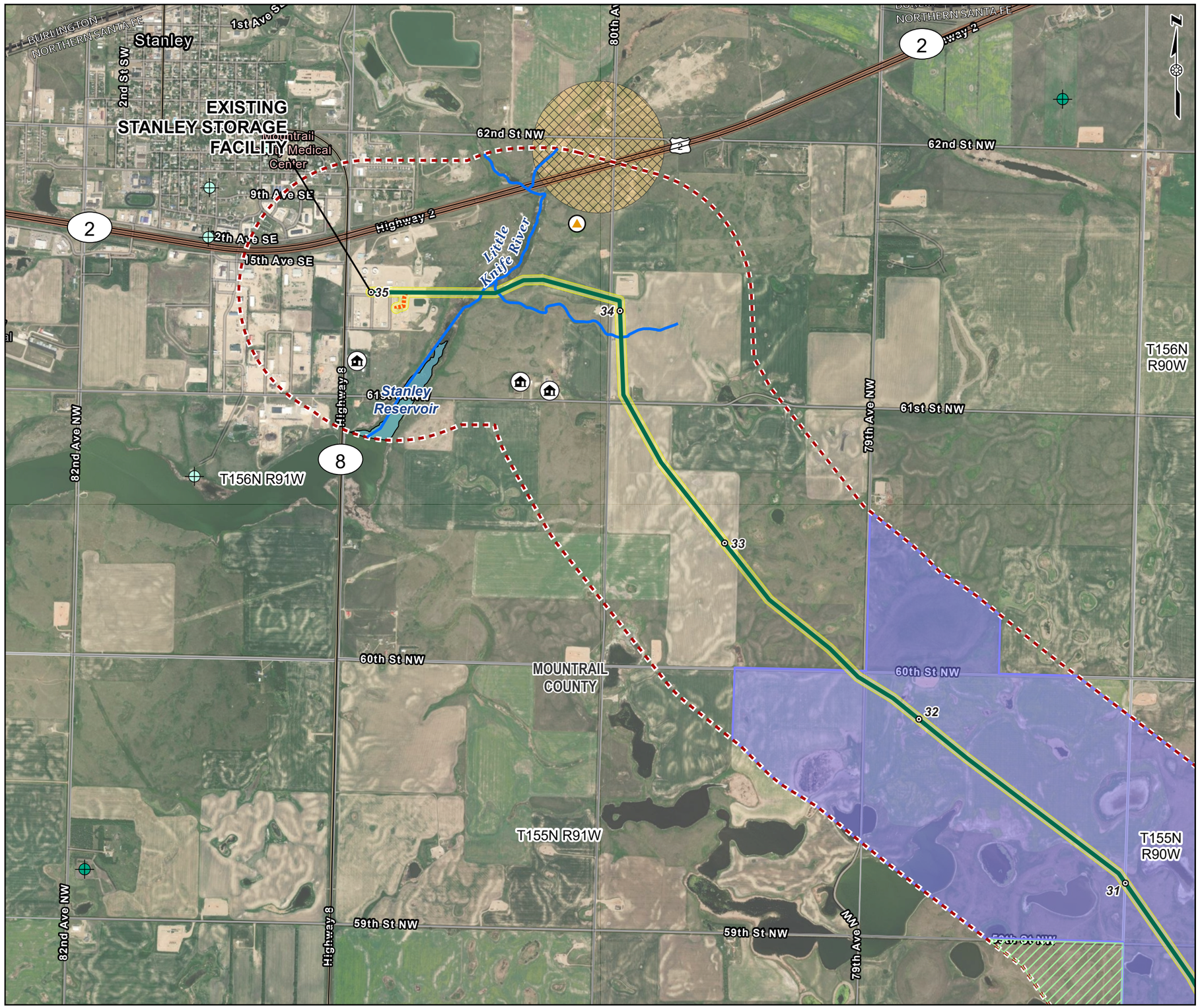

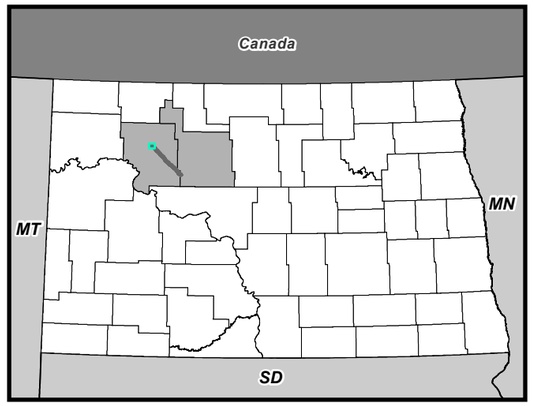

Legend

- Milepost
- Domestic Well
- Municipal Well
- Occupied Residence
- Gravel Pit
- NHD Stream
- Existing Canadian Pacific Railway
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS Waterfowl Production Area
- NDDTL - School Trust Lands
- Source Water Protection Area - Noncommunity (Inactive)
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 1 OF 9

PN:CO002338.0001
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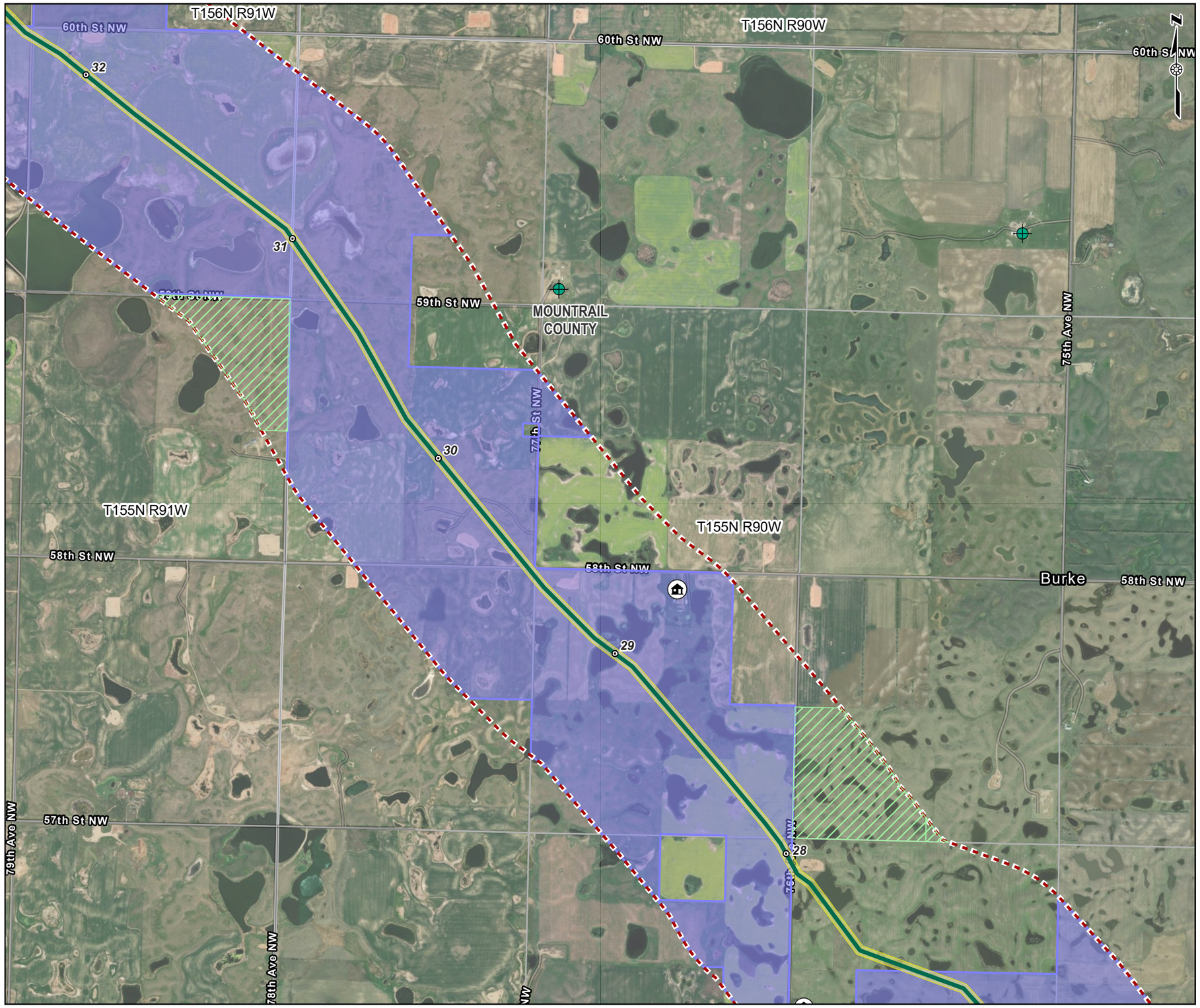

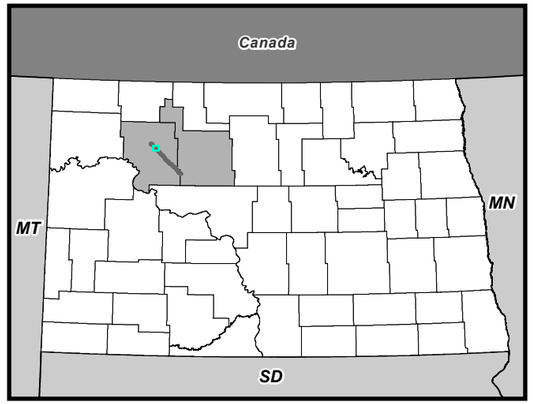

Legend

- Milepost
- Domestic Well
- Occupied Residence
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS Waterfowl Production Area
- NDDTL - School Trust Lands
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 2 OF 9

PN:CO002338.0001
Date: 5/20/2024

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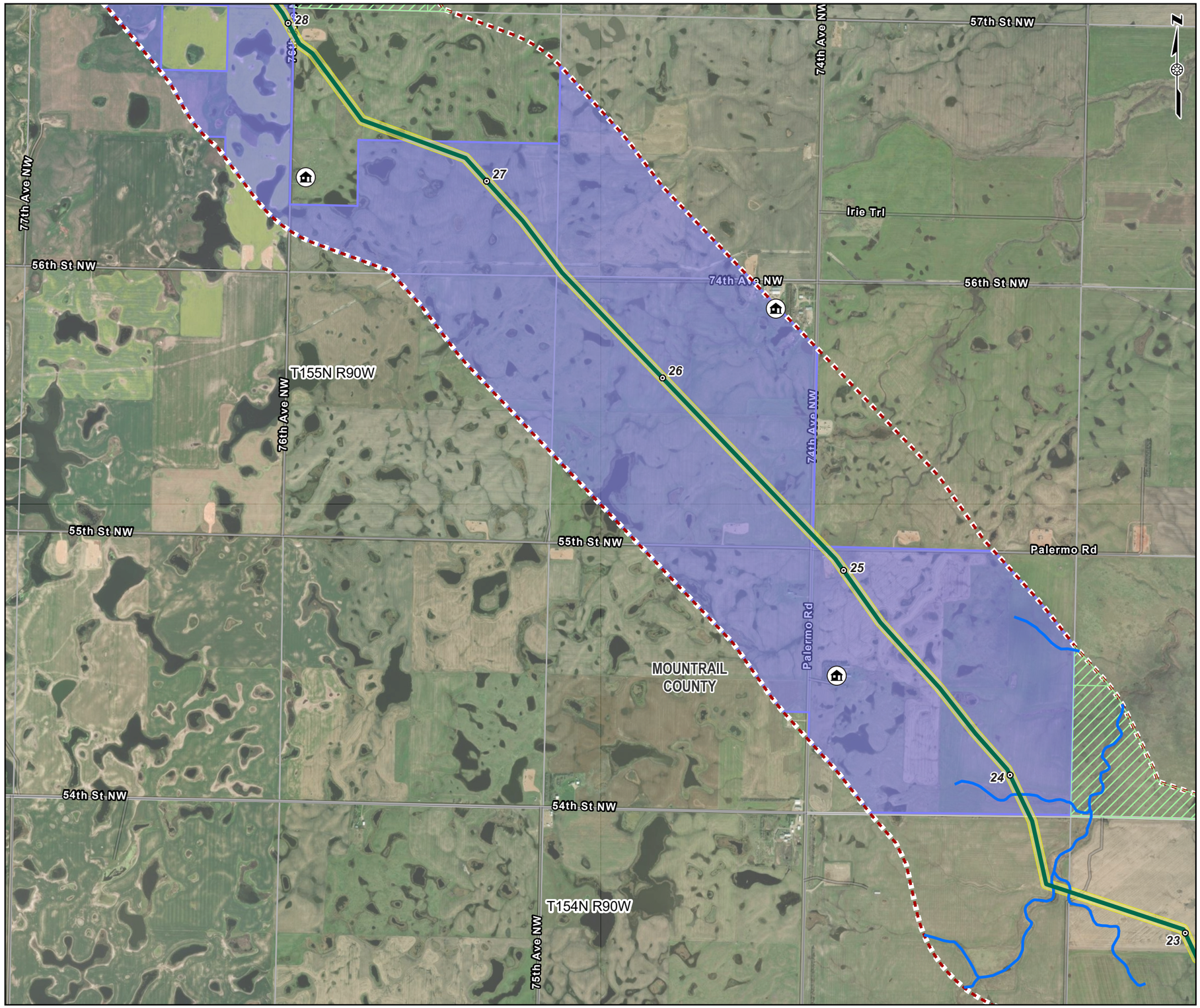

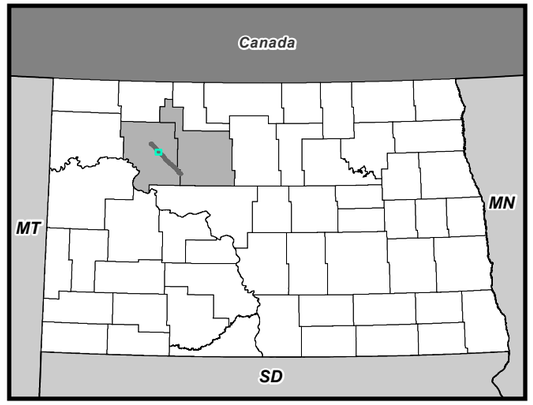

Legend

- Milepost
- Occupied Residence
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS Waterfowl Production Area
- NDDTL - School Trust Lands
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 3 OF 9

PN:CO002338.0001
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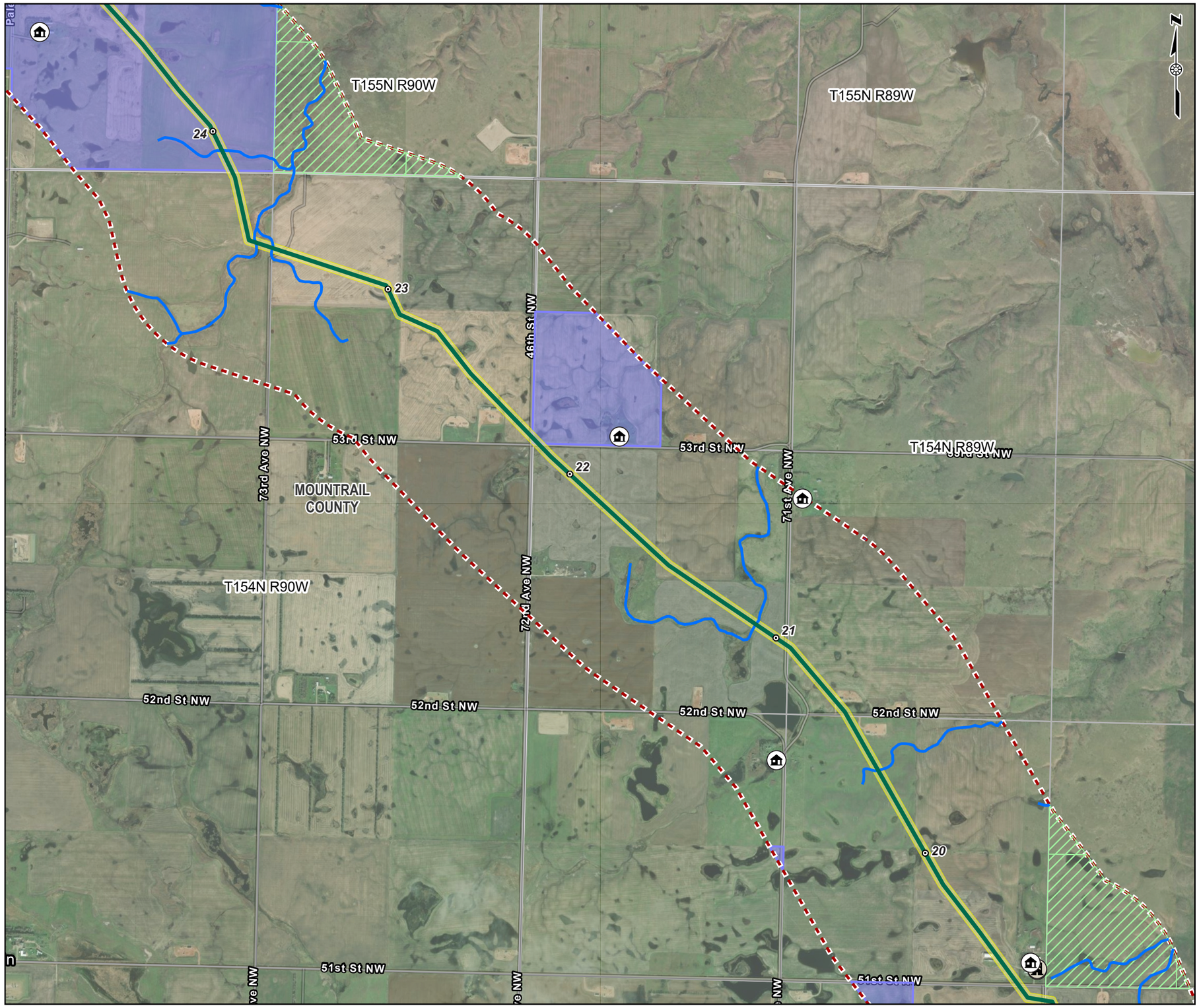

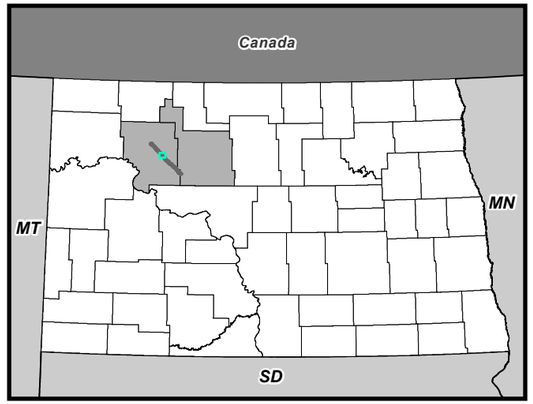

Legend

- Milepost
- Occupied Residence
- Abandoned Coal Mine
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS Waterfowl Production Area
- NDDTL - School Trust Lands
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 4 OF 9

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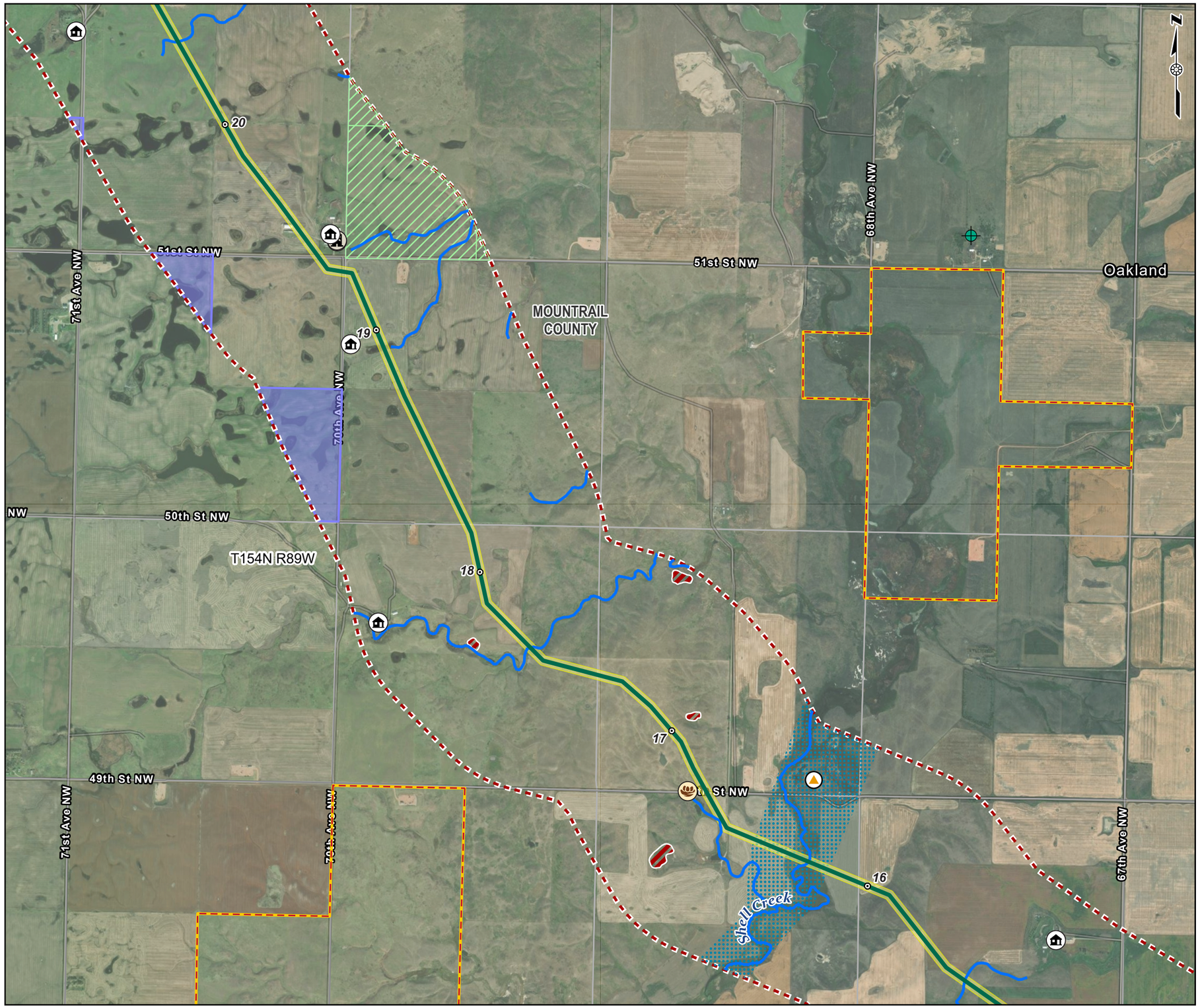

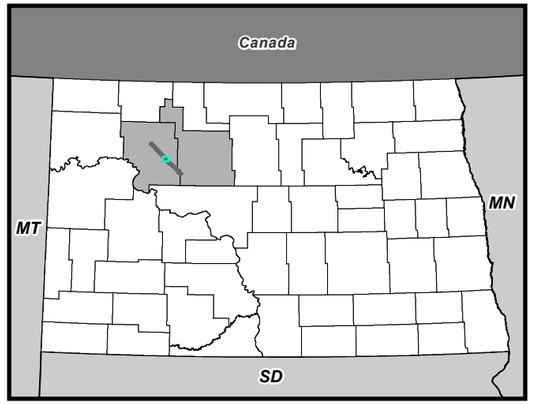

Legend

- Milepost
- Domestic Well
- Occupied Residence
- Abandoned Coal Mine
- Gravel Pit
- Bald Eagle Nest
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS Waterfowl Production Area
- NDGF - PLOTS Land
- NDDTL - School Trust Lands
- Potential Landslide Area
- Shell Creek-White Lake Aquifer
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 5 OF 9

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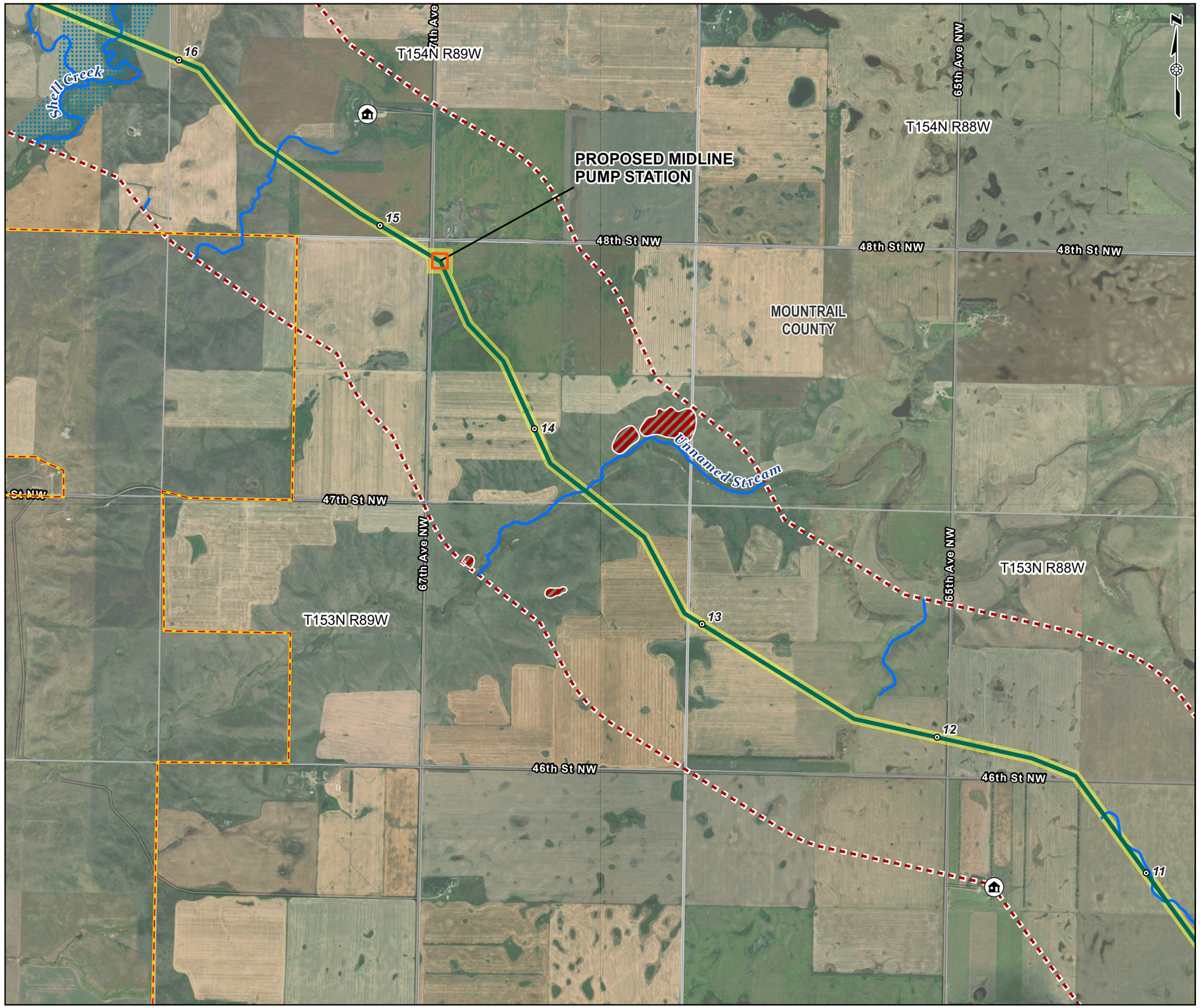

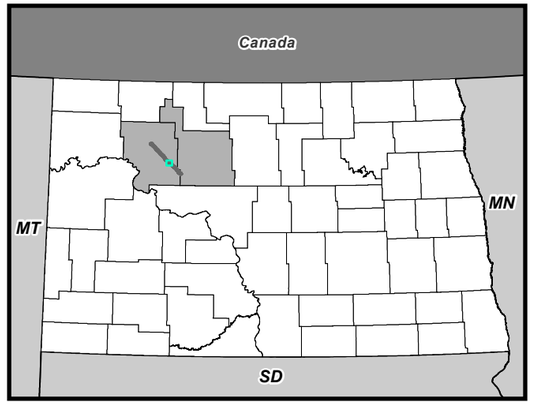

Legend

- Milepost
- Occupied Residence
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NDGF - PLOTS Land
- Potential Landslide Area
- Shell Creek-White Lake Aquifer
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 6 OF 9

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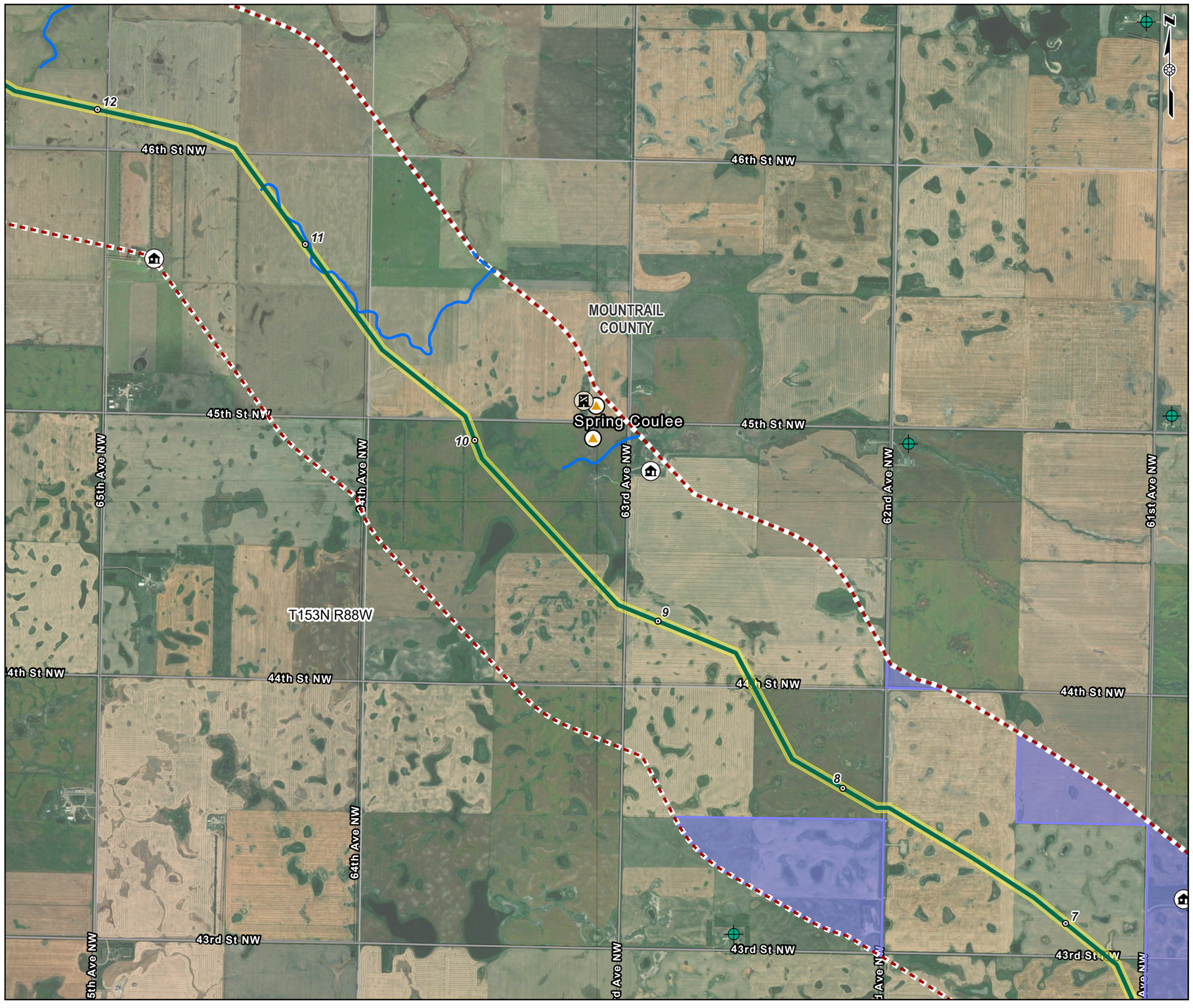

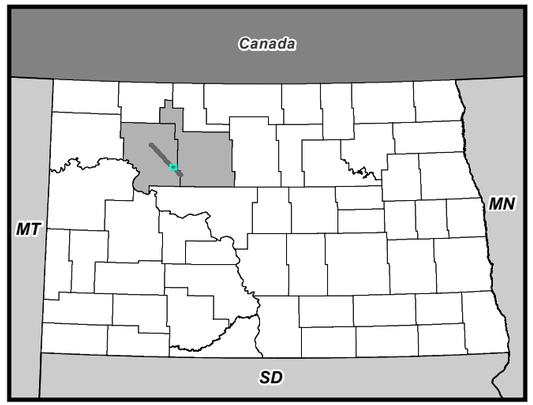

Legend

- Milepost
- Domestic Well
- Occupied Residence
- Abandoned Coal Mine
- Gravel Pit
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS Waterfowl Production Area
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 7 OF 9

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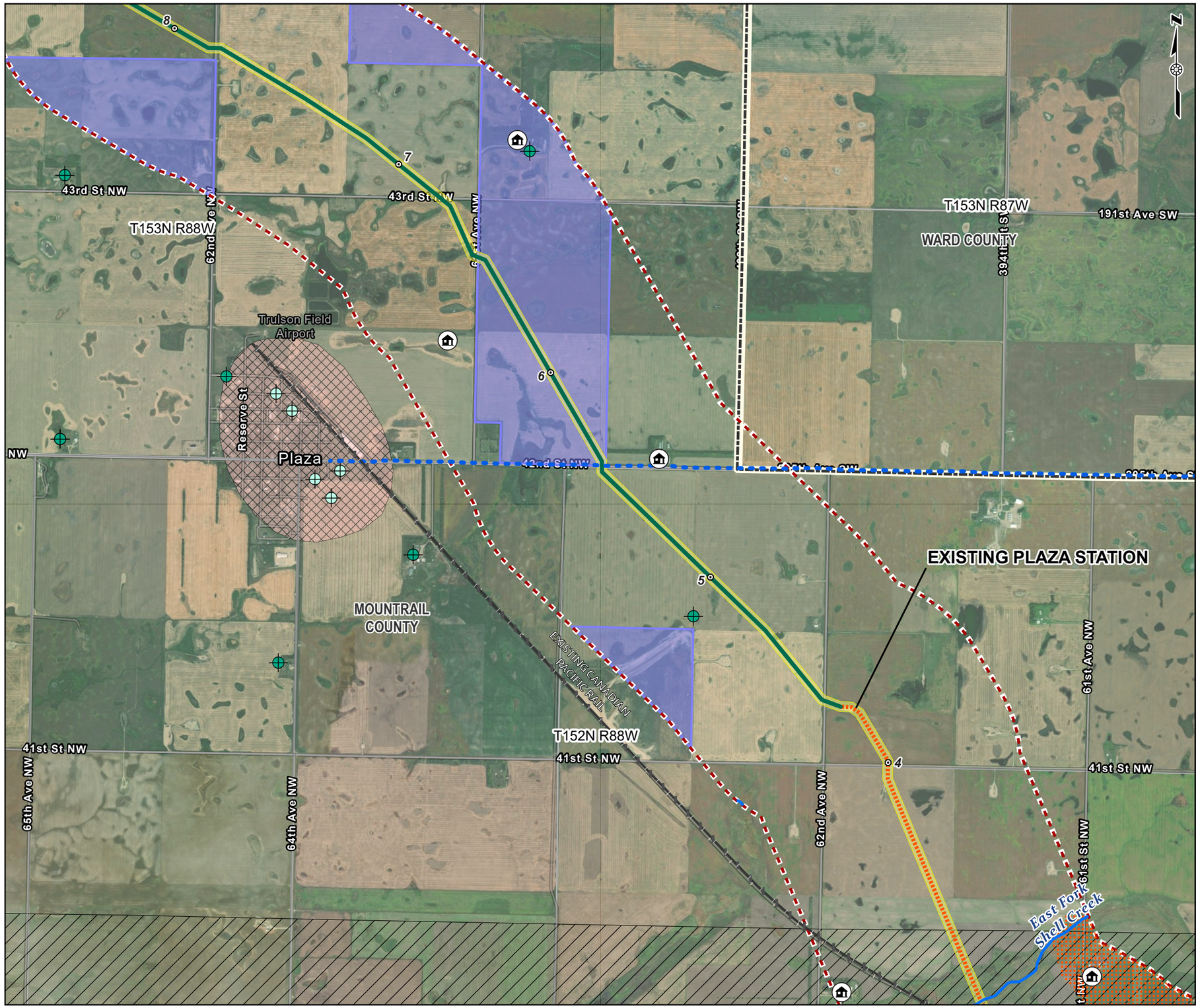

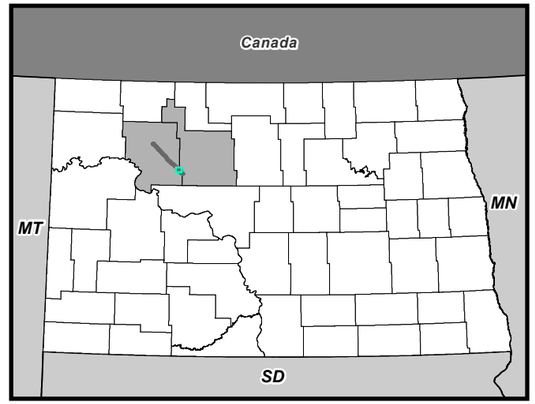

Legend

- Milepost
- Domestic Well
- Municipal Well
- Occupied Residence
- Snowmobile Trail
- NHD Stream
- Existing Canadian Pacific Railway
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS Waterfowl Production Area
- Source Water Protection Area - Community (Inactive)
- Hiddenwood Lake Aquifer
- Fort Berthold Indian Reservation Boundary
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL AND WARD COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 8 OF 9

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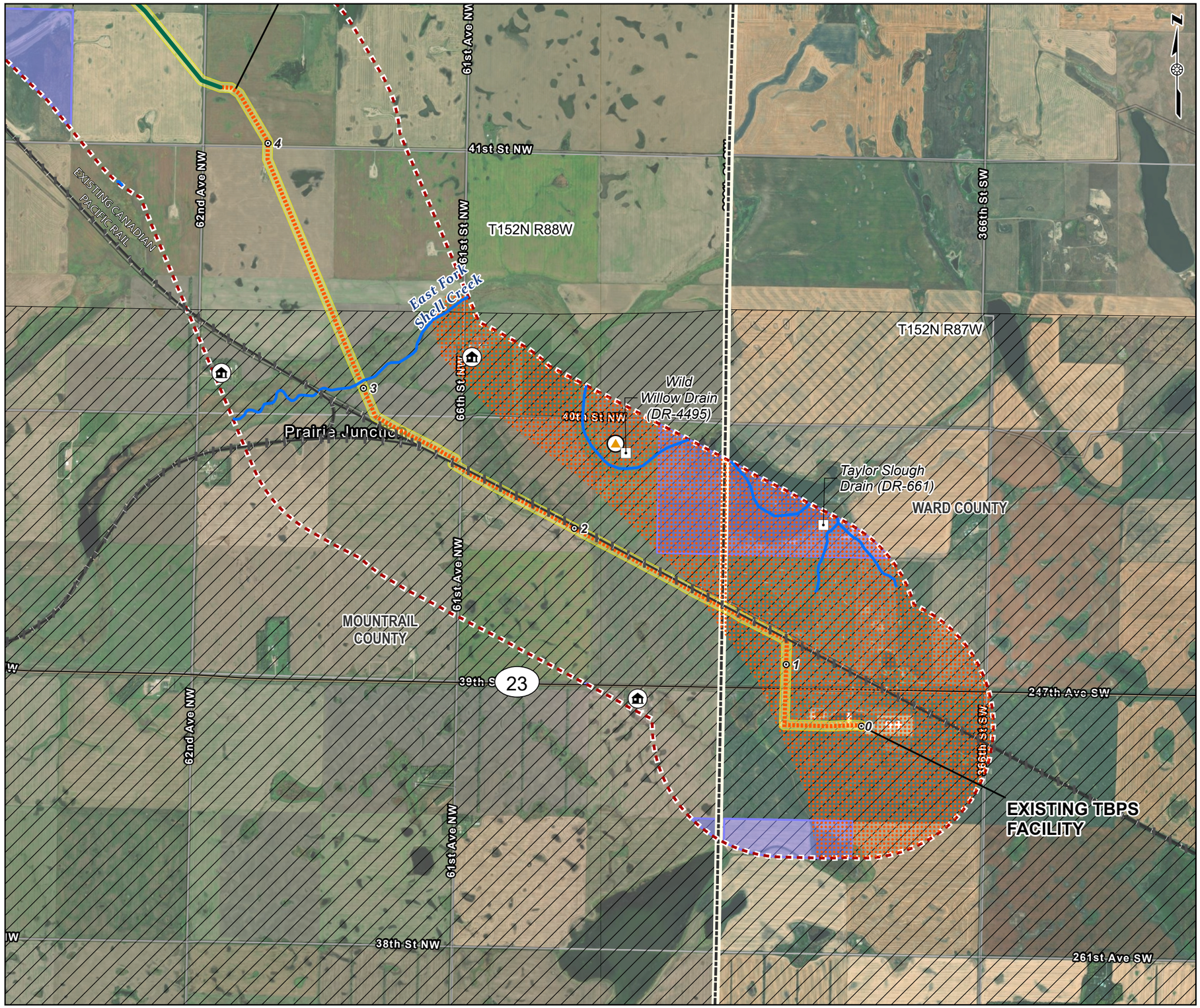

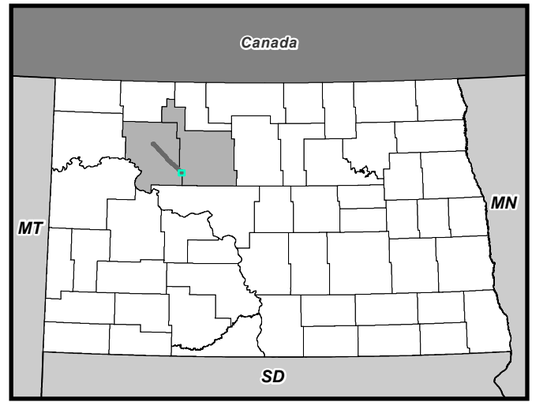

Legend

- Milepost
- Domestic Well
- Surface Drain Location
- Occupied Residence
- Gravel Pit
- NHD Stream
- Existing Canadian Pacific Railway
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- USFWS Waterfowl Production Area
- Hiddenwood Lake Aquifer
- Fort Berthold Indian Reservation Boundary
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL AND WARD COUNTY, NORTH DAKOTA

AVOIDANCE AREAS
DETAIL SHEET 9 OF 9

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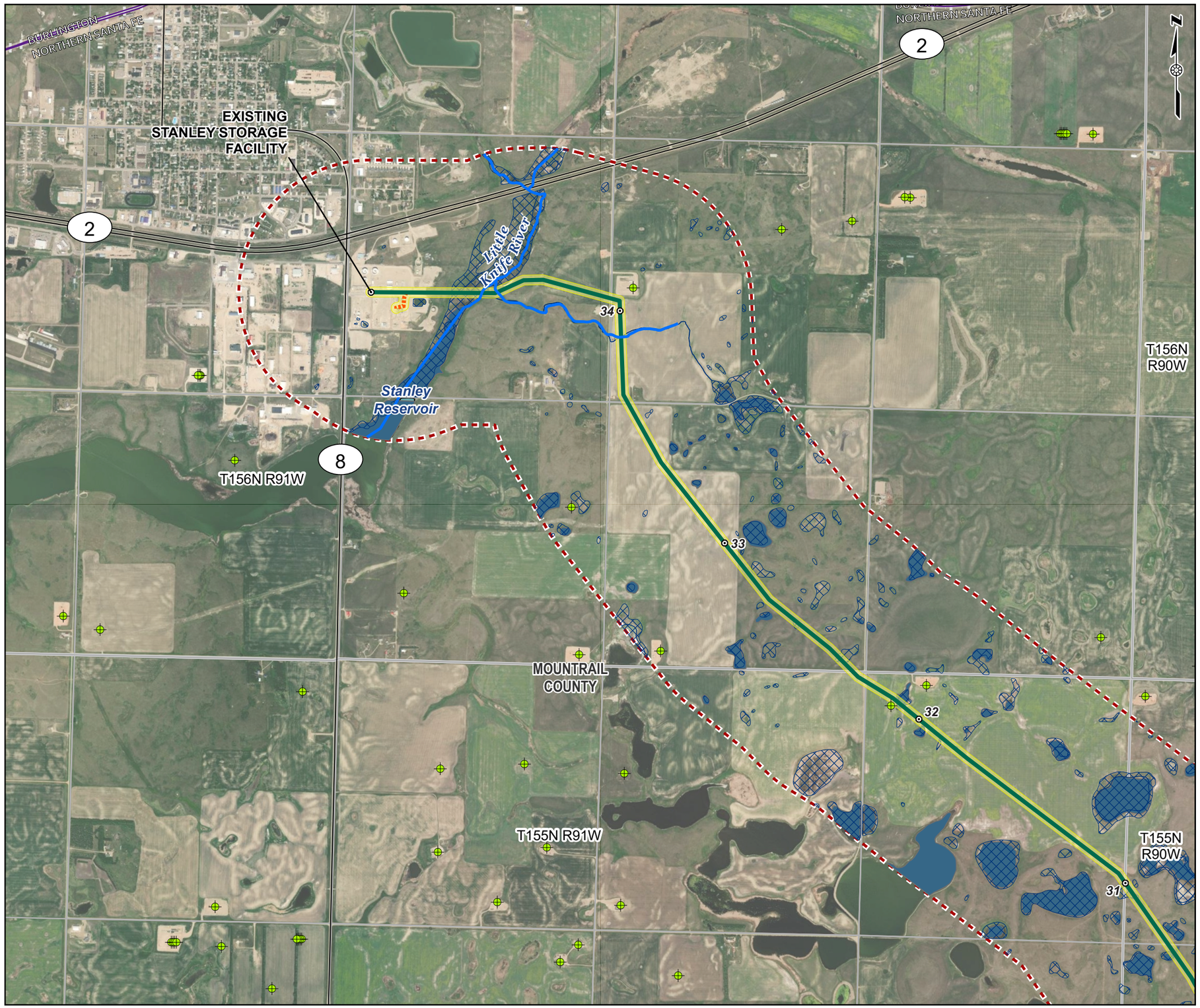

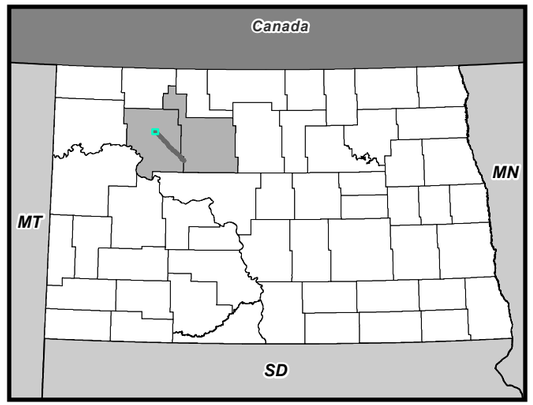

Legend

- Milepost
- Oil and Gas Well
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NWI Wetland
- NHD Waterbody
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
1. WORLD IMAGERY IS OBTAINED FROM ESRI WORLD IMAGERY SERVICE.
2. NATIONAL WETLANDS INVENTORY (NWI) WETLAND DATA OBTAINED FROM THE US FISH & WILDLIFE SERVICE AT: WWW.FWS.GOV.
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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED
DETAIL SHEET 1 OF 9

PN:CO002338.0001

Date: 5/20/2024

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T156N R91W

T156N R90W

T155N R91W

T155N R90W

MOUNTRAIL COUNTY

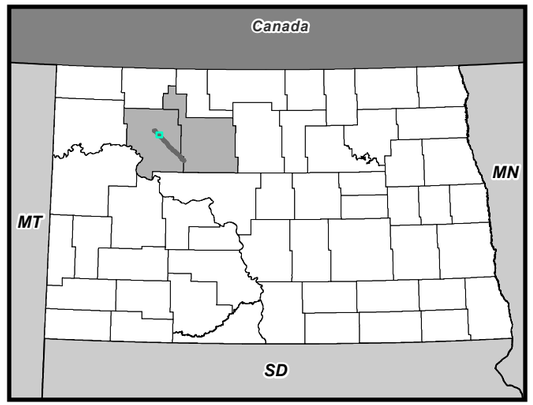
32

31

30

29

28



Legend

- Milepost
- Oil and Gas Well
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NWI Wetland
- NHD Waterbody
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED
DETAIL SHEET 2 OF 9

PN:CO002338.0001

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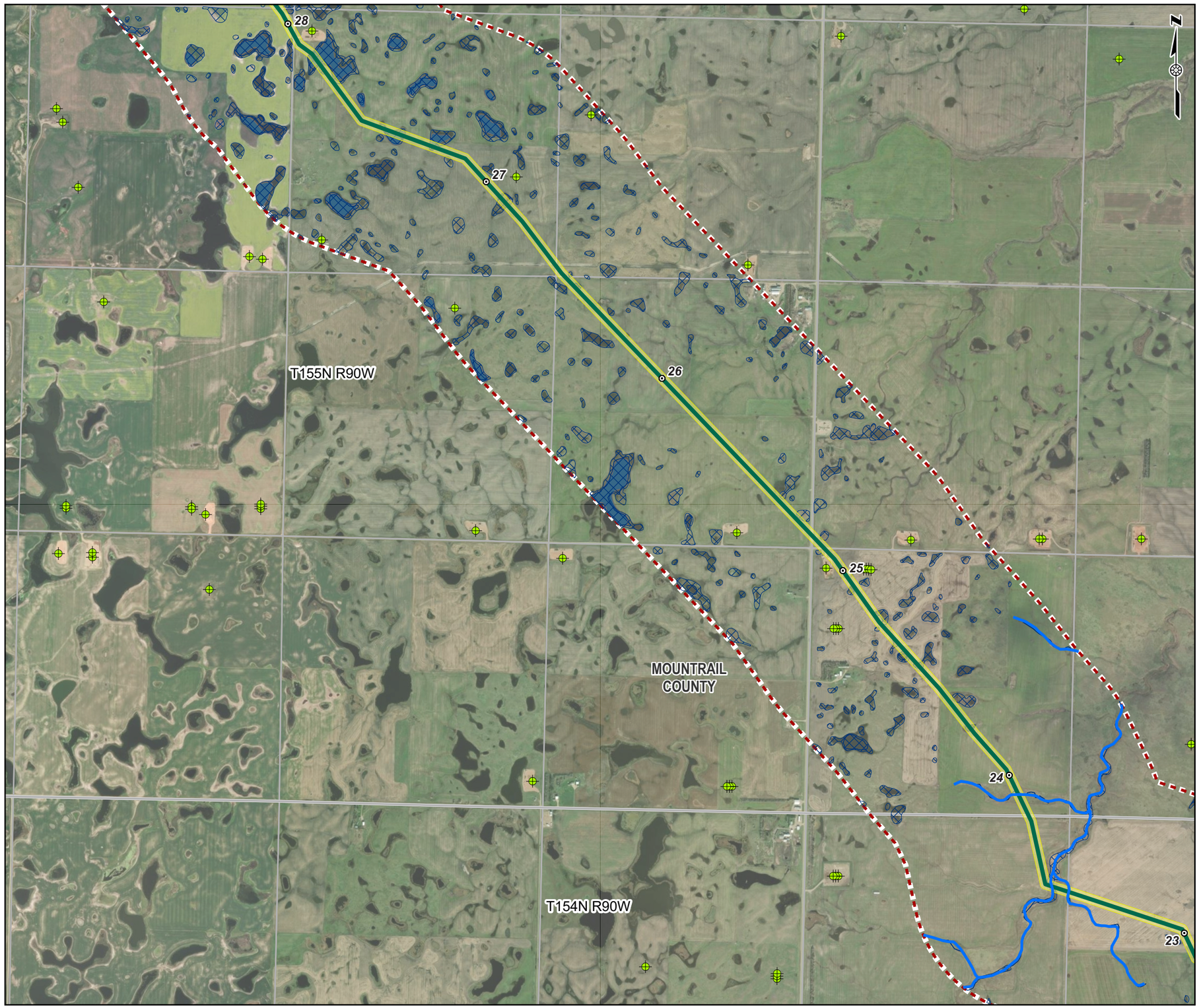

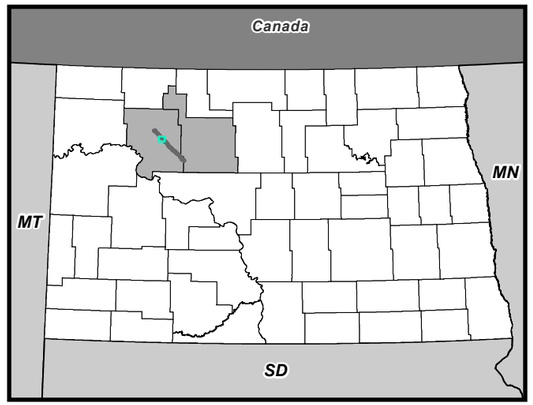

Legend

- Milepost
- Oil and Gas Well
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NWI Wetland
- NHD Waterbody
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED
DETAIL SHEET 3 OF 9

PN:CO002338.0001

Date: 5/20/2024

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T155N R90W

T155N R89W

T154N R89W

T154N R90W

MOUNTRAIL COUNTY

24

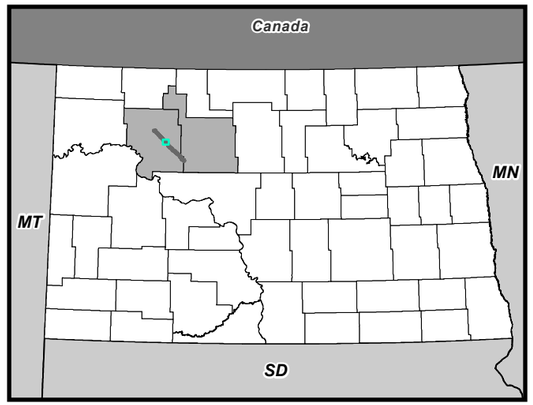
23

22

21

20

N



Legend

- Milepost
- Oil and Gas Well
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NWI Wetland
- NHD Waterbody
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED
DETAIL SHEET 4 OF 9

PN:CO002338.0001

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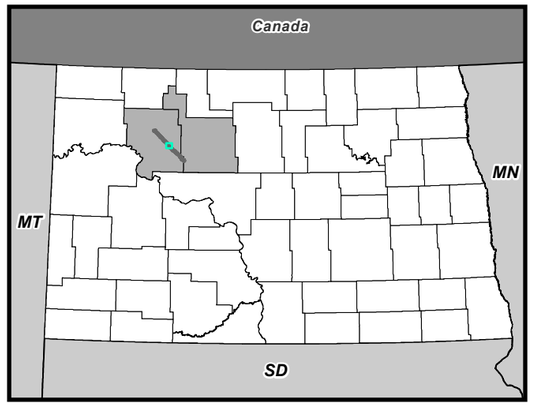

Legend

- Milepost
- Oil and Gas Well
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NWI Wetland
- NHD Waterbody
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED
DETAIL SHEET 5 OF 9

PN:CO002338.0001

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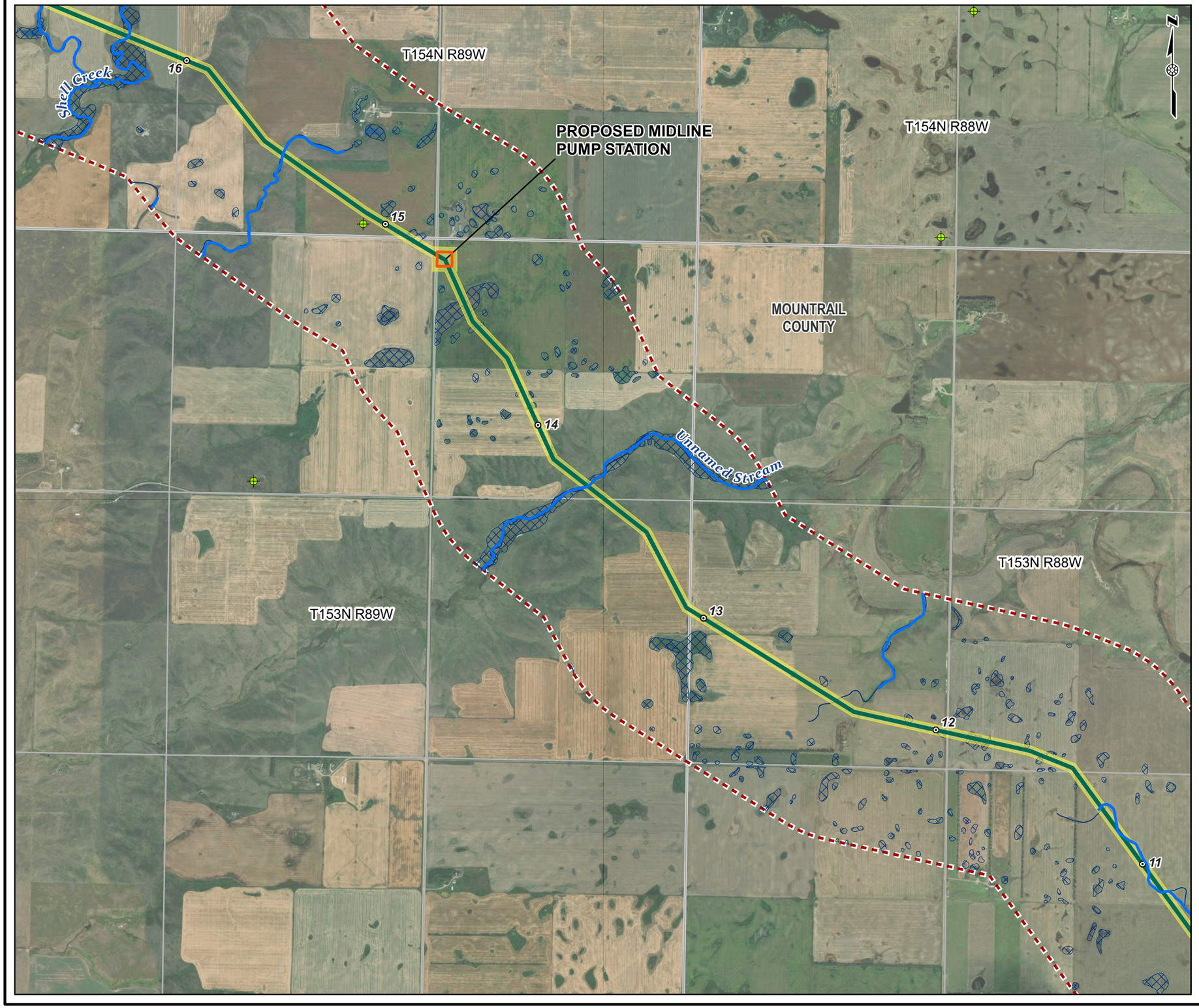

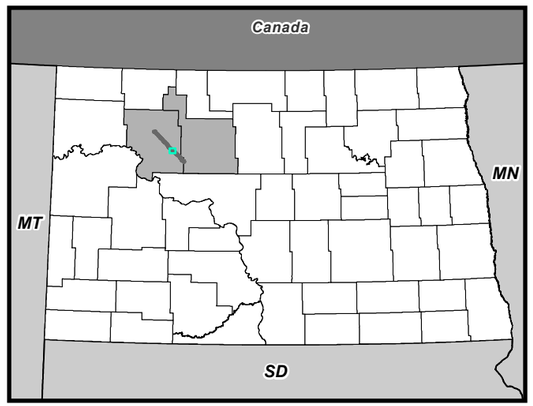

Legend

- Milepost
- Oil and Gas Well
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- Proposed Midline Pump Station - 2.0 acres
- NWI Wetland
- NHD Waterbody
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED DETAIL SHEET 6 OF 9

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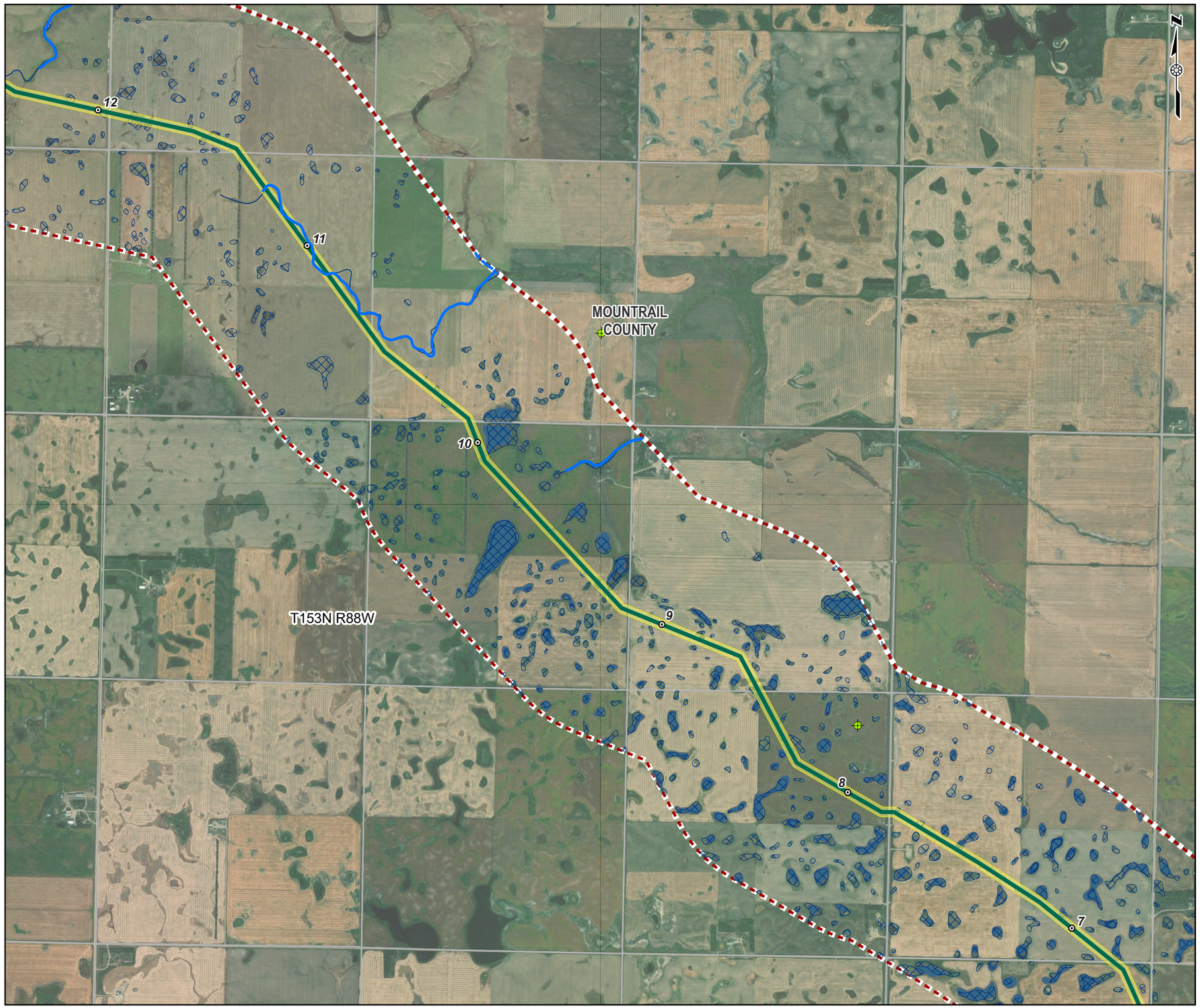

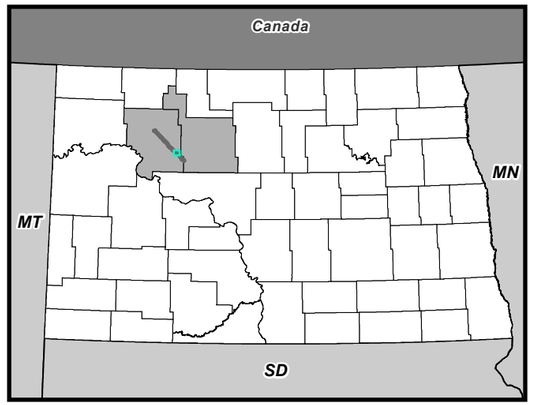

Legend

- Milepost
- Oil and Gas Well
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NWI Wetland
- NHD Waterbody
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED
DETAIL SHEET 7 OF 9

PN:CO002338.0001

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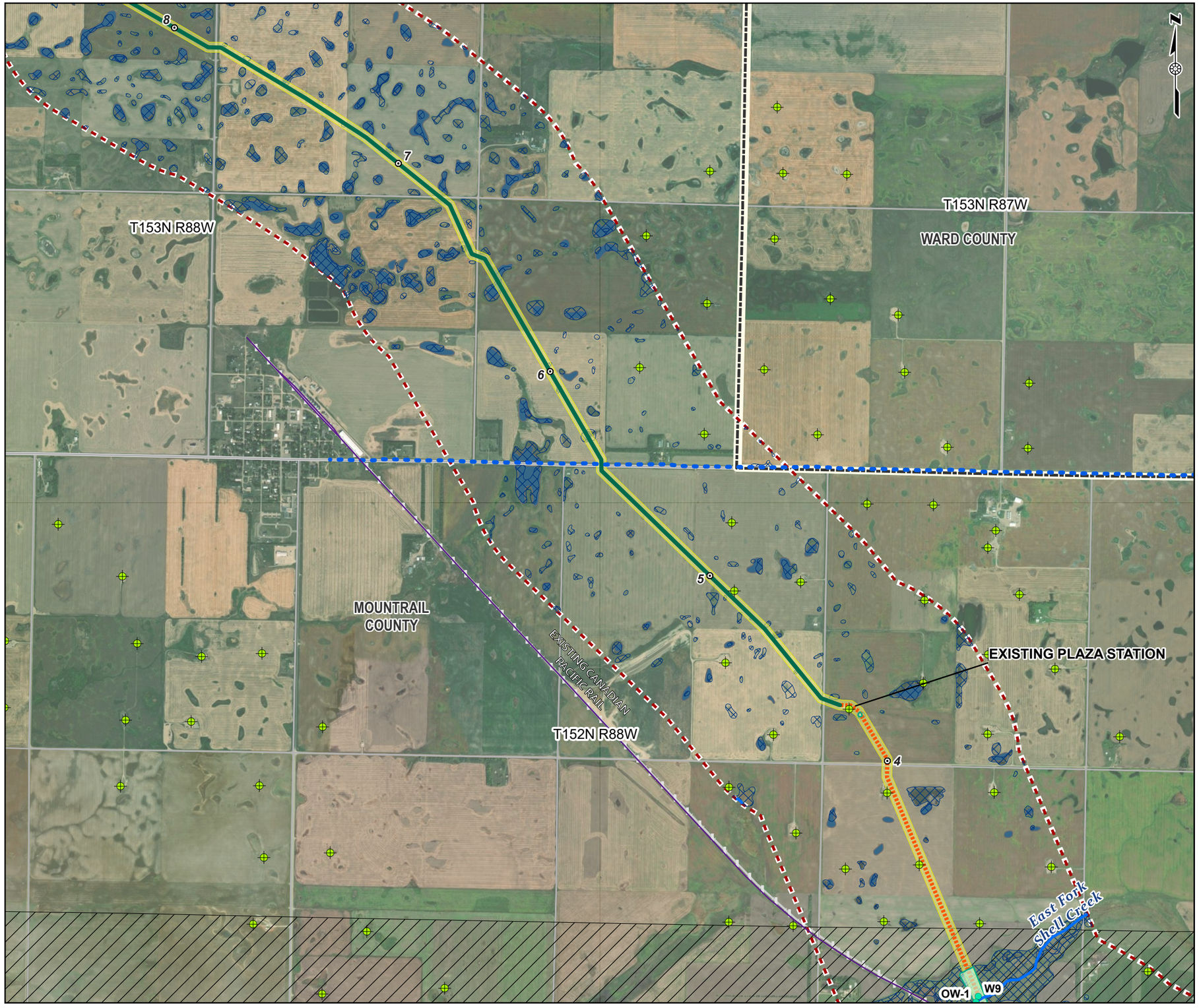

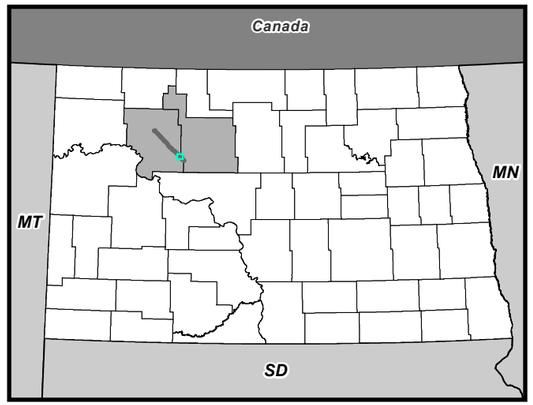

Legend

- Milepost
- Oil and Gas Well
- Jurisdictional Wetland/Stream
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- Snowmobile Trail
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NWI Wetland
- Delineated Wetland
- NHD Waterbody
- Fort Berthold Indian Reservation Boundary
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED
DETAIL SHEET 8 OF 9

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EXISTING PLAZA STATION

4

EXISTING CANADIAN PACIFIC RAIL

T152N R88W

East Fork Shell Creek

W9

OW-1

3

T152N R87W

W7

2

W6

WARD COUNTY

W1

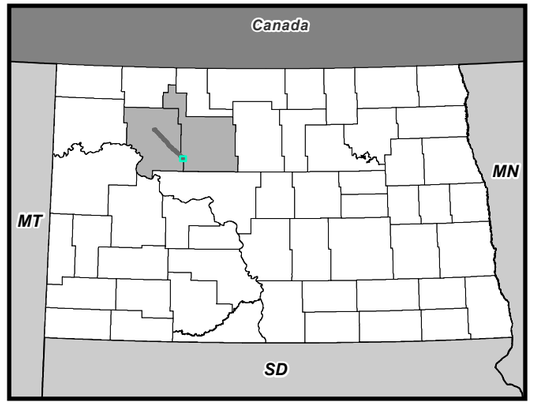
1

MOUNTRAIL COUNTY

23

EXISTING TBPS FACILITY

N



Legend

- Milepost
- Oil and Gas Well
- Jurisdictional Wetland/Stream
- NHD Stream
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- NWI Wetland
- Delineated Wetland
- NHD Waterbody
- Fort Berthold Indian Reservation Boundary
- Study Area (1 mile)
- County Boundary

0 1,000 2,000 3,000 4,000 Feet

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THUNDER BUTTE PIPELINE PROJECT
COUNTY, NORTH DAKOTA

ROUTE SELECTION CRITERIA CONSIDERED
DETAIL SHEET 9 OF 9

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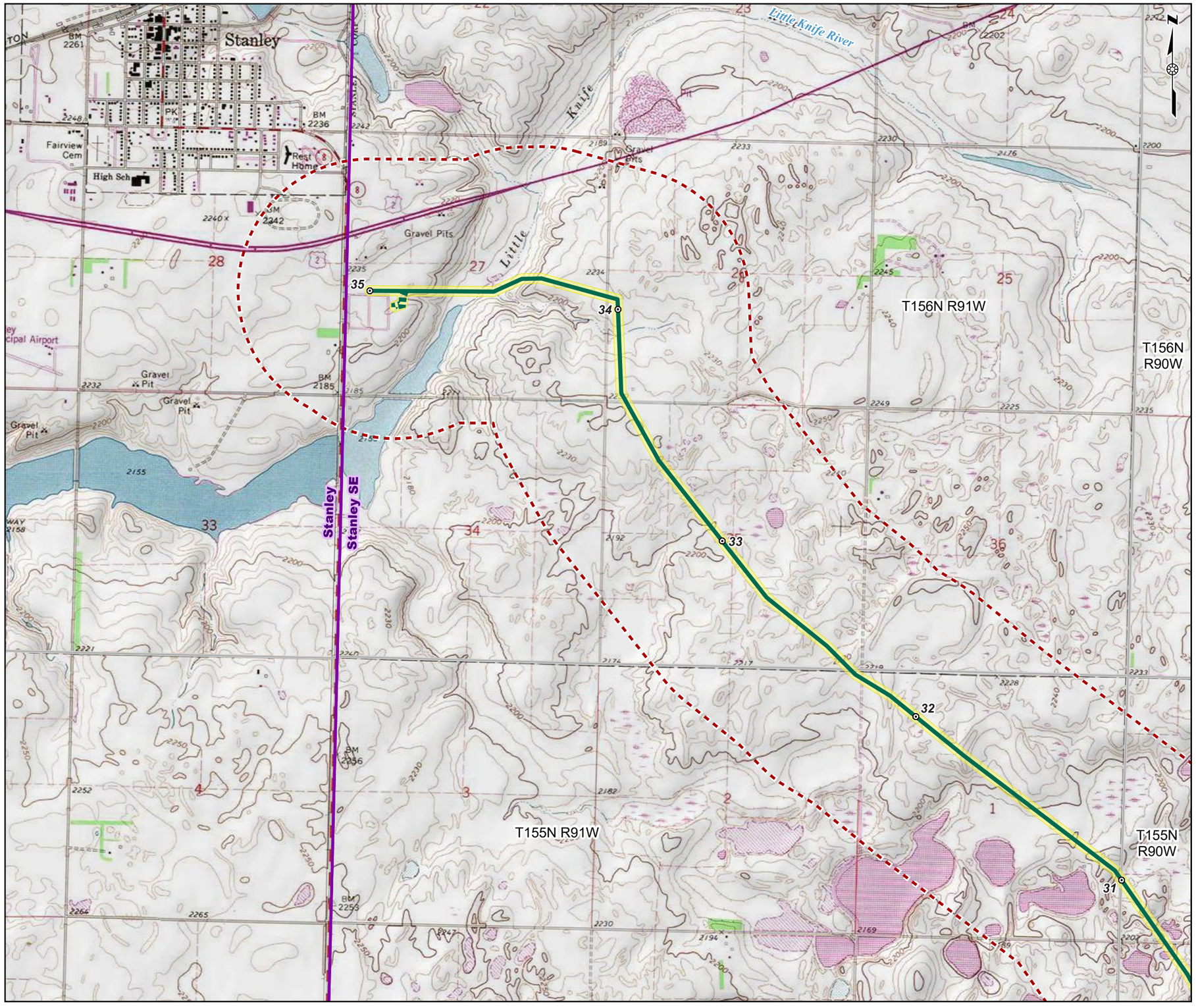

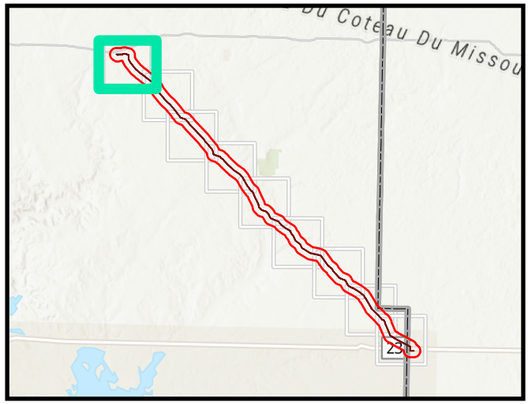

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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2. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) STANLEY, STANLEY SE, NORTH DAKOTA OBTAINED FROM ESRI IMAGE SERVICE.
3. PROJECTION IS NAD 1983 STATEPLANE NORTH DAKOTA N FIPS 3301 (US FEET). THE SCALE IS: 1:24,000.

THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 1 OF 9

PN:CO002338.0001
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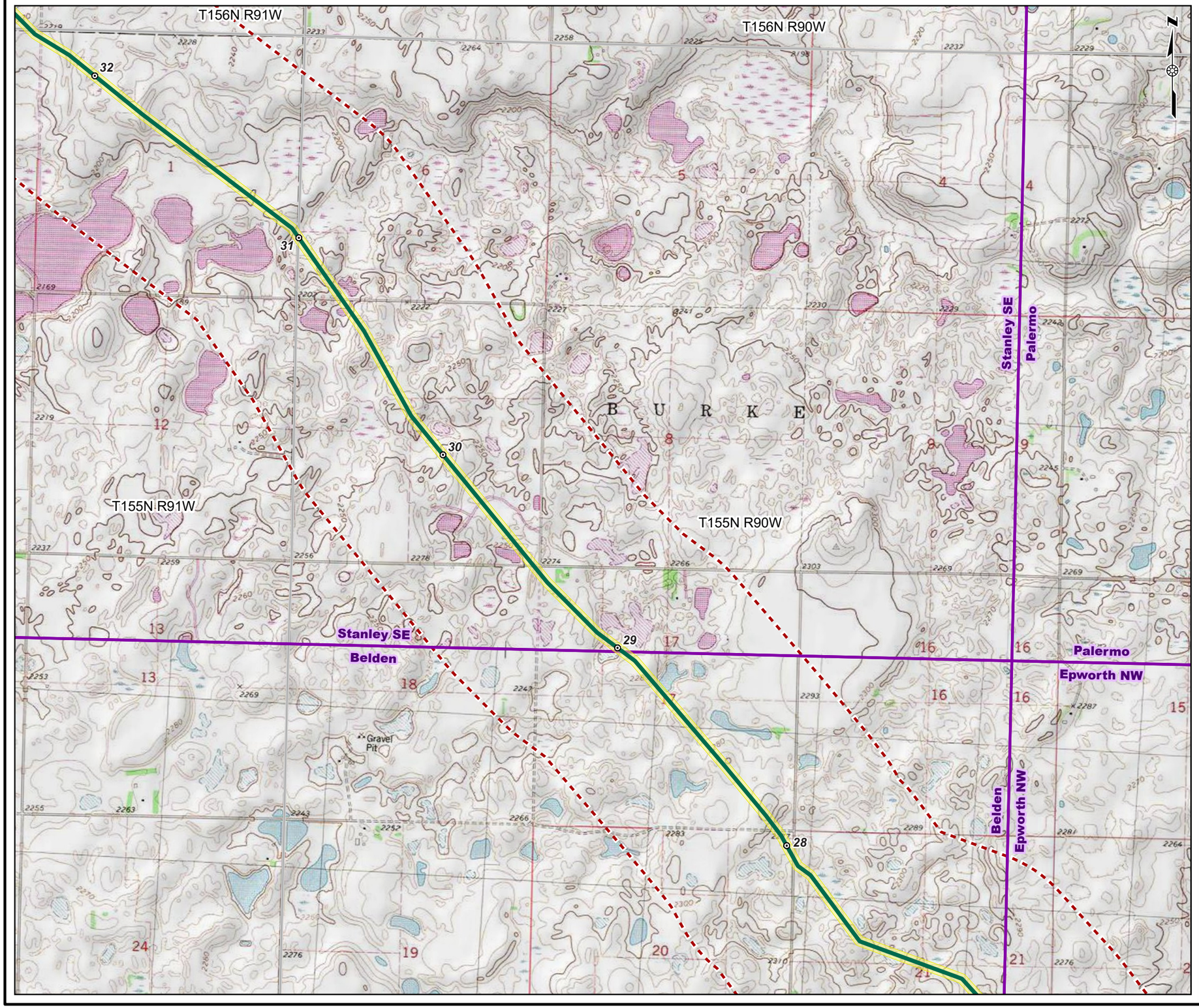

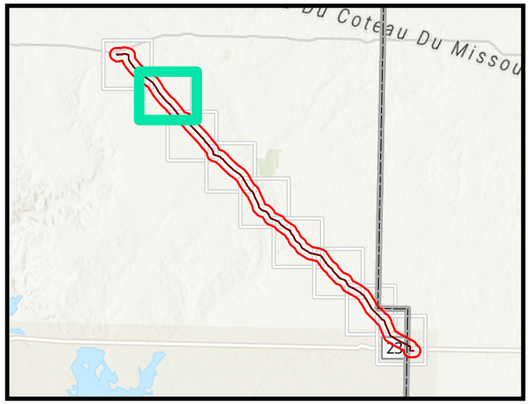

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 2 OF 9

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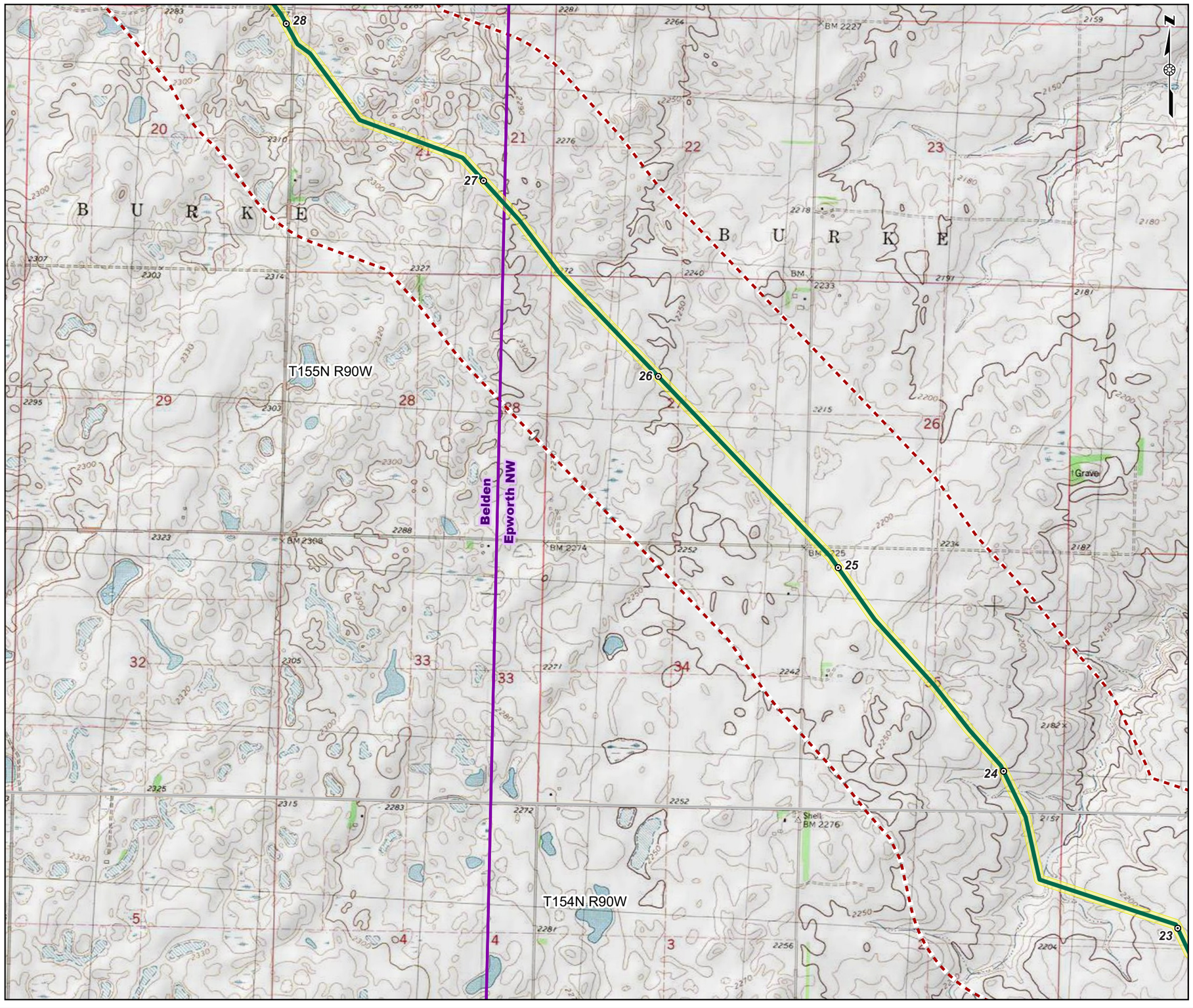
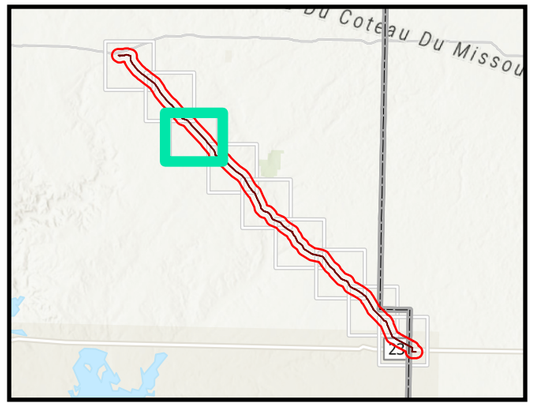
Date: 5/20/2024 User Name: MNugent
Document Path: T:_EPP\Makoti_pipeline\pro\Makoti_Pipeline\Makoti_Pipeline_Rev.aprx





Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
1. WORLD IMAGERY IS OBTAINED FROM ESRI WORLD IMAGERY SERVICE.
2. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) BELDEN, EPWORTH NW, NORTH DAKOTA OBTAINED FROM ESRI IMAGE SERVICE.
3. PROJECTION IS NAD 1983 STATEPLANE NORTH DAKOTA N FIPS 3301 (US FEET).
THE SCALE IS: 1:24,000.

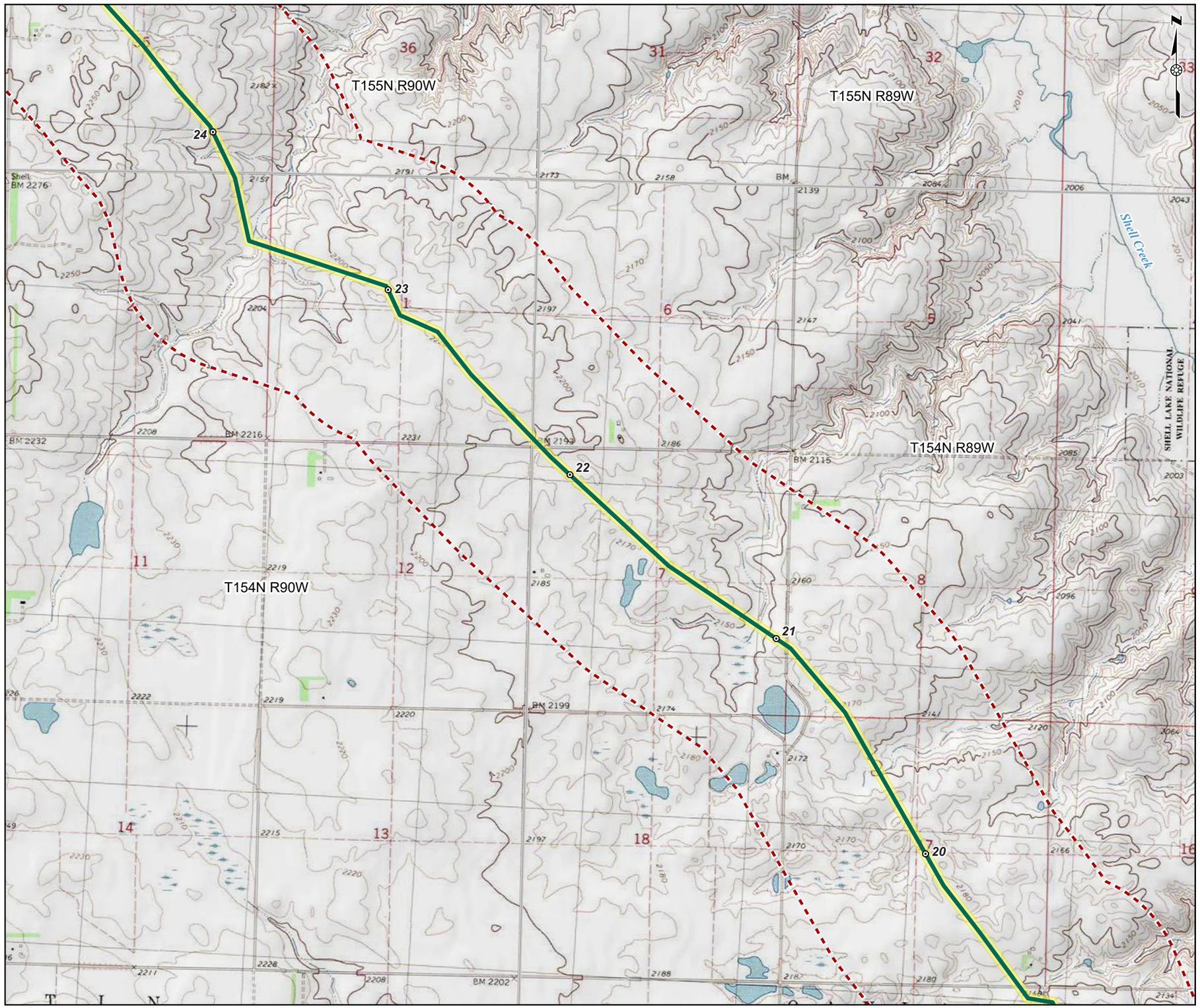
THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

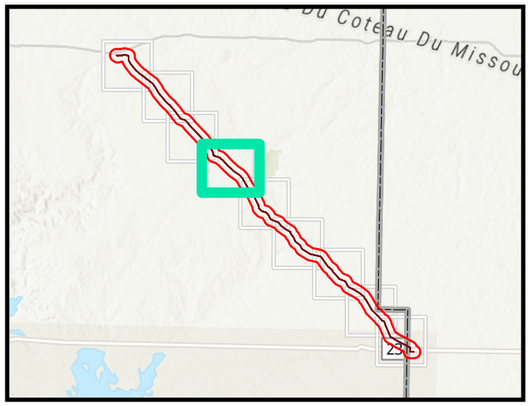
FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 3 OF 9

PN:CO002338.0001
Date: 5/20/2024

ARCADIS

Date: 5/20/2024 User Name: MNugent
Document Path: T:_EPP\Makoti_pipeline\pro\Makoti_Pipeline\Makoti_Pipeline_Rev.aprx





Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
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- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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2. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) EPWORTH NW, NORTH DAKOTA OBTAINED FROM ESRI IMAGE SERVICE.
3. PROJECTION IS NAD 1983 STATEPLANE NORTH DAKOTA N FIPS 3301 (US FEET).
THE SCALE IS: 1:24,000.

THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

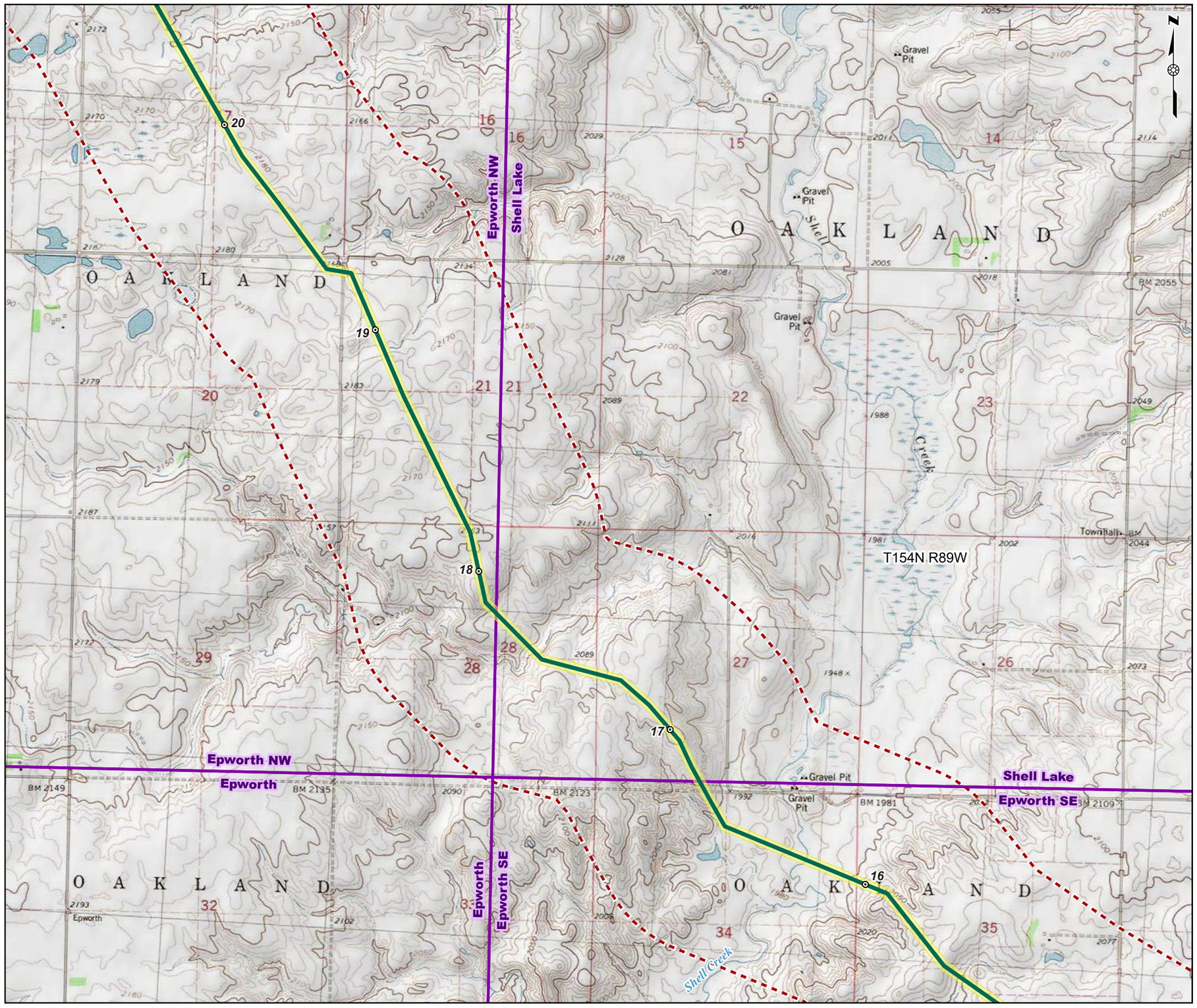
FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 4 OF 9

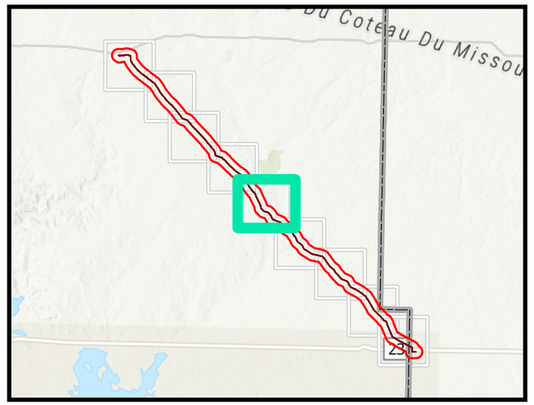
PN:CO002338.0001

Date: 5/20/2024

ARCADIS

Date: 5/20/2024 User Name: MNugent
Document Path: T:_EPP\Makoti_pipeline\pro\Makoti_Pipeline\Makoti_Pipeline_Rev.aprx





Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
1. WORLD IMAGERY IS OBTAINED FROM ESRI WORLD IMAGERY SERVICE.
2. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) EPWORTH NW, SHELL LAKE, EPWORTH, EPWORTH SE, NORTH DAKOTA OBTAINED FROM ESRI IMAGE SERVICE.
3. PROJECTION IS NAD 1983 STATEPLANE NORTH DAKOTA N FIPS 3301 (US FEET).
THE SCALE IS: 1:24,000.

THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 5 OF 9

PN:CO002338.0001

Date: 5/20/2024

ARCADIS

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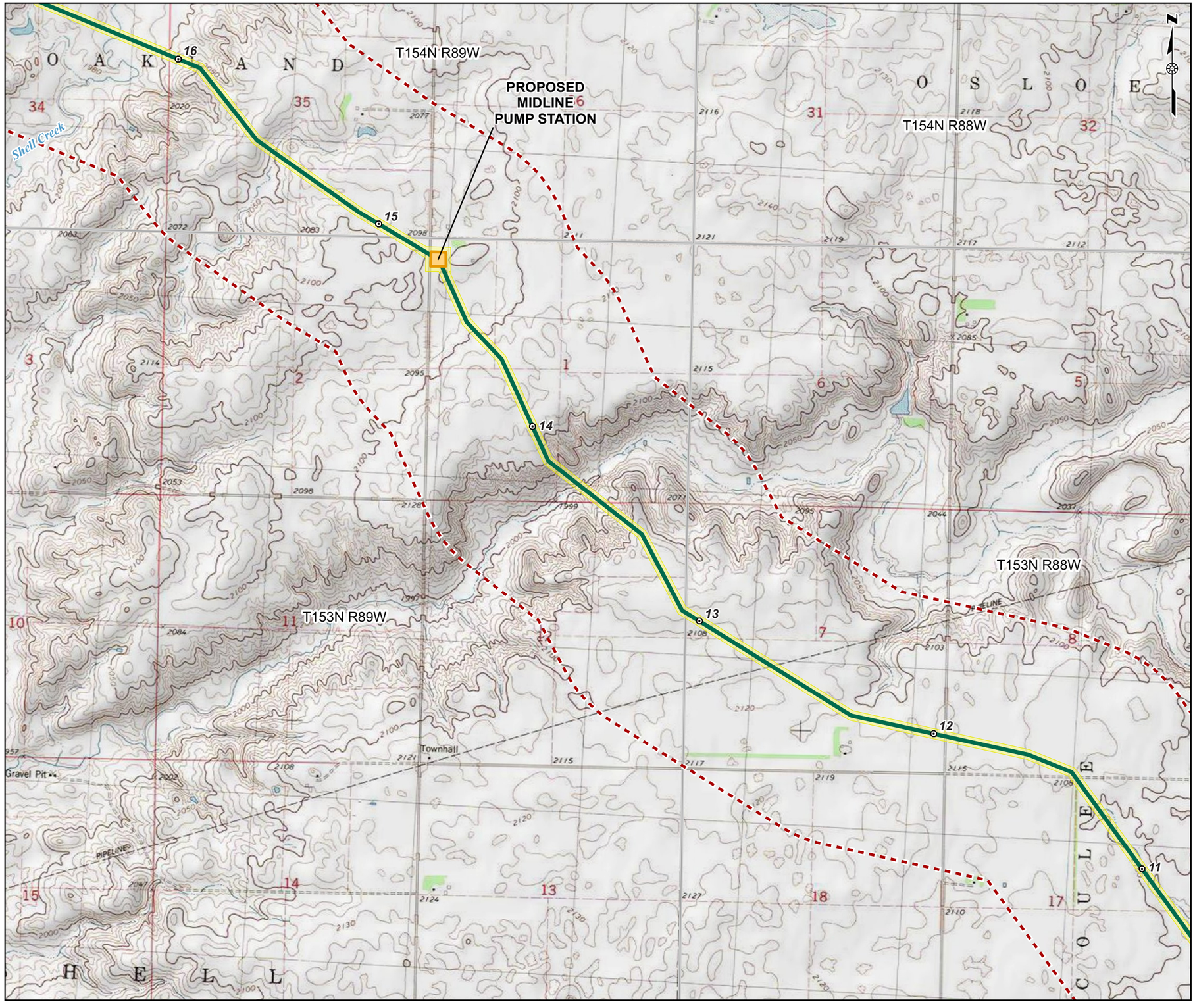

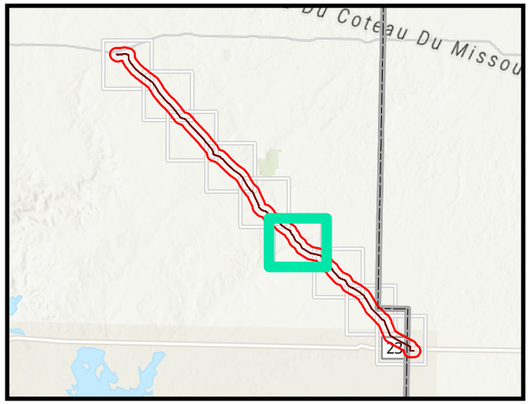

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
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2. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) EPWORTH SE, NORTH DAKOTA OBTAINED FROM ESRI IMAGE SERVICE.
3. PROJECTION IS NAD 1983 STATEPLANE NORTH DAKOTA N FIPS 3301 (US FEET).
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THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 6 OF 9

PN:CO002338.0001

Date: 5/20/2024

ARCADIS

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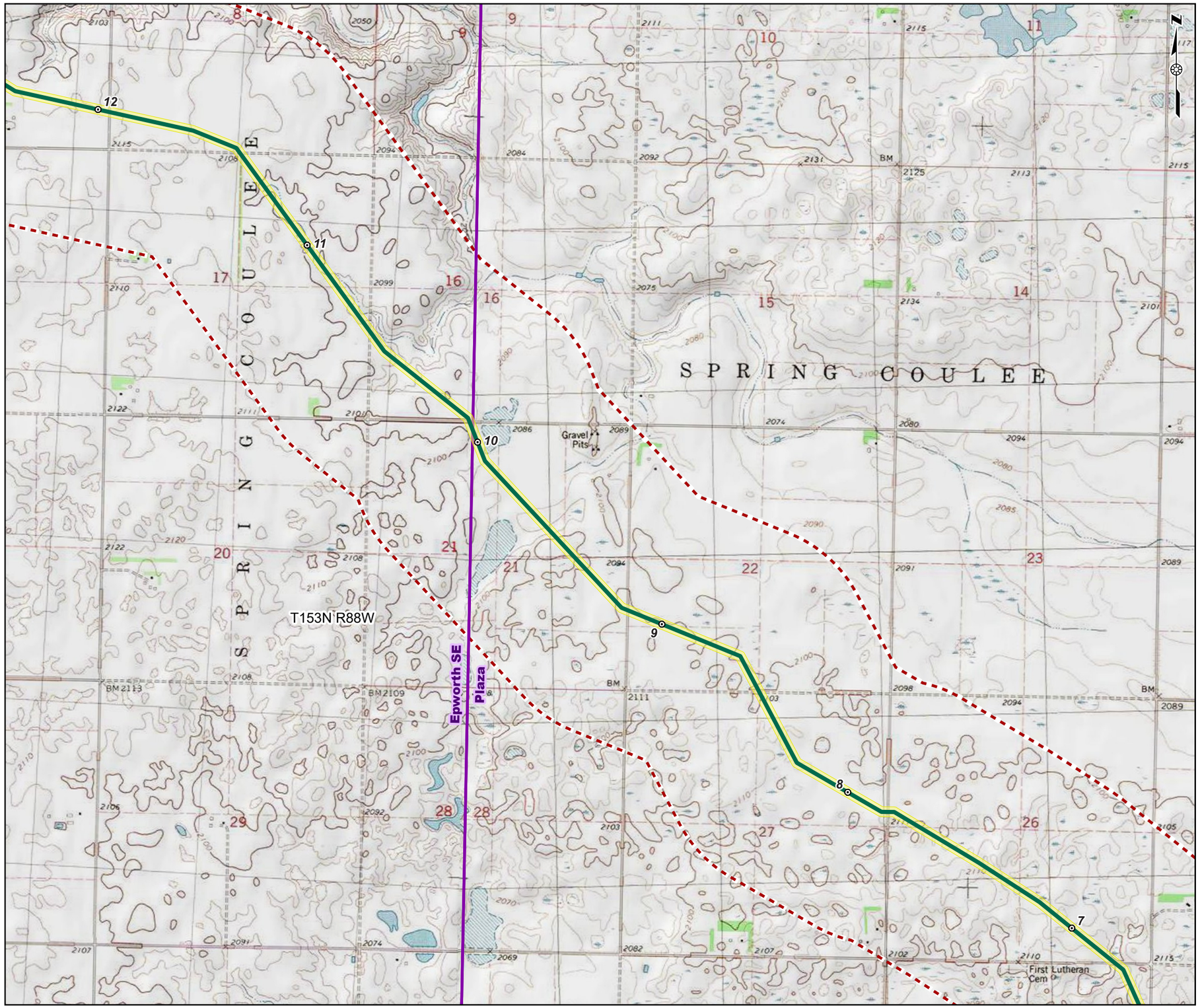

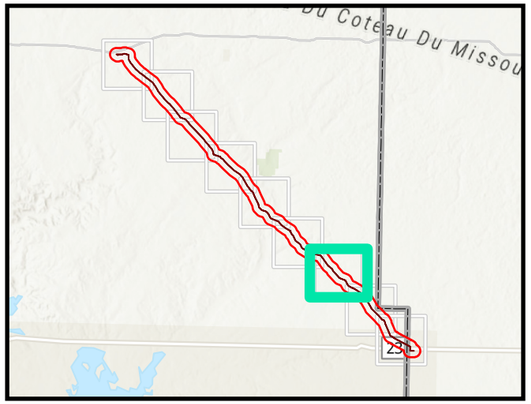

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
1. WORLD IMAGERY IS OBTAINED FROM ESRI WORLD IMAGERY SERVICE.
2. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) EPWORTH SE, PLAZA, NORTH DAKOTA OBTAINED FROM ESRI IMAGE SERVICE.
3. PROJECTION IS NAD 1983 STATEPLANE NORTH DAKOTA N FIPS 3301 (US FEET). THE SCALE IS: 1:24,000.

THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL COUNTY, NORTH DAKOTA

FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 7 OF 9

PN:CO002338.0001

Date: 5/20/2024

ARCADIS

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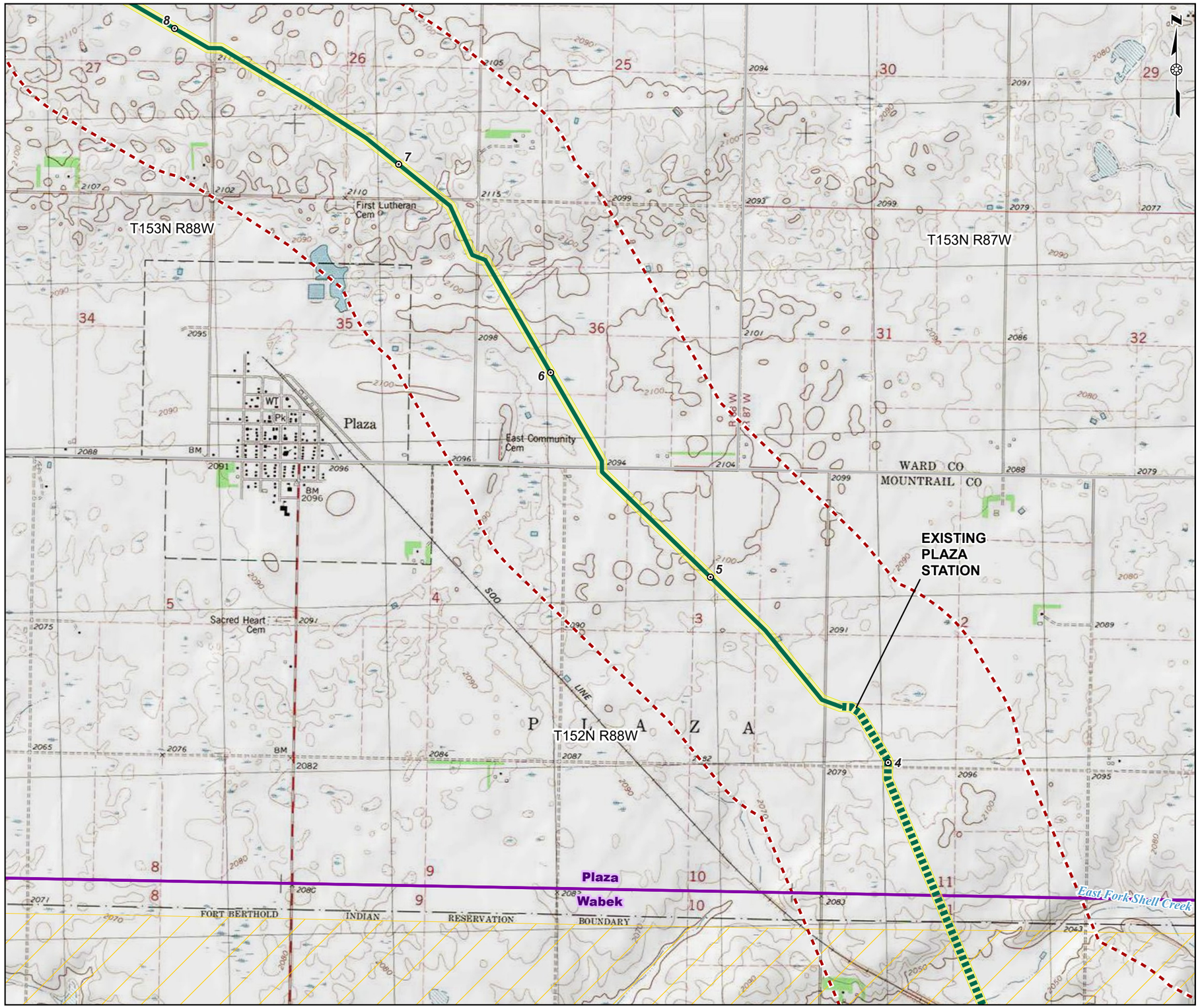

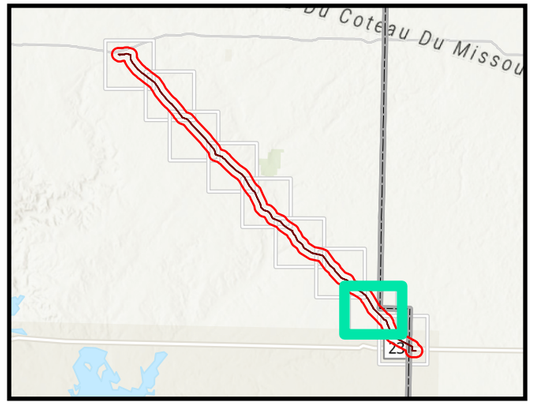

Legend

- Milepost
- Existing Pipeline Route (30-foot permanent ROW)
- Proposed Pipeline Route (30-foot permanent ROW)
- Proposed Midline Pump Station - 2.0 acres
- 200-foot Project Corridor (100 feet on either side of the pipeline centerline)
- Fort Berthold Indian Reservation Boundary
- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
1. WORLD IMAGERY IS OBTAINED FROM ESRI WORLD IMAGERY SERVICE.
2. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) PLAZA, WABEK, NORTH DAKOTA OBTAINED FROM ESRI IMAGE SERVICE.
3. PROJECTION IS NAD 1983 STATEPLANE NORTH DAKOTA N FIPS 3301 (US FEET). THE SCALE IS: 1:24,000.

THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL AND WARD COUNTY, NORTH DAKOTA

FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 8 OF 9

PN:CO002338.0001

Date: 5/20/2024

ARCADIS

Date: 5/20/2024 User Name: MNugent
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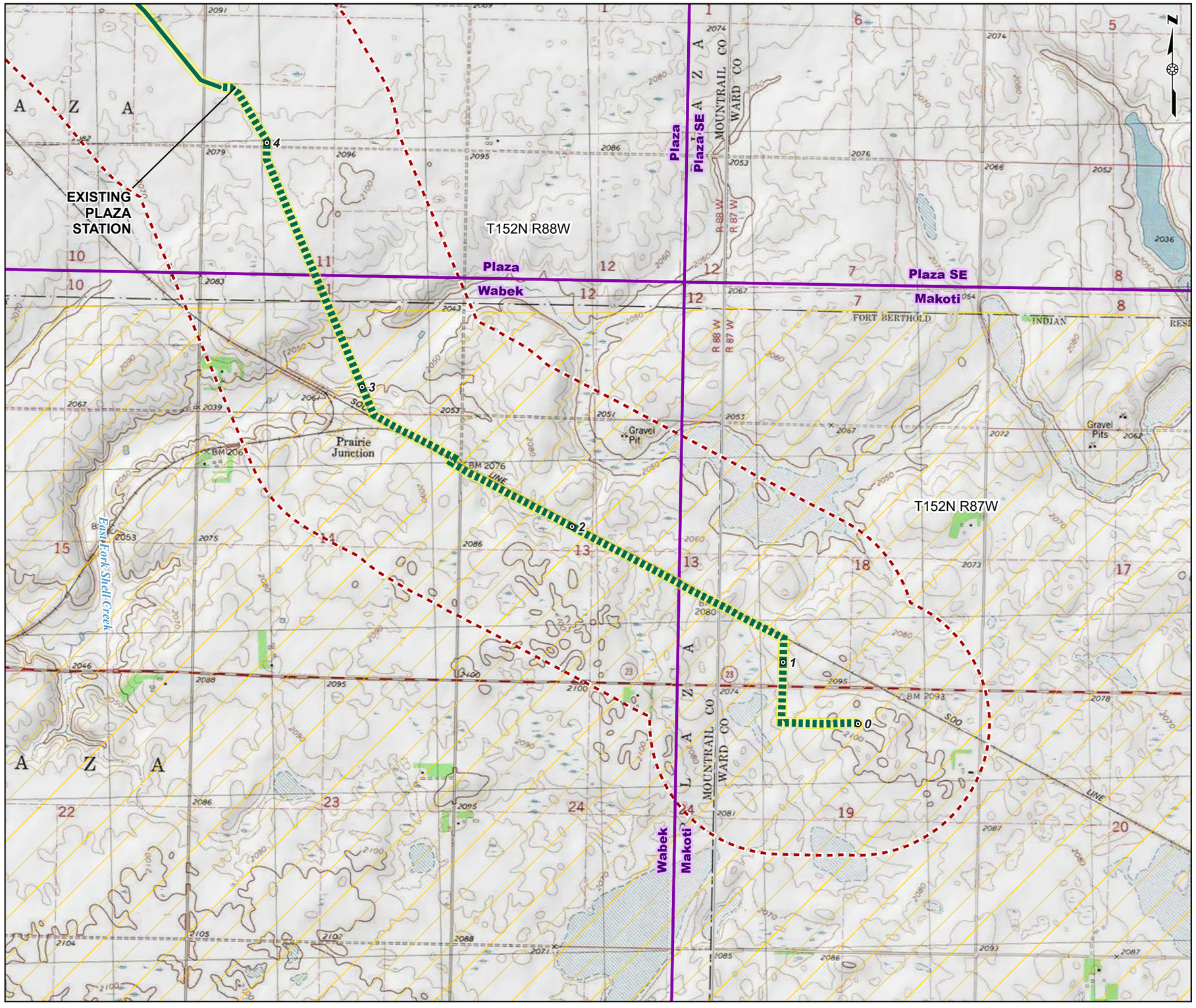

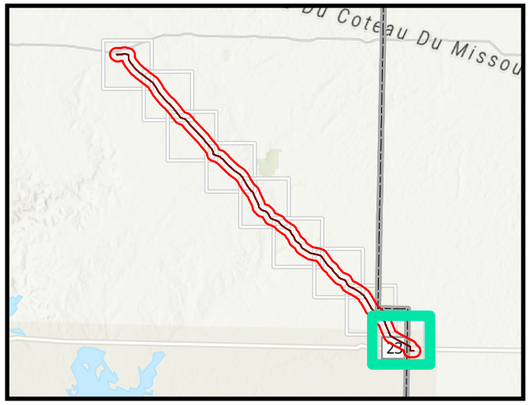

Legend

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- Fort Berthold Indian Reservation Boundary
- Topo Boundary
- Study Area (1 mile)

0 1,000 2,000 3,000 4,000 Feet

GRAPHIC SCALE

NOTES:
1. WORLD IMAGERY IS OBTAINED FROM ESRI WORLD IMAGERY SERVICE.
2. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) PLAZA, PLAZA SE, WABEK, MAKOTI, NORTH DAKOTA OBTAINED FROM ESRI IMAGE SERVICE.
3. PROJECTION IS NAD 1983 STATEPLANE NORTH DAKOTA N FIPS 3301 (US FEET). THE SCALE IS: 1:24,000.

THUNDER BUTTE PIPELINE PROJECT
MOUNTRAIL AND WARD COUNTY, NORTH DAKOTA

FIGURE 1
TOPOGRAPHIC MAP
DETAIL SHEET 9 OF 9

PN:CO002338.0001
Date: 5/20/2024

ARCADIS

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ATTACHMENT 2

Updated Consolidated Application Sections 16.1, 16.2, 16.3, and Tables 4 and 5

16 Siting Criteria

16.1 Exclusion Areas

Per NDAC § 69-06-08-02(1), certain geographical areas will be excluded from consideration for a transmission pipeline route. For example, Exclusion Areas may be located within the Corridor, but at no given point may such an area or areas encompass more than 50 percent of the Corridor unless there is no reasonable alternative.

The Exclusion Areas within the Project Corridor for both the proposed pipeline and the existing pipeline and crossed by the Route were evaluated, and the results are summarized in **Table 3** and shown on the Exclusion Areas maps in **Appendix A**.

- Proposed Pipeline: There are no Exclusion Areas within the Project Corridor or crossed by the Route for the proposed pipeline.
- Existing Pipeline: The Exclusion Areas within the Project Corridor or crossed by the Route are described in the following subsections.

16.1.1 Designated or Registered: National Parks, Memorial Parks, Historic Sites and Landmarks, Natural Landmarks, Monuments, and Wilderness Areas

No designated or registered national parks, memorial parks, historic landmarks, natural landmarks, monuments, or wilderness areas were identified within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline.

16.1.2 Designated or Registered: State Parks, Sites, Monuments, Archaeological Sites, and Natural Preserves

No designated or registered state parks, sites, monuments, archeological sites, natural preserves are within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline.

16.1.3 County Parks and Recreational Areas, Municipal Parks, and Parks Owned or Administered by Other Governmental Subdivisions

No county parks and recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions are within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline.

16.1.4 Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species

The USFWS IPaC report (USFWS 2023) identified five species federally listed as threatened, endangered, or candidate that could potentially occur in the Project Corridor for the proposed pipeline; however, no designated critical habitat for federally listed species was identified within the Project Corridor. No areas critical to the life stages of threatened or endangered animal or plant species have been identified within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline.

16.1.5 Areas Where Animal or Plant Species that are Unique or Rare to This State Would be Irreversibly Damaged

In a letter dated October 18, 2023 (Section 5.4), NDPR stated that no known plant or animal species of concern or significant ecological communities are documented within or immediately adjacent to the project site. No areas where animal or plant species that are unique or rare to North Dakota were identified within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline; therefore, no unique or rare animal or plant species are anticipated to be irreversibly damaged from construction or operation of the Project.

16.1.6 Areas within 1,200 Feet of the Geographic Center of an Intercontinental Ballistic Missile Launch or Launch Control Facility

Based on publicly available information, there are no Minot Air Force Base assets located in Ward and Mountrail Counties. On behalf of TBPL, Arcadis submitted a project consultation letter to Minot Air Force Base on September 29, 2023, providing opportunity to comment and requesting an assessment of on wildlife concerns. No response has been received to date.

- Proposed Pipeline: The proposed Project Corridor and Route are not located within 1,200 feet of the geographic center of an ICBM launch or launch control facility.
- Existing Pipeline: The Project Corridor and Route are located within 1,200 feet of the geographic center of one ICBM launch or launch control facilities. This Exclusion Area does not constitute more than 50 percent of the Project Corridor. The existing pipeline was built in the 1960s; therefore, there is no reasonable alternative to avoid such features, and what mitigation measures the company intends to implement to minimize and mitigate adverse impacts resulting from the location, construction, and operation of the pipeline in those locations.

16.1.7 Areas within 30 Feet on Either Side of a Direct Line between Intercontinental Ballistic Missile Launch or Launch Control Facility

Based on publicly available information, there are no Minot Air Force Base assets located in Ward and Mountrail Counties. On behalf of TBPL, Arcadis submitted a project consultation letter to Minot Air Force Base on September 29, 2023, providing opportunity to comment and requesting an assessment of on wildlife concerns. No response has been received to date.

- Proposed Pipeline: The Project Corridor and Route are not located within 30 feet on either side of a direct line between ICBM launch or launch control facility.
- Existing Pipeline: The Project Corridor and Route are located within 30 feet on either side of a direct line between several ICBM launch or launch control facilities. These Exclusion Areas do not constitute more than 50 percent of the Project Corridor. The existing pipeline was built in the 1960s; therefore, there is no reasonable alternative to avoid such features, and what mitigation measures the company intends to implement to minimize and mitigate adverse impacts resulting from the location, construction, and operation of the pipeline in those locations.

Table 3 Exclusion Areas Summary

Feature	Proposed Pipeline		Existing Pipeline		Description	Section Addressed
	Within Project Corridor (Y/N)	Route Crosses (Y/N)	Within Project Corridor (Y/N)	Route Crosses (Y/N)		
Designated or registered national parks, memorial parks, historic sites and landmarks, natural landmarks, monuments, and wilderness areas.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.1.1
Designated or registered state parks, historic sites, monuments, historical markers, archaeological sites, and natural preserves.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.1.2
County parks and recreational areas, municipal parks, and parks owned or administered by other governmental subdivisions.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.1.3
Areas critical to the life stages of threatened or endangered animal or plant species.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.1.4
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.1.5
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	N	N	Y	Y	• Proposed Pipeline: N/A • Existing Pipeline: One within the Project Corridor and one crossed by the Route.	16.1.6
Areas within 30 feet on either side of a direct line between ICBM launch or launch control facility.	Y	N	Y	Y	• Proposed Pipeline: N/A • Existing Pipeline: Seven within the Project Corridor and crossed by the Route.	16.1.7

Abbreviations
N/A = Not Applicable

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16.2 Avoidance Areas

Per NDAC § 69-06-08-02(2), certain geographical areas may not be considered in the routing of a transmission pipeline unless the applicant shows that, under the circumstances, there is no reasonable alternative. In determining whether an Avoidance Area should be designated for a facility, the Commission may consider, among other things, the proposed management of adverse impacts, the orderly siting of facilities, system reliability and integrity, the efficient use of resources, and alternative routes. In addition, a buffer zone will be implemented around these areas to protect their integrity, unless a distance is specified in the criteria. Avoidance Areas may be located within a Corridor, but at no given point may such an area or areas encompass more than 50 percent of the Corridor unless there is no reasonable alternative.

The Avoidance Areas within the Project Corridor for both the proposed pipeline and the existing pipeline and crossed by the Route were evaluated and the results are summarized in **Table 4** and shown on the Avoidance Areas maps in **Appendix A**.

- Proposed Pipeline: There are no Avoidance Areas within the Project Corridor or crossed by the Route for the proposed pipeline.
- Existing Pipeline: Avoidance Areas with the Project Corridor or crossed by the Route for the existing pipeline are described in the following subsections.

16.2.1 Designated or Registered National Historic Districts; Wildlife Areas; Wild, Scenic, or Recreational Rivers; Wildlife Refuges; and Grasslands

No designated or registered national historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; grasslands; scenic outlooks/viewing areas are located within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline. When TBPL executed easement agreements with the landowners, none of the landowners of the properties identified USFWS-managed wetland or grassland easements within the Project Corridors for the proposed pipeline or the existing pipeline.

- Proposed Pipeline: Based on desktop analysis, there are no USFWS-managed Waterfowl Production Areas (WPAs) within the Project Corridor for the proposed pipeline.
- Existing Pipeline: Based on desktop analysis, two USFWS-managed WPAs are located within the Project Corridor and crossed by the Route for the existing pipeline. These Avoidance Areas do not constitute more than 50 percent of the Project Corridor. The existing pipeline was built in the 1960s; therefore, there is no reasonable alternative to avoid such features, and what mitigation measures the company intends to implement to minimize and mitigate adverse impacts resulting from the location, construction, and operation of the pipeline in those locations.

16.2.2 Designated or Registered State Wild, Scenic, Recreational Rivers; Game Refuges; Game Management Areas; Management Areas; Forest; Forest Management Lands; and Grasslands

No state wild, scenic, or recreational rivers; state game refuges or game management areas; state forests or forest management lands; or state grasslands are located within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline. The NDGF manages Private Lands Open to Sportsmen (PLOTS)

and the North Dakota Department of Trust Lands (NDDTL) manages School Trust Lands. In a letter dated October 18, 2023 (Section 5.5), the ND DEQ stated that department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area.

- Proposed Pipeline: Based on desktop analysis, there are no NDGF-managed PLOTS lands, NDDTL School Trust Lands, or ND DEQ lands in the Project Corridor for the proposed pipeline.
- Existing Pipeline: Based on desktop analysis, there are no NDGF-managed PLOTS lands, NDDTL School Trust Lands, or ND DEQ lands in the Project Corridor for the existing pipeline.

16.2.3 Historical Resources Not Specifically Designated as Exclusion or Avoidance Areas

Metcalf conducted a Class III cultural resource inventory of the APE. Metcalf surveyed a 3.84-milelong, 300-foot-wide Project Corridor for the proposed new pipeline, the proposed site for the midline pump station and new permanent access road, and several temporary access roads, workspaces/laydown areas on October 2, 2023. Metcalf surveyed a total of 147 acres.

During the Class III cultural survey, no cultural resources were identified within the Field Survey Area for the proposed pipeline; therefore, Metcalf recommended a finding of *No Historic Properties Affected* (36 CFR 800.4[d][1]) for this undertaking. The Metcalf Class III Cultural Resources Report is provided in **Appendix F**.

16.2.4 Areas which are Geologically Unstable

- Proposed Pipeline: No geologically unstable areas (e.g. abandoned coal mines, gravel pits, landslide areas, etc.) were identified within Project Corridor or crossed by the Route.
- Existing Pipeline: No geologically unstable areas (e.g. abandoned coal mines, gravel pits, landslide areas, etc.) were identified within Project Corridor or crossed by the Route.

Table 4 Avoidance Areas Summary

Feature	Proposed Pipeline		Existing Pipeline		Description	Section Addressed
	Within Project Corridor (Y/N)	Route Crosses (Y/N)	Within Project Corridor (Y/N)	Route Crosses (Y/N)		
Designated or registered national historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	N	N	Y	Y	• Proposed Pipeline: N/A • Existing Pipeline: Two USFWS-managed WPAs are within the Project Corridor and crossed by the Route.	16.2.1
Designated or registered state wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forest; forest management lands; and grasslands.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.2.2
Historical resources which are not specifically designated as exclusion or avoidance areas.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.2.3
Areas which are geologically unstable.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.2.4
Within 500 feet of a residence, school, or place of business.	N	N	Y	N	• Proposed Pipeline: N/A • Existing Pipeline: One occupied residence is approximately 462 feet from the centerline of the Route. There are no schools or places of business within 500 feet.	16.2.5
Reservoirs and municipal water supplies.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.2.6
Water sources for organized rural water districts.	N	N	N	N	• Proposed Pipeline: N/A • Existing Pipeline: N/A	16.2.7
Area of recreational significance which are not designated as exclusion areas.	N	N	Y	Y	• Proposed Pipeline: N/A • Existing Pipeline: One NDPR-designated snowmobile trail is within the Project Corridor and crossed by the Route.	16.2.8

Abbreviations:
N/A = Not Applicable

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16.2.5 Within 500 Feet of a Residence, School, or Place of Business

- Proposed Pipeline: No residences, schools, or places of business were identified within 500 feet of the Project Corridor or Route.
- Existing Pipeline: One occupied residence was identified approximately 462 feet from the centerline of the existing pipeline. There are no additional occupied structures, schools, places of business, or municipal wells within 500 feet of the proposed route. Conversion of the existing pipeline will not require disturbances or construction activities within 500 feet of the occupied residence. Prior to construction, TBPL will obtain a waiver from the landowner and the waiver will be filed with the Commission.

16.2.6 Reservoirs and Municipal Water Supplies

- Proposed Pipeline: Based on available data sources, no reservoirs, municipal water supply wells, or private drinking water wells were identified within or near the Project Corridor or crossed by the Route. The Hiddenwood-Lake Aquifer is within the Project Corridor and crossed by the Route; however, this aquifer is not a municipal water supply. Based on the Final Environmental Impact Statement for the Mandan, Hidatsa, and Arikara Nation's Proposed Clean Fuels Refinery Project (U.S. Bureau of Indian Affairs and U.S. Environmental Protection Agency 2009), groundwater in the portion of the aquifer within the Study Area is of very poor quality and is not suitable for drinking water. Generally, water in this aquifer is a sodium sulfate bicarbonate type with high quantities of sulfate, iron, and dissolved solids.
- Existing Pipeline: Based on available data sources, no reservoirs, municipal water supply wells, or private drinking water wells were identified within or near the Project Corridor or crossed by the Route. The Stanley Reservoir and several municipal wells in the Plaza area are within the 1-mile Study Area for the existing pipeline; however, the reservoir and municipal wells are outside of the 200-foot Project Corridor. Shell Creek-White Lake Aquifer is within the Project Corridor and crossed by the Route; however, this aquifer is not a municipal water supply.

16.2.7 Water Sources for Organized Rural Water Districts

No wellhead protection areas or other water sources for organized rural water districts have been identified within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline.

16.2.8 Area of Recreational Significance Which Are Not Designated as Exclusion Areas

- Proposed Pipeline: No areas of recreational significance were identified within the Project Corridor or crossed by the Route.
- Existing Pipeline: One North Dakota Parks and Recreation-designated snowmobile trail is crossed by the Project Corridor and Route of the existing pipeline. Conversion of the existing pipeline will not require disturbances or construction activities within or near the snowmobile trail.

16.3 Selection Criteria Considered

During project design, TBPL selected a Preferred Project Corridor and Route for the proposed pipeline that complies with the Commission’s selection criteria to avoid significant adverse effects or to manage and maintain these effects at an acceptable minimum for the resources described in the following subsections.

The Selection Criteria Considered for the Preferred Corridor and Route for both the proposed pipeline and the existing pipeline were evaluated, and the results are shown on the Selection Criteria Considered maps in **Appendix A**.

16.3.1 Agricultural Production

More than 70% of the Project Corridor for the proposed pipeline is agricultural land, with cultivated crops and some pastureland used for livestock grazing. The primary crops cultivated in the area include canola (*Brassica napus*), common wheat (*Triticum aestivum*), alfalfa (*Medicago sativa),* lentils (*Lens culinaris*), soybean (*Glycine max*), with the remaining cultivated land being used for hay production.

Approximately 4.7 acres of prime farmland and approximately 108 acres of farmland of statewide importance may be temporarily affected during construction of the proposed pipeline. (**Table 5**). The proposed midline pump station will displace approximately 2.0 acres of farmland of statewide importance for the life of the project. No additional farmland will be disturbed or displaced by conversion of the existing pipeline.

Table 5 Farmland in 200-Foot Project Corridor

Type of Farmland	Acres in Project Corridor	Percent of Total Project Corridor	Acres in 30-foot Permanent Right-of-Way	Percent of Total Permanent Right-of-Way
Prime Farmland	14.9	1.8	4.7	1.9
Farmland of Statewide Importance	352	42	108	42
Not Prime Farmland	472	56	141	55
Prime Farmland if Drained	3.3	0.4	1.0	0.4
Totals	**842**	**100**	**255**	**100**

The primary impact will be the loss of standing crops within the construction work area for the growing season. Construction may also result in soil compaction, mixing of topsoil and subsoil including introduction of rocks into the topsoil from the subsoil, erosion, and the introduction of weeds. These impacts can lower soil productivity and reduce crop yields following construction. There is a potential for diminished crop yields for 1 to 2 years following construction.

The pipeline will be buried deeper than typical tillage depths to allow continued agricultural use of the land in the ROW after construction. On agricultural land, rocks greater than 4 inches in diameter that are exposed on the surface due to construction activity will be removed from the ROW prior to and after topsoil replacement. Following construction, TBPL will restore the ROW to its pre-construction contours and stabilize the ground. Planting and harvesting will be allowed to continue over the permanent ROW.

After construction is completed, the ROW will be restored to its pre-construction land use. Fields are anticipated to return to normal yields within 1 to 2 years after construction is completed. Financial compensation will be provided to the landowners for temporary and permanent effects to agricultural production; therefore, impacts to agricultural production within the Project Corridor are anticipated to minor and short-term.

Impacts on agricultural production will be limited to the construction of the proposed new facilities. No impacts are expected for conversion of the existing pipeline. Operation of the Project is not anticipated to result in long-term impacts on agriculture production.

16.3.2 Family Farms and Ranches

Easements will be negotiated with all affected landowners, and sufficient compensation will be provided. The Project will not result in changes of land ownership. The primary impact on family farms would be the loss of standing crops within the work area for the growing seasons during which project-related activities occur, temporary prohibition of livestock grazing in the construction ROW, and restrictions on livestock movement across the construction ROW during construction. The effects of construction on family farms or ranches are anticipated to be minor and short-term.

Post-construction restoration will return the ROW to pre-construction contours, and farming and ranching operations will be allowed to continue over the permanent ROW. Long-term or permanent impacts on family farms and ranches are not anticipated. Impacts on family farms and ranches will be limited to the construction of the new pipeline; no impacts are expected for conversion of the existing pipeline or during the operation of the Project.

16.3.3 Land Economically Suitable for Irrigation

During TBPL's negotiations of the landowner easement agreements, none of the landowners of the properties within the Project Corridor stated that they believe their land could be economically suitable for irrigation or that they plan to install an irrigation system. There are no known irrigated lands within the Project Corridor or crossed by the Route; therefore, the Project is unlikely to result in temporary or permanent impacts to areas suitable for irrigation.

16.3.4 Surface Drainage Patterns and Groundwater Flow Patterns

16.3.4.1 Surface Water

- Proposed Pipeline: The proposed pipeline Route crosses the East Fork of Shell Creek and several wetlands. The creek flows to the southwest before connecting with Lake Sakakawea. This waterbody is within a pasture and is subject to grazing pressure from cattle. Two surface drains, Taylor Slough Drain (Permit DR-661) and Wild Willow Drain (Permit DR-4495), were identified within the 1-mile Study Area for the proposed pipeline; however, these surface drains are not in the 200-foot Project Corridor and will not be crossed by the Route.
- Existing Pipeline: The Route for the existing pipeline crosses the Little Knife River, Shell Creek, and several unnamed drainages. Stanley Reservoir is within the 1-mile Study Area for the existing pipeline; however, the reservoir boundary is outside of the 200-foot Project Corridor for the existing pipeline. Conversion of the existing pipeline will not require any disturbances of surface waters or associated wetlands and riparian habitats.

Construction effects on surface drainage patterns will include temporary localized disturbances to the topography. Where the proposed pipeline crosses the WOUS, the HDD method will be used to minimize potential impacts to flow or future maintenance efforts by landowners or the drainage authority. The HDD method will be used to avoid disturbing the bed or banks of the East Fork of Shell Creek; therefore, no changes to surface drainage patterns are anticipated.

Intermittent drainages will be crossed using open-cut construction. These drainages are expected to be dry during construction of the proposed pipeline; therefore, no changes to surface drainage patterns are anticipated. If these drainages are flowing, then the open cut method of construction will not be used and the HDD method will be utilized instead to avoid disturbance of the flowing drainage. After construction, disturbed areas will be restored to approximate pre-construction contours, allowing drainage patterns to remain unchanged. TBPL will implement the following mitigation measures to minimize the potential for impacts to the intermittent drainages:

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) to minimize erosion and potential effects associated with stormwater runoff and sediment transport to surface waters during construction. The SWPPP will include BMPs that will be implemented until final reclamation has been achieved to minimize changes to the existing surface drainage patterns and avoid alteration of existing groundwater flow patterns.
- Implement temporary erosion control BMPs (e.g., slope breakers, sediment barriers, and mulch) to minimize the potential for soil loss due to wind or water erosion during construction.
- Restore the work area to approximate pre-construction contours.

16.3.4.2 Groundwater

Aquifers underlying the Project Corridor comprise both bedrock and overlying unconsolidated deposits. Shallow water table conditions (less than 6 feet) are expected to be encountered in various locations (NRCS 2023). The water table is expected to be isolated from underlying bedrock and unconsolidated aquifers in most locations. The Hiddenwood Lake unconsolidated aquifer is present beneath the Route of the proposed pipeline. Although the aquifer is expected to be at least 65 feet below the ground surface and confined from the surface in most areas, the crossing location is within a possible recharge zone (Pettyjohn and Hutchinson 1971). Review of drillers logs from the vicinity of the Shell Creek-White Lake aquifer crossing indicate that water-bearing sand and gravel deposits are found at variable depths and most wells exhibit confined conditions (DWR 2023). The Fort Union Formation underlays the Project Area at depths of 105 to more than 125 feet bgs (Bureau of Indian Affairs [BIA] and USEPA 2009).

Construction activities which may encounter shallow (water table) aquifers, such as trenching, drilling, dewatering, and backfilling, could cause minor fluctuations in groundwater levels and/or increased turbidity within the surficial aquifers. The proposed pipeline will be installed at depths that will not interfere with groundwater flow patterns. Typically, the pipeline trench will be less than 6 feet deep, except where the HDD method is proposed for installation of the pipe, where installation depths will be deeper.

Dewatering, if necessary, is not expected to have a significant effect on regional groundwater flow patterns. Shallow (water table) aquifers will quickly reestablish equilibrium if disturbed, and turbidity levels will rapidly subside. Based on the relatively shallow depth of construction and because the depth of the shallowest groundwater level within the Hiddenwood Lake and Shell Creek-White Lake aquifers is anticipated to be below the deepest point of the proposed pipeline trench, installation of the proposed pipeline will not have a significant effect on regional groundwater flow patterns or quality. Any potential effects on groundwater flow patterns will be limited to surficial aquifers, and impacts will be highly localized and limited to the construction phase of the project. No permanent impacts to groundwater flow patterns are expected.

Two surface drains, Taylor Slough Drain (Permit DR-661) and Wild Willow Drain (Permit DR-4495), were identified within the 1-mile Study Area for the proposed pipeline; however, these surface drains are not within the 200-foot Project Corridor and will not be crossed by the Route. The Project will not affect sloughs, ponds, lakes (i.e., wetlands) outside of the Project Corridor; therefore, no surface drain permits are anticipated to be required. In addition, the Project will have no direct impacts to surface drain permits Taylor Slough Drain (DR-661) and Wild Willow Drain (DR-4495). In the unlikely event that either DR-661 or DR-4495 will be modified, the DWR will be notified.

The DWR maintains a network of observation wells across the state for monitoring the water levels and quality in glacial and bedrock aquifers. No observation wells were identified within the Project Corridor; therefore, no direct impacts to water wells are anticipated. If an observation well is encountered during Project activities and must be

removed, the DWR Water Appropriation Division will be notified. If the functionality of a well is impacted, a replacement well(s) will be installed.

Impacts on deeper aquifers (e.g., Fort Union-Hell Creek aquifer) are not anticipated given their depth and separation from surficial materials. Moreover, deeper aquifers are commonly confined and hydraulically insulated from overlying formations.

Surface drainage and groundwater flow patterns will not be significantly altered by construction of proposed pipeline and associated aboveground facilities. Implementation of Project SPCC and IPM plans would minimize potential risk of impacts to groundwater during construction and operation. The effects of construction will be minor and short-term; therefore, no mitigation measures to protect groundwater are anticipated to be required.

16.3.5 Sound Sensitive Land Uses

Land use in the vicinity of the Project is primarily agricultural. The Project is in a rural, sparsely populated agricultural area with very few noise-sensitive receptors within or near the Project Corridor. Sound-sensitive land uses include residences, places of business, schools, hospitals, churches, or cemeteries. Existing noise sources near the Project include the existing CPR railroad and car/truck traffic traveling on State Highway 23 (typically between 60 and 95 decibels when cars, trucks, and/or trains are traveling on roads/railroads at higher speeds).

- Proposed Pipeline: No residences, schools, places of business, hospitals, churches, cemeteries, or other noise-sensitive land uses were identified within 500 feet of the Route for the proposed pipeline.
- Existing Pipeline: One residence was identified within 500 feet of the Route. No additional occupied structures, cemeteries, schools, or places of business were identified within 500 feet of the Route for the existing pipeline. Conversion of the existing pipeline will not require disturbances or construction activities within 500 feet of the occupied residence. Prior to construction, TBPL will obtain a waiver from the landowner and the waiver will be filed with the Commission.
- Midline Pump Station: No residences, schools, places of business, hospitals, churches, cemeteries, or other noise-sensitive land uses were identified within 500 feet of the proposed midline pump station.

Sound-sensitive receptors close to the construction areas will be exposed to temporary increases in noise levels during operation of heavy equipment for construction. Noise generated during construction will be limited to equipment and heavy machinery during normal working hours. The effects of construction noise will be less noticeable for the portion of the proposed pipeline near State Highway 23, where the existing noise levels are elevated from railroad and highway vehicular traffic.

The effects of noise will be diminished with distance from the equipment operations. Nighttime noise levels will normally be unaffected by construction, as most construction is typically restricted to daylight hours on weekdays. Noise generated during pipeline operations and maintenance is expected to be negligible.

16.3.6 Visual Effect on Adjacent Areas

No designated scenic outlooks or viewing areas were identified within the Project Corridor or crossed by the Route for the proposed pipeline or the existing pipeline. The proposed pipeline and aboveground facilities will be in a rural area that is sparsely populated and dominated by cropland. Views of the landscape will be limited to residents of homesteads, occasional views from area roadways, and oil and gas personnel; therefore, based on number of viewers and duration of their views, viewer sensitivity is considered low.

Visual impacts during construction will include views of personnel and equipment during the construction period (approximately 3 months). Heavy equipment, open trenches, and spoil piles will change the colors and textures of the landscape. The removal of vegetation will create contrast within the existing landscape with the introduction of distinct lines in the landscape. The new pipeline will be buried, and the associated midline pump station will have a relatively low profile. Following construction, disturbed soils will be re-contoured and re-vegetated to match original conditions in accordance with landowner agreements. Following successful revegetation, visual impacts will be minimal.

Construction of the proposed midline pump station and one associated permanent access road will result in the long-term conversion of agricultural land to industrial use. The aboveground facilities will be in rural agricultural areas, where very few people will see the facilities, and the visual impact will not significantly alter the aesthetic landscape.

16.3.7 Extractive and Storage Resources

16.3.7.1 Oil and Gas Production

The Project Corridor and Route for the proposed pipeline and existing pipeline are located within the Williston Basin, a major oil and gas producing basin in western North Dakota.

- Proposed Pipeline: Several oil or gas wells were identified within the Project Corridor; however, none are crossed by the Route.
- Existing Pipeline: Several oil or gas wells were identified within the Project Corridor; however, none are crossed by the Route.

TBPL performed a centerline survey of the Route to identify extractive and storage resources owned by third-party entities. TBPL contacted, or will contact, each entity to obtain its respective crossing and encroachment guidelines and requirements and will continue to work closely with each entity during the construction and operation and maintenance phases to safely construct and operate the Project around existing facilities and minimize the potential for impacts.

Because oil and gas are generally produced from depths of 1,000 feet or more, construction of the proposed pipeline is not expected to affect the ability of existing wells to produce petroleum and/or natural gas. Typically, the pipeline trench will be less than 6 feet deep, except where the HDD method is proposed for installation of the pipe, where installation will be slightly deeper. Potential construction-related damage that could occur will be limited to the near-surface components of the wells and gathering systems. To minimize the potential for impacting near-surface components, TBPS will implement the following mitigation measures:

- Avoid direct impact to any wells located near the construction ROW; and
- Identify any associated underground gathering lines along the Route of the proposed pipeline and take appropriate precautions to protect the integrity of such facilities.

16.3.7.2 Sand and Gravel Mining Operations

- Proposed Pipeline: No sand/gravel mining operations (gravel pits) are within the Project Corridor or crossed by the Route.
- Existing Pipeline: No sand/gravel mining operations (gravel pits) are within the Project Corridor or crossed by the Route.

16.3.8 Wetlands, Woodlands, and Wooded Areas

- Proposed Pipeline: During construction of the proposed pipeline and midline pump station, clearing of vegetation will result in temporary impacts to wetlands, woodlands, and wooded areas. There are very few trees and shrubs within the Project Corridor for the proposed pipeline; however, a few trees and shrubs were identified primarily limited to the banks of the East Fork of Shell Creek. To avoid WOUS disturbances and to minimize potential impacts to riparian vegetation during construction of the proposed pipeline, TBPL will use the HDD method at the crossings of the East Fork of Shell Creek and the wetlands determined by the USACE as WOUS. Areas where vegetation will be removed during construction will be restored in accordance with the landowner agreements.
- Existing Pipeline: The existing pipeline was built in the 1960s and the 30-foot permanent ROW has been maintained in an herbaceous state free of trees. No tree or shrub removal or wetland disturbances will be required for conversion of the existing pipeline.
- Midline Pump Station: No wetlands, woodlands, or wooded areas were identified within the site for the proposed midline pump station.

A SWPPP will be developed to minimize erosion and discharge of sediments or pollutants to surface water and wetlands.

To minimize the impacts on trees, the following mitigation measures will be implemented:

- Avoid removal of trees if practicable; and
- For removed trees with DHB >1.0 inches, trees will be replaced consistent with the Commission's Tree and Shrub Mitigation Specifications.

Construction is anticipated to result in minor and short-term effects on wetlands, woodlands, and wooded areas.

16.3.9 Radio and Television Reception and Other Communication or Electronic Facilities

No radio, television, or other communication or electronic facilities were identified within or near the Project Corridor or crossed by the Route for the proposed pipeline or existing pipeline. No effects on radio, television, or other communication or electronic facilities are expected as a result of the Project.

16.3.10 Human Health and Safety

The PHMSA administers the national regulatory program to ensure the safe transportation of crude oil and other hazardous materials by pipeline. The PHMSA develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities.

Many of the regulations are written as performance standards that set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. Best practices and engineering controls will be implemented to prevent adverse effects to the environment and human health and safety.

TBPL will collaborate with the local emergency response manager in conjunction with Ward and Mountrail Counties to develop an appropriate Emergency Response Plan. TBPL will work with local emergency responders to ensure implementation of a safe and effective response strategy should an adverse event occur.

16.3.11 Animal Health and Safety

Due to the proximity to Highway 23, existing agricultural activities, and previous ground disturbances, animals within and near Project Corridor and Route for the proposed pipeline and existing pipeline are limited to livestock and common wildlife species, such as include squirrels, badgers, deer, pheasant, grouse, partridge, and songbirds. No species of concern are expected to be impacted by the Project.

As a result of the noise and human activity during construction, livestock, and mobile species, such as larger mammals and birds, will likely avoid the construction areas and relocate to adjacent habitat and are not expected to be negatively impacted by Project activities. Less mobile or burrowing species may be inadvertently killed during construction. Some individuals may be permanently displaced and perish due to increased competition or other effects of being forced into suboptimal habitat, although suitable habitat within the Project Corridor will be available following construction.

BMPs will be implemented during construction to allow for the unhindered movement of local livestock and wildlife. Overall impacts on livestock and wildlife are expected to be temporary and minor.

16.3.12 Plant Life

Existing vegetation, including cultivated crops, weeds, trees, and shrubs will be temporarily cleared within the work area before the start of construction. The disturbed areas will be restored to approximate pre-construction contours and vegetation will be restored in accordance with landowner agreements. For those areas to be revegetated, a native seed mix will be developed in conjunction with the local landowners and NRCS for areas to be seeded.

The North Dakota Department of Agriculture (NDDA) coordinates efforts of county weed boards and state and federal land managers to implement weed management programs as established in North Dakota Law (NDCC Section 4.1-47-02). Each county in North Dakota has a County Weed Control Board, which develops and maintains county-level lists of noxious weeds and implements noxious weed control.

A Weed Management Plan has been developed for the Project (**Appendix H**). BMPs will be implemented to prevent the spread of noxious weeds and to minimize the risk of importing or transporting any weed species. Equipment and tools will be cleaned of any plant debris before ingress and egress from the Project Area.

ATTACHMENT 3

Weed Management Plan

Thunder Butte Pipeline, LLC

WEED MANAGEMENT PLAN

Thunder Butte Pipeline Project

May 2024

WEED MANAGEMENT PLAN

Thunder Butte Pipeline Project

May 2024

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Figures

Figure 1 Project Overview Map 2

Acronyms and Abbreviations

EMP	Environmental Mitigation Plan
EI	Environmental Inspector
FBIR	Fort Berthold Indian Reservation
Gap	Gap Midstream LLC.
GPS	Global Positioning System
Project	Thunder Butte Pipeline Project
MHA Nation	Mandan, Hidatsa, and Arikara Nation
NDCC	North Dakota Century Code
NDDA	North Dakota Department of Agriculture
Plan	Weed Management Plan
ROW	right-of-way
TAT	Three Affiliated Tribes
TBPL	Thunder Butte Pipeline LLC.
TBPS	Thunder Butte Petroleum Services, Inc.

1. Introduction

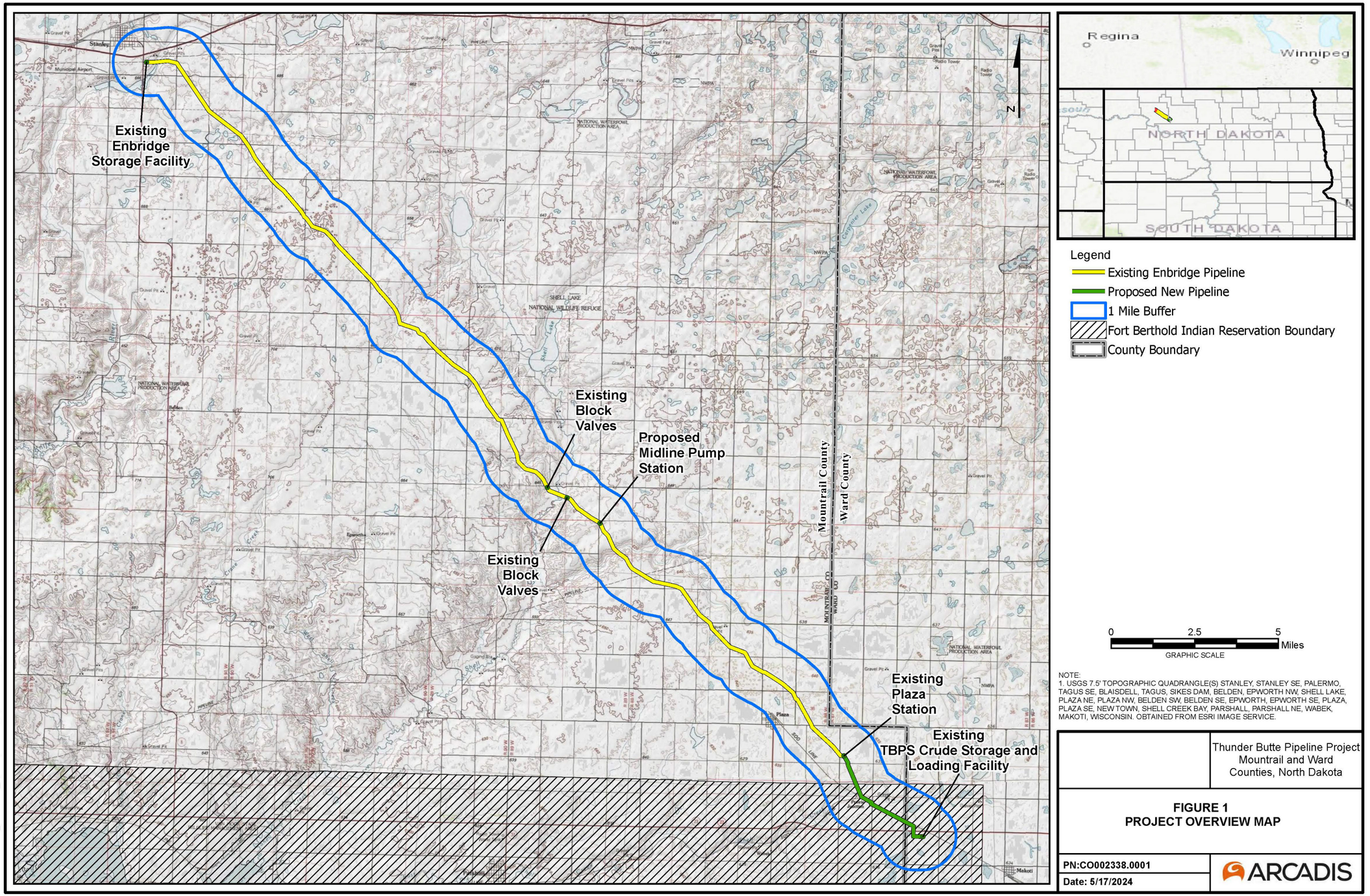
Thunder Butte Pipeline, LLC (TBPL) proposes the Thunder Butte Pipeline Project (the Project) to transport crude oil from the existing Thunder Butte Petroleum Services, Inc. (TBPS) Crude Storage and Loading Facility (TBPS Facility) within the Fort Berthold Indian Reservation (FBIR), approximately 2.6 miles northwest of Makoti, North Dakota, to the existing Enbridge Stanley Pump Station and Terminal (Enbridge Storage Facility) in Stanley, North Dakota (**Figure 1**). The Project is a joint venture between Gap Midstream, LLC (Gap) and the Mandan, Hidatsa, and Arikara Nation (MHA Nation) doing business as TBPS. The MHA Nation/Three Affiliated Tribes (TAT) owns the TBPS Facility, and Enbridge Pipelines North Dakota owns the Enbridge Storage Facility.

The Project will consist of two primary components:

- Construction of a new 3.84-mile-long underground pipeline, and
- Conversion of an existing 30.8-mile-long collector (gathering) pipeline to a transmission pipeline.

The new pipeline will commence at the TBPS Facility in Ward County and terminate at the interconnection with the existing gathering pipeline in Section 2, T152N R88W in Mountrail County. The existing pipeline was previously owned by EPND (Line 82-111). From the interconnection point with the existing pipeline approximately 2.1 miles southeast of Plaza, North Dakota, the existing pipeline will transport crude oil to the Enbridge Facility. All but the southern 3.84 miles of the Project is an existing pipeline. Construction and operation of the proposed new and existing pipeline and associated facilities will be under North Dakota Public Service Commission jurisdiction.

This Weed Management Plan (Plan) has been developed to identify weed control practices that will be implemented for the Project to prevent the spread of invasive and noxious weeds and to minimize the risk of importing or transporting any weed species. TBPL will retain one or more third-party inspector (“Environmental Inspector”) who will oversee implementation of this Plan.



Legend
- Existing Enbridge Pipeline
- Proposed New Pipeline
- 1 Mile Buffer
- Fort Berthold Indian Reservation Boundary
- County Boundary

0 2.5 5 Miles
GRAPHIC SCALE

NOTE:
1. USGS 7.5' TOPOGRAPHIC QUADRANGLE(S) STANLEY, STANLEY SE, PALERMO, TAGUS SE, BLAISDELL, TAGUS, SIKES DAM, BELDEN, EPWORTH NW, SHELL LAKE, PLAZA NE, PLAZA NW, BELDEN SW, BELDEN SE, EPWORTH, EPWORTH SE, PLAZA, PLAZA SE, NEW TOWN, SHELL CREEK BAY, PARSHALL, PARSHALL NE, WABEK, MAKOTI, WISCONSIN. OBTAINED FROM ESRI IMAGE SERVICE.

Thunder Butte Pipeline Project
Mountrail and Ward
Counties, North Dakota

FIGURE 1
PROJECT OVERVIEW MAP

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2. Goals and Objectives

This Plan outlines weed control practices to prevent and/or control the spread of noxious weeds during and following construction of the Project. Noxious weed management requirements and commitments are also summarized in the Project's Environmental Mitigation Plan (EMP).

All contractors will be responsible for implementing the practices described in this Plan. Monitoring during the construction and post-construction phases will ensure that weed management objectives are achieved.

The objectives of noxious weed control on the Project include the following:

- Acquire information on the occurrence, distribution, and abundance of noxious weeds in the Project area prior to construction.
- Prevent the establishment of new populations of noxious weeds in the Project areas not previously infested and limit the spread of existing infestations to the extent feasible.
- Minimize possible negative effects to flora or fauna within the Project area by control activities.
- Coordinate and consult with Ward and Mountrail County weed personnel regarding noxious weed control activities conducted by the TBPL to ensure compatibility with existing weed control protocols.
- Respond to landowner and/or land-managing agency reports of weeds during the post-construction period.

3. North Dakota Weed Laws and Regulations

The North Dakota Noxious Weed Control Law (North Dakota Century Code (NDCC) Title 4.1, Section 4.1-47) imposes stewardship obligations upon local governing bodies (county and city weed boards) as well as public and private landowners throughout the state to control noxious weeds on land they own or control. Local county and city weed boards have responsibility for the implementation and enforcement of weed management in North Dakota. Under section 4.1-47-29 of the NDCC, the agriculture commissioner may quarantine the state or portions of the state if deemed necessary to prevent the spread of noxious weeds. There are weed boards in all counties of North Dakota. Each board operates under the supervision of the North Dakota Department of Agriculture (NDDA). The NDAA Commissioner coordinates the efforts of County Weed Boards and state and federal land managers to implement integrated weed management programs. County Weed Board controls noxious weeds in road rights-of-way and public lands throughout the County to control and prevent the spread of noxious weeds in accordance with NDCC §4.1-47-02. Under the Noxious Weed Control Law, a person may not willfully transport any material that contains noxious weed seeds or propagating parts, on a public road, in a manner that allows for the dissemination of noxious weeds.

Noxious weeds are defined as plants propagated by either seed or vegetative parts and determined to be injurious to public health, crops, livestock, land, or other property (NDDA 2021). The NDDA Commissioner is responsible for maintaining the state noxious weed list, while the County Weed Boards may designate as noxious certain weeds that are not on the state noxious weed list. Thirteen weeds have been declared noxious in North Dakota (NDCC §4.1-47-03). Counties and cities do have the option to add additional weeds onto a list for enforcement only in their jurisdiction. The 13 state listed noxious weeds that are enforced by all cities and counties in North Dakota are listed below (NDDA 2023):

1. Absinth Wormwood (Artemisia absinthium L.)
2. Canada Thistle (Cirsium arvense (L.) Scop.)
3. Dalmatian Toadflax (Linaria genistifolia spp. dalmatica)
4. Diffuse Knapweed (Centaurea diffusa Lam.)
5. Houndstongue (Cynoglossum officinale L.)
6. Leafy Spurge (Euphorbia esula L.)
7. Musk Thistle (Carduus nutans L.)
8. Palmer amaranth (Amaranthus palmeri)
9. Purple Loosestrife (Lythrum salicaria L., Lythrum virgatum L., and all cultivars)
10. Russian Knapweed (Centaurea repens L.)
11. Saltcedar (Tamarisk spp.)
12. Spotted Knapweed (Centaurea maculosa Lam.)
13. Yellow Toadflax (Linaria vulgaris)

4. Identification of Problem Areas

Cultivated crops and noxious weeds currently growing within the construction ROW will be removed prior to the start of construction activities. TBPL will inventory all trees and shrubs anticipated to be cleared, including those that are considered invasive species or noxious weeds before cutting.

Prior to clearing of vegetation, TBPL will work with the County Weed Control Boards and landowners to identify known locations of weed infestations in the Project area. In addition, areas containing noxious species may be identified prior to construction by the Environmental Inspectors (EI), which will be demarcated using color-coded flagging or signage on the construction ROW. Noxious weeds that occur adjacent to the right-of-way (ROW) will be similarly noted. Identification of existing noxious weed locations will alert EI and construction personnel to implement weed control measures during construction.

5. Noxious Weed Management

Weeds are spread by a variety of means that may include construction equipment, construction and reclamation materials, livestock, wildlife, vehicles, people, and wind. The risk of establishing weeds typically increases with ground disturbing activities. This Plan emphasizes: 1) preventing the establishment of new populations of noxious weeds in lands that are currently weed-free; and 2) limiting the spread of existing populations of noxious weeds as feasible. The following section presents strategies to manage noxious weeds during the preconstruction, construction, and post-construction phases of the Project.

5.1 Preventive Measures

The following measures will be implemented to prevent the spread of invasive and noxious weeds and to minimize the risk of importing or transporting any weed species.

- TBPL will implement weed treatment prior to construction on a species and/or site-specific basis. Preconstruction treatments may include mechanical means (e.g., mowing, clearing) or herbicides, depending on the species present and size of the population.
- In areas where noxious weeds have been identified, the Contractor will stockpile cleared vegetation and salvaged topsoil adjacent to the area from which they were stripped. Stockpiles containing noxious weed seed or plant parts will be separated from abutting, uninfested stockpiles. During reclamation, the Contractor will return topsoil and vegetative material from infested sites to the areas from which they were originally stripped.
- For areas in which noxious weeds have been identified within the construction ROW, additional measures will be taken during construction in these areas to prevent the spread of seeds including cleaning all equipment before leaving the site and treating all disturbed soils with herbicides as approved by the landowner(s) of the participating properties.
- All Contractor vehicles and equipment will arrive at the work site clean and free of noxious weed seeds or parts. Equipment will be cleaned using high-pressure washing devices if necessary (air or water). An Environmental Inspector (EI) will inspect and verify that vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds or parts prior to being allowed access to the ROW.
- For equipment known to have passed through a weed-infested area, the undercarriage will be cleaned of any plant debris with high-pressure washing equipment prior to ingress and egress from the Project area.
- The Contractor will implement revegetation activities as promptly as possible following construction and during the optimal seeding and planting window. An adequate vegetative cover greatly reduces the opportunity for invasion by noxious weeds.
- Disturbed areas will be restored in accordance with the landowner agreements. For those areas to be revegetated, a native weed-free seed mix will be used as specified by the landowner(s) or the Natural Resources Conservation Service (NRCS). Certificates of seed analysis are required for all seed mixes to restrict the introduction of noxious weeds. Seed will be used within 12 months of testing.
- The Contractor will use hay or straw bales that are free of noxious weeds. Only certified weed free vegetative components (e.g., mulch, straw/hay bales, seed mixes) will be used on the Project. The

Contractor must identify the source of straw/hay bales and mulch used for erosion control to verify that it is noxious weed-free.

- Immediately after seeding, the Contractor will apply certified weed free mulch on all areas with high erosion potential and on slopes greater than 5 percent. The Contractor will spread mulch uniformly over the area to cover at least 75 percent of the ground surface at an approximate rate of 2 tons per acre of hay or straw or their equivalent. The Contractor will not apply mulch in cultivated areas unless requested by the landowner.
- The Contractor will only apply fertilizer to reclaimed areas as directed by the land management agency, EI, or if requested by the landowner. Fertilizer is known to enhance the growth of noxious weeds.
- Imported gravel and fill material will be source-identified by the Contractor and approved by TBPL to ensure that the originating site is noxious weed-free.

5.2 Treatment Methods

Noxious weed treatment will be in accordance with the NDDA, county regulations, or jurisdictional land management agency. Post-construction control measures may include one or more of the methods listed below.

- Mechanical methods will include hand-pulling, mowing, or disking weeds. If these methods are used, subsequent seeding may be conducted to re-establish a desirable vegetative cover that will stabilize soils and slow the potential re-invasion of noxious weeds.
- County and State-approved herbicides will be utilized to control noxious weed populations at select sites. Applications will typically be controlled to minimize impacts on surrounding vegetation (specific species and locations will be targeted). In areas of dense infestation, a broader application will be used and a follow-up seeding program implemented if needed. The timing of subsequent revegetation efforts will be based on the life of the selected herbicide and appropriate seeding windows. Herbicide application is discussed in greater detail in Section 6.
- In the event an area is not seeded until the spring following construction because of weather or scheduling constraints, all annual weed species and undesirable vegetation that have become established will be mechanically removed (e.g., disking, harrowing, mowing) as part of the seedbed preparation.
- TBPL will respond to landowner reports of post-construction noxious weeds on or adjacent to the ROW or aboveground facilities. Where it is determined that new populations have become established, or weed density or extent exceeds that which occurred in pre-construction circumstances, TBPL will either treat directly, treat via county or private contractor, or reimburse the landowner for reasonable costs associated with the treatment of documented weeds. Mechanical/cultural control methods or herbicide treatments will be considered.
- Under certain circumstances it may be necessary or desirable to clear herbaceous and woody vegetation well in advance of grading operations (i.e., pre-clearing). Depending on site conditions, preclearing could have the potential to contribute to noxious weed dispersal due to soil disturbance and/or the spreading of plant parts. TBPL will implement the following measures to avoid or minimize the spread of weeds during pre- clearing:

- All pre-clearing equipment will arrive on site clean and free of noxious weed seeds or parts; – Vegetation will be cut as close to the ground as possible without disturbing the soil surface;
- Pre-clearing operations will be reassessed if soil conditions become too saturated to avoid soil degradation (via thawing or rain). TBPL may temporarily suspend pre-clearing until conditions improve or use methods that reduce soil disturbance.
- Depending on site conditions, relevant practices outlined elsewhere in this Plan will be implemented per TBPL direction.

Treatment methods will be based on species-specific and site-specific conditions (e.g., plant phenology, proximity to water or riparian areas, agricultural activities, time of year) and will be coordinated with landowners and local regulatory agencies.

5.3 Education

TBPL and the Contractor will provide information to their employees regarding noxious weed identification, reporting, and impacts on agriculture, livestock, and wildlife. The critical importance of preventing the spread of noxious weeds in un-infested areas and controlling the proliferation of weeds already present will be explained.

The importance of adhering to measures to prevent the spread of noxious weeds will be stressed.

6. Herbicide Application, Handling, Spills, and Cleanup

Herbicides will be utilized on a limited basis during the pre-construction phase and as the primary control method during the post-construction phase. Herbicides used on the Project in North Dakota will first be approved by the County Weed Supervisor in the county in which they would be used. All persons applying herbicides will have appropriate and current North Dakota licensing.

6.1 Herbicide Application and Handling

Prior to herbicide application, TBPL or an TBPL Contractor will obtain any required permits from the Project area counties in North Dakota. All TBPL contractors conducting this scope of work will be licensed in herbicide application and will handle, store, and complete herbicide application in accordance with all applicable laws and regulations.

U.S. Environmental Protection Agency herbicide label instructions will be strictly followed. Application of herbicides will be suspended when any of the following conditions exist:

- Wind velocity exceeds six miles per hour for application of liquids or 15 miles per hour for application of granular herbicides.
- Snow or ice covers the foliage of noxious weeds.
- Precipitation is occurring or imminent.

Vehicle-mounted sprayers (e.g., handgun, boom, injector) will be used primarily in open areas that are readily accessible by vehicle. Hand application methods (e.g., backpack spraying) that target individual plants will be used to treat small, scattered weed populations in rough terrain. Calibration checks of equipment will be conducted at the beginning of spraying and periodically to ensure that proper application rates are being achieved.

All herbicide equipment and containers will be inspected daily for leaks.

6.2 Herbicide Spills and Cleanup

All reasonable precautions will be taken to avoid spilling herbicides. In the event of an unintentional herbicide release, immediate action will be taken to clean up the site. A spill kit is required in contractor vehicles used for herbicide application and in herbicide storage areas.

6.3 Worker Safety and Spill Reporting

All herbicide contractors will obtain and have readily available copies of the appropriate Safety Data Sheets for the herbicides being used. Herbicide spills will be reported in accordance with all applicable laws and requirements.

7. Post-Construction Monitoring and Treatment

The focus of TBPL's weed management program is to protect weed-free perennial vegetation by monitoring and treating new or expanded post-construction weed populations within the Project work area.

Monitoring and management of pre-existing noxious weeds in agricultural areas will be conducted on a case-by-case basis in response to landowner reports.

The distribution and density of noxious weeds will be monitored following construction and reclamation of the site in North Dakota. In cultivated field and non-native pastures, monitoring surveys would occur in response to landowner reports. Surveys will be conducted as early in the year as feasible to identify and control noxious weeds before they produce seed. Noxious weeds, if present, will be documented on aerial photo-based maps. Estimates will be made for the entire problem area, comparing disturbed and adjacent areas, and may include a range of species cover and density values. The boundaries of new noxious weed populations within the Project will be drawn on maps and located with a GPS unit.

Weed monitoring will be conducted in conjunction with overall revegetation monitoring after the first growing season following revegetation consistent with the EMP. Treatment of noxious weeds will occur if one or more of the following three criteria are met:

- A new noxious weed population is confined to the construction ROW.
- A noxious weed population is expanding via the construction ROW.
- A noxious weed population is impeding revegetation establishment in the ROW.

Weed treatment will be discontinued if weeds are not present for two consecutive years or if adjacent populations are so extensive that continued treatment and monitoring of the ROW would be ineffective.

8. References

North Dakota Department of Agriculture (NDDA). 2021. North Dakota Noxious Weed Law and Regulations. North Dakota Department of Agriculture, Plant Industries Division, updated May 2021. Available at https://www.ndda.nd.gov/sites/www/files/documents/files/2021%20Noxious%20Weeds%20Book.pdf. Accessed: September 6, 2022.

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