ONEOK BAKKEN PIPELINE, L.L.C.

Tioga Lateral Pipeline Project

Williams County, North Dakota

North Dakota Public Service Commission

Consolidated Application for Certificate of Corridor Compatibility and Route Permit

November 2019

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Exhibit 1 - Consolidated Application, November 2019
ONEOK Bakken Pipeline, L.L.C.

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REGULATORY CROSS-REFERENCE GUIDE

AUTHORITY	DESCRIPTION	SECTION(S)
Chapter 49-22.1	***CENTURY CODE – Title 49 ENERGY CONVERSION AND TRANSMISSION FACILITY***	
49-22.1-06	Application for a Certificate for a Corridor	
1.a	Description of size and type of facility	1.0, 2.1
1.b	Summary of any studies of environmental impacts	5.0
1.c	Need for the facility	2.2
1.d	Site for energy conversion facility	N/A
1.e	Preferred transmission (pipeline) corridor	2.17, Exhibits B.2-B.4, electronic GIS data
1.f	Analysis of merits and detriments of facility location	4.1
1.g	Mitigating measures	9.0
1.h	Corridor evaluation pursuant to 49-22-09 and 49-22-05.1	7.0, 7.4.1, 8.0
1.i	Other relevant information	8.0
49-22.1-07	Application for Route Permit	
1.a	Description of size and type of facility	1.0, 2.1
1.b	Description of the location	1.0, 2.16, 2.17
1.c	Route evaluation relative to 49-22-09 and 49-22-05.1	7.0, 8.0
1.d	Mitigating measures	9.0, Exhibit H
1.e	Right-of-way (ROW) preparation, construction, and reclamation	2.18, Exhibit H
1.f	Statement identifying how: 1. Landowners informed of ROW acquisition 2. How landowners will be compensated	2.19
1.g	Other relevant information	8.0
49-22.1-09	Factors to be considered in evaluating corridor and route applications	
1	Research and investigation into effects of the project on public health, welfare, natural resources, and the environment	5.0, 7.1, 7.2, 7.3, 7.4.3, 7.4.7, 7.4.9, 8.1
2	Effects of transmission technology and design to minimize adverse effects	8.2
3	Potential beneficial uses of waste energy from energy conversion facility	8.3
4	Unavoidable adverse direct and indirect environmental effects	8.4
5	Corridor or route alternatives developed during the hearing which minimize adverse effects	8.5
6	Irreversible and irretrievable commitments of natural resources if designated	8.6
7	Direct and indirect economic impacts of the facility	8.7

AUTHORITY	DESCRIPTION	SECTION(S)
8	Existing plans for other developments at or in the vicinity	8.8
9	Effect of project on scenic areas, historic sites and structures, paleontological and archaeological sites	5.1, 6.8, 7.1, 7.2.3
10	Effect of route on unique biological areas	5.2, 5.3, 6.1, 6.6, 7.1.5
11	Problems raised by federal, state, or local entities	6.0, 8.15, Exhibit E
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2.a.(7)(b)	The approximate length of facility	1.3
2.a.(7)(c)	The estimated span length for electric facilities	N/A
2.a.(7)(d)	The anticipated type of structure for electric facilities	N/A
2.a.(7)(e)	The voltage for electric facilities	N/A
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2.i.	A discussion of the applicant's policies and commitments to limit the environmental impact of its facilities, including copies of the board resolutions and management directives	7.4.7, 9.0, Exhibit H
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2.o.	8 1/2 X 11 black and white map suitable for newspaper publication	Exhibit B.5
2.p.	Discussion of present and future natural resource development in the area	1.0
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ACRONYMS AND ABBREVIATIONS

ANS	Aquatic Nuisance Species
API	American Petroleum Institute
BCA	Beaver Creek Archaeology, Inc.
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
bpd	barrels per day
CFR	Code of Federal Regulations
CMRP	Construction Mitigation and Restoration Plan
CRP	Conservation Reserve Program
EI	environmental inspector
EO	Executive Order
ESO	Ecological Services Office
ETWS	extra temporary workspace
F	degrees Fahrenheit
FSA	Farm Service Agency
Flatiron	Flatiron Field Service L.L.C.
GIS	geographic information system
HESS	Hess Corporation
HDD	horizontal directional drill
ICBM	Intercontinental Ballistic Missile
IPaC	Information, Planning, and Conservation System
LWCF	Land and Water Conservation Fund
MBTA	Migratory Bird Treaty Act
Merjent	Merjent, Inc.
MP	milepost
MMcf/d	million cubic feet per day
MNR	Midwest Natural Resources, Inc.
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDIC	North Dakota Industrial Commission
NDDA	North Dakota Department of Agriculture
NDDEQ	North Dakota Department of Environmental Quality
NDDTL	North Dakota Department of Trust Lands
NDGFD	North Dakota Game and Fish Department
NDGS	North Dakota Geological Survey

NDGIS	North Dakota Geographic Information Systems
NDIC	North Dakota Industrial Commission
NDPDES	North Dakota Pollution Discharge Elimination System
NDPRD	North Dakota Parks and Recreation Department
NDPSC or Commission	North Dakota Public Service Commission
NDR	North Dakota Rules
NDSWC	North Dakota State Water Commission
NGL or NGLs	natural gas liquid
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
NWR	National Wildlife Refuge
ONEOK	ONEOK Bakken Pipeline, L.L.C.
PCN	Pre-Construction Notification
PLOTS	Private Land Open to Sportsmen
Project	Tioga Lateral Pipeline Project
psig	pounds per square inch gauge
ROW	right-of-way
SHPO	State Historic Preservation Office
SWPPP	Stormwater Pollution Prevention Plan
UDP	Unanticipated Discoveries Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOD	U.S. Department of Defense
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNPS	U.S. National Park Service
UWYO	University of Wyoming
WMD	Wetland Management District
WAWSA	Western Area Water Supply Authority
WHPA	Wellhead Protection Area
WPA	Waterfowl Production Area
XTO	XTO Energy Inc.

INTRODUCTION

ONEOK Bakken Pipeline, L.L.C. (ONEOK), a wholly owned subsidiary of ONEOK, Inc., owns and operates natural gas liquids (NGLs) assets in North Dakota. ONEOK is proposing the Tioga Lateral Pipeline Project (Project). The Project is a new 16-inch-diameter steel NGL pipeline that would originate at the Hess Corporation's (HESS) Tioga Gas Processing Plant and terminates at an interconnection with ONEOK's Stateline to Riverview NGL pipeline. The Project would be approximately 75.0 miles in length, and is entirely located in Williams County, North Dakota.

ONEOK submits to the North Dakota Public Service Commission (NDPSC) a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project. The application provides the information required by:

- North Dakota Century Code (NDCC), Energy Conversion and Transmission Facility Siting Act, Chapter 49-22.1; and

- North Dakota Administrative Code (NDAC), Article 69-06, Energy Conversion and Transmission Facility Siting.

Construction activities are currently proposed to begin in March 2020 and be completed in the fourth quarter of 2020. Restoration activities may extend through 2021, if needed.

1.0 SIZE AND TYPE OF FACILITY

1.1 TYPE

The proposed Project is a Y-grade NGL transmission pipeline. The steel pipeline will meet applicable U.S. Department of Transportation (USDOT) regulations as outlined in 49 Code of Federal Regulations (CFR) Part 195.

1.2 SIZE

The Project pipeline specifications are the following:

- 16-inch outside diameter steel pipe
  - 0.281-inch wall thickness, Grade X-65 (standard)
  - 0.312-inch wall thickness, Grade X-65 (road crossings)
  - 0.500-inch wall thickness, Grade X-65 (railroad crossings)
- Maximum operating pressure: 1,480 pounds per square inch gauge (psig)
- Initial estimated throughput: approximately 30,000 barrels per day (bpd)
- Maximum operating temperature: 120 degrees Fahrenheit (F)
- Normal operating conditions: 90 degrees F at 1,480 psig

1.3 LENGTH

The Route is approximately 75.0 miles in length and is wholly located in Williams County, North Dakota. Approximately 58 percent of the Route is co-located[1] with existing linear infrastructure.

1.4 ABOVEGROUND FACILITIES

The Project will include the installation of four mainline block valves, which will be installed in accordance with applicable USDOT regulations. Block valves allow for the isolation of select pipeline segments for inspection and maintenance purposes or in the event of a system failure.

The Project will also involve the installation of a new pig launcher and meter facility at HESS's Tioga Gas Processing Plant; a new meter at XTO Energy Inc.'s (XTO) Nesson Gas Plant Facility; new meter, pig launcher, and receiver facilities at the Flatiron Field Service L.L.C.'s (Flatiron) Springbrook Gas Processing Plant; and a pig receiver and meter facility near the connection with ONEOK's Stateline to Riverview NGL pipeline. The launcher and receiver facilities will facilitate the introduction of in-line tools for the performance of functions varying from cleaning to integrity monitoring. No new pump stations will be required for the Project at this time.

Refer to Exhibit A for engineering documents and the maps in Exhibit B for locations of aboveground facilities.

[1] For purposes of this filing, co-location is defined as sections of the route that are parallel to and within 150 feet of existing linear infrastructure (pipelines, powerlines, roads, railroads, etc.).

2.0 DESIGN OF THE FACILITY

2.1 DESIGN OF PROPOSED FACILITY

The Project design includes approximately 75.0 miles of 16-inch nominal diameter steel pipeline described in Section 1.0, in interstate commerce and subject to the federal pipeline safety regulations in 49 CFR Part 195. The pipeline will be manufactured according to American Petroleum Institute (API) Specifications API 5L, PSL 2. See Exhibit B for maps depicting the Project route.

2.2 PURPOSE AND NEED OF THE FACILITY

The purpose of the Project is to provide take-away capacity for Y-grade NGLs (a mixture of ethane, propane, butanes, iso-butane mix, pentanes, and natural gasoline). Construction of the proposed Project would provide firm, reliable service for an initial anticipated throughput of 30,000 barrels of NGLs per day and would provide a critical link between the HESS Tioga Gas Plant, the XTO Nesson Gas Plant, and the Flatiron Springbrook Gas Plant to the Stateline to Riverview NGL pipeline system for delivery to facilities in the Mid-Continent and Gulf Coast for additional processing prior to distribution to various markets.

Technological advances in drilling and completion associated with horizontal wells currently employed in the Bakken Shale and Three Forks formations of the Williston Basin have dramatically increased hydrocarbon production in the area. Producers remain active in the region creating demand for natural gas gathering infrastructure. Average daily natural gas production in North Dakota is currently estimated to be approximately 2,360 million cubic feet per day (MMcf/D) (North Dakota Department of Mineral Resources, 2019). See Section 4.1.1 for more information.

The increased production of oil and natural gas products continues to be constrained by the available infrastructure take-away capacity. While near term demands associated with increased crude oil production can be readily addressed with the installation of tankage for temporary storage coupled with additional trucking or rail capacity to bring it to market, the associated natural gas production is typically lost to flaring until the required infrastructure is placed into service.

As of July 2016, approximately 10 percent of gas produced was being flared (North Dakota Pipeline Authority, 2017). More recent information suggests the flaring of gas may have up increased up to 20 percent in October 2018 (Dalrymple, 2018). To continue to meet gas capture goals, infrastructure needs to be added to accommodate active drilling activities in North Dakota. The requisite infrastructure includes gathering systems and gas processing to refine the raw feedstock into commercial products. The function of gas processing plants is to separate commercial grade methane (i.e., natural gas) from NGLs such as butane, propane, and ethane, and in turn prepare these products for delivery.

A major constraint in transporting NGLs and other hydrocarbons from North Dakota to processing/ distribution centers and eventual end users in the United States is the lack of pipeline capacity. To relieve the pipeline constraints, several projects have been planned to address the growing volumes of natural gas, NGLs, and other hydrocarbons. However, pipeline capacity is not expected to keep pace with production, leaving incremental volumes to find alternative transportation methods, primarily rail or other surface transportation alternatives.

2.3 GENERAL AREA TO BE SERVED

The Project will allow for the delivery of additional NGLs from the Bakken and Three Forks production areas to facilities in the Mid-Continent and Gulf Coast for additional processing of the raw feedstock into commercial products prior to distribution to various markets to meet the existing need for agriculture and the petrochemical and plastics industries, as well as for refining and home heating throughout the United States.

2.4 CAPACITY

The initial anticipated capacity for the Project will be approximately 30,000 bpd.

2.5 TECHNOLOGY TO BE DEPLOYED/EMPLOYED

The Project will be designed, constructed, maintained, and inspected to the USDOT Pipeline and Hazardous Materials Safety Administration regulations utilizing industry standards and company policies. The system will be monitored 24 hours a day, 7 days a week, and 365 days a year by trained controls personnel. Additionally, the system is set up with a monitoring and alarm system that continuously monitors the flow and pressure of the system and readily signifies anything outside normal operating conditions.

2.6 TYPE OF PRODUCT TO BE TRANSMITTED

The Project will transport Y-grade NGL, which is a mixture of ethane, propane, butanes, iso-butane mix, pentanes, and natural gasoline.

2.7 SOURCE OF PRODUCT TO BE TRANSMITTED

The anticipated sources of the NGLs are formations in the Williston Basin.

2.8 FINAL DESTINATION OF PRODUCT

NGLs will be shipped out of North Dakota via other NGL pipeline systems connected to the Project which transport the NGLs to facilities in the Mid-Continent and Gulf Coast for additional processing prior to distribution to various markets.

2.9 WIDTH OF RIGHT-OF-WAY

The temporary construction right-of-way (ROW) would be 75 feet wide, of which 50 feet would remain as permanent ROW. In certain areas, the permanent easement width may be less than 50 feet depending on negotiations with landowners. For the portion of the Project that is co-located (approximately 58 percent), the proposed pipeline would generally be installed 50 feet offset from existing pipelines with the workspace located adjacent to the existing pipeline permanent easements. This offset distance may vary in isolated areas pending negotiations with other utilities or landowners.

In addition to the temporary construction ROW, extra temporary workspace (ETWS) would typically be required adjacent to crossings of roadways, railroads, waterbodies, wetlands, or other utilities; horizontal

directional drill (HDD) pipe fabrication areas; areas requiring additional trench depth or spoil storage areas; certain pipe bend locations; locations with soil stability concerns or side slope construction; and truck turnarounds or equipment passing lanes.

ONEOK will generally maintain its permanent easement along the entire length of the Project except as restricted by environmental conditions, foreign lines, and landowner agreements. The ROW will be reclaimed to its pre-existing use once construction is complete. ONEOK has designed and located ETWS outside of sensitive environmental resources to the extent possible.

2.10 REQUIREMENT FOR AND GENERAL LOCATION OF ANY NEW ASSOCIATED FACILITIES

The Project will include four mainline block valves (two of which will be motor operated), one pig launcher facility, one pig launcher and receiver facility, and one pig receiver facility. The block valves would be installed in accordance with applicable USDOT regulations. Block valves allow for the isolation of select pipeline segments for inspection and maintenance purposes or in the event of a system failure. Each valve will be constructed within an approximately 50-foot by 100-foot graveled lot (fenced). The pig launcher and receiver facilities would facilitate the introduction of in-line tools for the performance of functions varying from cleaning to integrity monitoring.

2.11 ESTIMATED DISTANCE BETWEEN SURFACE STRUCTURES FOR PIPELINE FACILITIES

A description of surface structures to be developed for the Project is provided in Sections 1.4 and 2.10 of this application. The location of the mainline block valves will be finalized upon evaluation of maintenance and safety requirements but are currently planned at the locations listed in Table 2.11-1 below. Approximate locations of the block valves and launcher/receivers are displayed on the figures in Exhibits B.2 – B.4. Typical engineering drawings for these facilities are provided in Exhibit A.

Table 2.11-1
Location and Description of Aboveground Facilities

Type	Description	Section	Township	Range
Trap	Launcher	23	157N	95W
Mainline valve	16-inch valve	4	156N	96W
Mainline valve	16-inch valve	2	155N	98W
Trap	Launcher/Receiver	22	155N	100W
Mainline valve	16-inch valve	29	156N	100W
Mainline valve	16-inch valve	10	155N	102W
Trap	Receiver	21	155N	103W

2.12 MAXIMUM DESIGN OPERATING PRESSURE AND TEMPERATURE FOR PIPELINE FACILITIES

The maximum operating pressure for the pipeline is 1,480 psig and the maximum operating temperature is 120 degrees F. Under normal operating conditions the pipeline will operate at a summertime temperature of 90 degrees F and 1,480 psig.

2.13 MAXIMUM DESIGN FLOW RATE FOR PIPELINE FACILITIES

The initial anticipated capacity for the Project will be approximately 30,000 bpd. Refer to Sections 1.2 and 2.4.

2.14 NUMBER AND GENERAL LOCATION FOR COMPRESSOR OR PUMPING STATIONS

No new compression or pumping stations will be installed for this Project.

2.15 ESTIMATED TOTAL COST OF CONSTRUCTION

ONEOK will invest approximately $100 million in North Dakota to develop this Project. Once constructed and in-service, the continued costs of maintenance and operation of the proposed pipeline are relatively minimal.

2.16 PREFERRED LOCATION OF FACILITY

The Project will be located entirely in Williams County, North Dakota, originating at the HESS Tioga Natural Gas Processing Plant in Township 157N, Range 95W, Section 23 moving generally east-to-west, and terminating in Township 155N, Range 103W, Section 21 at a planned interconnection with the ONEOK Stateline to Riverview NGL pipeline. The Project will also tie-in to the XTO Nesson Gas Plant in Township 156 North Range 96 West, Section 4 and the Flatiron Natural Gas Processing Facility in Township 155N, Range 100W, Section 22. Please refer to the maps in Exhibit B.2.

The proposed Project is approximately 75.0 miles in length, of which 43.2 miles (approximately 58 percent) will be co-located with existing pipeline corridors. Project location maps that depict the pipeline route are provided in Exhibit B. The Townships, Ranges, and Sections crossed by the Project route are presented in the following table (generally following the Project route from east to west):

Table 2.16-1
Location Summary

Township	Range	Section Crossed by Route
157 North	95 West	23-26, 35
156 North	95 West	5-8
156 North	96 West	1-4, 8-9, 17, 20, 29-30
156 North	97 West	25-26, 31-35
156 North	98 West	35-36
155 North	98 West	2, 8-11, 17-18

Table 2.16-1 Location Summary		
Township	**Range**	**Section Crossed by Route**
155 North	99 West	13-19, 21-22
155 North	100 West	4, 9-10, 14-15, 23-24
156 North	100 West	28-29, 30, 33
156 North	101 West	25-31, 34-35
156 North	102 West	34-36
155 North	102 West	3, 9-10, 16-19
155 North	103 West	21-24, 26-27

The Project is located entirely in Williams County, North Dakota and does not cross any municipal or city boundaries. The Project crosses the following civil townships:

- Brooklyn Township
- Cow Creek Township
- East Fork Township
- Equality Township
- Hebron Township
- Mont Township
- Pherrin Township
- Pleasant Valley Township
- Springbrook Township
- Tioga Township
- Tyrone Township
- West Bank Township
- Wheelock Township

Contact information for Williams County Board of Commissioners and Township officers is included as Exhibit C.

2.17 PREFERRED LOCATION OF CORRIDOR

ONEOK and its affiliates own and operate several assets throughout the region. The operation of these assets is conducted in a manner to maximize the overall value of the NGLs, which benefits regional stakeholders (i.e., producers, royalty owners, and the State) through direct payments and tax revenues. The Project Corridor described in this application provides ONEOK with the opportunity to utilize existing pipeline corridors and minimize landowner and environmental impacts. ONEOK requests that the Corridor described in this application be certificated by the NDPSC.

Selection of the proposed Corridor and Route entailed a program that evaluated several geographic information system (GIS) data layers for the Project area. Information relative to high consequence areas (populated areas, wetlands, waterbodies, areas of cultural significance or high probability, public lands, etc.) and other unfavorable constructability or operational features were evaluated to avoid and minimize proximity and potential impacts on these features. Features for favorable constructability or operations,

such as existing ROWs (pipelines, roads, railways, power lines, etc.), were also evaluated to maximize co-location.

After selection of a preliminary location for routing the pipeline, ONEOK developed a 1-mile-wide study area for analysis and agency consultation (see Section 6 for more detail). The shortest route that accomplished the desired impact avoidance and minimization while maximizing co-location efforts served as the baseline for developing the proposed study area, Corridor, and Route. This baseline was then evaluated for environmental, engineering, construction, and ROW considerations for further optimization.

ONEOK worked with engineering and environmental firms to develop and refine the Route and Corridor within the study area. Environmental field surveys were conducted in summer and fall 2019 within an approximately 300-foot-wide survey corridor, generally centered on the pipeline route, to identify sensitive resources and to further refine the route (See Section 5). The Corridor described in this application follows the proposed Route along a generally 300-foot-wide corridor where environmental surveys were conducted. In a few isolated areas, the Corridor is slightly wider than 300 feet to allow ETWS for safety reasons and/or to assist in segments of the Project that require additional workspace due to HDDs (ETWS for setting up HDD drilling rigs, pullback sections for HDDs) or extra space for crossing of unique areas.

Several factors went into consideration in selecting the pipeline route, including:

- Human – choosing a route to minimize impacts and ensures public safety;
- Environmental – choosing a route to minimize disturbances to biological and cultural resources; and
- Constructability – considering terrain and obstacles such as roads, waterbodies, and other utilities to achieve safe and efficient construction.

A Project overview map is included as Exhibit B.1. The location of the Project Corridor and Route is depicted on the aerial maps in Exhibits B.2 – B.4 and has also been filed in electronic shapefile format. A black and white map suitable for publication is provided as Exhibit B.5.

2.18 DESCRIPTION OF ROW PREPARATION AND CONSTRUCTION AND RECLAMATION PROCEDURES

Pipeline construction occurs in a linear fashion and, at any one time during the Project, any of the following activities may occur. The typical sequence of construction activities for the Project is as follows:

- Staking the workspace boundaries and utilities;
- Clearing of construction area;
- Installing temporary erosion and sediment controls;
- Grading and stump removal, if necessary;
- Segregation of topsoil, where necessary;
- Pipe delivery, bending, and welding;
- Trenching;
- Pipe installation;
- Backfilling excavations;

- Cleanup and final grading;
- Soil compaction treatment, where necessary;
- Stone removal, where necessary;
- Final restoration; and
- Upon final stabilization, removal of temporary erosion and sediment controls.

Rough and final grading includes restoring disturbed areas as near as practicable to pre-construction conditions, returning the topsoil where topsoil has been stripped, preparing a seedbed (where applicable) for permanent seeding, installing, or repairing temporary erosion and sediment control measures, repairing/replacing fences, and installing permanent erosion and sediment controls. Pre-existing landowner soil conservation improvements and structures disturbed by pipeline construction will be restored to the approximate pre-construction line and grade.

ONEOK has developed a Revegetation Plan for the Project to provide procedures to be followed during the revegetation of areas disturbed as a result of construction (see Section 9 for more information). In areas of cultivated cropland, the land will be returned to its original land use as soon as practicable following construction. ONEOK initiated baseline soils and topsoil depth surveys in Fall 2019 to support construction design and restoration and revegetation efforts. ONEOK plans to complete these surveys prior to construction in spring 2020, pending favorable weather conditions. Additionally, ONEOK will comply with applicable permit conditions and landowner agreements.

2.19 LANDOWNER NOTIFICATION, EASEMENT ACQUISITION, AND COMPENSATION

Prior to conducting field surveys, ONEOK reviewed courthouse records for the purpose of identifying current landowners along the route. ONEOK contacted landowners to introduce the Project and to obtain permission to conduct surveys.

ONEOK is in the process of negotiating easement agreements with landowners to give the company the right to construct, operate, and maintain the pipeline along a specified portion or corridor of each landowner's property in return for monetary compensation. ONEOK will obtain a permanent pipeline easement with an additional temporary easement during construction. When applicable, ONEOK will offer additional compensation for damages resulting from pipeline construction, such as the loss of crops.

The refinement of the route includes adjustments made per landowner requests. ONEOK, at all times, negotiates in good faith and necessary easement conditions and restrictions are presented and discussed.

3.0 SCHEDULE

3.1 OBTAINING CERTIFICATE OF CORRIDOR COMPATIBILITY

ONEOK seeks a Certificate of Corridor Compatibility by or before March 1, 2020.

3.2 OBTAINING ROUTE PERMIT

ONEOK seeks a Route Permit by or before March 1, 2020.

3.3 COMPLETING ROW ACQUISITION

ONEOK anticipates completing ROW acquisition in February 2020.

3.4 STARTING CONSTRUCTION

ONEOK plans to begin construction on the Project upon receipt of regulatory approval and applicable permits in March 2020.

3.5 COMPLETING CONSTRUCTION

Completion of construction is anticipated to occur in the fourth quarter of 2020.

3.6 TESTING OPERATIONS

Testing of the pipeline and facilities is expected to be conducted in the fourth quarter of 2020.

3.7 COMMENCING OPERATIONS

The in-service date for the Project is anticipated to be in the fourth quarter of 2020.

4.0 ALTERNATIVES

4.1 ALTERNATIVES TO THE PROPOSED FACILITY

Construction of the proposed Project will provide firm, reliable service for an initial anticipated throughput of 30,000 bpd of NGL take-away capacity from the HESS Tioga, XTO Nesson, Flatiron Springbrook Plants to an interconnect with ONEOK's Stateline to Riverview NGL pipeline. The products will be delivered to the Mid-Continent and Gulf Coast for additional processing. ONEOK identified and evaluated several Project alternatives; however, none of these alternatives effectively satisfied the Project objective. These alternatives included:

- No Action Alternative;
- Trucking Transportation Alternative; and
- Rail Transportation Alternative.

4.1.1 No Action Alternative

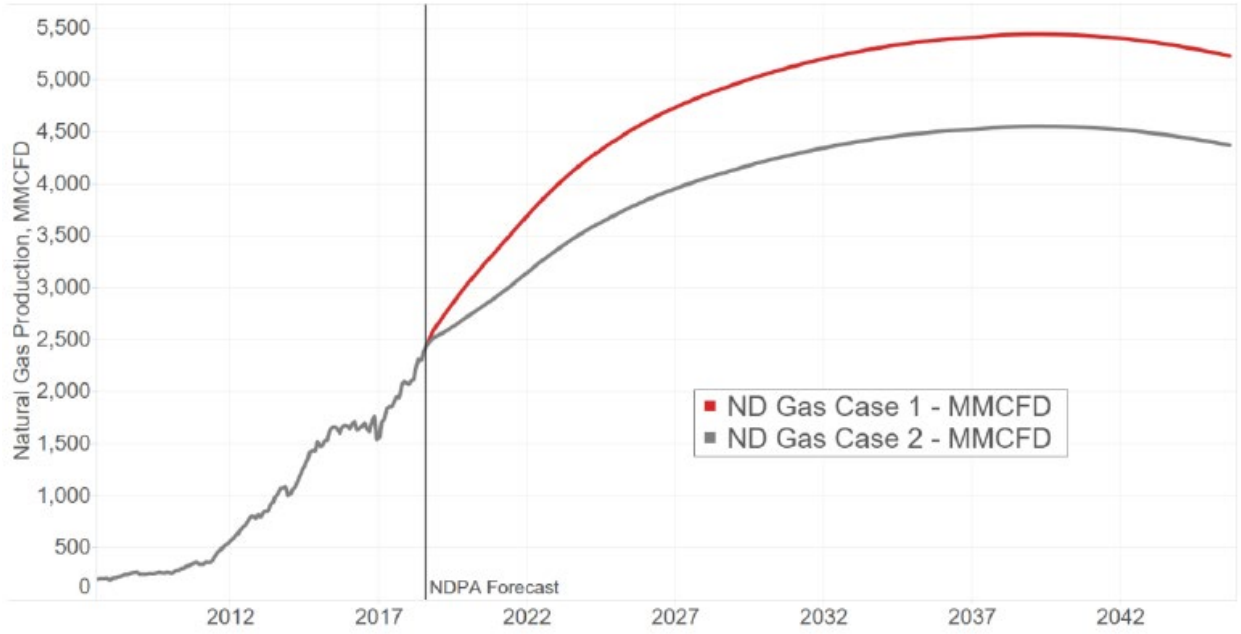
The primary objective of the Project is to provide take-away capacity for the NGLs produced at the HESS Tioga, XTO Nesson, and Flatiron Springbrook processing plants. Under the No Action alternative, the Project would not be constructed, and the plants could not effectively process and transport gas produced in the region.

Within the region, NGL production from the Williston Basin has increased from 250 MMcf/d in 2011 to almost 2,500 MMcf/d presently and is projected by the North Dakota Industrial Commission (NDIC) to continue to increase through 2040 (see Figure 4.1.1-1). Thus, development of solutions for gas gathering, processing, and take-away infrastructure are needed. Historically, gathering, processing, and pipeline constraints have held back production growth in the Williston Basin region.

The state of North Dakota set a target of 74 percent gas capture in 2014 with an increased target every year since then. The next current gas capture target rate is 91 percent capture by Quarter 4 2020. The natural gas gross capture rate for Bakken production was 84 percent in June 2018. Flaring percentages from 2015 to 2018 are presented in Figure 4.1.1-2. In order for the industry to continue to meet or exceed future gas capture targets, additional investments in gas gathering, processing, and transmission will be required in the short and long term.

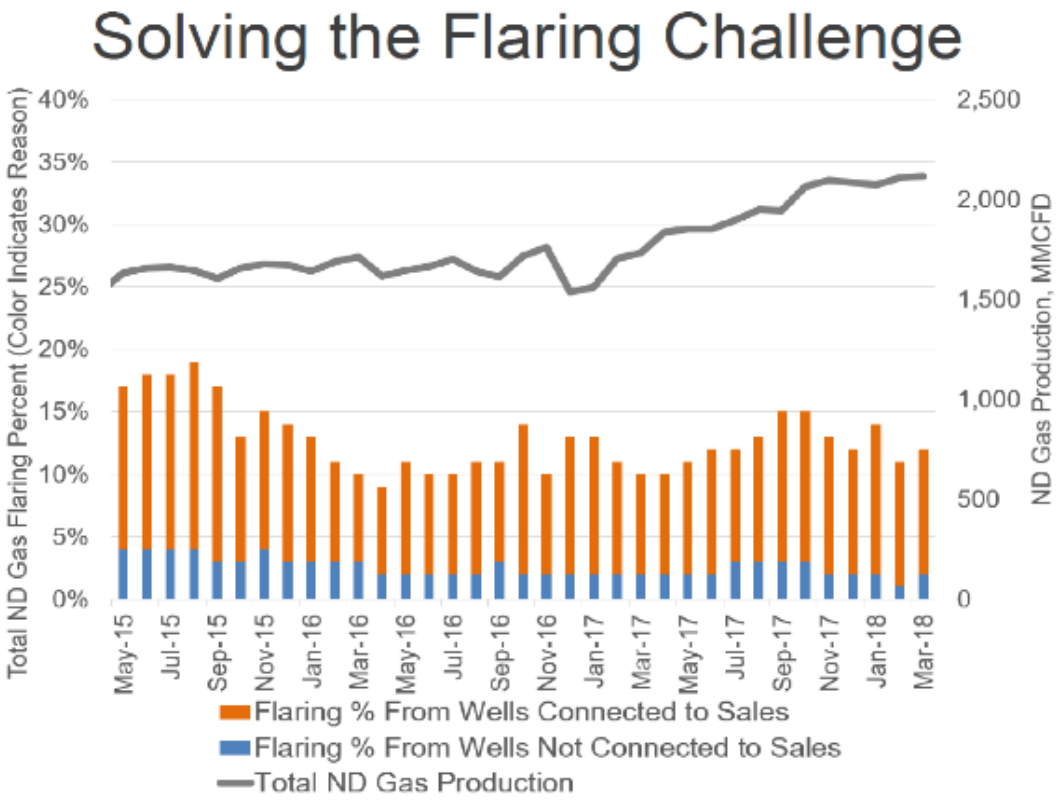
A No Action Alternative will leave the region constrained by limited transport capacity for safe and reliable transmission of NGL products to markets. The No Action Alternative does not meet the commercial needs of ONEOK and does not serve the industry and public at-large. For these reasons, ONEOK rejected the No Action Alternative.

Figure 4.1.1-1 North Dakota NGL Production Forecast



Source: North Dakota Industrial Commission (NDIC), 2018

Figure 4.1.1-2 North Dakota Flaring Percentages



Source: Kringstad, 2018

4.1.2 Trucking Transportation Alternative

A Trucking Transportation Alternative was reviewed and rejected due to the volumes of NGLs that will be produced from the HESS Tioga, XTO Nesson, and Flatiron Springbrook plants. The anticipated daily capacity for the proposed Project will be equal to an estimated 30,000 barrels or 1,260,000 gallons of NGLs. The average load for an NGL truck is approximately 10,000 gallons per truck. Thus, it would require 126 trucks per day to be loaded at the HESS Tioga, XTO Nesson, and Flatiron Springbrook plants, an average of 5.25 trucks every hour for 24 hours a day. Similarly, it would require these 126 trucks per day to be unloaded (i.e., transloaded) at a railcar facility, fractionation facility for further processing, or another pipeline terminal every day.

This level of truck activity is not logistically feasible, as it will cause significant amounts of heavy vehicle traffic for the area residents, as well additional wear and tear on infrastructure. Further, any disruption in the trucking capacity due to seasonal load restrictions on roads, inclement weather, or road repairs would result in a plant shutdown and flaring of gas production. The Trucking Transportation Alternative is additionally constrained by the road network in the rural area of the Project. For these reasons, ONEOK rejected the Trucking Transportation Alternative.

4.1.3 Rail Transportation Alternative

A Rail Transportation Alternative would require the design and construction of rail car loading and offloading facilities, lateral service lines, and ancillary facilities necessary to support the requisite volumes of NGLs, requiring land acquisition and permanent conversion of agricultural land to industrial. Use of rail would require a completely different project design than that currently proposed for the Project.

Based on the projected initial capacity of the Project, approximately 42 rail cars carrying 30,000 gallons of NGL would need to be loaded and transported via rail on a daily basis under the rail transportation alternative. While rail tanker cars are a vital part of the short-haul distribution network for NGLs, pipelines are a more reliable, safe, and economical alternative for the large volumes to be transported and long distances to be covered by the Project. As such, the Rail Transportation Alternative is not considered a viable alternative and was rejected.

4.2 ROUTE/SEGMENT ALTERNATIVES

ONEOK has conducted a thorough analysis of the Project Corridor. The purpose of this analysis was to confirm that the proposed Project Corridor is suitable and would cause minimal environmental impacts, thus conforming to the NDPSC siting criteria.

In conjunction with these efforts, ONEOK studied routing alternatives based upon criteria as discussed in Section 2.17. A variety of routes were explored but later rejected due to a host of feasibility constraints and in consultation with landowners. In support of ONEOK's route selection, the desktop studies of the Project Corridor were refined and augmented with field studies along the entire length of the Project Corridor where landowner permission for environmental surveys was obtained.

Environmental field surveys were conducted by trained natural and cultural resource specialists across a generally 300-foot-wide area typically centered on the proposed Route (see Section 5). Field crews performed these comprehensive natural and cultural resource surveys in summer and fall of 2019. The purpose of these field studies was two-fold:

(1) to definitively identify any potential resource issues (e.g., wetlands, waterbodies, protected species, critical habitats, or cultural resources) within the Project Corridor; and

(2) to provide the baseline field data necessary to prescribe alternative routing or mitigation as necessary to minimize environmental impacts.

ONEOK developed its Route based on desktop and field studies as well as input from regulatory agencies (see Section 6). The Route begins on the eastern end in Township 157N, Range 95W, Section 23 at the HESS Tioga Natural Gas Processing Plant. The Route generally moves to the west terminating in Township 155N, Range 103W, Section 21 at a planned interconnection with the Stateline to Riverview NGL pipeline. ONEOK has chosen this Project alignment to meet landowner requests and to minimize impacts on environmental features. The Route meets the Project's objectives while conforming to the NDPSC's transmission route siting requirements. Additionally, in selection of the Route, ONEOK co-located the majority of the Route (approximately 58 percent) with existing utilities or other linear infrastructure (roads, railroads, etc.).

The results of environmental field surveys are discussed in the following sections and the full Natural Resources Survey Report is provided as Exhibit D. The Cultural Resources Survey Report is privileged and not included in this application. Refer to Sections 5.1 and 6.8 for a summary of the cultural resource survey, results, and consultation with the North Dakota State Historic Preservation Office (SHPO).

5.0 ENVIRONMENTAL STUDIES

ONEOK defined its study area as a 1-mile-wide corridor generally centered on the pipeline route and conducted an initial desktop analysis for cultural resources, wetlands and waterbodies, and other sensitive environmental resources. The assessment was conducted utilizing GIS mapping, agency database review, peer-reviewed articles, and internet research. Following the desktop analysis, the appropriate agencies were consulted for cultural and biological resources (see Section 6).

ONEOK contracted specialized consultants to perform cultural, wetland and waterbody, habitat, and protected species surveys for the Project. Additional surveys, including a tree and shrub inventory and noxious/invasive weed survey, were also initiated in fall 2019 and will be supplemented at the pre-construction phase, as needed. Field studies for the Project focused on a generally 300-foot-wide environmental survey corridor, typically centered on the Route. The survey corridor was widened in select locations to allow for flexibility in pipeline routing or in areas where ETWS is anticipated to be required. At the time of this filing, 100 percent[2] of the Project Corridor (as shown on the maps in Exhibits B.2 – B.4) have been surveyed for natural resources and cultural resources.

The Project Corridor is the corridor ONEOK is requesting be certificated by the NDPSC. In most areas, the Project Corridor is identical to the environmental survey corridor; however, some environmental field surveys were performed on areas outside of the Project Corridor. The Natural Resource Survey Report provided as Exhibit D includes details on the full field surveys; however, analysis of environmental resources and impacts in this application is limited to the area that was surveyed within the Project Corridor.

5.1 CULTURAL RESOURCE INVENTORY

According to the North Dakota Energy Conversion and Transmission Facility Siting Act, among the "factors to be considered [by the Commission] in evaluating applications and designation of sites, corridors, and routes," is the effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites. The repository in North Dakota for this information is the North Dakota SHPO, which acts as a technical resource during identification and evaluation of areas, sites, and structures and during reviews of Project effects. The NDPSC tasks the Applicant to coordinate identification and effects discussions with the North Dakota SHPO.

ONEOK commissioned Beaver Creek Archaeology, Inc. (BCA) to conduct cultural resources surveys and research associated with the Project. Since June 2019, ONEOK has sponsored desktop and field reviews of a study area that completely encompass the Project Corridor and Route. The review tasks included canvassing the North Dakota SHPO previous survey and archaeological and historic structure files and characterizing them in a Class I cultural resource report; documenting archaeological sites and historic structure field inventory of an area that includes the Project Corridor and Route in a Class III cultural resource report; and corresponding with SHPO about the resources identified and projected avoidance measures, where applicable. The standards of the National Register of Historic Places (NRHP) are used in North Dakota to differentiate those sites for which impacts are considered during Project reviews (i.e., eligible, not evaluated for inclusion on the NRHP) from those for which impacts are not considered.

[2] Survey permission was not granted at railroad crossing easements prior to field surveys being initiated. The two crossings of railroad lines will be done via HDD avoiding any surface impacts.

On behalf of ONEOK, BCA conducted a Class I cultural resources literature review of records from the North Dakota SHPO to identify previously completed cultural resource investigations and recorded cultural resources within the Corridor. The Class I literature review identified 119 previously recorded cultural resources within 0.5 mile of the Project Corridor. Of these, 64 are recommended not eligible for inclusion in the NRHP, 4 are eligible for inclusion in the NRHP, and 51 remain unevaluated regarding their NRHP eligibility. A total of 19 previously recorded cultural resources were identified within the Project Corridor.

Fieldwork associated with the Class III Cultural Resource Inventory of the Project was completed in summer and fall 2019. During the inventory, 8 new cultural resources were recorded, and 19 previously recorded sites were investigated within the proposed Corridor. Of the 27 cultural resources examined, 9 are crossed by the proposed Route. Of these 9 sites, 8 sites are recommended not eligible for inclusion in the NRHP and require no further consideration. One unevaluated site lead was not re-located and therefore requires no further consideration.

As designed, the Route does not directly cross any cultural sites; however, 10 sites located within the Corridor could not be avoided by the standard 100-foot buffer SHPO applies to sites due to potential constructability issues associated with landform and/or landowner restrictions. ONEOK will consult with the North Dakota SHPO to determine if adjustments to the recommended avoidance buffer may be implemented. If construction occurs within the avoidance buffers, North Dakota SHPO may require fencing and/or onsite monitoring by a qualified archaeologist.

ONEOK understands that details and locations of cultural resources are considered as privileged; as such, these features are not displayed on the enclosed maps with this application and the Class III survey report is not included with this filing. ONEOK is finalizing its Class III cultural resource survey report and plans to file this report with SHPO in December 2019.

ONEOK will work with the North Dakota SHPO to clarify NRHP recommendations and finalize avoidance and mitigation measures, if needed. ONEOK will file copies of future correspondence with the North Dakota SHPO to the NDPSC to document that the Project will not adversely affect cultural resources.

5.2 WETLAND AND WATERBODY INVENTORY

Wetland and waterbody surveys were conducted within the Project Corridor in the summer and fall of 2019. Wetland delineations were conducted pursuant to the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (U.S. Army Corps of Engineers [USACE], 1987), the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (USACE, 2010), the Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al., 1979), and the National Wetland Plant List (Lichvar et al., 2016). Waterbody survey methods followed the protocols set forth in the Regulatory Guidance Letter No. 05-05, Ordinary High-Water Mark Identification (USACE, 2005) and The Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al., 1979).

On behalf of ONEOK, Midwest Natural Resources, Inc. (MNR) conducted wetland and waterbody delineations for the Project. Surveys were completed in the summer and fall of 2019. The results of this survey can be found in the Natural Resource Survey Report provided in Exhibit D. Mapping of wetlands and waterbodies within the surveyed corridor are included in the Selection Criteria maps in Exhibit B.4. A summary of delineated features and anticipated impacts is provided in Table 5.2-1 below.

Table 5.2-1 Summary of Delineated Wetlands and Waterbodies						
Component	**Palustrine Emergent Wetland**	**Palustrine Open Water**	**Palustrine Scrub Shrub**	**Waterbody (perennial)**	**Waterbody (intermittent)**	**Waterbody (ephemeral)**
Number of Delineated Features in Corridor	53	4	1	6	1	6
Number of features crossed by Route Centerline	40	4	0	6	1	6
Temporary Impacts (acres)[1]	7.5	0.61	0.01	0.25	<0.01	0.02
Permanent Impacts (acres)[2]	0	0	0	0	0	0

[1] ONEOK is currently finalizing crossing methods for each feature. The acreage presented in this table assumes a worst-case scenario where all features will be open cut.

[2] All wetlands and waterbodies will be restored to pre-construction conditions following construction activities. Please see Section 9 and Exhibit H for more information on construction and restoration plans.

ONEOK will implement appropriate minimization and mitigation measures at these features, which may include avoidance (e.g., workspace modification or HDD) or use of construction mats and other best management practices (BMPs) to minimize impacts when working in or around wetlands. Refer to the Project maps in Exhibit B.4 for the location of each feature and Sections 7.3.2 and 9 for information regarding additional minimization measures.

5.3 WILDLIFE INVENTORY

Wildlife surveys were conducted within the Project Corridor by MNR in conjunction with the wetland and waterbody delineations in summer and fall 2019. Details regarding the wildlife observed during field surveys are included in the Natural Resources Survey Report included in Exhibit D.

In order to minimize potential impacts on wildlife and protected species resulting from pipeline construction activities as well as operation and maintenance activities, ONEOK has developed general conservation measures to be employed on the Project. ONEOK would provide pre-construction environmental training to all ONEOK and contractor personnel whose activities may impact the environment during pipeline and facility construction. As part of this training, ONEOK would provide information on proper identification of whooping cranes and red knots and on correct procedures regarding a sighting. See Section 9.1 for more information.

ONEOK would also retain environmental inspectors (EIs) to verify that environmental protection measures, permit conditions, and other specifications are implemented appropriately by the contractor during Project construction, including conservation measures associated with threatened and endangered species. The EIs would have stop-work authority to enforce all provisions of federal, state, and local regulations and the provisions and requirements of any other applicable permits. Additionally, ONEOK would adhere to post-construction restoration and revegetation procedures prescribed by applicable permit conditions to minimize erosion during operation and maintenance of the pipeline. ONEOK would comply with applicable federal, state, and local rules and regulations, and take appropriate precautions to protect against environmental degradation.

5.3.1 Federally Protected Species Review

A review of the U.S. Fish and Wildlife Service (USFWS) Endangered Species Information, Planning, and Conservation System (IPaC) website (USFWS, 2019a) was conducted to determine the potential for listed species and critical habitat that may be present in Williams County, North Dakota. Field surveys for listed species and a general habitat assessment of the Project Corridor were conducted by MNR in the summer and fall of 2019. Details regarding the wildlife observed during field surveys are provided in the Natural Resources Survey Report included in Exhibit D.

Table 5.3-1 provides a summary of protected species in Williams County. A brief description of each species and their preferred habitat is also provided below. Project-based conservation measures to minimize potential environmental effects to listed species are included in Section 9.5. A summary of ONEOK's consultations with USFWS with respect to federally listed threatened and endangered species is included in Section 6.1 and in Exhibit E.

Table 5.3-1
Federally Listed Species in Williams County, ND

Scientific Name	Common Name	Status
Myotis septentrionalis	Northern long-eared bat	Threatened
Sternula antillarum	Interior least tern	Endangered
Charadrius melodus	Piping plover (Northern Great Plains population)	Threatened
Calidris canutus rufa	Rufa red knot	Threatened
Grus americana	Whooping crane	Endangered
Scaphirhynchus albus	Pallid sturgeon	Endangered

5.3.1.1 Northern Long-eared Bat

The northern long-eared bat is a medium-sized bat of the Vespertilionidae family. The species overwinters in small crevices or cracks in hibernacula, such as caves and mines. In summer, the species roosts either singly or in colonies under loose bark or in crevices and hollows in both live trees and snags. A habitat generalist, roost tree selection appears also to be opportunistic and the species will use a variety of tree sizes and species; however, they appear to prefer trees with a diameter at breast height of at least 3 inches. Less frequently, northern long-eared bats have been observed roosting in man-made structures such as sheds or barns. Although historically less common in the western portion of its range, northern long-eared bats occur throughout North Dakota (USFWS, 2015).

The primary threat to the northern long-eared bat is the spread of white nose syndrome; in the absence of this disease, it is unlikely the species would be suffering the dramatic population declines seen across its range (USFWS, 2015).

The northern long-eared bat was listed as a federally threatened species in May 2015, with an interim 4(d) rule; the final 4(d) rule was effective as of February 16, 2016. A 4(d) rule may only be applied to species listed as threatened and is a tool periodically utilized by the USFWS to allow for flexibility in Endangered Species Act implementation. The rule allows the USFWS to tailor take restrictions to those that make the most sense for protecting and managing at-risk species and directs the USFWS to issue regulations considered "necessary and advisable to provide for the conservation of threatened species" (USFWS, 2016a).

The northern long-eared bat is rare in North Dakota and has only been identified in a few locations in the state. While it is possible that individual bats may be roosting and foraging in the Project area and may occur (temporarily) during the migratory period (K. Shelley, True North Environmental Consultancy, pers. Comm. 2019), the species is not expected to occupy the Project area during the reproductive cycle. It has been documented in forested habitat in the Turtle Mountains in Bottineau and Rolette Counties, North Dakota and in the riparian corridors of the Little Missouri and Missouri rivers in southwestern North Dakota (North Dakota Game and Fish Department, 2019).

Because the species will be hibernating and not roosting in trees in the construction workspace between October 1 and April 1, clearing prior to April 1 will not result in impacts on northern long-eared bat individuals. Some tree clearing will be necessary for this Project and may occur after April 1, 2020; however, per the USFWS Hibernacula and Maternity Roost Tree Location Information, there are no known northern long-eared bat hibernacula or maternity roosts in North Dakota (NDGFD, 2019, USFWS, 2019b). As such, incidental take from lawful activities is not prohibited, and clearing can be conducted at any time of year, per the exemptions of the 4(d) rule for non-federal projects (USFWS, 2016b).

5.3.1.2 Interior Least Tern

The smallest of the American terns, the interior population of least terns breed and raise young along sandy, open beaches and islands along major river systems. In North Dakota, the interior least tern utilizes sparsely vegetated sandbars on the Missouri River for nesting, foraging, and raising young. The species is found mainly on the Missouri River from Garrison Dam south to Lake Oahe, and on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea. Approximately 100 pairs breed in North Dakota during the summer before flying to coastal areas of Central and South America and the Caribbean Islands (USFWS, 2016c).

On October 24, 2019, the USFWS published a proposed rule in the Federal Register announcing their intent to remove the interior least tern from the Federal List of Endangered and Threatened Wildlife (USFWS, 2019c). The USFWS is seeking information, data, and comments from the public regarding this proposed rule and the associated draft post-delisting monitoring plan. The USFWS will make a final determination on the proposal within 1 year of the publication of the proposed rule.

Migrating and foraging least terns could potentially utilize wetlands near the Project Corridor; however, suitable nesting habitat for the least tern is not present in the Project Corridor. As such, Project activities are not expected to have adverse impacts on least terns.

5.3.1.3 Piping Plover

Piping plovers are small shore birds that nest on sandbars in rivers and sandy beaches bordering lakes and reservoirs. The Great Plains population of piping plovers are annual migrants; the species overwinters on the Gulf coast and migrates to summer nesting areas in the central United States and southern Canada. The species arrives in North Dakota in mid-April and remains until late August. Piping plovers utilize wide, sparsely vegetated beaches and barren river sandbars, as well as the salt encrusted mud flats and/or gravelly salt flats and adjacent uplands 200 feet above the high water mark of alkali lakes and wetlands in the Great Plains for nesting, foraging, sheltering, brood-rearing, and dispersal (USFWS, 2016d; 2018c).

Critical habitat has been designated for the piping plover in Williams County; however, the Project Corridor does not intersect with designated critical habitat for the species. The nearest designated critical

habitat for the species is associated with the Missouri River/Lake Sakakawea reservoir, approximately 7 miles south of the Project area (USFWS, 2019d). The Project will have no impact on designated critical habitat.

Piping plovers are tracked by the Breeding Bird Survey; only 15 individuals were recorded between 1977 and 2017 (Pardieck et al., 2018). Data from the International Piping Plover Census conducted in 2011 identified 623 adult piping plovers and 255 breeding pairs in North Dakota; 4 individuals (2 breeding pairs) were identified in Williams County at two locations at Lake Sakakawea (Elliot-Smith et al., 2015). In addition, databases of sightings by private individuals (eBird, 2019; North Dakota Birding Society, 2019; ND-Birds, 2019) were also searched for plover occurrences in the Project Corridor. Piping plovers were identified in eBird in four locations in Williams County between 1992 and 2015. No piping plovers were reported in Williams County by members of the North Dakota Birding Society or users of the ND-Birds listserv.

Construction activities associated with the Project have the potential to impact individual piping plovers if the species is nesting in the area. Specifically, noise or presence of humans and equipment involved in construction activities may impact foraging behaviors and could cause nesting birds to abandon nests and chicks.

Wetland and waterbody surveys conducted in 2019 identified the presence of one wetland with *potentially* suitable habitat for piping plover within the proposed Project Corridor near MP 16.8 (see Exhibit D); however, nesting habitat is not available every year at interior wetlands due to high inter-annual variability in water levels and/or vegetation growth on beaches. ONEOK is planning to cross this wetland area via the HDD method which will avoid surface impacts to the feature.

If deemed necessary, surveys will be conducted at this wetland after April 1, 2020 to determine whether suitable nesting habitat is present prior to construction. If suitable habitat is identified at this location, a qualified wildlife biologist would conduct daily surveys of the identified areas for the duration of the drilling activities to monitor for the presence of piping plovers. The survey would be conducted during daylight hours (i.e., between 30 minutes prior to sunrise and 30 minutes after sunset). The USFWS recommends a 0.5 mile no entry buffer around wetlands where nesting plovers are documented (see Section 6.1.1). If nesting plovers are present at this wetland, ONEOK would stop work and contact the USFWS for technical assistance to determine the appropriate actions that must be taken to avoid adverse impacts to this species.

With these conservation measures in place, Project activities are not expected to have adverse impacts on piping plovers.

5.3.1.4 Rufa Red Knot

The rufa red knot is a large sandpiper noted for its long-distance migration between summer breeding grounds in the Arctic and wintering areas at high latitudes in the Southern Hemisphere. Some red knots wintering in the northwestern Gulf of Mexico migrate through interior North America during both spring and fall and use stopover sites in the Northern Great Plains. The species relies heavily on exposed substrate at wetland edges for stopover habitat; the suitability of a wetland for red knots depends on water levels and may vary annually (Skagen, 2006; USFWS, 2014a).

The red knot is not a resident of North Dakota; the species is an infrequent migrant during annual migration (May 15 to June 15). The number of migrating shorebirds documented in the interior can vary

dramatically due to high inter-annual availability in water levels and habitat quality at mid-continental wetlands.

The general Project-based conservation measures discussed in Section 5.3 would minimize potential impacts on rufa red knot individuals and habitat. In addition to these general Project-based conservation measures, the following species-specific conservation measures would be implemented, as appropriate. If a rufa red knot is sighted by ONEOK's contractor or EI within 1.0 mile of the construction workspace during construction, or if the USFWS notifies ONEOK of a rufa red knot sighting within 1.0 mile of the construction workspace, construction activities would cease until the individual(s) have left the area. Any sightings by ONEOK's contractor or EI within the construction workspace would be immediately reported to the USFWS and the North Dakota Game and Fish Department (NDGFD). To avoid long-term impacts on the rufa red knot's migratory stopover habitat, wetlands crossed by the Project would be restored to pre-construction conditions. With these conservation measures in place, adverse impacts on rufa red knots are not expected.

5.3.1.5 Whooping Crane

Whooping cranes embark on a bi-annual migration from summer nesting and breeding grounds in Wood Buffalo National Park in northern Alberta to the barrier islands and coastal marshes of the Aransas National Wildlife Refuge (NWR) on the Gulf Coast of Texas (USFWS, 2014b). Twice yearly in the spring and fall, the cranes migrate along the Central Flyway, a migratory corridor approximately 220 miles wide and 2,400 miles in length that includes eastern Montana and portions of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and eastern Texas. During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding in harvested grain fields (USFWS, 2014b).

In North Dakota, the whooping crane is not present year-round; they are only present during the bi-annual migration between winter grounds and summer nesting sites (i.e., late April to June 15 and September 15 to November 15). As such, the species cannot be confirmed as present in or absent from the Project Corridor. However, the Project Corridor falls within the 95 percent migration corridor (i.e., the 220-mile band where 95 percent of all whooping crane sightings have occurred [USFWS, 2012]), and suitable stopover habitat (i.e., open landscape wetlands and croplands) is present in the vicinity of the Project. Construction activities have the potential to impact individual whooping cranes. Specifically, if construction takes place during the species' migration period, human presence or noise from construction activities and equipment may cause migrating whooping cranes to startle and flush from wetlands or fields and/or to divert from the area.

The general Project-based conservation measures discussed in Section 5.3 would minimize potential impacts on whooping crane individuals and habitat. In addition to these general Project-based conservation measures, the following species-specific conservation measures would be implemented, as appropriate. If a whooping crane is sighted by ONEOK's contractor or EI within 1.0 mile of the construction workspace during construction or if the USFWS notifies ONEOK of a whooping crane sighting within 1.0 mile of the construction workspace, construction activities would cease until the individual(s) have left the area. Any whooping crane sightings by ONEOK's contractor or EI would be immediately reported to the USFWS and NDGFD. To avoid long-term impacts on whooping crane migratory stopover habitat, wetlands crossed by the Project would be restored to pre-construction conditions. With these conservation measures in place, adverse impacts on whooping cranes are not expected.

5.3.1.6 Pallid Sturgeon

The pallid sturgeon inhabits the Missouri and Mississippi Rivers from Montana to Louisiana. Wild pallid sturgeon have been noted in the Missouri River downstream from the Fort Peck Dam in Montana to the headwaters of Lake Sakakawea, North Dakota, and downstream from Garrison Dam, North Dakota to the headwaters of Lake Oahe, South Dakota (USFWS, 2014c). The pallid sturgeon's preferred habitat includes the benthic environment associated with swift waters of large, turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats, and requiring extensive micro habitat diversity. The species is usually found in main-channel habitat with a sand or gravel bottom (U.S. Fish and Wildlife Service [USFWS], 1990).

The Project Corridor does not cross the Missouri or Yellowstone Rivers. As such, impacts on pallid sturgeon are not anticipated.

5.3.2 Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA), which prohibits the taking of any migratory bird, or a part, nest, or eggs of any such bird, except under the terms of a valid permit issued pursuant to federal regulations. On December 22, 2017, the U.S. Department of the Interior's Office of the Solicitor issued a memorandum stating that the MBTA does not prohibit incidental take of migratory birds, and the "prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing..." (U.S. Department of the Interior, 2017). As such, activities which result in unintentional take are not in violation of the MBTA.

Surveys of the Project Corridor were conducted in the summer and fall of 2019, which confirmed that suitable nesting habitat for migratory birds is present within the Project Corridor or within line-of-site of the Project Corridor. ONEOK has developed a Migratory Bird Plan to outline measures it will implement to avoid, minimize, and reduce possible impacts on migratory birds (see Section 9 and Exhibit H for more information). Conservation measures will be developed in consideration of statutory authority, regulatory guidance, and through experience with state and federal agencies on past projects in the region.

Prior to initiating pre-clearing activities and construction, ONEOK will also conduct environmental training for company and contractor supervisory personnel. Where constructing the Project outside of the peak nesting season for migratory birds is not feasible, ONEOK plans to conduct ground surveys to identify migratory bird nests prior to construction activities. Varying activity restriction buffers around active nests will be utilized as conservation measures for the plan.

A summary of ONEOK's consultation with USFWS with respect to MBTA is included in Section 6.1 and in Exhibit E.

5.3.3 Bald and Golden Eagle Protection Act

Bald and golden eagles are protected by both the MBTA and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits the take of a bald or golden eagle adults, juveniles, or chicks including their parts, nests, or eggs without a permit. Take is defined by the BGEPA as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites.

No eagle nests were identified during the natural resource surveys conducted in 2019 (see Exhibit D).One eagle nest was identified in the study area by the agencies ONEOK has consulted with; however, it was noted that this nest has been destroyed as of 2014 (see Section 6.6).

ONEOK plans to conduct ground surveys for eagle nests prior to construction in conjunction with pre-construction migratory bird surveys (see Section 9). If an eagle nest is identified prior to construction, ONEOK would conduct additional surveys to determine if the nest is active, employing the USFWS protocol for determining occupancy. If any nests are active, ONEOK would employ the USFWS recommended measures to prevent impacts to nesting eagles. In open areas where there is little or no forested or topographical buffers, the USFWS recommends maintaining a 660-foot buffer between Project activities and the eagle nest. A smaller buffer may be appropriate in areas where a landscape buffer or natural areas shield the nest from Project activities. ONEOK will work with the USFWS to determine the appropriate buffer distance buffer and/or timing restriction to prevent disruption to nesting eagles.

A summary of ONEOK's consultation with USFWS with respect to the BGEPA is included in Section 6.1 and in Exhibit E.

5.4 TREE/SAPLING/SHRUB INVENTORY

During the natural resource surveys described above, crews noted general areas where trees and shrubs are present and also conducted a formal tree and shrub inventory based on guidance from recent NDPSC-issued Orders. The tree and shrub inventory results are being finalized in a separate report and will record the pre-construction status of these resources, which will form the baseline for restoration and mitigation reconciliation.

ONEOK anticipates authorization of the Project will require all trees and shrubs that are removed to be replaced at a 2:1 ratio. ONEOK will submit its tree and shrub inventory and proposed mitigation plan upon completion.

5.5 NOXIOUS WEEDS INVENTORY

The Federal Noxious Weed Act of 1974 established a federal program to control the spread of noxious weeds. The U.S. Secretary of Agriculture was given the authority to declare plants "Noxious Weeds" and limit the interstate spread of such plants without a permit. North Dakota law (NDCC Section 4.1-47-02) requires every person to do all things necessary and proper to control the spread of noxious weeds and makes it illegal for any person to distribute, sell, or offer for sale within the state a noxious weed.

The North Dakota Department of Agriculture (NDDA) lists 13 species of noxious weeds and invasive species (North Dakota Department of Agriculture, 2019). In addition to the NDDA noxious weed and invasive species list, localized weed boards within each county manage noxious weeds and invasive species and may develop a list of additional weeds for enforcement within their jurisdiction. Williams County has designated one additional species as a noxious weed (refer to Table 5.5-1).

Table 5.5-1 State and County Listed Noxious Weeds		
Common and Scientific Name	**State of North Dakota**	**Williams County**
Absinth wormwood (*Artemisia absinthium*)	X	X
Canada thistle (*Cirsium arvense*)	X	X
Dalmatian toadflax (*Linaria dalmatica*)	X	X
Diffuse knapweed (*Centaurea diffusa*)	X	X
Houndstongue (*Cynoglossum officinale L.)*	X	X
Leafy spurge (*Euphorbia esula*)	X	X
Musk thistle (*Carduus nutans*)	X	X
Narrowleaf hawksbeard (*Crepis tectorum*)		X
Palmer amaranth (*Amaranthus palmeri*)	X	X
Purple loosestrife (*Lythrum salicaria*)	X	X
Russian knapweed (*Acroptilon repens*)	X	X
Saltcedar (*Tamarix chinensis*)	X	X
Spotted knapweed (*Centaurea maculosa*)	X	X
Yellow toadflax (*Linaria vulgaris*)	X	X

Field surveys conducted in the fall of 2019 documented 541 areas of noxious weeds within the planned Project Corridor with a total area of approximately 209.7 acres, consisting primarily of Canada thistle and leafy spurge, with some occurrences of absinth wormwood. The Route crosses 268 areas of noxious weeds totaling approximately 51.8 acres. A detailed description of these areas and maps displaying their locations are included in the Natural Resources Survey Report included in Exhibit D.

It is ONEOK's intent to minimize the potential introduction and/or spread of invasive species and noxious weeds along its construction ROW during pipeline construction activities and the revegetation timeframe. However, it is not practicable for ONEOK to eradicate undesirable species that are adjacent to its ROW. ONEOK will minimize the potential for the establishment of undesirable species by minimizing the time duration between final grading and permanent seeding.

ONEOK will also require that construction equipment be cleaned before arriving on construction workspaces to prevent the introduction of undesirable species to the Project area, as described in the Project's Weed Management Plan, which addresses weed control (see Section 9 and Exhibit H). ONEOK has been in consultation with the Williams County Weed Board about the Project (see Section 6.17 for more information).

6.0 AGENCY NOTIFICATIONS AND PERMITTING

In October 2019, ONEOK initiated consultation and coordination with federal, state, and local agencies requesting review of a 1-mile study area surrounding the Project.[3] Letters and/or emails were submitted with accompanying maps of the Project. Shapefiles of the Project centerline and study area were provided via email. Since the consultation requests were submitted, ONEOK has incorporated some minor route deviations; however, all of these changes were well within the 1-mile study area provided.

A summary of these consultations is provided in Table 6-1 and further details on each consultation are included in the following sections. A table summarizing the current state of environmental permits required for the Project is included as Exhibit G.

Table 6-1
Summary of Agency Notifications[1]

Agency	Applicable Resource/Program	Date Submitted	Response Received
Federal			
USFWS North Dakota Ecological Services Office (ESO)	Federally listed threatened and endangered species, USFWS-managed lands, MBTA consultation, and BGEPA consultation	10/10/2019	11/15/2019
USFWS Crosby Wetland Management District (WMD)	USFWS-administered wetland and grassland easements and NWR system	10/10/2019	10/16/2019 11/4/2019
USACE, Regulatory Office	Crossings of Section 408 Civil Works projects or other USACE-owned or managed lands; any special requirements, restrictions, or specifications regarding constructing pipelines across or under USACE-regulated features; and any permits issued through USACE that may be applicable to the Project to include anticipated permitting timeframes	10/10/2019	Pending
U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) – Williams County	Identification of impacts on NRCS-administered lands, easements, and programs	10/10/2019	11/7/2019
USDA Farm Services Agency (FSA) – Williams County	Identification of impacts on FSA-administered lands, easements, and programs	10/10/2019	Pending
U.S. Department of Defense (USDOD) – Cable Affairs	Identification of intercontinental ballistic missiles and launch facilities locations relative to the route	10/10/2019	10/10/2019
State			
NDGFD	State Conservation Priority Species, Game Refuges, Game Management Areas and Private Land Open to Sportsmen	10/10/2019	11/6/2019
NDGFD	Known locations of eagle nests	10/10/2019	10/21/2019
North Dakota Parks and Recreation Department (NDPRD)	North Dakota Natural Heritage Inventory system, State Parks, Recreation areas, Natural areas, and Land and Water Conservation Fund projects	10/10/2019	10/18/2019
North Dakota SHPO	NRHP, Cultural Resources Consultation	December 2019 (anticipated)	Pending

[3] Consultation letters and emails were submitted on behalf of ONEOK by environmental consultant (Merjent, Inc. or "Merjent"). Some follow-up agency discussions were between agency staff and Merjent.

Table 6-1 Summary of Agency Notifications[1]			
Agency	**Applicable Resource/Program**	**Date Submitted**	**Response Received**
North Dakota Geological Survey (NDGS)	Identification of impacts on NDGS-administered lands and programs	10/10/2019	10/16/2019
North Dakota Department of Health (NDDEQ)	Identification of impacts on NDDEQ-administered programs	10/10/2019	10/24/2019
North Dakota State Water Commission (NDSWC)	Identification of impacts on rural water supply systems and NDSWC-administered projects	10/10/2019	10/29/2019
North Dakota Department of Trust Lands (NDDTL) – School Trust	Identification of impacts on NDDTL-administered School Trust lands	10/10/2019	11/14/2019
NDDTL – Mineral Trust	Identification of impacts on NDDTL-administered Mineral Trust lands	10/10/2019	10/11/2019
County/Local			
Western Area Water Supply Authority (WAWSA)	Identification of impacts on rural water supply systems and WAWSA-administered projects	10/10/2019	11/6/2019
Williams County Board of Commissioners	Confirmation of any local ordinances or other resources under Williams County jurisdiction applicable to the Project; any permits issued through the Board of Commissioners office that may be applicable to the Project; and a summary of any applicable permit process and anticipated timeframes	10/10/2019	11/13/2019
Williams County Water Resource Board	Locations of any county-regulated drains, ditches, and/or other drainage features; relevant special requirements, restrictions, or specifications; relevant local ordinances and/or permits; and a summary of permit process and anticipated timeframes	10/10/2019	11/13/2019
Williams County Weed Control Board	Confirmation of current listing of noxious weeds; known locations of noxious and/or invasive weed species along the proposed route; and guidance and/or recommendations for weed control, pesticide use, and non-chemical treatment options	10/10/2019	10/10/2019
Buford Township Sauk Valley Township Trenton Township Tioga Township	Townships crossed by project with floodplain administration authority	10/11/2019 10/10/2019 10/11/2019 10/11/2019	Pending Pending Pending Pending
City of Tioga City of Springbrook	City boundaries are not crossed; but are located within the 1-mile study area	11/4/2019 11/4/2019	Pending Pending
[1] Full copies of agency consultations are included in Exhibit E.			

6.1 U.S. FISH AND WILDLIFE SERVICE

The USFWS administers several programs designed to identify and protect special status plant and animal species, critical habitats, and lands managed by the agency including the MBTA and the BGEPA. Additionally, the USFWS administers NWR and Waterfowl Production Areas (WPAs) as well as wetland and grassland easements throughout North Dakota. ONEOK provided the USFWS-ESO and Crosby WMD with Project notification on October 10, 2019, which included a description of the Project and an assessment of its impacts relative to the interests of the USFWS.

6.1.1 Federally Protected Species Review

In a November 15, 2019 response, the USFWS-ESO provided comment on federally protected species and confirmed the list ONEOK provided in its consultation request was accurate. USFWS-ESO provided recommended conservation measures for three species (whooping crane, northern long-eared bat, and piping plover); however, acknowledged that the Project may be exempt from take of northern long-eared bat due to a 4(d) rule which has been published for the species. As there are no known roosts or hibernacula in North Dakota, the 4(d) rule applies (USFWS, 2019b). As such, incidental take from lawful activities is not prohibited, and clearing can be conducted at any time of year, per the exemptions of the 4(d) rule for non-federal projects.

Results of our federally protected species review are discussed in greater detail in Section 5.3.1 and the Natural Resource Report is provided in Exhibit D. A copy of the response letter from the USFWS-ESO is included in Exhibit E. Species specific conservation measures ONEOK intends to employ for the Project are described in Section 9.5.

6.1.2 Migratory Bird Treaty Act

Migratory birds are federally protected by the MBTA, which prohibits the taking, killing, possession, and transportation of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. In North Dakota, both native prairie and non-native grasslands provide breeding, nesting, foraging, brood-rearing, and dispersal habitat for many species of migratory birds. As summarized in Section 9, ONEOK will implement a Migratory Bird Plan during construction to protect migratory birds and eagles/raptors.

6.1.3 Bald and Golden Eagle Protection Act

Bald and golden eagles are protected by both the MBTA and the BGEPA. The BGEPA prohibits the take of a bald or golden eagle adults, juveniles, or chicks including their parts, nests, or eggs without a permit. Take is defined by the BGEPA as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites.

As summarized in Section 9, ONEOK will implement a Migratory Bird Plan during construction to protect migratory bird and eagle/raptors (see Section 5.3.3 for further discussion). ONEOK did not identify any eagle nests during its natural resource surveys in 2019. See Section 6.6 for a discussion of ONEOK's consultation with NDGFD regarding eagle nests.

6.1.4 Habitat Avoidance, Restoration, and Mitigation

USFWS-ESO provided general comments and recommendations regarding avoiding and minimizing impacts to existing habitat in the Project area and also provided recommendations for restoration and revegetation. Please see Section 9 and Exhibit H for more information on ONEOK's construction and restoration plans for the Project.

6.1.5 Wetland and Grassland Easements

The USFWS Crosby WMD administers NWRs, WPAs, as well as wetland and grassland easements in the western portion of North Dakota. A desktop review of information available in the public domain, including U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps, USGS Protected Areas Database-US dataset, and the USFWS IPaC has been completed for the Project Corridor. Desktop analysis indicated two USFWS-managed parcels (wetland easements) are located within the Project Corridor, one of which is directly crossed by the Project Route between MPs 12.6 – 13.1. While wetland easements are assigned to an entire parcel of land, the USFWS' jurisdiction only apples to wetlands within that parcel.

ONEOK provided the USFWS Crosby WMD with Project notification on October 10, 2019 and requested confirmation on the location of USFWS-administered easements. In an October 16, 2019 response, USFWS confirmed that the Project crosses one wetland easement parcel located in the northwest ¼ of Section 4, Township 156 North, Range 96 West. The USFWS included a map in their response identifying several wetlands within the parcel that are in its jurisdiction and included one that is near the Project route near MP 12.6. USFWS recommended that wetlands on its parcel be avoided by bore/HDD or a reroute, and specifically called out one wetland in the extreme northwest corner of its parcel near the Project Route.

The USFWS did not provide boundaries of this wetland basin; however, based on subsequent discussions with agency staff, we understand USFWS reviews historic aerial imagery and looks for wetland "signatures", which helps to evaluate the location and extent of wetland basins. This area was surveyed as part of ONEOK's natural resource surveys and wetland delineations and a wetland was not delineated in this area. Based on subsequent conversations with USFWS via phone, ONEOK understands formal field delineations do not supersede USFWS determinations based on the ability for wetland and surface water boundaries to change over time. ONEOK also confirmed that the USFWS recommends avoidance or boring of these features to stay out of their jurisdiction. As the feature is located adjacent to a road that the Project crosses, USFWS asked if ONEOK could extend the length of the road bore to avoid surface impacts on the feature.

Since the original consultation letter was submitted, the Route has shifted to the east in this area and an updated map and shapefile of the route in this area was provided on October 29, 2019 following a phone conversation with agency staff. In a November 5, 2019 response, the USFWS indicated that the shifted route avoids the wetland basin within their easement parcel and thus, the Project will not fall under their jurisdiction. The USFWS also recommended sediment control devices (straw waddles or silt fence) be used upslope of the wetland basin, and that ONEOK contact the Crosby WMD 48 hours before construction activities on this parcel.

A record of these communications is provided and can be found in Exhibit E.

6.2 U.S. ARMY CORPS OF ENGINEERS

The USACE regulates impacts on waters of the United States[4] under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Based on a review of the wetland and waterbody data collected during field surveys (see Section 5.2 and Exhibit D), the Project will cross features that likely fall within the USACE's jurisdiction. ONEOK expects that the Project will be eligible for coverage under the

[4] As defined in 40 CFR 230.3

USACE Nationwide Permit (NWP) 12, which authorizes temporary impacts on USACE-jurisdictional waters due to construction of utility lines.

Based on a review of anticipated temporary impacts on waters of the United States, at this time, ONEOK does not anticipate that the Project will meet one of the following seven criteria that trigger the need for a Pre-Construction Notification (PCN) to the USACE:

1. Mechanized land clearing in a forest wetland.
2. A Section 10 permit is required.
3. The crossing length of the utility line in waters of the United States exceeds 500 feet (applied to each crossing individually).
4. The utility line is within a jurisdictional area and runs parallel to a stream bed that is within a jurisdictional area.
5. Discharges that result in the loss (i.e., permanent fill) of greater than 1/10 acre of waters of the United States.
6. Permanent access roads constructed above grade in waters of the United States for a distance of more than 500 feet.
7. Permanent access roads are constructed in waters of the United States with impervious surfaces.

If a PCN is not required to be submitted, work within jurisdictional waters will be conducted in accordance with the General Conditions of NWP 12. If it is determined a PCN is required, ONEOK will inform the NDPSC and provide a copy of USACE's approval upon receipt. See Exhibit G for more information.

On October 10, 2019, ONEOK initiated Project-specific consultations with the USACE requesting notification of Section 408 Civil Works projects or other USACE-owned or managed lands within the study area; any special requirements, restrictions, or specifications regarding constructing pipelines across or under USACE-regulated features; and any permits issued through USACE that may be applicable to the Project to include anticipated permitting timeframes. Based on a review of publicly available data, ONEOK is not aware of any USACE-owned or managed lands in the Project area.

USACE staff acknowledged receipt of the consultation request and indicated that they are drafting a response letter; however, at the time of this filing, their response is pending. ONEOK will file any responses received from USACE in supplemental filings.

6.3 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE

The USDA'S NRCS administers the Grassland Reserve Program, Wetland Reserve Program, the Farm and Ranch Lands Protection Program, and the Agricultural Conservation Easement Program.

On October 10, 2019, ONEOK provided Project notification to the NRCS requesting a review of the Project for concerns related to NRCS-administered lands and programs. In a November 7, 2019 response, the NRCS did not identify any conservation easements crossed by the Route or within the Project study area. The agency referenced its Farmland Protection Policy Act but stated that is does not apply to pipelines as they do not permanently remove farmland from production. NRCS also provided further comment and recommendations on minimizing impacts to wetlands.

Through landowner communications to-date, ONEOK has not identified any parcels that are crossed with NRCS easements. ONEOK plans to minimize impacts to wetlands as described in Section 9. A record of communication with the NRCS can be found in Exhibit E.

6.4 U.S. DEPARTMENT OF AGRICULTURE, FARM SERVICE AGENCY

Lands enrolled in the USDA-FSA-administered Conservation Reserve Program (CRP) are privately owned; however, the FSA has administrative responsibilities to ensure the provisions of CRP are maintained throughout the contract period. The CRP program stipulates that lands enrolled in CRP may not have the vegetative cover disturbed during the Primary Nesting and Brood Rearing Season (i.e., April 15 through August 1) unless disturbance of the existing cover is minimal, and a waiver of this provision is granted by the FSA.

On October 10. 2019, ONEOK provided Project notification to the FSA requesting confirmation regarding FSA-administered lands and programs in the Project Corridor. A response is pending; however, based on other recent projects in the area, it is ONEOK's experience that the FSA typically cannot provide specific information, but can provide the names of all FSA participants in the county.

In lieu of obtaining the full list of CRP enrollees in Williams County from the FSA, ONEOK has relied on discussions with each landowner impacted along its Route regarding conservation easements. Based on these discussions and individual landowner knowledge, to date ONEOK has not identified any parcels that are crossed that contain FSA-administered easements. Should CRP land be impacted by the Project within the Primary Nesting and Brood Season noted above, ONEOK will apply for a waiver from FSA.

A record of communication with the FSA can be found in Exhibit E.

6.5 U.S. DEPARTMENT OF DEFENSE

Review of aerial imagery (University of Wyoming, 2018) for each Minot Air Force Base Minuteman Intercontinental Ballistic Missile (ICBM) site suggested the absence of ICBM launch or launch control facilities within 1,200 feet of the Project Corridor. On October 10. 2019, ONEOK provided Project notification to the USDOD requesting confirmation regarding the presence or absence of ICBM facilities within 1,200 feet of the Project Corridor. The USDOD confirmed in their October 10, 2019 response that no USDOD lands are located within the 1-mile-wide evaluation corridor. A record of this communication can be found in Exhibit E.

6.6 NORTH DAKOTA GAME AND FISH DEPARTMENT

The NDGFD has oversight of the state's game species. On October 10, 2019, ONEOK provided Project notification to the NDGFD requesting information regarding the presence or absence of State Conservation Priority Species within the Project Corridor. In a November 6, 2019 response, the NDGFD concluded that the Project will not have significant adverse effects on wildlife or wildlife habitat provided their recommendations are implemented where appropriate.

The NDGFD's response indicated their primary concern is the possible disturbance of native prairie and wooded draws. The NDGFD requested every effort be made to prevent destruction of these areas and disturbed areas be reclaimed to pre-Project conditions. The NDGFD requested appropriate precautions be taken to protect any wetlands that cannot be avoided. Lastly, the NDGFD stated that aerial surveys for

raptor nests should be completed before construction begins and that a 0.5-mile buffer be implemented around active eagle nests (known occupied within the past 5 years). ONEOK does not intend to perform aerial surveys prior to construction as field surveys did not identify any nests in the area and further consultation with NDGFD's Wildlife and Conservation Division did not identify any known nest locations in the Project's study area (see below).

In addition, NDGFD identified two waterbodies that are classified fisheries (Little Muddy River and Beaver Creek), both of which ONEOK intends to cross via the HDD method. NDGFD commented that they appreciated that these two waterbodies would be crossed via boring to protect the resource. NDGFD also recommended additional precautions to protect State waterways. One suggestion was to incorporate pressure sensing valves on both sides of waterways as well as developing a maintenance schedule to ensure the integrity of the pipe for the life of the Project. As noted in Section 1.4, ONEOK plans to install four valves for the Project and also has a monitoring and maintenance program as described in Section 7.4.9. A second valve on either side of waterways is not required by USDOT regulations.

NDGFD also provided comments about controlling the spread of aquatic nuisance species (ANS) and stated the contractor should provide the department reasonable opportunity to inspect any equipment prior to it being placed into waters of the state. NDGFD provided the contact information for the department's ANS Species Coordinator. ONEOK will contact the ANS Coordinator to determine known locations of ANS and will also allow an opportunity for department staff to inspect equipment if in-stream work in infested waters is anticipated.

Based on a desktop review of publicly available data, ONEOK identified three parcels of Private Land Open to Sportsmen (PLOTS) Lands that the Project crosses (see Exhibit B.4 for locations). In its response, NDGFD stated that PLOTS is a public access program which cost-shares with private landowners to help conserve fish and wildlife habitat. PLOTS lands are not owned or managed by NDGFD and a special use permit is not required to cross these lands. NDGFD encourages landowners enrolled in the PLOTS program to notify the agency regarding activities.

ONEOK also submitted a request to a NDGFD Wildlife and Conservation Division on October 10, 2019 requesting known locations of bald and golden eagle nests. In an October 21, 2019 response, NDGFD identified one historic golden eagle nest within the Project study area; however, the nest was an old site that was considered "destroyed" as of 2014 (tree fell down or was removed). As noted in Section 5.3 above, no eagle nests were identified during the natural resource surveys conducted for the Project in 2019.

As outlined in Section 9, ONEOK has already accounted for many of these concerns and has developed, or will develop, plans and procedures to address these items during construction. ONEOK will continue to review work plans and procedures to incorporate NDGFD's recommendations where feasible.

Copies of correspondence with NDGFD are included in Exhibit E.

6.7 NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

The NDPRD Natural Resource Division's scope of authority and expertise covers recreation and biological resources (rare species and ecological communities, in particular). The NDPRD also maintains a database identifying the locations and recorded occurrences of plant and animal species of special concern. The

NDPRD authority includes management of state park lands and Land and Water Conservation funded recreation projects.

On October 10, 2019, Project notification was initiated with the NDPRD seeking confirmation regarding the presence or absence of managed lands, ecological resources, rare species, or their critical habitats within the Project Corridor. In an October 18, 2019 response, the NDPRD stated that they did not identify any rare species of significant ecological communities within the Project's study area. They also provided a map of Land and Water Conservation Fund (LWCF) recreational projects that they coordinate and provided contact information for agency staff if these projects may be impacted. The closest LWCF-managed project is the Epping Dam, which is located approximately 1.0 mile north of the Route near MP 39.5. No impacts on this LWCF project are anticipated.

A copy of correspondence with the NDPRD is included in Exhibit E.

6.8 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

According to the North Dakota Energy Conversion and Transmission Facility Siting Act, among the "factors to be considered [by the Commission] in evaluating applications and designation of sites, corridors, and routes," is the effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites. The repository in North Dakota for this information is the North Dakota SHPO, which acts as a technical resource during identification and evaluation of areas, sites, and structures and during reviews of Project effects. The NDPSC tasks the Applicant to coordinate identification and effects discussions with the North Dakota SHPO.

As described in Section 5.1, ONEOK completed cultural resource surveys in 2019 that covered 100 percent of the Project Corridor. ONEOK is finalizing its Class III cultural resource survey report and anticipates submitting it to SHPO for a technical review in December 2019. ONEOK will file copies of future correspondence with the North Dakota SHPO to the NDPSC to document that the Project will not adversely affect cultural resources.

6.9 NORTH DAKOTA GEOLOGICAL SURVEY

On October 10, 2019, Project notification was initiated with the NDGS to solicit comments on the Project regarding potentially unstable areas and landslide deposits. In an October 16, 2019 response, NDGS stated that the pipeline route passes along areas that are generally topographically flat with little relief and consequently are generally free of landslides; however, some potential landslide areas near the Project were identified.

NDGS provided a table of 29 locations of identified landslide areas, most of which are avoided by the Project. NDGS specifically called out four locations that require further evaluation; a fifth location was also called out in an attachment to the letter and recommended to be evaluated. Based on a November 14, 2019 call with NDGS staff, ONEOK confirmed that the fifth location identified in the attachment is recommended to be evaluated. NDGS also stated that the areas they have identified as potential landslides are based largely on a review of aerial imagery and newly available Light Detection and Ranging (aka "LIDAR") data. These areas have not been verified in the field.

ONEOK has initiated field review of these areas and plans to conduct an engineering analysis in late 2019/early 2020 to determine the exact location of the features with respect to the Route and to

determine appropriate avoidance measures, if required. ONEOK will supply this analysis to the NDPSC upon completion and will continue to work with the NDGS to avoid or minimize impacts in these areas, as needed. Please see Section 7.2.4 for more information.

A copy of correspondence with the NDGS is included in Exhibit E.

6.10 NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY

On October 10, 2019 Project notification was initiated with the NDDEQ seeking confirmation regarding NDDEQ-administered programs in the Project Corridor. The NDDEQ responded on October 24, 2019 stating that it believes environmental impacts from the proposed construction would be minor and can be controlled by proper construction methods. Furthermore, NDDEQ noted that the department owns no land in or adjacent to the proposed Project, does not have any projects scheduled in the area, and believes the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

The NDDEQ provided several comments/recommendations with respect to construction, which are summarized below:

- Development of facilities, access road, well pads of pipelines should have measures to mitigate fugitive dust.
- Care should be taken near any water of the state to minimize impacts and stream beds and banks should be restored and revegetated as soon as possible after work has been completed. Caution should also be taken to prevent spills of oil and grease and other contaminants from equipment maintenance and fueling.
- Projects disturbing one or more areas are required to have a permit to discharge stormwater if runoff will carry eroded material to a water of the state. NDDEQ also noted that local municipalities may have additional requirements with respect to stormwater management, and recommended checking with local official to confirm any local stormwater management considerations are addressed. NDDEQ noted that the Project crosses a 303(d) listed waterbody (Little Muddy River, impaired with respect to fecal coliform) and extra care should be taken to ensure construction does not affect the waterbody.
    - The State of North Dakota recognizes the federal construction stormwater exemption for oil and natural gas projects. As such, ONEOK does not intend to apply for coverage under the NDDEQ's General Permit NDR10-0000; however, ONEOK will develop and implement a Project-specific SWPPP to prevent pollutant runoff from the construction site from entering waters of the State.
    - ONEOK has been in consultation with county/local agencies and has not identified any local stormwater permitting requirements.
    - ONEOK plans to cross the Little Muddy River via the HDD method which will avoid direct impacts to the waterbody
- The Project overlies three glacial drift/surficial aquifers and domestic water supply wells may be located along the route, particularly near the city of Tioga. Care should be taken to avoid spills and all spill must be immediately reported to NDDEQ and appropriate remedial actions performed.
- Noise from construction activities should be minimized by ensuring equipment has a recommended muffler in good working order. Construction activities can also be minimized by not conducting construction activities in early morning or late evening hours.

- Solid wastes must be managed in accordance with state's solid and hazardous waste rules. Reuse and/or recycling of materials is strongly encouraged.
- Projects that involve pipelines should select locations that minimize the potential for impacts on human health and the environment during and after construction by avoiding, when possible, source water protection areas and sensitive surface and groundwater environments. In addition, pipeline routes should select area with natural barriers to both surface and ground waters, when possible. A spill response plan should be developed and implemented, and surveillance and monitoring for early detection of leaks should be required.

As noted in Section 9 of this application, ONEOK has implemented numerous mitigation measures and developed several plans (see Exhibit H) to minimize dust control, noise, impacts on waters of the state, as well as address spill control and response. A copy of correspondence with the NDDEQ is included in Exhibit E.

Trench Dewatering and Hydrostatic Test Water Discharges: The NDDEQ also provides authorization to discharge water from hydrostatic testing of pipe and dewatering activities during construction under the NDPDES general permit NDG07-0000. ONEOK intends to apply for permit coverage and comply with the requirements of NDG07-0000 for hydrostatic test discharge and dewatering activities associated with the Project. Coverage under the permit is generally granted no more than 30 days after submittal of an application. ONEOK will file a copy of this permit with the NDPSC upon receipt.

The NDDEQ also administers the North Dakota Source Water Protection Program, which was developed in response to the 1996 Safe Drinking Water Act amendments. The program identifies wellhead protection areas (WHPA) for groundwater-dependent public water systems or a source water protection area for surface water-dependent public water systems. The WHPAs are classified as "community" or "non-community". Based on review of the NDDEQ Wellhead Protection and Source Water Protection Areas datasets (North Dakota Department of Environmental Quality, 2019), the nearest protection area is located approximately 0.75 mile from the Project near MP 0.0. This WHPA is a community listed as "R&R Trailer Court". No impacts on this area are anticipated during construction or operation of the pipeline. NDDEQ did not identify any WHPAs in its response letter.

6.11 NORTH DAKOTA STATE WATER COMMISSION

On October 10, 2019, Project notification was initiated with the NDSWC seeking confirmation regarding NDSWC-administered sovereign lands, water supply systems, projects, and other programs within the Project Corridor. Based on a desktop review, ONEOK did not identify any of these resources within the study area.

In an October 29, 2019 response, NDSWC stated that the State does not have formal floodplain permitting authority, and that floodplain permitting is always done by local entities. ONEOK has been in contact with the Williams County Water Resource Board and townships with designated floodplain permitting authority. To date, ONEOK has not identified any mapped floodplains that will be crossed by the Project and floodplain permitting is not anticipated for this Project.

NDSWC staff also noted that it maintains a network of observation wells across the state and that these wells are often installed in road rights-of-way. NDSWC requested to be contacted in the event ONEOK discovers an observation well that must be moved or abandoned. To date, ONEOK has not identified any such wells.

Appropriation of water from the state's water resources is permitted by the NDSWC. ONEOK is in the process of identifying potential source waters for dust control, drilling mud, and hydrostatic testing of the pipeline. ONEOK may truck in water from municipal sources or water depots which are already permitted, or ONEOK may appropriate water directly from surface or ground water sources. If ONEOK elects to appropriate directly from waters of the state, it will file an application to the NDSWC for a Temporary Water Permit. Permits are typically authorized 2 to 4 weeks after submittal of an application.

If permits are obtained for water appropriation, they will be filed with the NDPSC upon receipt. A copy of correspondence with the NDSWC is included in Exhibit E.

6.12 NORTH DAKOTA DEPARTMENT OF TRUST LANDS – SCHOOL TRUST LANDS

On October 10, 2019, ONEOK provided Project notification to the NDDTL Surface Management Division requesting comments regarding the presence of State School Trust Lands within the Project Corridor. A preliminary review of the Surface Trust Land dataset (North Dakota Geographic Information Systems [NDGIS], 2018a) concluded School Trust Lands were within the 1-mile-wide study area. The Project Route crosses two parcels of School Trust Land (see Exhibit B.4).

NDDTL acknowledged receipt and requested the shapefile data be resent. ONEOK provided this information on October 12, 2019 and again on November 14, 2019. In a November 14, 2019 response, NDDTL confirmed the locations of two School Trust Parcels crossed by the Project and two additional parcels located in the study area. ONEOK staff has been in discussions with NDDTL staff about these crossings since May 2019 and is actively working to secure an easement to cross these lands. In their response, NDDTL acknowledged that they are working directly with a ONEOK representative on these crossings.

The location of School Trust Lands in relation to the Project are displayed on the maps in Exhibit B.4. A copy of the correspondence with NDDTL is included in Exhibit E. The NDDTL Rights-of-Way permit(s) will be filed with the NDPSC upon receipt.

6.13 NORTH DAKOTA DEPARTMENT OF TRUST LANDS – MINERAL TRUST LANDS

On October 10, 2019, ONEOK provided Project notification to the NDDTL Minerals Management Division requesting comments regarding the presence or absence of State Mineral Trust Lands within the Project Corridor. ONEOK included a map of the route and study area with the location of Mineral Trust Lands obtained from public databases (NDGIS, 2018b). In an October 10, 2019 response, the agency confirmed that the location of the Mineral Trust Lands provided in the consultation letter and accompanying mapset was accurate. No additional comments or concerns were noted.

The location of Mineral Trust Lands in relation to the Project are displayed on the maps in Exhibit B.4. A copy of the correspondence with NDDTL is included in Exhibit E.

6.14 WESTERN AREA WATER SUPPLY AUTHORITY

On October 10, 2019, Project notification was initiated with the WAWSA seeking information related to rural water supply systems and WAWSA-administered projects. On October 30, 2019, Merjent spoke with WAWSA staff regarding the Project. During the call, WAWSA noted that the Project intersects with

multiple WAWSA water supply lines and that ONEOK would need to coordinate with WAWSA at these crossing locations. WAWSA also indicated it was planning to construct a new pipeline system in the western portion of the Project area in Spring 2020 and that the Tioga Lateral Project may intersect this new pipeline system (see Section 8.8).

On November 6, 2019, WAWSA provided a copy of their system map (existing and proposed) as well as a shapefile of the water supply lines. WAWSA staff indicated that each crossing of their pipeline would require a permit through their agency and that an agency representative may request to be present during construction activities at some or all crossings. ONEOK's ROW and construction staff will coordinate with WAWSA on these crossing and secure any necessary permits.

A record of this communication can be found in Exhibit E. ONEOK will file crossing permits with NDPSC upon receipt.

6.15 WILLIAMS COUNTY BOARD OF COMMISSIONERS

On October 10, 2019, Project notification was initiated with the Williams County Board of Commissioners seeking information regarding any local ordinances, permits, or other resources under the Board's jurisdiction that may be applicable to the Project, as well as a summary of any permit processes and anticipated timeframes, if applicable.

County staff responded via email on November 13, 2019, and also contacted ONEOK via phone to discuss the Project. Staff indicated that ONEOK would need to secure road crossing permits, approach permits, and will need to inspect haul roads before construction starts. ONEOK will work directly with County staff to secure these approvals and ensure any necessary inspections occur prior to construction. Copies of any permits will be filed with the NDPSC upon receipt.

A record of this communication can be found in Exhibit E.

6.16 WILLIAMS COUNTY WATER RESOURCE BOARD

On October 10, 2019, Project notification was initiated with the Williams County Water Resource Board seeking comment on the following topics:

- Locations of any county-regulated drains, ditches, and/or other drainage features.
- Any special requirements, restrictions, or specifications regarding constructing pipelines across or under county-regulated drainage features.
- Any local ordinances related to drainage.
- Any applicable permits with a summary of the permit process and anticipated timeframes.

Based on a review of the county's website, ONEOK has not identified any specific permits or approvals that will be required from the Water Resource Board. In a November 13, 2019 response, the Water Resource Board indicated that they had no requirements for the Project. A record of this communication can be found in Exhibit E.

6.17 WILLIAMS COUNTY WEED CONTROL BOARD

The Williams County Weed Control Board is responsible for administering the state's noxious weed law. There are 13 state listed noxious weeds and 1 additional noxious weed listed in Williams County. As described in Section 5.5, ONEOK conducted an inventory of noxious weeds in conjunction with its natural resource surveys in fall 2019. Prior to conducting these noxious weed inventory survey, ONEOK contacted the County Weed Control Board to inquire if the county has a formal permit program with respect to noxious weeds, and also whether survey data collected in 2019 would be considered valid for a project to be constructed in 2020. Agency staff stated that there is no county-level permit/approval required with respect to noxious weeds and did not have any concerns with using 2019 survey data for this Project.

On October 10, 2019, Project notification was initiated with the Williams County Weed Control Board seeking comment on the following topics:

- Confirmation that the list of noxious weeds obtained by ONEOK is correct and current.
- Known locations of noxious and/or invasive weed species along the proposed route.
- Guidance and/or recommendations for weed control, pesticide use, and non-chemical treatment options.

ONEOK received a response from the Weed Control Officer on October 10, 2019. The response indicated that the Weed Officer for the county resigned in July 2019 and that the county is actively seeking a new officer. The response also confirmed that the list of noxious weeds ONEOK identified was correct. While there is no known county-level permit program in place, ONEOK plans to control the spread of noxious weeds by implanting its Weed Management Plan (see Section 9 and Exhibit H)

A record of these communications can be found in Exhibit E.

6.18 CIVIL TOWNSHIP CONSULTATIONS

Williams County has delegated authority for administration of floodplains to some civil townships. ONEOK is not aware of any local permits or approvals required from any civil townships with respect to floodplains; however, ONEOK did provide notification of the Project to the following townships that are designated as floodplain administrators:[5]

- Buford Township
- Sauk Valley Township
- Trenton Township
- Tioga Township

Project notifications were sent on October 10, 2019. No responses have been received to date. A record of these communications can be found in Exhibit E.

6.19 CITY CONSULTATIONS

The Project does not cross the municipal boundaries of any cities; however, the 1-mile study area does intersect with the boundaries of the cities of Tioga and Springbrook. ONEOK submitted a Project

[5] http://www.swc.nd.gov/pdfs/floodplain_admin.pdf

notification and consultation request to officials from both cities on November 4, 2019. Responses are pending. A record of these communications can be found in Exhibit E.

7.0 CRITERIA

The information presented in this section was developed to demonstrate conformance with the NDPSC's siting criteria for transmission facilities. ONEOK has conducted a thorough inventory of the Project Corridor and evaluated the resources within it to assess the compatibility of the Project with the NDPSC's siting criteria. The following sections identify and discuss the presence or absence of siting criteria within the Project Corridor and Route. Where siting criteria are identified, the location of each is shown on the maps in Exhibits B.2 – B.4. GIS data is also being provided with this application in electronic form.

7.1 EXCLUSION AREAS

Exclusion areas are geographic areas that must be excluded in the consideration of a route for a transmission facility. A buffer zone of a reasonable width must also be included to protect the area. The following table and text identify and discuss exclusion areas within the Project Corridor.

Table 7.1-1
Exclusion Areas
NDPSC Certificate of Corridor Compatibility and Route Permit

Exclusion Area	Located within Study Area	Located within the Project Corridor	Crossed by Route	Administering Agency
National Parks	No	No	No	U.S. National Park Service (USNPS)
National Memorial Parks	No	No	No	USNPS
National Historic Sites and Landmarks	No	No	No	USNPS
National Natural Landmarks	No	No	No	USNPS
National Wilderness Areas	No	No	No	USNPS; U.S. Forest Service
National Monuments	No	No	No	USNPS
State Parks	No	No	No	NDPR
State Historic Sites	No	No	No	State Historical Board
State Monuments	No	No	No	State Historical Board
State Historical Markers	No	No	No	State Historical Society
State Archaeological Sites	No	No	No	State Historical Board
State Nature Preserves	No	No	No	State Park Service
County Parks and Recreation Areas, Municipal Parks, and Parks under Other Governmental Jurisdiction	No	No	No	Various
Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species	No	No	No	USFWS
Areas Where Animal or Plant Species Unique or Rare to the State Would be Irreversibly Damaged	No	No	No	Various
Areas Within 1,200 Feet of an ICBM Facility	No	No	No	USDOD

Table 7.1-1 Exclusion Areas NDPSC Certificate of Corridor Compatibility and Route Permit				
Exclusion Area	**Located within Study Area**	**Located within the Project Corridor**	**Crossed by Route**	**Administering Agency**
Areas within 30 feet of direct line of ICBM launch facility	No	No	No	USDOD

7.1.1 Federal Resource Review

Review of digital data available from USNPS and the USFWS shows that there are no national parks, national memorial parks, national historic sites and landmarks, national wilderness areas, or national monuments located within the Project Corridor or Route (U.S. National Park Service, 2019). Therefore, there will be no direct impacts on national parks, sites, monuments, or wilderness. The nearest federally managed park land is the Fort Union Trading Post National Historic Site located approximately 16 miles south of the western terminus of the Project.

There are no designated critical habitat areas for federally listed threatened or endangered species in the Project Corridor or study area. The nearest designated critical habitat is Lake Sakakawea, which is approximately 10 miles south of the Project. The lake is designated as critical habitat for the piping plover (federally threatened) and also provides habitat for the federally endangered pallid sturgeon. The Project will have no impact on USFWS-designated critical habitat.

Based on the information above, there will be no impacts on federally administered or protected exclusion areas.

7.1.2 State Resource Review

Review of digital data indicates that there are no designated or registered state parks, sites, monuments, or nature preserves within the Project Corridor or Route. The nearest state-managed park or protected site is the Lewis and Clark State Park located approximately 9 miles south of the Project near MP 30. Therefore, there will be no direct impacts on state parks, sites, monuments, or nature preserves.

7.1.3 County Resource Review

Review of publicly available data shows that there are no county parks and recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions within the Project Corridor or crossed by the Route. The nearest such area is the Epping/Springbrook County Dam Park located approximately 1 mile north of the Project near MP 39.5. Therefore, no direct impacts are anticipated.

7.1.4 Areas of Critical Habitat

The USFWS has designated critical habitat for one federally listed species in Williams County (piping plover). The nearest designated critical habitat for the piping plover is associated with the Missouri River/Lake Sakakawea reservoir, approximately 10 miles south of the Project area. The Project will have no impact on designated critical habitat.

As described in Section 5.3, ONEOK commissioned natural resource surveys of the Corridor. The scope of the surveys included documentation of the presence or absence of federally and state listed species of concern or evidence of suitable habitats for these species. The results of these field studies are detailed in Section 5.3.1, and planned mitigation measures are discussed in Section 9 of this document. Consultation requests have been submitted to USFWS and formal correspondence regarding federally listed species will be provided when received.

7.1.5 Areas where Unique or Rare Species to the State Would Be Irreversibly Damaged

Based upon field surveys, the Project will not result in irreversible impacts that are detrimental to plant and animal species or their habitats that are unique or rare to the state. The implementation of the proposed construction and restoration plans (see Section 9 and Exhibit H) and full compliance with environmental permits will help minimize temporary impacts and mitigate the potential for irreversible damage.

7.1.6 Areas within 1,200 Feet of ICBM Facility or 30 Feet of Direct Line of Launch Facility

Based on information compiled by the University of Wyoming regarding current and historic missile site locations (University of Wyoming, 2018), which was comprised of both tabular data describing these sites and supported with additional aerial imagery for each Minot Air Force Base Minuteman ICBM site, ONEOK has confirmed the absence of ICBM launch or launch control facilities located within 1,200 feet of the Route. This was confirmed through consultation with the USDOD as described in Section 6.5.

7.2 AVOIDANCE AREAS

Avoidance areas are geographic areas that may not be considered in the routing of a transmission facility unless it is shown there is no reasonable alternative under the circumstances. A route may contain avoidance areas; however, avoidance areas may not encompass more than 50 percent of the Project Corridor width at any point, unless there is no reasonable alternative. The following table and text identify and discuss avoidance areas within the Project Corridor.

Table 7.2-1
Avoidance Areas
NDPSC Certificate of Corridor Compatibility and Route Permit

Avoidance Area	Located within Study Area	Located within Project Corridor	Located along Route	Administering Agency
National Historic Districts	No	No	No	State Historic Society
National Wildlife Areas	No	No	No	USFWS
National Wild, Scenic, or Recreational Rivers	No	No	No	Heritage Conservation Recreation Service, State
NWRs	No	No	No	USFWS
National Grasslands	No	No	No	U.S. Forest Service
State Wild, Scenic, or Recreational Rivers	No	No	No	State of North Dakota Legislative Assembly
State Game Refuges	No	No	No	NDGFD

Table 7.2-1 Avoidance Areas NDPSC Certificate of Corridor Compatibility and Route Permit				
Avoidance Area	**Located within Study Area**	**Located within Project Corridor**	**Located along Route**	**Administering Agency**
State Game Management and Management Areas	No	No	No	NDGFD
State Forests	No	No	No	State Forest Service
State Forest Management Lands	No	No	No	State Forest Service
State Grasslands	No	No	No	State Park Service
Historical Resources not Specifically Designated as Exclusion or Avoidance Areas	Yes	Yes	No[1]	SHPO
Geologically Unstable Areas	Yes	Yes	TBD	State Geological Survey
Within 500 Feet of a Residences, School, or Place of Business	Yes	Yes	Yes	Landowner
Reservoirs	No	No	No	USACE; NDSWC, WAWSA
Municipal Water Supplies	No	No	No	NDSWC, WAWSA
Water Sources for Organized Rural Water Districts	No	No	No	NDSWC, WAWSA
Irrigated Land[2]	N/A	N/A	N/A	NDSWC
Areas of Recreational Significance Not Designated as Exclusion Areas	No	No	No	Various

[1] ONEOK plans to submit its cultural resources report to SHPO in December 2019. ONEOK will file its response upon receipt. See Sections 5.1 and 6.8 for more information.

[2] Irrigated land does not apply to underground transmission facilities.

7.2.1 Federal Resource Review

ONEOK conducted a comprehensive review of publicly available information and field studies of the Project Corridor. This review confirmed the absence of designated or registered historic districts, refuges, and wild, scenic, or recreational rivers within the Project Corridor. The nearest federally managed avoidance area is the Lake Zahl NWR located approximately 17 miles north of the Project.

As described in Sections 5.1 and 6.8, ONEOK conducted Class III cultural resources surveys and has concluded the Project will not result in impacts on NRHP-eligible resources. ONEOK is finalizing its cultural resource report and plans to submit this report and a request for concurrence to the North Dakota SHPO in December 2019. Response letters from the North Dakota SHPO will be filed with the NDPSC, upon receipt.

7.2.2 State Resource Review

ONEOK conducted a review of publicly available resources and concluded no designated or registered game refuges, game management areas, management areas, forests, forest management lands, or grasslands are within the Project Corridor. The nearest state management avoidance area is the White Earth Valley Wildlife Management Area located approximately 7 miles from the eastern portion of the Project Route.

7.2.3 Historical Resources Not Designated as Exclusion/Avoidance Areas

See Section 5.1 for a discussion of historical resource desktop and field studies conducted for completion of Class I and Class III cultural resource reports and see Section 6.8 for a discussion of agency consultations conducted with the North Dakota SHPO regarding the Project. None of the cultural resources identified within the Project Corridor were determined to be NRHP-eligible, thus are not protected and should not be considered as an avoidance area.

7.2.4 Geologically Unstable Areas

North Dakota has not experienced an earthquake of sufficient enough magnitude to damage steel welded pipe or structural steel structures in recorded history. Sinkholes are known to occur in the region, but these are related to subsurface mining activities as opposed to limestone dissolution.

As noted in Section 6.9, in its response to ONEOK's consultation request, NDGS identified 29 landslide deposits in the study area and specifically listed 5 areas that require further evaluation. These areas are summarized in Table 7.2.4-1 and are displayed as avoidance areas in Exhibit B.2.

ONEOK has initiated field review of these areas and plans to conduct an engineering analysis in late 2019/early 2020 to determine the exact location of the features with respect to the Route and to determine appropriate avoidance measures, if required. These five locations are summarized in Table 7.2.4-1 below.

Table 7.2.4-1
NDGS Identified Landslide Areas near Route

Milepost	Description	Status
0.9	Creek crossing, south facing slope	Field review required to confirm exact location and appropriate avoidance. Since consultation was submitted, ONEOK has shifted route 50 feet to west, which should avoid feature.
1.1	Northeast of route along creek slope	HDD crossing planned
38.3	Next to south-facing slope area	Field/engineering review required to confirm exact location and appropriate avoidance measure.
56.2	Crossing Cow Creek, southwest facing slope	HDD crossing planned
56.5[1]	None[1]	Field review to confirm location; appears to be 150 feet east of centerline/workspace

[1] The NDGS cover letter did not specifically call out this location; however, it was noted in Attachment 1 of the NDGS response as "Evaluate."

ONEOK will continue to work with the NDGS to address any concerns and to avoid or minimize impacts in these areas. Follow-up communication will be filed with the NDPSC.

7.2.5 Areas within 500 Feet of a Residence, School, or Place of Business

Based on a review of aerial photography as well as discussions with landowners, ONEOK has identified 19 structures that have been confirmed as occupied residences or businesses within 500 feet of the Route (18

unique landowners). ONEOK is in active discussions with the owners of these structures and is in the process of securing waivers from each landowner. Landowner waivers will be filed as Exhibit F upon receipt.

7.2.6 Reservoirs and Municipal Water Supplies

Based on a review of publicly available data, ONEOK has confirmed the absence of reservoirs or municipal source water protection areas for community water supply sources within the Project Corridor. As discussed in Section 6.14, ONEOK has been in discussion with WAWSA regarding water supply pipelines it operates in western North Dakota and has received a map/shapefile of WAWSA pipelines. ONEOK will continue to work with WAWSA to ensure any water pipelines crossed by the Project are completed safely without impact on those lines.

7.2.7 Water Sources for Organized Rural Water Districts

Based on a review of publicly available data, ONEOK is not aware of any water sources for organized rural water districts within the Project Corridor. As discussed in Section 6.14, ONEOK consulted with WAWSA to identify locations of their existing and planned water supply pipelines. ONEOK will continue to coordinate with WAWSA and will secure permits for each WAWSA water supply pipeline that is crossed by the Project.

WAWSA, NDSWC, and NDDEQ have not identified any water sources for rural water districts within the Project Corridor. As discussed in Section 6.10, there are no WHPAs in the Project Corridor or study area. The nearest protection area is located approximately 0.75 mile from the Project near MP 0.0. This WHPA is a community listed as “R&R Trailer Court”. No impacts on this area are anticipated during construction or operation of the pipeline.

7.2.8 Irrigated Land

Irrigated land does not apply to underground transmission facilities.

7.2.9 Areas of Recreational Significance but Not Designated Exclusion Areas

Based on a review of publicly available data, ONEOK has not identified any areas of recreational significance within the Project Corridor. To date, none of the county or township agencies with which ONEOK consulted have identified any areas of recreational significance in the vicinity of the Project.

7.3 SELECTION CRITERIA

The Commission specifies selection criteria considered in designating a pipeline corridor or route. These criteria are used to determine whether adverse effects from the location, construction, and maintenance of the facility will be at an acceptable minimum or whether these effects will be managed and maintained at an acceptable minimum.

The selection criteria that were considered for the Project include:

- Agricultural Production;
- Family Farms and Ranches;
- Land Suitable for Irrigation;

- Surface Drainage and Groundwater Flow Patterns;
- Sound Sensitive Areas;
- Visual Effects;
- Extractive and Storage Resources;
- Wetlands, Woodlands, and Wooded Areas;
- Communication or Electric Control Facilities;
- Human Health and Safety;
- Animal Health and Safety; and
- Plant Life.

Potential impacts and measures to avoid and minimize these impacts, as they relate to each of the selection criteria, are discussed in the following subsections.

7.3.1 Agricultural Impacts

Agricultural Production: The Route would temporarily affect approximately 682 acres of land in North Dakota, of which approximately 456 acres (67 percent) are located on privately owned cropland (USGS, 2016). The majority of the land crossed can be characterized as either agricultural or natural vegetative cover. Once construction is complete, the land will be restored to its pre-construction contours and land use. ONEOK will provide settlements to landowners for crop loss resulting from Project construction.

Based on a review of aerial photography, two of the four new block valves (measuring 50 feet by 100 feet) will be located on land that has traditionally been used for row crop agriculture. The conversion of this land to an industrial land use (0.23 acre) is considered to be negligible when compared to the amount of agricultural land in Williams County (999,277 acres[6]).

Family Farms and Ranches: The Route would temporarily affect approximately 184 acres (27 percent) that are comprised of privately-owned farms and/or ranches.[7] Once construction is complete, the land will be restored to its pre-construction contours and land use. ONEOK will negotiate easements with all affected landowners. The Project will have no permanent impacts on lifestyle or farm/ranch operations once construction is completed.

Based on a review of aerial photography, two of the four new block valves (measuring 50 feet by 100 feet) will be located on land that appears to be pasture that may be used as ranchland. The conversion of this land to an industrial land use (0.23 acre) is considered to be negligible when compared to the amount of agricultural land in Williams County (999,277 acres[8]).

The location of pipeline markers is required by 49 CFR Part 195 for pipelines. ONEOK works with local landowners and county officials to ensure that pipeline markers are located where required but also in an acceptable location for these parties. These markers are to be placed in full view so that they are not accidentally damaged by, or cause damage to, landowner or county equipment.

Lands Suitable for Irrigation: This section is not applicable to buried pipelines (NDAC 69-06-08-02[2][h]).

6 USDA 2017 Census of Agriculture (U.S. Department of Agriculture, 2017)
7 Approximately by sum of grassland/herbaceous and hay/pasture land use types (U.S. Geological Survey, 2016)
8 USDA 2017 Census of Agriculture (U.S. Department of Agriculture, 2017)

7.3.2 Surface Drainage

Standard pipeline construction techniques to be employed would not modify existing surface drainage patterns. Care will be taken throughout the construction process to minimize environmental impacts, including modification of drainage patterns. During restoration, those areas that were disturbed during construction will be restored, the local topography will be restored to its original contours, vegetation will be reestablished. Impacts are anticipated to be minimal and temporary. BMPs will be implemented in accordance with the Project-specific SWPPP, which will be modeled after the NDDEQ Construction Storm Water General Permit requirements (see Section 9 and Exhibit H).

As noted previously, the Project will cross two NDGFD-designated fisheries (Little Muddy River and Beaver Creek) via the HDD method. ONEOK will utilize its HDD Inadvertent Release Control and Mitigation Contingency Plan (see Section 9 and Exhibit H) where applicable. Permanent impacts on surface drainage are not anticipated.

7.3.3 Groundwater Flow Patterns

Water well data and drilling logs have been recorded by the NDSWC within the Project area (North Dakota State Water Commission, 2019). Based on a review of these logs, there are 64 wells on file within the Project study area, 17 of which recorded depth to groundwater (aka static water level) at the time the well was drilled. This data ranges in date from 1941 to 2016.

Based on the data, depth to groundwater ranged from 4 feet to 125 feet, with an average depth of 37 feet. The required tie-in excavations for the proposed Project are not anticipated to reach these depths in the vast majority of the Project area. If groundwater is encountered during construction activities, it will be dewatered in accordance with ONEOK's construction plans (see Section 9) and applicable state permits (see Exhibit G).

Based on a desktop review, the Project will cross three surficial aquifers near MP 14, MP 20, and MPs 47 – 53.[9] Surficial aquifers are major glacial-drift aquifers that are considered to have the greatest potential for yielding significant quantities of water for municipal, industrial, and agricultural purposes. As described in Section 9, ONEOK has developed a Spill Prevention, Control, and Countermeasures Plan that provides details on preventative measures, response, notification, and remediation procedures. Adherence to these measures will help protect these features.

The location of the surficial aquifers is displayed on the maps in Exhibit B.4. The Project is not anticipated to have an impact on groundwater flow patterns.

7.3.4 Sound-Sensitive Land Uses

Temporary increases in ambient sound will occur in the areas immediately surrounding active construction. The Project is located in a rural setting away from major population centers. Construction will take place over a period of approximately 6 to 7 months; however, no one area will have ongoing daily activity, as construction will progress from one area of the route into the next. Construction activities at any given point along the Project are generally limited to daylight hours. The use of heavy equipment or trucks will be the primary noise generating activity during construction and excavation. The level of

[9] These aquifers were also identified in NDDEQ response letter (see Exhibit E)

impact may vary by equipment type, duration of construction activity, and the distance between the noise source and the receptor. Once constructed and in-service, normal pipeline operations are not audible. Construction and operation of the Project is expected to comply with applicable noise requirements and local ordinances.

7.3.5 Visual Effect on Adjacent Areas

The Project would include four mainline block valves, one pig launcher facility, one pig launcher and receiver facility, and one receiver facility. Each valve will be located on gravel pad and will be enclosed with fences that are padlocked shut against vandalism and accidental activation. One of the four new block valves will be located within a previously developed site. The other three valves will be located in previously undeveloped areas and will require an approximately 50-foot by 100-foot graveled and fenced lot.

Valve locations will be clearly marked with a small placard that details ownership and contact information. The visual piping and equipment will be finished and maintained with a tan or white painted surface. These features are common throughout the landscape and are not obtrusive. The pig launcher, launcher/receiver, and receiver facilities will be located in, or adjacent to existing gas processing facilities that are already developed and will cause only minor incremental visual impacts. No other permanent aboveground features are proposed as a part of the Project.

7.3.6 Extractive and Storage Resources

As noted in Sections 2.2 and 4.1, the Project will help in meeting the state of North Dakota's goals to increase the capture of natural gas and reduce flaring This Project will not affect any known extractive or storage resources. Impacts on future extractive development would not constitute a substantial loss of resource availability because of the narrow, linear nature of the pipeline ROW relative to the expanse of areas with resource potential.

Based on a desktop review, four abandoned mines are located in the Project study area, the nearest of which is approximately 1,000 feet from the Route (see Exhibit B.4). No impacts to these areas are anticipated; however, ONEOK will confirm the location of these abandoned mines through consultation with NDPSC's Abandoned Mines Land Division.

7.3.7 Wetlands, Woodlands, and Wooded Areas

A comprehensive desktop review of published data, including aerial photography and NWI data, was conducted to assess the presence or absence of wetlands, woodlands, and wooded areas. The review of the proposed Project Corridor confirmed the presence of these resources. In addition, as described in Section 5.4, ONEOK commissioned field surveys to further identify and record the locations of these resources along the Route. The results of these field studies will be used to implement construction measures to avoid or minimize impacts, where possible. Land use and land cover information is shown in Exhibit B.3. Proposed mitigation measures are detailed in Section 9 and detailed survey results can be found in Exhibit D.

As detailed in Section 5.4, a formal tree and shrub inventory was conducted in conjunction with natural resource surveys based on guidance from recently issued NDPSC orders. A stand-alone tree and shrub inventory report is being finalized and will record the pre-construction status of these resources. These

reports will be filed with the Commission upon completion and will form the baseline for restoration and mitigation assumed to be required by the NDPSC.

7.3.8 Radio and TV Reception and Other Communication or Electronic Facilities

Based on review of publicly available information, no radio and television reception are located within the Project Corridor. Locations of antenna and microwave structure located with the study area are displayed on the Selection Criteria maps in Exhibit B.4. The proposed Project is a buried, underground utility. No impacts on television or radio reception or communication or electronic control facilities are anticipated to occur as a result of the Project.

7.3.9 Human Health and Safety

During construction, residences and businesses in proximity to construction activities will be exposed to short-term increases in construction-related noise and dust. The construction ROW, access roads, and spoil piles near residential and commercial areas will be watered down as needed to control fugitive dust emissions during construction. Following construction, measures to stabilize and revegetate the ROW will be taken promptly to minimize further dust emissions. Heavy construction equipment required for pipeline installation will generate unavoidable short-term increases in sound levels. Increases in noise levels due to equipment operation will be limited to the period of active construction and will primarily be avoided during night-time hours (i.e., 10pm – 7am). Twenty-four-hour construction activities are generally limited to completing tasks that commenced during the day and where ceasing to complete could jeopardize the installation. This largely applies to some phases of HDDs, various bores, and occasional aboveground facility construction.

The USDOT's pipeline standards are published in Part 195 of Title 49 of the CFR. The regulations are intended to ensure adequate protection of the public and to prevent accidents and failures. Part 195 addresses hazardous liquid pipeline safety issues, specifying material selection and qualification, minimum design requirements, construction, pressure testing, operations, maintenance, protection from internal, external, and atmospheric corrosion, and integrity management of the pipeline for the life of the facility.

Actual installation of the pipeline and all construction and testing records will be subject to inspection. All pipe installed along the Project will be externally coated with a fusion bonded epoxy to resist corrosion. Once installed, internal inspections will be conducted on the pipeline at regular intervals using in-line inspection technology. The pipeline will undergo hydrostatic testing at a minimum of 1.25 times the maximum allowable operating pressure to ensure its integrity and will be placed into service only after successful completion and commissioning to verify compliance with all construction standards and requirements.

ONEOK will ensure that a public education and outreach program is developed to promote public awareness of pipelines and pipeline safety in accordance with USDOT requirements. Proper signage and warnings at road and highway crossings, railroad crossings, navigable rivers, and other locations will alert the public to the presence of underground lines and to provide information, contact numbers, and emergency data.

7.3.10 Animal Health and Safety

ONEOK will avoid, minimize, and mitigate impacts on protected species to the extent practicable. A summary of field surveys conducted with respect to natural resources is included in Section 5.3 and consultations with state and federal agencies related to protected species are provided in Section 6. Impacts on the majority of animal species will be short-term and temporary, and the construction workspace will be restored to its pre-construction conditions following installation of the pipe.

7.3.11 Plant Life

As noted on the land use/land cover maps (see Exhibit B.3), the majority of the Route crosses cultivated cropland and herbaceous grasslands. Field surveys did not identify any protected or endangered plant species. All areas disturbed by construction of the Project will be revegetated in accordance with applicable agency standards and landowner requests. In addition, ONEOK will complete tree and shrub mitigation per NDPSC guidelines.

7.4 POLICY CRITERIA

7.4.1 LOCATION AND DESIGN

The Project facilities are being sited in accordance with the North Dakota Energy Conversion and Transmission Facility Siting Act (NDCC chapter 49-22.1). Efforts to avoid and minimize environmental and human impacts are ongoing. Additionally, discussions with landowners regarding placement of the pipeline on respective tracts have been ongoing for several months.

Facilities will be constructed and operated according to all applicable regulations. The Project will meet or exceed state and federal safety requirements and will be designed in accordance with 49 CFR Part 195. All persons and firms providing service to ONEOK are required to conduct their work in compliance with environmental conditions, permit authorizations, and applicable regulations and will be held accountable for their actions.

7.4.2 TRAINING AND UTILIZATION OF IN-STATE LABOR

Construction of the Project will require approximately 300 workers in North Dakota.

7.4.3 ECONOMIES OF CONSTRUCTION AND OPERATION

The Project will be an additional North Dakota asset for ONEOK. In 2018, ONEOK paid ad valorem tax in excess of $432,000. Once constructed and in-service, the continued costs of maintenance and operation of the proposed pipeline will be minimal.

7.4.4 USE OF CITIZEN COORDINATING COMMITTEES

ONEOK, Inc., the parent company of ONEOK, has established and maintains a good relationship with local residents through its long-term regional presence operating various assets in the area. Through these relationships, ONEOK, Inc. has maintained several grassroots communication channels to inform local residents regarding the developments associated with the Project. ONEOK, Inc. will continue to maintain

contact with local government officials. Through this contact, Project-related information will be exchanged and should concerns arise, ONEOK, Inc. will work with officials to resolve those issues.

7.4.5 COMMITMENT OF PORTION OF TRANSMITTED PRODUCT FOR USE IN STATE

The proposed Project will originate at HESS Tioga Natural Gas Processing Plant and deliver NGLs to the Stateline to Riverview NGL pipeline. The products handled, transferred, and shipped will be delivered to markets located out of the state.

7.4.6 LABOR RELATIONS

ONEOK maintains positive labor relations with its staff and contract workforce and does not anticipate encountering any adverse labor relations on this Project. ONEOK is an equal opportunity employer committed to diversity and inclusion. Additionally, the labor market in the region is generally supportive of the oil and gas industry.

7.4.7 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

ONEOK is committed to protecting the environment during all phases of construction of the Project. Before construction, environmental field surveys of the pipeline route were conducted to identify wetlands, streams, threatened and endangered species and their habitat, cultural resources, agricultural or forested areas, and special land-use designations. In consultation with state and federal agencies, ONEOK developed mitigation plans to protect these sensitive areas during and after construction. Once the pipeline is operational, ongoing monitoring and maintenance activities will be implemented to ensure the safe operation of the pipeline.

7.4.8 COORDINATION OF FACILITIES

As noted previously, the Project originates at the HESS Tioga Natural Gas Processing Plant and will terminate at the Stateline to Riverview NGL pipeline. From that location, NGLs will be transported to the Mid-Continent and Gulf Coast for additional processing.

ONEOK Rockies Midstream (ONEOK's affiliate) owns and operates several gas processing plants in North Dakota (Stateline I and II, Garden Creek I, II and III, Bear Creek, Lonesome Creek, Grasslands, and Demicks Lake) and is in various stages of construction on additional plants (Demicks Lake II, Demicks Lake III, and Bear Creek II). ONEOK provides take-away capacity via pipeline for the NGLs produced at the plants. Coordination of the proposed Project with existing facilities is anticipated to be seamless, as the proposed Project will provide additional take-away transportation capacity of NGLs in North Dakota.

7.4.9 MONITORING IMPACTS

ONEOK has established and maintained positive landowner and community relationships throughout the region through its open communication and commitment to corporate citizenship standards that are based on integrity. ONEOK monitors landowner concerns through its ROW department and responds to all reasonable requests. In a similar manner, ONEOK monitors community concerns and responds to all reasonable concerns brought to its attention by local community leaders. ONEOK will select a contractor

for construction of the Project and will coordinate the oversight responsibilities for construction activities with this contractor throughout the Project. Environmental responsibilities will be coordinated in the same manner.

During operation, pipeline control personnel provide 24-hour electronic surveillance of ONEOK pipeline operations. In addition, ONEOK uses a number of inspection methods and processes to mitigate corrosion and minimize the potential for third-party damage to its pipelines. These include regular ROW patrols, inspections of cathodic protection equipment, and coordination with the North Dakota One-Call Center to mark a pipeline or to be present during excavation to ensure the public's safety and the integrity of the pipeline.

ONEOK designs, constructs, operates, and maintains its pipeline systems to ensure safety and reliability. If a leak were detected, the company is able to stop the flow of product remotely from its control center. ONEOK continues to establish and maintain contact with appropriate fire, police, and other public officials. This communication establishes the responsibility and resources of each government organization that may respond to a pipeline emergency. ONEOK also acquaints officials with the abilities of the pipeline operator when responding to an emergency. In all cases, emergency responders are directed to protect people first, then the environment next, and then property.

7.4.10 USING EXISTING AND PROPOSED ROWS AND CORRIDORS

ONEOK selected the Project alignment to maximize the use of existing utility corridors and other linear infrastructure. Of the 75.0 miles of the Route, approximately 58 percent is co-located with existing utilities.

7.4.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES

ONEOK, Inc. is a leading midstream service provider and owner of one of the nation's premier NGL systems, connecting NGL supply in the Mid-Continent, Permian and Rocky Mountain regions with key market centers and an extensive network of natural gas gathering, processing, storage and transportation assets. The company owns and operates:

- 7,460 miles of NGL gathering pipelines;
- 5,000 miles of NGL distribution pipelines;
- 27 billion cubic feet of storage capacity;
- 7 NGL fractionators;
- 8 NGL product terminals; and
- 860,000 bpd of net NGL fractionation capacity.

8.0 OTHER FACTORS CONSIDERED

8.1 PUBLIC HEALTH, WELFARE, NATURAL RESOURCES, AND THE ENVIRONMENT

Refer to Sections 5.0, 7.1, 7.2, 7.3, 7.4.3, 7.4.7, and 7.4.9.

8.2 TRANSMISSION TECHNOLOGIES AND SYSTEMS DESIGNED TO MINIMIZED ADVERSE ENVIRONMENTAL EFFECTS

The Project design is consistent with existing pipeline technologies. A variety of measures will be taken to avoid, minimize, or mitigate impacts on sensitive resources, including implementing trenchless construction (i.e., HDD, bores), narrowing ROW widths, rerouting, and route deviations, etc. Trenchless techniques avoid the need for open cut trenches, thereby minimizing environmental impacts and eliminating ground-level surface hazards in sensitive areas along the route. BMPs will be used to minimize impacts from clearing, trenching, and reclamation of the construction ROW. Potential impacts on environmentally sensitive areas will be either avoided through rerouting, HDDs/bores, or by protecting sites during construction.

ONEOK's Construction Mitigation and Restoration Plan (CMRP) will prescribe construction techniques and mitigation measures that will be employed to minimize the effects of construction on environmental resources. Mitigation measures are also discussed in Section 9 of this application. The Project does not include new energy conversion or transmission technologies that are expressly designed to minimize adverse environmental effects.

8.3 BENEFICIAL USES OF WASTE ENERGY FROM A PROPOSED ENERGY CONVERSION FACILITY

The Project does not involve new energy conversion facilities; as such, the potential for beneficial uses of waste energy from a proposed energy conversion facility does not apply to the Project.

8.4 UNAVOIDABLE ADVERSE DIRECT AND INDIRECT ENVIRONMENTAL EFFECTS

Unavoidable adverse direct and indirect environment effects will be temporary, short-term, and will be minimized to the extent practicable. The Project has been co-located and will run parallel to existing infrastructure (e.g., pipelines, utility corridors, railways) to the extent practicable. ONEOK will implement measures to mitigate potential impacts on resources such as vegetation, wildlife, agricultural, transportation, and noise levels. Refer to Section 9 for a complete description of mitigation measures.

8.5 CORRIDOR OR ROUTE ALTERNATIVES DEVELOPED DURING THE HEARING THAT MINIMIZE ADVERSE EFFECTS

A description of the alternatives analyzed during Project design is presented in Section 4 of this application. The Project Corridor and Route have been designed based on landowner engagement, stakeholder outreach, civil surveys, environmental surveys, and constructability analysis, among other

considerations. Reroutes of varying lengths and for a variety of reasons have been made to minimize adverse effects to sensitive areas. ONEOK will continue to adjust the Route based on additional constructability concerns and necessary feature avoidance. ONEOK will participate in the hearing process and will address any alternatives developed during the process, as applicable.

8.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES IF DESIGNATED

The Project was designed to co-locate the pipeline within existing linear infrastructure (i.e., pipeline, utility, road, and railroad corridor) to the extent practicable (58 percent). This design minimizes irreversible or irretrievable commitments of natural resources due to conversion from greenfield to industrial uses and optimizing existing fragmentation. Generally, all areas impacted by pipeline construction will return to previous land use. In isolated areas, long-term vegetation impacts will result from converting wooded areas to herbaceous/scrub shrub areas to comply with federal pipeline regulations. This conversion of vegetation ensures safety and integrity of the pipeline and facilitates aerial inspections of the pipeline.

The Project will not result in an irreversible and irretrievable commitment of natural resources.

8.7 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE FACILITY

Estimated total spending for construction of the Project is $100 million. This estimate includes construction of the pipeline, engineering, and real estate services; easement payments; mitigation payments; and other support services. Construction outputs for the Project include employment, labor income, and production spending. The Project is expected to employ approximately 300 workers for construction activities. These economic impacts will be realized during construction in 2020 and throughout operations and maintenance annually starting in 2020.

North Dakota imposes taxes on sales, use, gross receipts and lodging, and individual income. Local governments may impose taxes on the same tax bases; however, most unincorporated areas do not impose local option sales taxes. The Project will contribute directly and indirectly to tax bases at the state and local levels.

Construction of this Project would provide firm, reliable service for an initial anticipated throughput of 30,000 bpd of NGLs and provide a critical transportation link between the HESS Tioga, XTO Nesson, and Flatlands Springbrook with ONEOK's NGL transmission system for delivery to facilities in the Mid-Continent and Gulf Coast for additional processing prior to distribution to various markets.

8.8 EXISTING PLANS FOR OTHER DEVELOPMENTS IN THE VICINITY

ONEOK, Inc., the parent company of ONEOK, is the largest independent operator of natural gas gathering and processing facilities in the Williston Basin.

Through its consultation with WAWSA, ONEOK has become aware of a new WAWSA pipeline system in the western portion of the Project area that is slated for construction in Spring 2020 (see Section 6.14 for a discussion and WAWSA consultation in Exhibit E for a map). ONEOK will coordinate with WAWSA through construction activities in areas where the two projects may intersect. According to the NDIC – Oil

and Gas Division (NDIC, 2019), there are currently 57 active drilling rigs in Williams County. ONEOK is not aware of any other large-scale projects in the vicinity of the Project and to date.

With the exception of WAWSA, none of the local, state, or federal agencies ONEOK consulted with for this Project have identified any projects or developments in the Project area. Based on a review of the scope and location of present and foreseeable projects, ONEOK has concluded that this Project is not in conflict with any known or proposed developments planned in the area.

8.9 RECYCLING OF CONVERSION BYPRODUCTS AND EFFLUENTS

Recycling of conversion byproducts and effluents is not applicable to this type of project.

8.10 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

ONEOK is committed to conducting its business in compliance with all applicable environmental laws and regulations. These laws, regulations, and standards are designed to safeguard the environment, human health, wildlife, and natural resources.

ONEOK will conduct its activities with the objectives of providing a healthful and safe workplace for its employees and preventing accidents and environmental incidents. All persons and firms providing service to ONEOK are required to conduct their work in compliance with all environmental conditions, permit authorizations, and applicable regulations and will be held accountable for their actions in that regard.

8.11 ENERGY CONSERVATION THROUGH USE OF A PRIMARY ENERGY SOURCE OR RAW MATERIAL

ONEOK is committed to energy conservation through management of energy costs and energy usage in the operations of the Project.

8.12 NON-RELOCATION OF RESIDENTS

No residents will be relocated as a result of the Project.

8.13 DEDICATION OF AN AREA ADJACENT TO THE FACILITY FOR LAND USE SUCH AS RECREATION, AGRICULTURE, OR WILDLIFE MANAGEMENT

ONEOK does not own property adjacent to the proposed Project suitable for recreation, agricultural, or wildlife management purposes. The current land use of properties adjacent to the Project is primarily agricultural/range land (see Exhibit B.3).

The Project will result in the development of a buried pipeline and other industrial type ancillary facilities. No land is being acquired for the Project. Therefore, no areas are proposed for dedication.

8.14 SECONDARY USES OF APPROPRIATE ASSOCIATED FACILITIES FOR RECREATION AND THE ENHANCEMENT OF WILDLIFE

The Project will result in the development of a buried pipeline and other industrial type ancillary facilities. As such, these developments are not typically suitable for recreational or wildlife application.

8.15 PROBLEMS RAISED BY FEDERAL, STATE, AND LOCAL AGENCIES

ONEOK provided Project-specific notification to various federal, state, and local agencies. Through this notification process, these agencies have the opportunity to identify possible sensitive environmental resources within the study area and any related agency concerns. Section 6 of this application summarizes the consultations that have taken place to date and a complete record of these agency communications is provided in Exhibit E. ONEOK is actively working with federal, state, and local agencies and will address problems that are raised. ONEOK will continue to file agency responses with the Commission as they are received.

9.0 MITIGATION MEASURES

ONEOK has developed, or is in the process of developing, several Project control documents that will be utilized during construction activities to minimize and mitigate impacts on environmental resources. Draft "Issued for Permitting" copies of these plans have been included in Exhibit H of this filing. These plans will be finalized prior to construction and incorporated into contract documents and enforced by ONEOK.

- CMRP
  - Comprehensive control document that describes general mitigation measures related to erosion and sedimentation, stream/wetland crossings, highway/rail crossings, dewatering and hydrostatic testing, and revegetation.
- Migratory Bird Plan
  - Describes measures to be taken to avoid, minimize, and reduce possible impacts on migratory birds.
- SWPPP
  - Outlines construction stormwater management and erosion/sediment controls.
- Spill Prevention, Control, and Countermeasure Plan
  - Outlines spill prevention and BMPs and provides details on spill response and notification procedures in the event of a spill.
- HDD Inadvertent Release Control and Mitigation Contingency Plan
  - Provides measures to minimize the potential for release of drilling mud during HDD operations. Establishes procedures and responsibilities for containment/cleanup in the event of an inadvertent release.
- Unanticipated Discoveries Plan (UDP)
  - Provides response measures to be followed in the event of a discovery of cultural resources or human remains during construction.
- Revegetation Plan
  - Describes revegetation and permanent restoration of disturbed ROW. Appropriate seed mixes will be incorporated into this plan. This plan also addresses control of noxious and invasive weeds.
- Weed Management Plan
  - Outlines methods to control state and county listed noxious weeds.
- Dust Control Plan
  - Outlines methods of controlling fugitive dust emissions caused by construction activities/soil exposure.

The plans, as they relate to specific resources, are referenced in the following sections. In addition to these plans, the Project will be subject to permits from various agencies (environmental permits are discussed in Section 6 and a summary table is included as Exhibit G). To further ensure compliance with permits, plans, obligations, and commitments, ONEOK will employ one or more EIs during the Project. The EI(s) will be responsible for monitoring construction activities and will provide daily reports to ONEOK staff.

9.1 ENVIRONMENTAL TRAINING PLAN

Prior to commencing construction on this Project, ONEOK will conduct environmental training for all Project personnel and contractors who will be working in the field. Those personnel completing the

training are provided a hard-hat sticker; personnel who do not complete training will not be allowed on the Project ROW.

ONEOK will develop a Project-specific presentation which covers environmental expectations, regulations, and ONEOK policy. This presentation will be covered at the Project construction kick-off meeting. Topics covered will include General Guidelines and Contractor Expectations, Project Staff, Project Permits and Plans, Compliance and Mitigation Measures, Cultural Resources and Unanticipated Discoveries, Environmentally Sensitive Areas, and Public Relations. An open question and answer session will be provided to allow contractors and all Project personnel to understand Project-related environmental requirements and processes. Any new construction personnel will also receive environmental training as they are added to the Project.

9.2 HUMAN ENVIRONMENT

ONEOK will require its construction contractor to clean up, on a daily basis, all personal litter, bottles, and paper deposited by ROW preparation and construction crews. Waste and scrap that is the product of pipeline construction will be removed and properly disposed of in accordance with applicable regulations before construction is completed. To the maximum extent practicable, ONEOK will minimize noise and dust resulting from construction near residential areas.

Paved roads and railroad crossings will be bored; therefore, use of these facilities will not be disrupted as a result of the Project. Gravel roads will be open cut or bored. Open cutting a road will temporarily close it to traffic; however, the road network throughout the Project area is sufficient that suitable alternative routes are readily available to prevent any significant delays in traffic.

ONEOK will obtain applicable permits prior to conducting road crossings. Temporary signs will be posted at each crossing as appropriate to alert motorists to construction activity. Paved roads and railroads will be bored, which will minimize interference with traffic flow caused by construction activities.

As noted above, ONEOK has developed, or is in the process of developing, several Project control plans that will be utilized during construction activities to minimize and mitigate impacts (draft plans included in Exhibit H)

9.3 TERRAIN AND GEOLOGICAL RESOURCES

ONEOK will, to the maximum extent practicable, restore the area affected by pipeline construction to its pre-construction condition and contours. Restoration will be compatible with the safe operation, maintenance, and inspection of the pipeline. Measures such as slope breakers, erosion control blankets, and re-vegetation will be employed, as appropriate, to maintain the stability of slopes along the ROW. No crown of backfill material will be left over the trench in wetlands.

Please refer to Sections 6.9 and 7.2.4 for additional discussion regarding potential landslide areas identified by the NDGS within the Project corridor. ONEOK will keep the NDPSC apprised of its analysis of these areas.

9.4 SOILS

Pipeline construction activities such as clearing, grading, trench excavation, and backfilling, as well as the movement of construction equipment along the ROW, may result in impacts on soil resources. Clearing removes protective cover and exposes soil to the effects of wind and precipitation, which may increase the potential for soil erosion and movement of sediments into sensitive environmental areas. Grading and equipment traffic may compact soil, reducing porosity and percolation rates, which could result in increased runoff potential. Trench excavation and backfilling could lead to a mixing of topsoil and subsoil and may introduce rocks to the soil surface from deeper soil horizons.

ONEOK will minimize or avoid these impacts on soils by implementing the mitigation measures described in its CMRP. The CMRP will be included in contract documents and enforced as such throughout the duration of the Project. Temporary erosion and sedimentation control measures may include installation of silt fence, straw bales, slope breakers, trench breakers, erosion control fabric, and mulch.

To minimize potential impacts on soil productivity, topsoil will be segregated during trench excavation in agricultural land, unsaturated wetlands, and if applicable, other areas where soil productivity is an important consideration. Unless otherwise requested by the landowner, topsoil in cropland will be removed to a maximum depth of 12 inches from the trench and spoil storage area and stored separately from the trench spoil. After the trench is backfilled, topsoil will be returned to its approximate original location in the soil horizon.

Compaction of agricultural soils will be minimized by restricting construction activities during periods of prolonged rainfall. Where unacceptable levels of compaction occur in agricultural lands, a chisel plow or other deep tillage equipment will be utilized to loosen the soil during restoration.

ONEOK will retain one or more EIs to monitor the contractor's compliance with applicable requirements to protect soil resources during construction of the Project.

In order to assist in restoration and reclamation efforts, ONEOK initiated baseline soils and topsoil depth surveys in Fall 2019 to support construction design and restoration and revegetation efforts. ONEOK plans to complete these surveys prior to construction in spring 2020, pending favorable weather conditions. The purpose of the study is to identify existing soil conditions across the entire Project length, highlight problem areas, plan construction controls, and design restoration measures in a more site-specific manner. The results of these studies will provide valuable information to ONEOK to assist in targeted, site-specific restoration. Pending final construction design, geotechnical investigations may be initiated at certain HDD locations to assist in planning the set-up, profile, and completion of boring efforts and to minimize risk for unexpected conditions during construction.

9.5 VEGETATION AND WILDLIFE

ONEOK will clear the ROW to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline. In areas that require permanent revegetation, ONEOK will specify appropriate seed mixes, application rates, and seeding dates, considering recommendations of appropriate state and federal agencies and landowner requests. In non-agricultural areas, vegetation cleared from extra workspace will be allowed to revegetate after construction depending on arrangements with the landowner. Consequently, significant changes in cover types are not anticipated.

ONEOK will take appropriate precautions to protect livestock and crops from being affected by construction. Operation of the proposed pipeline is not anticipated to significantly affect terrestrial wildlife, fisheries resources, or other aquatic species. Shelter belts and trees will be protected and restored by ONEOK to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the pipeline.

Noxious Weeds: The Project Corridor includes 541 noxious weed patches, of which 268 are intersected by the Route (see Exhibit D). To mitigate the spread of noxious weeds, equipment leaving infested areas will be visually inspected prior to leaving the area, and vegetation and soils will be cleaned from vehicles and equipment, as needed. ONEOK will also comply with its Weed Management Plan (see Exhibit H).

Trees and shrubs: ONEOK will comply with the NDPSC's tree and shrub mitigation specifications. A formal tree and shrub inventory was initiated in fall 2019. Results from these inventories will provide a baseline for tree and shrub mitigation for the Project, which ONEOK assumes will be a condition of the NDPSC's Order. See Section 5.4 for more information. The tree and shrub inventory report will be filed with the Commission upon completion or with ONEOK's Tree and Shrub Mitigation Plan.

Additional field work may occur prior to construction as the workspace is finalized and pending final regulatory authorization of the Project. The clearing or removal of trees or shrubs will be done selectively and minimally, in a manner that minimizes the disturbance to woody vegetation and in compliance with NDPSC's specifications. The replacement of trees and shrubs will be based upon actual impacts due to construction and NDPSC requirements.

Wetlands and Waterbodies: ONEOK will minimize impacts on wetland and waterbodies by minimizing workspace through these features and by utilizing low-impact crossing methods, such as HDD, where appropriate. Furthermore, ONEOK will conduct all regulated crossings in compliance with the USACE NWP 12. After completion of waterbody crossings, ONEOK will revegetate disturbed stream banks in accordance with the CMRP, Revegetation Plan, and requirements of applicable state or federal permits. During construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. After the trench is backfilled, the topsoil will be replaced to facilitate the natural revegetation process. Features will be returned to their pre-construction condition and contours.

Whooping crane: If a whooping crane is sighted within the construction corridor or if the USFWS notifies ONEOK of a whooping crane sighting within 1 mile of the construction ROW, ONEOK would suspend construction activities and work would not resume until the birds have left the area. Any whooping crane sightings would be immediately reported to the USFWS and the NDGFD.

As part of pre-construction activities, ONEOK would conduct environmental training with contractors and construction crews, providing them information on proper identification of the species and correct procedures regarding a sighting (see Section 9.1). In addition, to avoid long-term impacts on whooping crane migratory stopover habitat, wetlands that are crossed by the Project would be restored to pre-construction contours. With these conservation measures in place, Project activities are not anticipated to have adverse impacts on the whooping crane.

Rufa red knot: If red knots are sighted during construction or if the USFWS notifies ONEOK of a red knot sighting within 1 mile of construction activities, ONEOK would suspend construction activities and work would not resume until the birds have left the area. Any sightings within the construction corridor would be immediately reported to the USFWS.

As part of pre-construction activities, ONEOK would conduct environmental training with contractors and construction crews, providing them information on proper identification of the species and correct procedures regarding a sighting (see Section 9.1). In addition, to avoid long-term impacts on the red knot's migratory stopover habitat, wetlands crossed by the Project would be restored to pre-construction contours. With these conservation measures in place, Project activities are not anticipated to have adverse impacts on the rufa red knot.

Piping plover: As noted in Section 5.3.1, wetland and waterbody surveys conducted in 2019 identified the presence of one wetland with *potentially* suitable habitat for piping plover within the proposed Project Corridor near MP 16.8 (see Exhibit D); however, nesting habitat is not available every year at interior wetlands due to high inter-annual availability in water levels and/or vegetation growth on beaches.

If deemed necessary, surveys will be conducted at this wetland after April 1, 2020 to determine whether suitable nesting habitat is present. If suitable habitat is identified at this location, a qualified wildlife biologist would conduct daily surveys of the identified areas for the duration of the drilling activities to monitor for the presence of piping plovers. The survey would be conducted during daylight hours (i.e., between 30 minutes prior to sunrise and 30 minutes after sunset). The USFWS recommends a 0.5 mile no entry buffer around wetlands where nesting plovers are documented (see Section 6.1.1). If nesting plovers are present at this wetland, ONEOK would stop work and contact the USFWS for technical assistance to determine the appropriate actions that must be taken to avoid adverse impacts to this species.

Bald and Golden Eagles: ONEOK has not identified any known eagle nest locations based on its consultations with USFWS and NDGFD, as well as its 2019 field surveys. ONEOK sent a specific request for known eagle nest data to NDGFD on October 10, 2019 and NDGFD confirmed there are no known nests in the Project study area (see Section 6.6 and Exhibit E).[10] ONEOK will work with the USFWS, NDGFD and other agencies as necessary if an active eagle nest is identified within 1 mile of the Project.

Migratory Bird Treaty Act: The commonly observed timeframe for avian migration in North Dakota is February 1st to July 15th. Construction activities for the proposed Project are planned to begin in March 2019. Based on the Project's schedule, construction activities are anticipated to occur during the recognized migration/breeding season. ONEOK will develop and implement their Migratory Bird Plan (see Exhibit H).

To the extent feasible, ONEOK will adjust Project execution with the objective of meeting the goals listed above.

9.6 LAND USE

ONEOK will obtain and comply with applicable county permits and zoning and land use regulations. Permits may include, but are not limited to, grade and fill permits, ditch crossing permits, and road and utility permits. ONEOK will retain one or more EIs to monitor compliance with environmental conditions of county or township permits. County and township officials with zoning authority have been identified in Exhibit C.

ONEOK will repair surface drains and drainage tiles disturbed during ROW preparation, construction, and maintenance activities. ONEOK will repair private roads and farm lanes damaged when moving equipment

[10] NDGFD identified one eagle nest it had in its files in the study area; however, this nest was noted as "destroyed' in 2014. See Exhibit E.

or when obtaining access to the ROW. ONEOK will repair or replace fences and gates removed or damaged as a result of ROW preparation, construction, or maintenance activities.

The Project will be installed at a minimum depth of 48 inches from the surface contour to minimize the potential for environmental damage resulting from deep tillage activities, unless modified to accommodate special construction issues at the site. All undeveloped section line crossings will be installed at least 72 inches deep per NDPSC standard conditions. Upon installation of the pipeline, all Project locations will be returned to their original pre-construction contours and land use to the extent feasible.

9.7 CULTURAL RESOURCES

Consideration for impacts on cultural resources have occurred throughout the course of the Project. Avoidance is the preferred method of treatment for historic properties. As discussed in Sections 5.1 and 6.8, ONEOK conducted Class III inventory surveys throughout the Project Corridor and concluded the Project will not have an adverse impact on NRHP-eligible cultural resources. ONEOK is finalizing its Class III cultural resource report and anticipates filing the report with the North Dakota SHPO in December 2019. ONEOK will file a copy of the SHPO response letter upon receipt.

There is always the potential during construction to encounter previously unknown cultural resources or human remains. As such, ONEOK has developed a Project-specific UDP (see Exhibit H) that describes the actions to be taken in the event a previously unrecorded paleontological or cultural resource site is discovered during construction activities, specifically calling for work to stop until the appropriate authority can be contacted. This plan will be incorporated into contract documents and implemented throughout the Project.

10.0 DEVELOPMENT

10.1 AREAS OF KNOWN GEOLOGIC INSTABILITY

As noted in Sections 6.9 and 7.2.4, NDGS identified 29 landslide deposits in the study area and specifically listed 5 areas that require further evaluation. These areas are summarized in Table 7.2.4-1 and are displayed as avoidance areas in Exhibit B.2. As noted previously, ONEOK is in the process of evaluating each of these areas to determine the exact location of each feature with respect to the Route and to determine an appropriate avoidance measure, if required. Following further analysis of these five locations, ONEOK will submit a follow-up consultation to the NDGS to confirm the Project will not have an impact in these areas. ONEOK will keep NDPSC apprised of these discussions. See Sections 6.9 and 7.2.4 for more information.

10.2 PRESENT AND FUTURE NATURAL RESOURCE DEVELOPMENT IN THE AREA

A small percentage of North Dakota is held in public ownership. Of the 45 million acres of land in the state, less than 3 million are owned in fee title by state and federal land management agencies. Most of these agencies work in cooperation with private producers in managing these lands. For example, the NDGFD leases certain tracts of wildlife management areas for grazing, haying, and food plots. The USFS manages land for multiple uses and the sustained yield of renewable resources such as water, forage, wildlife, and recreation, as well as industry such as oil and gas development.

As discussed in Section 7.1.1, there are no national parks, national memorial parks, national historic sites and landmarks, national wilderness areas, or national monuments located within the Project Corridor. There are no designated or registered state parks, sites, monuments, or nature preserves along the Project Corridor. There are no county parks, recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions crossed by the route. As such, there will be no direct impacts on national parks, sites, monuments, or wilderness.

As discussed in Section 7.2.1, there are no federally managed wildlife areas; wild, scenic, or recreational rivers; or wildlife refuges within the study area, Project Corridor, or Route. The land use along the pipeline route is primarily in agricultural production with a significant number of oil wells and other pipeline systems and associated infrastructure in the area. As the pipeline is a buried utility, surface land use will generally return to preexisting conditions once the pipeline is installed.

Other known development projects in the vicinity of the Project are discussed in Section 8.8 of this application. ONEOK is not aware of any federal, state, or local natural resource development plans within the Project Corridor or study area.

11.0 QUALIFICATIONS OF PREPARERS

Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Degree: B.S., Administration of Justice, The Pennsylvania State University

Ms. Ludwig is an Environmental Project Manager with 14 years of environmental planning experience in a wide range of development and remediation projects. She has both performed and managed the assessment, siting, permitting, and construction of a wide range of federal, state, and municipal infrastructure projects throughout the Midwest and Southeast regions. Ms. Ludwig manages ONEOK's third party environmental and cultural resource consultants and serves as a coordinator for environmental and other necessary project permits.

Matthew Nelson
Project Manager
ONEOK, Inc.

Degrees: M.S., Engineering Management, University of Missouri Science and Technology
B.S., Civil Engineering, United States Military Academy

Mr. Nelson has been managing pipeline related projects in various regions within which ONEOK operates over the past 4 years. As project manager for the Tioga Lateral Pipeline Project, Mr. Nelson manages and coordinates activities of the project team to execute the Project. Mr. Nelson is responsible for oversight of the entire planning, siting, construction, and restoration process. He is tasked with meeting the commercial objectives and schedule of the project while maintaining strict compliance with all federal, state, and local regulations.

Paul Hartzheim, M.S.
Senior Environmental Analyst
Merjent, Inc.

Degrees: M.S., Water Resources Science, University of Minnesota – Twin Cities
B.S., Environmental Science, University of Minnesota - Twin Cities

Mr. Hartzheim is a Senior Analyst and Project Manager with 15 years of environmental consulting experience serving the pipeline and renewables industries. He has served as Project Manager, Deputy Project Manager, and resource specialist on numerous projects in over 20 states. Mr. Hartzheim's responsibilities have included preparation of federal, state, and local permit applications; State Public Utility Commission filings; construction and industrial SWPPPs; National Pollutant Discharge Elimination System applications; Soil Erosion and Sediment Control Plans; and Environmental Mitigation Plans, as well as coordination of state and federal agency consultations. Mr. Hartzheim has also assisted in data collection, interpretation and analysis, developing and conducting environmental training modules, and coordinating and managing field survey efforts and EIs.

Maddy Krumwiede, PMP
Project Manager/Senior Environmental Analyst
Merjent, Inc.

Degrees: M.B.A., North Dakota State University
B.S., Civil Engineering, North Dakota State University

Ms. Krumwiede is a Project Manager and Senior Analyst with Merjent with 8 years of experience in the water resources and environmental regulation fields. Her experience in the environmental field includes project management, interpretation and analysis of project-related data/maps to evaluate permit needs and form strategies during the planning stages of projects, coordinating environmental field surveys, conducting environmental training, performing compliance inspections, and EI coordination. Ms. Krumwiede has a variety of permitting experience, including preparation of federal, state, and local permit applications; National Pollutant Discharge Elimination System applications and SWPPPs; preparation of Environmental Assessments; and coordination with local, state, and federal units of government.

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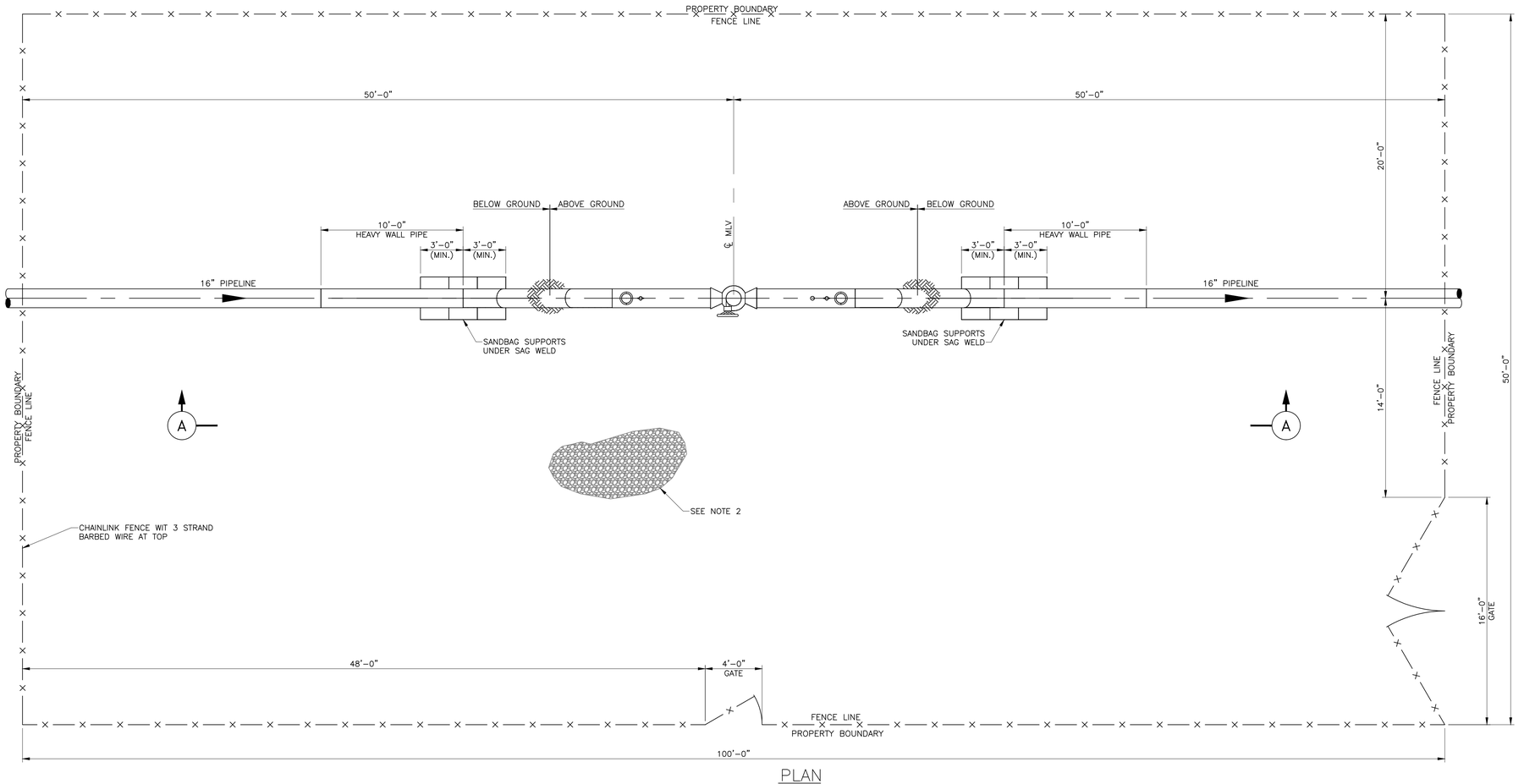
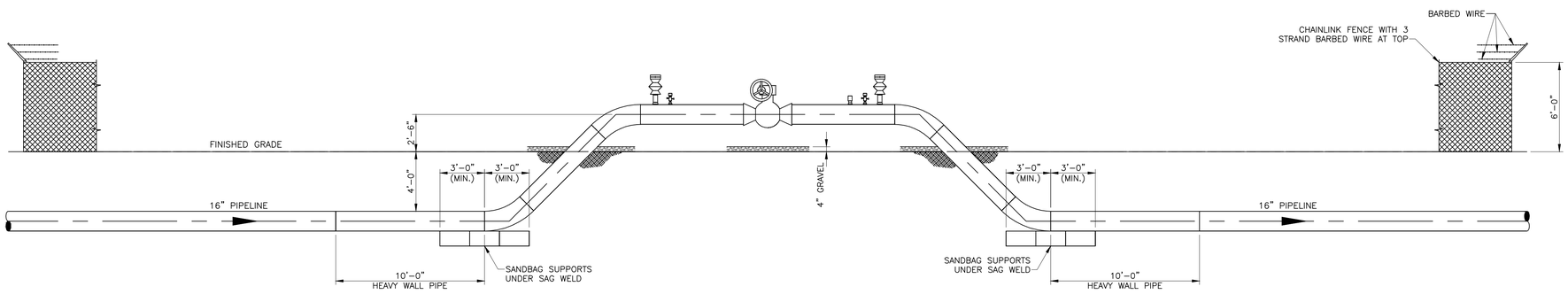
Exhibit A

Engineering Documents



PLAN



ELEVATION "A–A"

NOTES:

1. ALL FENCE MATERIAL TO BE ZINC COATED (GALVANIZED) 9 GA. STEEL.
2. 1" CRUSHED LIMESTONE OR 1" CRUSHED SCORIA.

ISSUED FOR REVIEW
11/05/19

MK	DATE	REVISIONS	BY	AP.
A	11/05/19	ISSUED FOR REVIEW	FC	CH

MK	DATE	REVISIONS	BY	AP.

NOTICE
This drawing has not been published and is the sole property of ONEOK BAKKEN PIPELINE, Tulsa, Ok., and is loaned to the borrower for his confidential use only; and in consideration of the loan of this drawing the borrower promises and agrees that it shall not be reproduced, copied, loaned, or otherwise disposed of directly or indirectly, nor used for any purpose other than for which it is specifically furnished.

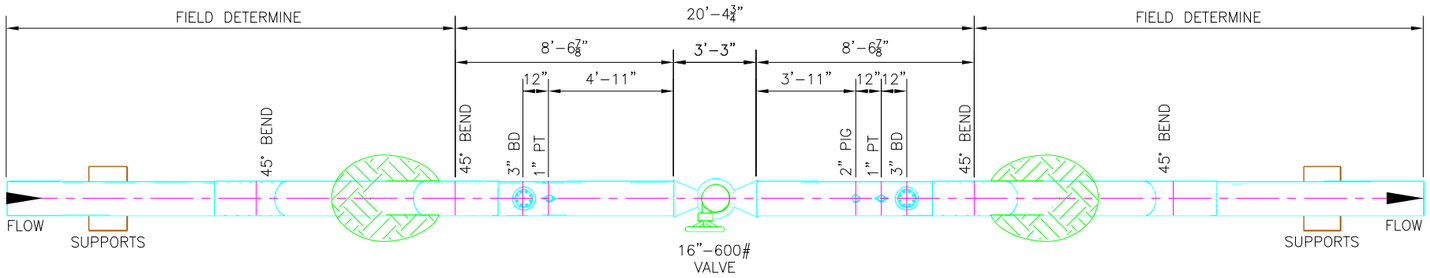
DWG. NO.	REFERENCE DRAWINGS

ONEOK BAKKEN PIPELINE
A SUBSIDIARY OF ONEOK PARTNERS

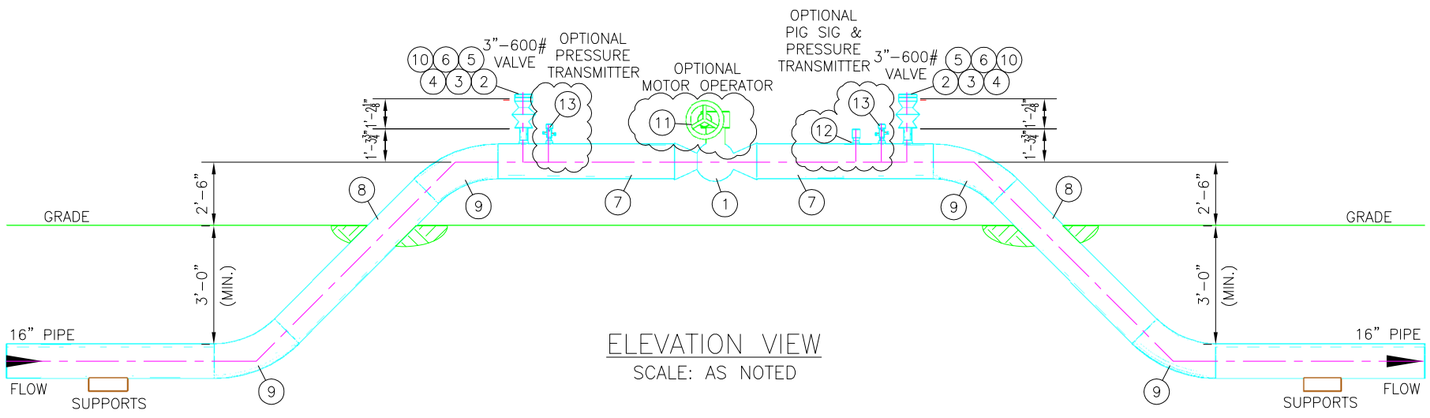
PLOT PLAN
TYPICAL 16" MAINLINE VALVE SITE
TIOGA LATERAL PROJECT

DES.: FC	AFE#: 023.131.5660.	DATE: 10/03/19	
DR.: FC	010033.115201	DWG. NO.: HTL-100-005	REV. A
CH.: JGW	SCALE:		
AP.: CH	CAD#:		

Drawing name: S:\AFS\Projects\ONEOK\Tioga\020376 - Tioga_Lateral_Pipeline_Project_Management_and_Engineering\770_Engineering\300_Mechanical\SITE PLANS\MLV\TYP_16IN_MLV.dwg Plotted on: Nov 05, 2019 - 1:04pm



PLAN VIEW
SCALE: AS NOTED



ELEVATION VIEW
SCALE: AS NOTED

BILL OF MATERIAL

MRK	QTY	SIZE	DESCRIPTION	LENGTH
1	1	16"	VALVE, BALL, ANSI 600, SEE DWG: STD-M-5001	3'-3"
2	2	3"	VALVE, PLUG, NORDSTROM, ANSI 600, SCH STD, FExBW CS, LUBRICATED PLUG, DYNAMIC BALANCED	11 1/2"
3	2	3"	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105	
4	2	3"	GASKET, ⅛" THK, ANSI 600, RF TYPE 304, ⅛" CENTERING RING, FLEXITALLIC CGI OR EQUAL	
5	16	3/4"	BOLTS, ANSI 16.5 GR B-7, w/ 2 HVY HED HEAD NUTS	5"
6	2	16"x3"	WELDOLET, SCH XH, ASTM A-105	
7	1	16"	16.000" O.D.x0.375" WT, API 5L, GRADE X-52, SCH 30, ERW, PE&B, LBS/FT 62.58	14'-0"±
8	1	16"	16.000" O.D.x0.375" WT, API 5L, GRADE X-52, SCH 30, ERW, PE&B, LBS/FT 62.58, COATED 14-16 MIL. FBE.	16'-0"±
9	4	16"	FACTORY 45°, 3R, SCH 30, Y-52	
10	2	3"	3.500" O.D.x0.216" WT, API 5L, GRADE B, SCH 40 SML, PE&B, LBS/FT 7.85	1'-0"

OPTIONAL BILL OF MATERIAL

11	1	16"	MOTOR OPERATOR, SEE DWG: STD-M-5002	OPTIONAL
12	1	2"	KIDD PIG SIG INDICATOR, SEE DWG: STD-M-5001 FOR MANUAL SEE DWG: STD-M-5002 FOR ELECTRICAL	OPTIONAL
13	2	1/2"	PRESSURE TRANSMITTER, SEE DWG: STD-M-5002	OPTIONAL

P:\Standards\STD-P-1016

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	8/1/16	ISSUED FOR CONSTRUCTION	TDS		8				
2					9				
3					10				
4					11				
5					12				
6					13				
7					14				

NOTICE

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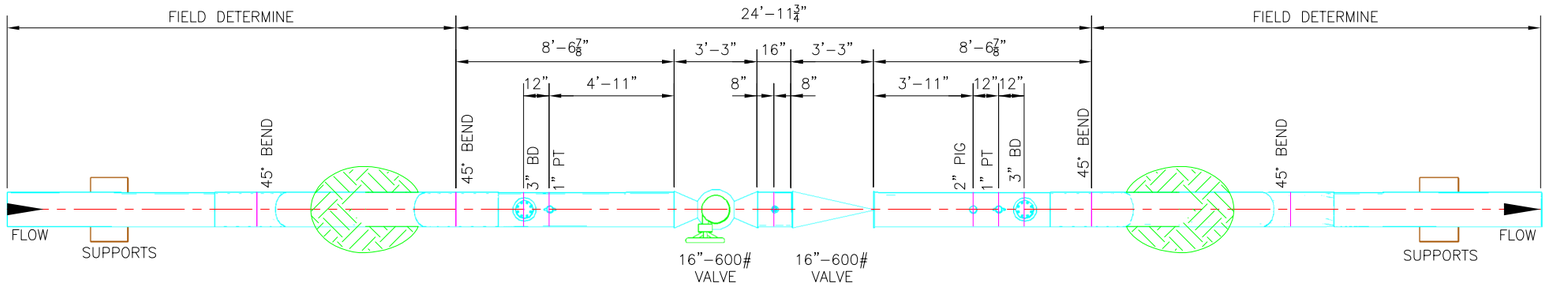
DWG. NO.	REFERENCE DRAWINGS
STD-M-5001	VALVES, & PIG SIG OPTIONS
STD-M-5002	MOTOR OPERATOR, PIG SIG & PT OPTIONS

ONEOK
NGL PIPELINE, L.L.C.
P.O. BOX 29
MEDFORD, OK 73759

STANDARD
16"-600# MAIN LINE BLOCK VALVE
DIMENSIONS & B.O.M.
PLAN & ELEVATION VIEWS

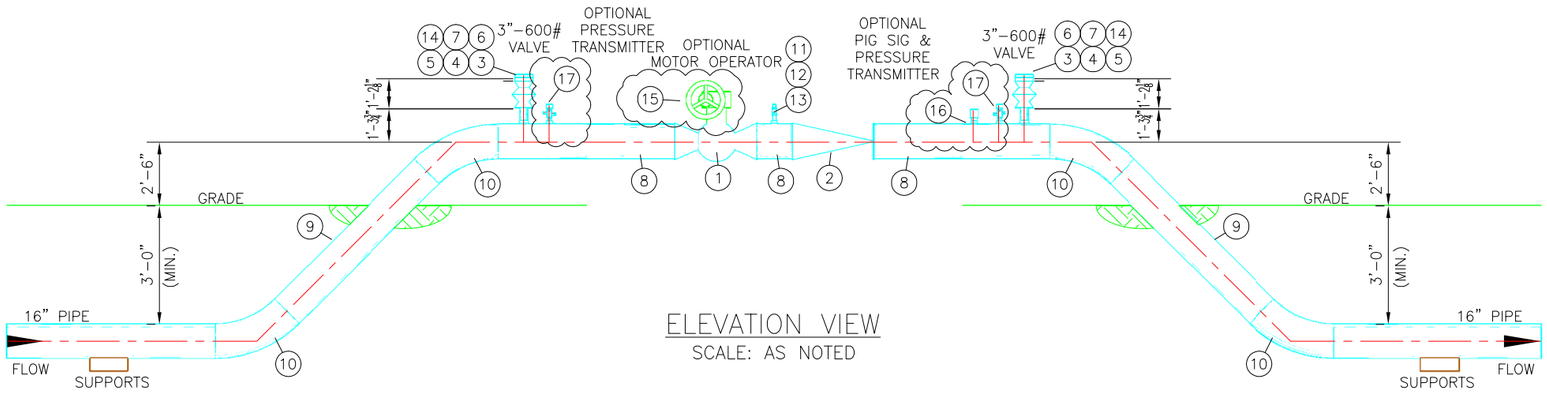
DES.:		SCALE: 3/8"=1'	CAD#: STD-P-1016	
DR.:	MBC	DATE: 5/18/16	AFE#:	REV.
CH.:	TDS	DWG. NO.:	STD-P-1016	1
AP.:				



PLAN VIEW
SCALE: AS NOTED

BILL OF MATERIAL				
MRK	QTY	SIZE	DESCRIPTION	LENGTH
1	1	16"	VALVE, BALL, ANSI 600, SEE DWG: STD-M-5001	3'-3"
2	1	16"	VALVE, CHECK, ANSI 600, SEE DWG: STD-M-5001	3'-3"
2	2	3"	VALVE, PLUG, NORDSTROM, ANSI 600, SCH STD, FExBW CS, LUBRICATED PLUG, DYNAMIC BALANCED	11 1/2"
4	2	3"	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105	
5	2	3"	GASKET, ⅛" THK, ANSI 600, RF TYPE 304, ⅛" CENTERING RING, FLEXITALLIC CGI OR EQUAL	
6	16	3/4"	BOLTS, ANSI 16.5 GR B-7, w/ 2 HVY HED HEAD NUTS	5"
7	2	16"x3"	WELDOLET, SCH XH, ASTM A-105	
8	1	16"	16.000" O.D.x0.375" WT, API 5L, GRADE X-52, SCH 30, ERW, PE&B, LBS/FT 62.58	15'-0"±
9	1	16"	16.000" O.D.x0.375" WT, API 5L, GRADE X-52, SCH 30, ERW, PE&B, LBS/FT 62.58, COATED 14-16 MIL. FBE	15'-0"±
10	4	16"	FACTORY 45°, 3R, SCH 30, Y-52	
11	1	1"	NIPOLET, SCH XXH, 3000#, ASTM A-105, THREADED	
12	1	1"	VALVE, BALL, THREADED, 3000#	
13	1	1"	PLUG, HEX HEAD, THREADED, 3000#, ASTM A-105	
14	2	3"	3.500" O.D.x0.216" WT, API 5L, GRADE B, SCH 40 SML, PE&B, LBS/FT 7.85	1'-0"

OPTIONAL BILL OF MATERIAL				
15	1	16"	MOTOR OPERATOR, SEE DWG: STD-M-5002	OPTIONAL
16	1	2"	KIDD PIG SIG INDICATOR, SEE DWG: STD-M-5001 FOR MANUAL SEE DWG: STD-M-5002 FOR ELECTRICAL	OPTIONAL
17	2	1/2"	PRESSURE TRANSMITTER, SEE DWG: STD-M-5002	OPTIONAL



ELEVATION VIEW
SCALE: AS NOTED

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	8/1/16	ISSUED FOR CONSTRUCTION	TDS		8				
2					9				
3					10				
4					11				
5					12				
6					13				
7					14				

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DWG. NO.	REFERENCE DRAWINGS
STD-M-5001	VALVES, & PIG SIG OPTIONS
STD-M-5002	MOTOR OPERATOR, PIG SIG & PT OPTIONS

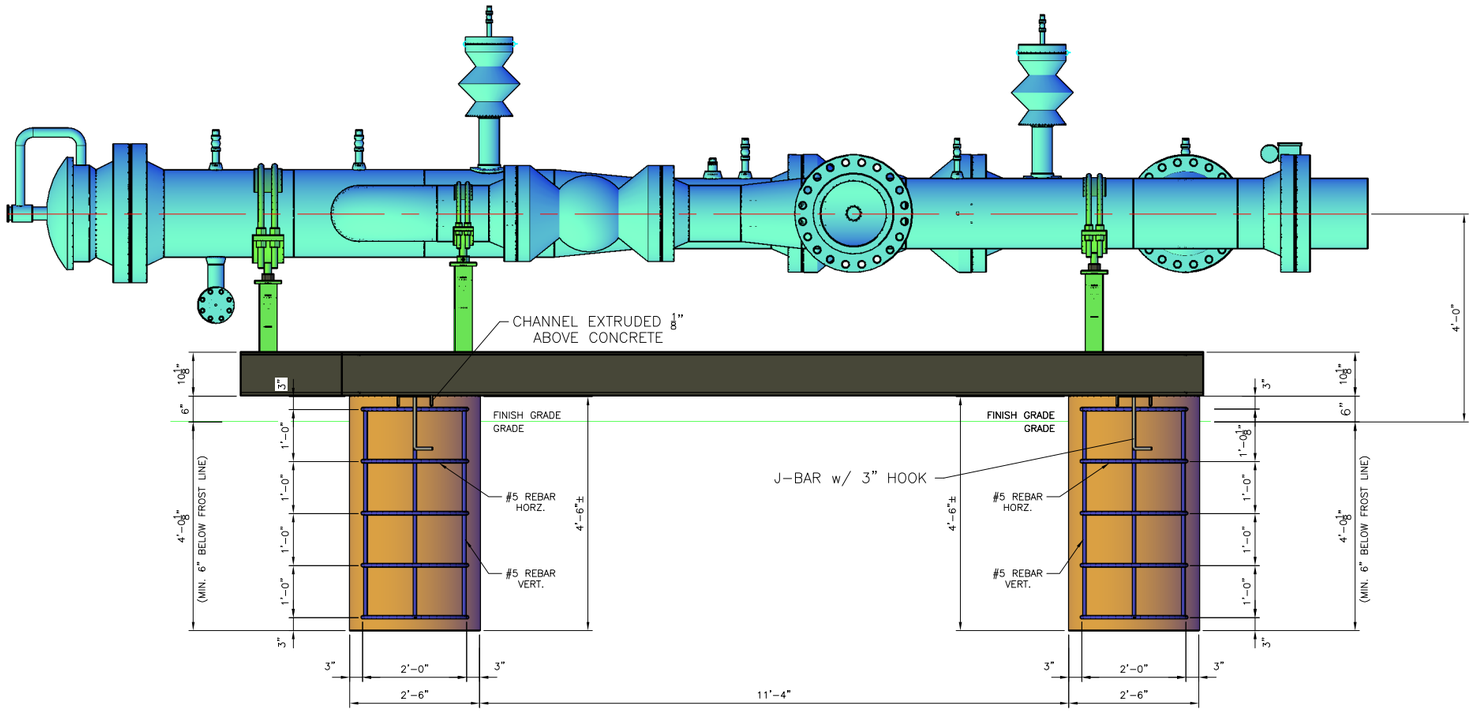
ONEOK
NGL PIPELINE, L.L.C.
P.O. BOX 29
MEDFORD, OK 73759

STANDARD
16"-600# MAIN LINE BLOCK VALVE w/ CHECK
DIMENSIONS & B.O.M.
PLAN & ELEVATION VIEWS

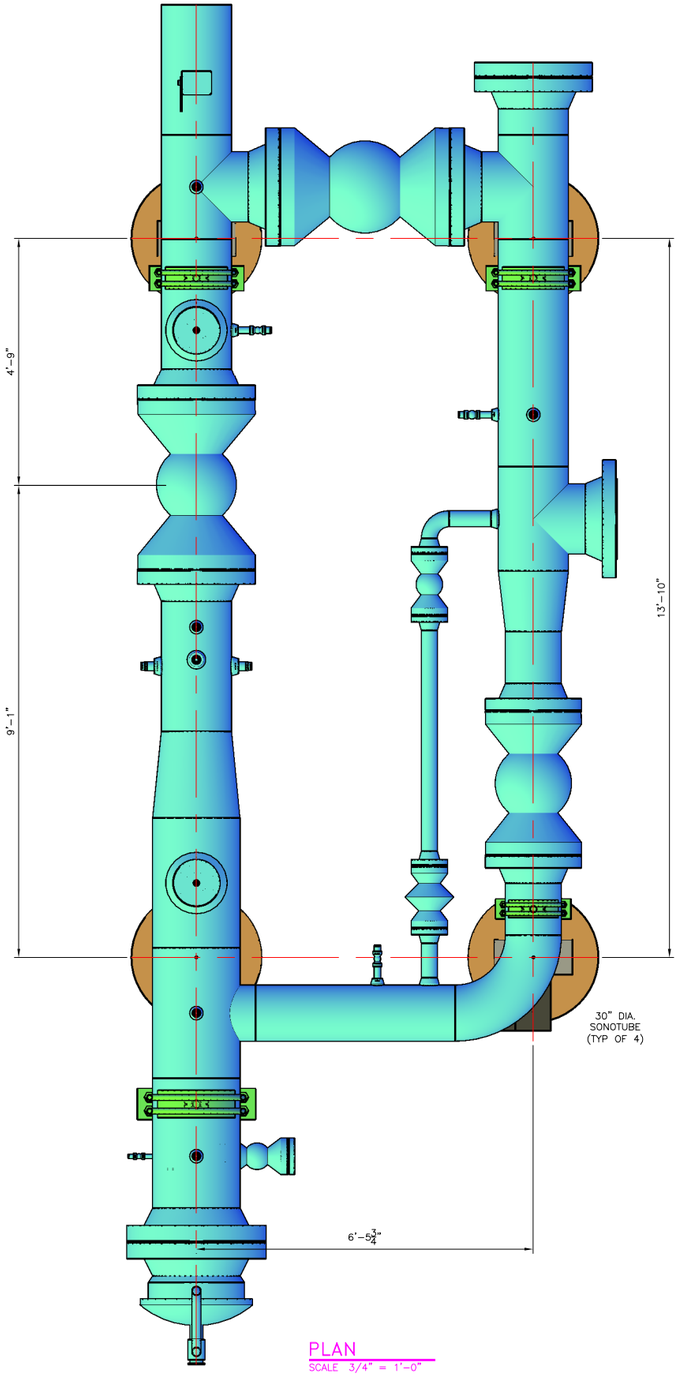
DES.:		SCALE: 3/8"=1'	CAD#: STD-P-1017	
DR.:	MBC	DATE: 5/18/16	AFE#:	REV.
CH.:	TDS	DWG. NO.:	STD-P-1017	1
AP.:				

P:\Standards\STD-P-1017

FOUNDATION BILL OF MATERIAL				
MARK	UNIT	LONG ANNOTATION	MEASUREMENT	WEIGHT
1	FT	#5 REBAR	190 ±	200 ±
2	CY	3000# CONCRETE	3.50 ±	
3	4	C8x11.5	1'-6"	70 ±
4	4	J-BAR w/ 3" HOOK	12"x3"	
TOTAL MEASUREMENTS DEPEND ON ACTUAL FROST LINE				



ELEVATION
SCALE 3/4" = 1'-0"



PLAN
SCALE 3/4" = 1'-0"

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	11/8/18	ADDED CHANNELS INTO FOUNDATIONS	MBC	TDS	8				
2	11/4/19	RELOCATED FOUNDATION PER TRAP CHANGES	MBC	TDS	9				
3					10				
4					11				
5					12				
6					13				
7					14				

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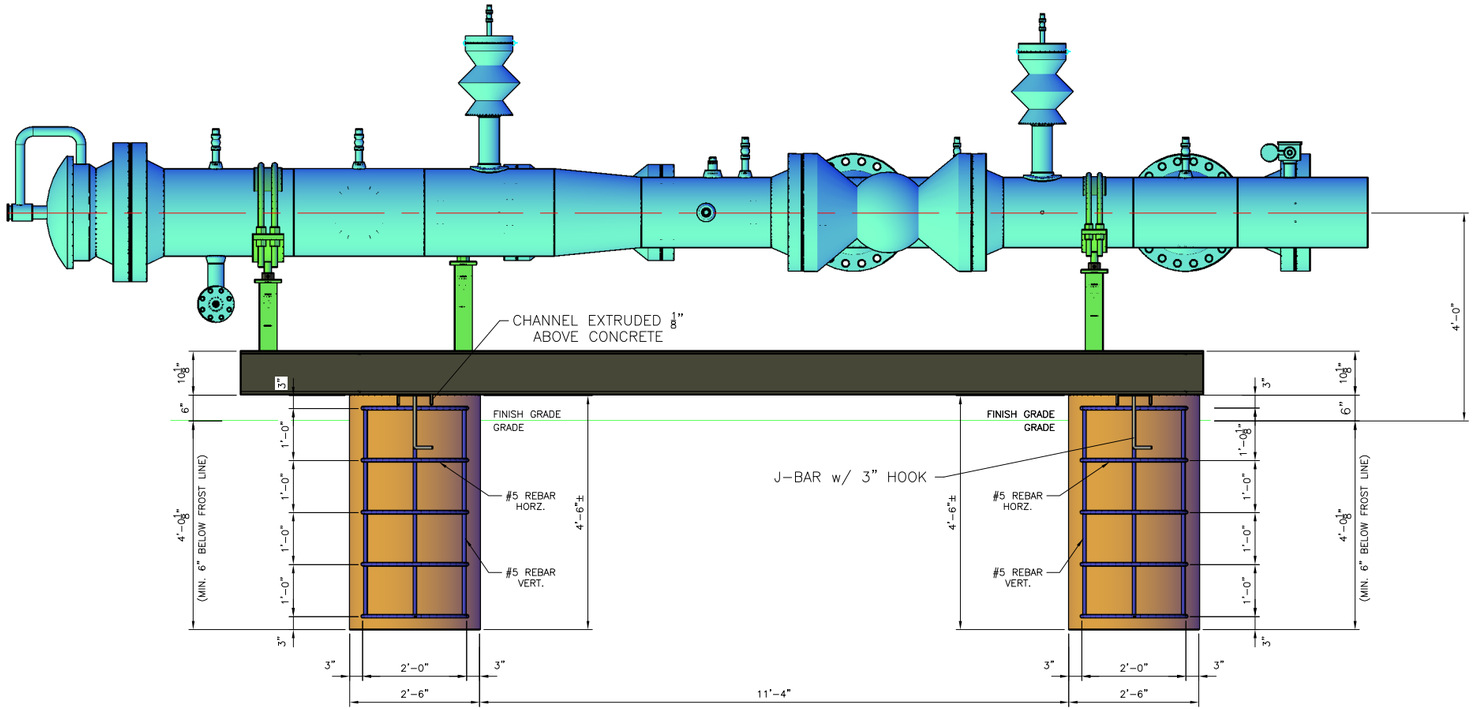
DWG. NO.	REFERENCE DRAWINGS

ONEOK
NGL PIPELINE, L.P.
P.O. BOX 29
MEDFORD, OK 73759

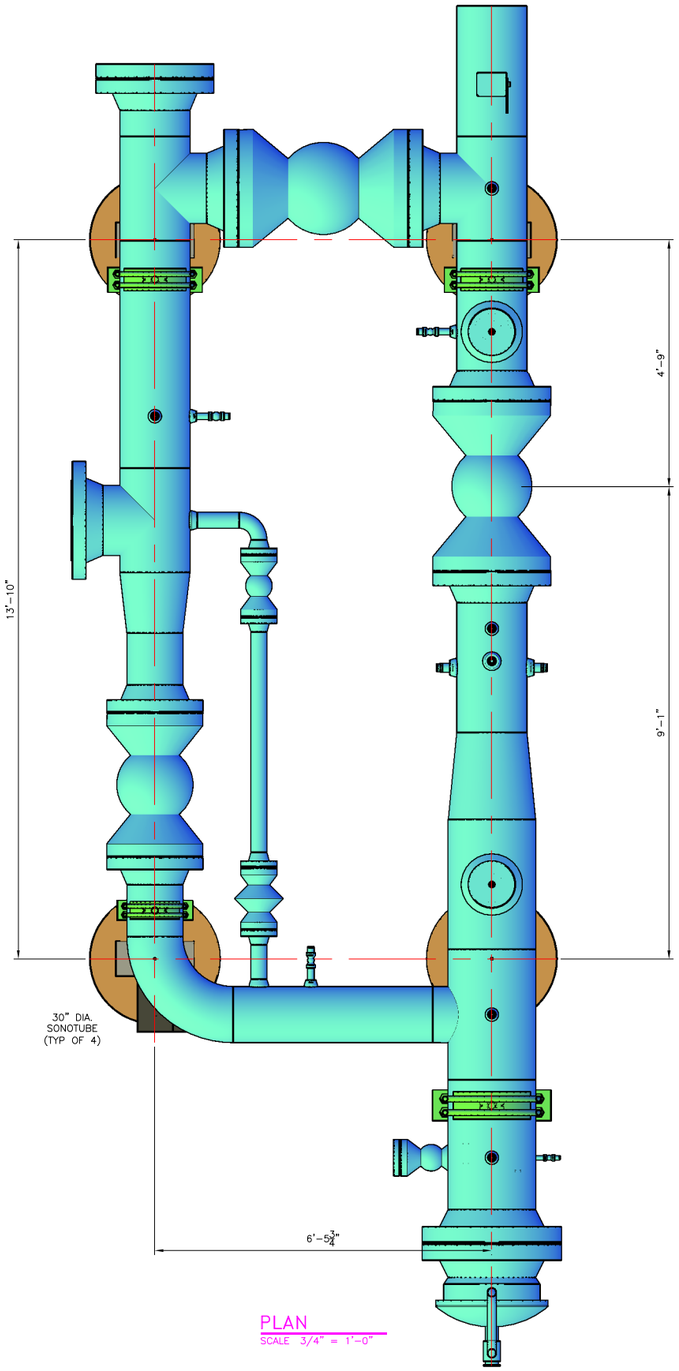
STANDARD
16"-600# LAUNCHER W/ RIGHT HAND BYPASS
FOUNDATION DIMENSIONS & B.O.M.

DES.:		AFE#:	DATE: 7/17/12
DR.: MBC			DWG. NO.: STD-F-2014 REV. 2
CH.: TDS		SCALE: AS NOTED	
AP.:		CAD#: STD-F-2014	

FOUNDATION BILL OF MATERIAL				
MARK	UNIT	LONG ANNOTATION	MEASUREMENT	WEIGHT
1	FT	#5 REBAR	190 ±	200 ±
1	CY	3000# CONCRETE	3.50 ±	
TOTAL MEASUREMENTS DEPEND ON ACTUAL FROST LINE				



ELEVATION
SCALE 3/4" = 1'-0"



PLAN
SCALE 3/4" = 1'-0"

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	11/8/18	ADDED CHANNELS INTO FOUNDATIONS	MBC	TDS	8				
2	11/4/19	RELOCATED FOUNDAION PER TRAP CHANGES	MBC	TDS	9				
3					10				
4					11				
5					12				
6					13				
7					14				

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DWG. NO.	REFERENCE DRAWINGS

ONEOK
NGL PIPELINE, L.P.
P.O. BOX 29
MEDFORD, OK 73759

STANDARD
16"-600# LAUNCHER W/ LEFT HAND BYPASS
FOUNDATION DIMENSIONS & B.O.M.

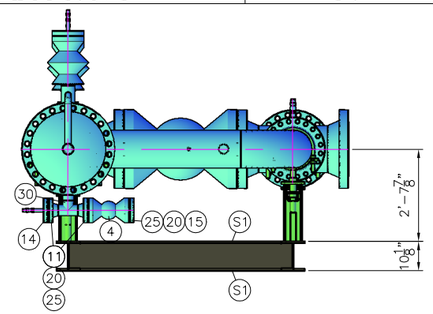
DES.:	AFE#:	DATE: 7/17/12	
DR.: MBC		DWG. NO.: STD-F-2015	REV. 2
CH.: TDS	SCALE: AS NOTED		
AP.:	CAD#: STD-F-2015		

STEEL BILL OF MATERIAL

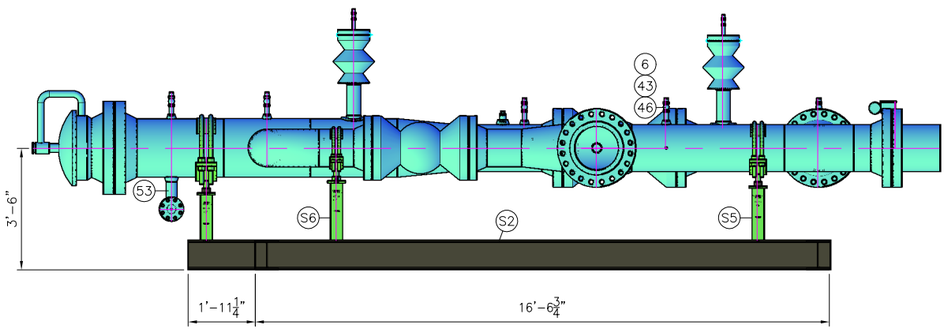
MARK	QTY	LONG ANNOTATION	LENGTH	WEIGHT
S1	2	W10X45	6'-5 1/8"	534.38
S2	1	W10X45	16'-6 3/4"	745.39
S3	1	W10X45	18'-6"	832.53
TOTAL WEIGHT: 2112.30				

SUPPORT BILL OF MATERIAL

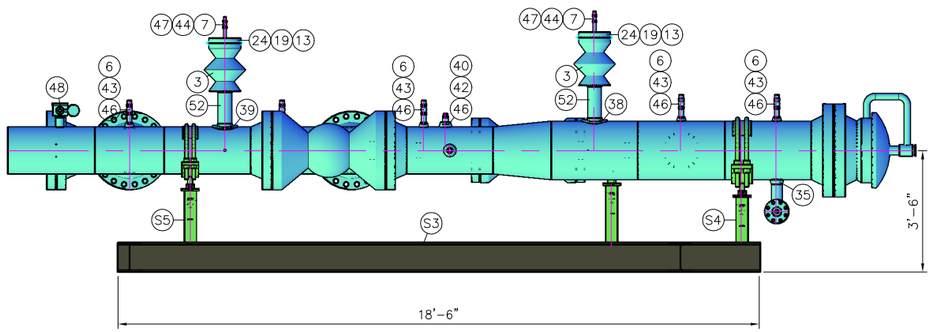
MARK	QTY	MODEL	LENGTH TO CENTERLINE OF PIPE	STYLE
S4	1	EZ-LINE 2024-BIR-20"	2'-8"	PIPE SUPPORT
S5	2	EZ-LINE 1218-BIR-16"	2'-8"	PIPE SUPPORT
S6	1	EZ-LINE 1218-BIR-12"	2'-8"	PIPE SUPPORT



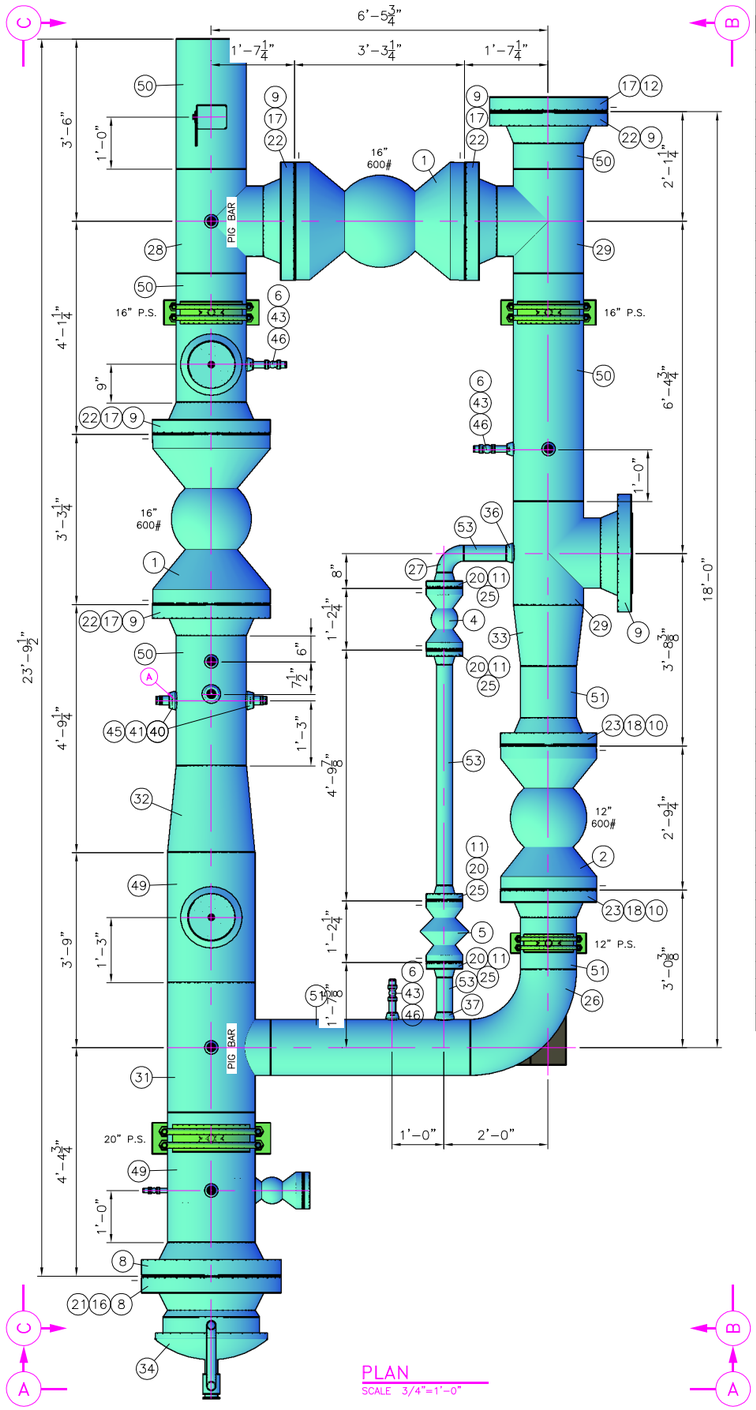
ELEVATION
SCALE 1/2"=1'-0" A



ELEVATION
SCALE 1/2"=1'-0" B



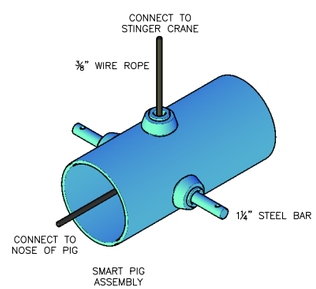
ELEVATION
SCALE 1/2"=1'-0" C



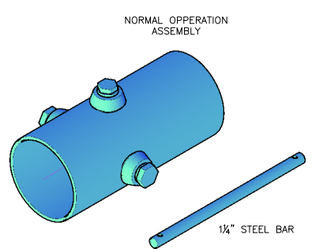
PLAN
SCALE 3/4"=1'-0"

PIPING BILL OF MATERIAL

MARK	SIZE	QTY	DESCRIPTION	LENGTH
1	16"	2	VALVE, BALL, RFFE, ANSI 600 SEE DWG. STD-M-5000 & STD-M-5001(MOTOR OPERATOR)	3'-3"
2	12"	1	VALVE, BALL, RFFE, ANSI 600 SEE DWG. STD-M-5000 & STD-M-5001(MOTOR OPERATOR)	2'-9"
3	4"	2	VALVE, PLUG, RFxWE, ANSI 600	1'-5"
4	3"	2	VALVE, BALL, RFFE, ANSI 600, w/ VITON OR FLOUROCARBON SEALS	1'-2"
5	3"	1	VALVE, PLUG, RFFE, ANSI 600	1'-2"
6	1"	8	VALVE, BALL, SW/THRD, 3000#, w/ VITON OR FLOUROCARBON SEALS	2 3/16"
7	1/2"	2	VALVE, BALL, SW/THRD, 3000#, w/ VITON OR FLOUROCARBON SEALS	1 7/16"
8	20"	2	FLANGE, ANSI 600, RF WELD NECK, SCH STD, F-60, MSS-PS-44	
9	16"	6	FLANGE, ANSI 600, RF WELD NECK, SCH STD, F-52, MSS-SP-44	
10	12"	2	FLANGE, ANSI 600, RF WELD NECK, SCH STD, F-42, MSS-SP-44	
11	3"	6	FLANGE, ANSI 600, RF WELD NECK, SCH STD, ASTM A-105	
12	16"	1	FLANGE, ANSI 600, RF BLIND, SCH STD, F-52, MSS-SP-44	
13	4"	2	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105 (DRILL/TAP FOR 1/2" NIPPLE)	
14	3"	1	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105 (DRILL/TAP FOR 1/2" NIPPLE)	
15	3"	1	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105	
16	20"	1	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
17	16"	5	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
18	12"	2	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
19	4"	2	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
20	3"	7	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
21	1 5/8"	24	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (20"-600#) 1 SET	12 1/2"
22	1 1/2"	100	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (16"-600#) 5 SETS	10 1/2"
23	1 1/4"	40	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (12"-600#) 2 SETS	9 1/2"
24	7/8"	16	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (4"-600#) 2 SETS	6"
25	3/4"	56	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (3"-600#) 7 SETS	5"
26	12"	1	ELBOW, 90, LR, SCH STD, SML, GRADE Y-42, MSS-SP-75	
27	3"	1	ELBOW, 90, LR, SCH STD, SML, GRADE B	
28	16"	1	TEE, STR, SCH STD, SML, GRADE Y-52, MSS-SP-75 (WITH PIG BARS)	
29	16"	2	TEE, STR, SCH STD, SML, GRADE Y-52, MSS-SP-75	
30	3"	1	TEE, STR, SCH STD, SML, GRADE B	
31	20"x12"	1	TEE, RED, SCH STD, SML, GRADE Y-60, MSS-SP-75 (WITH PIG BAR)	
32	20"x16"	1	REDUCER, CONC, SCH STD, SML, GRADE Y-60, MSS-SP-75	
33	16"x12"	1	REDUCER, CONC, SCH STD, SML, GRADE Y-52, MSS-SP-75	
34	20"	1	CLOSURE, ANSI 600, HORIZONTAL, STANDARD BORE, WELD IN, WITH VITON O-RINGS MFG.: TDW D2000 OR YALE Y2000	
35	20"x3"	1	WELDOLET, SCH XH, ASTM A-105	
36	16"x3"	1	WELDOLET, SCH XH, ASTM A-105	
37	12"x3"	1	WELDOLET, SCH XH, ASTM A-105	
38	20"x4"	1	REINFORCING WELD SADDLE, A234, GR WPB,MSS-SP-75, WPHY-60	
39	16"x4"	1	REINFORCING WELD SADDLE, A234, GR WPB,MSS-SP-75, WPHY-60	
40	16"x1½"	3	THREDOLET, 3000#, ASTM A-105	
41	1½"x1¼"	2	BUSHING, THREADED, HEX HEAD, 3000#	
42	1½"x1"	1	BUSHING, THREADED, HEX HEAD, 3000#	
43	1"	8	NIPOLET, PLAIN END, SCH XXH, ASTM A-105	4"
44	½""	2	NIPPLE, SCH 160, SML, GRADE B, T.O.E.	4"
45	1¼"	2	PLUG, THREADED, HEX HEAD, 3000#	
46	1"	9	PLUG, THREADED, HEX HEAD, 3000#	
47	½"	2	PLUG, THREADED, HEX HEAD, 3000#	
48	16"x2"	1	KIDD PIG SIG, SCRAPER PASSAGE INDICATOR SEE DWG: STD-M-5000 FOR MANUAL OPERATIONS SEE DWG: STD-M-5001 FOR ELECTRONIC OPERATIONS	
49	20"	1	20.000" O.D.x0.375" WT, API 5L, GRADE X-60, SCH 20, ERW, PE&B, LBS/FT 78.60	5'-0"
50	16"	1	16.000" O.D.x0.375" WT, API 5L, GRADE X-52, SCH 30, ERW, PE&B, LBS/FT 62.58	12'-4 3/4"
51	12"	1	12.750" O.D.x0.375" WT, API 5L, GRADE X-42, SCH STD, ERW, PE&B, LBS/FT 49.56	5'-10 1/8"
52	4"	1	4.500" O.D.x0.237" WT, API 5L, GRADE B, SCH 40, SML, PE&B, LBS/FT 10.79	2'-0"
53	3"	1	3.500" O.D.x0.216" WT, API 5L, GRADE B, SCH 40, SML, PE&B, LBS/FT 7.58	6'-2 5/8"



DETAIL
SCALE 1 1/2"=1'-0" A



MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	4/11/18	REVISED WELDxFLGD PLUG VALVES	MC	TDS	8				
2	11/1/19	GENERAL REVISIONS PER ENGINEERS	MBC	TDS	9				
3					10				
4					11				
5					12				
6					13				
7					14				

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DWG. NO.	REFERENCE DRAWINGS

ONEOK
NGL PIPELINE, L.P.
P.O. BOX 29
MEDFORD, OK 73759

STANDARD
16"-600# TRAP w/ RIGHT HAND BYPASS
DIMENSIONS & B.O.M.

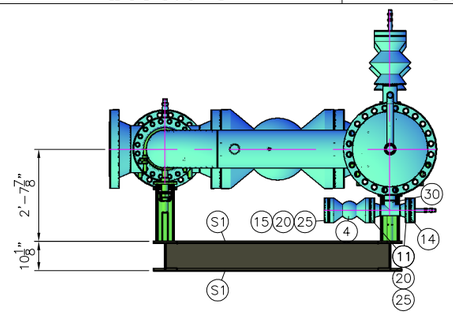
DES.:	AFE#:	DATE: 12/14/17	
DR.: MBC		DWG. NO.:	REV.
CH.: TDS	SCALE: AS NOTED	STD-P-2014	2
AP.:	CAD#: STDP2014		

STEEL BILL OF MATERIAL

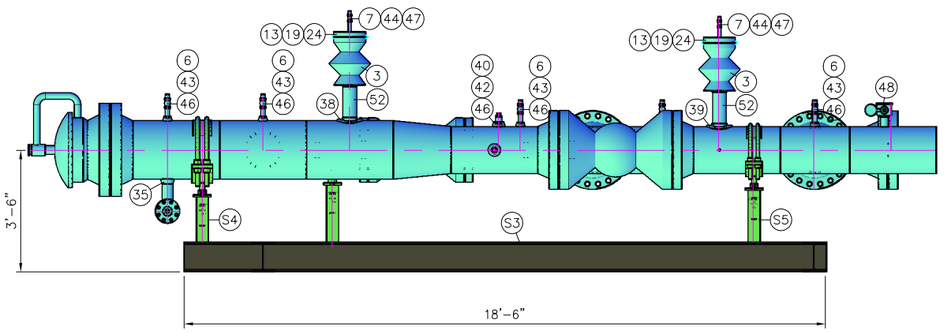
MARK	QTY	LONG ANNOTATION	LENGTH	WEIGHT
S1	2	W10X45	6'-5 1/8"	534.38
S2	1	W10X45	16'-6 3/4"	745.39
S3	1	W10X45	18'-6"	832.53
TOTAL WEIGHT: 2112.30				

SUPPORT BILL OF MATERIAL

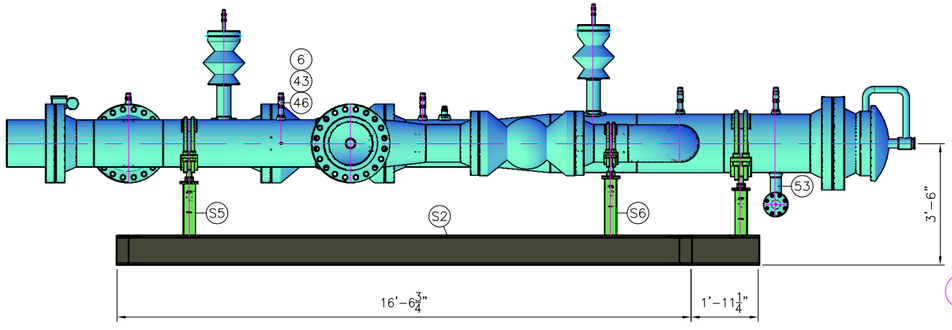
MARK	QTY	MODEL	LENGTH TO CENTERLINE OF PIPE	STYLE
S4	1	EZ-LINE 2024-BIR-20"	2'-8"	PIPE SUPPORT
S5	2	EZ-LINE 1218-BIR-16"	2'-8"	PIPE SUPPORT
S6	1	EZ-LINE 1218-BIR-12"	2'-8"	PIPE SUPPORT



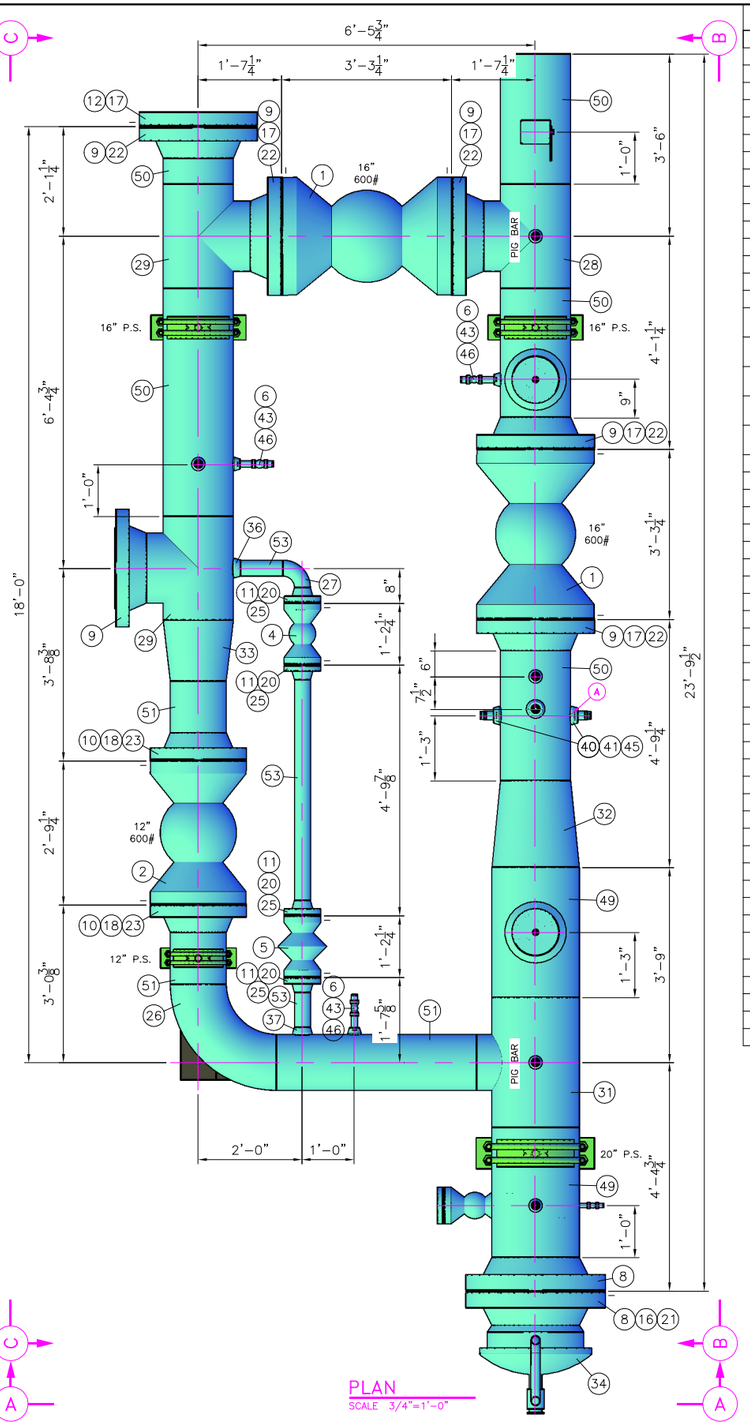
ELEVATION A
SCALE 1/2"=1'-0"



ELEVATION B
SCALE 1/2"=1'-0"



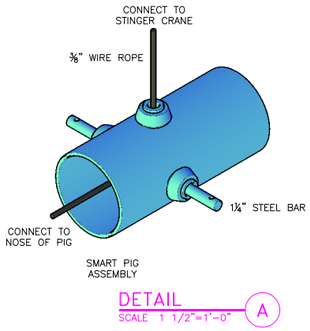
ELEVATION C
SCALE 1/2"=1'-0"



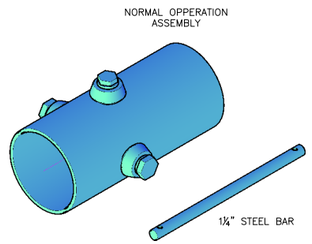
PLAN
SCALE 3/4"=1'-0"

PIPING BILL OF MATERIAL

MARK	SIZE	QTY	DESCRIPTION	LENGTH
1	16"	2	VALVE, BALL, RFFE, ANSI 600 SEE DWG. STD-M-5000 & STD-M-5001(MOTOR OPERATOR)	3'-3"
2	12"	1	VALVE, BALL, RFFE, ANSI 600 SEE DWG. STD-M-5000 & STD-M-5001(MOTOR OPERATOR)	2'-9"
3	4"	2	VALVE, PLUG, RFxWE, ANSI 600	1'-5"
4	3"	2	VALVE, BALL, RFFE, ANSI 600, w/ VITON OR FLOUROCARBON SEALS	1'-2"
5	3"	1	VALVE, PLUG, RFFE, ANSI 600	1'-2"
6	1"	8	VALVE, BALL, SW/THRD, 3000#, w/ VITON OR FLOUROCARBON SEALS	2 3/16"
7	1/2"	2	VALVE, BALL, SW/THRD, 3000#, w/ VITON OR FLOUROCARBON SEALS	1 7/16"
8	20"	2	FLANGE, ANSI 600, RF WELD NECK, SCH STD, F-60, MSS-PS-44	
9	16"	6	FLANGE, ANSI 600, RF WELD NECK, SCH STD, F-52, MSS-SP-44	
10	12"	2	FLANGE, ANSI 600, RF WELD NECK, SCH STD, F-42, MSS-SP-44	
11	3"	6	FLANGE, ANSI 600, RF WELD NECK, SCH STD, ASTM A-105	
12	16"	1	FLANGE, ANSI 600, RF BLIND, SCH STD, F-52, MSS-SP-44	
13	4"	2	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105 (DRILL/TAP FOR 1/2" NIPPLE)	
14	3"	1	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105 (DRILL/TAP FOR 1/2" NIPPLE)	
15	3"	1	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105	
16	20"	1	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
17	16"	5	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
18	12"	2	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
19	4"	2	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
20	3"	7	GASKET, 1/8" THK, 600LB RF SPIRAL WOUND TYPE 304 FLEXIBLE GRAPHITE FILLER, 1/8" CENTERING RING, FLEXITALLIC STYLE CGI OR EQUAL	
21	1 5/8"	24	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (20"-600#) 1 SET	12 1/2"
22	1 1/2"	100	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (16"-600#) 5 SETS	10 1/2"
23	1 1/4"	40	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (12"-600#) 2 SETS	9 1/2"
24	7/8"	16	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (4"-600#) 2 SETS	6"
25	3/4"	56	STUD BOLTS, ANSI 16.5, GRADE B-7, W/ (2) HVY HEX HEAD NUTS (3"-600#) 7 SETS	5"
26	12"	1	ELBOW, 90, LR, SCH STD, SML, GRADE Y-42, MSS-SP-75	
27	3"	1	ELBOW, 90, LR, SCH STD, SML, GRADE B	
28	16"	1	TEE, STR, SCH STD, SML, GRADE Y-52, MSS-SP-75 (WITH PIG BARS)	
29	16"	2	TEE, STR, SCH STD, SML, GRADE Y-52, MSS-SP-75	
30	3"	1	TEE, STR, SCH STD, SML, GRADE B	
31	20"x12"	1	TEE, RED, SCH STD, SML, GRADE Y-60, MSS-SP-75 (WITH PIG BAR)	
32	20"x16"	1	REDUCER, CONC, SCH STD, SML, GRADE Y-60, MSS-SP-75	
33	16"x12"	1	REDUCER, CONC, SCH STD, SML, GRADE Y-52, MSS-SP-75	
34	20"	1	CLOSURE, ANSI 600, HORIZONTAL, STANDARD BORE, WELD IN, WITH VITON O-RINGS MFG.: TDW D2000 OR YALE Y2000	
35	20"x3"	1	WELDOLET, SCH XH, ASTM A-105	
36	16"x3"	1	WELDOLET, SCH XH, ASTM A-105	
37	12"x3"	1	WELDOLET, SCH XH, ASTM A-105	
38	20"x4"	1	REINFORCING WELD SADDLE, A234, GR WPB,MSS-SP-75, WPHY-60	
39	16"x4"	1	REINFORCING WELD SADDLE, A234, GR WPB,MSS-SP-75, WPHY-60	
40	16"x1½"	3	THREDOLET, 3000#, ASTM A-105	
41	1½"x1¼"	2	BUSHING, THREADED, HEX HEAD, 3000#	
42	1½"x1"	1	BUSHING, THREADED, HEX HEAD, 3000#	
43	1"	8	NIPOLET, PLAIN END, SCH XXH, ASTM A-105	4"
44	½"	2	NIPPLE, SCH 160, SML, GRADE B, T.O.E.	4"
45	1¼"	2	PLUG, THREADED, HEX HEAD, 3000#	
46	1"	9	PLUG, THREADED, HEX HEAD, 3000#	
47	½"	2	PLUG, THREADED, HEX HEAD, 3000#	
48	16"x2"	1	KIDD PIG SIG, SCRAPER PASSAGE INDICATOR SEE DWG: STD-M-5000 FOR MANUAL OPERATIONS SEE DWG: STD-M-5001 FOR ELECTRONIC OPERATIONS	
49	20"	1	20.000" O.D.x0.375" WT, API 5L, GRADE X-60, SCH 20, ERW, PE&B, LBS/FT 78.60	5'-0"
50	16"	1	16.000" O.D.x0.375" WT, API 5L, GRADE X-52, SCH 30, ERW, PE&B, LBS/FT 62.58	12'-4 3/4"
51	12"	1	12.750" O.D.x0.375" WT, API 5L, GRADE X-42, SCH STD, ERW, PE&B, LBS/FT 49.56	5'-10 1/8"
52	4"	1	4.500" O.D.x0.237" WT, API 5L, GRADE B, SCH 40, SML, PE&B, LBS/FT 10.79	2'-0"
53	3"	1	3.500" O.D.x0.216" WT, API 5L, GRADE B, SCH 40, SML, PE&B, LBS/FT 7.58	6'-2 5/8"



DETAIL A
SCALE 1 1/2"=1'-0"



MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	4/11/18	REVISED WELDxFLGD PLUG VALVES	MC	TDS	8				
2	11/1/19	GENERAL REVISIONS PER ENGINEERS	MBC	TDS	9				
3					10				
4					11				
5					12				
6					13				
7					14				

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DWG. NO.	REFERENCE DRAWINGS

ONEOK
NGL PIPELINE, L.P.
P.O. BOX 29
MEDFORD, OK 73759

STANDARD 16"-600# TRAP w/ LEFT HAND BYPASS DIMENSIONS & B.O.M.

DES.:	AFE#:	DATE: 12/14/17	
DR.: MBC		DWG. NO.: STD-P-2015	REV. 2
CH.: TDS	SCALE: AS NOTED		
AP.:	CAD#: STDP2015		

Exhibit B - Project Maps

B.1 Project Overview

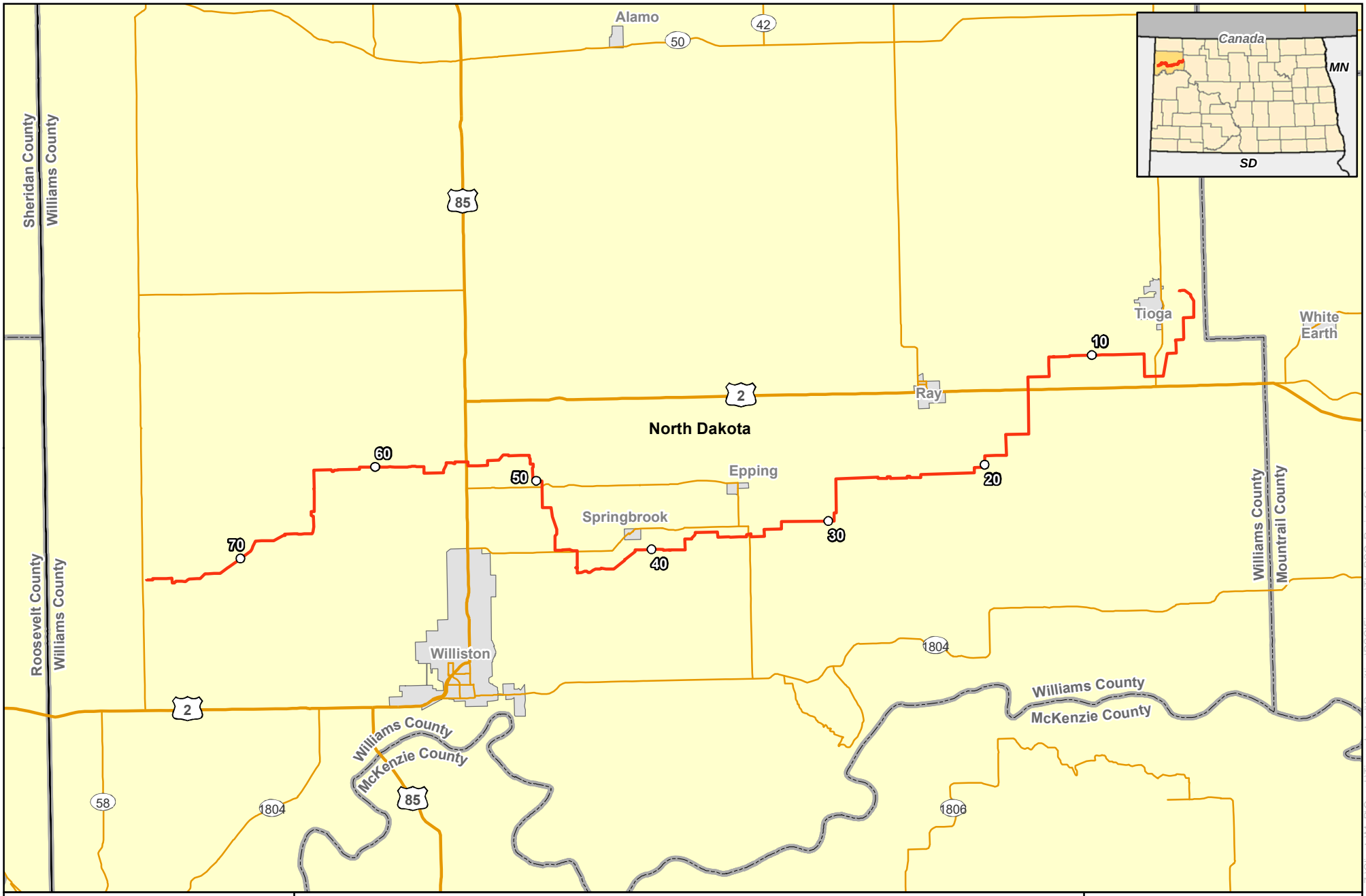
Alamo
50
42
Canada
MN
SD
Sheridan County
Williams County
85
Tioga
White Earth
10
2
Ray
North Dakota
60
50
Epping
20
Springbrook
30
70
40
Roosevelt County
Williams County
Williston
Williams County
Mountrail County
1804
Williams County
McKenzie County
2
Williams County
McKenzie County
85
58
1804
1806
0
3
6
Miles
1 inch = 6 miles
N
W
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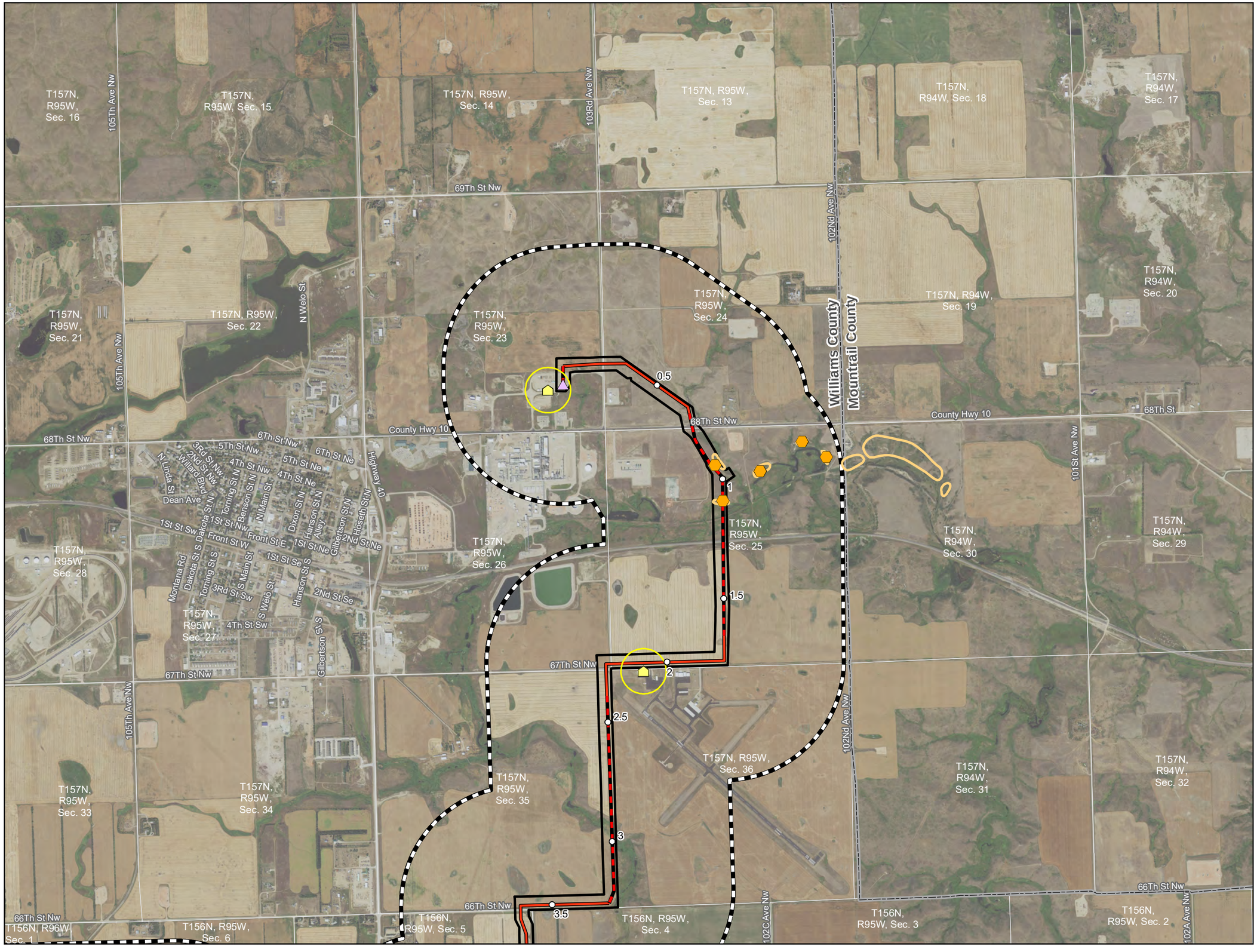
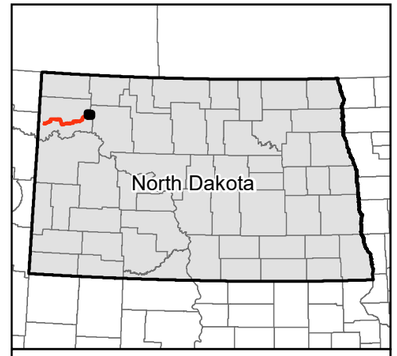
Exhibit B.1
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Project Overview
Milepost
Proposed Route
Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\Permitting\PSC\Figures\TL_PSC_Project_Overview.mxd
Date: (11/4/2019)

B.2 Avoidance and Exclusion Maps





0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA-APFO Aerial Photography Field Office

N W E S

- Milepost
- Mainline Valve
- Launcher/Receiver
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study Area
- Section Boundary

Avoidance Areas

- Abandoned Mine
- Potential for Future Slope Instability
- Occupied Structure within 500' of Route
- Occupied Structure (500' Buffer)
- Landslide Deposits

*No exclusion areas located within map view

Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

Page 1 of 13

Williams County, ND

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Source: Z:\Clients\M_P\ONEOK\Tioga_Lateral\Permitting\PSC\Figures\TL_PSC_Avoidance_Exclusion_Area_Map_Book.mxd

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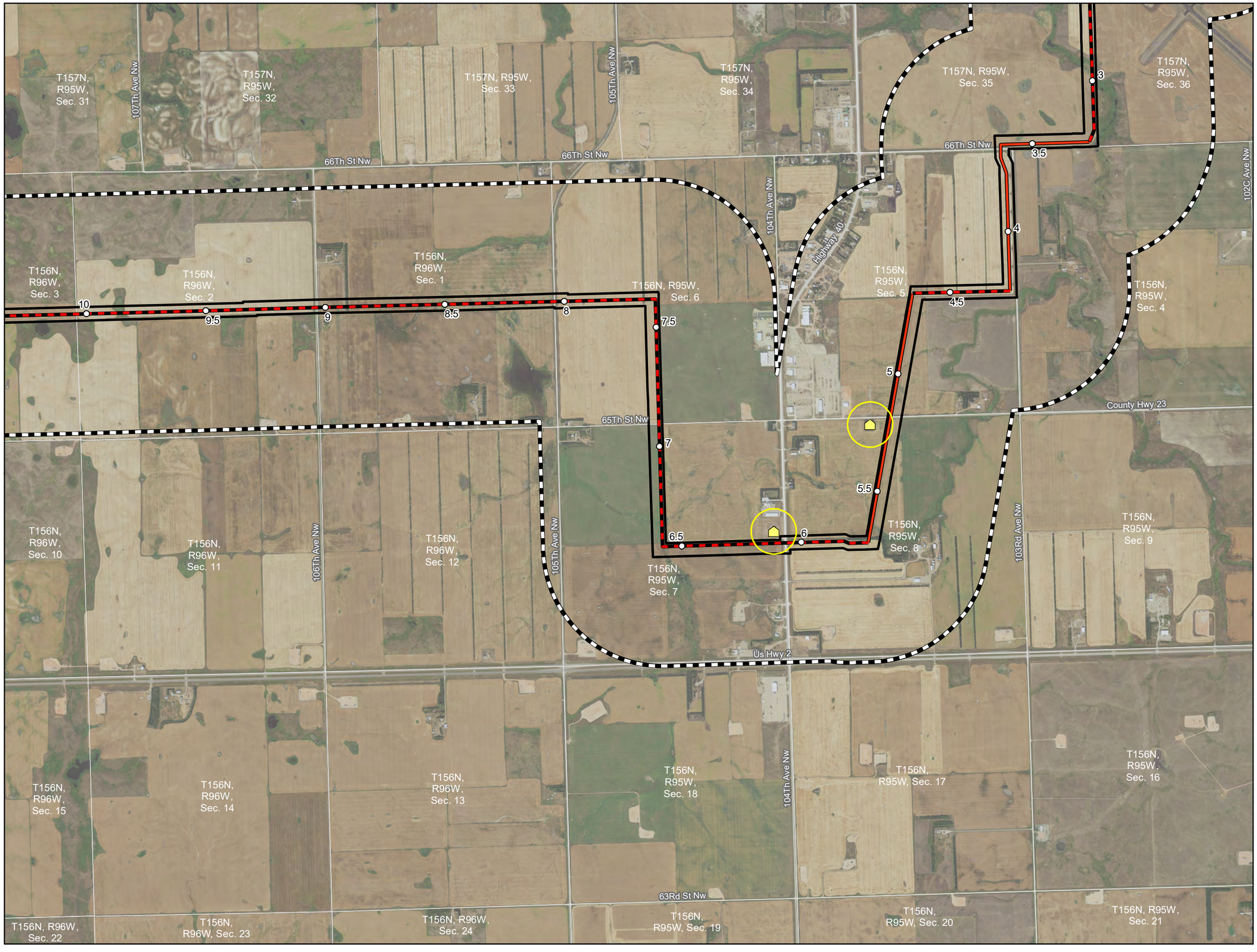

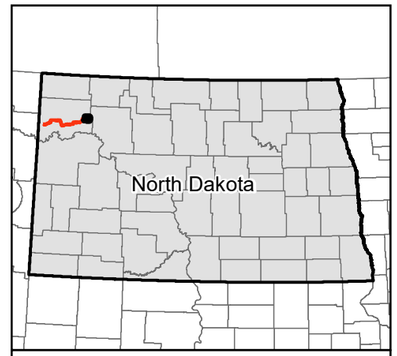

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Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

Page 2 of 13

Williams County, ND

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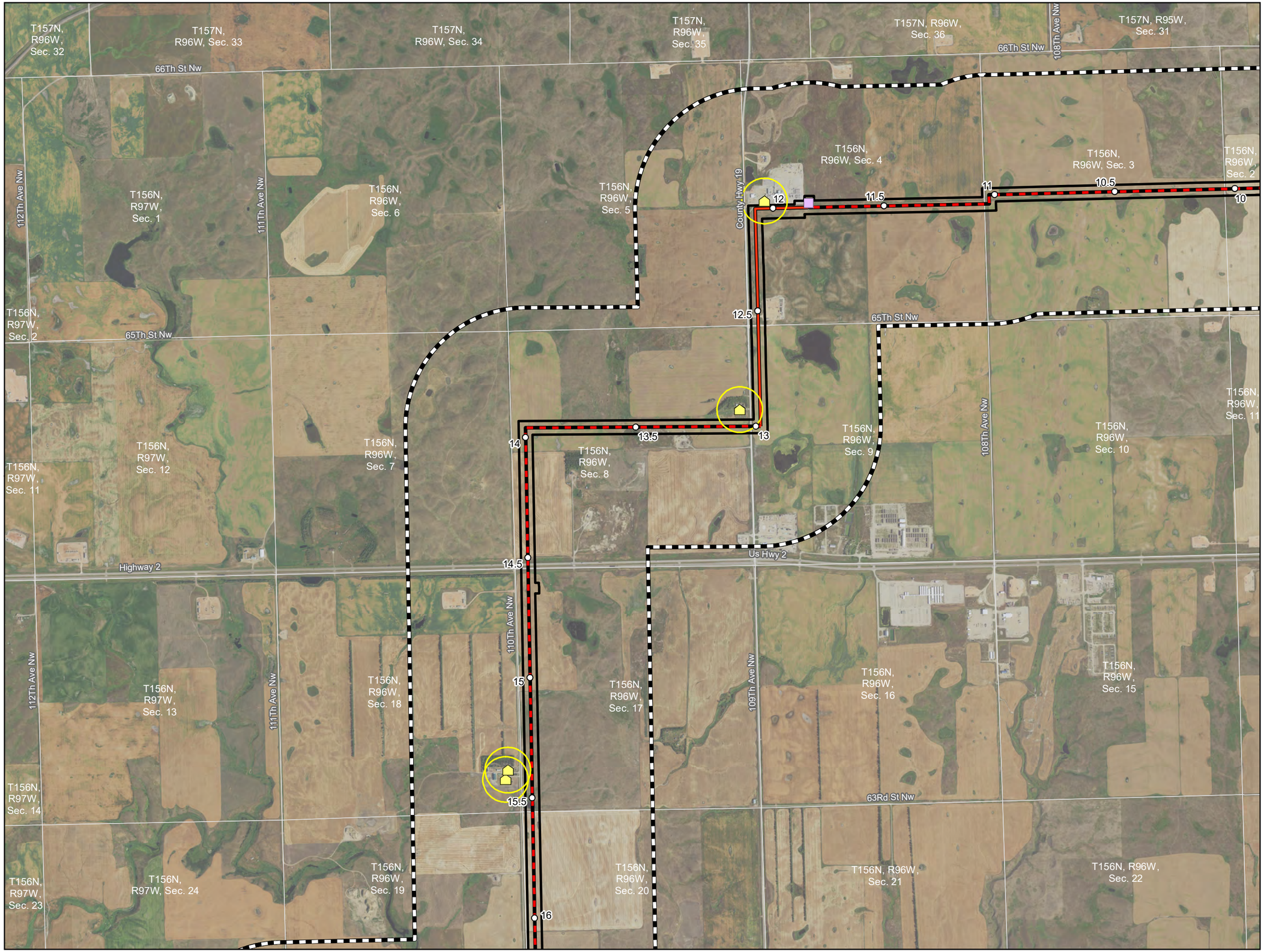

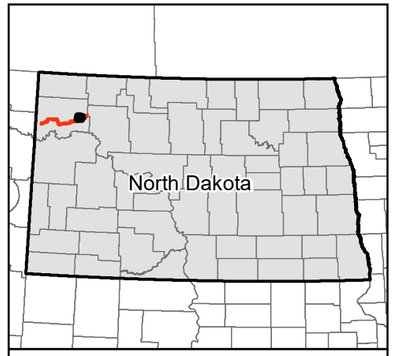

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ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

Page 3 of 13

Williams County, ND

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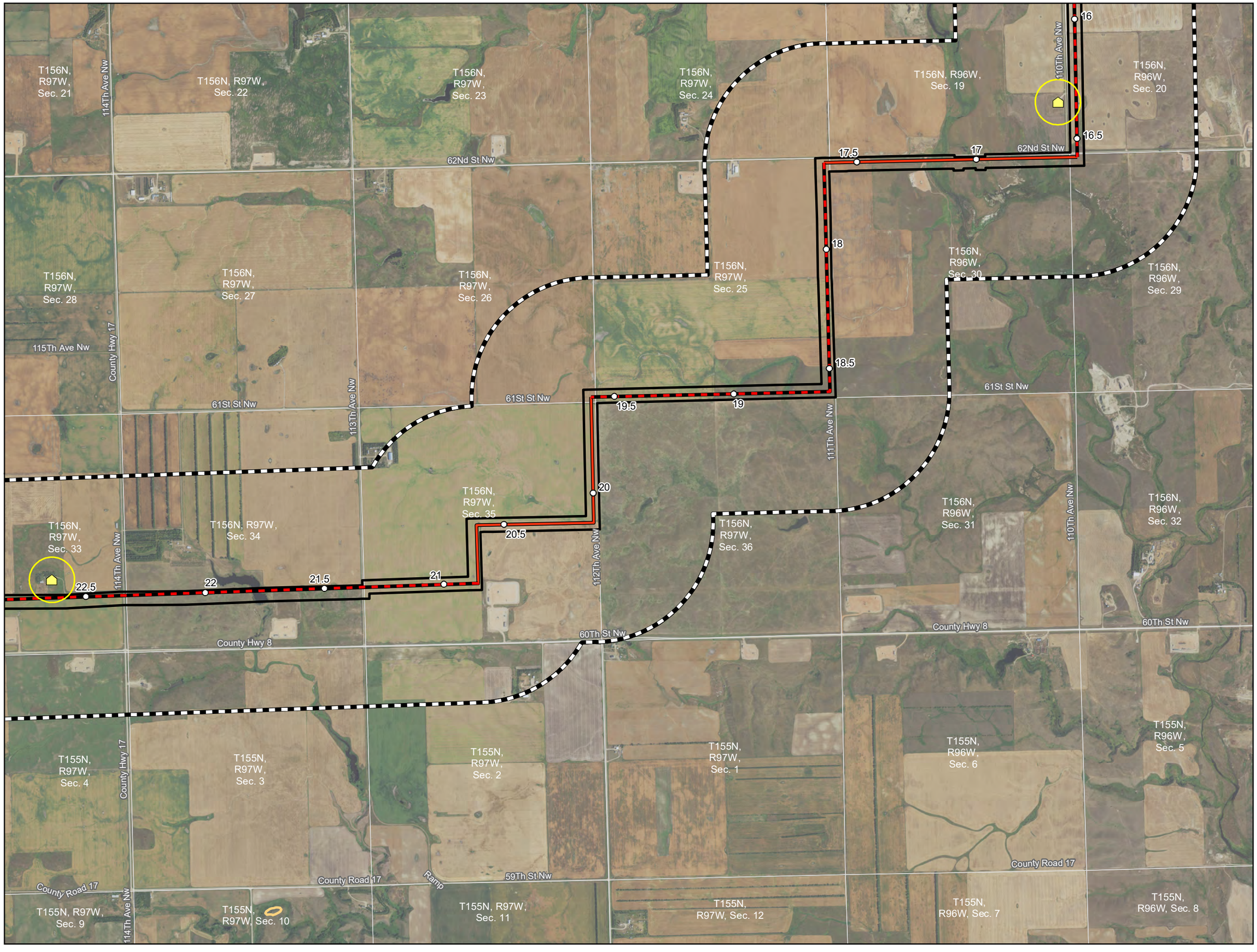

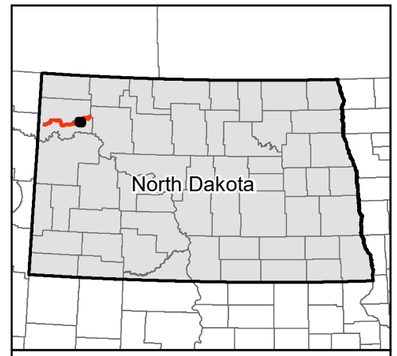

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Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

Page 4 of 13

Williams County, ND

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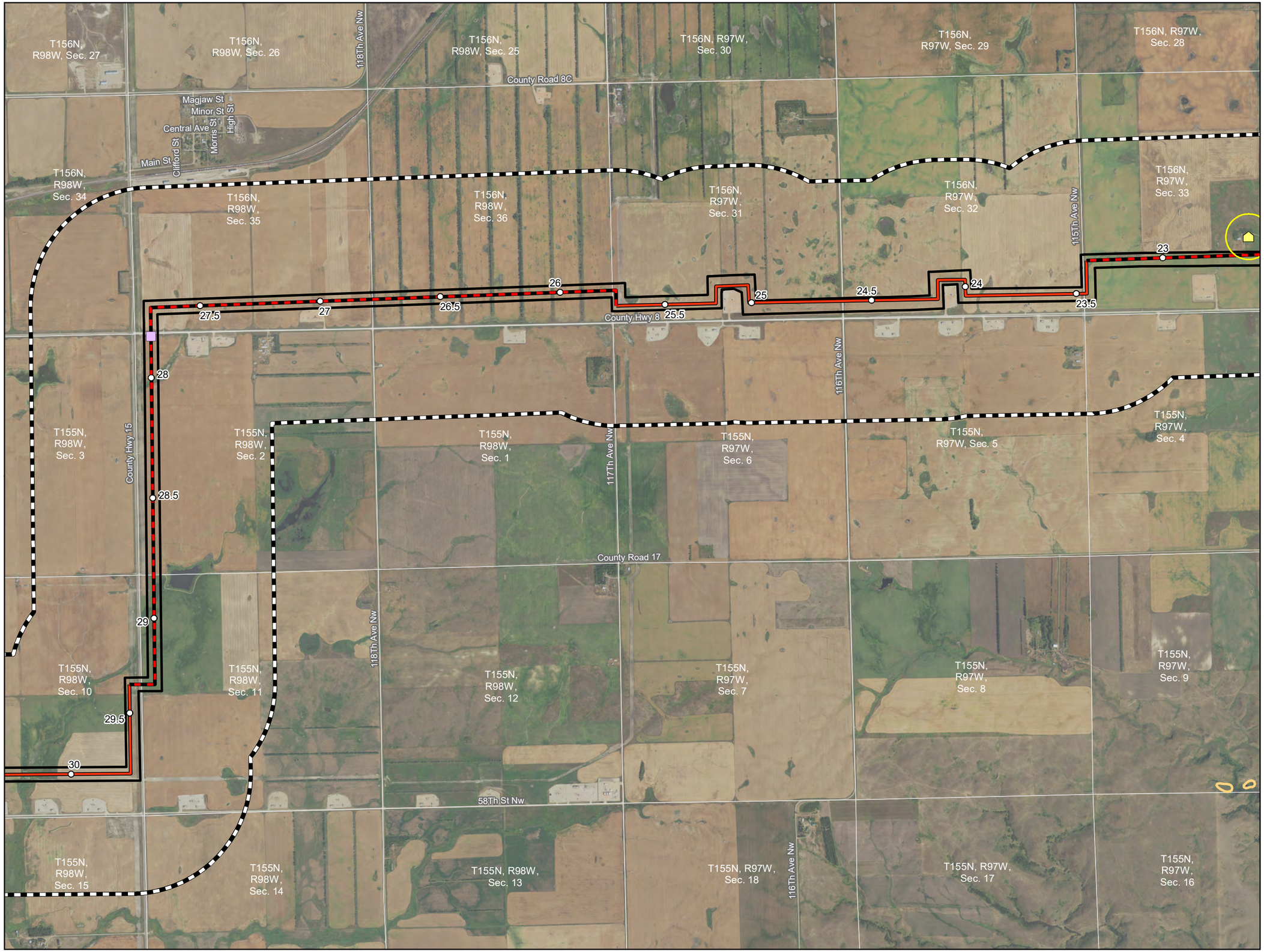

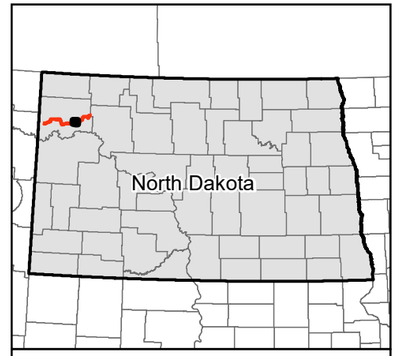

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Imagery Source: USDA-FSA-APFO Aerial Photography Field Office

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W E
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Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

Page 5 of 13

Williams County, ND

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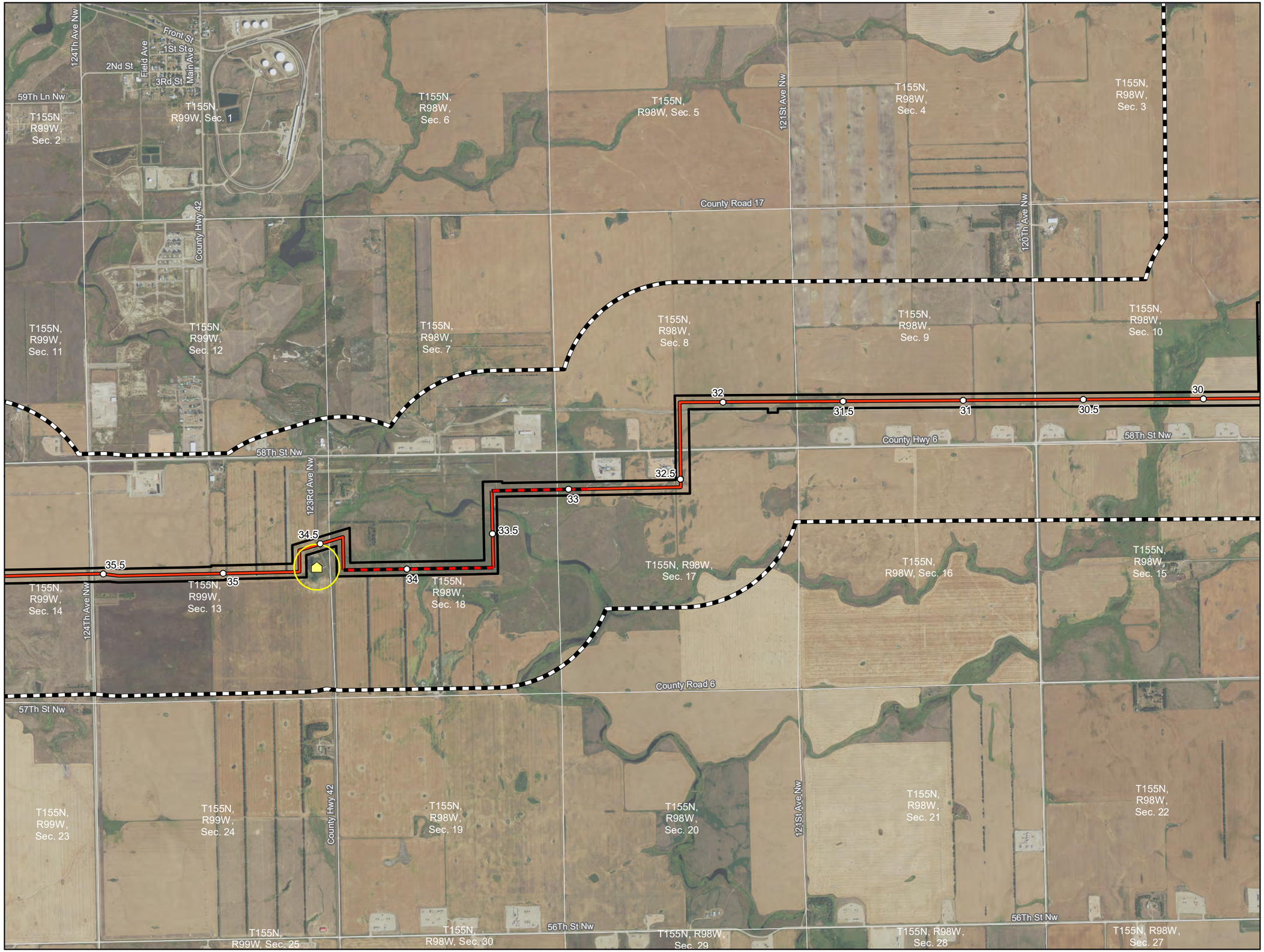

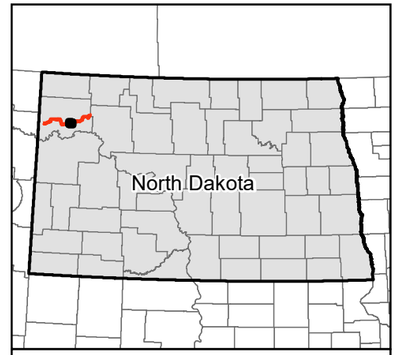

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Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

Page 6 of 13

Williams County, ND

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Date: (11/15/2019)

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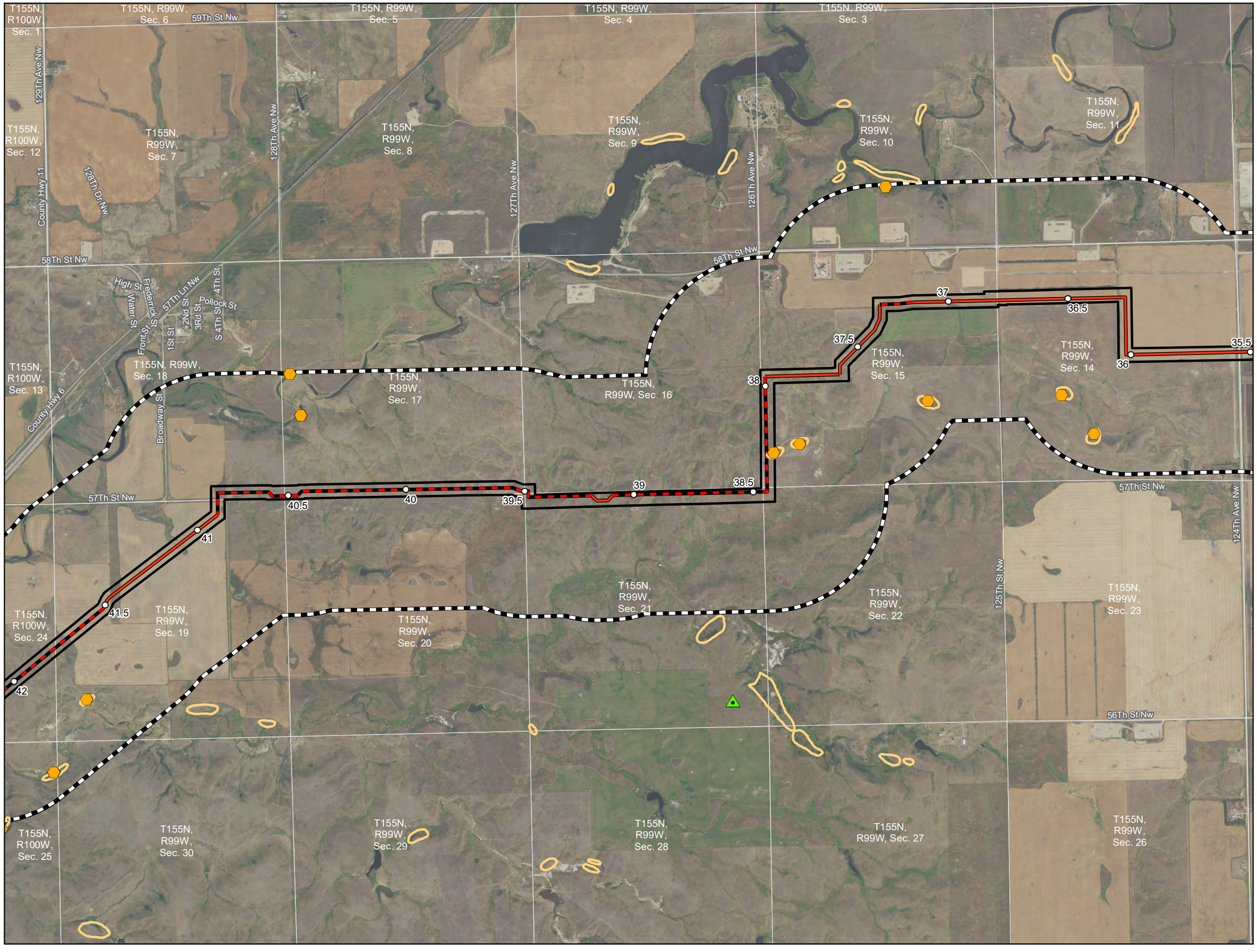
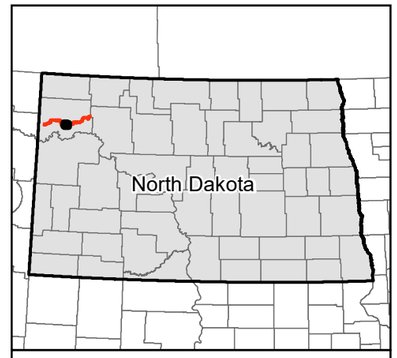
11/15/2019





0 1,000 2,000 Feet

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Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

Page 7 of 13

Williams County, ND

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11/15/2019

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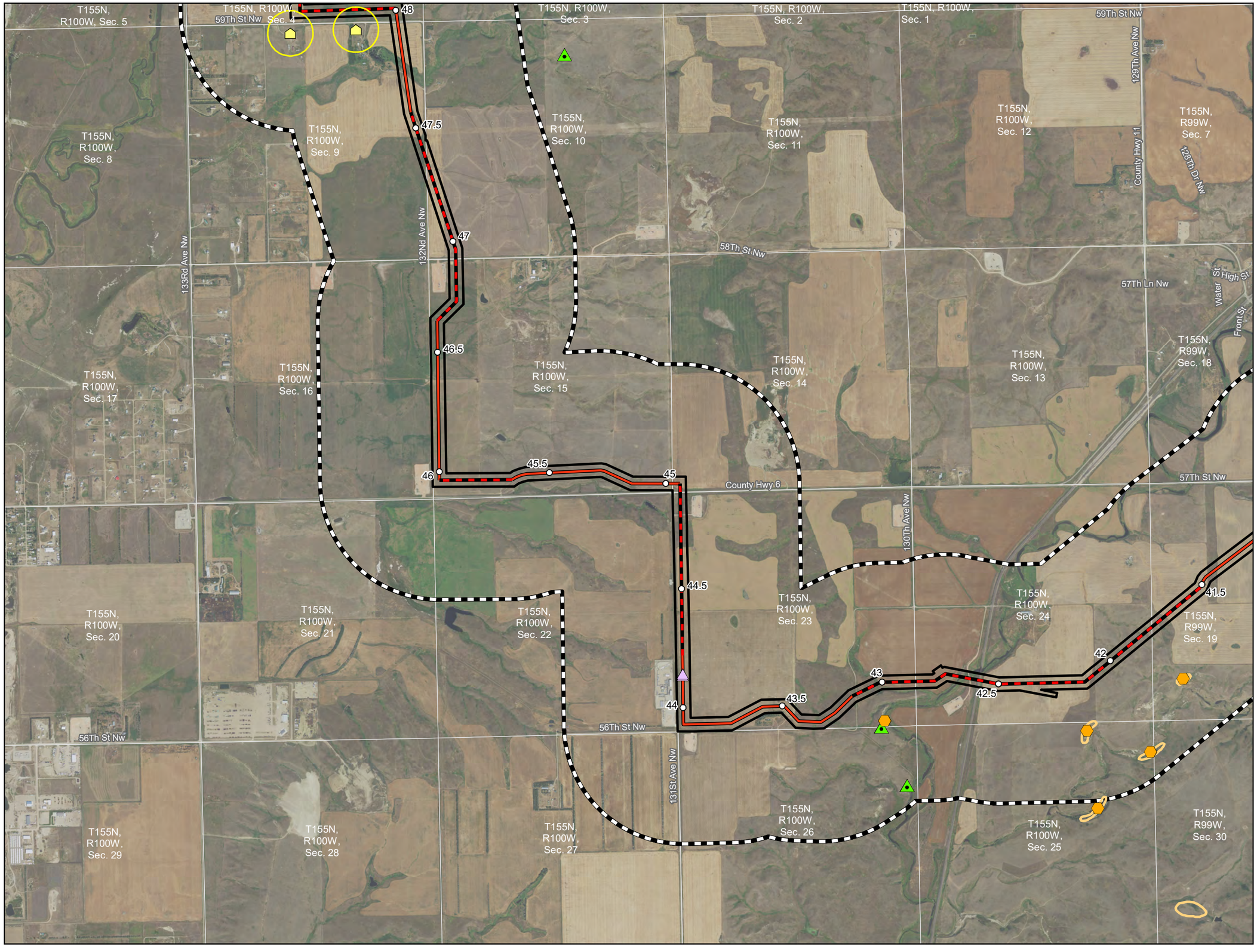

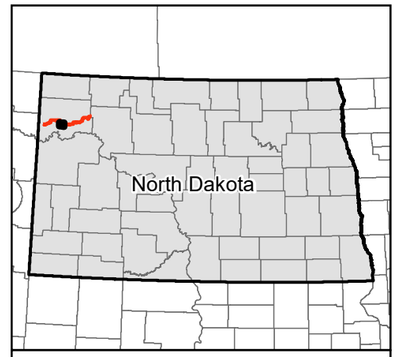

0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA-APFO Aerial Photography Field Office

N W E S

- Milepost
- Mainline Valve
- Launcher/Receiver
- Centerline: Co-located
- Centerline: Not Co-located
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- Section Boundary

Avoidance Areas

- Abandoned Mine
- Potential for Future Slope Instability
- Occupied Structure within 500' of Route
- Occupied Structure (500' Buffer)
- Landslide Deposits

*No exclusion areas located within map view

Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

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Williams County, ND

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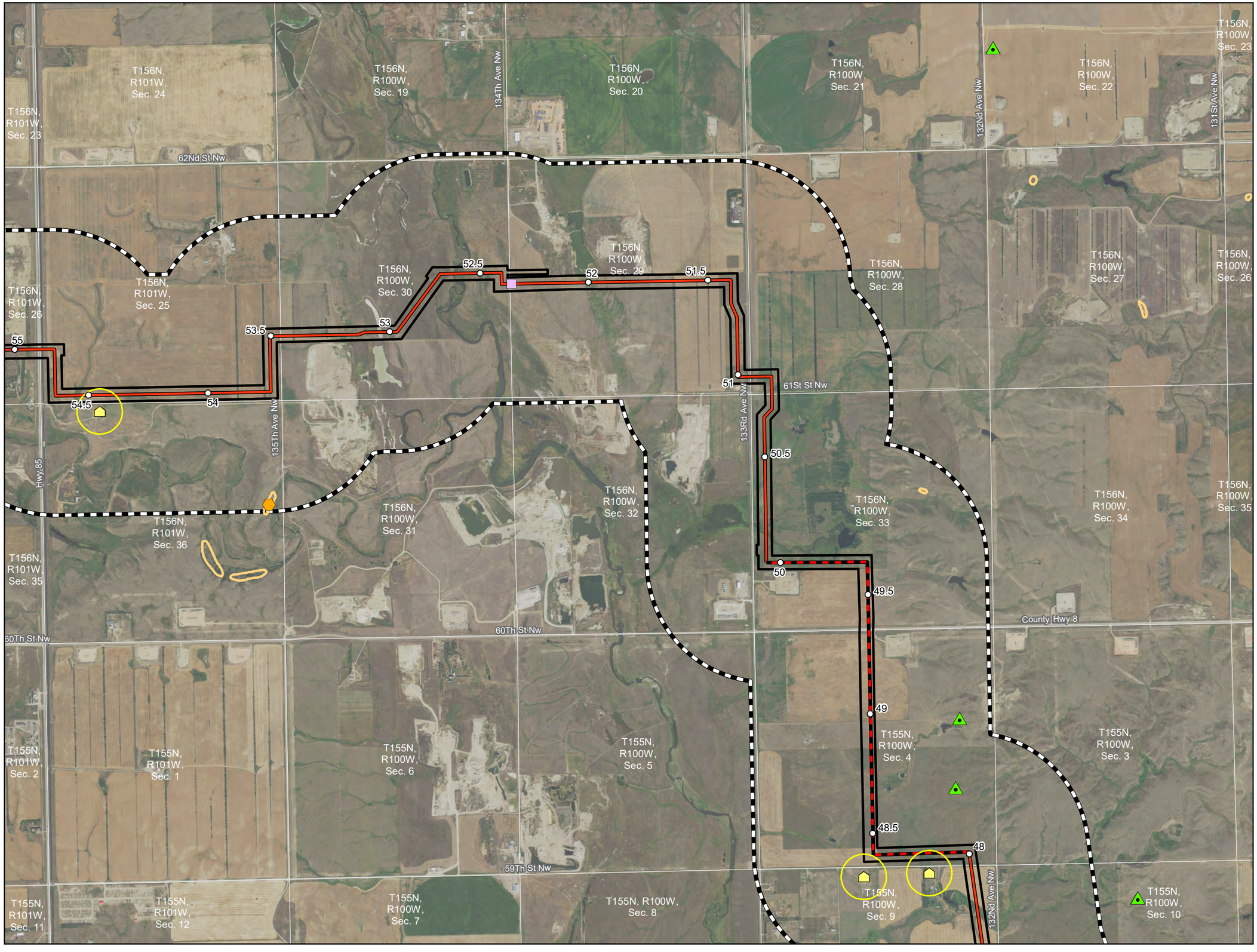

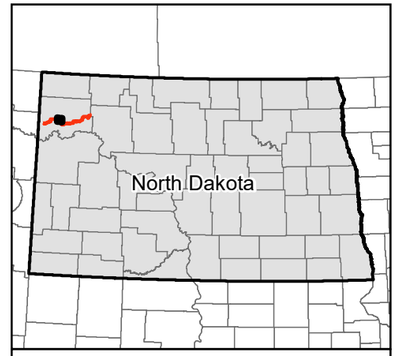

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Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

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Williams County, ND

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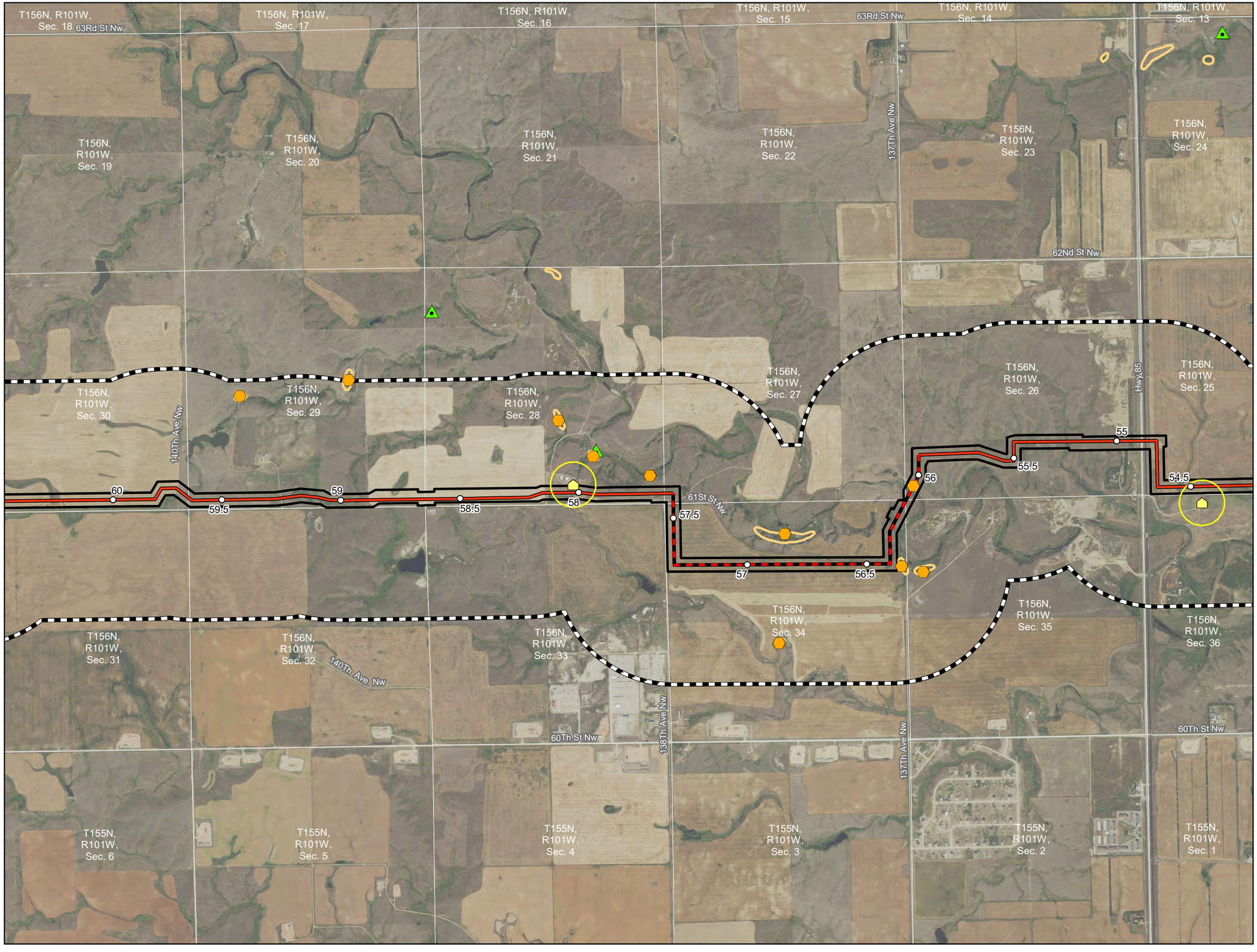

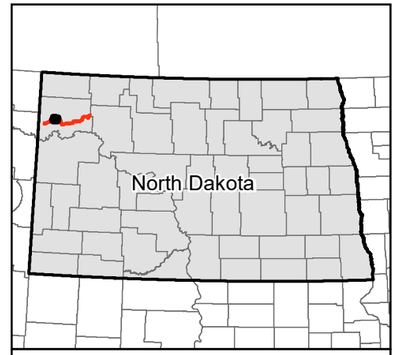

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Williams County, ND

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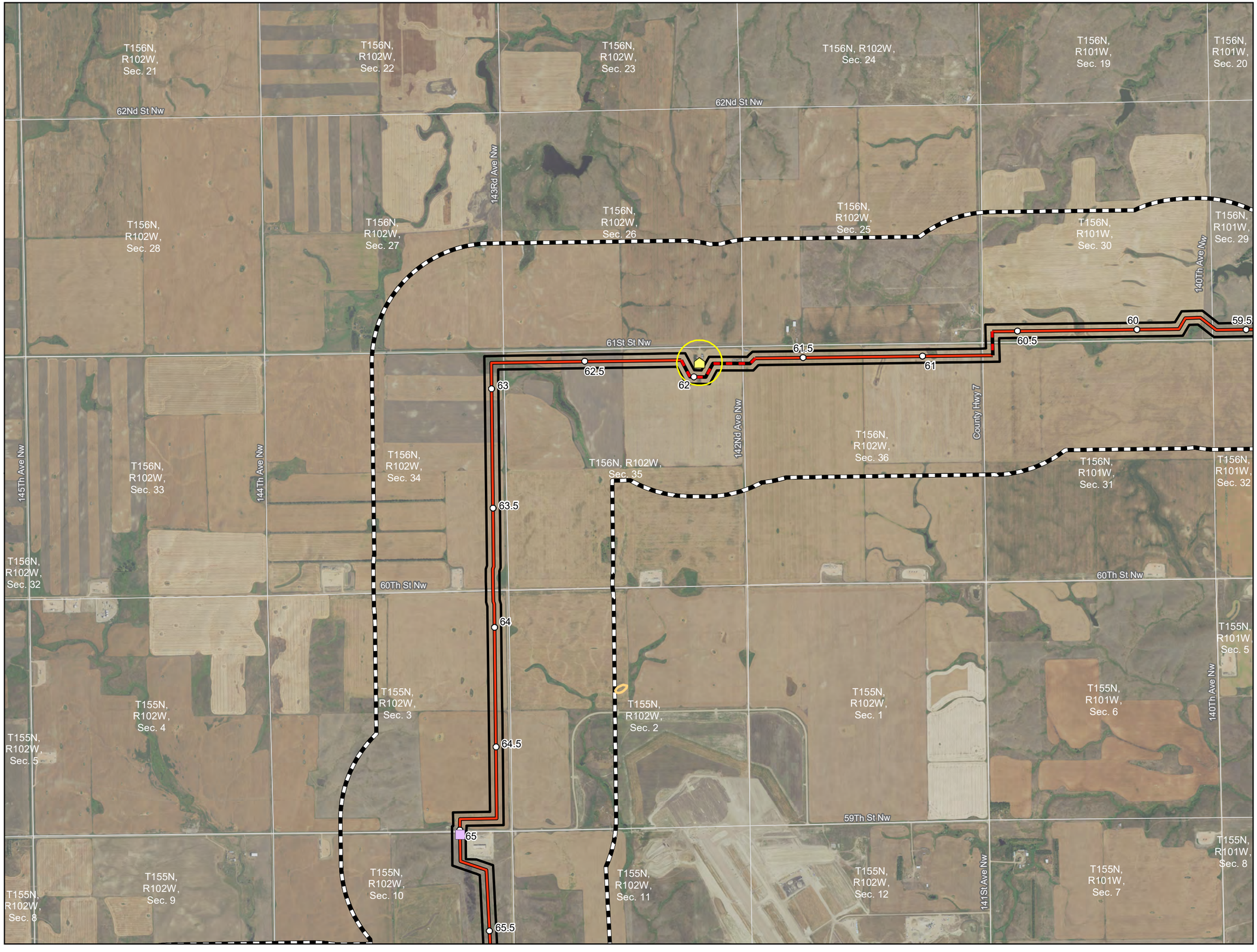

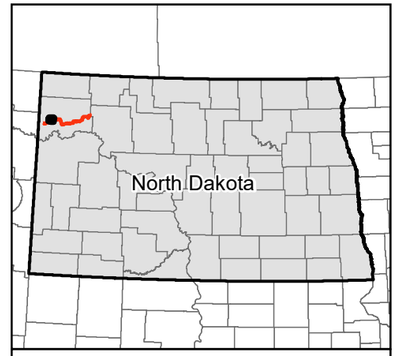

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Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

Page 11 of 13

Williams County, ND

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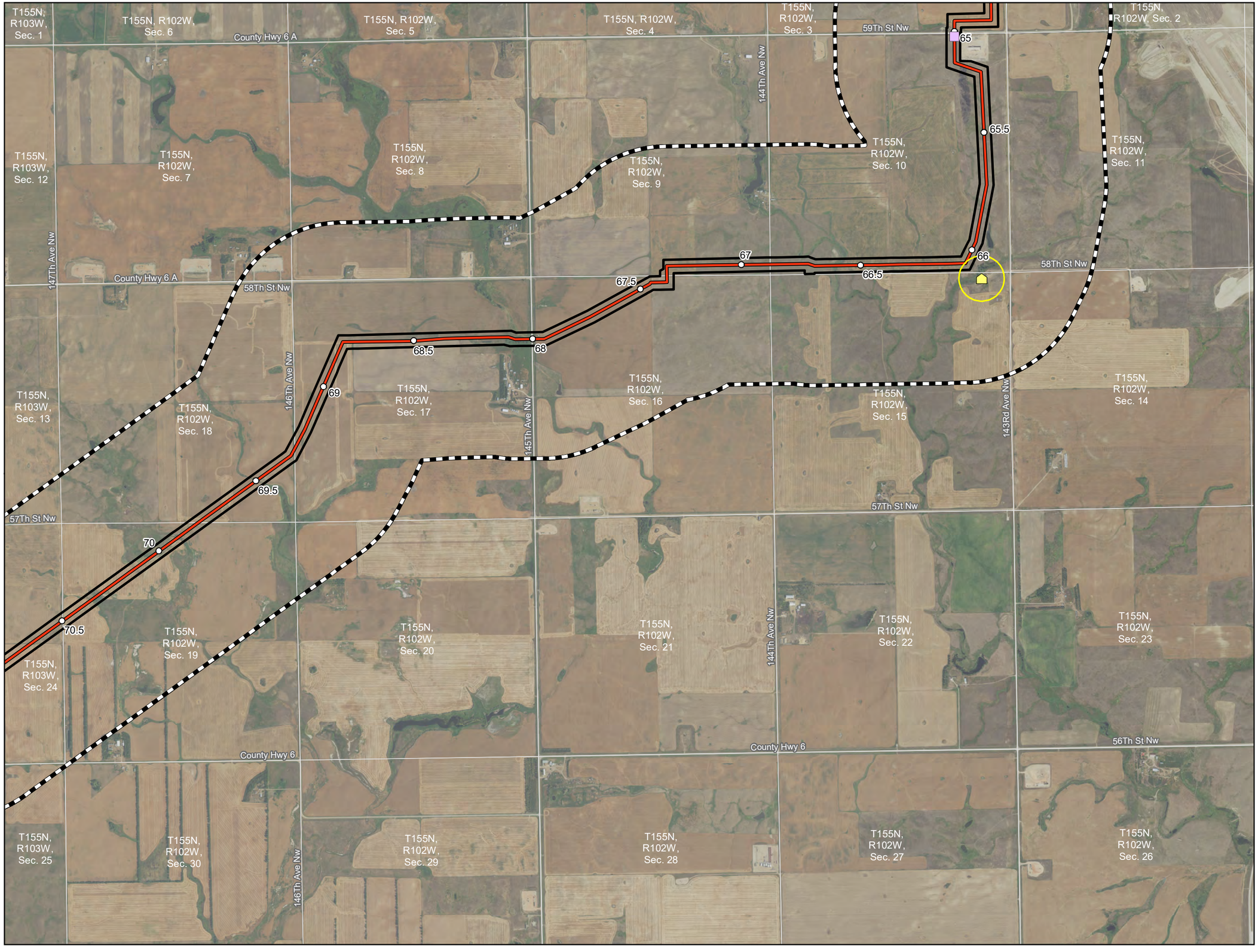

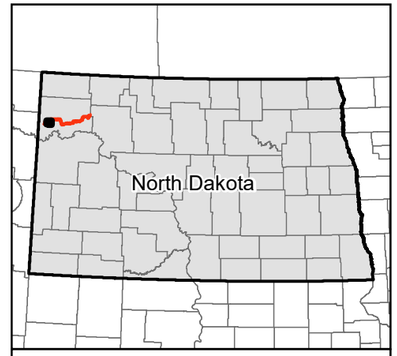

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Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

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Williams County, ND

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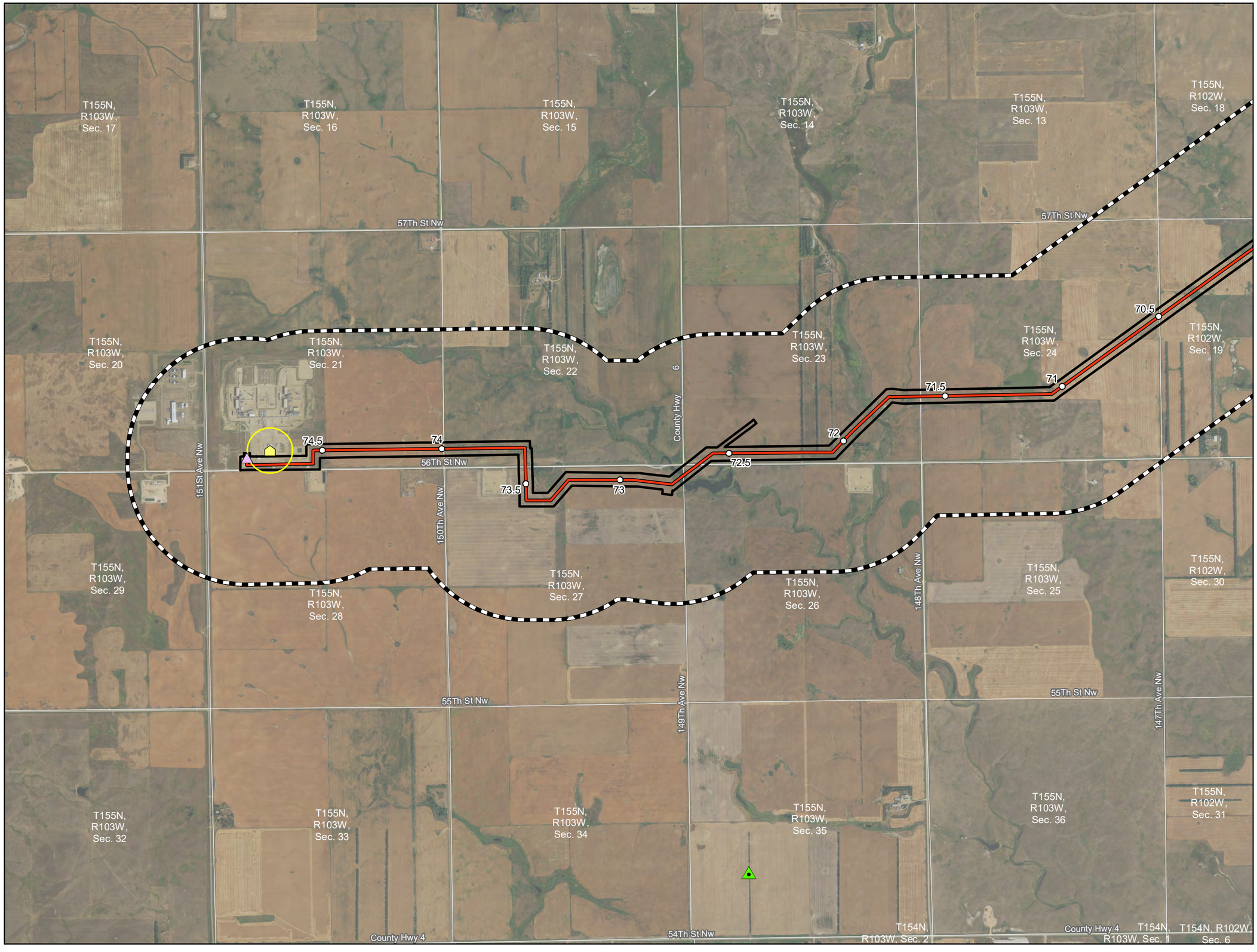

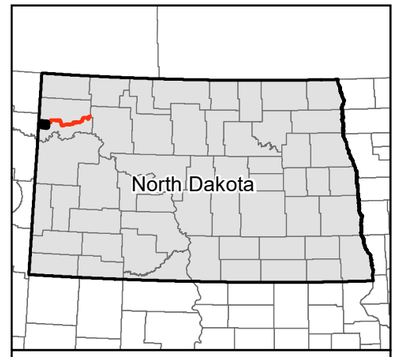

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Imagery Source: USDA-FSA-APFO Aerial Photography Field Office

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Exhibit B.2
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Avoidance and Exclusion Maps

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Williams County, ND

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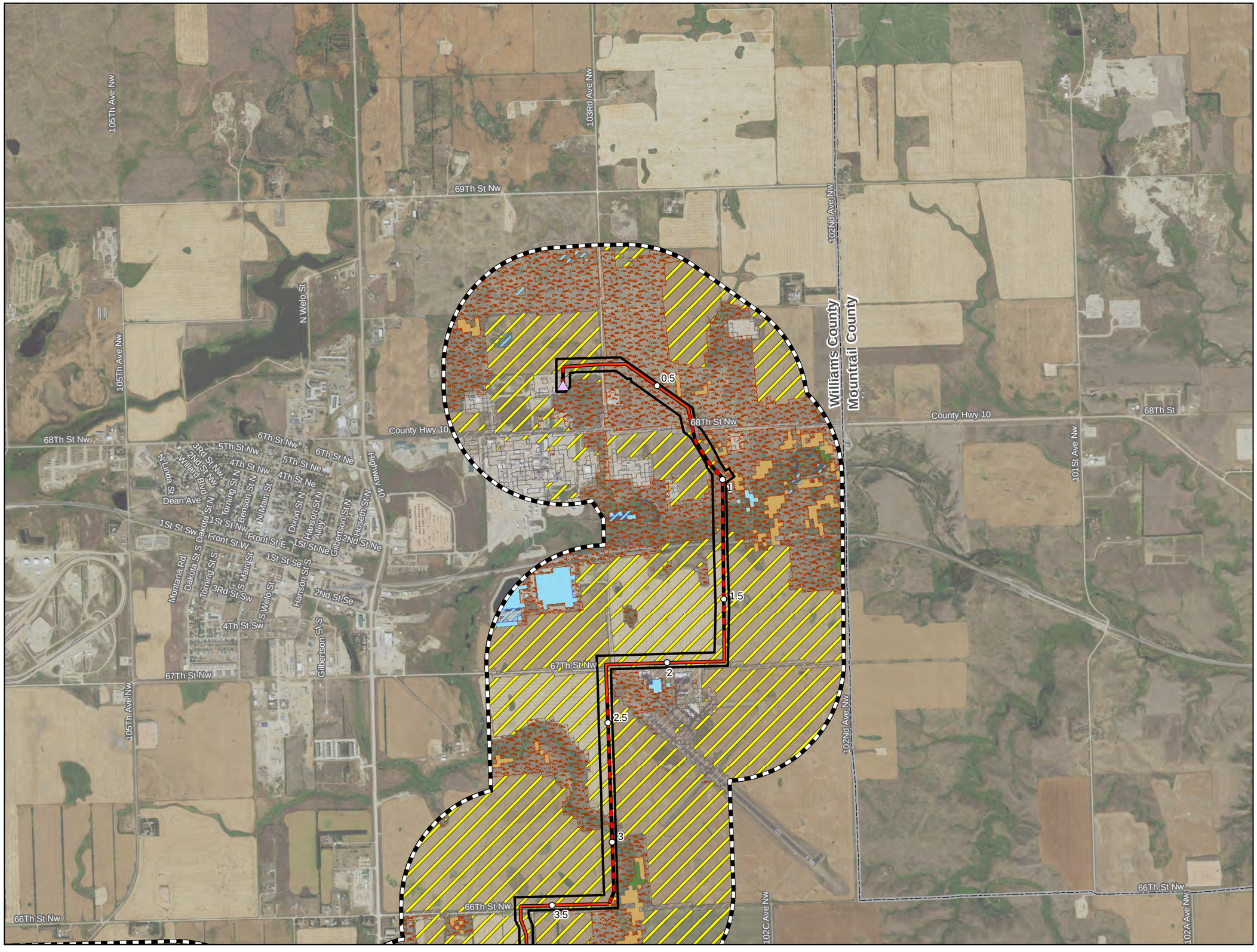
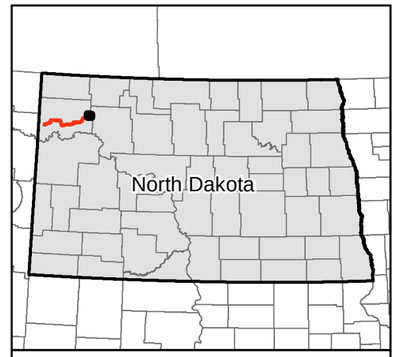
Date: (11/15/2019)

B.3 Land Use/Land Cover Maps





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N W E S

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LULC Classification

- Barren Land
- Cultivated Crops
- Forested
- Developed
- Emergent Herbaceous Wetlands
- Herbaceuous
- Hay/Pasture
- Open Water
- Shrub/Scrub
- Woody Wetlands

Exhibit B.3
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

Williams County, ND

Source: Z:\Clients\M_P\ONEOK\Tioga_Lateral\Permitting\PSC\Figures\TE_PSC_Land_Use_Map_Book.mxd

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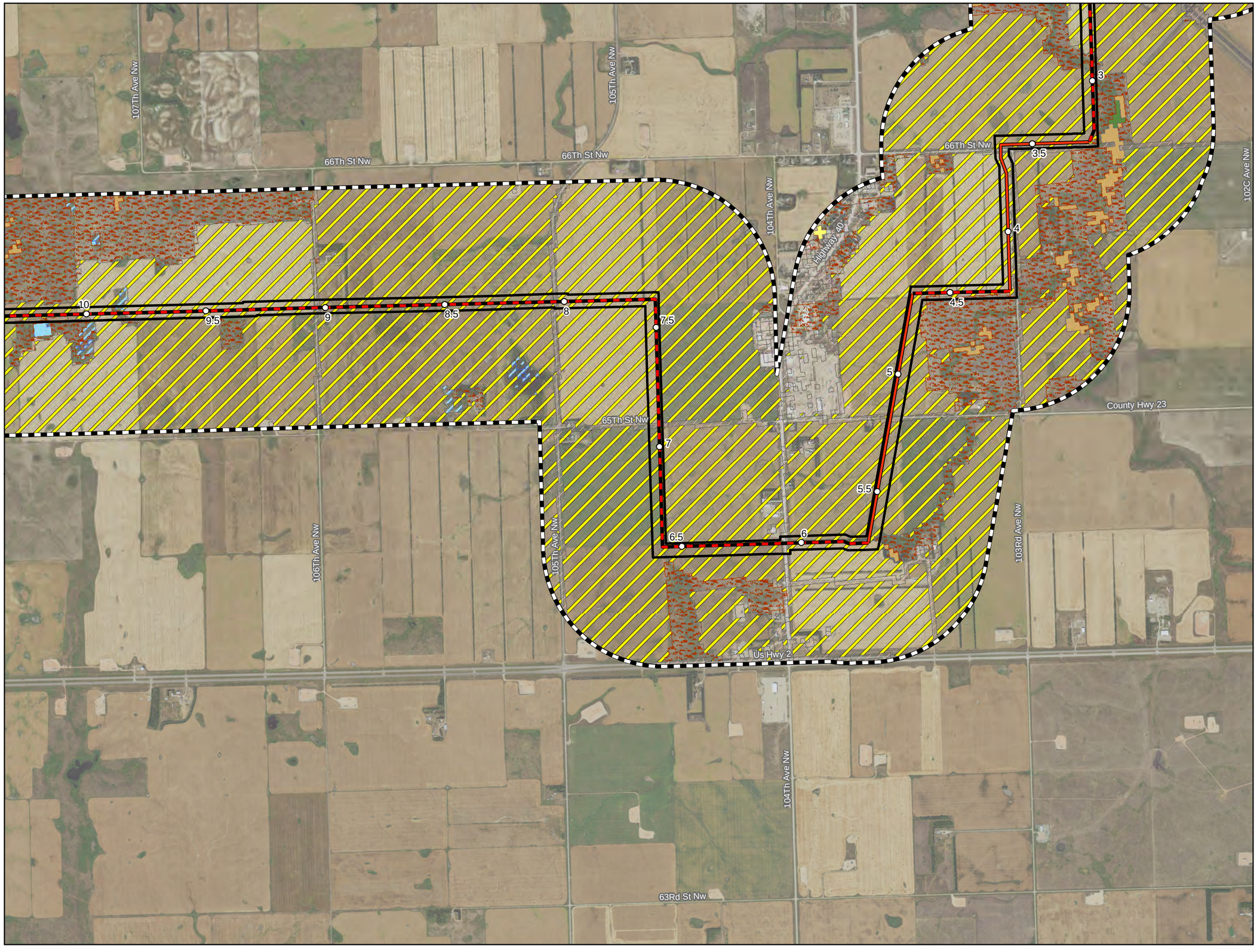
11/15/2019



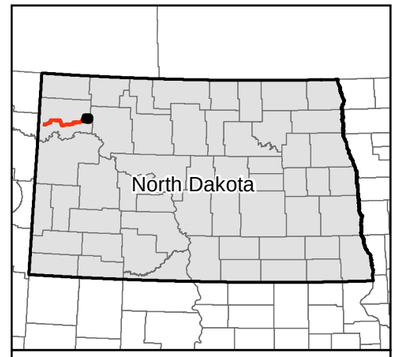


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Exhibit B.3
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

Page 2 of 13

Williams County, ND

Source: Z:\Clients\W_P\Oneok\Tioga_Lateral\Permitting\PSC\Figures\TE_PSC_Land_Use_Map_Book.mxd

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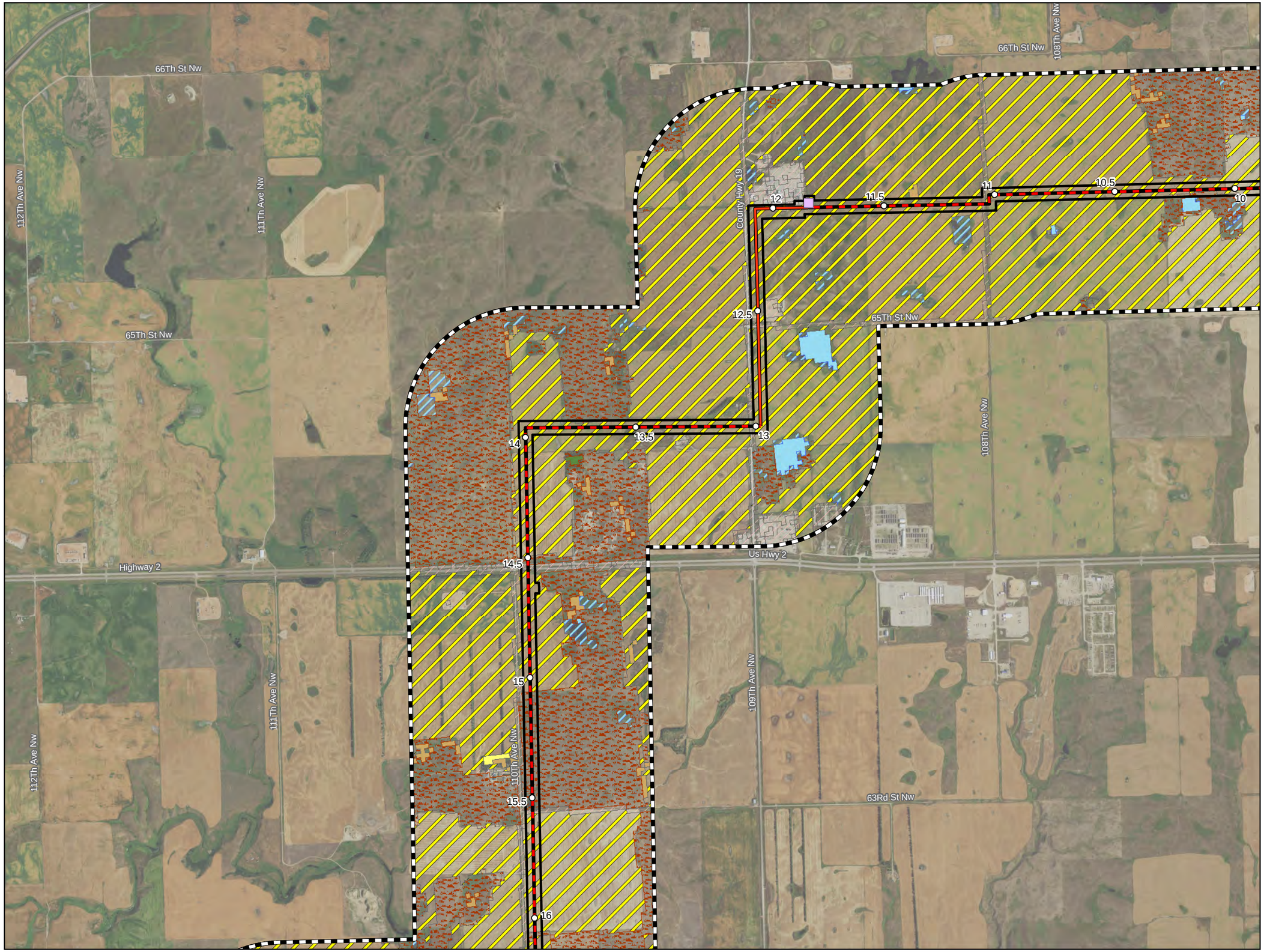

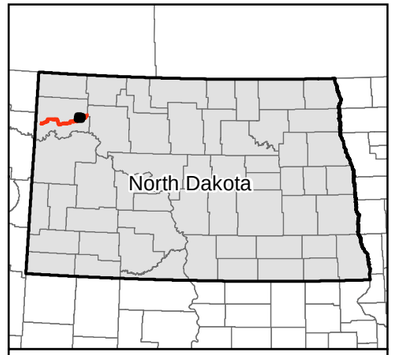

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Exhibit B.3
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

Williams County, ND

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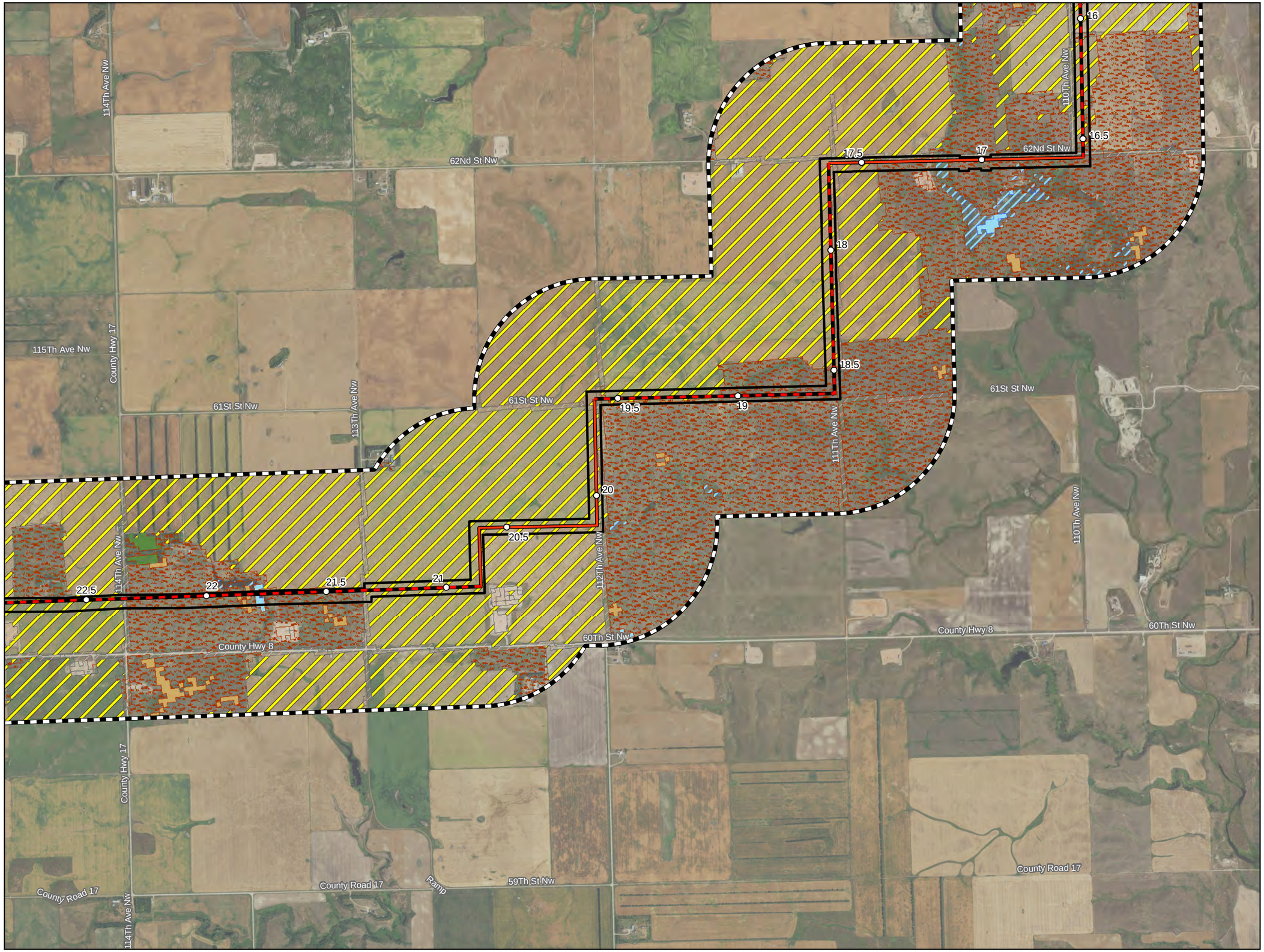

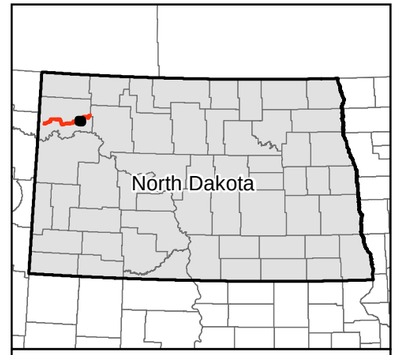

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ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

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Williams County, ND

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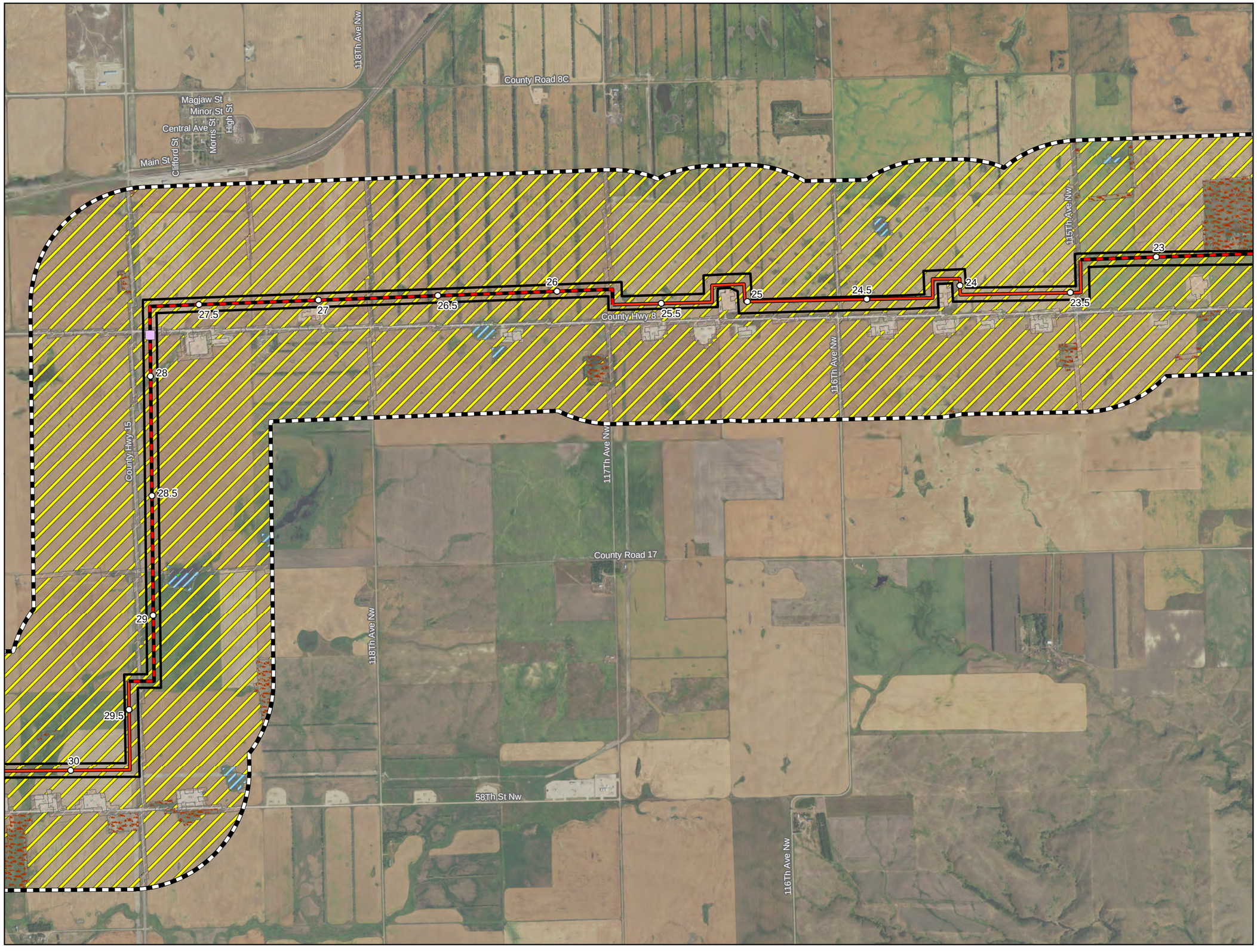

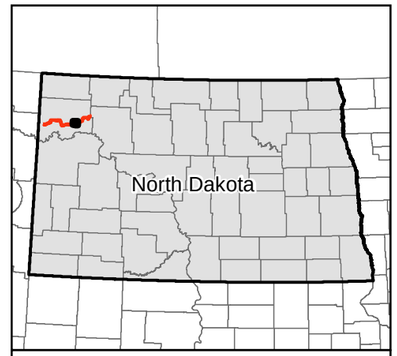

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Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

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Williams County, ND

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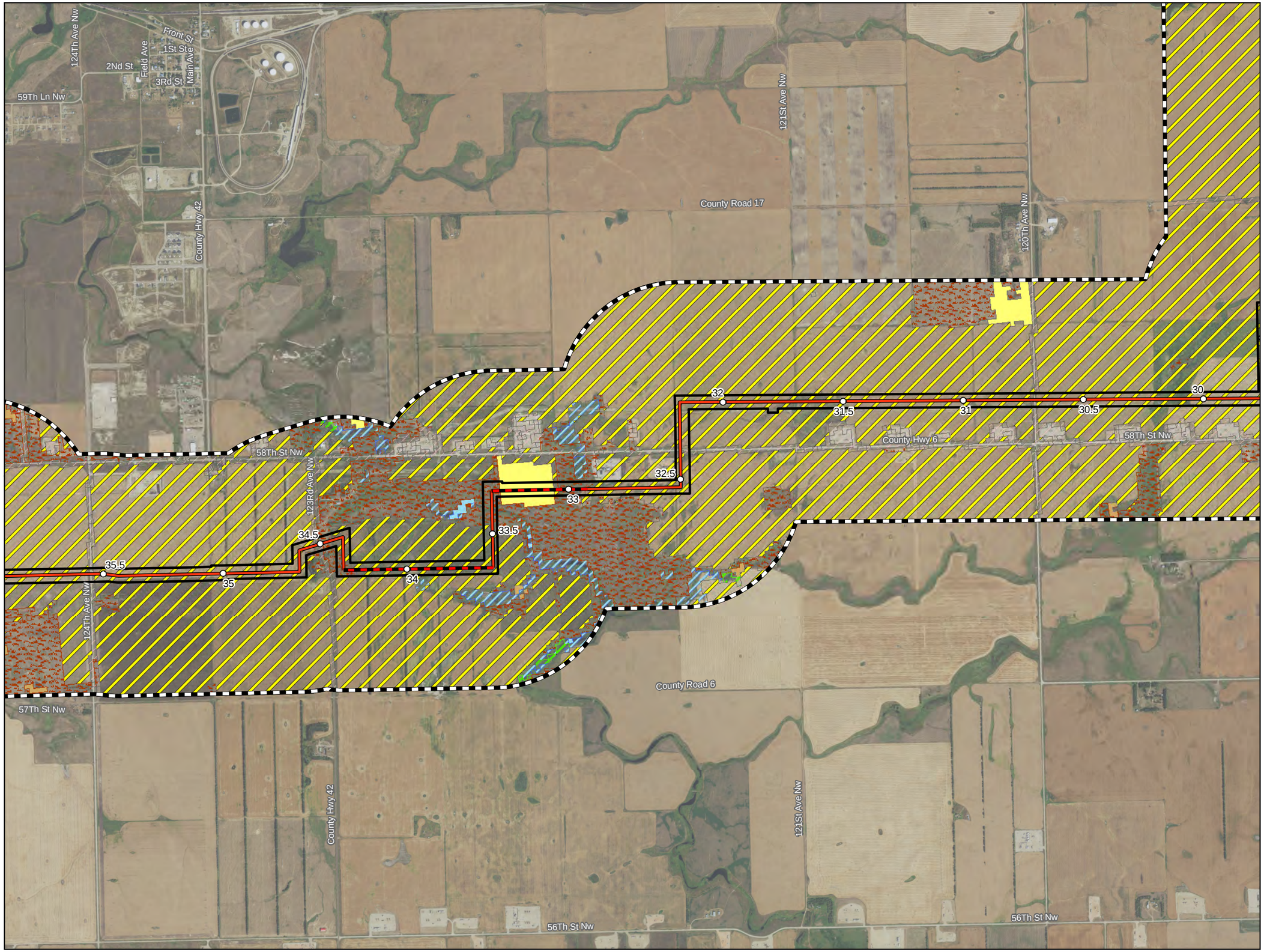

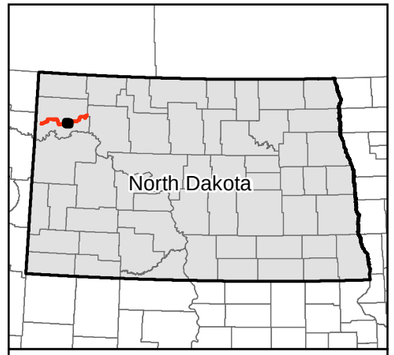

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Land Use/Land Cover Maps

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Williams County, ND

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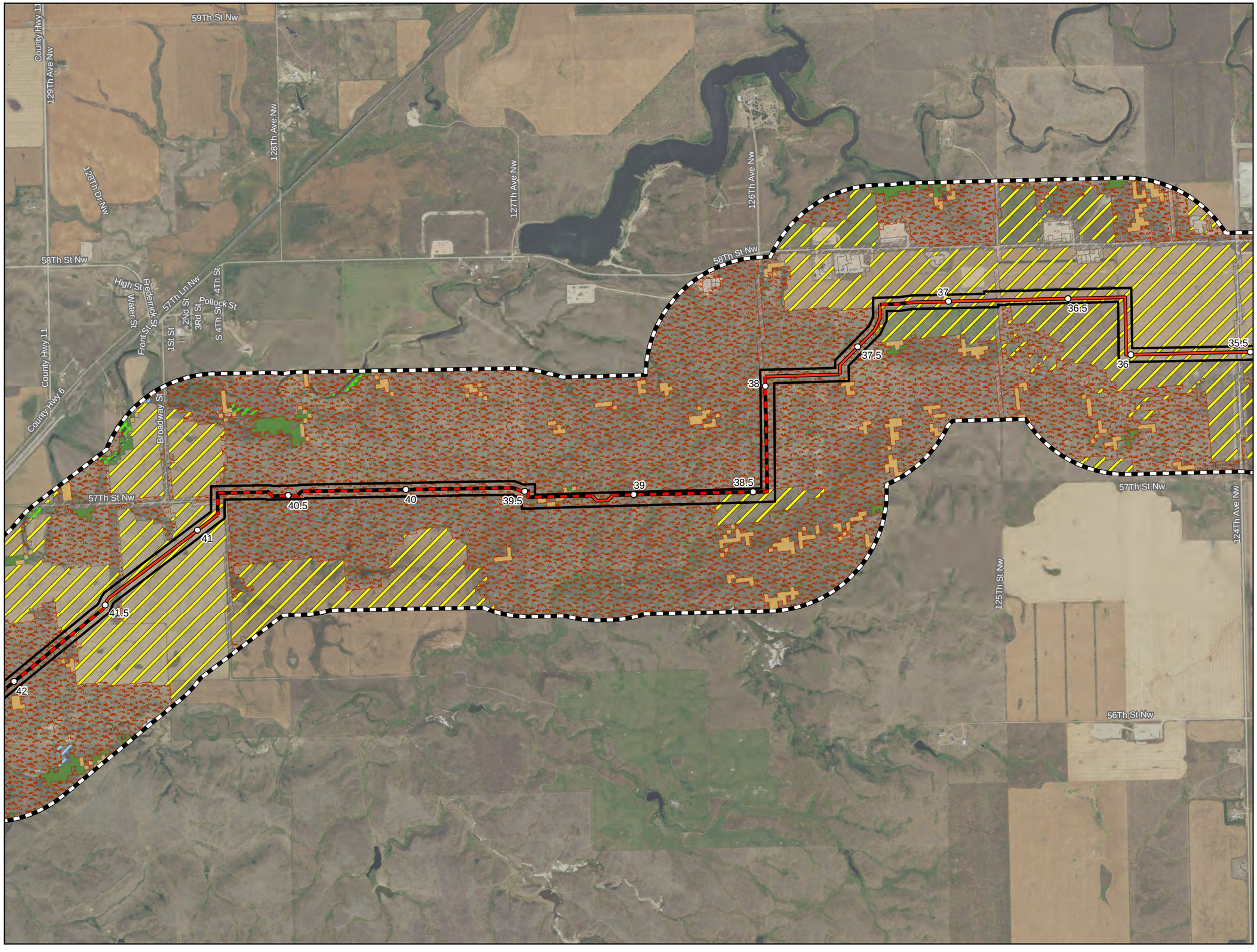

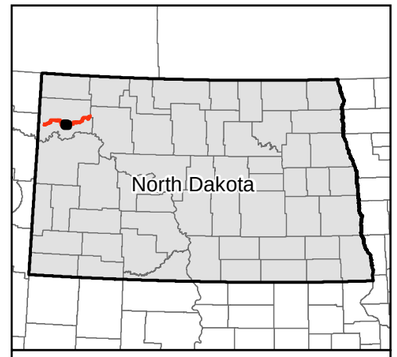

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Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

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Williams County, ND

Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\Permitting\PSC\Figures\1L_PSC_Land_Use_Map_Book.mxd

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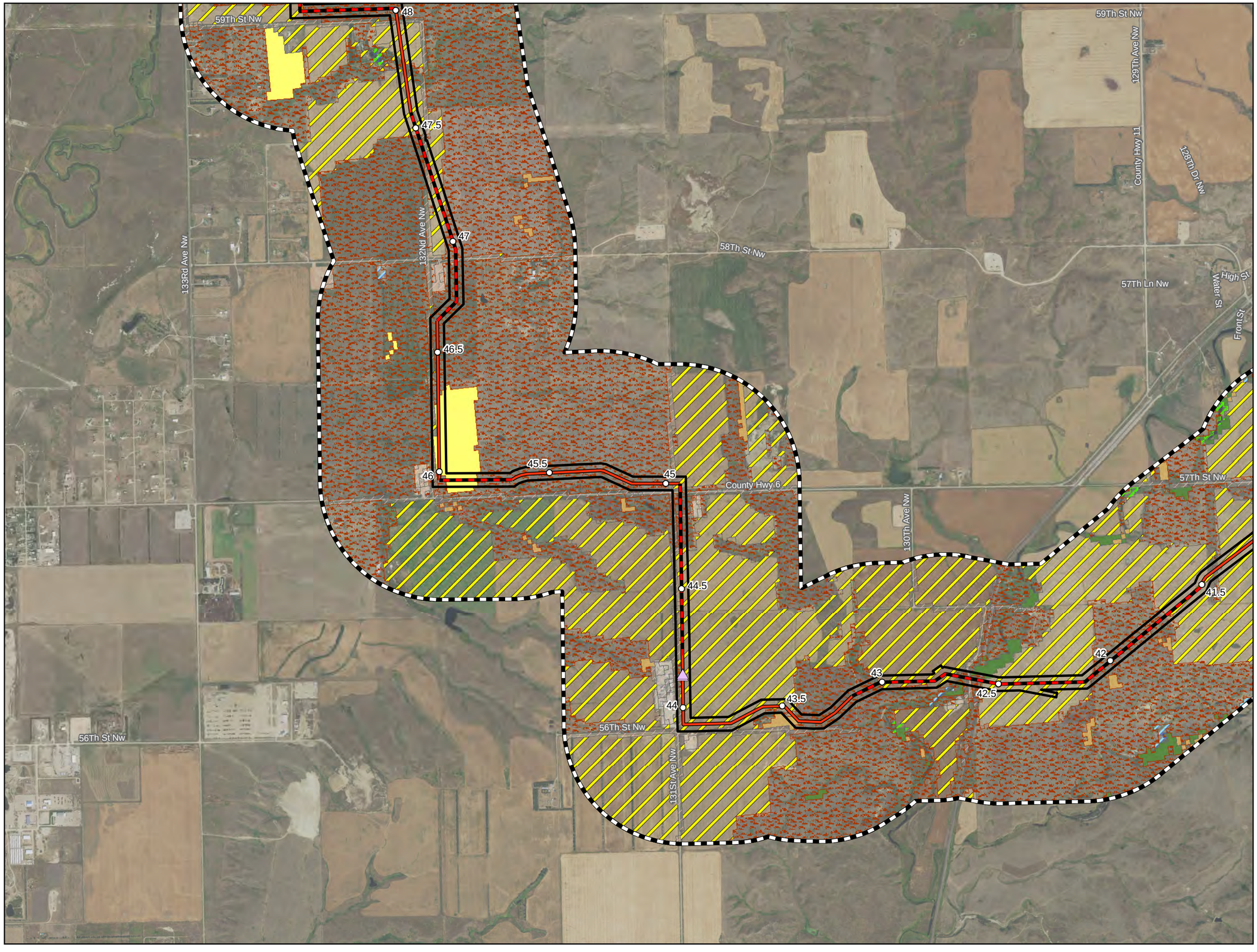

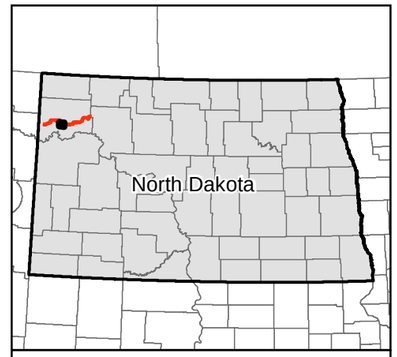

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Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

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Williams County, ND

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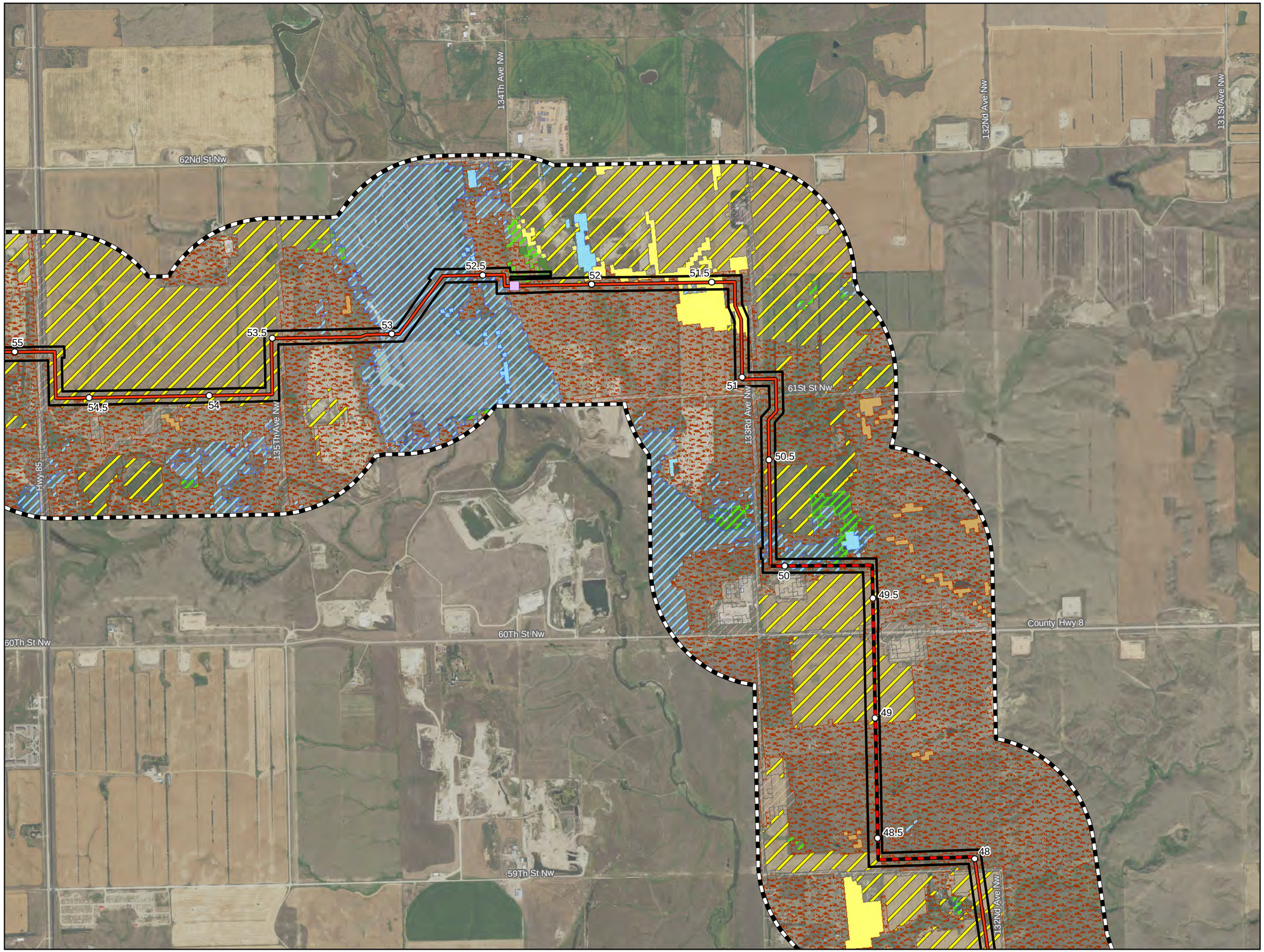

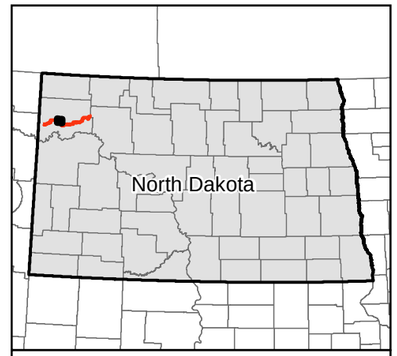

0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA-APFO Aerial Photography Field Office

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- Milepost
- Mainline Valve
- Launcher/Receiver
- Centerline: Co-located
- Centerline: Not Co-located
- Project Corridor
- 1-mile Study

LULC Classification

- Barren Land
- Cultivated Crops
- Forested
- Developed
- Emergent Herbaceous Wetlands
- Herbaceuous
- Hay/Pasture
- Open Water
- Shrub/Scrub
- Woody Wetlands

Exhibit B.3
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

Page 9 of 13

Williams County, ND

Source: Z:\Clients\M_P\ONEOK\Tioga_Lateral\Permitting\PSC\Figures\1L_PSC_Land_Use_Map_Book.mxd

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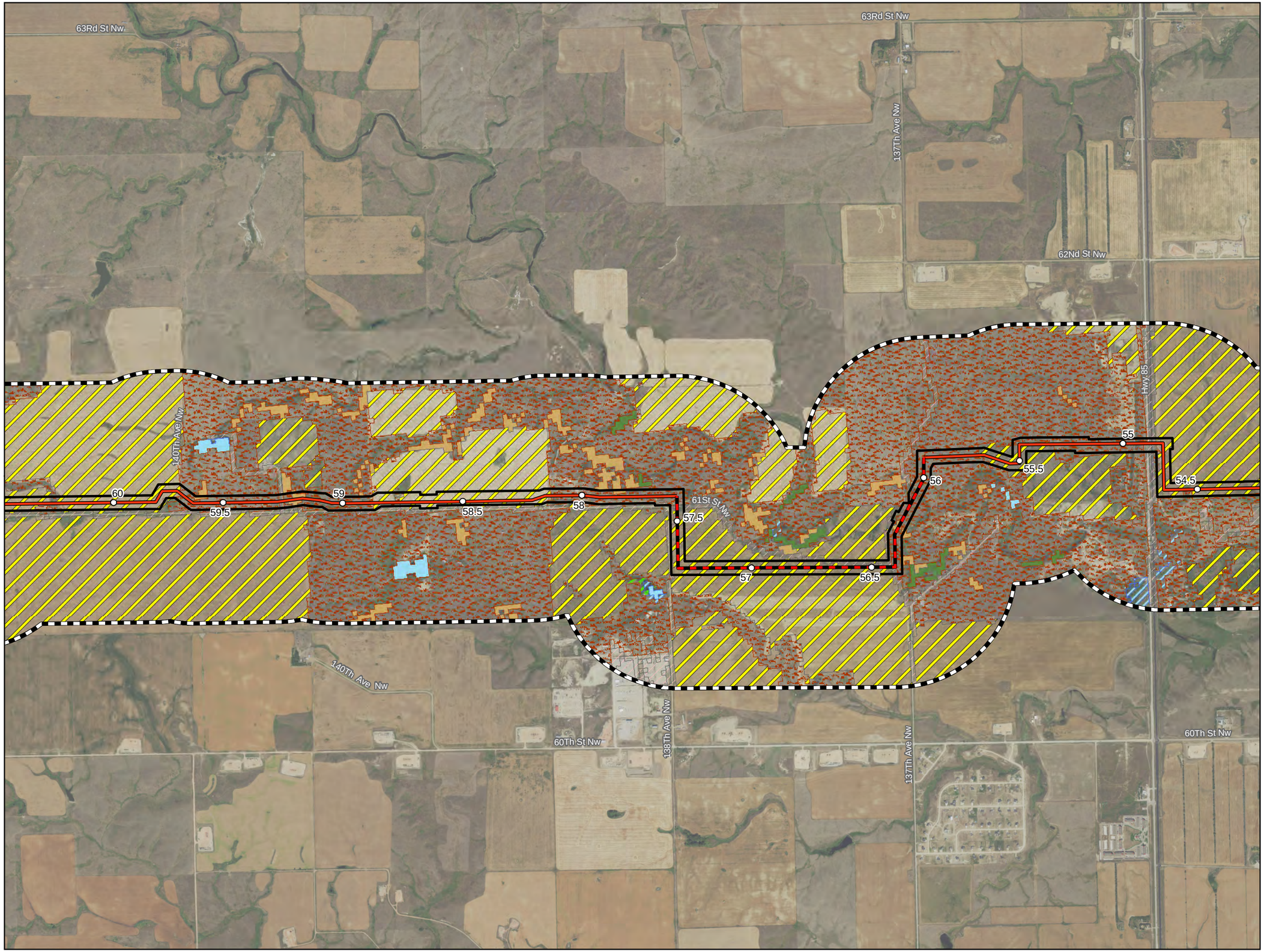

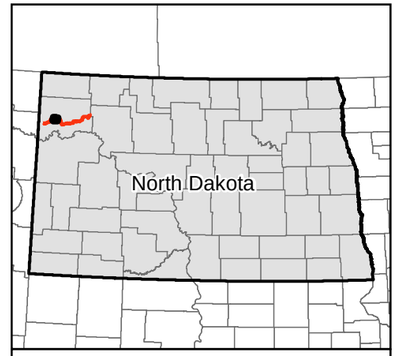

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Exhibit B.3
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

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Williams County, ND

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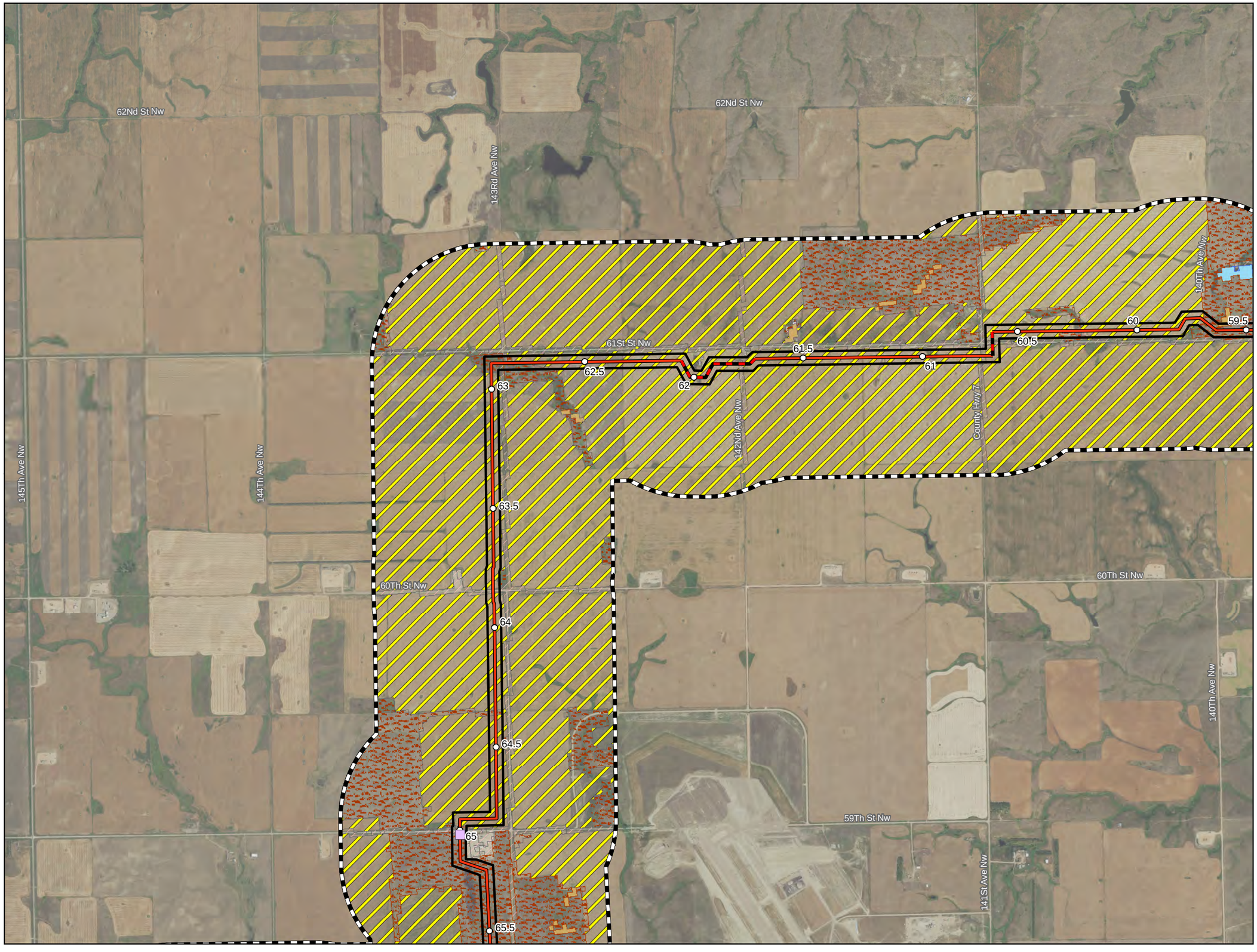

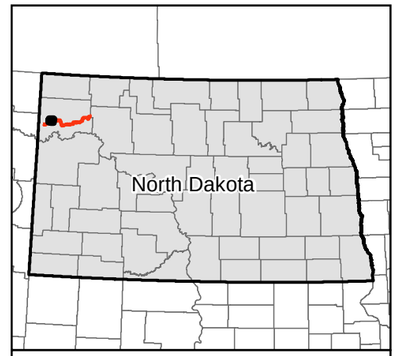

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Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

Williams County, ND

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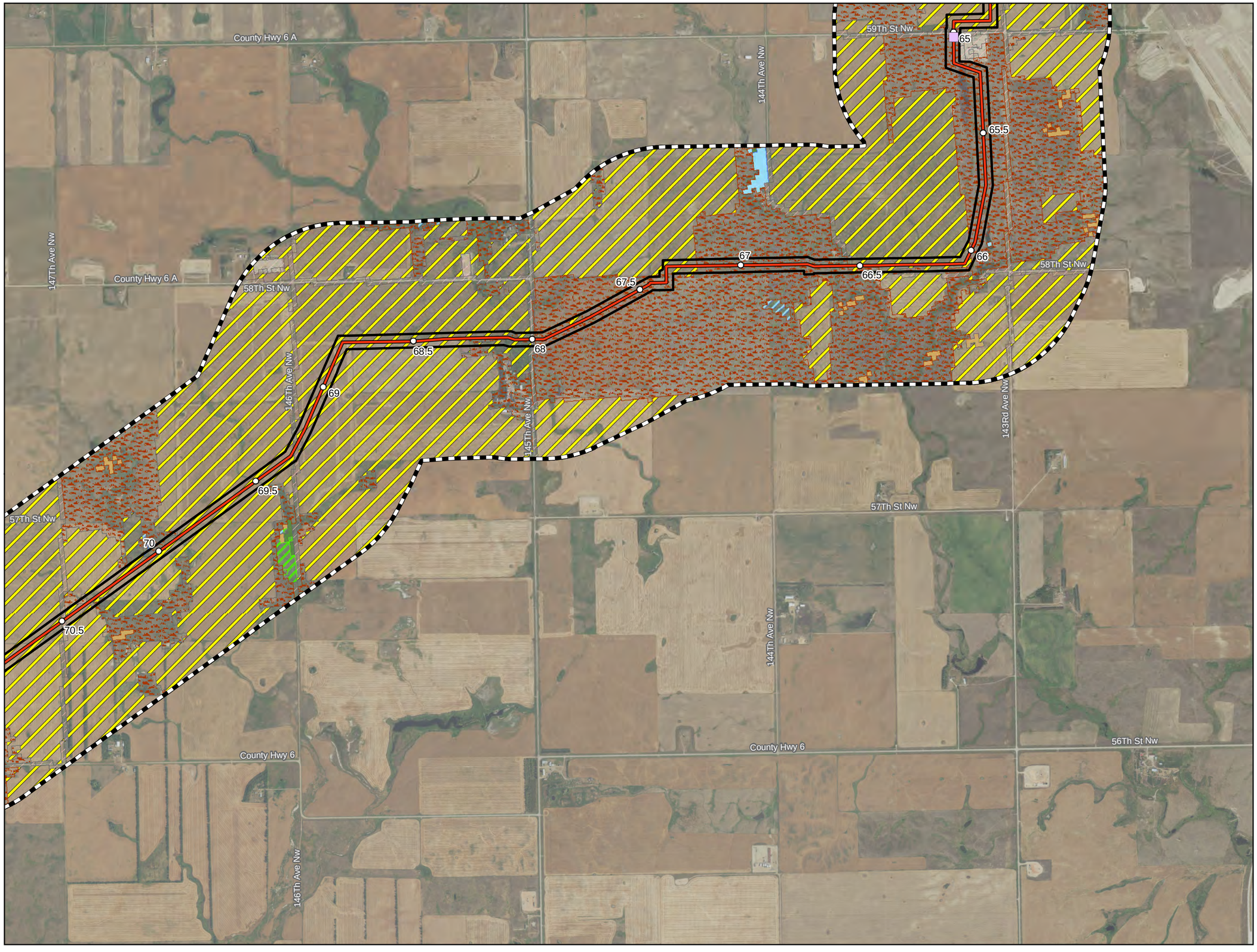

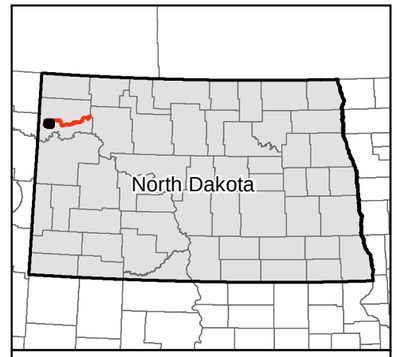

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Exhibit B.3
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

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Williams County, ND

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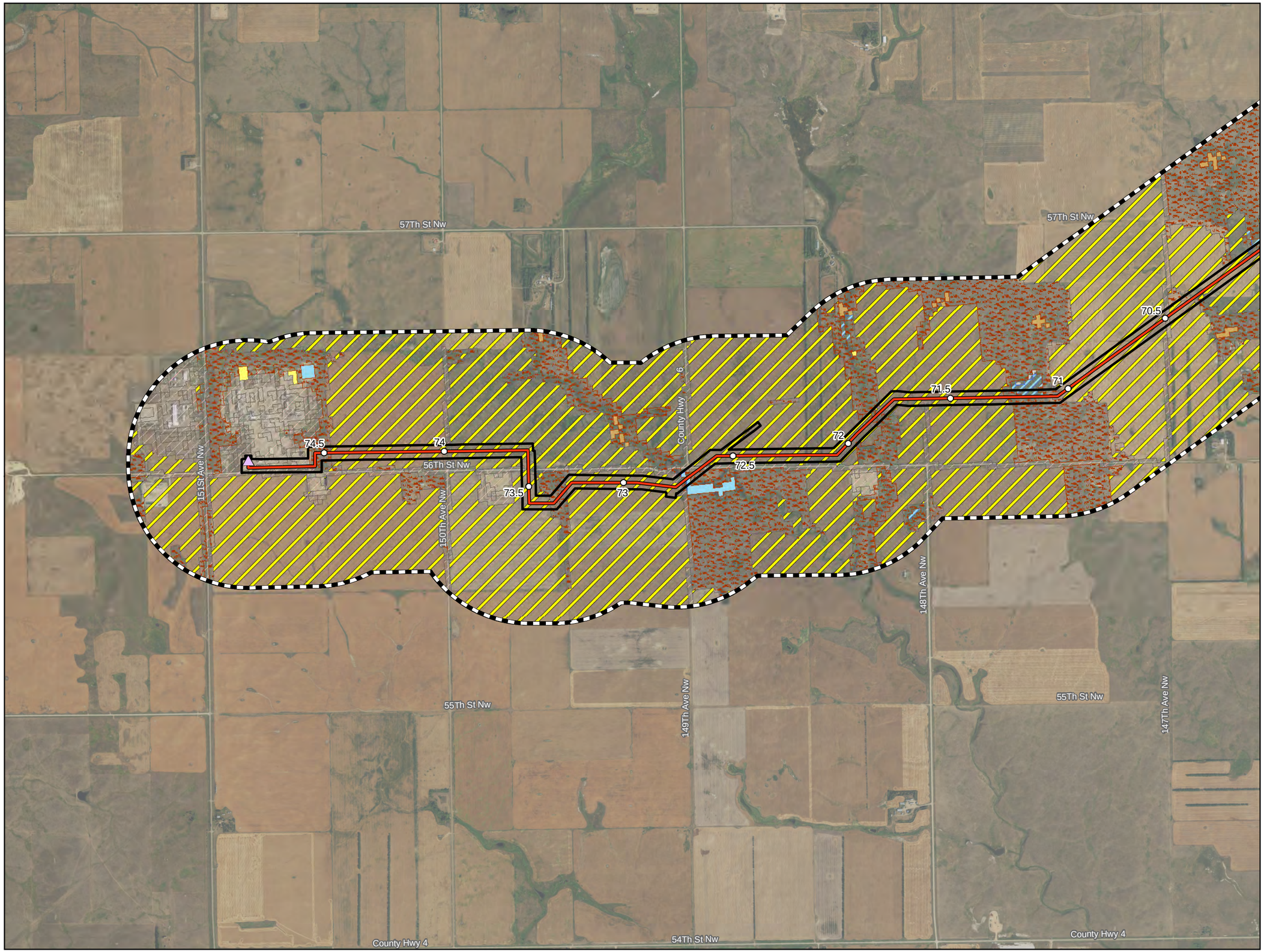

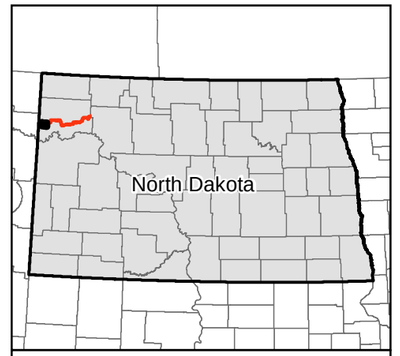

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Exhibit B.3
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Land Use/Land Cover Maps

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Williams County, ND

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11/15/2019

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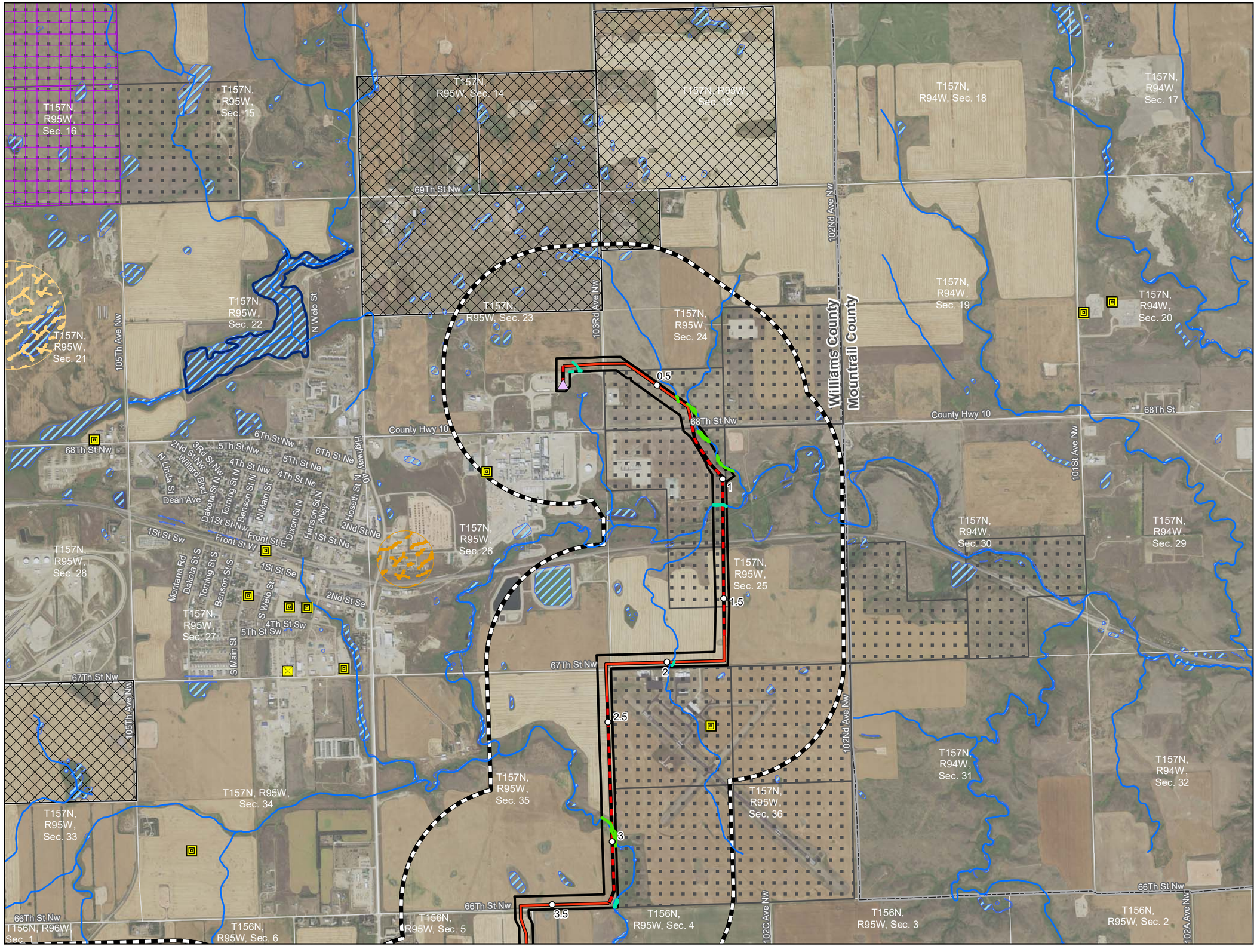
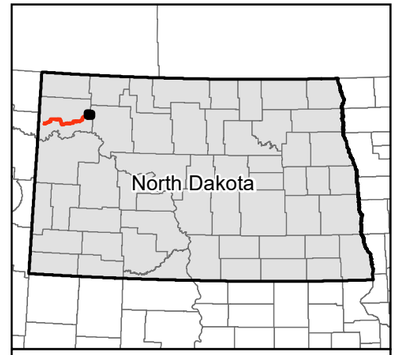
B.4. Selection Criteria (Other) Maps





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Imagery Source: USDA-FSA-APFO Aerial Photography Field Office

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- Microwave Station
- Impaired Waterbody
- Class II Waterbody
- Class II Waterbody/Special Fishery for Waterbody Fishing
- NHD Flowline
- Field Delineated Waterbody
- Field Delineated Wetland
- NWI Wetland
- Surficial Aquifer
- Fishing Lake
- Wellhead Community Protection Area
- Wellhead Non-Community Protection Area
- FWS Wetland Easement
- Private Lands Open to Sportsmen (PLOTS)
- NDDTL - School Trust Land
- NDDTL - Mineral Trust Land

Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

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Williams County, ND

Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\Permitting\PSC\Figures\TL_PSC_Other_Criteria_Map_Book.mxd

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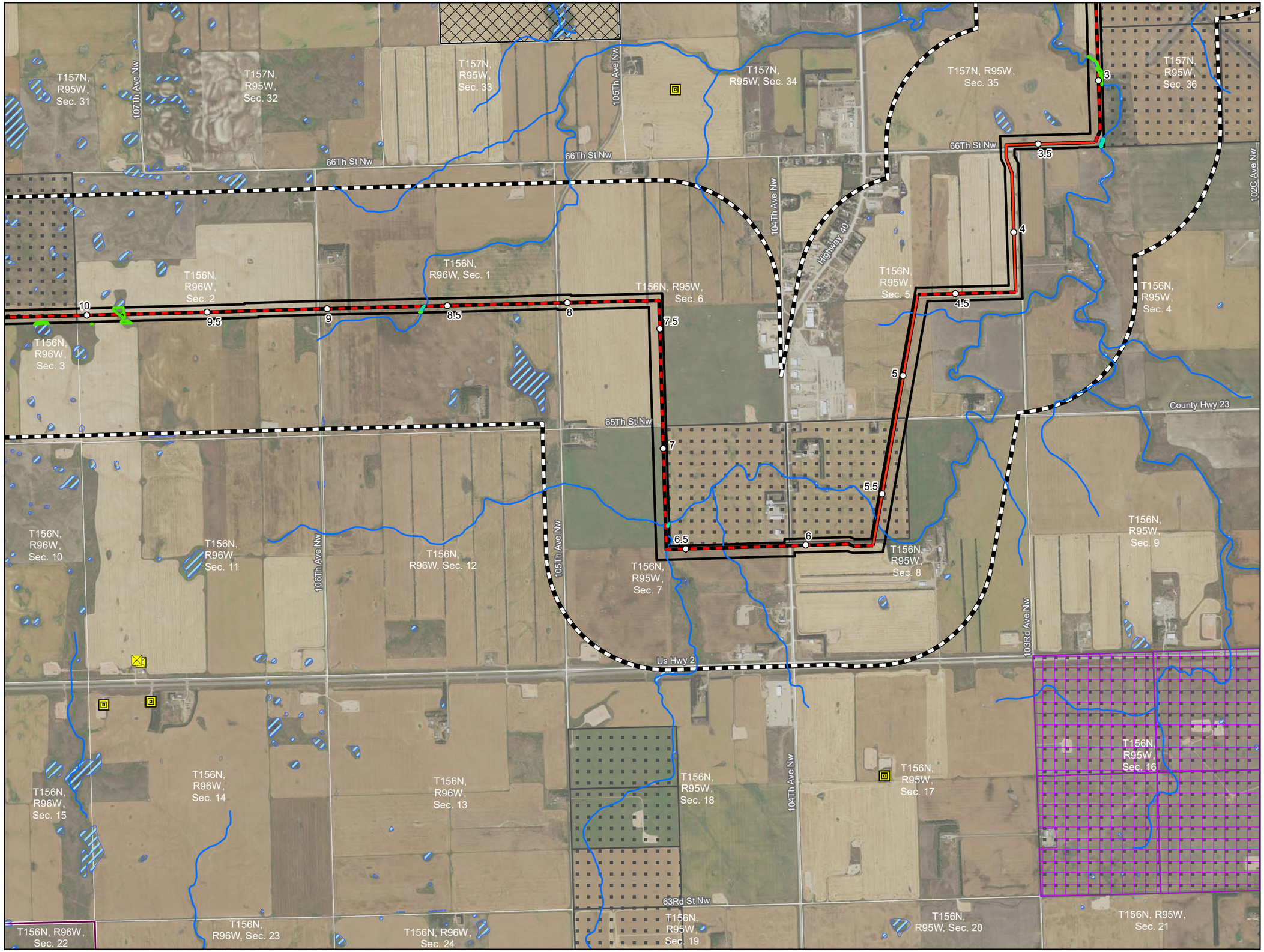

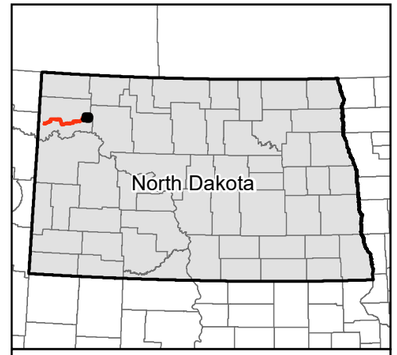

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Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

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Williams County, ND

Source: Z:\Clients\M_P\ONeok\Tioga_Lateral\Permitting\PSC\Figures\1L_PSC_Other_Criteria_Map_Book.mxd
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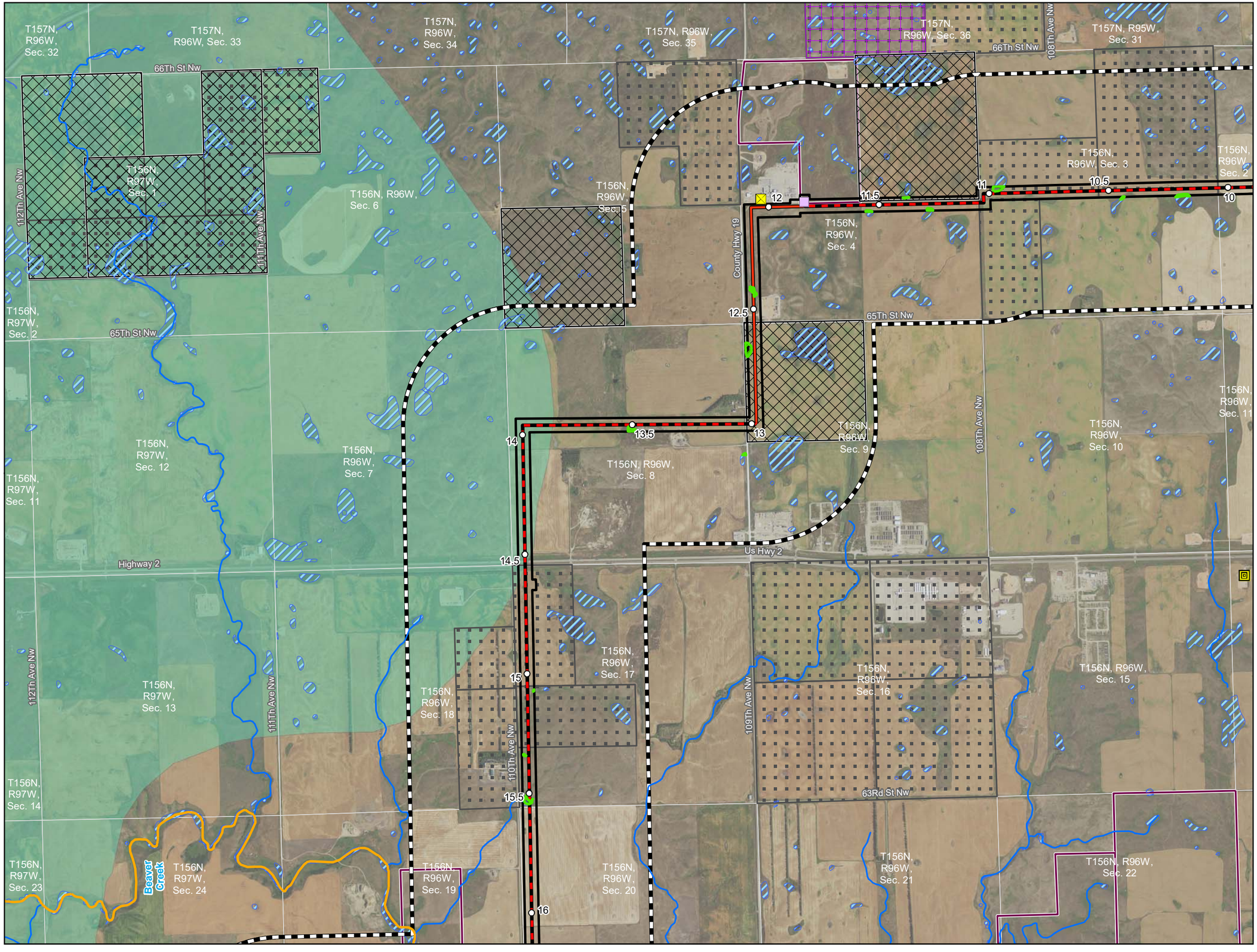

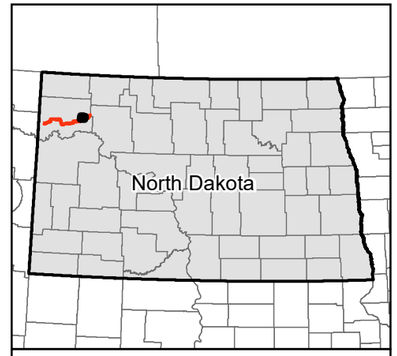

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Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

Page 3 of 13

Williams County, ND

Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\Permitting\PSC\Figures\TL_PSC_Other_Criteria_Map_Book.mxd

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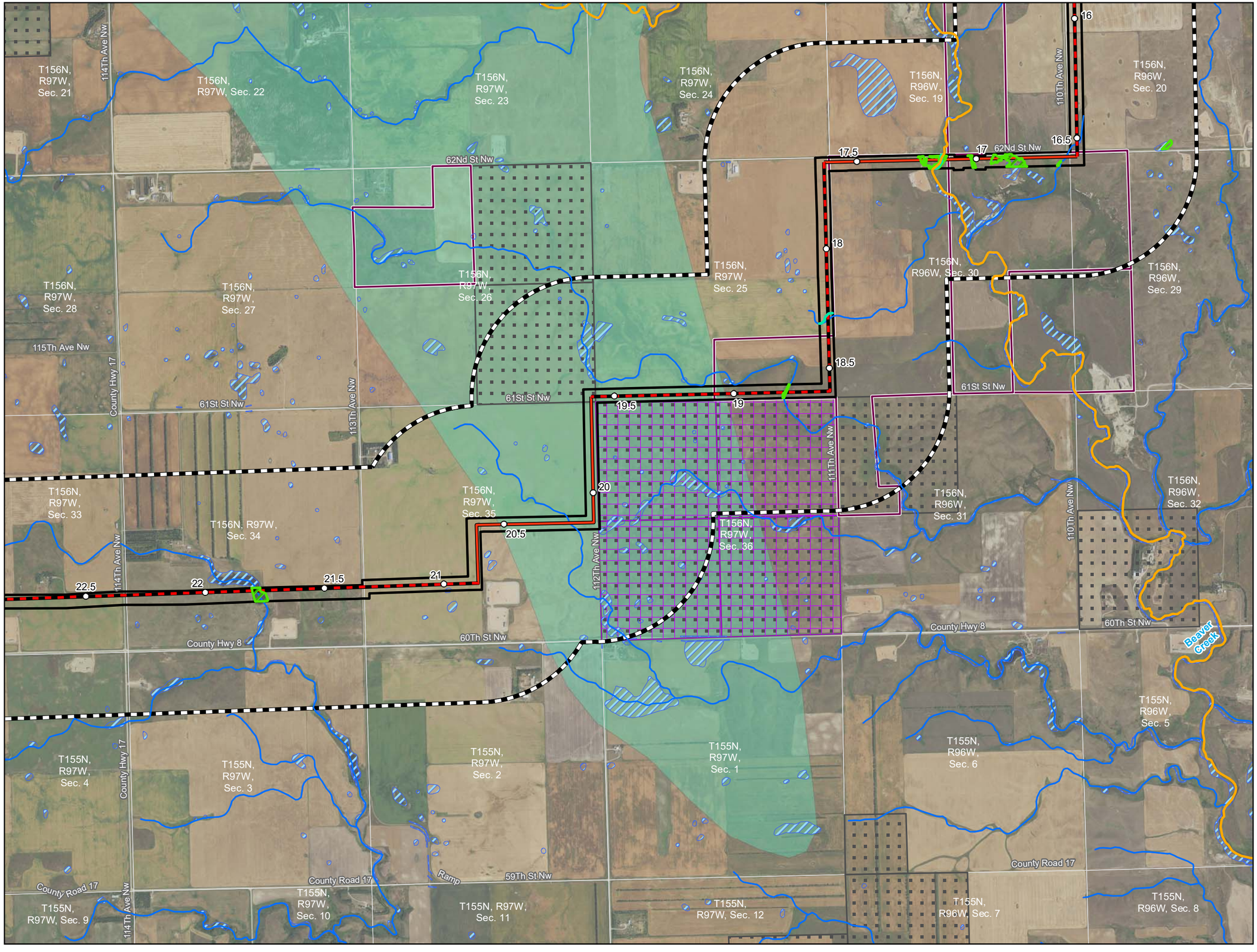

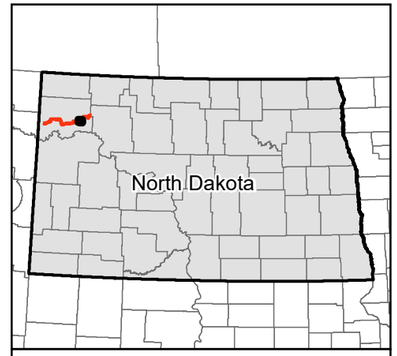

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Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

Page 4 of 13

Williams County, ND

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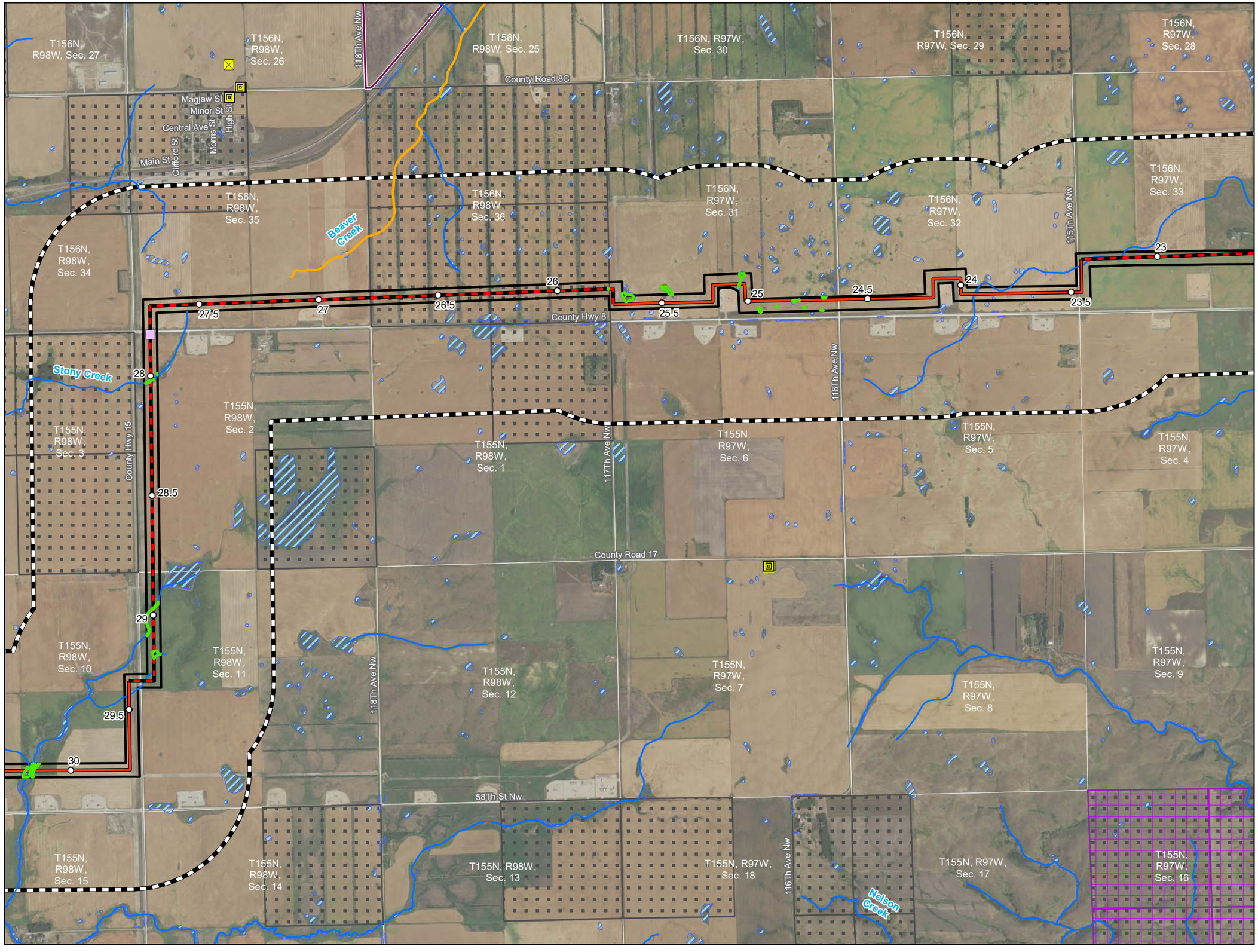

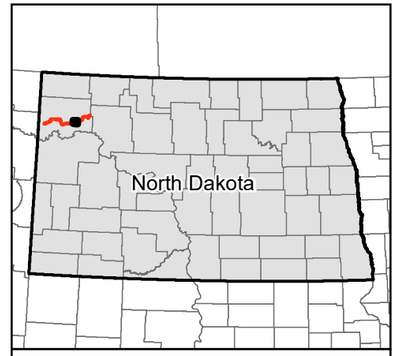

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Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

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Williams County, ND

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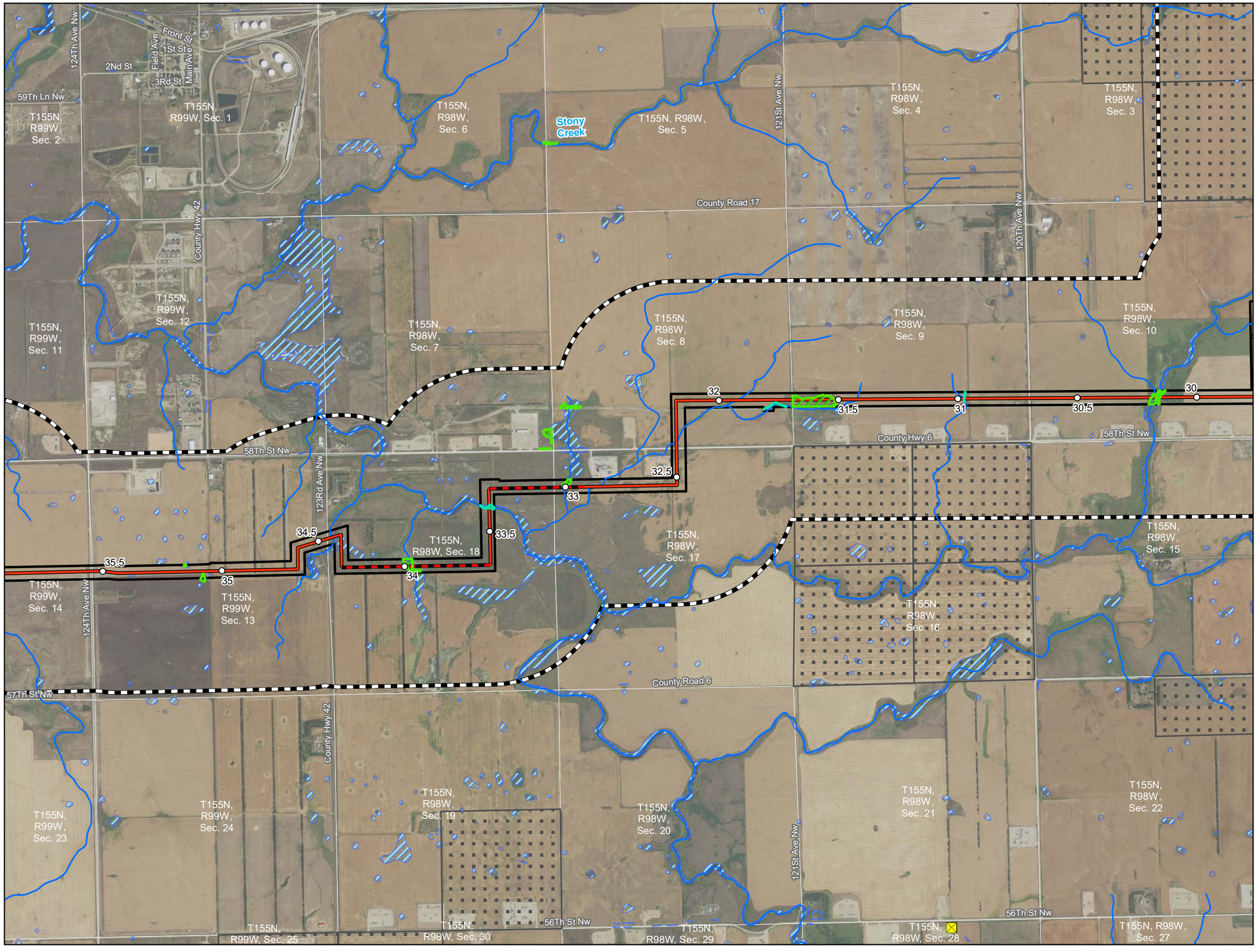

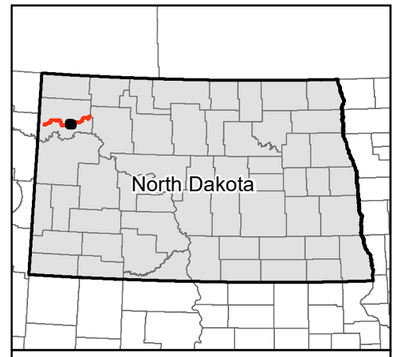

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Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

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Williams County, ND

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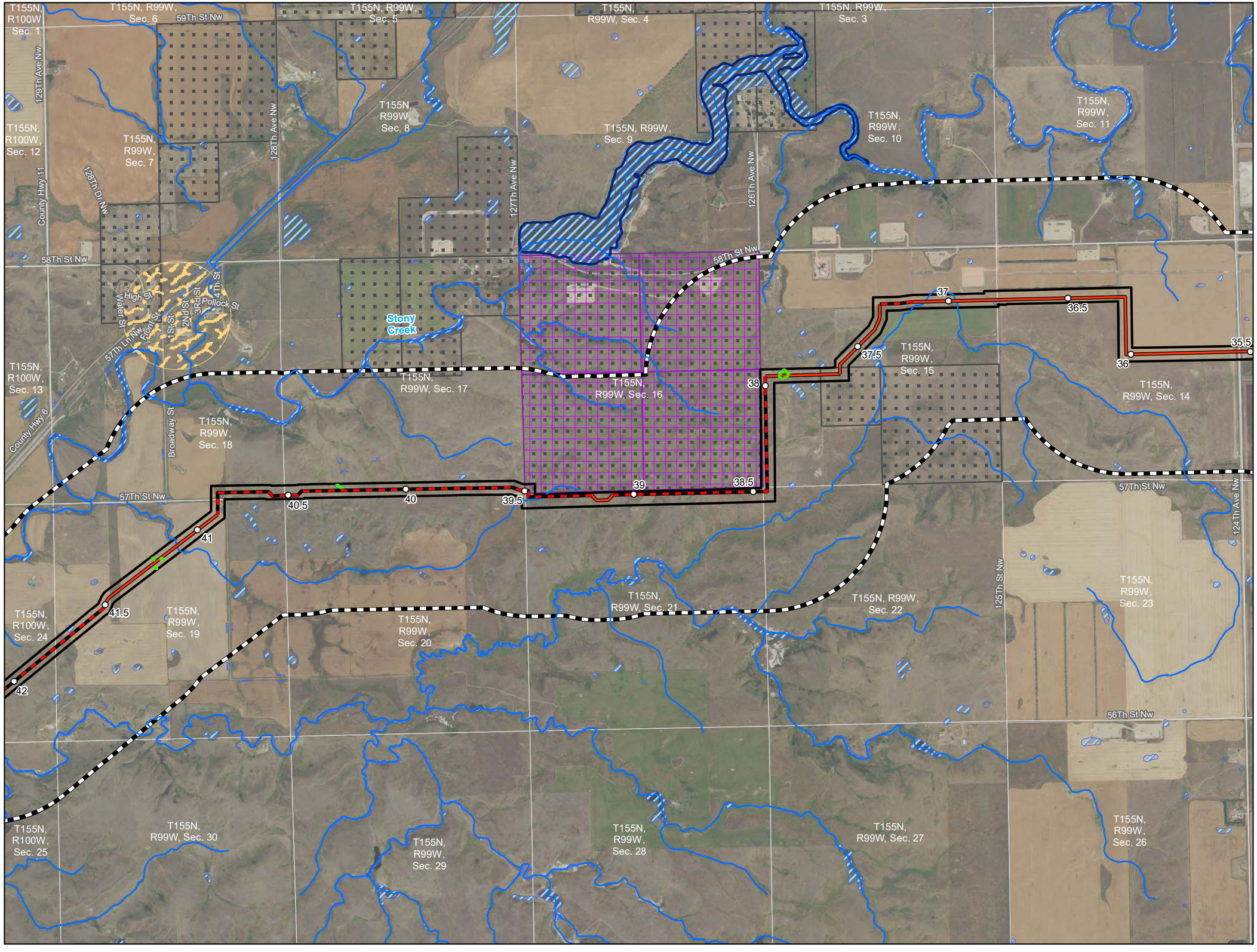

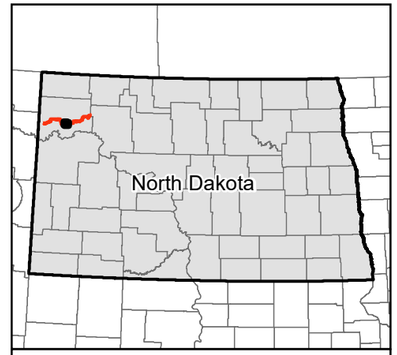

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Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

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Williams County, ND

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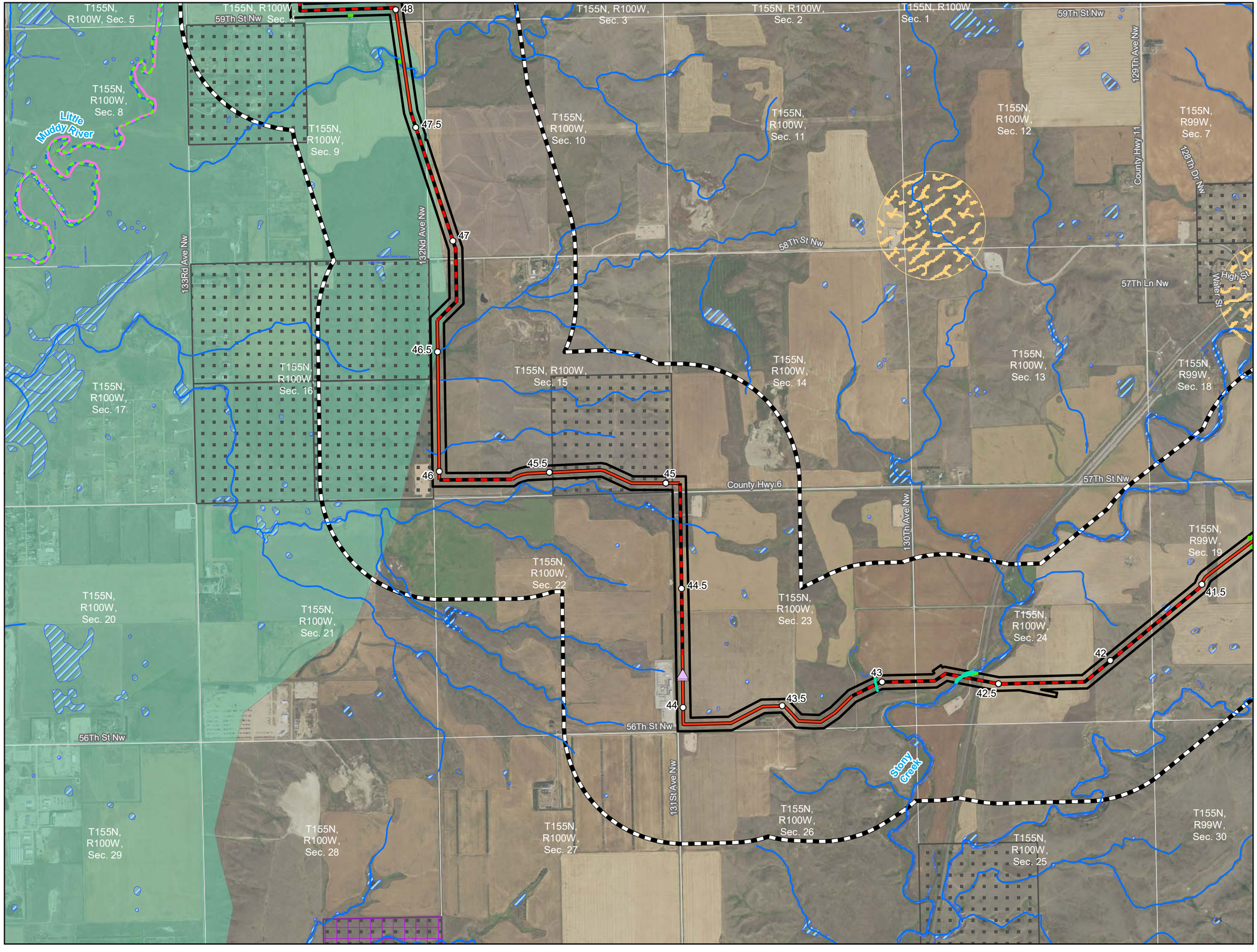

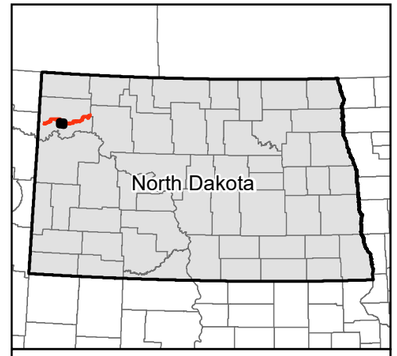

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Exhibit B.4
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Tioga Lateral Pipeline Project

Selection Criteria Maps

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Williams County, ND

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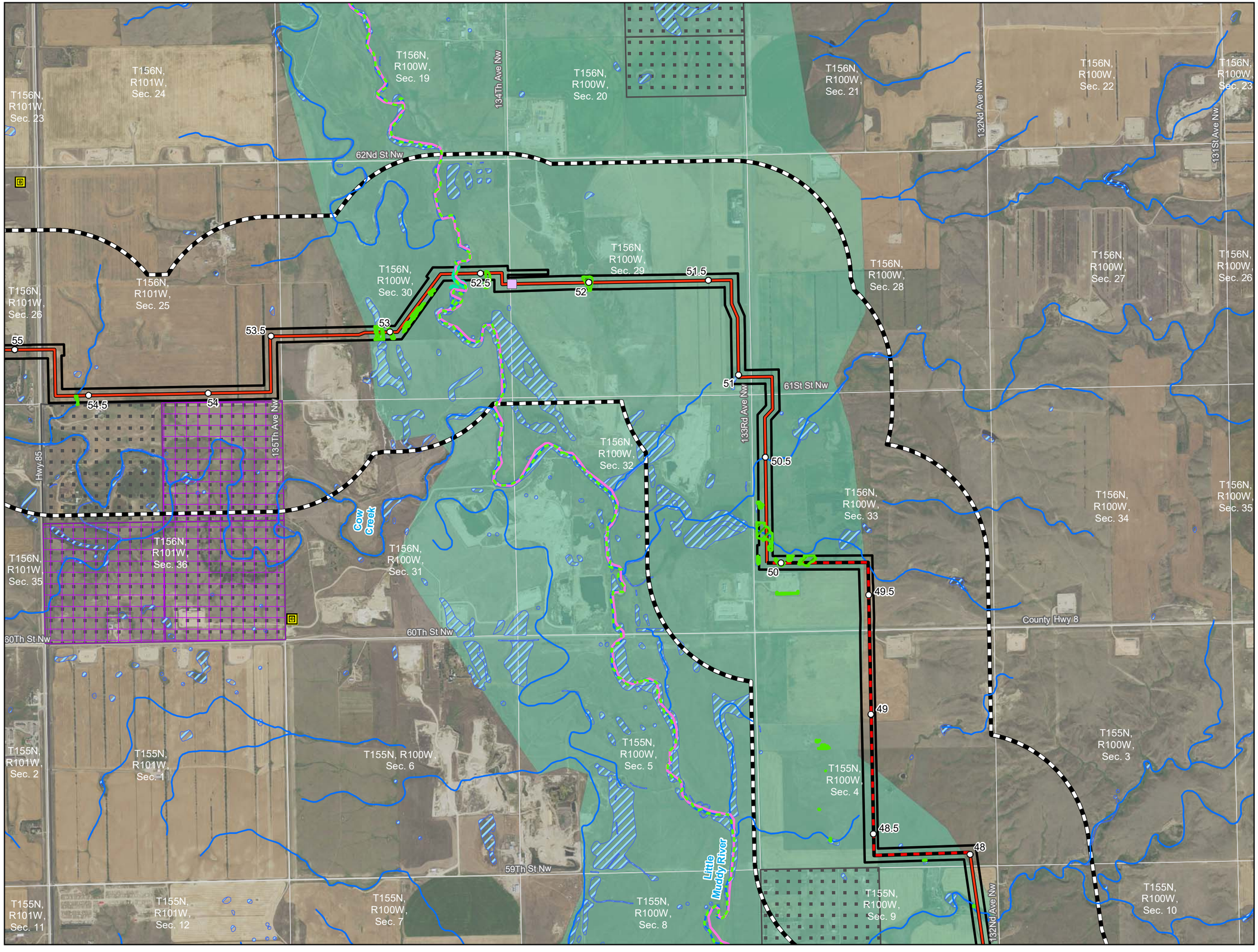

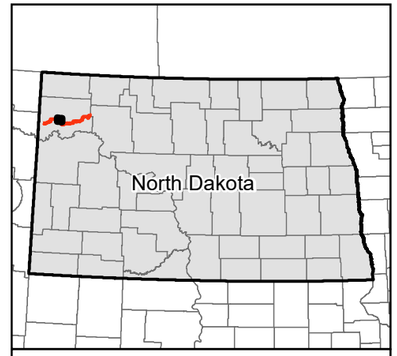

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- Antenna Structure
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- Class II Waterbody/Special Fishery for Waterbody Fishing
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- Field Delineated Wetland
- NWI Wetland
- Surficial Aquifer
- Fishing Lake
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- Wellhead Non-Community Protection Area
- FWS Wetland Easement
- Private Lands Open to Sportsmen (PLOTS)
- NDDTL - School Trust Land
- NDDTL - Mineral Trust Land

Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

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Williams County, ND

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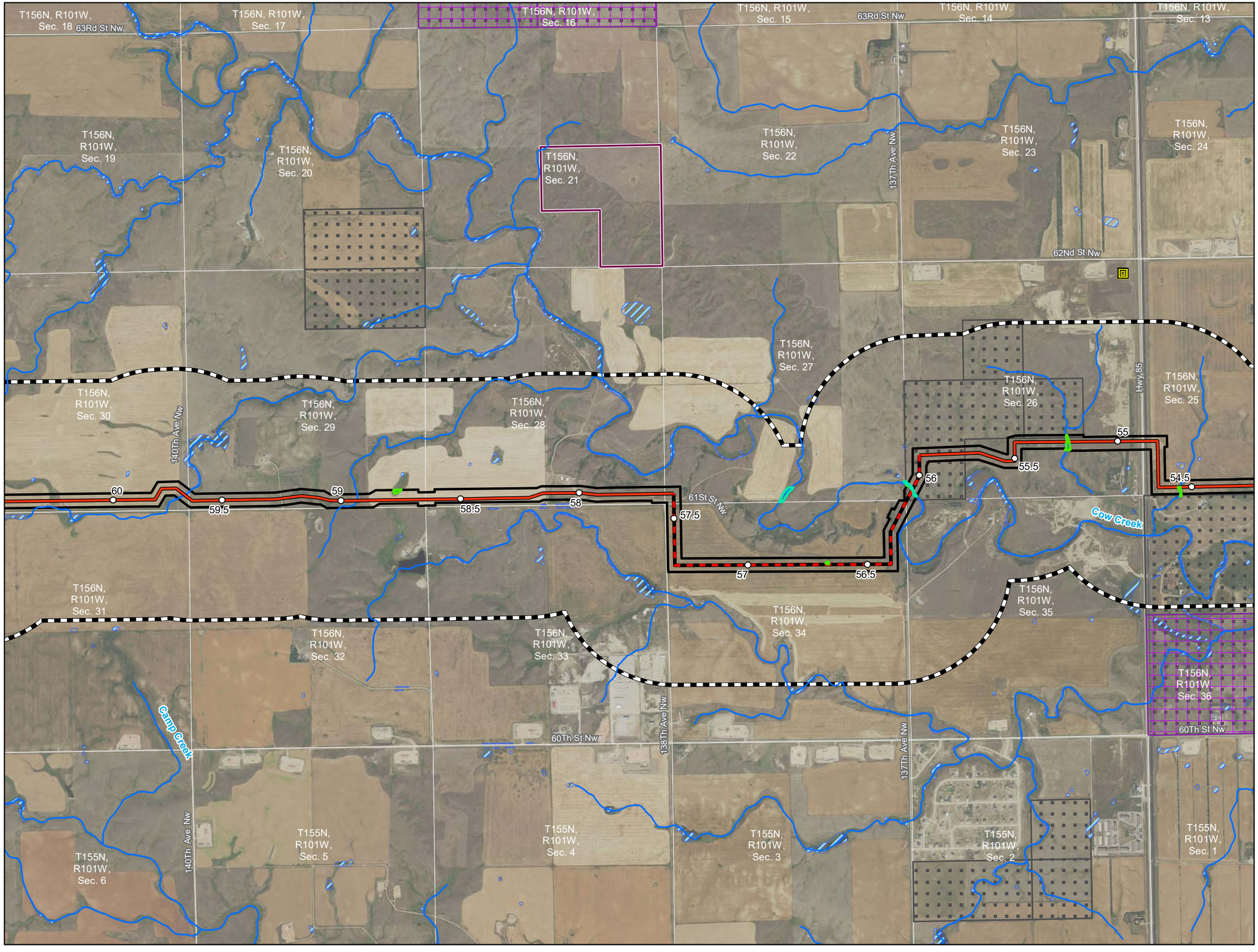

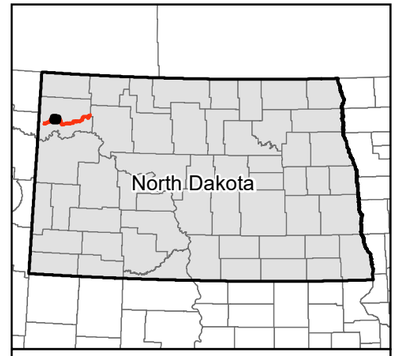

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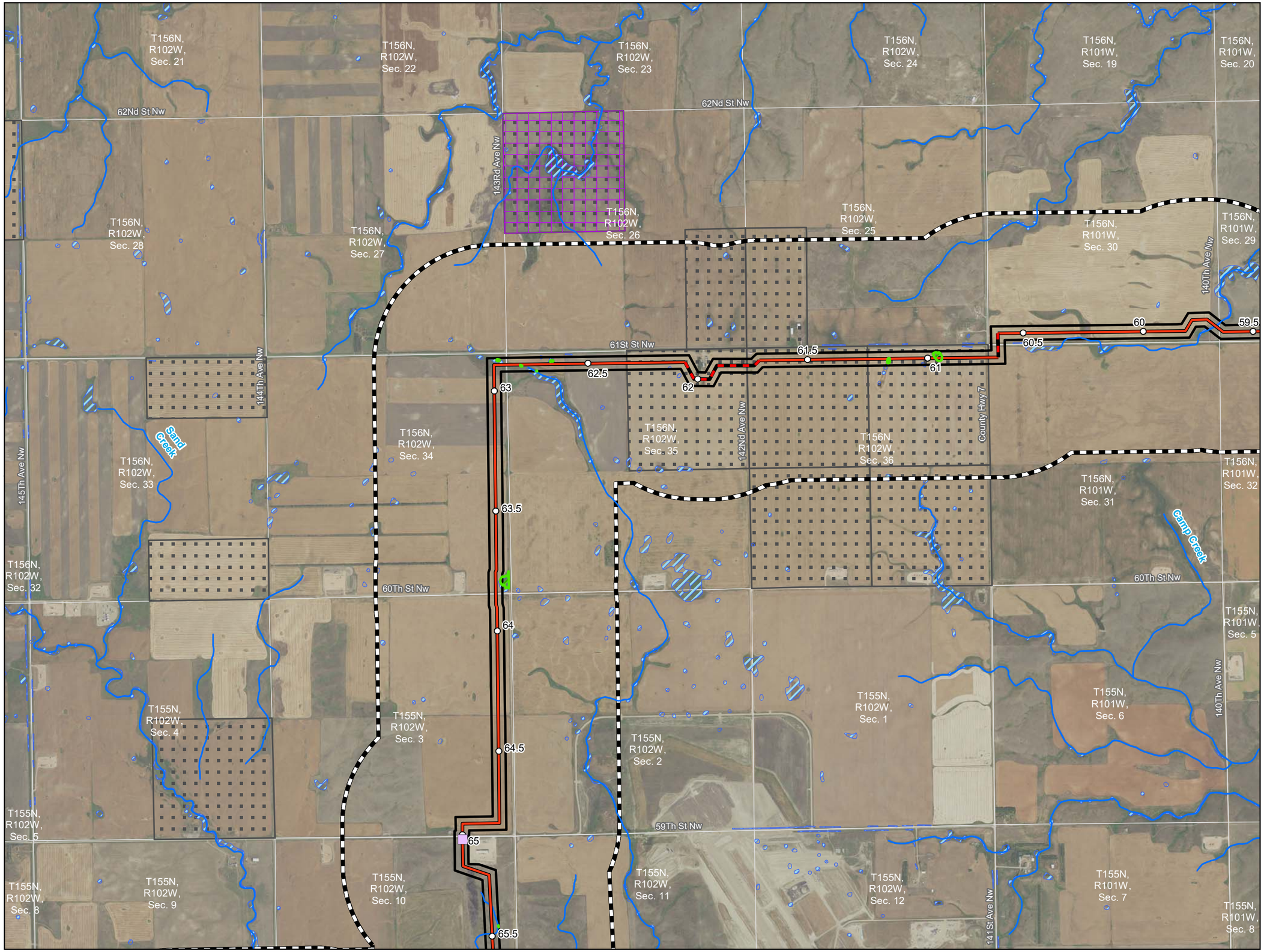

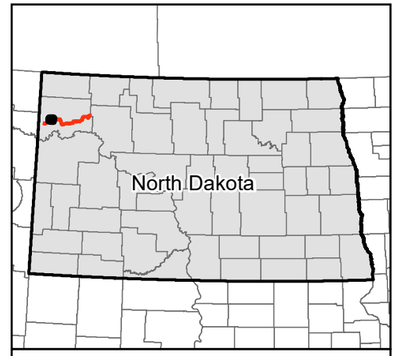

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Tioga Lateral Pipeline Project

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Williams County, ND

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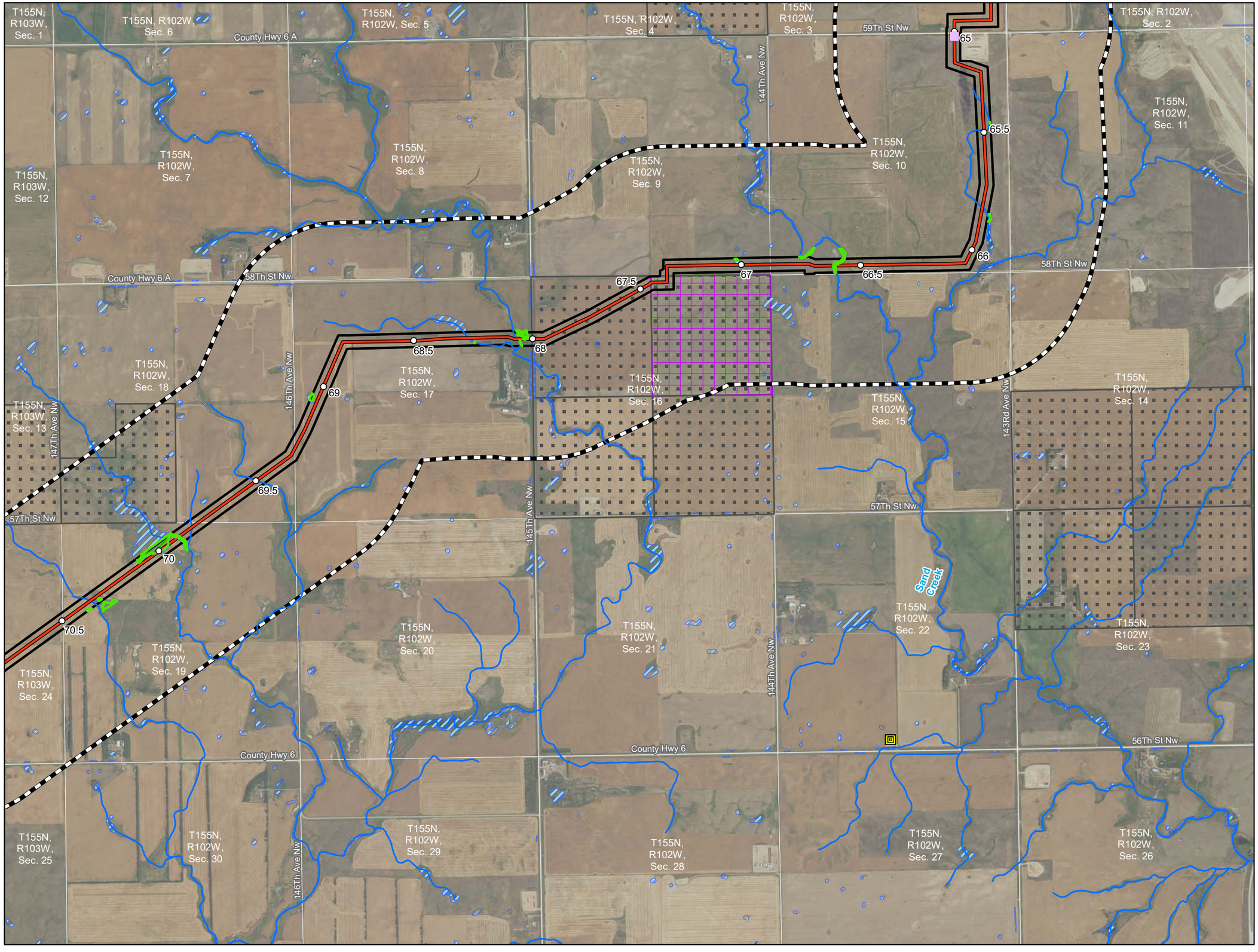

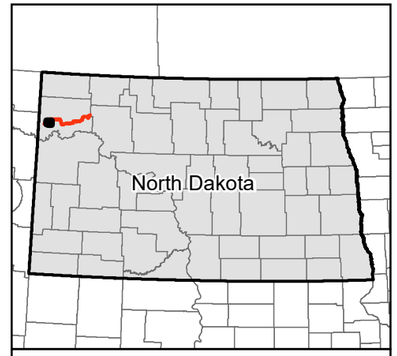

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Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

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Williams County, ND

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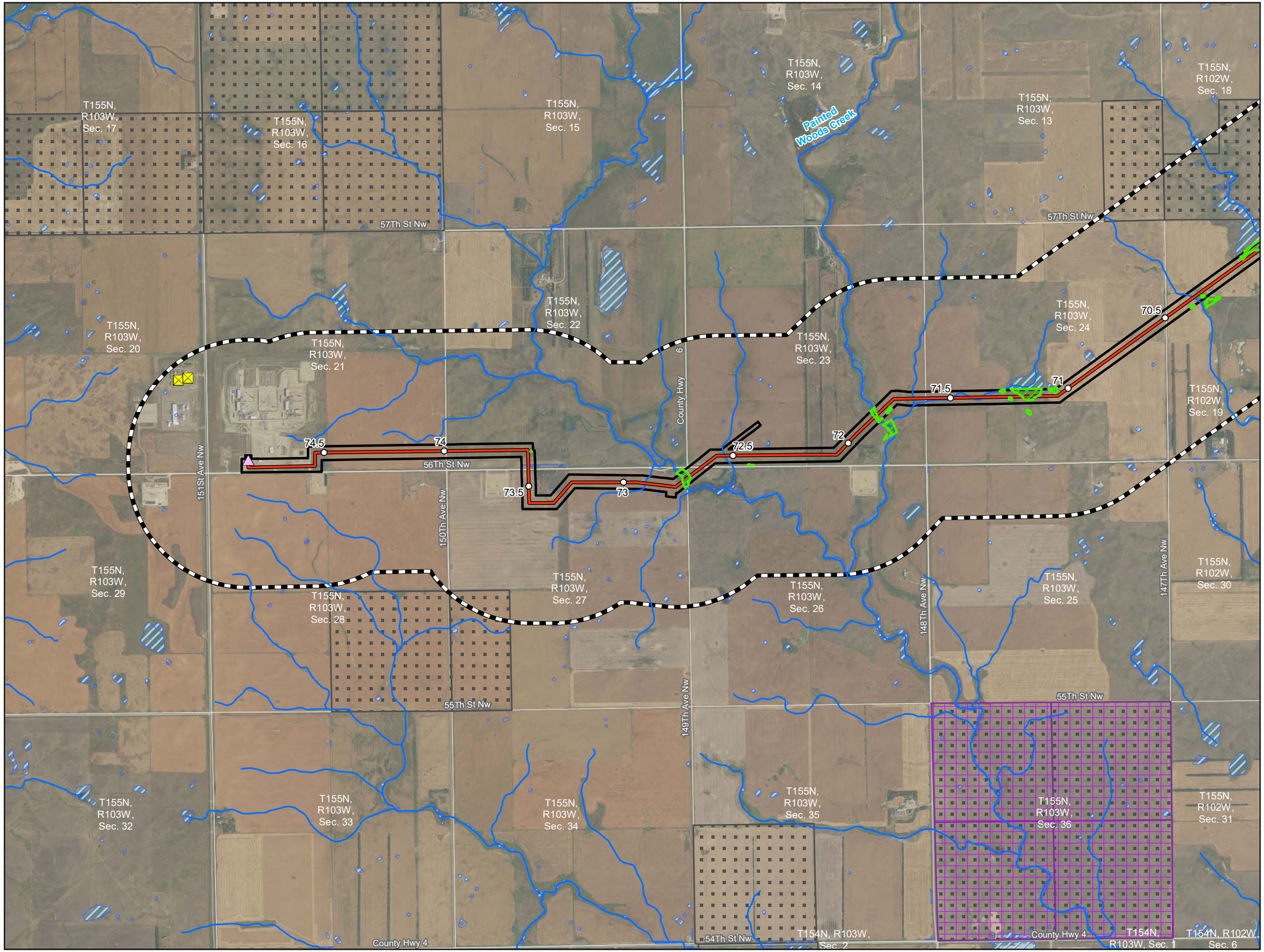

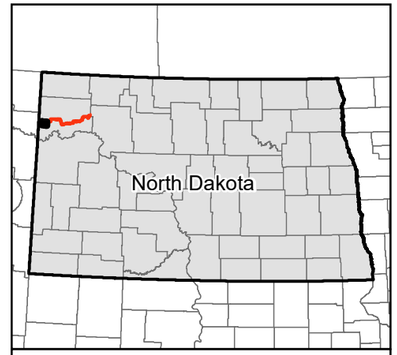

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Exhibit B.4
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project

Selection Criteria Maps

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Williams County, ND

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B.5 Black and White Map for Publications

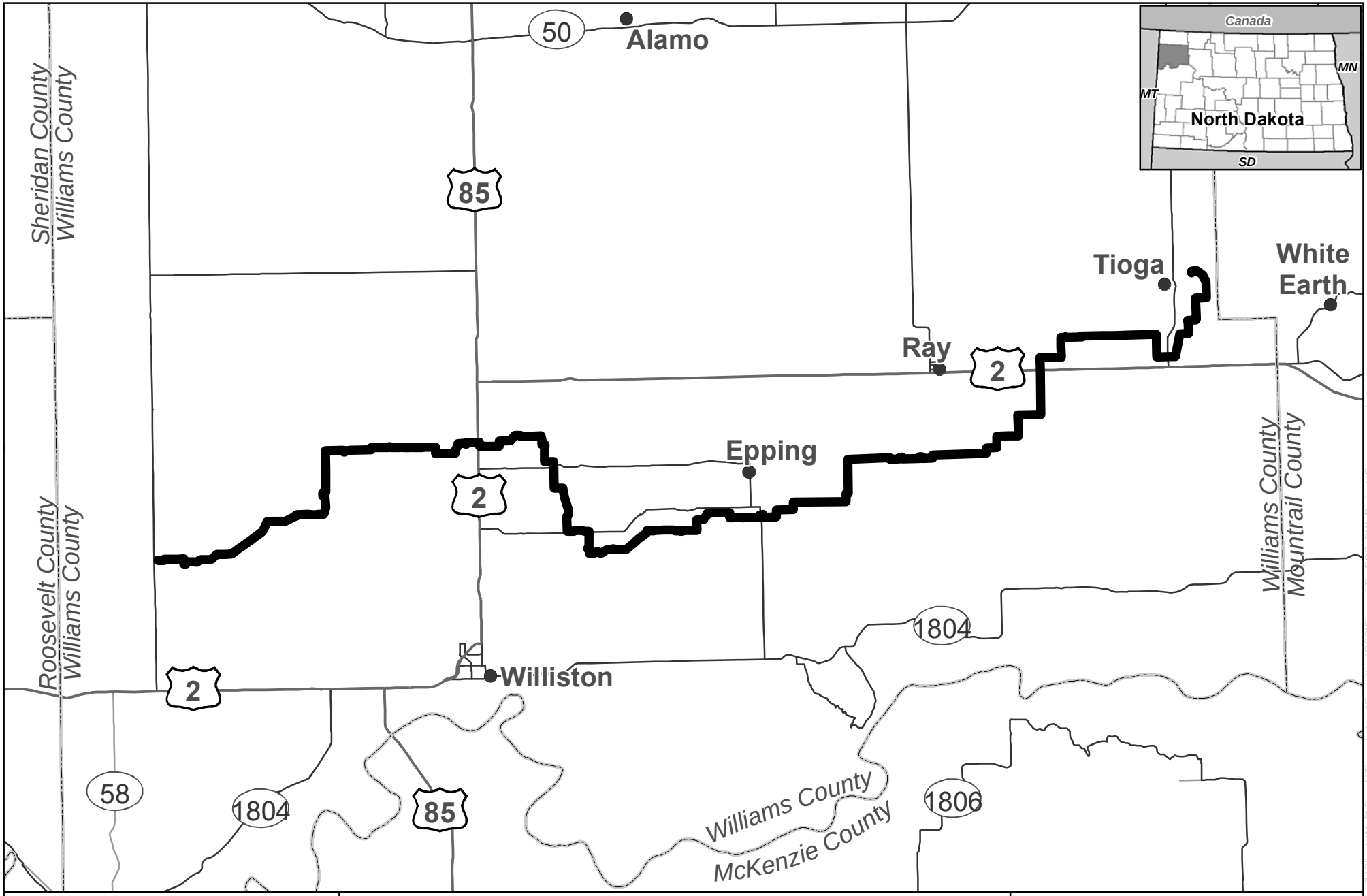
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Exhibit B.5
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Project Location Map
Preferred Route
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Exhibit C

County/Township Officials Contact Information

ONEOK Bakken Pipeline, L.L.C. - Tioga Lateral Pipeline Project
County/Township Officials - Contact Information

Agency	Title(s)	Contact	Address	Phone	Email
Williams County					
Board of Commissioners	Auditor's Office Auditor's Office NDSU Extension Weed Dept. County Parks Social Services	Beau Anderson	5045 153rd Ave NW Williston, ND 58801	701-641-6196	beaua@co.williams.nd.us
Board of Commissioners	Assessor's Office Facilities Department Vector Control IT	Steve Kemp	4828 Highway 85 Williston, ND 58801	701-570-3354	stevek@co.williams.nd.us
Board of Commissioners	State's Attorney's Office Treasurer/Recorder's Office Public Safety Advisory Board Emergency Management Dept of Motor Vehicles	Cory Hanson	2506 12th Ave W Williston, ND 58801	701-339-6553	coryh@co.williams.nd.us
Board of Commissioners	Sheriff's Office Development Services Finance Dept. Human Resources	David Montgomergy	222 14th St E Williston, ND 58801	701-570-6882	davidm@co.williams.nd.us
Board of Commissioners	County Highway Public Safety Advisory Board Youth Assessment Center Veterans Service Office	Barry Ramberg	P.O. Box 854	701-570-1350	barryr@co.williams.nd.us
Planning and Zoning	Senior Planner	Sam Neill	206 East Broadway Williston, ND 58801	701-577-4565	planning@co.williams.nd.us
Townships					
Brooklyn 11747 55th St NW Ray ND 58849	Chairman	Keith Johnson	11747 55th St NW Ray ND 58849	701-859-3501 701-570-8226	Not Available/unknown
	Supervisor 1	Joshua Smith	Not Available/unknown	701-859-4191 701-770-5021	Not Available/unknown
	Supervisor 2	Brian Johnson	Not Available/unknown	701-570-4378	Not Available/unknown
Cow Creek	Not Available/Unknown				
East Fork 928 Spring Creek Dr Williston, ND 58801	Chairman	Rick Sorenson	928 Spring Creek Dr Williston, ND 58801	701-770-2781 701-572-2852	ssorenson@wil.midco.net
	Supervisor 1	Terry Smith	Not Available/unknown	Not Available/unknown	Not Available/unknown

ONEOK Bakken Pipeline, L.L.C. - Tioga Lateral Pipeline Project County/Township Officials - Contact Information					
Agency	**Title(s)**	**Contact**	**Address**	**Phone**	**Email**
Equality 11382 62nd St NW Ray, ND 58849	Chairman	Paul Weyrauch	11382 62nd St NW Ray, ND 58849	701-568-2468	equalitytownhip@gmail.com
	Supervisor 1	Bruce Bergstrom	Not Available/unknown	701-568-2336	Not Available/unknown
	Supervisor 2	Tom Wheeler	Not Available/unknown	701-568-3204	Not Available/unknown
Hebron 14954 57th Street Northwest Williston, ND 58801	Chairman	Floyd Miller	14954 57th Street Northwest Williston, ND 58801	701-875-4280 701-570-3983	Not Available/unknown
	Supervisor 1	Stanley Larson	Not Available/unknown	701-875-4291	Not Available/unknown
	Supervisor 2	Michael Horab	Not Available/unknown	580-875-3156	Not Available/unknown
Mont 5835 144 Ave Northwest Williston, ND 58801	Chairman	Joseph Barkie	5835 144 Ave Northwest Williston, ND 58801	701-875-4261 701-570-2237	Not Available/unknown
	Supervisor 1	Blaine Jorgenson	Not Available/unknown	701-875-4228 701-770-4553	Not Available/unknown
	Supervisor 2	Jim Larson	Not Available/unknown	701-875-4262 701-609-3754	Not Available/unknown
Pherrin 13226 59th Street NW Williston, ND 58801	Chairman	Joe Trumpower	13226 59th Street NW Williston, ND 58801	701-572-0661	Not Available/unknown
	Supervisor 1	Ted Reinertson	Not Available/unknown	Not Available/unknown	Not Available/unknown
	Supervisor 2	Will Chamley	Not Available/unknown	701-570-4696	Not Available/unknown
Pleasant Valley 6522 102C Ave NW Tioga, ND 58853	Chairman	Jon Hersel	6522 102C Ave NW Tioga, ND 58853	701-664-3502 701-641-1825	Not Available/unknown
	Supervisor 1	Craig Postovit	Not Available/unknown	701-664-2956 701-641-0865	Not Available/unknown
	Supervisor 2	Ryan Davidson	Not Available/unknown	701-664-2228 701-641-1205	Not Available/unknown
Springbrook 5563 124th Ave NW Epping, ND 58843	Chairman	Robert Helde	5563 124th Ave NW Epping, ND 58843	701-859-6171 701-770-0744	Not Available/unknown
	Supervisor 1	Craig Moen	Not Available/unknown	701-859-3741 701-580-5015	Not Available/unknown
	Supervisor 2	Roxy Helde	Not Available/unknown	701-859-3870 701-570-5721	Not Available/unknown
Tioga 6934 108th Ave NW Tioga ND	Chairman	Joseph Breckey	6934 108th Ave NW Tioga ND	701-664-2675	Not Available/unknown
	Supervisor 1	Sam Sagaser, Sr.	Not Available/unknown	701-664-2109	Not Available/unknown
	Supervisor 2	Casey Almer	Not Available/unknown	701-664-2675	Not Available/unknown

ONEOK Bakken Pipeline, L.L.C. - Tioga Lateral Pipeline Project County/Township Officials - Contact Information					
Agency	**Title(s)**	**Contact**	**Address**	**Phone**	**Email**
Tyrone 13796 64th Street Northwest Williston, ND 58801	Chairman	Ronald Sylte	13796 64th Street Northwest Williston, ND 58801	701-570-4851	rcsylte@nccray.com
	Supervisor 1	Neil Berger	Not Available/unknown	701-826-3291	Not Available/unknown
	Supervisor 2	Scott Barkie	Not Available/unknown	701-826-3591	Not Available/unknown
West Bank 10676 62ND ST NW TIOGA, ND 5885	Chairman	Bob Anderson	Not Available/unknown	701-664-3583	Not Available/unknown
	Supervisor 1	Brandon Hauge	Not Available/unknown	701-568-3042	Not Available/unknown
	Supervisor 2	Troy Donnelly	Not Available/unknown	701-568-3573	Not Available/unknown
Wheelock 6449 120th Ave NW Ray ND 58849	Chairman	Tom Daniel	6449 120th Ave NW Ray ND 58849	701-568-3646 701-770-3656	Not Available/unknown
	Supervisor 1	Ronald Olson	Not Available/unknown	701-568-3108	Not Available/unknown
	Supervisor 2	Jim Thoreson	Not Available/unknown	701-859-3333	Not Available/unknown
[1] Based on conversation with Williams County staff, all of the townships crossed by the Project defer to the County for zoning and land use purposes.					

Exhibit D

Natural Resources Survey Report



NATURAL RESOURCES SURVEY REPORT - 2019

TIOGA LATERAL PIPELINE PROJECT – WILLIAMS COUNTY, NORTH DAKOTA

ONEOK BAKKEN PIPELINE, LLC

Midwest Natural Resources, Inc.
1032 West 7th St., Suite 150
St. Paul, MN 55102

MNR
MIDWEST NATURAL RESOURCES

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Appendix B - Natural Resource Field Survey Protocols
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Project Overview

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota. Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

Midwest Natural Resources, Inc. (MNR) was contracted by Merjent to conduct natural resources surveys associated with the Project. Survey efforts included routine wetland and waterbody surveys, noxious weed surveys, and a general habitat assessment for state- and federally-listed species.

Survey Limits and Existing Data

MNR conducted natural resources surveys between July 9 and November 6, 2019. Surveys generally occurred within a corridor averaging over 300 feet in width and included several reroutes and corridor extensions/modifications. The data provided in this report includes all features collected over the survey period and within every revision of the corridor. The mapbooks that accompany this report illustrate all areas that were surveyed as well as all data that was collected during survey efforts. Aside from three properties where landowner permission was denied, survey coverage is 100% complete within the latest survey corridor (dated 11/5/2019). Any subsequent revisions to the route will be surveyed (as needed) and submitted as addenda to this report.

MNR staff evaluated existing data, prior to and during field efforts, including resources such as the National Wetlands Inventory (NWI), National Hydrography Dataset (NHD), and the Soil Survey Geographic (SSURGO) database within the survey area. This background data is provided in the mapbook, **Tioga_Existing_Data_Mapbook**.

Existing data from the NWI showed a total of 163 wetland features within the survey area (**Table 1**), and 58 of these are classified as riverine systems.

Table 1. Summary of NWI Features within the survey corridor

Wetland Type	Cowardin	Count	Total area (acres)
Freshwater Emergent Wetland	PEM	97	22.39
Freshwater Pond	PAB	7	5.61
Lake	L2AB	1	3.70
Riverine	R4SB/R5UB	58	16.00
	Total	**163**	**47.70**

There are 94 waterbody features (including 87 stream features and 7 open waterbodies) intersecting the survey area according to the NHD. All of these waterbody features are also represented in the NWI dataset.

A total of 64 soil types are mapped across the survey area. Mapped soils are primarily well drained loams, and only 10 soil types are classified as hydric. Hydric soil types are generally alluvial deposits in low-lying drainageways or isolated areas associated with open water or wetland features. All soil types are depicted in the existing data mapbook and are listed in **Appendix A**.

Methods

Wetlands and Waterbodies

Wetland and waterbody surveys were conducted via pedestrian surveys along the entire survey corridor. Potential wetland areas were evaluated utilizing the Routine "Onsite" Determination Method contained in the Regional Supplement to the Corps of Engineers USACE Wetland Delineation Manual: Great Plains Region for the 1987 Wetlands Delineation Manual Technical Report Y-87-1.

Potential waterbody boundaries were identified by the presence of a defined bed and bank and evidence of flow following the USACE Regulatory Guidance Letter No. 05-05, Ordinary High Water Mark Identification (2005) and Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al. 1979). All features were classified to Cowardin Class. Ephemeral waterbodies (classified as R6) were defined as features having flow for brief periods following rainfall or snowmelt.

Additionally, non-water data points were collected to document NWI/NHD features or previously-documented wetlands/waterbodies which were lacking wetland/waterbody characteristics at the time of field surveys. Wetland determination forms were collected to document non-wetland NWI and previously-mapped wetland features.

All documented features were recorded spatially with sub-meter GPS units (Trimble GeoXT 6000) and were further documented with representative photographs. Specific survey methods and data collection procedures are provided in the Tioga Lateral Pipeline Project Natural Resource Field Survey Protocols in **Appendix B.**

Noxious Weeds

Noxious weed surveys targeted the 13 species identified by the North Dakota Department of Agriculture as well as one additional species listed in Williams County (see **Table 4.4-1** in **Appendix B**). All occurrences of target noxious weed species were mapped with a GPS unit and further documented with a representative photograph. Isolated occurrences were mapped as a single point location, whereas larger populations were mapped using a series of points indicating the general extent of the infestation.

Habitat Assessments

Surveys included a general habitat assessment for state- and federally-listed threatened and endangered species listed in **Table 4.3-1** (**Appendix B**). Habitat assessment surveys were also completed for raptor nests (including bald and golden eagles). These were conducted visually within line-of-sight of the survey corridor.

Results and Discussion

Wetlands and Waterbodies

Surveys resulted in the delineation of 125 wetlands within the entire survey area; 122 of these features include seasonally saturated or temporarily flooded PEM communities, 25 of which are in agricultural settings (AG-PEM). One PSS and seven PUB communities were documented during field efforts. Five wetland features are complexes comprising multiple Cowardin community types, most commonly PEM and PUB. Total wetland acreage by Cowardin class is summarized in **Table 2**. Delineated wetland features are summarized in **Appendix C**, and wetland determination forms are provided in **Appendix D** with

representative photographs included in **Appendix E**. All delineated wetland features are depicted in the delineated features mapbook, **Tioga_Delineated_Features_Mapbook**.

In addition to the delineated wetland features, a total of sixty potential wetland features were investigated and deemed to be upland. A majority of these areas were examined due to the presence of a mapped NWI polygon. The locations of these non-water sample points are depicted in the delineated features mapbook, and wetland determination forms are included in **Appendix D**. Representative photographs of the non-wetland features are provided in **Appendix F**.

A total of 17 waterbodies were documented within the survey area; eight of these are ephemeral features, one is intermittent, and the remaining eight are perennial (**Table 3**). NHD features lacking waterbody characteristics were additionally documented with non-water sample points which are depicted in the delineated features mapbook. Delineated waterbody features are summarized in **Appendix G**, and data forms are provided in **Appendix H** with representative photographs included in **Appendix I**. All documented waterbody features are depicted in the delineated features mapbook.

Table 2. Summary of wetland features

Wetland Community Type	Cowardin	Acres in Survey Corridor
Freshwater Emergent (Farmed)	AG-PEM	3.84
Freshwater Emergent	PEM	40.25
Freshwater Scrub-Shrub	PSS	0.14
Freshwater Pond	PUB	4.35
	Total	**48.58**

Table 3. Summary of waterbody features

Waterbody Regime	Cowardin	Count
Ephemeral	R6	8
Intermittent	R4SB	1
Perennial	R2UB	8
	Total	**17**

Noxious Weeds

Surveys resulted in the documentation of 627 noxious weed occurrences throughout the project area. Only four of the target species were observed (**Table 4**). Canada thistle (*Cirsium arvense*) was the most common noxious weed species, accounting for 505 of the observations. A majority of the noxious weed occurrences were observed along the edges of fields and roads. Noxious weed locations are depicted in the delineated features mapbook.

Table 4. Summary of noxious weed occurrences

Scientific Name	Common Name	Count
Artemisia absinthium	Absinth wormwood	14
Cirsium arvense	Canada thistle	505
Crepis tectorum	Narrowleaf Hawksbeard	4
Euphorbia esula	Leafy spurge	104
	Total	**627**

Habitat Assessments

The general project area is located in an agricultural landscape which primarily consists of row crop, pasture, and open grassland.

Potential suitable habitat for federally-listed species is present within the survey area (**Table**), including piping plover (*Charadrius melodus*) and northern long-eared bat (NLEB). Potential suitable nesting habitat for piping plover may be present in alkaline wetlands with salt-encrusted shores. One potential area (h-19067a-004) associated with wetland w-19067a-020 was identified as potential suitable habitat for piping plover (**pages 16-17**, **Tioga_Existing_Data_Mapbook**). If more detailed follow-up surveys for this species are needed, these will be conducted at a later date. Potential roosting and foraging habitat for NLEB may be present in the survey area and would mainly be associated with planted windbreaks.

No eagle or raptor nests were found during the course of surveys.

Table 5. Habitat suitability within the project area

Species	Scientific Name	Presence of Habitat in the Project Area
Northern long-eared bat	*Myotis septentrionalis*	Suitable roosting and foraging habitat potentially present
Interior least tern	*Sterna antillarum*	Suitable habitat not present
Piping plover	*Charadrius melodus*	Suitable nesting and foraging habitat potentially present
Red knot	*Calidris canutus*	Suitable migratory stopover habitat present
Whooping crane	*Grus americana*	Suitable migratory stopover habitat present
Pallid sturgeon	*Scaphirhynchus albus*	Suitable habitat not present

References

Cowardin, LM, V Carter, FC Golet, and ET LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC.

US Army Corps of Engineers. 2005. Regulatory Guidance Letter No. 05-05, Ordinary High Water Mark Identification. December 7, 2005.

US Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0). ERDC/EL TR-10-1. US Army Engineer Research and Development Center, Vicksburg, MS.

Appendix A

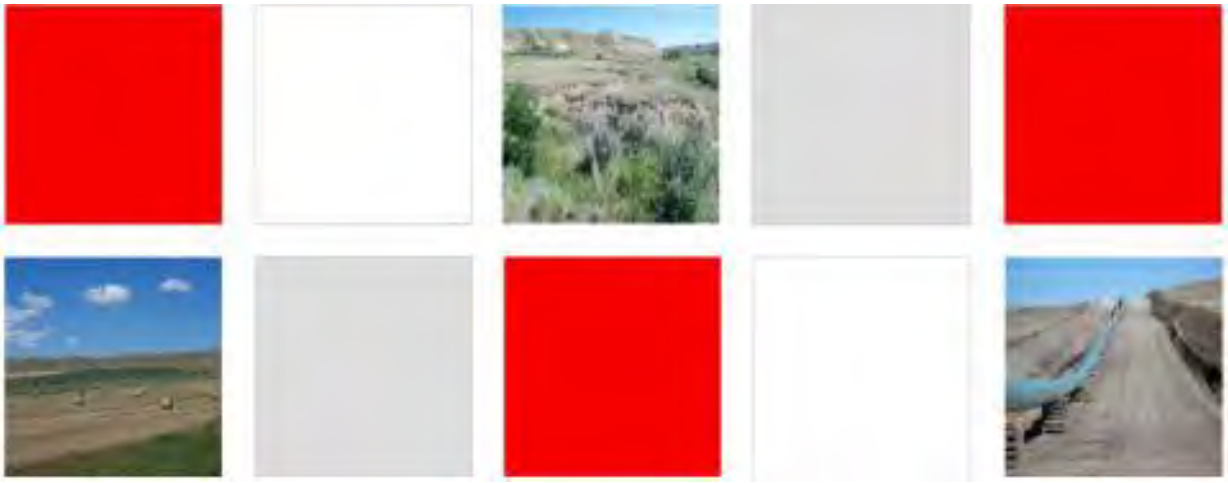
Soil Map Units within Project Area

Soil Map Unit Symbol	Soil Map Unit Name	Drainage Class	Hydric Soil
53	Arnegard loam, 0 to 2 percent slopes	Well drained	No
281	Bowdle loam, 0 to 2 percent slopes	Well drained	No
669	Farland silt loam, 0 to 6 percent slopes	Well drained	No
1128	Lehr loam, 2 to 6 percent slopes	Somewhat excessively drained	No
1249	Appam sandy loam, 0 to 6 percent slopes	Somewhat excessively drained	No
1427	Parnell silty clay loam, 0 to 1 percent slopes	Very poorly drained	Yes
1664	Shambo loam, 0 to 2 percent slopes	Well drained	No
1798	Tally fine sandy loam, 6 to 9 percent slopes	Well drained	No
1835	Tonka silt loam, 0 to 1 percent slopes	Poorly drained	Yes
1854	Trembles fine sandy loam, slightly wet, 0 to 1 percent slopes	Moderately well drained	No
1871	Vallers loam, saline, 0 to 1 percent slopes	Poorly drained	Yes
2014	Williams-Bowbells loams, 0 to 3 percent slopes	Moderately well drained	No
2015	Williams-Bowbells loams, 3 to 6 percent slopes	Moderately well drained	No
2031	Williams-Zahl loams, 3 to 6 percent slopes	Well drained	No
2032	Williams-Zahl loams, 6 to 9 percent slopes	Well drained	No
2081	Zahl-Williams loams, 9 to 15 percent slopes	Well drained	No
2176	Zahl-Williams loams, 15 to 60 percent slopes	Well drained	No
2270	Harriet and Stirum soils, 0 to 2 percent slopes	Poorly drained	Yes
2338	Amor-Williams-Zahl loams, 3 to 9 percent slopes	Well drained	No
2339	Amor-Zahl-Cabba loams, 9 to 25 percent slopes	Well drained	No
2340	Arnegard-Shambo loams, 2 to 6 percent slopes	Well drained	No
2342	Cabba-Amor-Zahl loams, 25 to 60 percent slopes	Well drained	No
2345	Daglum-Rhoades complex, 0 to 6 percent slopes	Moderately well drained	No
2346	Dooley fine sandy loam, 0 to 6 percent slopes	Well drained	No
2348	Korchea-Divide loams, channeled 0 to 2 percent slopes	Somewhat poorly drained	No
2350	Lehr-Williams loams, 0 to 6 percent slopes	Well drained	No
2351	Lehr-Williams loams, 6 to 9 percent slopes	Well drained	No
2353	Livona fine sandy loam, 0 to 6 percent slopes	Well drained	No
2354	Livona-Zahl complex, 6 to 9 percent slopes	Well drained	No
2356	Niobell-Williams loams, 0 to 6 percent slopes	Moderately well drained	No
2358	Tally fine sandy loam, 0 to 6 percent slopes	Well drained	No
2361	Wabek sandy loam, 2 to 6 percent slopes	Excessively drained	No
2362	Wabek sandy loam, 6 to 25 percent slopes	Excessively drained	No
C132B	Williams-Zahl loams, 3 to 6 percent slopes	Well drained	No
C132C	Williams-Zahl-Zahill complex, 6 to 9 percent slopes	Well drained	No
C135C	Zahl-Williams-Zahill complex, 6 to 9 percent slopes	Well drained	No
C135D	Zahl-Williams loams, 9 to 15 percent slopes	Well drained	No
C148C	Williams-Zahl-Parnell complex, 0 to 9 percent slopes	Very poorly drained	No

Soil Map Unit Symbol	Soil Map Unit Name	Drainage Class	Hydric Soil
C155F	Zahl-Max-Arnegard loams, 15 to 60 percent slopes	Well drained	No
C156F	Zahl-Max-Bowbells loams, 6 to 35 percent slopes	Well drained	No
C210A	Williams-Bowbells loams, 0 to 3 percent slopes	Moderately well drained	No
C210B	Williams-Bowbells loams, 3 to 6 percent slopes	Moderately well drained	No
C272A	Hamerly-Tonka complex, 0 to 3 percent slopes	Poorly drained	Yes
C2A	Tonka silt loam, 0 to 1 percent slopes	Poorly drained	Yes
C3A	Parnell silty clay loam, 0 to 1 percent slopes	Very poorly drained	Yes
C418B	Tansem-Sakakawea loams, 2 to 6 percent slopes	Well drained	No
C419A	Wildrose silty clay, 0 to 2 percent slopes	Well drained	No
C451A	Arnegard loam, 0 to 2 percent slopes	Well drained	No
C491A	Straw-Fluvaquents channeled, complex, 0 to 2 percent slopes, frequently flooded	Very poorly drained	Yes
C580A	Harriet-Regan-Stirum complex, 0 to 2 percent slopes, occasionally flooded	Poorly drained	Yes
C663A	Niobell-Williams loams, 0 to 3 percent slopes	Moderately well drained	No
C800B	Appam sandy loam, 2 to 6 percent slopes	Somewhat excessively drained	No
C810A	Bowdle loam, 0 to 2 percent slopes	Well drained	No
C816B	Lehr loam, 2 to 6 percent slopes	Somewhat excessively drained	No
C818B	Lehr-Williams loams, 0 to 6 percent slopes	Well drained	No
C818C	Lehr-Williams loams, 6 to 9 percent slopes	Well drained	No
C825A	Divide loam, 0 to 2 percent slopes	Somewhat poorly drained	No
C870E	Wabek-Lehr-Appam complex, 9 to 25 percent slopes	Somewhat excessively drained	No
C874C	Wabek-Appam complex, 6 to 9 percent slopes	Somewhat excessively drained	No
C996	Water	N/A	No
C999F	Orthents-Aquents-Urban land, highway complex, 0 to 35 percent slopes	Somewhat poorly drained	No
E2145A	Shambo loam, 0 to 2 percent slopes	Well drained	No
E3603E	Amor-Zahl-Cabba loams, 9 to 25 percent slopes	Well drained	No
E4139A	Korchea-Fluvaquents complex, channeled, 0 to 2 percent slopes, frequently flooded	Very poorly drained	Yes

Appendix B

Natural Resource Field Survey Protocols



ONEOK Bakken Pipeline, L.L.C.

Tioga Lateral Pipeline Project

Natural Resource Field Survey Protocols

July 3, 2019

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1.0 SCOPE

The objective of these protocols for wetland and waterbody, habitat assessment, noxious weeds, and tree and shrub surveys is to ensure that Merjent, Inc. (Merjent) and its subcontractors, implement consistent field data collection procedures for the Tioga Lateral Pipeline Project (Project). The Natural Resource Field Survey Protocols (Protocols) incorporate all applicable agency and client requirements to-date to facilitate timely and complete environmental permitting applications.

2.0 SAFETY

Safety is a priority for ONEOK, Inc. (ONEOK) and Merjent. Compliance with all Project-specific safety requirements is mandated by all parties. For specific information on safety requirements, please refer to the Health & Safety Plans therein.

3.0 COMMUNICATION

Please refer to the to the Communication Plan therein.

4.0 SURVEY PROTOCOLS

The entire environmental survey corridor (average 300-feet) developed by Merjent for the Project will be walked during field surveys to minimize the chance of missing any wetland communities, waterbody features, noxious weeds, woody vegetation, or potential suitable habitat areas that may affect permitting, constructability, or mitigation efforts.

4.1 WETLANDS

Crews will delineate all wetlands regardless of potential jurisdictional status and will collect data for wetland features encountered in the survey corridor. Wetland delineation methods will follow standard protocols set forth in the following publications:

- 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (1987 Manual);
- 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (Regional Supplement; USACE 2010);
- Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al. 1979); and
- The National Wetland Plant List (NWPL; Lichvar et al. 2016).

Data collection procedures include completing the USACE Wetland Determination Forms, collecting wetland boundaries via global positioning system (GPS) and data dictionary (see Section 4.2), collecting the spatial point data for wetland data points, and taking representative photos (see Section 4.3).

4.1.1 Vegetation

Vegetation sampling and documentation will follow procedures as described in the 1987 Manual, the Regional Supplement, community types as outlined in Cowardin et al. (1979), while using the wetland indicator statuses as prescribed by the National Wetland Plant List.

4.1.1.1 Cowardin Classifications

Cowardin classifications will be assigned to all delineated wetlands in North Dakota as either palustrine emergent (PEM), agricultural PEM (AG-PEM), palustrine unconsolidated bottom (PUB), palustrine scrub-shrub (PSS), and/or palustrine forested (PFO).

4.1.2 Hydrology

Hydrology sampling and documentation will follow procedures as described in the 1987 Manual and the Regional Supplement.

4.1.3 Soils

Soil sampling and documentation will follow procedures as described in the 1987 Manual and the Regional Supplement, which requires one soil profile to be collected at each data point.

Due to safety concerns, One Calls must be placed and marked before any ground disturbance can occur. **One calls are the responsibility of the individual performing soil excavations.**

Digging in roadside ditches is not prohibited but is **not** recommended due to the likelihood of buried private utilities.

4.1.4 Wetland Complexes

For wetlands with multiple Cowardin classes, each discrete community will be identified when it comprises 10 percent or more of the wetland complex within the environmental survey corridor. Each discrete community within a wetland complex will require at least one representative USACE Wetland Determination Form, spatial data (boundaries and data points), and a photo.

4.1.5 Upland Inclusions

Upland inclusions within a wetland may be observed and will be delineated. In these cases, crews will collect the spatial wetland/upland boundary and a USACE upland data point to represent the upland inclusion.

4.1.6 Upland Verification - National Wetland Inventory

An area may be identified as a U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) wetland, but field indicators may conclude that the area doesn't meet the wetland parameters, thus is an upland. In these situations, field crews will:

- Collect a spatial data point location within the area indicated by NWI to be wetland;
- Collect detailed and defensible notes via data dictionary on vegetation, soil, and hydrology to document why the area is upland (note: completing a USACE Wetland Determination Form is not necessary); and
- Take a photograph of the NWI-indicated area to further characterize its upland nature.

In other instances, crews may locate an NWI that overlaps the observed wetland or is skewed from the observed wetland. In these cases, no additional documentation is needed for the upland fragment of the NWI area.

4.2 WATERBODIES

Waterbody surveys will be completed in conjunction with wetland surveys and crews will delineate all waterbodies regardless of potential jurisdictional status. Waterbody delineation methods will follow the protocols set forth in the following publications:

- Regulatory Guidance Letter No. 05-05, Ordinary High Water Mark Identification (USACE 2005); and
- Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al. 1979).

Waterbody data collection will consist of completing the Waterbody Community Data Form, collecting spatial data, and photos (see Section 4.3). Spatial data will be collected as follows:

- Waterbodies less than or equal to 10 feet between original high water mark (OHWM) will be delineated by capturing the centerline of the waterbody bed; and
- Waterbodies with an OHWM width greater than 10 feet will be delineated by capturing the OHWM along each bank.

4.2.1 Flow Regime and Cowardin Classifications

Flow regime will be defined as ephemeral, intermittent, or perennial. These will need to correspond to the appropriate Cowardin Class.

- Ephemeral Waterbodies – Defined as those features with an obvious bed and bank and are inundated following spring thaw and after periods of rainfall (otherwise these features are dry).
- Intermittent Waterbodies – Defined as those features with an obvious bed and bank but likely have water present within the feature throughout the growing season. These features will additionally show evidence of sorting or stratification of materials (cobble, sand, organic matter).
- Perennial Waterbodies – Defined as those features with an obvious bed and bank and have standing water as well as evidence of aquatic fauna and flora consistently throughout the year.

4.2.2 Waterbodies within Wetland Complexes

There may be situations where a waterbody feature is contained within a larger wetland feature. Under these circumstances, the waterbody feature will be delineated separately from the wetland feature, as to differentiate the features for permitting and mitigation purposes.

4.2.3 National Hydrography Dataset – Upland Verification

An area may be identified as a U.S. Geological Survey National Hydrography Dataset (NHD) waterbody, but field indicators may conclude that the area does not contain a bed or bank (i.e., OHWM) and is entirely upland. In these situations, field crews will:

- Collect a spatial point location within the area indicated by NHD to be waterbody; and
- Take a photograph of the NHD-indicated area to further characterize its upland nature.

In other instances, crews may locate an NHD that overlaps the observed waterbody or is skewed from the observed feature. In those cases, no additional documentation is needed for the upland fragment of the NHD area.

4.3 HABITAT ASSESSMENTS

Habitat assessment surveys, including surveys for raptor nests (including bald and golden eagles), will be completed in 2019 where crews will delineate all potentially suitable habitat for federal- and state-listed threatened and endangered species. Data collection for habitat assessments will be limited to GPS data collection via data dictionary and photo documentation. If a community, individual, or population is observed, polygon data will be collected.

4.3.1 A second mobilization in spring 2020 would include reviewing seasonal status of wetlands identified as potentially suitable piping plover habitat during summer 2019 surveys. In addition, all known historic and newly identified eagle nests will be surveyed in spring 2020 for nesting activity per USFWS monitoring guidelines. Listed Species

The USFWS lists six federally-listed threatened and endangered species in Williams County, North Dakota (see Table 4.3.1). Designated critical habitat is present in the county but is not found in the Project area.

Table 4.3-1
USFWS Federally-listed Threatened and Endangered Species [a]

Scientific Name	Common Name	Federal Status
Myotis septentrionalis	Northern long-eared Bat	Threatened
Sterna antillarum	Least tern	Endangered
Charadrius melodus	Piping plover	Threatened, Critical habitat
Calidris canutus rufa	Red knot	Threatened
Grus americana	Whooping crane	Endangered
Scaphirhynchus albus	Pallid sturgeon	Endangered

[a] https://ecos.fws.gov/ipac/ (accessed June 2018)

4.4 NOXIOUS WEED SURVEYS

Noxious weed surveys will be conducted where crews will delineate all occurrences of state- and county-listed noxious weeds in Williams County, North Dakota. Data collection for noxious weeds will be limited to GPS data collection via data dictionary and photo documentation.

The North Dakota Department of Agriculture lists 13 noxious weed species in the state and Williams County, North Dakota lists one additional species (see Table 4.4-1).

Table 4.4-1
North Dakota and Williams County Listed Noxious Weeds

Species Scientific Name	Species Common Name
North Dakota Department of Agriculture [a]	
Artemisia absinthium	Absinth wormwood
Cirsium arvense	Canada thistle
Linaria genistifolia	Dalmation toadflax
Centaurea diffusa	Diffuse knapweed
Cynoglossum officinale L.	Houndstongue
Euphorbia esula	Leafy spurge
Carduus nutans	Musk thistle
Amaranthus palmeri	Palmer amaranth

Table 4.4-1 North Dakota and Williams County Listed Noxious Weeds	
Species Scientific Name	**Species Common Name**
Lythrum salicaria	Purple loosestrife
Acroptilon repens	Russian knapweed
Tamarix chinensis, T. parviflora, T. ramosissima	Saltcedar
Centaurea maculosa	Spotted knapweed
Linaria vulgaris	Yellow toadflax
Williams County [b]	
Crepis tectorum	Narrowleaf hawksbeard
[a] https://www.nd.gov/ndda/plant-industries/noxious-weeds (accessed July 2019) [b] https://www.nd.gov/ndda/sites/default/files/resource/2019%20May%20-%20City%20County%20Noxious%20Weeds%20List.pdf (accessed July 2019)	

4.5 TREE AND SHRUB SURVEYS

Tree and shrub surveys will be conducted where crews will delineate all occurrences of woody vegetation that meets the USACE 1987 definitions of trees and shrubs in North Dakota and will be performed in accordance with the North Dakota Public Service Commission's Tree and Shrub Mitigation guidance. Data collection for trees and shrubs will be limited to GPS data collection via data dictionary and photo documentation.

5.0 FIELD DATA COLLECTION

The field data collection procedures as described in Section 4.1 through 4.5 are further explained below, including detailed descriptions of feature ID nomenclature, spatial data collection procedures, and photos.

5.1 FEATURE ID NOMENCLATURE

Feature ID nomenclature for wetlands, waterbodies, potential habitat, noxious weeds, and woody vegetation is Project specific and will be labeled in accordance with the methods outlined below. The first character of the Feature ID is meant to decipher the feature type (e.g., wetland, stream, woody vegetation, etc.), otherwise, the format is at the discretion of the subcontractor. The Feature IDs must remain consistent for the life of the Project.

The first character of each feature IDs are to be used as follows:

- W = wetlands
  - W1 = wetland data point
  - U1 = upland data point
- S = waterbodies
- N = non-water upland verification points
- H = potential habitat
- X = noxious weeds
- T = trees, shrubs

5.2 GPS DATA COLLECTION

Sub-meter accurate GPS units will be used to locate wetland boundaries, USACE sample point locations, waterbody features, potential habitat, noxious weeds, and woody vegetation within the

survey corridor. Data dictionaries will be used to supplement the spatial data collection for all disciplines.

The coordinate system to be used will be UTM Zone 13N in meters.

Polygons are required for wetlands, waterbodies, habitat, noxious weeds, and woody vegetation data. For wetlands, at least one wetland data point should be included for each wetland polygon, as well as a corresponding upland data point.

5.2.1 Survey Tracking

Merjent has prepared a separate communications protocol to identify procedures for survey reporting and tracking that should be referenced to keep Merjent and ONEOK appraised of survey progress.

5.2.2 Data Dictionaries

Data dictionaries will be used as the main form of data collection for wetlands, waterbodies, habitat assessments, noxious weeds, and woody vegetation, and will also supplement the wetland and waterbody data. Data dictionaries must either be approved by Merjent, or will be provided to the Subcontractor by Merjent, in order to ensure full compliance with applicable regulations.

5.3 PHOTO DOCUMENTATION

Photo IDs will always match their Feature IDs. To take a photo of a wetland, waterbody, a specific Cowardin community within a complex, or a habitat area, it may be necessary to do so from outside the wetland or community. The name for the photo will match the wetland or community being photographed, not the location where it was taken. For example, a photo of a wetland taken from an upland area will be labelled with a “w”; not a “u” or other upland label.

The purpose of taking photos is to characterize the surveyed feature (wetland, waterbody, habitat, noxious weed, tree and shrub, or upland verification points). At least one representative photograph will be taken of each feature, except for waterbodies. Two representative photographs will be taken of each waterbody; the first photograph will be perpendicular to the waterbody and the second photograph will be parallel to the waterbody. If multiple plant communities are present in a given wetland (e.g., wetland complex; PEM/PSS/PFO), a representative photograph of each plant community will be taken.

- Photos will be taken in the landscape (horizontal) orientation;
- Photos will be a representative image of the feature; and
- Photos will not be taken looking into the sun as this will obscure the photo. When possible, the sun should be at the back of the photographer.

6.0 REFERENCES

Cowardin, L. M., V. Carter, F.C. Golet, and E.D. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

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Appendix C

Table of Delineated Wetland Features

Feature ID	Cowardin	Regime	Area (acres)	Mapbook Page
w-19067a-001	PEM	Saturated	0.03	2
w-19067a-002	PEM	Saturated	0.07	2
w-19067a-003	PEM	Seasonally Flooded	0.30	2
w-19067a-004	PEM	Seasonally Flooded	0.12	2
w-19067a-005	PEM	Saturated	0.02	2
w-19067d-029	PEM	Seasonally Flooded	0.01	2
w-19067a-006	PEM	Seasonally Flooded	0.46	4,5
w-19067a-012	PEM	Saturated	0.04	9
w-19067a-013	AG-PEM	Temporarily Flooded	0.24	10
w-19067a-014	PEM	Saturated	0.83	10
w-19067a-015	PEM	Saturated	0.004	10,11
w-19067a-016	PEM	Saturated	0.47	11
w-19067a-045	PEM/PUB	Seasonally Flooded/Permanently Flooded	0.30	11
w-19067a-046	PEM	Saturated	0.07	11
w-19067a-009	PEM	Saturated	0.13	12
w-19067a-010	PEM	Saturated	0.05	12
w-19067a-011	PEM	Saturated	0.08	12
w-19067d-028	AG-PEM	Saturated	0.28	12
w-19067a-007	PEM	Saturated	0.06	13
w-19067a-008	PEM	Seasonally Flooded	0.72	13
w-19067c-004	PSS/PEM	Saturated	0.34	13
w-19067c-001	PEM/PUB	Saturated/Permanently Flooded	0.41	15
w-19067c-002	PEM	Saturated	0.04	15
w-19067c-003	PEM	Saturated	0.02	15
w-19067a-017	PEM	Seasonally Flooded	0.39	16
w-19067a-019	PEM	Saturated	0.06	16
w-19067a-020	PEM	Saturated	2.60	16,17
w-19067a-021	PEM	Saturated	0.35	17
w-19067a-022	PEM	Seasonally Flooded	1.01	17
w-19067a-023	PEM	Saturated	0.12	17
w-19067a-024	PEM	Saturated	0.24	17
w-19067a-025	PEM	Saturated	0.24	18
o-19067a-002	PUB	Permanently Flooded	1.70	21
w-19067b-001	PEM	Saturated	0.78	24
w-19067b-002	PEM	Saturated	0.41	24
w-19067b-003	AG-PEM	Temporarily Flooded	0.19	24
w-19067b-004	AG-PEM	Temporarily Flooded	0.06	24
w-19067b-005	AG-PEM	Temporarily Flooded	0.12	24
w-19067b-006	AG-PEM	Temporarily Flooded	0.02	24
w-19067b-007	PEM	Seasonally Flooded	0.06	24

Feature ID	Cowardin	Regime	Area (acres)	Mapbook Page
w-19067b-008	AG-PEM	Temporarily Flooded	0.03	24
w-19067b-009	AG-PEM	Temporarily Flooded	0.04	24
w-19067b-010	AG-PEM	Temporarily Flooded	0.02	24
w-19067b-011	PEM	Saturated	0.06	24
w-19067b-012	AG-PEM	Temporarily Flooded	0.01	25
w-19067c-005	PEM	Saturated	0.12	26
w-19067c-006	PEM	Saturated	0.00	26
w-19067c-007	PEM	Saturated	0.39	28
w-19067c-008	AG-PEM	Temporarily Flooded	0.37	28
w-19067c-009	PEM	Saturated	0.24	28
w-19067c-010	PEM	Saturated	0.66	28
w-19067c-011	PEM	Saturated	4.46	30
w-19067b-013	PEM	Saturated	0.10	31
w-19067b-016	PEM	Saturated	0.17	33
w-19067b-014	PEM	Saturated	0.10	35
w-19067b-015	PEM	Saturated	0.58	35
w-19067c-012	PEM	Saturated	0.54	35
w-19067d-027	PEM	Saturated	0.40	35
w-19067a-027	AG-PEM	Temporarily Flooded	0.98	35,36
w-19067a-026	AG-PEM	Temporarily Flooded	0.27	36
w-19067d-026	AG-PEM	Temporarily Flooded	0.05	36
w-19067b-017	PEM	Saturated	0.63	39
w-19067d-025	PEM	Saturated	0.05	40
w-19067b-018	AG-PEM	Temporarily Flooded	0.05	41
w-19067b-019	AG-PEM	Temporarily Flooded	0.05	41
w-19067b-020	AG-PEM	Temporarily Flooded	0.04	41
w-19067b-021	PEM	Temporarily Flooded	0.09	42
w-19067b-022	PEM	Saturated	0.02	47
w-19067b-023	PEM	Saturated	0.03	47
w-19067d-003	PEM/PUB	Seasonally Flooded/Permanently Flooded	0.05	47
w-19067d-004	PEM	Saturated	0.01	48
w-19067d-005	PEM	Saturated	0.00	48
w-19067d-006	PEM	Saturated	0.28	48
w-19067d-007	PEM	Saturated	0.08	48
o-19067d-001	PUB	Permanently Flooded	0.33	49
w-19067b-024	AG-PEM	Temporarily Flooded	0.24	49
w-19067b-025	PEM	Saturated	2.39	49
w-19067b-026	PEM	Saturated	0.19	49
w-19067b-027	PEM	Saturated	0.19	49
w-19067d-030	PEM	Saturated	0.35	49

Feature ID	Cowardin	Regime	Area (acres)	Mapbook Page
w-19067d-031	PEM	Saturated	0.24	49
w-19067d-032	PEM	Saturated	1.21	49
w-19067b-028	PEM	Saturated	0.91	50
w-19067a-030	PEM	Temporarily Flooded	0.32	51
w-19067a-031	PEM/PUB	Seasonally Flooded/Permanently Flooded	1.22	51
w-19067a-032	PEM	Saturated	0.67	51
w-19067a-043	PEM	Temporarily Flooded	0.68	51
w-19067a-044	PEM	Temporarily Flooded	0.14	51
w-19067a-029	PEM	Saturated	0.13	52
w-19067a-028	PEM	Temporarily Flooded	0.46	53
w-19067d-002	PEM	Saturated	0.07	53,54
w-19067d-001	AG-PEM	Temporarily Flooded	0.07	54
w-19067b-029	PEM	Saturated	0.23	56
w-19067b-030	PEM	Saturated	0.61	58
w-19067b-031	AG-PEM	Temporarily Flooded	0.13	58
w-19067a-037	PEM	Saturated	0.05	59
w-19067a-038	PEM	Temporarily Flooded	0.02	59
w-19067b-032	PEM	Saturated	0.03	59
w-19067d-023	PEM	Saturated	0.01	59
w-19067d-024	PEM	Saturated	0.90	60
w-19067a-034	PEM	Seasonally Flooded	0.63	62
w-19067a-035	PEM	Temporarily Flooded	0.02	62
w-19067a-036	PEM	Seasonally Flooded	0.03	62
w-19067d-021	PEM	Seasonally Flooded	0.26	62
w-19067d-022	PEM	Temporarily Flooded	0.00	62
w-19067a-033	PEM	Saturated	0.05	63
w-19067d-017	AG-PEM	Temporarily Flooded	0.24	64
w-19067d-018	PEM	Saturated	0.57	64
w-19067d-019	PEM	Saturated	0.03	64
w-19067d-020	PEM	Temporarily Flooded	0.01	64
w-19067a-041	PEM	Seasonally Flooded	0.31	65
w-19067d-016	PEM	Seasonally Flooded	2.81	65
w-19067a-039	AG-PEM	Temporarily Flooded	0.10	65,66
w-19067a-040	PEM	Saturated	0.65	65,66
w-19067d-015	AG-PEM	Temporarily Flooded	0.07	65,66
w-19067a-042	PEM	Seasonally Flooded	0.15	66
w-19067d-010	PEM	Saturated	0.07	66
w-19067d-011	PEM	Saturated	0.13	66
w-19067d-013	PEM	Seasonally Flooded	2.43	66
w-19067d-014	PEM	Seasonally Flooded	0.34	66

Feature ID	Cowardin	Regime	Area (acres)	Mapbook Page
w-19067b-034	PEM	Saturated	1.69	67
w-19067d-008	PEM	Saturated	0.03	67
w-19067d-009	AG-PEM	Temporarily Flooded	0.16	67
o-19067b-001	PUB	Permanently Flooded	1.32	68
w-19067b-033	AG-PEM	Temporarily Flooded	0.01	68

Appendix D

Wetland Determination Forms

Field forms which were completed in support of this project are maintained in the project files in MNR's office.

Appendix E

Wetland Photographs



o-19067a-002 facing SE



o-19067b-001 facing S



o-19067d-001 facing S



w-19067a-001-w facing NW



w-19067a-002-w facing N



w-19067a-003-w facing NW



w-19067a-004-w facing NW



w-19067a-005-w facing N



w-19067a-006-w facing E



w-19067a-007-w facing SW



w-19067a-008-w facing N



w-19067a-009-w facing E



w-19067a-010-w facing NE



w-19067a-011-w facing E



w-19067a-012-w facing S



w-19067a-013-w facing S



w-19067a-014-w facing W



w-19067a-015-w facing W



w-19067a-016-w facing E



w-19067a-017-w facing NW



w-19067a-019-w facing W



w-19067a-020-w1 facing E



w-19067a-020-w2 facing E



w-19067a-021-w facing S



w-19067a-022-w facing W



w-19067a-023-w facing N



w-19067a-024-w facing N



w-19067a-025-w facing N



w-19067a-026-w facing W



w-19067a-027-w facing E



w-19067a-028-w facing NE



w-19067a-029-w facing N



w-19067a-030-w facing SE



w-19067a-031-w1 facing N



w-19067a-031-w2 facing W



w-19067a-032-w facing N



w-19067a-033-w facing S



w-19067a-034-w facing N



w-19067a-035-w facing NW



w-19067a-036-w facing SW



w-19067a-037-w facing S



w-19067a-038-w facing SE



w-19067a-039-w facing N



w-19067a-040-w facing S



w-19067a-041-w facing N



w-19067a-042-w facing E



w-19067a-043-w facing E



w-19067a-044-w facing SE



w-19067a-045-w1 facing N



w-19067a-045-w2 facing W



w-19067a-046-w facing NE



w-19067b-001-w facing E



w-19067b-002-w facing S



w-19067b-003-w facing N



w-19067b-004-w facing S



w-19067b-005-w facing W



w-19067b-006-w facing E



w-19067b-007-w facing NE



w-19067b-008-w facing N



w-19067b-009-w facing S



w-19067b-010-w facing S



w-19067b-011-w facing W



w-19067b-012-w facing N



w-19067b-013-w facing N



w-19067b-014-w facing E



w-19067b-015-w facing N



w-19067b-016-w facing E



w-19067b-017-w facing W



w-19067b-018-w facing S



w-19067b-019-w facing N



w-19067b-020-w facing E



w-19067b-021-w facing E



w-19067b-022-w facing E



w-19067b-023-w facing S



w-19067b-024-w facing W



w-19067b-025-w facing N



w-19067b-026-w facing E



w-19067b-027-w facing W



w-19067b-028-w facing E



w-19067b-029-w facing W



w-19067b-030-w facing N



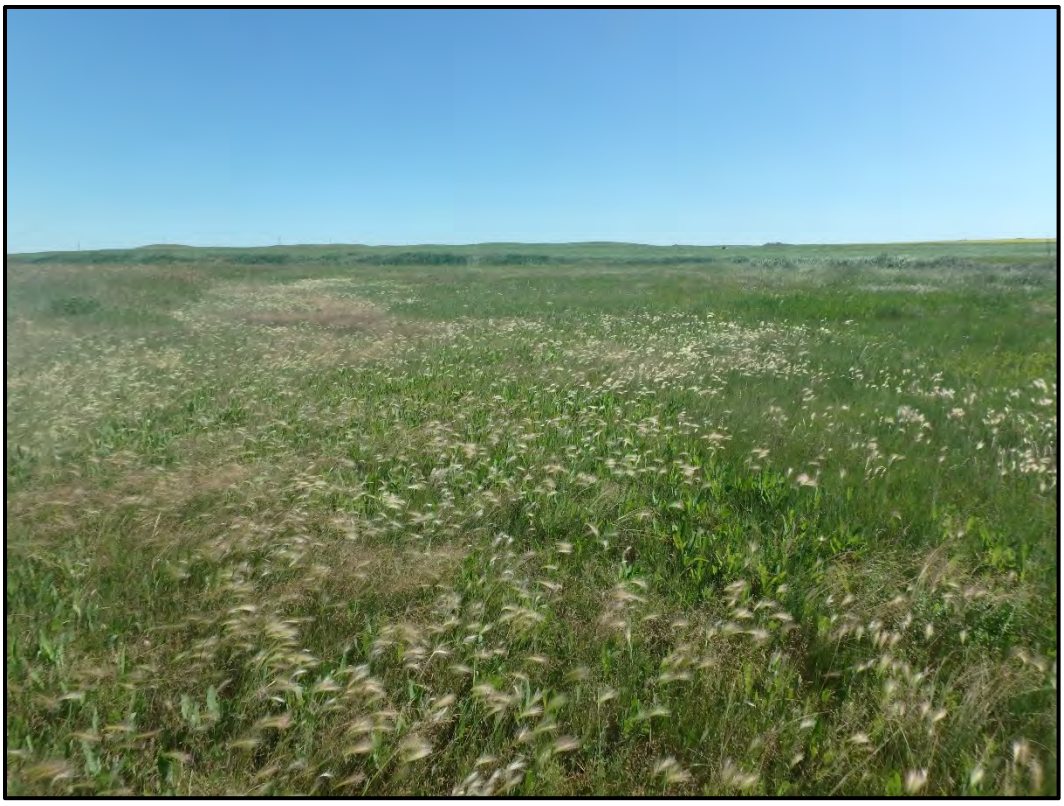
w-19067b-031-w facing N



w-19067b-032-w facing W



w-19067b-033-w facing N



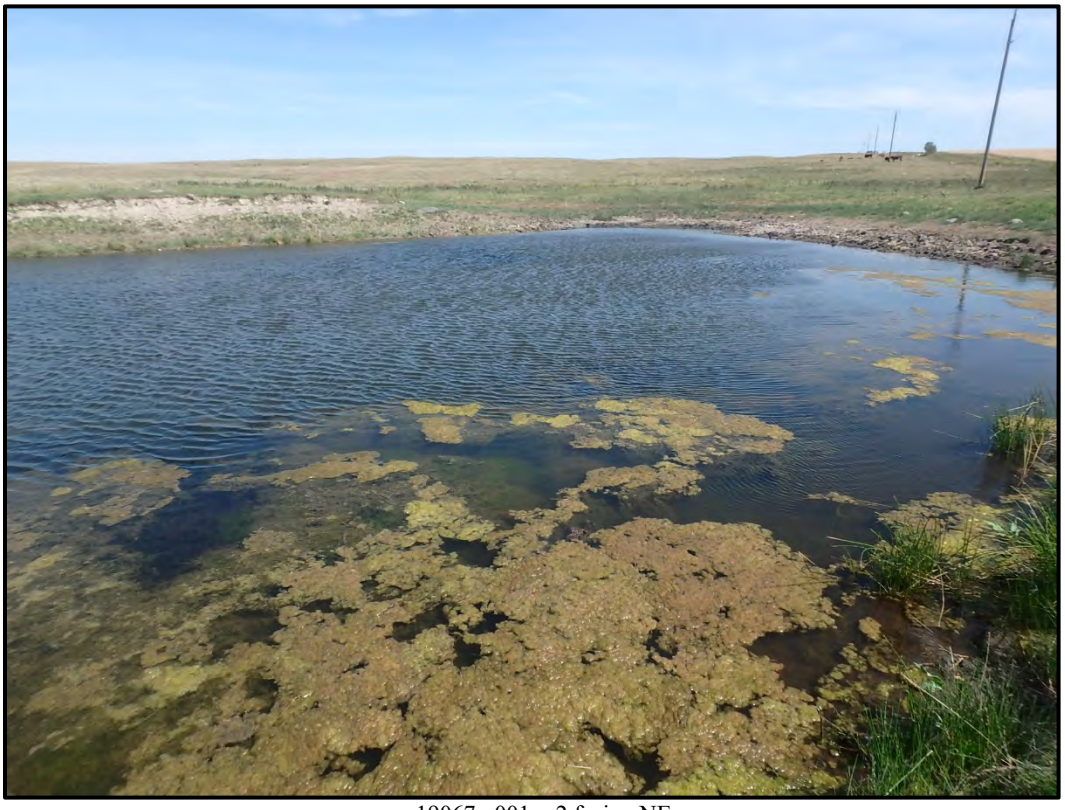
w-19067b-034-w1 facing N



w-19067b-034-w2 facing S



w-19067c-001-w1 facing N



w-19067c-001-w2 facing NE



w-19067c-002-w facing SE



w-19067c-003-w facing W



w-19067c-004-w1 facing S



w-19067c-004-w2 facing S



w-19067c-005-w facing W



w-19067c-006-w facing S



w-19067c-007-w facing E



w-19067c-008-w facing N



w-19067c-009-w facing N



w-19067c-010-w facing N



w-19067c-011-w1 facing S



w-19067c-011-w2 facing W



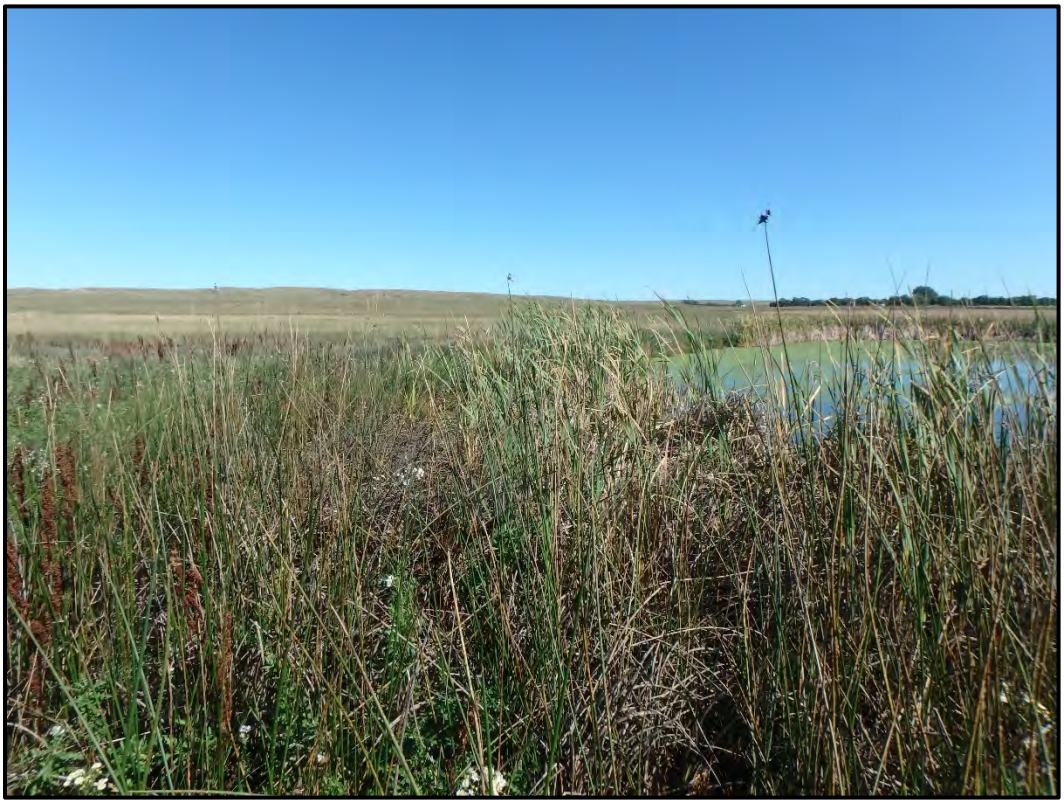
w-19067c-012-w facing W



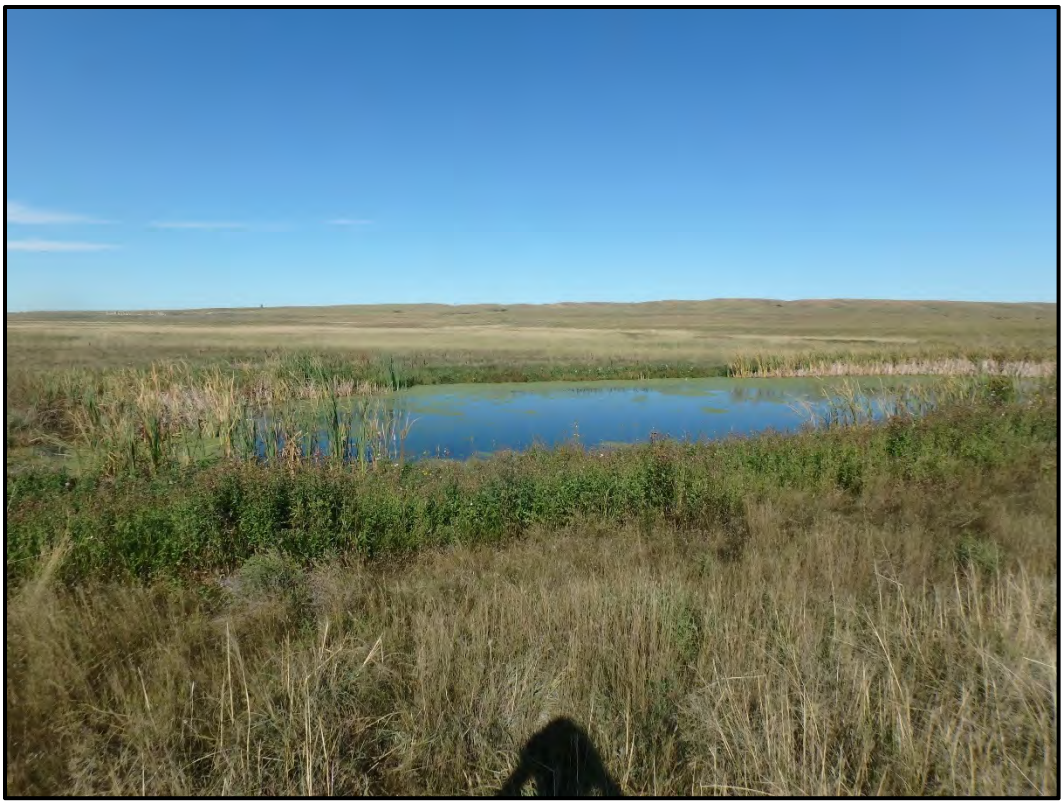
w-19067d-001-w facing E



w-19067d-002-w facing N



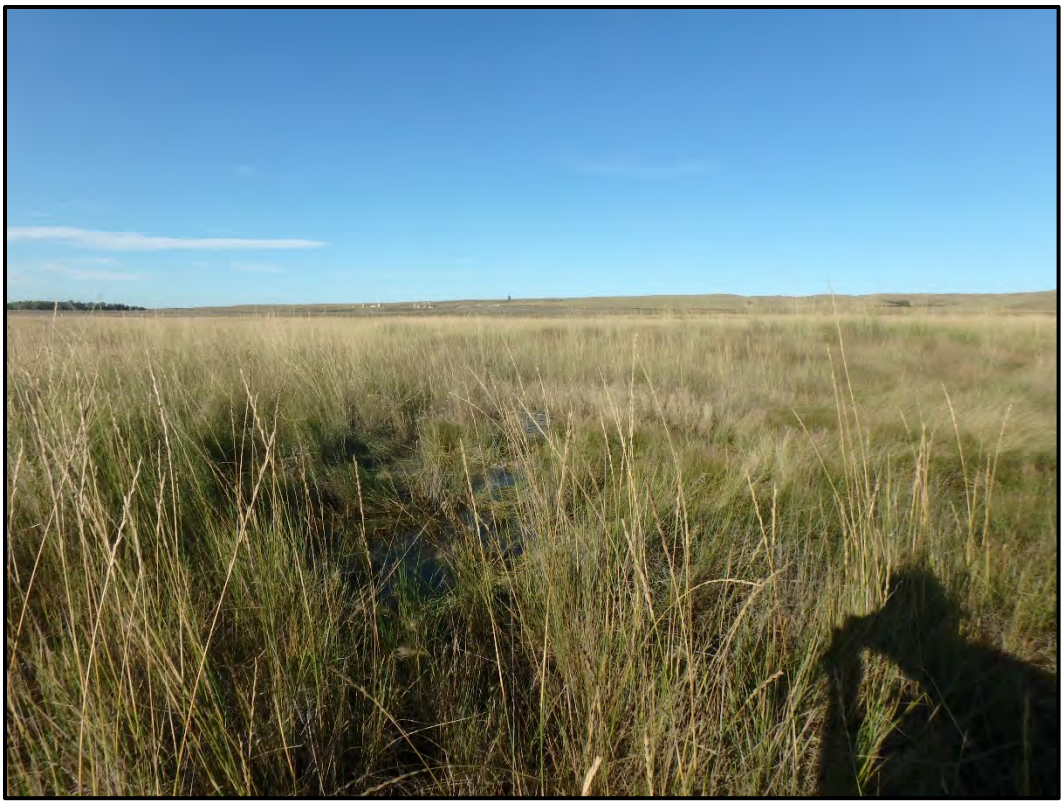
w-19067d-003-w1 facing E



w-19067d-003-w2 facing N



w-19067d-004-w facing W



w-19067d-005-w facing N



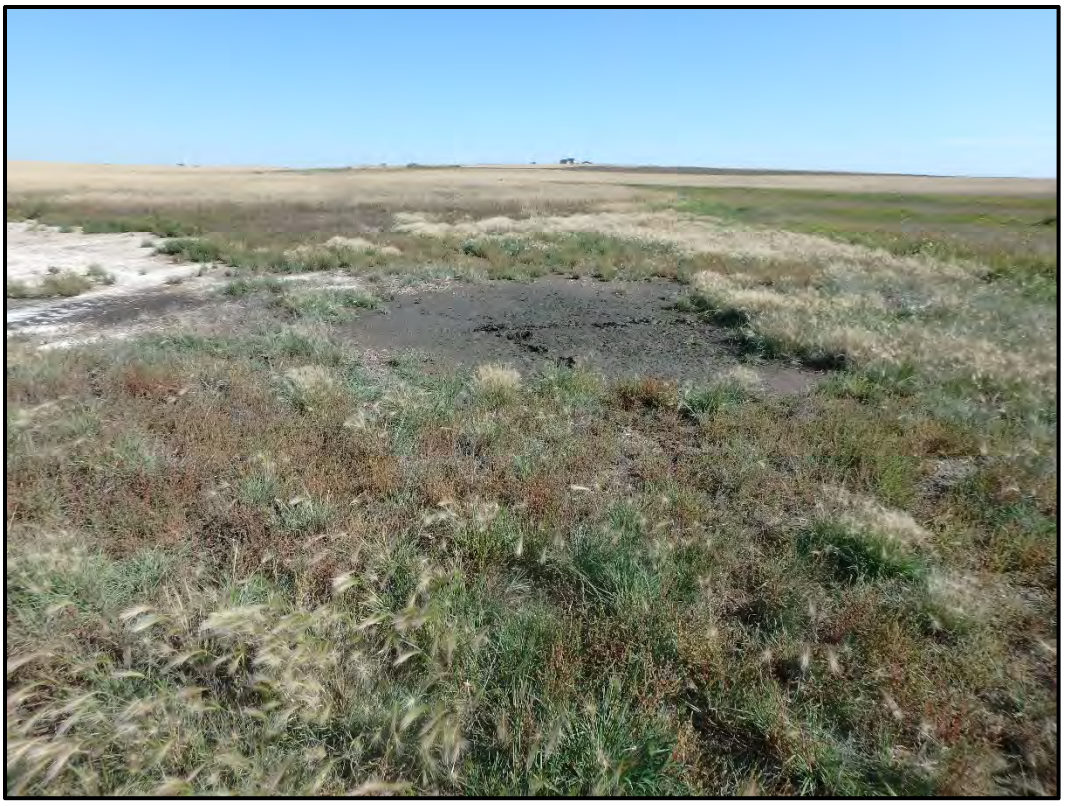
w-19067d-006-w facing N



w-19067d-007-w facing S



w-19067d-008-w facing W



w-19067d-009-w facing E



w-19067d-010-w facing N



w-19067d-011-w facing NE



w-19067d-013-w facing NW



w-19067d-014-w facing W



w-19067d-015-w facing S



w-19067d-016-w1 facing NE



w-19067d-016-w2 facing NW



w-19067d-017-w facing N



w-19067d-018-w facing NW



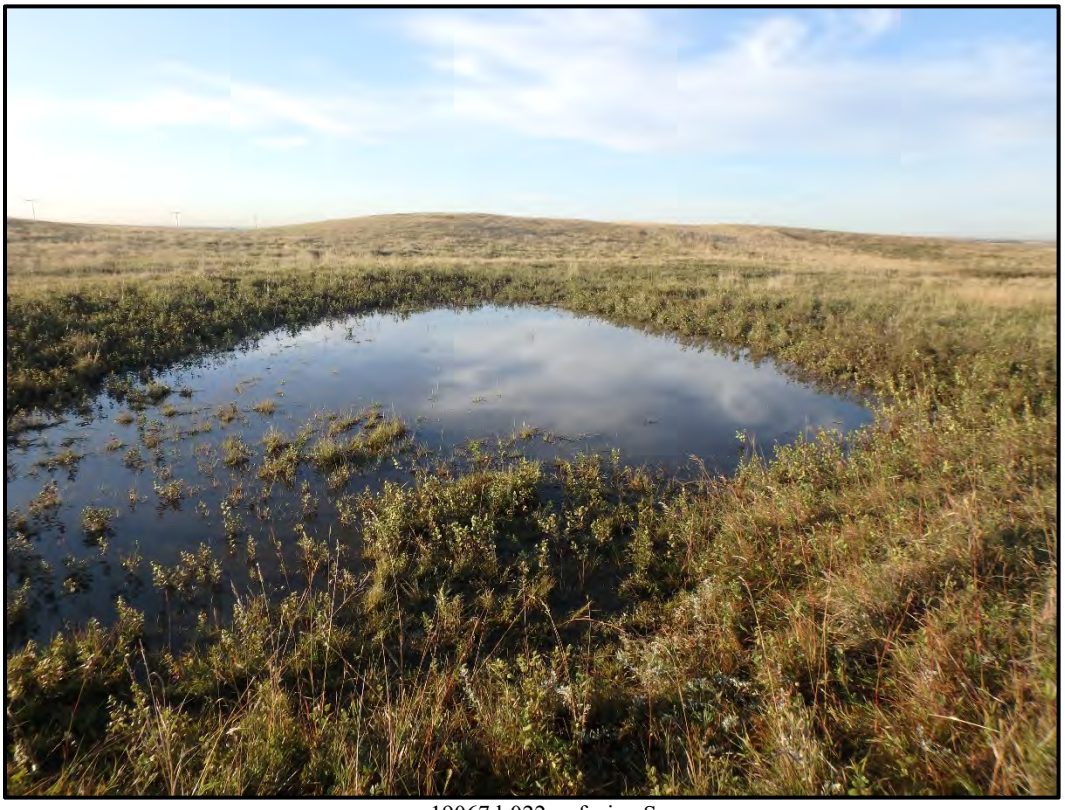
w-19067d-019-w facing S



w-19067d-020-w facing N



w-19067d-021-w facing E



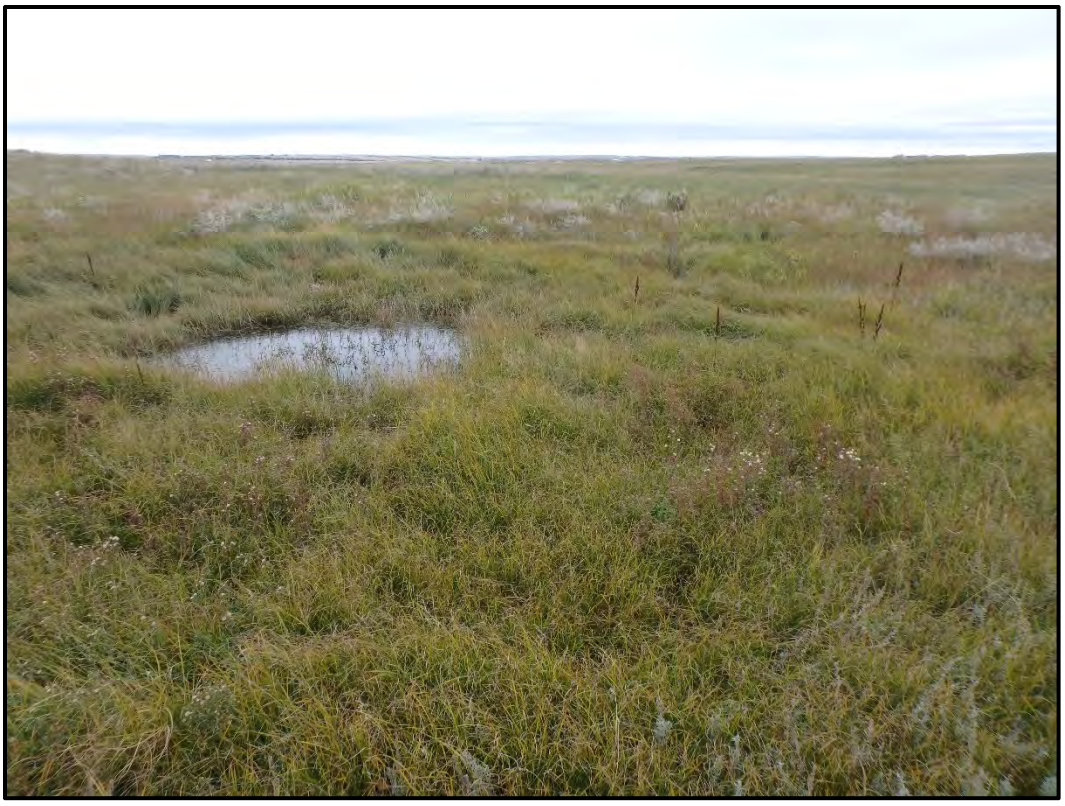
w-19067d-022-w facing S



w-19067d-023-w facing S



w-19067d-024-w facing N



w-19067d-025-w facing N



w-19067d-026-w facing E



w-19067d-027-w facing E



w-19067d-028-w facing NW



w-19067d-029-w facing NW



w-19067d-030-w facing S



w-19067d-031-w facing NE



w-19067d-032-w facing NW



w-19067d-029-w facing NW



w-19067d-030-w facing S



w-19067d-031-w facing NE



w-19067d-032-w facing NW

Appendix F

Non-Wetland Photographs



n-19067a-018 facing E



n-19067a-019 facing S



n-19067a-023 facing S



n-19067a-024 facing N



n-19067a-025 facing S



n-19067a-027 facing N



n-19067a-028 facing E



n-19067a-036 facing S



n-19067a-039 facing S



n-19067a-040 facing W



n-19067a-042 facing E



n-19067a-043 facing S



n-19067a-047 facing NE



n-19067a-051 facing W



n-19067a-052 facing S



n-19067a-056 facing SW



n-19067a-062 facing E



n-19067b-002 facing E



n-19067b-003 facing N



n-19067b-011 facing N



n-19067b-020 facing N



n-19067b-021 facing N



n-19067b-027 facing N



n-19067b-032 facing W



n-19067b-033 facing W



n-19067b-038 facing E



n-19067b-039 facing W



n-19067b-042 facing S



n-19067b-050 facing SW



n-19067b-051 facing S



n-19067b-052 facing SW



n-19067b-053 facing N



n-19067b-054 facing SE



n-19067b-055 facing E



n-19067b-056 facing E



n-19067b-057 facing N



n-19067b-058 facing N



n-19067b-059 facing S



n-19067b-064 facing W



n-19067b-066 facing S



n-19067b-067 facing W



n-19067b-071 facing W



n-19067b-076 facing E



n-19067b-077 facing N



n-19067b-078 facing SE



n-19067b-086 facing S



n-19067c-001 facing N



n-19067c-014 facing N



n-19067c-018 facing W



n-19067d-007 facing SW



n-19067d-011 facing NE



n-19067d-015 facing N



n-19067d-016 facing NW



n-19067d-019 facing E



n-19067d-025 facing NW



n-19067d-027 facing S



n-19067d-035 facing E



n-19067d-037 facing S



n-19067d-038 facing E



n-19067d-039 facing E



n-19067d-050 facing S



n-19067d-055 facing S



n-19067d-056 facing N



n-19067d-059 facing N



n-19067d-060 facing N



n-19067d-065 facing N

Appendix G

Table of Delineated Waterbody Features

Feature ID	Cowardin	Regime	OHWM Width (ft)	Bank Width (ft)	Mapbook Page
s-19067d-002	R6	Ephemeral	1	1	2
s-19067d-003	Ditch	Ephemeral	1	3	2
s-19067a-001	R2UB	Perennial	20	23	3
s-19067a-002	R6	Ephemeral	1	1	3,4
s-19067a-003	R2UB	Perennial	35	40	5
s-19067a-004	R6	Ephemeral	3	3	7
s-19067a-005	R4SB	Intermittent	2	2	9
s-19067a-006	R2UB	Perennial	5	6	17
s-19067a-007	R6	Ephemeral	4	4	17,18
s-19067c-001	R6	Ephemeral	2	6	29
s-19067c-002	R6	Ephemeral	1	5	30
s-19067b-001	R2UB	Perennial	10	15	35
s-19067a-009	R2UB	Perennial	50	55	42
s-19067a-008	R6	Ephemeral	1	1	43
s-19067a-011	R2UB	Perennial	75	80	51
s-19067a-010	R2UB	Perennial	50	60	54
s-19067d-001	R2UB	Perennial	15	20	53,54

Appendix H

Waterbody Forms

Field forms which were completed in support of this project are maintained in the project files in MNR's office.

Appendix I

Waterbody Photographs



s-19067a-001 facing E



s-19067a-001 facing S



s-19067a-002 facing E



s-19067a-002 facing N



s-19067a-003 facing N



s-19067a-003 facing W



s-19067a-004 facing E



s-19067a-004 facing S



s-19067a-005 facing E



s-19067a-005 facing S



s-19067a-006 facing S



s-19067a-006 facing W



s-19067a-007 facing NE



s-19067a-007 facing SE



s-19067a-008 facing E



s-19067a-008 facing N



s-19067a-009 facing NE



s-19067a-009 facing NW



s-19067a-010 facing E



s-19067a-010 facing SE



s-19067a-011 facing E



s-19067a-011 facing N



s-19067b-001 facing N



s-19067b-001 facing W



s-19067c-001 facing N



s-19067c-001 facing W



s-19067c-002 facing E



s-19067c-002 facing S



s-19067d-001 facing E



s-19067d-001 facing N



s-19067d-002 facing E



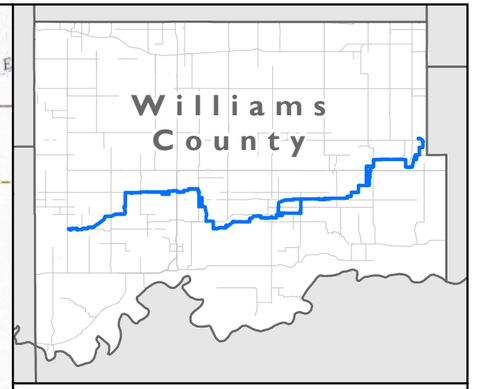
s-19067d-002 facing S



s-19067d-003 facing S



s-19067d-003 facing W

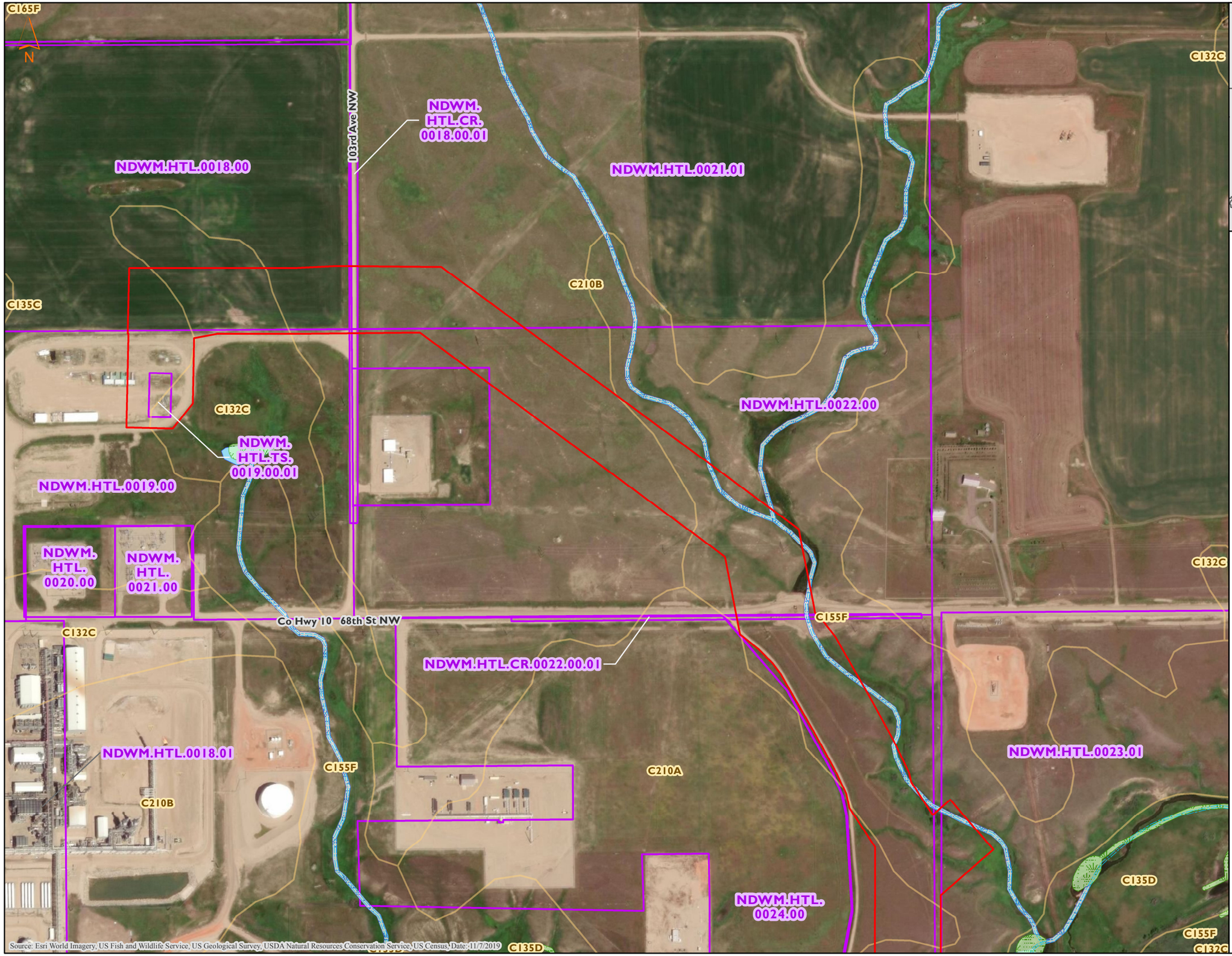


Survey Corridor Overview
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

Environmental Survey Area

0 4 8
Miles

Source: USGS Topo, USGS The National Map, US Census, Date: 11/7/2019



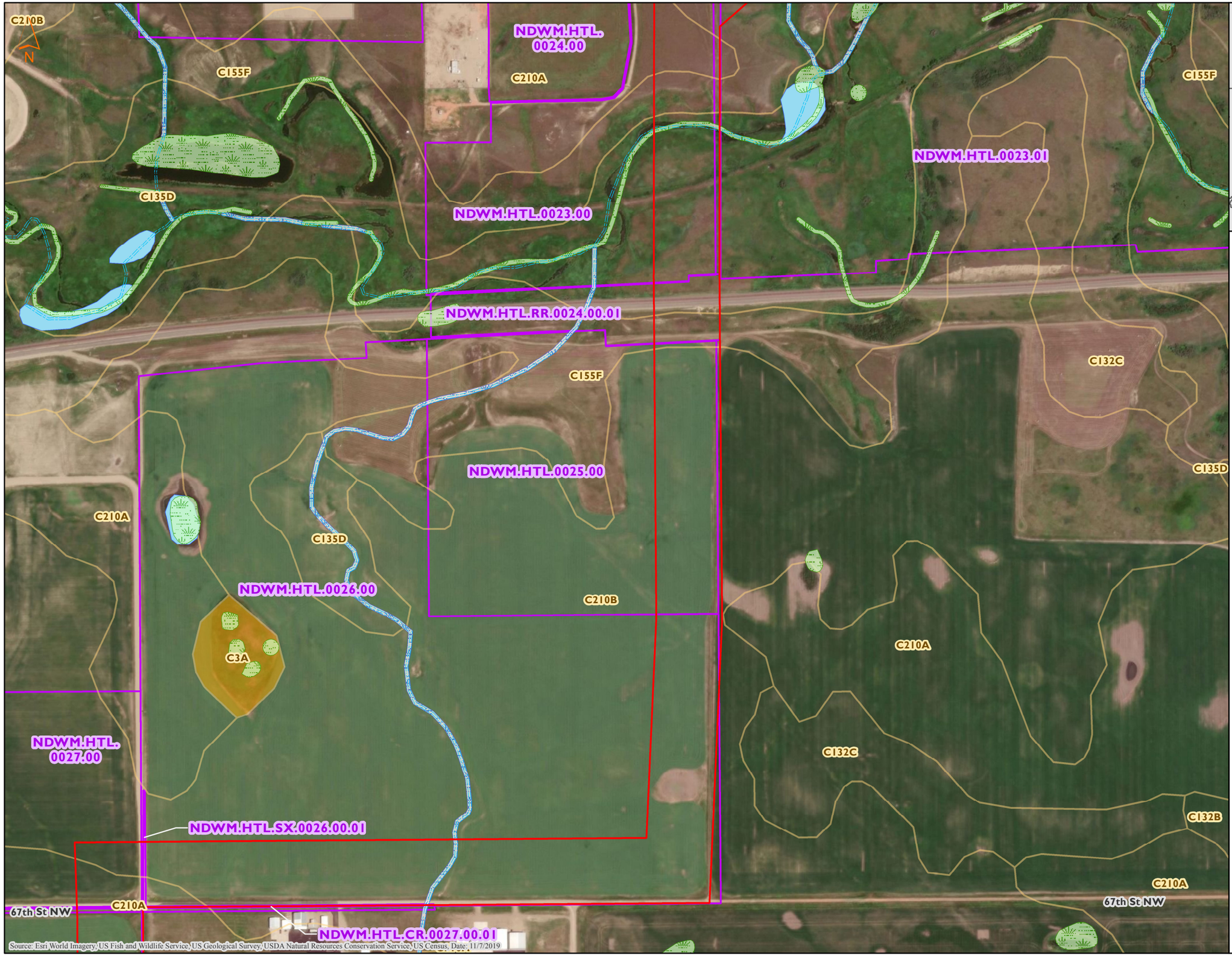


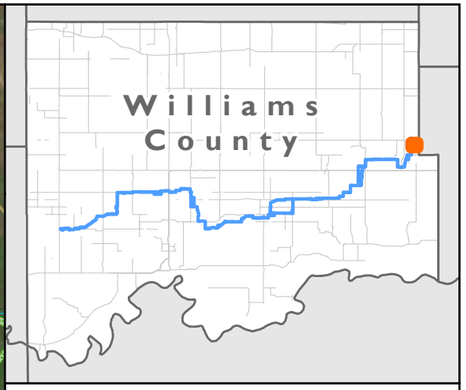
MNR

NHD/NWI Features, SSURGO Soil Units
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

- NHD Stream
- NHD Waterbody
- NWI Wetland - L1/L2
- NWI Wetland - PAB
- NWI Wetland - PEM
- NWI Wetland - PFO
- NWI Wetland - PSS
- NWI Wetland - PUB
- NWI Wetland - Riverine
- Hydric Soil
- Non-Hydric Soil
- Environmental Survey Area
- Tract

0 400 800
Feet





NHD/NWI Features, SSURGO Soil Units
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

- NHD Stream
- NHD Waterbody
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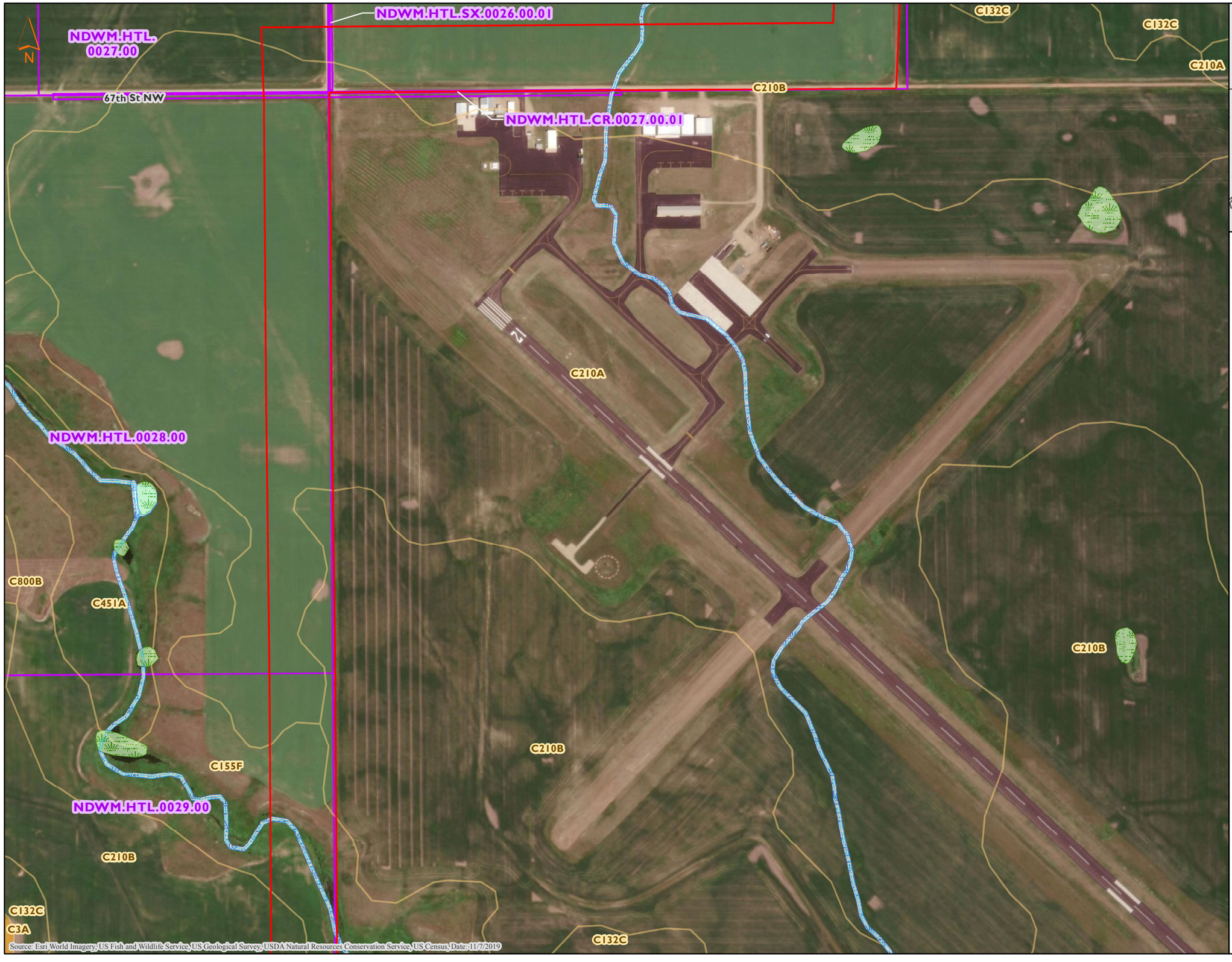
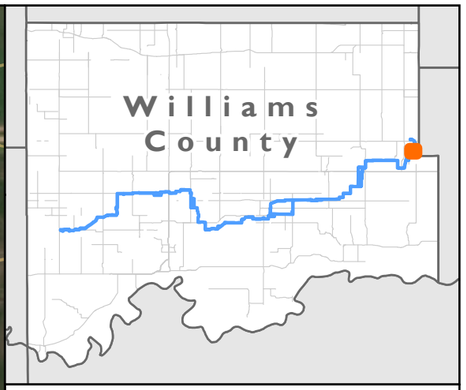
- NWI Wetland - PUB
- NWI Wetland - Riverine
- Hydric Soil
- Non-Hydric Soil
- Environmental Survey Area
- Tract

0 400 800
Feet

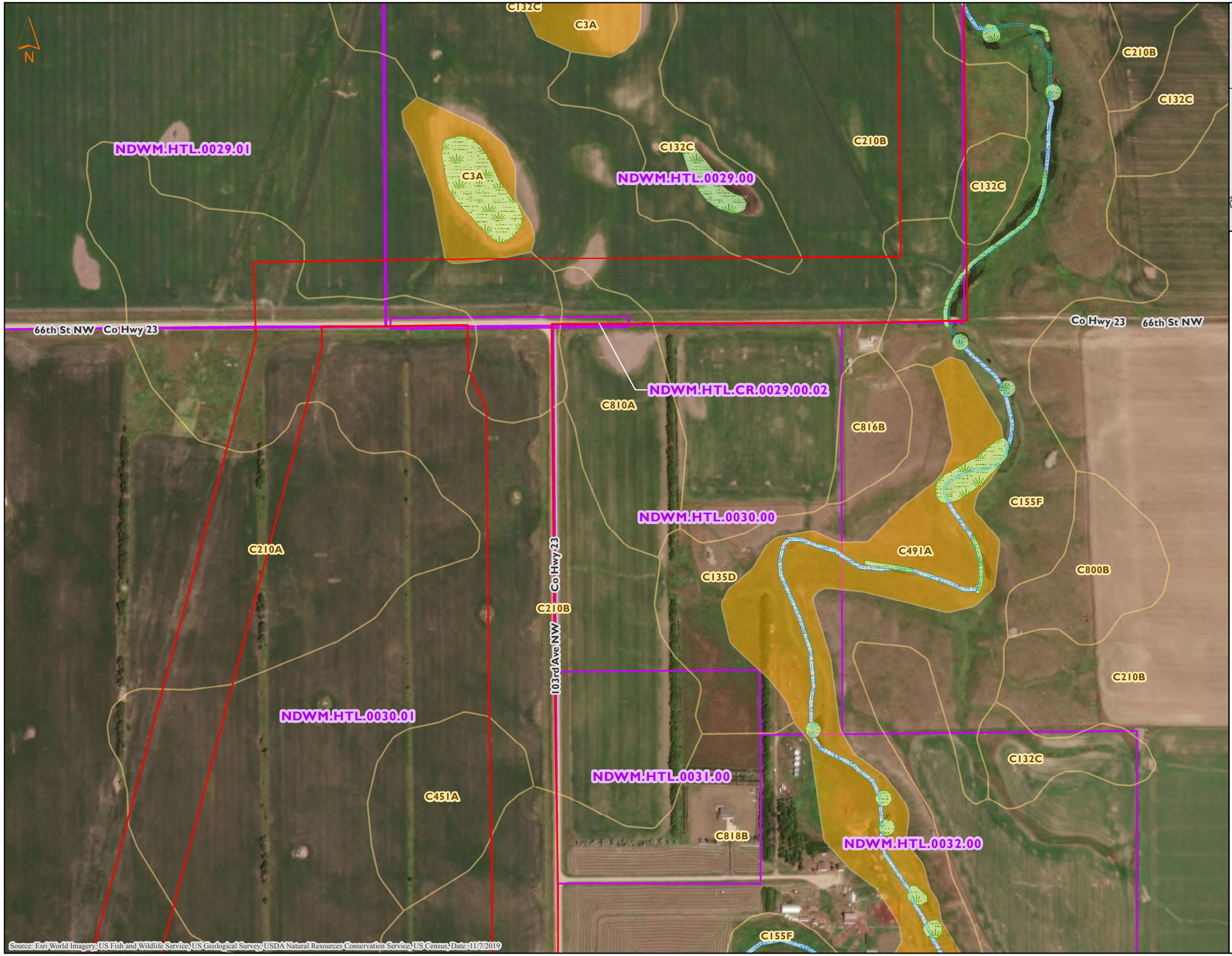


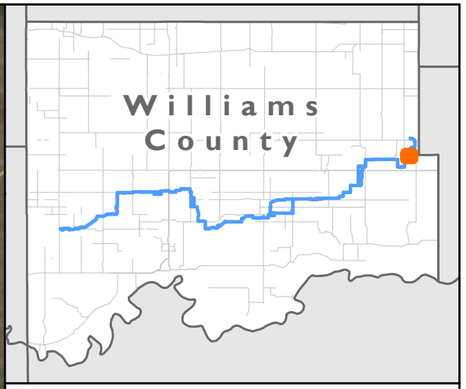


NHD/NWI Features, SSURGO Soil Units
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

- NHD Stream
- NHD Waterbody
- NWI Wetland - L1/L2
- NWI Wetland - PAB
- NWI Wetland - PEM
- NWI Wetland - PFO
- NWI Wetland - PSS
- NWI Wetland - PUB
- NWI Wetland - Riverine
- Hydric Soil
- Non-Hydric Soil
- Environmental Survey Area
- Tract

0 400 800
Feet





MNR

NHD/NWI Features, SSURGO Soil Units
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

- NHD Stream
- NHD Waterbody
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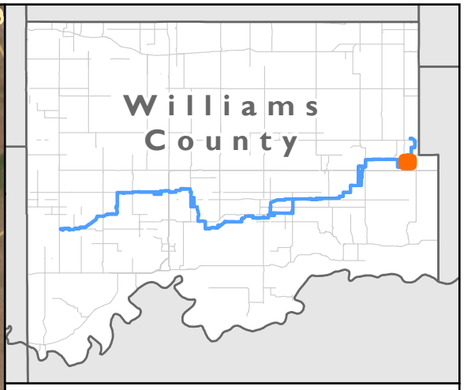
- NWI Wetland - PAB
- NWI Wetland - PEM
- NWI Wetland - PFO
- NWI Wetland - PSS
- NWI Wetland - PUB
- NWI Wetland - Riverine
- Hydric Soil
- Non-Hydric Soil
- Environmental Survey Area
- Tract

0 400 800
Feet



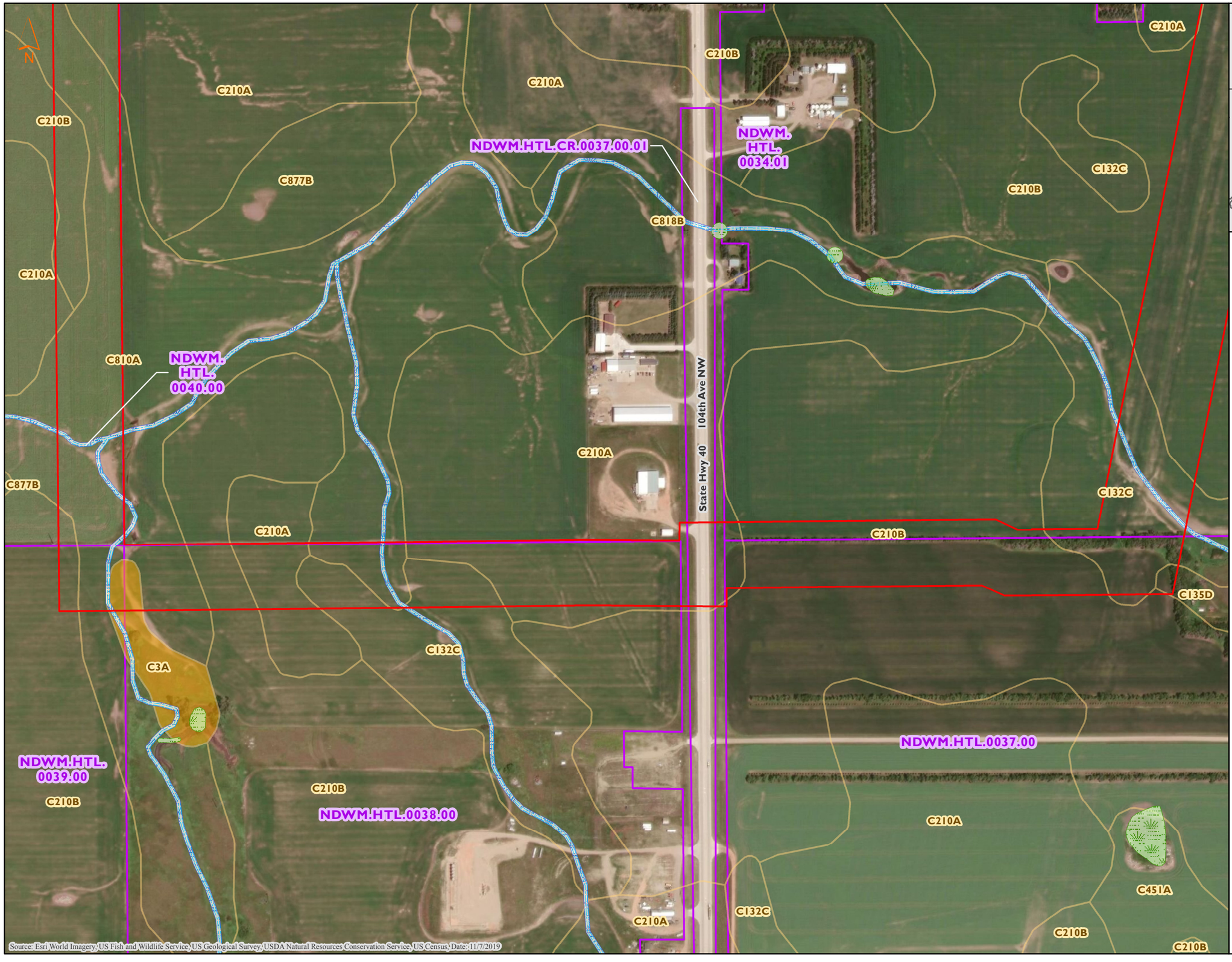


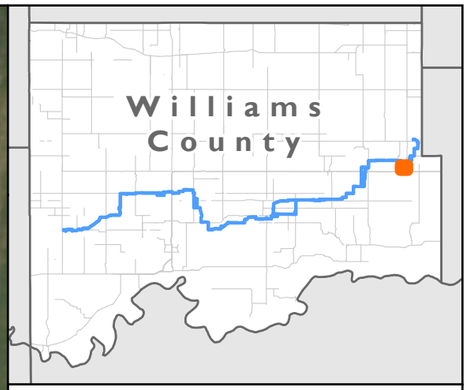
MNR

NHD/NWI Features, SSURGO Soil Units
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

- NHD Stream
- NHD Waterbody
- NWI Wetland - L1/L2
- NWI Wetland - PAB
- NWI Wetland - PEM
- NWI Wetland - PFO
- NWI Wetland - PSS
- NWI Wetland - PUB
- NWI Wetland - Riverine
- Hydric Soil
- Non-Hydric Soil
- Environmental Survey Area
- Tract

0 400 800
Feet





NHD/NWI Features, SSURGO Soil Units
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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- Non-Hydric Soil
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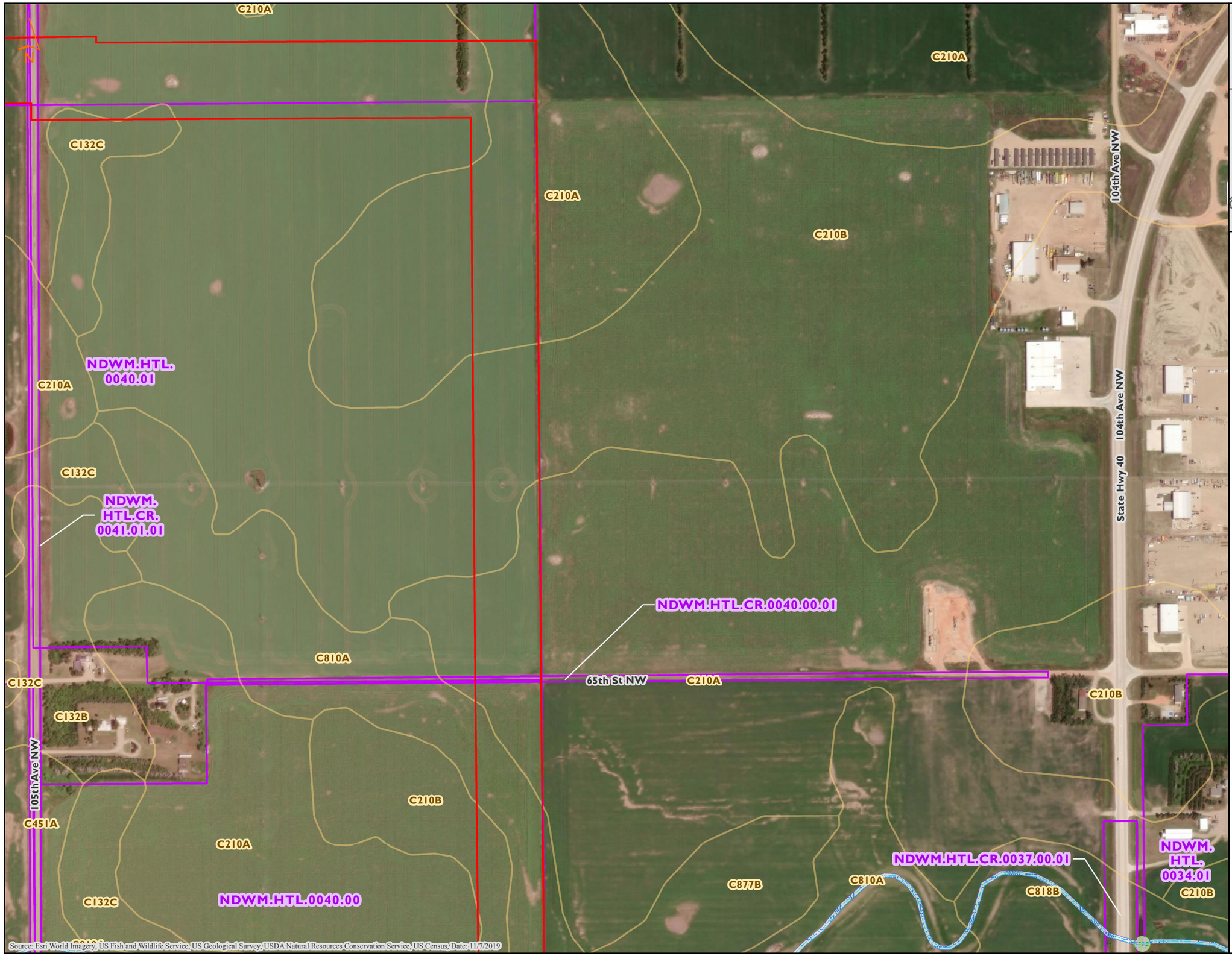
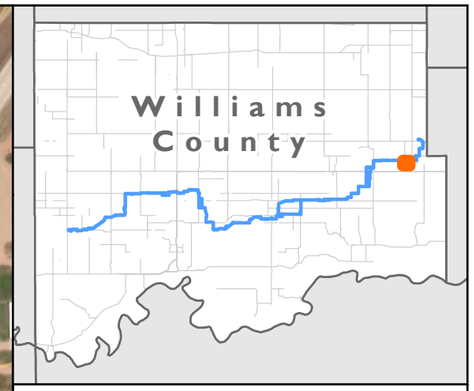
Feet





MNR

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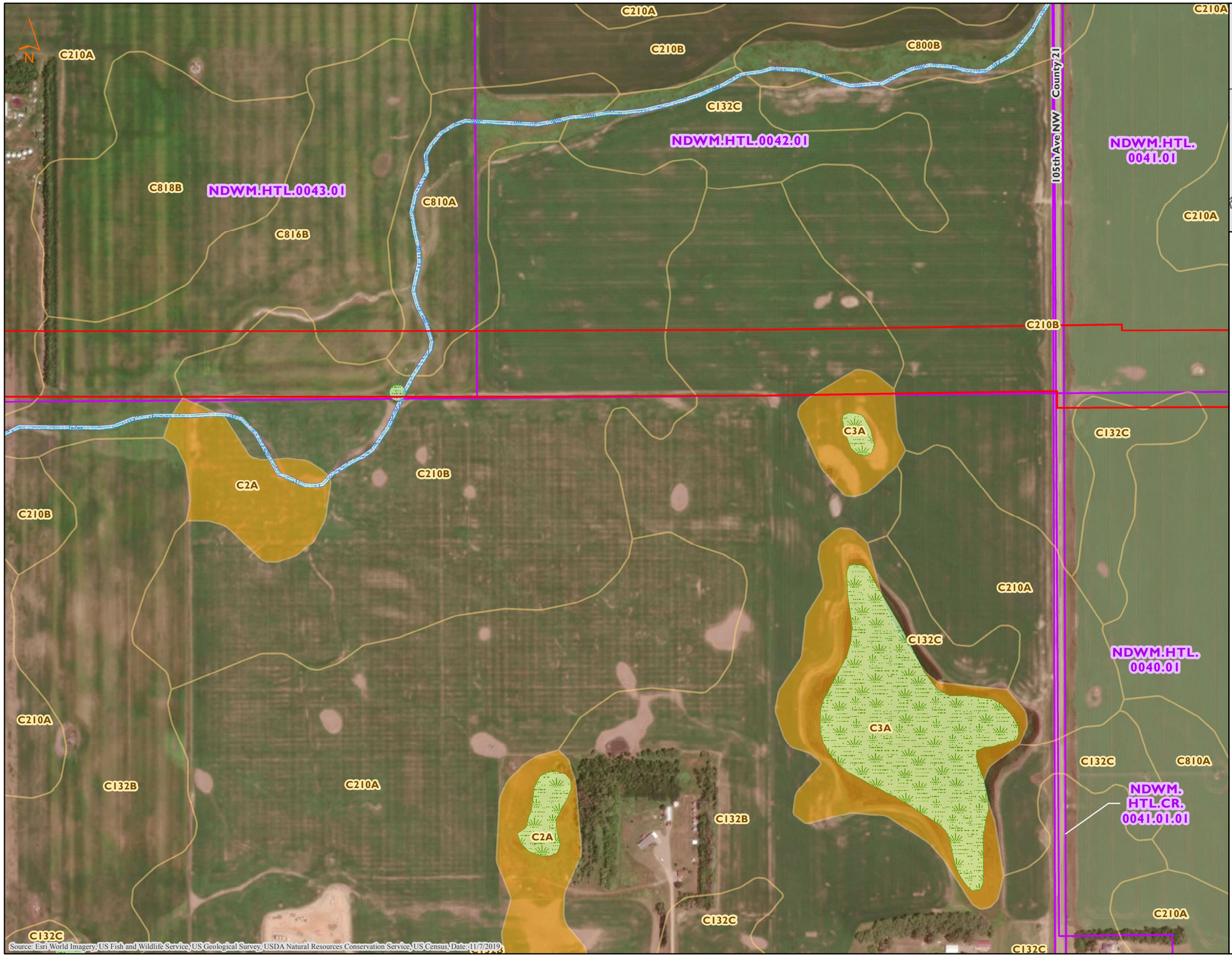

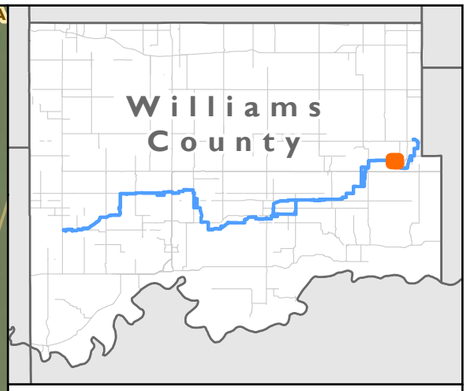

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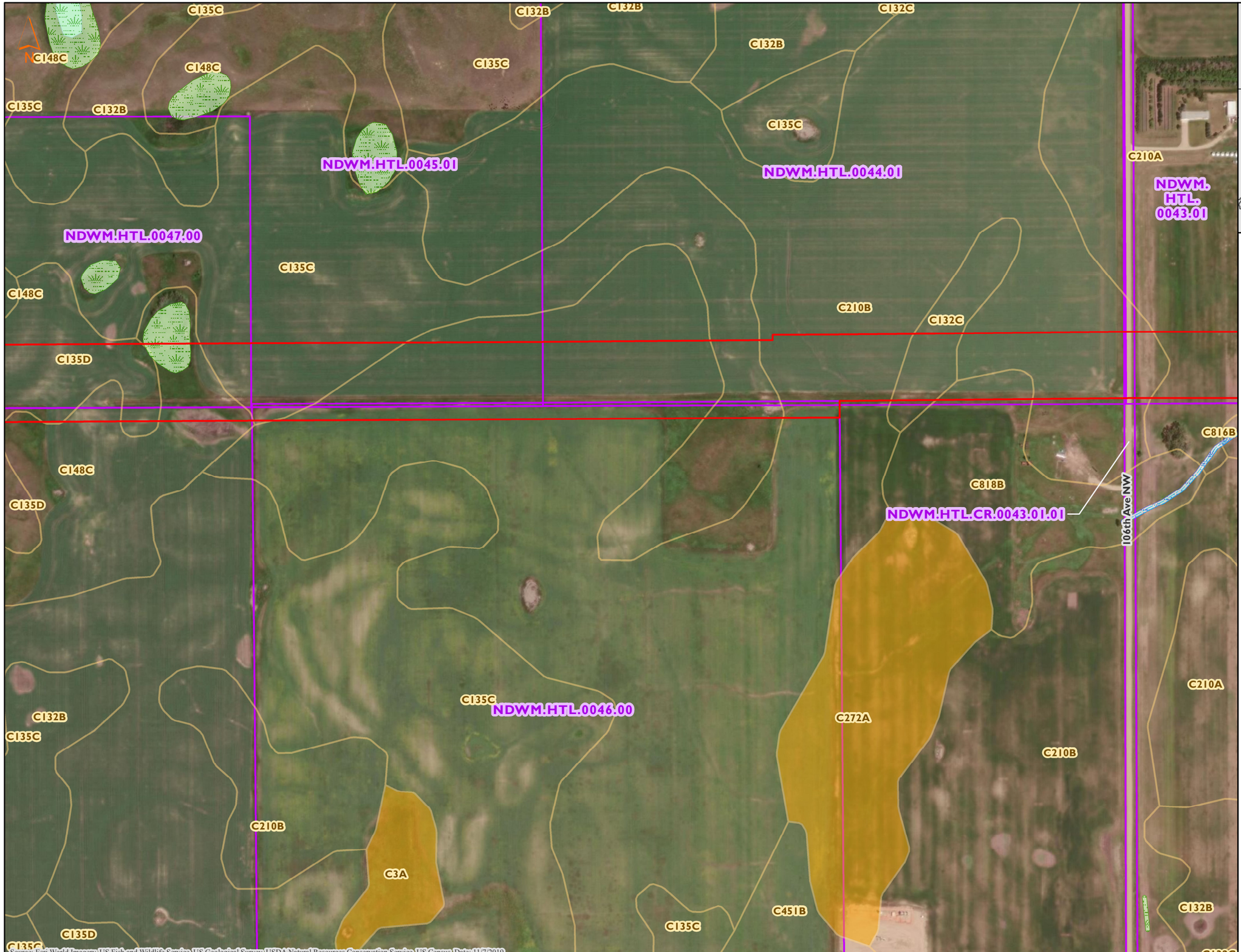

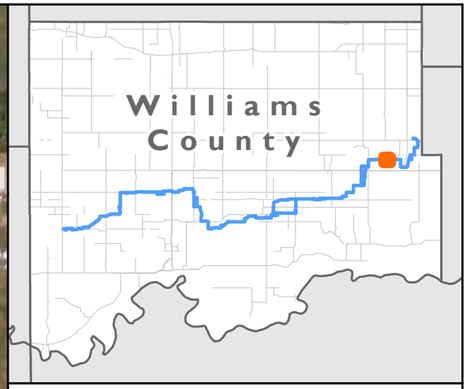

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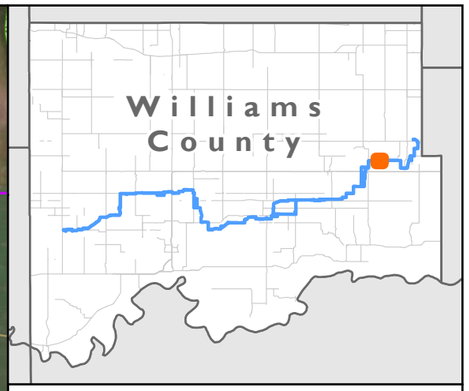

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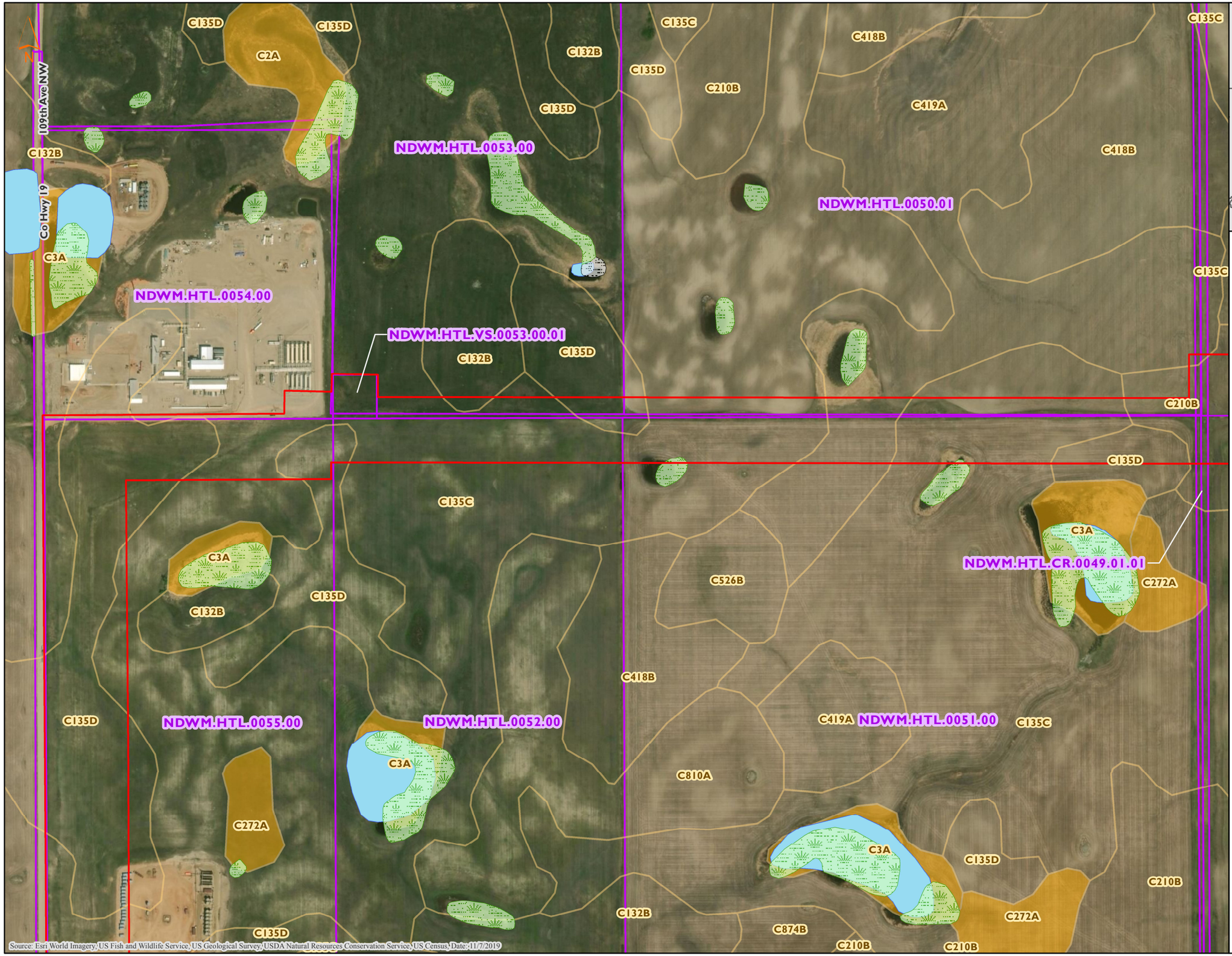

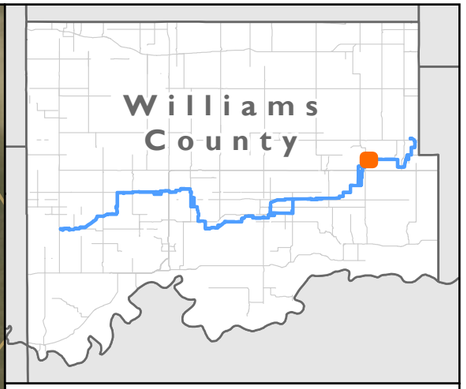

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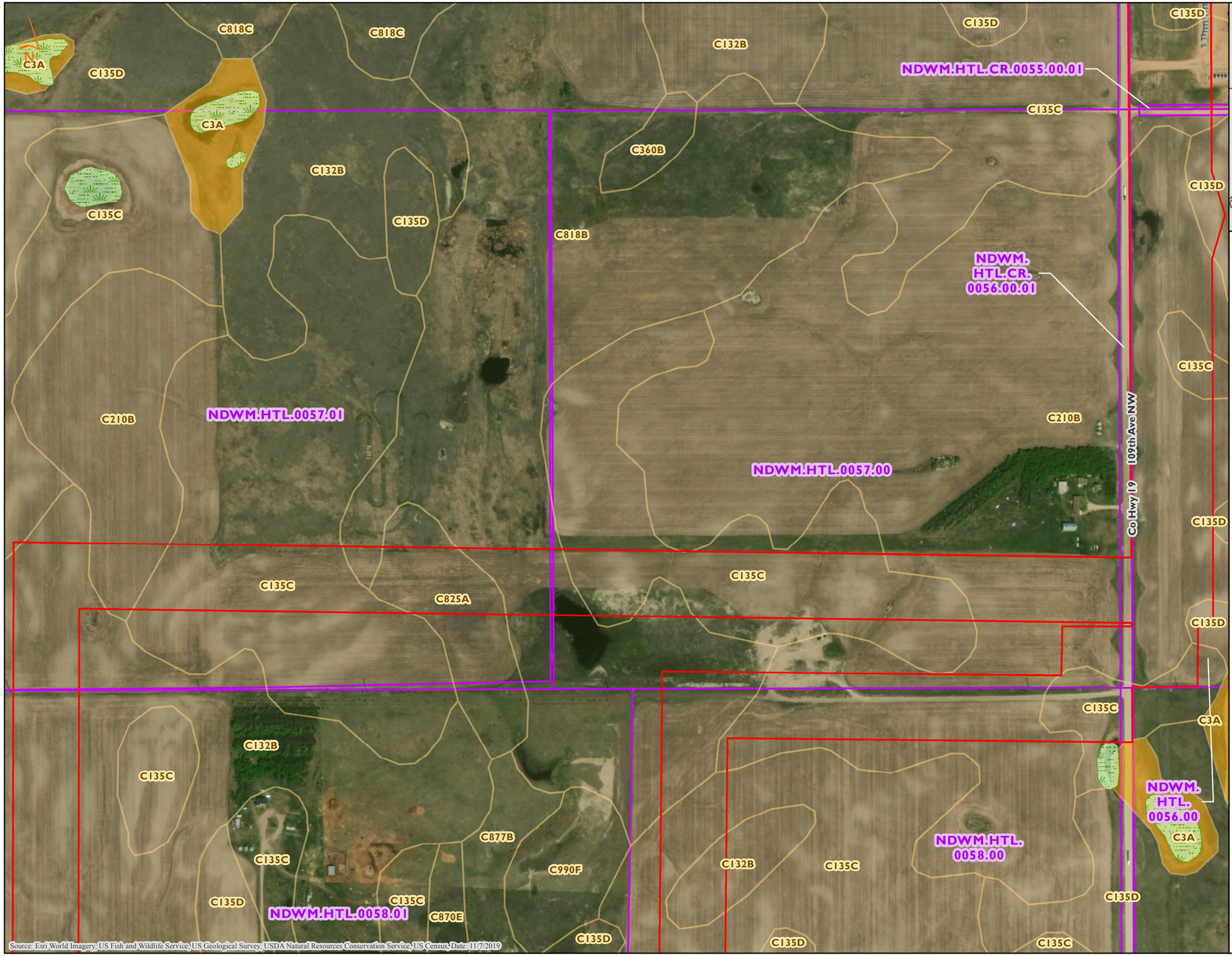

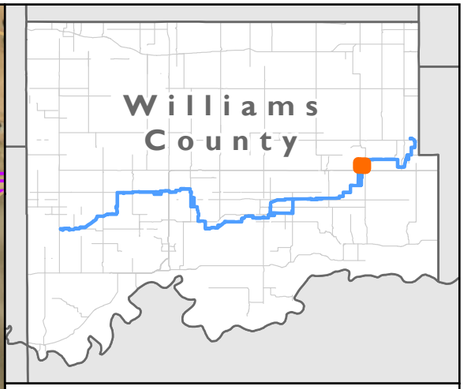

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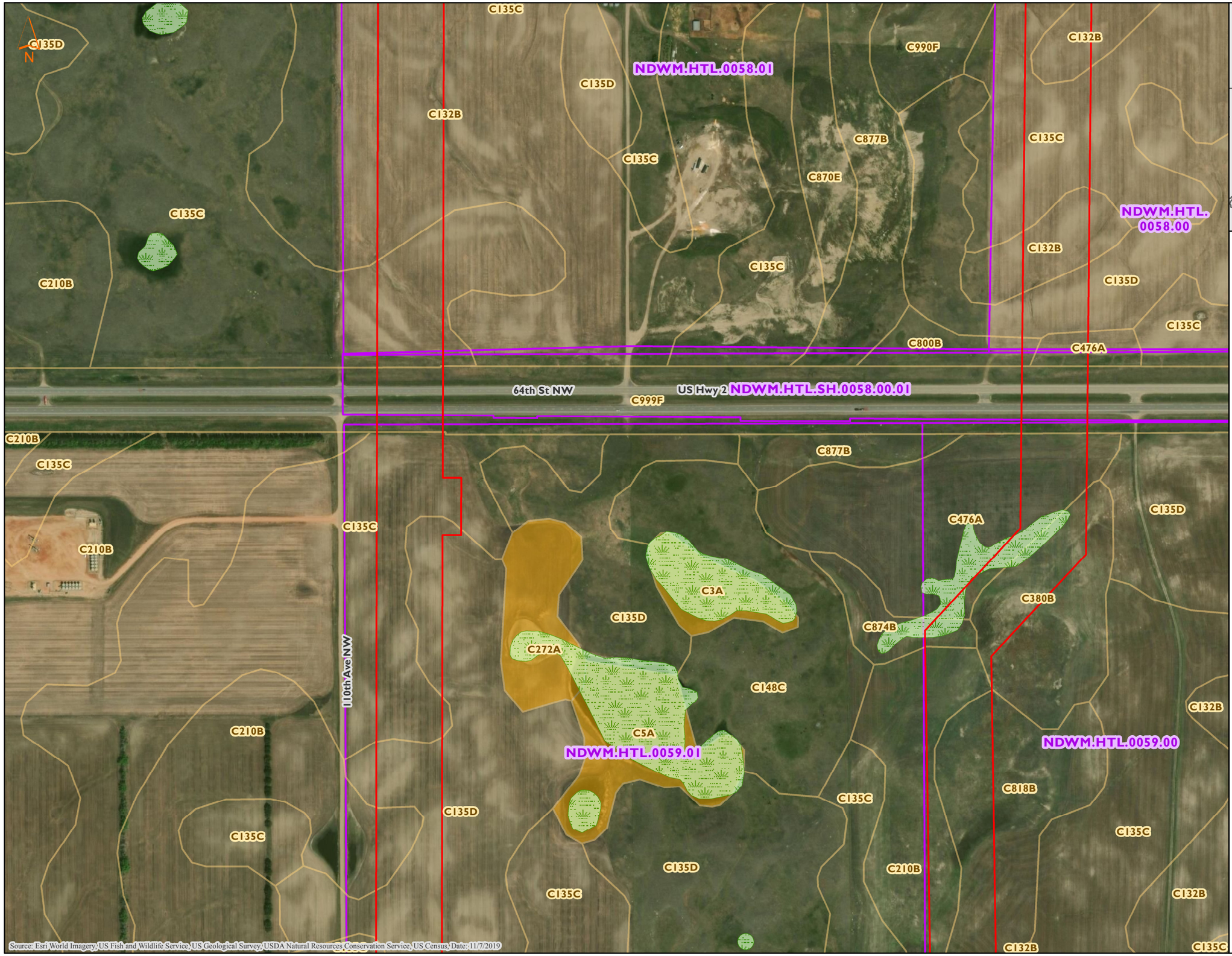

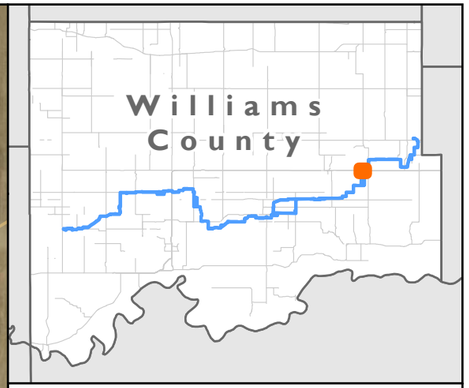

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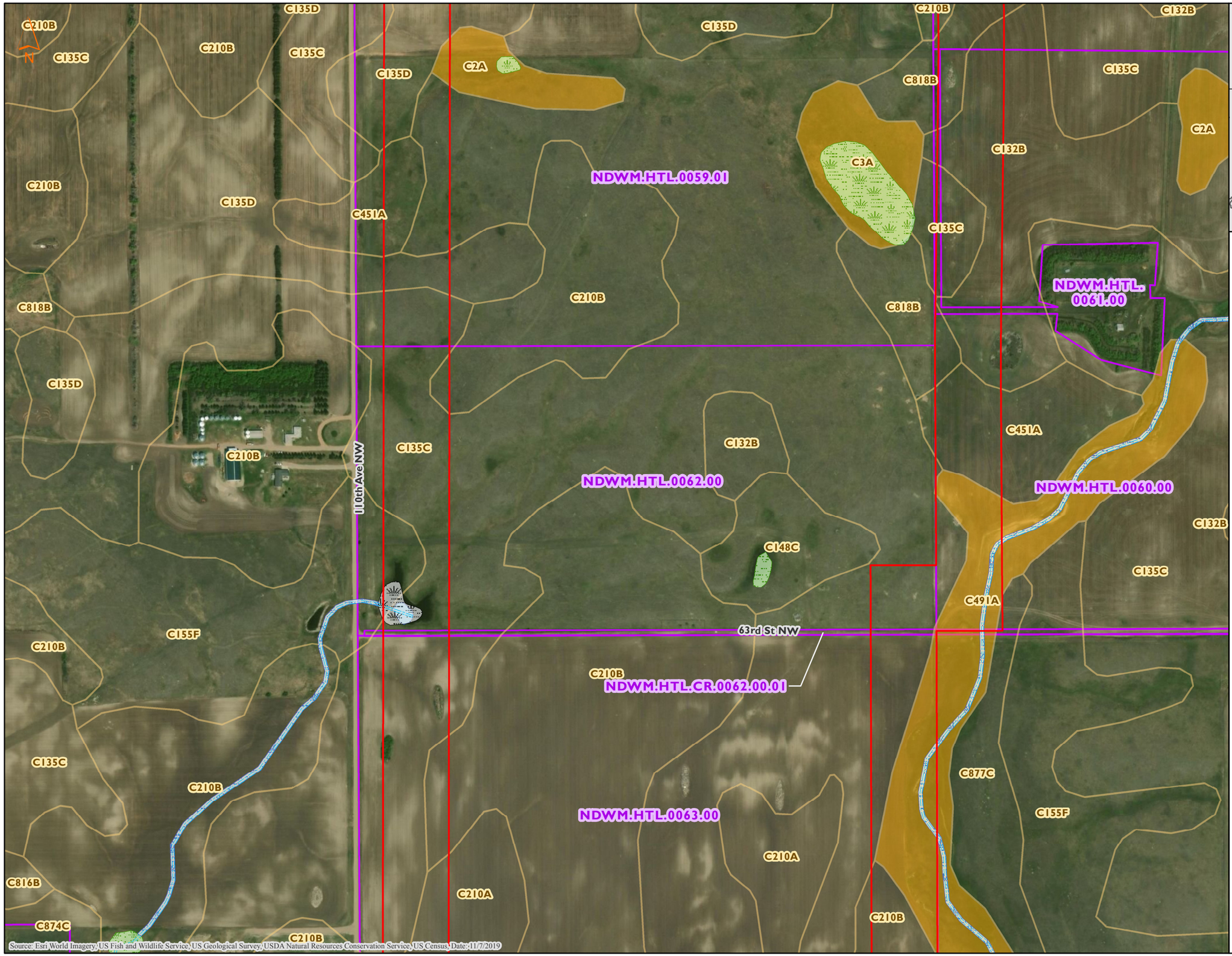

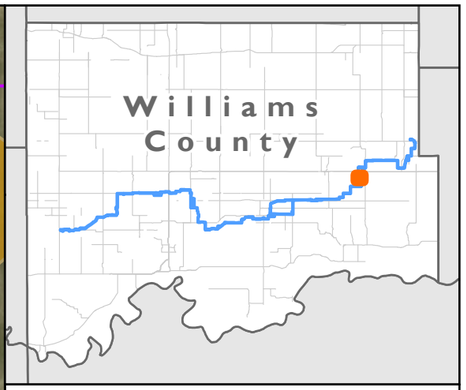

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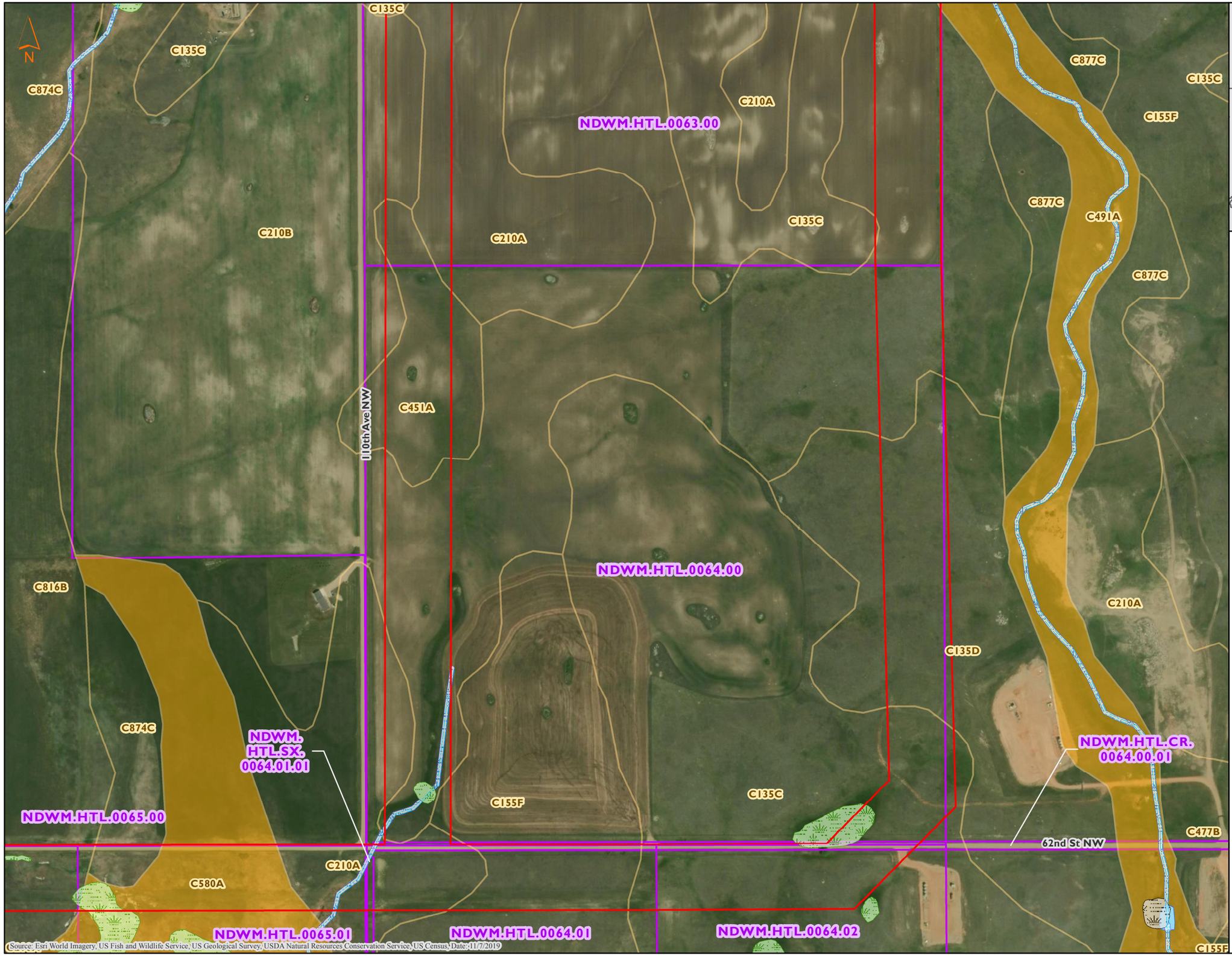

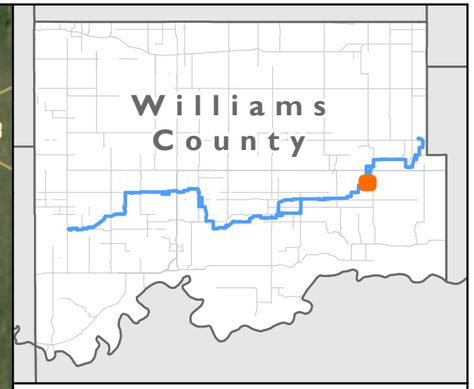

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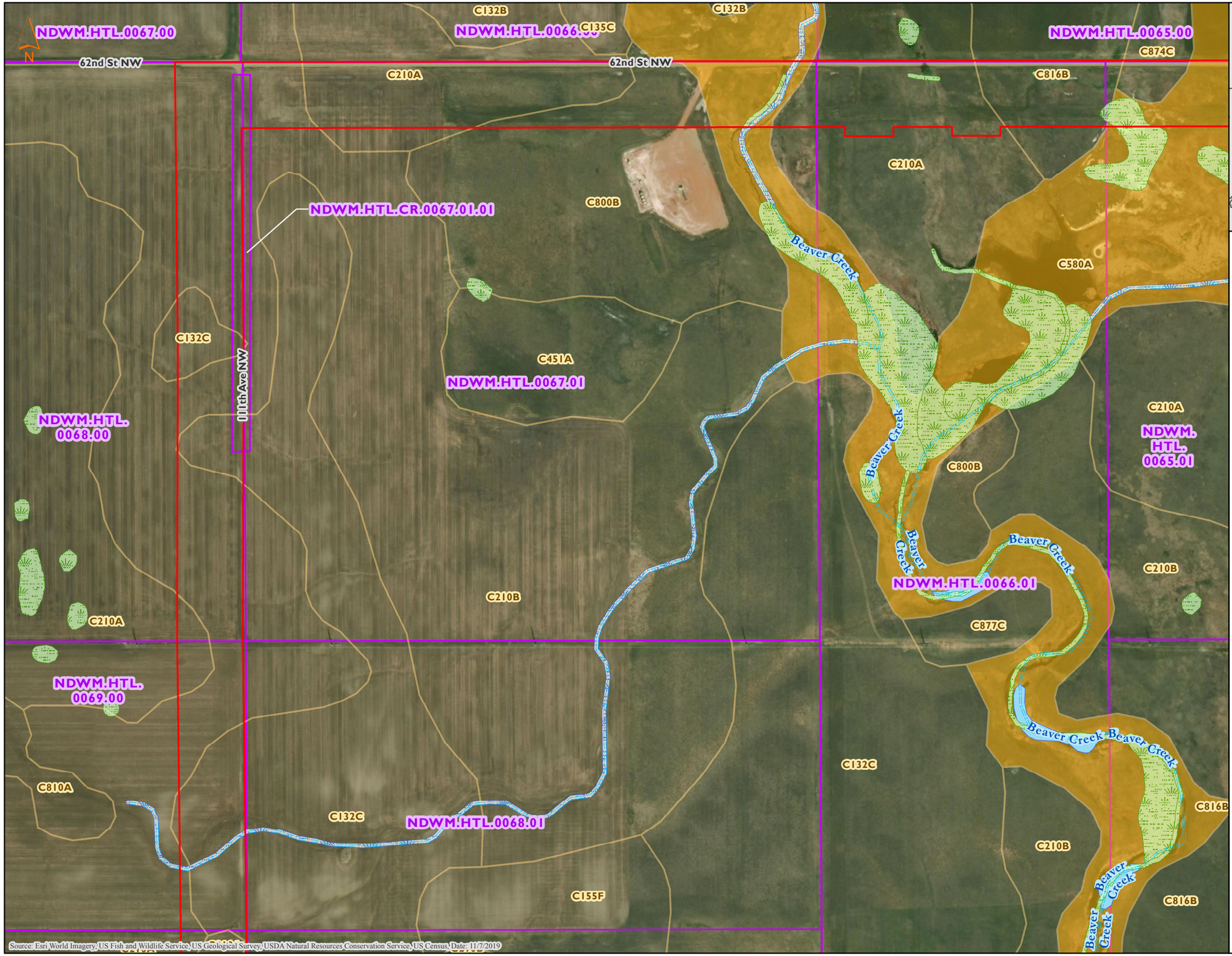

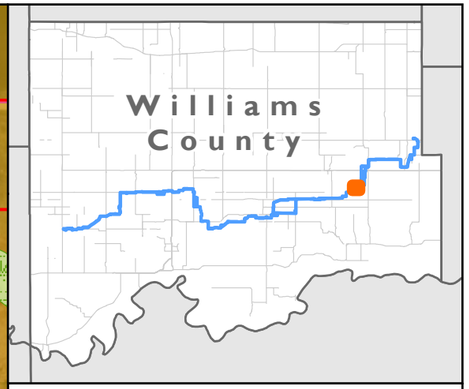

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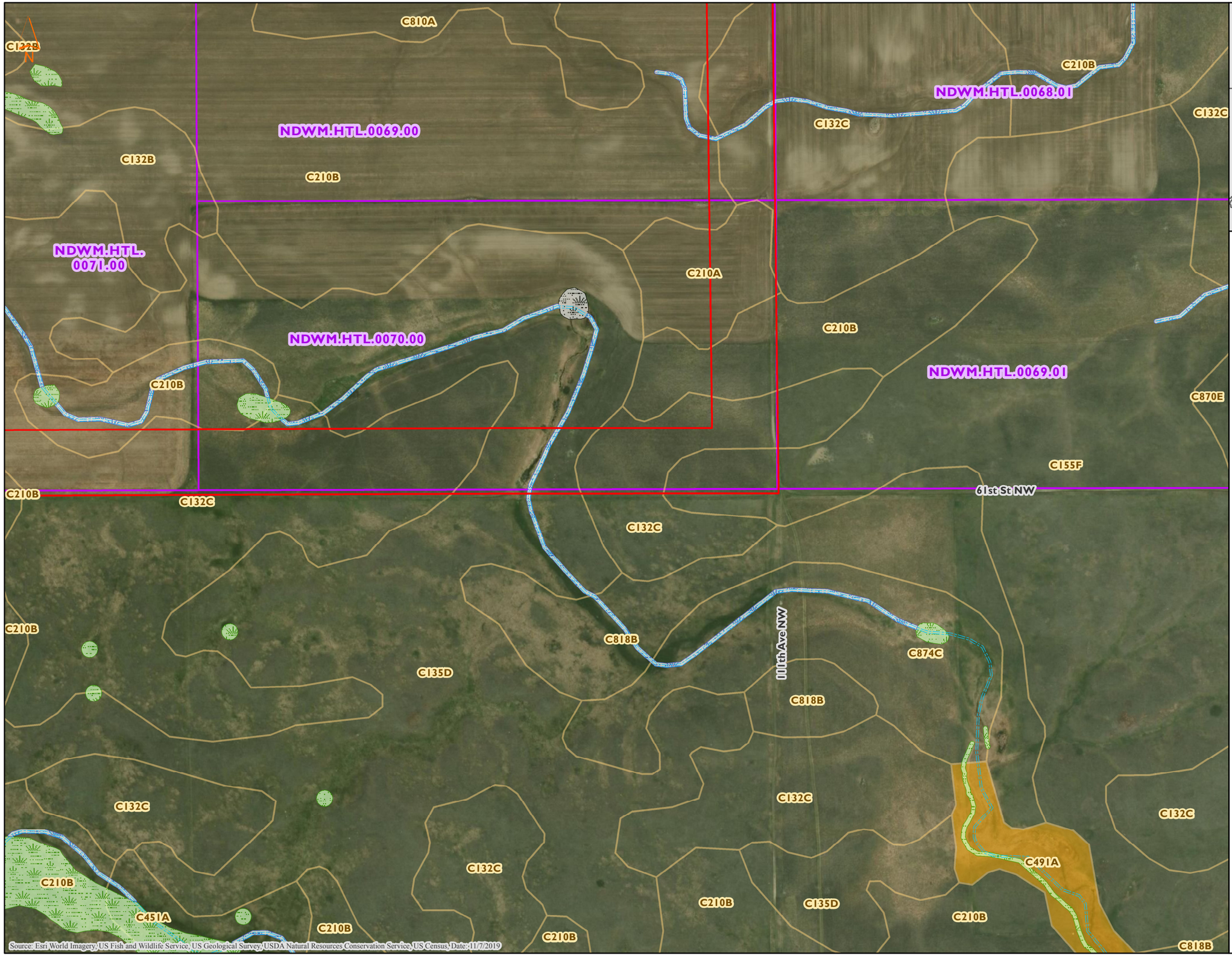

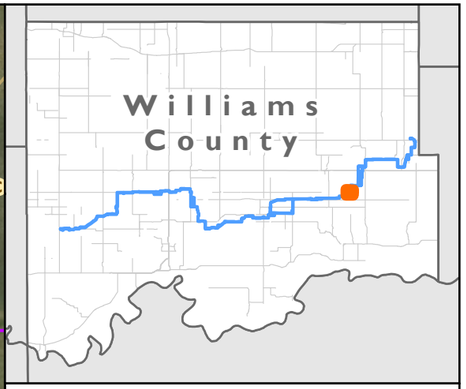

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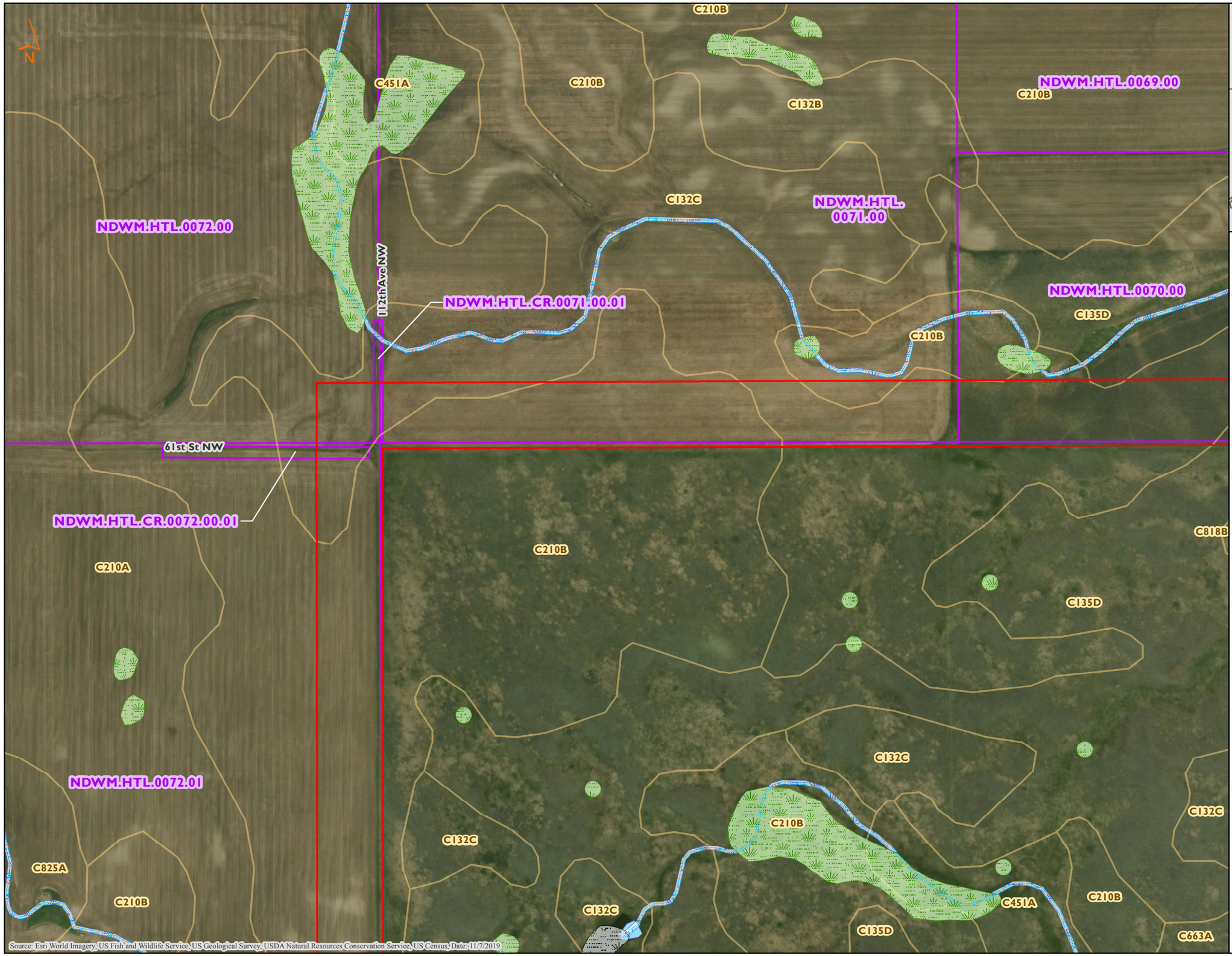

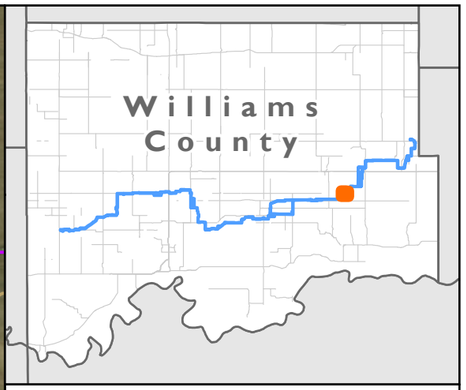

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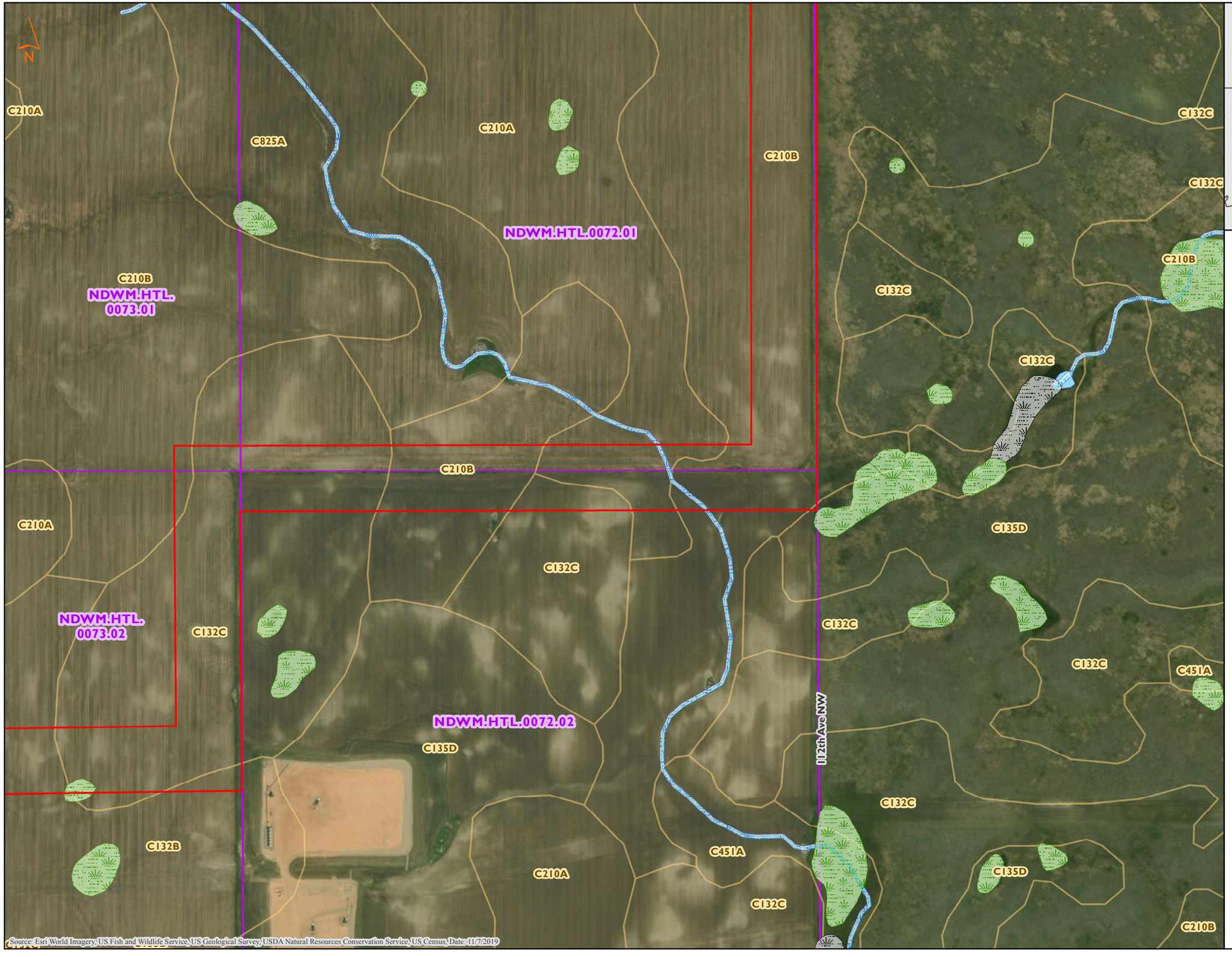



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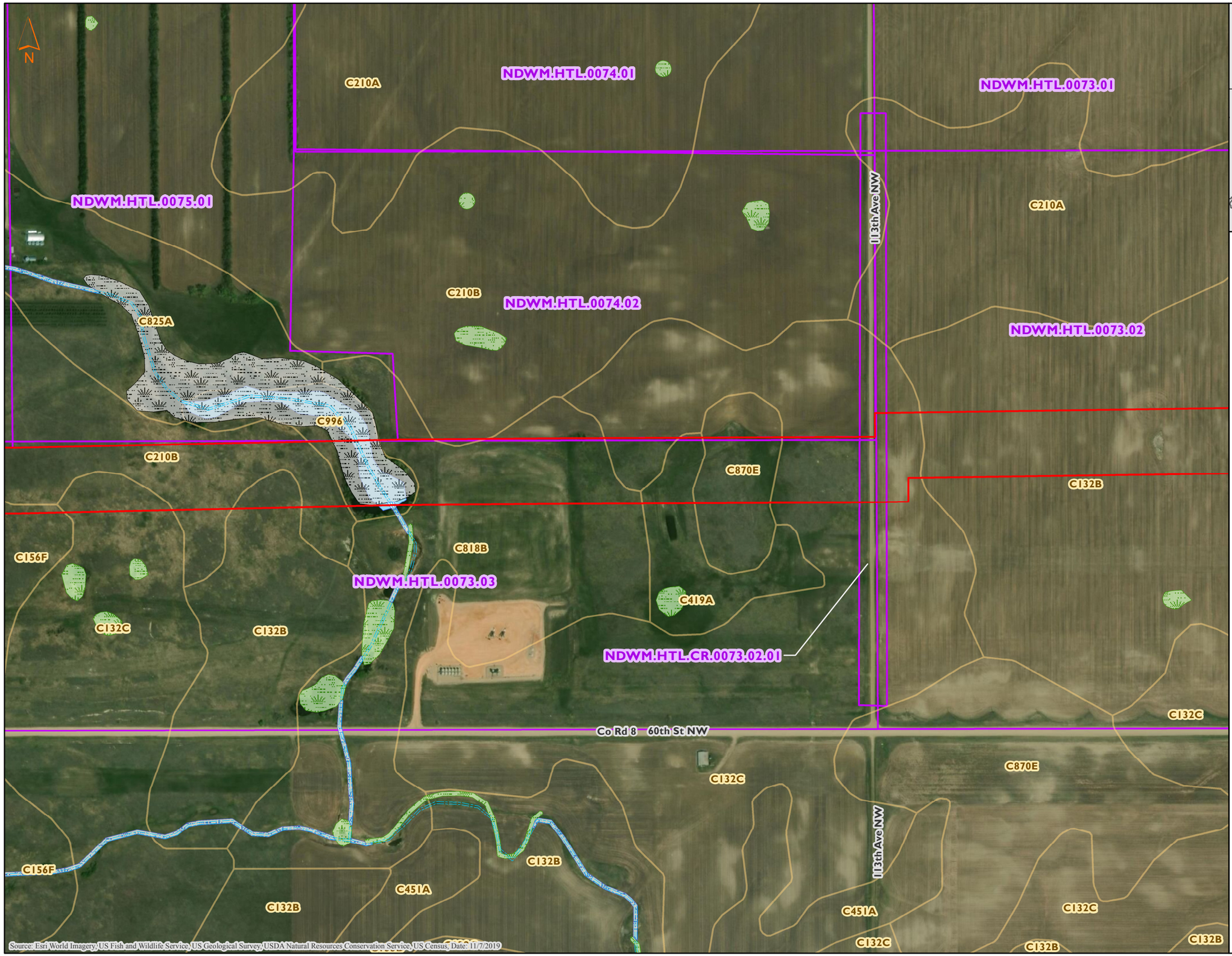

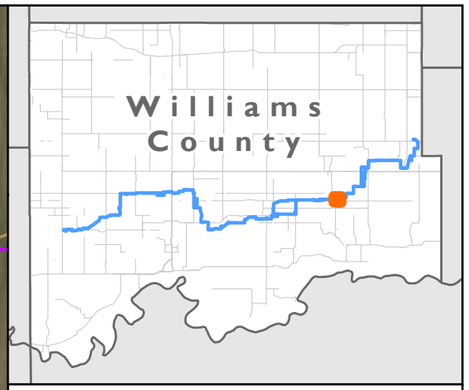

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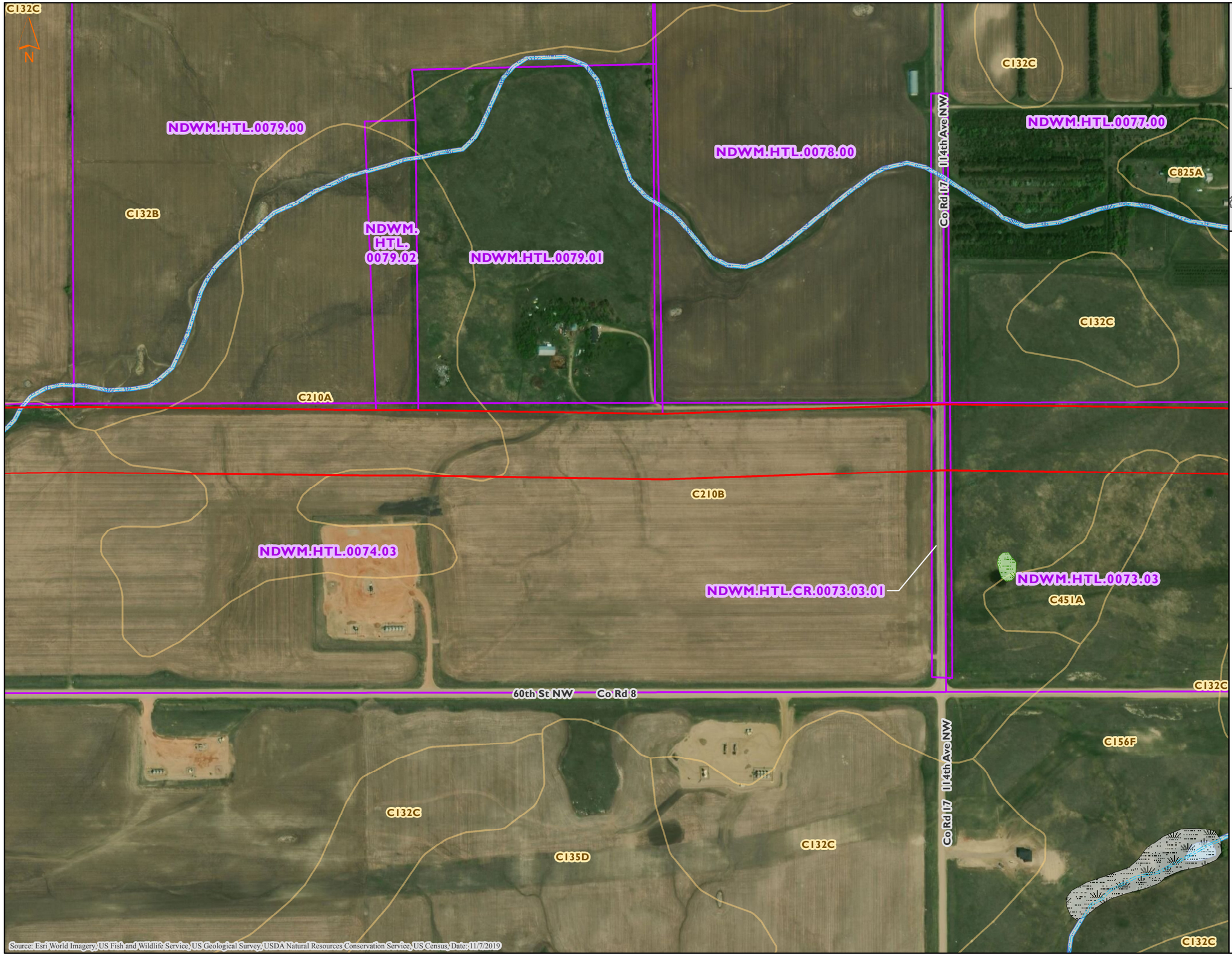

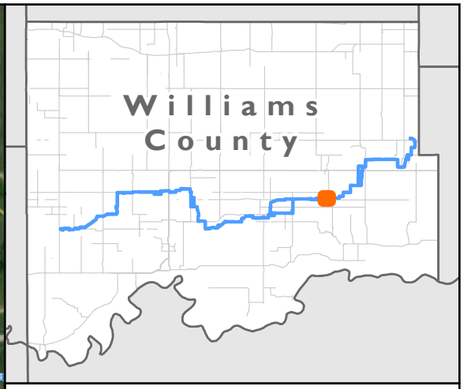

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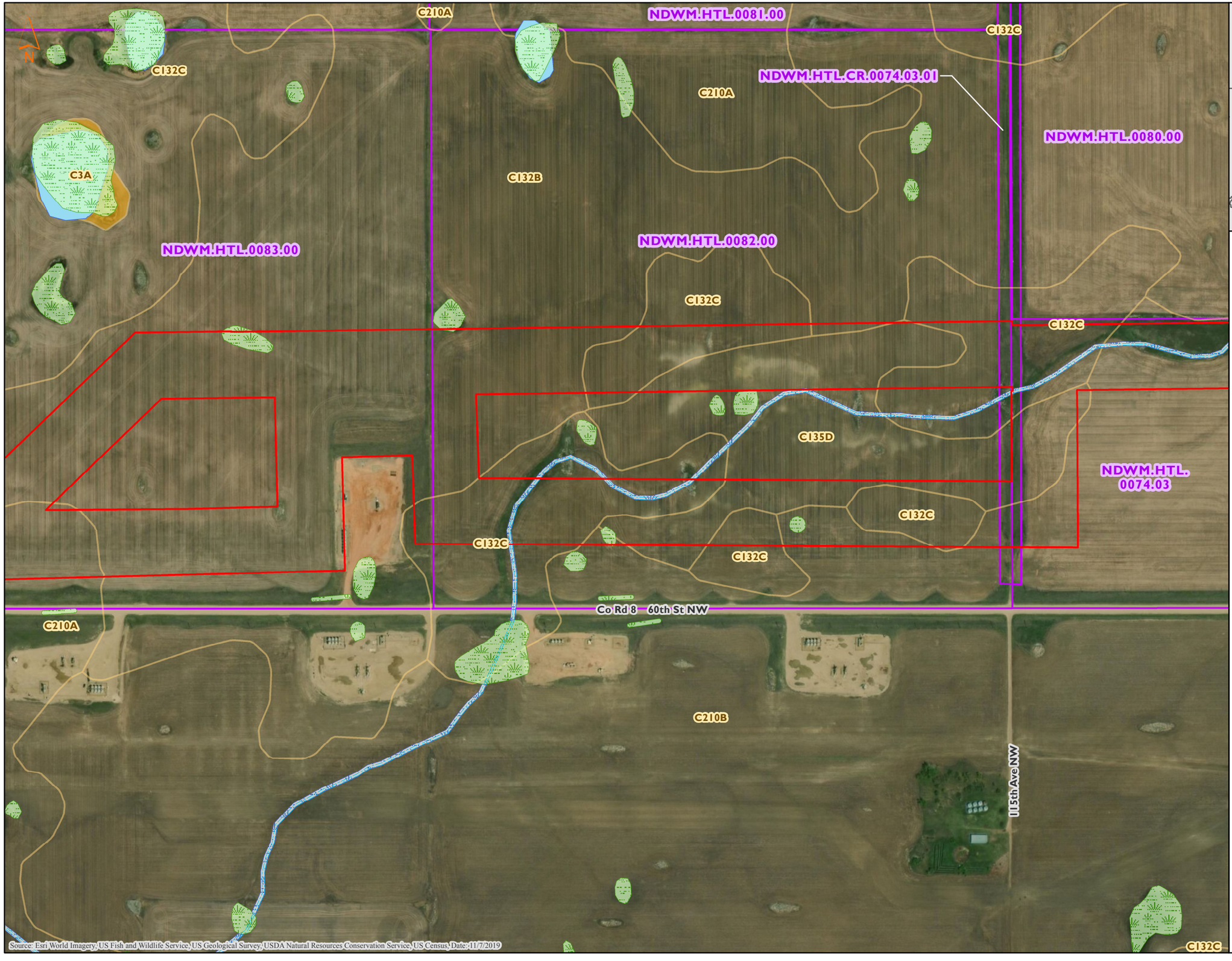

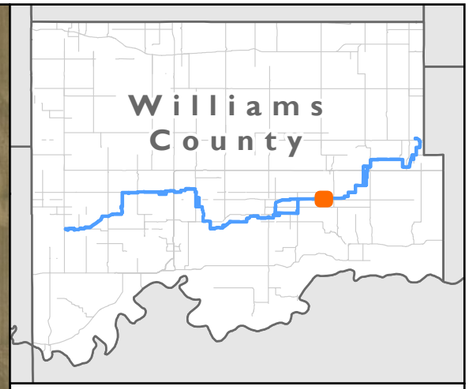

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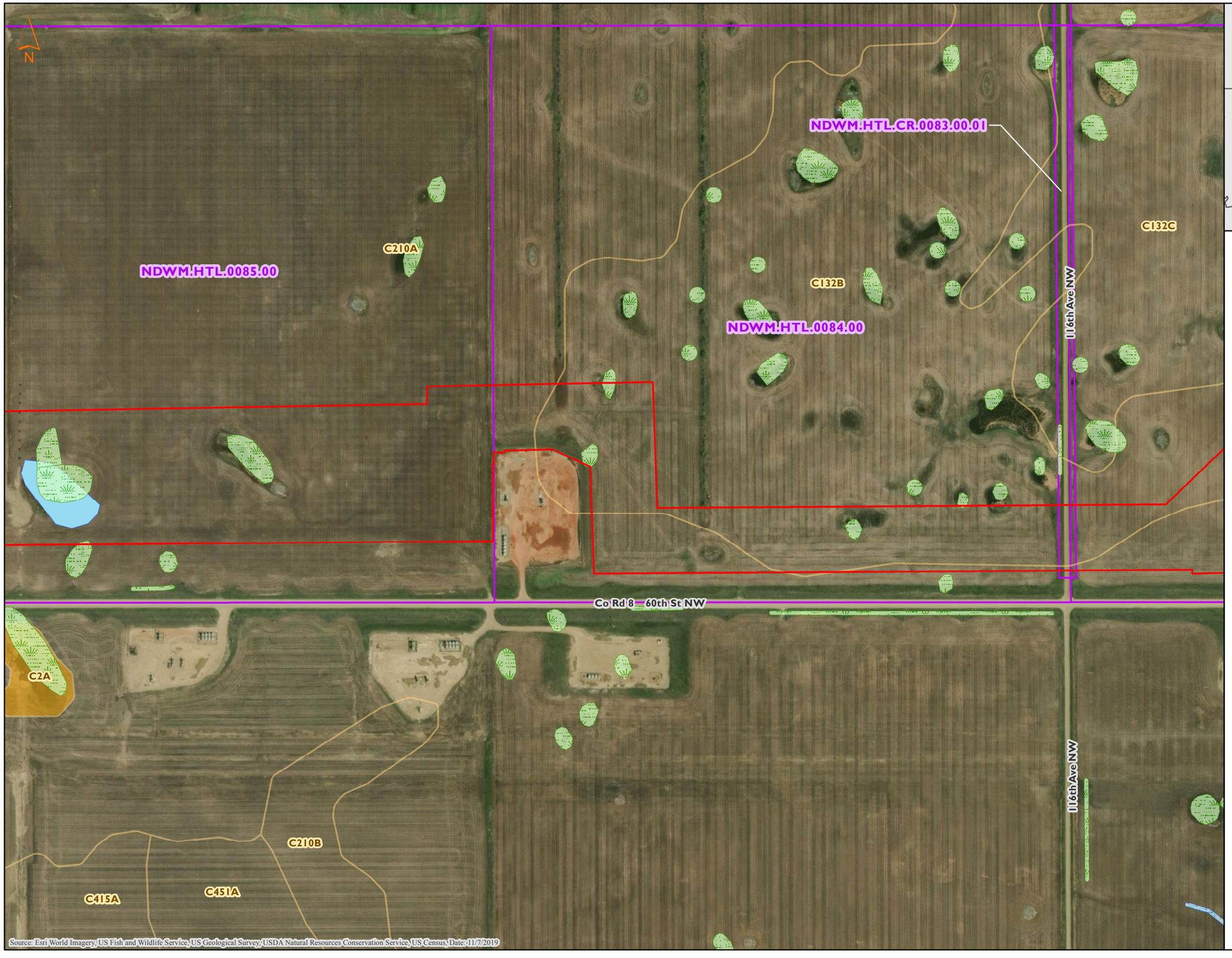

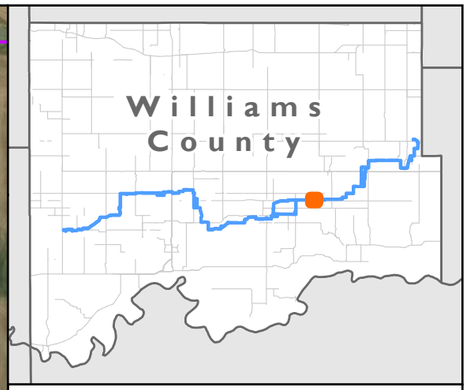

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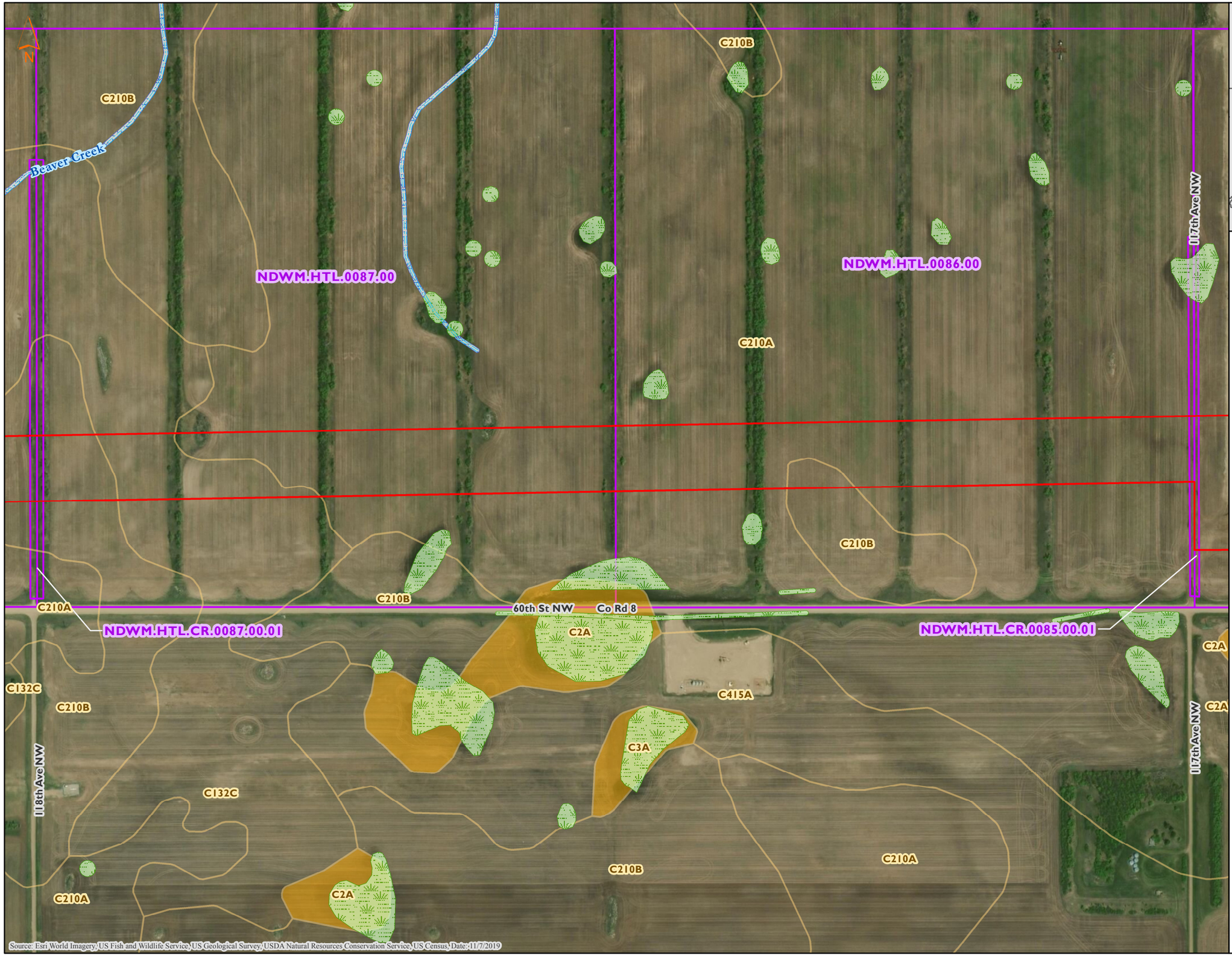



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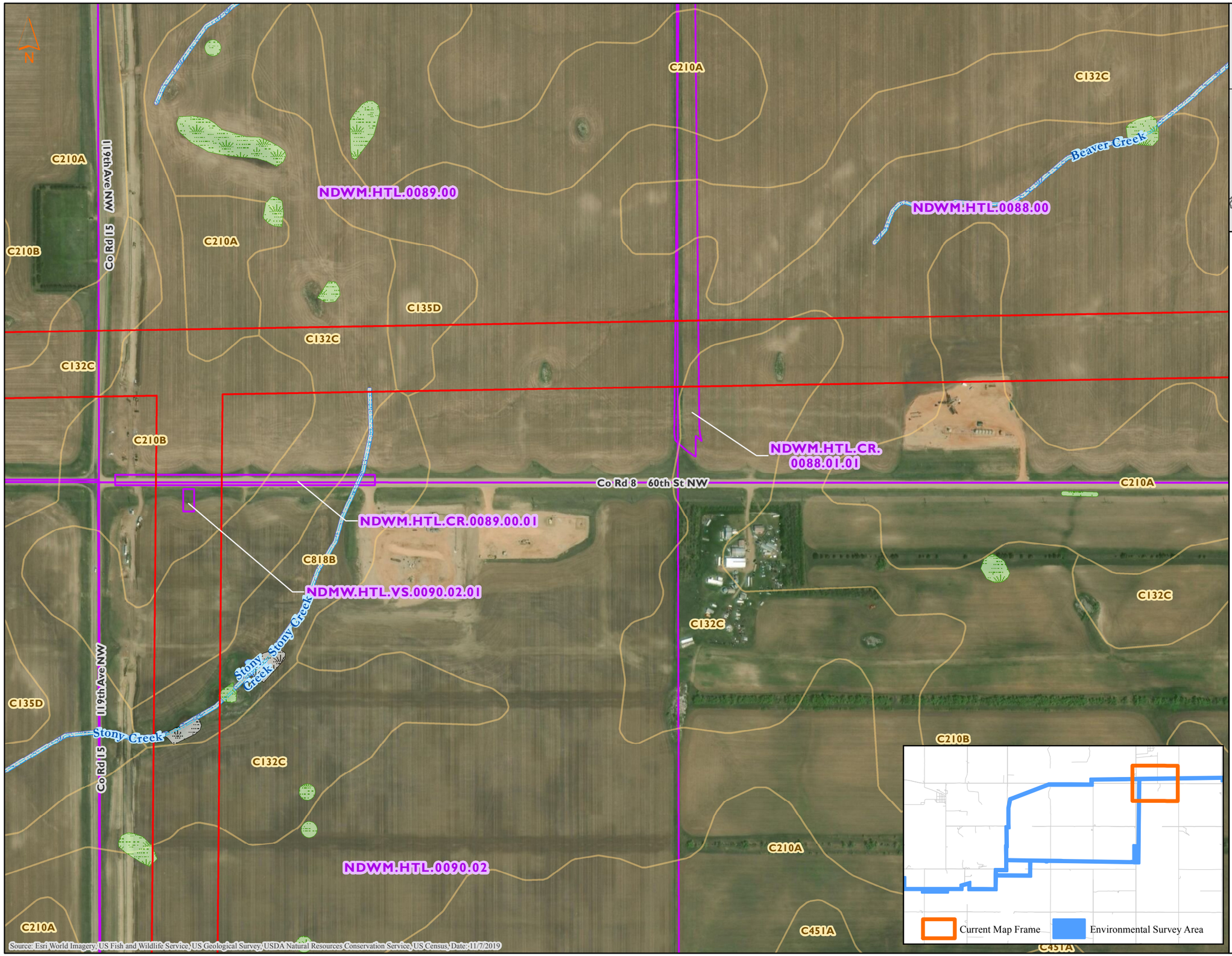



MNR

NHD/NWI Features, SSURGO Soil Units
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

NHD Stream
NHD Waterbody
NWI Wetland - L1/L2
NWI Wetland - PAB
NWI Wetland - PEM
NWI Wetland - PFO
NWI Wetland - PSS
NWI Wetland - PUB
NWI Wetland - Riverine
Hydric Soil
Non-Hydric Soil
Environmental Survey Area
Tract

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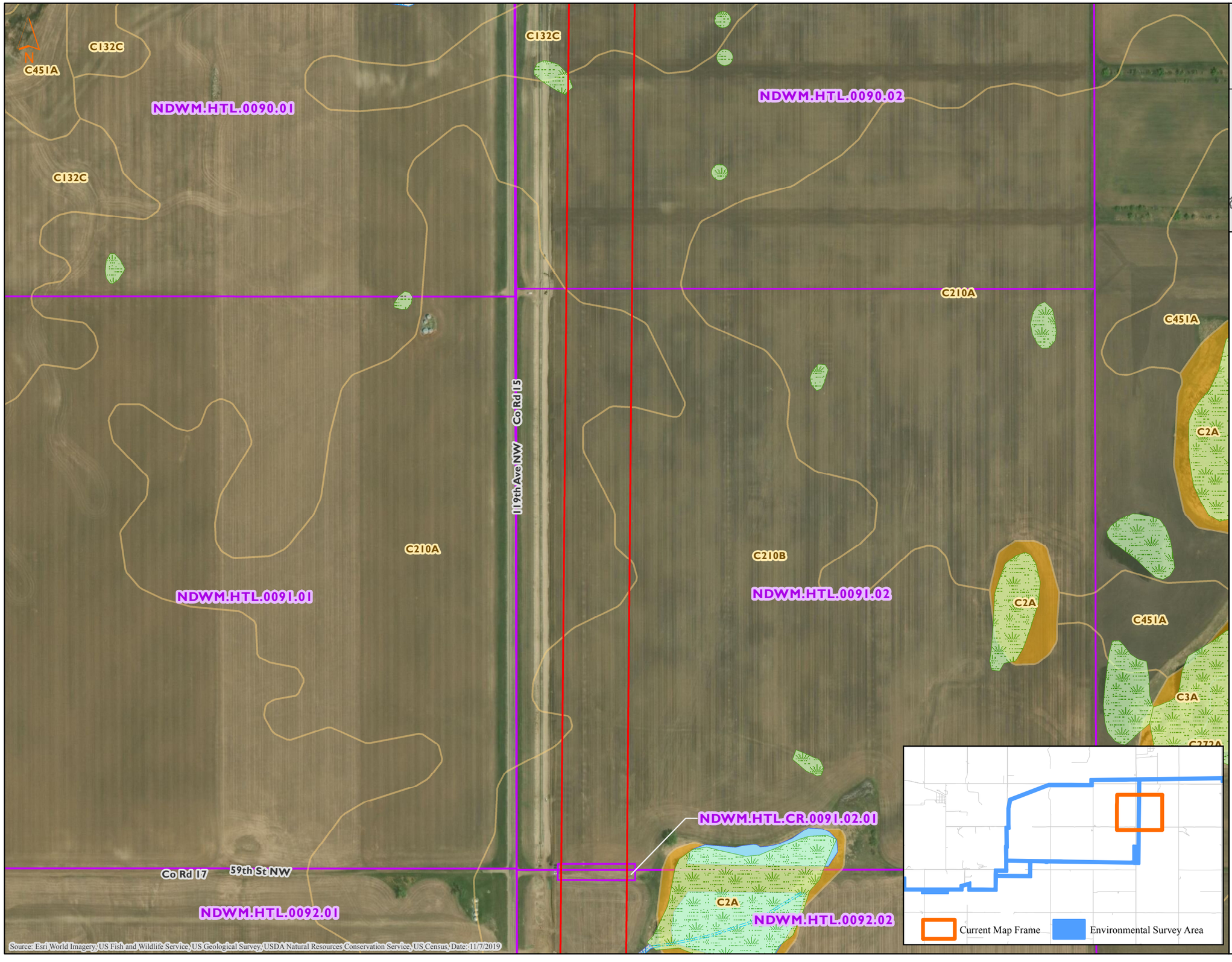
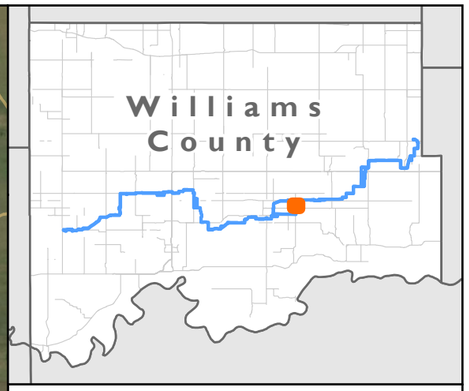
Feet





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NHD/NWI Features, SSURGO Soil Units
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ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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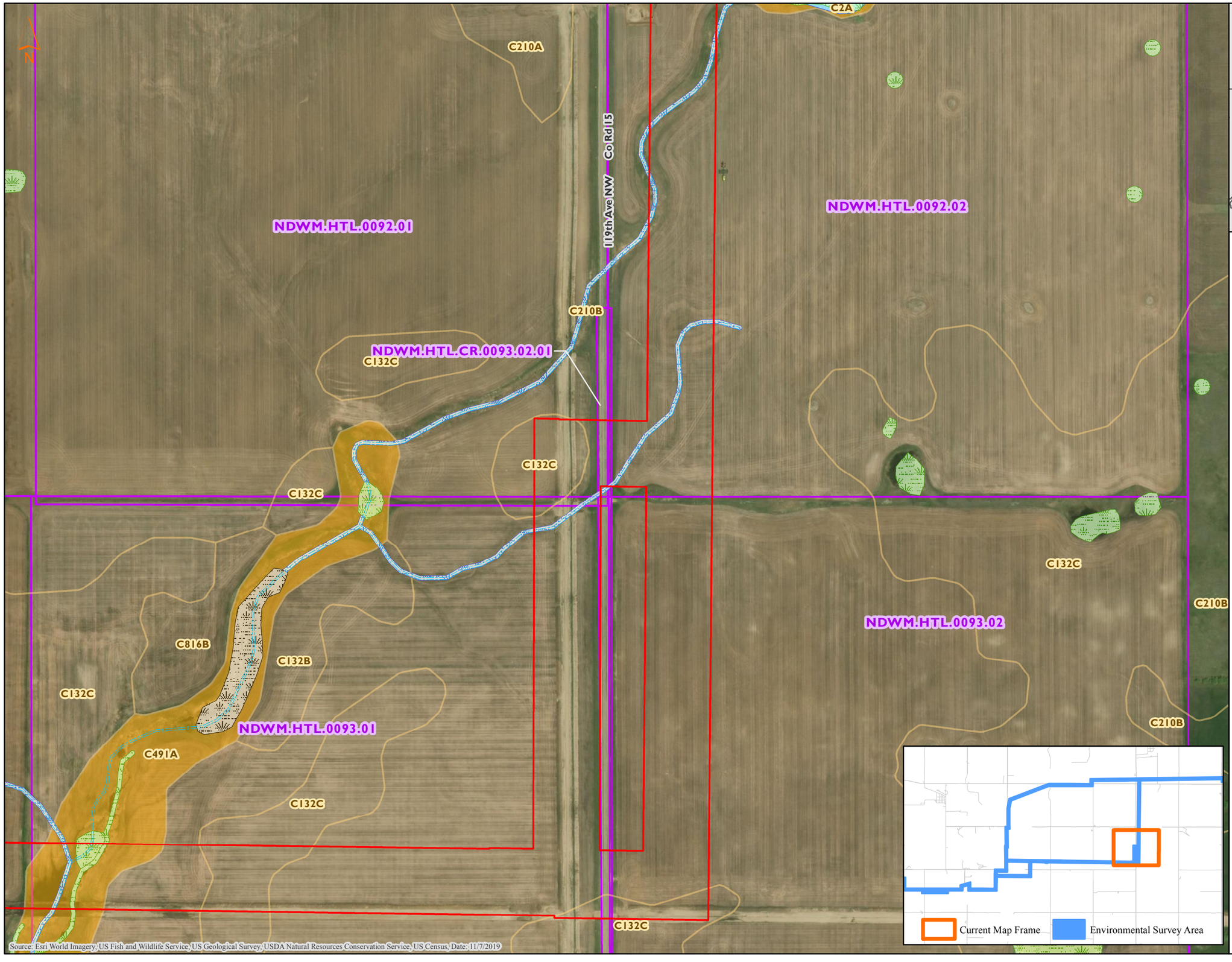

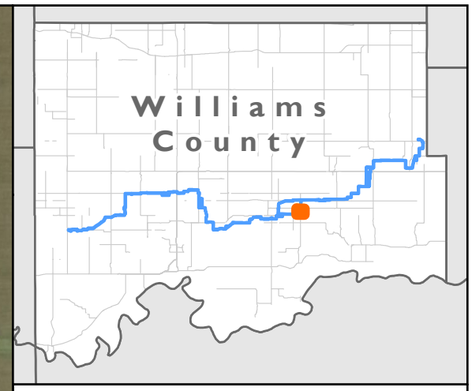

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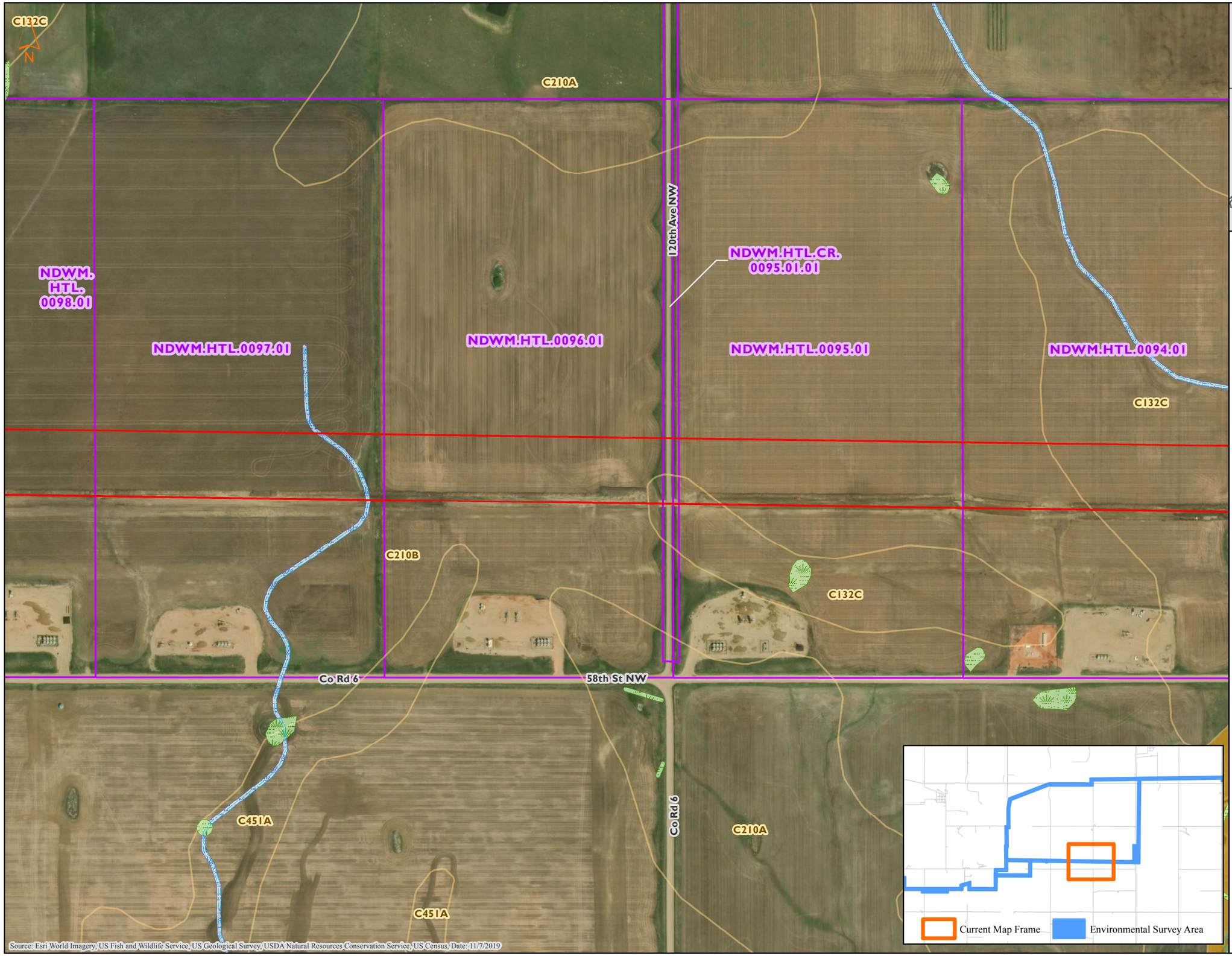

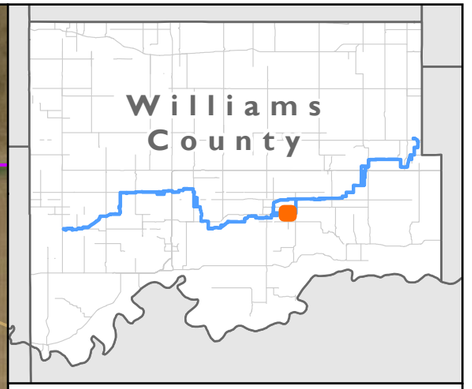

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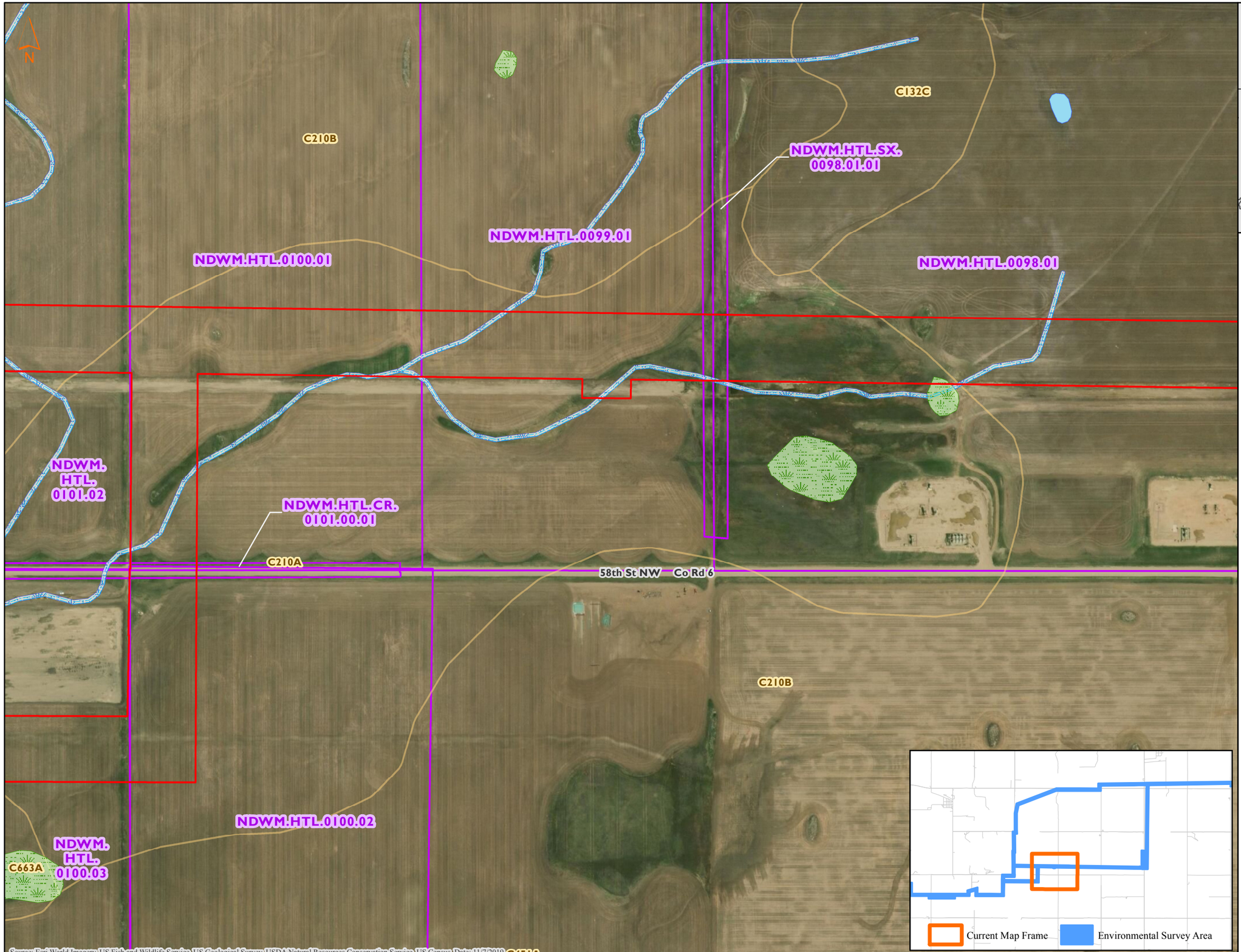

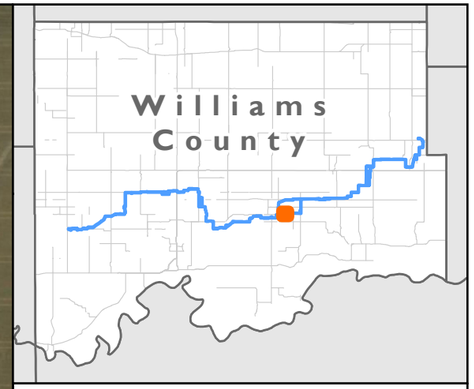

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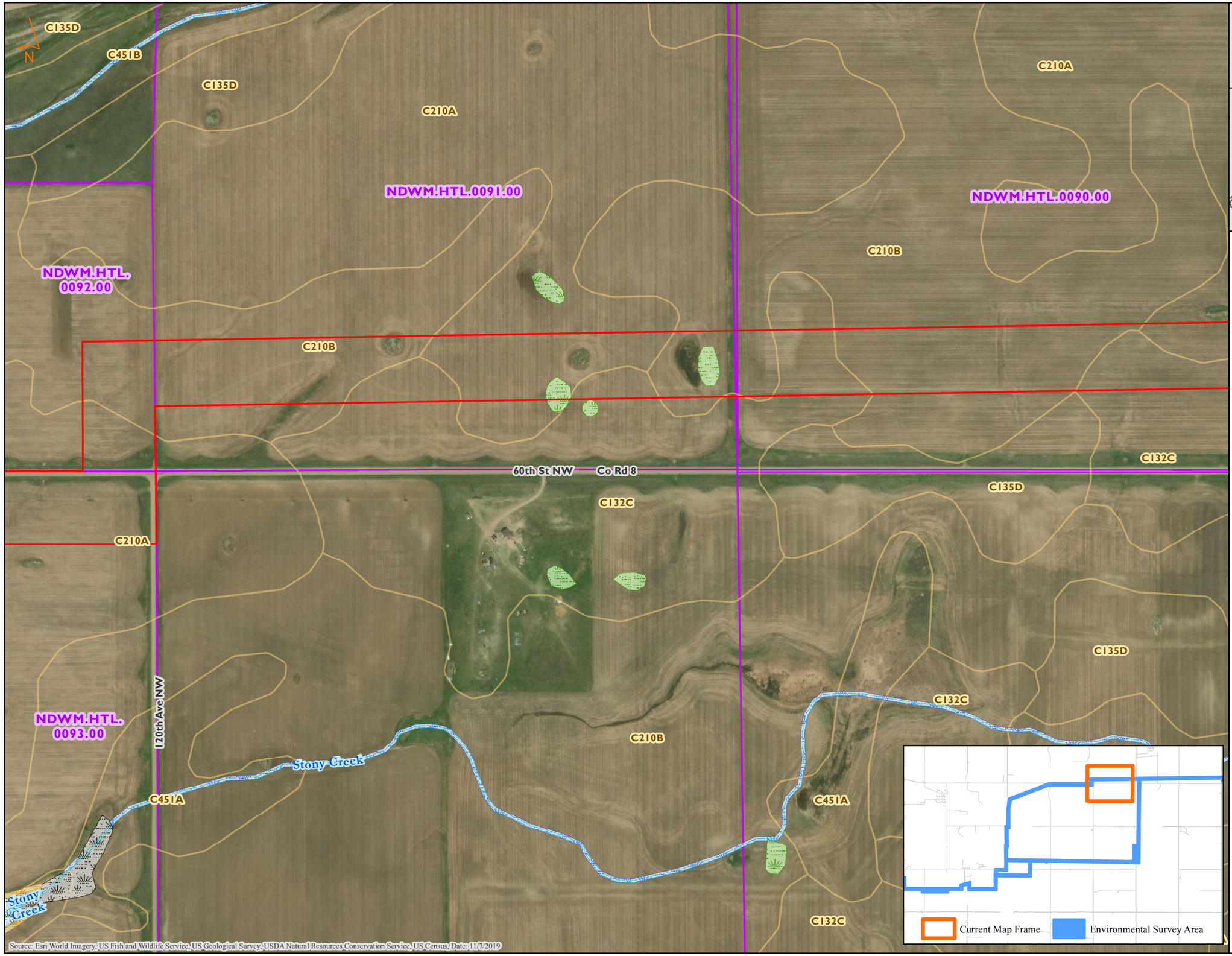



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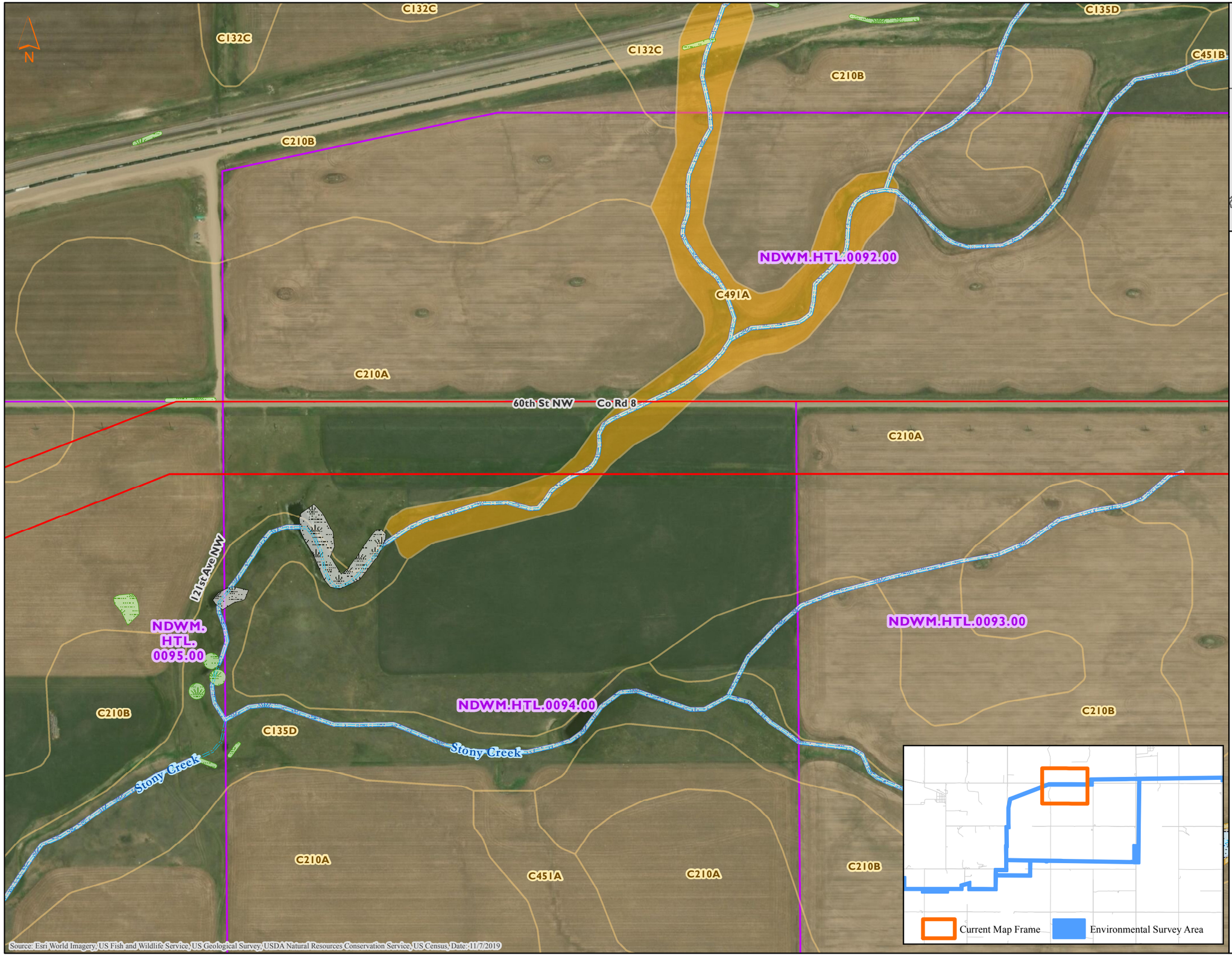



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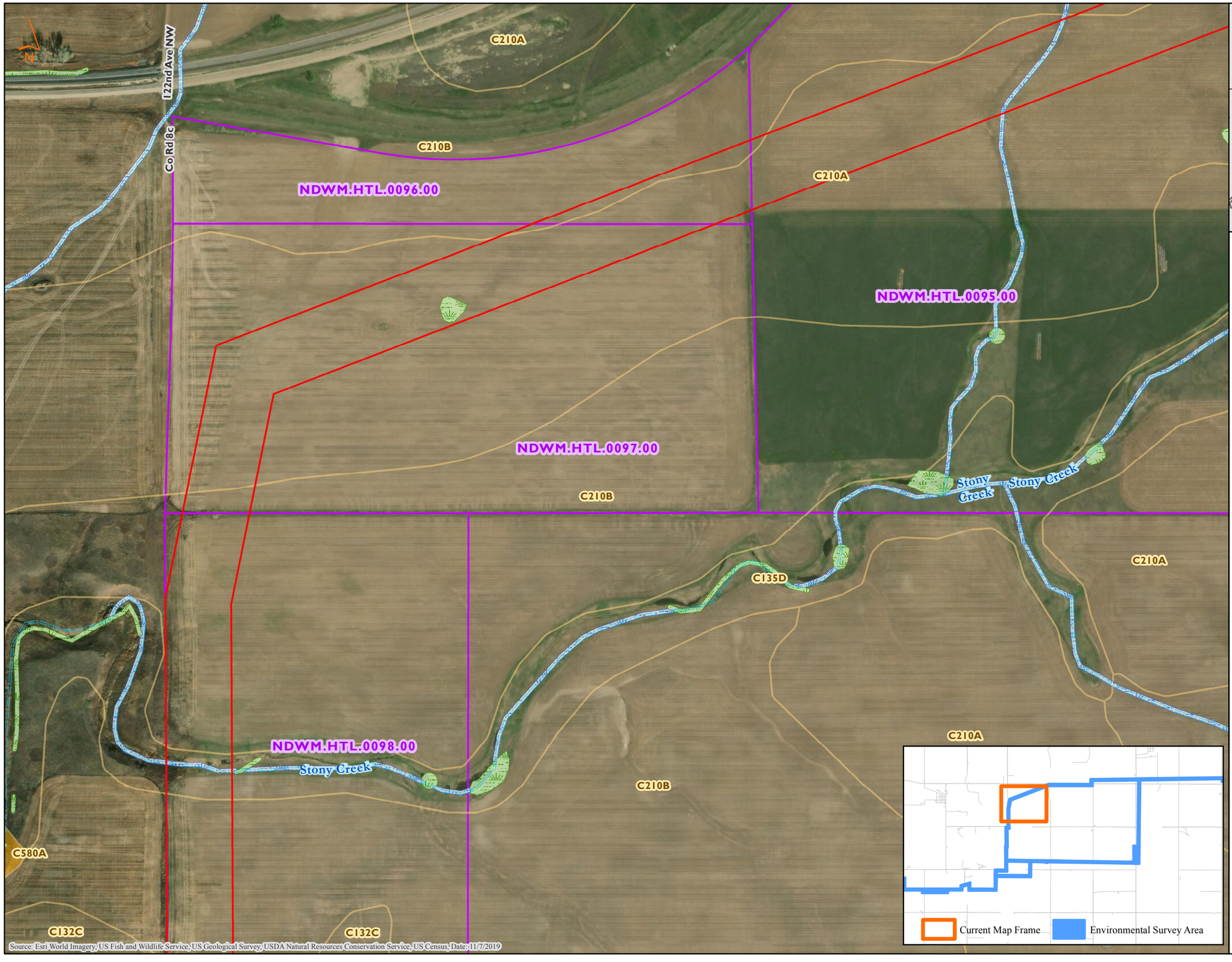

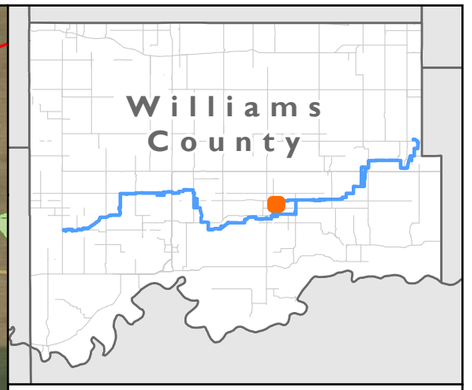

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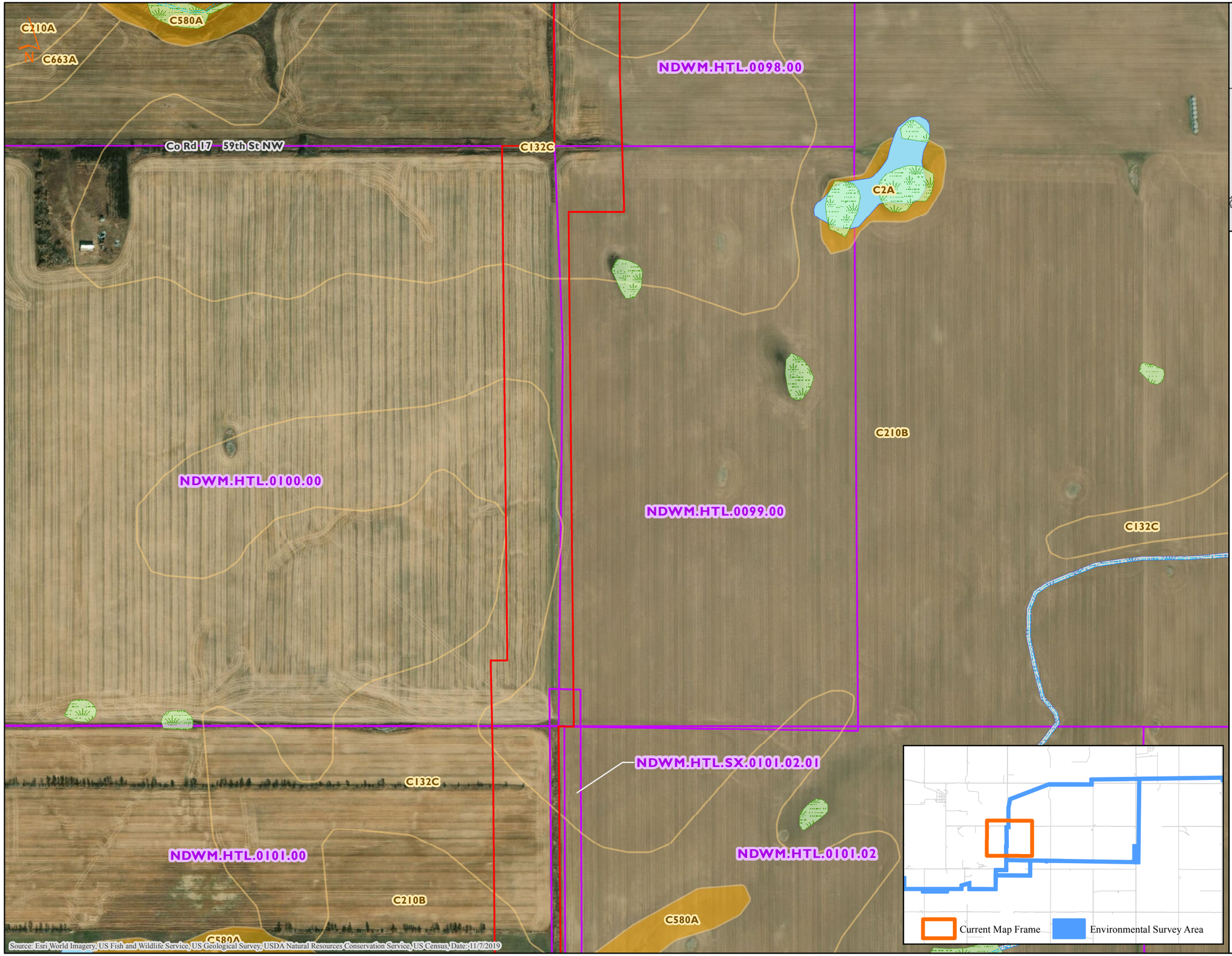



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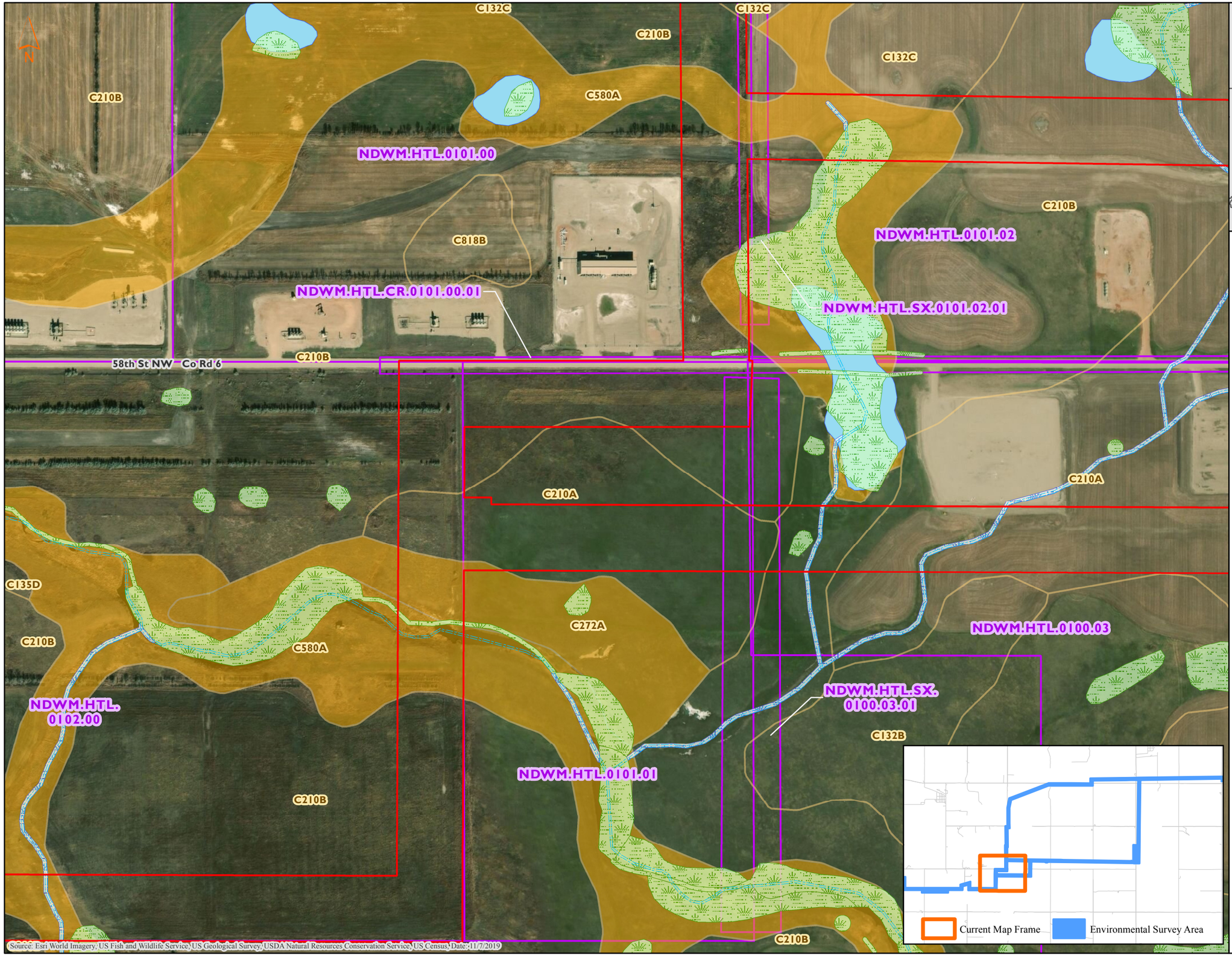

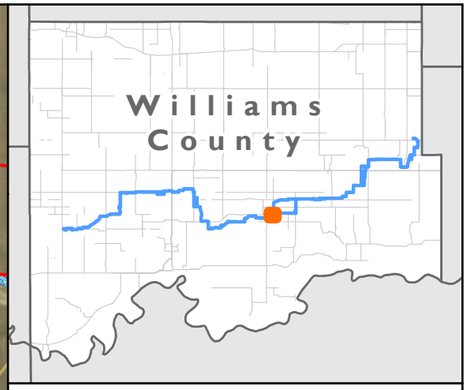

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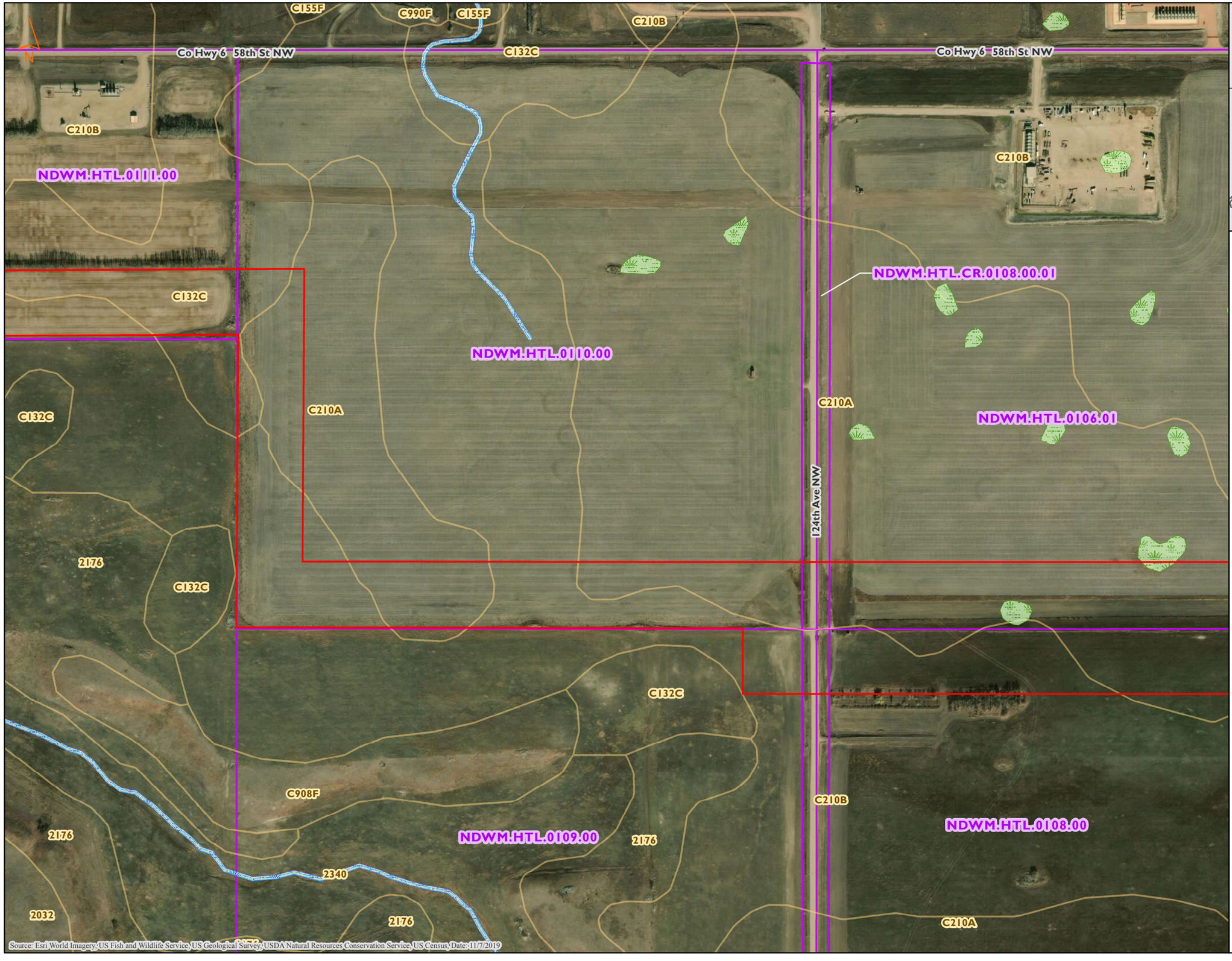



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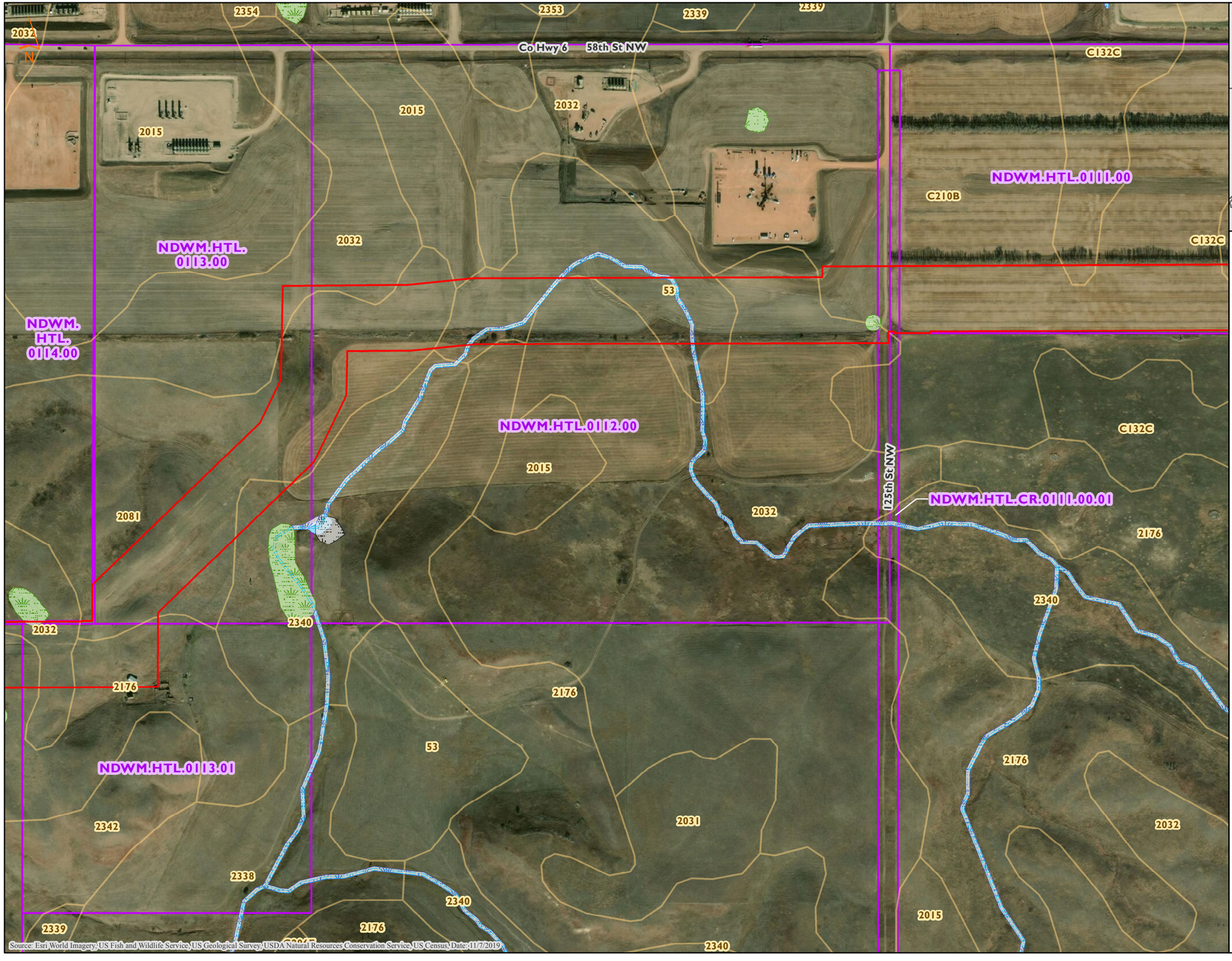

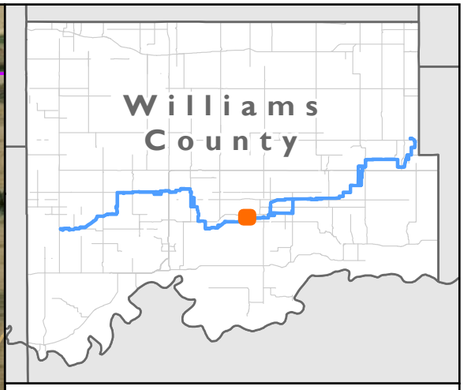

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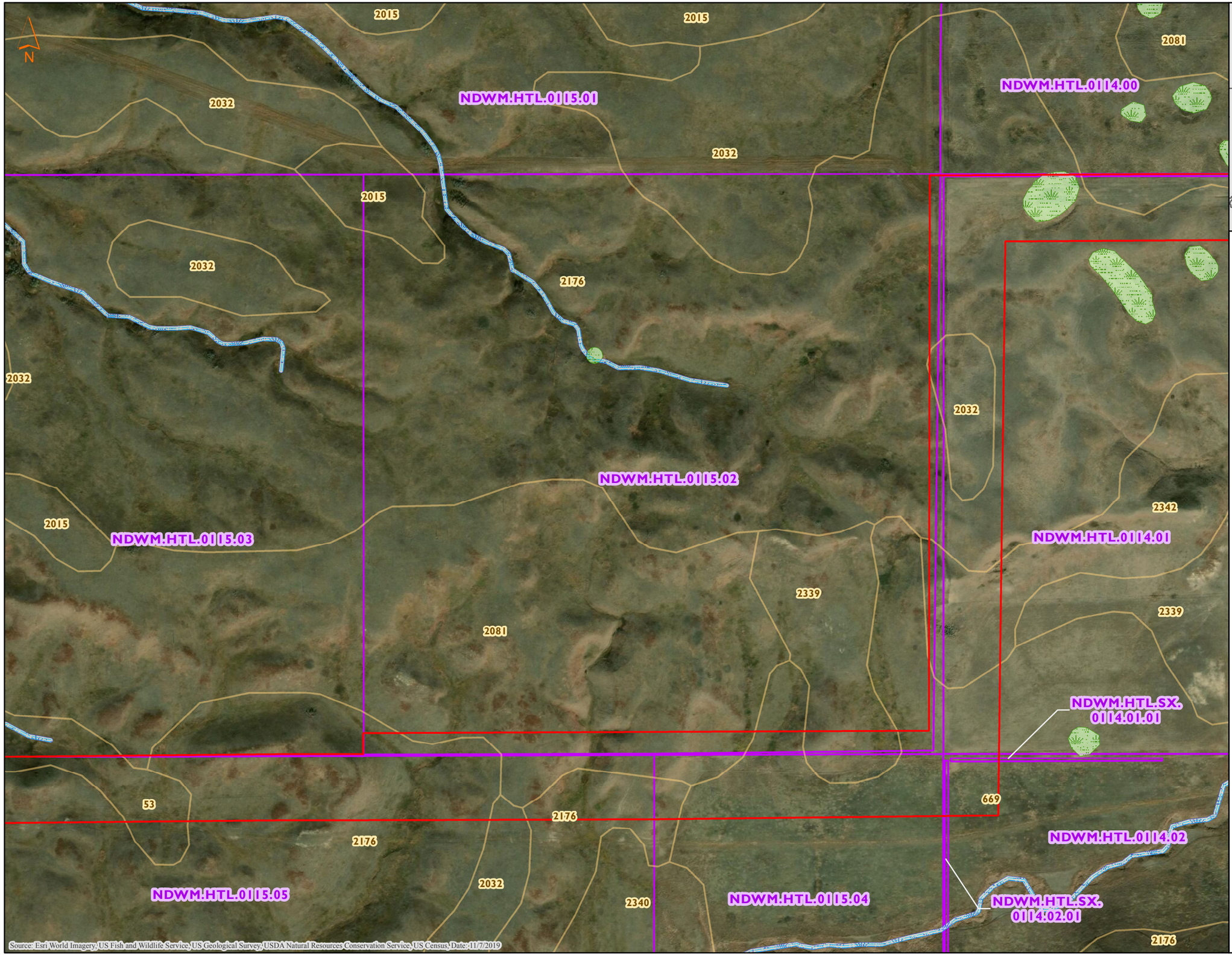

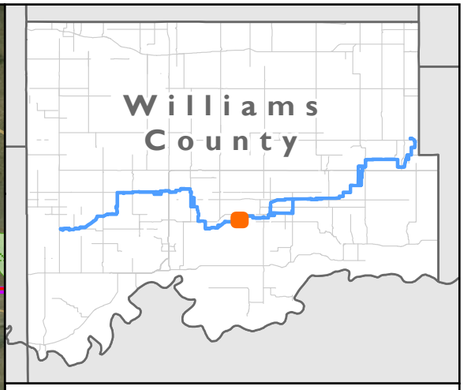

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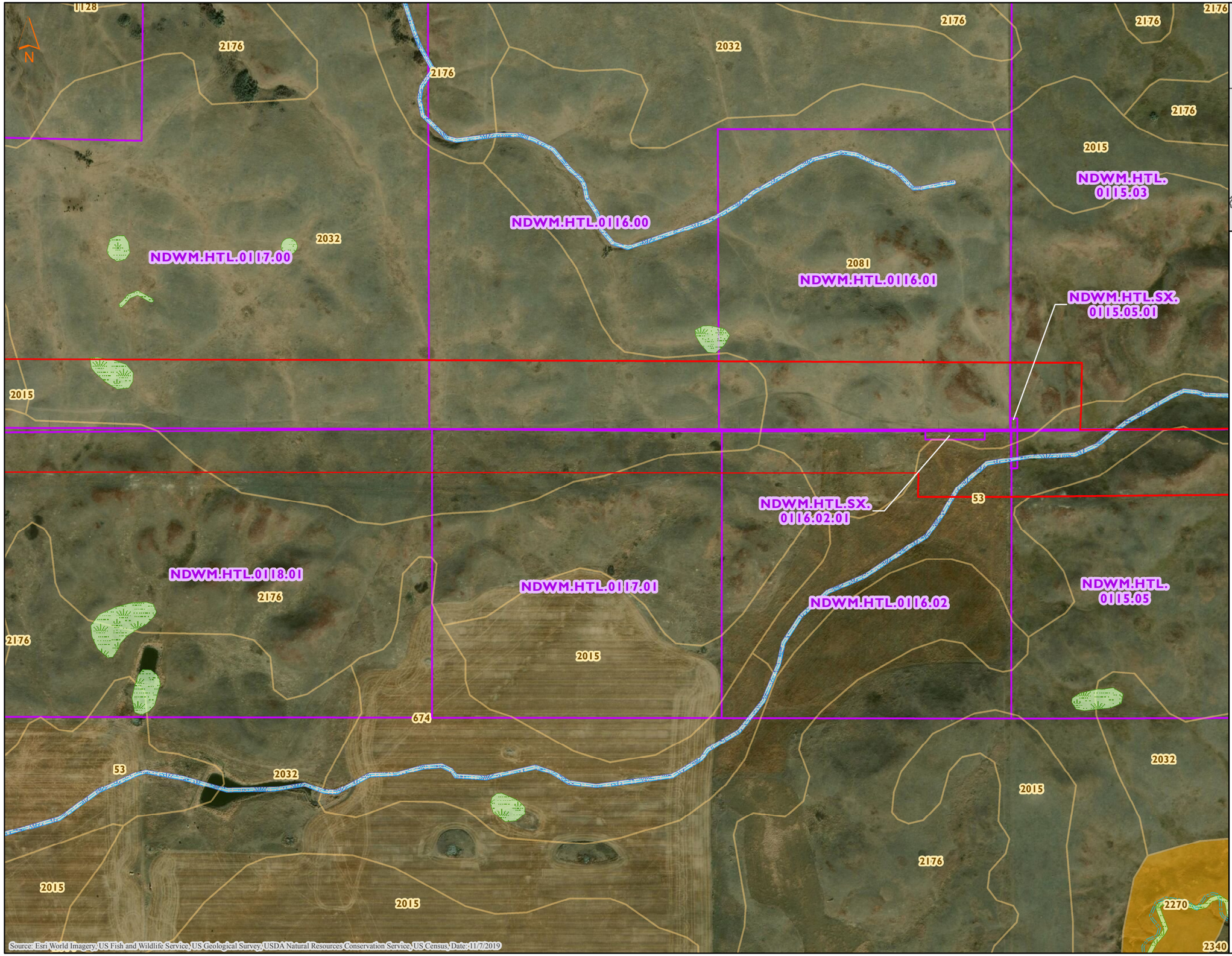



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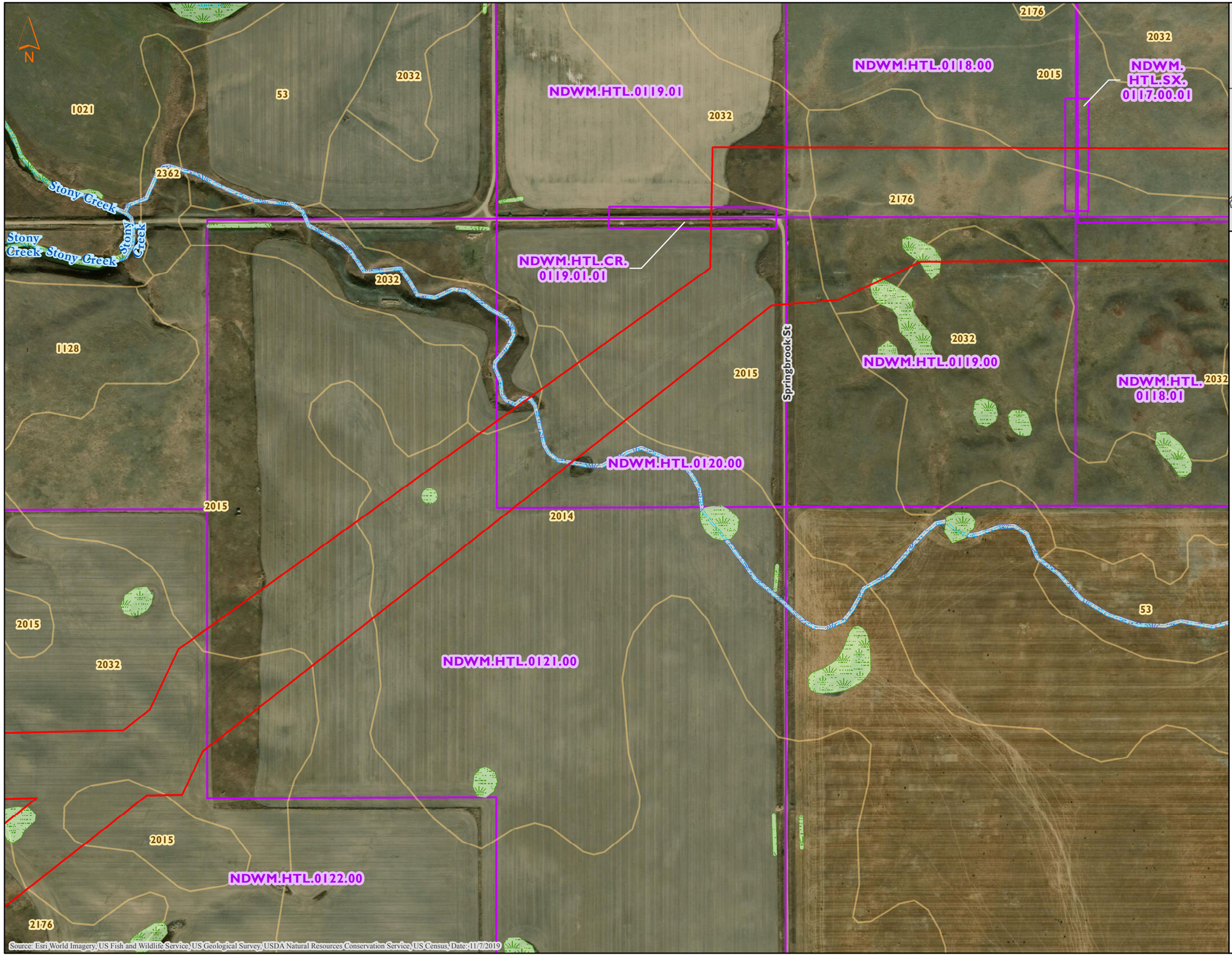



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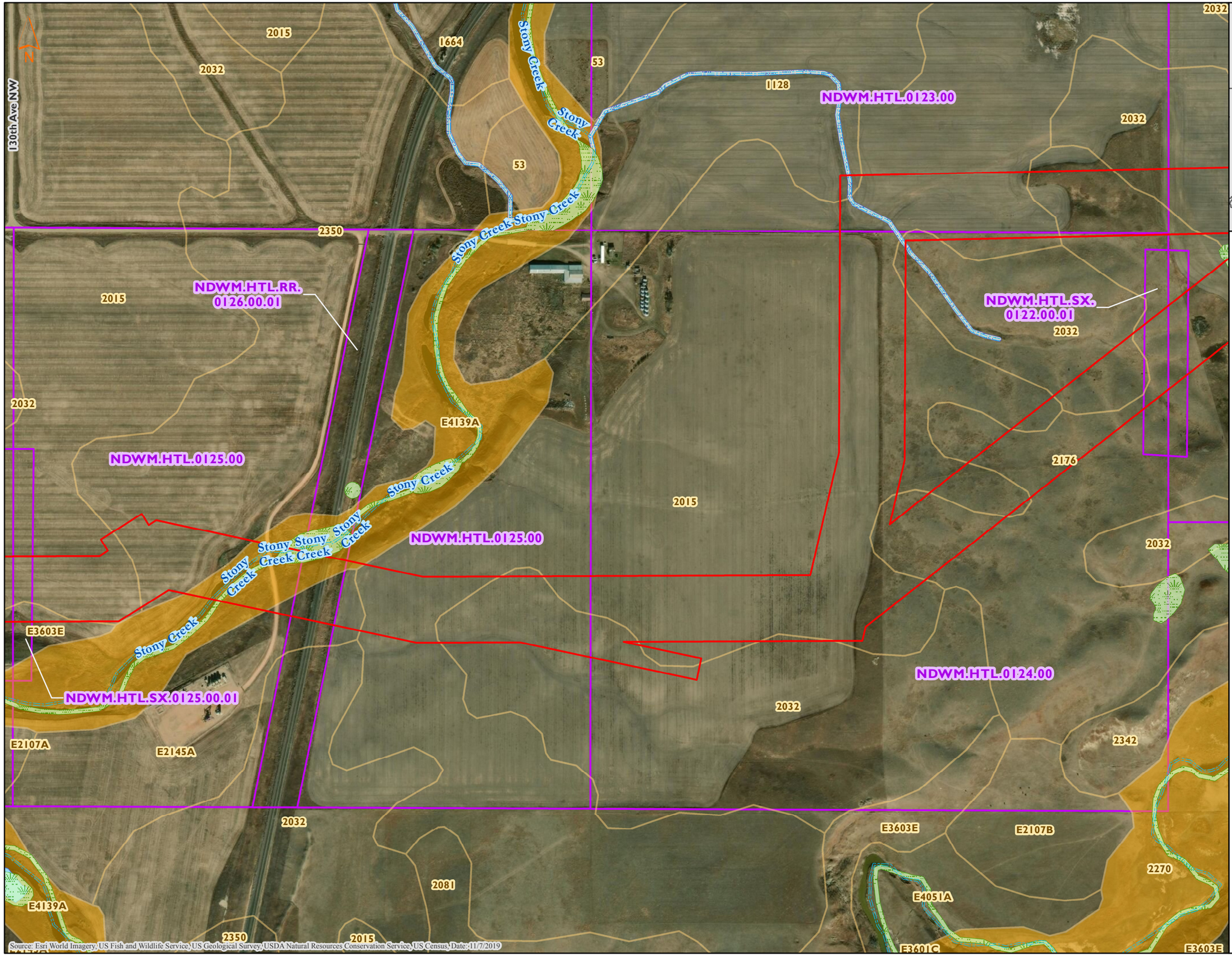



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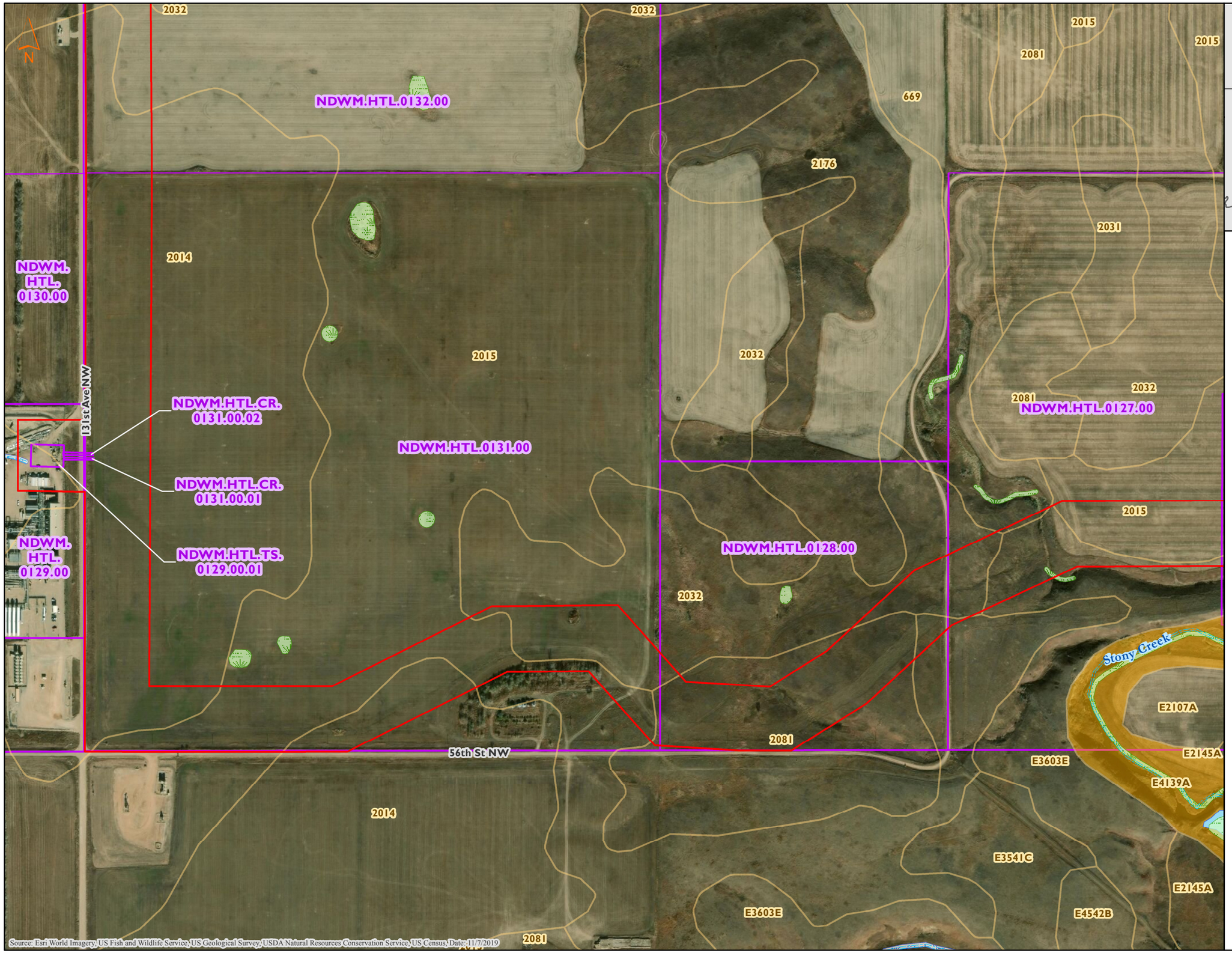

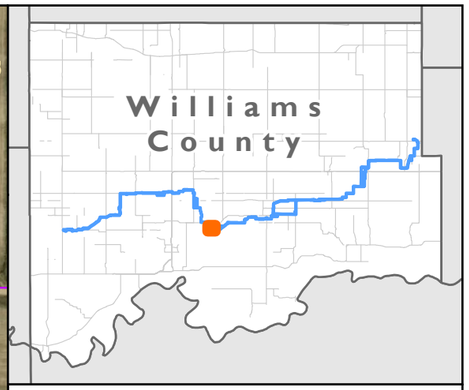

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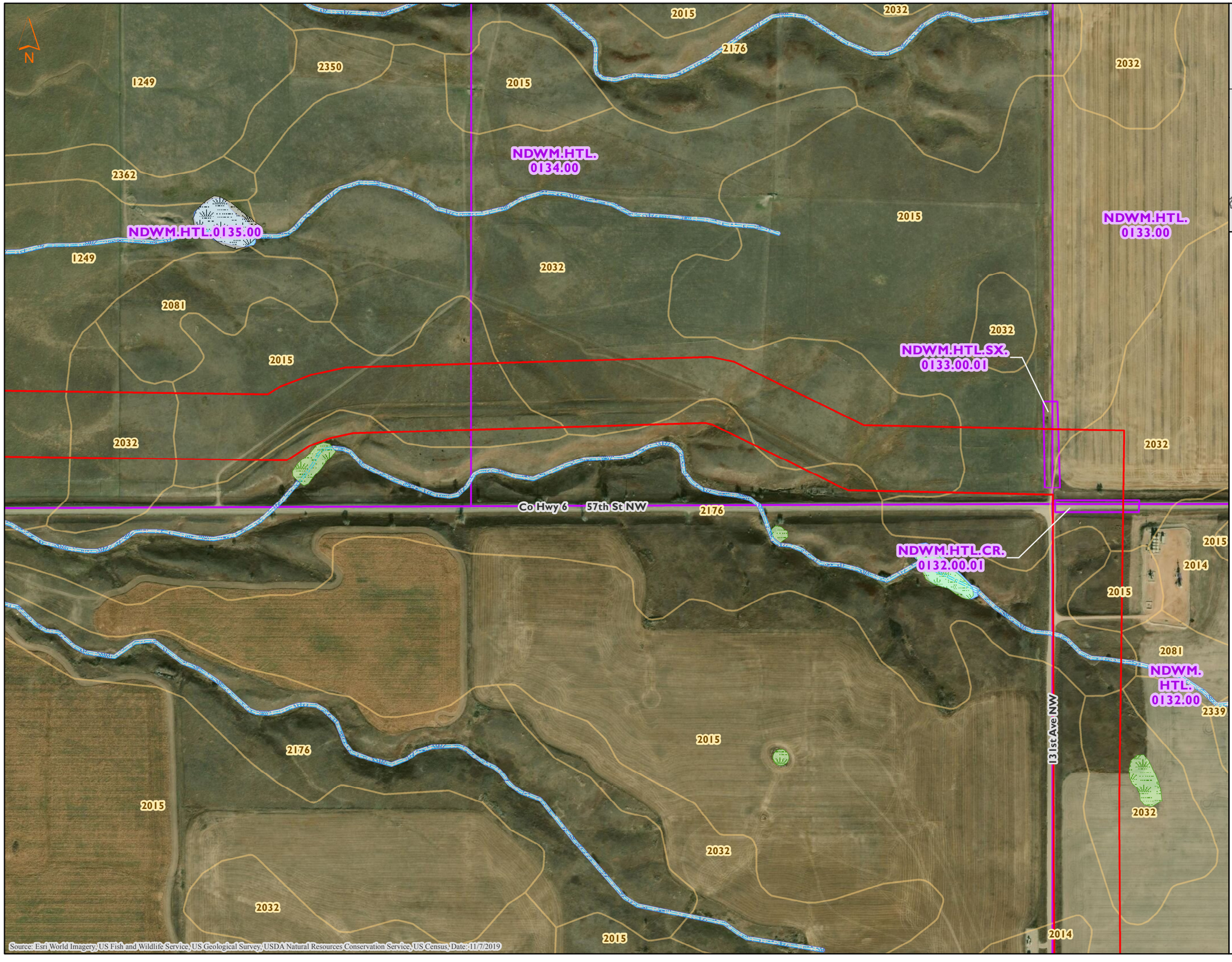

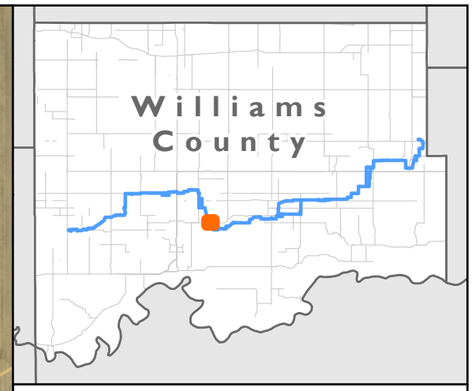

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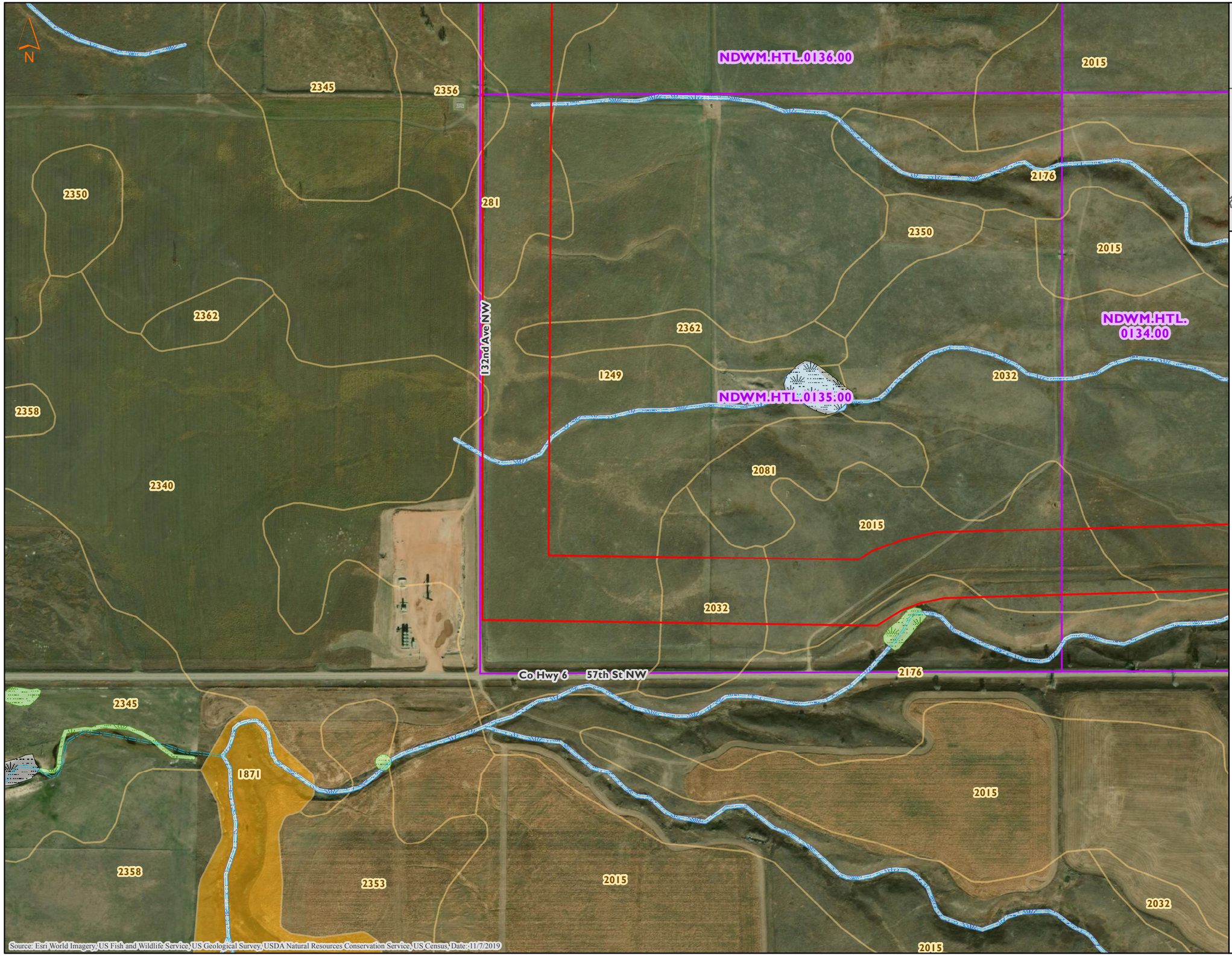



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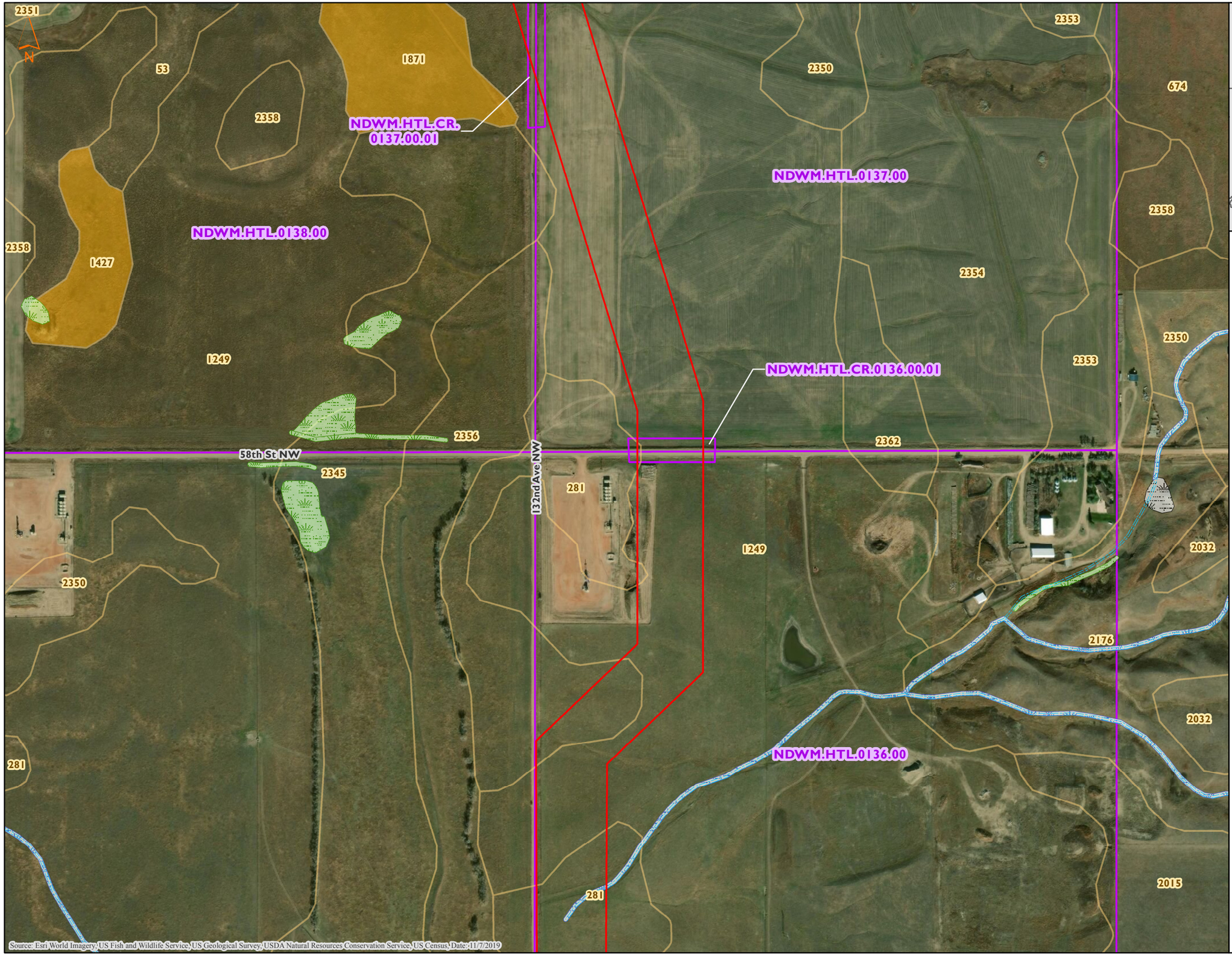

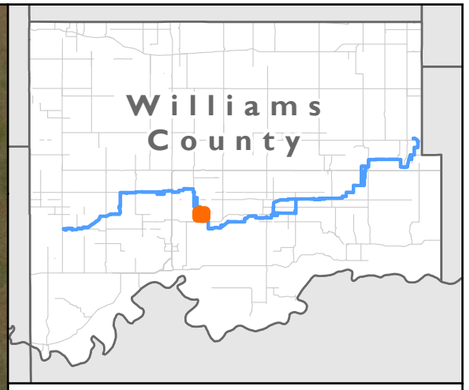

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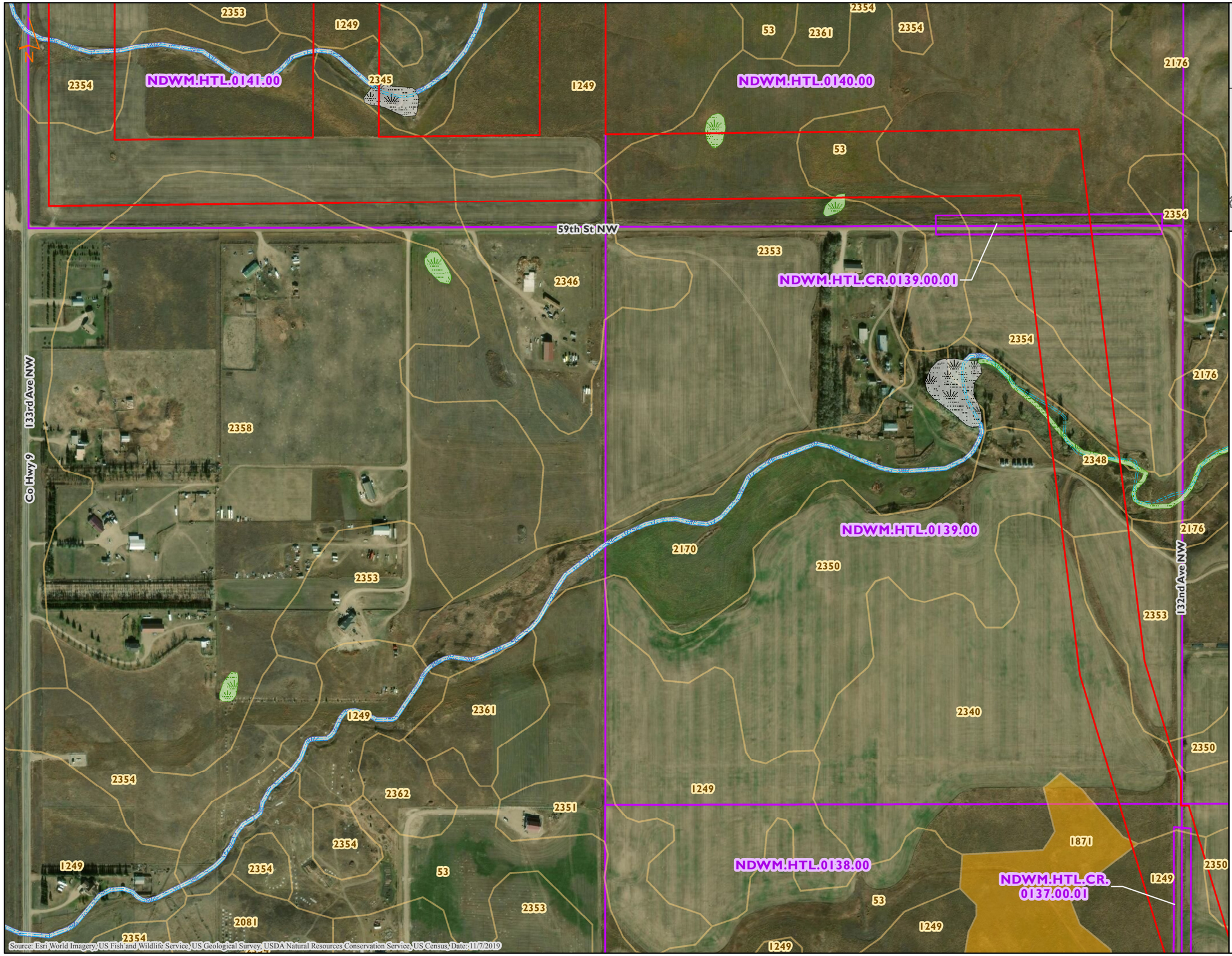



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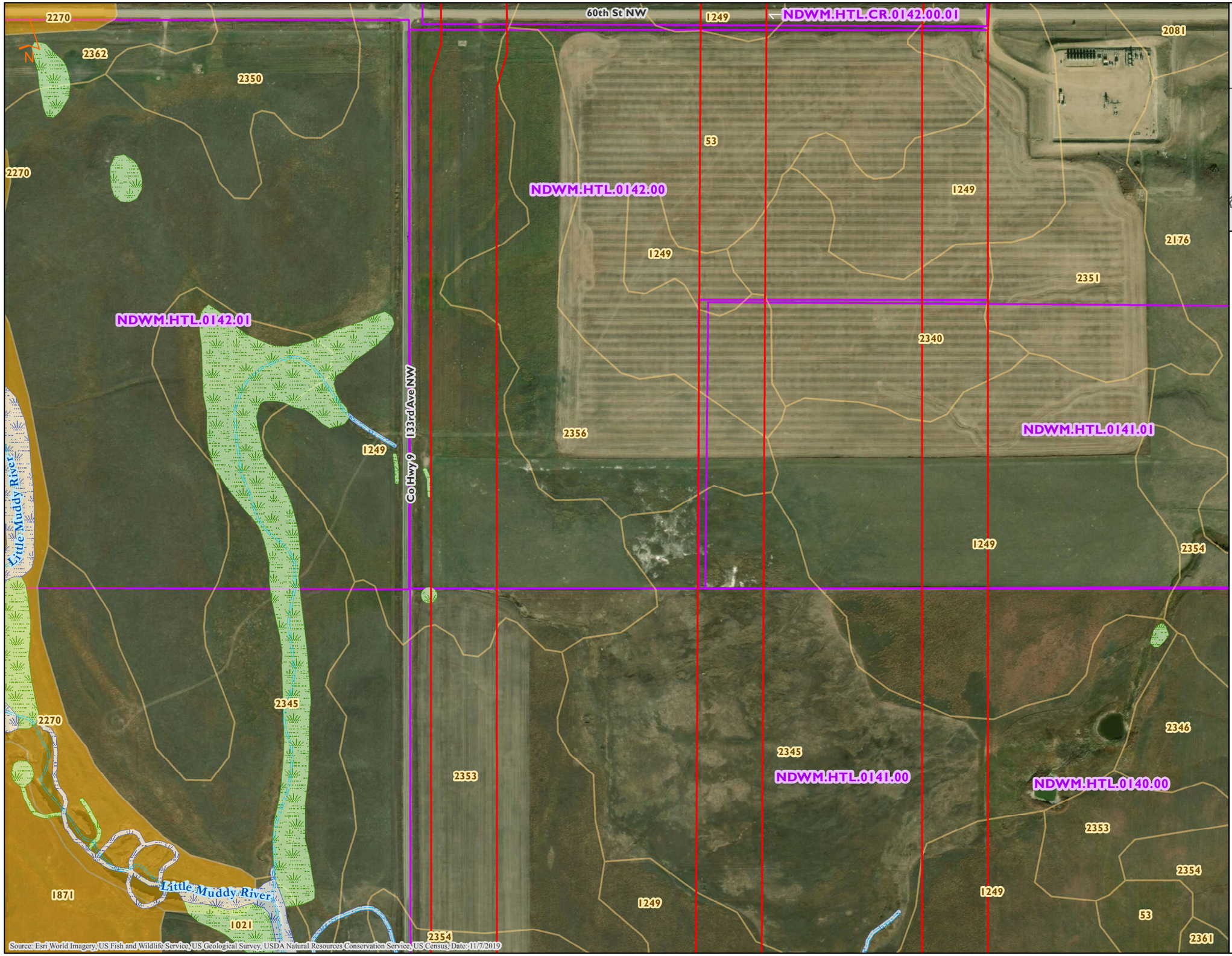



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ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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- NWI Wetland - PFO
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- NWI Wetland - Riverine
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- Non-Hydric Soil
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- Tract

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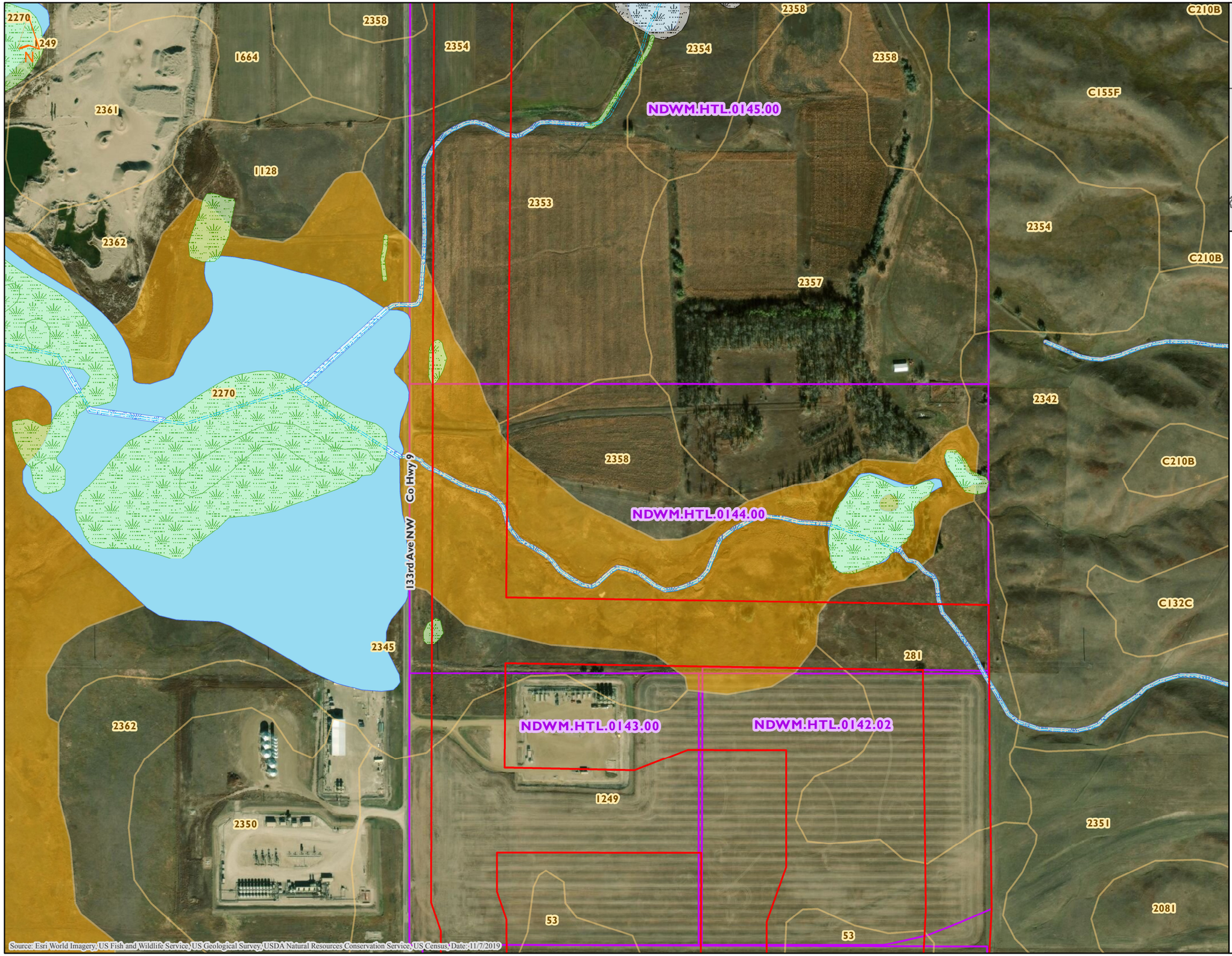
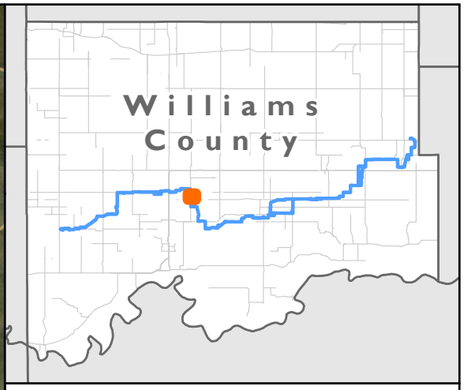
Feet





MNR

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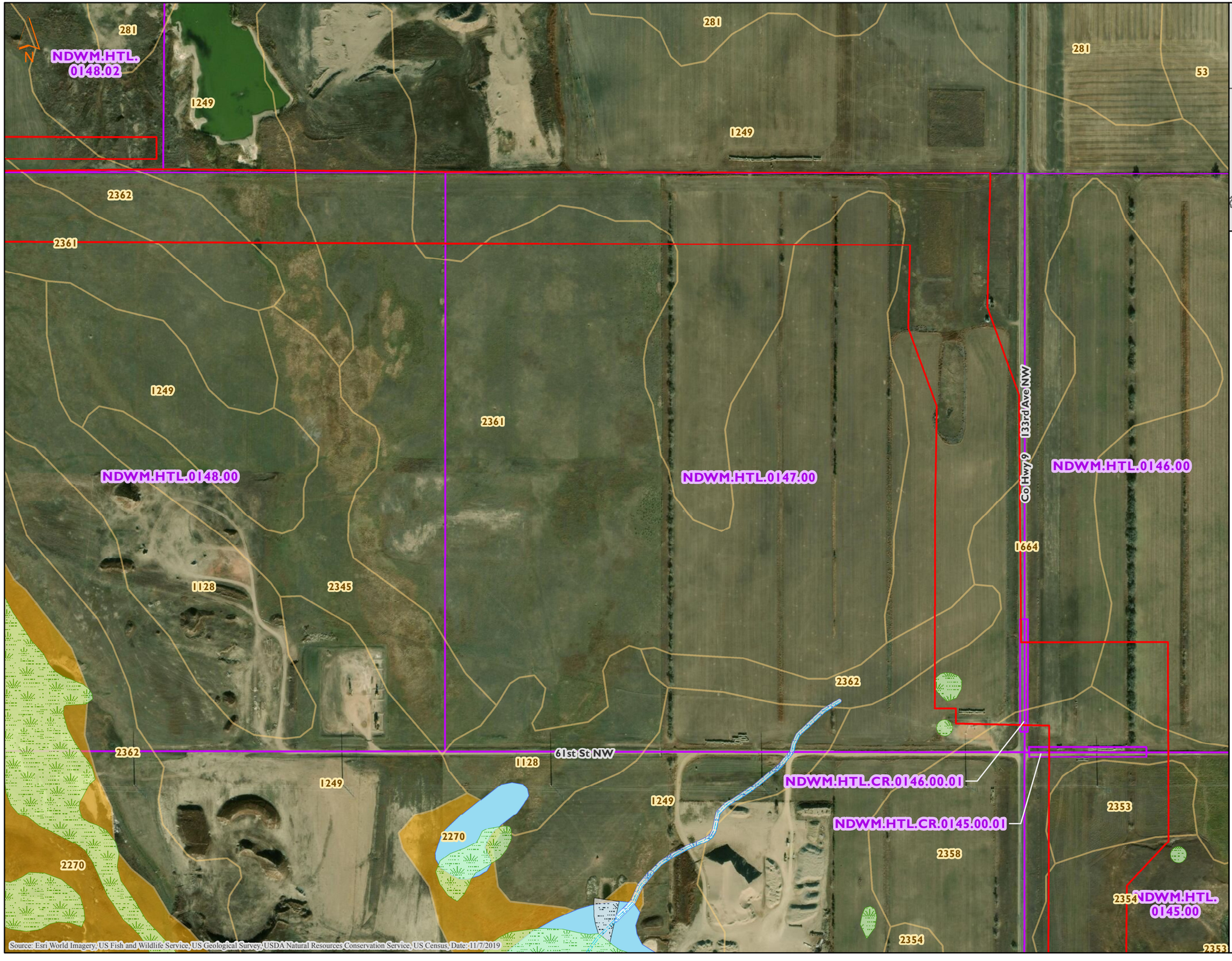

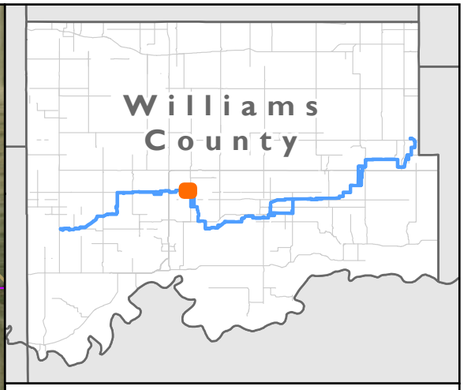

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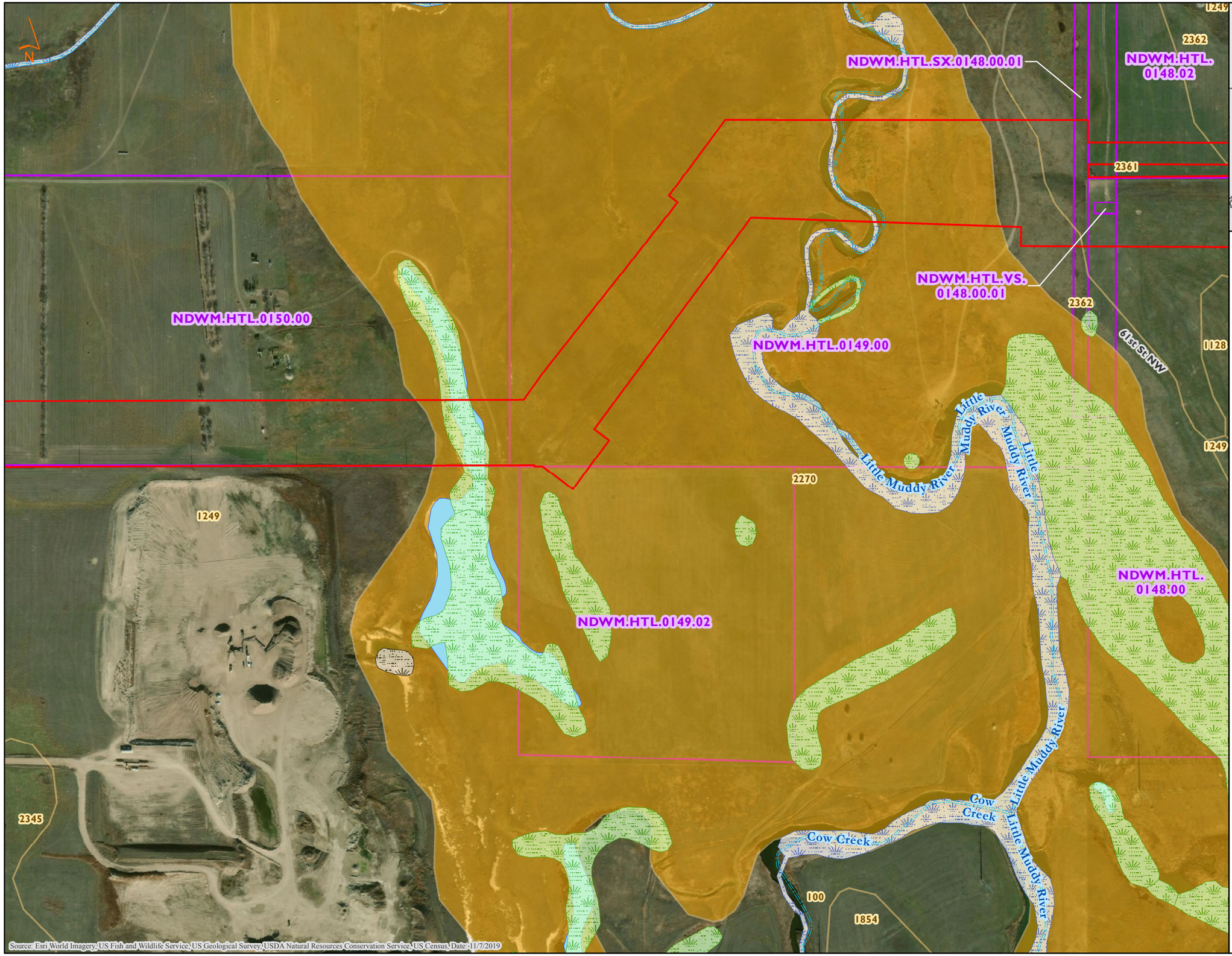



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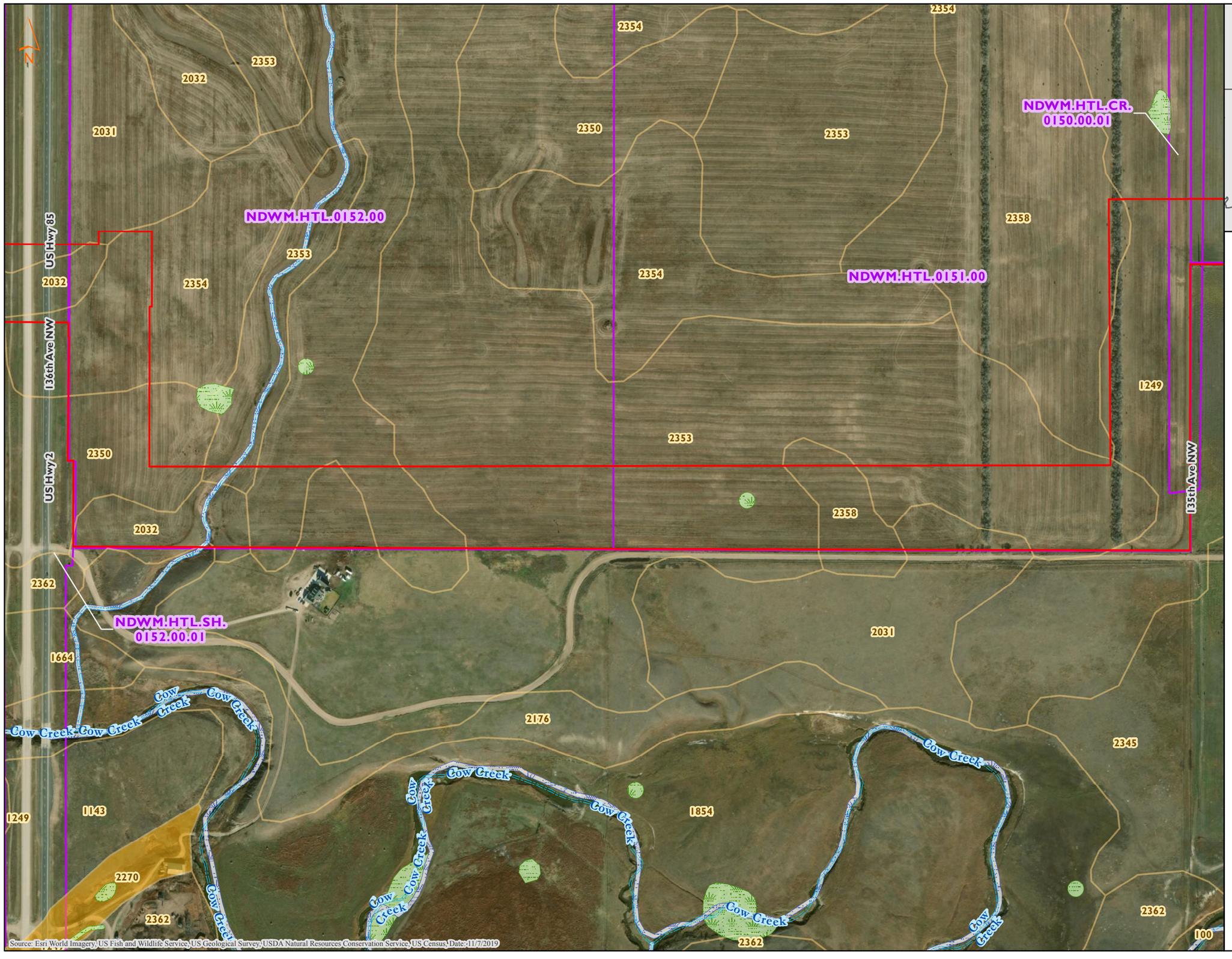



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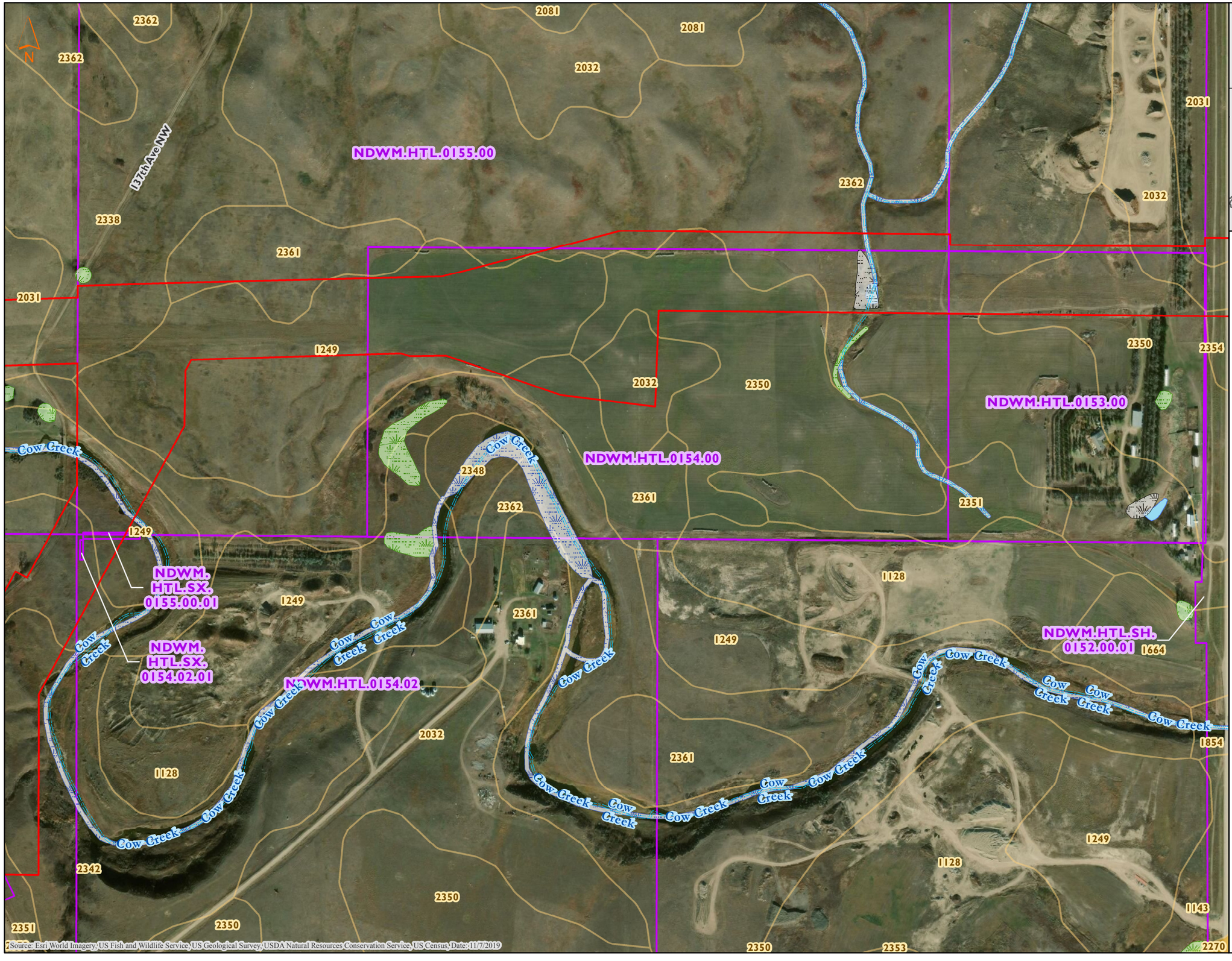

Source: Esri, World Imagery, US Fish and Wildlife Service, US Geological Survey, USDA Natural Resources Conservation Service, US Census, Date: 11/7/2019



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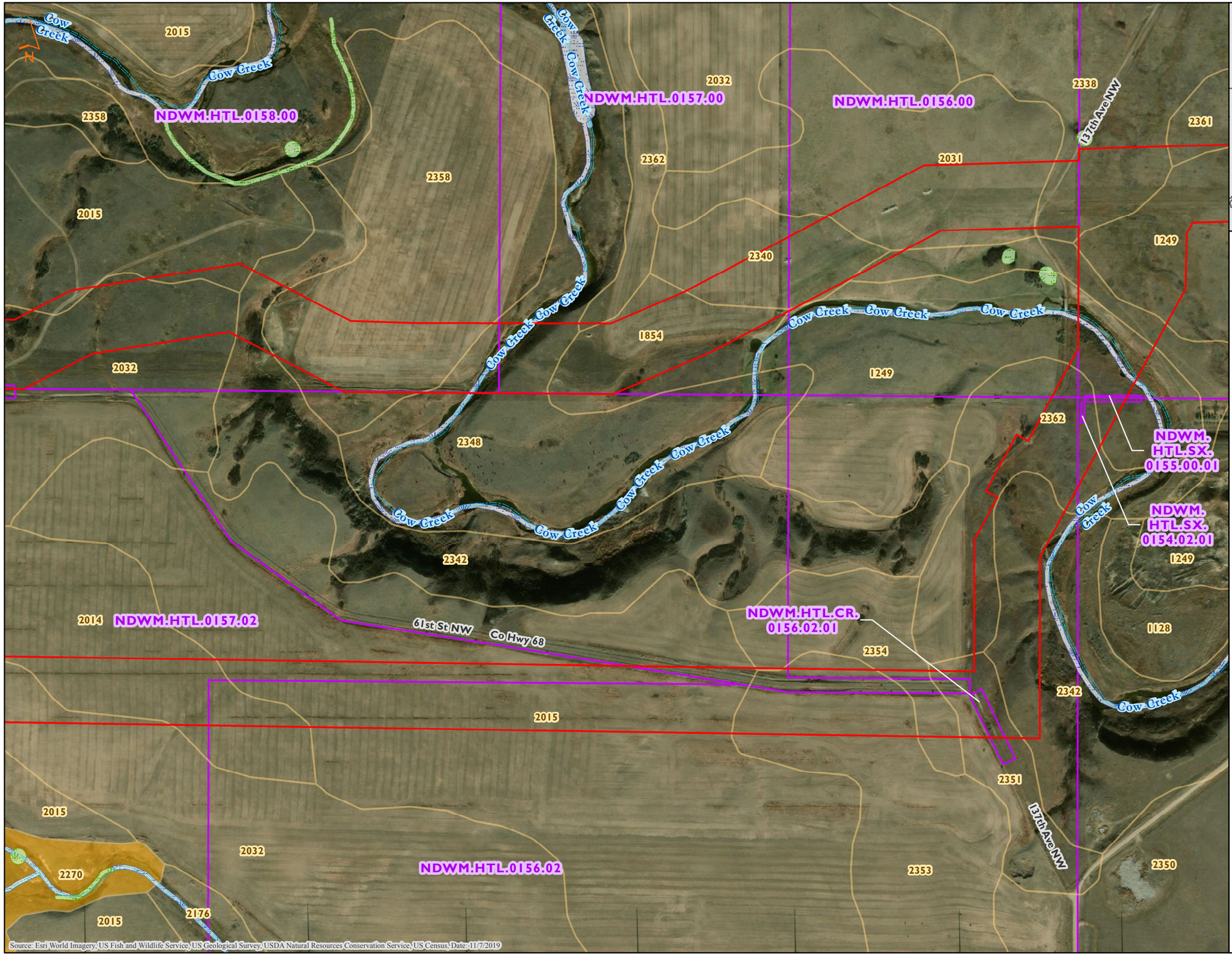

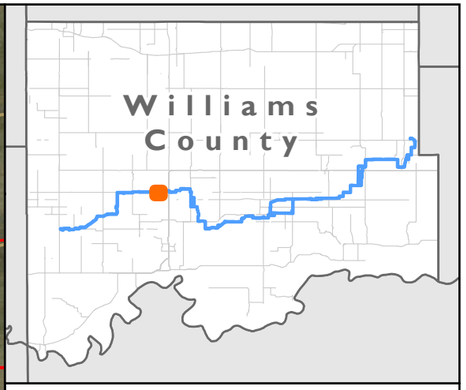

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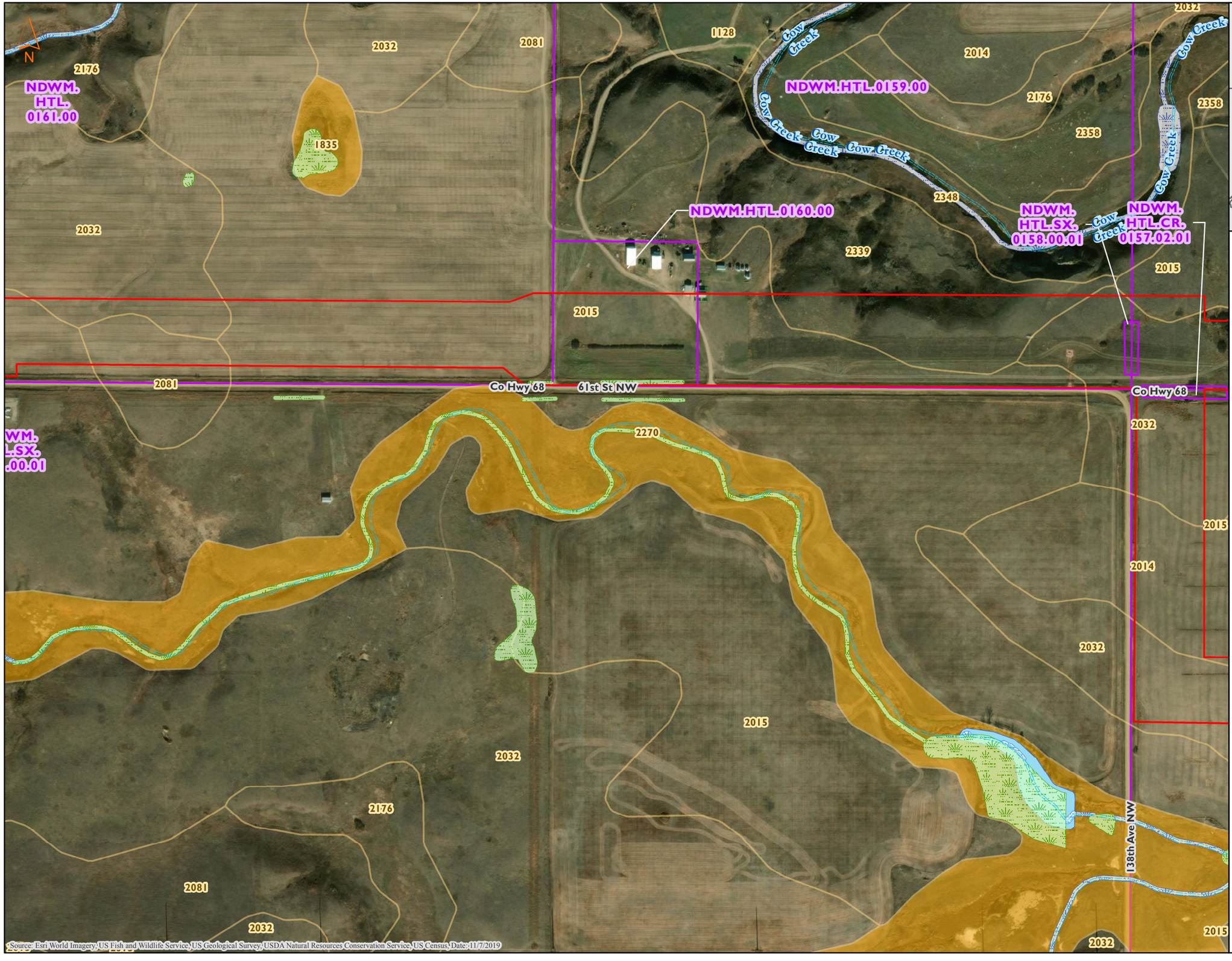

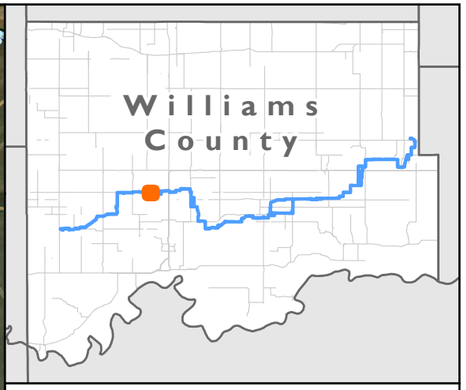

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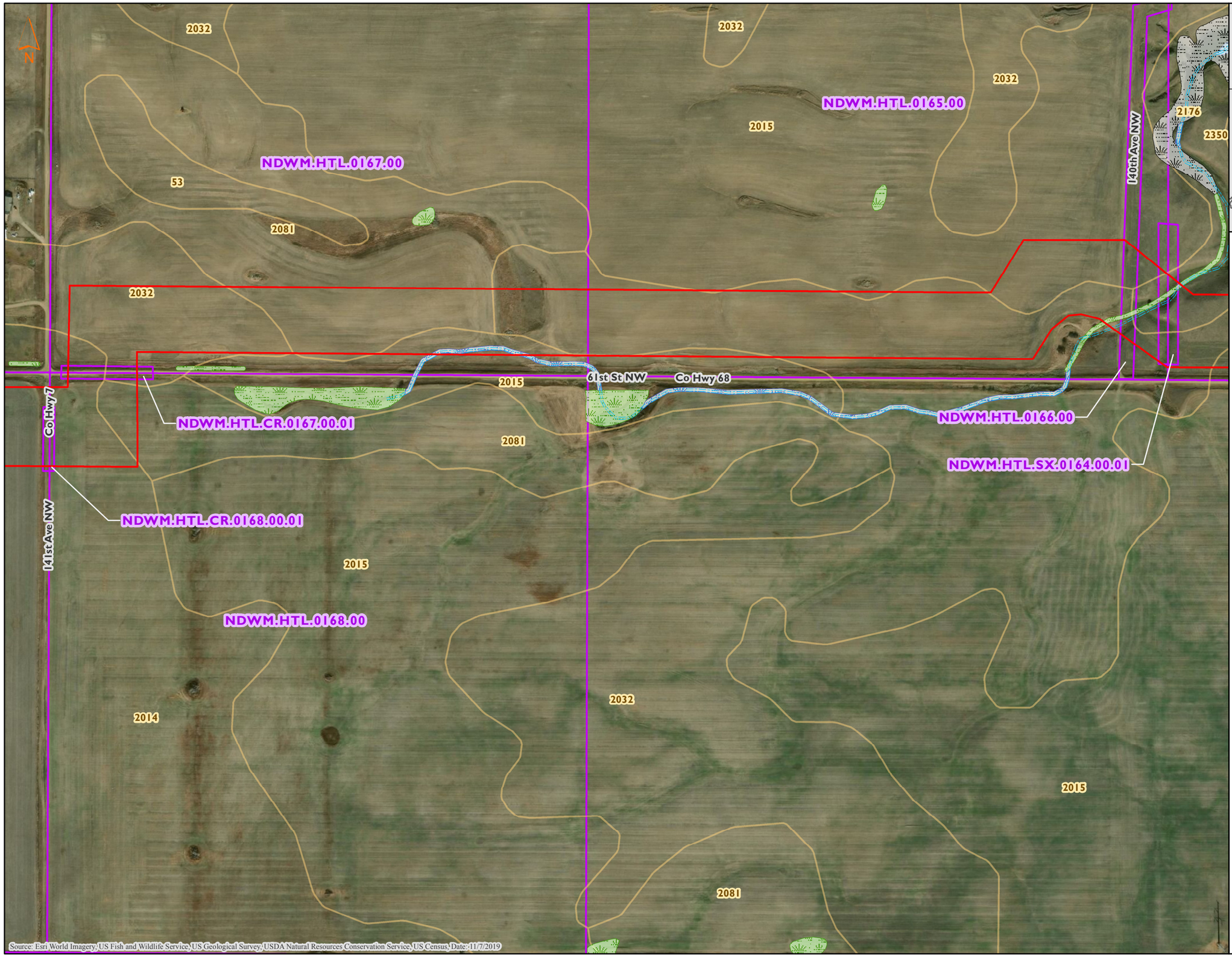

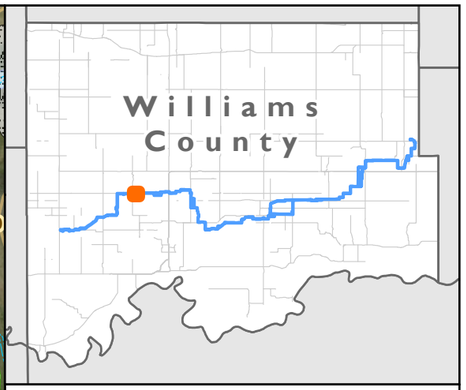

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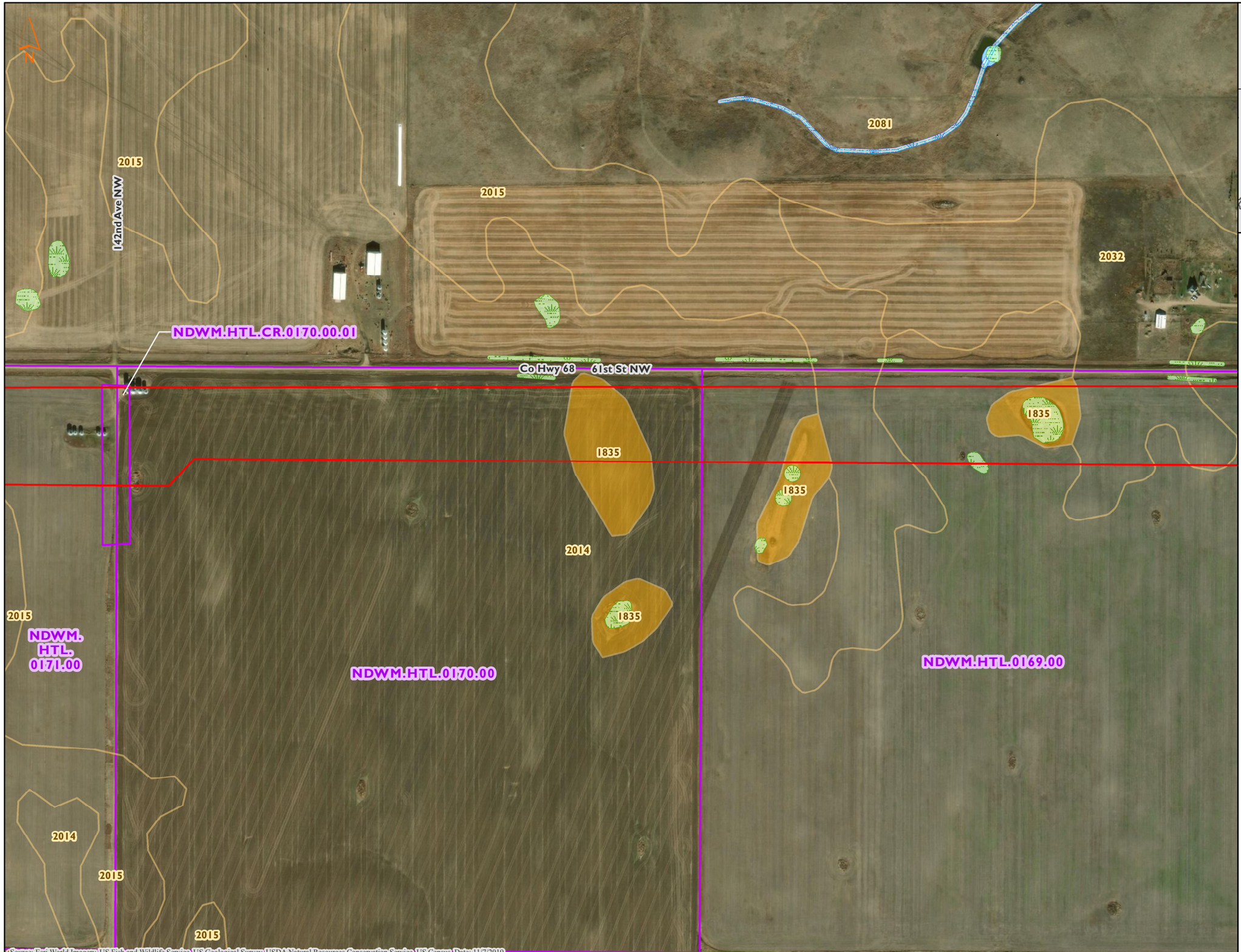



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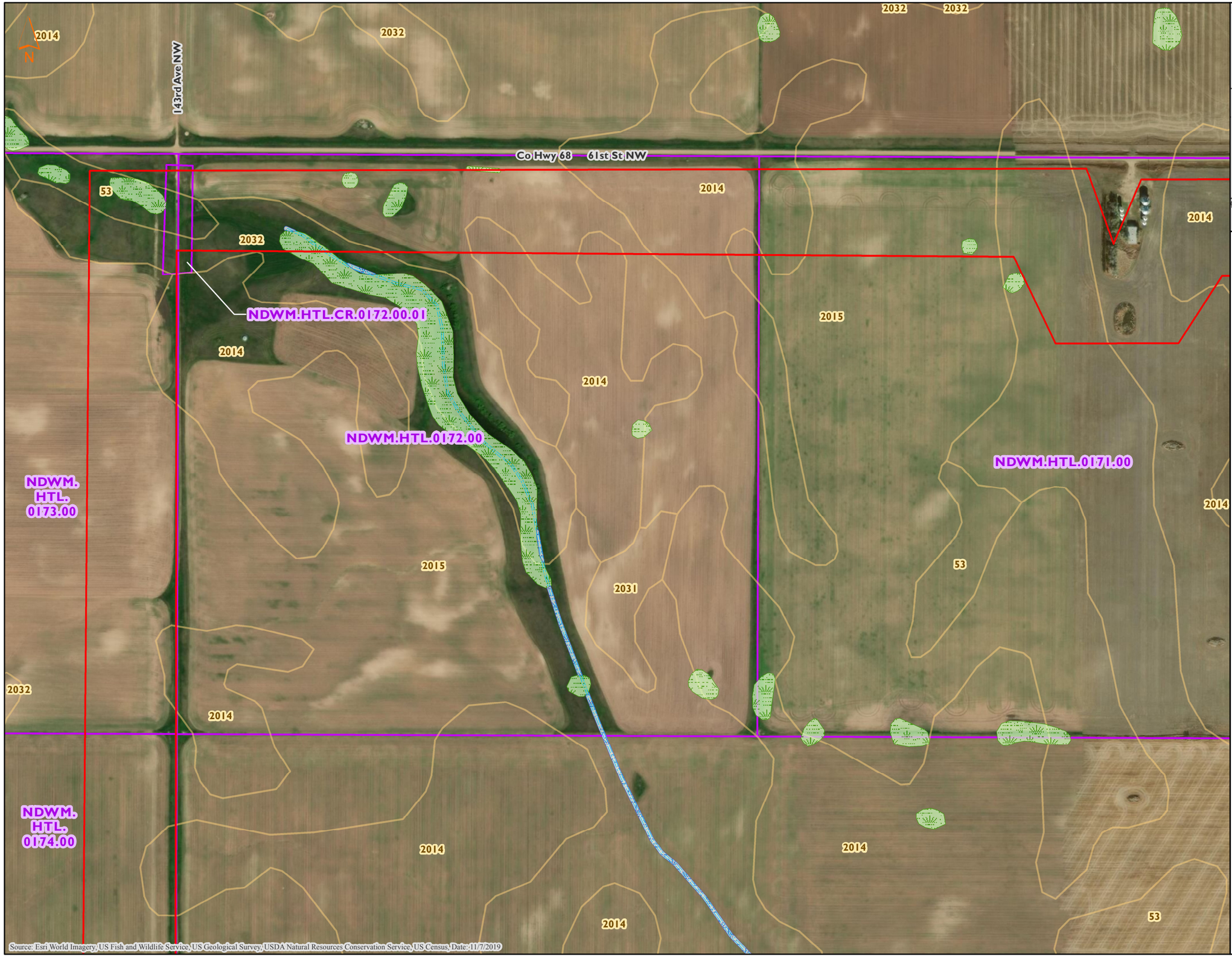

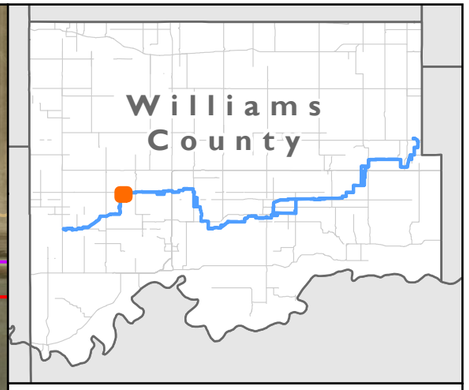

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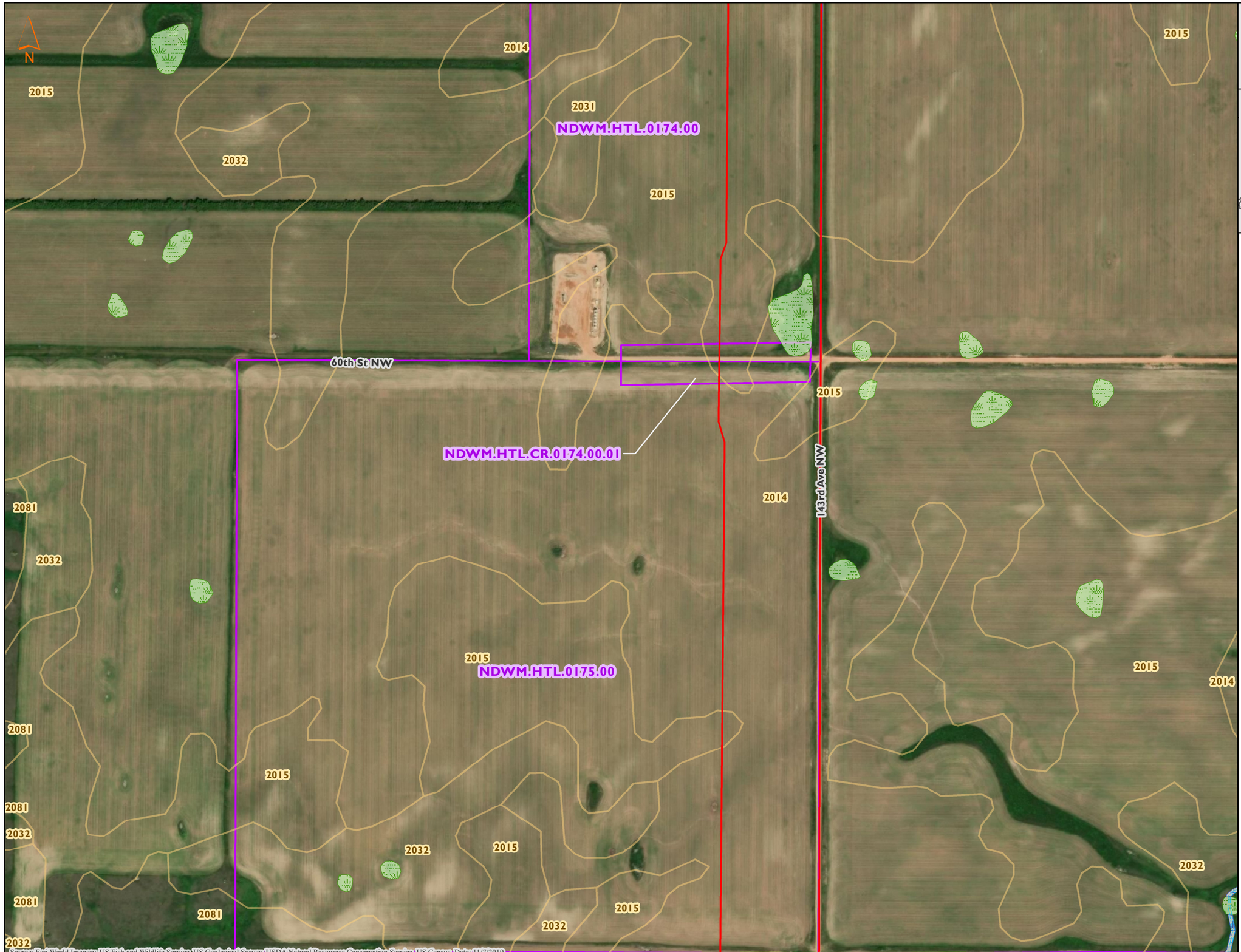



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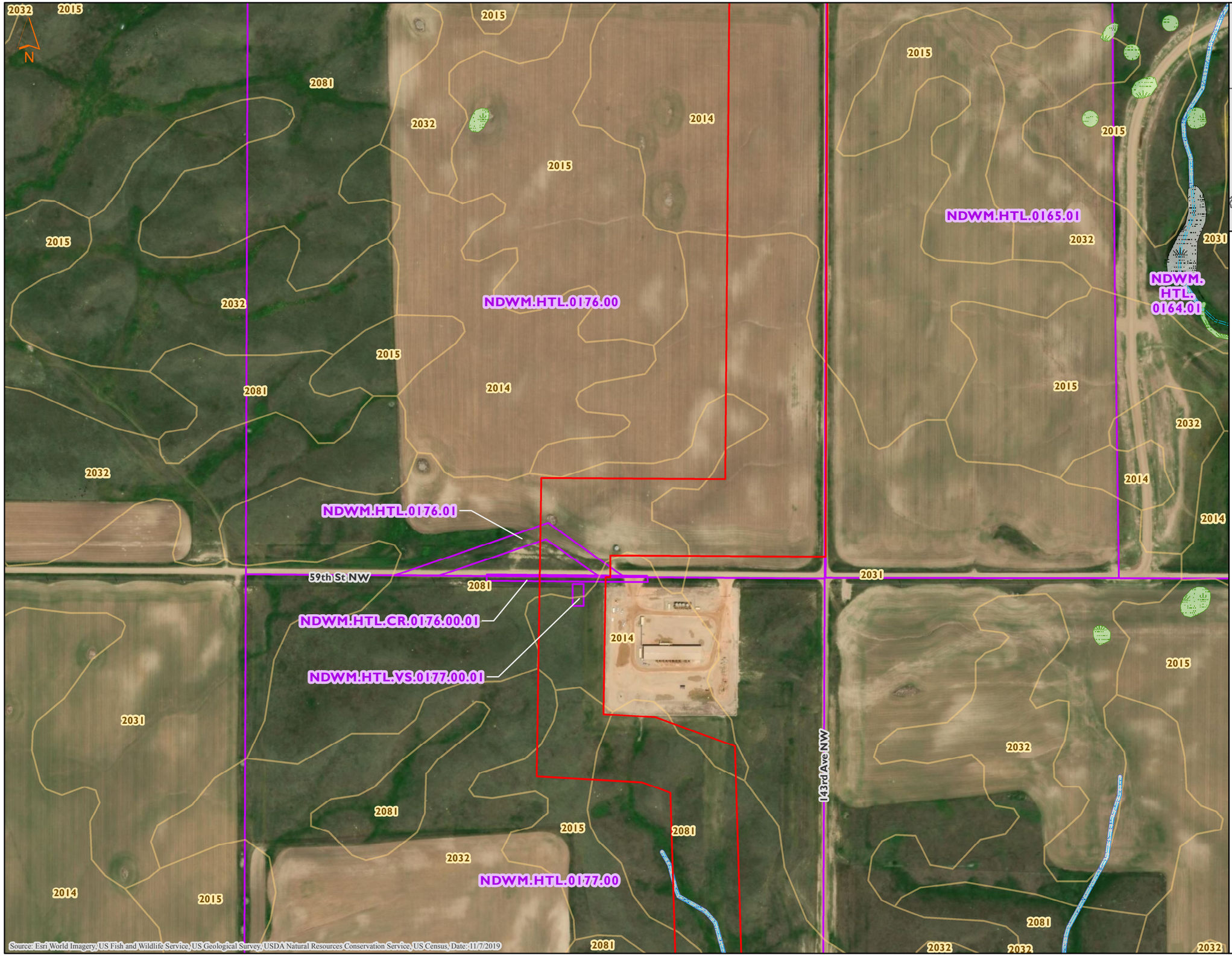

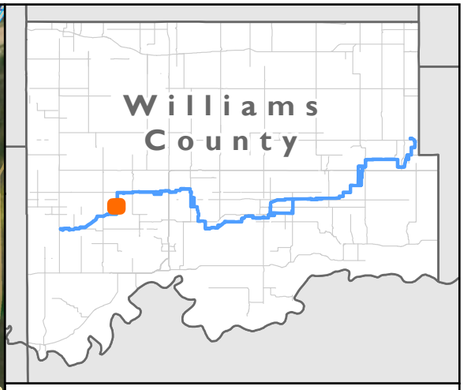

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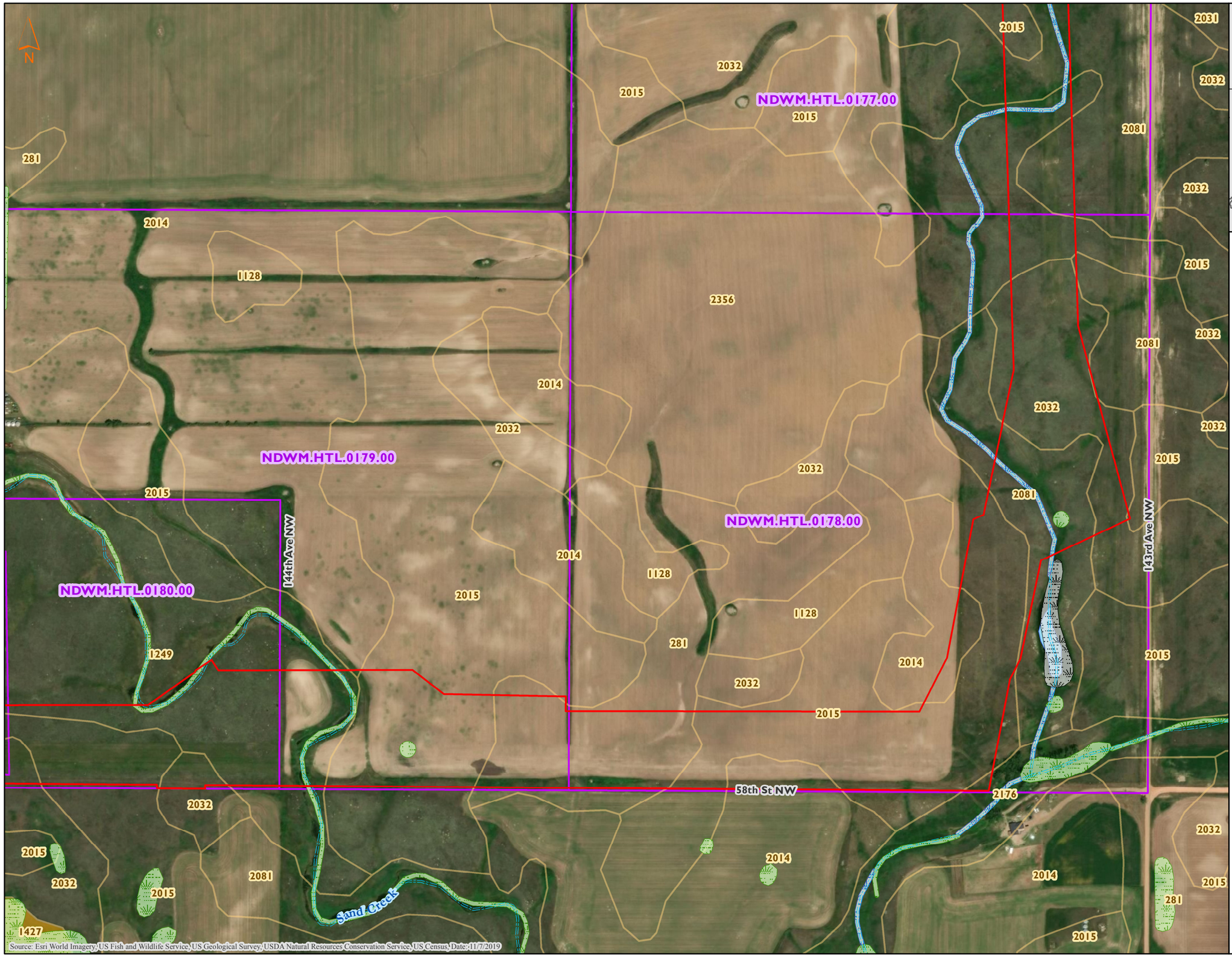

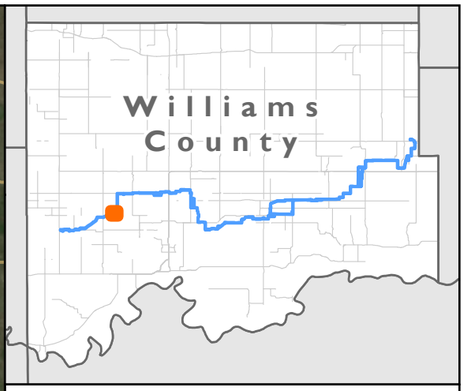

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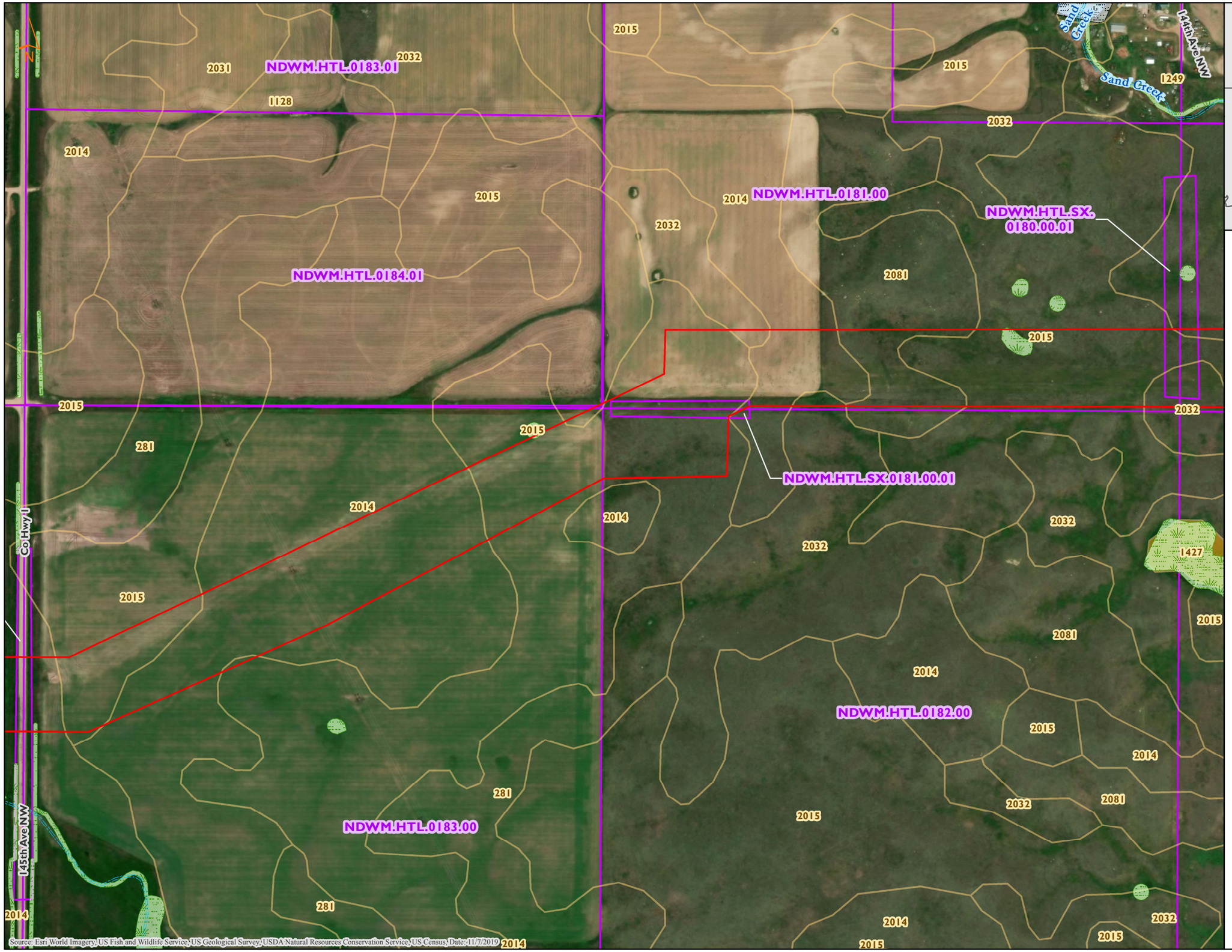

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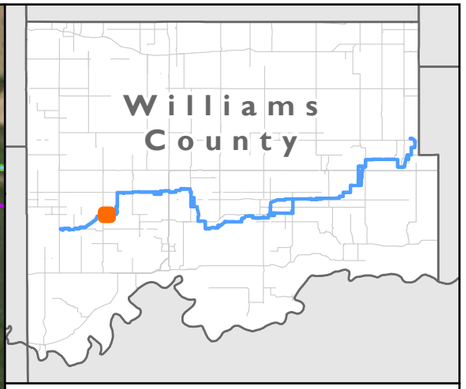

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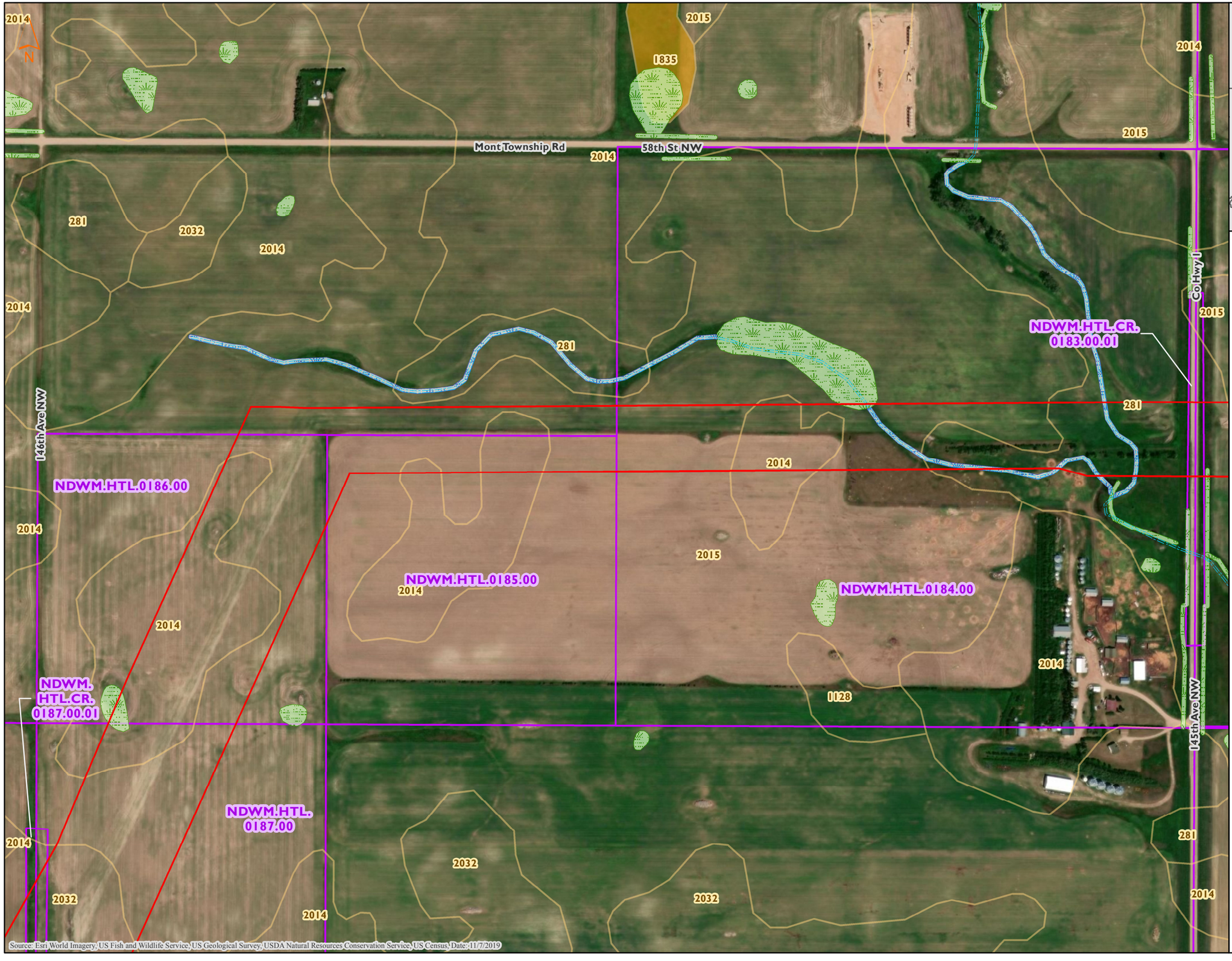

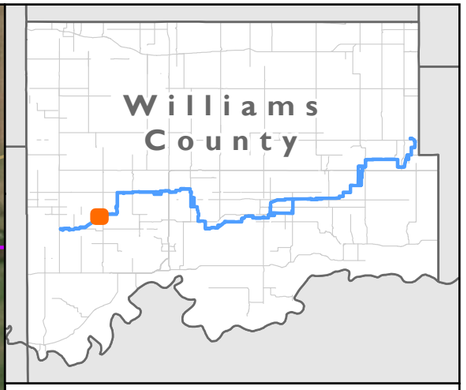

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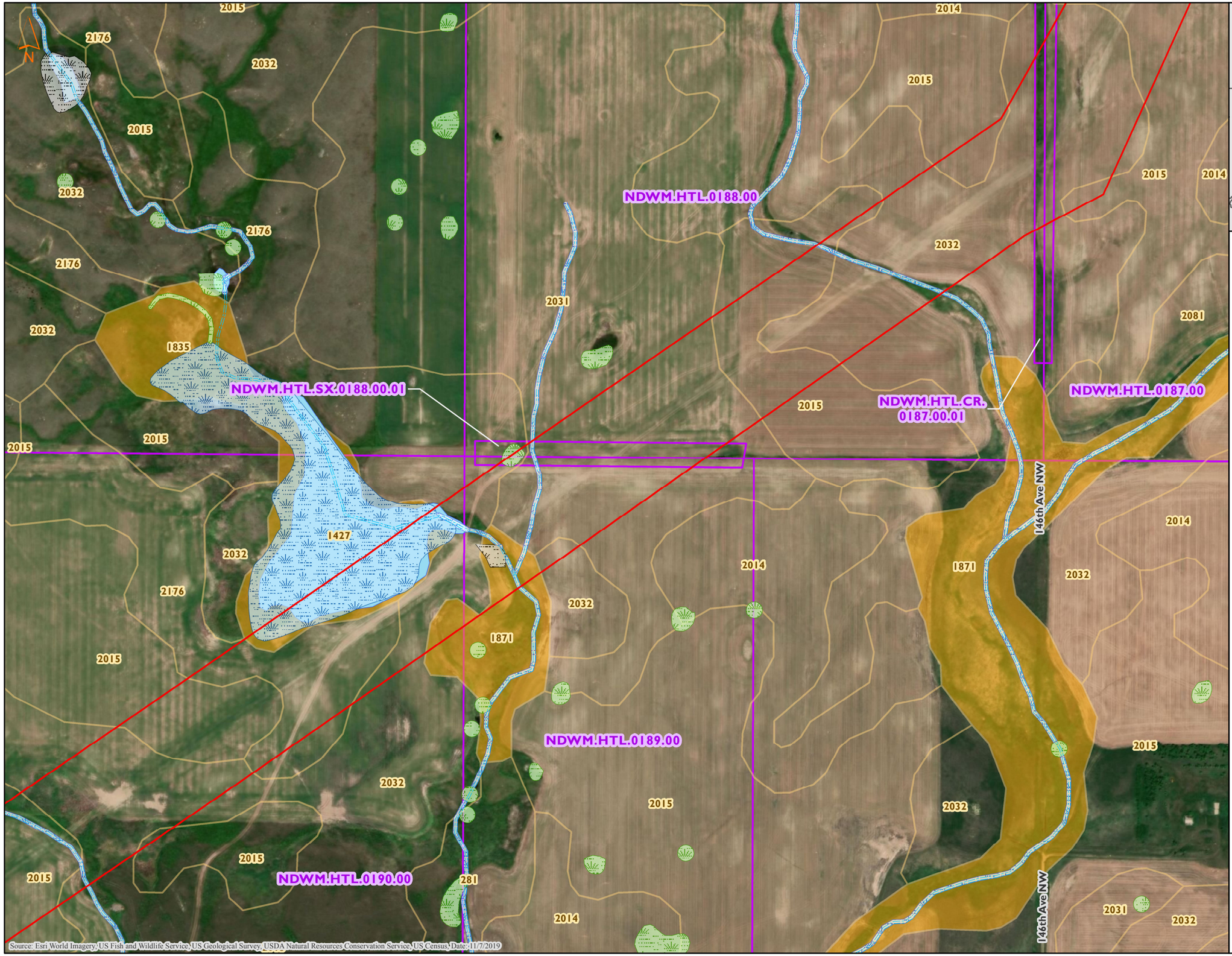

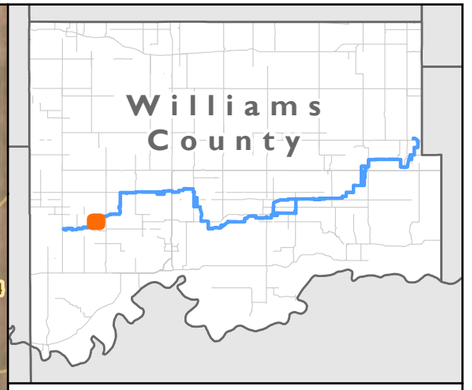

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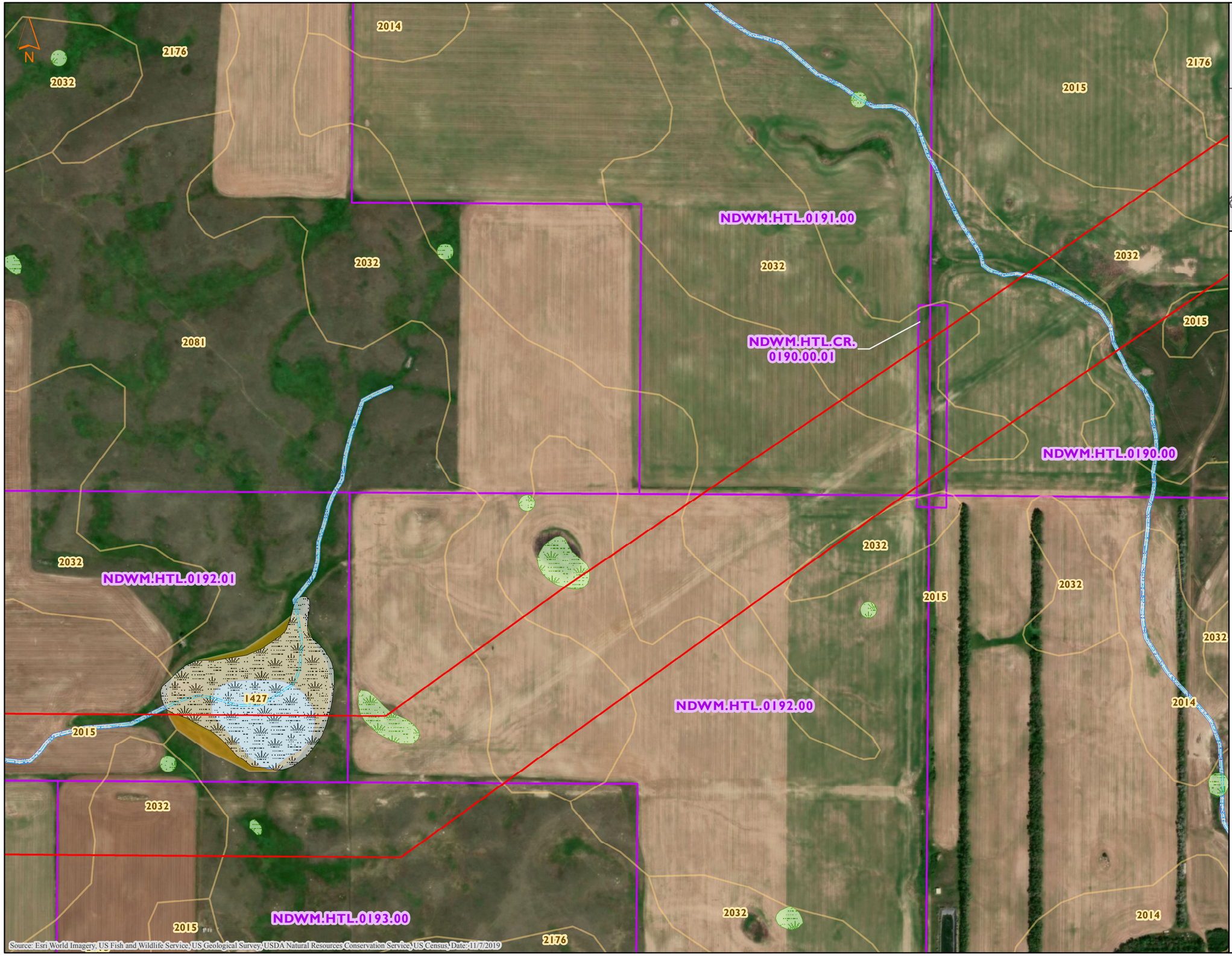

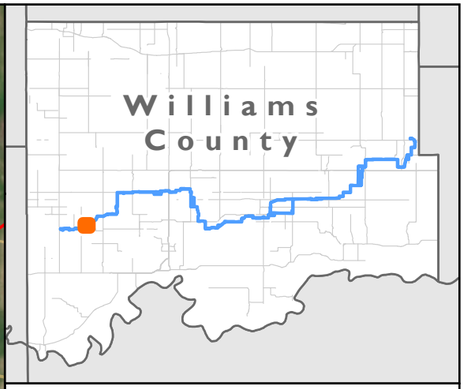

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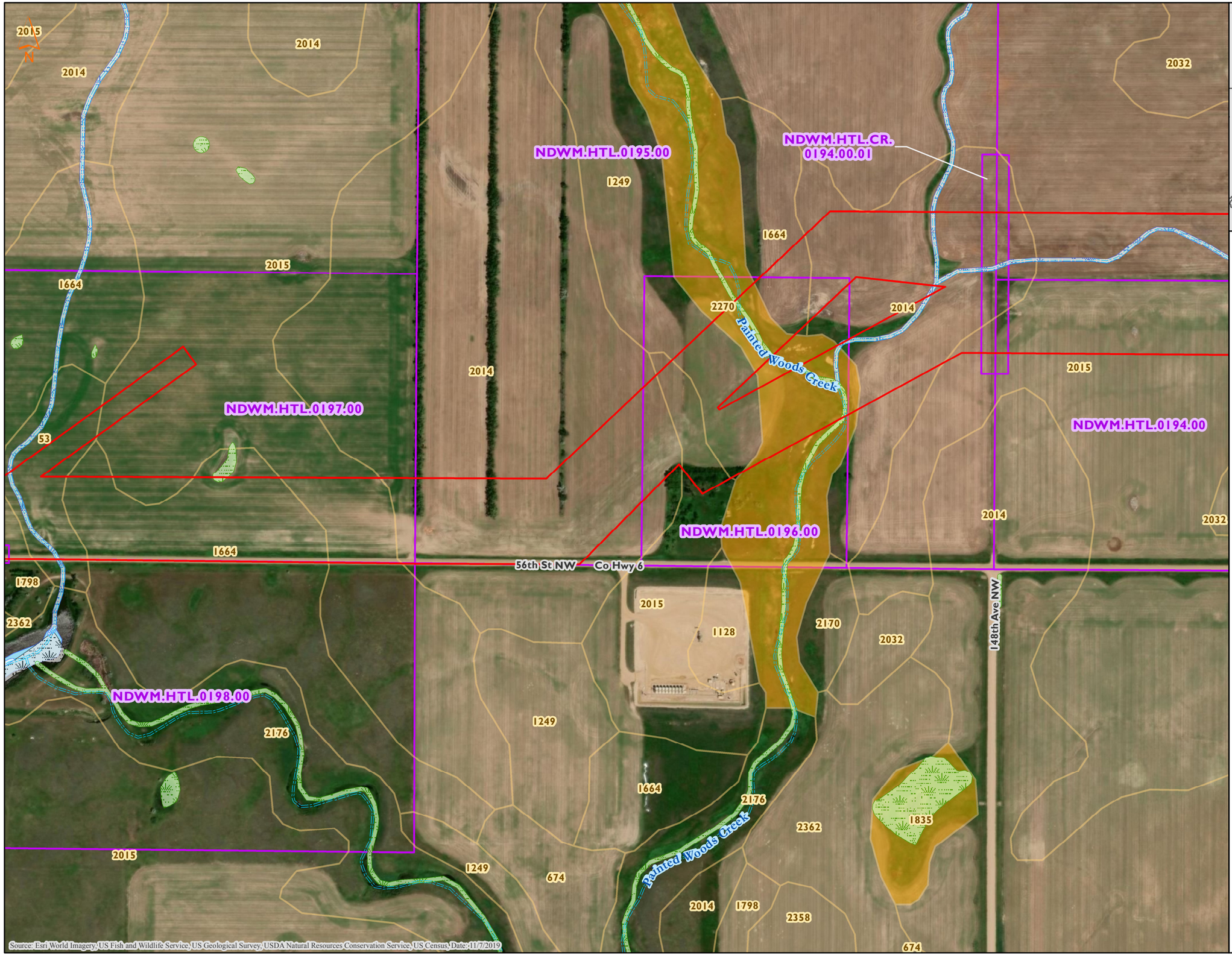

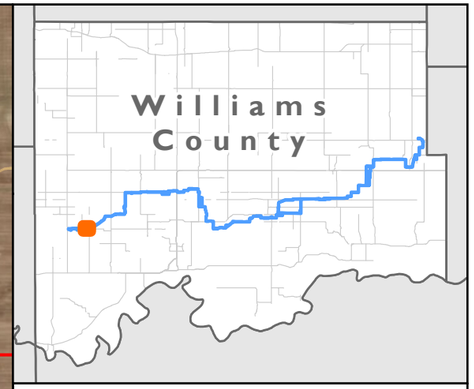

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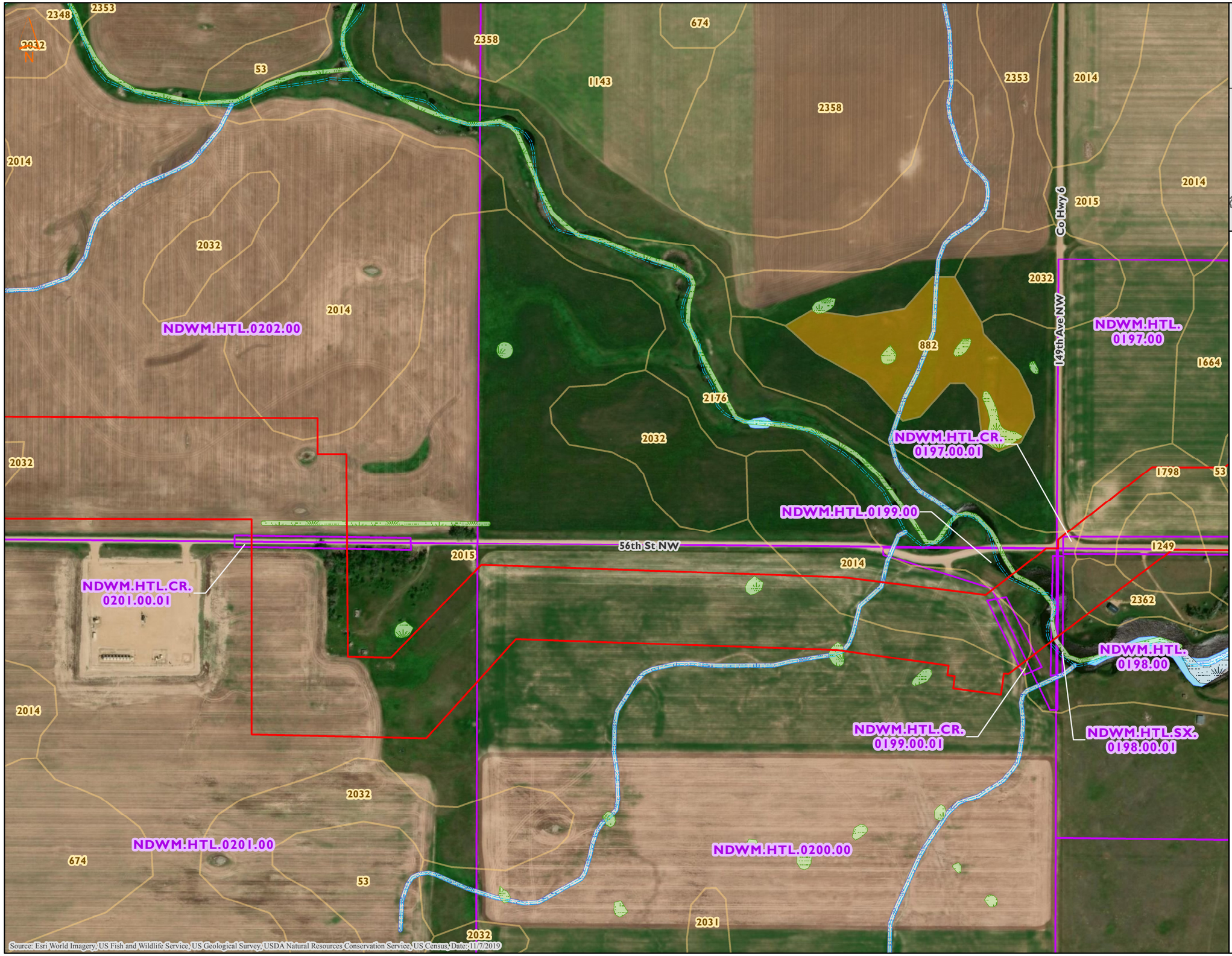

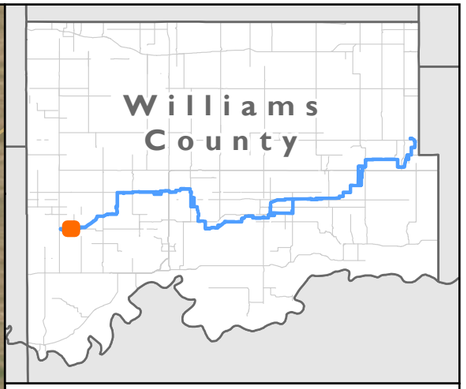

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- NWI Wetland - L1/L2
- NWI Wetland - PAB
- NWI Wetland - PEM
- NWI Wetland - PFO
- NWI Wetland - PSS
- NWI Wetland - PUB
- NWI Wetland - Riverine
- Hydric Soil
- Non-Hydric Soil
- Environmental Survey Area
- Tract

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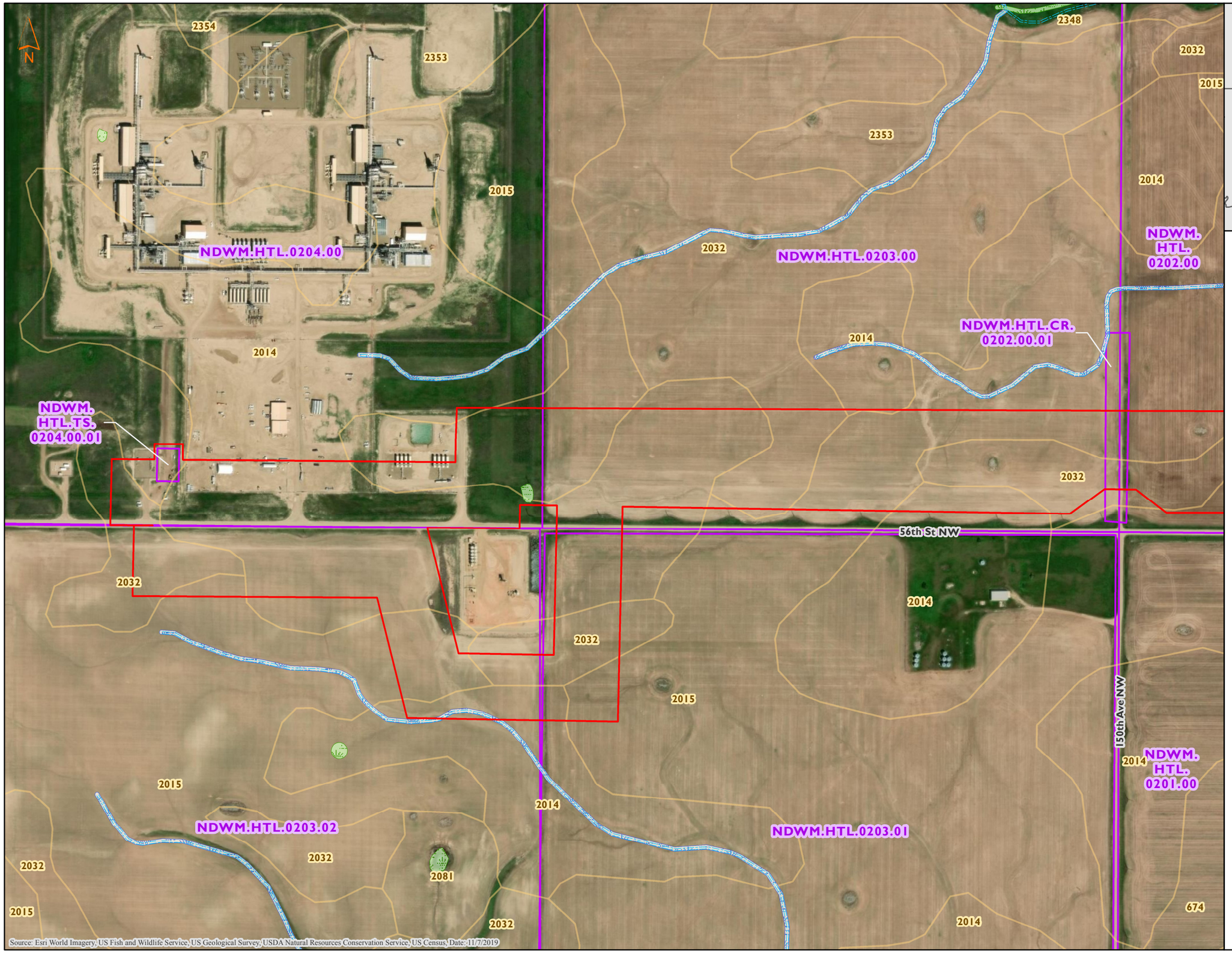

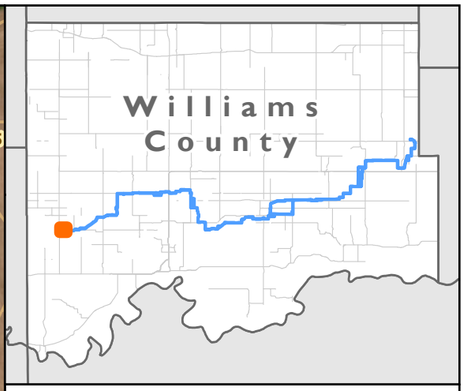

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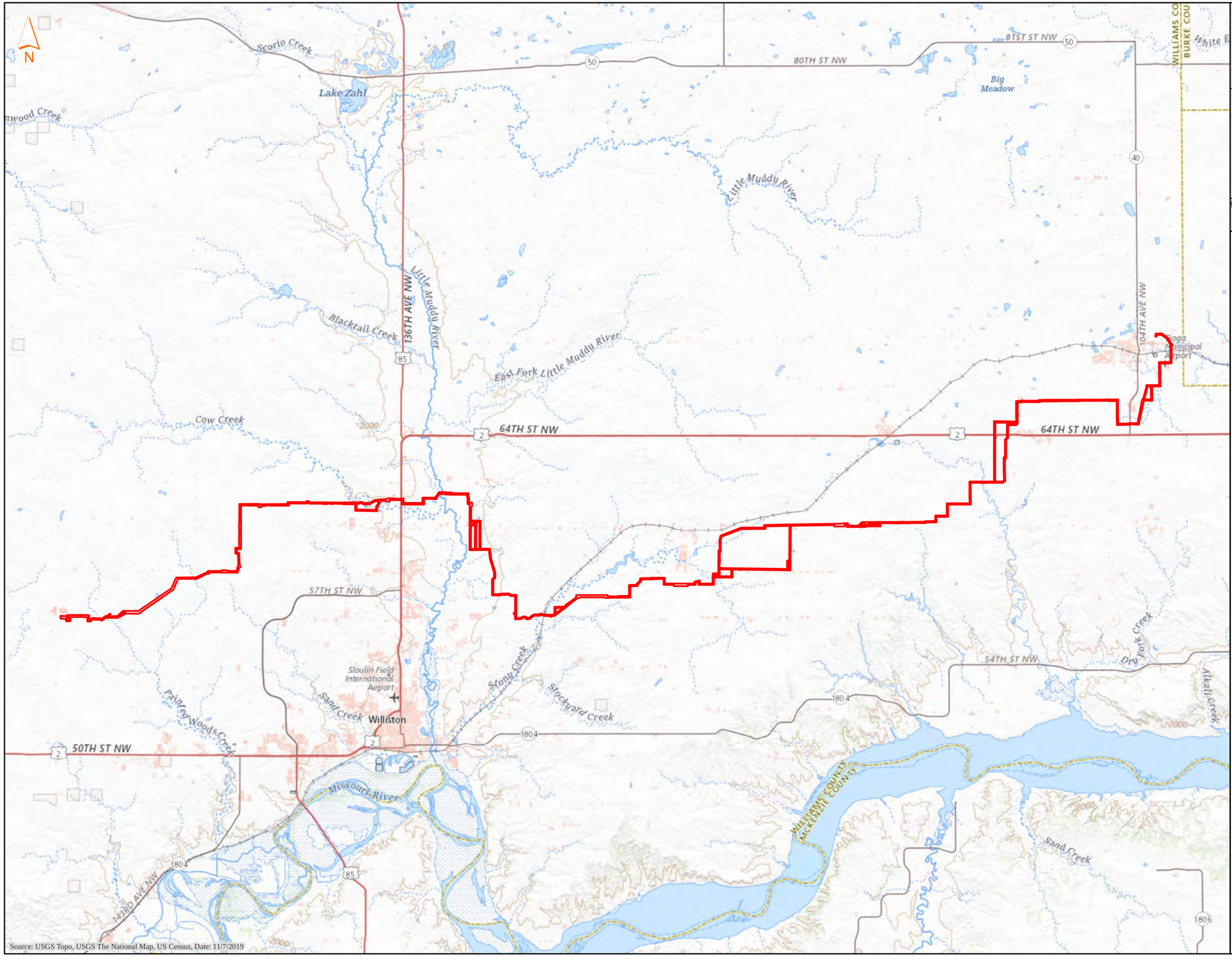
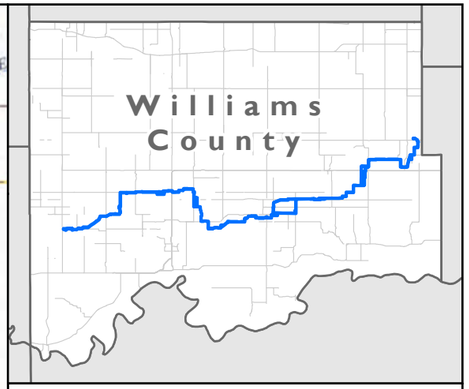
NHD/NWI Features, SSURGO Soil Units
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

- NHD Stream
- NHD Waterbody
- NWI Wetland - L1/L2
- NWI Wetland - PAB
- NWI Wetland - PEM
- NWI Wetland - PFO
- NWI Wetland - PSS
- NWI Wetland - PUB
- NWI Wetland - Riverine
- Hydric Soil
- Non-Hydric Soil
- Environmental Survey Area
- Tract

0 400 800
Feet





Survey Corridor Overview
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

Environmental Survey Area

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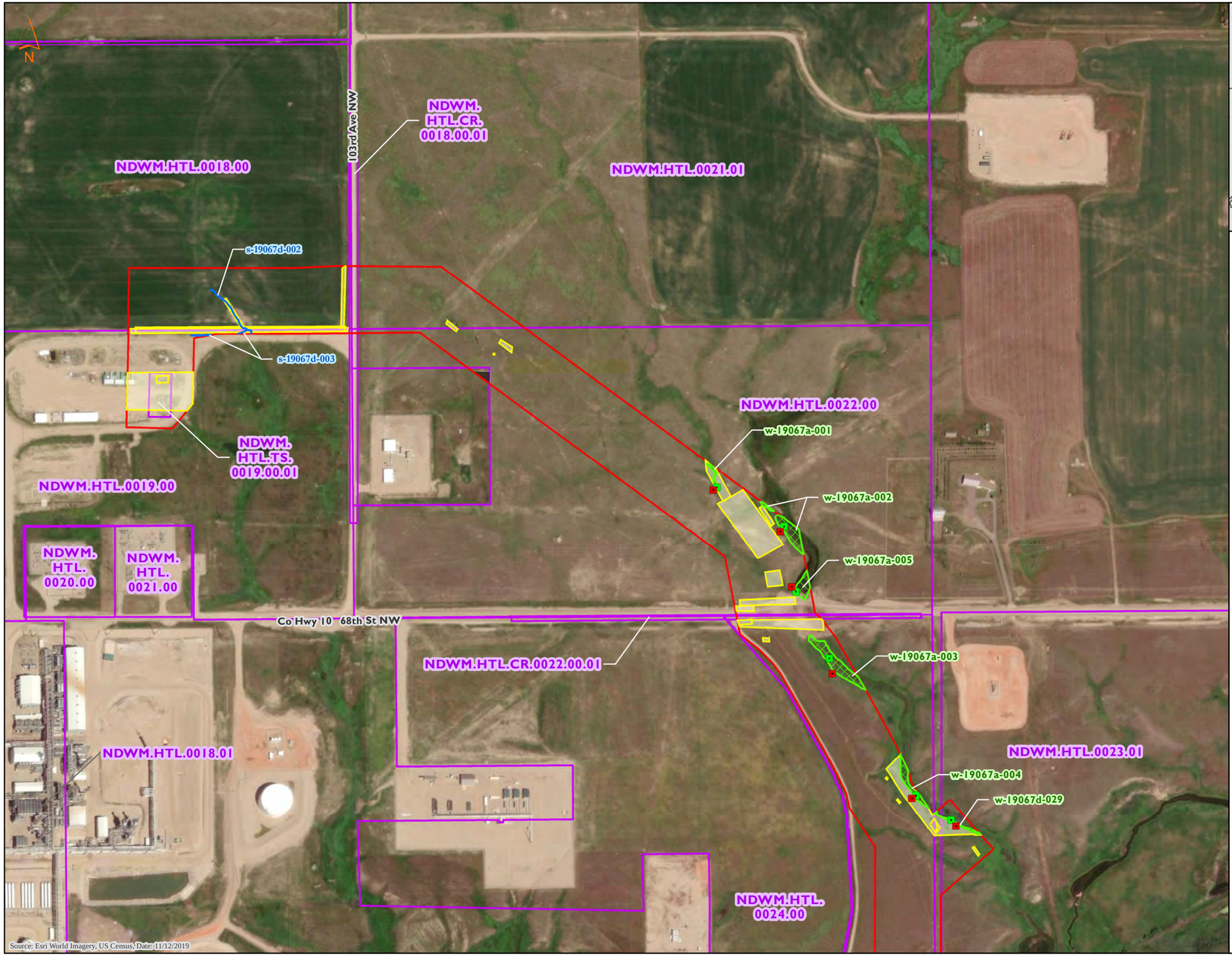



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Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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- Waterbody
- Noxious Weed Population
- Unsurveyed Area
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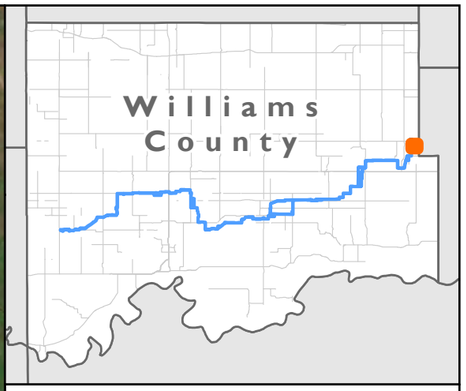
Feet





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ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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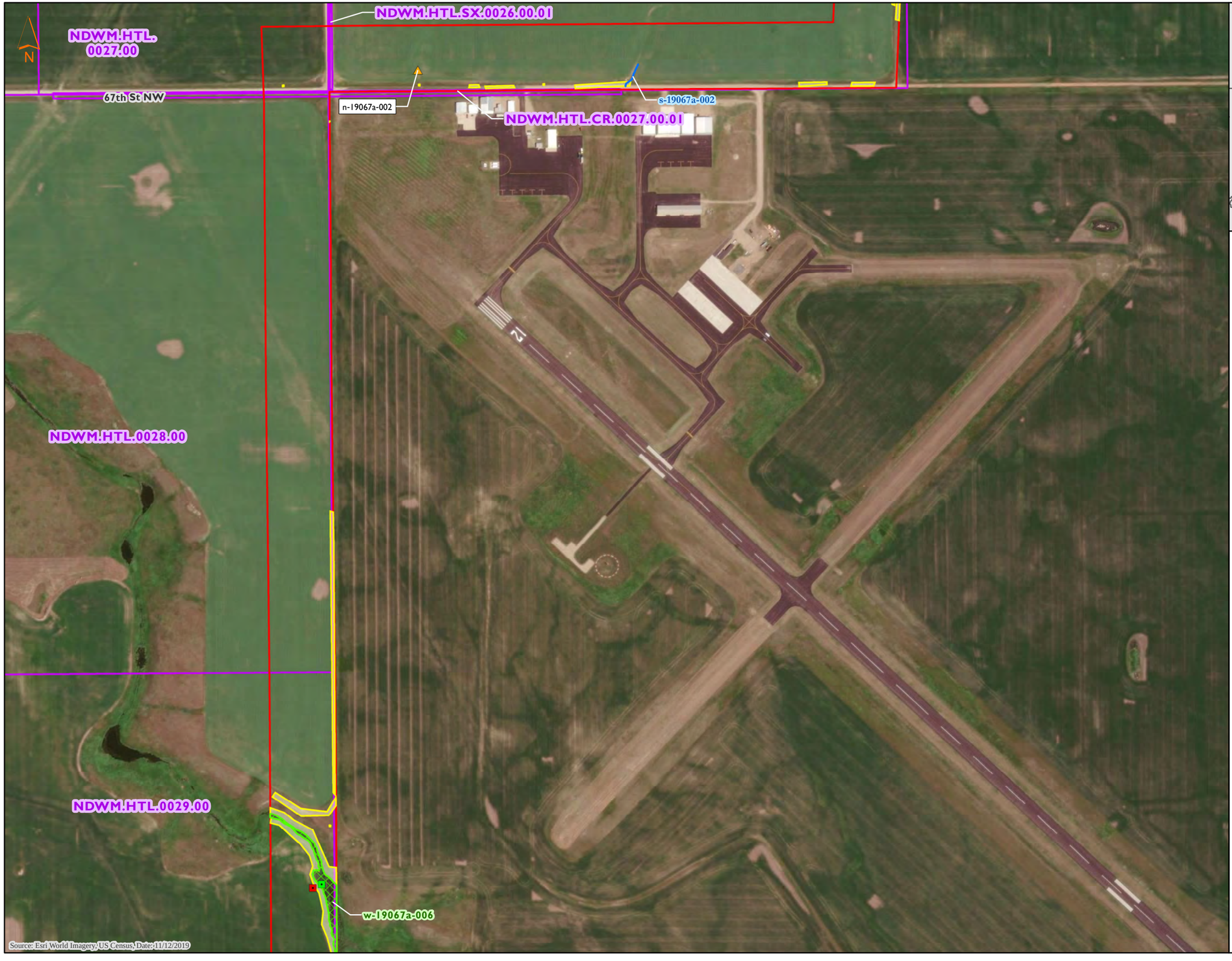

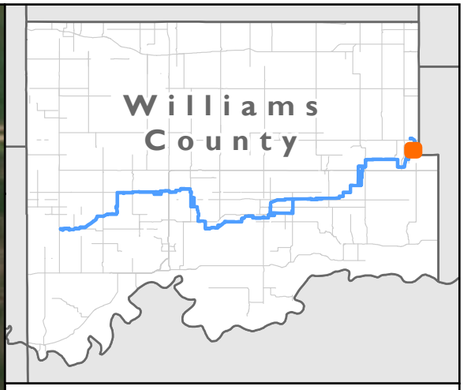

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ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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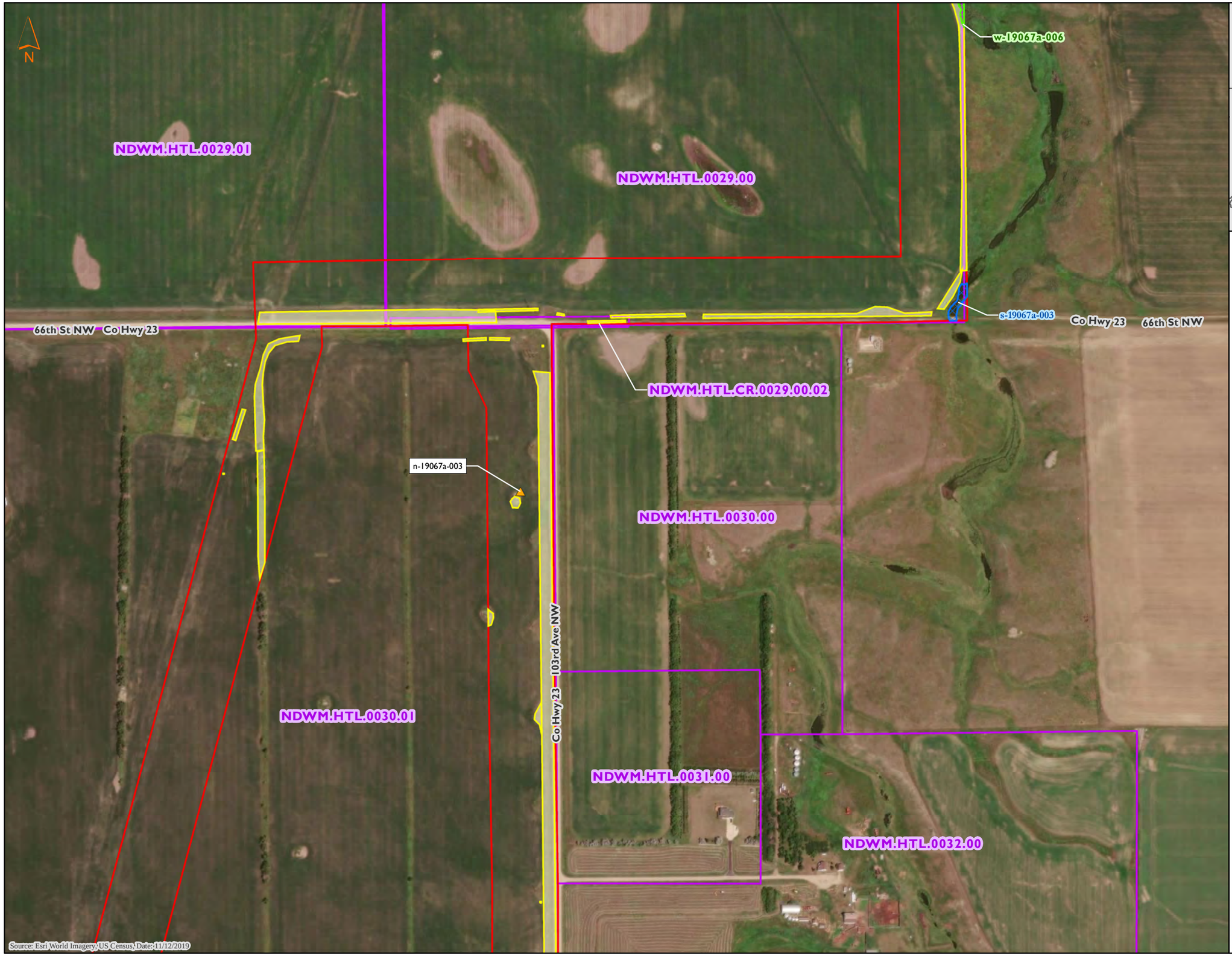

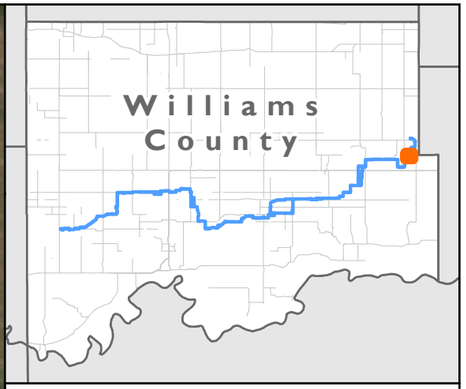

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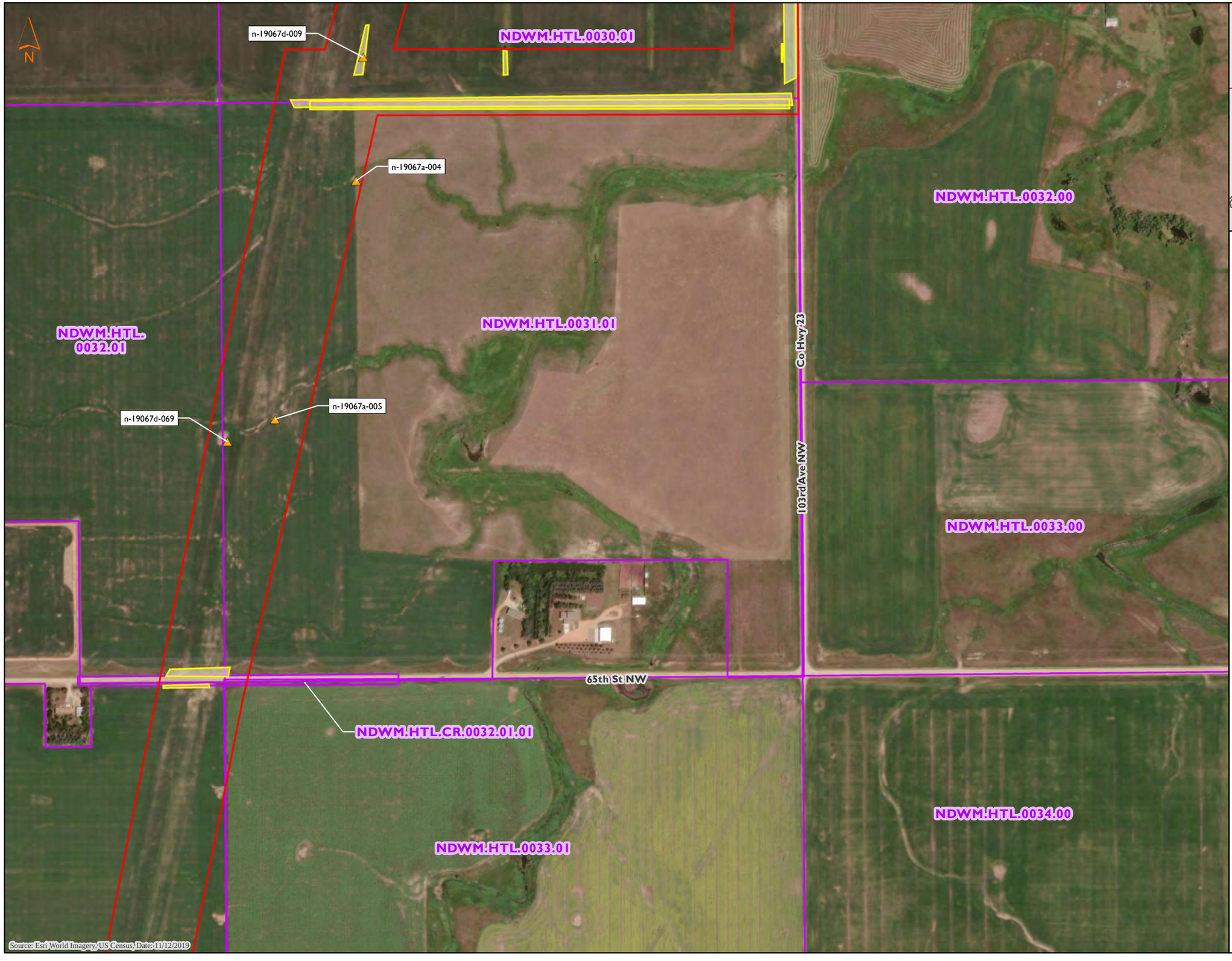

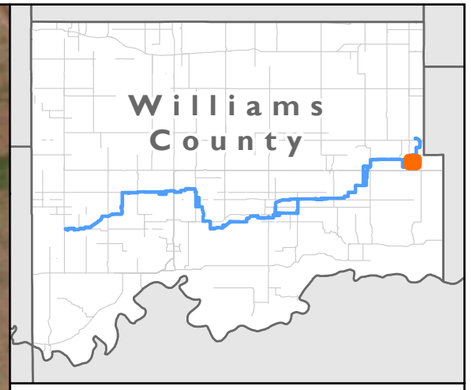

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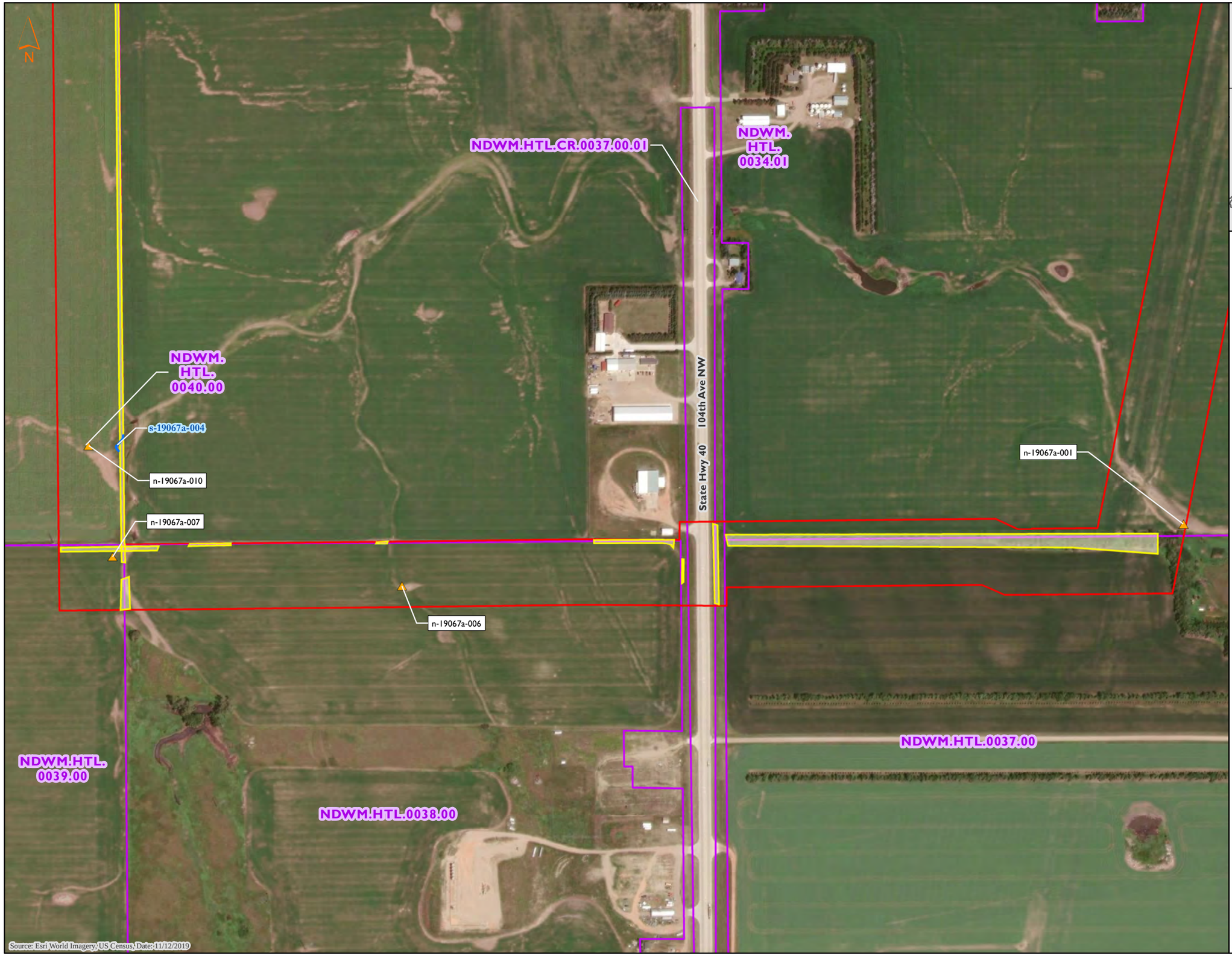

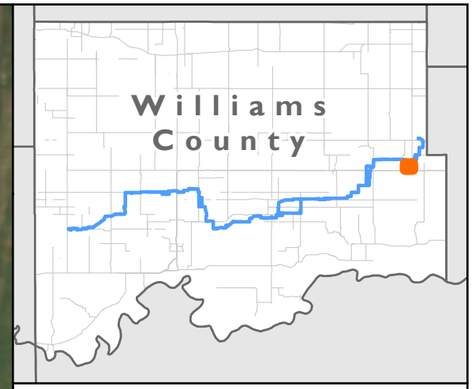

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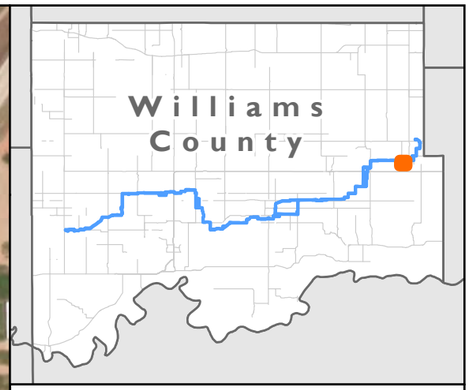

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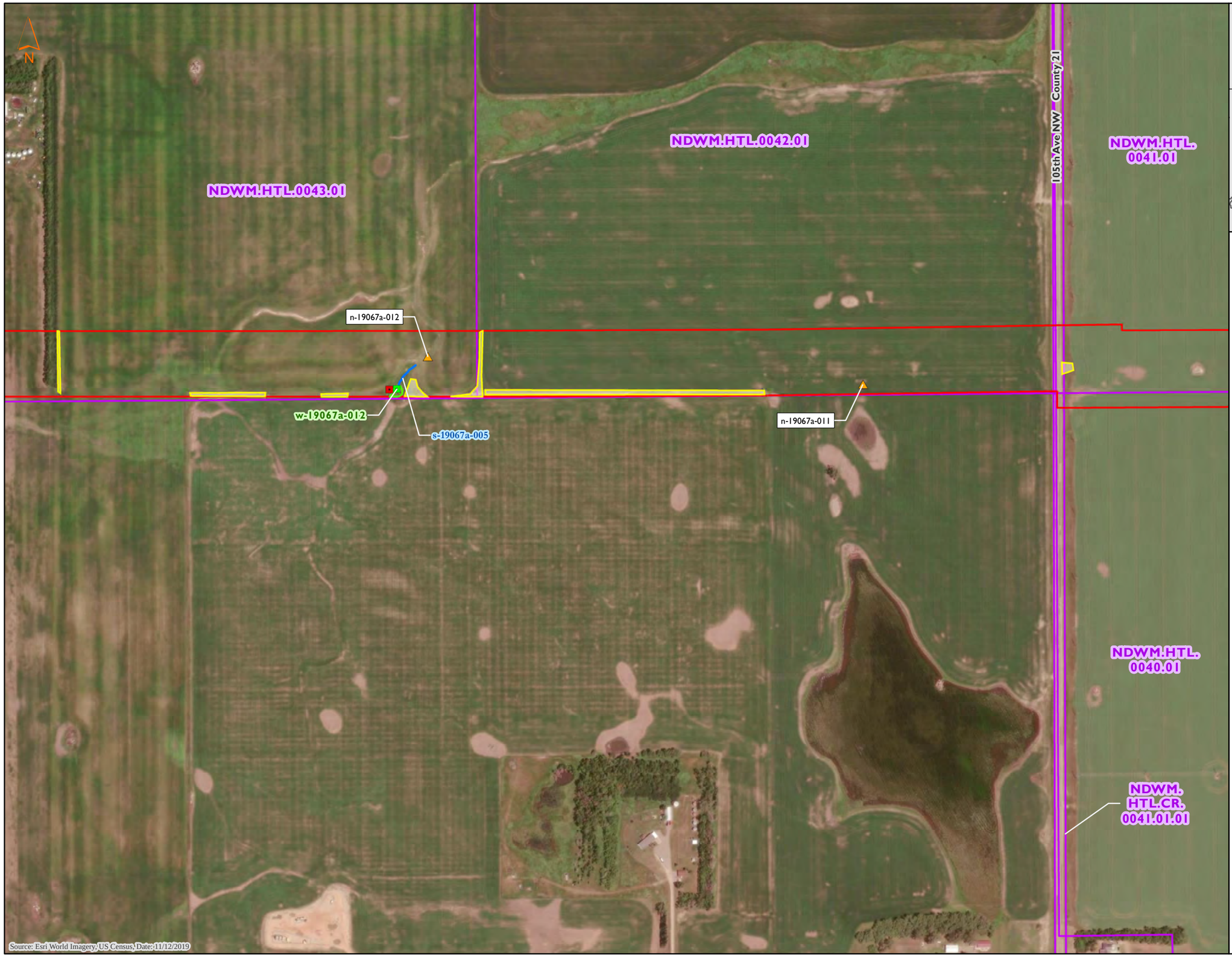

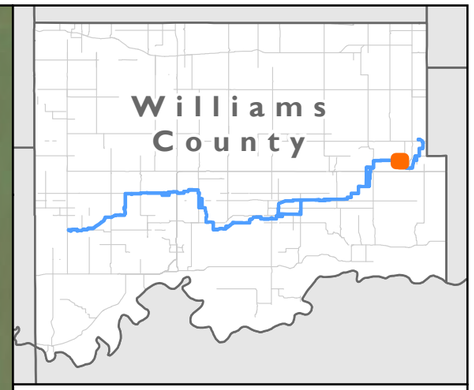

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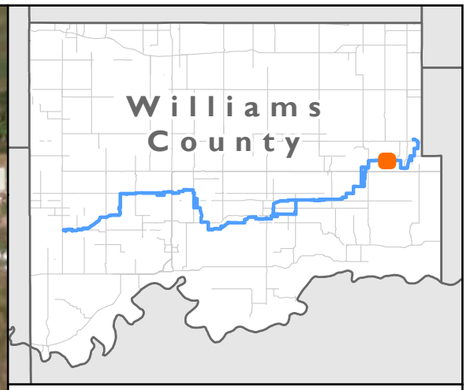

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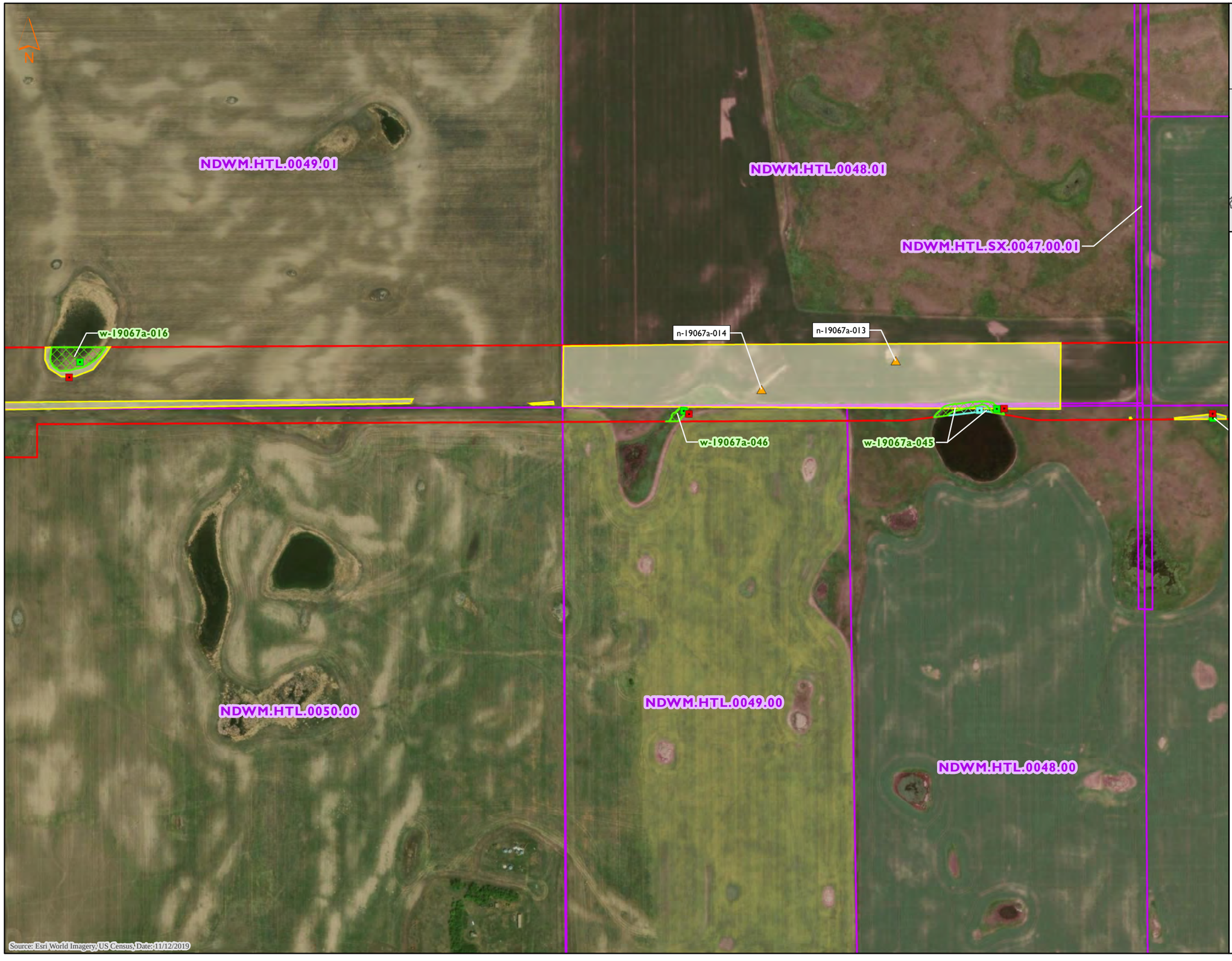

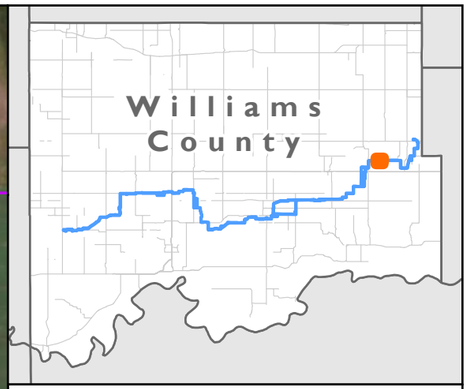

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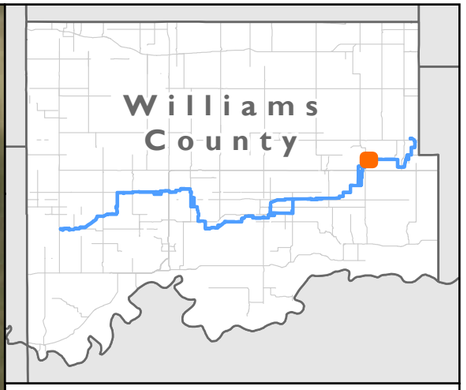

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ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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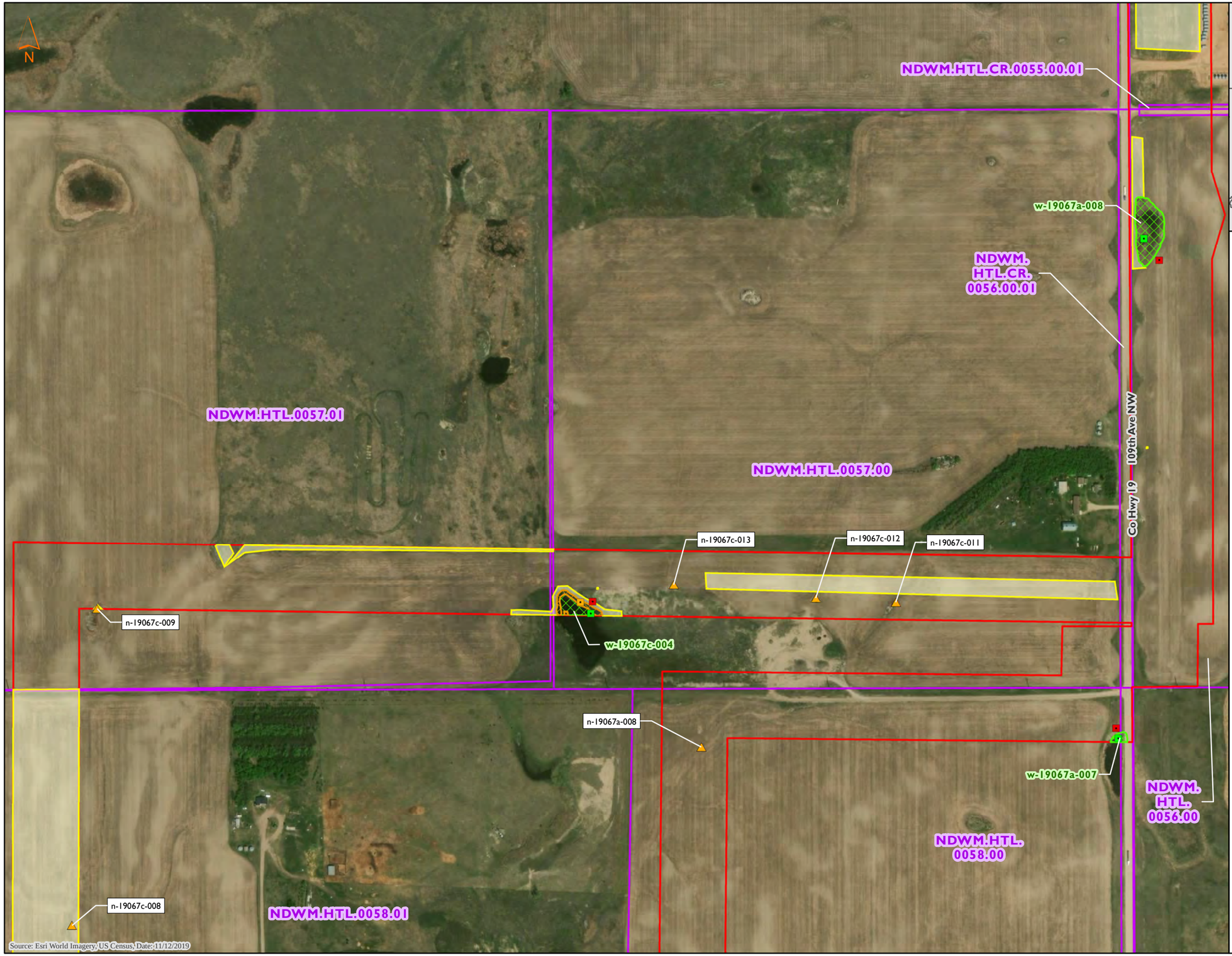



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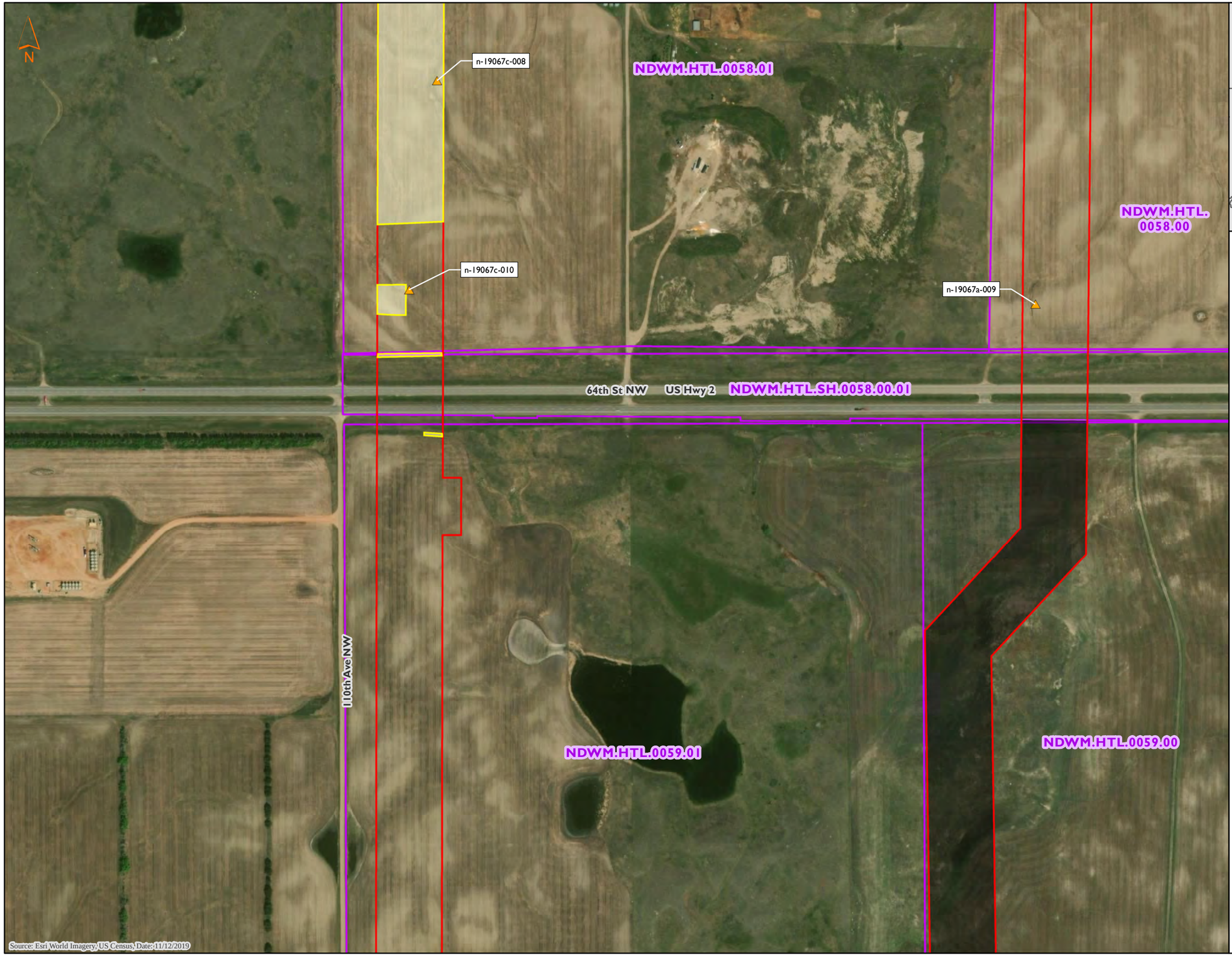

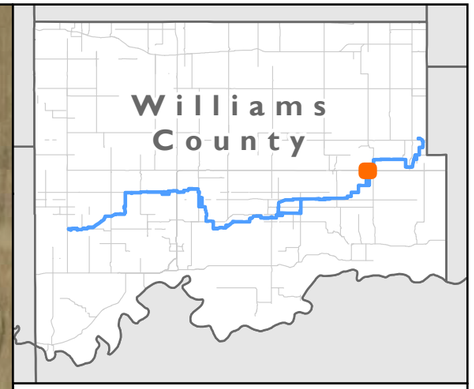

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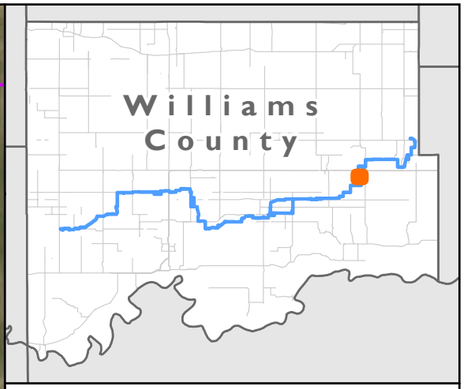

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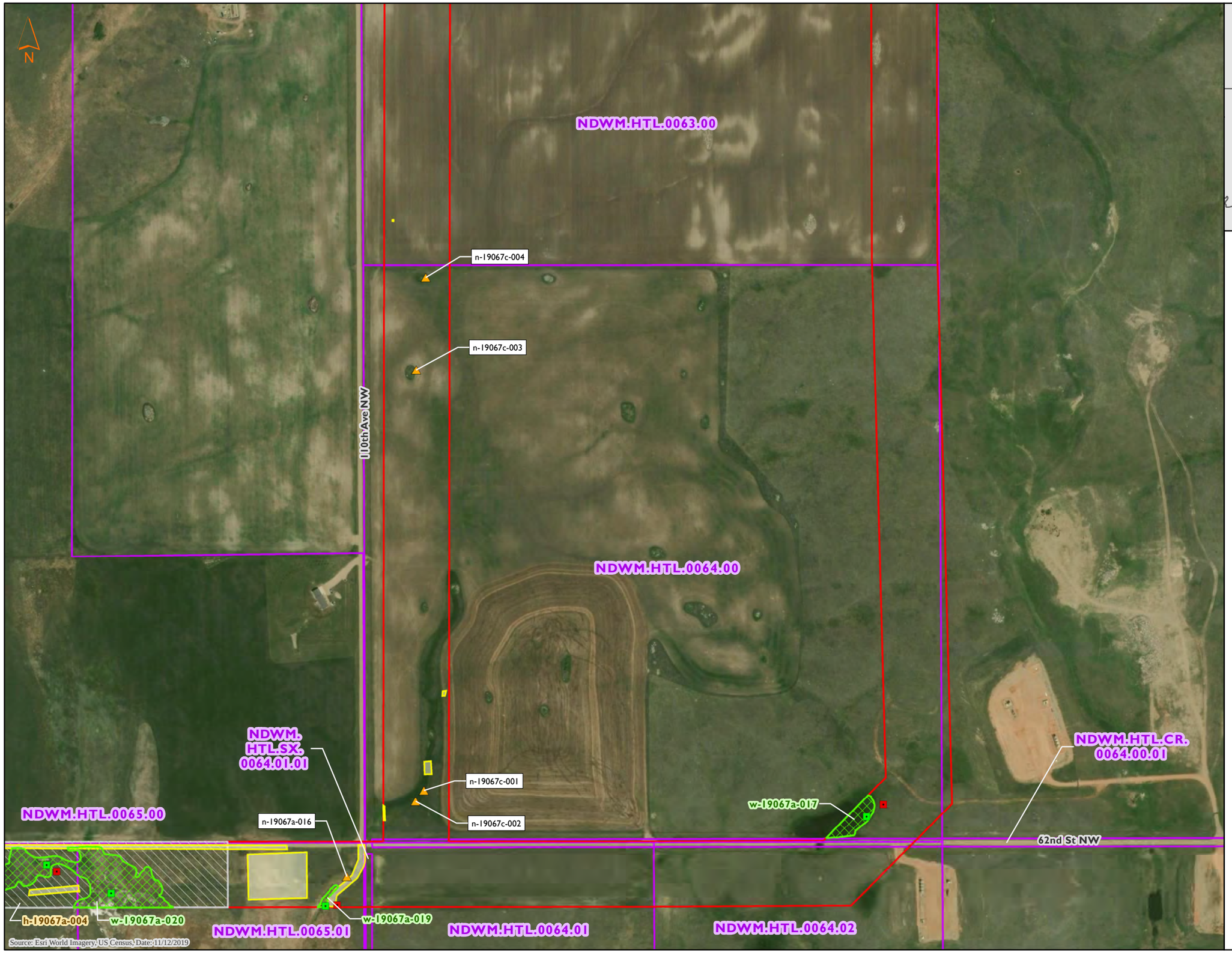

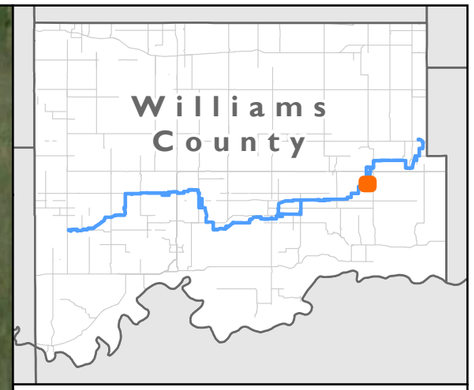

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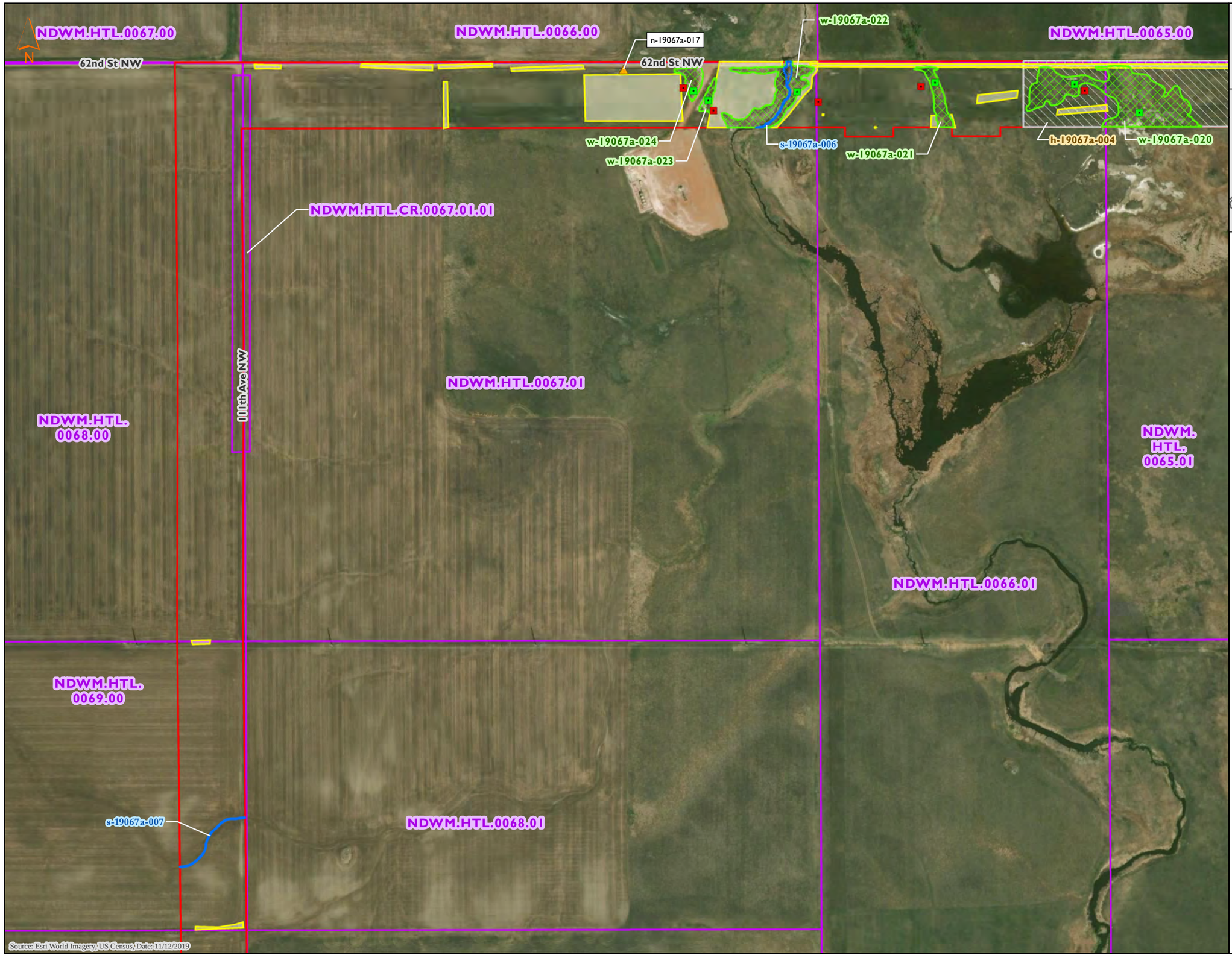

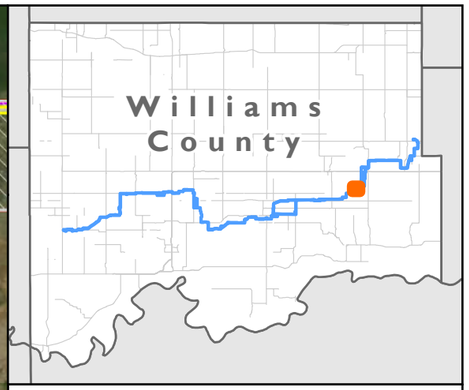

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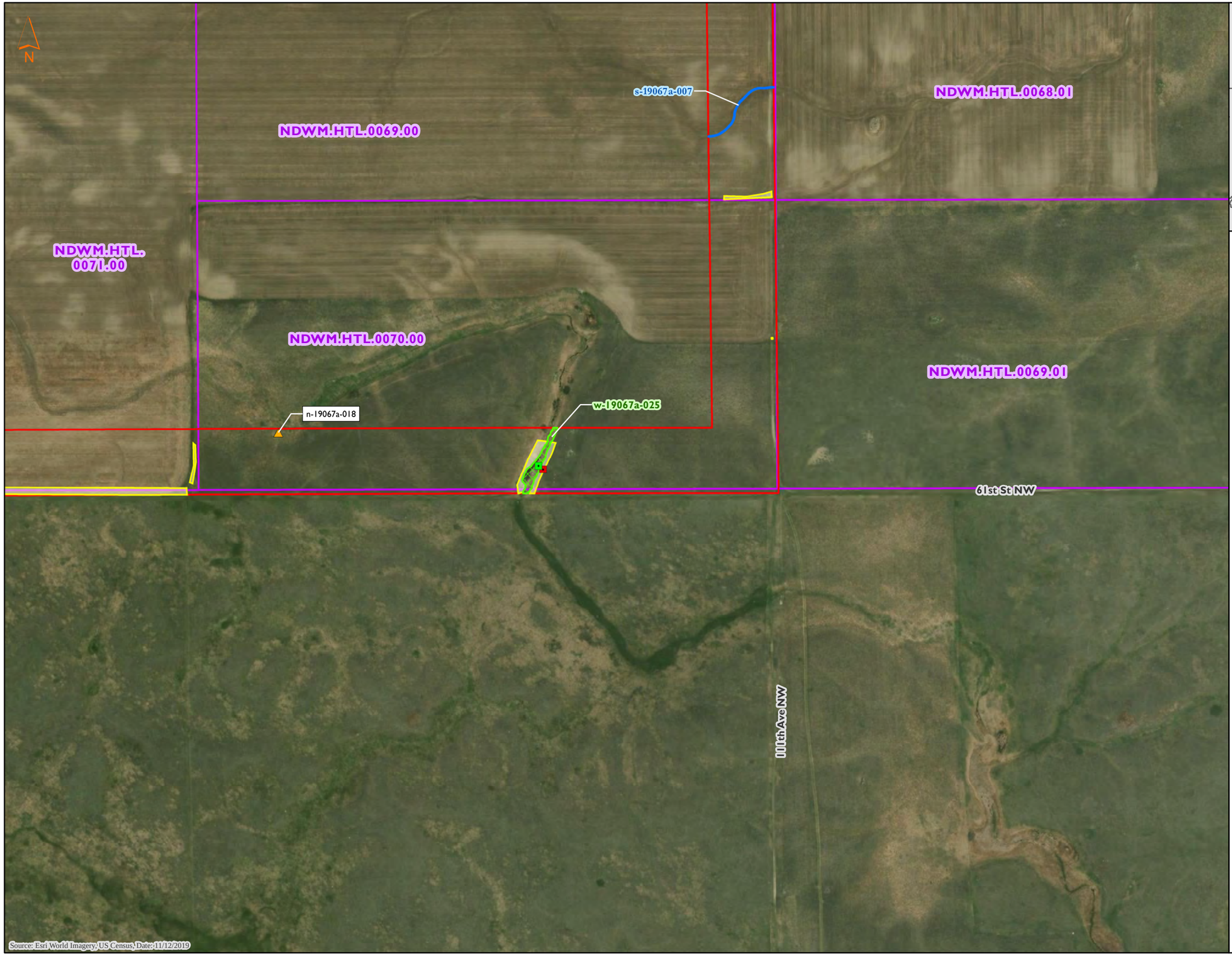

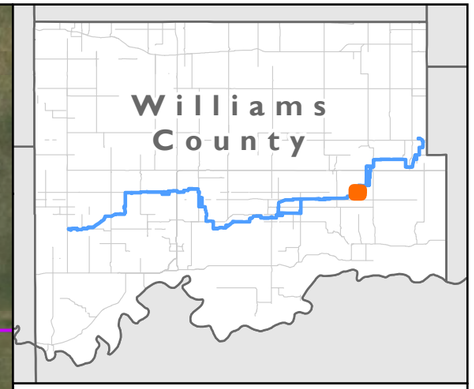

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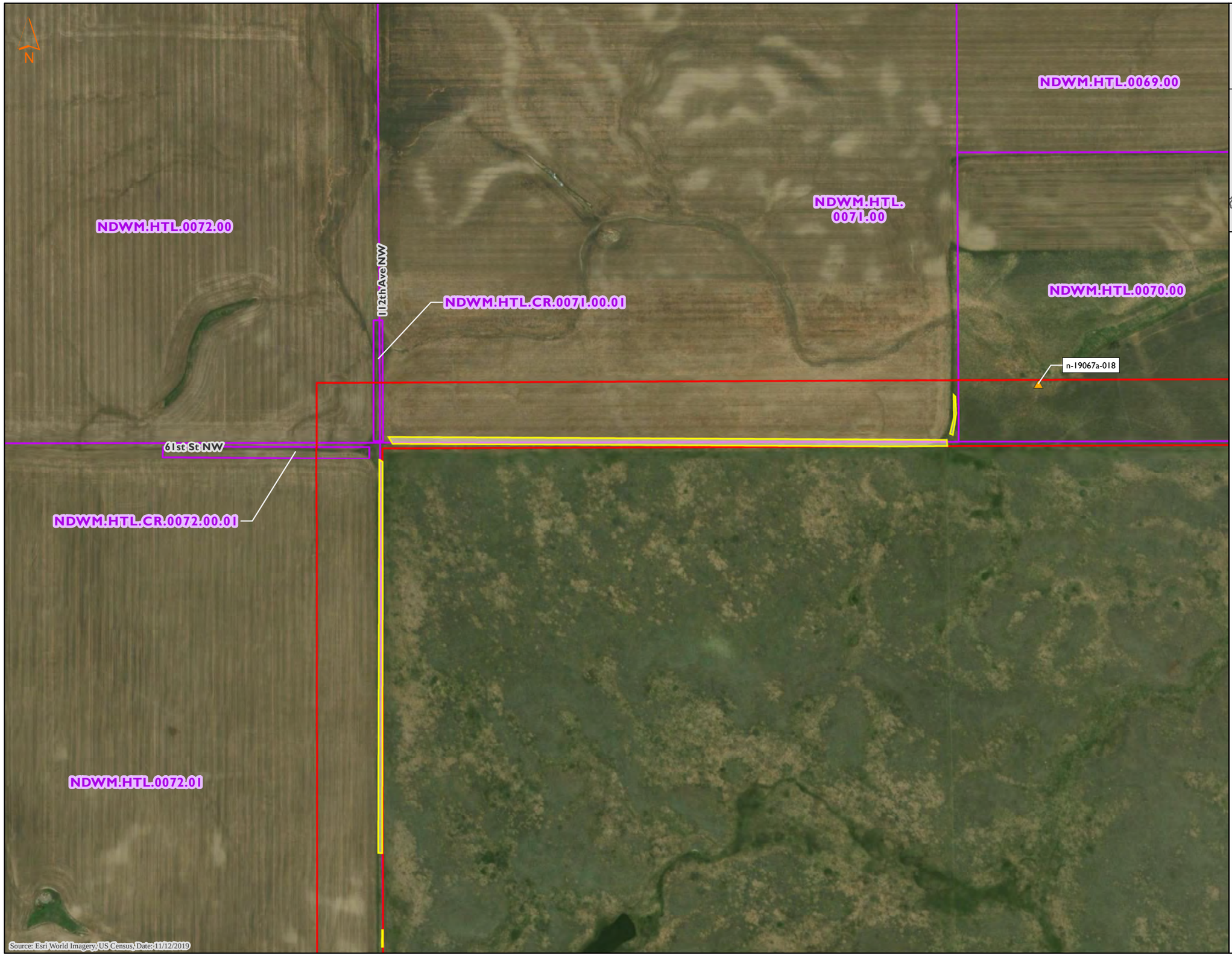

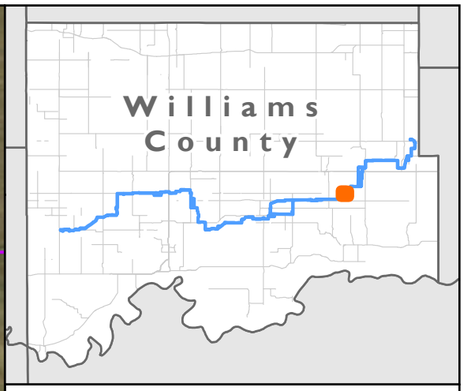

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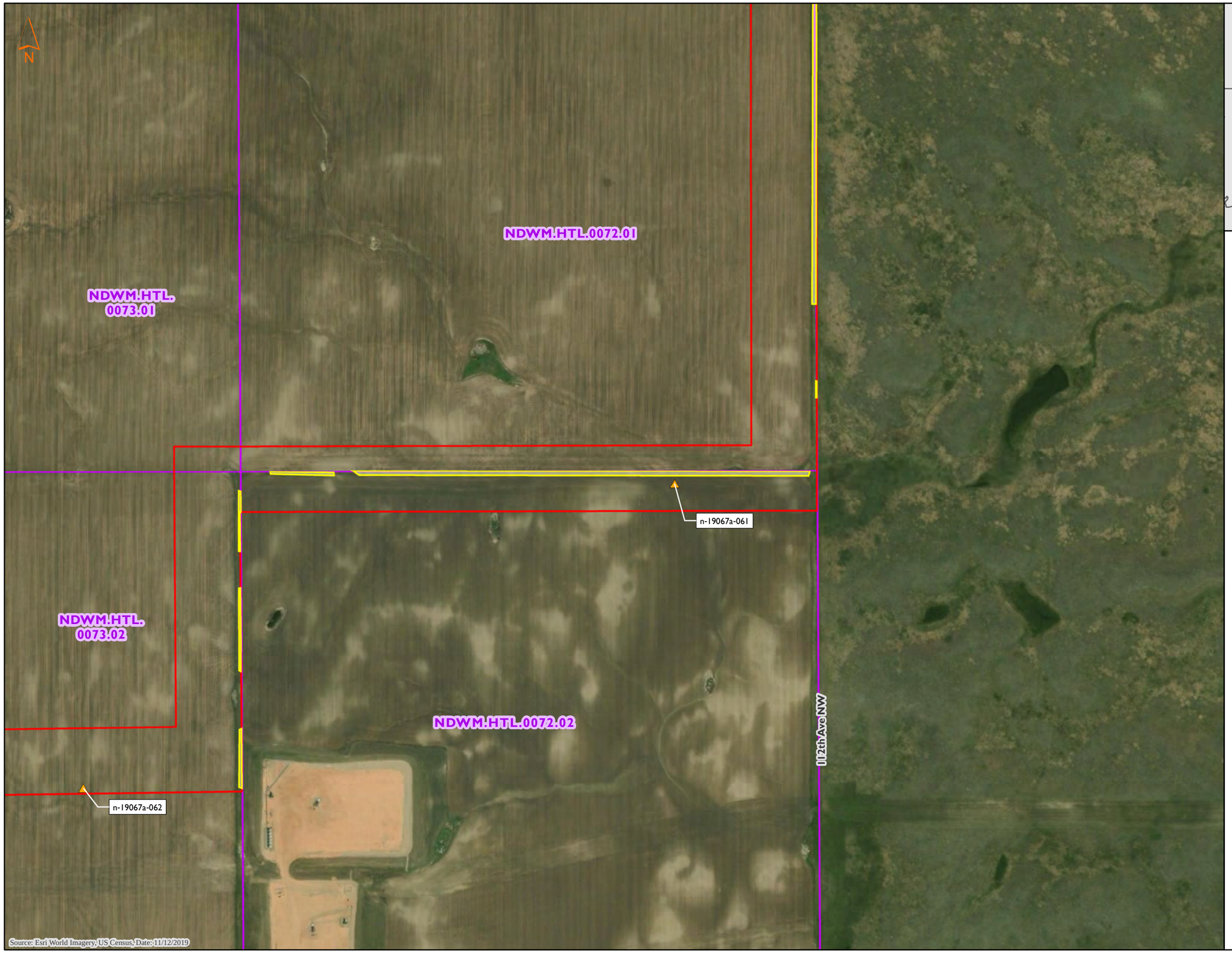

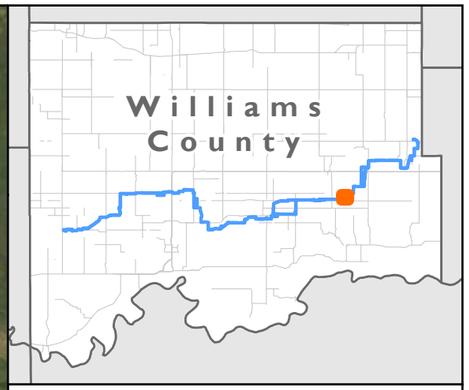

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- Tract

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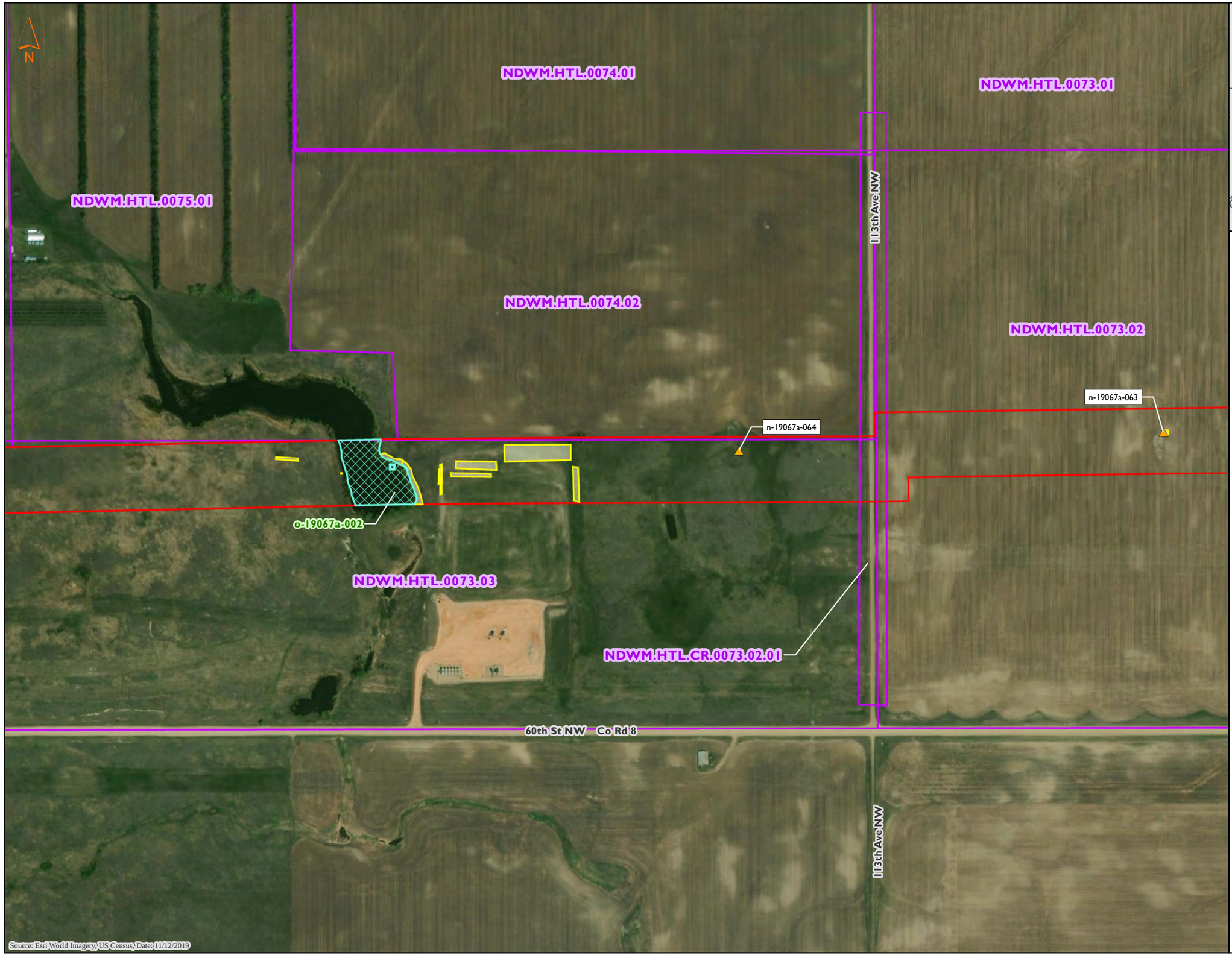

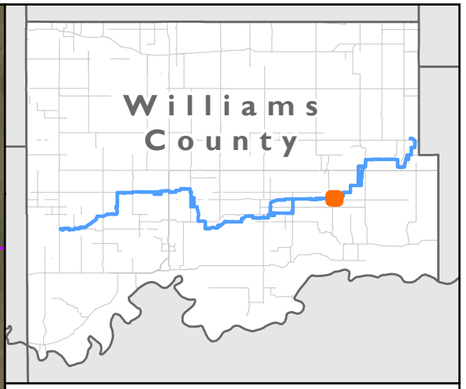

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ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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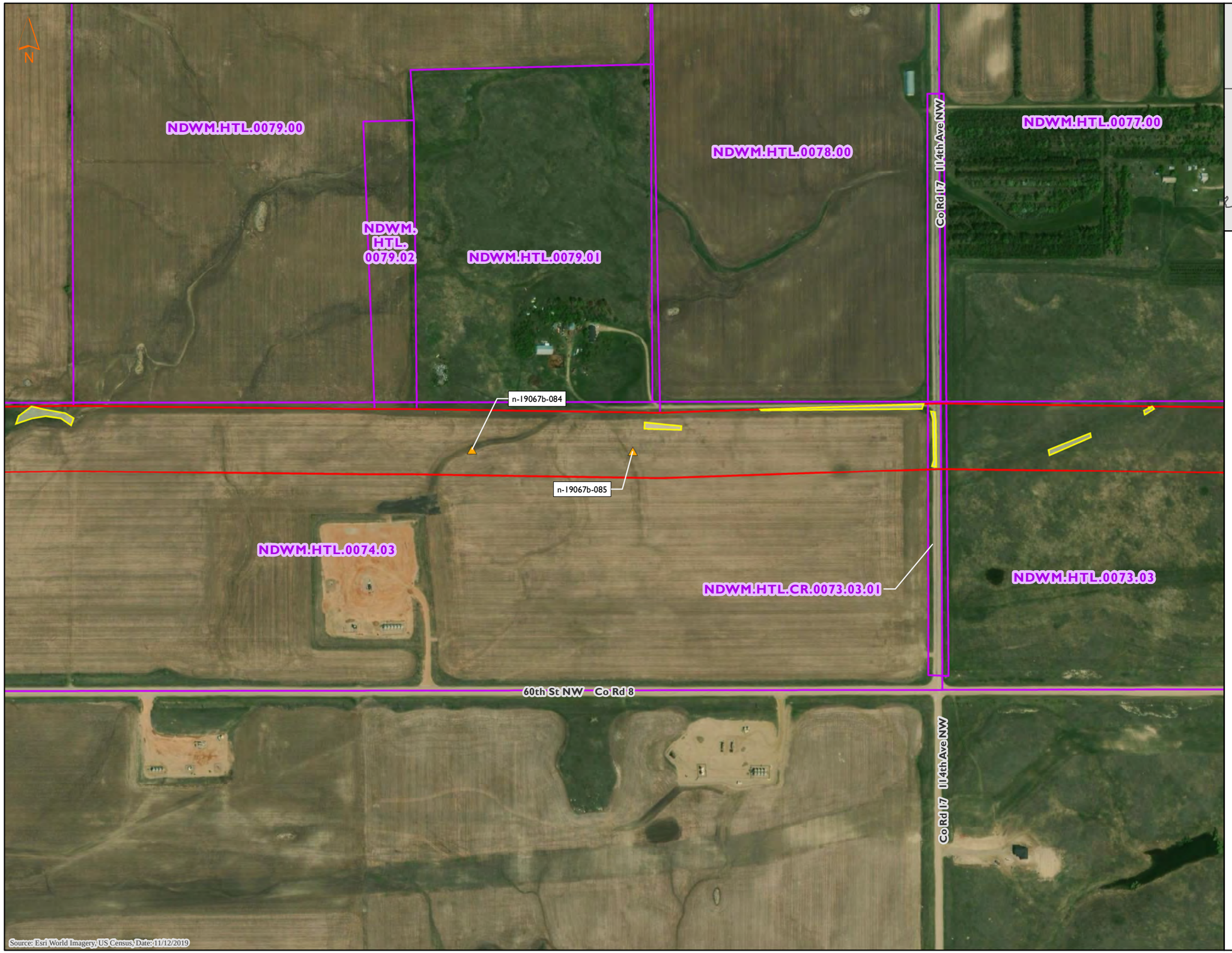

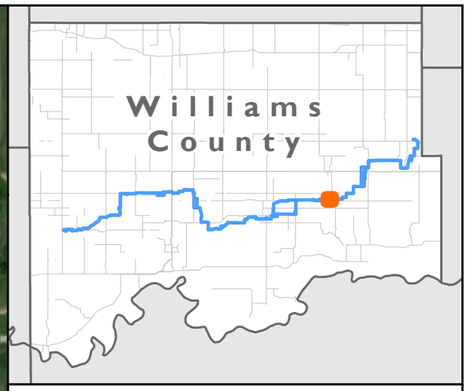

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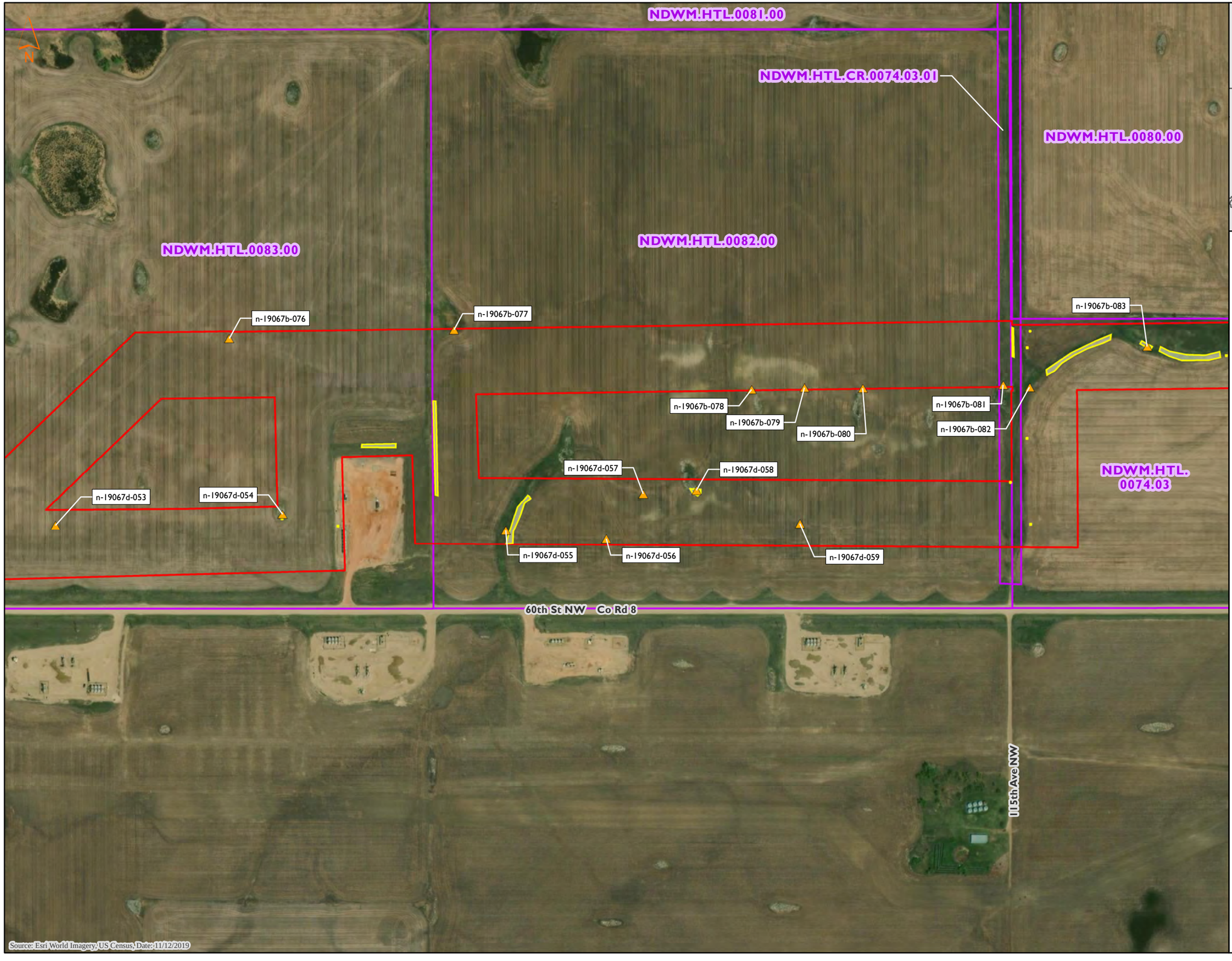

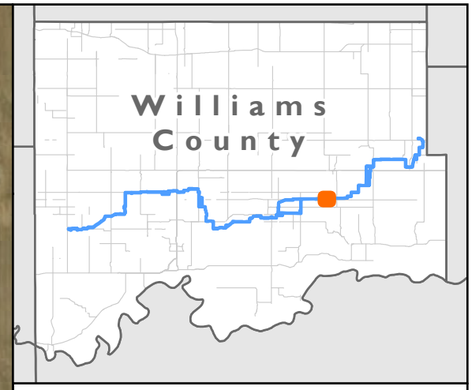

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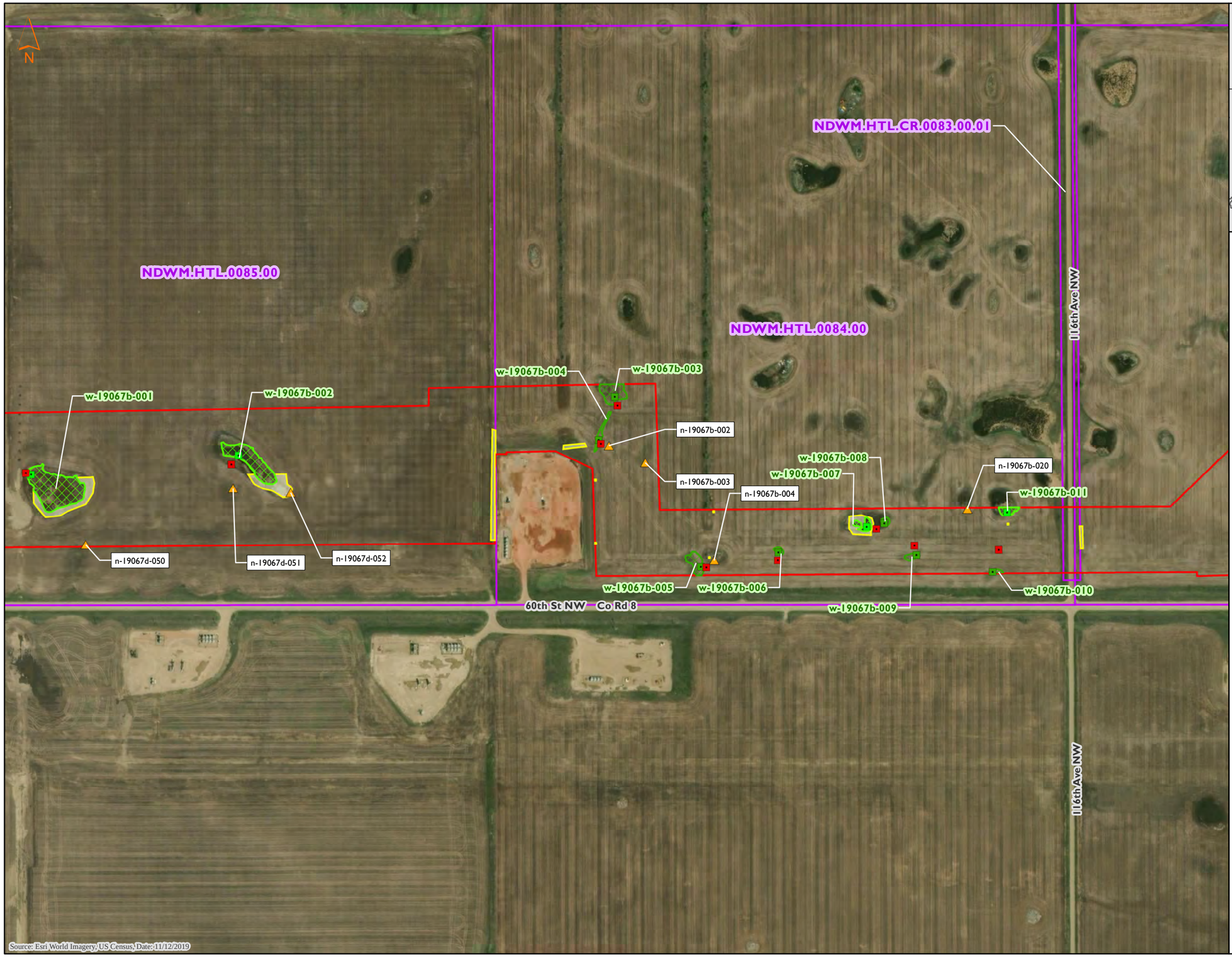



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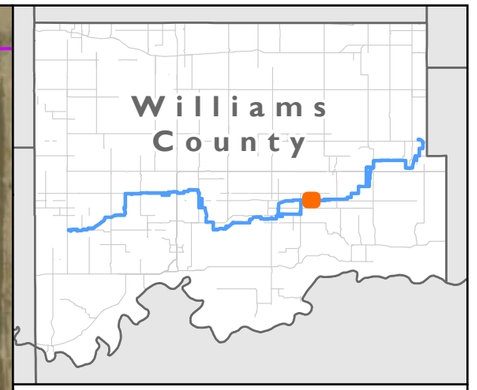

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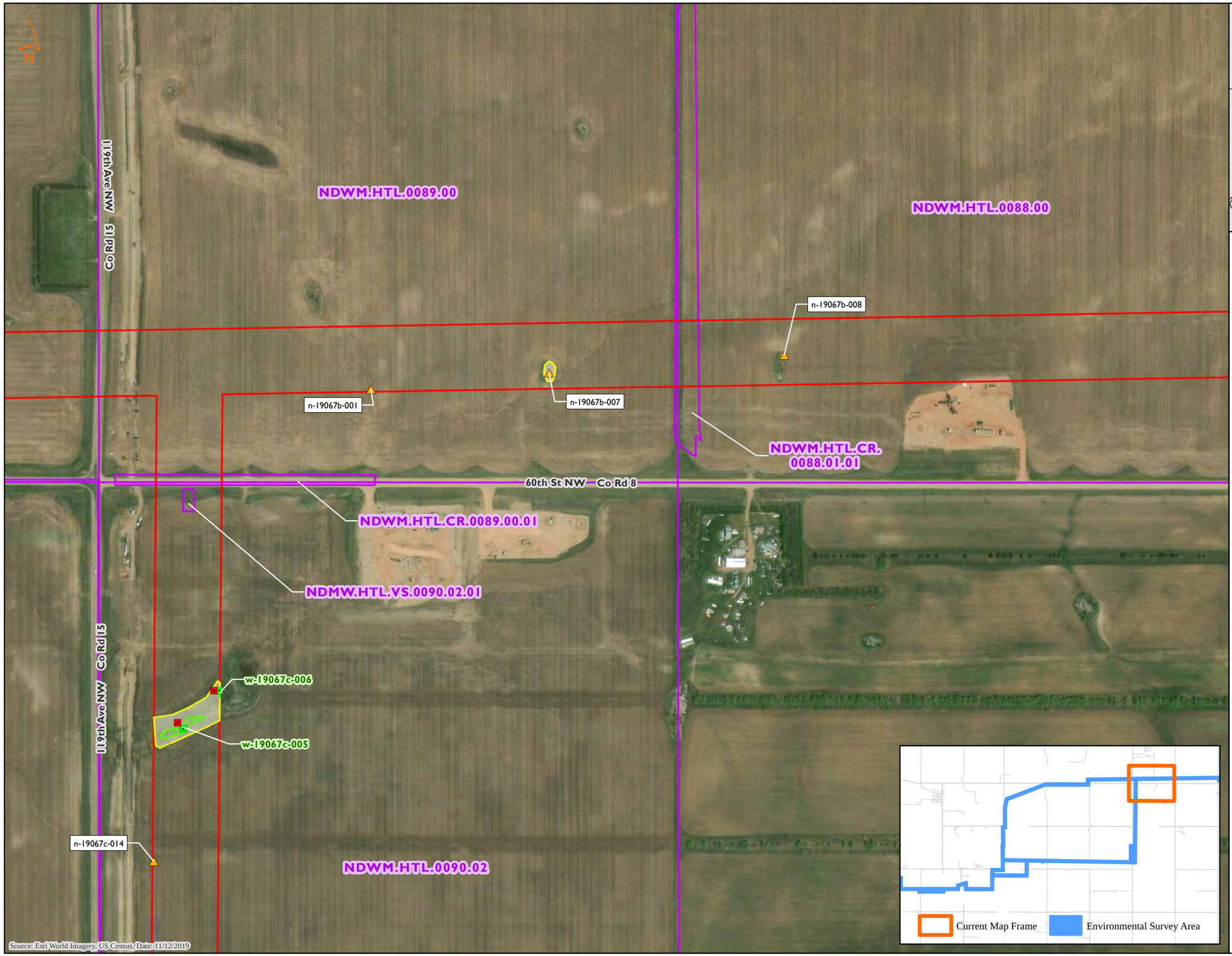

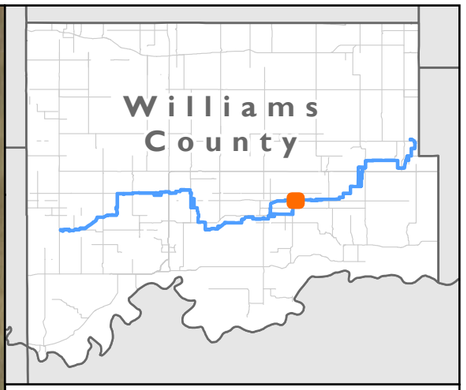

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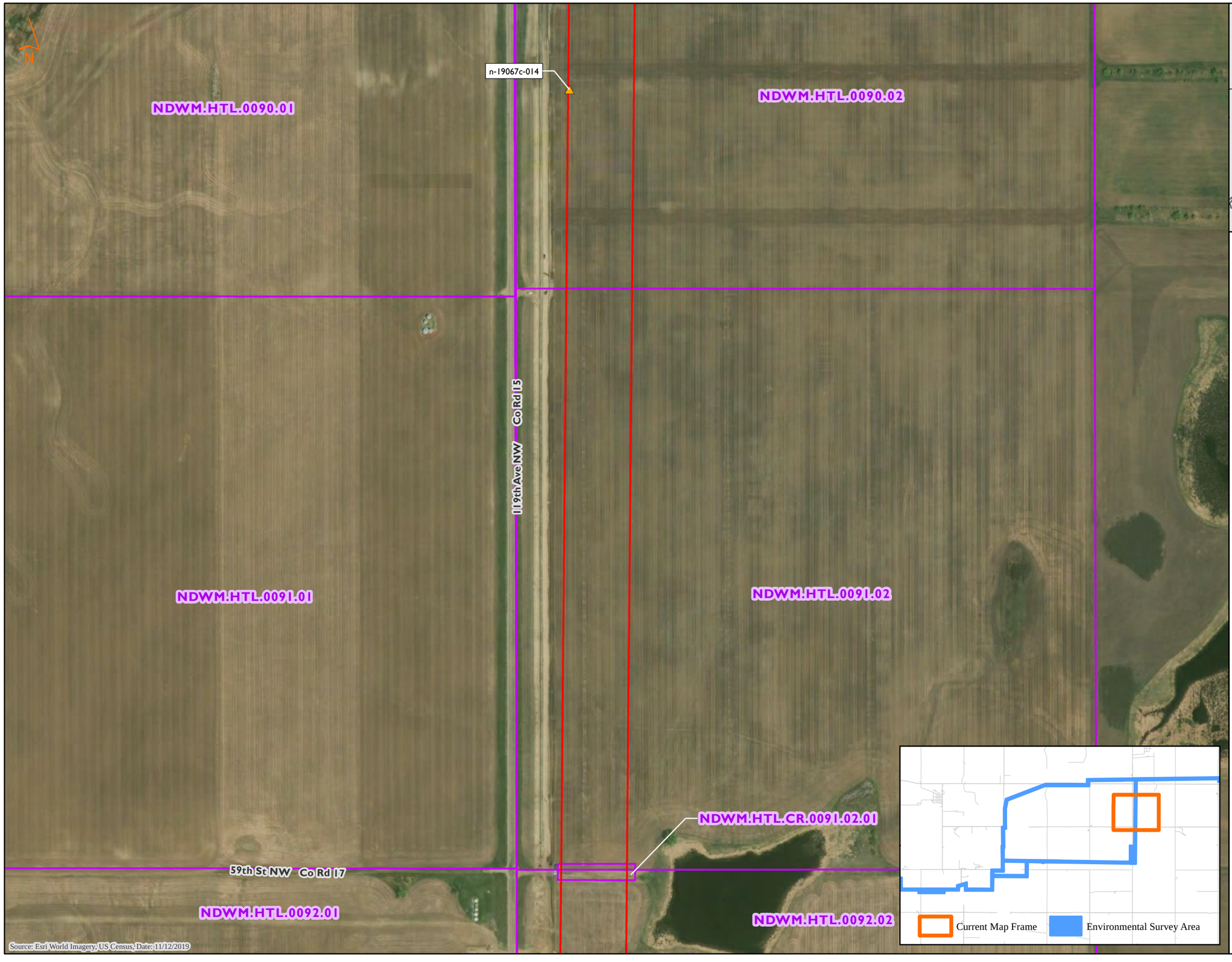



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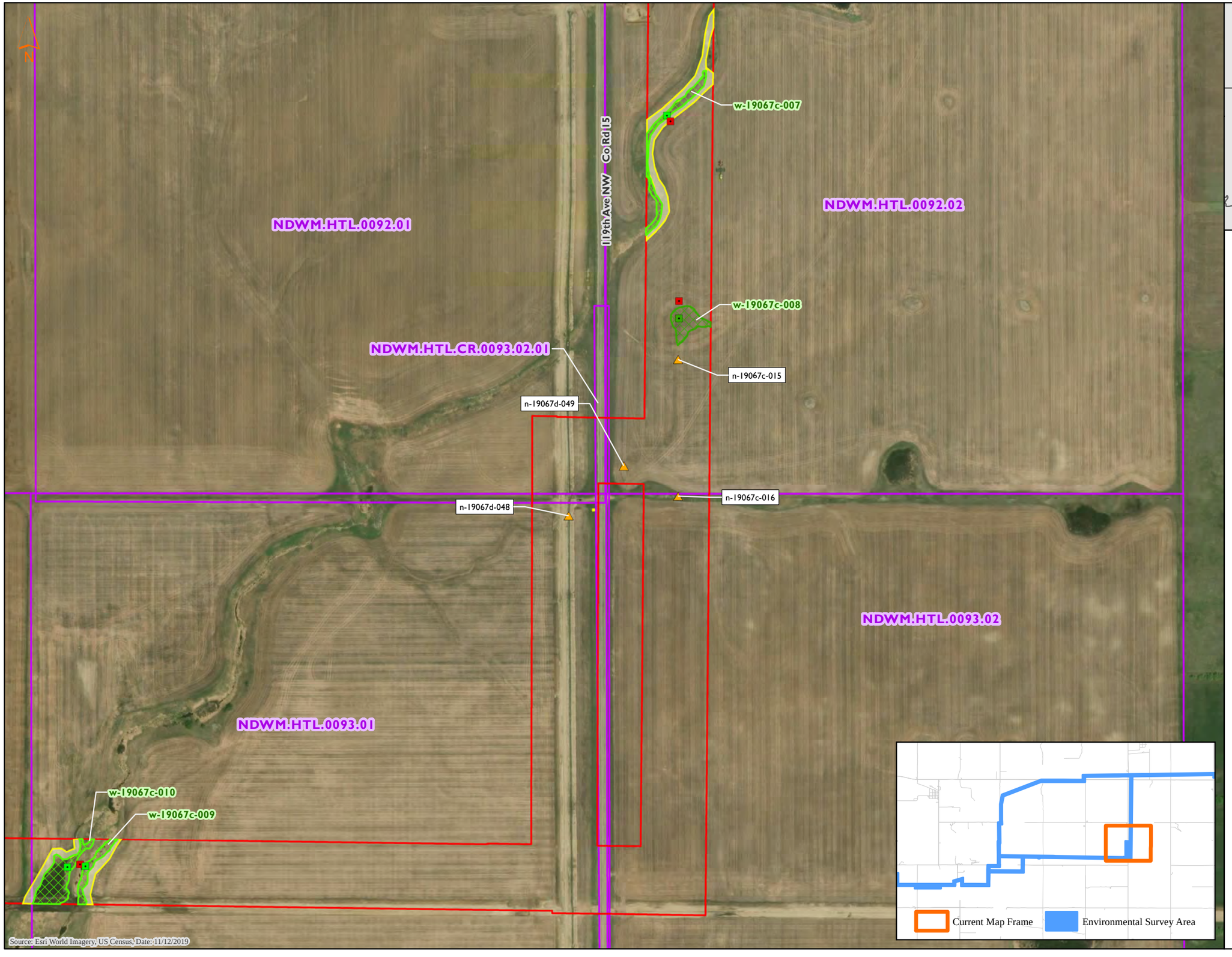

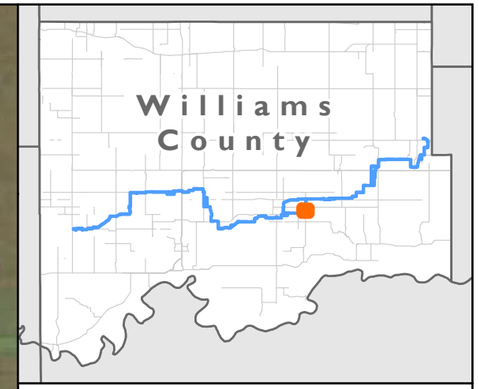

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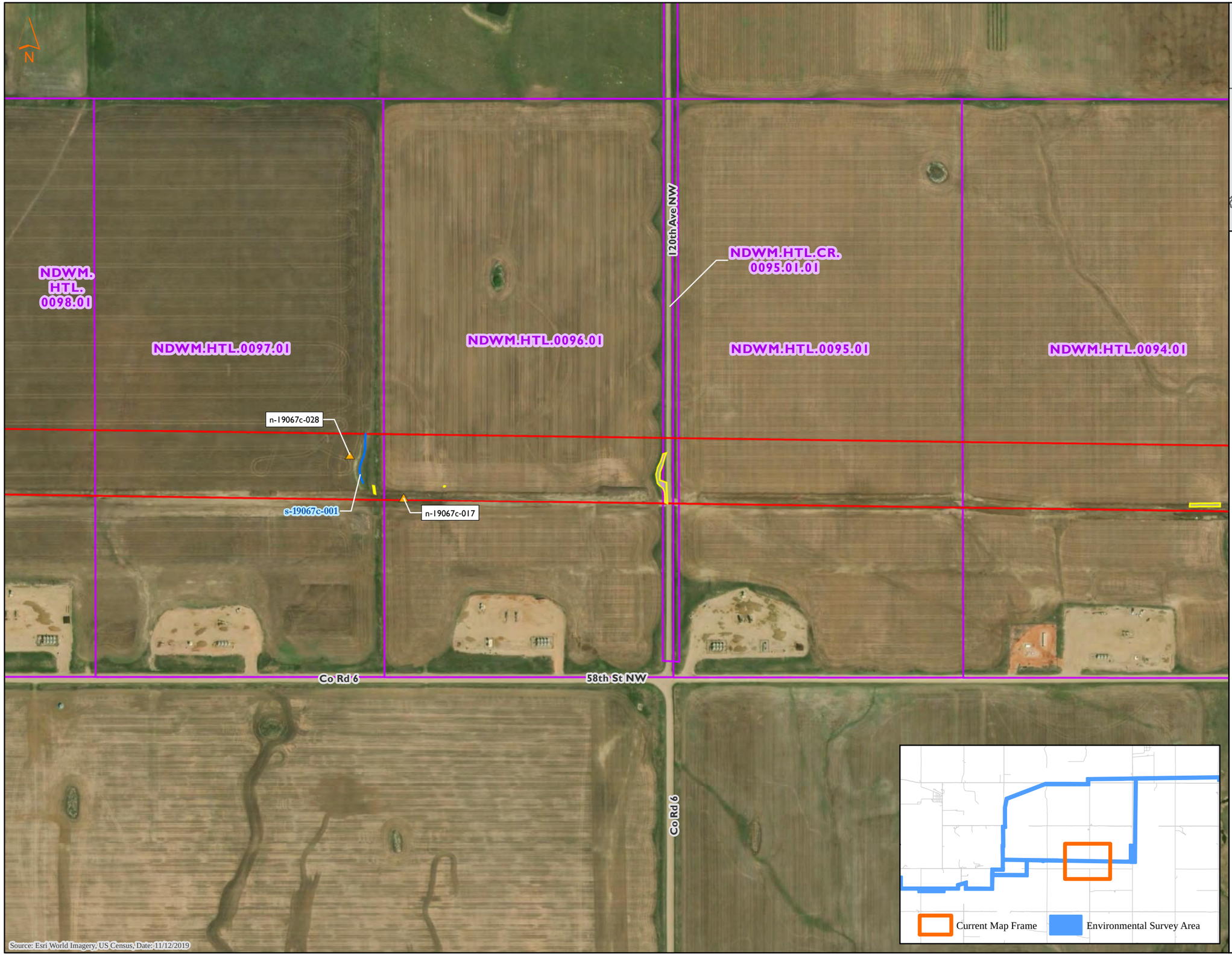

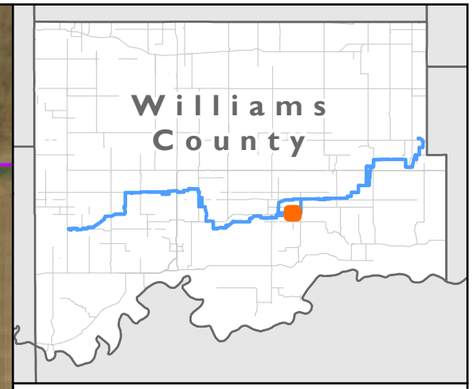

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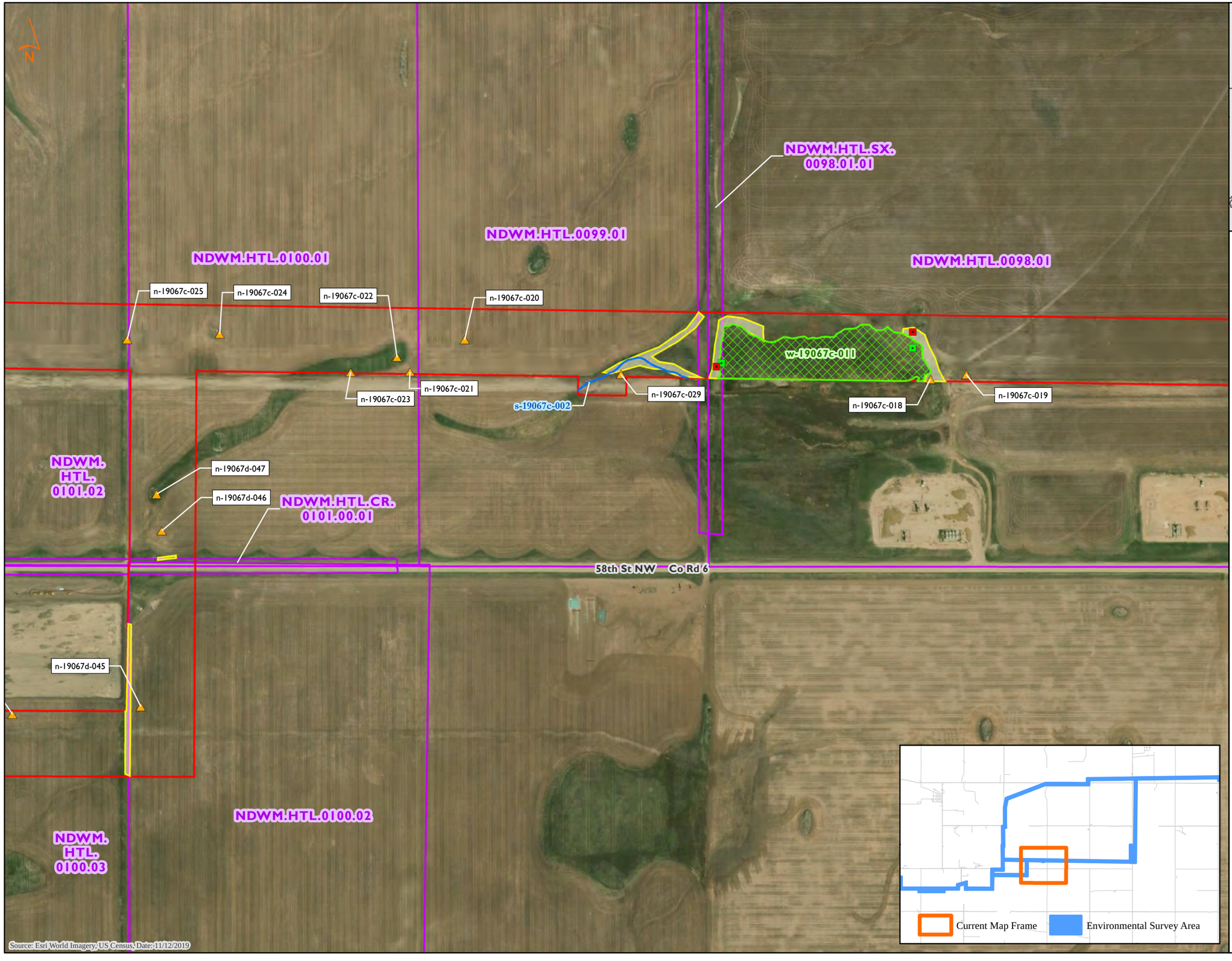

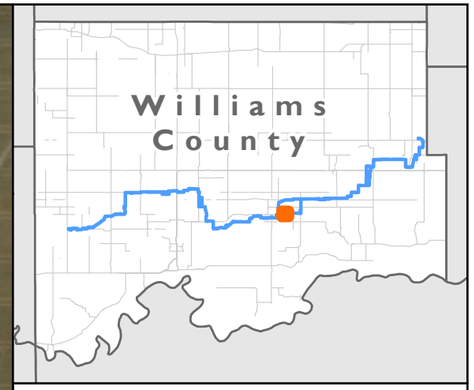

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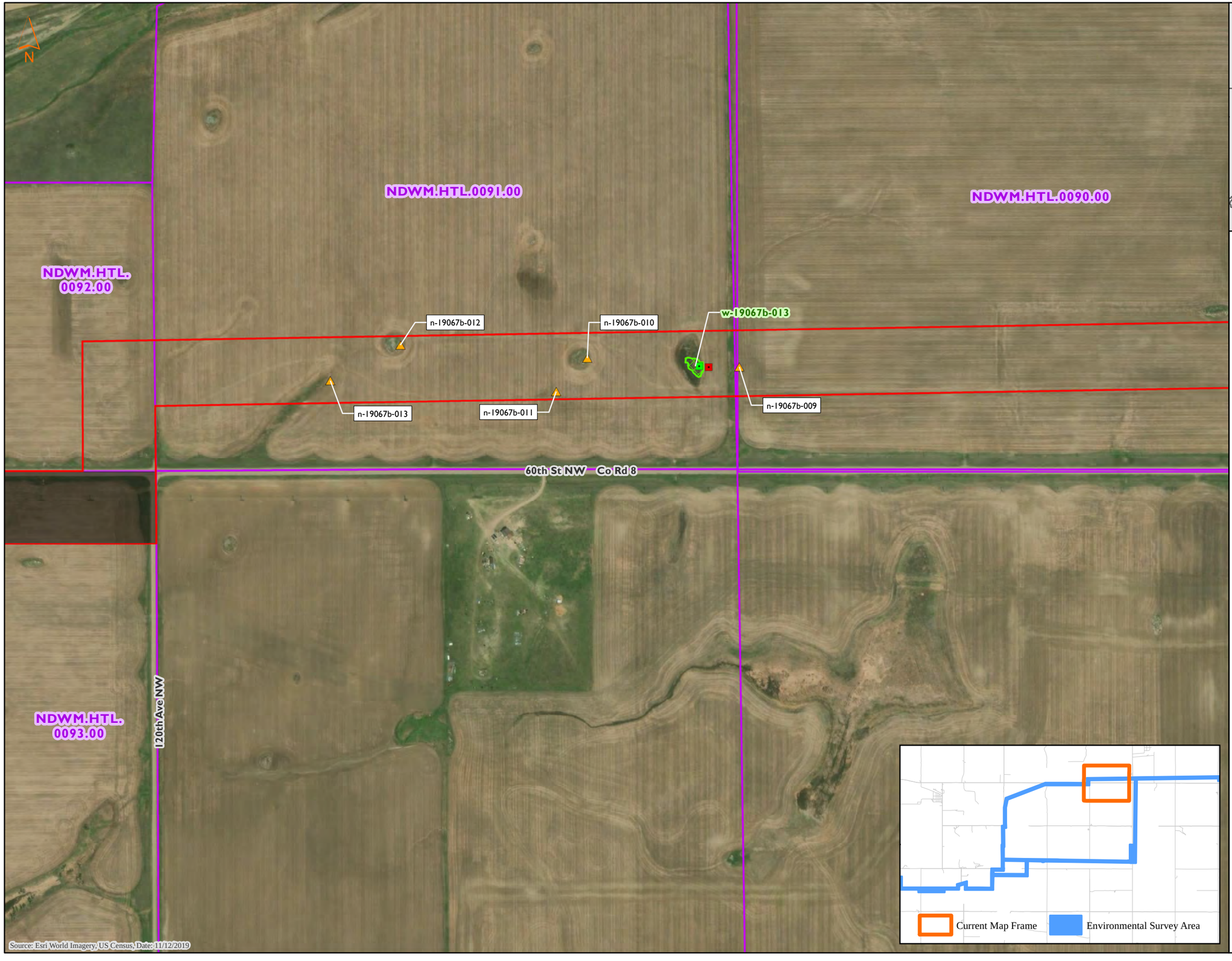

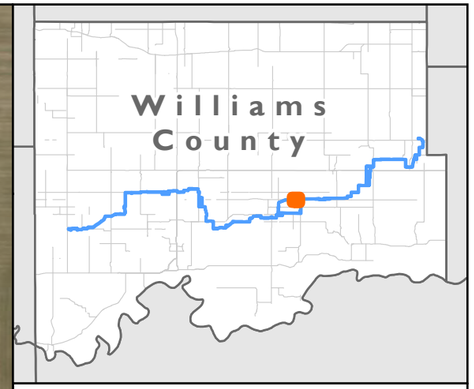

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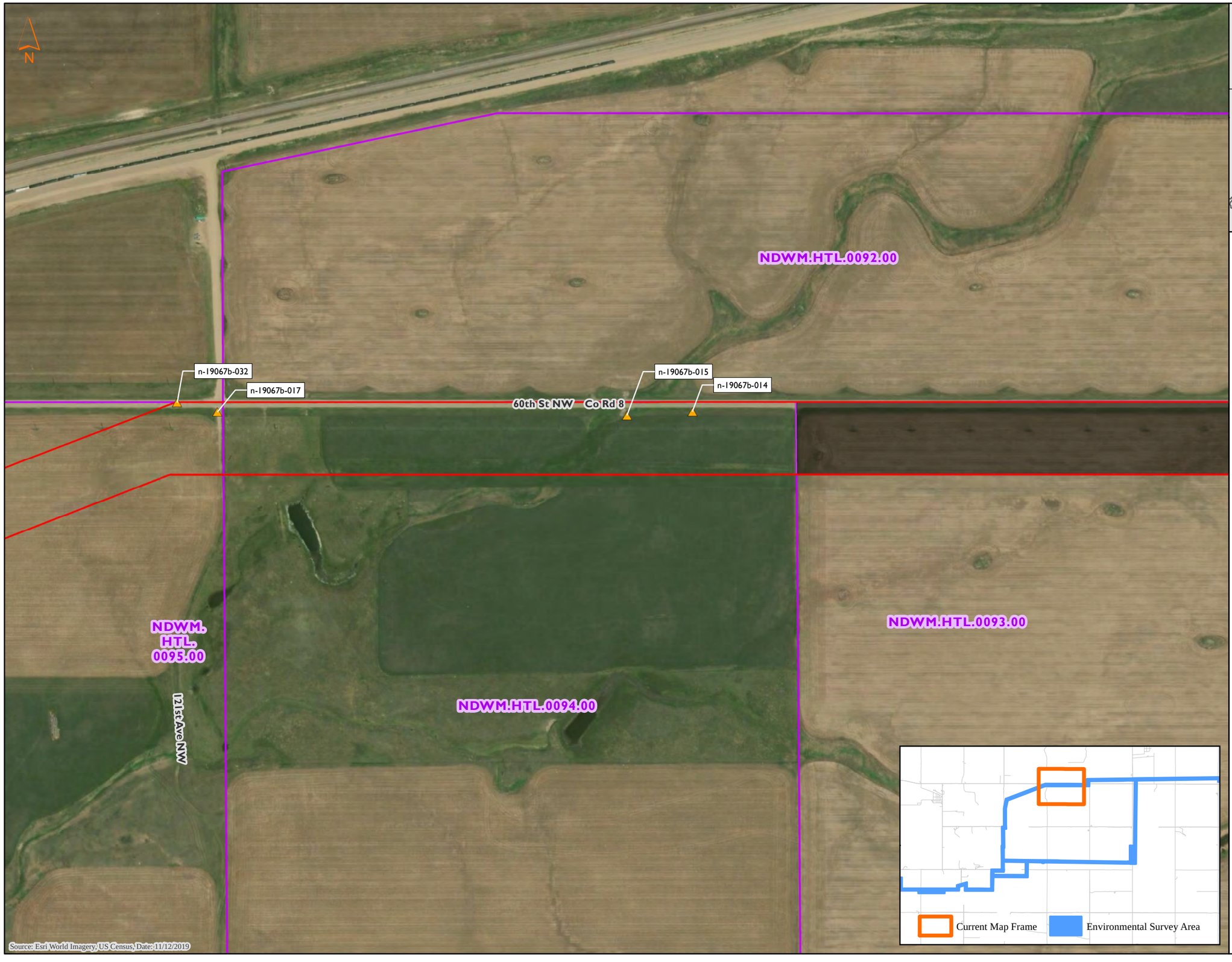



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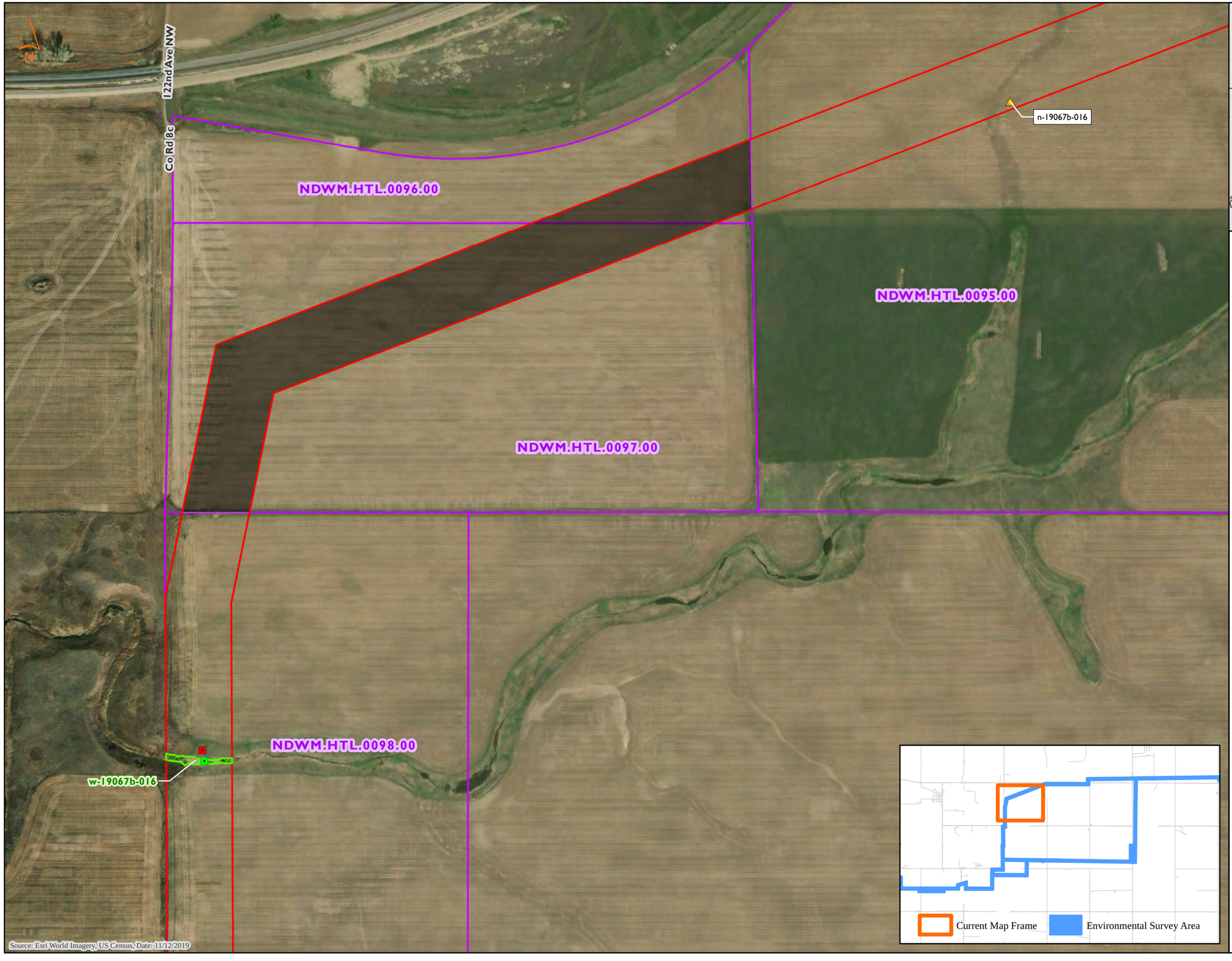

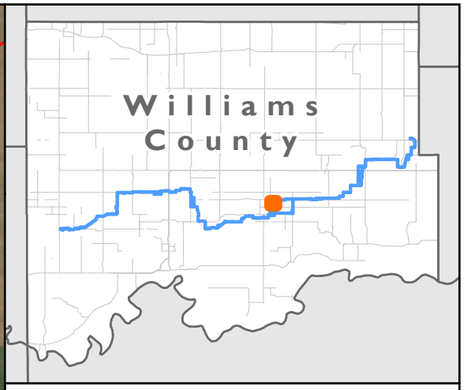

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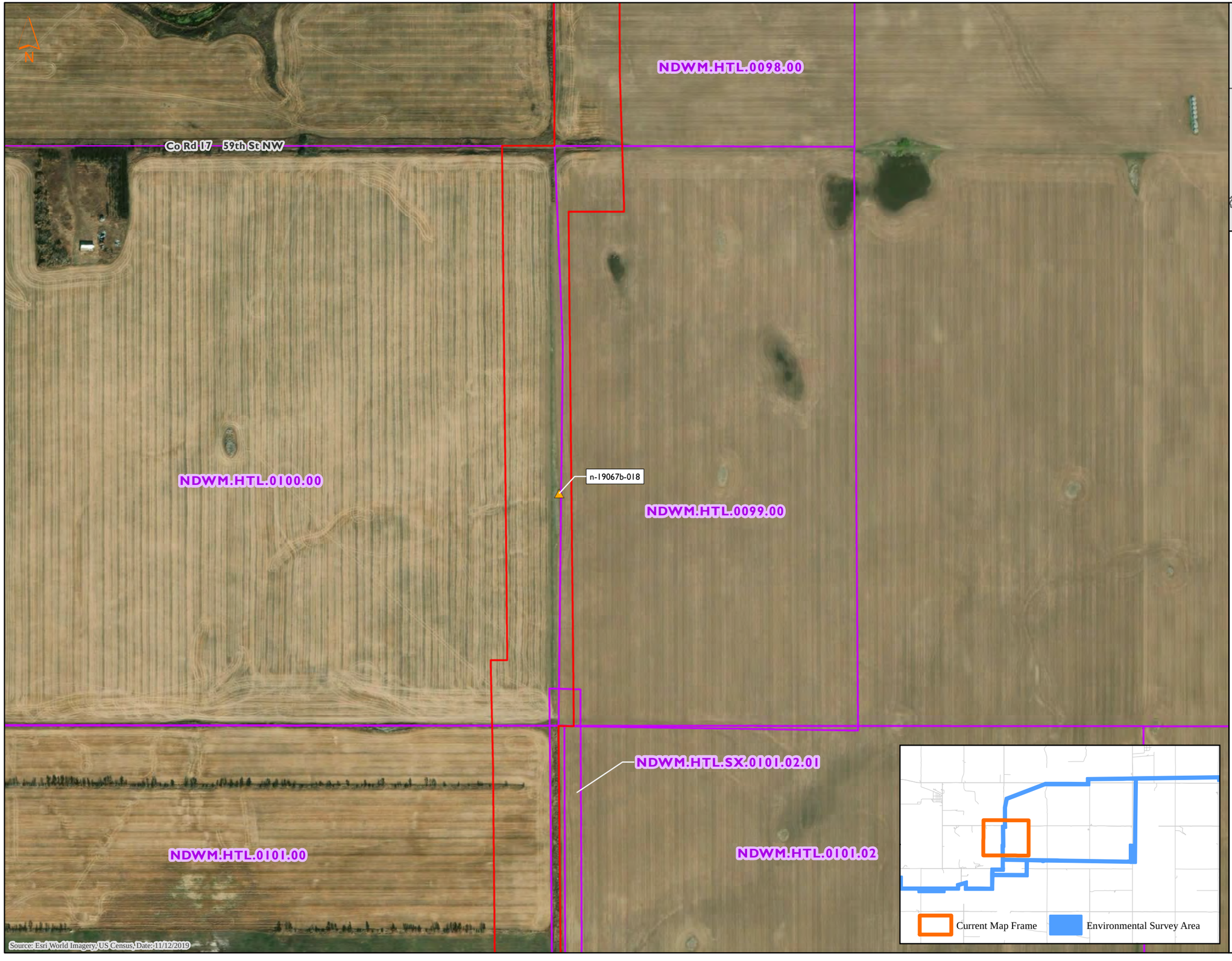



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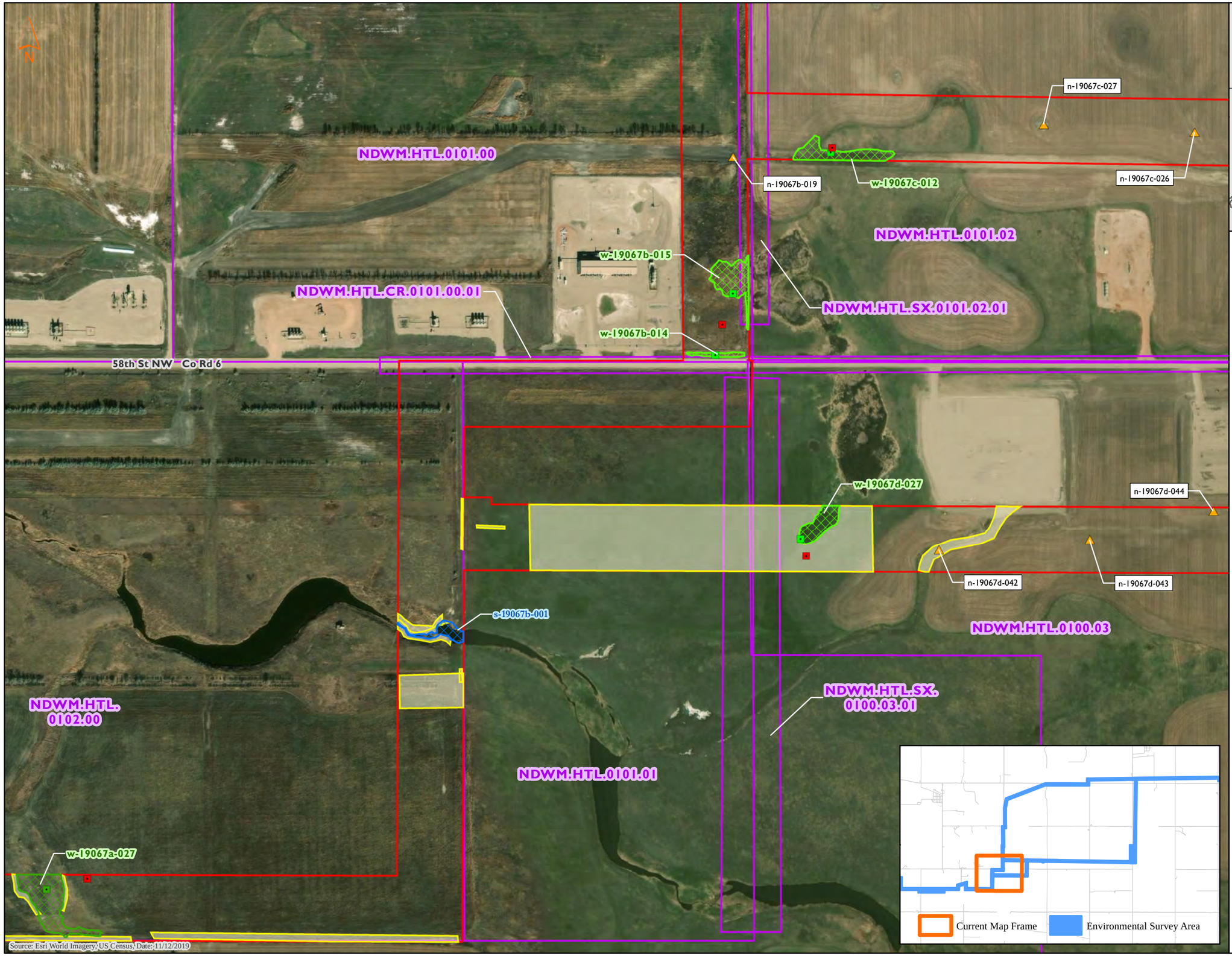

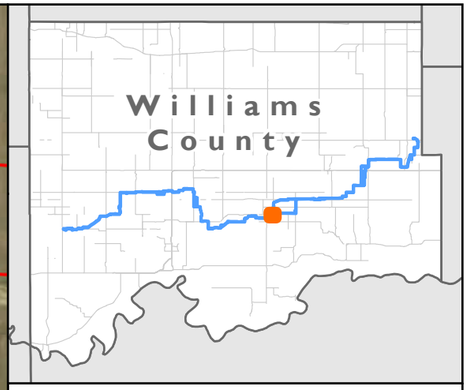

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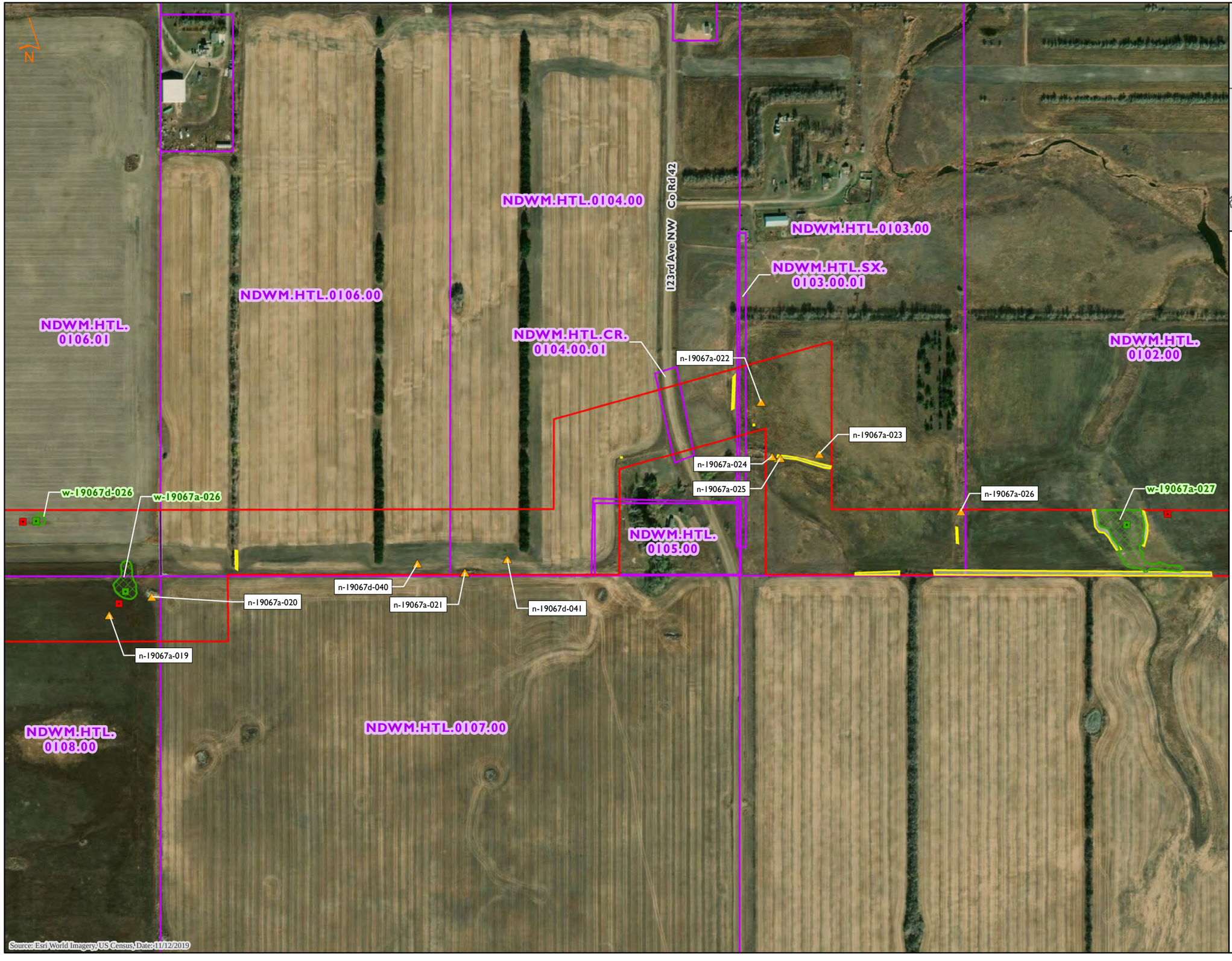

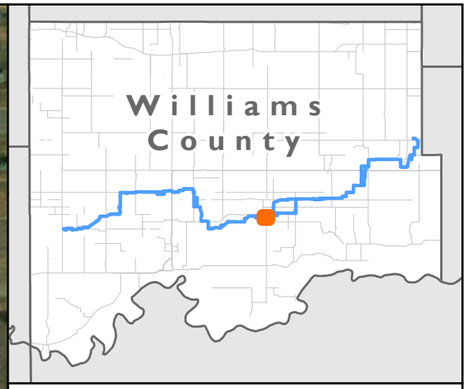

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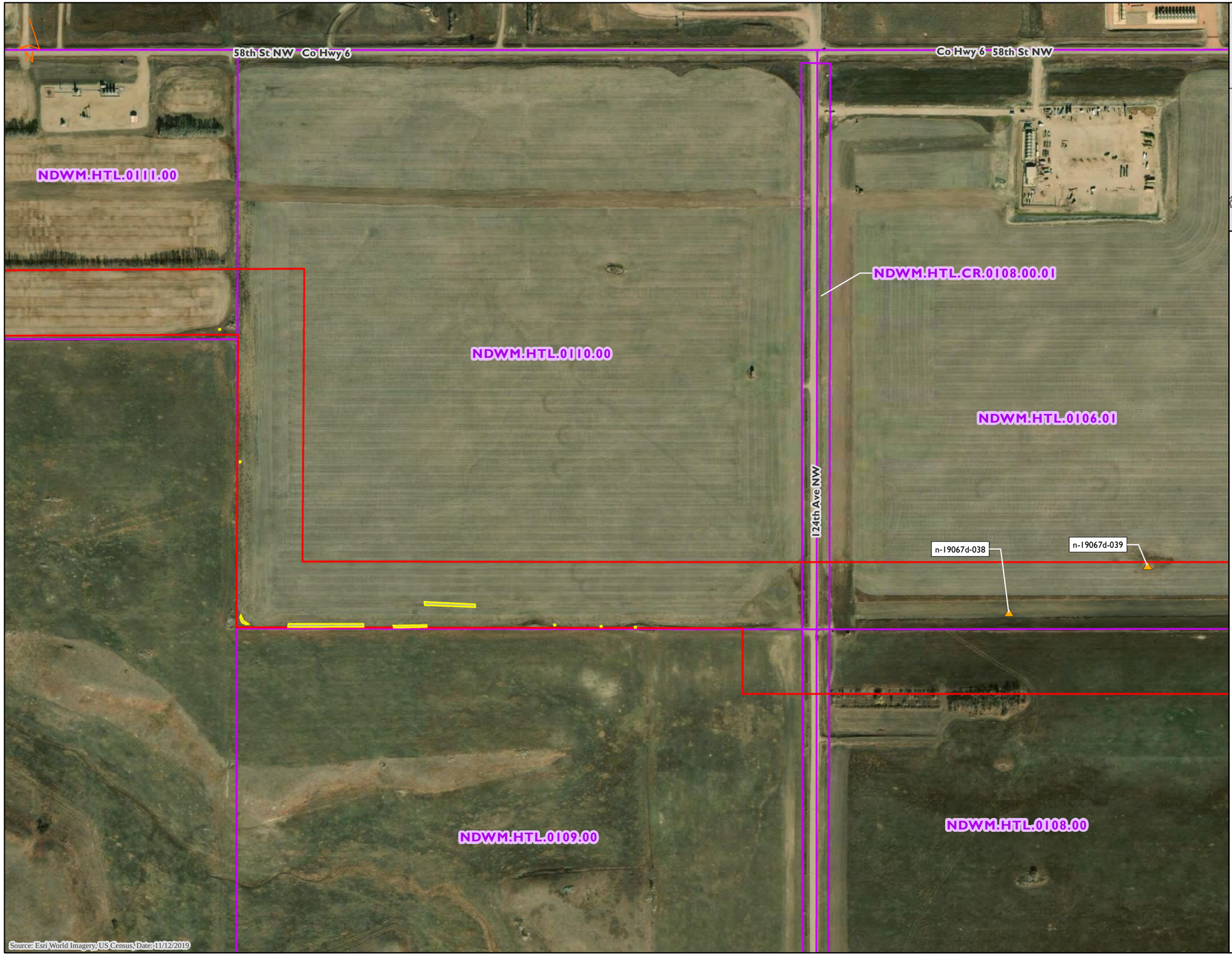

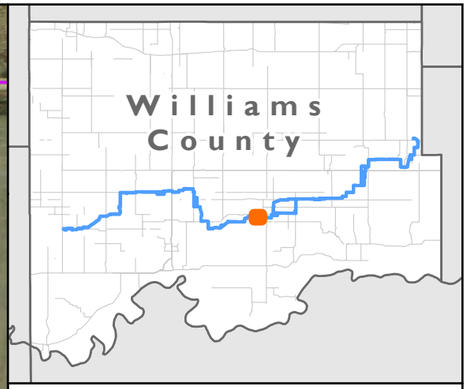

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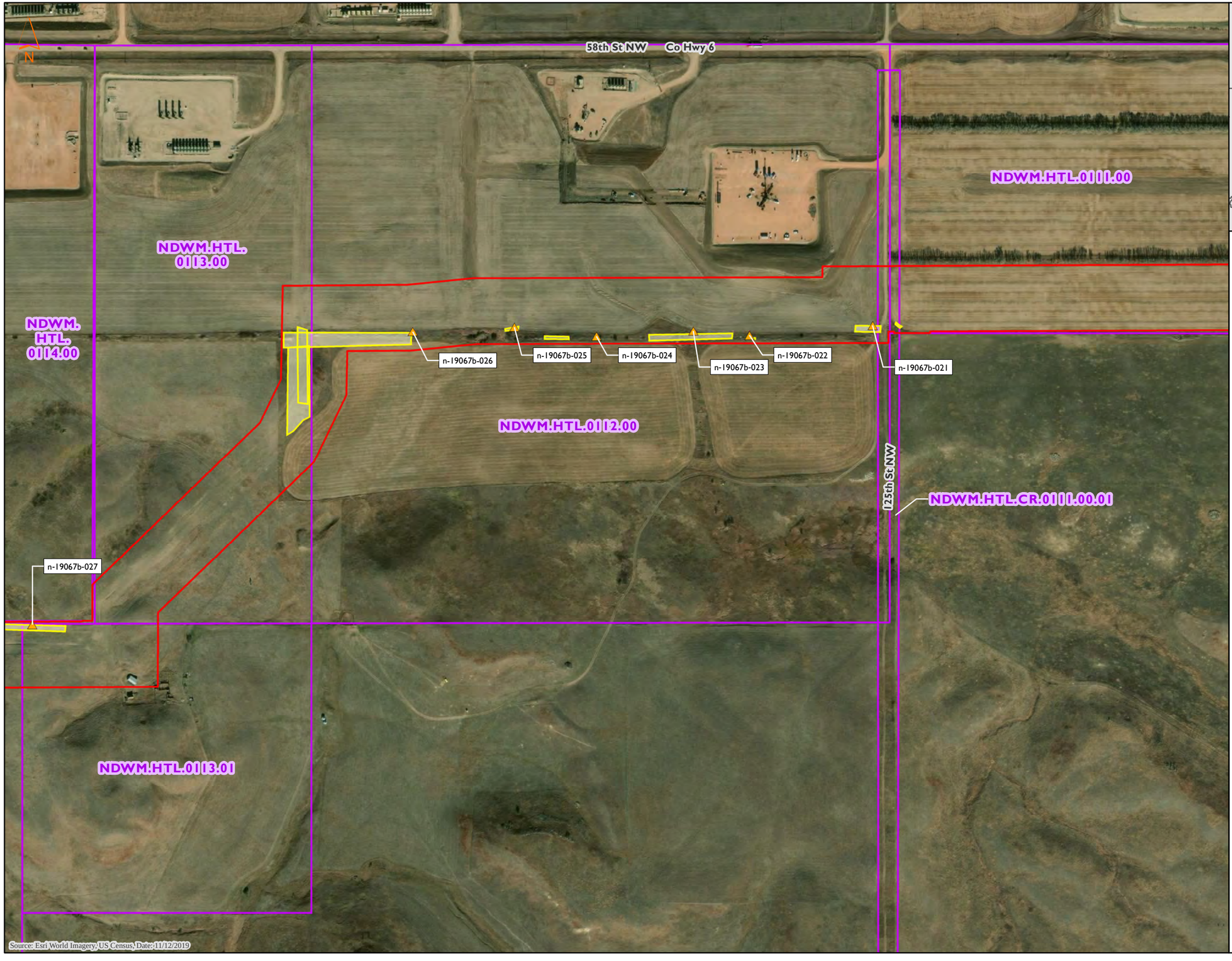

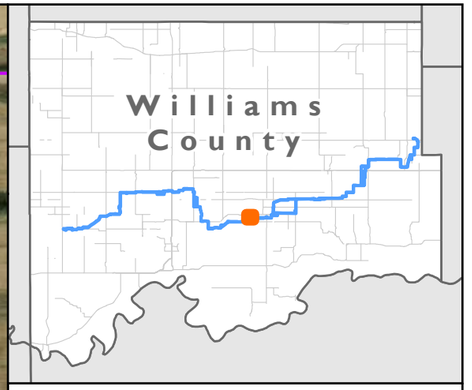

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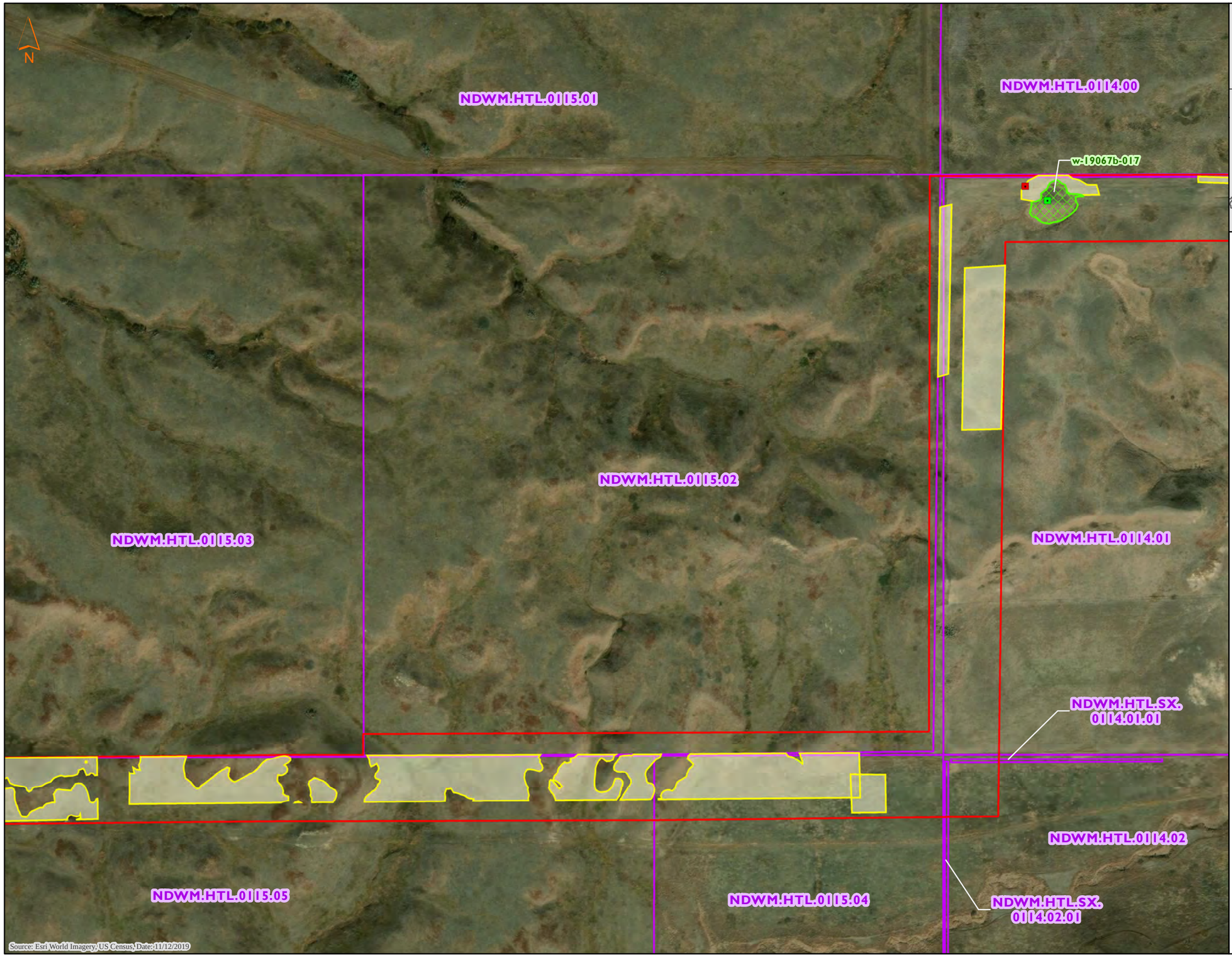



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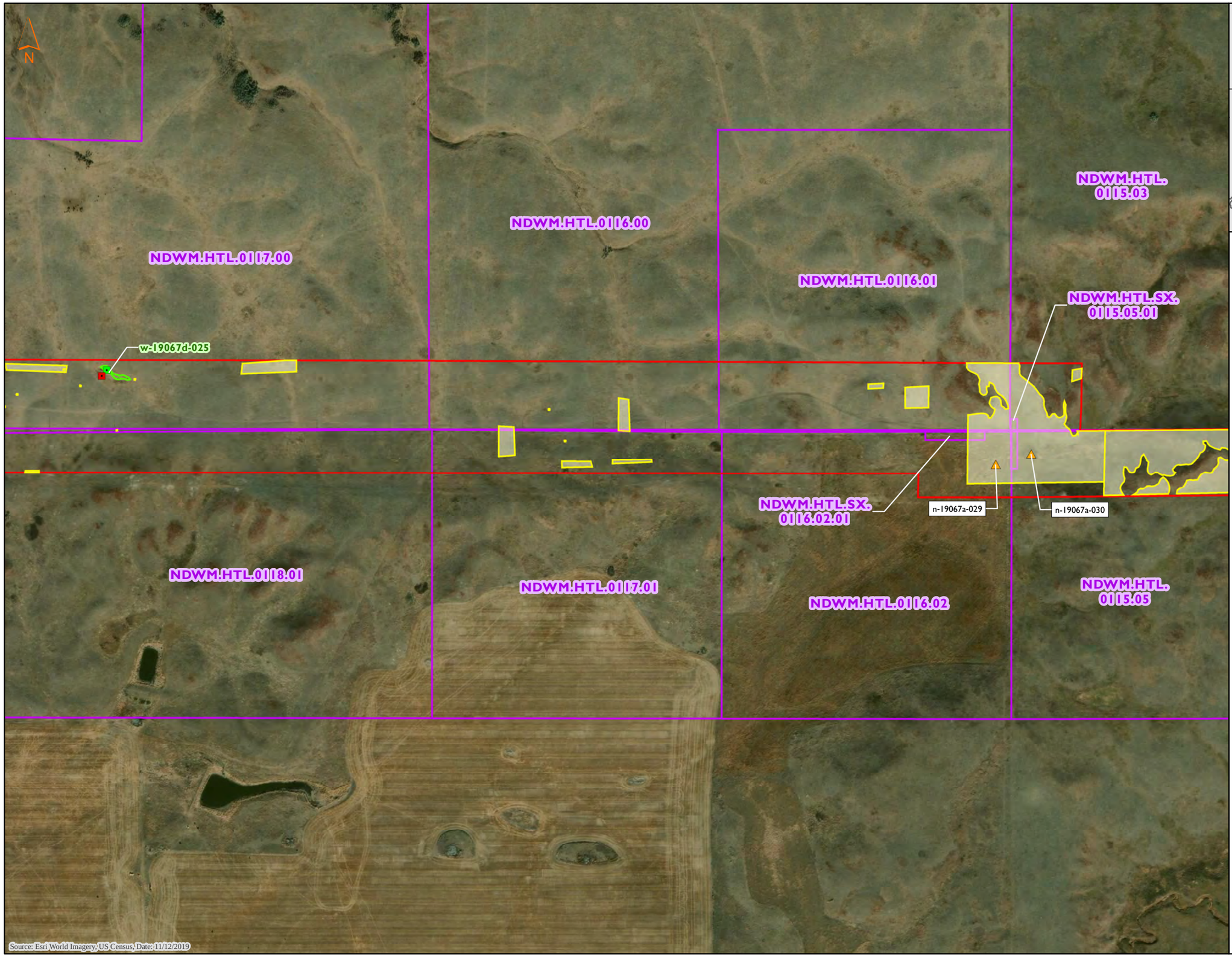

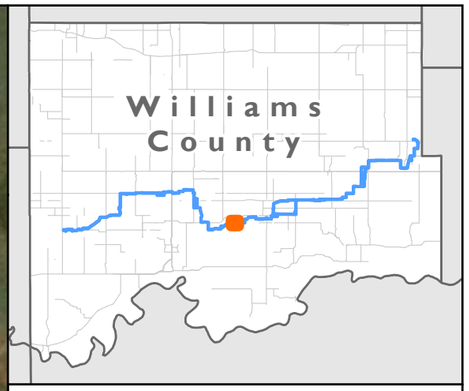

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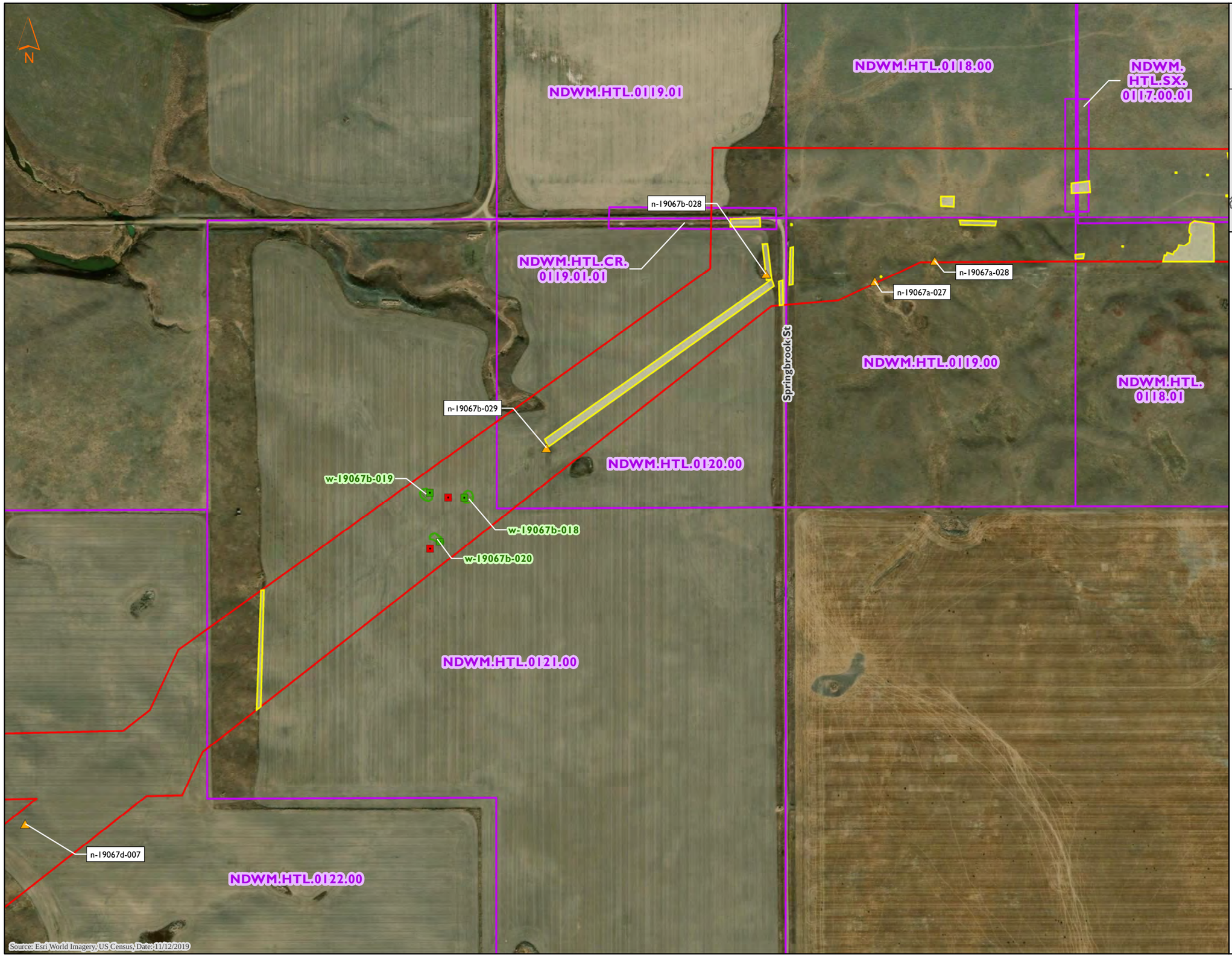

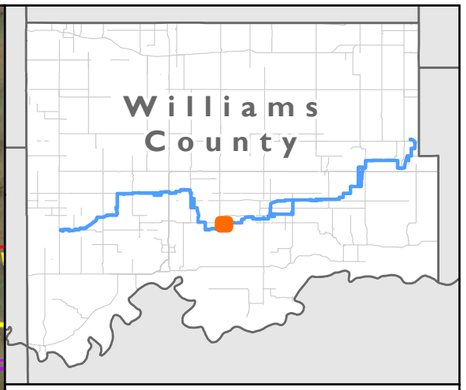

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ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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- Unsurveyed Area
- Environmental Survey Area
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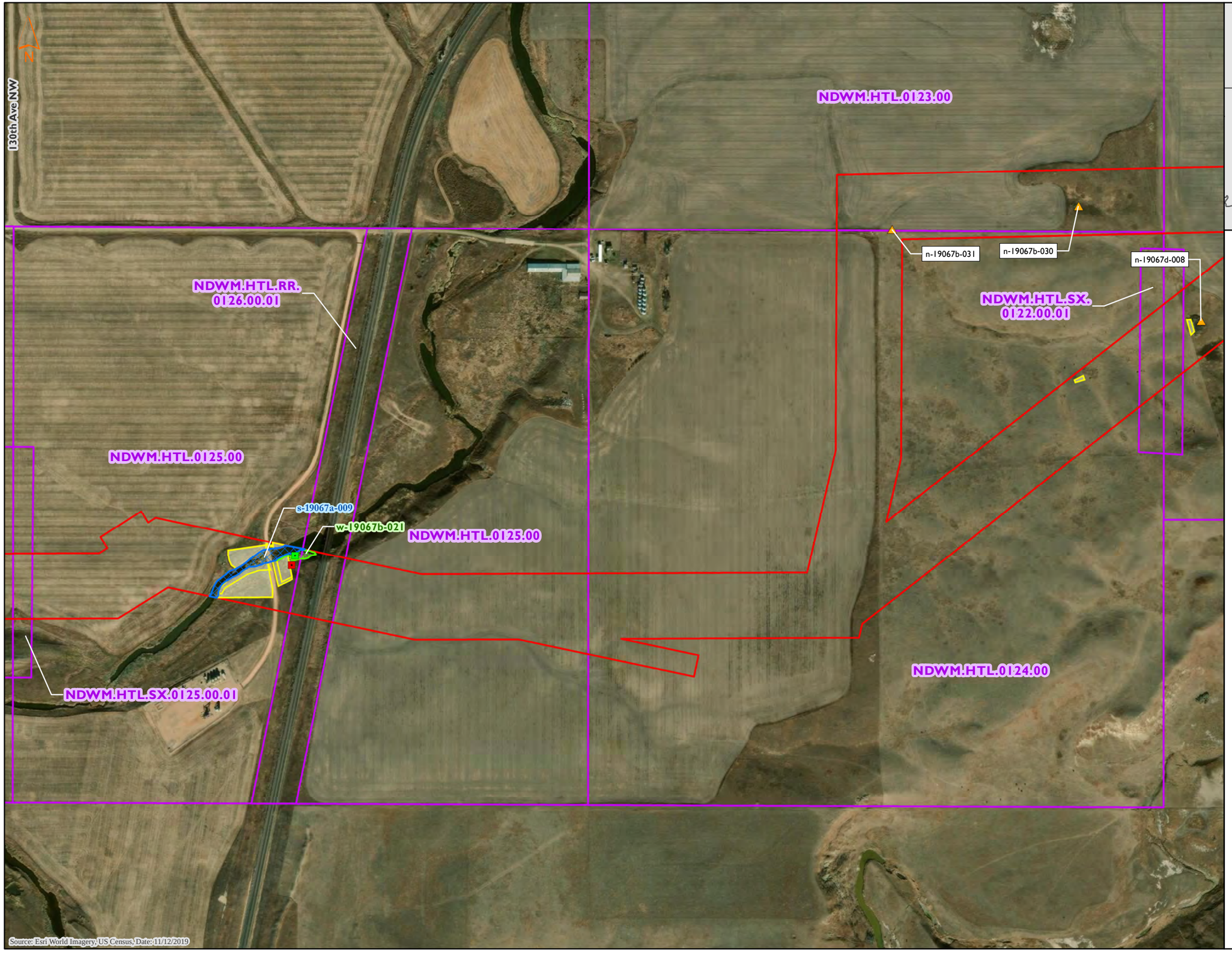



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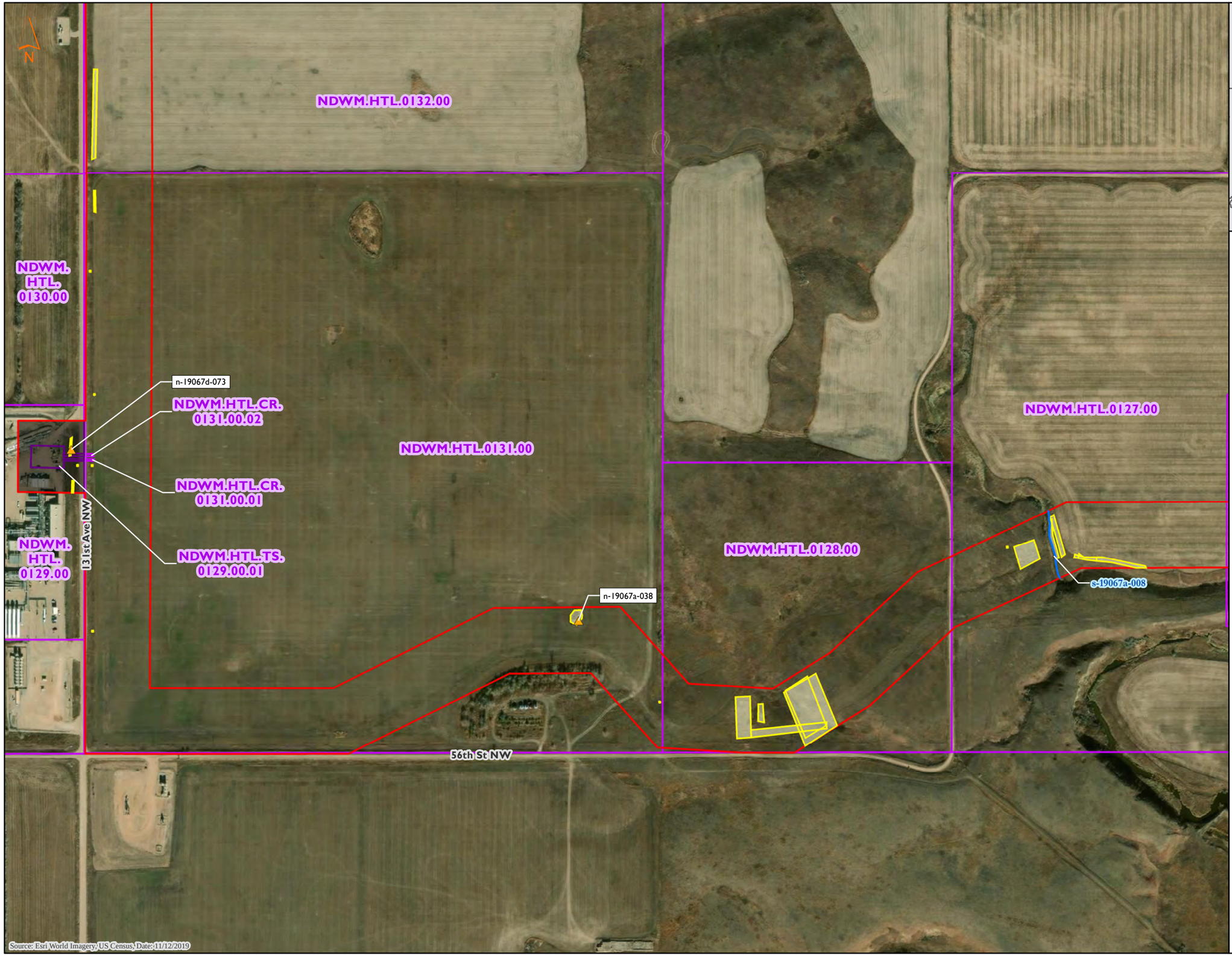



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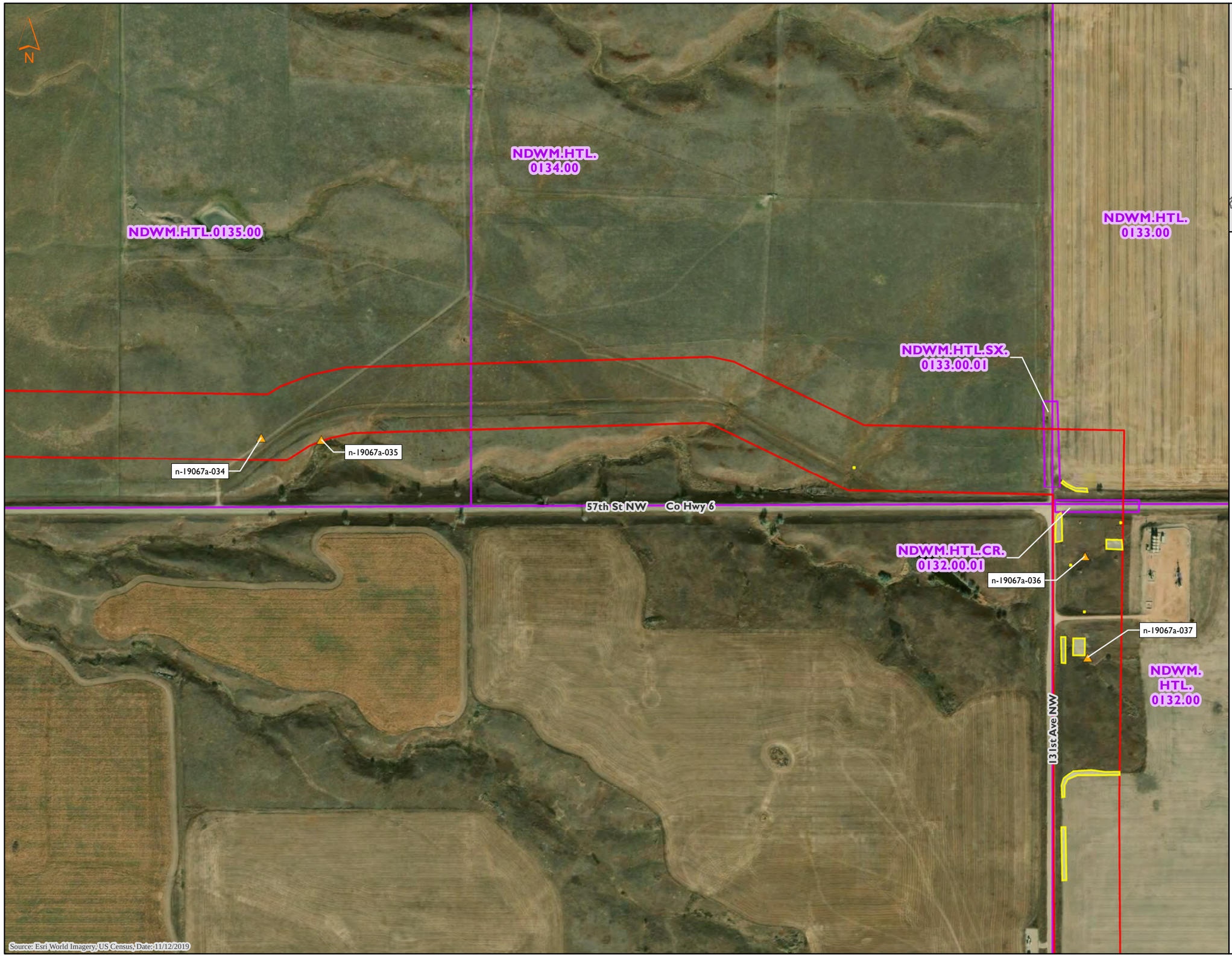

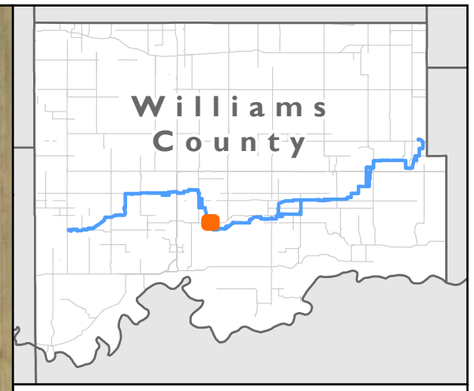

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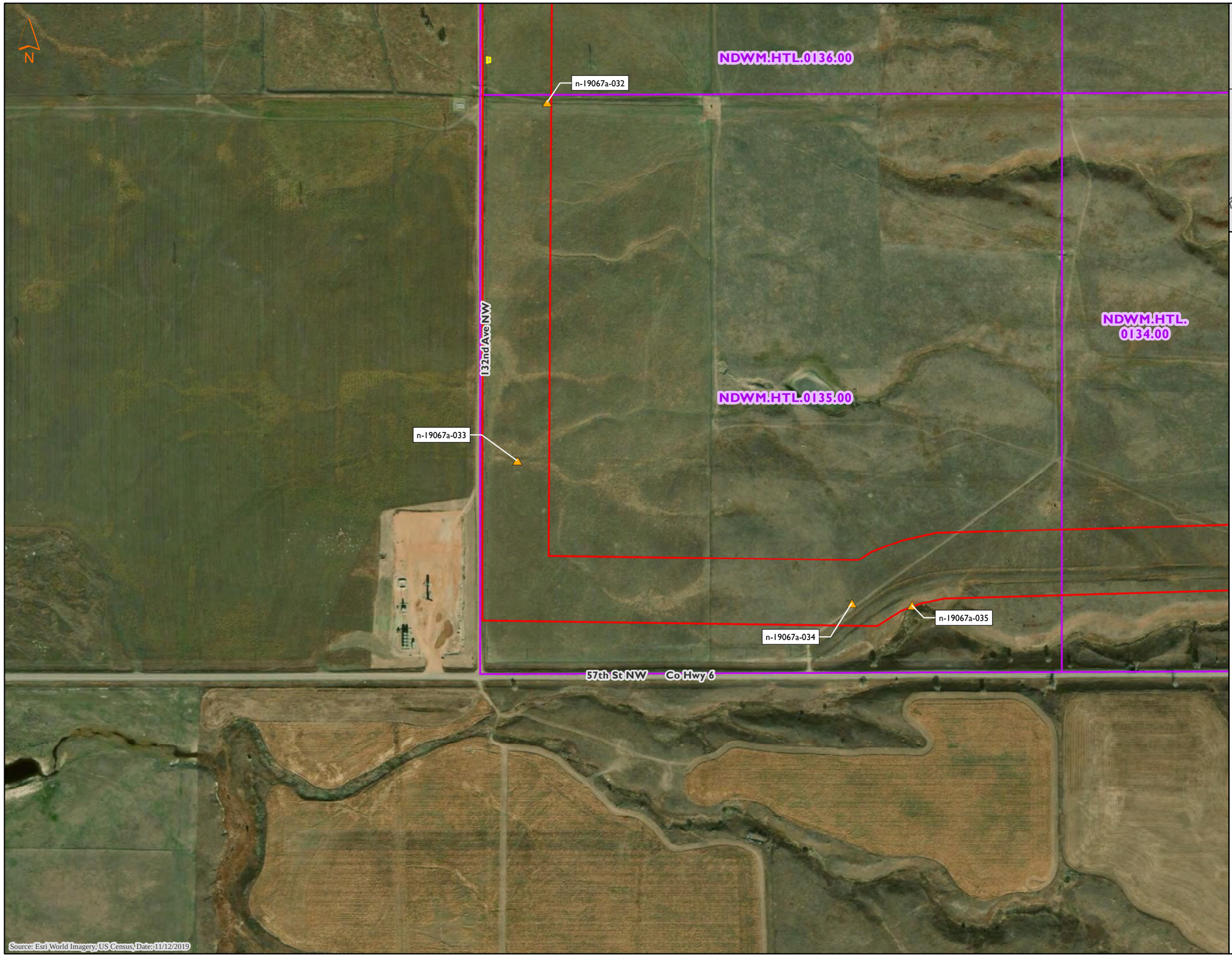

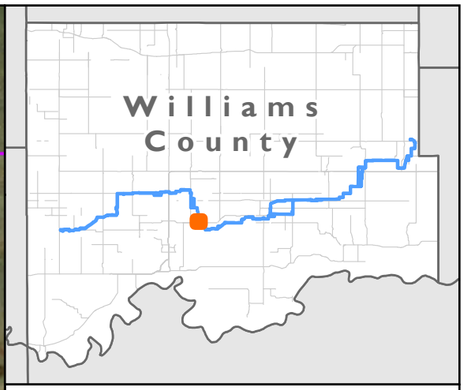

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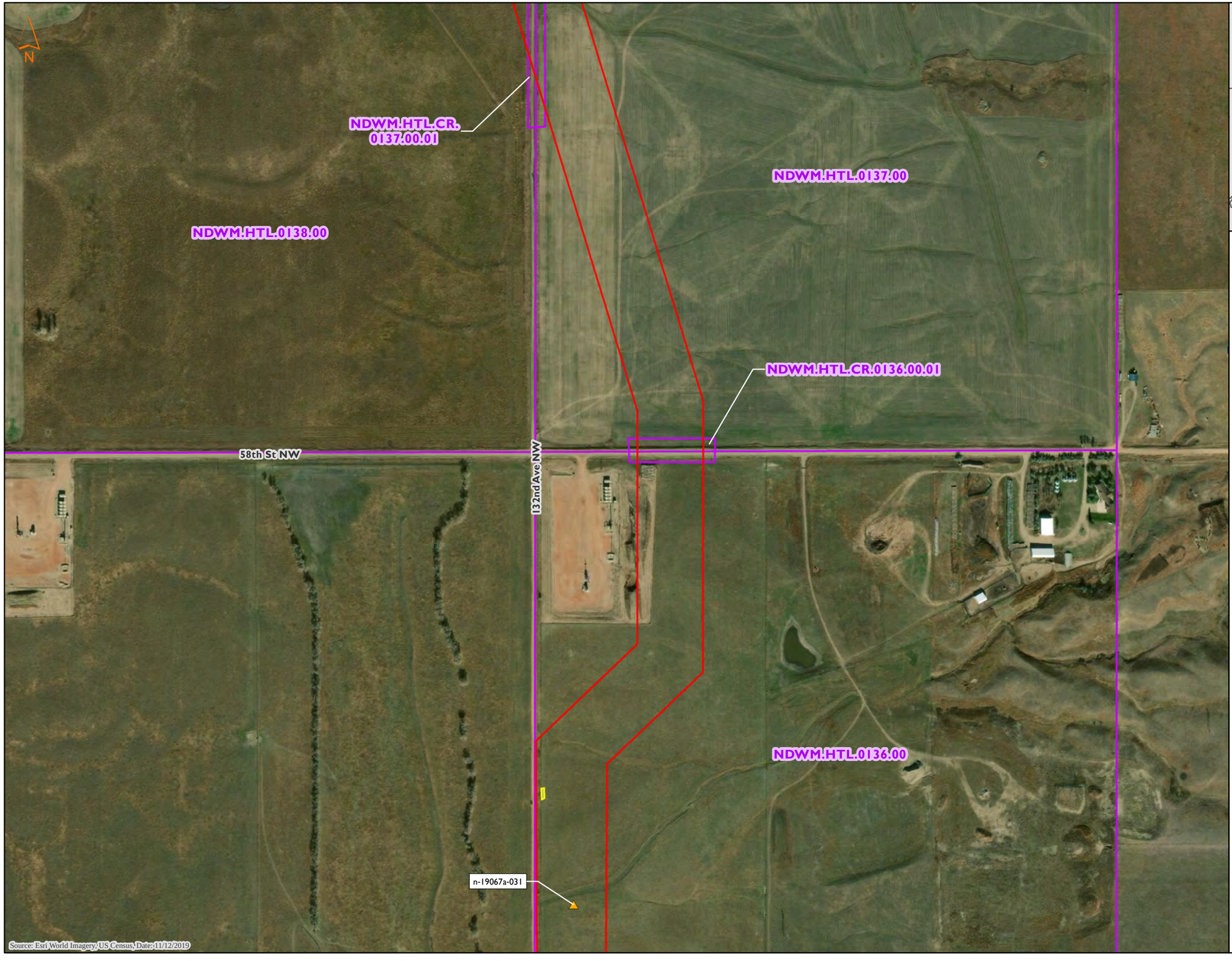

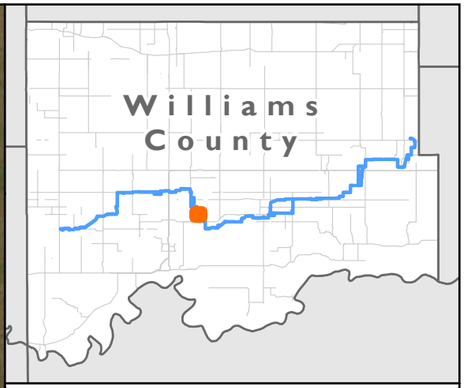

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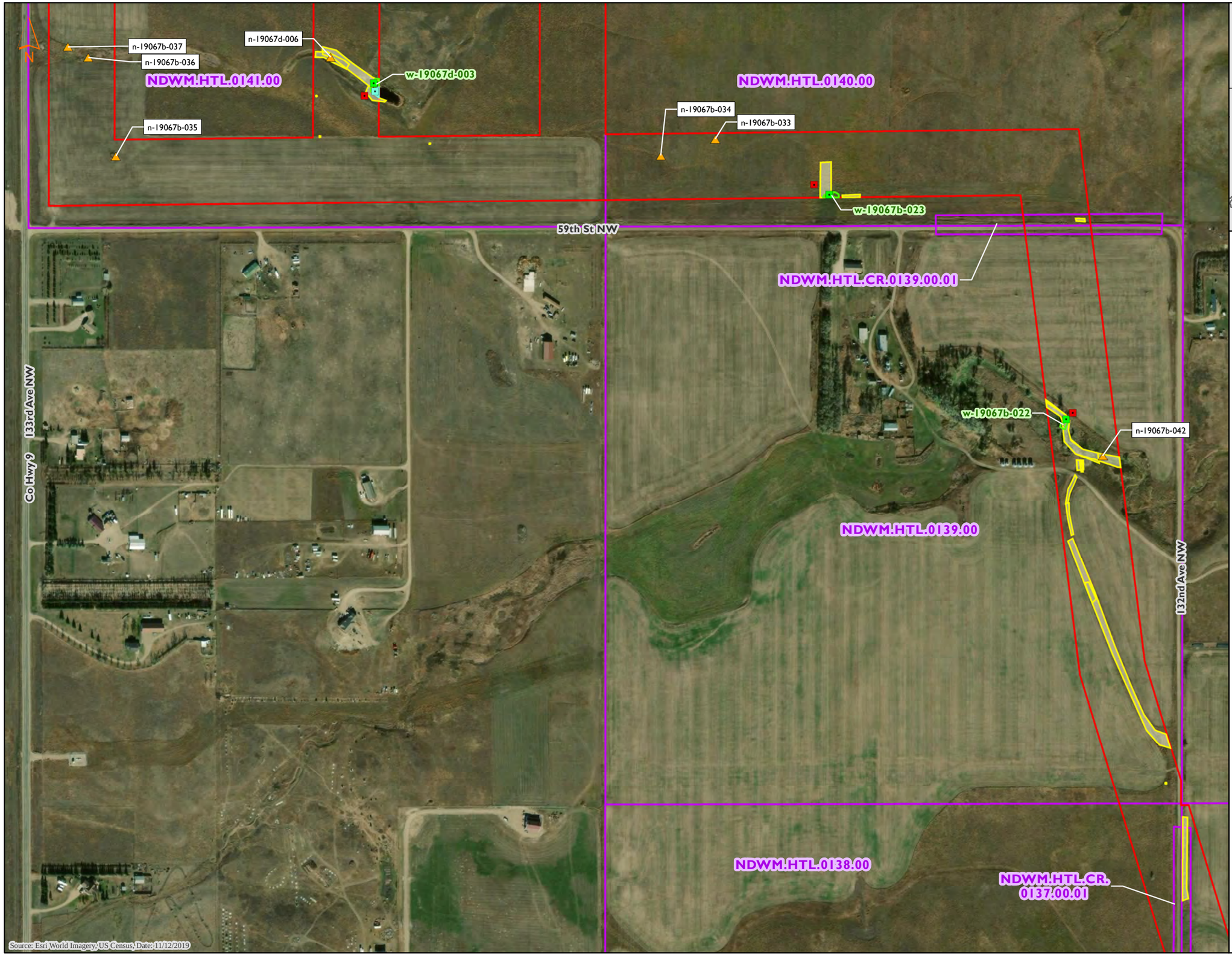

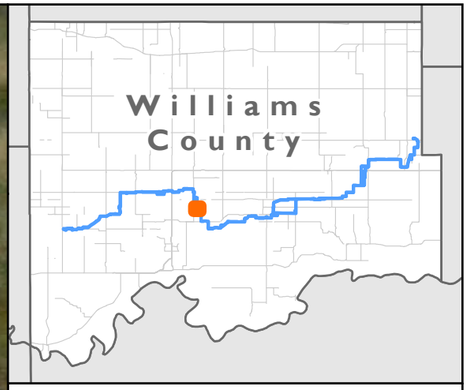

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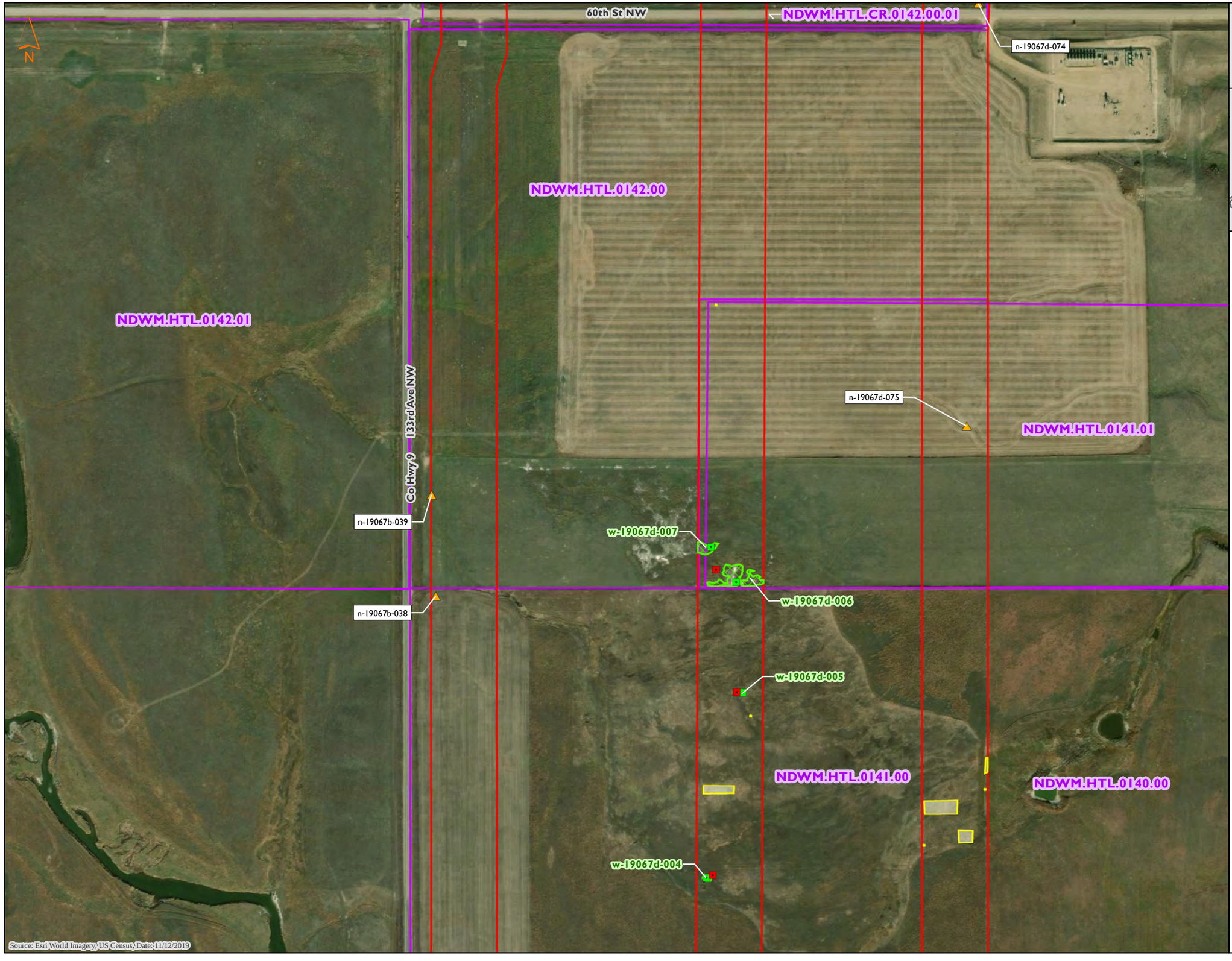



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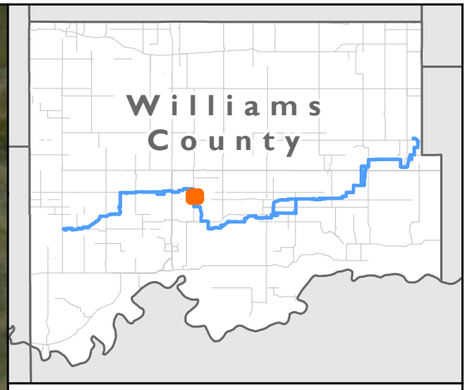

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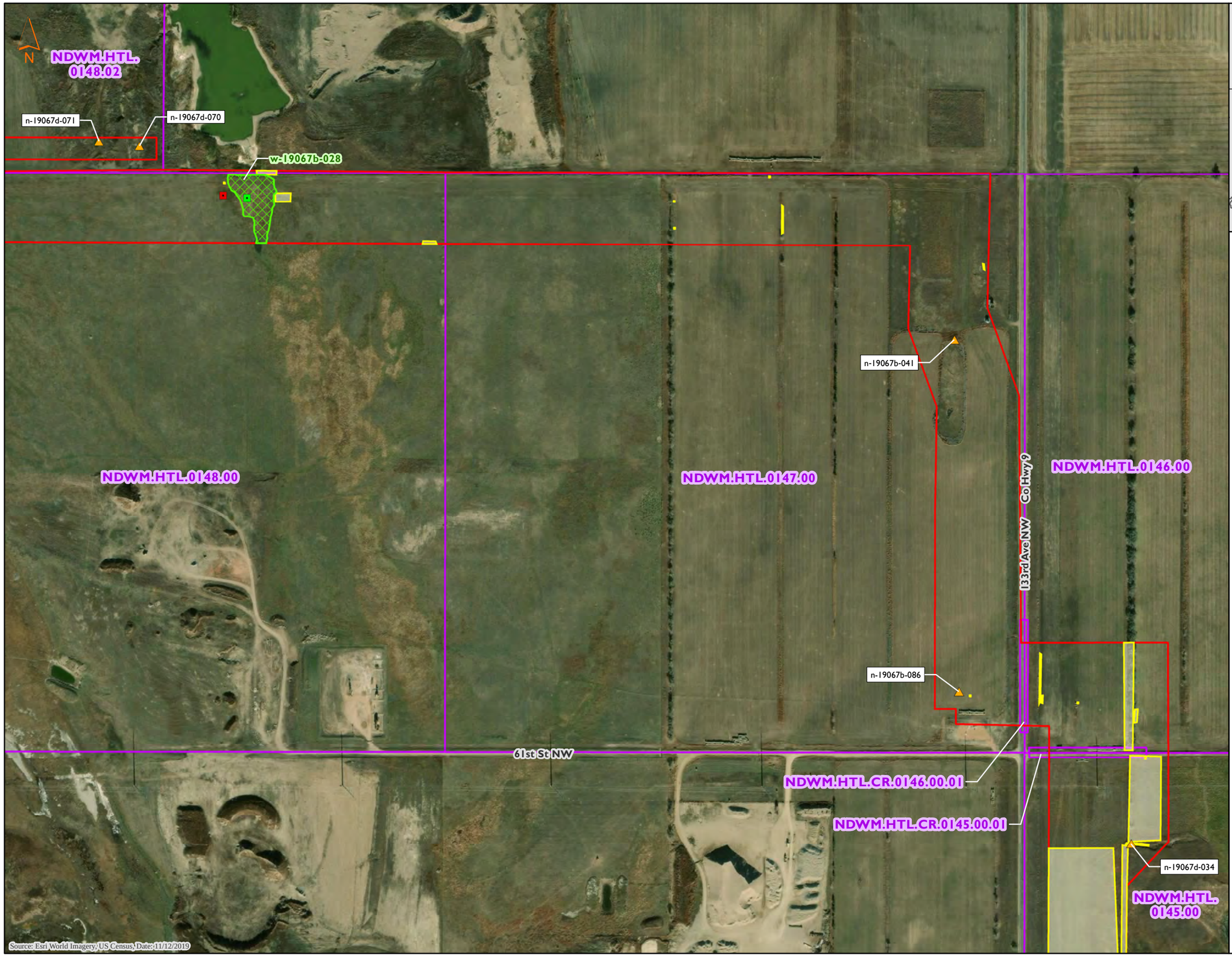



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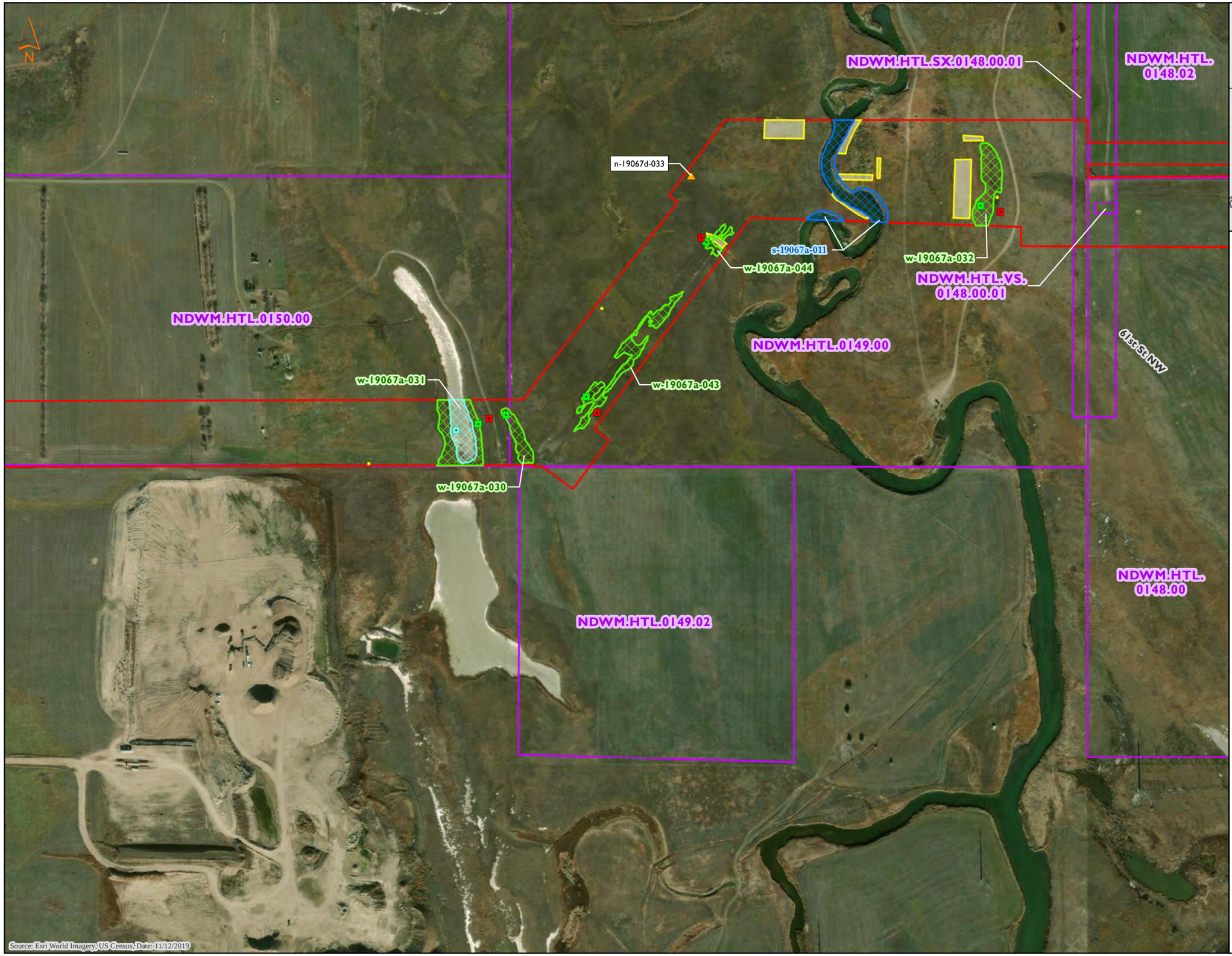



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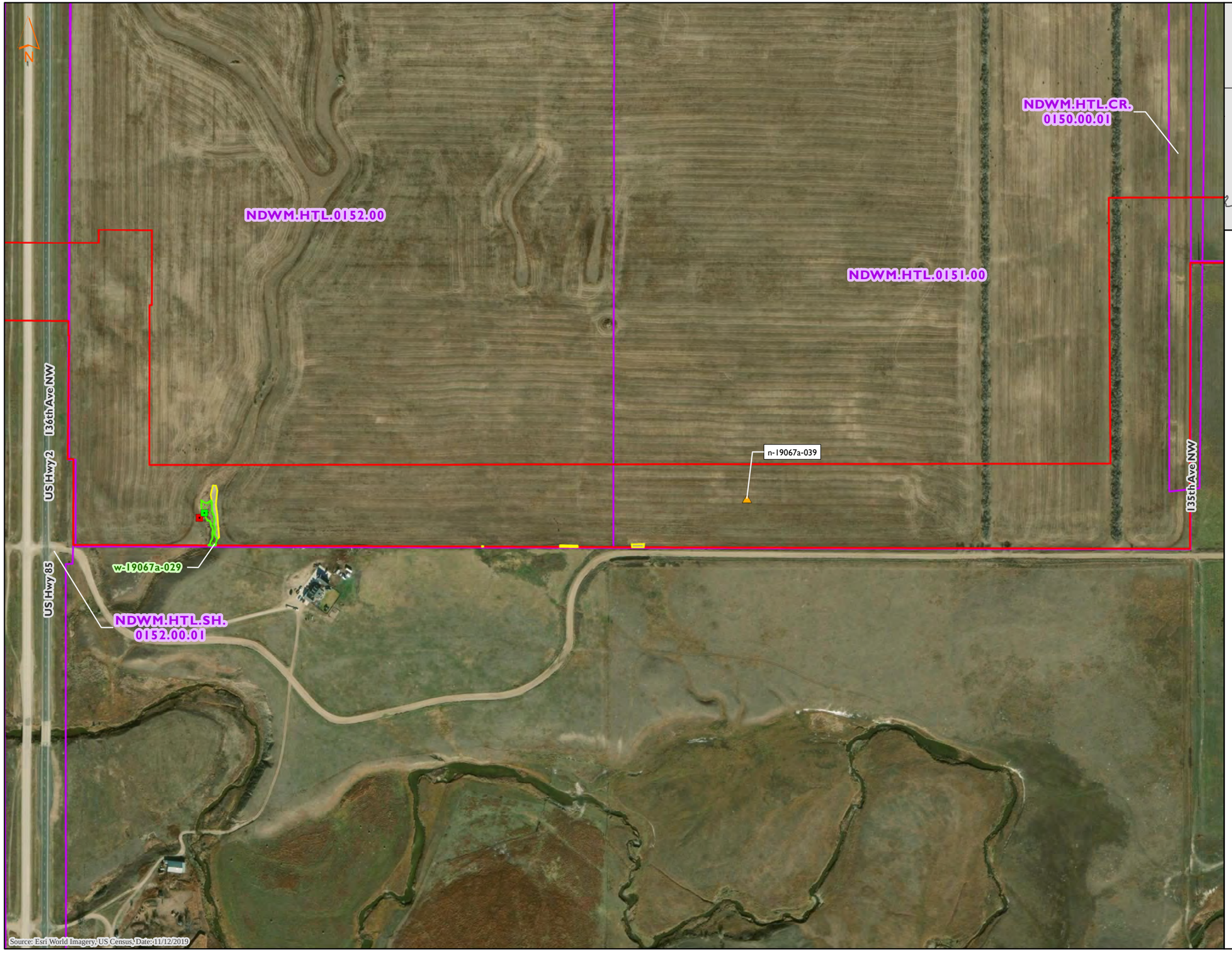



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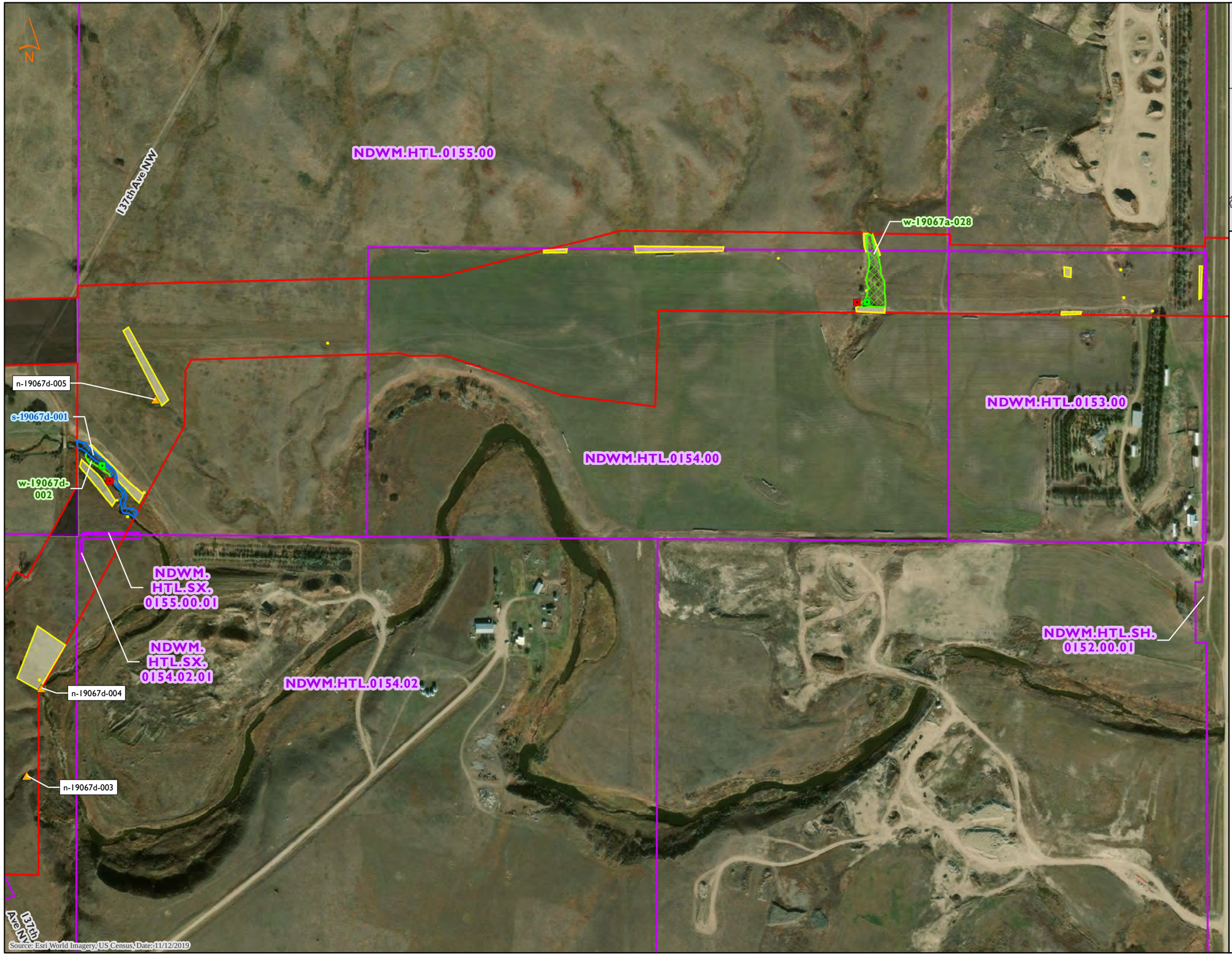



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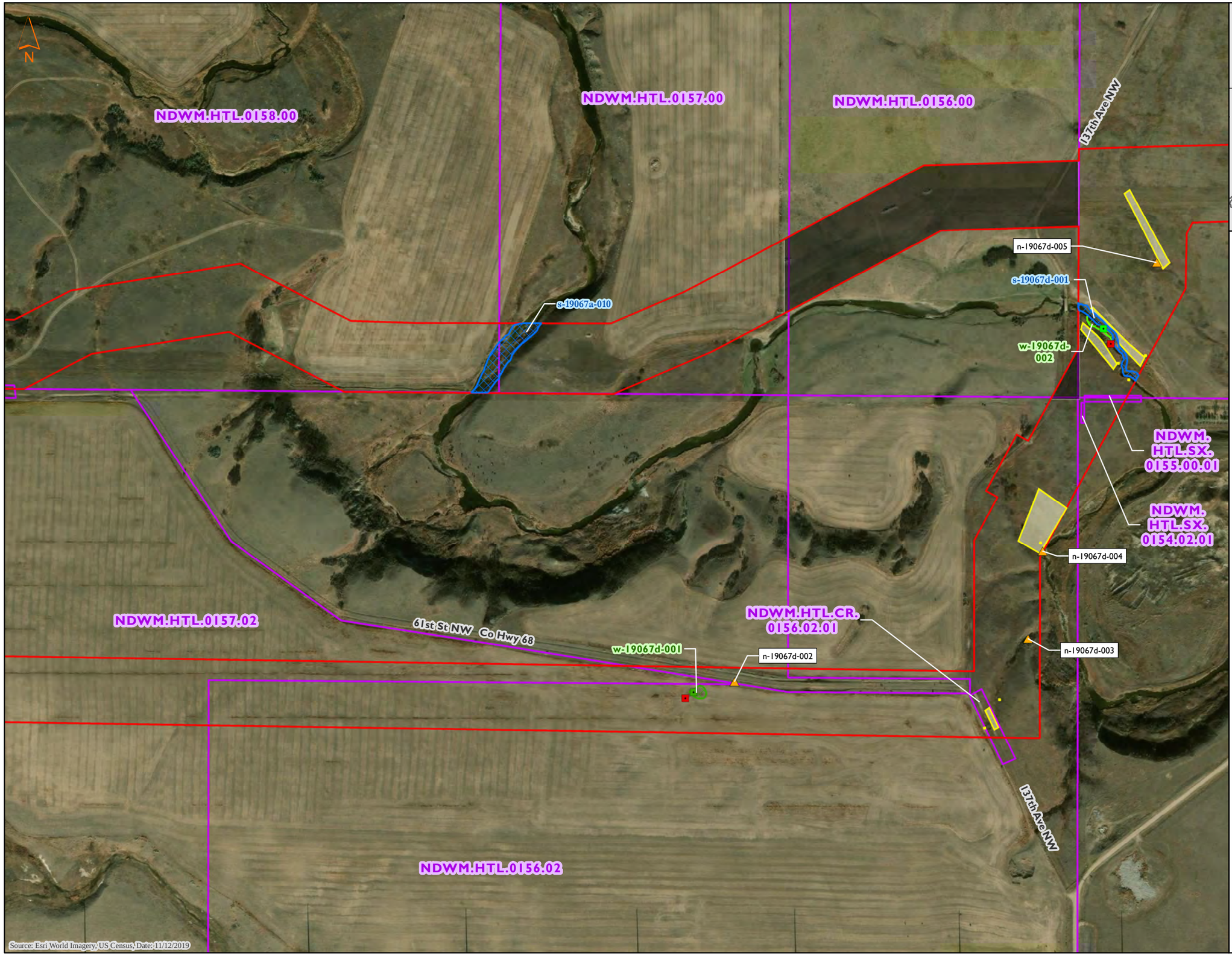

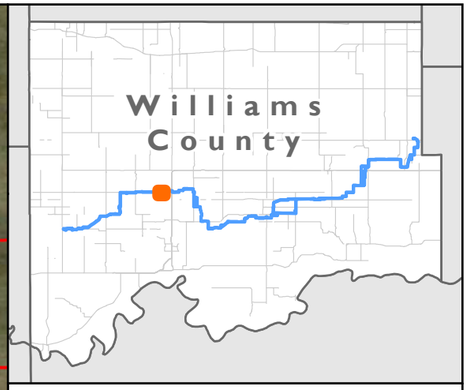

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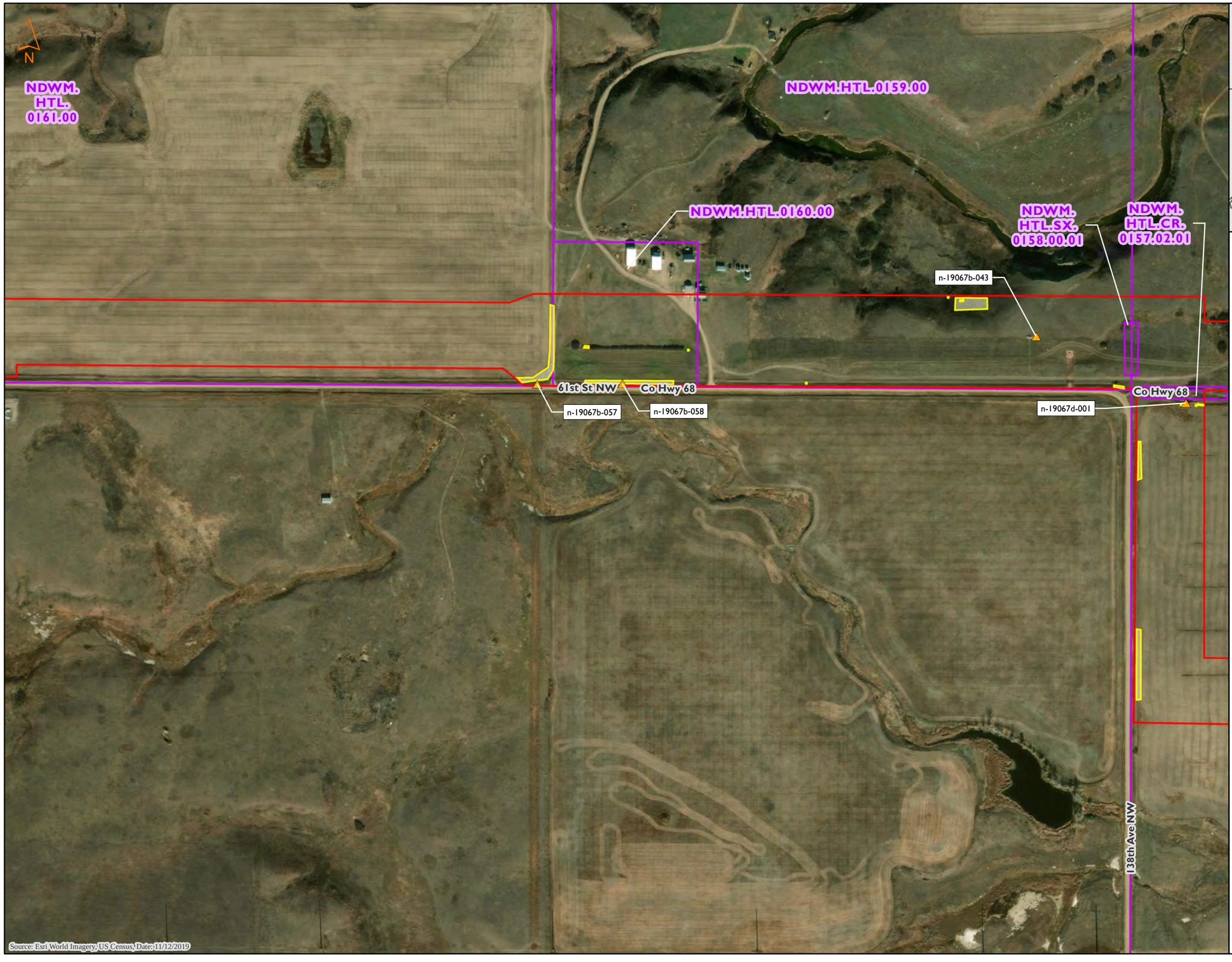

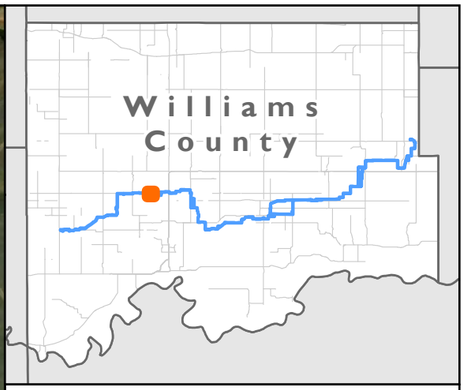

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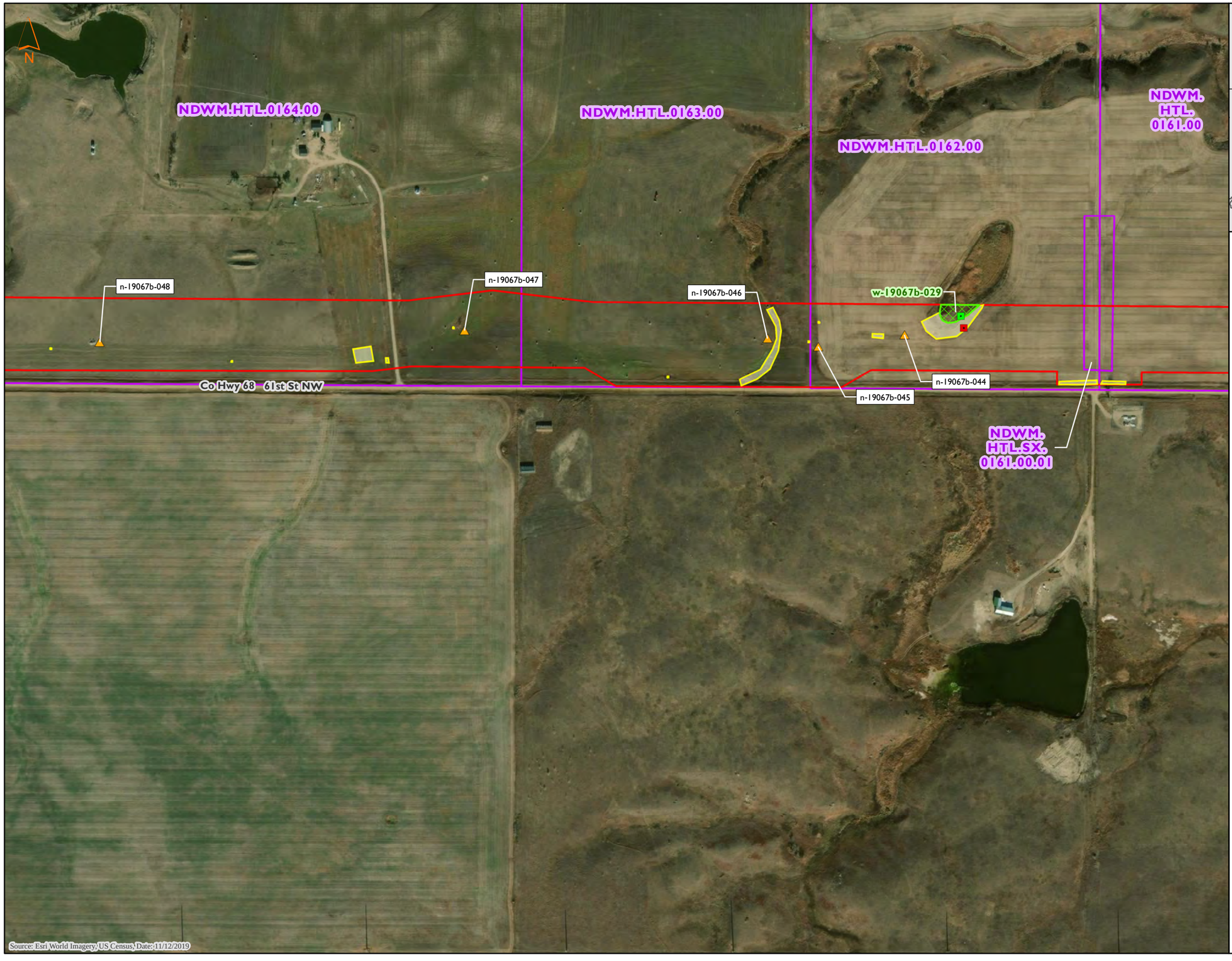

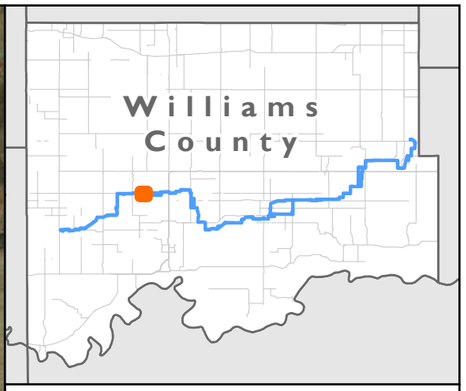

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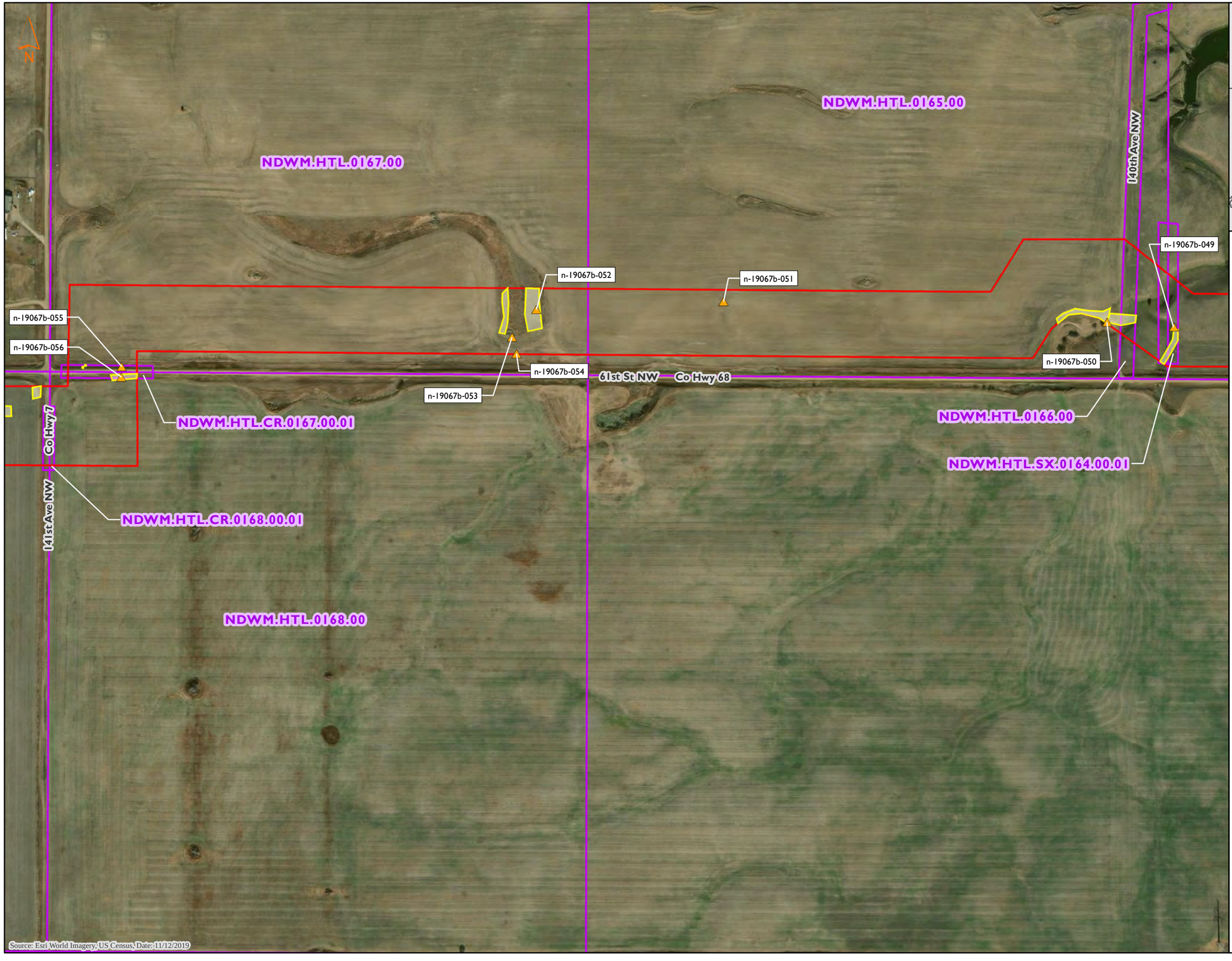



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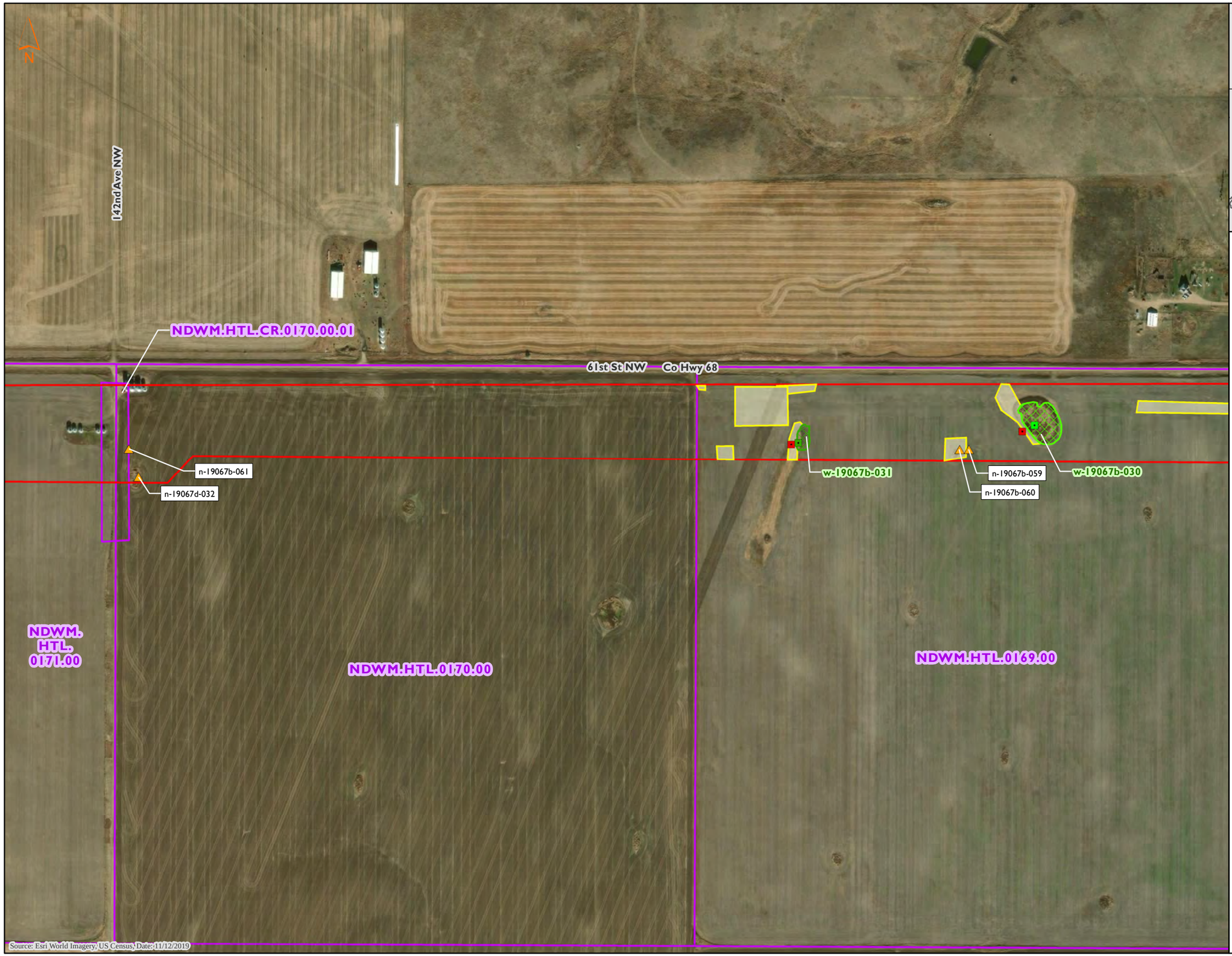

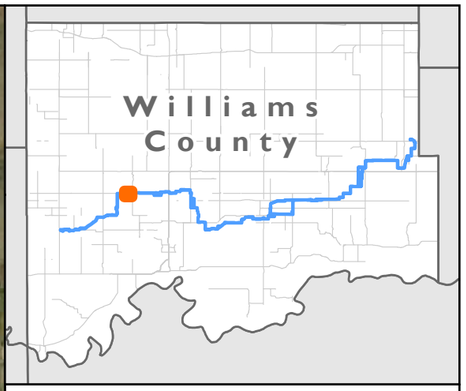

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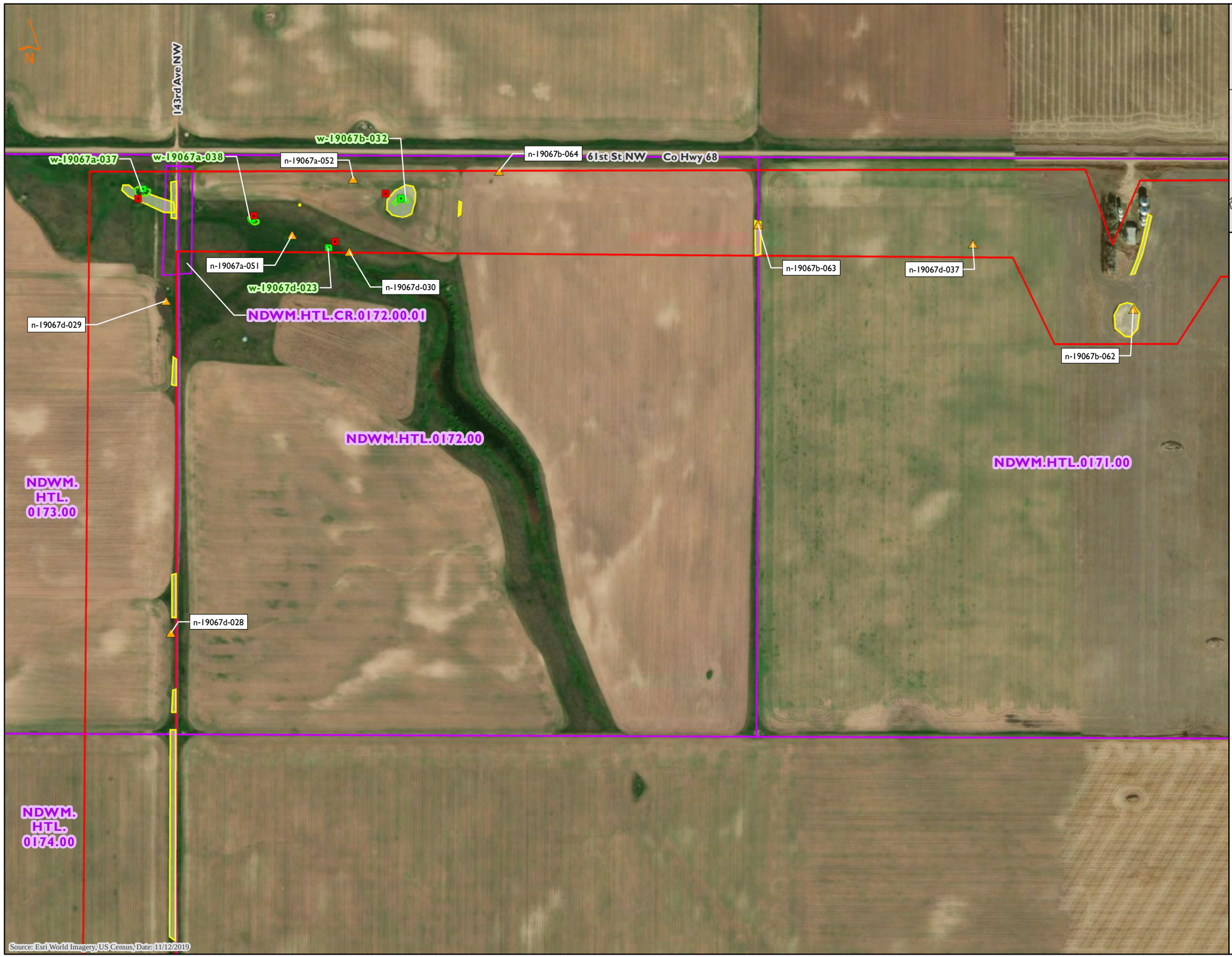

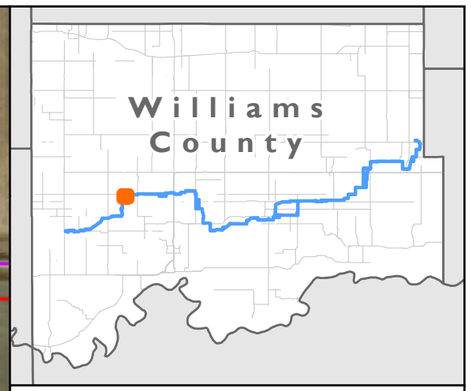

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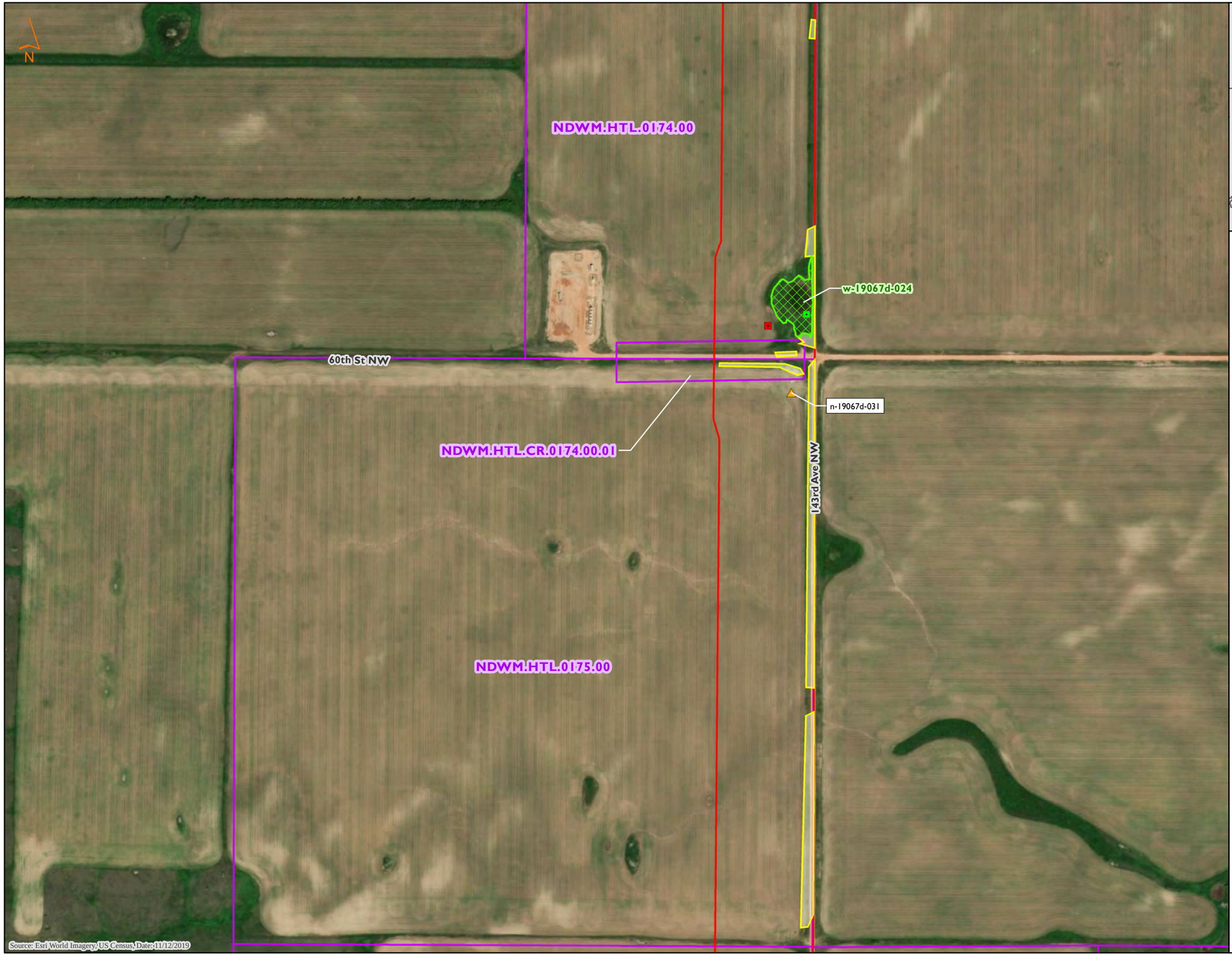



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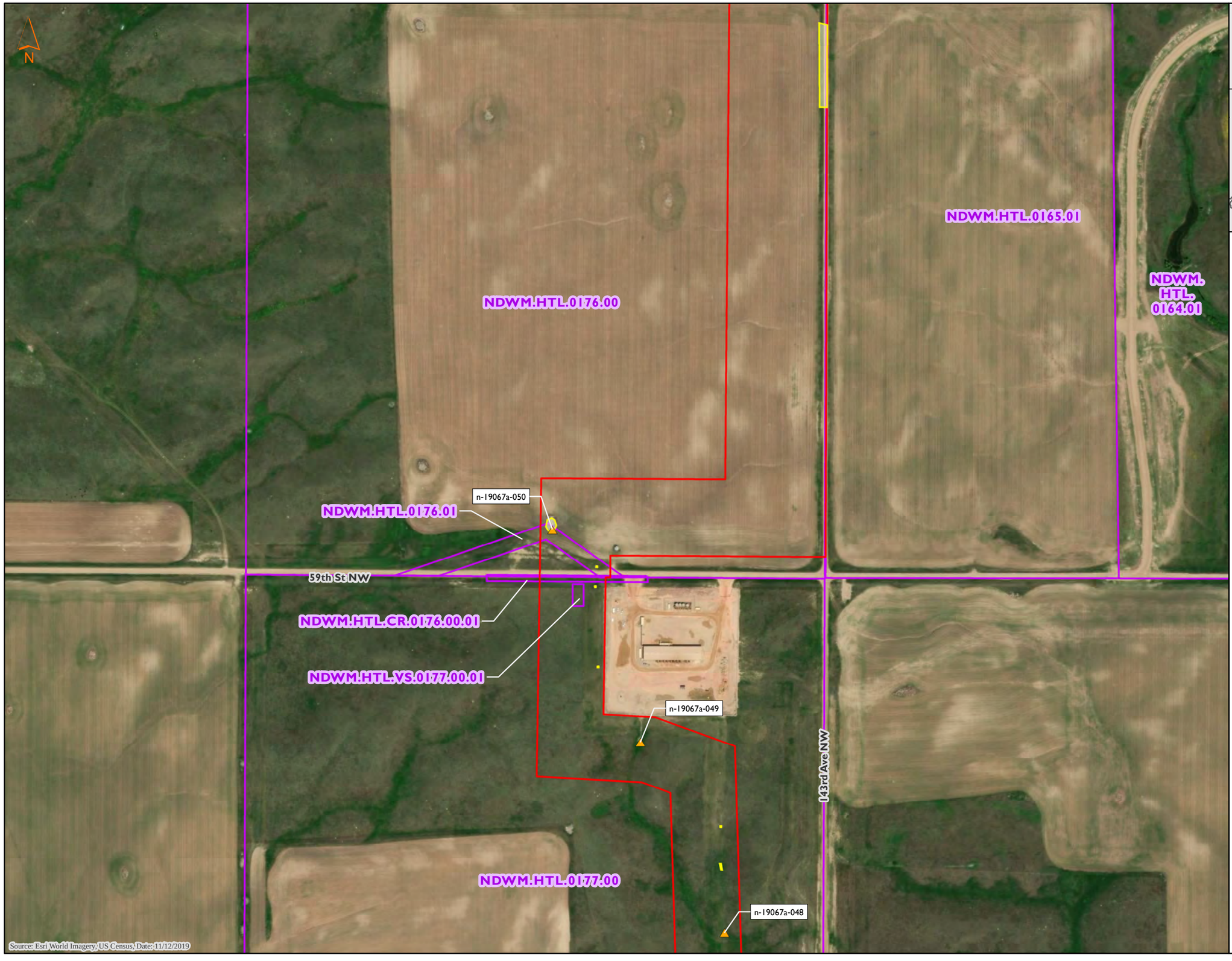

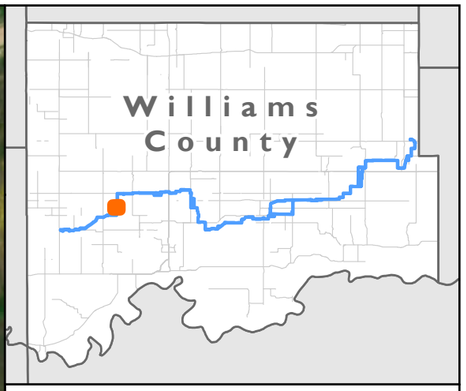

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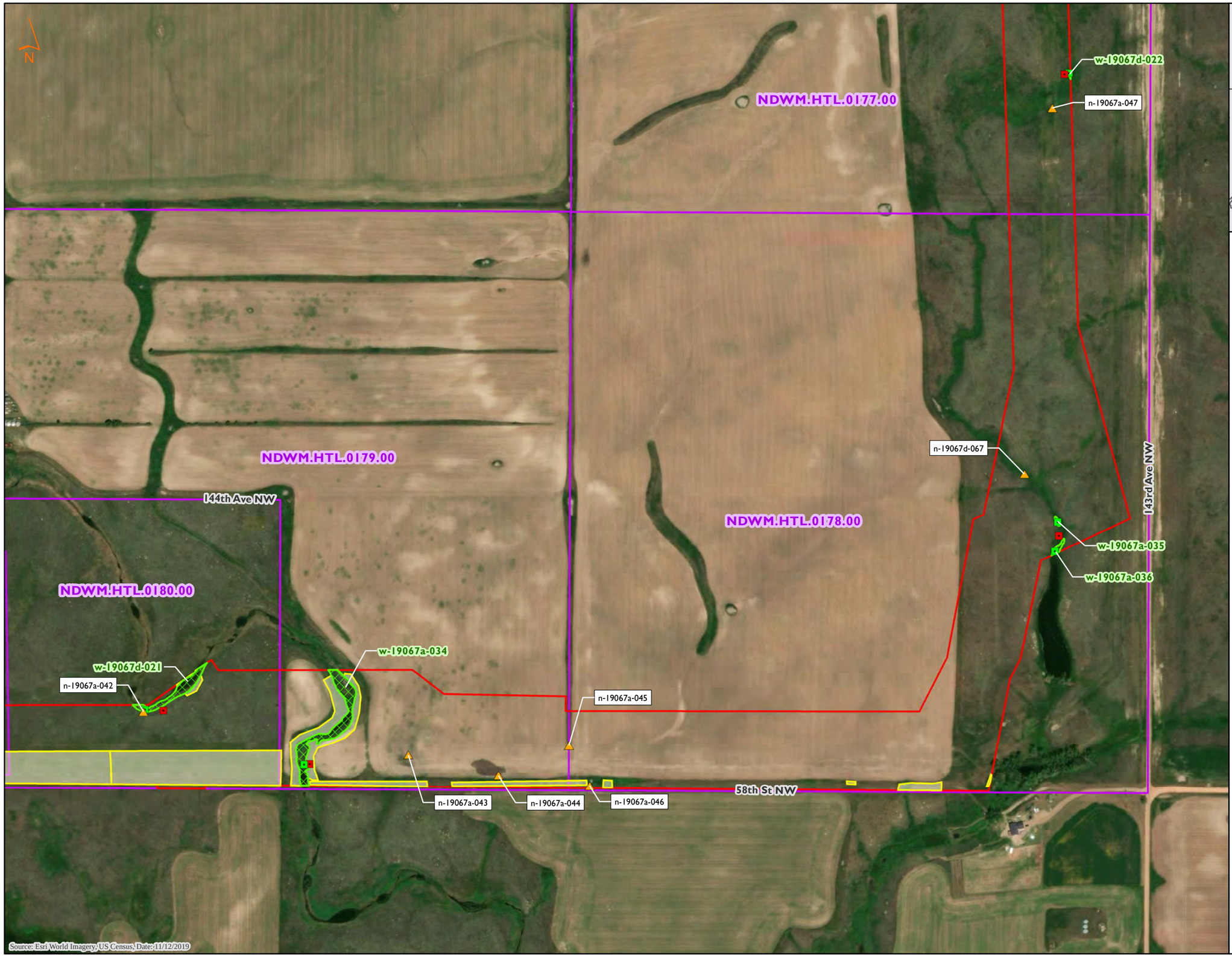

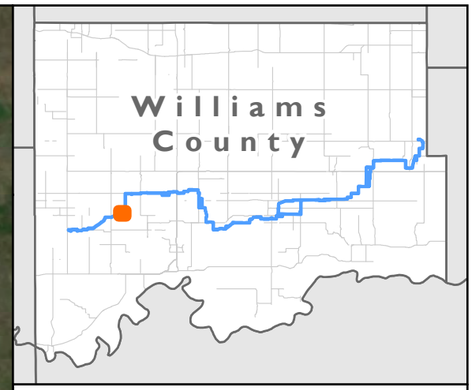

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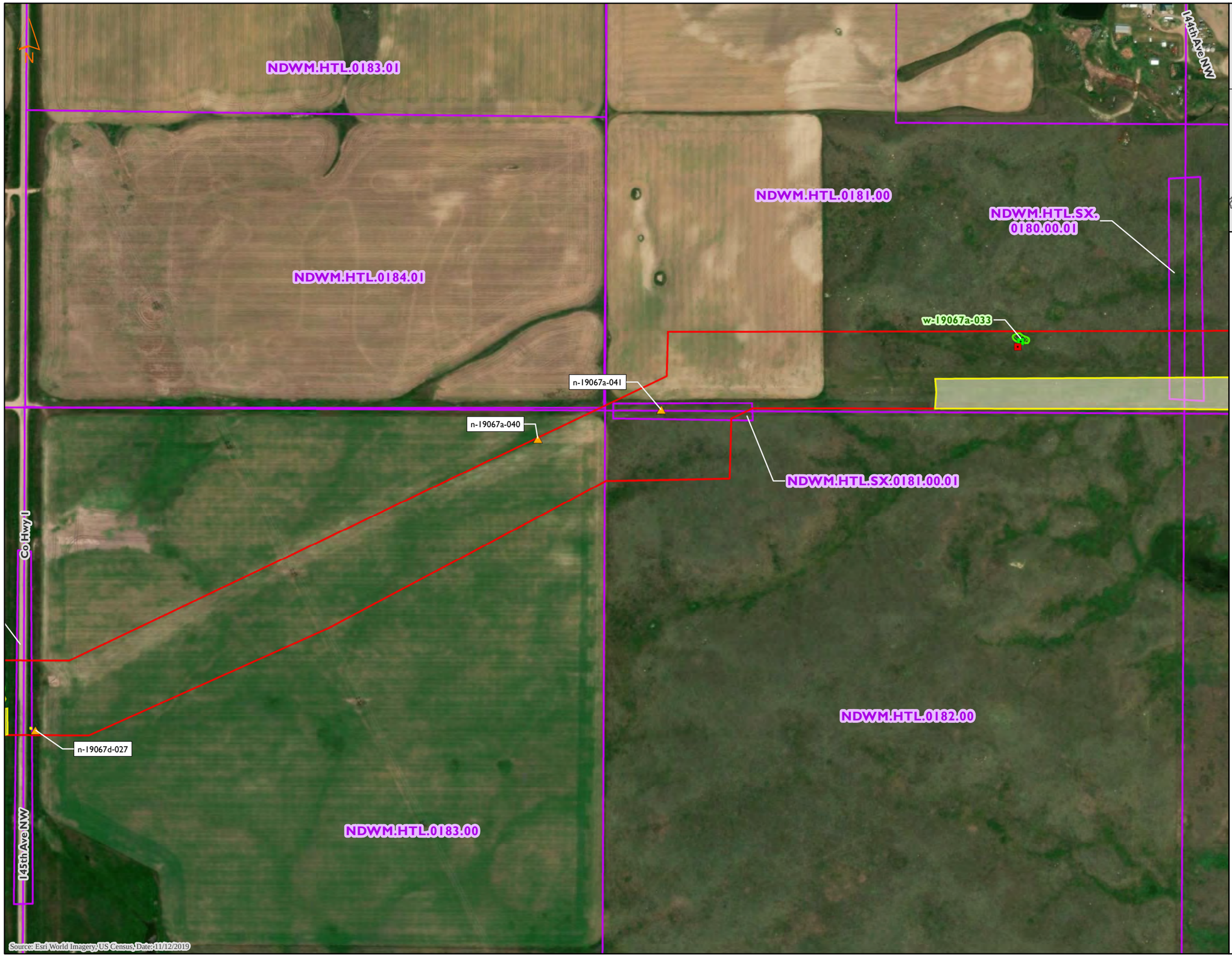

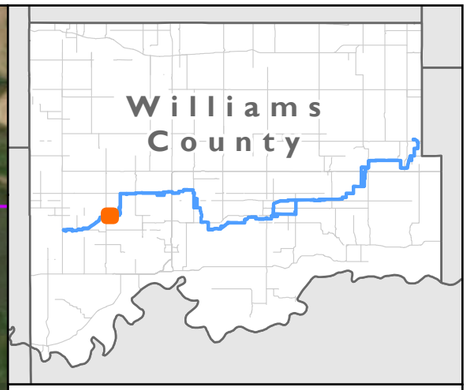

Delineated Features
Tioga Lateral Pipeline Project
ONEOK Bakken Pipeline, L.L.C.
Williams County, North Dakota

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- PSS Data Point
- PUB Data Point
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- Waterbody
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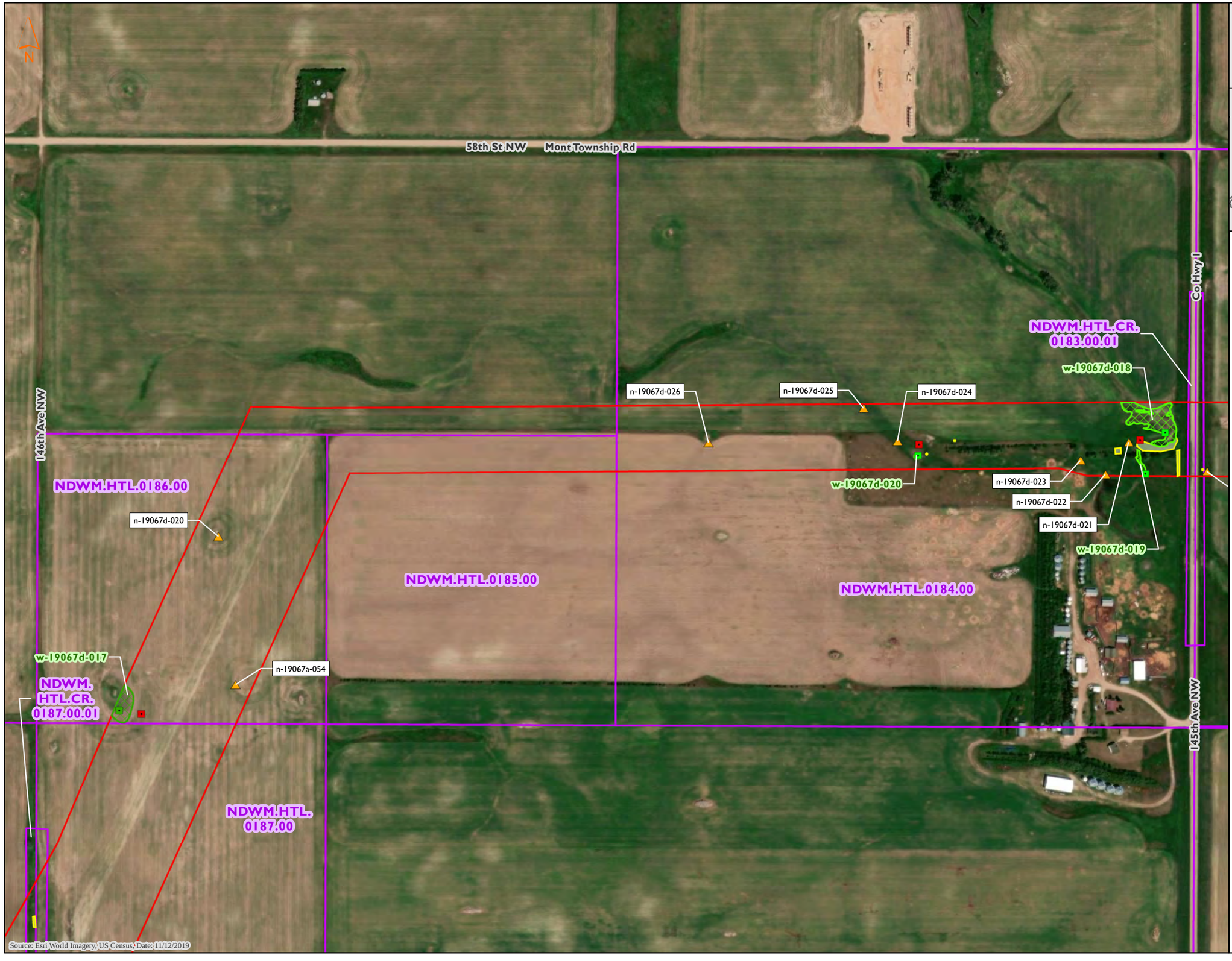

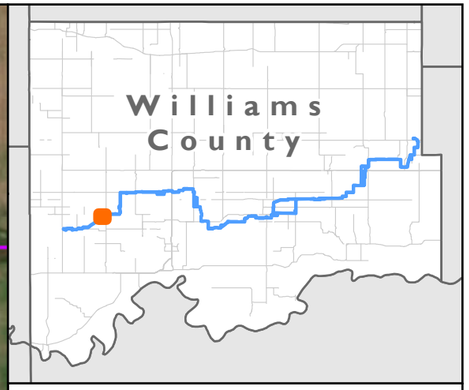

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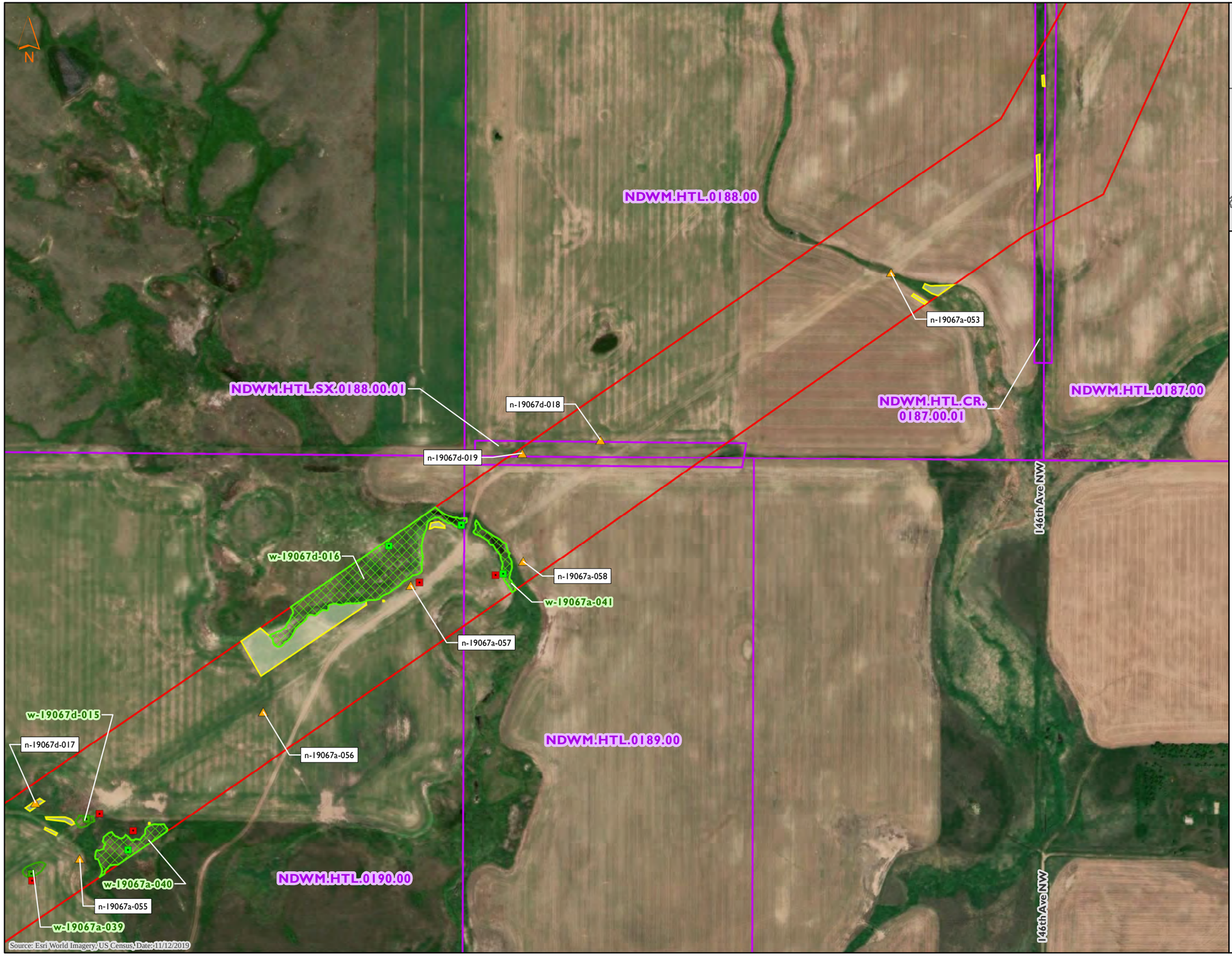

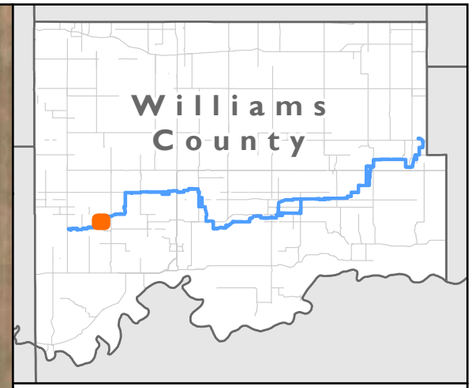

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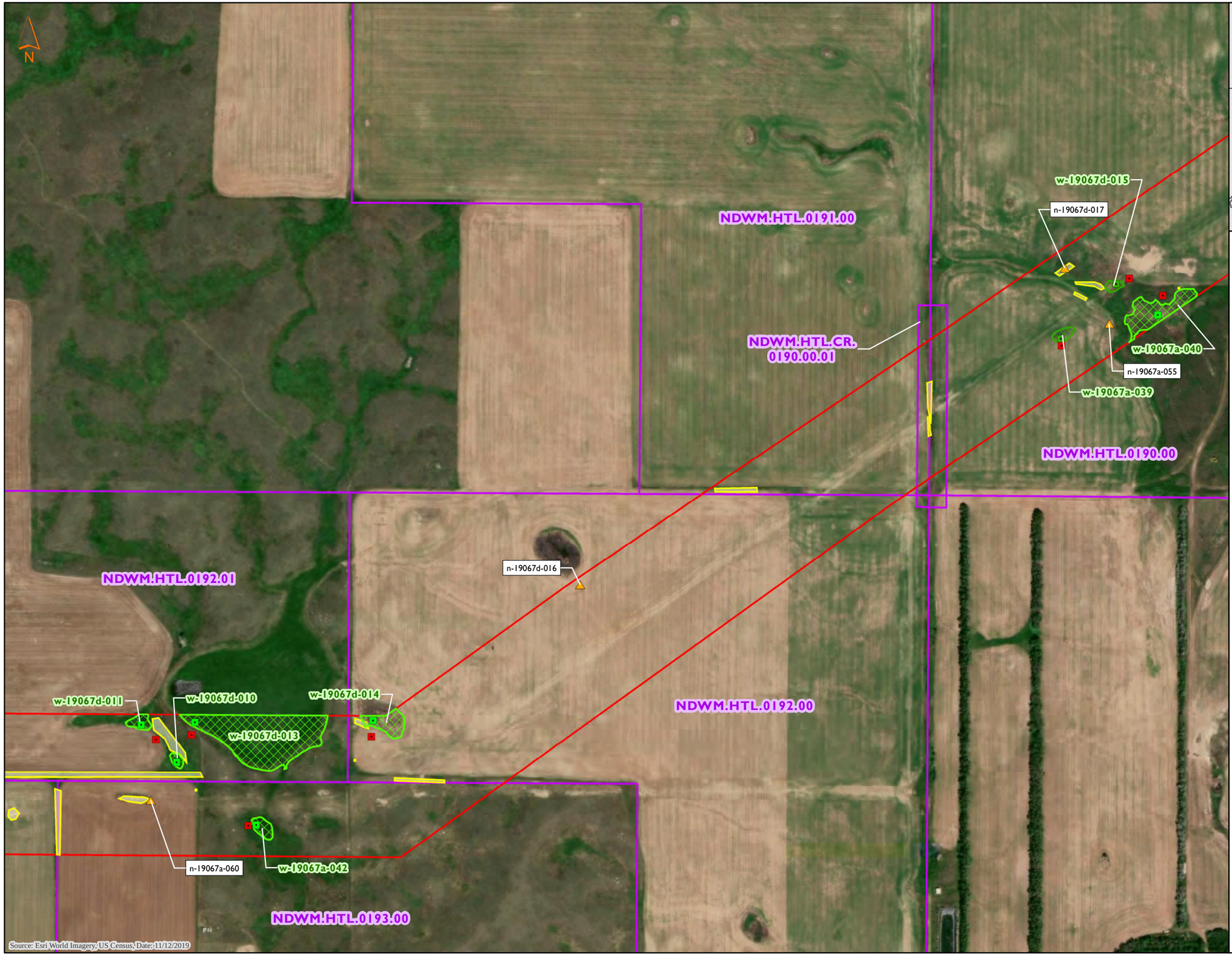

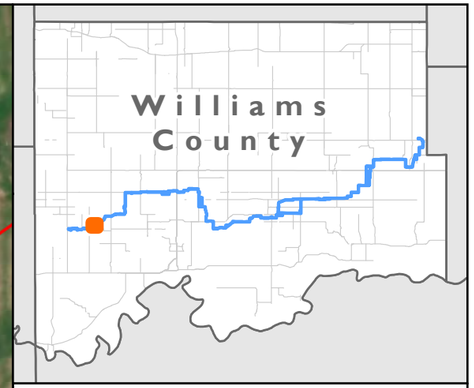

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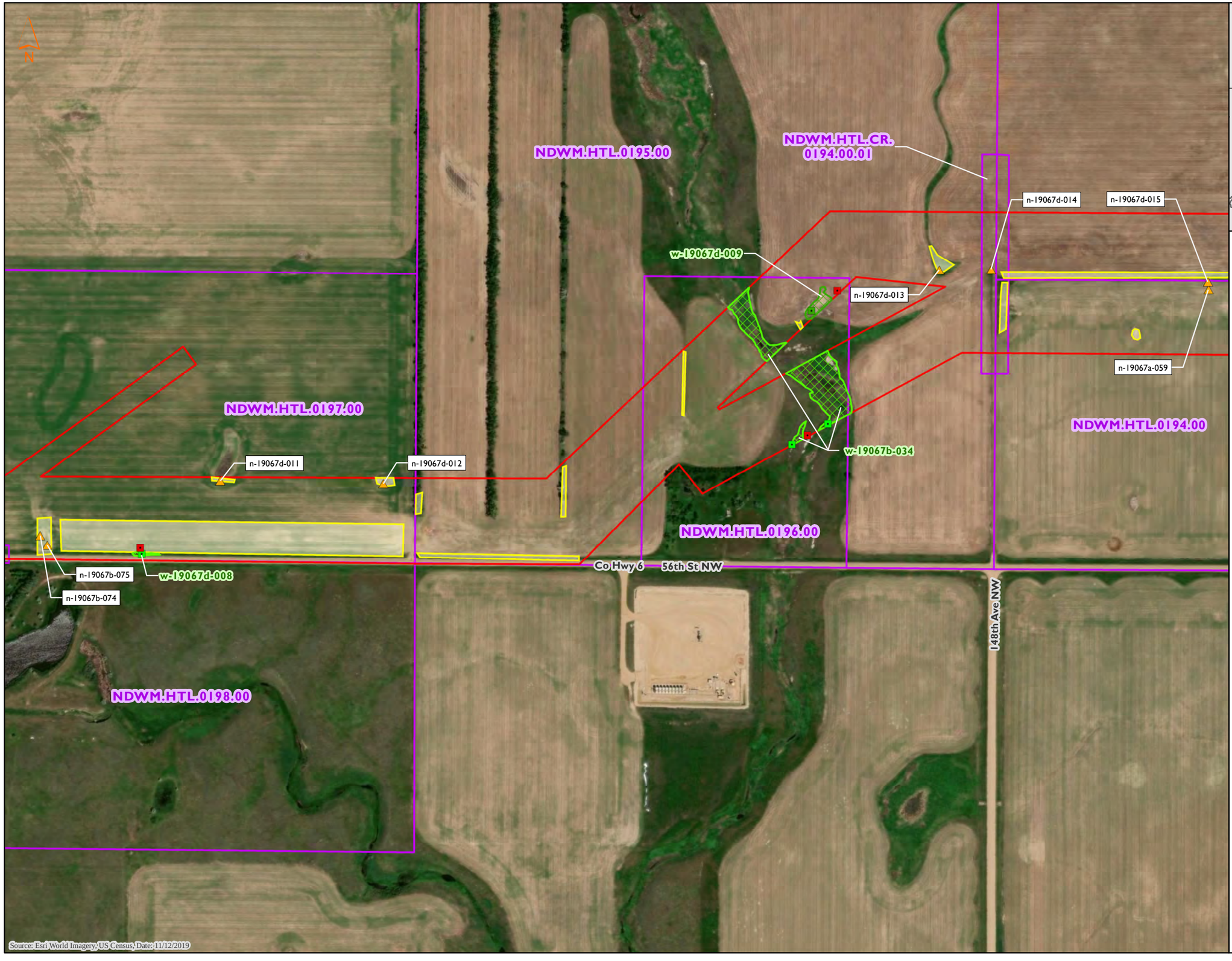

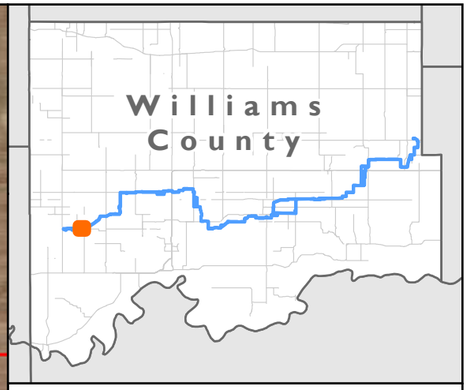

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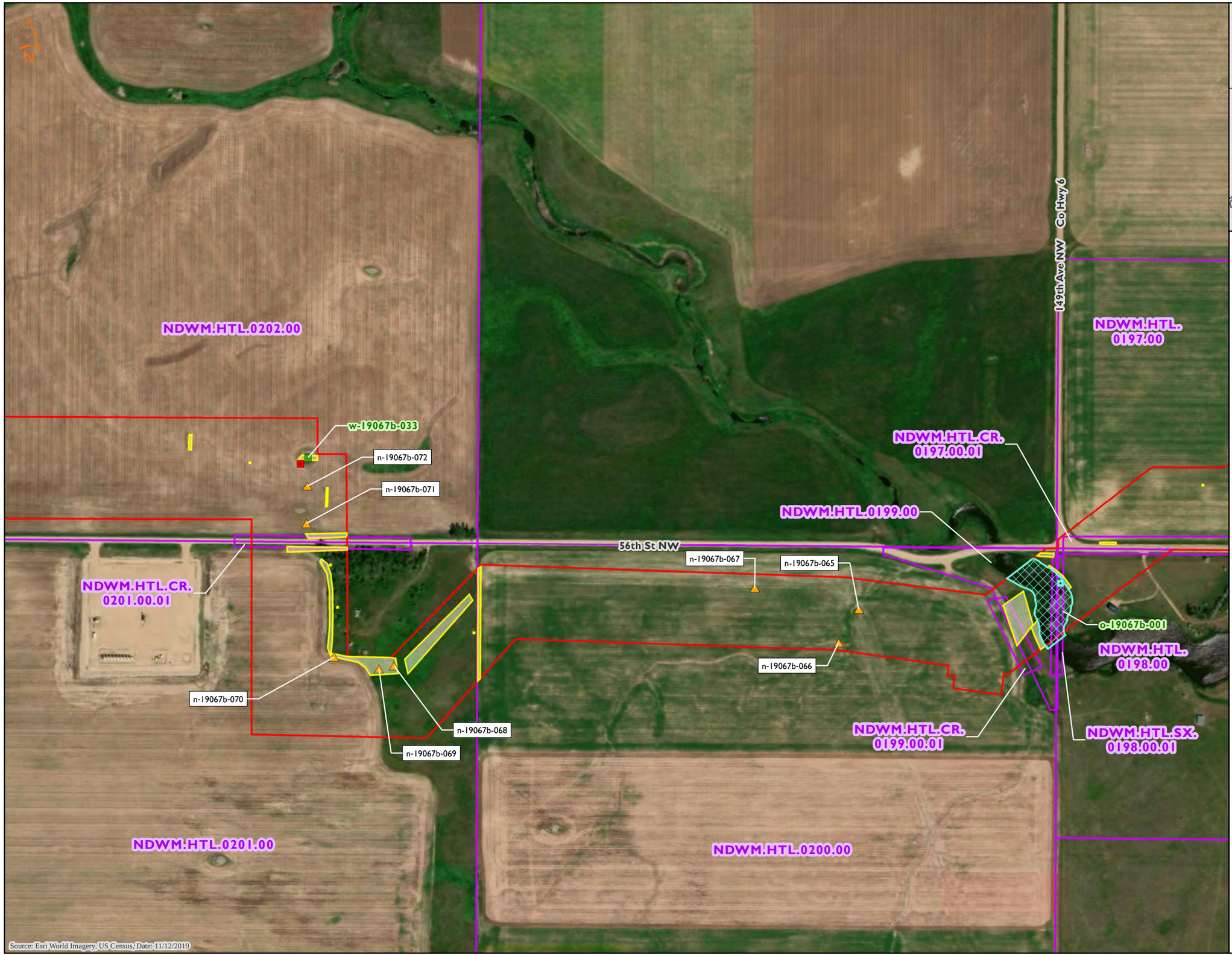



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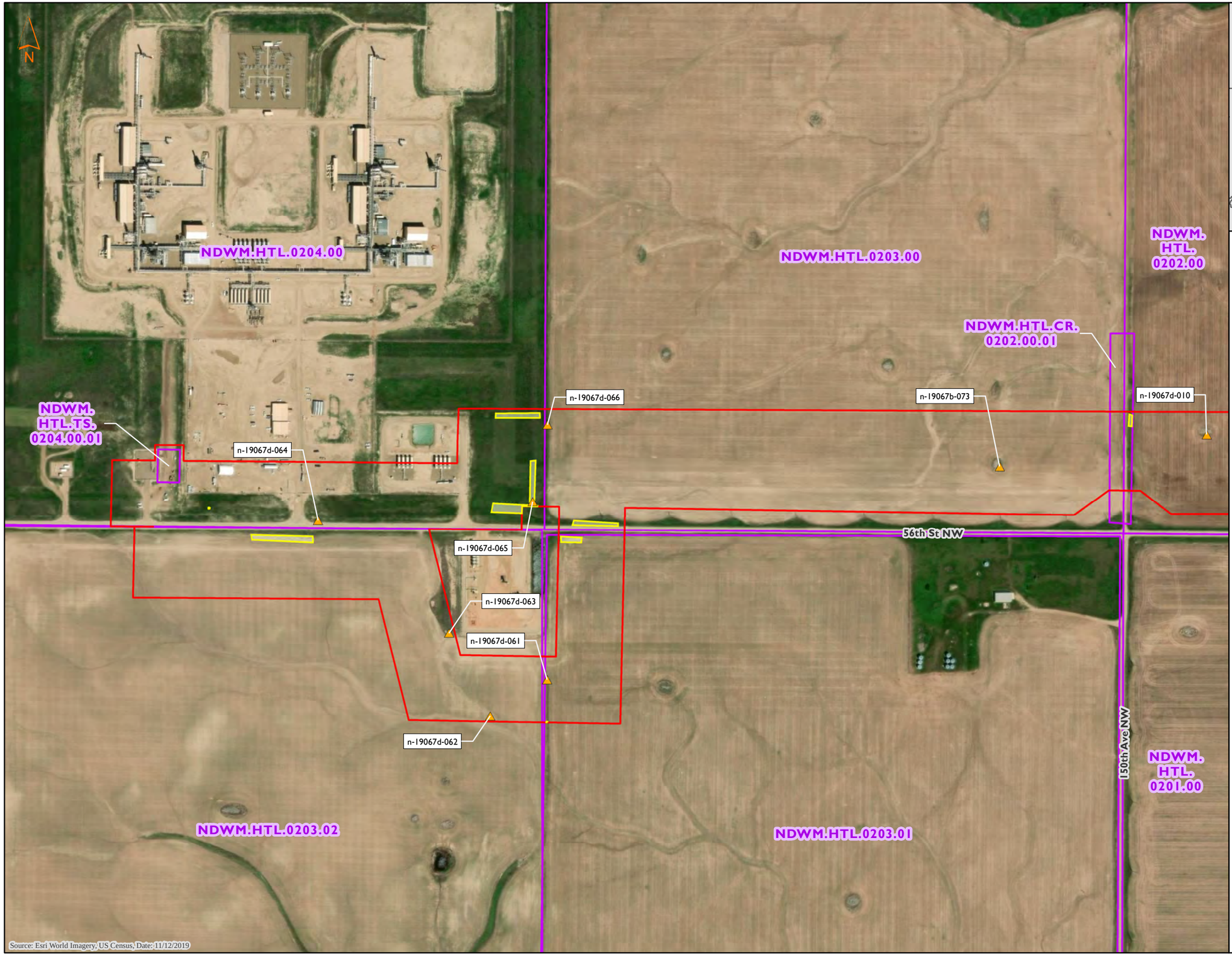

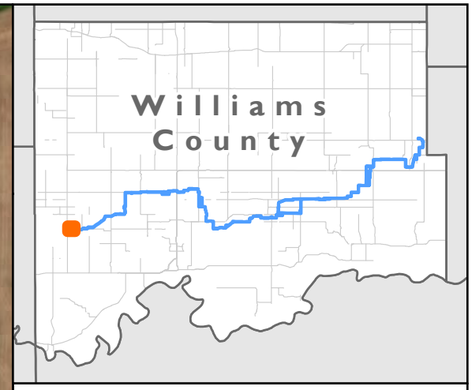

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Exhibit E

Agency Consultations

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U.S. Fish and Wildlife Service

(Threatened and Endangered Species)

ONEOK

October 10, 2019

Mr. Scott Larson
U.S. Fish and Wildlife Service
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Larson,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

The enclosed Project maps depict the current proposed pipeline route and a one-mile-wide evaluation corridor.[1] The Townships, Ranges, and Sections crossed by the Project are presented in Table 1.

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

October 10, 2019
Mr. Scott Larson

This letter is intended to introduce you to the Project, request confirmation of the threatened and endangered species identified within the Project area (see Table 2), and solicit comments on the species, their habitats, or designated critical habitat areas that may occur in Williams County. We would also appreciate your review and comments regarding migratory birds and eagles as they relate to the proposed construction activities. We are also consulting with the Crosby Wetland Management District regarding wetland and grassland easements in the area.

Table 2
USFWS Federally Listed Threatened, Endangered, Proposed, and Candidate Species Potentially Present in the Tioga Lateral Pipeline Project Area[1]

Scientific Name	Common Name	Status
Myotis septentrionalis	Northern long-eared bat	Threatened
Scaphirhynchus albus	Pallid sturgeon	Endangered
Charadrius melodus	Piping plover	Threatened
Charadrius melodus	Piping plover	Designated Critical Habitat
Sterna antillarum	Least tern	Endangered
Calidris canutus rufa	Red knot	Threatened
Grus americana	Whooping crane	Endangered

[1] Information for Planning and Consultation (IPaC). USFWS website. Available at https://ecos.fws.gov/ipac/.Accessed October 2019.

Merjent, Inc. (Merjent) is assisting ONEOK with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Merjent has been coordinating natural resource surveys of the proposed Project work areas over the 2019 field season; survey reports will be submitted to your agency once complete.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Andrea Sampson of Merjent at 612-226-1331 or asampson@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

cc: Andrea Sampson, Paul Hartzheim and Maddy Krumwiede, Merjent
Scott Larson, USFWS (via email at scott_larson@fws.com)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926
(701) 250-4481, ndfieldoffice@fws.gov

IN REPLY REFER TO:
CPA-0028 ONEOK
Bakken natural gas
liquids

November 15, 2019

Ms. Beth Ludwig
Environmental Project Manager
Merjent
Tractor Works Building
800 Washington Avenue North
Minneapolis, Minnesota 55401

Dear Ms. Ludwig:

Thank you for the opportunity to provide comments on the proposed ONEOK Bakken Pipeline, LLC (ONEOK) Tioga Lateral Line Project (Project) received on October 10, 2019. The new 75-mile pipeline would be 16-inch diameter steel and transport natural gas liquids in Williams County, North Dakota. The U.S. Fish and Wildlife Service (Service) offers the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 *et seq.*), the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57), the Endangered Species Act (ESA) (16 U.S.C. 1531 *et seq.*), and the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d, 54 Stat. 250).

Threatened and Endangered Species

Private individuals and companies are required to ensure that their actions do not result in "take" of federally listed animals. Take is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Section 10(a)(1)(B) of the ESA allows non-Federal parties planning activities that have no Federal nexus (A Federal nexus exists whenever an activity is conducted, funded, or licensed or permitted by a Federal agency), but which could result in the incidental taking of listed animals, to apply for an incidental take permit. The application must include a habitat conservation plan laying out the proposed actions, determining the effects of those actions on Federally-listed plant and wildlife species and their habitats (and may include proposed or candidate species), and defining measures to minimize and mitigate adverse effects.

Thank you for using our online Information for Planning and Consultation (IPaC) system to identify species of concern that have a potential to be in the project area. We can confirm that the federally listed threatened and endangered species listed in table two are correct for Williams County. Further information is provided below on the species that may need additional surveys

or conservation measures.

Whooping Crane

The Aransas Wood Buffalo Population (AWBP) of the endangered whooping crane (*Grus americana*) is the only self-sustaining migratory population of whooping cranes remaining in the wild. Whooping cranes breed in the wetlands of Wood Buffalo National Park in Alberta and the Northwest Territories of northern Canada, and overwinter on the Texas coast. Whooping cranes in the AWBP annually migrate through North Dakota during their spring and fall migrations.

The presence of suitable roosting and feeding habitat for whooping cranes indicate the potential for whooping crane presence in the proposed project area. The Service recommends that if a whooping crane is sighted within one mile of the project while it is under construction, that all work cease within one mile of that part of the project and the Service be contacted immediately. In coordination with the Service, work may resume after the bird(s) leave the area. Whooping cranes are unlikely to spend more than a few days in any one spot during migration.

Northern Long Eared Bat

The northern long-eared bat (*Myotis septentrionalis*) (NLEB) is listed as threatened under the ESA due to declines caused by white-nose syndrome, a deadly bat disease. The state of North Dakota is within the known range of the NLEB and in the white nose syndrome zone. During the summer, NLEBs typically roost singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically $\geq$3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices or presence of peeling bark. It has also been occasionally found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable). They forage for insects in upland and lowland woodlots and tree lined corridors. During the winter, NLEBs predominately hibernate in caves and abandoned mine portals. Additional habitat types may be identified as new information is obtained. If suitable NLEB habitat is present within the proposed project area, we recommend further coordination with our office. A 4(d) rule has been published that exempts take of NLEBs in certain circumstances and may apply to this project.

Piping Plover

The project area contains potential habitat for the piping plover *(Charadrius melodus),* a federally threatened species. Potential piping plover habitat in the project area is near alkali lakes and consists of sparsely vegetated beaches, salt-encrusted mud flats, and/or gravelly salt flats, and adjacent uplands 200 ft. (61 m) above the high water mark of alkali lakes and wetlands. In North Dakota, piping plovers begin arriving on their breeding grounds in early to mid-April and are typically gone by September 1; construction or maintenance activities during this time period may disturb nesting piping plovers. If construction is planned during this time (April 1-August 31st), we would recommend delineating areas of potential habitat during the planned natural resource surveys. We recommend timing surveys to evaluate potential piping plover habitat as close to construction as possible due to fluctuating water levels causing changes in

quantity of suitable shoreline. The Service recommends a ½ mile no entry buffer around all wetlands with potential or documented plover nesting during this timeframe. If you are unable to maintain a ½-mile buffer around all piping plover nesting wetlands, the Service recommends that the project proponent provide additional protective measures in these areas to avoid the potential take of piping plovers. Critical habitat has been designated for the piping plover but does not occur near the proposed pipeline route.

Eagle Guidance

Golden eagles (*Aquila chrysaetos*) are year-round residents in western North Dakota, and may occasionally be found throughout the state in winter or during migration. Bald eagles (*Haliaeetus leucocephalus*) occur throughout North Dakota in all seasons. Information available to the Service regarding all existing and recent breeding territory data indicates a potential for both bald and/or golden eagles to be present in the proposed pipeline evaluation corridor. The bald eagle and golden eagle are protected from a variety of harmful actions via take prohibitions in both the MBTA[1] and the BGEPA. The BGEPA, enacted in 1940 and amended several times, prohibits take of bald eagles and golden eagles, including their parts, nests, young or eggs, except where otherwise permitted pursuant to federal regulations. Incidental take of eagles from actions such as electrocutions from power lines or wind turbine strikes are prohibited unless specifically authorized via an eagle incidental take permit from the Service. BGEPA provides penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." BGEPA defines take to include the following actions: "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Service expanded this definition by regulation to include the term "destroy" to ensure that "take" also encompasses destruction of eagle nests. Also the Service defined the term disturb which means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

The Service has developed guidance for the public regarding means to avoid take of bald and golden eagles:

- The 2007 *National Bald Eagle Management Guidelines* serve to advise landowners, land managers, and others who share public and private lands with bald eagles when and

[1] On December 22, 2017, the Department of the Interior's (DOI) Office of the Solicitor Memorandum M-37050 titled The Migratory Bird Treaty Act Does Not Prohibit Incidental Take https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf) concludes that the MBTA's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs. The MBTA list of protected species includes bald and golden eagles, and the law has been an effective tool to pursue incidental take cases involving eagles. However, the primary law protecting eagles is the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S. Code § 668), since the bald eagle was delisted under the Endangered Species Act in 2007. Memorandum-37050 does not affect the ability of the Service to refer entities for prosecution that have violated the take prohibitions for eagles established by the BGEPA.

under what circumstances the protective provisions of BGEPA may apply. They provide conservation recommendations to help people avoid and/or minimize such impacts to bald eagles, particularly where they may constitute "disturbance," which is prohibited by the BGEPA.
https://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf

The Service also has promulgated new permit regulations under BGEPA:

- New eagle permit regulations, as allowed under BGEPA, were promulgated by the Service in 2009 (74 FR 46836; Sept. 11, 2009) and revised in 2016 (81 FR 91494; Dec. 16, 2016). The regulations authorize the limited take of bald and golden eagles where the take to be authorized is associated with otherwise lawful activities. These regulations also establish permit provisions for intentional take of eagle nests where necessary to ensure public health and safety, in addition to other limited circumstances. The revisions in 2016 included changes to permit issuance criteria and duration, definitions, compensatory mitigation standards, criteria for eagle nest removal permits, permit application requirements, and fees in order to clarify, improve implementation and increase compliance while still protecting eagles.
https://www.gpo.gov/fdsys/pkg/FR-2016-12-16/pdf/2016-29908.pdf

The Service's Office of Law Enforcement carries out its mission to protect eagles through investigations and enforcement, as well as by fostering relationships with individuals, companies, industries and agencies that have taken effective steps to avoid take, including incidental take of these species, and encouraging others to implement measures to avoid take. The Office of Law Enforcement focuses its resources on investigating individuals and entities that take eagles without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Those individuals and entities are encouraged to work closely with Service biologists to identify available protective measures, and to implement those measures during all activities or situations where their action or inaction may result in the take of an eagle(s).

Recommendations Specific to the project

The Service recommends that surveys be conducted prior to any on-the-ground activities to determine the extent of any bald or golden eagle breeding territories in the area that may be affected by the proposed activity. The Service recommends that aerial nest surveys (preferably by helicopter) be conducted within a one-mile wide evaluation corridor or buffer to identify any occupied and unoccupied eagle nest sites in proximity to the proposed project area, including any proposed new access roads. Aerial surveys should be conducted between March 1 and May 15, before leaf-out, so that nests are visible, and so their status (active or inactive) can be determined. A nesting territory or inventoried habitat should be designated as unoccupied by golden eagles ONLY after at least two complete aerial surveys in a single breeding season. Aerial surveys should include the following:

1. Due to the ability to hover and facilitate observations of the ground, helicopters are preferred over fixed wing aircraft, although small aircraft may also be used. The Service requests that ONEOK report any eagle nests found, as well as nests of any other raptors found during the survey. Whenever possible, two observers should be used to conduct the surveys.
2. Observations of any eagle nest sites should be recorded using GPS. The date, location, nest condition, activity status, and habitat should be recorded for each sighting.
3. We request that you share the qualifications of the biologist(s) conducting the survey, method of survey, and results of the survey with the Service.

Alternatively, ONEOK could conduct ground surveys to identify eagle nests within a one-mile wide evaluation corridor or buffer between March 1 and May 15. However, be aware that ground surveys are much less reliable than aerial surveys, even during leaf-off conditions, and typically may miss ¾ of eagle nests present. At least two ground observation periods lasting at least four hours or more are necessary to designate an inventoried habitat or territory as unoccupied as long as all potential nest sites and alternate nests are visible and monitored.

If bald eagle nests are found in the evaluation corridor, we recommend following the Service's May 2007, National Bald Eagle Management Guidelines (referenced above), which contains detailed information on protecting bald eagles from disturbance due to human activity. The size and shape of effective buffers vary depending on the topography and other ecological characteristics surrounding the nest site. In open areas where there are little or no forested or topographical buffers, such as in North Dakota, distance alone must often serve as the buffer. To avoid/minimize impacts to nesting bald eagles from construction activities, the Service recommends: (1) keeping a minimum 660-foot buffer between the activity and any bald eagle nest if no landscape buffer exists; (2) keeping a minimum 330-foot buffer and maintaining a landscape buffer or natural areas between the activity and around nest trees; and (3) avoiding activities during the bald eagle breeding season (February 1 – July 15). The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest sites and provide for alternative or replacement nest sites.

If golden eagle nests are found in the evaluation corridor, we recommend that you make every effort to avoid impacts to golden eagles. If activities are planned within a golden eagle territory, an assessment of the potential for take of a golden eagle will need to be made in conjunction with this office. This entails identifying your proposed activities that may occur in a golden eagle breeding territory, and sharing that information with this office. If the project proponent or federal action agency, if applicable, in conjunction with the Service, determines that any level of take is anticipated, including take due to disturbance, you should work with this office to modify your activity to avoid the take, or apply for a take permit and include the following information:

1. Collect and synthesize relevant project and biological data.
2. Document project avoidance and minimization measures.
3. Quantify the anticipated take.
4. Submit an application and furnish all required information.

Terrestrial Habitat Avoidance and Restoration

Construction activities should be conducted in a manner that will avoid/minimize impacts to the existing habitat in the project area. The following recommendations are intended to reduce construction related impacts: In replanting native prairie or other grassland habitat, the Service recommends planting a diverse mixture of native cool and warm season grasses and forbs. Recent research has suggested that a more diverse mix, including numerous forb species, is not only ecologically beneficial but is also more weed resistant, allowing for less intensive management and chemical use. In essence, the more species included in a mixture, the higher the probability of providing competition to resist invasion by non-native plants. The seed source should be as local as possible, preferably collected from the nearby native prairie. If seeds and/or plants are obtained commercially, we recommend obtaining seed stock from nurseries within 250 miles of the project area to ensure the particular cultivars are well adapted to the local climate. The Natural Resources Conservation Service (NRCS) compiles a list of vendors in North Dakota that supply conservation seed and plants at http://plant-materials.nrcs.usda.gov/pubs/ndpmcmt8152.pdf. Additional information on native grasses and forbs may be found at the NRCS Bismarck Plant Materials Center website at http://www.plant- materials.nrcs.usda.gov/ndpmc/.

Mitigation

The Service's mitigation policy was established in 1981 to help assure consistent and effective mitigation recommendations that help Federal action agencies and developers plan for mitigation measures early, avoid delays, and assure equal consideration of fish and wildlife resources with other project features and purposes. Our policy adopts the definition of the term "mitigation" as stated in the NEPA regulations which includes: "(a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments." The mitigation methods above can be applied to reduce direct and indirect effects at any point in the process of project development; however, we recommend early planning to help ensure full implementation of any necessary mitigation measures.

Migratory Birds

The MBTA makes it illegal to take, possess, import, export, transport, sell, purchase, barter or offer for sale, purchase or barter, any migratory birds, or the parts, nests or eggs of such a bird except under the terms of a valid Federal permit. Take is defined in regulation as pursue, hunt, shoot wound, kill, trap capture or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect. Migratory bird species protected by MBTA are listed in 50 CFR 10.13.

Fish and Wildlife Service Property Interests

The Service administers National Wildlife Refuges and Waterfowl Production Areas owned in fee title as well as wetland and grassland easements throughout North Dakota, including an ongoing easement acquisition program. A review of Service realty records indicates Service property interests are located in the planning area. ONEOK has been working with the Lostwood Wetland Management District to avoid Service property interests or obtain a special use permit if necessary. Thank you for your early coordination on this issue.

The Service appreciates the opportunity to work with the North Dakota Public Service Commission on our shared conservation goals. Should you have any questions regarding these comments, please have your staff contact Jessica Johnson of my staff at (701) 355-8507 or at the letterhead address, or contact me at (701) 355-8512.

Sincerely,

Deputy Field Supervisor
North Dakota and South Dakota Field Office

cc: Greg link, Division Chief, North Dakota Game and Fish Department
Brian Kroshus, Commissioner, NDPSC
Julie Fedorchak, Commissioner, NDPSC
Randy Christmann, Commissioner, NDPSC

U.S. Fish and Wildlife Service

(Wetland and Grassland Easements)

October 10, 2019

District Manager
US Fish and Wildlife Service
Crosby Wetland Management District
1010 Highway 42 NW
Crosby, ND 58730

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear District Manager,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits this Project notification letter to the U.S. Fish and Wildlife Service (USFWS) Crosby Wetland Management District (WMD) and is requesting your review regarding USFWS conservation easements (wetland and grassland easements). ONEOK understands that grassland easement data is not typically publicly available and is actively working with landowners to enquire about easement enrollment and status. We have identified some potential wetland easements near the Project, but we also understand the status of these easements may change from year to year.

Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review[1] (USFWS interests are identified).

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

Based on a desktop review of publicly available information, ONEOK has identified some potential wetland easements parcels in the vicinity of the Project; one of which is directly crossed near milepost 13 (NW ¼ of Section 9, Township 156N, Range 96W, see enclosed maps). As currently designed, the Project does not cross any National Wetland Inventory (NWI) or field delineated wetlands within this parcel.

It is our understanding the wetland easement parcels may be crossed if wetland features within the parcel are not impacted. ONEOK is requesting confirmation of this assumption and any additional information regarding wetland data within this parcel. We are also requesting a review of the Project to identify if any grassland or other USFWS easements are located within the evaluation corridor. ONEOK is also in consultation with the USFWS Ecological Services Field Office is Bismarck regarding threatened and endangered species.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
District Manager, USFWS Crosby WMD (via email at crosbywetlands@fws.gov)

Paul Hartzheim

From: Krebsbach, Jacob <jacob_krebsbach@fws.gov>
Sent: Thursday, October 31, 2019 8:20 AM
To: Paul Hartzheim
Subject: Re: [EXTERNAL] ONEOK Tioga Lateral Project - consultation request (USFWS Crosby WMD)

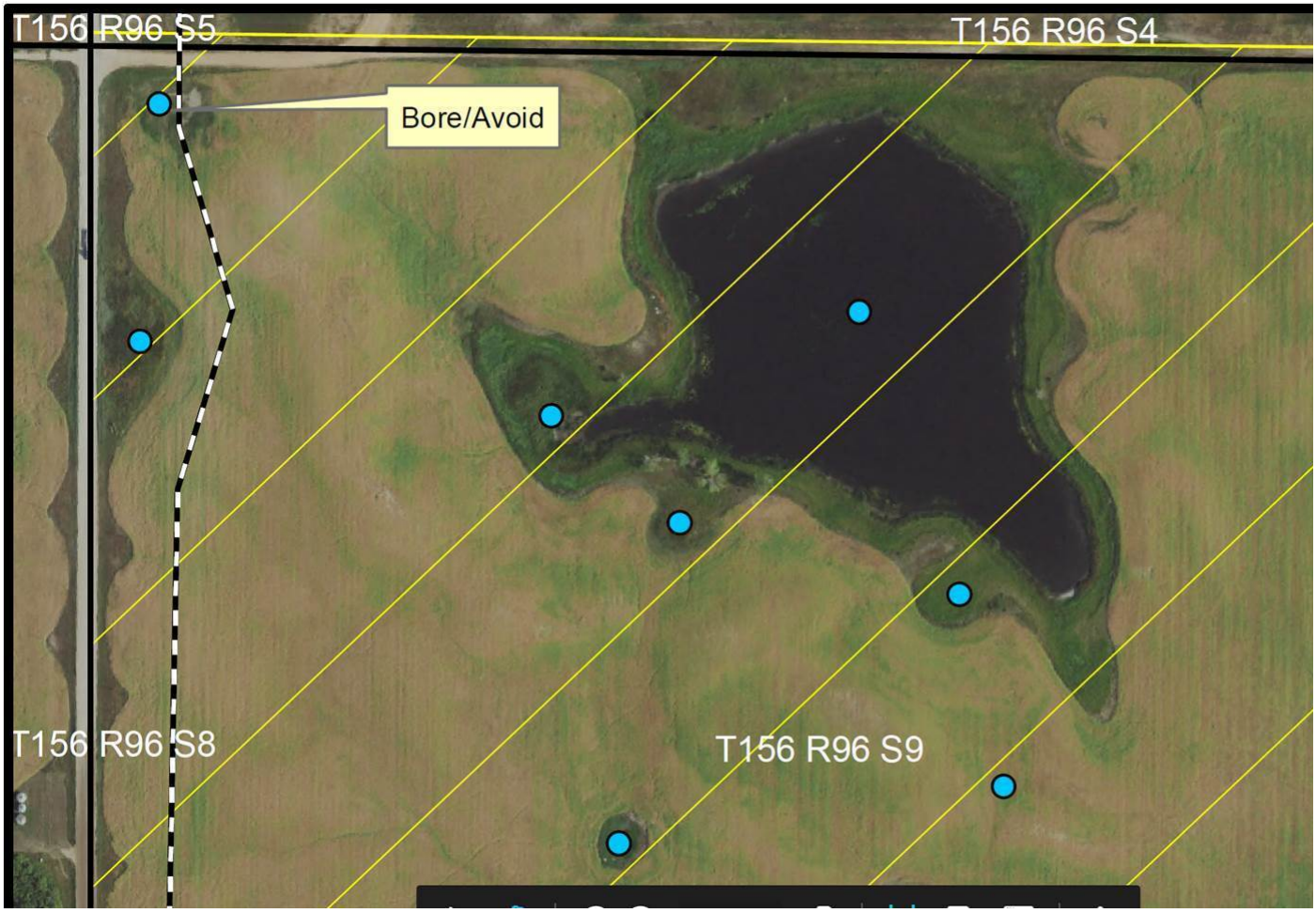
Paul,

My initial thoughts are that this looks ok, but if it's possible, could I get a shapefile just to confirm? Thanks.

Jacob Krebsbach
NAWCA Technician
Crosby Wetland Management District
U.S. Fish & Wildlife Service
10100 Hwy 42 NW
Crosby, ND 58730
701-965-6488 x10

On Tue, Oct 29, 2019 at 12:37 PM Paul Hartzheim <paul.hartzheim@merjent.com> wrote:

> Hi Jacob,
>
> It was good to talk to you yesterday. As discussed, since we submitted the original consultation request to you on October 10, 2019, ONEOK has shifted the project route to the east which may avoid the USFWS identified wetland basin you identified in the NW corner of the parcel. I've included a couple of screenshots below to show you the original route we submitted compared to the current route.
>
> Do you have any concerns with the new route impacting the USFWS identified wetland basin? I can provide a shapefile of the updated/current route if it would be helpful. If you believe the new route may still intersect with the feature, can you please let us know how many feet south of the road we would need to extend the road bore to avoid your jurisdiction?
>
> *Screenshot from USFWS response:*



Current project route has shifted to east. (red = centerline, black/blue = workspaces, pale yellow = environmental survey corridor)



Regards,

Paul Hartzheim

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

merjent.

1 Main Street SE, Suite 300
Minneapolis, MN 55414

612.746.3660
www.merjent.com

From: Krebsbach, Jacob <jacob_krebsbach@fws.gov>
Sent: Wednesday, October 16, 2019 12:15 PM
To: Paul Hartzheim <paul.hartzheim@merjent.com>
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>
Subject: Re: [EXTERNAL] ONEOK Tioga Lateral Project - consultation request (USFWS Crosby WMD)

Paul,

I've attached a map for the only location where the proposed pipeline will cross a USFWS easement. It would appear there is a small, temporary wetland basin in the very northwest corner of the parcel, in which the pipeline is routed through. Would ONEOK be willing to avoid or bore under this wetland? I assume the plan would be to bore under the road on the section line, so perhaps it would be possible to extend the bore to the south to avoid this basin?

There are no grassland easements within the study area. There are a few more wetland easements but the pipeline does not cross them as currently proposed.

Let me know if you have any questions or concerns. Thanks.

Jacob

Jacob Krebsbach

NAWCA Technician

Crosby Wetland Management District

U.S. Fish & Wildlife Service

10100 Hwy 42 NW

Crosby, ND 58730

701-965-6488 x10

On Thu, Oct 10, 2019 at 2:03 PM Paul Hartzheim <paul.hartzheim@merjent.com> wrote:

> To whom it may concern,
>
> On behalf of ONEOK Bakken Pipeline L.L.C. (ONEOK), please see the attached consultation letter requesting review of ONEOK's Tioga Lateral Project located in Williams County. A set of maps is included immediately following the letter and shapefiles of the project centerline and a one-mile-wide evaluation corridor are also included for your convenience.
>
> If you need any have any questions of need any additional information, please contact me directly or Beth Ludwig of ONEOK at 918-588-7257 or Beth.Ludwig@oneok.com. A hard copy of the attached will be sent to your attention and should arrive early next week.
>
> Sincerely,

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com



1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com

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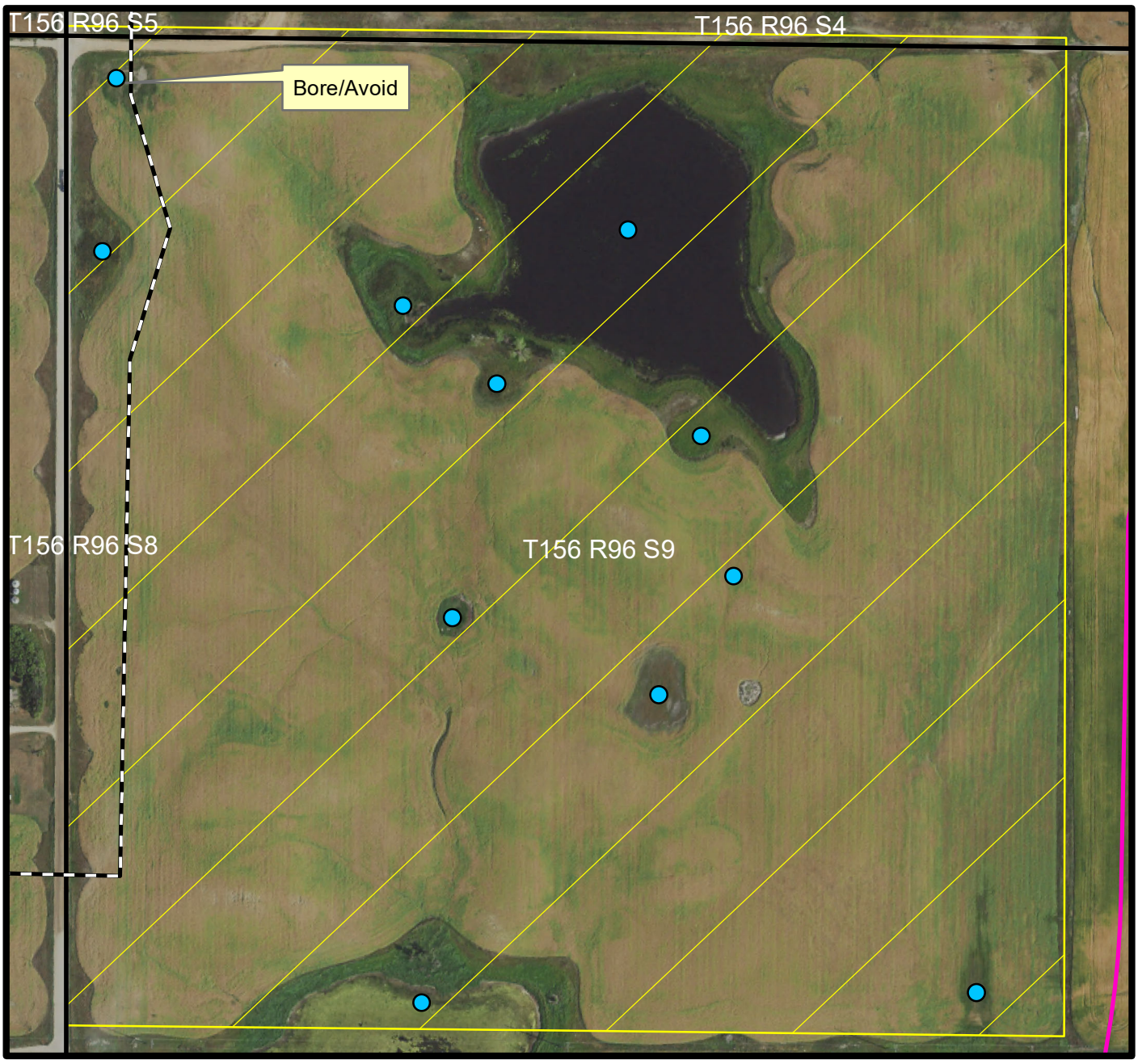
ONEOK Bakken Pipeline LLC
Tioga Lateral Pipeline Project
Williams County - T 156 N; R 96 W
Section 9 - NW4



Oil & Gas Interest

- Access Road
- Oil Well
- Oil Pad Location
- Existing Pipelines
- Proposed Pipeline
- Pipeline Study Area

0 0.045 0.09 Miles

Imagery: 2018 Photo
Map Prepared: 10/16/2019

N
W E
S

FWS Managed Lands

- Wetland Easement
- Grassland Easement
- Section Line
- FWS Identified Wetland

Disclaimer: This map represents the approximate location, size and shape of wetland basins using visible water, vegetation, and soil indicators from aerial photography available at the time this map was prepared. The ONLY purpose of this map is to aid in the siting of oil and/or gas facilities. THIS MAP IS NOT AN OFFICIAL MAP OF U.S. FISH AND WILDLIFE SERVICE PROTECTED WETLANDS AND IS NOT INTENDED TO BE USED FOR ANY OTHER PURPOSE BESIDES THE PLANNING AND SITING OF OIL AND/OR GAS FACILITIES.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

10100 Hwy 42 NW
Crosby, ND 58730

November 5, 2019

Attn: Beth Ludwig
ONEOK, Inc.
100 W. Fifth Street
Tulsa, Oklahoma 74103

Dear Ms. Ludwig:

This letter is in reference to the proposed ONEOK Bakken Pipeline, L.L.C.'s Tioga Lateral Pipeline Project in Section 9, T. 156 N., R. 96 W., Williams County, North Dakota. This proposed pipeline crosses at least one tract of land covered by U.S. Fish and Wildlife Service wetland easement contracts (see attached maps) that protect wetlands from draining, filling, leveling, and burning of wetland vegetation. Our staff has reviewed the project information provided by Paul Hartzheim of Merjent, Inc. and found that the pipeline is routed in a manner that no wetland basins will be impacted directly by (1) avoiding wetlands, or (2) boring under wetland basins. In addition to avoiding wetland basins with access roads and all machinery, the Service recommends that either straw waddles or silt fence be used upslope of all wetland basins.

Please notify the Crosby Wetland Management District Office 48 hours before planned excavation of the ONEOK pipeline.

This letter does not supersede any required permits from landowners, local, state, and federal entities.

Please be advised of other federal laws including the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the National Wildlife Refuge System Improvement Act and the Bald and Golden Eagle Protection Act (BGEPA) when planning your proposal. The ESA, MBTA, and BGEPA prohibit the unauthorized take of federally-listed threatened and endangered species, all migratory birds, and bald and golden eagles, respectively. You must ensure that your activities do not violate these laws. The best way to do that is through early coordination of your plans with the Ecological Services office for North Dakota. Please contact the field supervisor, Mr. Drew Becker, 3425 Miriam Ave., Bismarck ND 58501; by phone at 701-250-4481, or email at northdakotafieldoffice@fws.gov. Additional information on these wildlife resources and potential impacts and requirements for oil and gas development is available at website www.fws.gov/northdakotafieldoffice/.

If you have any questions please contact me at Crosby Wetland Management District, telephone 701-965-6488, from 7 a.m. to 4:30 p.m. Thank you for your cooperation.

Sincerely,

Scott Williams

Scott Williams
Wetland District Manager

Enclosure: Tioga Lateral Pipeline Project map

ONEOK Bakken Pipeline LLC
Tioga Lateral Pipeline Project
Williams County - T 156 N; R 96 W
Section 9 - NW4



Oil & Gas Interest

- Access Road
- Oil Well
- Oil Pad Location
- Existing Pipelines
- Proposed Pipeline
- Pipeline Work Area

0 0.0275 0.055 Miles

Imagery: 2018 Photo
Map Prepared: 11/4/2019

N
W E
S

FWS Managed Lands

- Wetland Easement
- Grassland Easement
- Section Line
- FWS Identified Wetland

Disclaimer: This map represents the approximate location, size and shape of wetland basins using visible water, vegetation, and soil indicators from aerial photography available at the time this map was prepared. The ONLY purpose of this map is to aid in the siting of oil and/or gas facilities. THIS MAP IS NOT AN OFFICIAL MAP OF U.S. FISH AND WILDLIFE SERVICE PROTECTED WETLANDS AND IS NOT INTENDED TO BE USED FOR ANY OTHER PURPOSE BESIDES THE PLANNING AND SITING OF OIL AND/OR GAS FACILITIES.

U.S. Army Corps of Engineers

(pending)

October 10, 2019

Ms. Patricia McQueary
State Program Manager
US Army Corps of Engineers – Omaha District
North Dakota Regulatory Division
3319 University Street
Bismarck, ND 58504

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Ms. McQueary,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

As designed, the Project will cross the Little Muddy River, a Class II waterbody, designated as a Special Fishery for Waterbody Fishing. The Project, as designed, will also cross Beaver Creek, which has a Class II designation. Both rivers will be crossed via the horizontal directional drilling (HDD) method and no impacts to the rivers are anticipated. ONEOK assumes the Project will be eligible for coverage under NWP 12 Utility Line Activities. Following completion of field surveys and after the route and associated workspaces have been solidified, ONEOK will submit a Pre-Construction Notification to your office, if deemed necessary.

ONEOK respectfully submits this Project information to the United States Army Corps of Engineers (USACE) to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. As part of its desktop review, ONEOK has not identified any Section 10 waterbodies or any USACE-owned or administered lands. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review[1].

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

To facilitate our review, the following information is requested:

- Confirmation of ONEOK's assessment in regard to the applicability of NWP 12;
- A review of the Project evaluation corridor for crossings of Section 408 Civil Works projects or other USACE owned or managed lands; and,
- Any special requirements, restrictions, or specifications regarding constructing pipelines across or under USACE-regulated features;

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project Shapefile (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Patricia McQuery and Jason Renschler, USACE (via email at Patricia.L.Mcqueary@usace.army.mil and Jason.J.Renschler@usace.army.mil)

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U.S. Department of Agriculture – Natural Resources Conservation Service

(Conservation Easements)

October 10, 2019

Mr. Jeff Roel
Resource Conservationist
US Department of Agriculture
Natural Resources Conservation Service – Williams County
1106 West 2nd Street
Williston, ND 58801

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Roel,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits a request for Project review from the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) regarding NRCS-administered lands and parcels enrolled in NRCS easement programs. ONEOK understands this information is not publicly available and is actively working with landowners to enquire about easement enrollment and status.

Sections, Townships, and Ranges within a one-mile-wide "evaluation corridor" are presented in the following table. Aerial and topographic based mapsets are also included for your review[1].

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
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156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Jeff Roel, USDA-NRCS (via email at jeff.roel@nd.usda.gov)

USDA

United States Department of Agriculture

Natural Resources
Conservation Service

Bismarck State Office
PO Box 1458
Bismarck, ND
58502-1458

Voice 701.530.2000
Fax 855-813-7556

November 7, 2019

ONEOK, Inc.
Attn: Beth Ludwig
100 West 5th St.
Tulsa, OK 74103

RECEIVED
NOV 19 2019
ONEOK
ENVIRONMENTAL

RE: Tioga Lateral Pipeline Project

Dear Ms. Ludwig:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated October 10, 2019, regarding the Tioga Lateral Pipeline Project.

Farmland Protection Policy Act

NRCS has a major responsibility with the Farmland Protection Policy Act FPPA in documenting conversion of farmland (i.e., prime, statewide importance and local importance) to non-agriculture use when funding is used. Your proposed projects consist of burying a 16-inch diameter steel pipeline to transport natural gas liquids. The burying of pipelines does not permanently remove farmland from production, therefore; FPPA does not apply to this project and no further action is needed.

Wetlands

The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose, or to have the effect of making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines to help avoid impacts to wetlands and possible loss of USDA benefits for producers. If these guidelines are followed, the impacts to the wetland will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements:

- Disturbance to the wetland must be temporary.
- No drainage of wetland is allowed (temporary or permanent).
- Mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained.
- Temporary side cast material must be placed in such a manner not to be dispersed in the wetland.
- All trenches in a wetland must be backfilled to the original elevation.

(More)

NRCS recommends that impacts to wetland be avoided.

If you have additional questions pertaining to FPPA, please contact me at (701) 530-2021 or by email at wade.bott@usda.gov. Thank you.

Sincerely,

Susan Samson - Bicki for

WADE D. BOTT
State Soil Scientist

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U.S. Department of Agriculture – Farm Service Agency

(Conservation Easements)

[pending]

October 10, 2019

Matthew Stanger
Acting County Executive Director
US Department of Agriculture
Williams County Farm Service Agency
1106 West 2nd Street
Williston, ND 58801-5804

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Stanger,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits this Project notification letter to the U.S. Department of Agriculture (USDA), Farm Service Agency (FSA) for review regarding FSA-administered lands and parcels enrolled in FSA easement programs within an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline. ONEOK understands this information is not publicly available and is actively working with landowners to enquire about easement enrollment and status.

Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.[1]

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent as an email attachment.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Matthew Stanger, USDA-FSA (via email at matthew.stanger@nd.usda.gov)

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U.S. Department of Defense

October 10, 2019

Delivered via email to:
Cy Munos
U.S. Department of Defense - Air Force Cable Affairs
cy.munos@us.af.mil

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Munos,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits a request for Project review from the U.S. Department of Defense, Air Force Cable Affairs regarding the location of intercontinental ballistic missiles and launch facilities within an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline. The enclosed Project maps and shapefiles depict the current proposed pipeline route and a one-mile-wide evaluation corridor. The Townships, Ranges, and Sections crossed by the Project are presented in Table 1.

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
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155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

October 10, 2019
Mr. Cy Munos

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent

To:	Paul Hartzheim
Cc:	Ludwig, Beth; Maddy Krumwiede
Date:	Thursday, October 10, 2019 3:37:25 PM

Paul,

The Minot AFB has no assets in the project area. Thanks for reaching out to us.

Cy Munos
Chief, Cable Affairs
91 MMXS/MMXSFK
Minot AFB, ND
DSN: 453-6053
COMM.: 701-723-6053
CELL: 701-720-8274

-----Original Message-----
From: Paul Hartzheim <paul.hartzheim@merjent.com>
Sent: Thursday, October 10, 2019 1:59 PM
To: MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK <cy.munos@us.af.mil>
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>; Paul Hartzheim <paul.hartzheim@merjent.com>
Subject: [Non-DoD Source] ONEOK Tioga Lateral Project - consultation request (USDOD)

Mr. Munos,

On behalf of ONEOK Bakken Pipeline L.L.C. (ONEOK), please see the attached consultation letter requesting review of ONEOK's Tioga Lateral Project located in Williams County. A set of maps is included immediately following the letter and shapefiles of the project centerline and a one-mile-wide evaluation corridor are also included for your convenience.

If you need any have any questions of need any additional information, please contact me directly or Beth Ludwig of ONEOK at 918-588-7257 or Beth.Ludwig@oneok.com <mailto:Beth.Ludwig@oneok.com> .

Sincerely,

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com

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North Dakota Game and Fish Department

(NDGFD managed lands and game species)

October 10, 2019

Mr. Greg Link
Division Chief
North Dakota Game and Fish Department
Conservation and Communication Division
100 North Bismarck Expressway
Bismarck, ND 58501-5095

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Link,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

The enclosed Project maps depict the current proposed pipeline route and a one-mile-wide evaluation corridor.[1] The Townships, Ranges, and Sections crossed by the Project are presented in Table 1.

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
157 North	95 West	23-26, 35, 36

As designed, the Project will cross the Little Muddy River, which is a Class II waterbody, designated as a Special Fishery for Waterbody Fishing, and is listed as impaired for fecal coliform. No Total Maximum Daily Load (TMDL) has been established for this waterbody; however, one is needed. The Project, as designed, will also cross Beaver Creek, which has a Class II designation. As both rivers will be crossed via the horizontal directional drilling method, no impacts to the rivers are anticipated.

Based on a desktop review of the Project, we have also identified parcels of Private Land Open to Sportsmen (PLOTS) land which are crossed near mileposts 17 and 19 (see enclosed maps). ONEOK is in discussion with the landowners of these parcels and is not aware of any special approval or license that is required from your agency to cross these lands. We are requesting confirmation that the location of the parcels is accurate and are soliciting any comments you may have with respect to construction in these areas.

ONEOK respectfully submits a request for Project review from the North Dakota Department of Game and Fish (NDGF) for presence or absence of: sensitive species; game refuge or game management lands; PLOTS lands; and projects under the direction of these programs. ONEOK has also been in consultation with Ms. Sandra Johnson of NDGF regarding eagle nest data.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Greg Link, NDGF (via email at glink@nd.gov)

GOVERNOR, Doug Burgum
DIRECTOR, Terry Steinwand
DEPUTY, Scott A. Peterson

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT
100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

November 6, 2019

Beth Ludwig
Environmental Project Manager
ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103

Dear Ms. Ludwig:

RE: Tioga Lateral Pipeline Project

ONEOK Bakken Pipeline, LLC is proposing to construct approximately 75 miles of 16-inch-diameter new steel pipeline to transport natural gas liquids. The project will be located entirely within Williams County, North Dakota. The North Dakota Game and Fish Department (NDGF) has reviewed this project for wildlife concerns.

A primary concern with pipeline projects is the possible disturbance of native prairie and wooded draws associated with construction of the pipeline and access roads. Avoidance of native prairie areas reduces impacts to several grassland species including many of the species of conservation priority. We ask that work within these areas be avoided to the extent possible, every effort be made to prevent destruction of woody vegetation, and disturbed areas be reclaimed to pre-project conditions.

The pipeline route crosses the Little Muddy River and Beaver Creek, both Classified fisheries. We appreciate that these streams will be crossed by directional boring to protect the resource. The Department also recommends that additional precautions be implemented into the design of pipes crossing under the State's waterways. One means of minimizing a potentially large pipeline failure is to incorporate pressure sensing valves on both sides of the waterway. These valves should be placed as close to the waterway as possible while staying out of the floodplain to reduce potential damage from ice and other floating debris. A maintenance schedule should be developed to ensure the integrity of the pipe for the life of the project.

Aquatic nuisance species (ANS) are a major concern in North Dakota. State law requires that the contractor, including any and all subcontractors involved in this project, take appropriate precautions to prevent the introduction or movement of ANS within the state. The contractor should provide the department a reasonable opportunity to inspect any equipment prior to these items being launched or placed into waters of the state. The Department's Aquatic Nuisance

Species Coordinator, Ms. Jessica Howell, can be contacted at 701-368-8368 for equipment inspections or additional information regarding ANS prevention protocols.

The National Wetland Inventory indicates a variety of wetlands within the proposed project corridor. Steps should be taken to protect any wetlands that cannot be avoided, no alterations should be made to existing drainage patterns, and above-ground appurtenances should not be placed in wetland areas. Unavoidable destruction or degradation of wetland acres should be mitigated in kind.

Aerial surveys should be conducted for raptor nests before construction begins. We recommend that a ½-mile construction buffer be implemented around active eagle nest sites (known occupied within the past 5 years). Ms. Sandra Johnson, Conservation Biologist, may be contacted at 701-328-6327 for additional information on golden eagle nest sites in the state.

PLOTS is a public access program which cost-shares with private landowners to help conserve fish and wildlife habitat. PLOTS lands are not owned or managed by the NDGF. While a special use permit is not required from the Department to cross these lands, disturbance of enrolled acres could result in the reduction or reimbursement of cost-share payments. NDGF encourages landowners to notify the Department early in the process.

We do not believe this project will have significant adverse effects on wildlife or wildlife habitat provided these recommendations are implemented where appropriate during project construction.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

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North Dakota Game and Fish Department

(Bald and Golden Eagle Nest Data)

October 10, 2019

Ms. Sandra "Sandy" Johnson
Conservation Biologist
North Dakota Game and Fish Department
Conservation and Communication Division
100 North Bismarck Expressway
Bismarck, ND 58501-5095

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Ms. Johnson,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

The enclosed Project maps depict the current proposed pipeline route and a one-mile-wide evaluation corridor.[1] The Townships, Ranges, and Sections crossed by the Project are presented in Table 1.

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
157 North	95 West	23-26, 35, 36

Merjent, Inc. (Merjent), on behalf of ONEOK, submitted a request for eagle nest data located within the Project evaluation corridor via e-mail on July 8, 2019 to inform the field-based natural resource survey effort taking place in summer 2019. ONEOK respectfully submits this new request for eagle nest data based on the current Project route (see enclosed Project maps) . Natural resource surveys are been completed along the entire Project route; if survey crews identified eagle nests within the evaluation corridor, ONEOK will share location and nest condition information with your office. ONEOK will conduct all work incompliance with the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA).

A Project notification letter was also sent to Mr. Greg Link requesting review for presence or absence of: sensitive species; game refuge or game management lands; Private Land Open to Sportsmen (PLOTS) lands; and projects under the direction of these programs.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Andrea Sampson of Merjent at 612-226-1331 or andrea.sampson@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project Shapefiles (provided electronically)

cc: Maddy Krumwiede, Paul Hartzheim, and Andrea Sampson, Merjent, Inc.
Sandy Johnson, NDGF (via email at sajohnson@nd.gov)

To:	Paul Hartzheim
Cc:	Ludwig, Beth; Andrea Sampson; Maddy Krumwiede
Date:	Monday, October 21, 2019 2:57:36 PM
Attachments:	image005.png image006.jpg image002.png

Hi Paul,
Thank you for resending the shapefile. I checked our database and there is one historical golden eagle nest within the project corridor. We typically require a data sharing agreement but this is an old nest site and as of 2014 we consider the nest site "destroyed." The nest was in a tree and at some point, the entire tree fell down or was destroyed. The general location is: 48.228792 -103.471854. Recognize our database only contains known or reported nests.
Let me know if you have any other questions.
Thanks,
Sandy

Sandra Johnson
Conservation Biologist

701.328.6382 • sajohnson@nd.gov • gf.nd.gov



From: Paul Hartzheim <paul.hartzheim@merjent.com>
Sent: Monday, October 14, 2019 1:33 PM
To: Johnson, Sandra K. <sajohnson@nd.gov>
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Andrea Sampson <andrea.sampson@merjent.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>
Subject: RE: ONEOK Tioga Lateral Project - consultation request (NDGF eagles)

CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Ms. Johnson,

I received responses from other ND state agencies that one of the files I attached to the Tioga Lateral consultation requests I emailed last week was rejected by the state of North Dakota's IT department. The file that was rejected was a compressed .zip file containing shapefiles of the Project route and a one-mile-wide evaluation corridor.

I am assuming this .zip file may have also been rejected in the email I sent to you last Thursday. As such, I'm attaching it as a raw/unzipped attachment to this email.

Please confirm receipt of this email and if you have any questions or need any additional information, please let me know.

Thanks,
Paul Hartzheim

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com

From: Paul Hartzheim
Sent: Thursday, October 10, 2019 1:49 PM
To: sajohnson@nd.gov
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Andrea Sampson <andrea.sampson@merjent.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>; Paul Hartzheim <paul.hartzheim@merjent.com>
Subject: ONEOK Tioga Lateral Project - consultation request (NDGF eagles)

Ms. Johnson,

On behalf of ONEOK Bakken Pipeline L.L.C. (ONEOK), please see the attached consultation letter requesting review of ONEOK's Tioga Lateral Project located in Williams County. A set of maps is included immediately following the letter and shapefiles of the project centerline and a one-mile-wide evaluation corridor are also included for your convenience.

If you need any have any questions of need any additional information, please contact me or Andrea Sampson directly, or Beth Ludwig of ONEOK at 918-588-7257 or Beth.Ludwig@oneok.com. A hard copy of the attached will be sent to your attention and should arrive early next week.

Sincerely,

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

North Dakota Parks and Recreation Department

(Natural Heritage Inventory)

October 10, 2019

Kathy Duttenhefner
Natural Resources Management Coordinator
North Dakota Department of Parks and Recreation
1600 East Century Avenue
Suite 3
Bismarck, ND 58503-0649

RE: ONEOK Bakken Pipeline, L.L.C. -Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Ms. Duttenhefner,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

The enclosed Project maps depict the current proposed pipeline route and a one-mile-wide evaluation corridor.[1] The Townships, Ranges, and Sections crossed by the Project are presented in Table 1.

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
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156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

October 10, 2019
Ms. Kathy Duttenhefner

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
157 North	95 West	23-26, 35, 36

ONEOK respectfully submits this letter requesting Project review from the North Dakota Parks and Recreation Department (NDPR) of the North Dakota Natural Heritage Inventory (NHI) system and for presence or absence of state parks, recreation areas, natural areas, and land and water conservation fund projects. Based on a desktop review of publicly available information, ONEOK is not aware of any specific NDPR interests in the vicinity of the Project. Also, we understand the fee associated with this NHI review is $60. A check has been enclosed.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,

Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)
NHI review fee ($60)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Kathy Duttenhefner, NDPR (via email at kgduttenhefner@nd.gov)

NORTH Dakota | Parks & Recreation
Be Legendary.™

October 18, 2019

Beth Ludwig
ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103

Re: ONEOK Bakken Pipeline, LLC Tioga Lateral Pipeline Project

Dear Mr. Ensrude:

The North Dakota Parks and Recreation Department has reviewed the above referenced proposed ONEOK Bakken Pipeline, LLC Tioga Lateral Pipeline Project located in Williams County, North Dakota

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage but may affect Land and Water Conservation Fund recreation projects that we coordinate. A map with LWCF project locations has been attached. All LWCF sites received assistance from the federal LWCF program and are under protection of section 6(f) of the LWCF Act. Any property taken from within the 6f boundary of these sites must be replaced with property of equal market value. Should any public or private utilities need to be added or relocated on the LWCF recreational lands, the NDPRD must be consulted prior to any action taken. Please contact Char Binstock at 701-328-5364 if additional information is needed.

The North Dakota Natural Heritage biological conservation database has reviewed the project to determine if any current or historical plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, we have no rare species or significant ecological community documented within or adjacent to project site. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

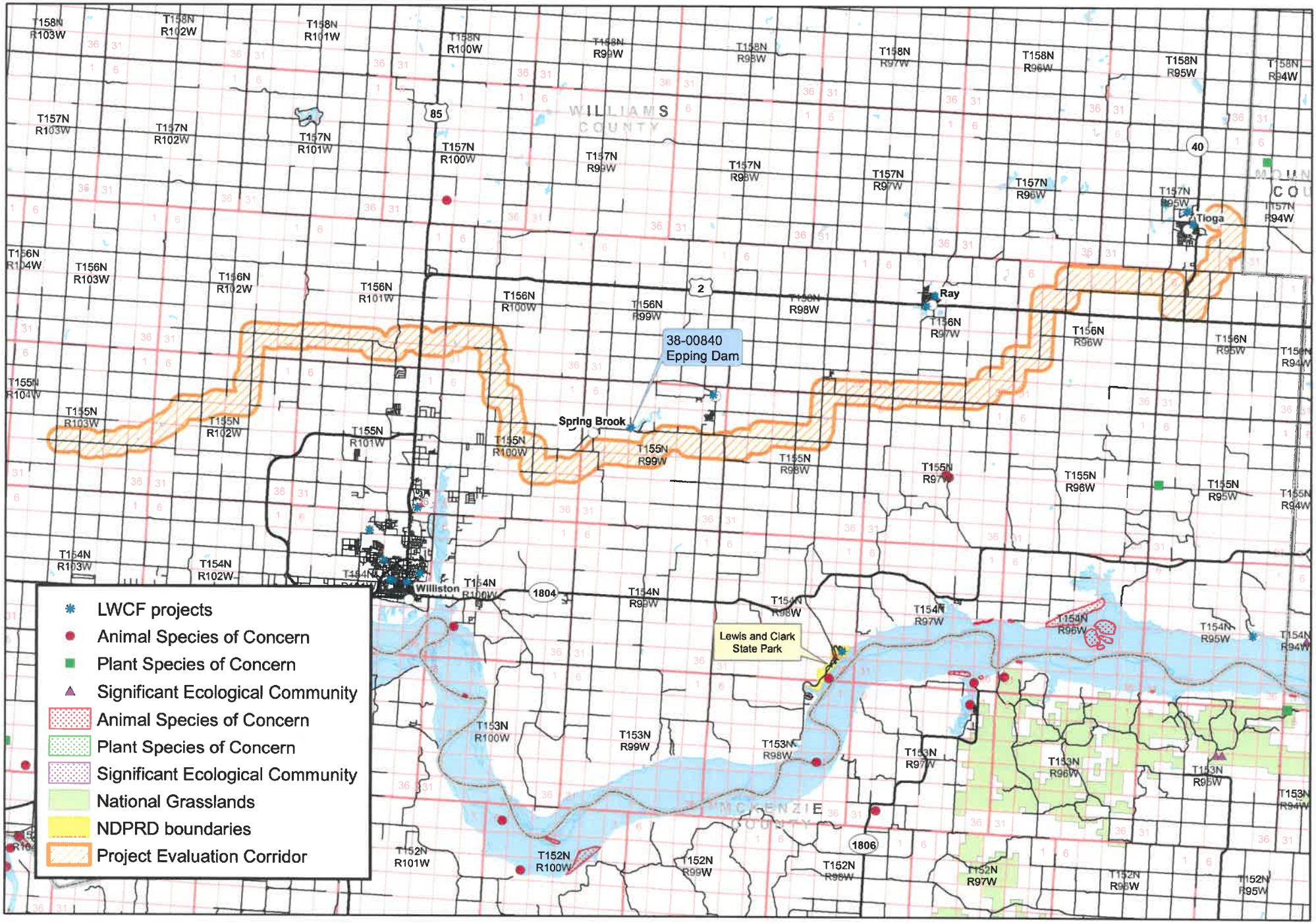
We appreciate your commitment to rare plant, animal and ecological community conservation, management and inter-agency cooperation to date. For additional information, please contact me at (701-328-5370 or kgduttenhefner@nd.gov Thank you for the opportunity to comment on this proposed project.

Sincerely,

Kathy Duttenhefner
Coordinator/Biologist II, Natural Resources Division

1600 East Century Ave. Ste. 3 | Bismarck, ND 58503
PHONE: 701-328-5357 | FAX: 701-328-5363 | EMAIL: parkrec@nd.gov | WEBSITE: www.parkrec.nd.gov

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



October 2019

Land and Water Conservation Fund Projects

Project Name	Project Number
Epping Dam	38-00840

North Dakota State Historic Preservation Office

[pending]

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North Dakota Geological Survey

October 10, 2019

Lynn Helms
Director
North Dakota Geological Survey
600 East Boulevard
Bismarck, ND 58505

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Helms,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits this Project information to the North Dakota Geological Survey (NDGS) to review a one-mile-wide evaluation corridor centered along the route of the pipeline to confirm ONEOK's assessment and to note any additional potential NDGS interests within the evaluation corridor. As part of our desktop review, ONEOK noted 4 abandoned mines (North Dakota Geographical Information System Data Portal) and 22 known landslide deposit areas (North Dakota Geological Survey Landslide Maps) within the evaluation corridor, including two of which are directly crossed by the current centerline (near mileposts 1 and 38). ONEOK is requesting any further information your agency has on these features and any recommendations you have in these areas.

Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review[1].

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Lynn Helms, NDGS (via email at lhelms@nd.gov)

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October 16, 2019

Beth Ludwig
ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103

Re: ONEOK Bakken Pipeline, LLC – Tioga Lateral Pipeline Project – Pipeline Corridor Review Comments

The North Dakota Geological Survey appreciates the notification and opportunity to review and provide comment on the proposed oil and gas energy infrastructure development project. The review of the proposed route detailed in the letter request of October 10, 2019 was completed by our office on October 16, 2019. We dropped in the alignment of the proposed pipeline route and evaluation corridor on our landslide base maps and compared it to the locations of landslides that have been identified by detailed mapping work previously completed by our office. Additionally, the entire proposed pipeline route and corridor was evaluated by reviewing contemporary National Agriculture Imagery Program (NAIP) aerial imagery from 2016 for the identification of any additional recent landslide areas.

During the route evaluation we noted that the proposed pipeline route generally passes along areas that are generally topographically flat with little relief and consequently are generally free of landslides. However, four locations of concern, three that would be considered to be direct crossings through identified landslide areas, were noted. The locations of these areas are listed below:

Locations of Concern along Pipeline Route

Map Book Page	Near Milepost	Description	Longitude	Latitude
1-8	1	Creek crossing, south facing slope	-102.896822	48.397019
1-8	1	Northeast of route along creek slope	-102.897442	48.399190
5-8	38	Next to south-facing slope area	-103.409227	48.243477
6-8	56	Crossing Cow Creek, southwest facing slope	-103.646623	48.299920

Several (25) other landslide areas were identified within the project evaluation corridor, both from existing mapping and new identification during this review, but are of nominal concern with respect to the location of the proposed pipeline route. A list of these locations is included as Attachment 1.

Landslide maps and data, along with LiDAR elevation data sets and mapping products for the project area are available on our website at: https://www.dmr.nd.gov/ndgs/lidar/

Careful examination of existing and proposed pipeline routes in North Dakota, along with applicable engineering evaluations of locations of concern and adherence to appropriate construction practices should be continued. You may also contact our offices directly, with any additional questions or comments, at (701) 328-8000.

Sincerely,

North Dakota Geological Survey:

Fred Anderson

Fred Anderson, *Geologist*
fjanderson@nd.gov

FJA\Attachment

Attachment 1 - Locations of Identified Landslide Areas				
No.	Longitude	Latitude	24K Quadrangle	Status
1	-102.896822	48.397019	Tioga Quadrangle	Evaluate
2	-102.897442	48.399190	Tioga Quadrangle	Evaluate
3	-102.893346	48.398754	Tioga Quadrangle	No Concern
4	-102.889463	48.400466	Tioga Quadrangle	No Concern
5	-102.887304	48.399508	Tioga Quadrangle	No Concern
6	-103.380154	48.244236	Stockyard Creek Quadrangle	No Concern
7	-103.383006	48.246604	Stockyard Creek Quadrangle	No Concern
8	-103.395134	48.246442	Stockyard Creek Quadrangle	No Concern
9	-103.406854	48.243979	Stockyard Creek Quadrangle	No Concern
10	-103.409227	48.243477	Stockyard Creek Quadrangle	Evaluate
11	-103.398554	48.259468	Springbrook Quadrangle	No Concern
12	-103.471986	48.229386	Stockyard Creek Quadrangle	No Concern
13	-103.475091	48.224993	Stockyard Creek Quadrangle	No Concern
14	-103.480810	48.226351	Stockyard Creek Quadrangle	No Concern
15	-103.479961	48.221641	Stockyard Creek Quadrangle	No Concern
16	-103.605241	48.292774	Blacktail Lake SE Quadrangle	No Concern
17	-103.645858	48.294715	Otter Tail Creek Quadrangle	No Concern
18	-103.647811	48.295078	Otter Tail Creek Quadrangle	Evaluate
19	-103.658345	48.297165	Otter Tail Creek Quadrangle	No Concern
20	-103.659055	48.290552	Otter Tail Creek Quadrangle	No Concern
21	-103.675646	48.302067	Otter Tail Creek Quadrangle	No Concern
22	-103.678738	48.304272	Otter Tail Creek Quadrangle	No Concern
23	-103.697762	48.306945	Otter Tail Creek Quadrangle	No Concern
24	-103.707641	48.306078	Otter Tail Creek Quadrangle	No Concern
25	-103.670520	48.300832	Otter Tail Creek Quadrangle	New-No Concern
26	-103.646623	48.299920	Otter Tail Creek Quadrangle	New-Evaluate
27	-103.499131	48.227191	Stockyard Creek Quadrangle	New-No Concern
28	-103.452041	48.246339	Stockyard Creek Quadrangle	New-No Concern
29	-103.452968	48.248862	Stockyard Creek Quadrangle	New-No Concern

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North Dakota Department of Environmental Quality

October 10, 2019

Mr. Peter Wax
North Dakota Department of Environmental Quality
Division of Water Quality
600 E. Boulevard Avenue
Bismarck, ND 58505-0200

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Wax,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

It is our understanding that the North Dakota Department of Environmental Quality (NDDEQ) provides guidance for implementing strategies to address environmental impacts and problems associated with new developments, administers the state hazardous waste management program, water and air quality management programs, and oversees protection of groundwater and drinking water aquifers.

During initial planning for the Project, ONEOK conducted a review of state regulations pertaining to stream classifications (NDCC 33-16.02) as it relates to Section 401 Water Quality Certification under the U.S. Army Corps of Engineers' (USACE) Nationwide Permit 12. As designed, the Project will cross the Little Muddy River, which is a Class II waterbody, designated as a Special Fishery for Waterbody Fishing, and is listed as impaired for fecal coliform with respect to Section 303(d). No Total Maximum Daily Load (TMDL) has been established for this waterbody. The Project, as designed, will also cross Beaver Creek, which has a Class II designation. ONEOK is planning to cross both rivers via the horizontal directional drilling (HDD) method which will avoid disturbance of both waterbodies. Based on discussions with USACE staff, we understand that boring under these features avoids USACE jurisdiction and does not require coverage under NWP 12 or Section 401.

A desktop review also identified two surficial aquifers that are crossed by the Project. It is our understanding that no special authorization is needed to construct across in these areas, but that these areas may yield large amounts of water for municipal, industrial, and agricultural purposes. No wellhead protection areas are directly crossed by the Project.

ONEOK respectfully submits this Project information to the NDDEQ to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic-based mapsets are also included for your review[1].

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
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155 North	97 West	1-6
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155 North	99 West	10-22, 30
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156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Peter Wax, NDDEQ (via email at pwax@nd.gov)

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October 24, 2019

Beth Ludwig
Environmental Project Manager
ONEOK Inc
100 West Fifth Street
Tulsa, OK 74103

Re: ONEOK Bakken Pipeline - Tioga Lateral Pipeline Project in Williams County

Dear Ms. Ludwig:

The North Dakota Department of Environmental Quality has reviewed the information concerning the above-referenced project received at the department on October 10, 2019, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. Development of the production facilities and any access roads, well pads or pipelines should have a minimal effect on air quality provided measures are taken to minimize fugitive dust. However, operation of the wells has the potential to release air contaminants capable of causing or contributing to air pollution. We encourage the development and operation of the wells in a manner that is consistent with good air pollution control practices for minimizing emissions. Emission control requirements are specified in 40 CFR 49.140 through 49.147 and other applicable Federal regulations.

   Any questions about air pollution control or permitting requirements should be addressed to the U.S. Environmental Protection Agency, Region 8. They can be reached at (303) 312-6312 or r8eisc@epa.gov.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. **Guidelines for minimizing degradation to waterways during construction are attached.**

3. Oil and gas projects disturbing one or more acres are required to obtain a permit to discharge storm water if runoff from the project will carry eroded material to a water of the state. A permit is not required for oil and gas projects if runoff from the project will not carry eroded material to a water of the state. Further information on the storm water permit may be obtained from the department's website or by calling the Division of Water Quality (701-328-5210). In addition, cities or counties may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed. Storm water runoff from the project area discharges to a 303(d) listed water body (Little Muddy River). Extra care should be taken to ensure construction activity does not affect the water body.

4. The project directly overlies the Little Muddy, Yellowstone River Channel, and Ray glacial drift aquifers; the Little Muddy aquifer is a designated sensitive groundwater area. Domestic water supply wells are located along the proposed pipeline route, particularly in the area south of Tioga. Care should be taken to avoid spills of any materials that may have an adverse effect on groundwater quality. All spills must be immediately reported to this department and appropriate remedial actions performed.

5. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

6. All solid waste materials must be managed and transported in accordance with the state's solid and hazardous waste rules. Appropriate efforts to reduce, reuse and/or recycle waste materials are strongly encouraged. As appropriate, segregation of inert waste from non-inert waste can generally reduce the cost of waste management. Further information on waste management and recycling is available from the department's Division of Waste Management at (701) 328-5166.

7. Projects that involve construction of pipelines should select locations that minimize the potential for impacts to human health and the environment during and after construction by avoiding, when possible, source water protection areas and sensitive surface and groundwater environments. Additionally, when possible, pipeline routes should select areas with natural barriers to both surface and ground waters. Human health and the environment should be further protected by developing a spill response plan that emphasizes rapid deployment of prepositioned assets necessary to contain spills and subsequent cleanup. Proper surveillance and monitoring for early detection of leaks should be required.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Director
North Dakota Department of Environmental Quality

LDG:dlp
Attach.

Construction and Environmental Disturbance Requirements

The following are the minimum requirements of the North Dakota Department of Environmental Quality for projects that involve construction or environmental disturbance in or near waters of the State of North Dakota. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect waters of the state. All projects must be constructed to minimize the loss of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of soil and sediment loss using erosion and sediment controls. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, and land resources must be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction must be managed to minimize impacts to aquatic systems. Follow safe storage and handling procedures to prevent the contamination of water from fuel spills, lubricants, and chemicals. Stream bank and stream bed disturbances must be controlled to minimize slit movement, nutrient upsurges, plant dislocations, and any physical, chemicals, or biological disruption. The use of pesticides or herbicides in or near surface waters is allowed under the department's pesticide application permit with notification to the department.

Fill Material

Any fill material placed below the ordinary high-water mark must be free of topsoil, decomposable materials, and persistent synthetic organic compounds; including, but not limited to, asphalt, tires, treated lumber, and construction debris. The department may require testing of fill materials. All temporary fill must be removed. Debris and solid wastes must be properly disposed or recycled. Impacted areas must be restored to near original condition.

North Dakota State Water Commission

October 10, 2019

Mr. John Paczkowski
Assistant State Engineer
North Dakota State Water Commission
900 East Boulevard
Bismarck, ND 58505

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Paczkowski,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

It is our understanding that the North Dakota State Water Commission (NDSWC) administers water appropriation and sovereign lands permit programs and may also have relevant information regarding rural water supply systems and projects. Based on initial Project review, ONEOK is not aware of any sovereign lands or other NDSWC interests in the vicinity of the Project.

ONEOK respectfully submits this Project information to the NDSWC to review a one-mile-wide evaluation corridor centered along the route of the pipeline and confirm no sovereign lands or other NDSWC interests are present. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review[1].

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
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156 North	95 West	4-9, 17, 18

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent via email.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
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157 North	95 West	23-26, 35, 36

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
John Paczkowski, NDSWC (via email at jpaczkowski@nd.gov)

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October 29, 2019

Beth Ludwig
Oneok
100 West Fifth Street
Tulsa, OK 74103

Dear Ms. Ludwig:

This is in response to your request for a review of the environmental impacts associated with the Tioga Lateral Pipeline Project.

The proposed project has been reviewed by State Water Commission staff, and the following comments are provided:

- There may be floodplains identified and/or mapped where this proposed project is to take place. North Dakota has no formal 'permitting' authority as a state entity in NFIP identified floodplain areas. The permitting is always done by the local entity, which has jurisdiction in the area in question. Please work closely with the local Floodplain Administrator.

- Initial review indicates the project does not require a conditional or temporary permit for water appropriation. However, if surface water or groundwater will be diverted for construction of the project, a water permit will be required per North Dakota Century Code § 61-04-02. Please consult with the Water Appropriations Division of the Office of the State Engineer if you have any questions at (701) 328-2754 or waterpermits@nd.gov.

- The State Water Commission maintains a network of observation wells across the state for monitoring the water levels and quality in glacial and bedrock aquifers. These wells are often installed in road and highway rights-of-way to limit inconvenience to the adjacent landowners. State Water Commission observation wells have a yellow protective casing extending between 1 and 3 feet above ground surface, and their locations are marked with a stake. If an observation well is encountered during project activities and must be removed, please contact the Water Appropriations Division. The State Water Commission hopes to keep all observation wells, but otherwise will ensure the well is properly abandoned.

Thank you for the opportunity to provide review comments. Should you have further questions, please contact me at 701-328-4970 or stevebest@nd.gov.

Sincerely,

Steven Best
Planner III

SB:dm/1570

North Dakota Department of Trust Lands

(Mineral Trust Lands)

October 10, 2019

Ms. Allisen Nagel
Land Professional
North Dakota Department of Trust Lands
Minerals Management Division
P.O. Box 5523
Bismarck, ND 58501

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Ms. Nagel,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits this Project information to the North Dakota Department of Trust Lands (NDDTL) - Minerals Management Division to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline to confirm the presence of Mineral Trust Lands. Based on a review of publicly available data, ONEOK identified several Mineral Trust parcels in the vicinity of the Project, some of which are directly crossed by the proposed centerline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table and aerial and topographic based mapsets are also included for your review[1].

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
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156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent as an email attachment.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

It is our understanding that no special authorization or permit is required to cross Mineral Trust Lands as pipeline construction and operation does not impact mineral resources of these parcels. As currently designed, the Project crosses School Trust Lands under the jurisdiction of the NDDTL. ONEOK is in active consultation with the NDDTL – Surface Management Division to obtain approval to cross these parcels.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Allisen Nagel, NDDTL (via email at allie.nagel@nd.gov and dtlMinerals@nd.gov)

To:	Paul Hartzheim; -Info-DTL Minerals
Cc:	Ludwig, Beth; Maddy Krumwiede
Date:	Thursday, October 10, 2019 2:35:23 PM
Attachments:	image001.jpg image002.png image003.png

Paul,

We agree that the data provided represents the approximate location of the Tioga Lateral Project and the proximity of mineral interests managed by this office, for use in a filing with the PSC in the state of North Dakota.

Allie Nagel, CPL
Land Professional

701.328.1952 • allie.nagel@nd.gov • land.nd.gov



From: Paul Hartzheim <paul.hartzheim@merjent.com>
Sent: Thursday, October 10, 2019 1:46 PM
To: Nagel, Allie C. <allie.nagel@nd.gov>; -Info-DTL Minerals <dtlminerals@nd.gov>
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>; Paul Hartzheim <paul.hartzheim@merjent.com>
Subject: ONEOK Tioga Lateral Project - consultation request (NDDTL Minerals)

An attachment has been removed from this message in accordance with the State of North Dakota Information Technology Department's Email Service Level Agreement (https://www.nd.gov/itd/services/email/email-service-level-agreement**). The attachment is NOT recoverable.**

Please contact your IT support staff or the ITD Service Desk with any concerns. You can submit an incident ticket to ITD via the web at www.nd.gov/itd/support **or by phone at 701-328-4470.**

CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Ms. Nagel,

On behalf of ONEOK Bakken Pipeline L.L.C. (ONEOK), please see the attached consultation letter requesting review of ONEOK's Tioga Lateral Project located in Williams County. A set of maps is included immediately following the letter and shapefiles of the project centerline and a one-mile-

wide evaluation corridor are also included for your convenience.

If you need any have any questions of need any additional information, please contact me directly or Beth Ludwig of ONEOK at 918-588-7257 or Beth.Ludwig@oneok.com. A hard copy of the attached will be sent to your attention and should arrive early next week.

Sincerely,



Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com



1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com

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North Dakota Department of Trust Lands

(School Trust Lands)

October 10, 2019

Mr. Joseph Stegmiller
Natural Resources Professional
North Dakota Department of Trust Lands
Surface Management Division
1707 N 9th Street
Bismarck, ND 58501

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Stegmiller,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits this Project information to the North Dakota Department of Trust Lands (NDDTL) – Surface Management Division to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline to confirm the presence or absence of State Surface Trust Lands. Based on a review of publicly available data, ONEOK identified several parcels of School Trust Lands in the vicinity of the Project, some of which are directly crossed by the proposed centerline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.[1]

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent as an email attachment.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

With this submittal, ONEOK is requesting confirmation that the locations of the parcels displayed on the enclosed maps is current and correct. As you may be aware, ONEOK has been in discussion with NDDTL staff (Kayla Graber) regarding the crossing of School Trust Lands and is actively pursuing a License to Cross these parcels (Reference #8575). We have also submitted a consultation letter to the NDDTL – Minerals Management Division regarding Mineral Trust lands in the vicinity of the Project.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Joseph Stegmiller, Kayla Graber NDDTL (via email at jstegmiller@nd.gov, kgraber@nd.gov and dtlSurface@nd.gov)

1707 North 9th Street
PO Box 5523
Bismarck, ND 58506-5523
Phone: (701) 328 – 2800
Fax: (701) 328 – 3650

land.nd.gov

DEPARTMENT OF
ND TRUST LANDS
INVESTING FOR EDUCATION

Jodi Smith, Commissioner

November 14, 2019

PAUL HARTZHEIM
MERJENT
1 MAIN STREET SE, SUITE 300
MINNEAPOLIS, MN 55414

RE: ONEOK BAKKEN PIPELINE, L.L.C. – TIOGA LATERAL PIPELINE PROJECT NOTIFICATION AND REQUEST FOR REVIEW

To Whom It May Concern:

The North Dakota Department of Trust lands (NDDTL) received a letter dated October 10, 2019, from Oneok, Inc. regarding a request for comment on the proposed Tioga Lateral Pipeline Project in Williams County, North Dakota.

Below is a list of surface tracts managed by NDDTL on behalf of the Board of University and School Lands located within the proposed project boundary area(s) as depicted via the received letter and subsequently received shapefile.

Tracts included in the proposed project			
County	**Township**	**Range**	**Section**
WIL	155	102	16
WIL	155	99	16
Tracts within the proposed project one-mile buffer area			
County	**Township**	**Range**	**Section**
WIL	156	102	36
WIL	156	97	36

NDDTL and Oneok representative Josh Bond are working on finalizing centerline surveys and narratives at this time (WIL-155-102-16 and WIL-155-99-16).

Any proposed projects crossing NDDTL managed property would need to apply for a Rights of Way and would be subject to review and approval by the Board of University and School Lands. NDDTL reviews the financial benefit to the trusts; availability of alternate encumbrance site or route; least environmentally damaging site or route regardless of property ownership; physical stability of the landscape; other potential future uses for the trust lands, including urban development; potential mineral and other material development including oil, gas, coal, construction aggregate, sodium sulfate, chemical substances, metallic ore, or uranium ore; feasibility for reclamation; maintenance of existing wetlands and water flows; any cultural, historical, archeological, and paleontological resources; habitat for federally listed threatened and endangered species; location of the proposed route or site in relation to section lines, quarter section lines and corridors; potential liability to the trusts; applicant's past encumbrances on trust lands; applicant's financial stability; and any other information relevant to the application which would assist in the determination.

If you have any questions, please contact the office at (701) 328-2800.

Sincerely,

Kayla Spangelo

Kayla Spangelo
Natural Resources Professional

Western Area Water Supply Authority

October 10, 2019

Mr. Mark Owan
Chair
Western Area Water Supply Authority
820 East Broadway, Suite 101
Williston, ND 58802

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Owan,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

It is our understanding that the Western Area Water Supply Authority (WAWSA) facilitates a regional approach to water needs of rural residents, communities, and industries in the region, and may also have relevant information regarding rural water supply systems and projects. ONEOK respectfully submits this Project notification to the requesting a review within an approximate one-mile-wide "evaluation corridor" centered along the route of the pipeline for WAWSA-administered or managed Projects. The Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.[1]

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
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155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent as an email attachment.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
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156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Mark Owen, WAWSA (via email at waws@waswp.com)

Paul Hartzheim

From: Kleyer, Nathan <nathan.kleyer@wawsp.com>
Sent: Wednesday, November 6, 2019 4:49 PM
To: Paul Hartzheim
Cc: Wilson, Curtis; Dustin Schultz; Ludwig, Beth; Maddy Krumwiede
Subject: FW: ONEOK -Tioga Lateral Project
Attachments: WAWSA_ExistingandProposed.abc; WAWSA Status Map and Tioga Lateral.pdf

Paul,

Please see the attached, as well as Lucas' instructions below to see the shapefiles.

Thanks,
Nate

From: Lucas Rengstorf <Lucas.Rengstorf@AE2S.com>
Sent: Wednesday, November 6, 2019 4:40 PM
To: Dustin Schultz <Dustin.Schultz@AE2S.com>
Cc: Weston McGruder <Weston.McGruder@AE2S.com>; Kleyer, Nathan <nathan.kleyer@wawsp.com>
Subject: RE: ONEOK -Tioga Lateral Project

Hi Dustin,

Attached are the shapefiles of the pipes (existing and proposed) within the Tioga Lateral Project buffer.

Change the extension to .zip and extract the folder to see the shapefiles.

Thanks,

Lucas Rengstorf
GIS Coordinator, GISP
Advanced Engineering and
Environmental Services, Inc. (AE2S)
4050 Garden View Drive, Suite 200
Grand Forks, ND 58201
Lucas.Rengstorf@AE2S.com
www.ae2s.com
Voice: 701.746.8087
Fax: 701.746.0370

From: Dustin Schultz <Dustin.Schultz@AE2S.com>
Sent: Monday, November 4, 2019 9:36 AM
To: Lucas Rengstorf <Lucas.Rengstorf@AE2S.com>
Cc: Weston McGruder <Weston.McGruder@AE2S.com>; Nathan Kleyer (nathan.kleyer@wawsp.com)

<nathan.kleyer@wawsp.com>
Subject: FW: ONEOK -Tioga Lateral Project

Lucas,

Can you pull together the requested shapefiles that were used to put together the buffer zone map for OneOk?

Let me know if you have any questions.

Thanks,
Dustin

From: Kleyer, Nathan <nathan.kleyer@wawsp.com>
Sent: Monday, November 4, 2019 8:10 AM
To: Dustin Schultz <Dustin.Schultz@AE2S.com>; Weston McGruder <Weston.McGruder@AE2S.com>
Subject: RE: ONEOK -Tioga Lateral Project

Dustin,

Curtis would like me to send the shape file to them and then he is going to discuss that issue with them.

Please get me the necessary shape files to appease Mr. Hartzheim.

Thank you,
Nate

From: Dustin Schultz <Dustin.Schultz@AE2S.com>
Sent: Wednesday, October 30, 2019 12:05 PM
To: Kleyer, Nathan <nathan.kleyer@wawsp.com>
Subject: Fwd: ONEOK -Tioga Lateral Project

Only if they send us a shape file of all their pipeline for use of construction, because they won't.

Dustin A. Schultz, PE
Operations Manager
AE2S
1102 Main Street
Williston, ND 58801

Begin forwarded message:

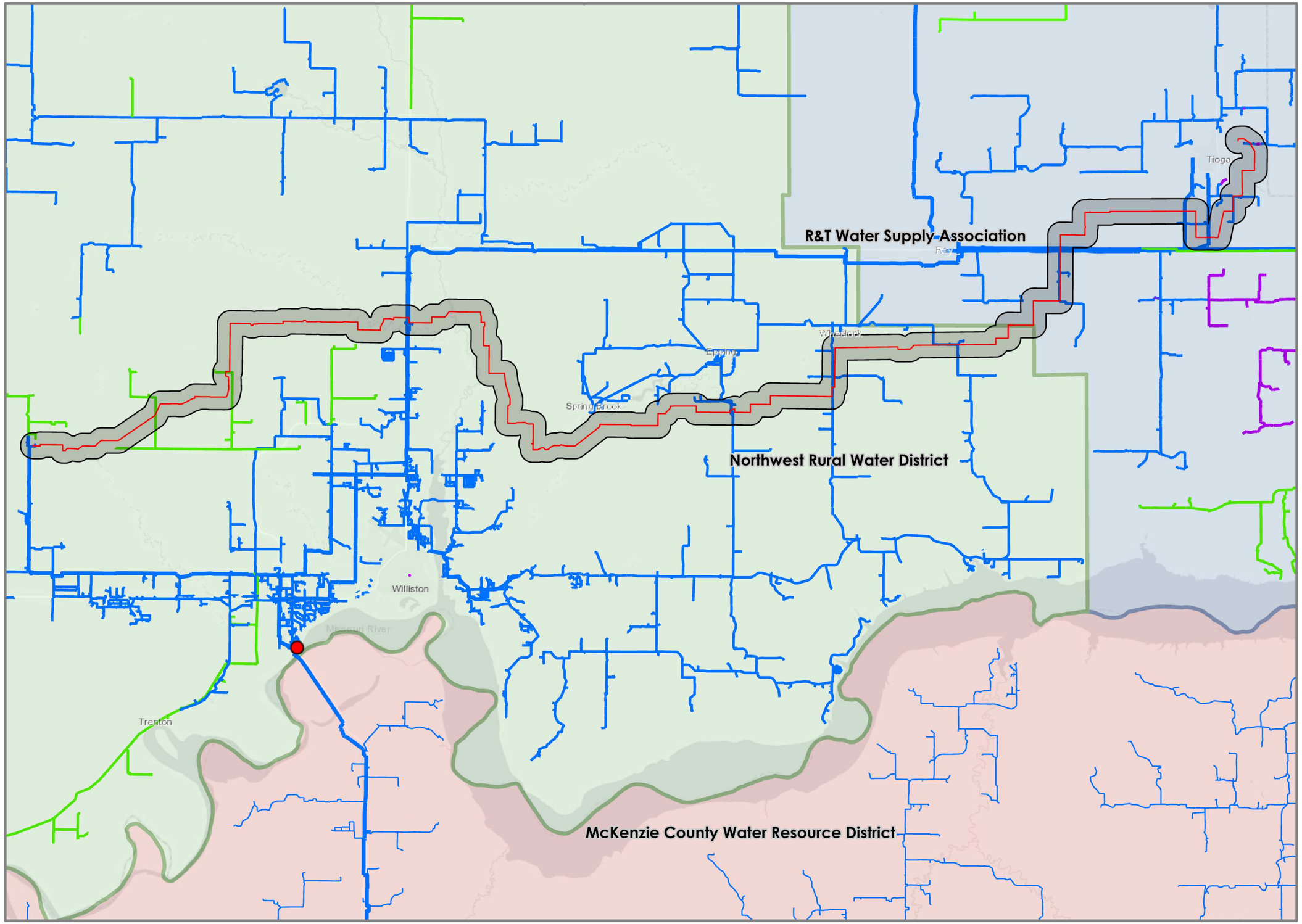
> **From:** Paul Hartzheim <paul.hartzheim@merjent.com>
> **Date:** October 30, 2019 at 11:59:01 AM CDT
> **To:** "Wilson, Curtis" <curtis.wilson@wawsp.com>
> **Cc:** Dustin Schultz <Dustin.Schultz@AE2S.com>, "Kleyer, Nathan" <nathan.kleyer@wawsp.com>, "Ludwig, Beth" <Beth.Ludwig@oneok.com>, Maddy Krumwiede <maddy.krumwiede@merjent.com>
> **Subject: RE: ONEOK -Tioga Lateral Project**
>
> Thank you Curtis,

It was very good to talk to you this morning. As discussed, could you also provide a shapefile of the WAWSA system as depicted on the attached map? I will then forward the map and shapefile to some folks at ONEOK and I envision we will be setting up a follow-up call/meeting in the near future to discuss in greater detail.

Thanks,
Paul

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

www.ae2s.com | Advanced Engineering and Environmental Services, Inc.



N

0 2 4

Miles

1:234,694



Locator Map Not to Scale

NORTH DAKOTA

WAWSA System

ONEOK - TIOGA LATERAL

- Tioga Lateral Centerline
- Tioga Lateral Corridor
- WAWSA Final Close Out
- WAWSA Proposed
- WAWSA Existing

Date: 10/14/2019

Information depicted may include data unverified by AE2S. Any reliance upon such data is at the user's own risk. AE2S does not warrant this map or its features are either spatially or temporally accurate.

Coordinate System: | Edited by: lrengstorf | X:\GIS_Reference_Data\GIS_Data\ND\Project\WAWSA\WAWSA General.aprx

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Williams County Board of Commissioners

October 10, 2019

David Montgomery
Chairman
Williams County Board of Commissioners
P.O. Box 2047
Williston, ND 58802-2047

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Montgomery,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits this project information to the Williams County Board of Commissioners to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.[1]

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
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156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
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[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent as an email attachment.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

To facilitate your review, we are requesting the following information be provided:

- Any local ordinances or other resources under your jurisdiction that are applicable to the Project.
- Any permits issued through your office which may be applicable to the Project, and a summary of the permit process and anticipated timeframes.
- Any current of future development projects you are aware of in the vicinity of the Project.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. ONEOK has submitted similar consultation letters to the Williams County Water Resource Board and County Weed Board.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project Shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
David Montgomery, Williams County (via email at davidm@co.williams.nd.us)

To:	Paul Hartzheim
Cc:	Ludwig, Beth; Maddy Krumwiede
Date:	Wednesday, November 13, 2019 9:00:18 AM

Mr Hartzheim,
I did receive this notice and I apologize for not responding back to you sooner.
I have forwarded your email on to the counties highway superintendent, Dennis Nelson, and the counties Developement Director (Planning, Zoning and Building Inspection), Kameron Hymer for their reviews also.
Thank You and if you have any questions or need further information, please don't hesitate to let us know.
David Montgomery

Sent from my iPhone

On Nov 13, 2019, at 8:14 AM, Paul Hartzheim <paul.hartzheim@merjent.com> wrote:

CAUTION: This email originated from outside our organization. Please take care when opening attachments or clicking on links.
An attachment has been removed from this message in accordance with the State of North Dakota Information Technology Department's Email Service Level Agreement (https://www.nd.gov/itd/services/email/email-service-level-agreement). The attachment is NOT recoverable.

Please contact your IT support staff or the ITD Service Desk with any concerns. You can submit an incident ticket to ITD via the web at www.nd.gov/itd/support or by phone at 701-328-4470.

Dear Mr. Montgomery,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) submitted a consultation request to you on October 10, 2019 to provide notification of ONEOK's proposed Tioga Lateral Pipeline Project and to solicit comments that will assist in the regulatory process. As we have not received a response, Merjent is following up on behalf of ONEOK to ensure you received the notification and have had the opportunity to respond. Attached is a copy of the original notification letter for your reference (a hard copy was also submitted to your attention).

The Project is within the jurisdiction of the North Dakota Public Service Commission (NDPSC) and copies of correspondence received in response to this notification will be included in ONEOK's application for a Corridor Certificate and Route Permit, which will be filed with the NDPSC later this year.

We appreciate your review and look forward to your response. If you have any questions or need any additional information, please contact me via email or phone or Beth Ludwig of ONEOK at Beth.Ludwig@oneok.com<mailto:Beth.Ludwig@oneok.com> or 918-588-7257.

Regards,
<image002.jpg>

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com
<image001.png>
1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com

From: Paul Hartzheim

Sent: Thursday, October 10, 2019 1:38 PM
To: davidm@co.williams.nd.us
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>; Paul Hartzheim <paul.hartzheim@merjent.com>
Subject: ONEOK Tioga Lateral Project - consultation request (Williams Co. Board of Commissioners)

Mr. Montgomery,

On behalf of ONEOK Bakken Pipeline L.L.C. (ONEOK), please see the attached consultation letter requesting review of ONEOK's Tioga Lateral Project located in Williams County. A set of maps is included immediately following the letter and shapefiles of the project centerline and a one-mile-wide evaluation corridor are also included for your convenience.

If you need any have any questions of need any additional information, please contact me directly or Beth Ludwig of ONEOK at 918-588-7257 or Beth.Ludwig@oneok.com<mailto:Beth.Ludwig@oneok.com>. A hard copy of the attached will be sent to your attention and should arrive early next week.

Sincerely,
<image002.jpg>

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com<mailto:paul.hartzheim@merjent.com>
<image001.png>
1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com<http://www.merjent.com>
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<ONEOK_Tioga Lateral Pipeline_Williams Co_Comm_Consult_2019-10-10.pdf>
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Lucas Bicknell

Subject: RE: (External) RE: ONEOK Tioga Lateral Project - consultation request (Williams Co. Board of Commissioners)

From: Dennis Nelson <DennisN@co.williams.nd.us>
Sent: Wednesday, November 13, 2019 1:49 PM
To: David Montgomery <davidm@co.williams.nd.us>; Kameron Hymer <kameronh@co.williams.nd.us>; Barry Ramberg <barryr@co.williams.nd.us>; Beau Anderson <BeauA@co.williams.nd.us>; Wayne Crow <WayneC@co.williams.nd.us>
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>
Subject: (External) RE: ONEOK Tioga Lateral Project - consultation request (Williams Co. Board of Commissioners)

Ok Just talked with Beth from Oneok She and I ASSUME the Construction side would be getting with Co. Hwy Soon to get proper paper work Beth (Oneok) will be checking with LAND Personal To see if WE ASSUMED Right.

Beth for you or pass along a few things that come to mind with most Pipe Line Projects. The Townships handle there township roads. You can find Permits and Co./ Township Map at williamsnd.com Please if you have any questions email or call. Thanks

1- Road Crossing Permit Keep in Mind BORE ONLY
2- Approach Permits For NEW, Improved or Temporary
3- Before Construction STARTS Will Need haul road Inspection.

From: David Montgomery <davidm@co.williams.nd.us>
Sent: Wednesday, November 13, 2019 9:05 AM
To: Dennis Nelson <DennisN@co.williams.nd.us>; Kameron Hymer <kameronh@co.williams.nd.us>; Barry Ramberg <barryr@co.williams.nd.us>; Beau Anderson <BeauA@co.williams.nd.us>
Subject: Fwd: ONEOK Tioga Lateral Project - consultation request (Williams Co. Board of Commissioners)

All,
Not sure you all have seen this email below, so thought I would forward to you all.
If you have any questions or concerns, please send them to the people listed in the email.
Thanks
David

Sent from my iPhone

Begin forwarded message:

> **From:** Paul Hartzheim <paul.hartzheim@merjent.com>
> **Date:** November 13, 2019 at 8:14:28 AM CST
> **To:** David Montgomery <davidm@co.williams.nd.us>
> **Cc:** "Ludwig, Beth" <Beth.Ludwig@oneok.com>, Maddy Krumwiede <maddy.krumwiede@merjent.com>, Paul Hartzheim <paul.hartzheim@merjent.com>
> **Subject: RE: ONEOK Tioga Lateral Project - consultation request (Williams Co. Board of Commissioners)**

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Dear Mr. Montgomery,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) submitted a consultation request to you on October 10, 2019 to provide notification of ONEOK's proposed Tioga Lateral Pipeline Project and to solicit comments that will assist in the regulatory process. As we have not received a response, Merjent is following up on behalf of ONEOK to ensure you received the notification and have had the opportunity to respond. Attached is a copy of the original notification letter for your reference (a hard copy was also submitted to your attention).

The Project is within the jurisdiction of the North Dakota Public Service Commission (NDPSC) and copies of correspondence received in response to this notification will be included in ONEOK's application for a Corridor Certificate and Route Permit, which will be filed with the NDPSC later this year.

We appreciate your review and look forward to your response. If you have any questions or need any additional information, please contact me via email or phone or Beth Ludwig of ONEOK at Beth.Ludwig@oneok.com or 918-588-7257.

Regards,

This page intentionally left blank

Williams County Water Resource Board

ONEOK

October 10, 2019

Mr. Roger Gunlikson
Chairman
Williams County Water Resource District Board
P.O. Box 2047
Williston, ND 58802-2047

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Gunlikson,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits this project information to the Williams County Water Resource District Board to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.[1]

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36
156 North	98 West	34-36

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent as an email attachment.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
157 North	95 West	23-26, 35, 36

To facilitate your review, we are requesting the following information be provided:

- Locations of any county-regulated drains, ditches, and/or other drainage features,
- Any special requirements, restrictions, or specifications regarding constructing pipelines across or under county-regulated drainage features,
- Any local ordinances related to drainage, and
- Any permits issued through your office which may be applicable to the Project, and a summary of the permit process and anticipated timeframes.

In addition, based on previous discussions with your office we understand that pipeline projects do not require county-level stormwater permit coverage as there will be no permanent change to existing contours or drainage patterns. The only permanent ground disturbance will result from the installation of 5 new valves (typical dimensions 50' x 100'). We are requesting confirmation that county-level stormwater permit coverage will not be required for this Project.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year. ONEOK has submitted similar consultation letters to the Williams County Board of Commissioners and County Weed Board.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project Shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Roger Gunlikson, Williams County (via email at rogerg@co.williams.nd.us)

To:	Paul Hartzheim
Cc:	Ludwig, Beth; Maddy Krumwiede; "kevin.ploof@ackerman-estvold.com"
Date:	Wednesday, November 13, 2019 11:38:33 AM
Attachments:	image002.jpg image003.png

Paul,

There were no requirements from the Board for your project.

Thank you.

Beth

From: Paul Hartzheim <paul.hartzheim@merjent.com>
Sent: Wednesday, November 13, 2019 9:08 AM
To: Beth M. Innis <BethI@co.williams.nd.us>
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>; Paul Hartzheim <paul.hartzheim@merjent.com>
Subject: RE: ONEOK Tioga Lateral Project - consultation request (Williams Co. Water Board)

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Dear Ms. Innis,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) submitted a consultation request to you on October 11, 2019 to provide notification of ONEOK's proposed Tioga Lateral Pipeline Project and to solicit comments that will assist in the regulatory process (my original email to Roger Gunlikson bounced back as undeliverable). As we have not received a response, Merjent is following up on behalf of ONEOK to ensure you received the notification and have had the opportunity to respond. Attached is a copy of the original notification letter for your reference (a hard copy was also submitted to your attention).

The Project is within the jurisdiction of the North Dakota Public Service Commission (NDPSC) and copies of correspondence received in response to this notification will be included in ONEOK's application for a Corridor Certificate and Route Permit, which will be filed with the NDPSC later this year.

We appreciate your review and look forward to your response. If you have any questions or need any additional information, please contact me via email or phone or Beth Ludwig of ONEOK at

Beth.Ludwig@oneok.com or 918-588-7257.

Regards,

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com

From: Paul Hartzheim
Sent: Friday, October 11, 2019 9:20 AM
To: 'Beth Innis (bethi@co.williams.nd.us)' <bethi@co.williams.nd.us>
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>; Paul Hartzheim <paul.hartzheim@merjent.com>
Subject: FW: ONEOK Tioga Lateral Project - consultation request (Williams Co. Water Board)

Ms. Innis,

I attempted to send the email below (and attachments) to Roger Gunlikson yesterday as I saw him listed as the chairman of the Williams County Water Resources Board; however, my email bounced back as undeliverable. We will be sending a follow up hard copy in the mail (addressed to Mr. Gunlikson) but I wanted to provide an electronic copy as well. We have similar letters/emails in to the Williams County Weed Board and the Board of Commissioners.

Please see below/attached and let me know if you have any questions.

Thanks,
Paul

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com

From: Paul Hartzheim
Sent: Thursday, October 10, 2019 1:40 PM
To: rogerg@co.williams.nd.us
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>; Paul Hartzheim <paul.hartzheim@merjent.com>
Subject: ONEOK Tioga Lateral Project - consultation request (Williams Co. Water Board)

Mr. Gunlikson,

On behalf of ONEOK Bakken Pipeline L.L.C. (ONEOK), please see the attached consultation letter requesting review of ONEOK's Tioga Lateral Project located in Williams County. A set of maps is included immediately following the letter and shapefiles of the project centerline and a one-mile-wide evaluation corridor are also included for your convenience.

If you need any have any questions of need any additional information, please contact me directly or Beth Ludwig of ONEOK at 918-588-7257 or Beth.Ludwig@oneok.com. A hard copy of the attached will be sent to your attention and should arrive early next week.

Sincerely,

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
www.merjent.com
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Williams County Weed Control Board

ONEOK

October 10, 2019

Mr. Doug Lalim
Weed Control Officer
Williams County Weed Board
5218 141st Ave NW
Williston, ND 58802

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Lalim,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

ONEOK respectfully submits this project information to the Williams County Weed Control Board to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.[1]

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
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156 North	97 West	24-26, 31-36

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent as an email attachment.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

Based on a review of the North Dakota Century Code 4.1-47-02 and North Dakota Department of Agriculture (NDDA) guidance documents, the following noxious weeds are currently listed:

- Absinth Wormwood (*Artemisia absinthium L.*)
- Canada Thistle (*Cirsium arvense (L.) Scop.*)
- Dalmatian Toadflax (*Linaria genistifolia spp. dalmatica*)
- Diffuse Knapweed (*Centaurea diffusa Lam.*)
- Houndstongue (*Cynoglossum officinale L.*)
- Leafy Spurge (*Euphorbia esula L.*)
- Musk Thistle (*Carduus nutans L.*)
- Palmer amaranth (*Amaranthus palmeri*)
- Purple Loosestrife (*Lythrum salicaria L., Lythrum virgatum L.*, and all cultivars)
- Russian Knapweed (*Centaurea repens L.*)
- Saltcedar (*Tamarisk spp.*)
- Spotted Knapweed (*Centaurea maculosa Lam.*)
- Yellow Toadflax *(Linaria vulgaris*)

In addition to the NDDA noxious weed and invasive species list, Williams County has designated on additional species as a noxious weed:

- Narrowleaf Hawksbeard (*Crepis tectorum*)

To facilitate our environmental review, we are requesting the following information for the areas crossed that are within the 1-mile wide study area associated with the Project:

- Confirmation that the list of noxious weeds above is correct and current;
- Known locations of noxious and/or invasive weed species along the proposed route; and
- Guidance and/or recommendations for weed control, pesticide use, and non-chemical treatment options.

As part of its environmental field surveys for the Project, ONEOK is conducting an inventory of state- and county-listed noxious and invasive weeds and will develop a Noxious Weed Management Plan prior to construction. We request additional information from your office on known location, size, and extent of noxious/invasive weeds; if available, please provide as a GIS shapefile, geographic coordinates (e.g., latitude/longitude), Public Land Survey System Section(s), or marked on a map.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed

with the NDPSC later this year. ONEOK has submitted similar consultation letters to the Williams County Board of County Commissioners and Williams County Water Resource District.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project Shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Doug Lalim, Williams County (via email at dougl@co.williams.nd.us)

To:	Paul Hartzheim
Cc:	Ludwig, Beth; Maddy Krumwiede; Kameron Hymer; Helen Askim
Date:	Thursday, October 10, 2019 3:13:13 PM
Attachments:	image001.png image002.jpg image003.png

Paul,
I am the Building Official for Williams County. When the current Williams County Weed Officer resigned in late July, I was asked to oversee the Weed Control operation to the end of the Season. The Weed Board will be getting together soon to develop an updated job description and start advertising for a qualified applicant for the position. I do not have the knowledge
Or the expertise to give you the information that you are looking for. I think, if the timing is right, the newly hired Weed Officer will be able to help you with the information.
I can tell you that the list of Noxious Weeds in your letter is correct for Williams County Noxious Weed List.
Sorry that I cannot help you with the remaining information that you are requesting.
Thanks,

Doug Lalim
Building Official
ICC Certified
206 East Broadway, Williston, ND 58801
701.577.4567 www.williamsnd.com



From: Paul Hartzheim <paul.hartzheim@merjent.com>
Sent: Thursday, October 10, 2019 1:42 PM
To: Doug Lalim <DougL@co.williams.nd.us>
Cc: Ludwig, Beth <Beth.Ludwig@oneok.com>; Maddy Krumwiede <maddy.krumwiede@merjent.com>; Paul Hartzheim <paul.hartzheim@merjent.com>
Subject: ONEOK Tioga Lateral Project - consultation request (Williams Co. Weed Board)

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Mr. Lalim,

On behalf of ONEOK Bakken Pipeline L.L.C. (ONEOK), please see the attached consultation letter requesting review of ONEOK's Tioga Lateral Project located in Williams County. A set of maps is included immediately following the letter and shapefiles of the project centerline and a one-mile-wide evaluation corridor are also included for your convenience.

If you need any have any questions of need any additional information, please contact me directly or Beth Ludwig of ONEOK at 918-588-7257 or Beth.Ludwig@oneok.com. A hard copy of the attached will be sent to your attention and should arrive early next week.

Sincerely,

Paul Hartzheim, MS
612.746.1618 direct
612.845.1641 mobile
paul.hartzheim@merjent.com

1 Main Street SE, Suite 300
Minneapolis, MN 55414
612.746.3660
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Civil Townships

[pending]

ONEOK

October 10, 2019

Mr. Mike Casler
Chairman
Buford Township
14783 44th Lane NW
Williston, ND 58801

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Casler,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

It is ONEOK's understanding that Buford Township manages floodplain administration within the township boundaries in Williams County. ONEOK respectfully submits this Project information to Buford Township to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
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156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

To facilitate your review, we are requesting the following information be provided:

- Any local ordinances or other resources under your jurisdiction that are applicable to the Project.
- Any permits issued through your office which may be applicable to the Project, and a summary of the permit process and anticipated timeframes.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent

October 10, 2019

Mr. Sheldon Holte
Chairman
Sauk Valley Township
10495 82nd Street NW
McGregor, ND 58755

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Holte,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

It is ONEOK's understanding that Sauk Valley Township manages floodplain administration within Williams County. ONEOK respectfully submits this Project information to Sauk Valley Township to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
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156 North	96 West	1-10, 12, 17-20, 29-31
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ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

To facilitate your review, we are requesting the following information be provided:

- Any local ordinances or other resources under your jurisdiction that are applicable to the Project.
- Any permits issued through your office which may be applicable to the Project, and a summary of the permit process and anticipated timeframes.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent

October 10, 2019

Mr. Joseph Breckey
Chairman
Tioga Township
6934 108th Avenue NW
Tioga, ND 58852-9016

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Breckey,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

It is ONEOK's understanding that Tioga Township manages floodplain administration within its township boundaries in Williams County. ONEOK respectfully submits this Project information to Tioga Township to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31
156 North	97 West	24-26, 31-36

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

To facilitate your review, we are requesting the following information be provided:

- Any local ordinances or other resources under your jurisdiction that are applicable to the Project.
- Any permits issued through your office which may be applicable to the Project, and a summary of the permit process and anticipated timeframes.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent

October 10, 2019

Mr. Walter Peterson
Chairman
Trenton Township
14090 47th Lane NW, Lot 305
Williston, ND 58801

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Peterson,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

It is ONEOK's understanding that Trenton Township manages floodplain administration within its township boundaries in Williams County. ONEOK respectfully submits this Project information to Trenton Township to review a one-mile-wide "evaluation corridor" centered along the route of the pipeline. Sections, Townships, and Ranges within the evaluation corridor are presented in the following table. Aerial and topographic based mapsets are also included for your review.[1]

Table 1
Tioga Lateral Pipeline Location

Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
155 North	100 West	3-5, 8-10, 13-16, 21-27
155 North	102 West	2, 3, 7-11, 14-20, 30
155 North	103 West	13, 20-29
155 North	97 West	1-6
155 North	98 West	1-3, 7-11, 14-18
155 North	99 West	10-22, 30
156 North	100 West	28-33
156 North	101 West	25-36
156 North	102 West	25-27, 34-36
156 North	95 West	4-9, 17, 18
156 North	96 West	1-10, 12, 17-20, 29-31

[1] A shapefile containing the project centerline and one-mile-wide evaluation corridor will be sent as an email attachment.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Tioga Lateral Pipeline Location		
Williams County, North Dakota		
Township	**Range**	**Sections within Evaluation Corridor**
156 North	97 West	24-26, 31-36
156 North	98 West	34-36
157 North	95 West	23-26, 35, 36

To facilitate your review, we are requesting the following information be provided:

- Any local ordinances or other resources under your jurisdiction that are applicable to the Project.
- Any permits issued through your office which may be applicable to the Project, and a summary of the permit process and anticipated timeframes.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and a copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit, which will be filed with the NDPSC later this year.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps
Project Shapefiles (provided electronically)

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Walter Peterson, Trenton Township (via email at walt14090@gmail.com)

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Cities (Tioga and Springbrook)

[pending]

November 4, 2019

Mr. Dan Larson
Community Service Director
City of Tioga
City Hall
16 1st Street NE
Tioga, ND 58852

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Larson,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and ONEOK will file an application for a Certificate of Corridor and Route Permit later this year. In support of this application, ONEOK has established a one-mile-wide "evaluation corridor" associated with the Project and is soliciting comments from federal, state, and local agencies to conduct a review of agency resources in this corridor. While the Project does not directly cross the city limits of Tioga, the evaluation corridor intersects with the city limits on the eastern end of the Project.

With this submittal, ONEOK respectfully submits this Project information to the city of Tioga for review. A Project overview map and detailed aerial and topographic based maps of the portion of the route near the Tioga city limits are included for reference. A copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

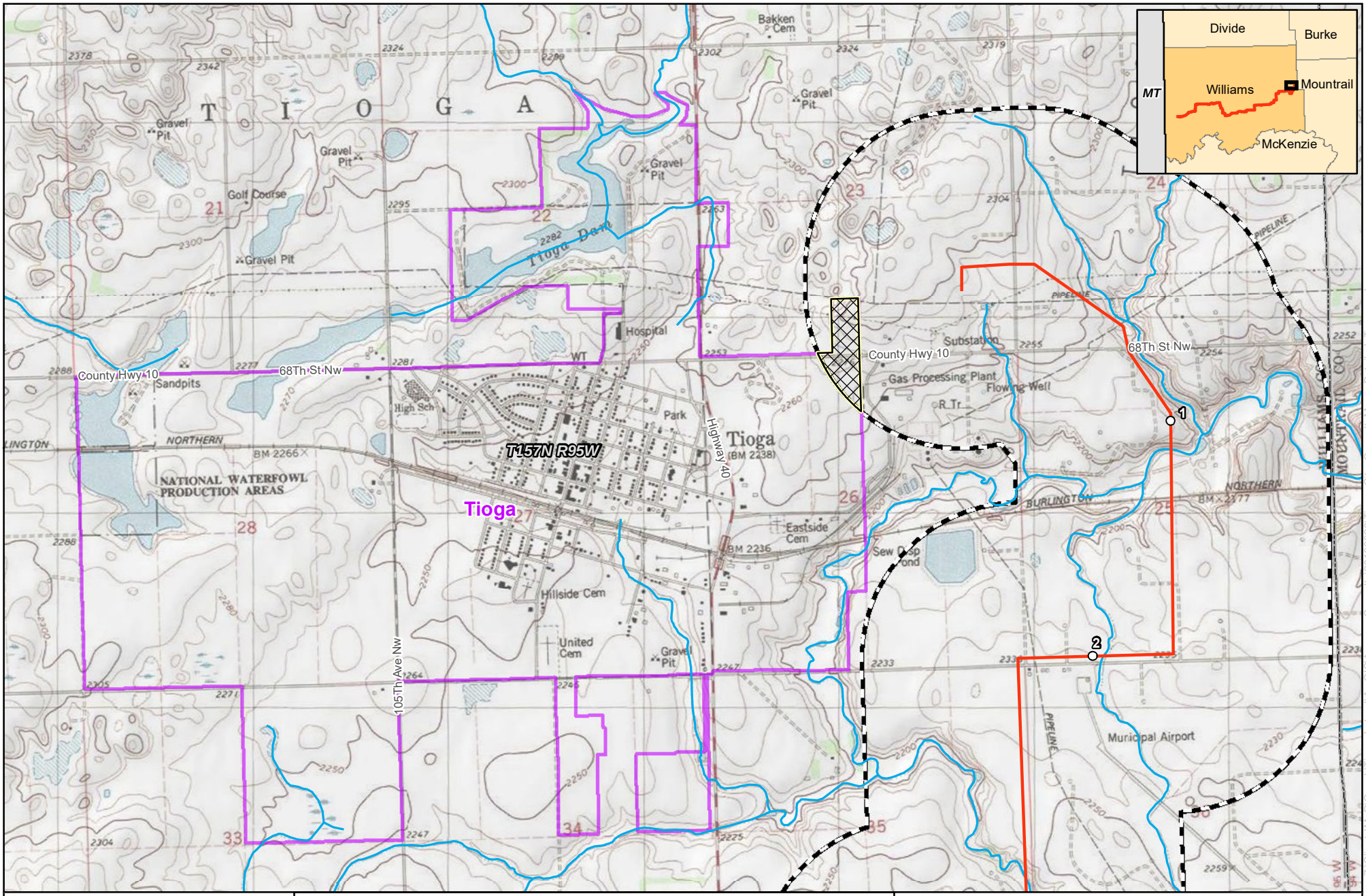
Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Dan Larson, City of Tioga (via email at communityservices@cityoftioga.com)



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1 inch = 2,200 feet

N W E S

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Detailed Project Maps
Williams County, ND

- Milepost
- Proposed Route
- NHD Waterbody
- City Boundary
- 1-mile Study Area
- Area of Interest
- County Boundary
- Township Boundary

Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\ArcGIS\Agency_Consults\20190926\Tioga_City_Consult_Maps_Detailed_Topo.mxd

Date: (10/18/2019)

November 4, 2019

Mr. Paul Johnsrud
Mayor
City of Springbrook
112 2nd Street
Springbrook, ND 58843

RE: ONEOK Bakken Pipeline, L.L.C. – Tioga Lateral Pipeline Project
Project Notification and Request for Review

Dear Mr. Johnsrud,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project) consisting of approximately 75 miles of new 16-inch-diameter new steel pipeline to transport natural gas liquids. The Project will be located entirely within Williams County, North Dakota (see enclosed Project overview map). Construction is scheduled to begin in April 2020 and will be completed in approximately 6-7 months. After construction is complete, restoration and reclamation of the right-of-way will continue as necessary.

A detailed routing analysis has been performed on this Project taking into consideration a significant amount of information to avoid and minimize impacts of known and suspected resources. Additionally, ONEOK is in the process of completing environmental field surveys (cultural and biological resources) of the route. The proposed Project has been routed adjacent to existing pipeline corridors to the extent possible.

The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC) and ONEOK will file an application for a Certificate of Corridor and Route Permit later this year. In support of this application, ONEOK has established a one-mile-wide "evaluation corridor" associated with the Project and is soliciting comments from federal, state, and local agencies to conduct a review of agency resources in this corridor. While the Project does not directly cross the city limits of Springbrook, the evaluation corridor intersects with the city limits.

With this submittal, ONEOK respectfully submits this Project information to the city of Springbrook for review. A Project overview map and detailed aerial and topographic based maps of the portion of the route near the Springbrook city limits are included for reference. A copy of your response will be included in ONEOK's application for a Certificate of Corridor and Route Permit.

Merjent, Inc. (Merjent) has been contracted by ONEOK to assist with the environmental review of the Project areas, completion of regulatory applications, and consultations with other agencies. Please identify any specific persons within your organization that should be contacted or included in future Project-related communications.

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. Should you have any questions or require additional information, please contact Paul Hartzheim of Merjent at 612-746-1618 or paul.hartzheim@merjent.com, or myself at 918-588-7257 or Beth.Ludwig@oneok.com.

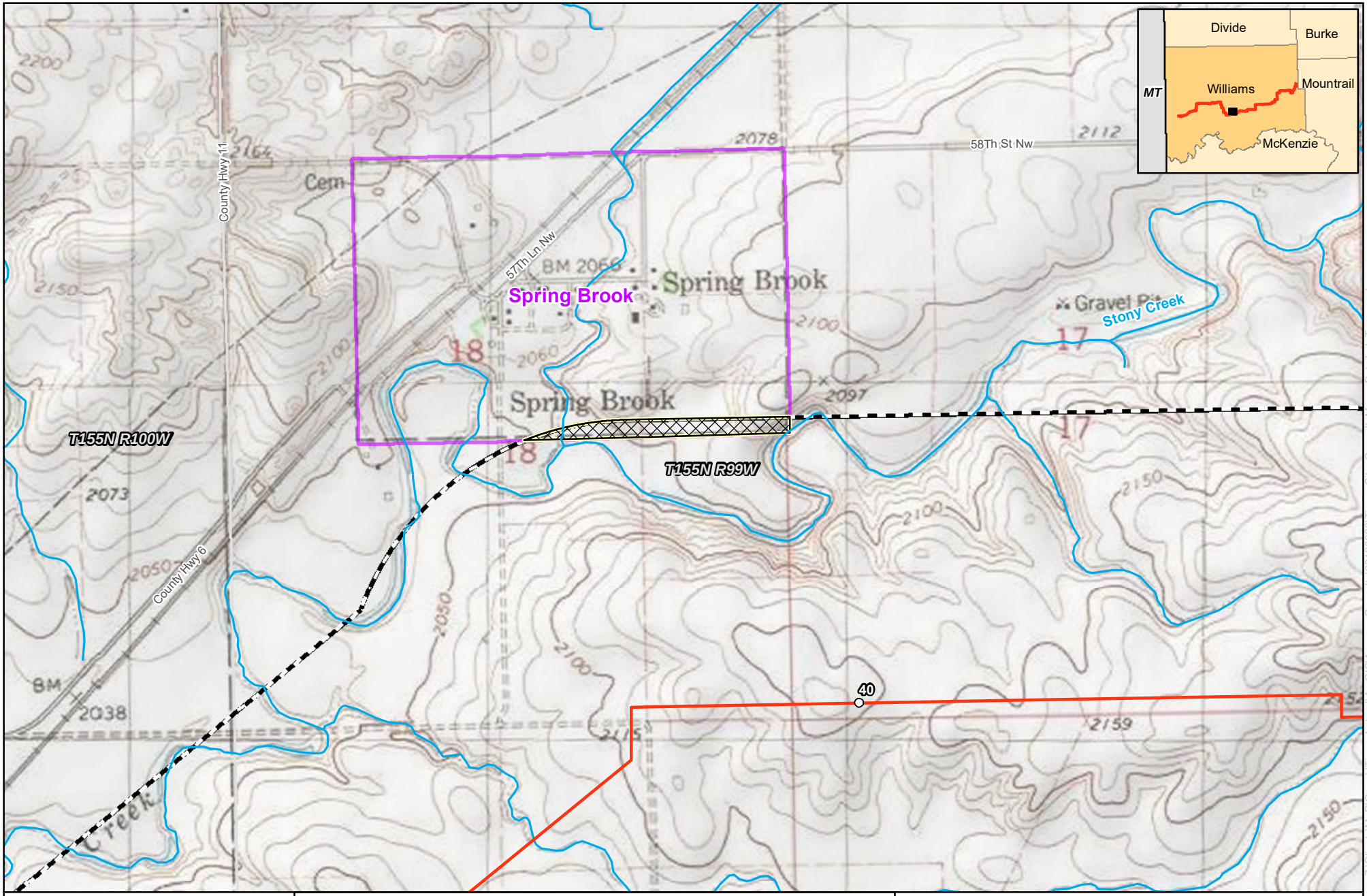
Sincerely,



Beth Ludwig
Environmental Project Manager
ONEOK, Inc.

Enclosures: Project Overview, Aerial and Topographic Based Route Maps

Cc: Maddy Krumwiede and Paul Hartzheim, Merjent
Paul Johnsrud, City of Springbrook (via email at springbrookndcity@gmail.com)



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1 inch = 1,200 feet

N W E S

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Detailed Project Maps
Williams County, ND

- Milepost
- Proposed Route
- NHD Waterbody
- City Boundary
- 1-mile Study Area
- Area of Interest
- County Boundary
- Township Boundary

Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\ArcGIS\Agency_Consults\20190926\Tioga_City_Consult_Maps_Detailed_Topo.mxd

Date: (10/18/2019)

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Exhibit E

Agency Consultation Mapsets

Project mapsets were included in all agency consultation letters. All mapset base layers include the proposed route; mileposts; the 1-mile study corridor; NHD waterbodies; and county and township boundaries. Mapsets were then generated using applicable agency-specific datasets for ease in agency review. The table below outlines the seven unique mapsets corresponding to the agency to which they were sent. Maps sent to city agencies depicted only that portion of the Project that would cross their jurisdiction. All agencies received the same Topographical Overview Map.

Mapset	**Agency**
Topographical Overview	All agencies
1	USFWS – T&E and Conservation Easements
2	USACE
3	USDA-NRCS; USDA-FSA; USDOD; NDPRD; NDSWC; WAWSA; Williams County Board of Commissioners, Water Resource Board, and Weed Control Board; and Townships.
4	NDGF
5	NDGS
6	NDDEQ
7	NDDTL – Mineral and School Trust

Topographical Overview Map

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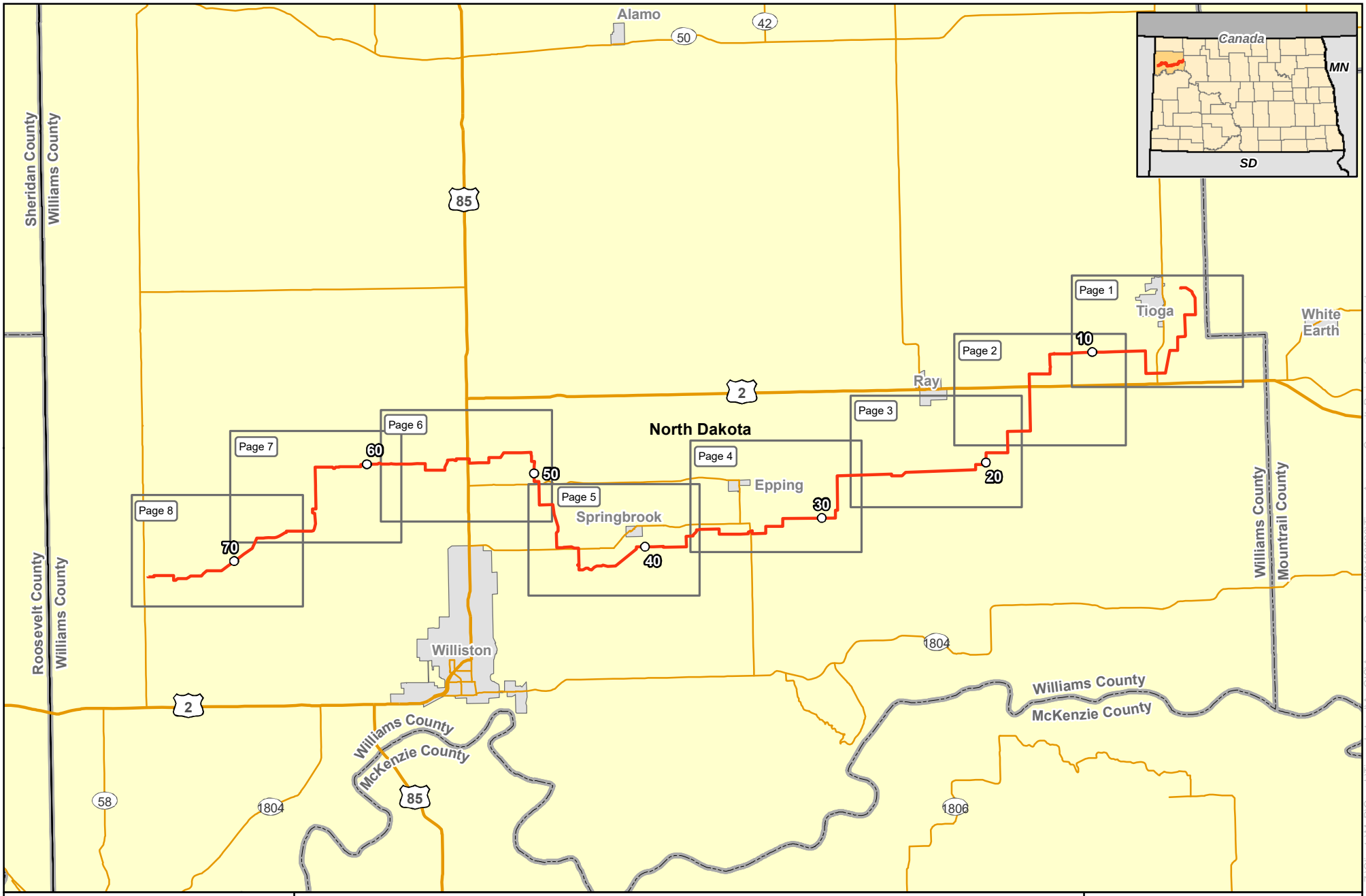

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1 inch = 6 miles

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Project Location Map
Williams County, ND

Milepost

Proposed Route

Detailed Map Page

Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\ArcGIS\Agency_Consults\20190926\Tioga_Agency_Consult_Project_Overview.mxd

Date: (10/1/2019)

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Mapset 1

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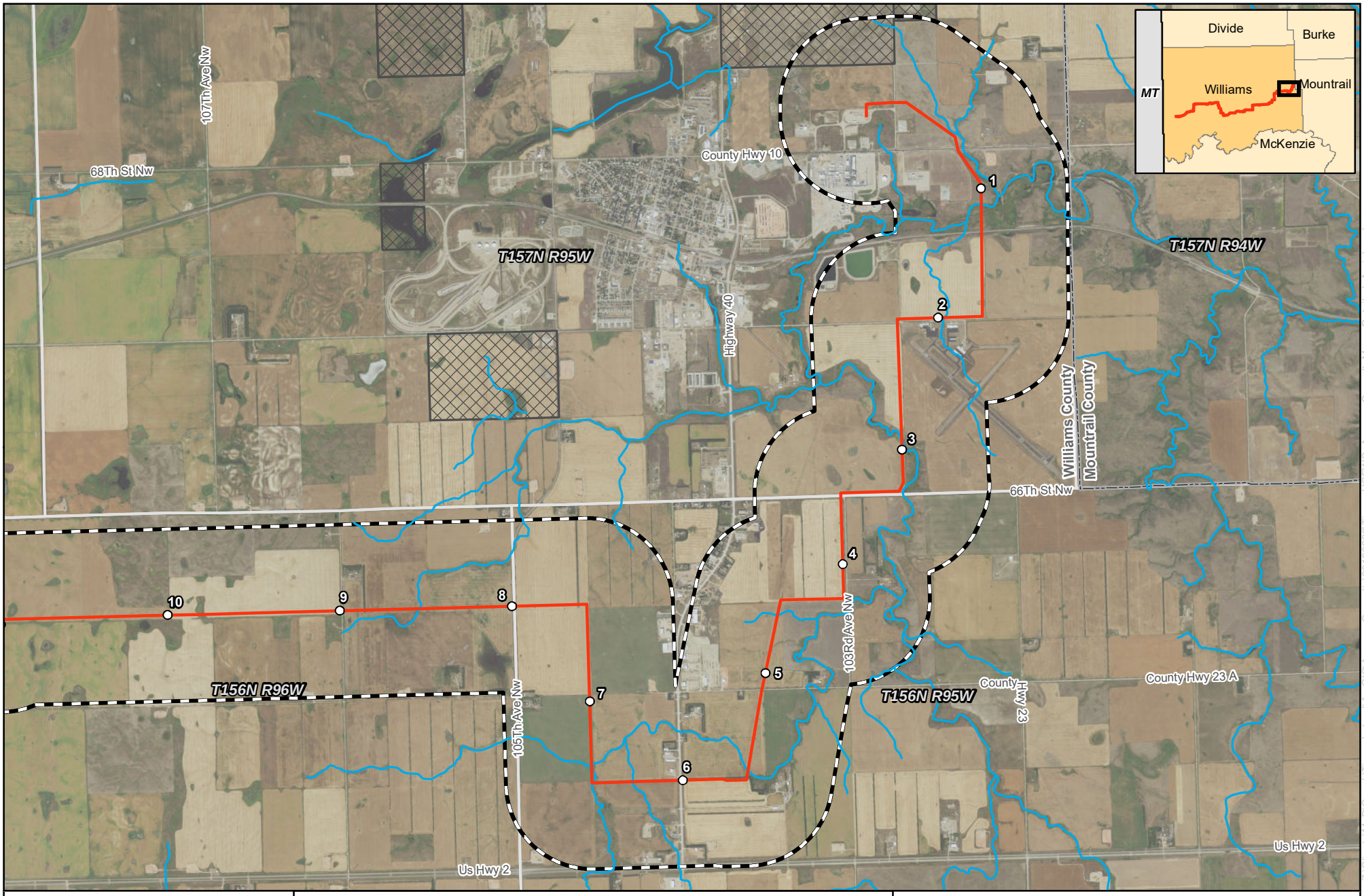

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1 inch = 4,000 feet

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.

Tioga Lateral Pipeline Project

Detailed Project Maps

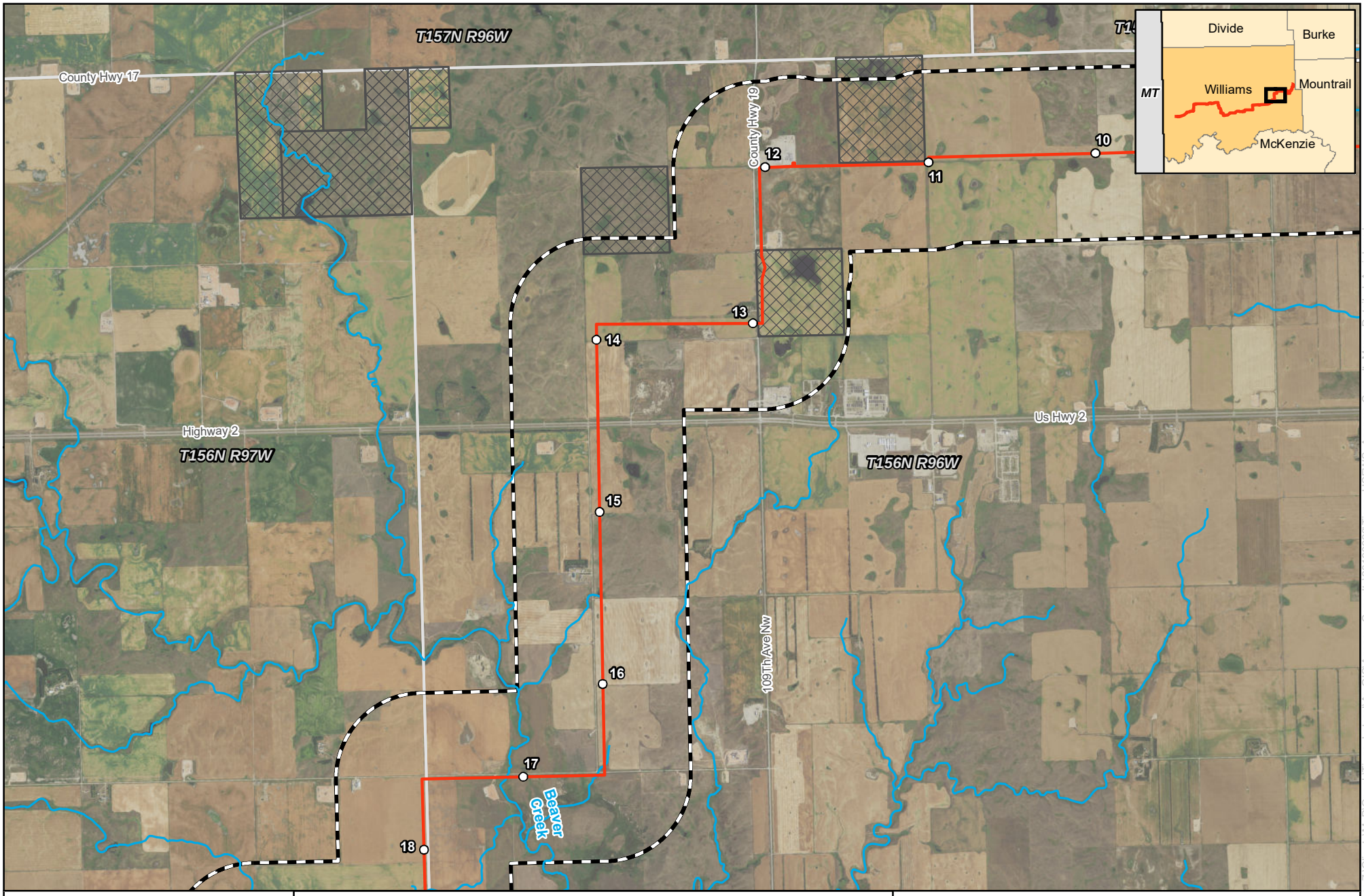
Williams County, ND

Page 1 of 8

- Milepost
- Proposed Route
- NHD Waterbody
- 1-mile Study Area
- FWS Interest
- County Boundary
- Township Boundary

Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\ArcGIS\Agency_Consults\20190926\Tioga_USFWS_Agency_Consult_Maps_Detailed_Aerial.mxd

Date: (9/26/2019)



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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Detailed Project Maps
Williams County, ND
Page 2 of 8

- Milepost
- Proposed Route
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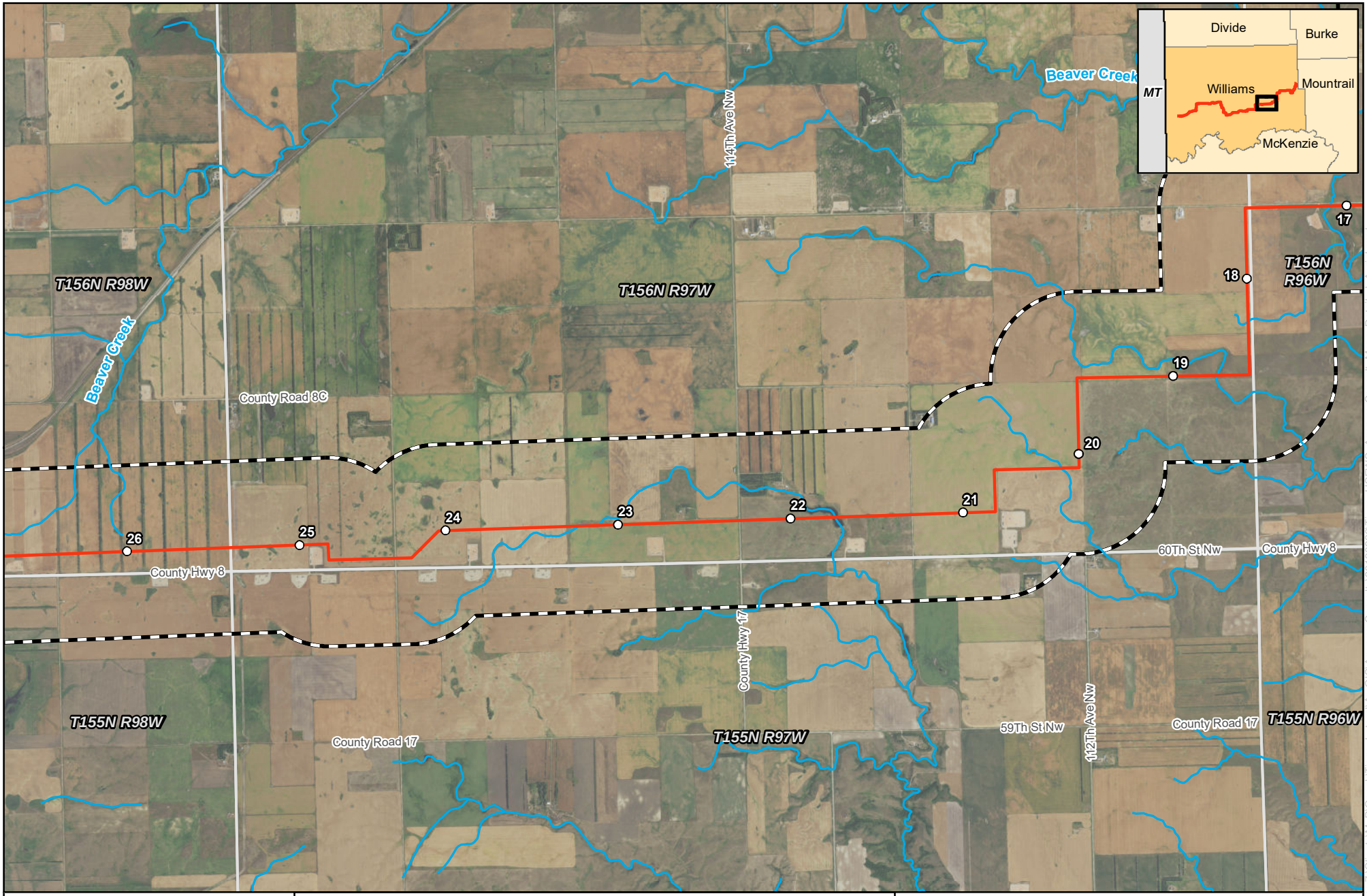

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N W E S

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Detailed Project Maps
Williams County, ND
Page 3 of 8

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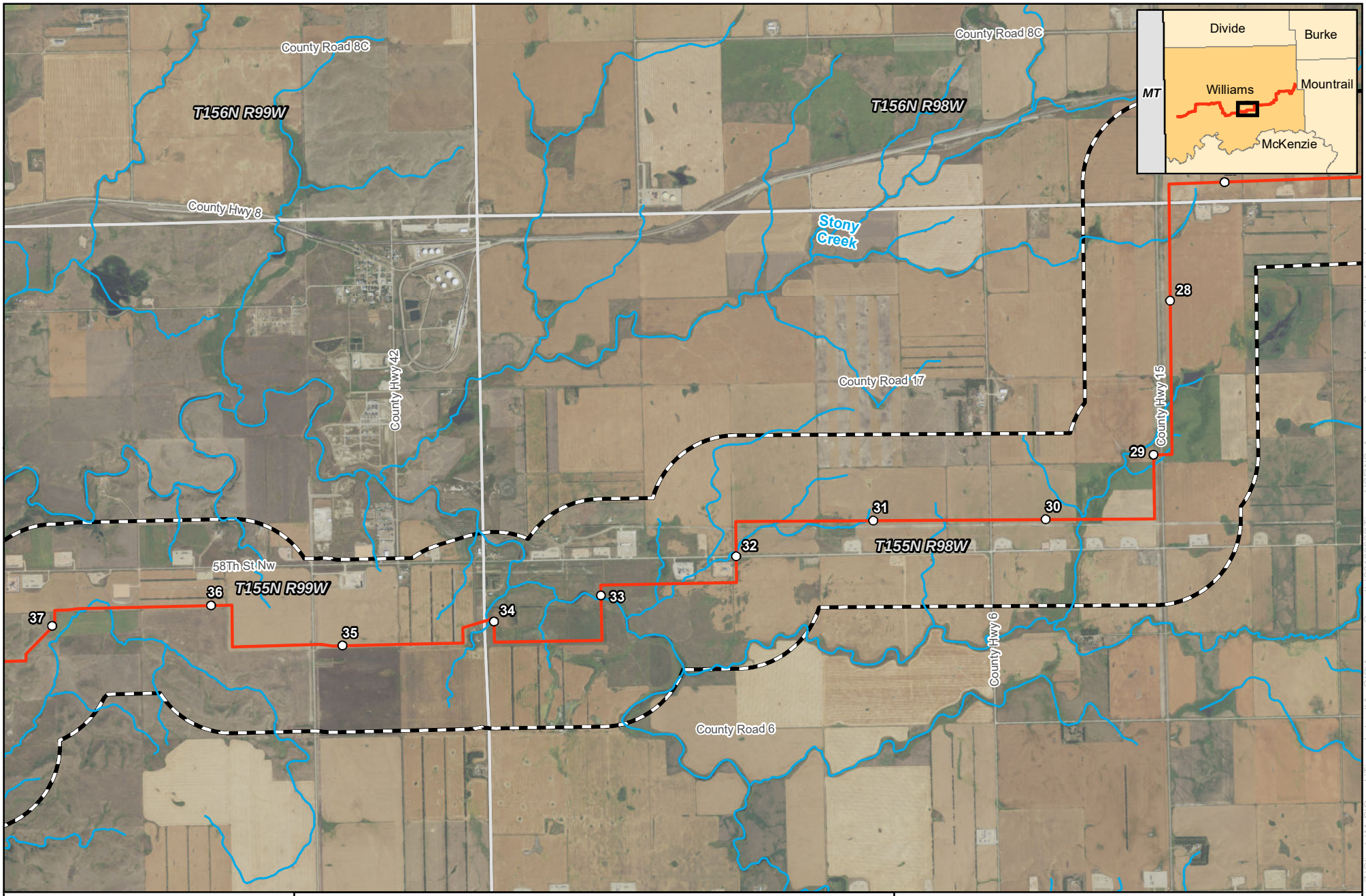

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.

Tioga Lateral Pipeline Project

Detailed Project Maps

Williams County, ND

Page 4 of 8

- Milepost
- Proposed Route
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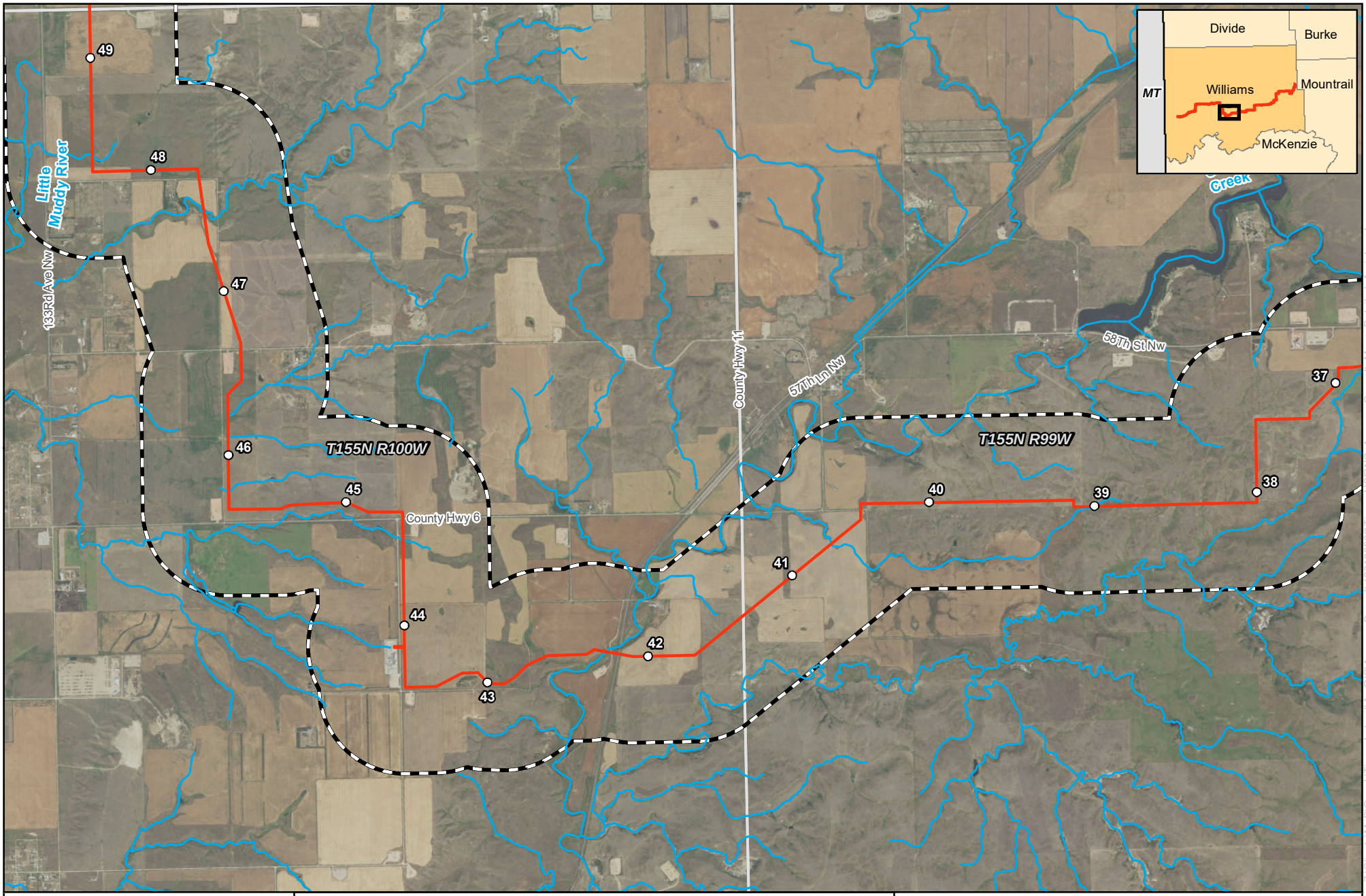

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N W E S

For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.

Tioga Lateral Pipeline Project

Detailed Project Maps

Williams County, ND

Page 5 of 8

- Milepost
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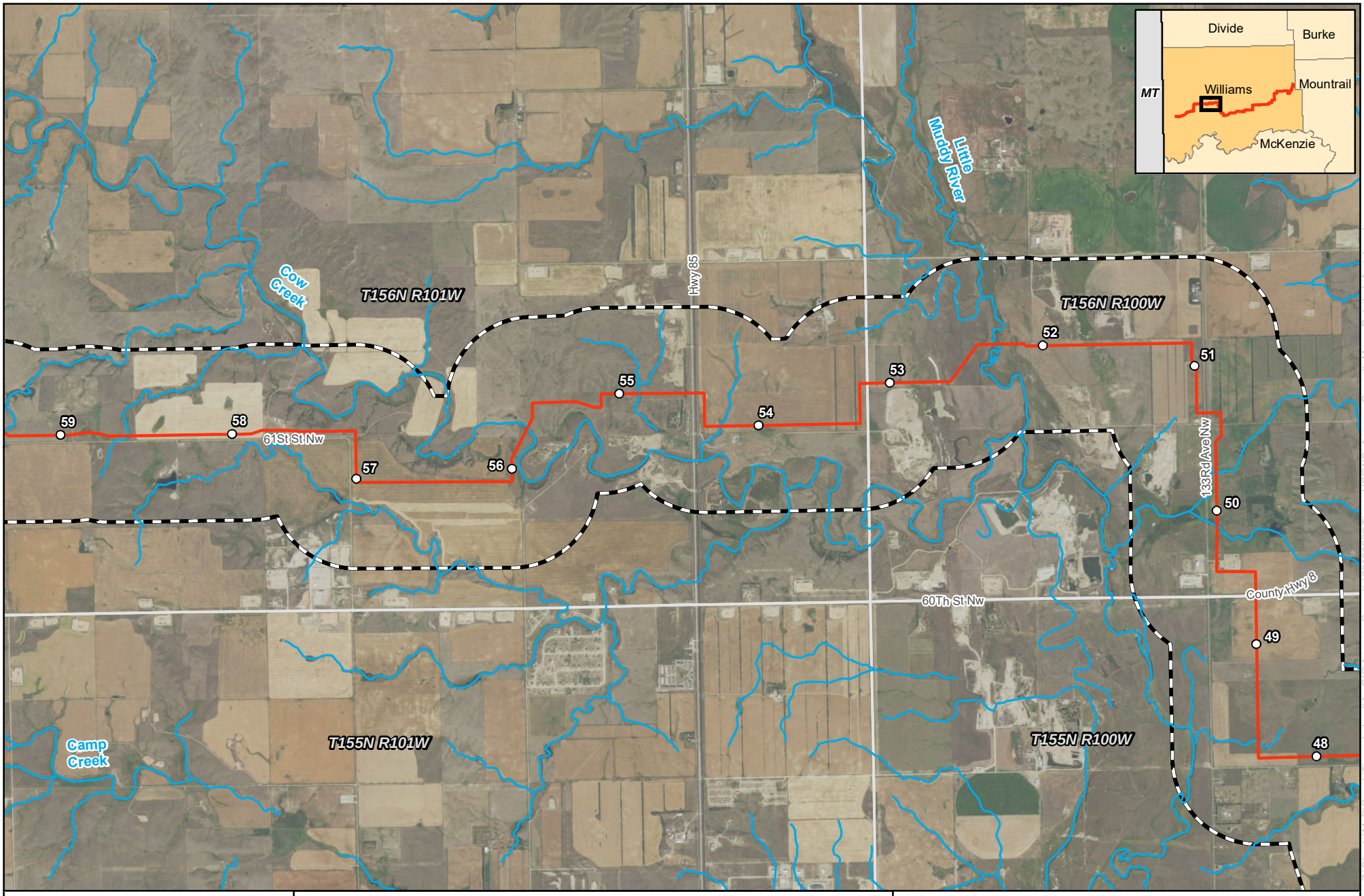

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Detailed Project Maps
Williams County, ND
Page 6 of 8

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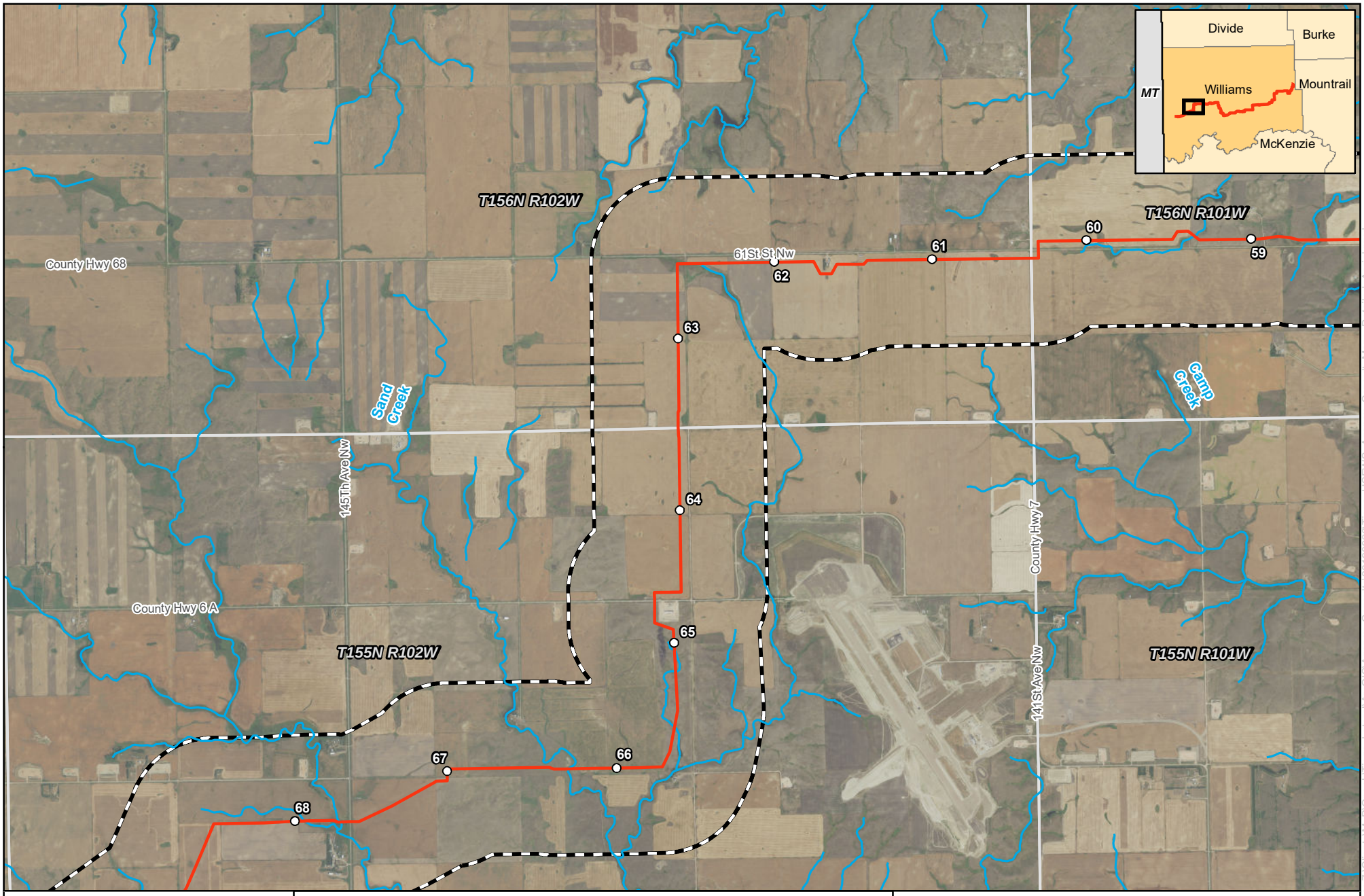

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.

Tioga Lateral Pipeline Project

Detailed Project Maps

Williams County, ND

Page 7 of 8

- Milepost
- Proposed Route
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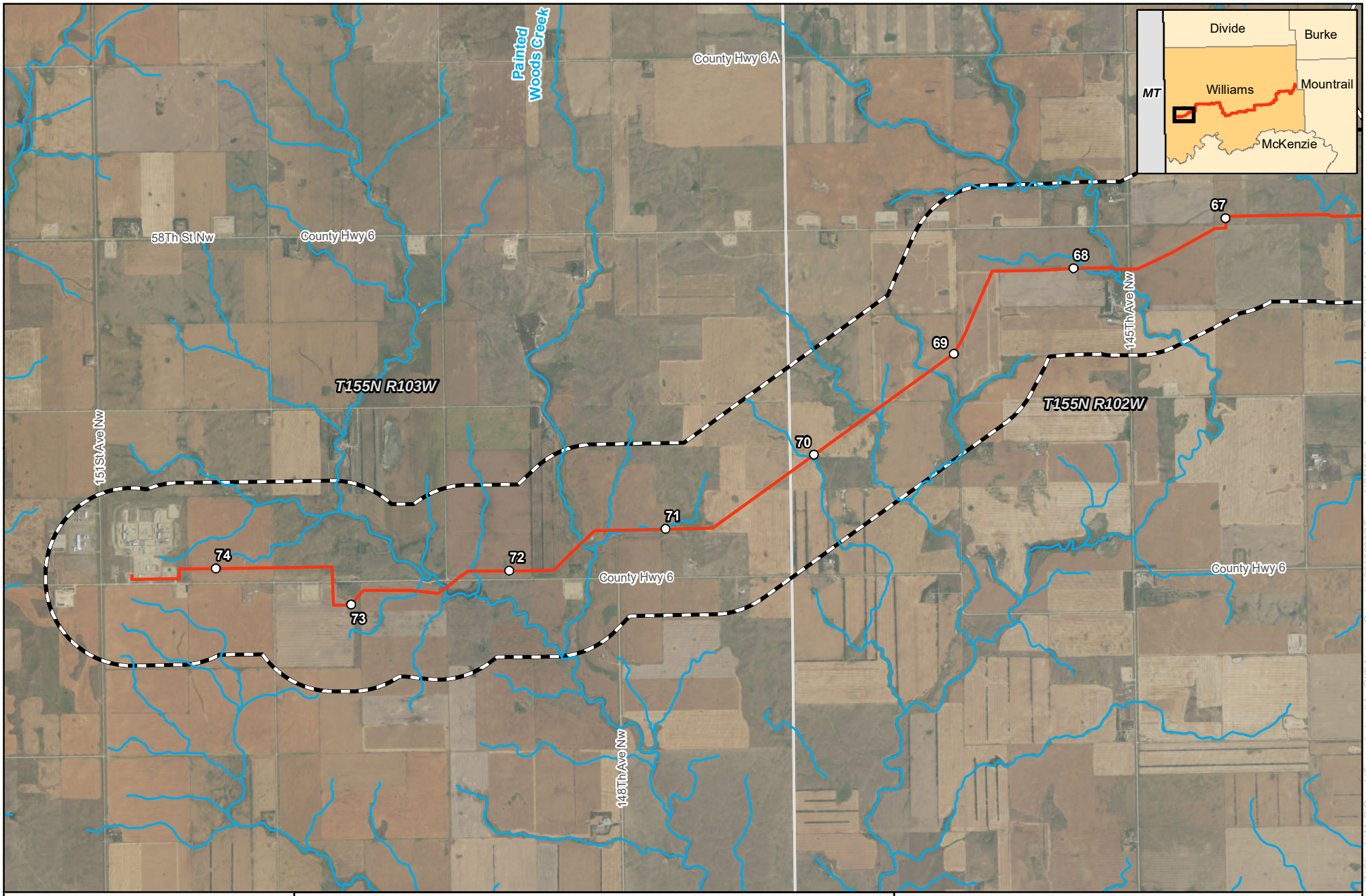
Date: (9/26/2019)



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N W E S

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For Environmental Review Purposes Only

ONEOK Bakken Pipeline, L.L.C.

Tioga Lateral Pipeline Project

Detailed Project Maps

Williams County, ND

Page 8 of 8

- Milepost
- Proposed Route
- NHD Waterbody
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- FWS Interest
- County Boundary
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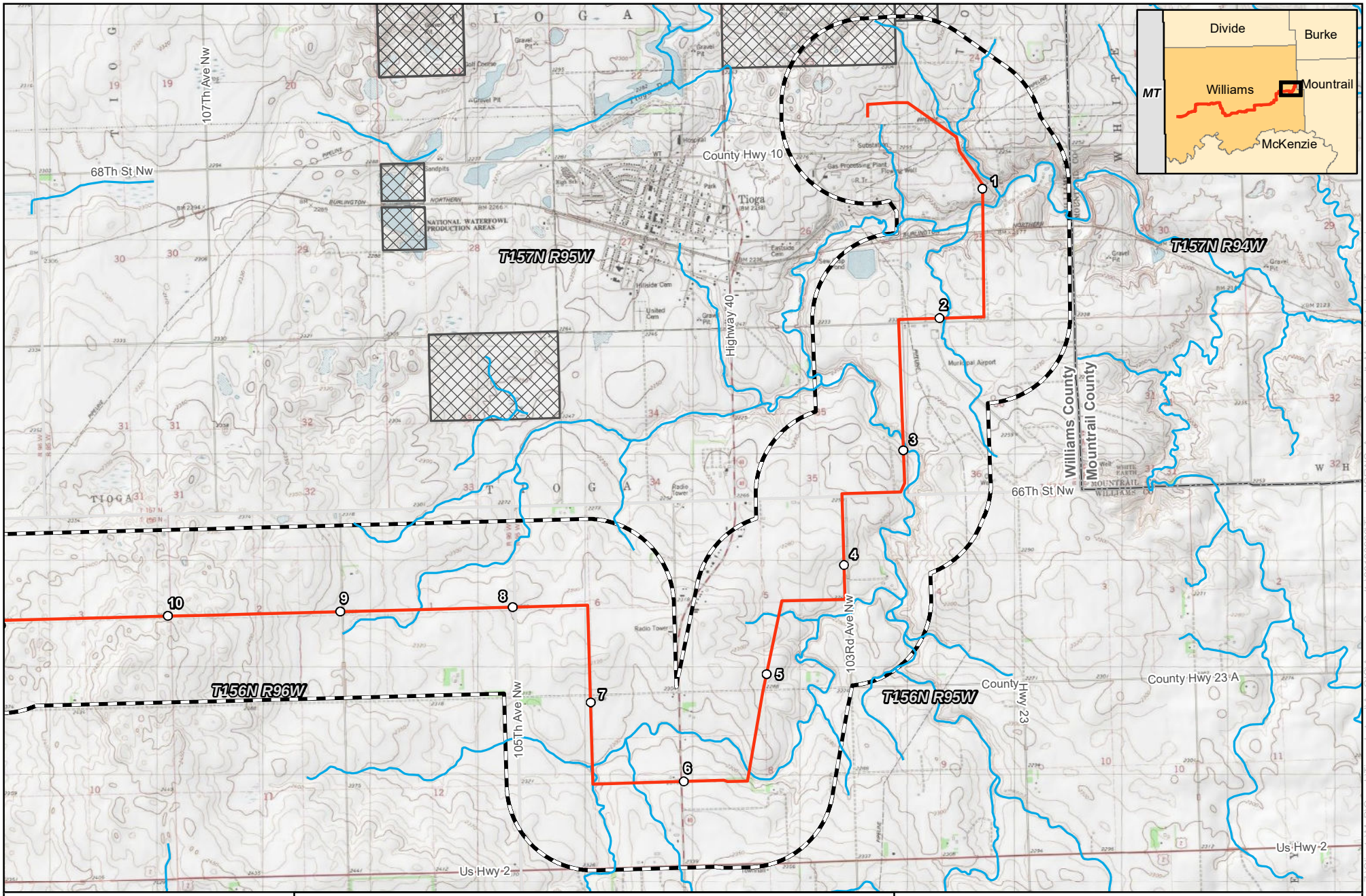
Date: (9/26/2019)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T156N R95W
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Tioga
68Th St Nw
107Th Ave Nw
Highway 40
Williams County
Mountrail County
66Th St Nw
103Rd Ave Nw
105Th Ave Nw
County Hwy 23
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For Environmental Review Purposes Only
ONEOK Bakken Pipeline, L.L.C.
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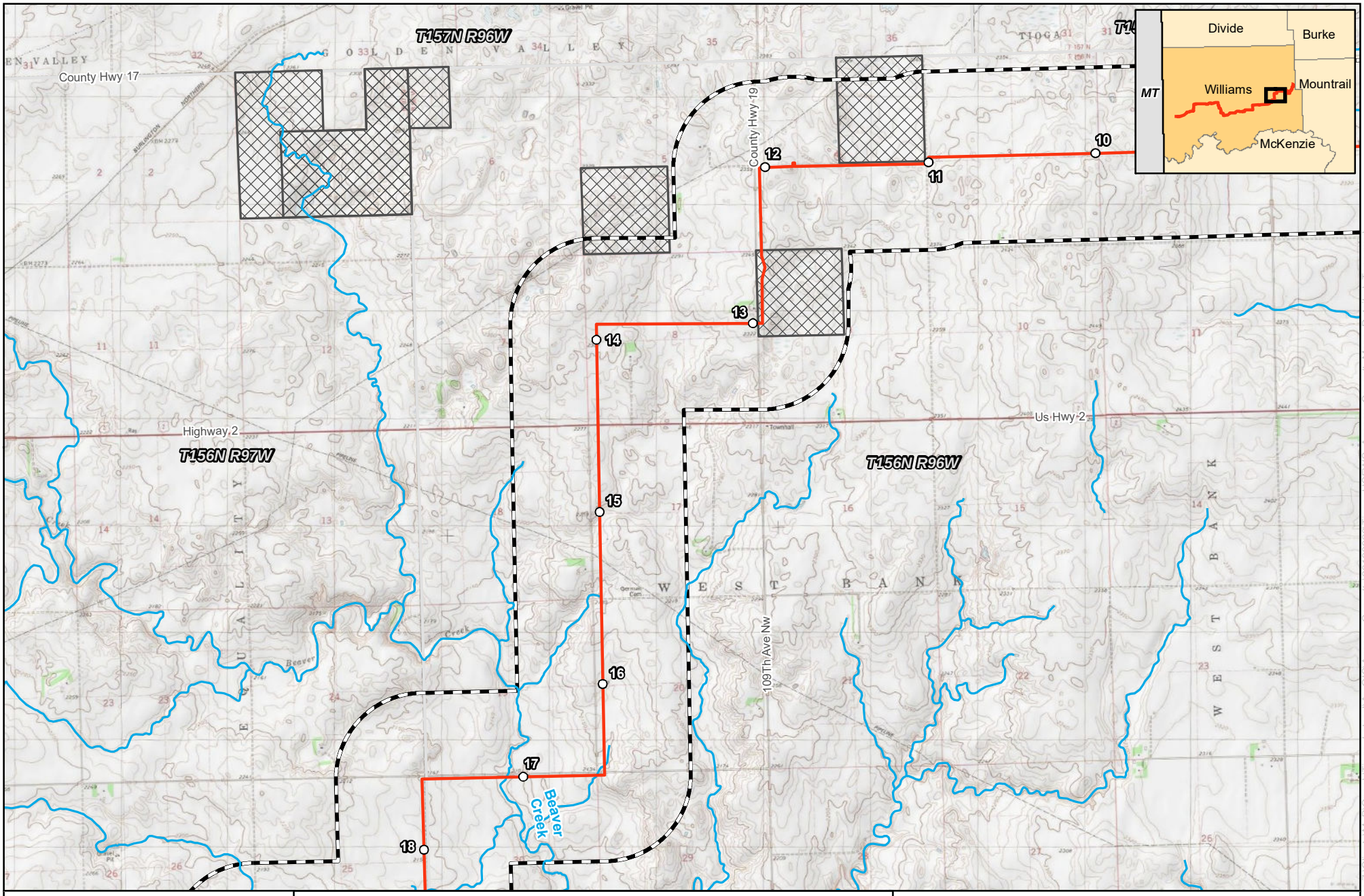

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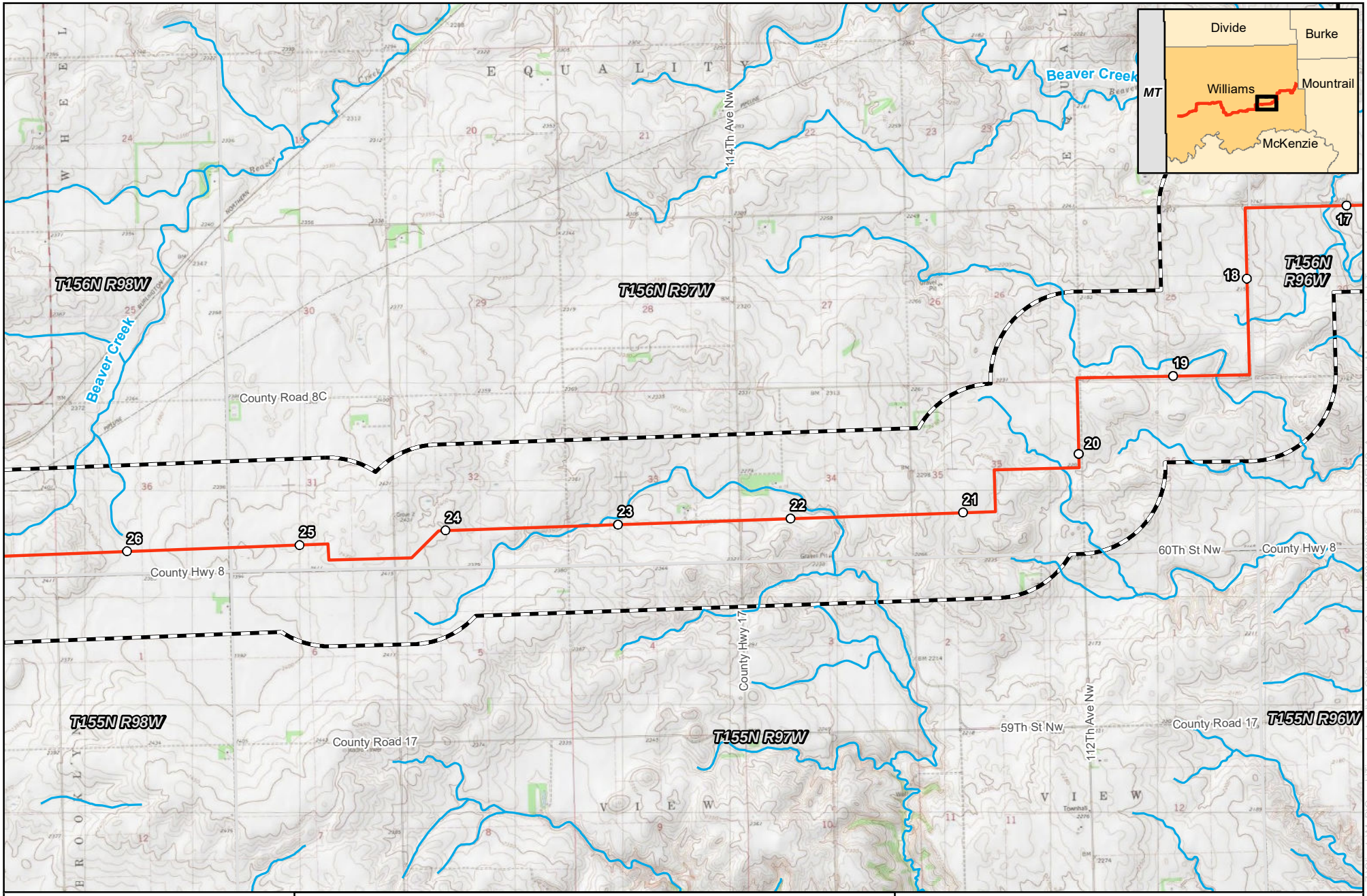

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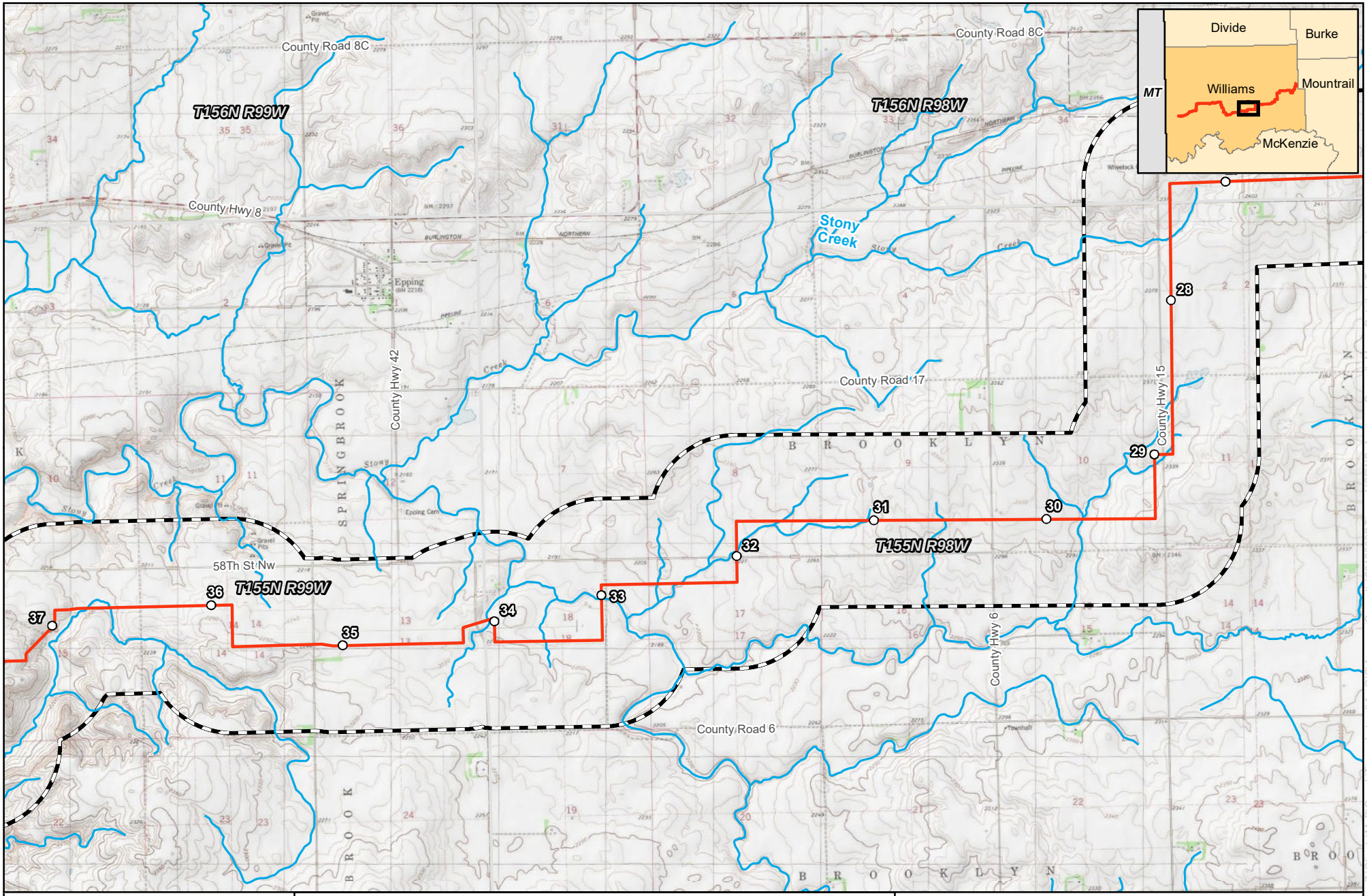

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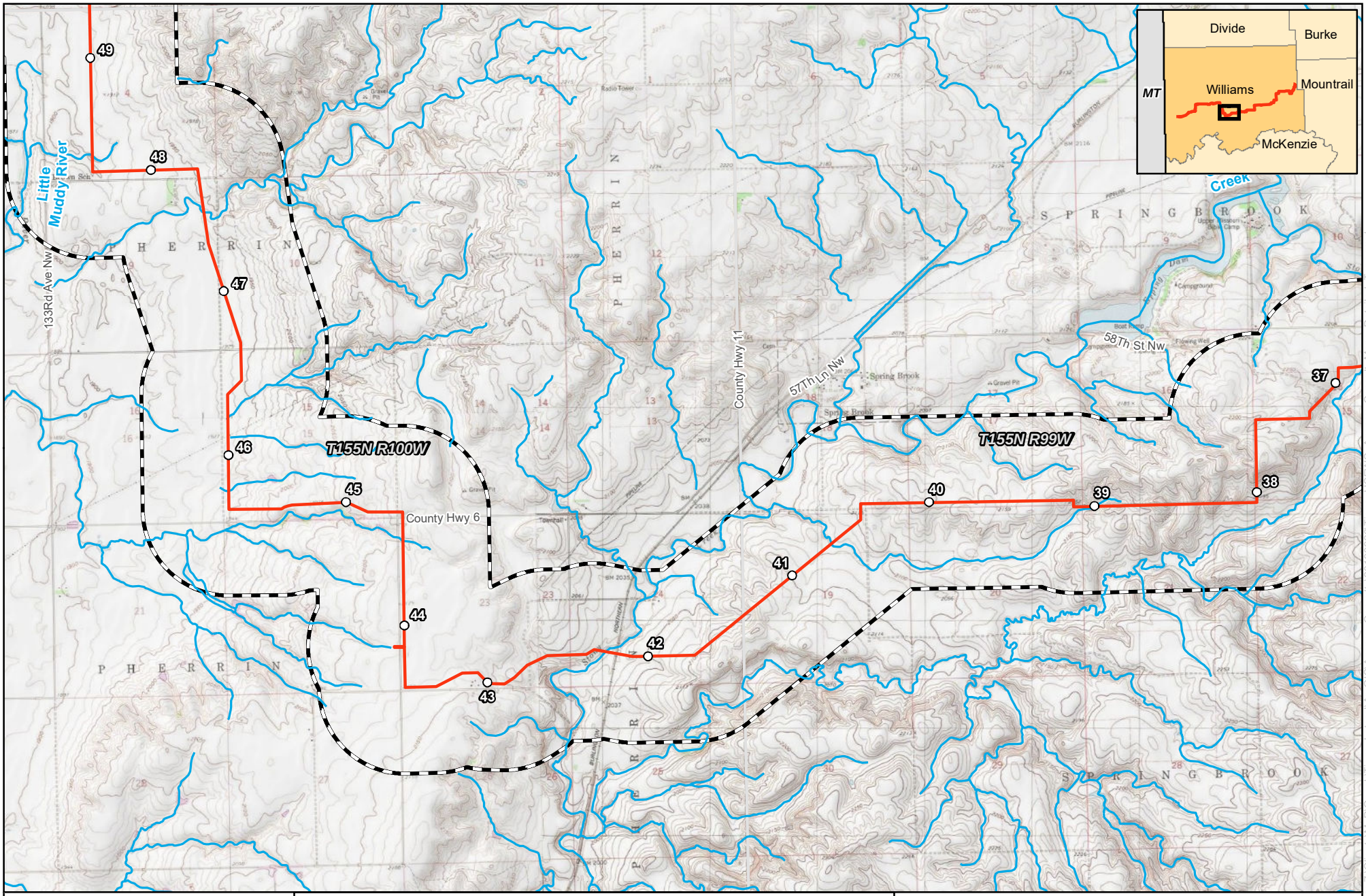

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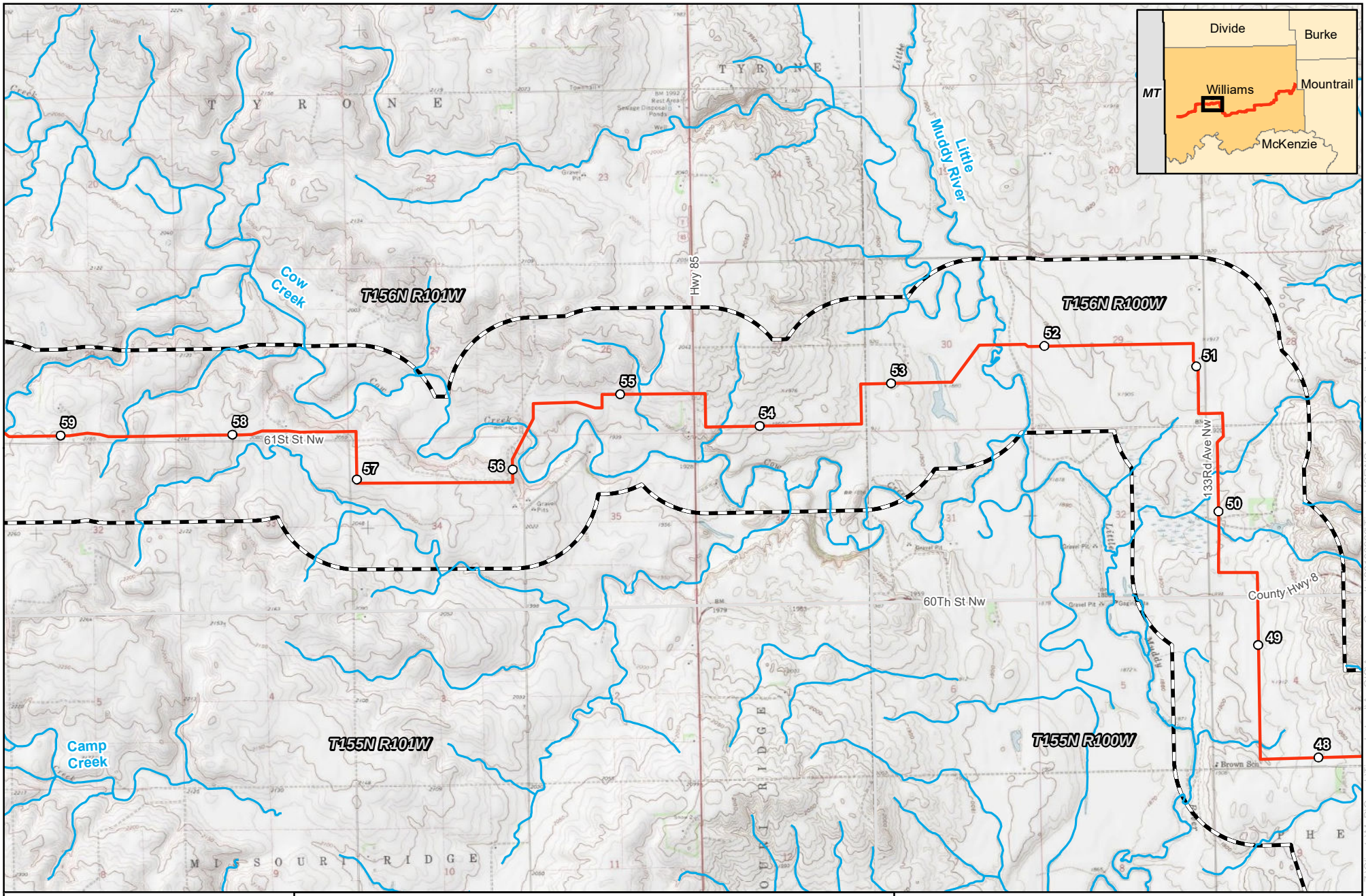

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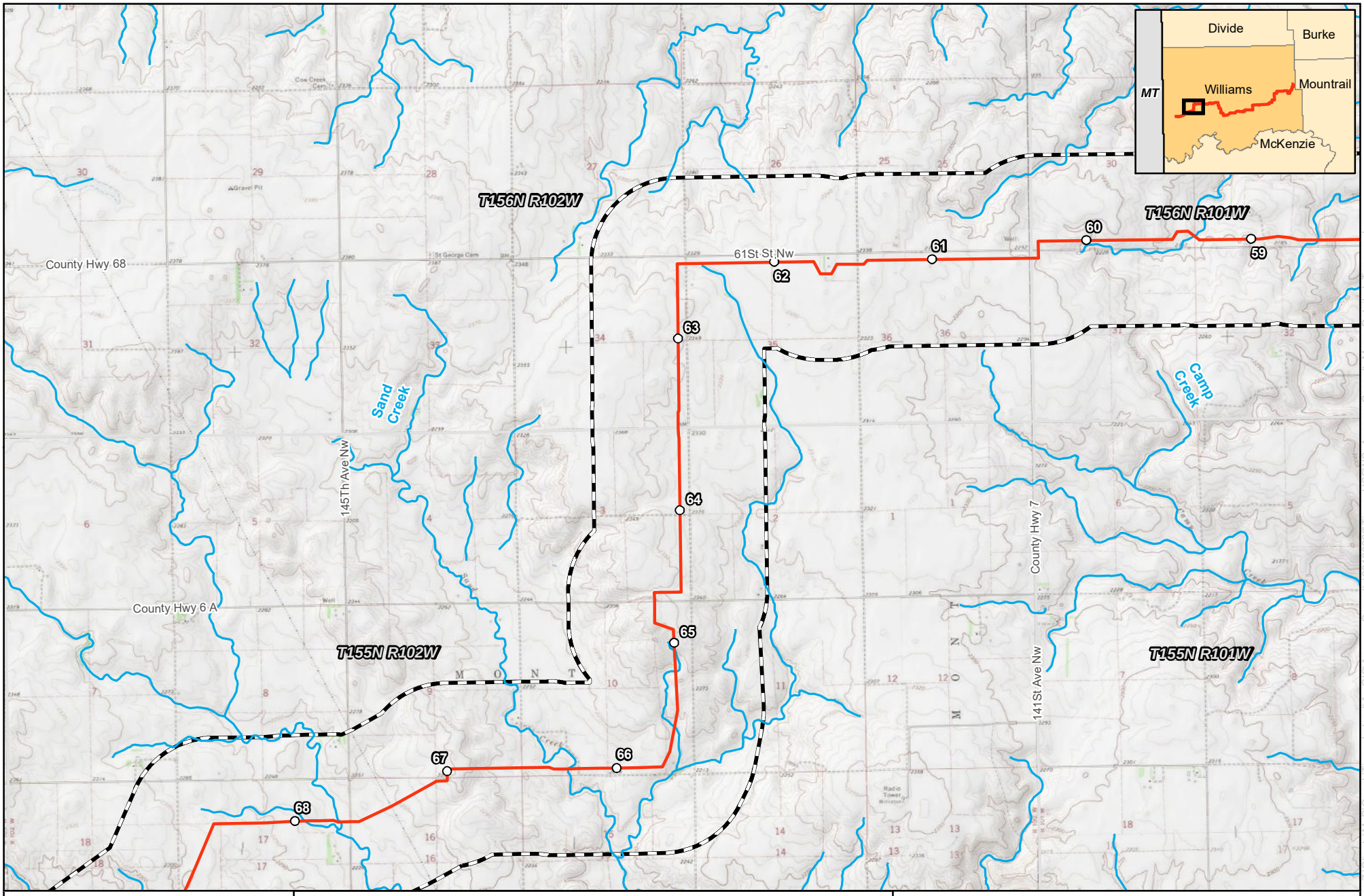

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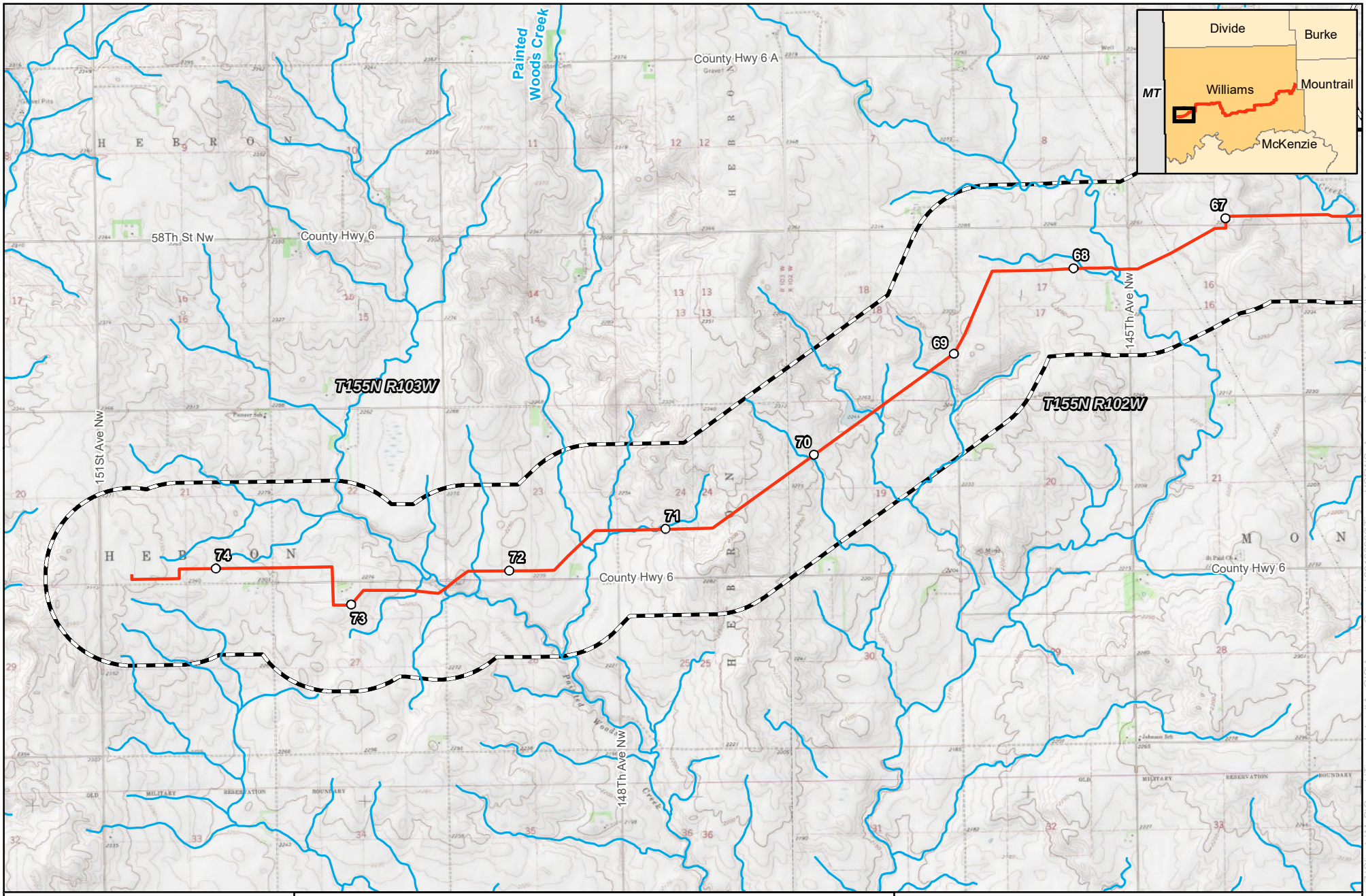

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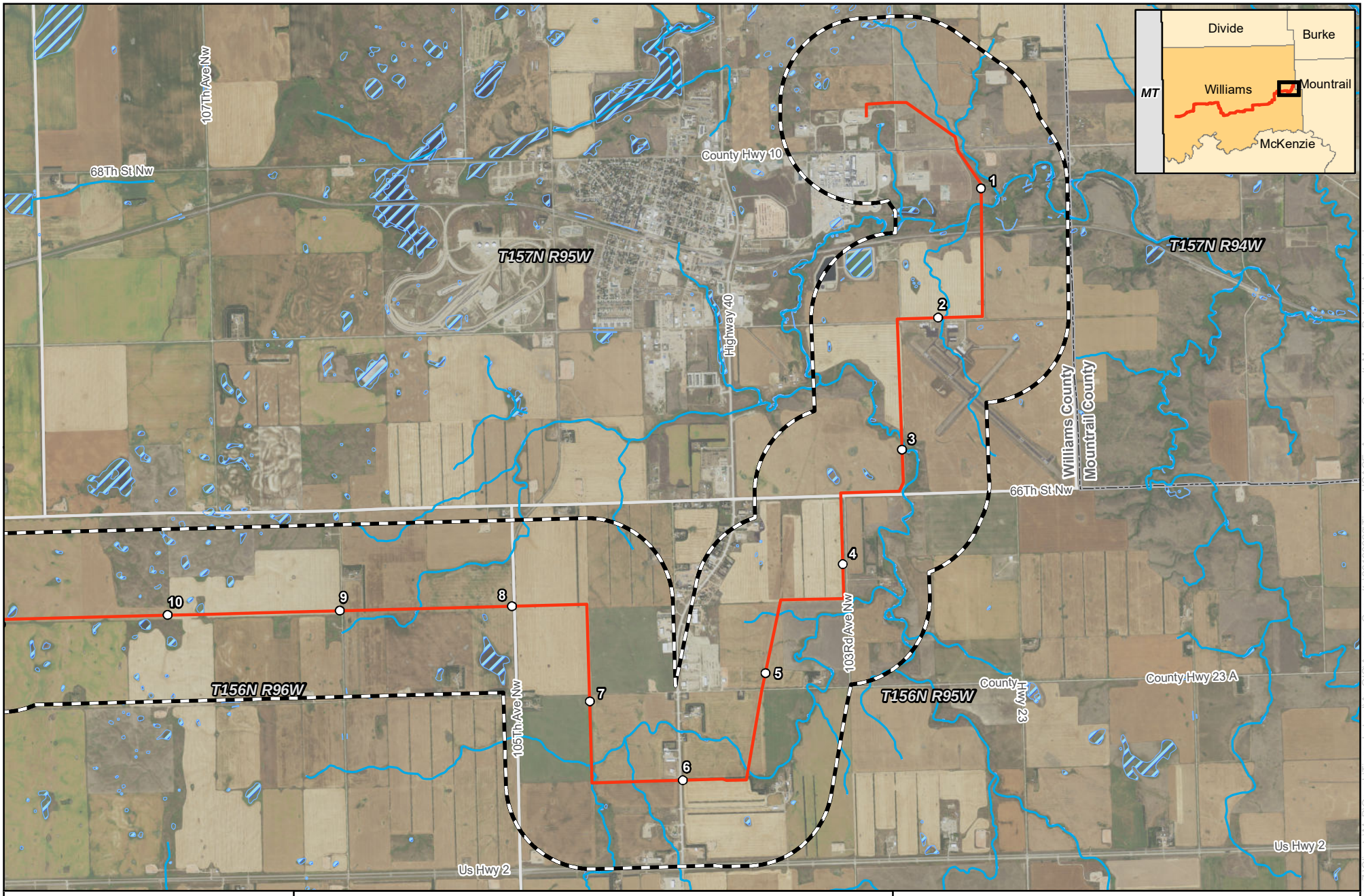

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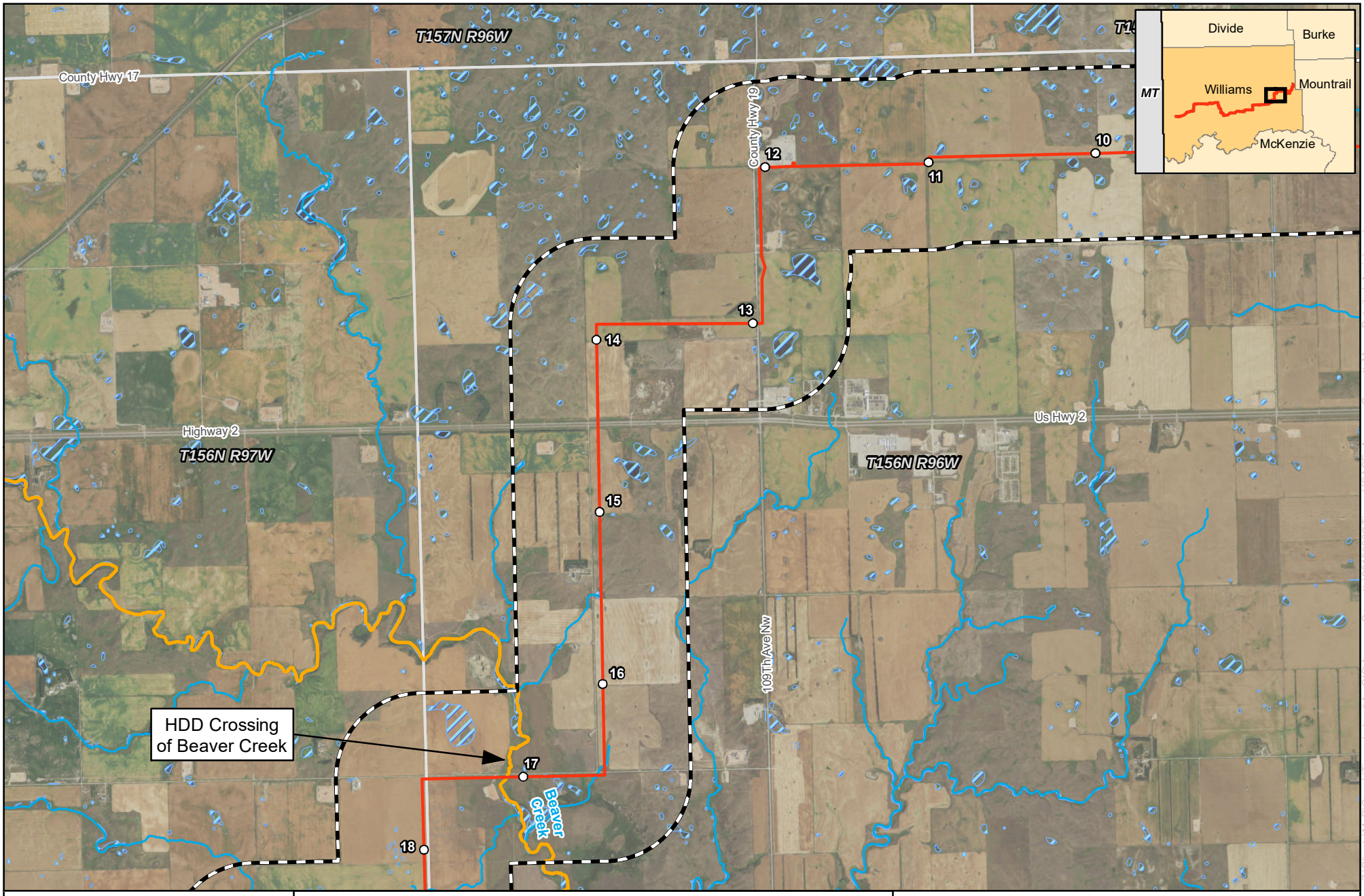

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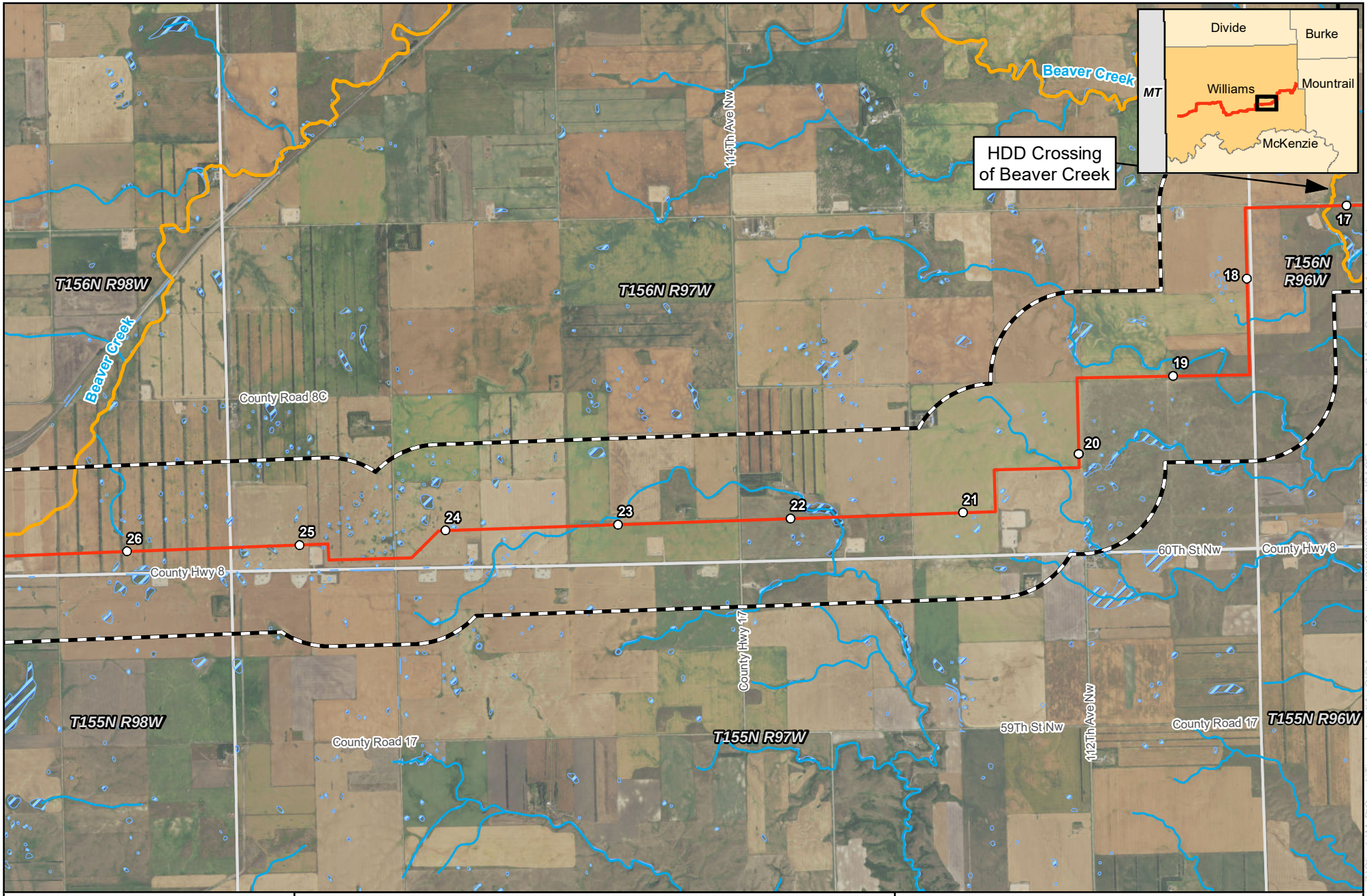

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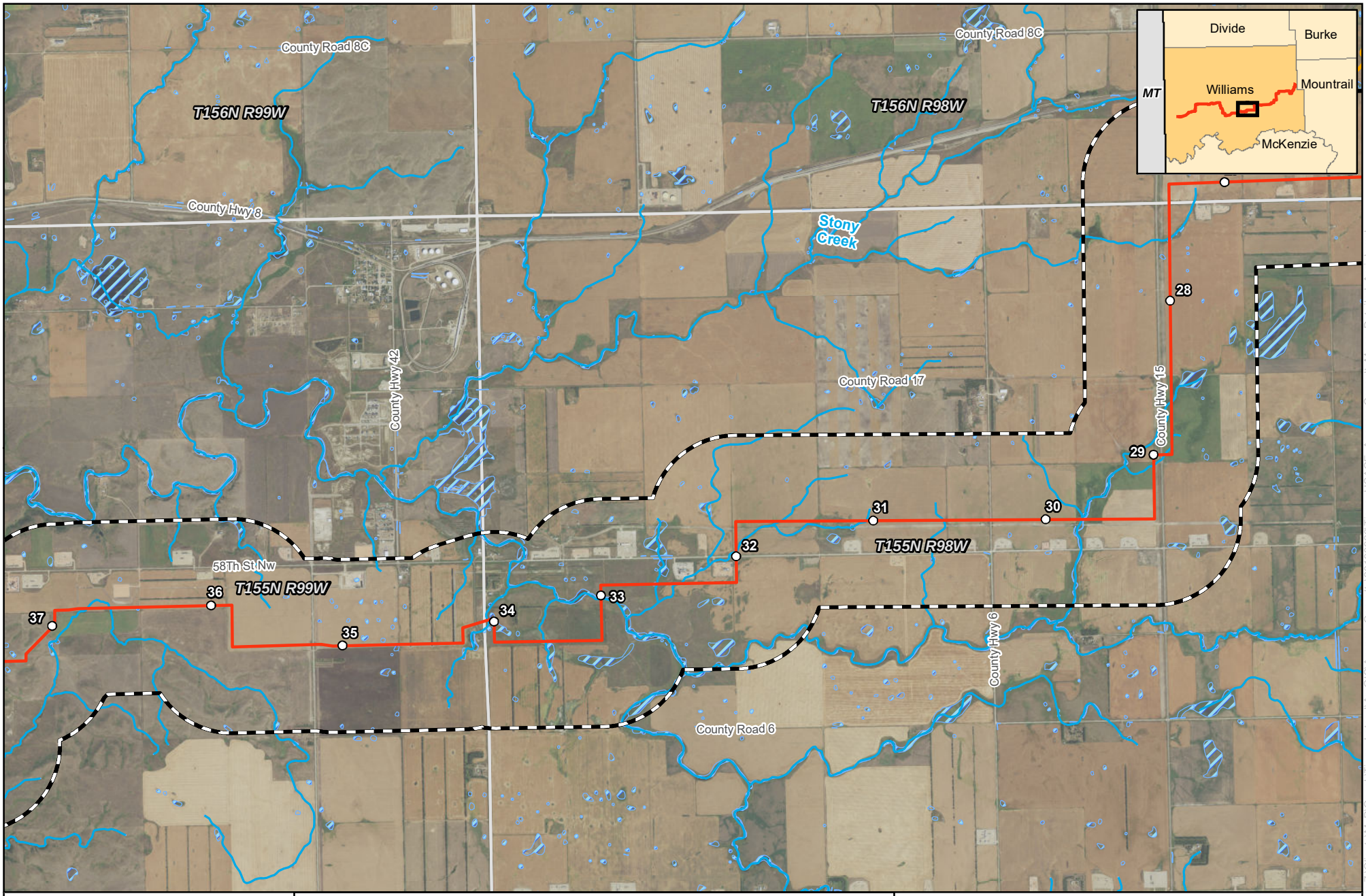

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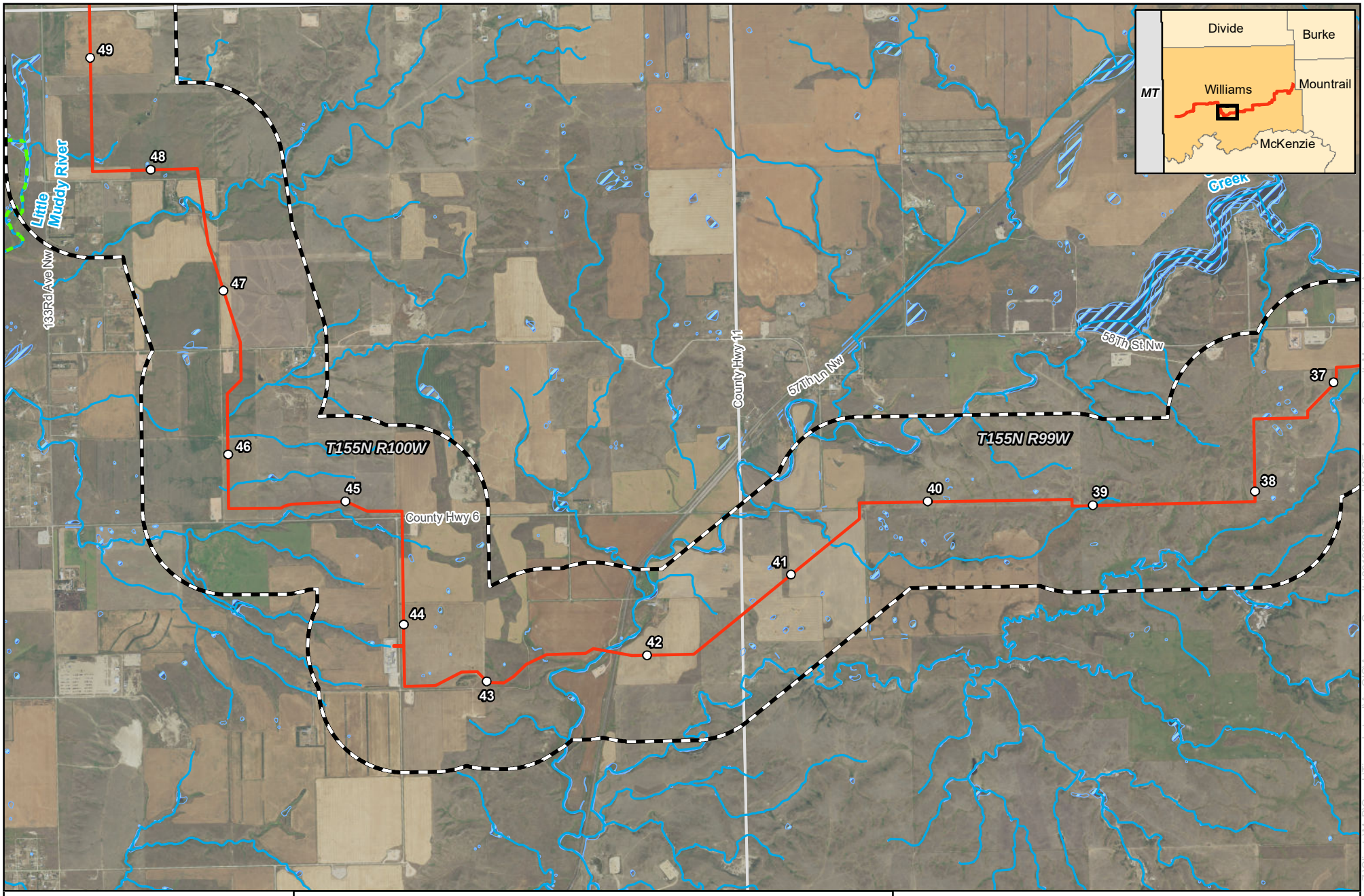

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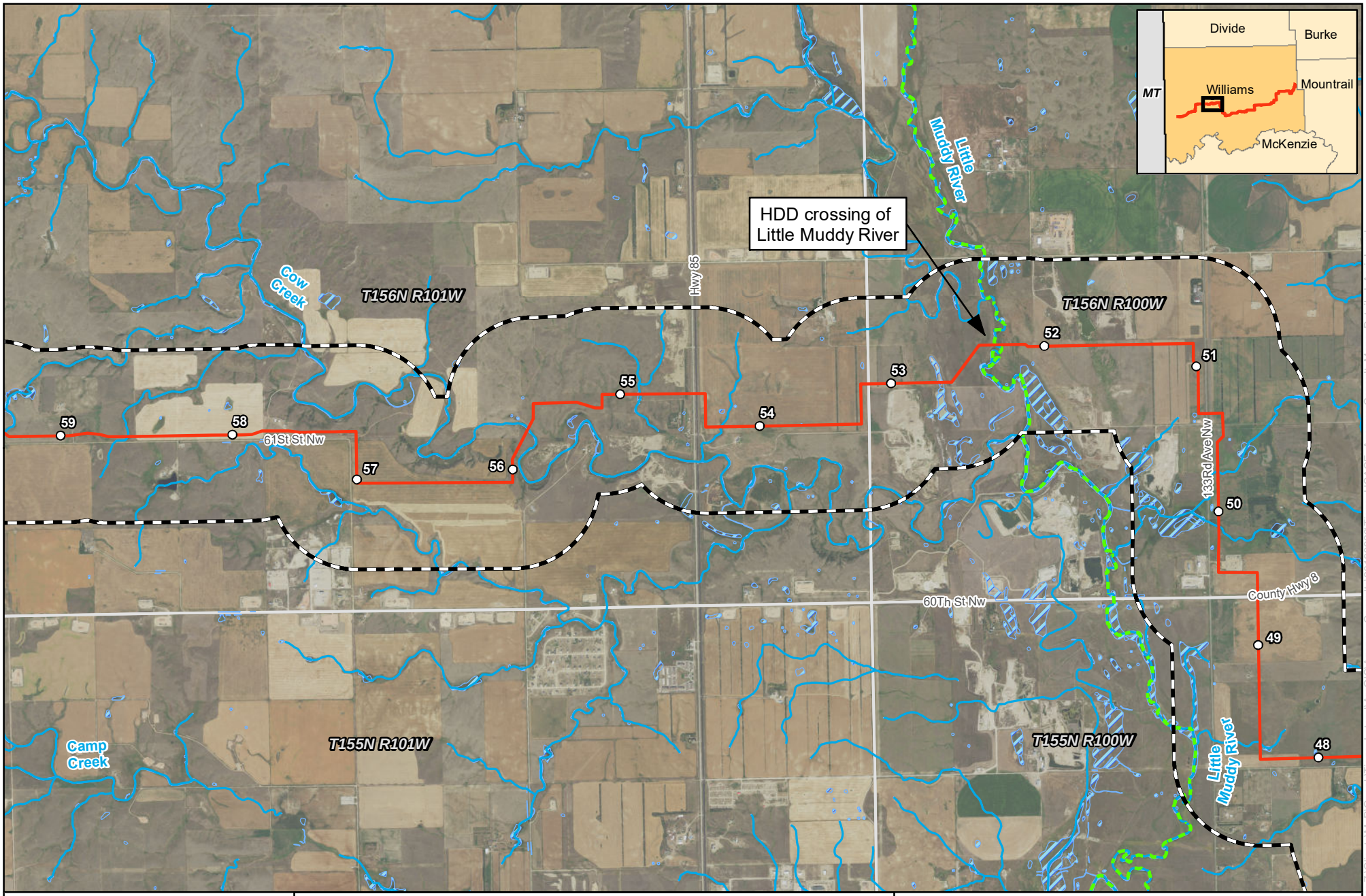

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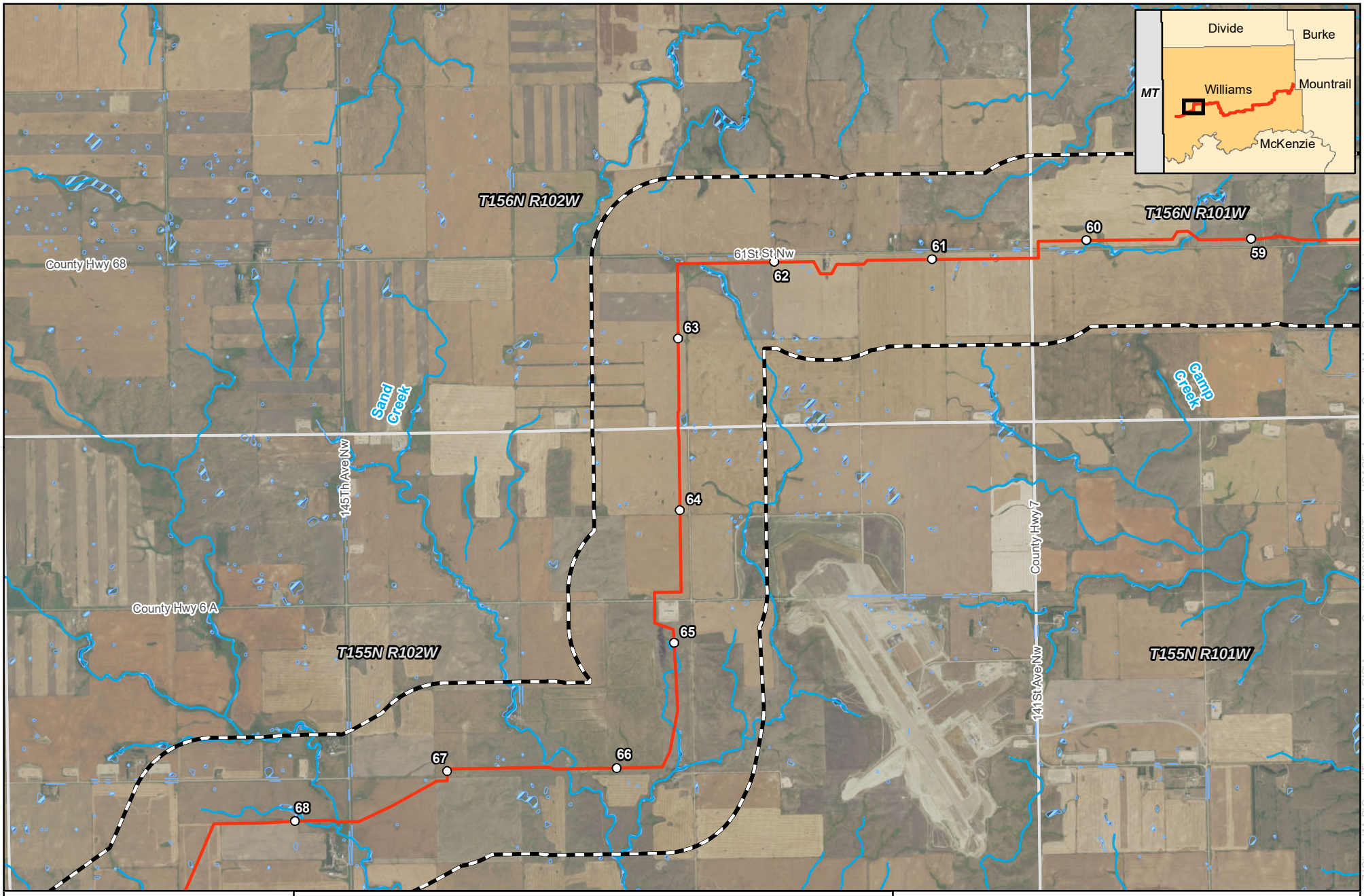

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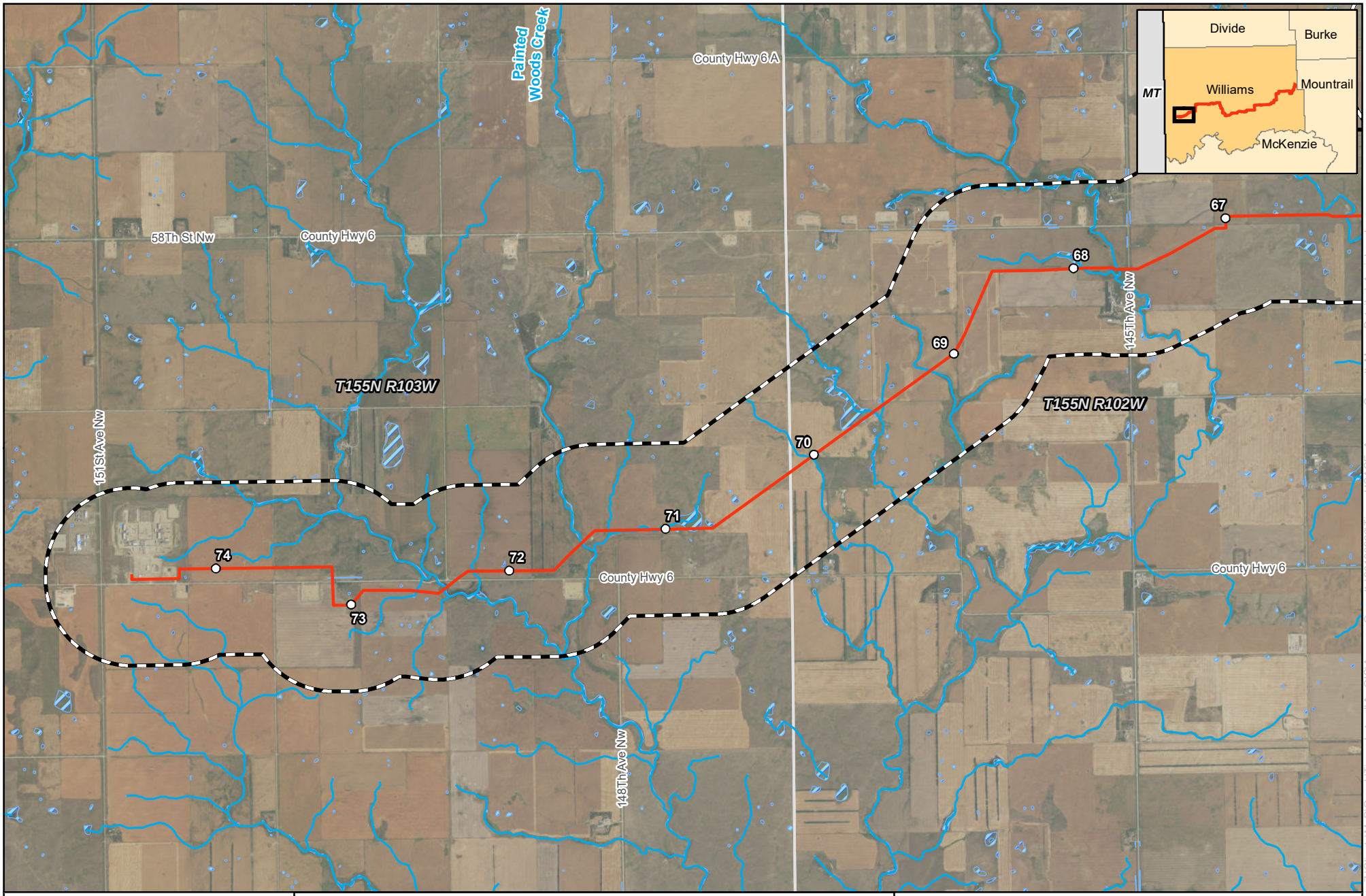

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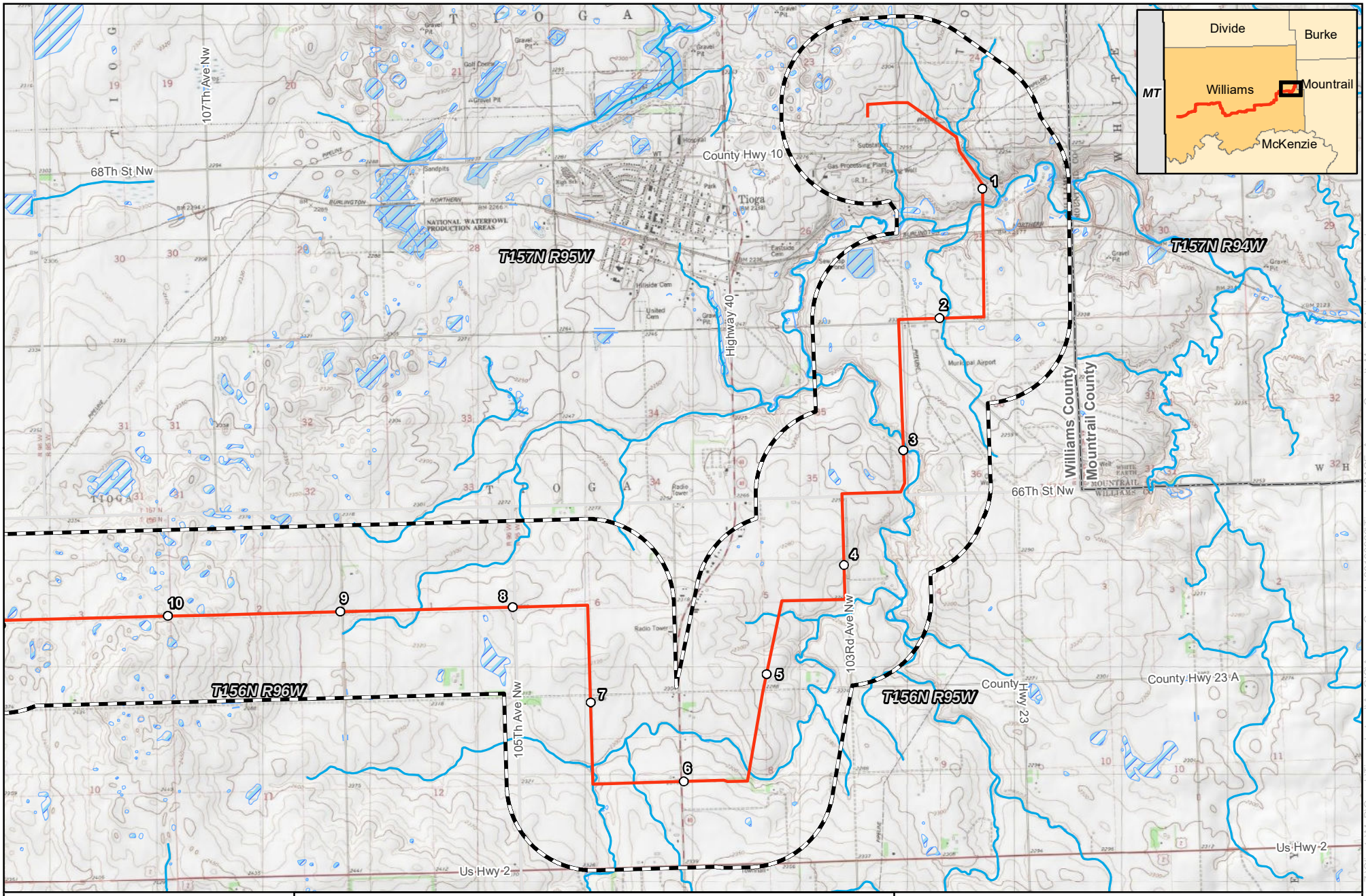

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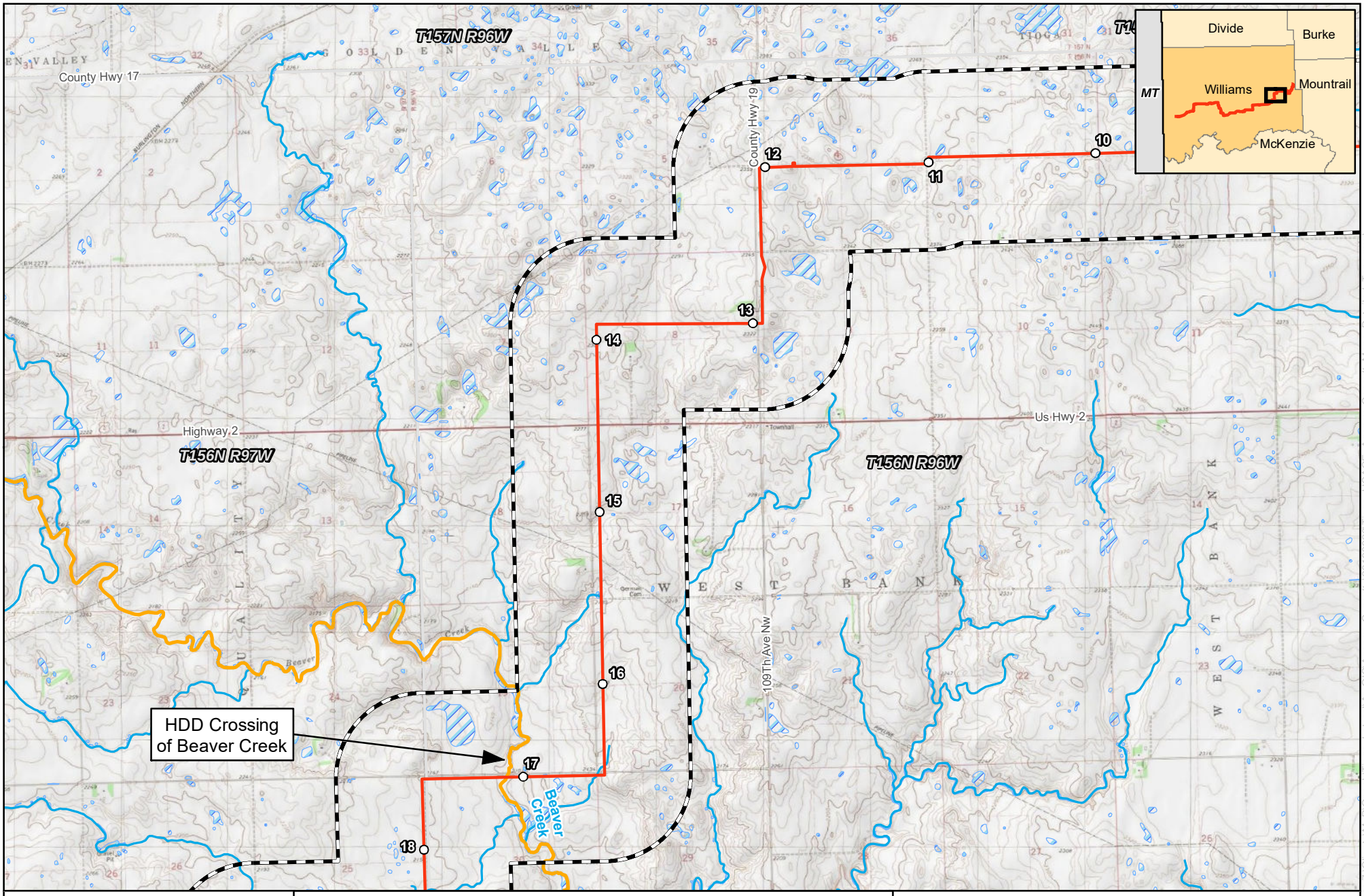

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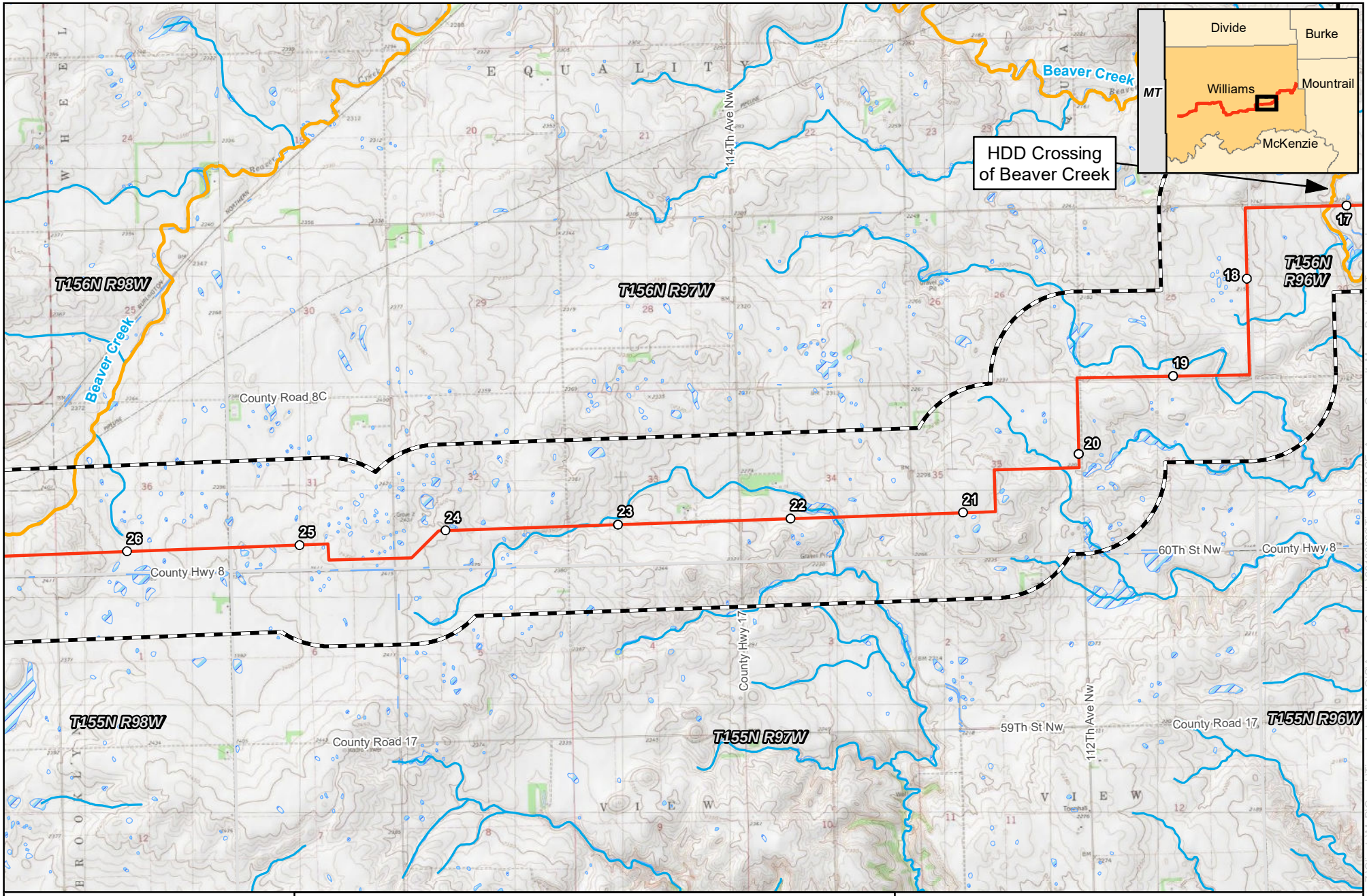

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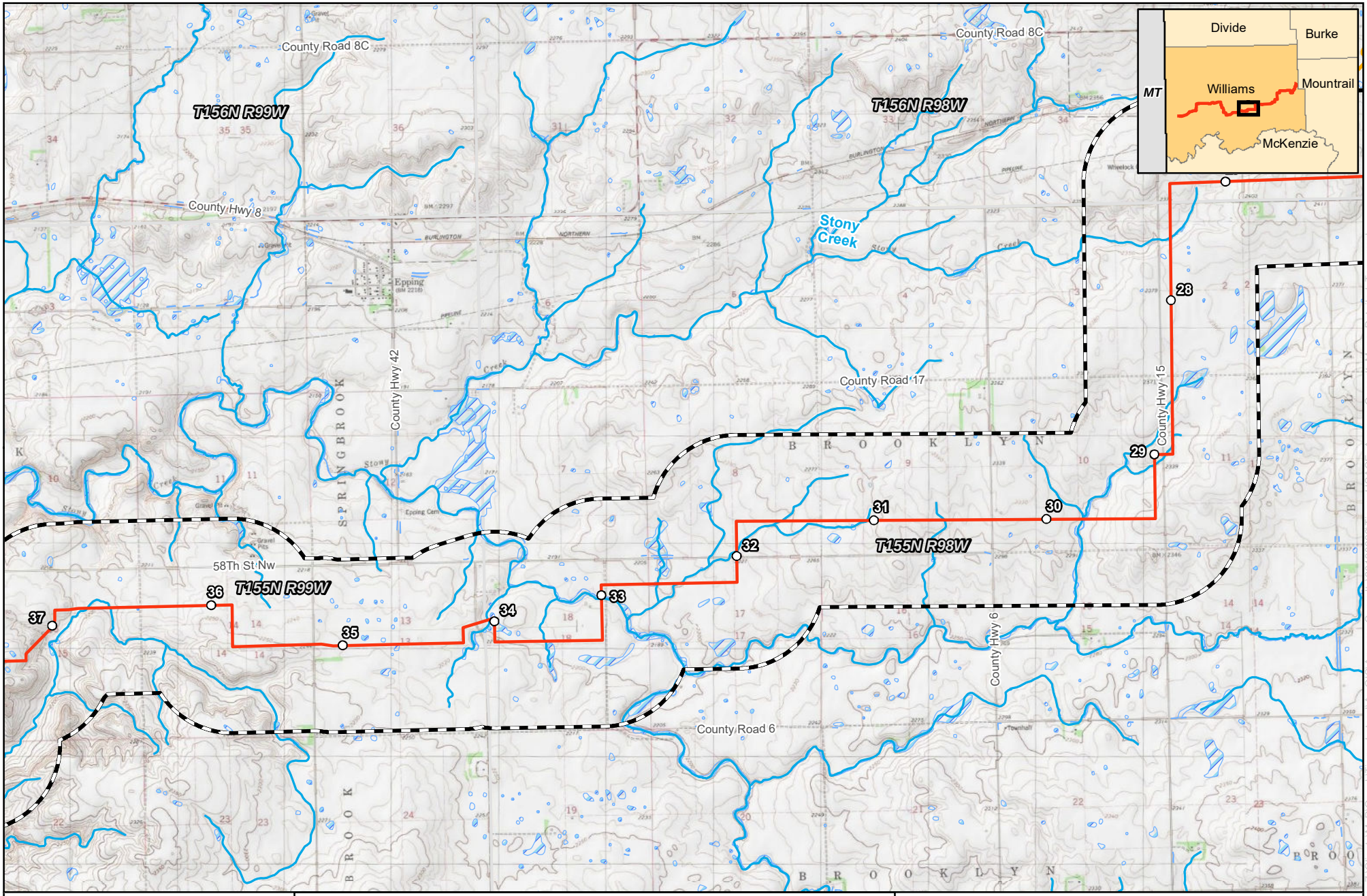

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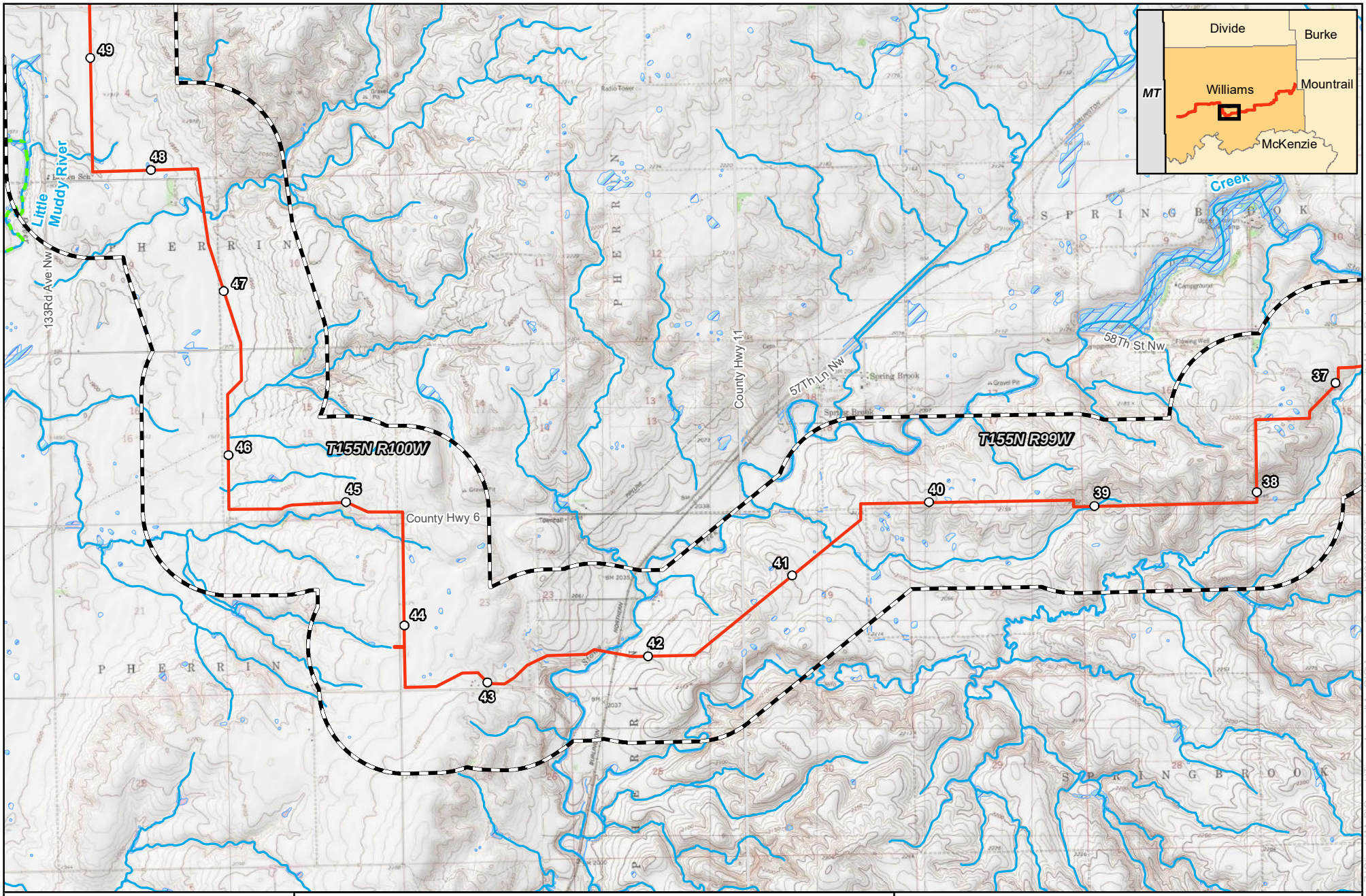

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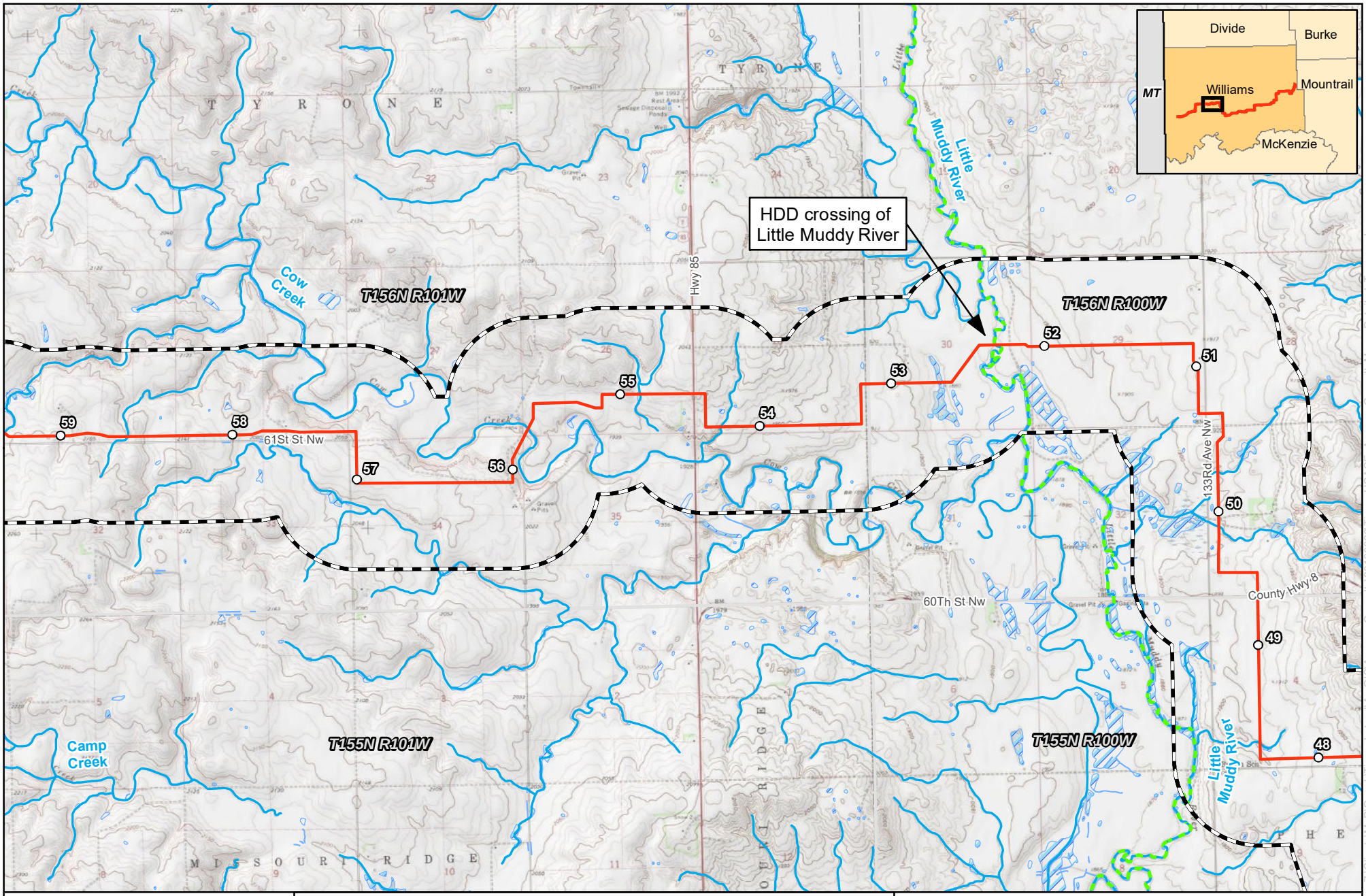

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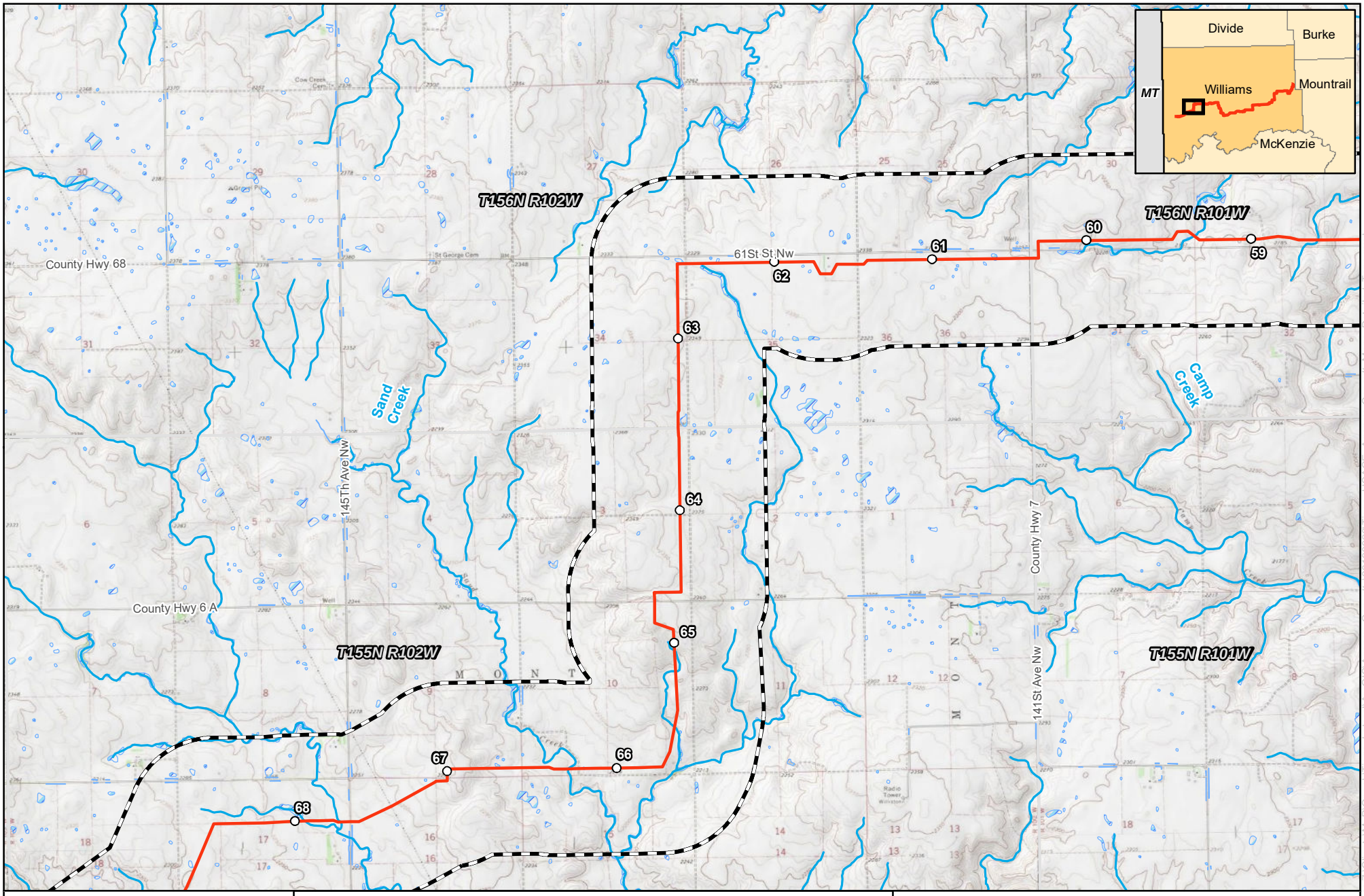

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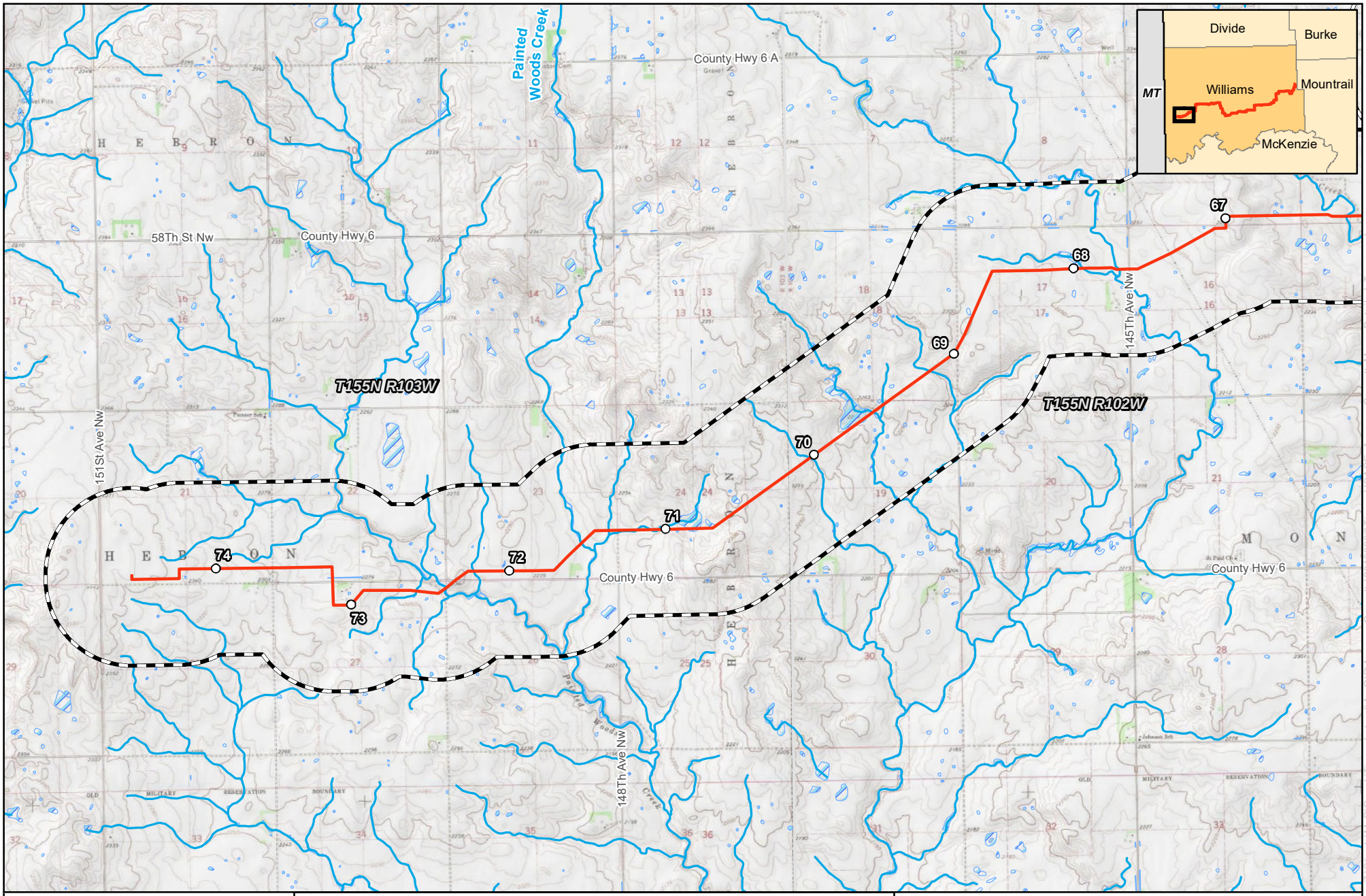

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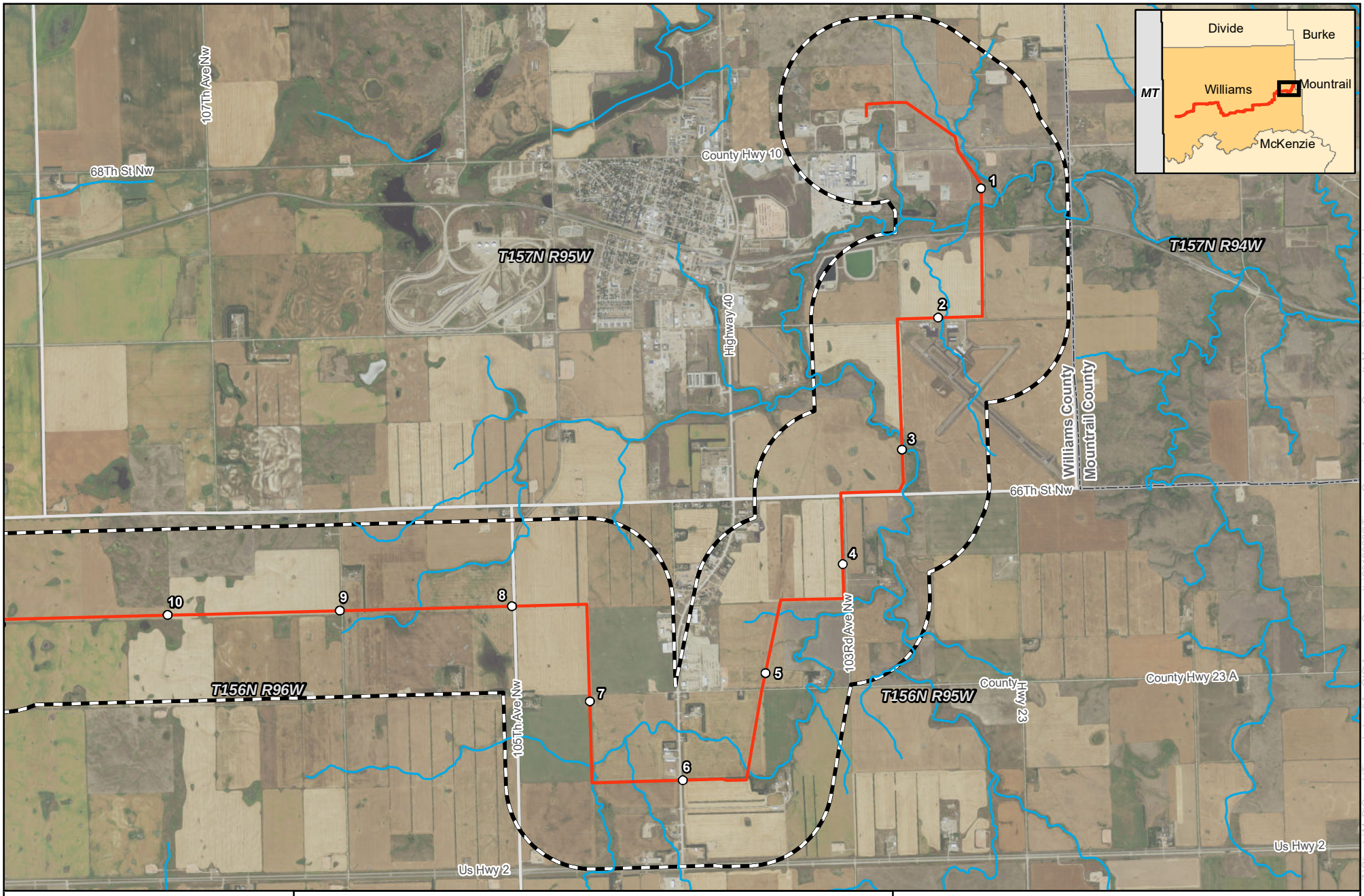

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ONEOK Bakken Pipeline, L.L.C.

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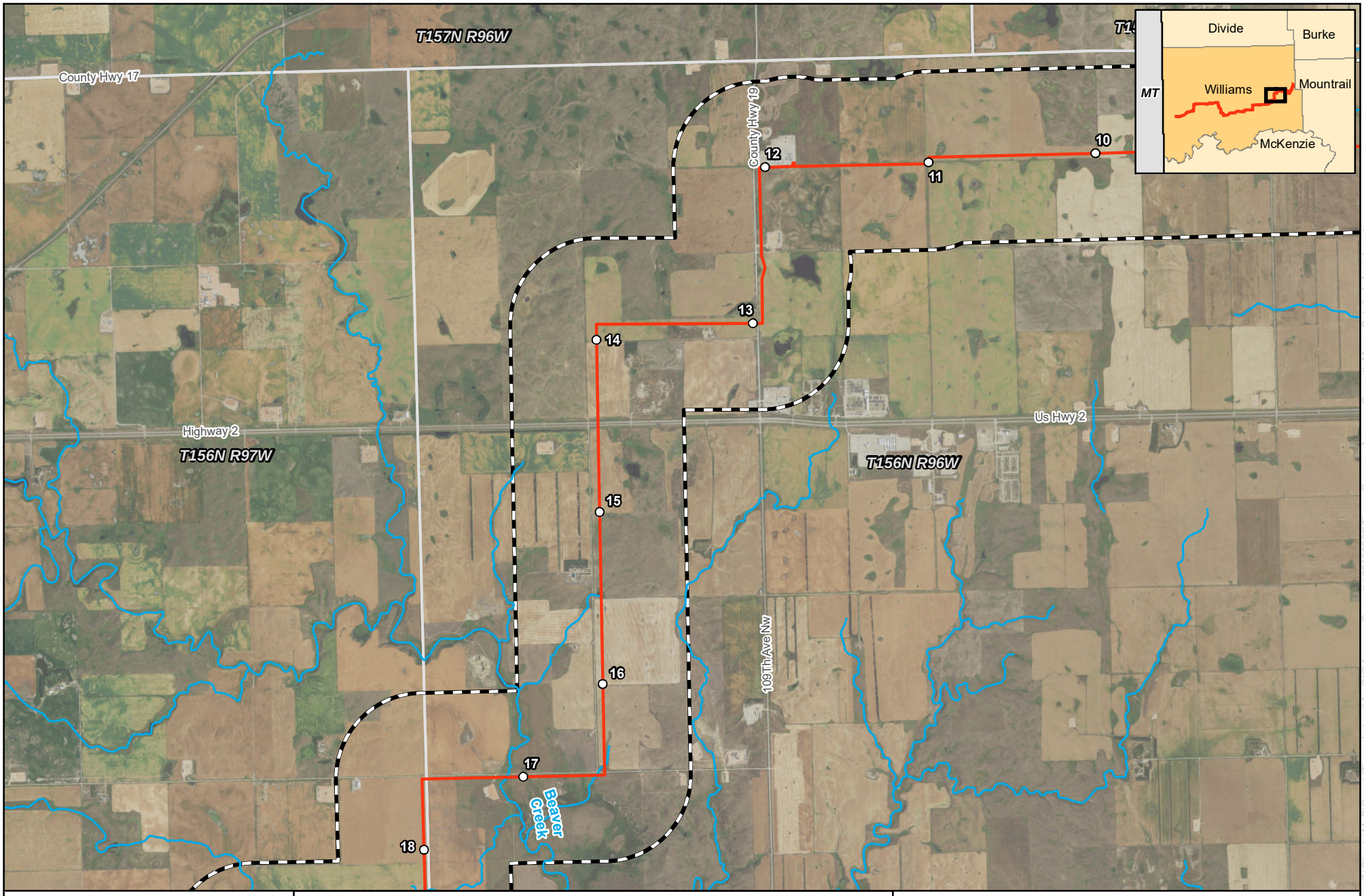

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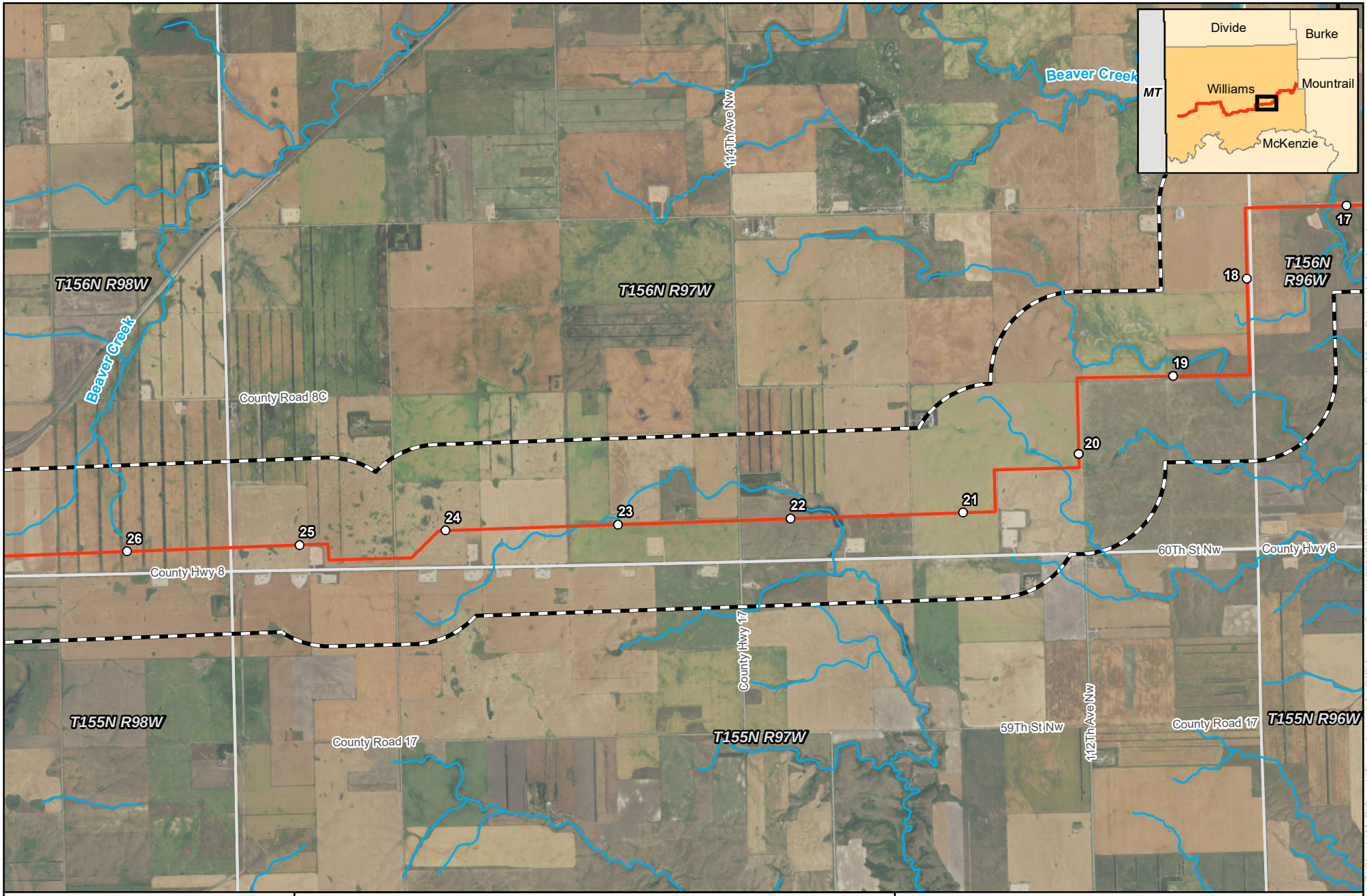

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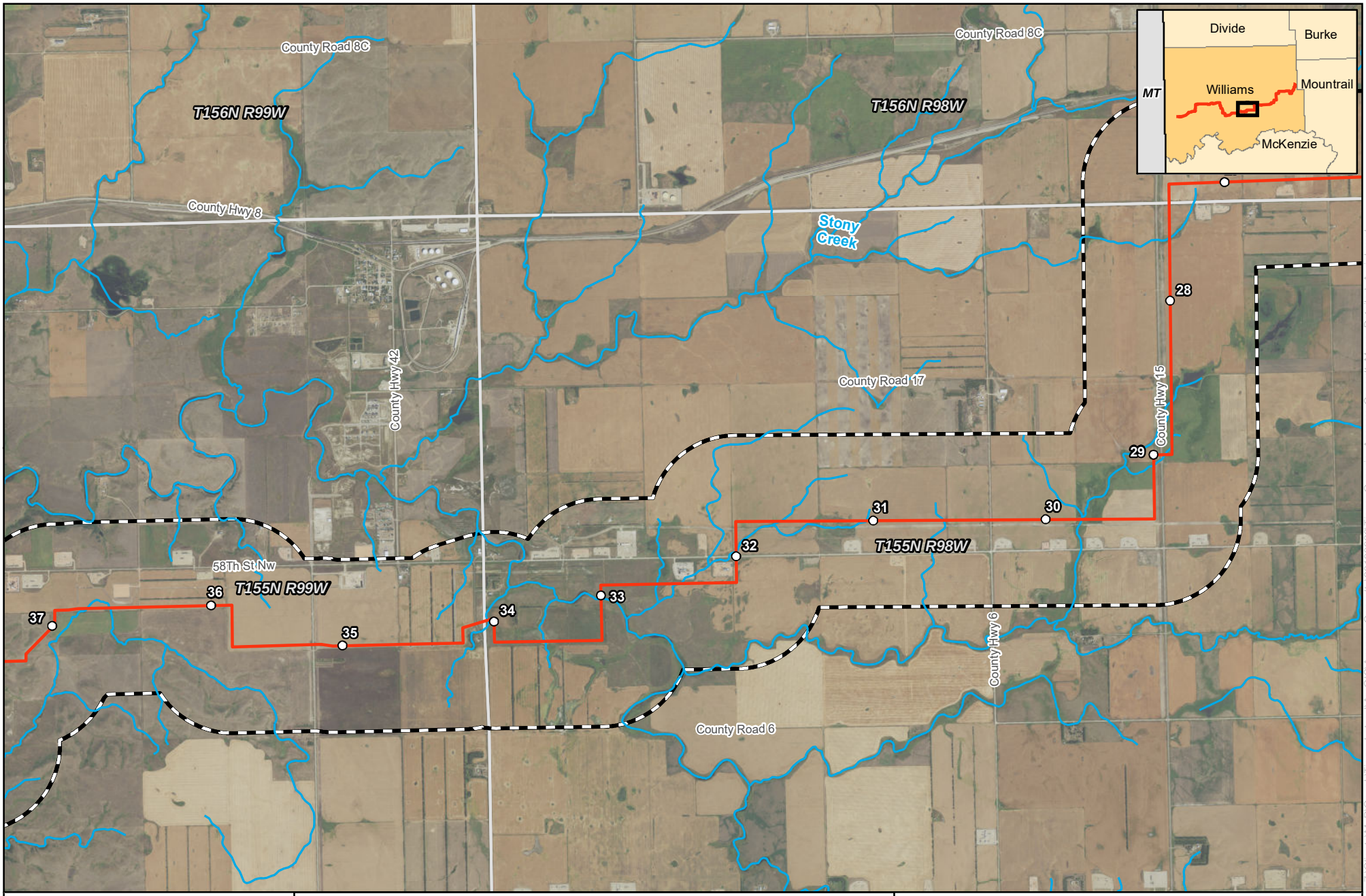

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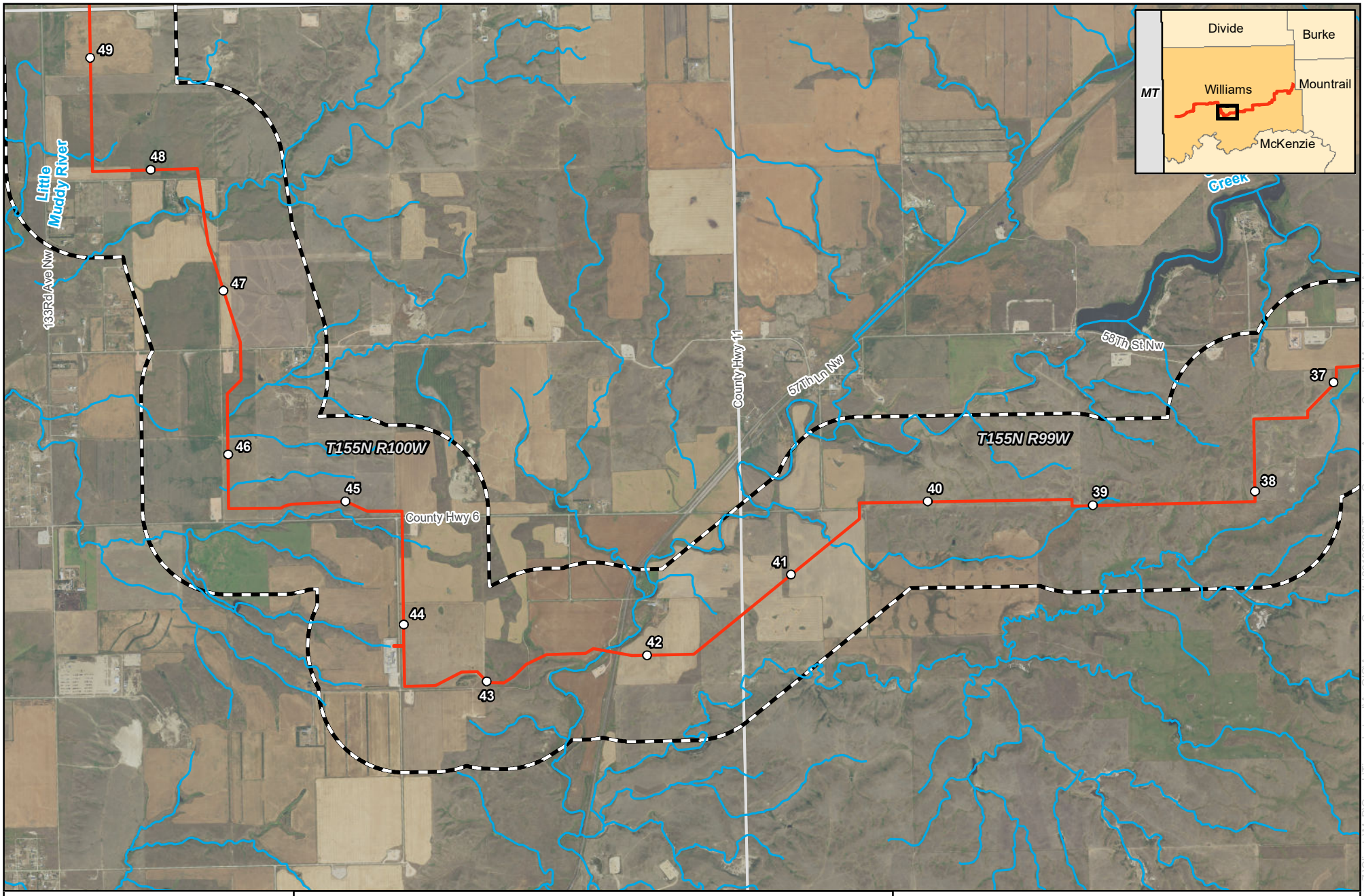

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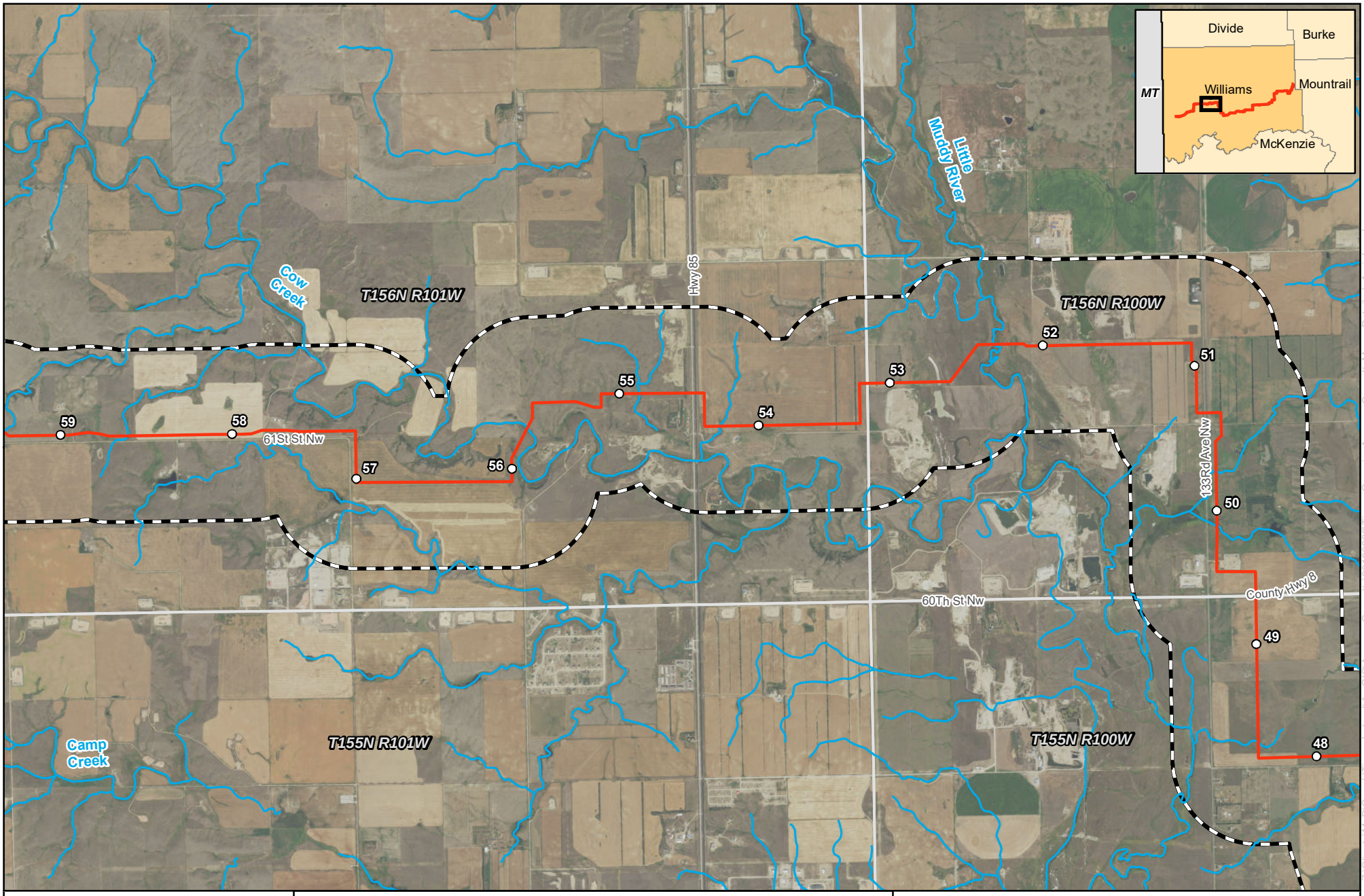

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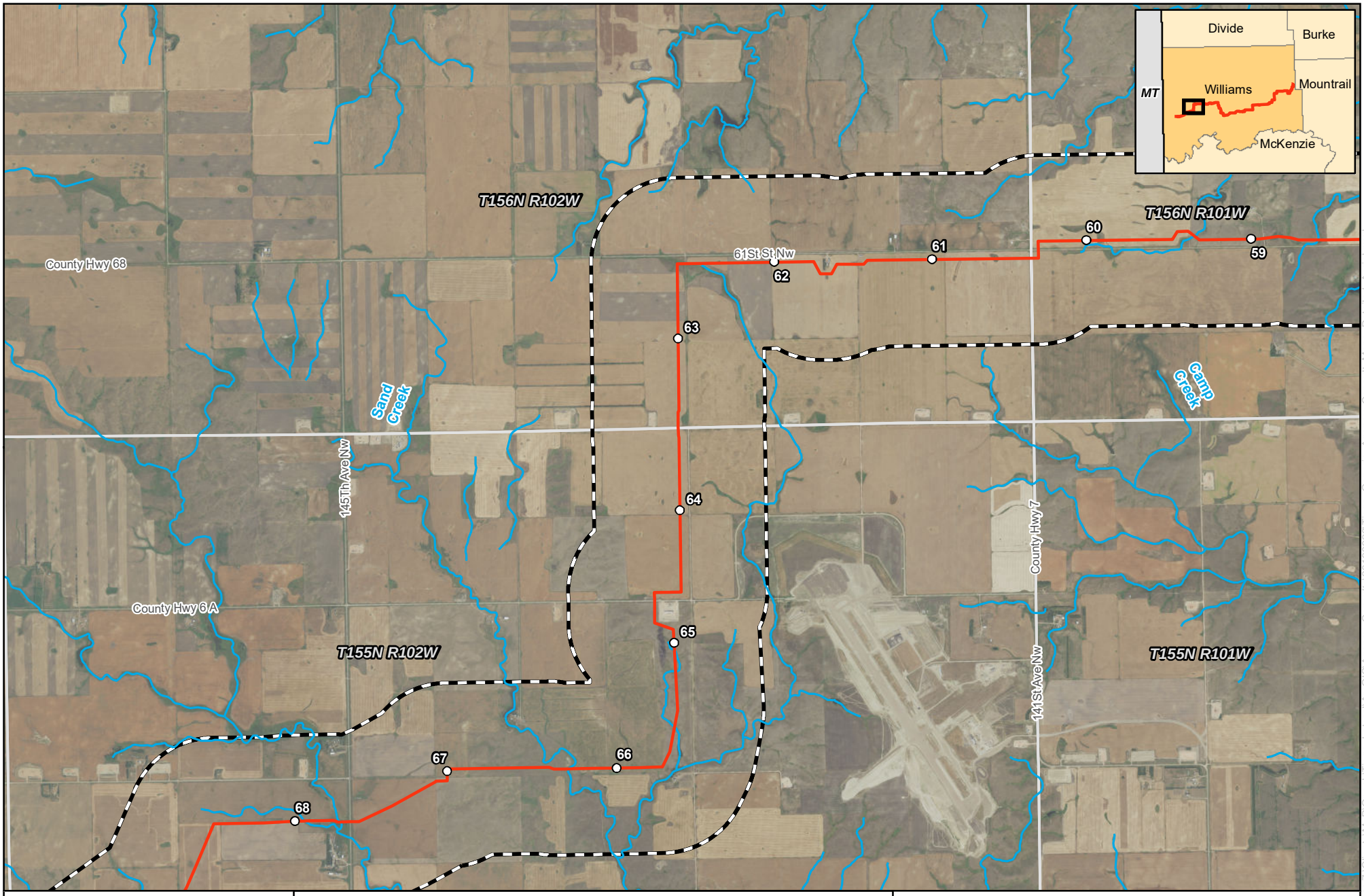

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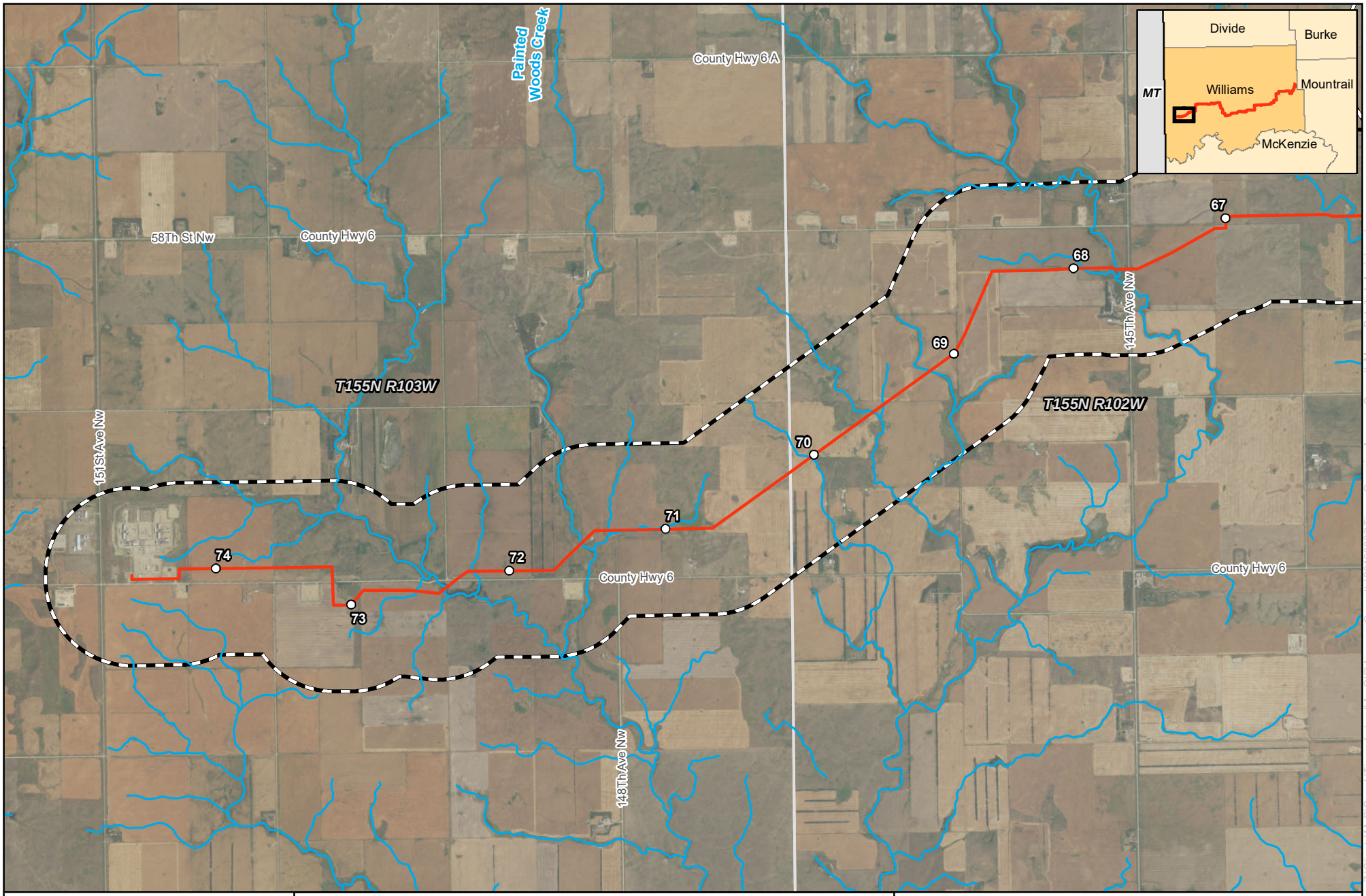

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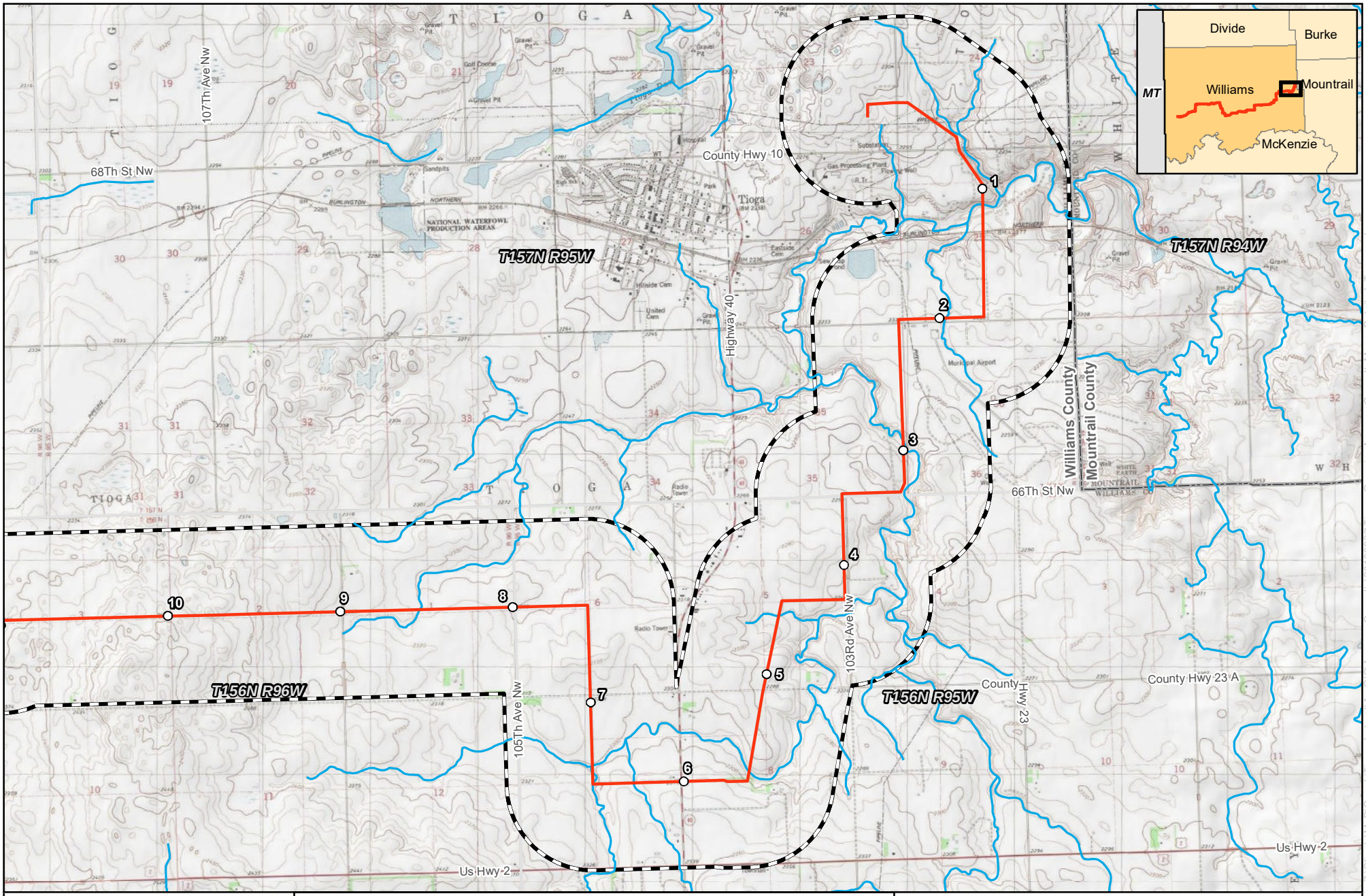

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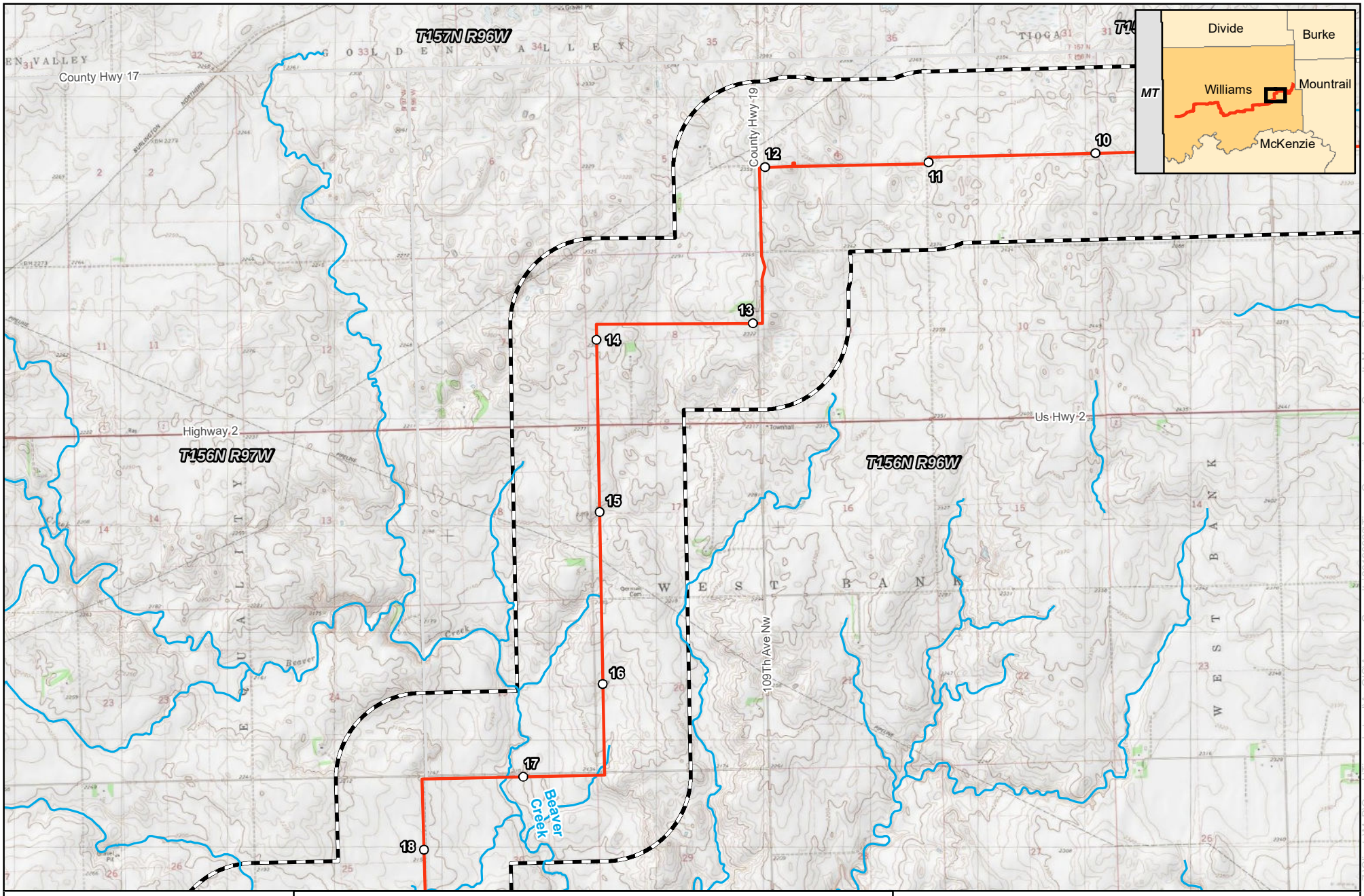

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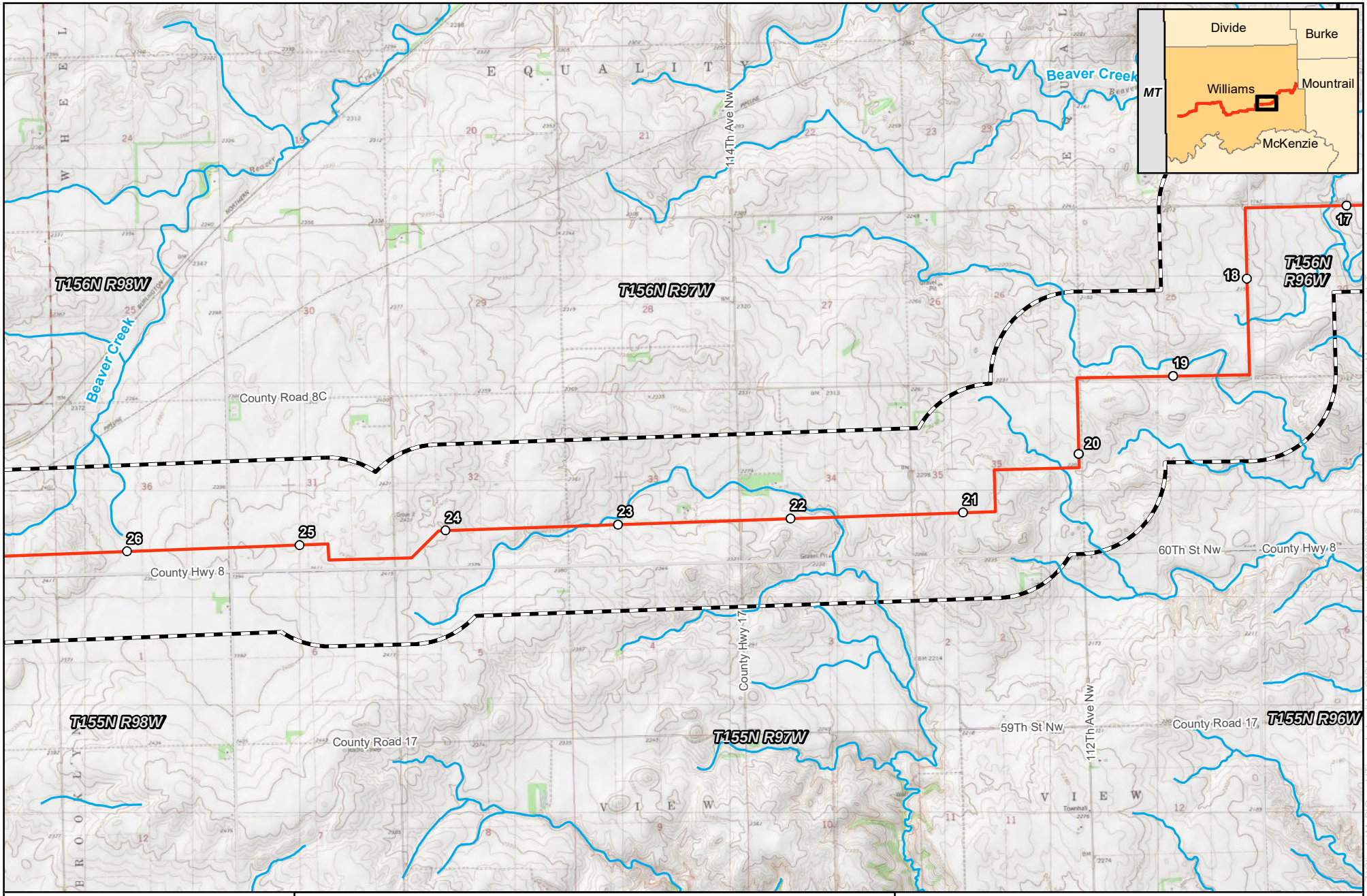

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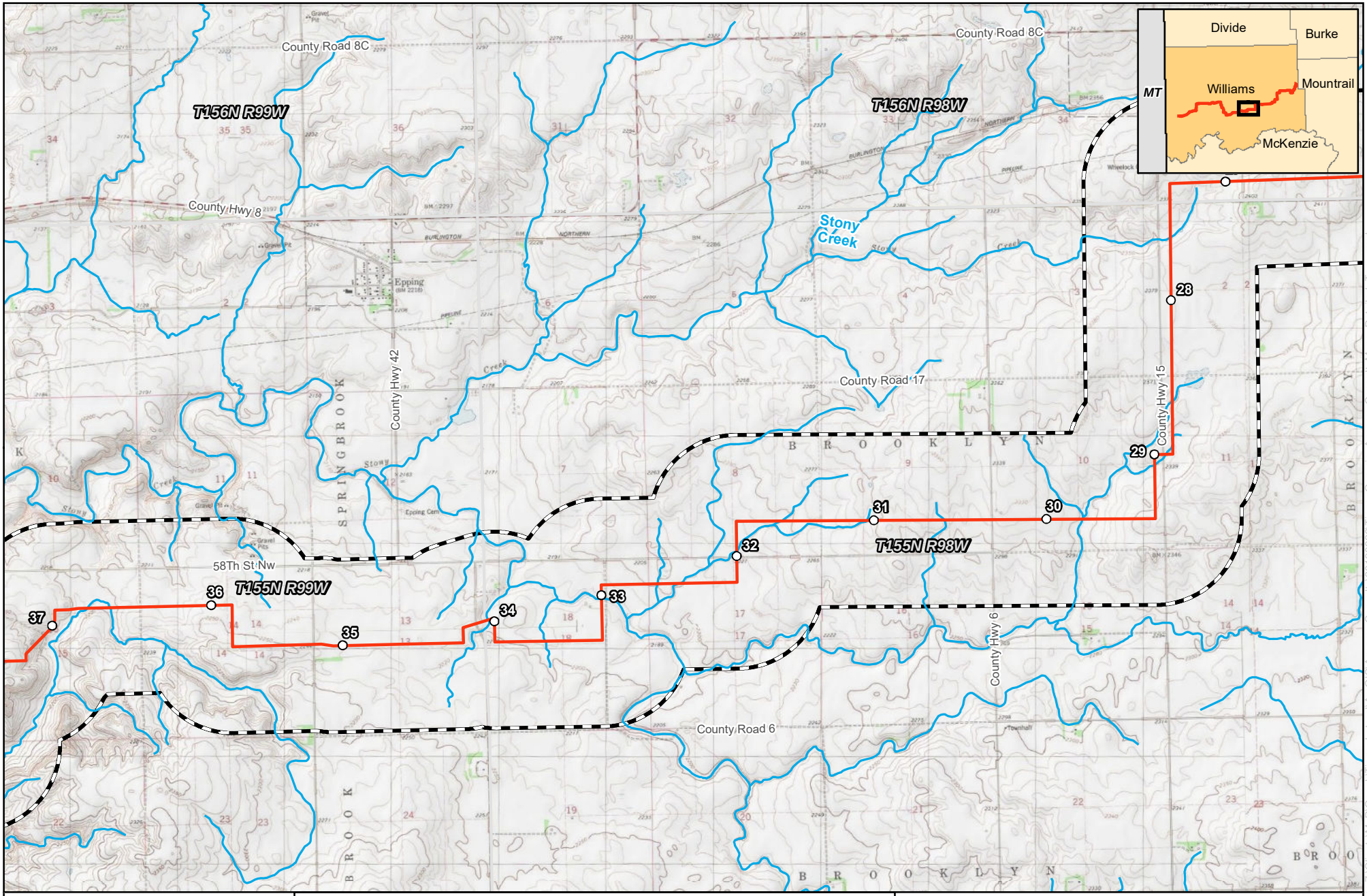

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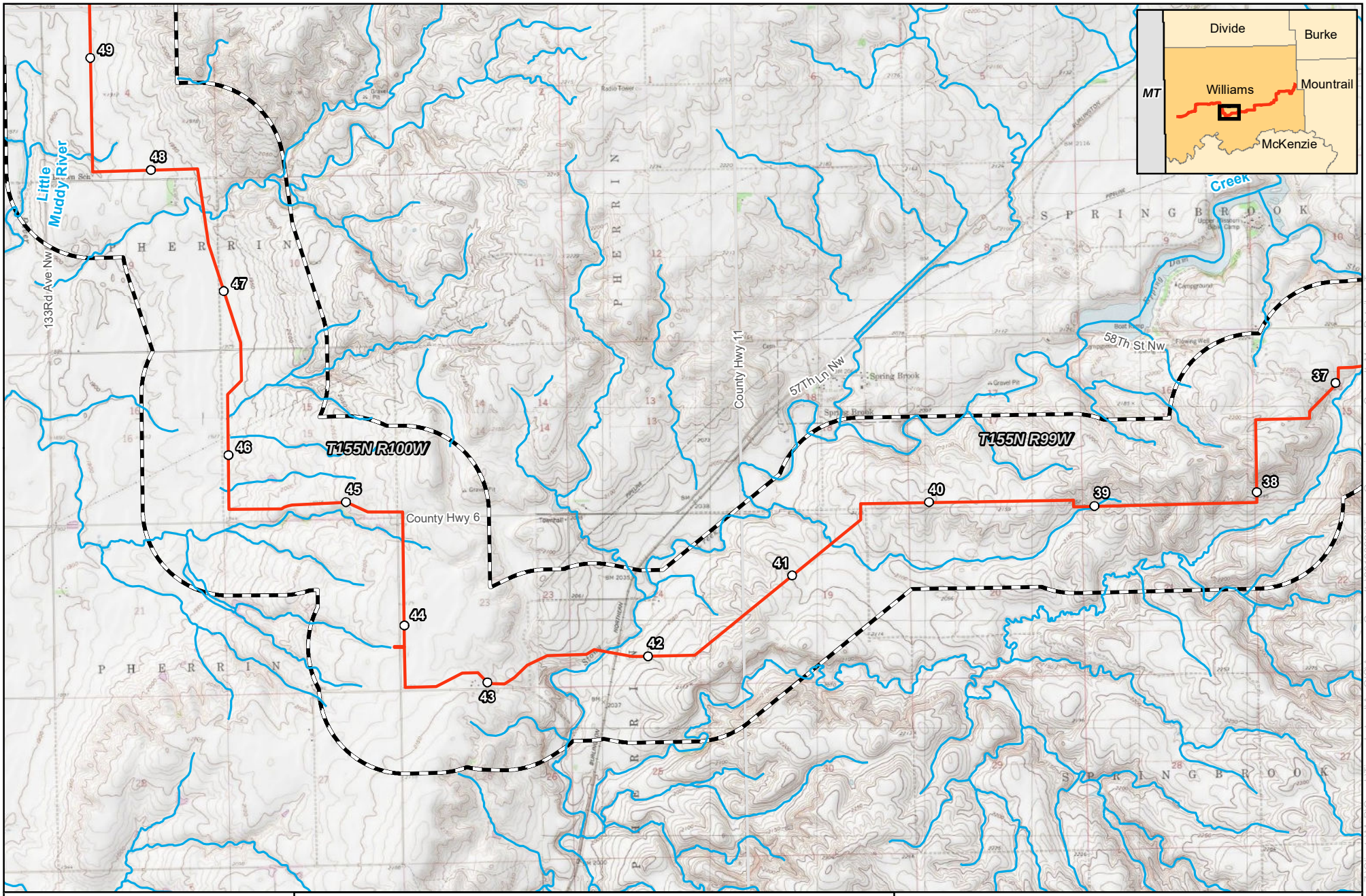

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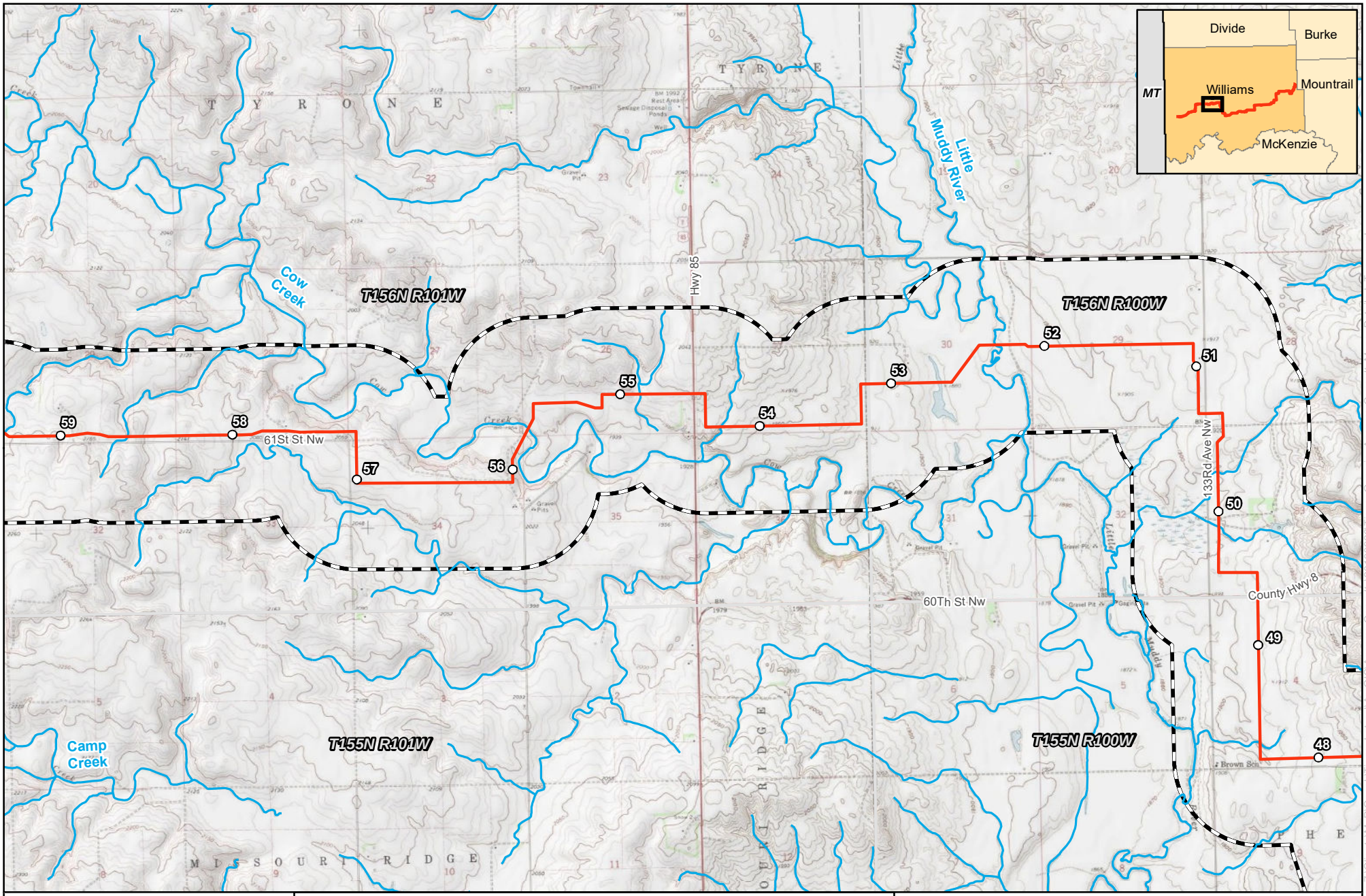

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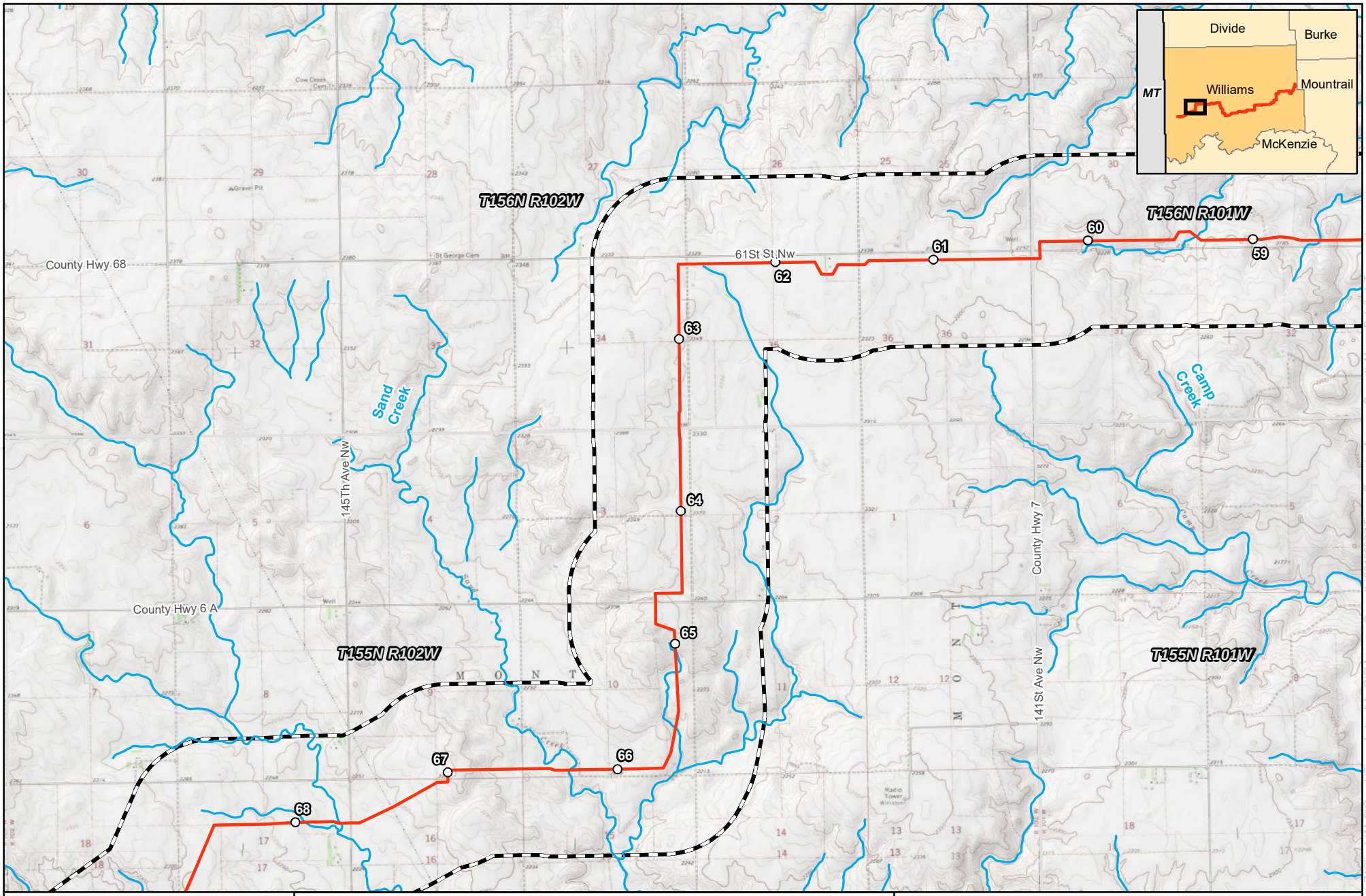

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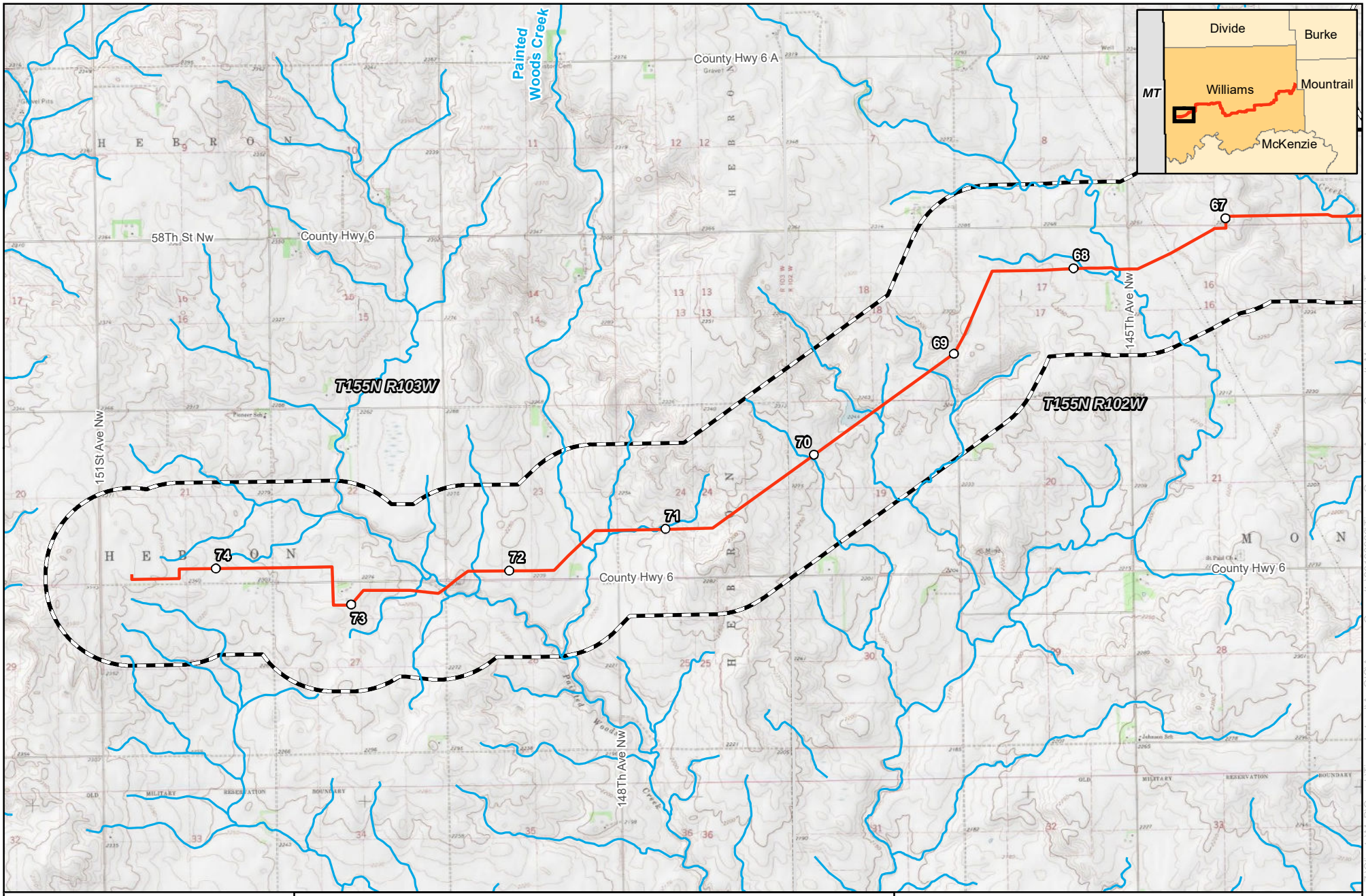

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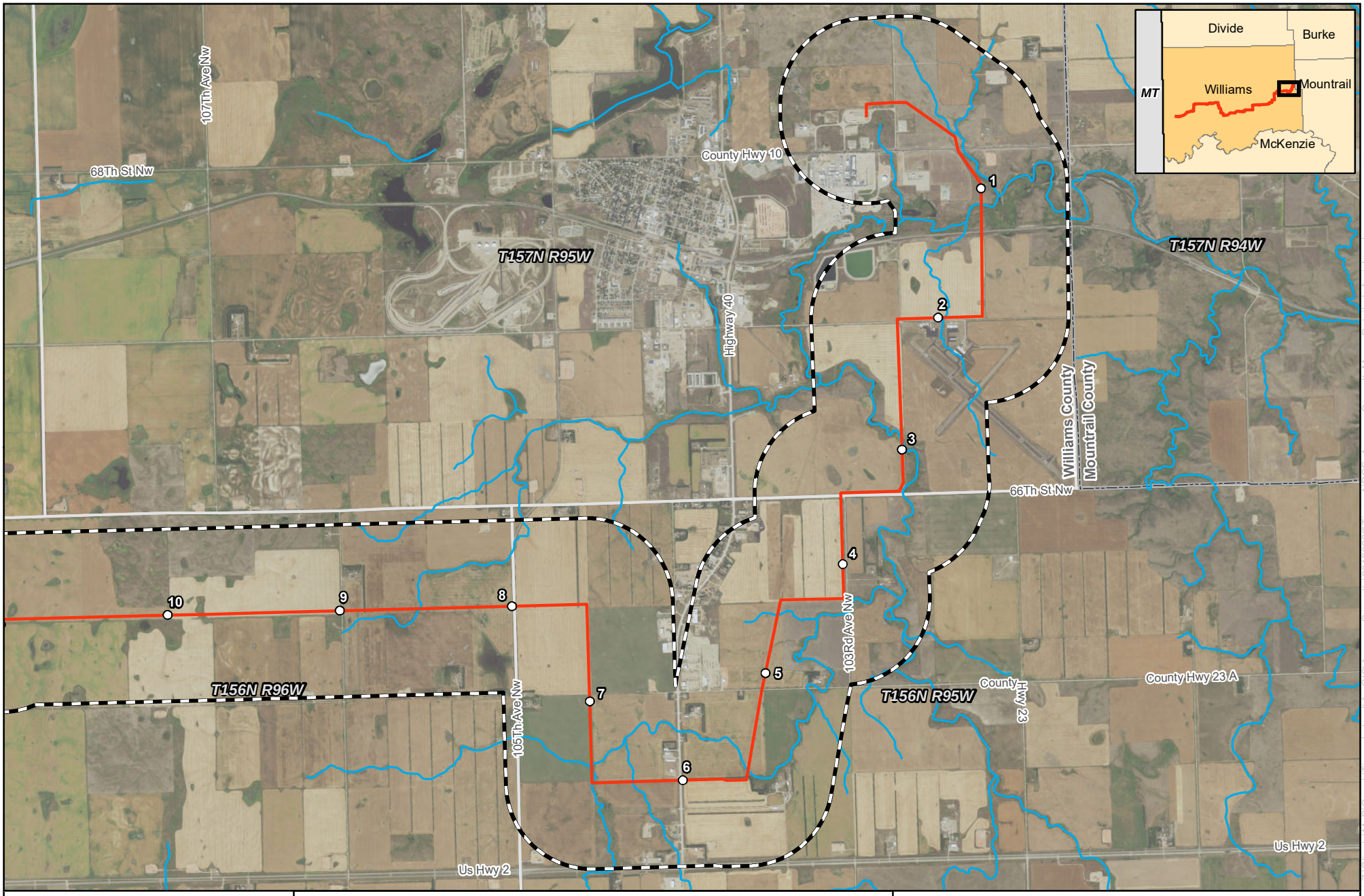

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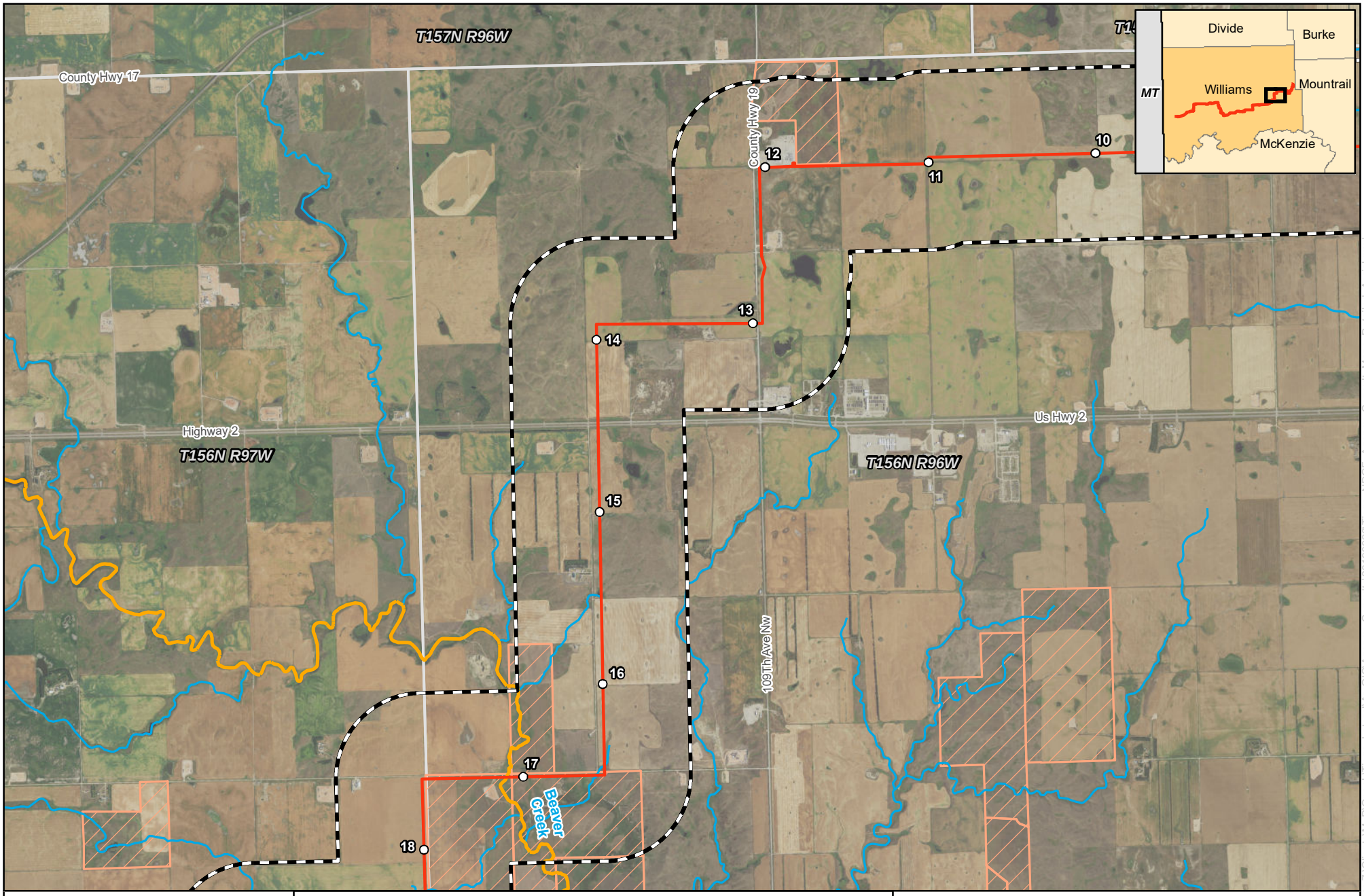

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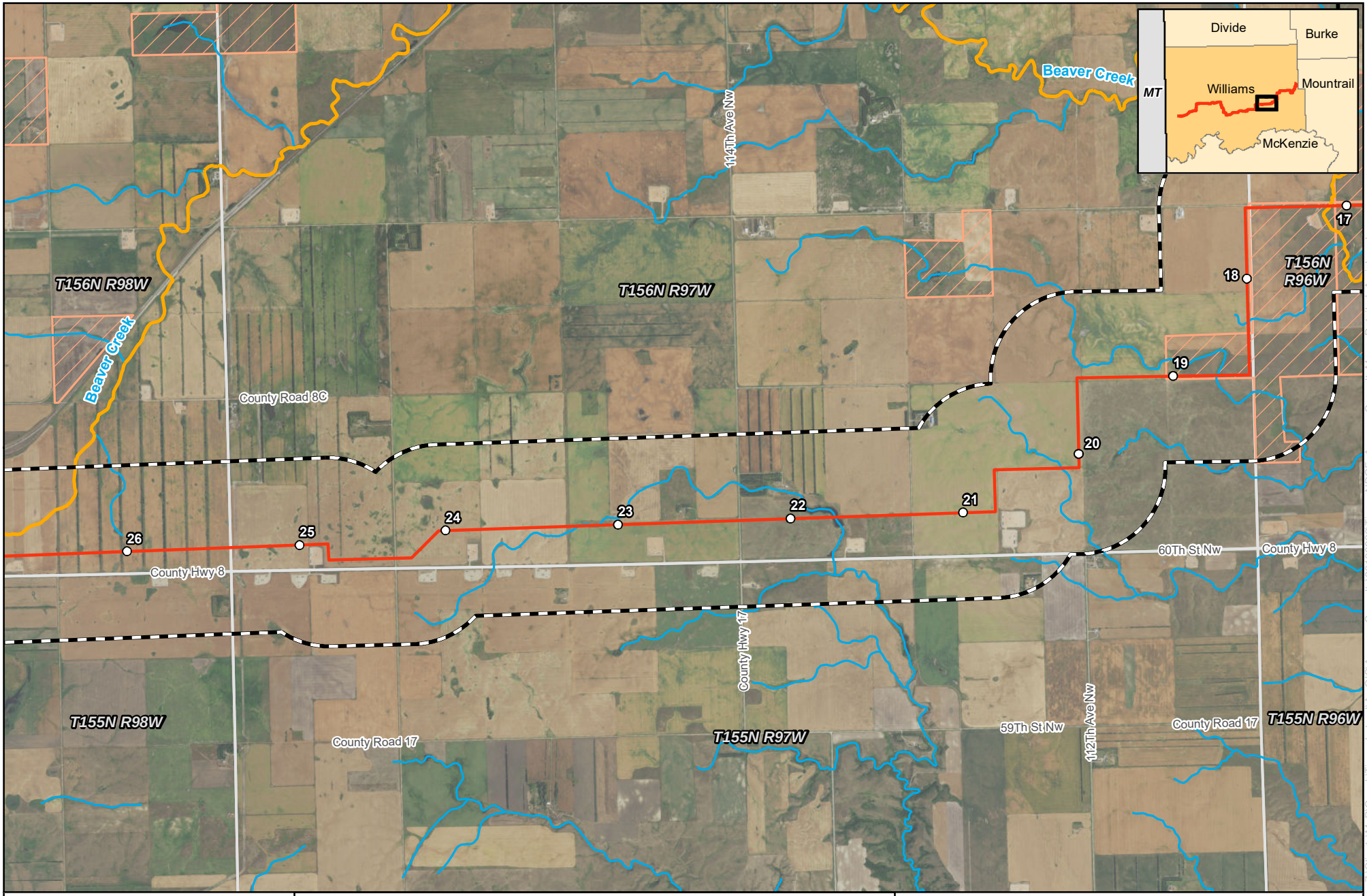

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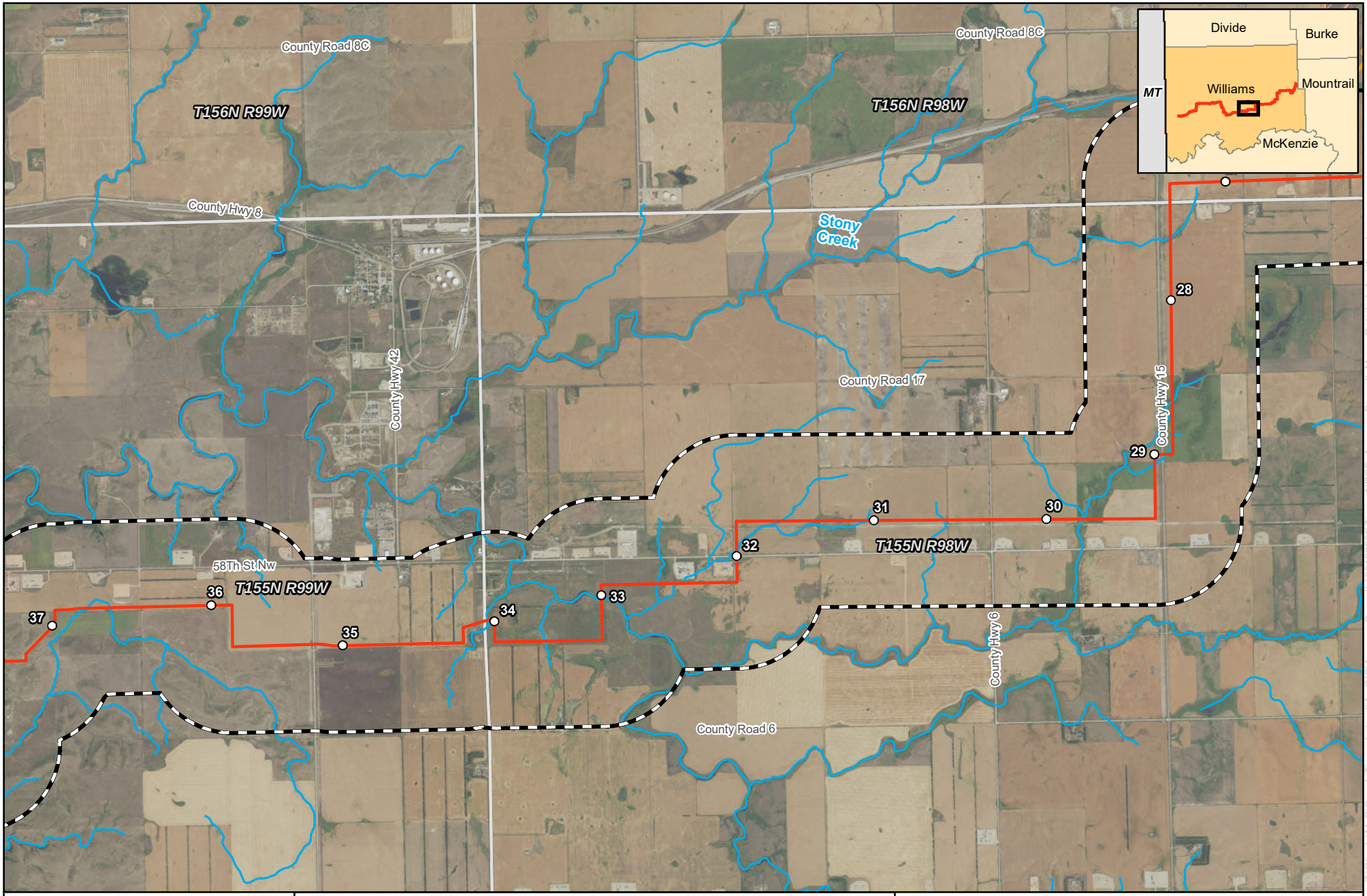

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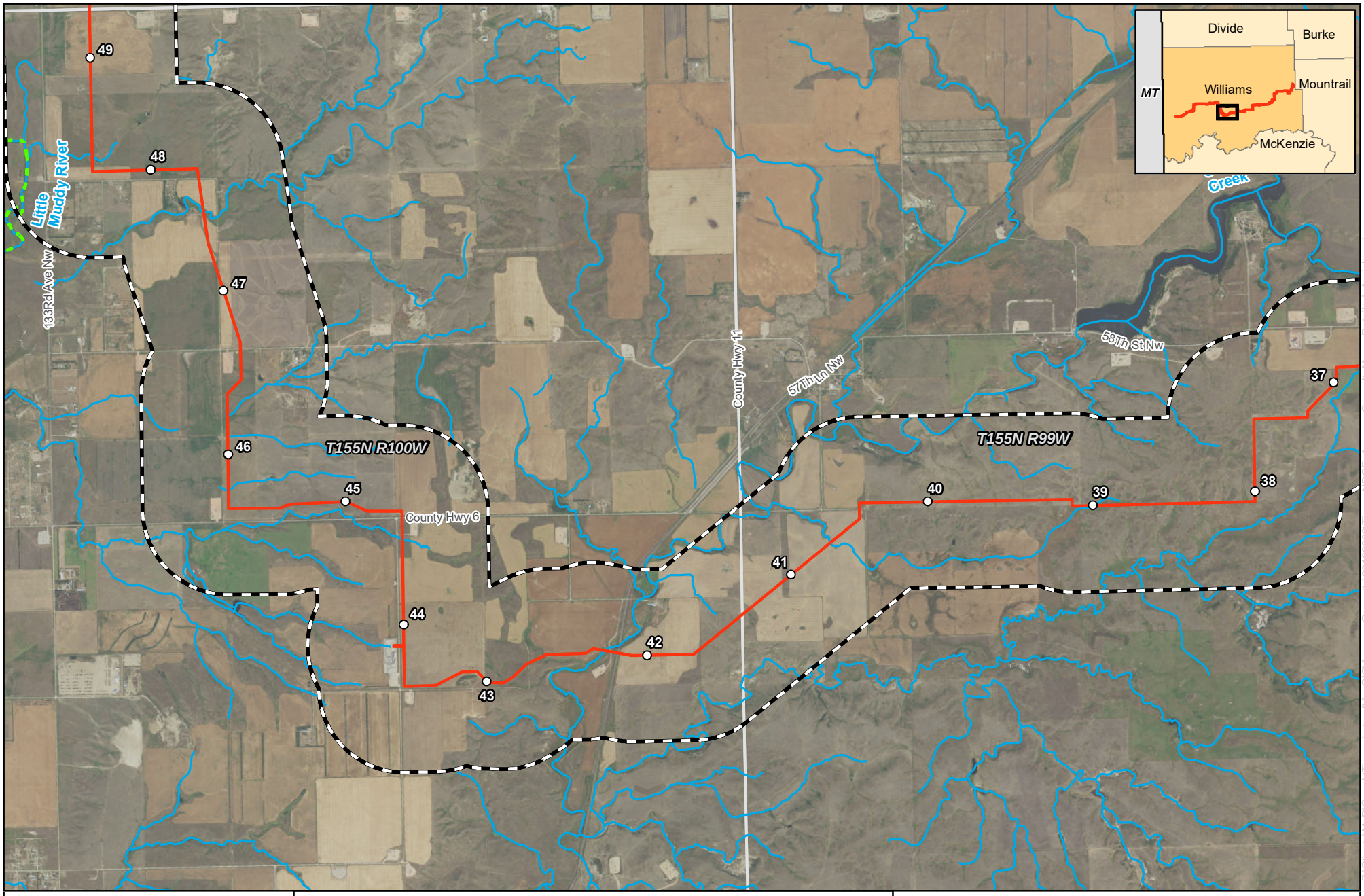

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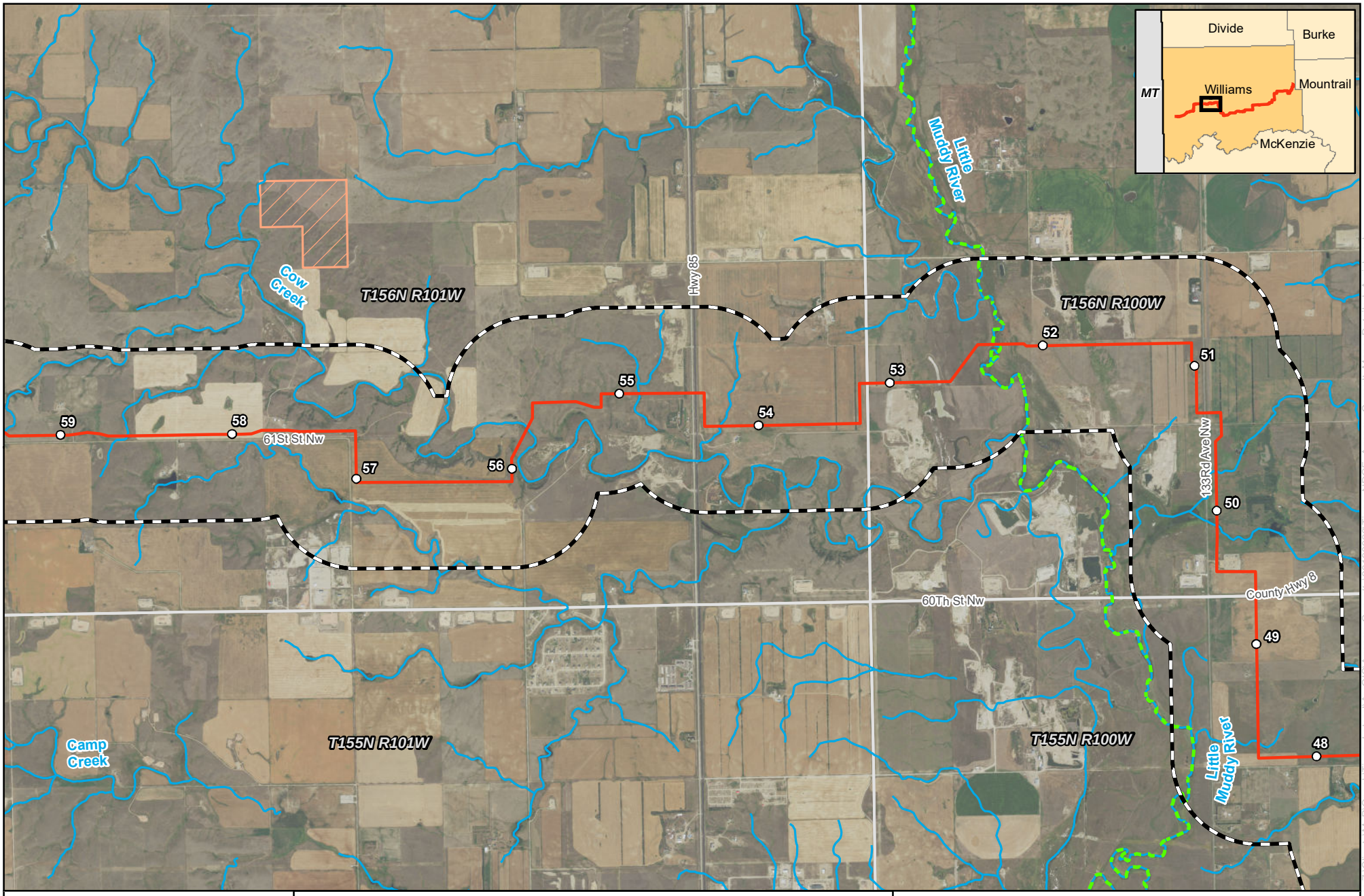

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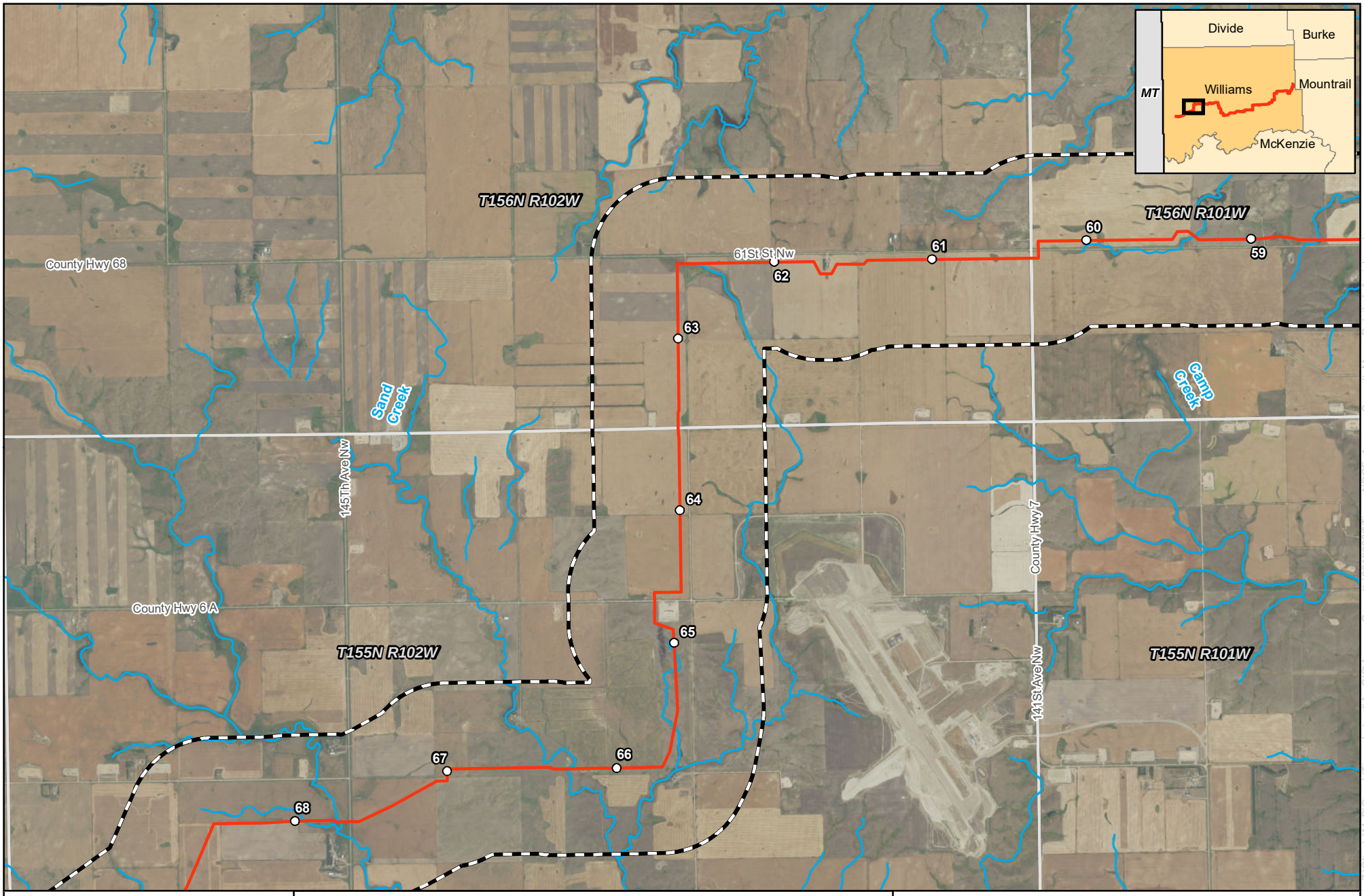

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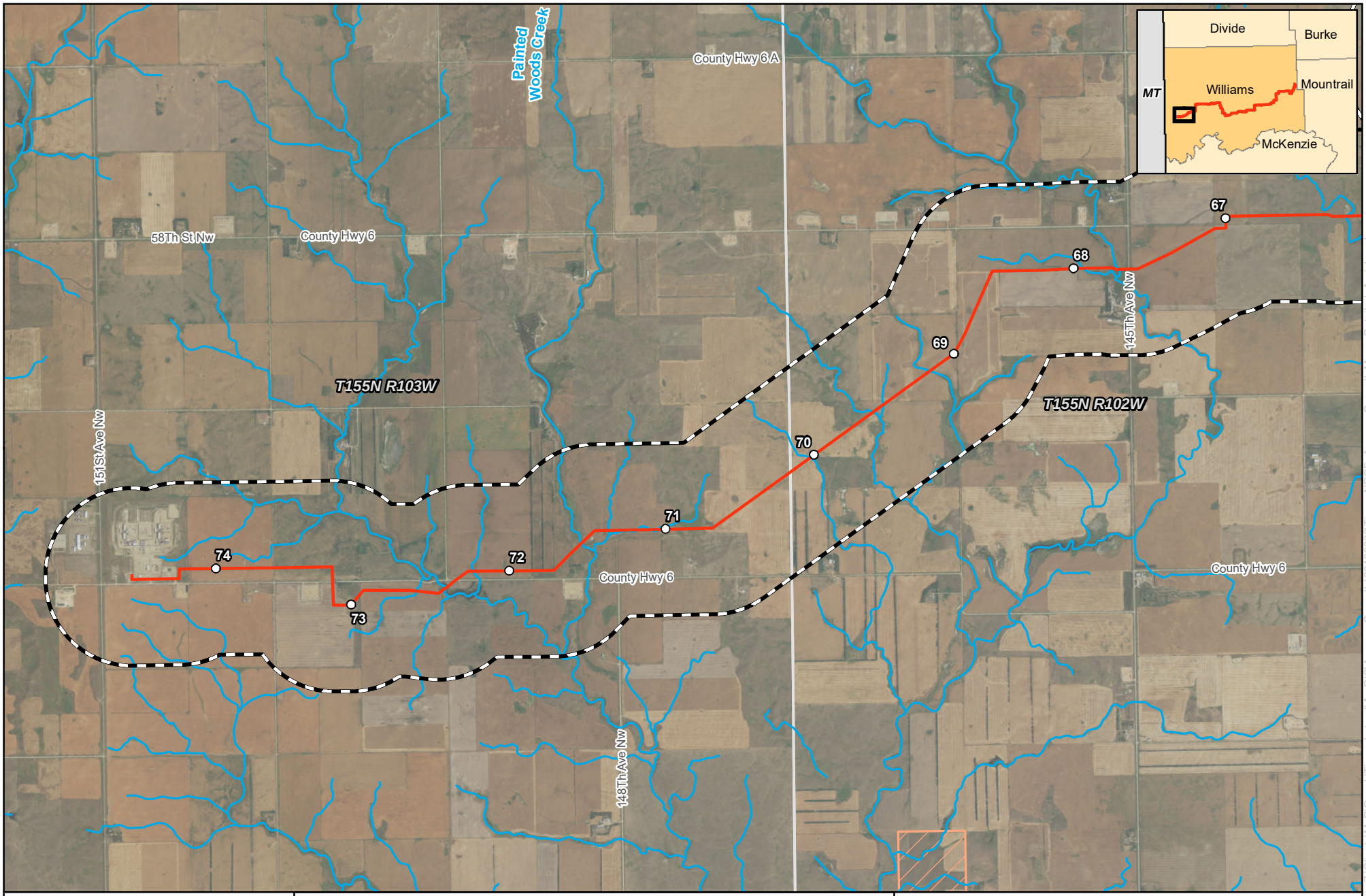

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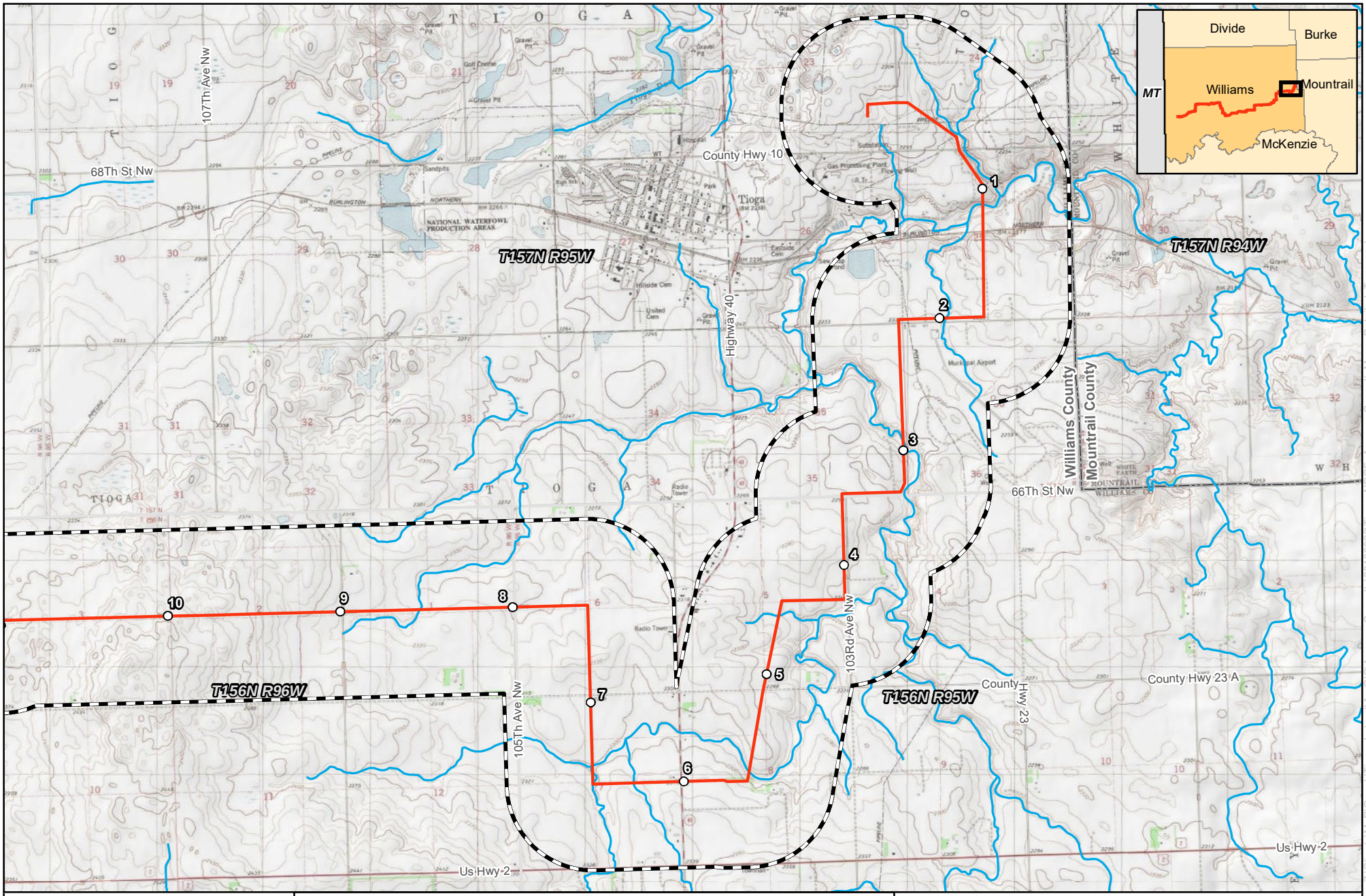

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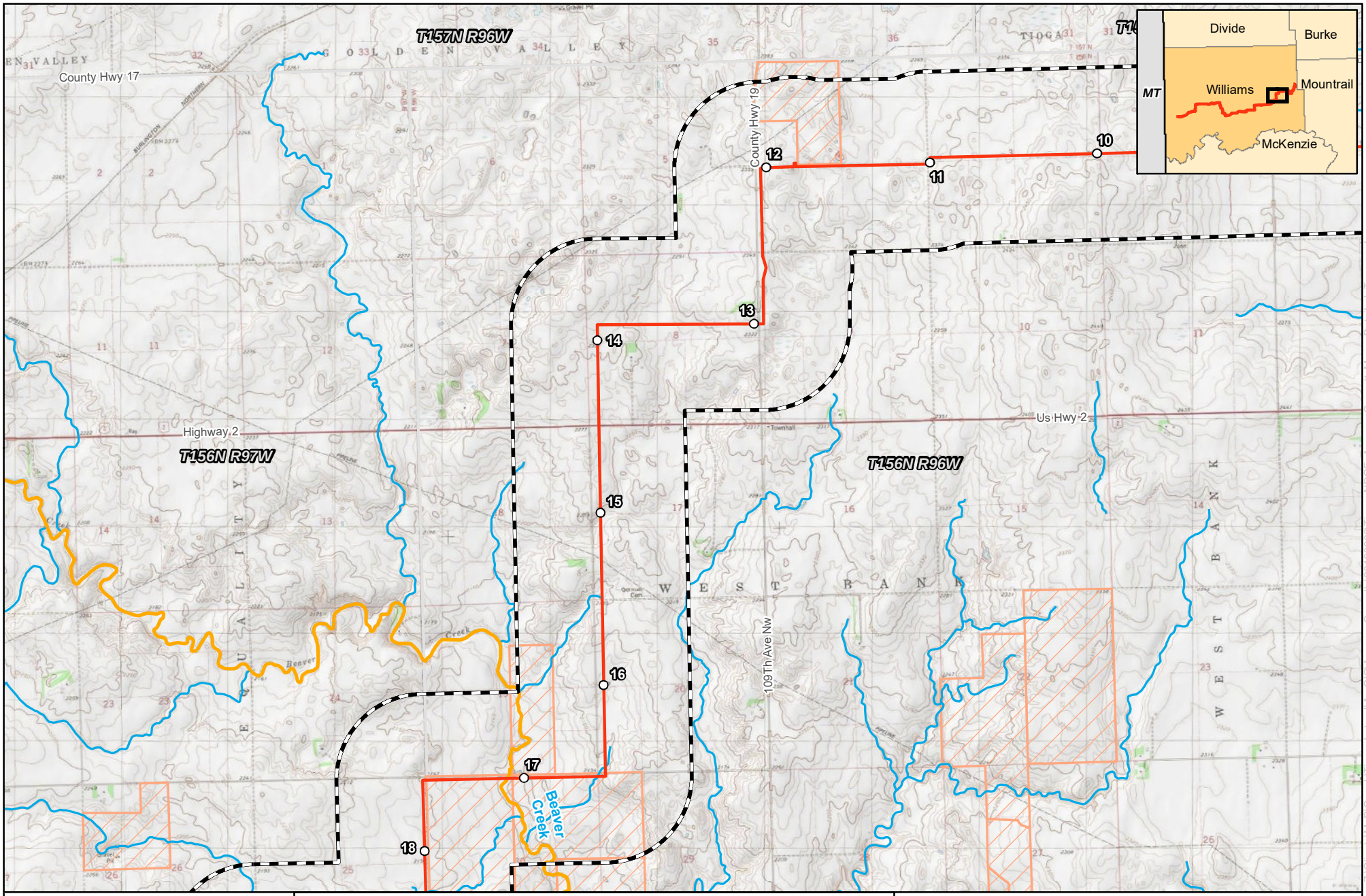

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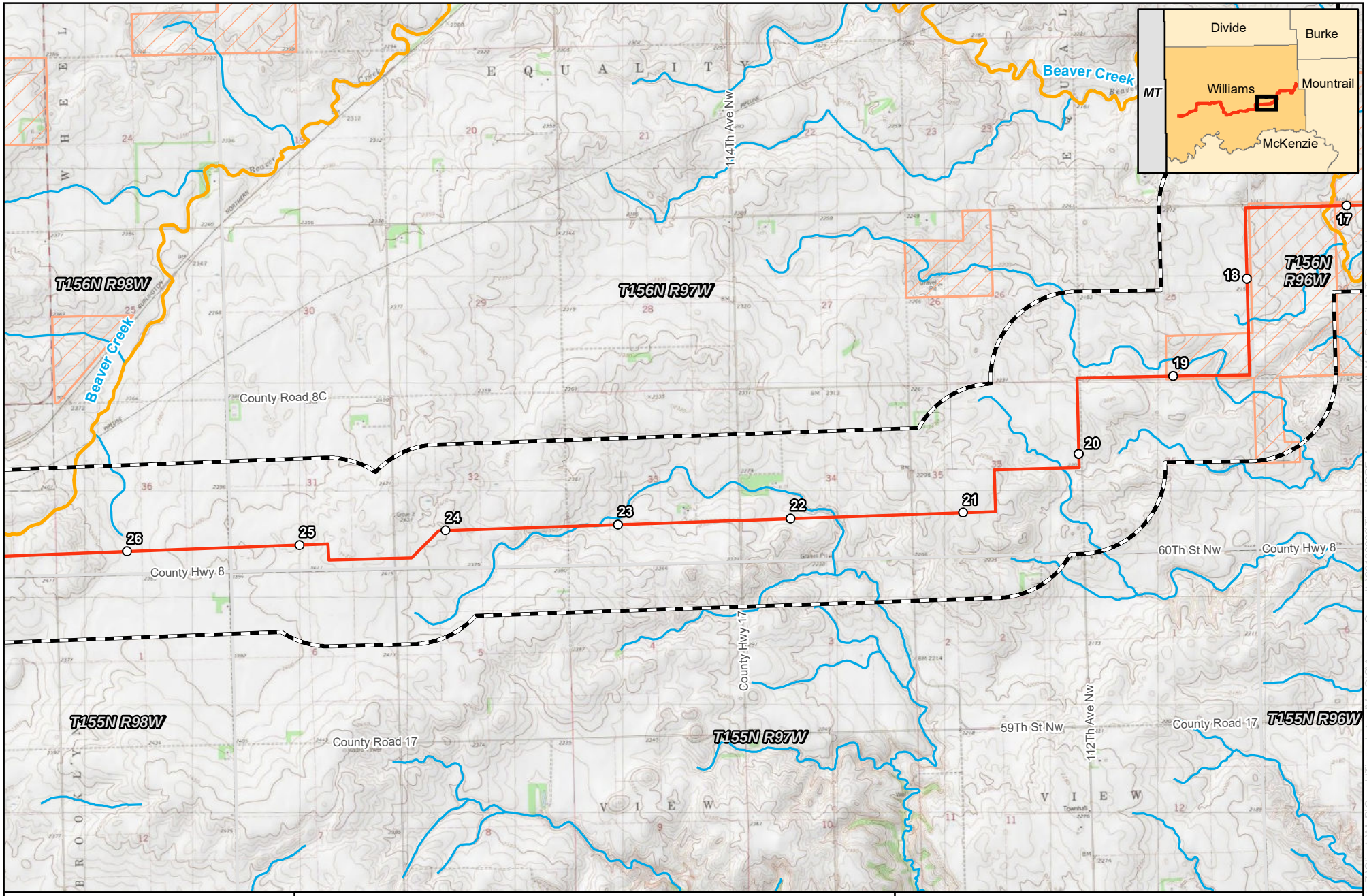

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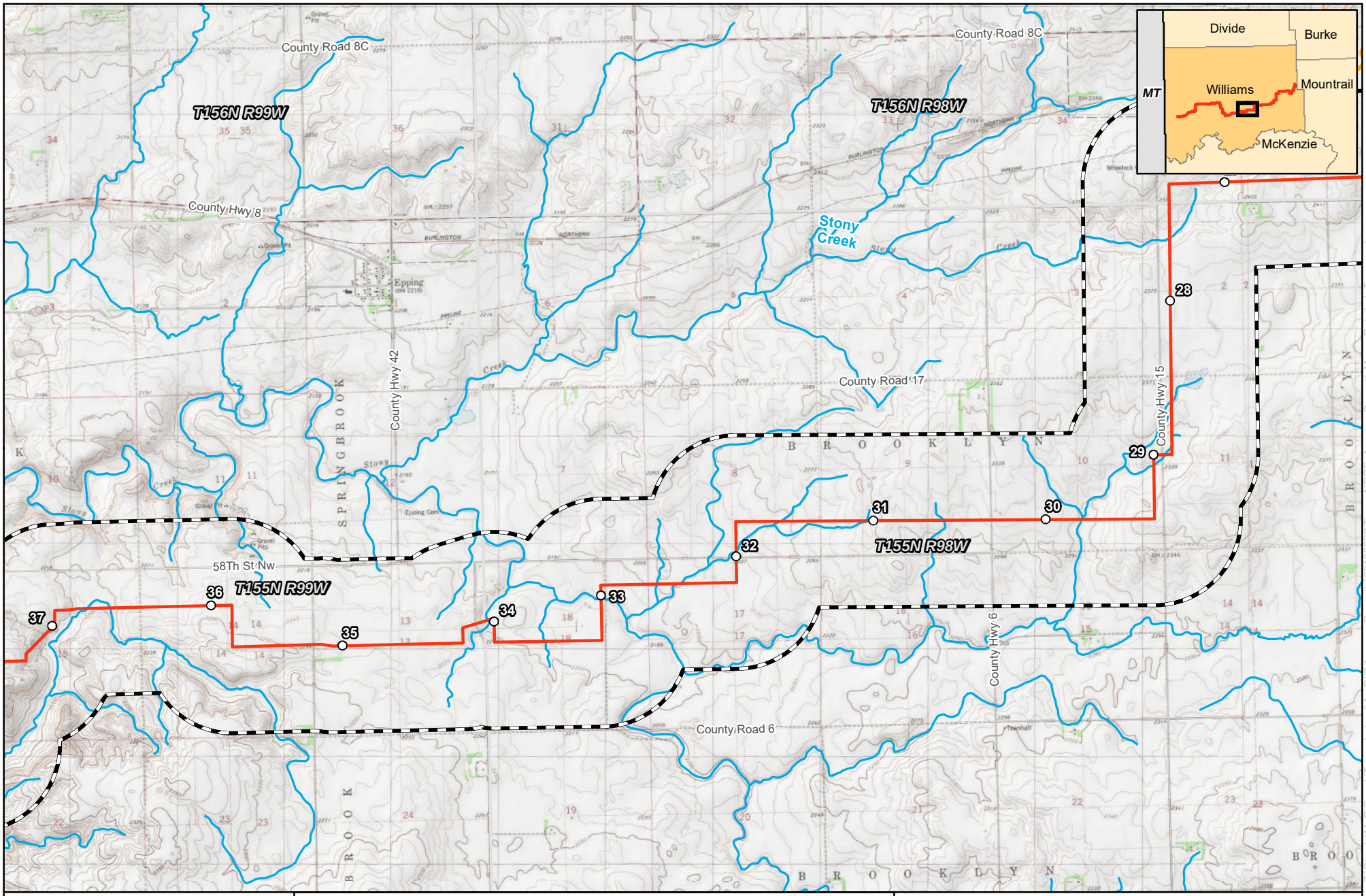

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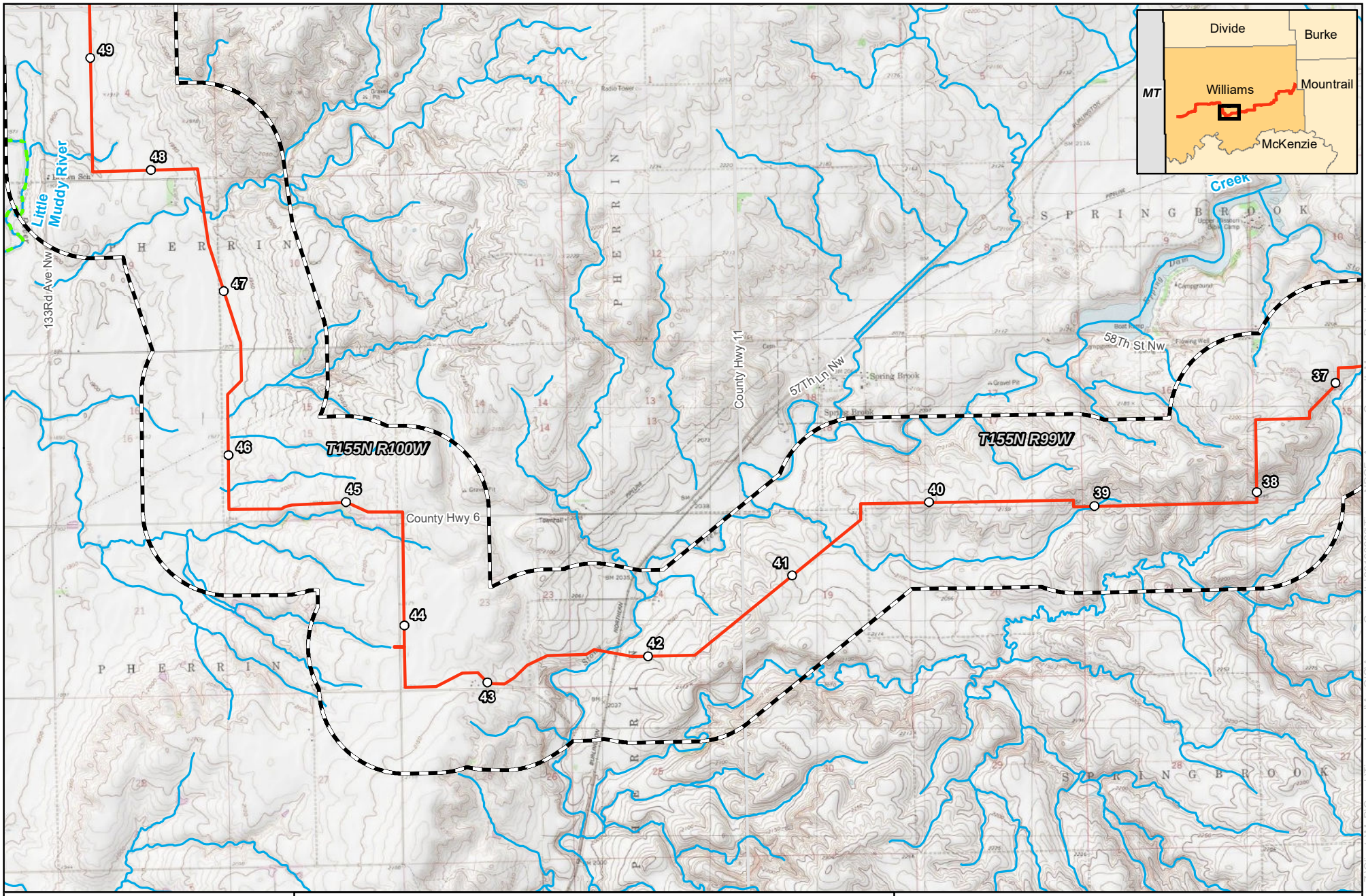

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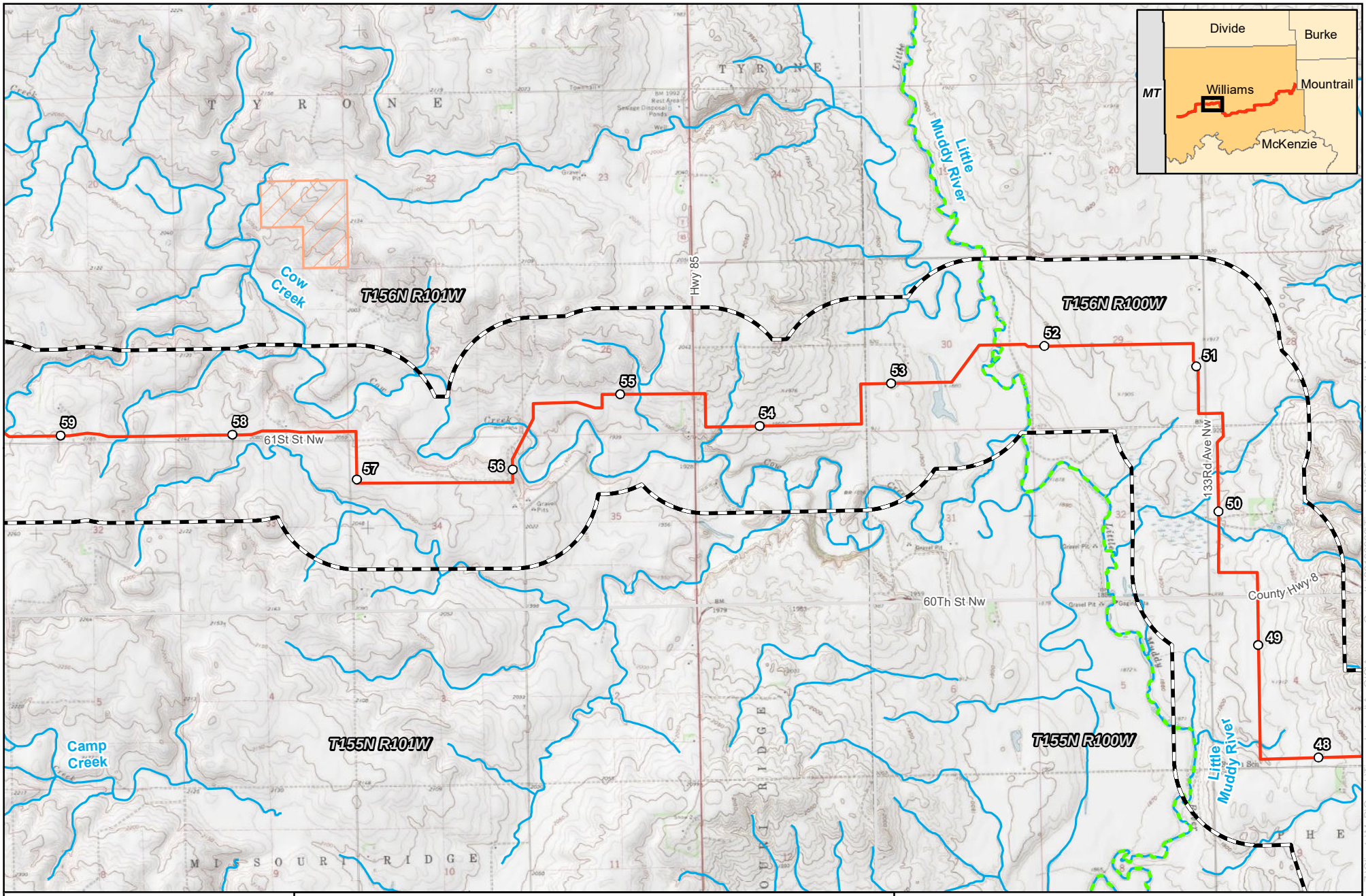

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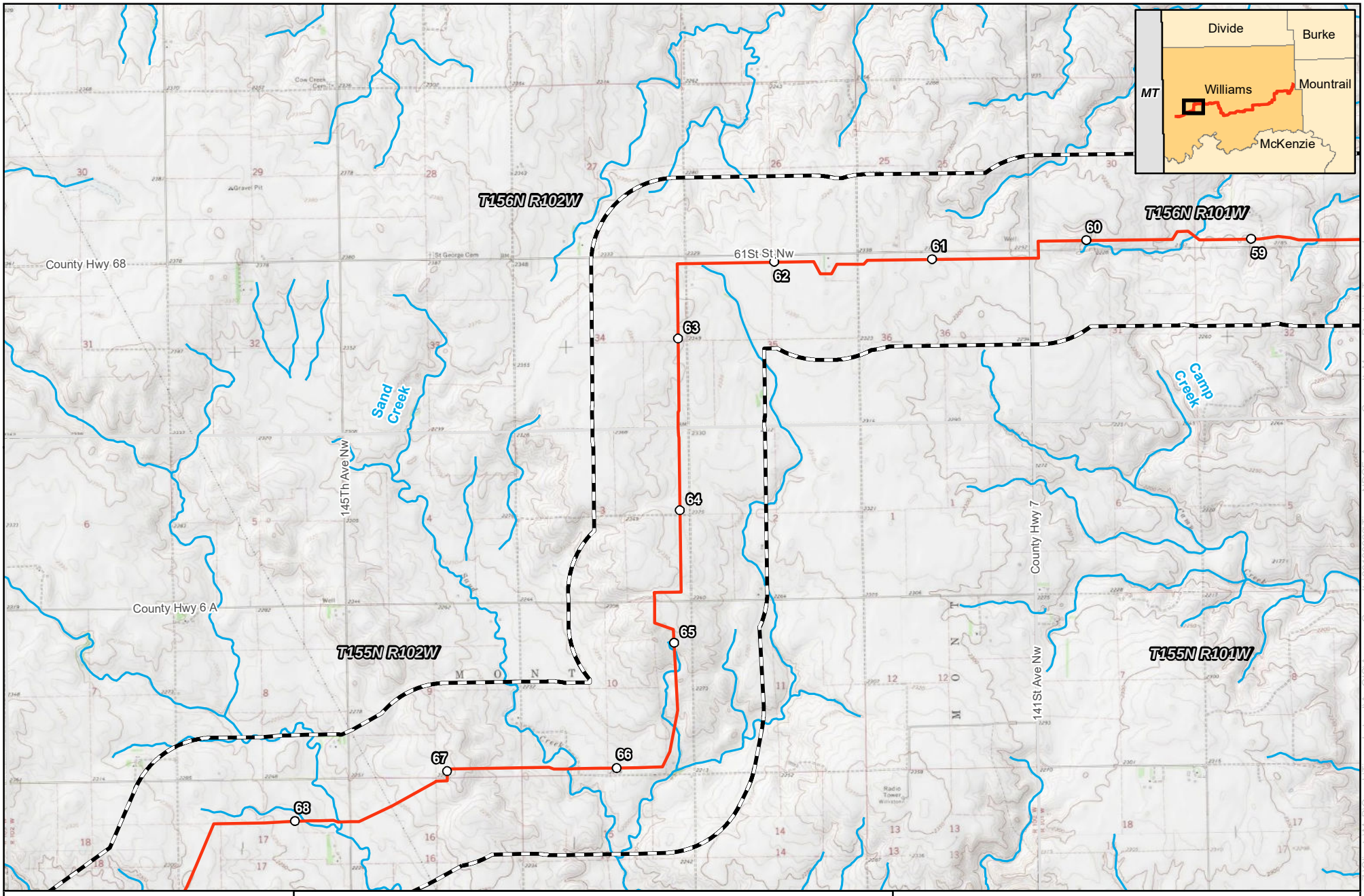

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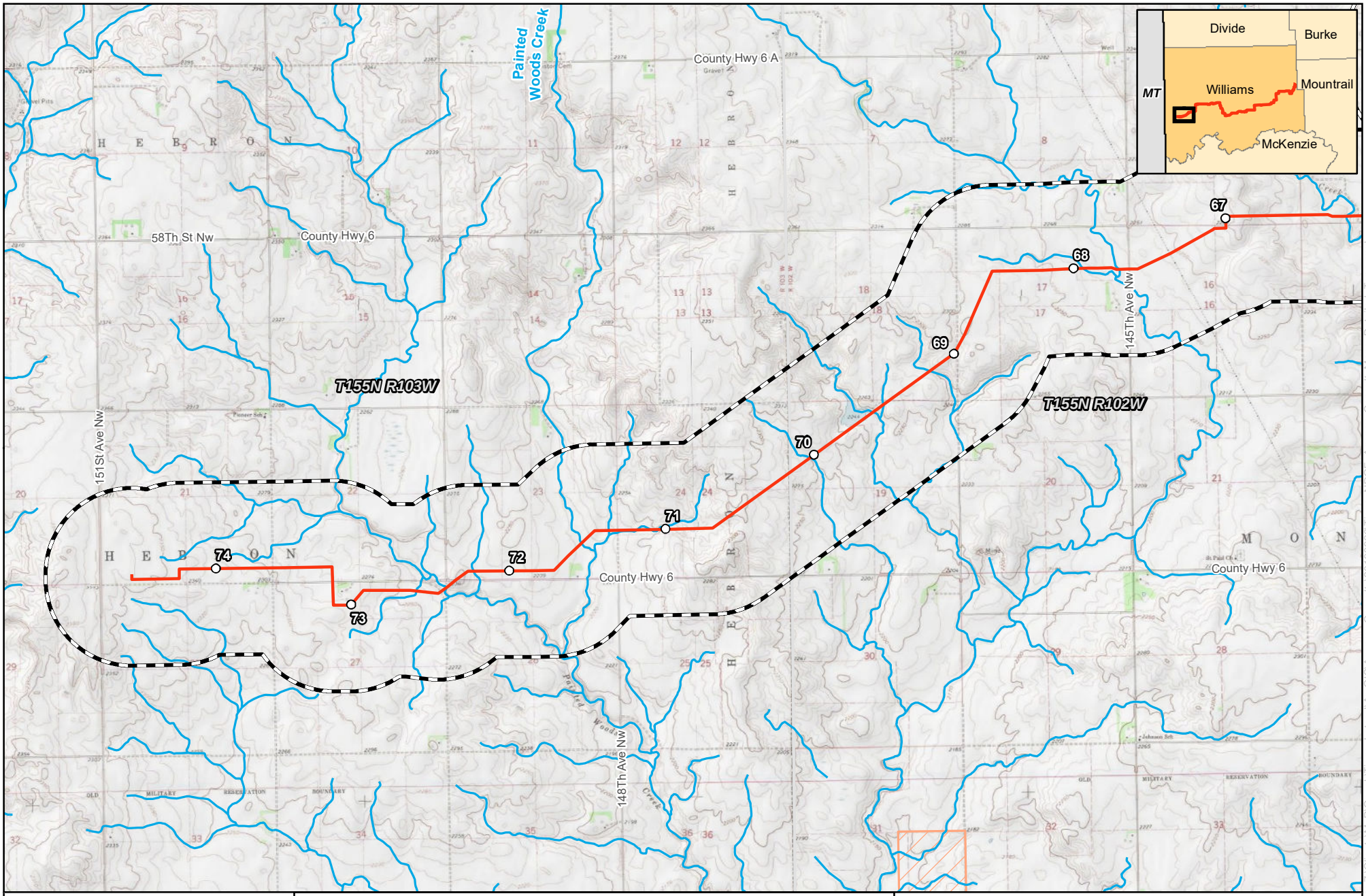

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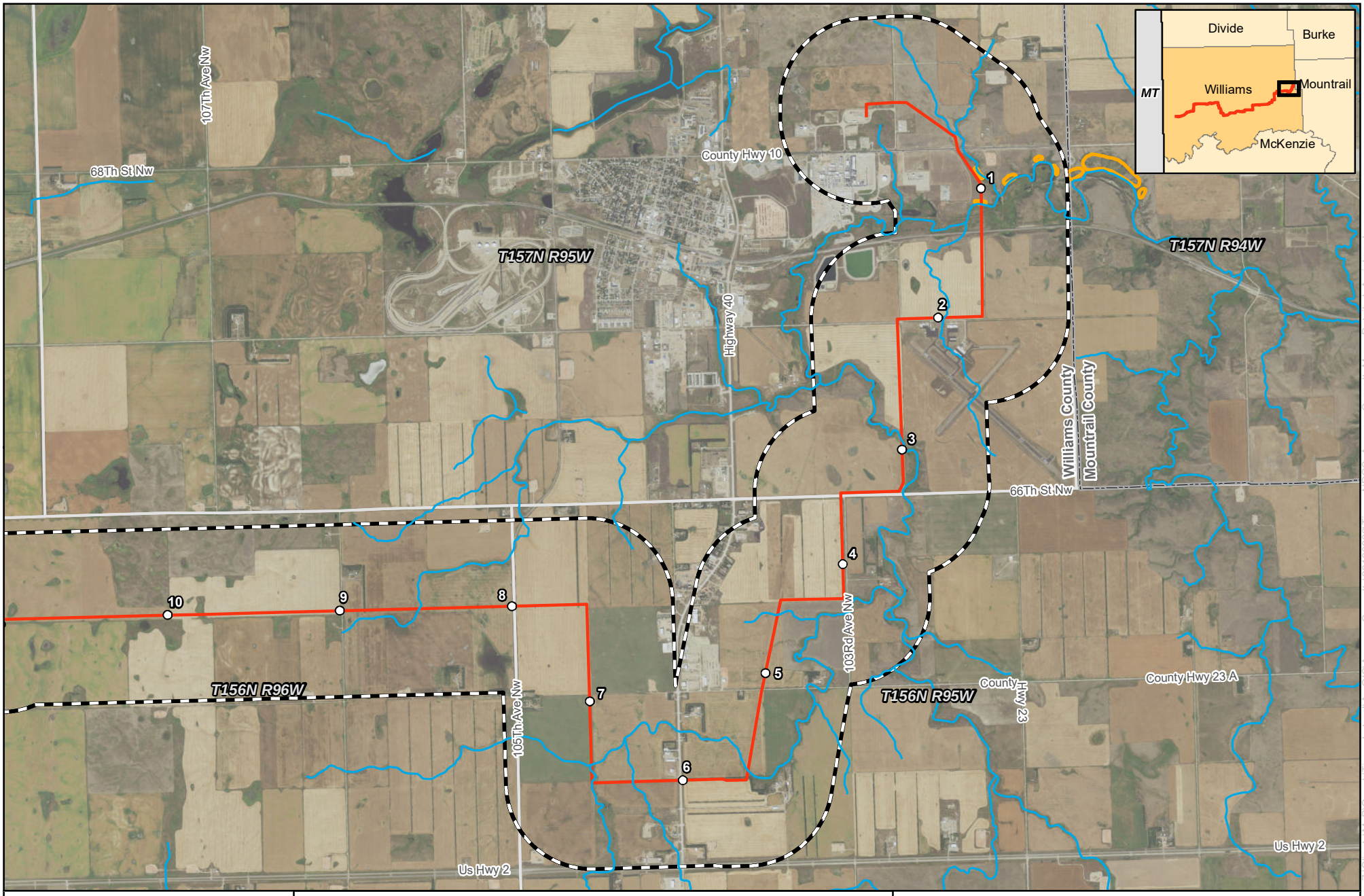

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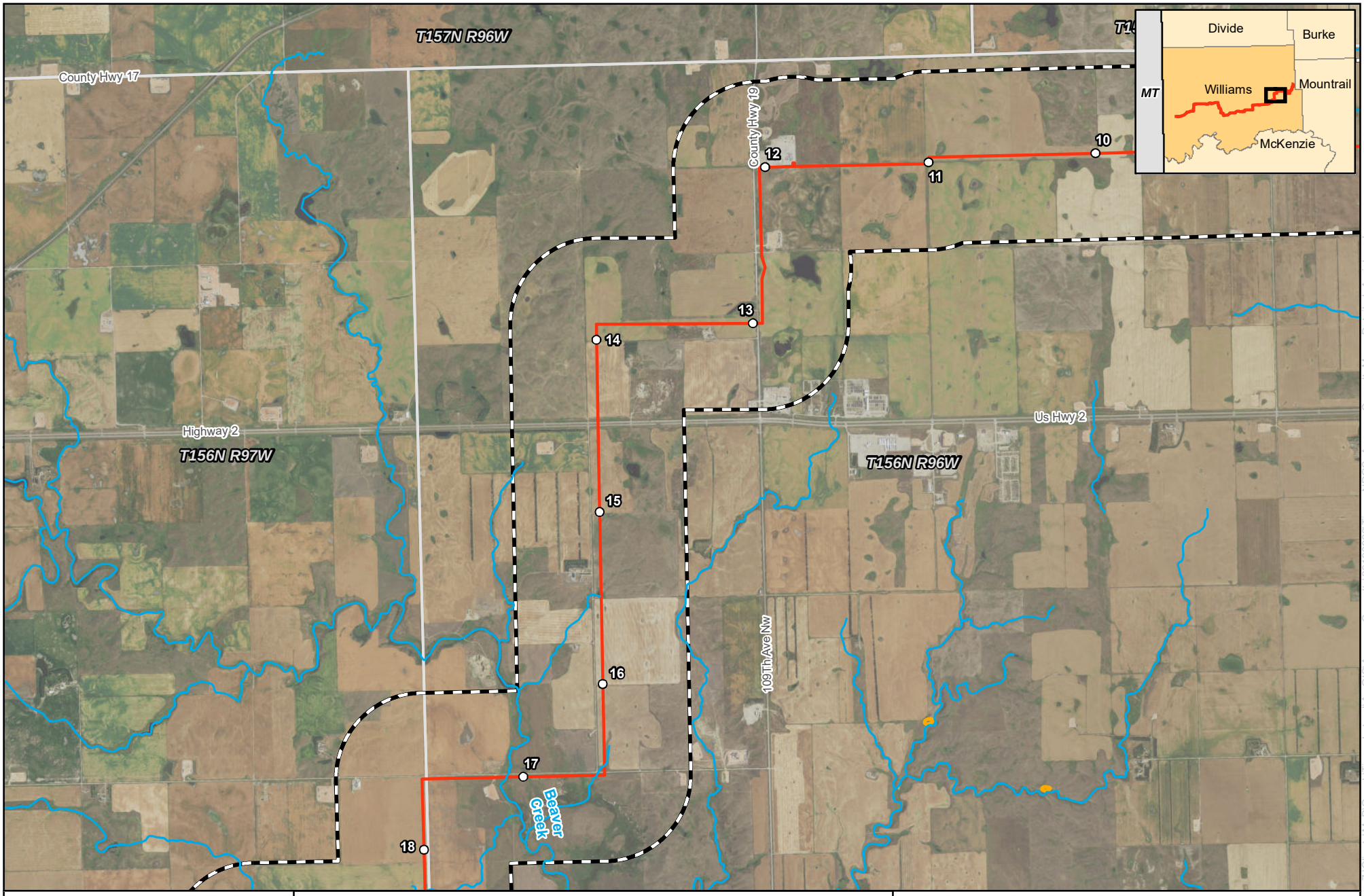

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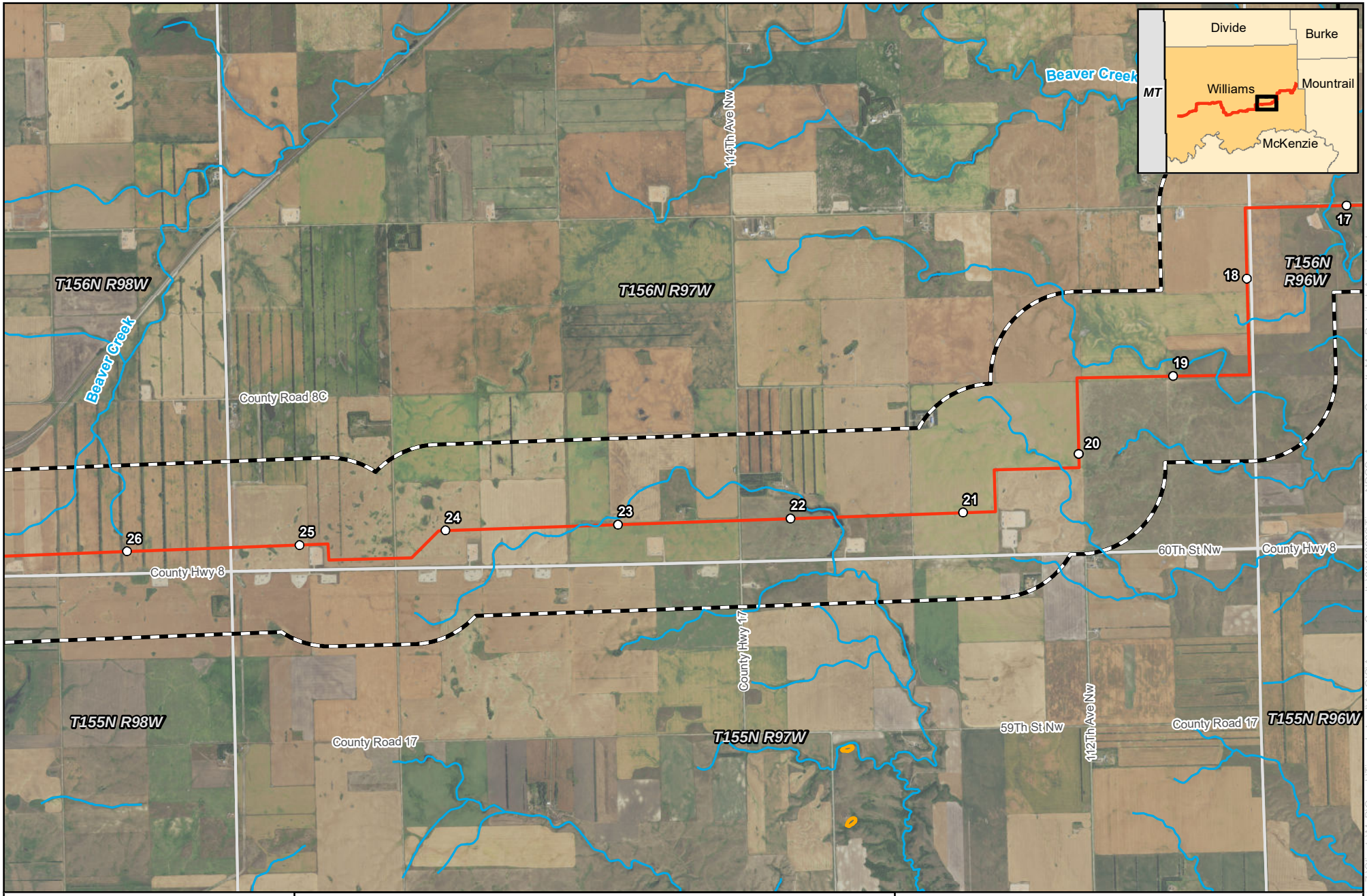

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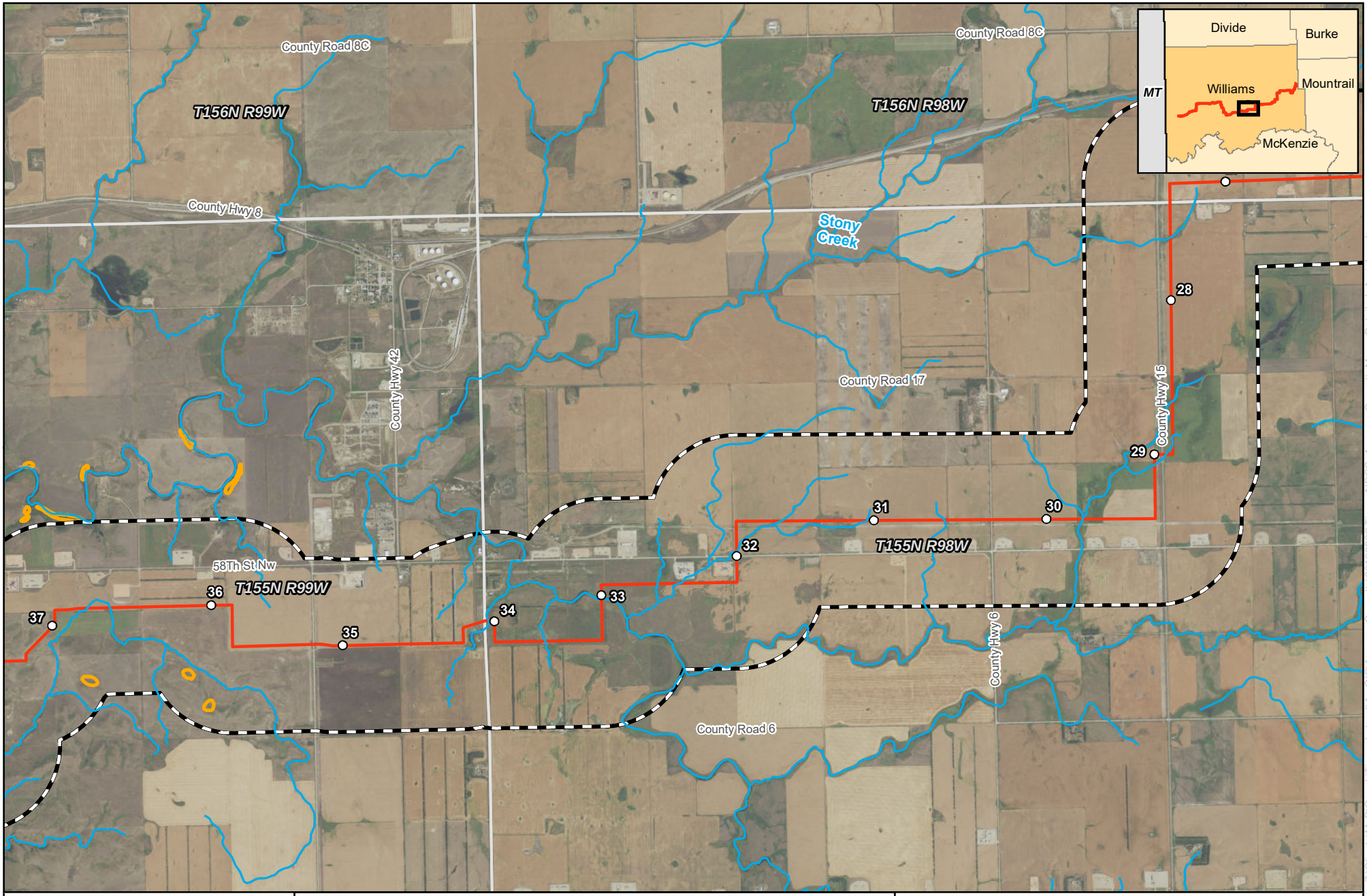

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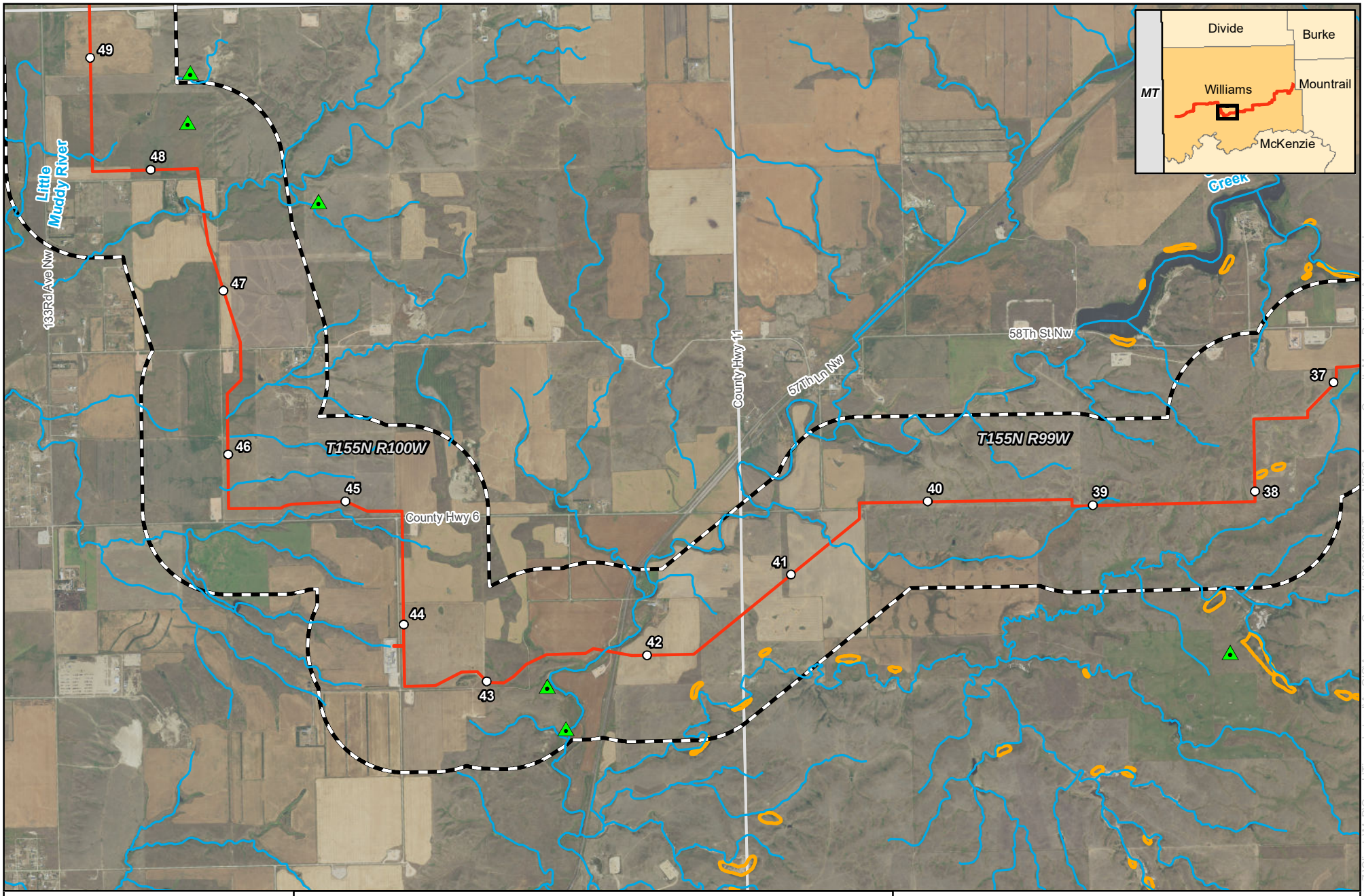

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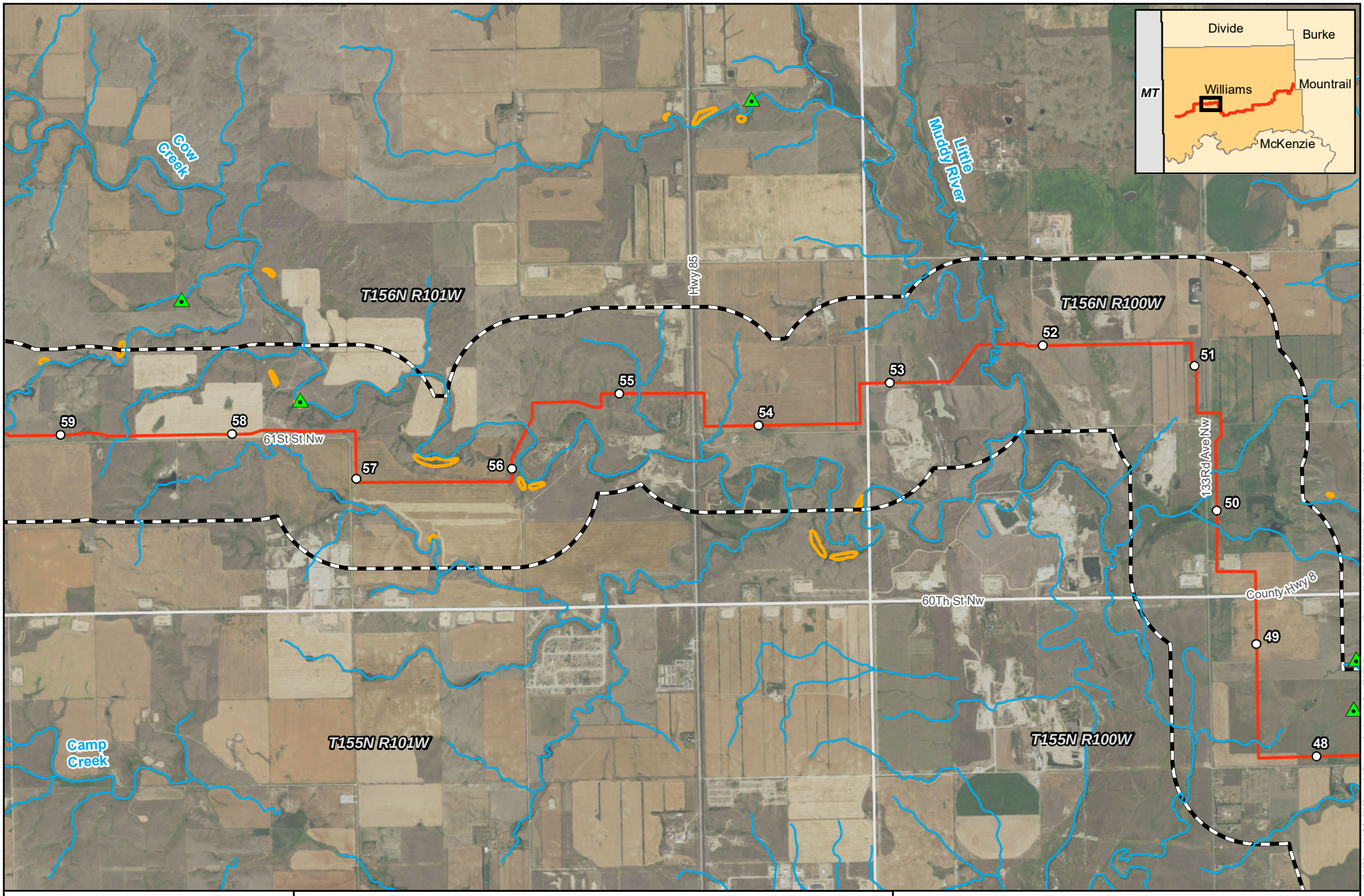

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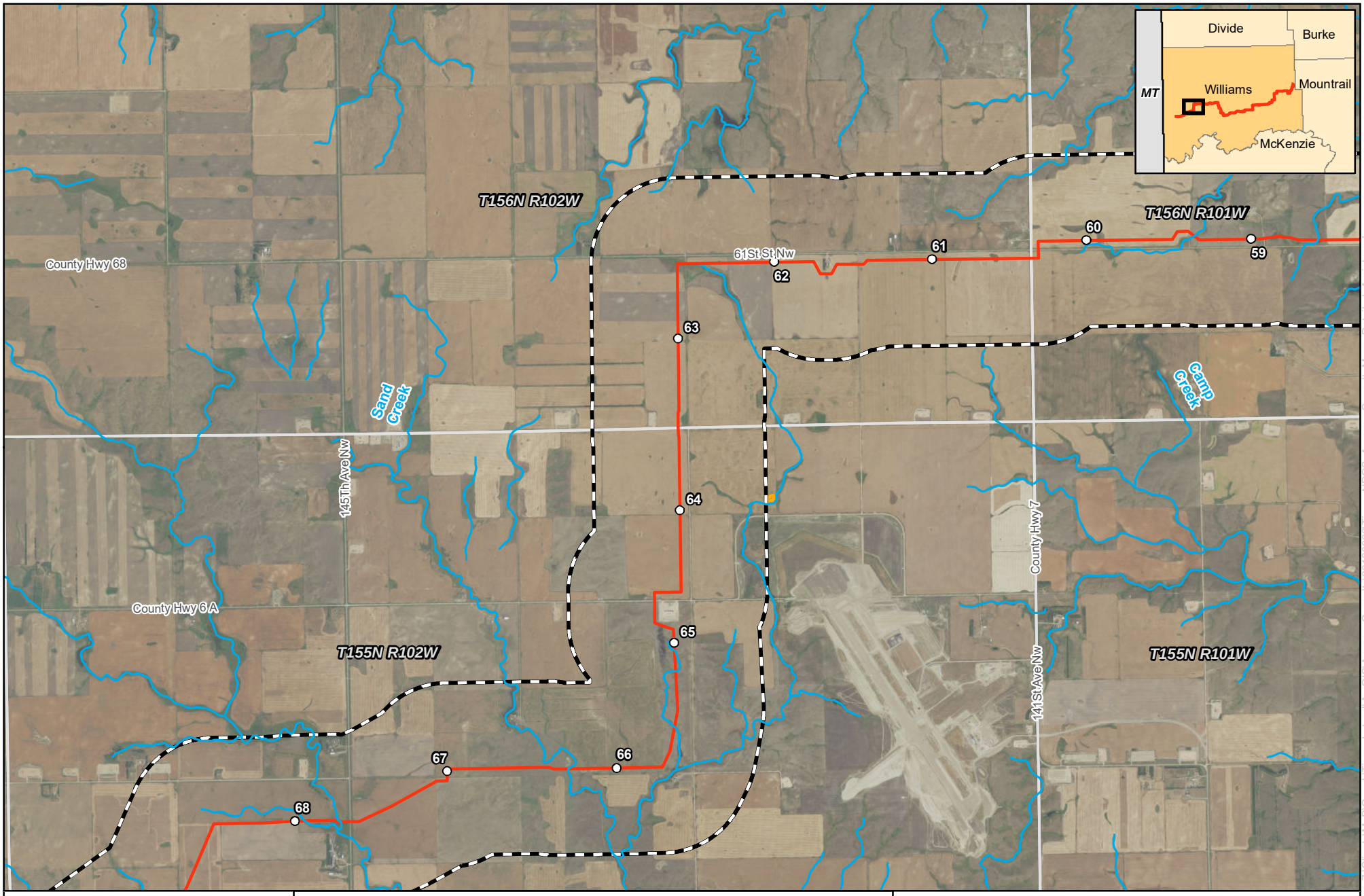

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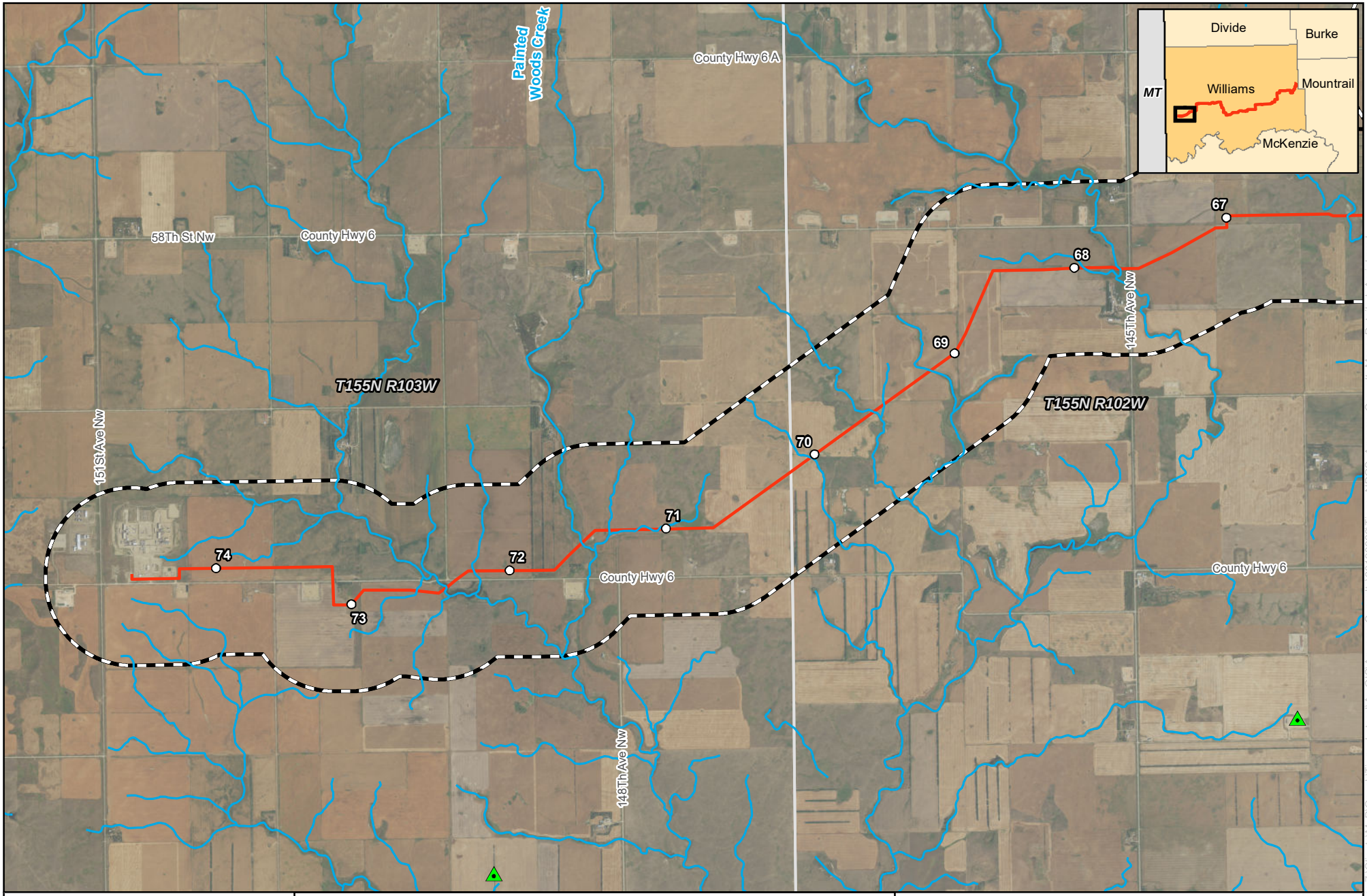

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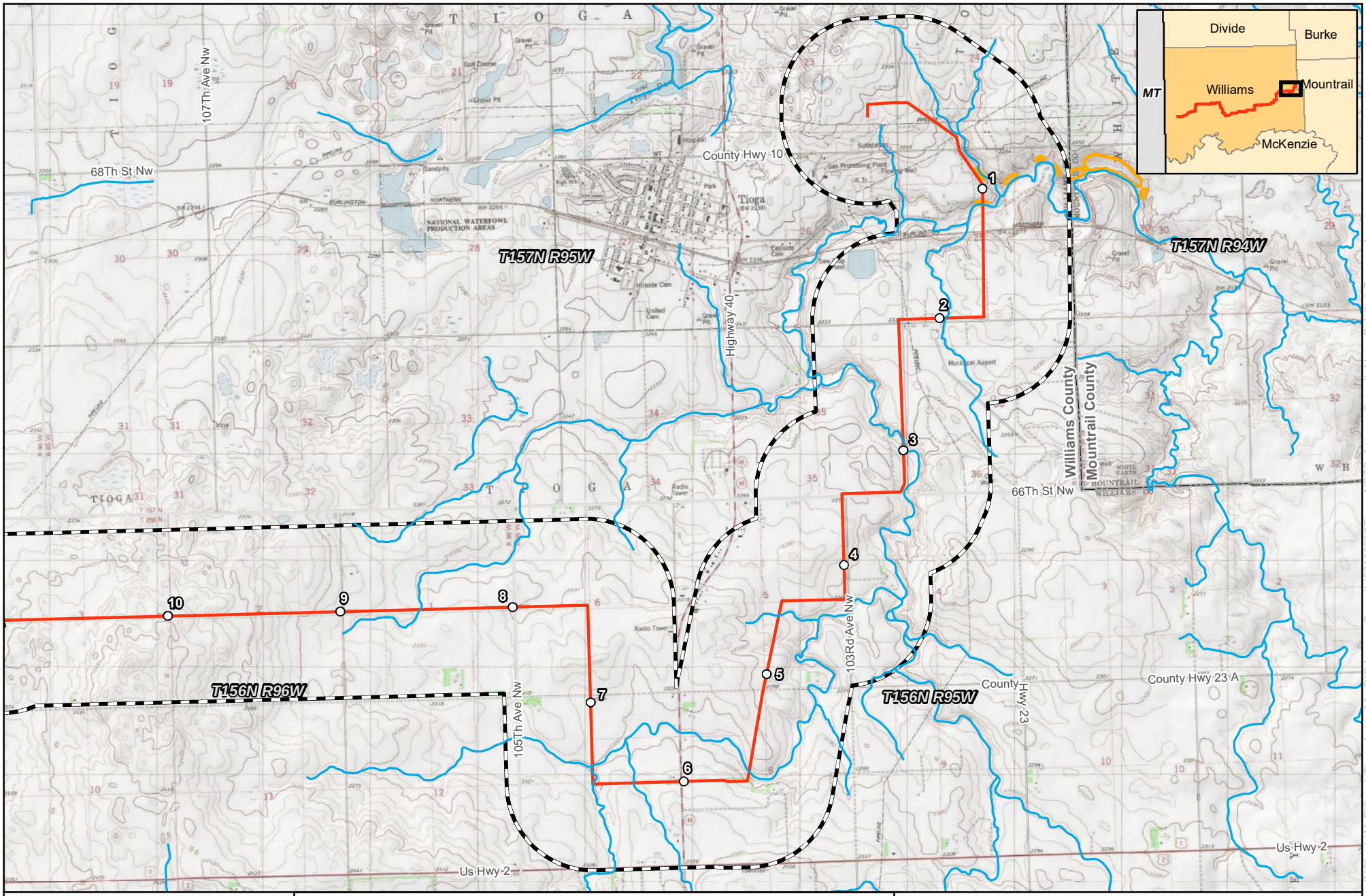

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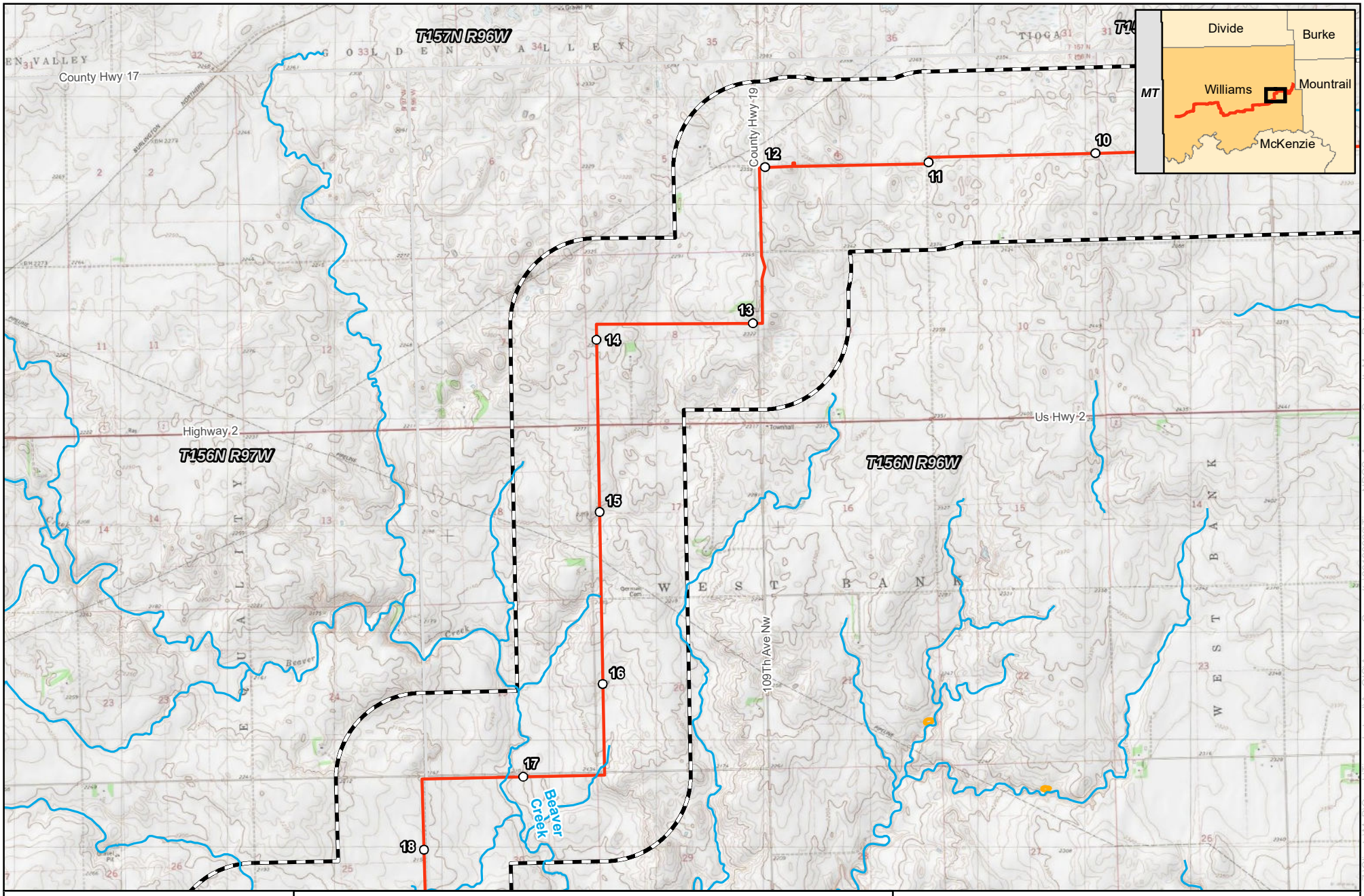

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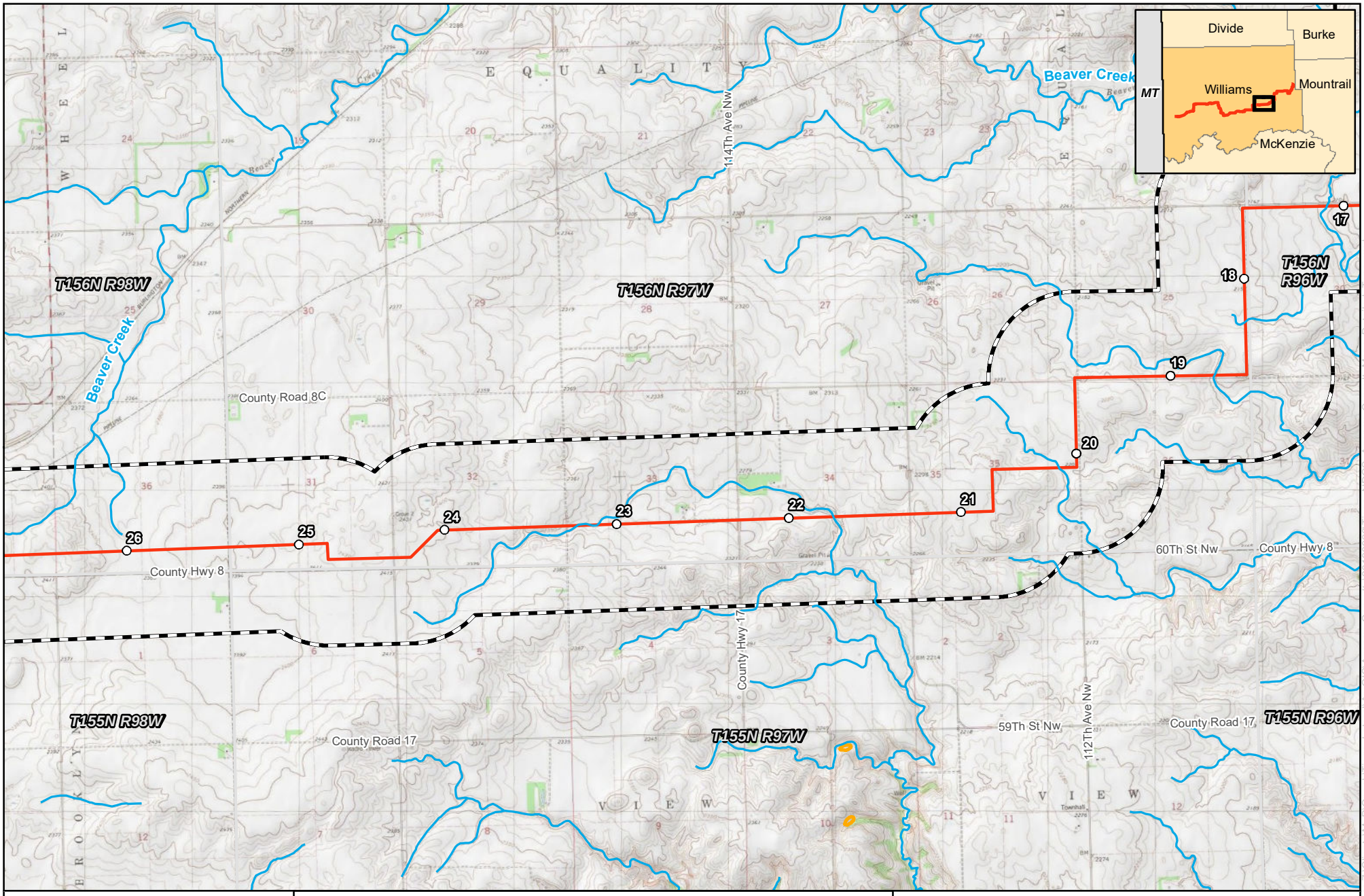

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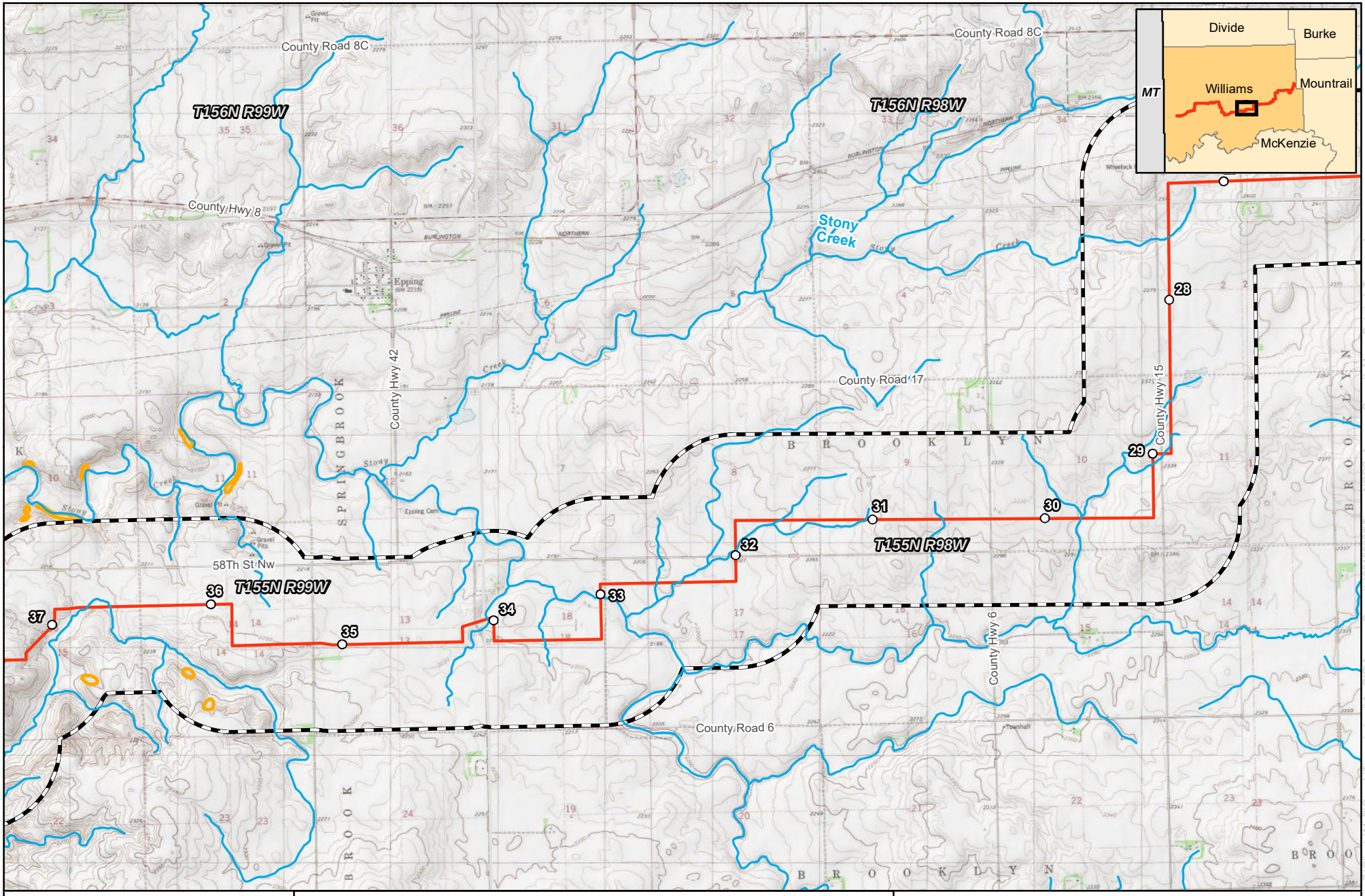

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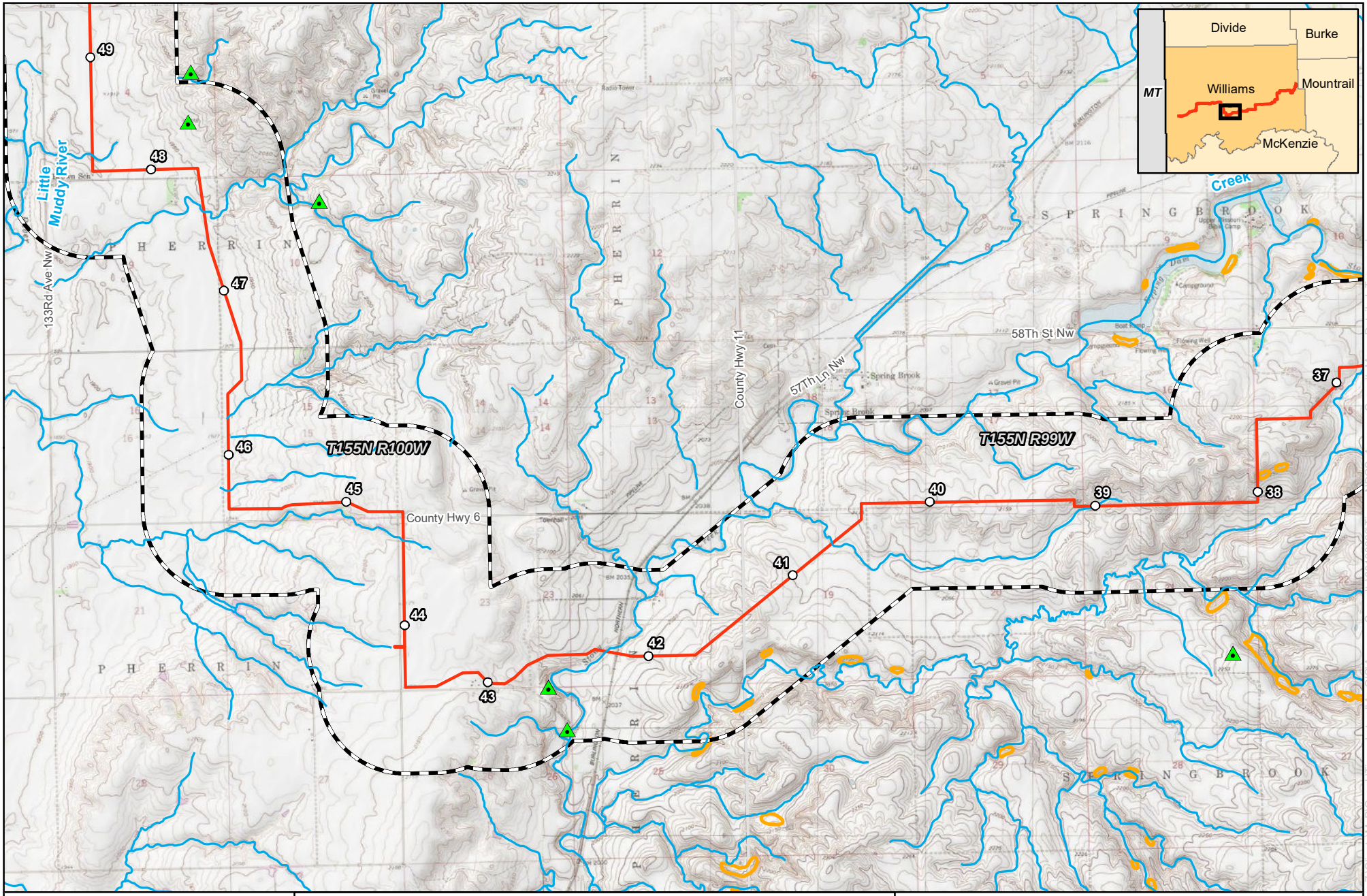

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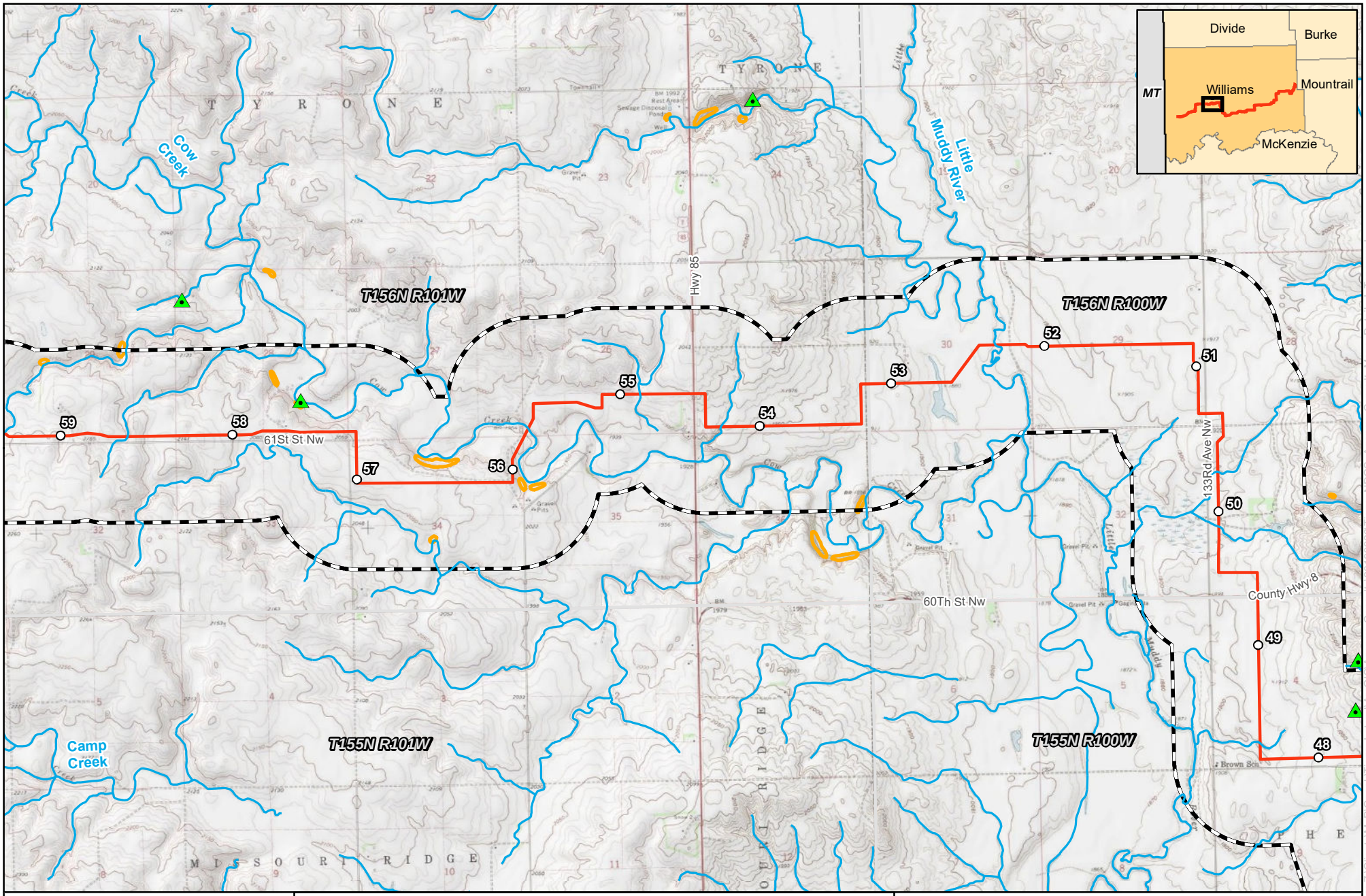

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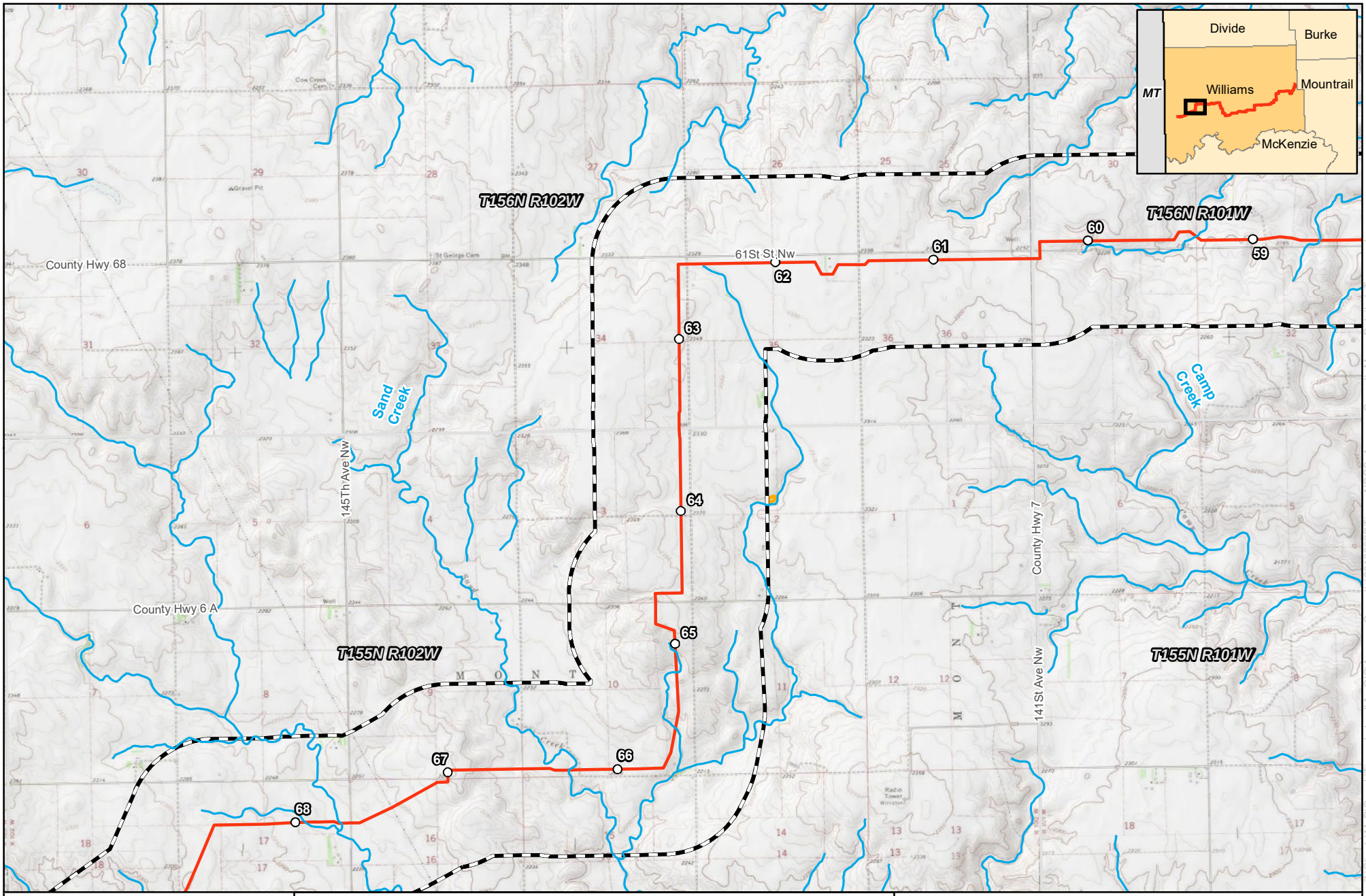

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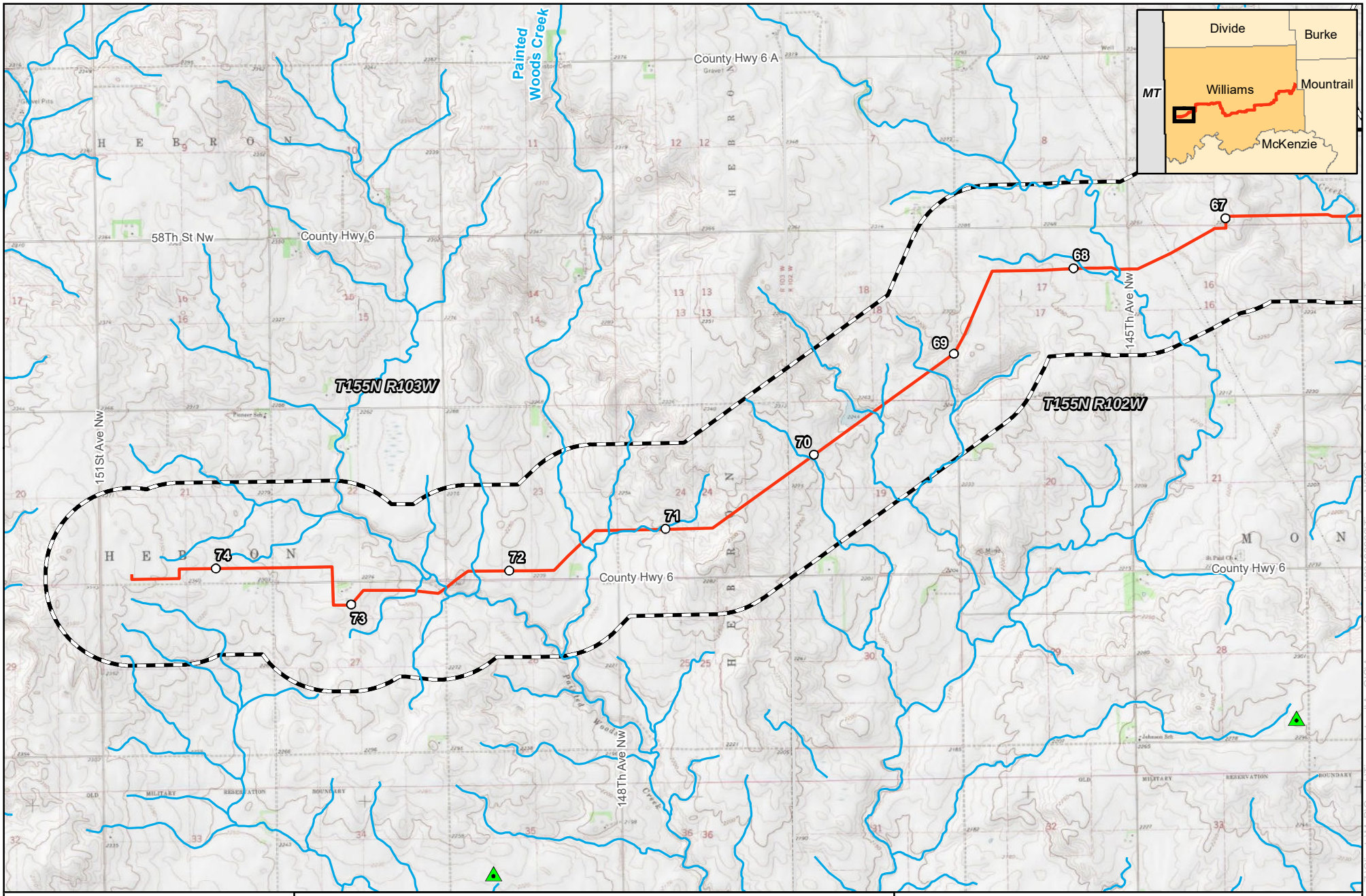

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1 inch = 4,000 feet

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ONEOK Bakken Pipeline, L.L.C.

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- Landslide Deposits
- County Boundary
- Township Boundary

Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\ArcGIS\Agency_Consults\20190926\Tioga_NDGS_Agency_Consult_Maps_Detailed_Topo.mxd

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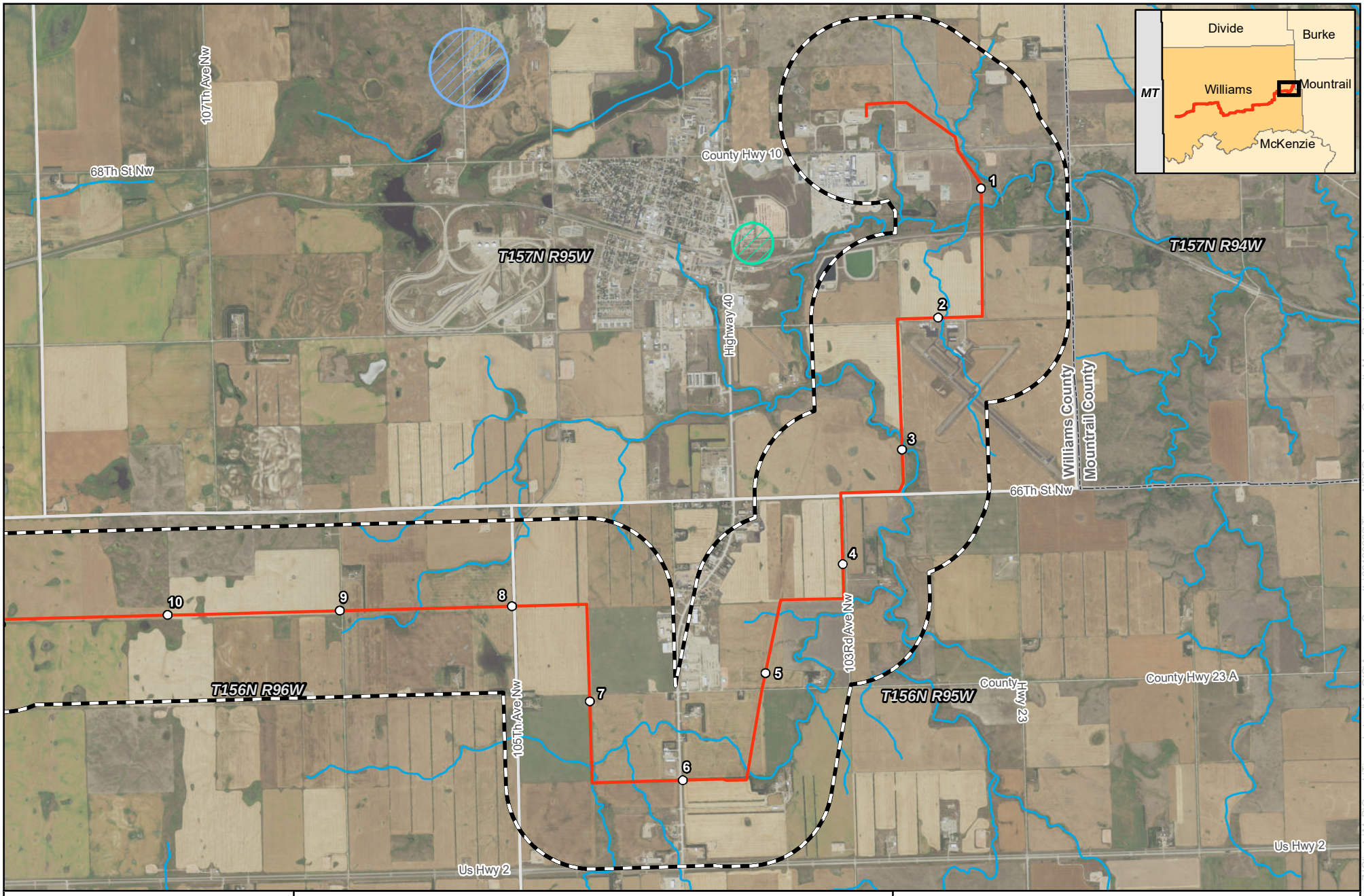

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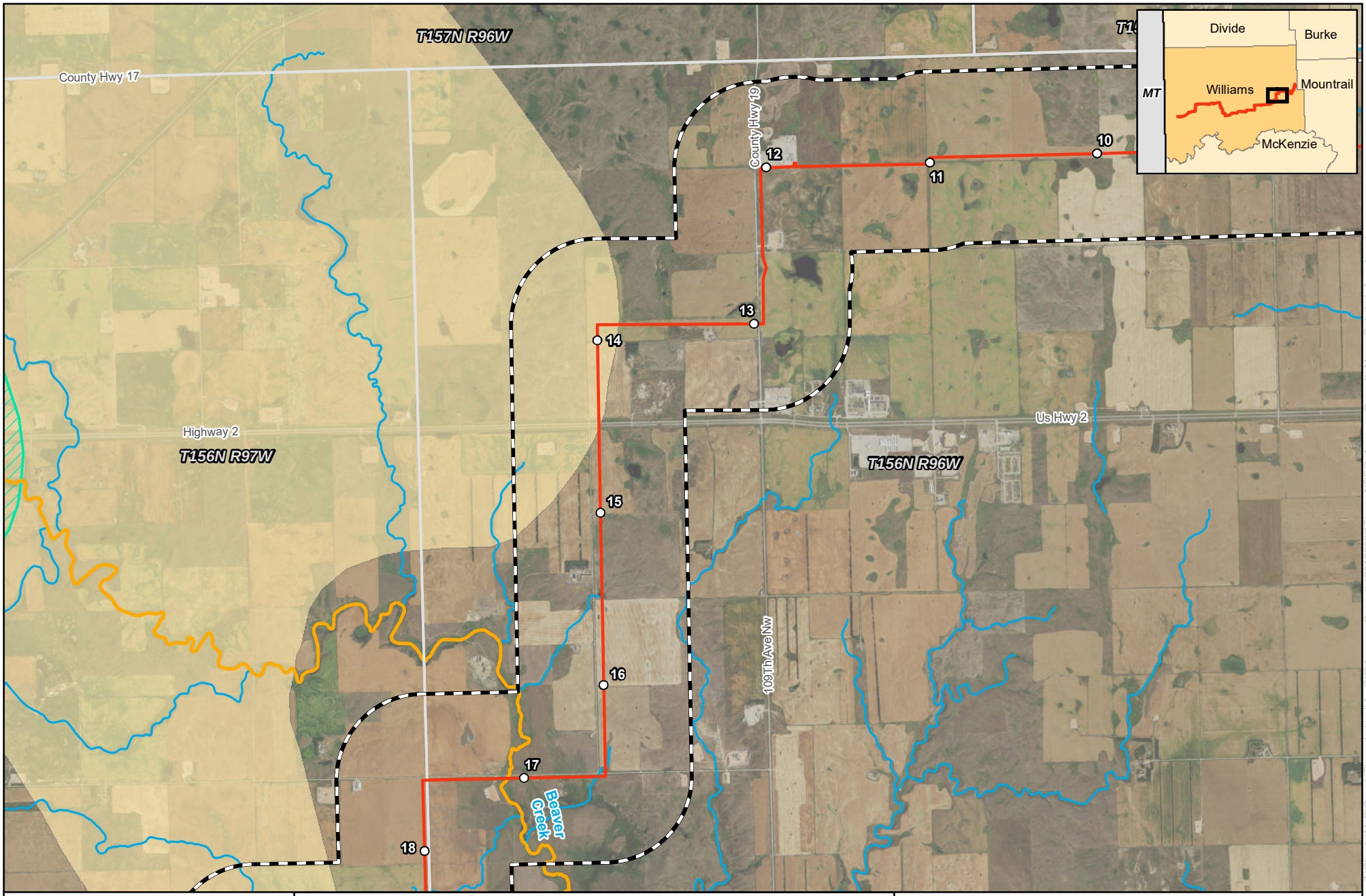

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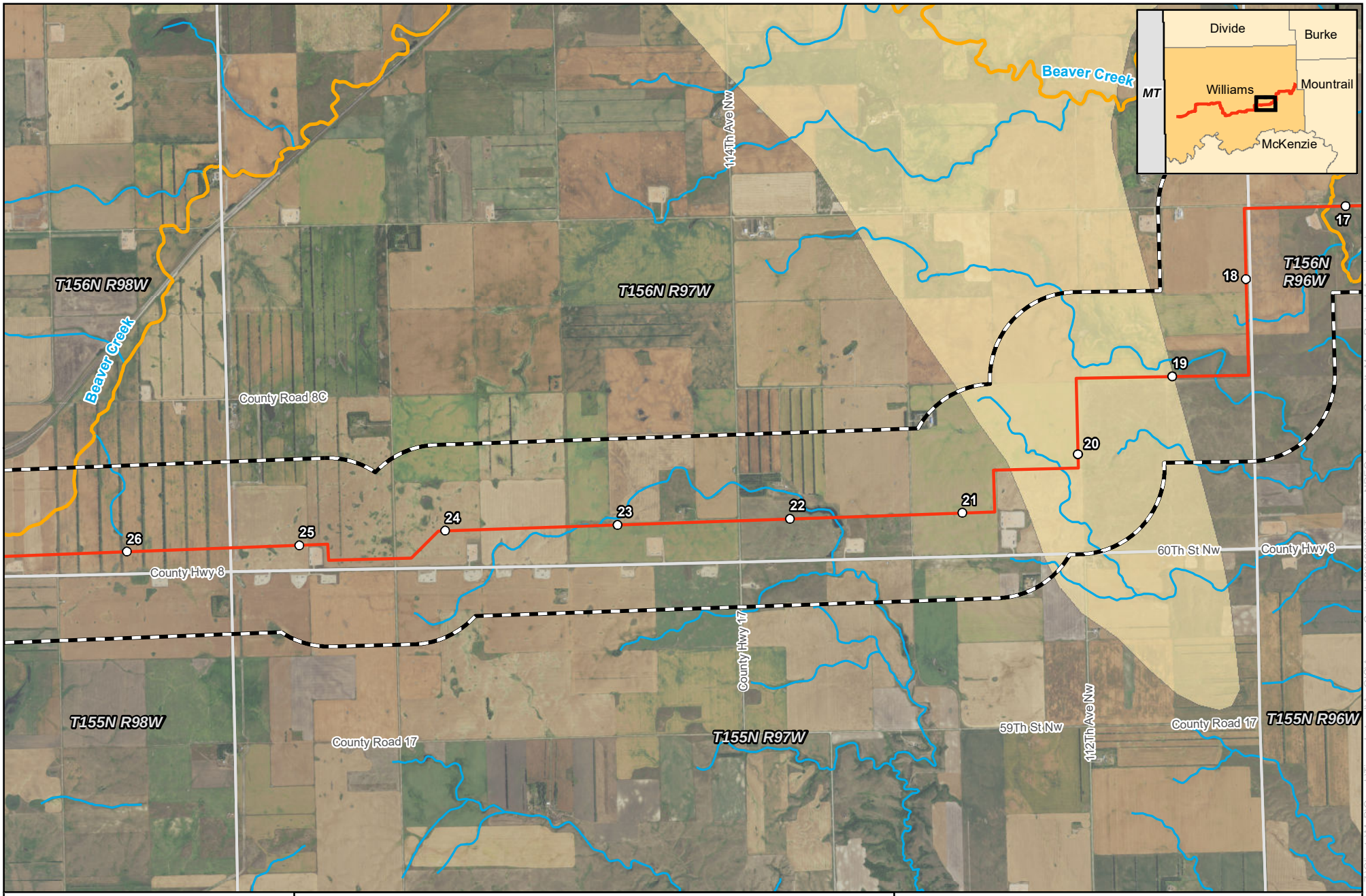

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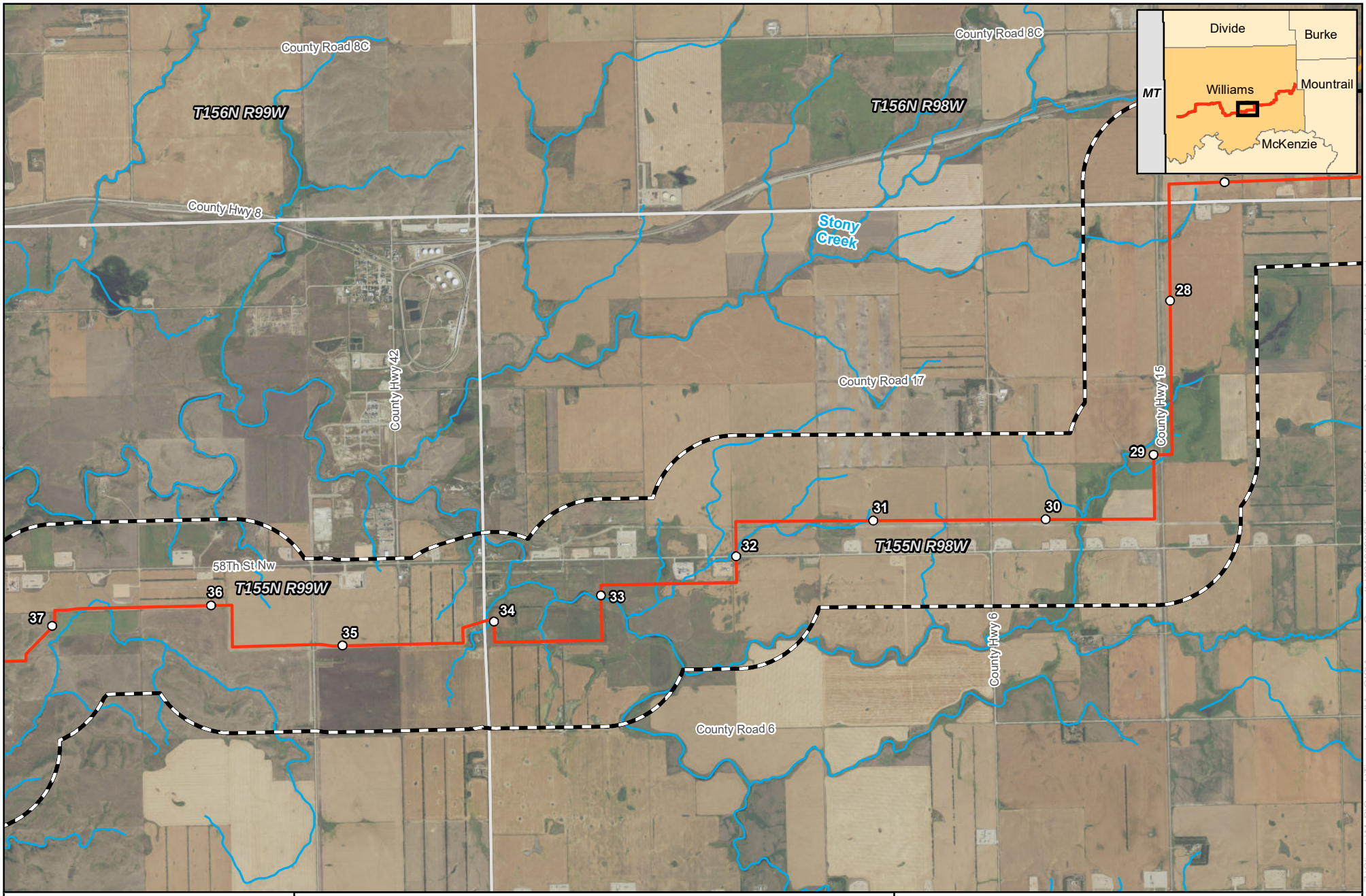

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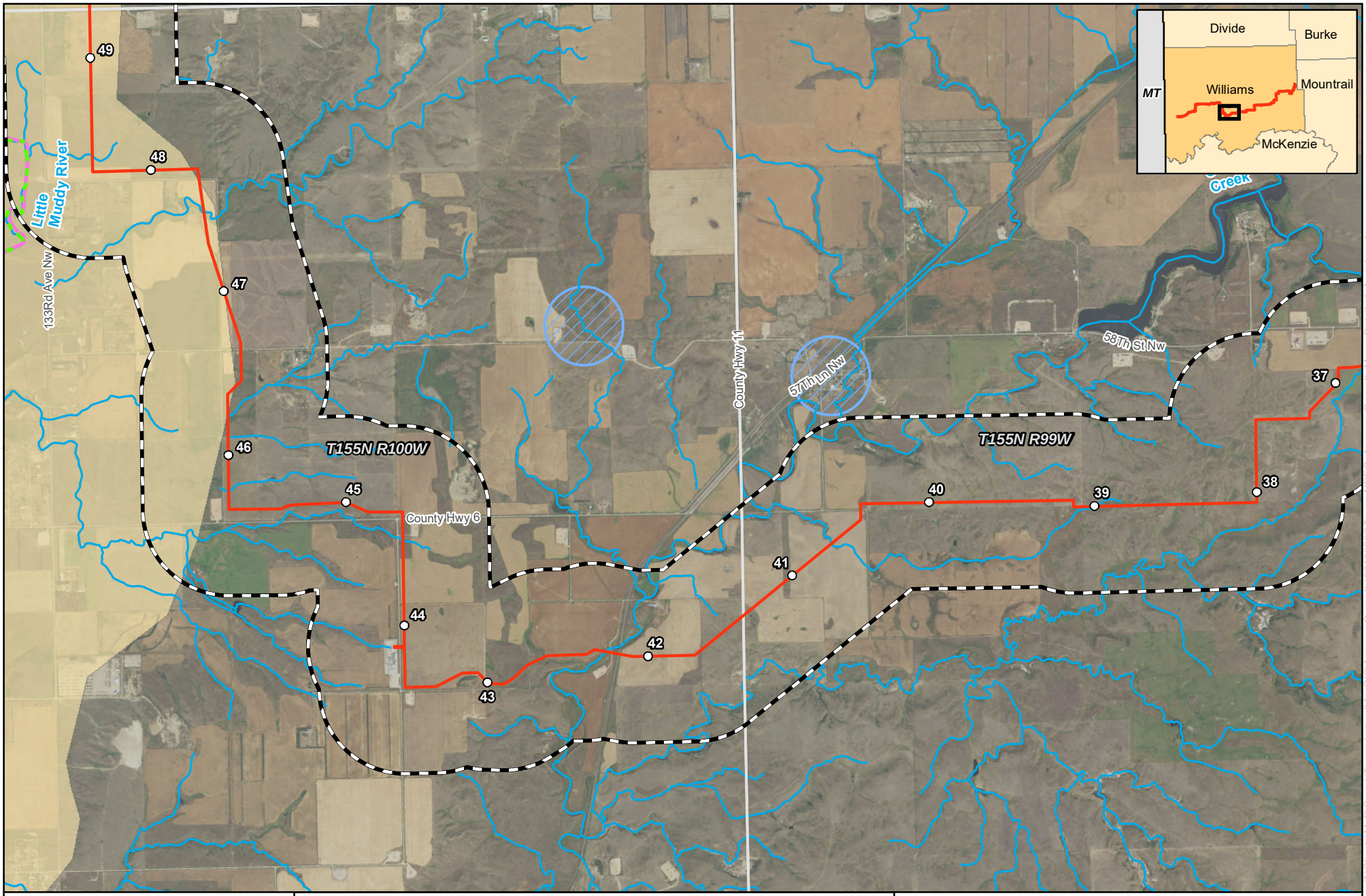

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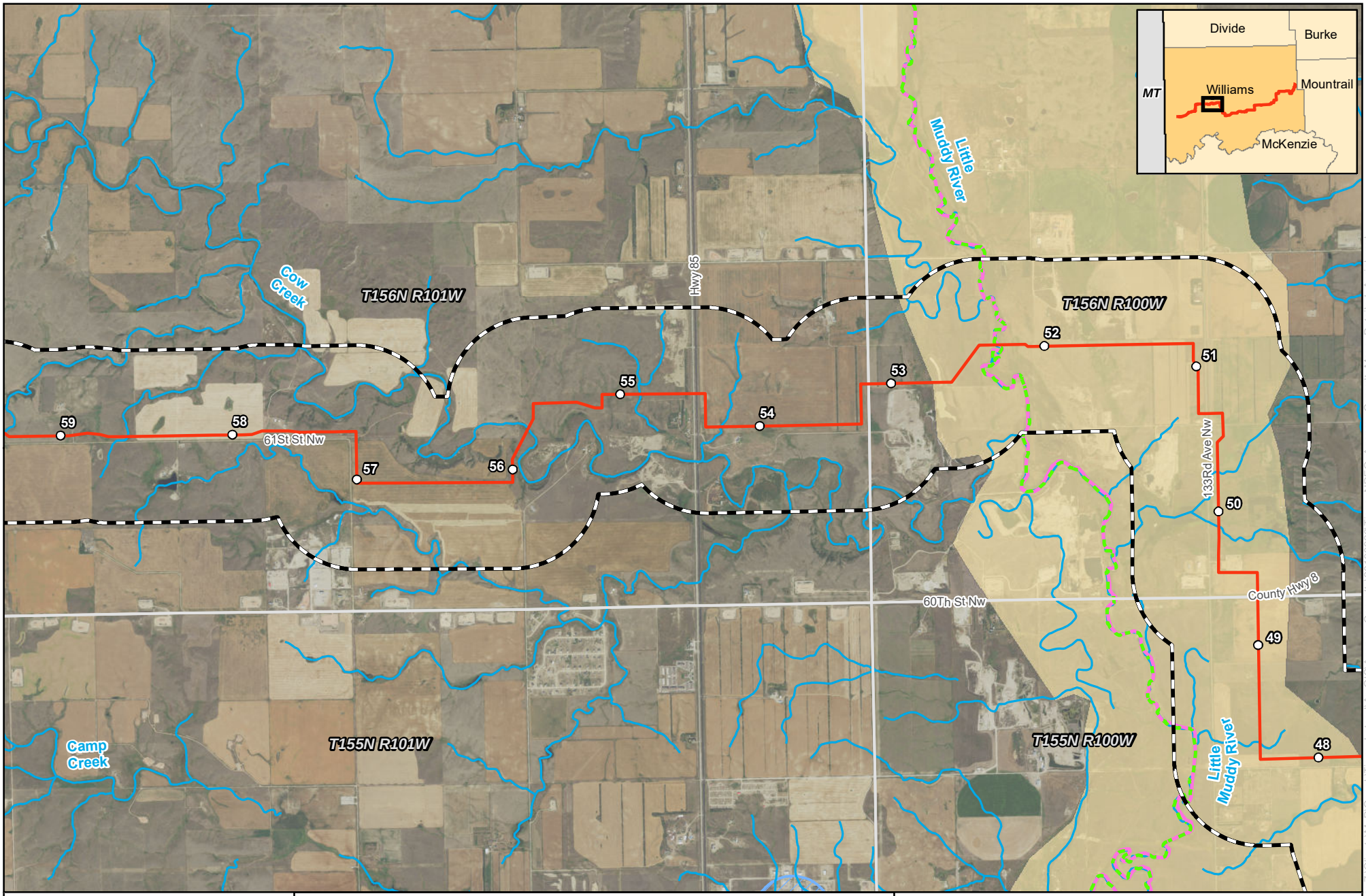

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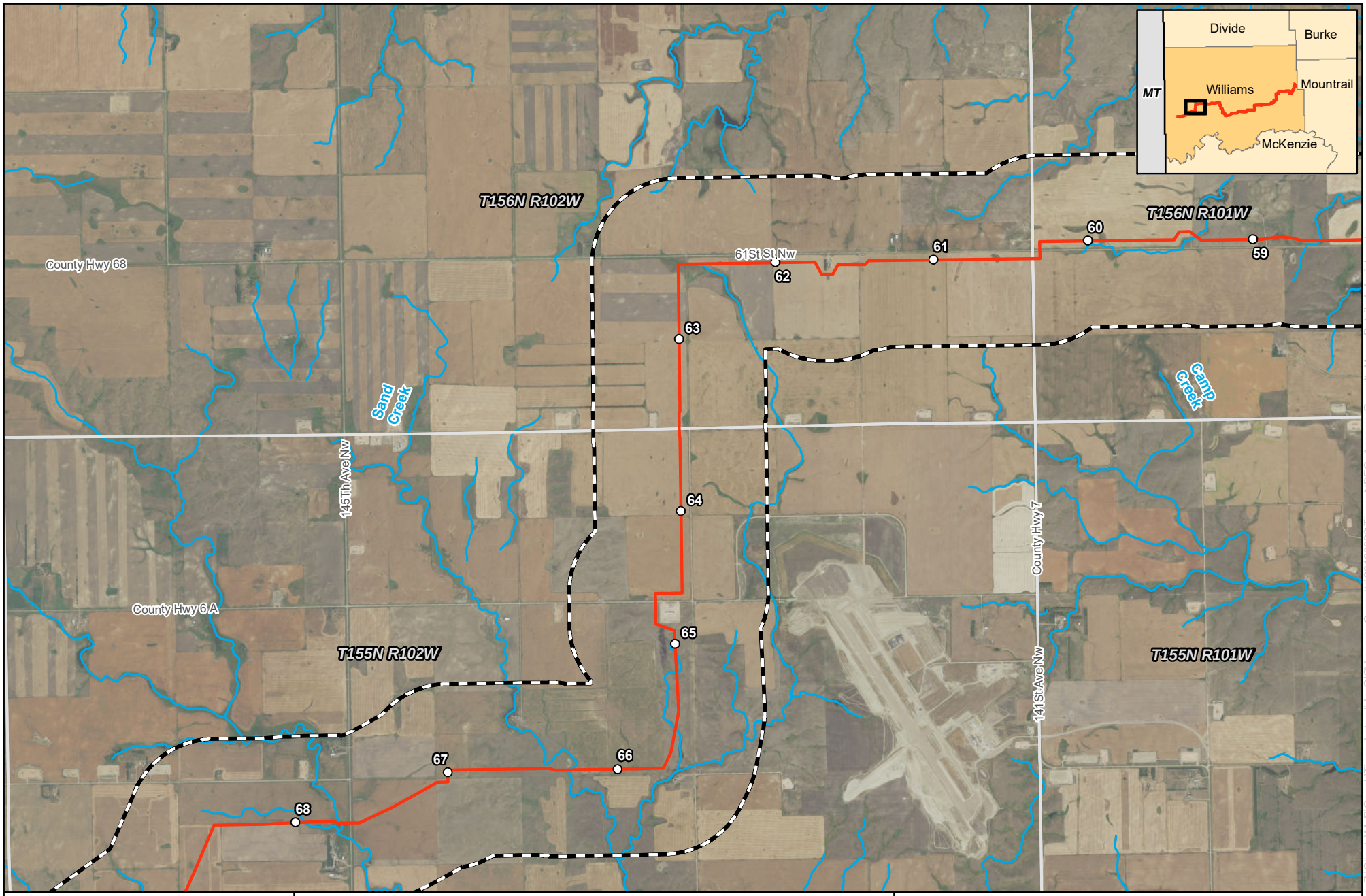

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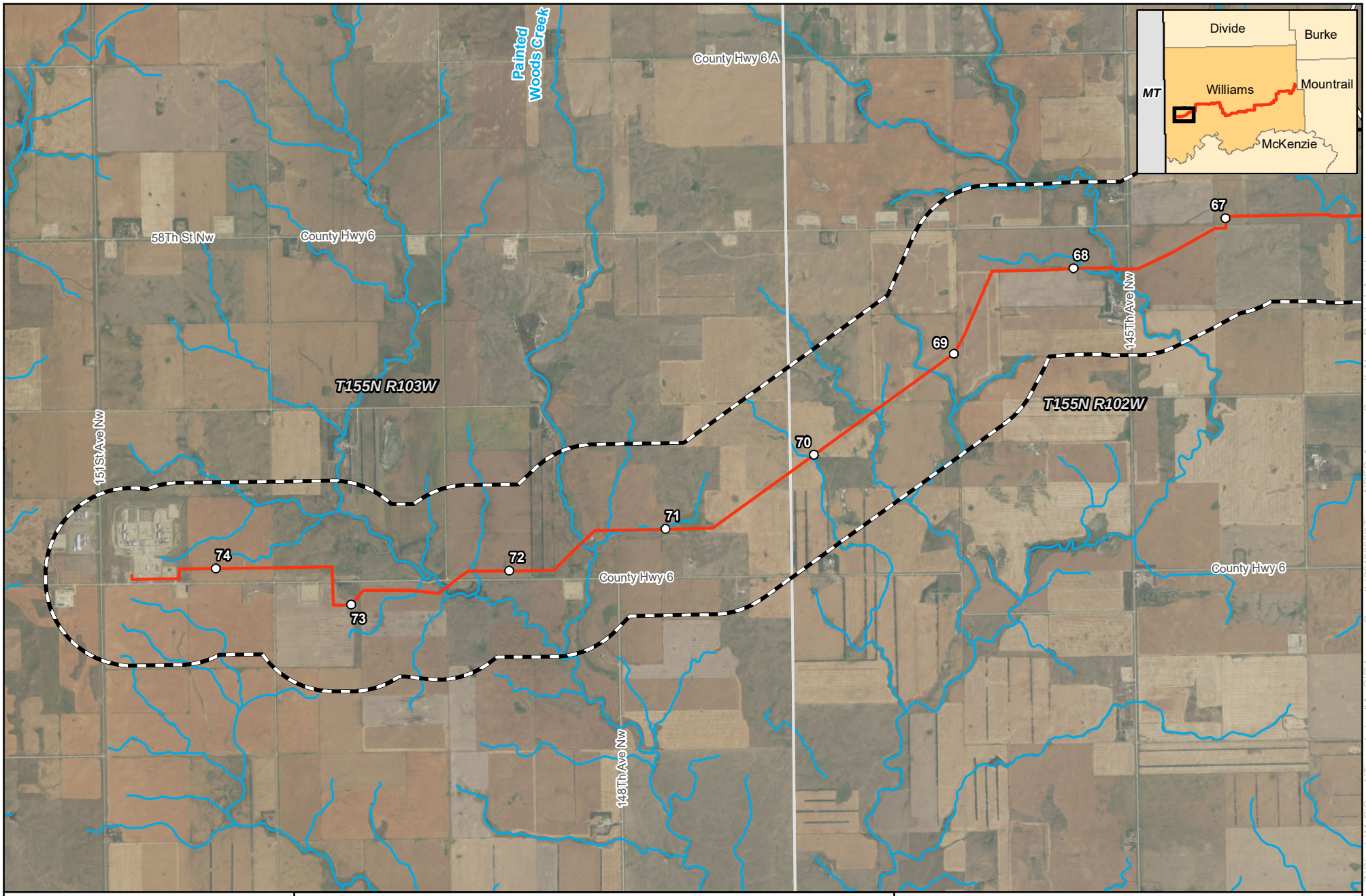

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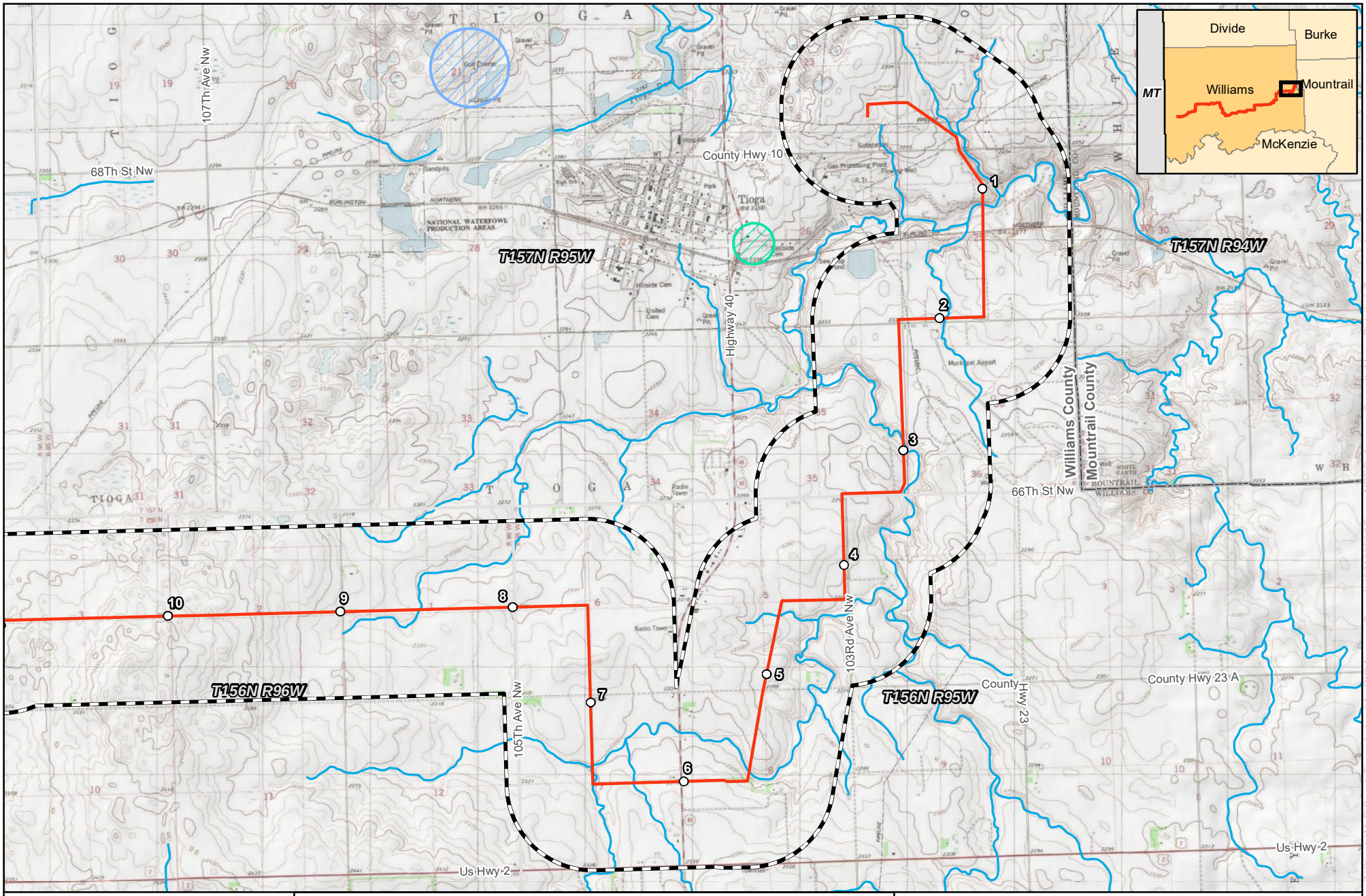

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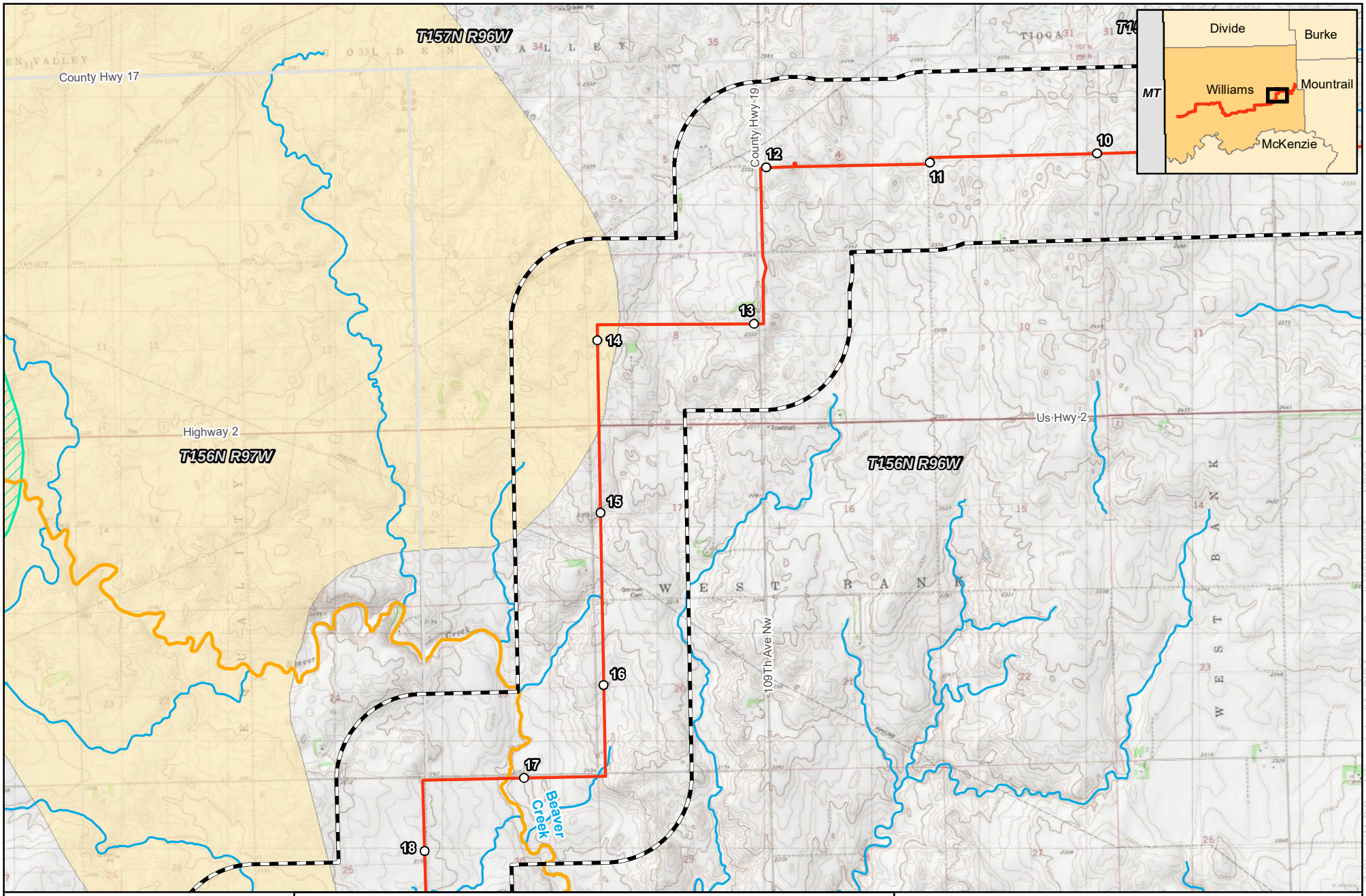

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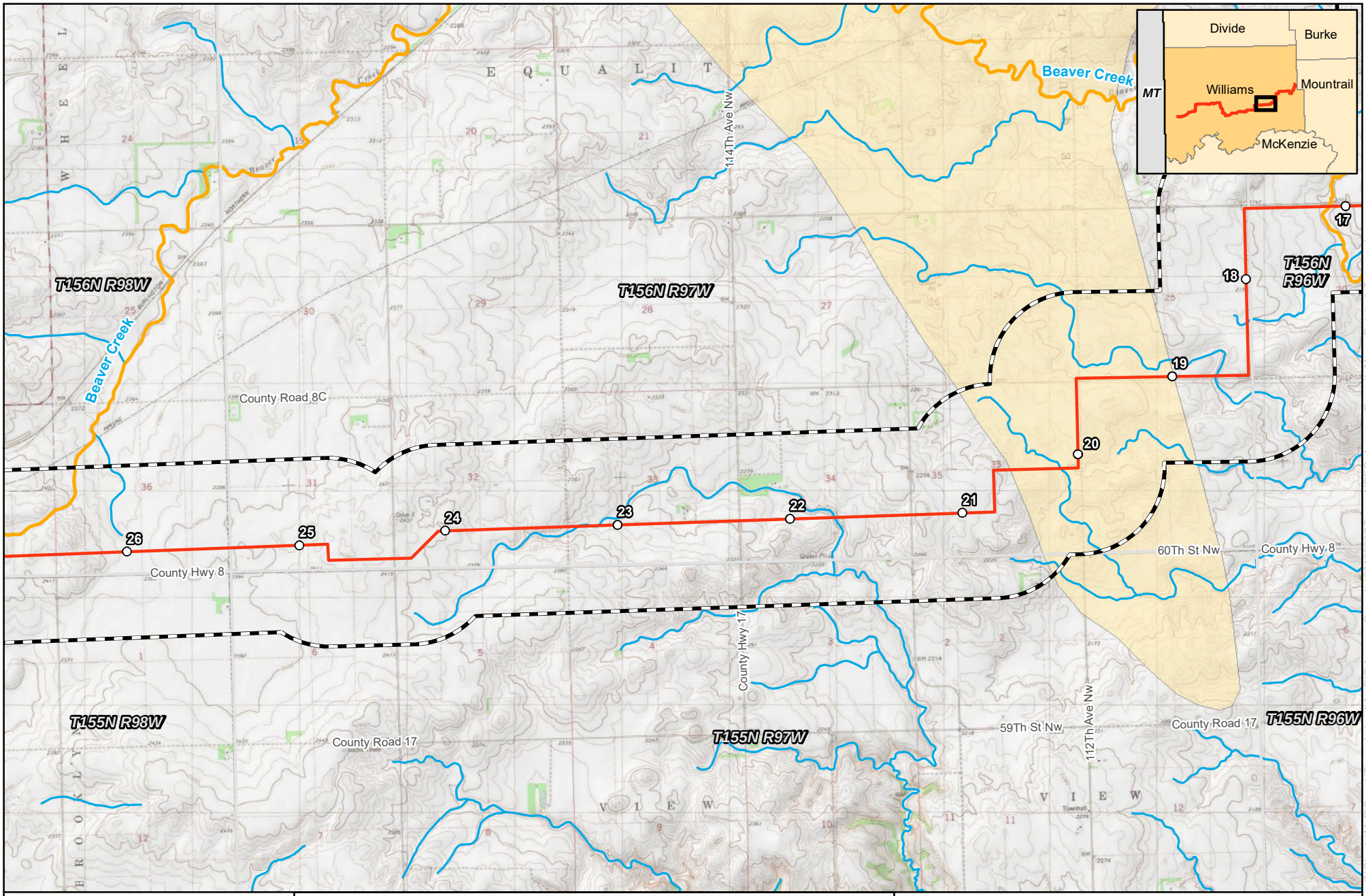
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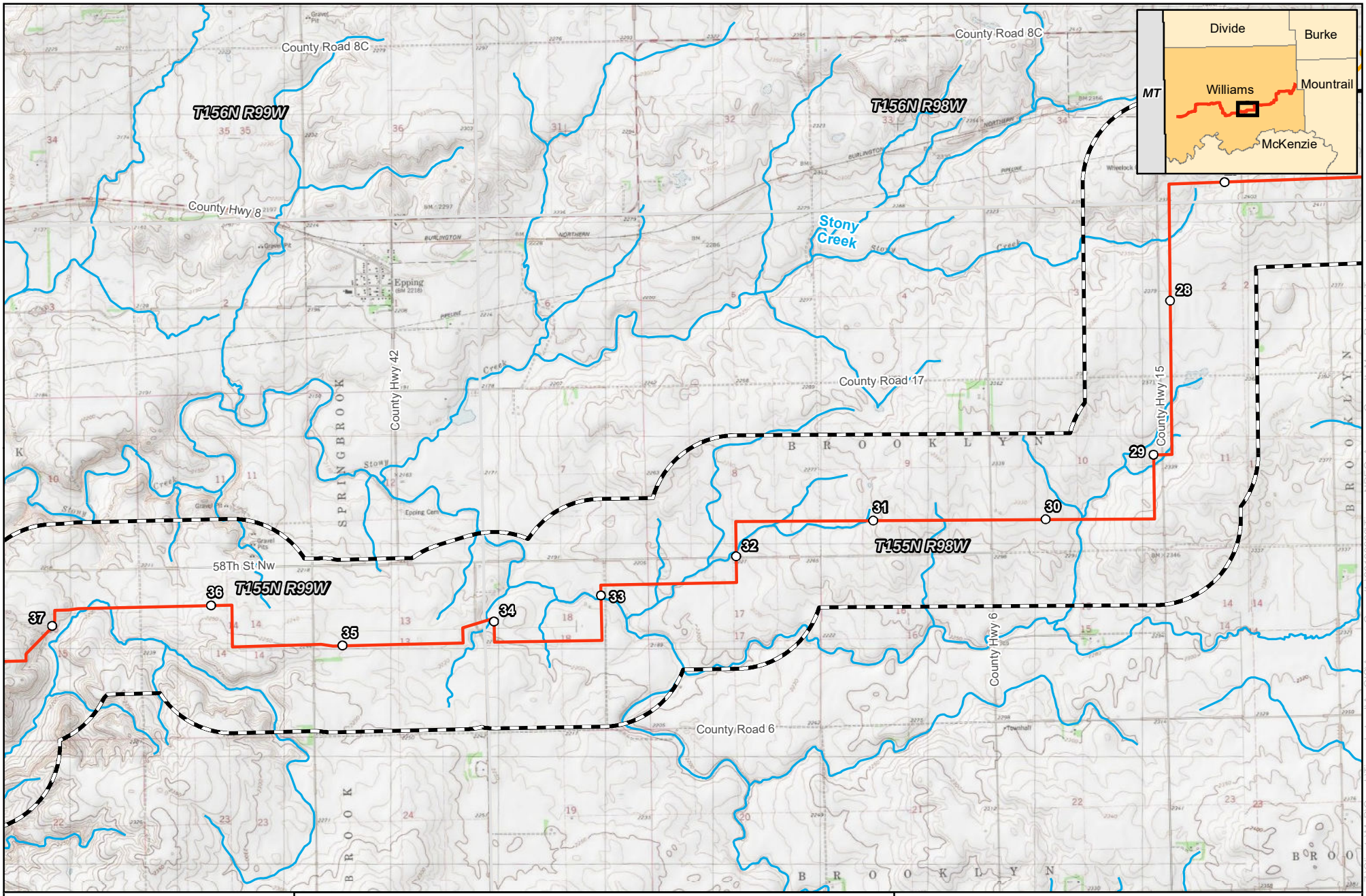

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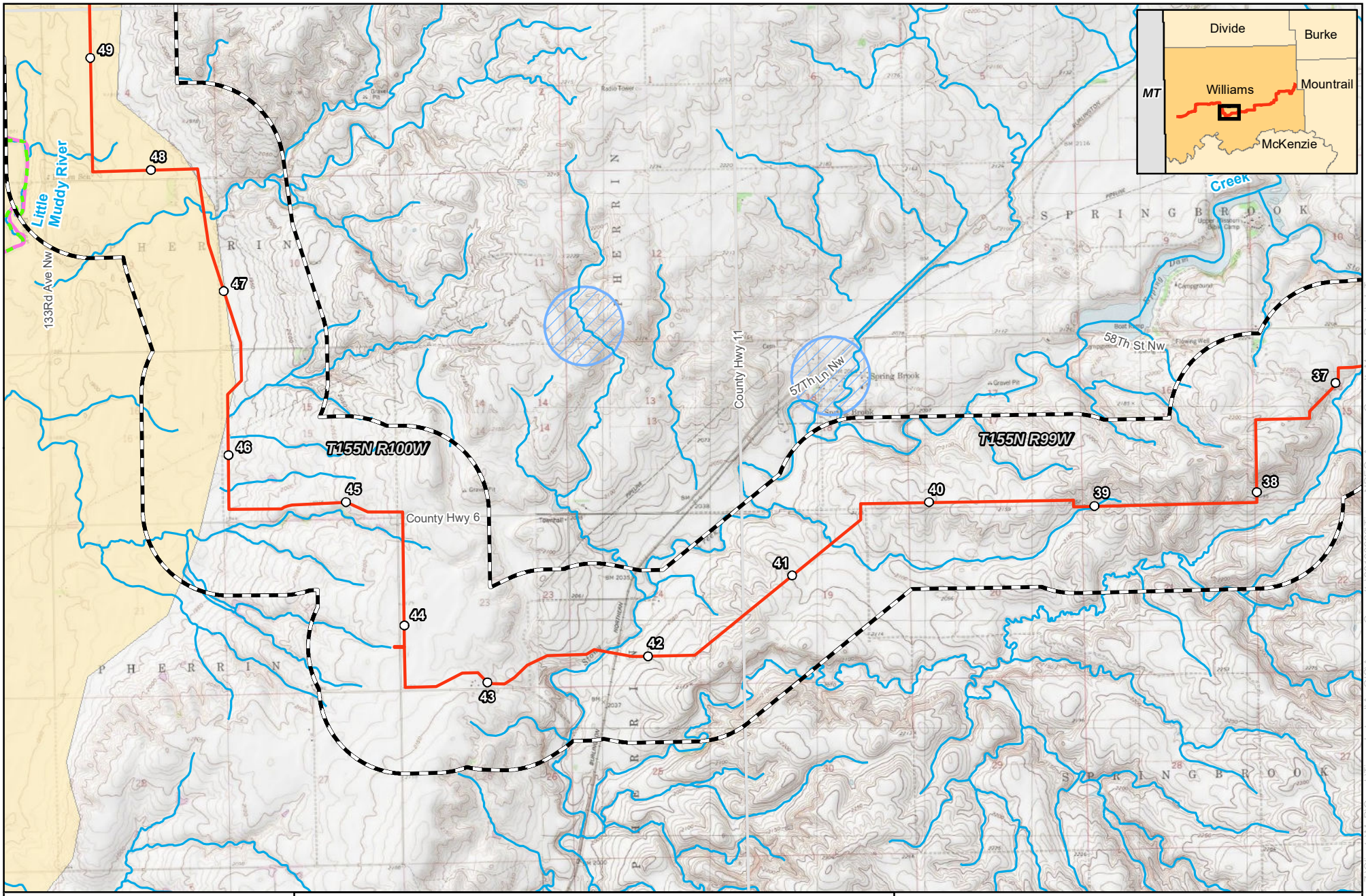

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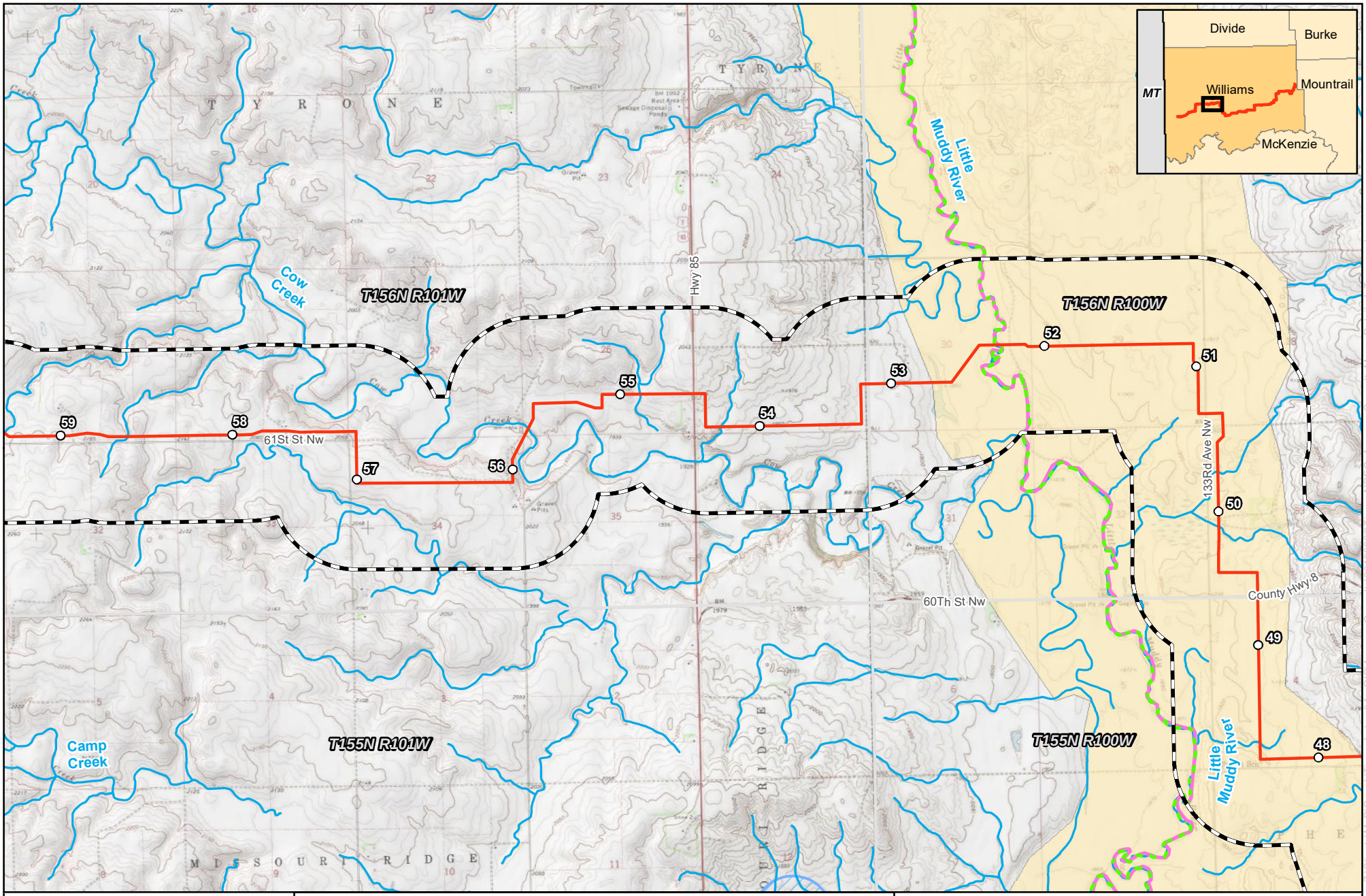
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McKenzie
Little Muddy River
Cow Creek
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58
61St St Nw
57
56
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50
60Th St Nw
County Hwy 8
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Camp Creek
T155N R101W
T155N R100W
Little Muddy River
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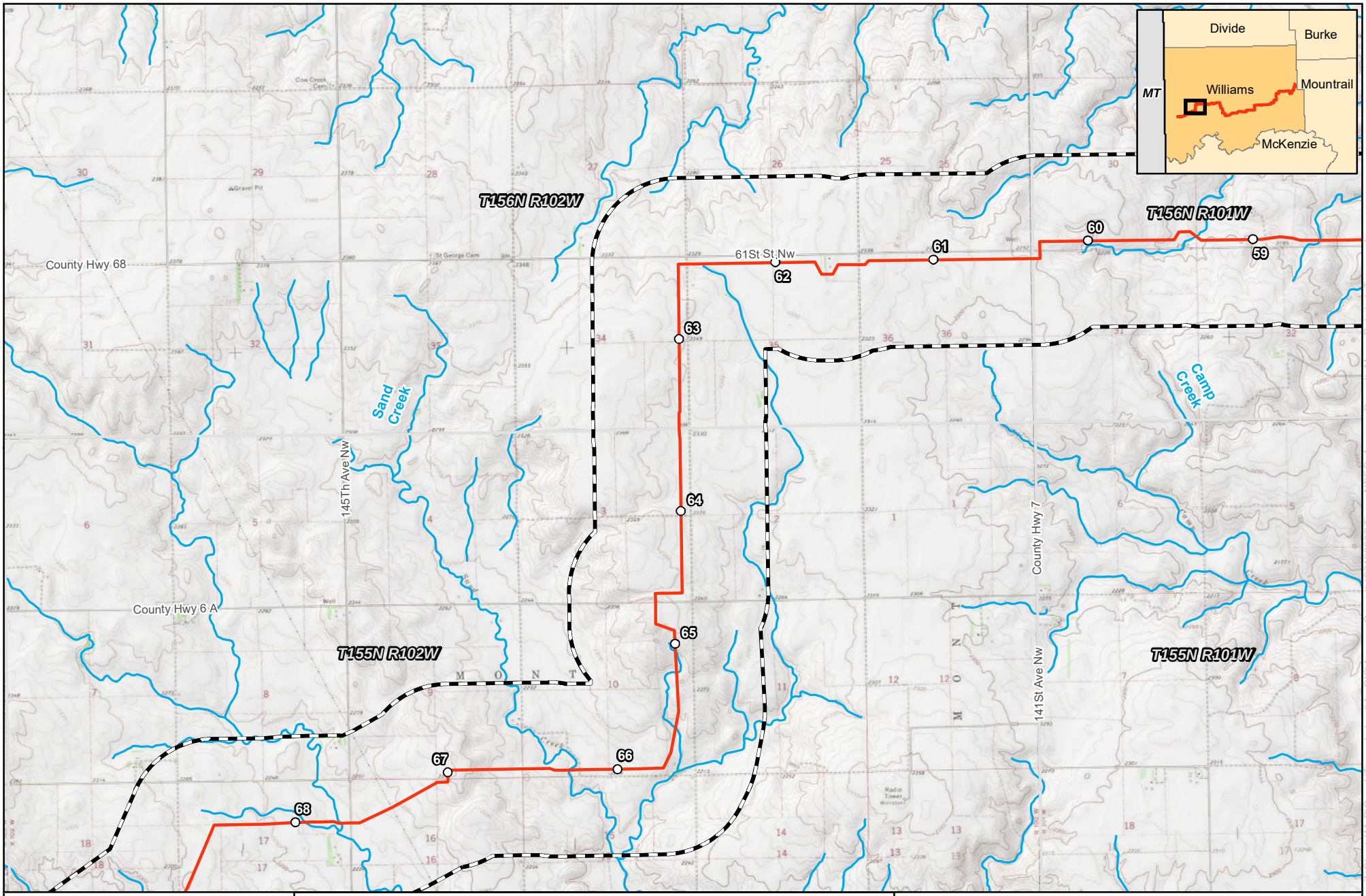

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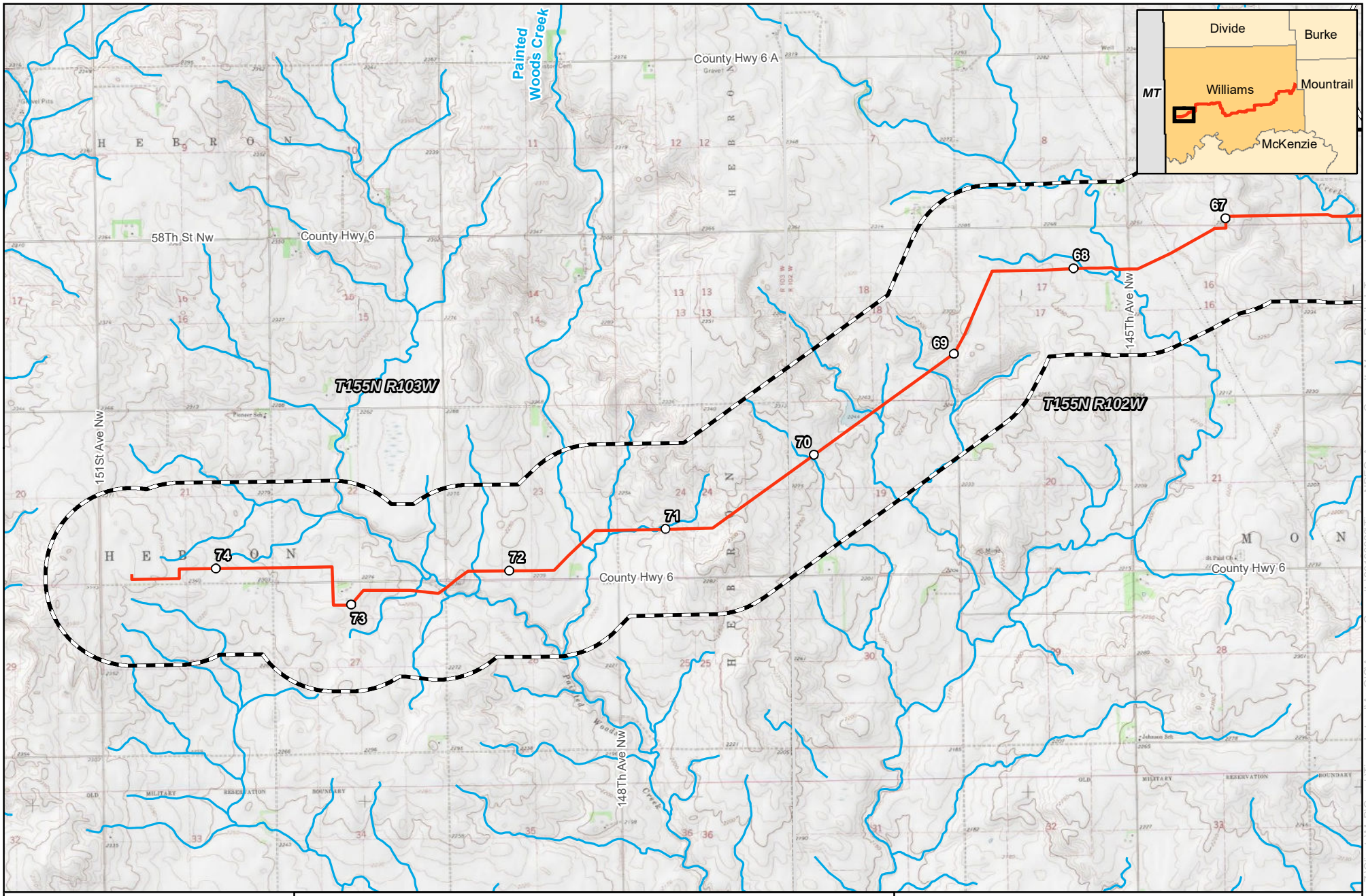

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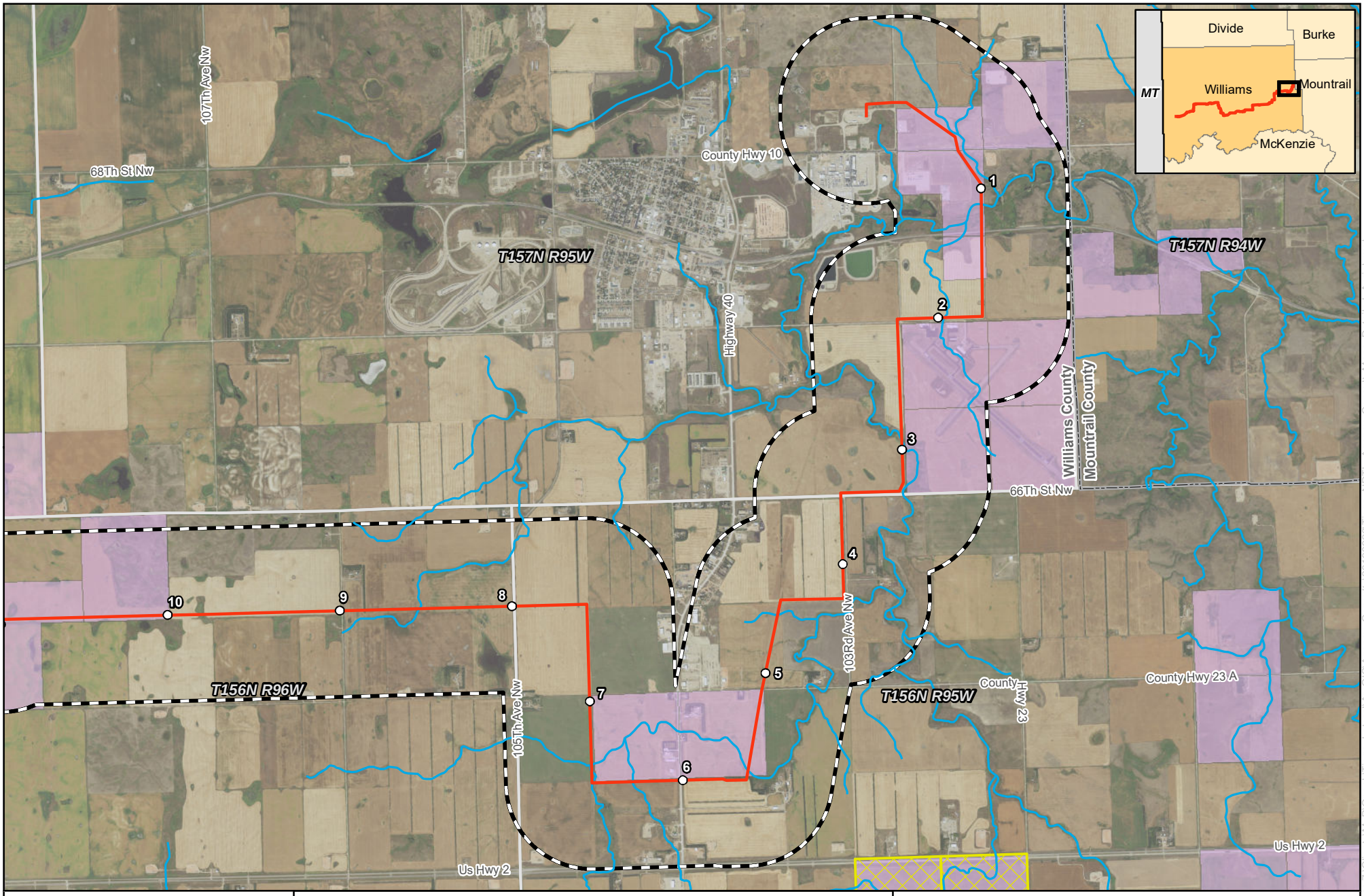

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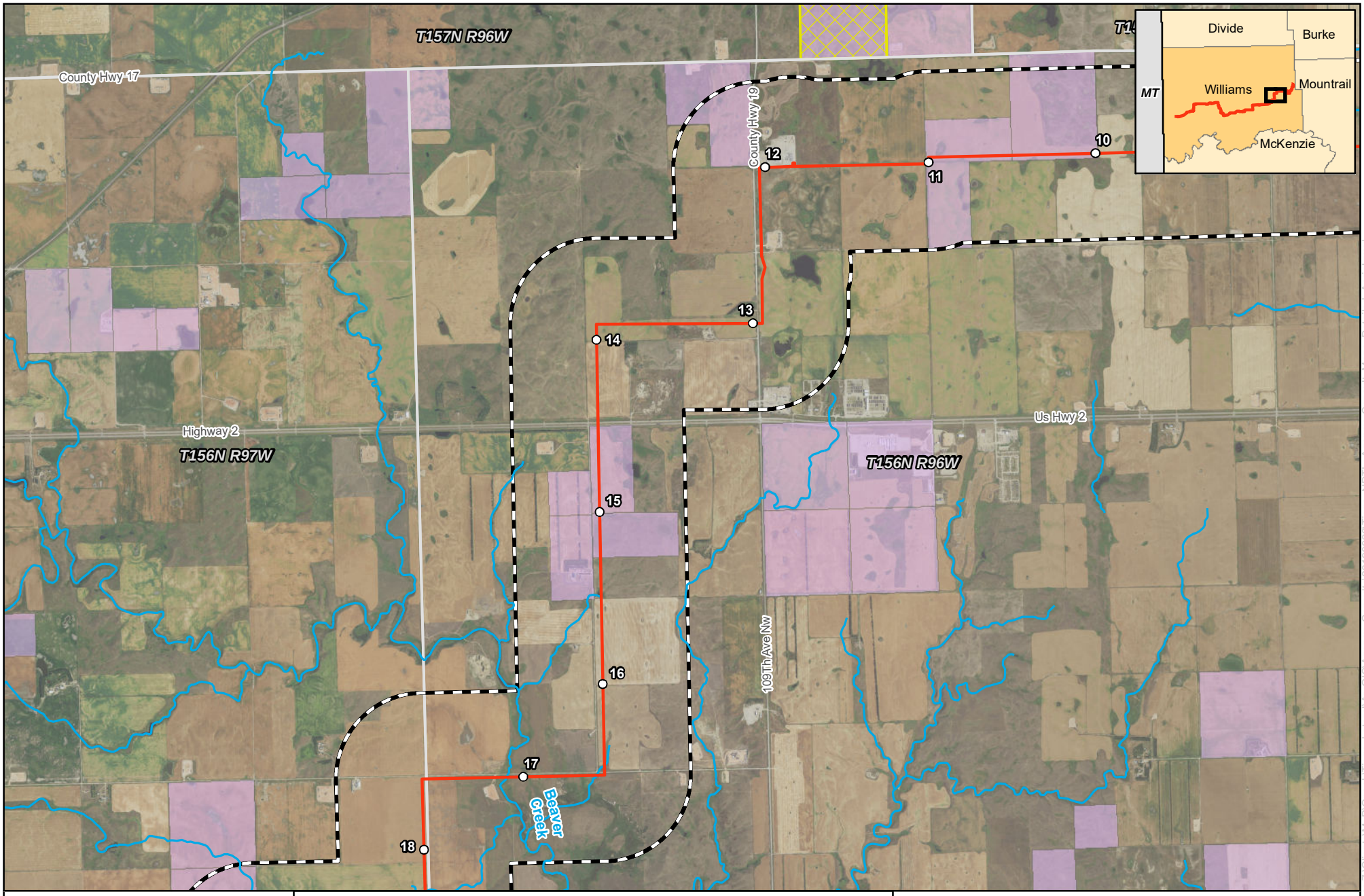

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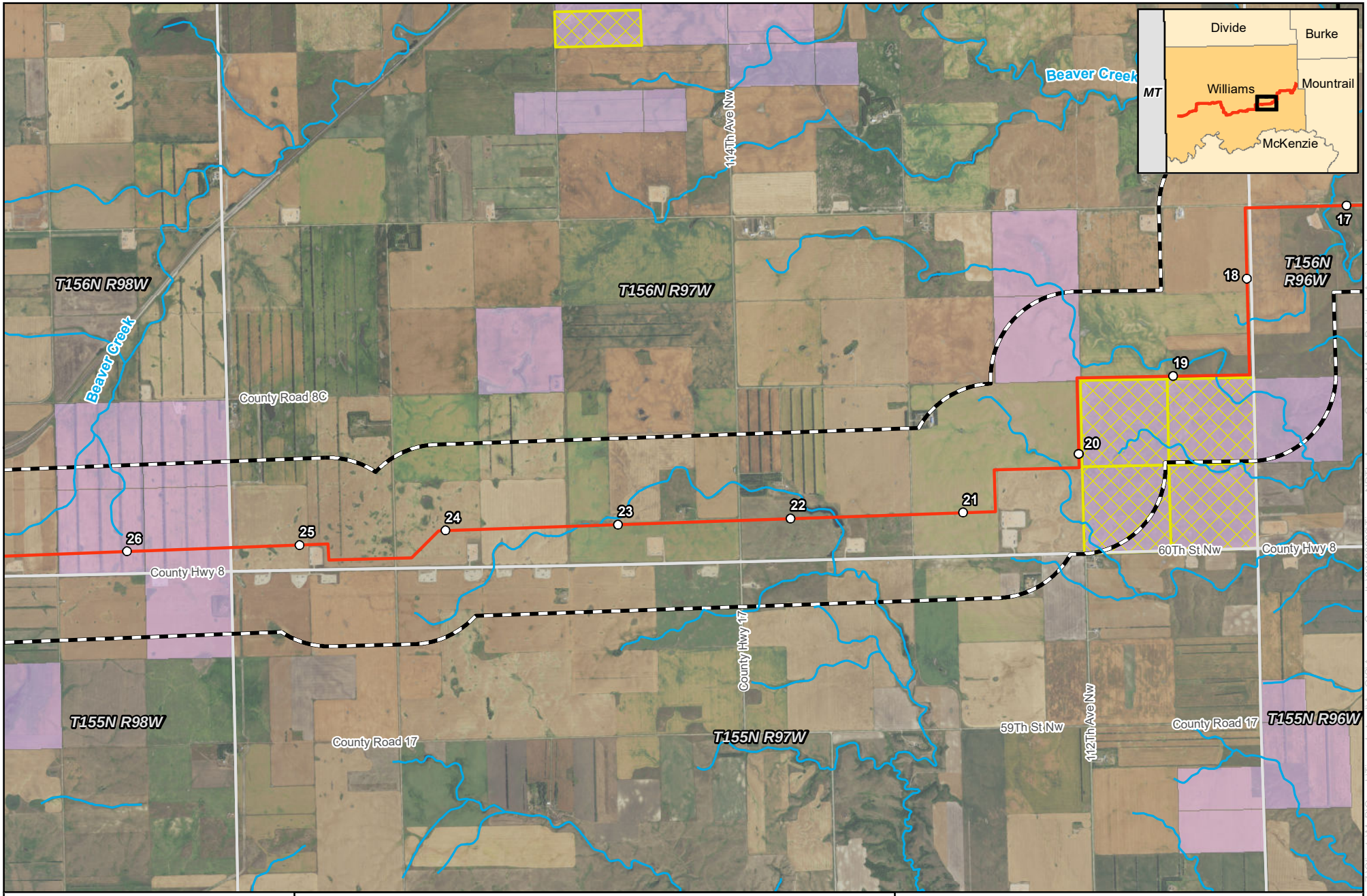

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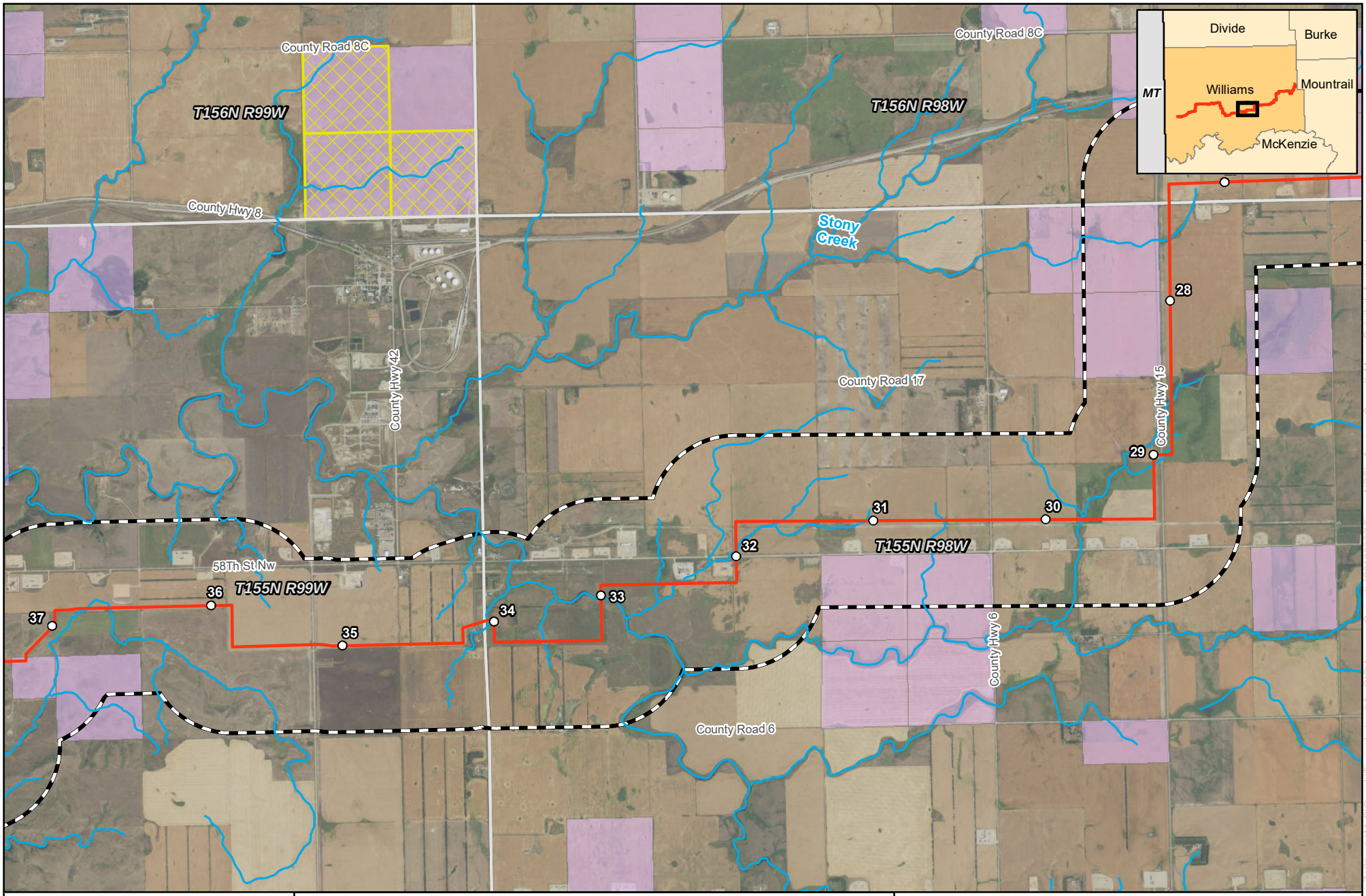

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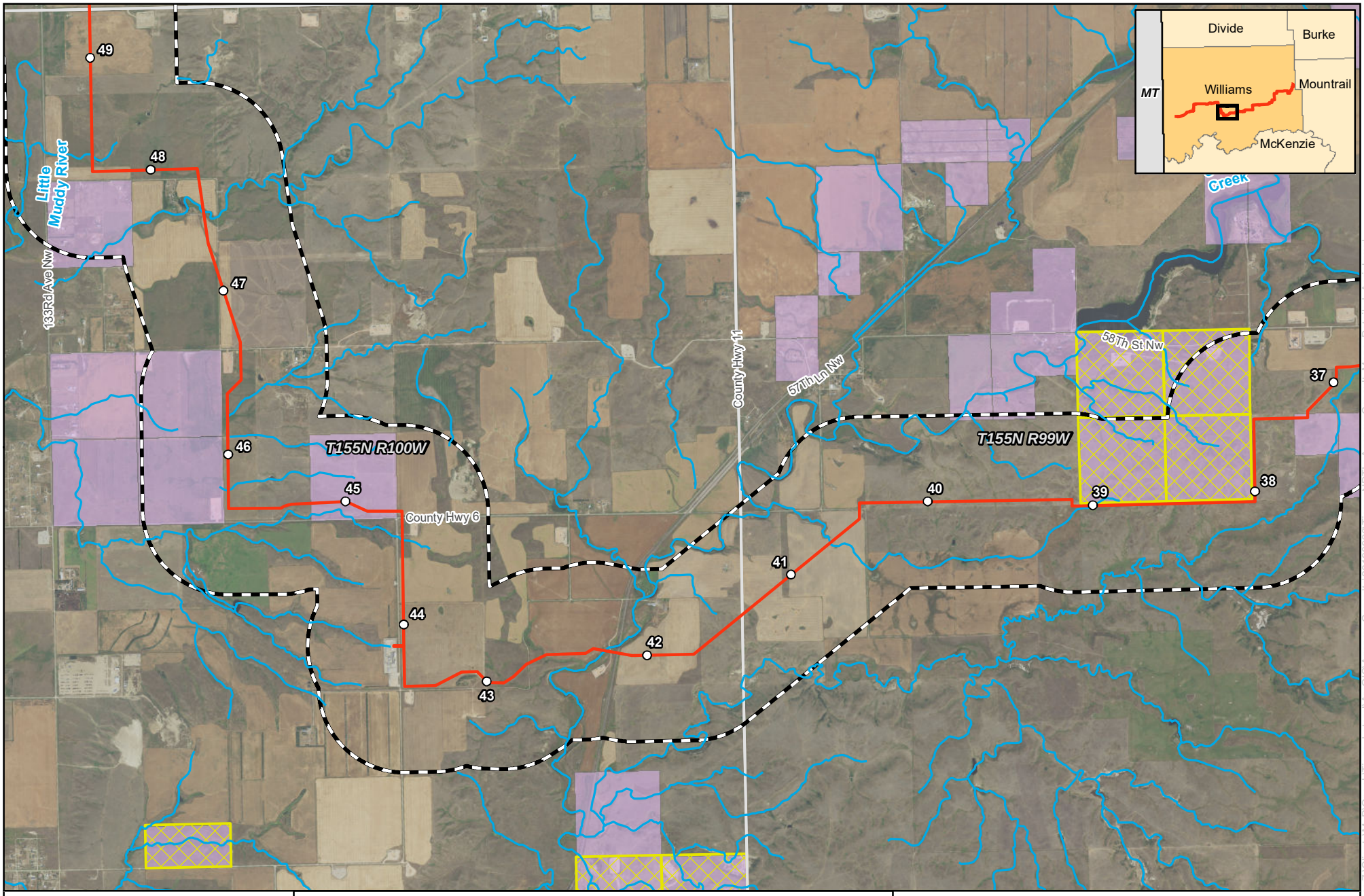

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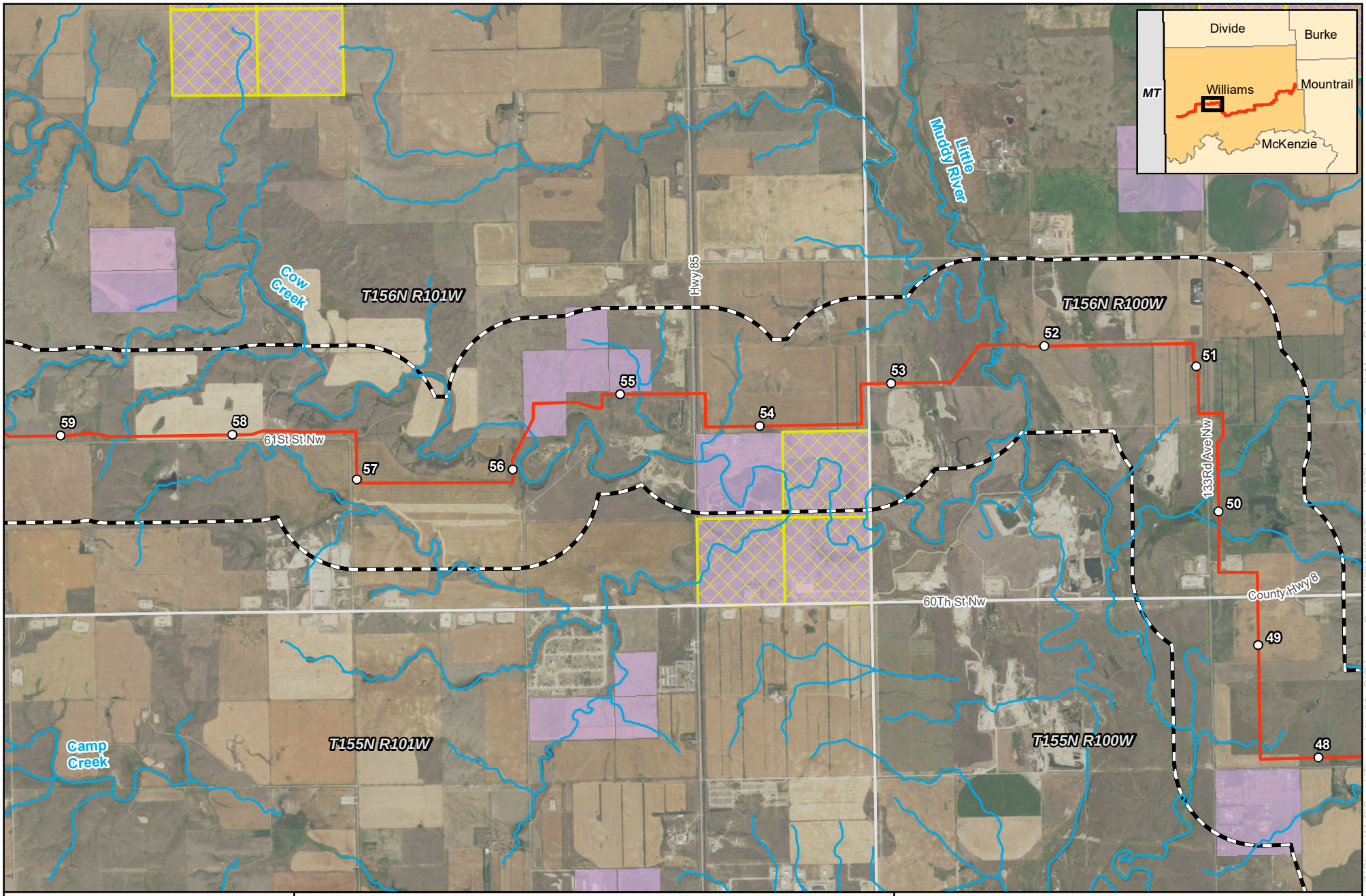

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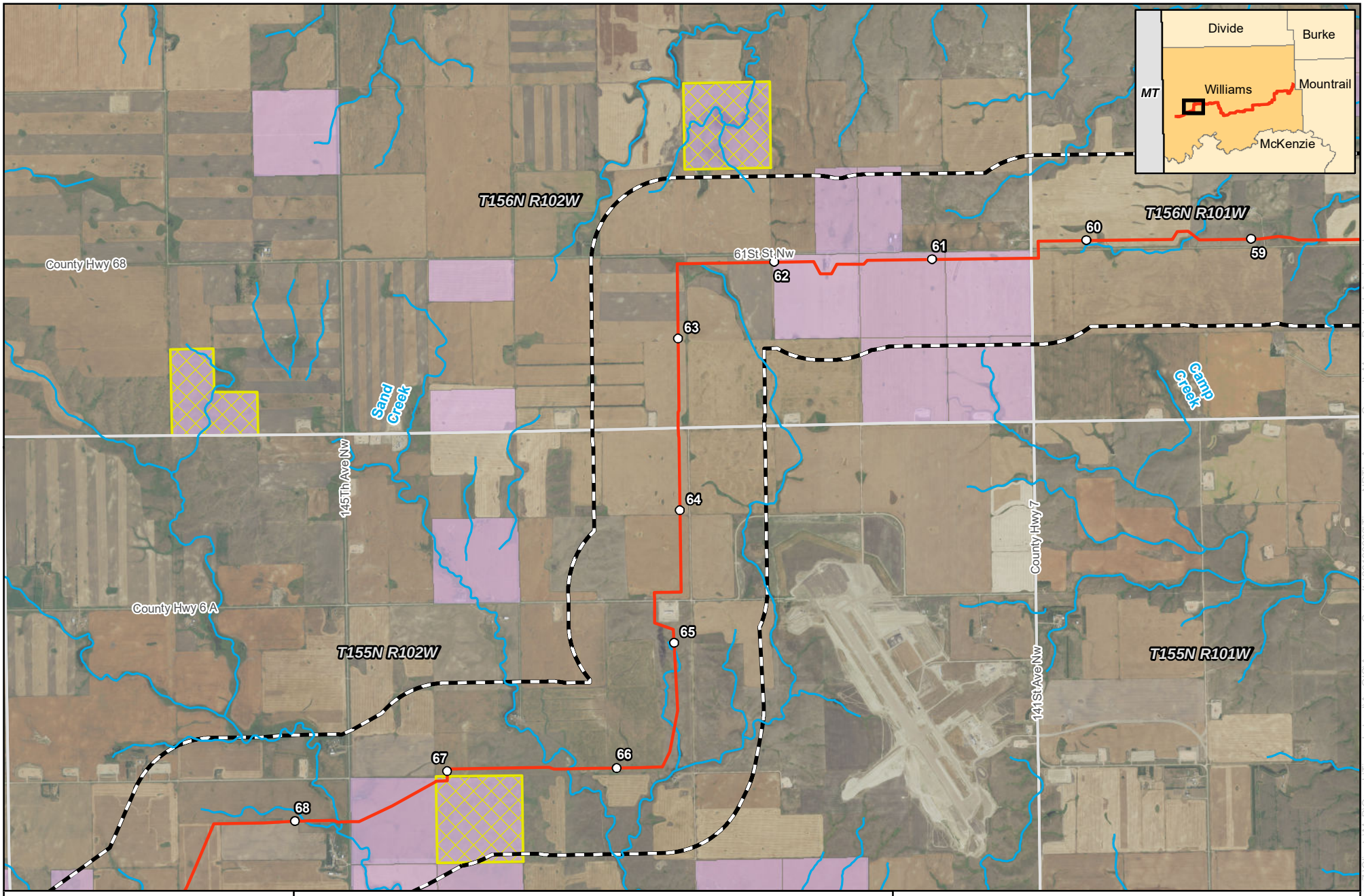

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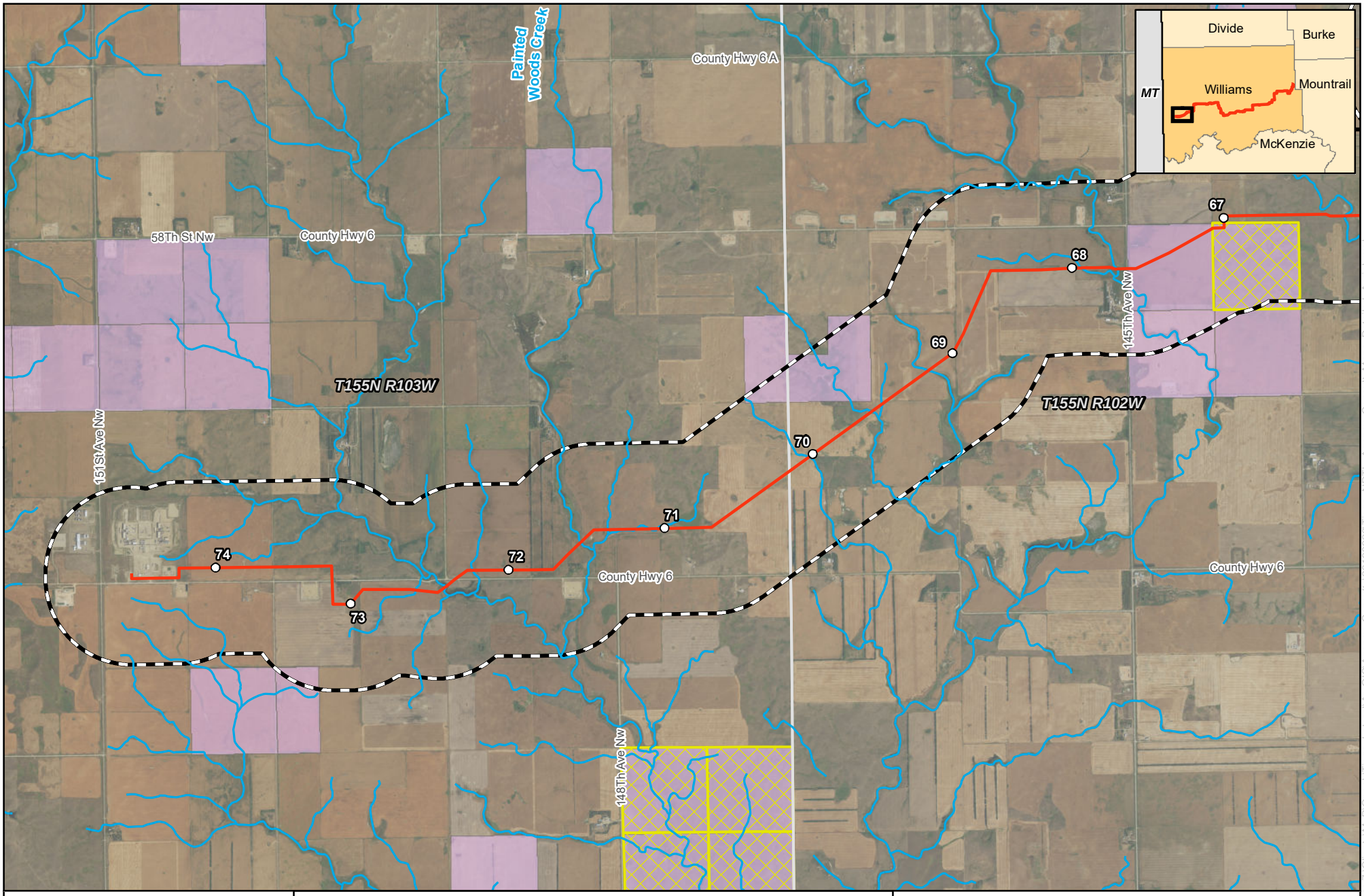

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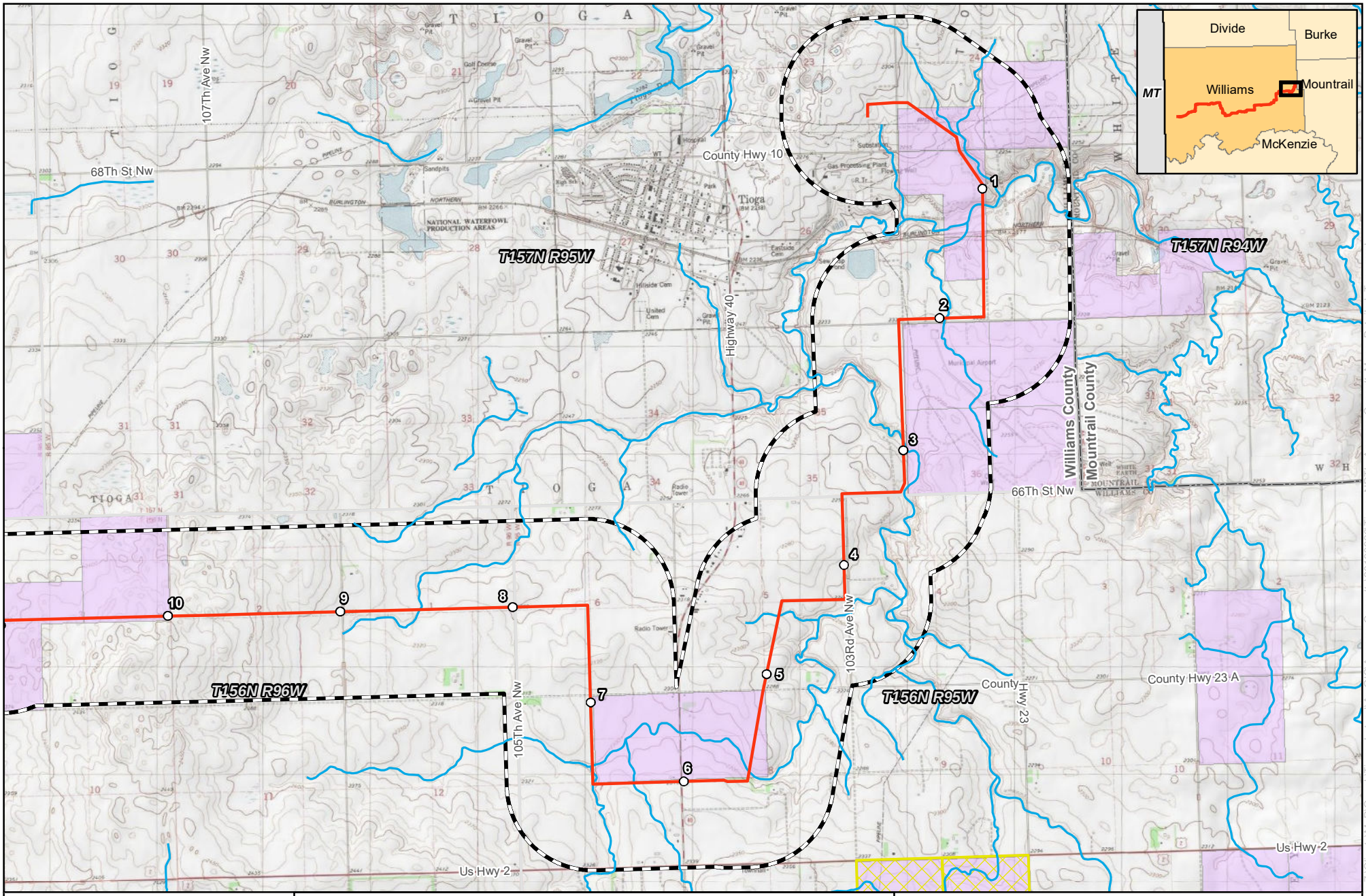

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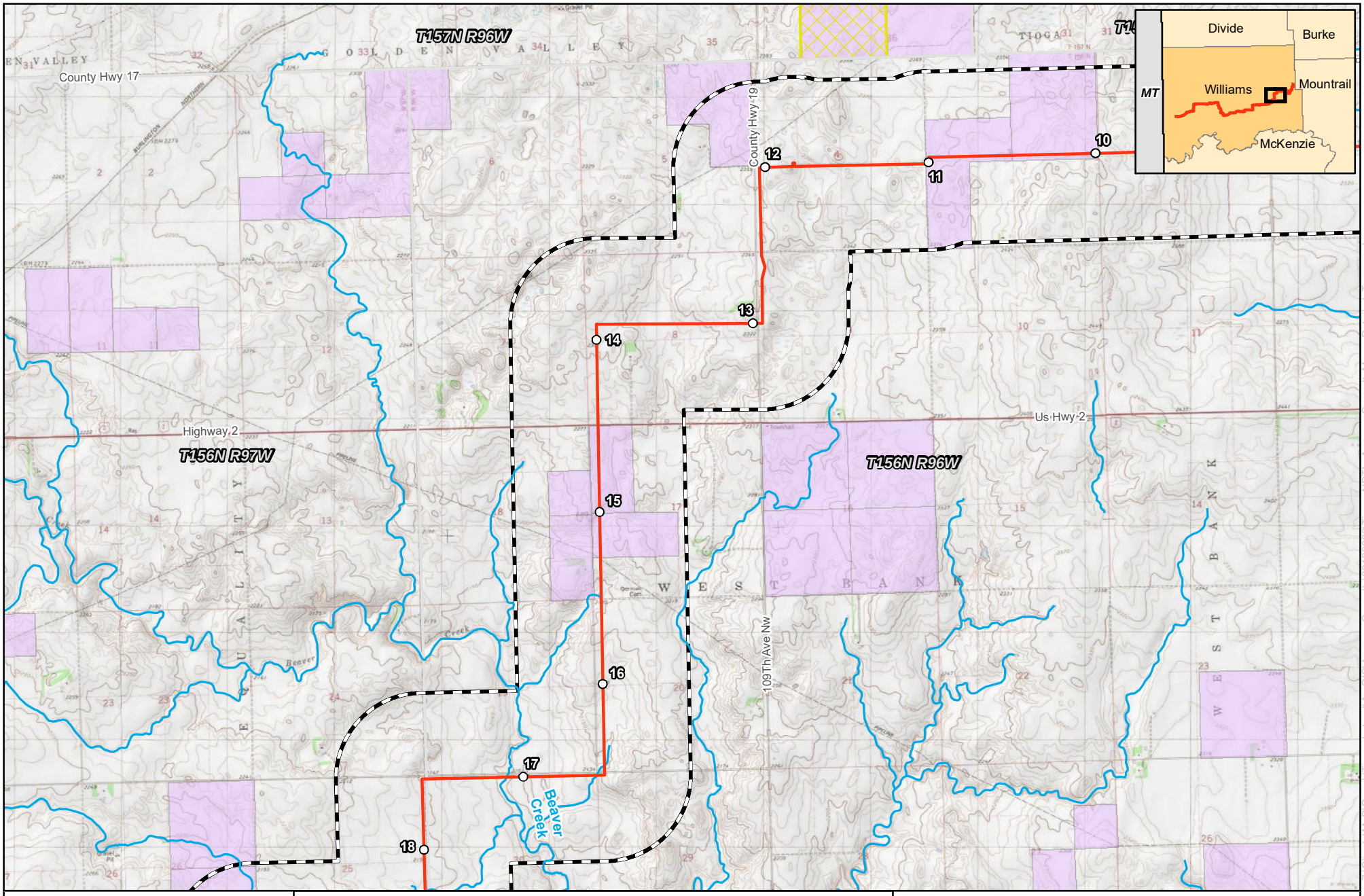

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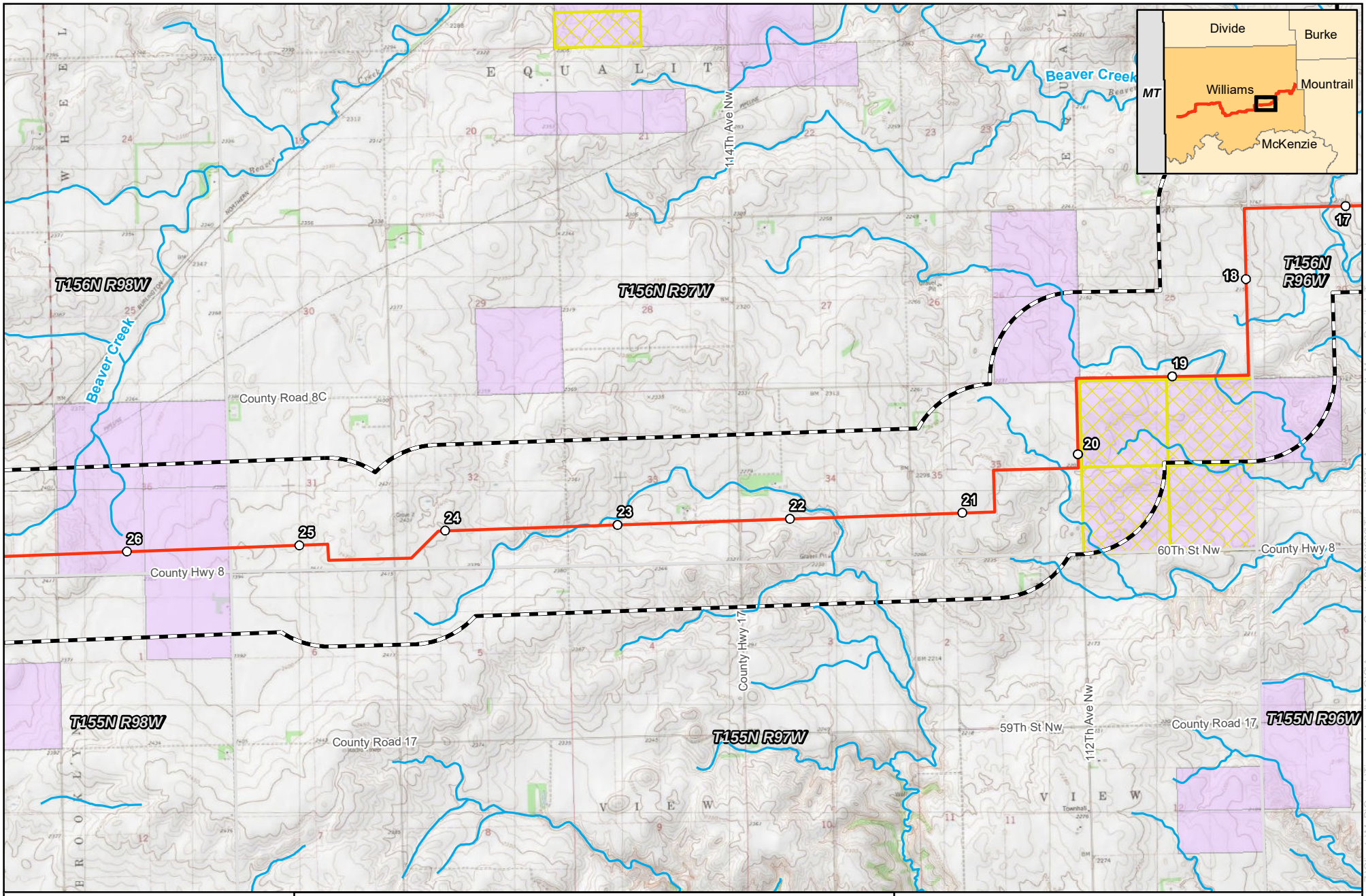

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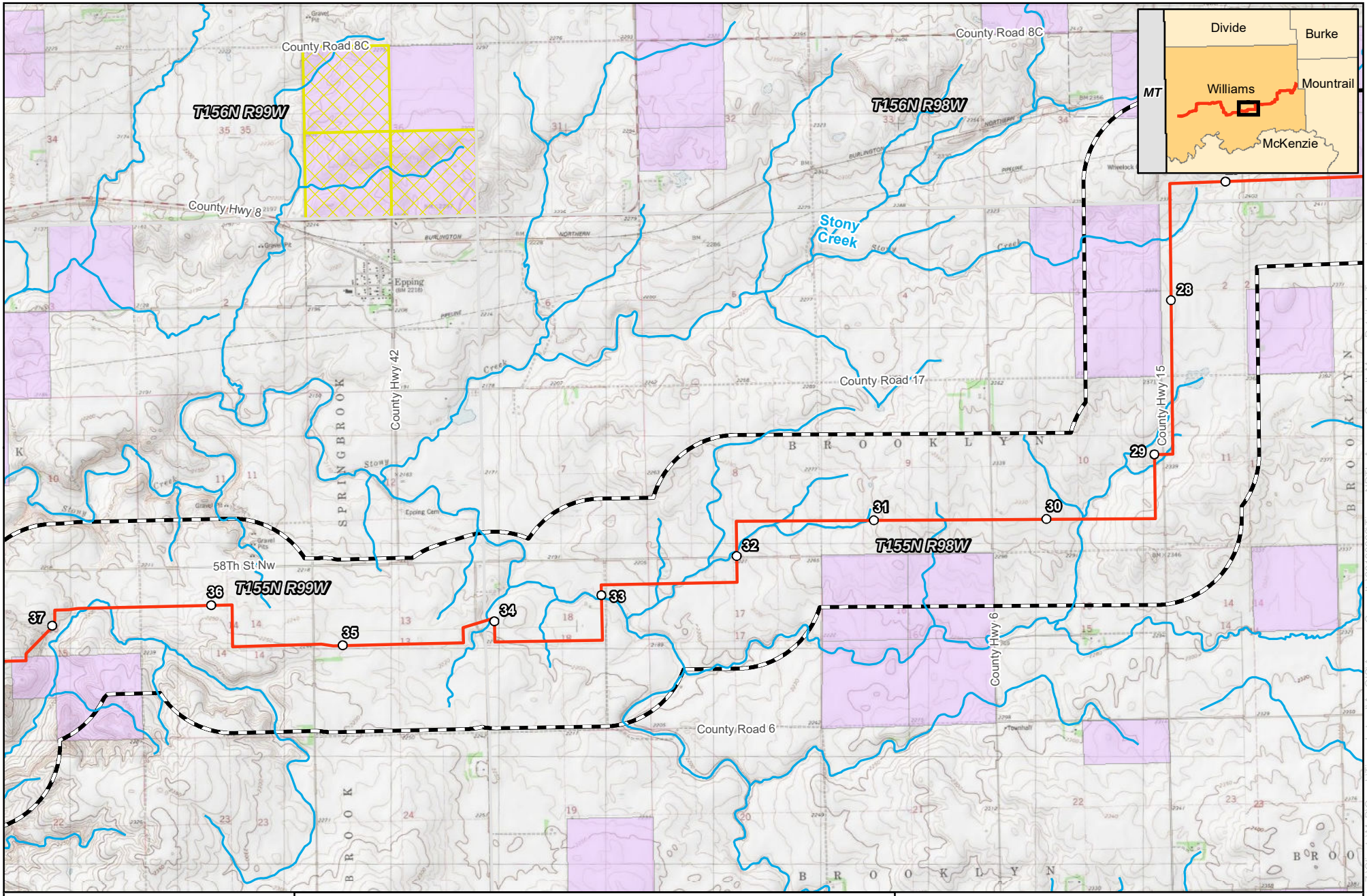

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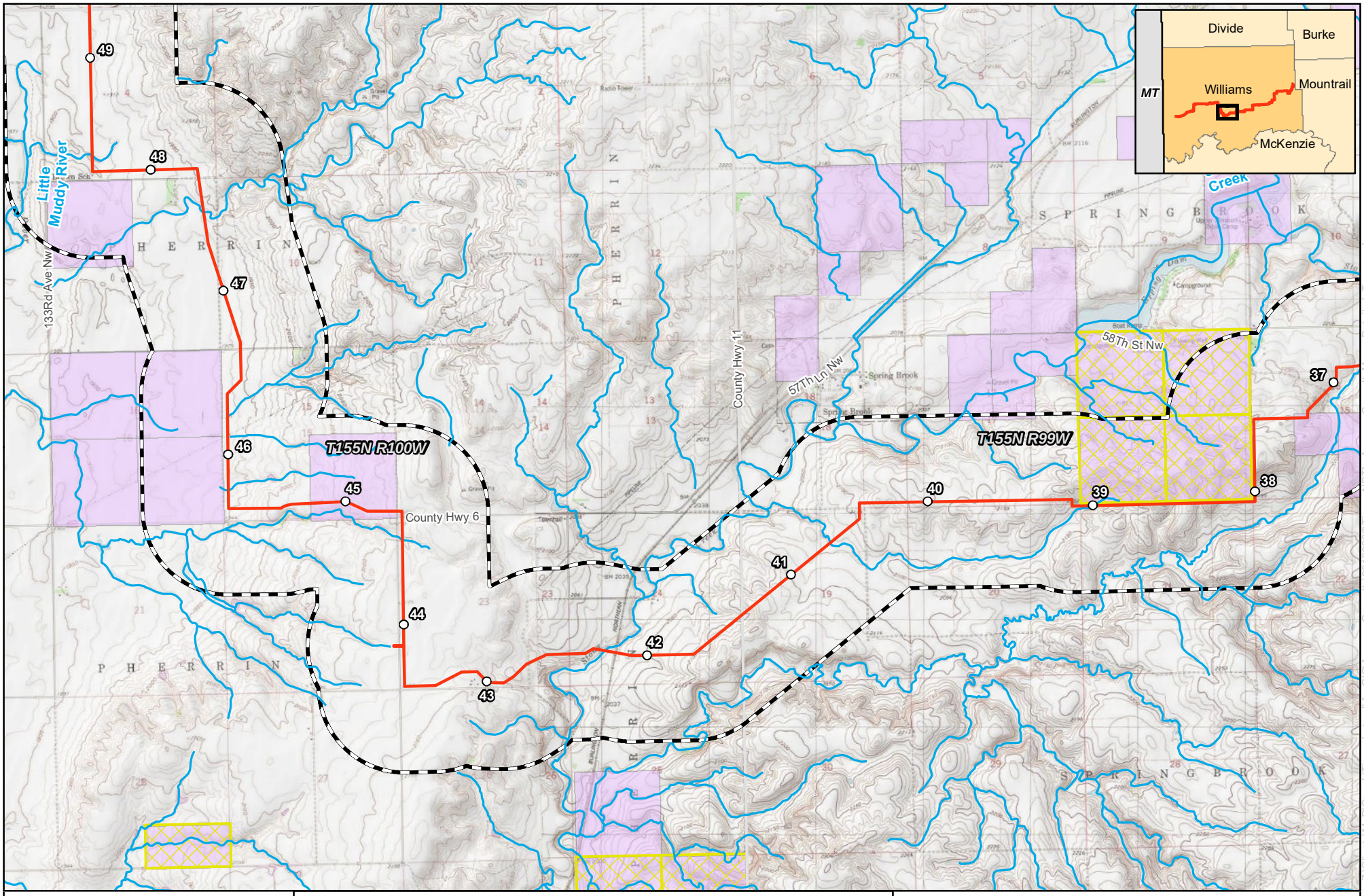

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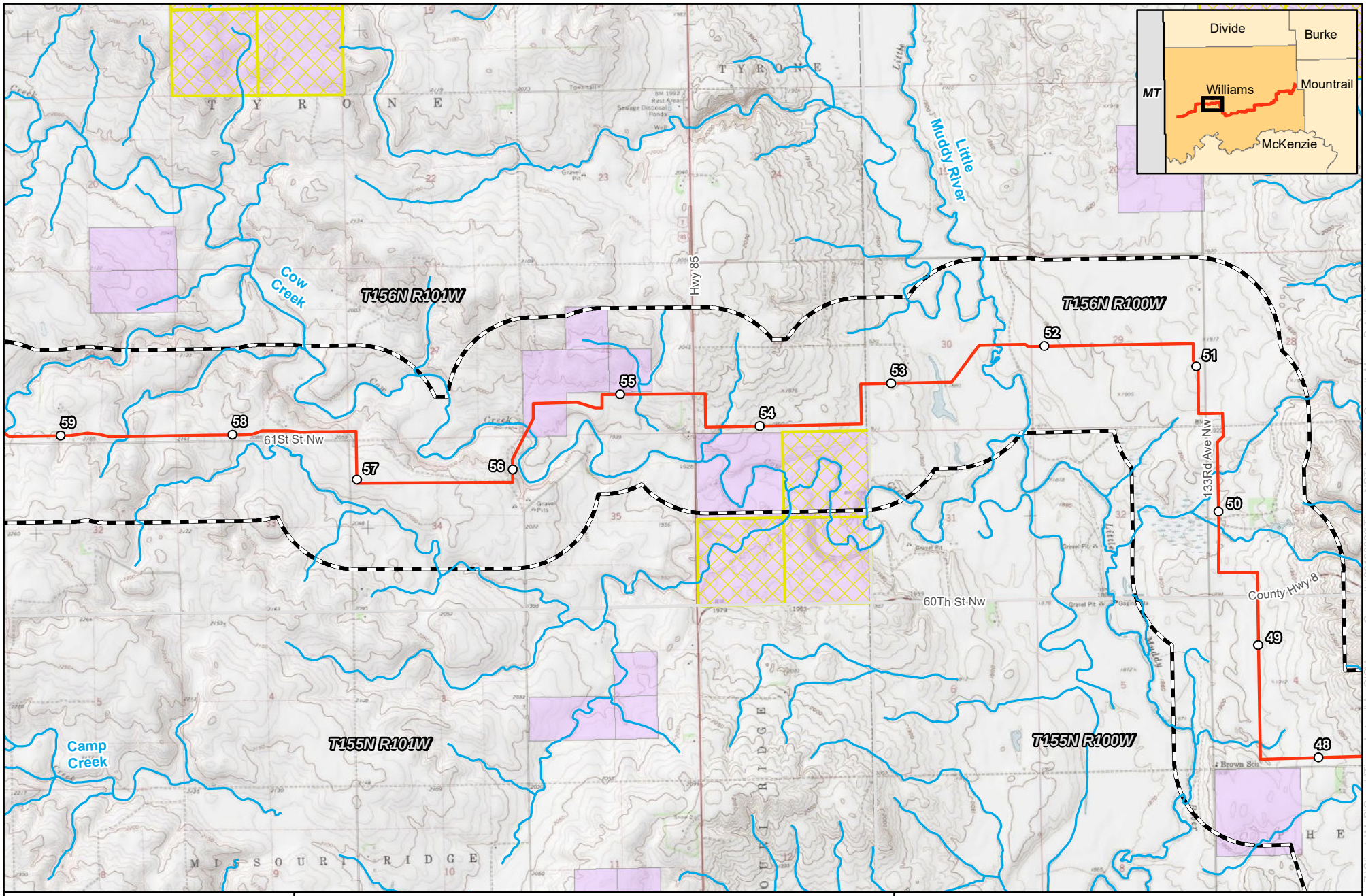

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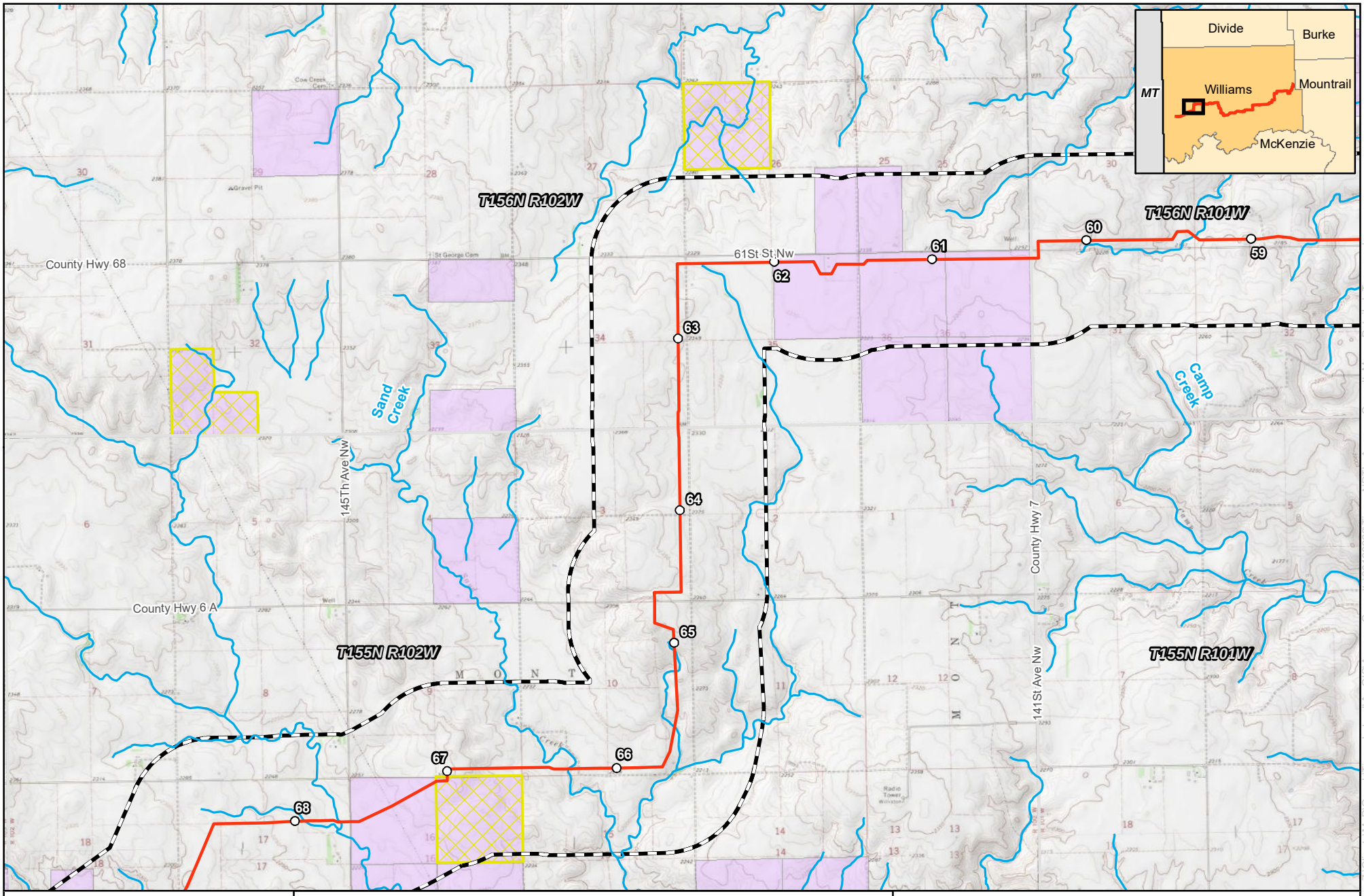

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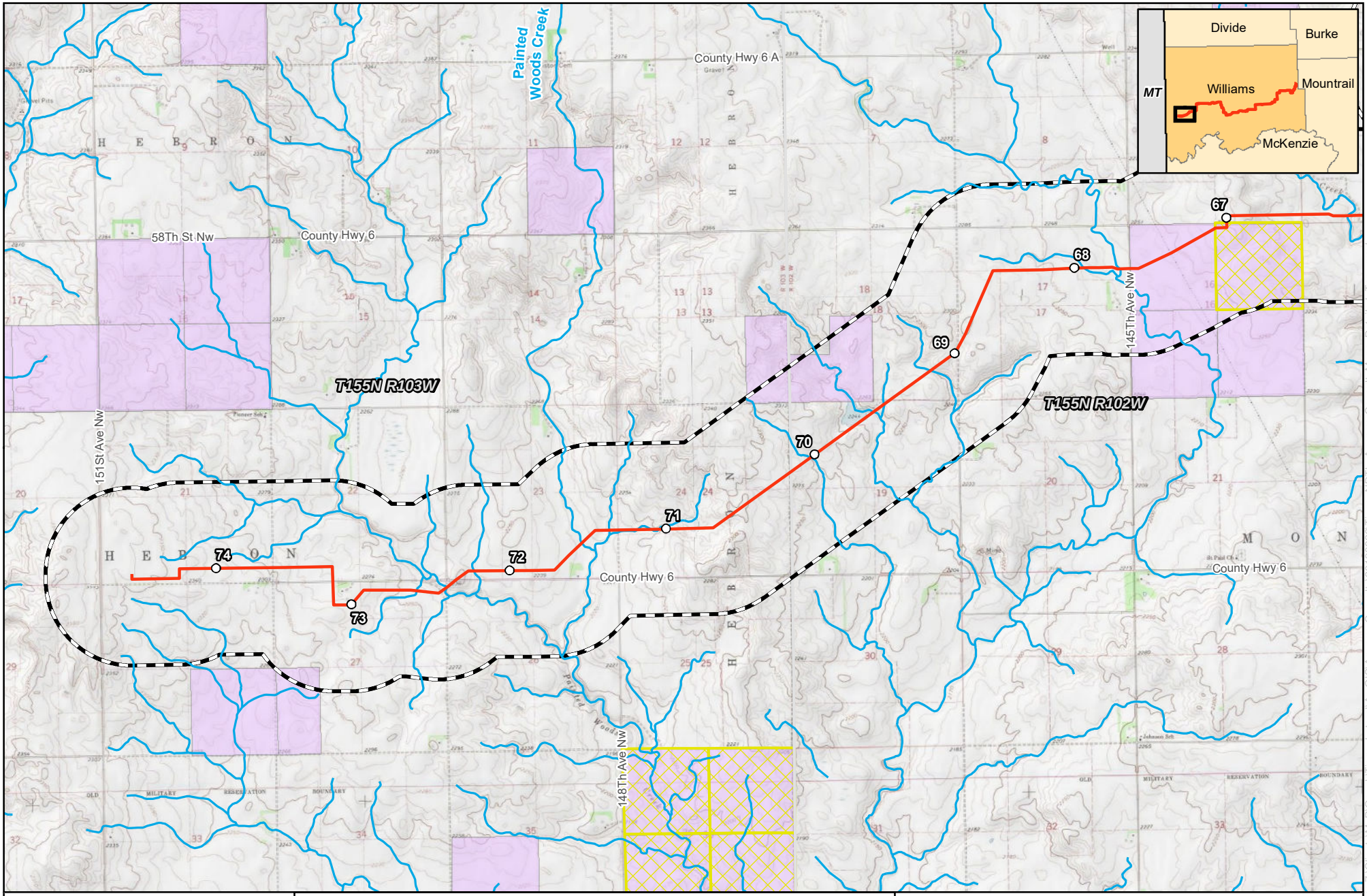

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Exhibit F

Landowner Waivers

[pending]

Exhibit G

Environmental Permit Table

ONEOK Bakken Pipeline, L.L.C. - Tioga Lateral Pipeline Permit Summary			
Agency	**Permit / Approval**	**Resource**	**Permit Status**
Federal Permits			
U.S. Army Corps of Engineers (USACE) - Omaha District	Nationwide Permit (NWP) 12 (Utility Line Activities)	Waters of the U.S.	As currently designed, a Pre-Construction Notification (PCN) will not be required (to be confirmed pending final project design).
State Permits (North Dakota)			
North Dakota Public Service Commission	Certificate of Corridor Compatibility and Route Permit	Siting of Project Corridor / Route	Application submitted November 2019. Pending
State Historic Society of North Dakota (SHPO)	Cultural Resources Consultation (Section 106-National Historic Preservation Act)	National Register of Historic Places - eligible cultural resources	Class III Cultural Resources Report to be submitted to North Dakota SHPO in December 2019. Concurrence anticipated in early 2020.
North Dakota Department of Trust Lands	License to Cross School Trust Lands	School Trust Lands	ONEOK has been in active discussions with NDDTL staff regarding obtaining easements to cross School Trust Lands. Right-of-way permits will be obtained prior to construction and filed with the NDPSC upon receipt.
North Dakota Department of Environmental Quality (NDDEQ) - Division of Water Quality	General Permit for Temporary Dewatering / Hydrostatic Testing NDG07-0000	Waters of the State / Trench Dewatering /Hydrostatic Discharge	Applicability to be determined pending finalization of the hydrostatic testing plan. If required, application to be submitted at least 30 days prior to discharge activities.
NDDEQ - Division of Water Quality	North Dakota Pollution Discharge Elimination System (NDPDES) General Stormwater Permit NDR10-0000	Waters of the State / Construction Stormwater	North Dakota recognizes federal Clean Water Act Section 402(l)(2), which exempts oil and natural gas projects from obtaining construction stormwater permit coverage. As such, ONEOK is not currently planning on securing this permit; however, ONEOK has developed a Stormwater Pollution Prevention Plan (SWPPP) which will be utilized during construction activities.
NDDEQ - Division of Water Quality	Section 401 Water Quality Certification	Waters of the State - Water Quality	Concurrent with NWP 12; automatically granted for projects eligible for coverage under NWP 12.
North Dakota State Water Commission (NDSWC)	Temporary Water Permit	Waters of the State - Appropriation	ONEOK is currently reviewing its options for sourcing water for dust control, drilling mud, and hydrostatic testing. If surface or ground waters will be utilized, ONEOK will submit an application for a Temporary Water Permit with NDSWC at least 2 weeks prior to appropriating water.
North Dakota Department of Transporation (NDDOT)	Utility Occupancy Permit	NDDOT managed highways and roads	To be obtained prior to construction
Local/County Permits			
Western Area Water Supply Authority (WAWSA)	Transmission Line Permit	Crossing of WAWSA-managed water supply lines	ONEOK has initiated discussion with WAWSA and received maps and shapefiles of WAWSA water supply pipelines crossed by the Tioga Lateral Project. ONEOK will secure permits for each crossing prior to construction.
Williams County Weed Board	Weed Management Plan	State- and county-listed noxious weeds	County does not currently have formal permit program for control of noxious weeds. ONEOK has developed a Weed Managment Plan to control spread of state- and county-listed noxious weeds per state law.
Williams County Road Department / Engineer	Road/Section Line Crossing Permits	Crossing of Public Roads and Section Lines	To be obtained prior to construction

Exhibit H

Construction Plans

Exhibit H

Construction Plans

H.1 Construction Mitigation and Restoration Plan



Tioga Lateral Pipeline Project

CONSTRUCTION MITIGATION AND RESTORATION PLAN

ISSUED FOR PERMITTING

November 2019

ONEOK TIOGA LATERAL PIPELINE PROJECT
CONSTRUCTION MITIGATION AND RESTORATION PLAN
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LIST OF ACRONYMS

ATWS	Additional Temporary Workspace
BMPs	Best Management Practices
CFR	Code of Federal Regulations
CMRP	Construction Mitigation and Restoration Plan
ECD	Temporary Erosion and Sediment Control Device
ETWS	Extra Temporary Workspace
HDD	Horizontal Directional Drill
IFC	Issued For Construction
LIDAR	Light Detection and Ranging
NPDES	National Pollutant Discharge Elimination System
ONEOK	ONEOK Bakken Pipeline, L.L.C.
Project	ONEOK Tioga Lateral Pipeline Project
ROW	Right-of-Way
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan or Spill Plan
TWS	Temporary Workspace

1.0 INTRODUCTION

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is committed to meeting or exceeding all applicable federal, state, and local environmental requirements during the planning, construction, and operation of the ONEOK Tioga Lateral Pipeline Project (Project). ONEOK has developed this *Construction Mitigation and Restoration Plan (CMRP)* to ensure that appropriate systems are in place to achieve compliance with the various permits and plans that have been developed for the Project. This *CMRP* outlines construction-related environmental policies, procedures, and mitigation measures developed by ONEOK based on ONEOK's experience implementing Best Management Practices (BMPs) during pipeline construction.

This *CMRP* is designed to address typical circumstances that may be encountered along the Project. Project-specific permit conditions and/or landowner agreements may supersede the general practices described in this document.

This document includes the following sections:

- Section 1.0 of this CMRP describes general mitigation measures, including soil erosion and sedimentation control procedures, to be implemented during upland construction and upland restoration;
- Section 2.0 discusses stream and river construction and restoration;
- Section 3.0 describes practices for wetland construction and restoration;
- Section 4.0 discusses highway, road, and rail crossings;
- Section 5.0 discusses construction dewatering;
- Section 6.0 outlines hydrostatic testing practices;
- Section 7.0 addresses water appropriation sources and discharge locations; and
- Section 8.0 addresses revegetation.

Alternative construction procedures implemented in lieu of this *CMRP* must provide an equal or greater level of protection to the environment and must be approved in writing by ONEOK.

2.0 GENERAL MITIGATION MEASURES

2.1 RIGHT-OF-WAY ACCESS

Access to the right-of-way (ROW) will be from public roadways and ONEOK-approved private access roads only. The Contractor is responsible for creating signs or other methods to identify approved access roads in the field and to ensure that access is confined to approved roads.

Road crossings and access points will be maintained in a safe and accessible condition throughout construction. ONEOK will require its construction contractor(s) to post caution signs on roads, where appropriate, to alert motorists of pipeline construction and warn them of slow traffic. In addition, trucks transporting pipe and heavy equipment will comply with all applicable state, county, and federal laws, rules, and permits for these loads.

Private/non-public roads will be negotiated with the landowner and approved by ONEOK prior to use. Use of these roads may be restricted based on the condition of the existing road (e.g., like-use traffic) and may not be upgraded without approval from ONEOK, the landowner, and/or applicable regulatory agencies.

Vehicle tracking of soil from the construction site onto roads will be minimized by implementation of BMPs such as installing stone pads, timber mats or equivalent, and reducing equipment/vehicle access to the ROW where practicable (through the use of off-ROW parking). Temporary accesses will be installed in accordance with applicable permit conditions. The Contractor is responsible to promptly clean and remove all soil tracked from the ROW on to public roads and highways.

The Contractor will repair private roads, lanes, and public roads damaged when moving equipment or obtaining access to the ROW.

2.2 RIGHT-OF-WAY REQUIREMENTS

Construction equipment and vehicles will be confined to the approved construction ROW, access roads, and extra workspace (approved construction workspace) shown on the “Issued for Construction” (IFC) construction alignment sheets. Construction activities for the Project will generally use a 75-foot-wide construction ROW as shown in Figure 1 that consists of the permanent ROW and temporary workspace (TWS). In addition, certain site-specific extra workspaces, as defined below, will be utilized. The construction ROW configuration may be modified to avoid and/or minimize disturbance to sensitive resource areas such as wetlands and waterways or difficult construction areas such as steep side slopes and/or in accordance with applicable permit conditions.

- Permanent ROW

ONEOK will establish a new 50-foot-wide permanent easement, centered on the new pipeline. The new permanent ROW will be maintained in an herbaceous or shrub vegetative cover following construction to facilitate access and inspection and operation of the pipeline system.

- Temporary Workspace

In addition to the new permanent ROW, construction will require TWS. The TWS will be located adjacent to and contiguous with the proposed ROW/permanent corridor and will typically be 25 feet wide. Approved TWS will be identified on the construction alignment sheets and by distinctive staking of construction limits prior to clearing.

- Extra/Additional Workspace

Site-specific extra temporary workspace (ETWS) and/or additional temporary workspace (ATWS) locations are construction work areas beyond the permanent ROW and TWS described above and will be required at select locations such as steep slopes as shown in Figure 2, road, waterbody, railroad, some wetland crossings, and where it is necessary to cross under existing pipelines or foreign utilities. ATWS will typically be located in uplands adjacent to the construction ROW and set 50 feet back from sensitive resource boundaries where site-specific field conditions allow. However, to complete work safely, ONEOK may need to locate ATWS within a wetland or within the 50-foot setback from a wetland or waterbody based on site-specific conditions. ATWS adjacent to waterbodies and/or wetlands is addressed further in Sections 2.6 and 3.4, respectively. In all cases, the size of extra workspace will be kept to the minimum necessary to safely conduct work.

ONEOK has conducted a preconstruction review of the entire Project area to determine specific ATWS locations. ONEOK will acquire extra workspace from the landowner where necessary. All approved ATWS locations will be depicted on the IFC alignment sheets; use of unauthorized workspace is prohibited without ONEOK's written approval.

- Pipe Storage and Contractor Yards

ONEOK and its contractors will establish pipe and contractor yards at various locations near the Project ROW. The BMPs and procedures that ONEOK has approved in this *CMRP*, as well as all applicable permit requirements, will be implemented as necessary at these locations.

2.3 FLAGGING AND SIGNAGE

Prior to the commencement of clearing operations, ONEOK will mark the boundaries of the approved construction workspace with distinctive stakes and flagging. ONEOK will install stakes to identify the boundaries of ATWS, staging areas, sensitive environmental areas, and along the construction ROW every 200 feet, or as appropriate, to maintain line-of-sight from one stake to the next. Other areas (e.g., pipe storage and contractor yards, borrow and disposal areas, access roads, etc.) will have signs posted for use by the Contractor during construction activities. See Table 1.3-1 for examples of the signs that will be installed on the Project.

ONEOK will preserve all existing recognizable civil survey monuments, cadastral corner markers, witness points, triangulation stations, military control monuments, or other recognizable physical markers (public and private) to the extent practicable. In the event that any such monument is at risk of damage or destruction during construction, ONEOK will ensure that the precise location of the monument is determined and properly referenced by a Professional Land Surveyor. If the monument is actually damaged or destroyed during construction, it will be rehabilitated or replaced by the Professional Land Surveyor. The monument will be replaced in accordance with the requirements of the State Board which oversees Professional Land Surveying.

Signs will be posted along the construction ROW to identify sensitive areas and to alert construction personnel of restrictions that apply. The limits of these areas will be delineated at the edge of the ROW. Fencing may also be required in some areas to further protect site-specific resources.

TABLE 2.3-1
ONEOK Tioga Lateral Pipeline Project Signs

Sign	Description
Approved Access Road	Project-related ROW access roads will be identified by road number or name and posted speed limit.
No Access	Signs identifying areas that are off limits, such as a fork in the road, which may be confused with Approved Access Areas.
Environmentally Sensitive Areas	Signs identifying environmentally sensitive areas that are off limits to disturbance or may require a special resource monitor during construction.
Waterbody	Entry and exits at delineated waterbodies.
Wetland	Entry and exits at delineated wetlands.

ONEOK has identified landowner-specific issues of concern that may be affected by construction activities. In coordination with these landowners, ONEOK will implement the following mitigation measures:

- Locate and mark above- and below-ground water lines;
- Locate and mark above- and below-ground utilities;
- Coordinate with landowners that utilize pivot irrigation systems; and
- Develop grazing deferment plans with landowners, tenants, or other grazing permit holders that address construction timing, fence cutting and bracing, temporary fencing, cattle guard locations, and water requirements for livestock.

Components of irrigation systems, waterlines, utilities, or other physical impediments impacted by construction will be repaired to at least pre-construction condition.

2.4 LINE LIST AND PERMITS

ONEOK will provide the Contractor with a Construction Line List (Line List). The Line List reflects special landowner requirements (e.g., topsoil segregation, seeding, fencing requirements, rock disposal, etc.); however, the Line List is not a comprehensive list of construction requirements. The Line List must be considered in conjunction with other Project documents and permits. The Contractor must comply with these special landowner requirements provided they conform to the Project permits. Any third-party agreements between the Contractor and the landowner must be pre-approved by ONEOK and in writing.

Permits obtained by ONEOK for this Project may have more stringent requirements than the requirements of this *CMRP* and/or the Line List. **In all cases, the more restrictive requirements will apply**.

2.5 NON-HAZARDOUS WASTE DISPOSAL

Non-hazardous pipeline construction wastes include human waste, trash, pipe banding and spacers, paper waste from coating products, welding rods, timber skids, cleared vegetation, stumps, drilling mud, and rock. The contractor will be responsible for removing waste from the Project area and identifying and locating proper licensed waste disposal facilities. The Contractor will not permit paper from wrapping or coating products or lightweight items to be scattered by the wind.

Waste which contains (or at any time contained) oil, grease, solvents, or other petroleum products falls within the scope of the oil and hazardous substances control, cleanup, and disposal procedures. This material will be segregated for handling and disposal as hazardous wastes.

The Contractor will provide portable, self-contained toilets during construction operations. Wastes from these units will be collected for disposal at licensed and approved facilities.

Drill cuttings and drilling mud will be disposed of as described in Section 2.8.4 of this document.

2.5.1 Hazardous Wastes

Hazardous and potentially hazardous materials will be stored, handled, and transported in accordance with applicable laws, regulations, rules, or permits. Hazardous waste materials will be stored in properly labeled containers. Each label will identify the contents in the container, indicate if the material is hazardous, and include a waste code and date of accumulation.

Personnel who will have a role in handling, storing, or otherwise managing hazardous waste will have training in accordance with applicable regulatory requirements and the manufacturer's recommendations. Personnel will be familiar with the hazards associated with particular wastes and appropriate safety procedures. Appropriate emergency response and spill equipment will be kept in an accessible area in accordance with ONEOK's *Spill Prevention, Control, and Countermeasure Plan (SPCC Plan).*

Transporters of oil, hazardous substances, and hazardous wastes will be licensed and certified according to the applicable state vehicle code. Hazardous wastes being transported off-site will be manifested and the manifest will conform to requirements of the appropriate state and federal agencies. The transporter will be licensed and certified to handle hazardous wastes on the public highways. The vehicles, as well as the drivers, must conform to all applicable vehicle codes for transporting hazardous wastes. Hazardous materials will be disposed of at licensed waste disposal facilities.

2.6 TEMPORARY EROSION AND SEDIMENT CONTROLS

Temporary sediment and erosion control devices (ECDs) include, but are not limited to slope breakers, sediment barriers, stormwater diversions, trench breakers, mulch, and revegetation. The goal of ECDs is to minimize wind and water erosion on-site and prevent construction-related sediment from migrating off-site into sensitive resource areas such as streams (dry or flowing), wetlands, lakes, or cultural resource sites. The Contractor will, at all times, maintain erosion and sediment control structures as required in the Project construction documents and as required by applicable permits.

ECDs will be installed as necessary and in accordance with applicable permit conditions after initial clearing but before disturbance of the soil and will be replaced by permanent ECDs as restoration is completed (see Figures 3 and 4). Additional information on ECDs is provided in the waterbody and wetland sections (Sections 2.0 and 3.0 of this Plan) and permanent restoration is addressed in ONEOK's *Revegetation Plan*.

2.7 UPLAND CLEARING

The initial stage of construction involves the clearing of tall herbaceous vegetation, brush, and trees from the ROW. Clearing may be accomplished with mowers, chain saws, and/or other hydraulic tree and brush cutting equipment. When clearing, trees will be felled onto the ROW to minimize damage to off-ROW vegetation and resources.

2.7.1 Disposal of Woody Debris

Unless otherwise directed by ONEOK, slash and woody debris will be disposed of by mowing, chipping, grinding, and/or hauling off-site to an approved disposal facility, or the material will be stockpiled at the edge of the ROW and used to stabilize erodible slopes during restoration. Disposal of trees or merchantable timber will be conducted in accordance with landowner agreements. Where landowner approval has been granted, chips may be uniformly broadcast (less than 2-inch thickness) across the ROW in non-agricultural, non-wetland areas where they will ultimately be incorporated into the topsoil layer during grading activities. Burning of woody debris may be allowed only where the Contractor has acquired all applicable permits and approvals (e.g., agency and landowner) and in accordance with all state and local regulations. The Contractor will provide ONEOK with copies of these permits and/or approvals prior to initiating burning.

Burning will not be allowed within 100 feet of a wetland or waterbody without site-specific approval from ONEOK. No burning will be allowed in wetlands. No chips, mulch, or mechanically-cut woody debris will be stockpiled in a wetland and no upland woody debris will be disposed of in a wetland or within agricultural areas (see Section 3.3 for further information on clearing in a wetland).

2.7.2 Upland Grading and Stump Removal

Grading generally follows clearing and involves leveling and smoothing the construction ROW and extra workspace areas (as necessary) to create a safe, even working surface for equipment and vehicles. Topsoil and subsoil disturbed during grading operations will not be mixed with foreign material (e.g., stumps and brush).

The objective of grading is to develop a ROW that allows the safe passage of equipment and meets the bending limitations of the pipe. The following measures will be implemented during grading unless otherwise approved or directed by ONEOK based on site-specific conditions or circumstances.

- Original contours and drainage patterns will be re-established to the extent practicable;
- Agricultural areas that have terraces will be surveyed to establish pre-construction contours to be utilized for restoration of the terraces after construction;

- Gravel access pads or timber mats will be used where necessary to prevent damage to the road shoulder and bar ditch at roadways to be crossed during construction; and
- Where the construction surface remains inadequate to support equipment travel, timber mats, timber riprap, or other methods may be used to stabilize surface conditions.

2.7.3 Irrigation Systems

If pipeline construction activities interfere with the operation of existing spray irrigation systems (flood, ditch, or spray), ONEOK will establish with the landowner or tenant an acceptable amount of time the irrigation system may be out of service. If feasible, temporary measures will be implemented to allow an irrigation system to continue to operate across the ROW during pipeline construction. Damage to irrigation systems caused by construction-related activities will be repaired following backfilling. Irrigation ditches that are active at the time of construction will not be stopped or obstructed except for the length of time necessary to install the pipeline beneath the ditch unless otherwise approved by the landowner or applicable ditch authority.

2.7.4 Upland Topsoil Segregation

The objective of topsoil handling is to maintain topsoil capability by conserving topsoil for future replacement and reclamation and to minimize the degradation of topsoil from compaction, rutting, loss of organic matter, or soil mixing so that successful reclamation of the ROW can occur. Topsoil generally has physical and chemical properties that are conducive to good plant growth. To prevent the mixing of topsoil with less productive subsoil during construction, topsoil will be segregated to avoid the co-mingling of soils using the full ROW topsoiling method (see Figure 5). Separation should be maintained between the topsoil and subsoil piles throughout construction to prevent mixing. Upland areas where topsoil will be stripped include cropland, hay fields, pasture, residential areas, and other areas as agreed to by the landowner or as specified in the Project permits. Topsoil will not be used to construct trench breakers (see Section 1.11) or to pad the pipe or construct ramps. Gaps will be left and ECDs installed where stockpiled topsoil and spoil piles intersect with water conveyances (i.e., ditches, swales, and waterways) to maintain natural drainage and to allow wildlife access across the construction work area. Wildlife gaps (including the water conveyance gaps) will be installed at a minimum of every quarter-mile.

The following mitigation measures will be implemented during topsoil removal and storage. All work will be conducted in accordance with applicable permits.

- Stripped topsoil will be stockpiled in a windrow along the edge of the ROW. The Contractor will perform work in a manner to minimize the potential for subsoil and topsoil to be mixed;
- Topsoil will not be used to fill a low area or to construct ramps at road or waterbody crossings; and
- If required due to excessively windy conditions, topsoil piles may be tackified using either water or a suitable approved tackifier (liquid mulch binder). Further details are included in the ONEOK *Dust Control Plan*.

2.7.4.1 Topsoil Segregation Methods

The Full ROW topsoil segregation method (see Figure 5) will be employed during construction, as indicated on the IFC alignment sheets.

Soil characteristics and land use are key considerations for topsoil management during pipeline construction. ONEOK will primarily use the Full ROW topsoil stripping method, unless otherwise requested by the landowner. In arid areas with a limited topsoil resource and/or in areas where significant side-slope excavation (e.g., two-toned, side-cut, etc.) will be required to create a safe, level area, topsoil will typically be segregated using an excavator, dozer, or similar equipment.

2.7.4.2 Depth of Upland Topsoil Stripping

The depth of topsoil to be segregated will depend on the soil conditions. In areas of deep topsoil, stripping to a maximum depth of 12 inches will generally be considered adequate to minimize impacts on agricultural soils. Additional workspace may be needed for spoil storage if more than 12 inches of topsoil are segregated. If less than 12 inches of topsoil are present, the Contractor will attempt to segregate to the depth that is present. The Environmental Inspectors and ONEOK will work with the Contractor to determine topsoil depth to be stripped.

2.7.5 Temporary Erosion and Sediment Controls

2.7.5.1 Erosion Control Devices

ECDs are intended to minimize erosion by slowing the velocity of stormwater runoff and diverting runoff from the construction ROW, preventing the movement of sediments off the construction ROW, and prohibiting the deposition of sediments into sensitive resources that may be on or adjacent to the ROW. Typical ECDs include silt fence and/or trenched-in and staked straw bales (see Figures 3 and 4) or biologs (i.e., compost socks, wattles, or excelsior logs), as well as other barriers such as compacted earth (e.g., drivable berms across travel ways), sand bags, or other appropriate materials (see Section 1.7.6).

Temporary ECDs will be installed after clearing and prior to grubbing and grading activities at the base of sloped approaches to streams, wetlands, and roads. Temporary ECDs will also be installed at the edge of the ROW as needed and/or in other areas, determined by ONEOK, so as to slow water leaving the site and prevent siltation of waterbodies and wetlands downslope or outside of the construction ROW (e.g., swales, side slopes). Temporary ECDs will be placed across the entire construction ROW at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from drainage ways, wetlands, and/or waterbodies until the area is revegetated in accordance with the National Pollutant Discharge Elimination System (NPDES) stormwater permit (where applicable) and there is no potential for scouring or sediment transport to surface waters.

If silt fence is used, sediment will be removed when its depth reaches about one-half of the height of the fence. Non-functional ECDs will be repaired, replaced, or supplemented with functional structures, as required.

Temporary ECDs installed across the travel lane may be removed during active daytime construction; however, ECDs will be properly reinstalled after equipment passage or after activities in the area are completed for the day. These ECDs will also be repaired and/or replaced prior to forecasted inclement weather. The Contractor is responsible for monitoring weather conditions and adjusting resources as needed to address pending and/or existing weather conditions.

2.7.5.2 Temporary Stabilization

Temporary stabilization is intended to minimize erosion of soil from wind and water. Installation of temporary seeding, mulch, and erosion control mats/blankets may be required by ONEOK in site-specific locations if there are construction delays and/or there is a high potential for erosion to occur. The Contractor may be required by ONEOK to install temporary stabilization materials based on site conditions, or as required in ONEOK's Project specific permit(s). Temporary stabilization measures as outlined in ONEOK's *Revegetation Plan* will be implemented to minimize erosion and for sediment control.

ONEOK will attempt to stabilize exposed slopes prior to snowfall; however, construction progress and/or seasonal weather variations may prevent installation prior to the first snowfall in some locations. Installation of stabilization measures and additional BMPs, as applicable based on-site conditions, will continue after the first snowfall to protect slopes prior to spring melt and runoff.

2.7.5.3 Mulch

Mulch is an effective tool to minimize erosion and will be applied to disturbed areas (except for actively cultivated land and wetlands) if agreed to with the landowner or land managing agency, if specified by the applicable permits or licenses, or as requested by ONEOK.

Mulch will be free of noxious weeds as listed in applicable state laws. Certified weed-free mulch may also be required at site-specific locations. The contractor(s) will be responsible for identifying and acquiring sources of certified weed-free mulch. Sources must be approved by ONEOK prior to purchase and copies of the applicable documentation must be provided to ONEOK.

Mulch will be applied at a rate of 1-2 tons per acre unless otherwise stipulated by permit conditions. Mulch will be uniformly distributed by a mechanical mulch blower (or by hand in areas not accessible to the mulch blower) to cover approximately 75 percent of the ground surface. Strands of mulch will be a minimum of 8 inches in length to allow proper anchoring. Mulch will be anchored/crimped to a depth of 2-3 inches using a mulch-anchoring tool or disc set in the straight position to minimize loss by wind and water. In areas not accessible to a mulch-anchoring tool the mulch may be anchored by liquid tackifiers, with advance written approval from ONEOK. The manufacturer's recommended method and rate of application will be followed. Mulch will not be applied in wetlands or actively cultivated farmland.

Hydro-mulch and liquid tackifier may be used in place of straw or weed-free hay mulch with prior approval from ONEOK. Application rates will be at the manufacturer's recommended rate, equal to or greater than 2 tons per acre of straw mulch. The use of tackifiers for anchoring straw and the use of hydro-mulch and tackifier will be limited to areas that are too steep or rocky to safely or effectively operate mechanical mulch-anchoring tools. Asphalt-based tackifiers will not be used on the Project.

2.7.6 Temporary Slope Breakers

Temporary slope breakers will be installed to minimize concentrated or sheet flow runoff in disturbed areas in accordance with the following maximum allowable spacing unless otherwise specified in permit conditions. Temporary slope breakers will also be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from waterbodies, wetlands, and road crossings. The spacing between temporary slope breakers may be reduced based on site-specific conditions, as requested by ONEOK.

Slope (%)	Approximate Spacing (ft.)
5-15	300
15-30	200
>30	≤100

If the length of the slope is less than the distance of the required spacing, slope breakers will not be required unless a sensitive resource area (e.g., wetland) is located immediately down slope or as requested by ONEOK. Temporary slope breakers may be constructed using earthen subsoil material, silt fence, straw bales, or biologs; rocked trenches may only be used in non-agricultural land. On highly erodible slopes, temporary slope breakers in the form of either earthen berms or rocked trenches will be used whenever possible.

Temporary slope breakers will be constructed according to the following specifications:

- Earthen berms will be installed with a 2 to 4 percent outslope, with a minimum 4-foot base and a minimum height of 1.5 feet (see Figures 8 and 9);
- Straw bales used as slope breakers will be trenched in and staked tightly against one another as to not allow flow underneath or between the bales;
- The outfall of temporary slope breakers will be directed off the construction ROW into a stable well-vegetated upland area or into an appropriate energy-dissipating sediment control device (e.g., silt fence, straw bales, rock aprons) to prevent the discharge of sediments (see Figure 8);
- Proper slope breaker outfalls will be established where topsoil segregation and/or grading has created a barrier at the edge of the construction workspace;
- Gaps will be created through spoil piles where necessary to allow temporary berms to direct flow off-ROW;
- The outfall of each temporary slope breaker will be positioned to prevent sediment discharge into wetlands, waterbodies, or other sensitive resources; and
- Temporary slope breakers will be inspected and repaired as necessary to maintain operational integrity and prevent erosion in active construction areas.

2.7.7 Noise and Dust Control

The Contractor will take reasonable steps to control construction-related noise near residential areas and other noise sensitive areas as directed by ONEOK. Noise control practices may include limiting working hours and vehicle traffic in residential areas and/or additional measures as appropriate based on site-specific conditions. Dust control practices are detailed in ONEOK's *Dust Control Plan*.

2.8 PIPE DELIVERY, BENDING, AND WELDING

Individual joints of pipe will be strung along the construction ROW. This operation involves specially designed equipment to deliver pipe from pipe storage yards to the ROW. Where practical, the Contractor will drive stringing trucks along an alignment which corresponds closely to the pipeline centerline to minimize the potential for soil compaction in actively cultivated areas.

After pipe stringing is complete, the pipe will be bent, as necessary, to conform to changes in ground contours and pipeline alignment. Individual pipe joints will be welded together and the welds will be inspected using a non-destructive testing procedure to verify weld integrity in accordance with federal regulations. The welds will then be coated to protect them from corrosion.

2.9 UPLAND TRENCHING

Trenching in uplands consists of excavating the trench for the pipeline and is typically accomplished with a backhoe excavator or a rotary-wheel ditching machine. Excavated material will be sidecast (stockpiled) within the approved construction ROW separate from topsoil (see Section 1.7.4) and stored such that erosion is minimized to the extent practicable. During construction ONEOK will coordinate

with landowners to minimize disruption of access caused by the trench. Where agreed to, the Contractor will leave plugs of soil in the ditch or will construct temporary access bridges across the trench for the landowner to move livestock or equipment. Trenches will also be sloped where started and ended to allow ramps for wildlife to escape.

2.9.1 Timing

The length of time a trench is left open will be minimized to ensure that installation of the pipe and restoration of the ROW occurs in a timely fashion and to ensure safety.

2.9.2 Pipeline Depth

At a minimum, the pipeline will be buried in accordance with U.S. Department of Transportation (USDOT) regulations (49 Code of Federal Regulations (CFR) Part 195) to prevent damage to the pipeline from normal use of the land.

2.10 PIPE INSTALLATION

Once the trench has been inspected for proper depth, rocks, and/or other obstructions, the welded pipe will be lowered into the trench. In rocky soils, the pipe may be wrapped with a protective shielding to prevent damage to the pipe coating during backfilling.

2.11 TRENCH BREAKERS

Trench breakers are installed in sloped areas after the pipeline has been lowered into the trench to protect against subsurface water flow along the pipe after the trench is backfilled. Trench breakers will be constructed with bags filled with rock-free subsoil or sand. Topsoil **will not** be used for trench breakers. Trench breakers will be placed from the bottom of the trench to near the top of the trench, completely surrounding the pipe, **and will be properly keyed into the undisturbed trench walls** (see Figures 10 and 11). The location for trench breakers will be based on field conditions including the degree and length of slope, presence of down slope sensitive resource areas such as wetland and waterbodies, and proximity to other features such as roads and/or railroads. The following conditions apply to the placement and installation of trench breakers unless otherwise directed by ONEOK:

- Trench breakers will be spaced as described for permanent berms (see Section 1.17) or as otherwise specified by ONEOK.
- Trench breakers will be installed on slopes greater than 5 percent adjacent to streams, wetlands, or other waterbodies.
- At a minimum, trench breakers will be installed at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland.
- Topsoil will not be used to construct trench breakers.
- Where the pipeline exits a wetland towards areas of lower relief, trench breakers will be installed where there is a potential for underground drainage along the pipe in order to prevent wetland or waterbody drainage.

ONEOK will identify preliminary trench breaker locations on the Project alignment sheets. These locations will be based on a review of mapped resources and topographical maps. The actual location of each trench breaker will be selected through coordination between ONEOK's Craft Inspectors, and the Contractor's Foreman during backfilling activities.

2.12 UPLAND BACKFILLING

Backfilling follows pipe installation and consists of replacing the material excavated from the trench. In many cases fine material will be needed to pad the pipe. Topsoil will not be used as padding material under any circumstance. In areas where topsoil has been segregated, the subsoil will be replaced first, and then the topsoil will be spread uniformly over the area from which it was removed. Prior to backfilling, the trench will be dewatered in accordance with the methods discussed in Section 5.0 of this Plan. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench will be considered construction debris and be removed to an approved disposal site, unless approved for use as mulch, for another acceptable construction-related purpose, or as designated by the landowner or land managing agency.

2.13 WET WEATHER SHUTDOWN

During construction, certain activities may be suspended at the direction of the Project Construction Coordinator in wet soil conditions, based on consideration of the following factors:

- Plasticity of the surface soil to a depth of approximately 4 to 8 inches;
- Extent of surface ponding;
- Extent and depth of rutting and mixing of soil horizons;
- Areal extent and location of potential rutting and compaction (i.e., can traffic be rerouted around wet area, using low ground weight, wide-track equipment, or other low impact construction techniques, using construction mats in problem areas); and
- Type of equipment and nature of the construction operations proposed for that day.

If, in consideration of the above factors, ONEOK determines that construction activities will result in significant rutting and/or the mixing of soil horizons, the Contractor will cease work in the applicable area until ONEOK determines that site conditions are such that work may continue.

The Contractor is responsible for appropriately planning for work, considering the potential for wet conditions, and being prepared to implement mitigation measures in the event of wet weather conditions. This is particularly important when conducting work in unsaturated wetlands or areas where topsoil was not segregated. The Contractor is responsible for implementing any and all such corrective measures should conditions subsequently worsen where the above-described criteria cannot be met.

2.14 CONTROLLING SPREAD OF UNDESIRABLE SPECIES

It is ONEOK's intent to minimize the potential introduction and/or spread of undesirable species (i.e., invasive species and noxious weeds) along its ROW due to pipeline construction activities. However, it is not practicable for ONEOK to eradicate undesirable species that are adjacent to its ROW. ONEOK

will minimize the potential for the establishment of undesirable species by minimizing the time between final grading and permanent seeding. Greater than six (6) days is only acceptable if final grading had to take place outside of the seeding window, as described in the *Revegetation Plan* or in the Contractor's ONEOK-approved revegetation plan.

ONEOK will implement weed control measures, pending landowner approval, at identified infestation areas based on weed district or EI input. Weed control measures may include the application of herbicide or mechanical and/or alternative methods. The weed control measure chosen will be the best method available for the time, place, and species of weed as identified through consultation with the appropriate regulatory agencies. Should landowners not allow the use of herbicides, alternative methods, approved by the landowners, will be implemented.

ONEOK will also require construction equipment and timber mats to be free of soil and plant material before arriving on the construction spread to prevent the introduction of undesirable species to the Project area, as described in the Project's *Weed Management Plan*.

2.15 CLEANUP AND ROUGH/FINAL GRADING

Initial cleanup and rough grading activities may take place simultaneously. Cleanup involves removing construction debris (e.g., litter generated by construction crews, timber skids and similar woody debris, and excess rock).

Rough and final grading includes restoring disturbed areas as near as practicable to preconstruction conditions, returning the topsoil where topsoil has been stripped, preparing a seedbed (where applicable) for permanent seeding, installing or repairing temporary erosion and sediment control measures, repairing/replacing fences, and installing permanent erosion and sediment controls. Pre-existing landowner soil conservation improvements and structures disturbed by pipeline construction will be restored to the approximate pre-construction line and grade. Soil conservation improvements and structures include, but are not limited to, grassed waterways, toe walls, drop inlets, grade control works, terraces, levees, and farm ponds.

2.16 TIMING

The Contractor will begin cleanup and rough grading (including installation of temporary erosion and sediment control measures) typically within 72 hours after backfilling and will attempt to complete this cleanup within fourteen (14) days after backfilling, weather and soil conditions permitting. If seasonal or other weather conditions prevent compliance with the time frames, the contractor will maintain the erosion and sediment control measures until cleanup can be conducted.

2.17 PERMANENT EROSION AND SEDIMENT CONTROLS

During final grading, slopes in areas other than cropland will be stabilized with erosion control structures. Erosion control treatments of specific physical land features are described below.

2.17.1 Slopes

Permanent berms (diversion dikes or slope breakers) will be installed on slopes, according to the following maximum spacing requirements unless otherwise specified in permit conditions or determined in the field by ONEOK:

Slope (%)	Approximate Spacing (ft.)
5-15	300
15-30	200
>30	≤100

Permanent berms will be constructed according to the following specifications:

- Permanent berms will be installed with a 2 to 4 percent outslope and will not cause pooling of water behind the berm.
- Permanent berms will be constructed of compacted earth.
- The outfall of berms will be directed toward appropriate energy-dissipating devices and off the construction ROW, if possible.
- Permanent berms will be inspected and repaired as deemed necessary by ONEOK to maintain function and prevent erosion.
- Erosion control blankets will be placed on slopes over 30 percent (see Figure 13) or on a continuous slope to a sensitive resource area (e.g., wetland or waterway).
- There should be no unbroken slope length greater than 75 feet for slopes with a grade of 3:1 or steeper in order to maintain sheet flow and minimize rills and/or gullies.

2.18 SOIL COMPACTION TREATMENT

Cultivated fields and compacted or rutted cultivated areas will be tilled with a deep tillage device or chisel-plowed to loosen compacted soils. Severely compacted agricultural areas will be plowed with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, the subsoil will be plowed before replacing the segregated topsoil. If subsequent construction and cleanup activities result in further compaction, additional measures will be undertaken to alleviate the soil compaction.

Topsoil and subsoil will be tested at regular intervals in agricultural and residential areas. The EIs will conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Penetrometers or other appropriate devices to conduct tests.

2.19 ROCK REMOVAL

Excess rock will be removed from at least the top 12 inches of disturbed soil in all actively cultivated or rotated cropland and pastures, hayfields, and residential areas or as specified in permit conditions or landowner agreements. Rock removal efforts will cease when the size and density of rocks on the ROW are similar to undisturbed areas adjacent to the ROW. Excess rock will be piled in upland areas where landowner permission has been obtained or will be hauled off-site to a ONEOK-approved disposal site.

2.20 OFF-ROAD VEHICLE CONTROL MEASURES

Off-road vehicle control measures will be installed as agreed to with landowners or as directed by land management agencies at points of entry. Such measures may include installing signs, fences and gates, or placement of other barriers such as boulders or timbers. All fences and gates removed or damaged will be repaired or replaced. The contractor may be held responsible for damage caused by trespassers if proper determent structures were not in place in a timely fashion.

2.21 REPAIR OF DAMAGED CONSERVATION PRACTICES

Soil conservation practices (such as terraces, grassed waterways, etc.) that are damaged by the pipeline construction will be restored to preconstruction conditions to the extent practicable.

2.22 LAND LEVELING FOLLOWING CONSTRUCTION

Following the completion of the pipeline, the ROW will be restored as near as practicable to its pre-construction conditions. Should uneven settling or documented surface drainage problems occur following the completion of pipeline construction, ONEOK will take appropriate steps to remedy the issue.

Permanent revegetation activities will begin as soon as soil conditions permit seedbed preparation and seed germination. Actively cultivated lands will be restored but will not be reseeded unless requested by the landowner. See Section 8.0 for more information regarding reseeding.

3.0 STREAM AND RIVER CROSSING GENERAL REQUIREMENTS

Pre-construction planning is an essential part of stream crossings. Stream crossing requirements, including construction methods, timing, erosion control, and restoration are described in this section and in the stream crossing permits issued by state and federal agencies. Prior to construction, the Contractor may identify alternative provisions to certain site-specific plans that would provide an equal or greater level of protection to stream and river ecosystems. Any proposed alternative provisions must be submitted to ONEOK far enough in advance of construction to allow ONEOK an opportunity to review the alternatives and consult with the appropriate regulatory agencies as necessary without causing construction delays. The Contractor must receive written approval from ONEOK prior to implementing the alternative crossing techniques.

The procedures in this section apply to natural or artificial streams, rivers, and other waterbodies such as jurisdictional ditches, ponds, and lakes. These procedures require that judgment be applied in the field and will be implemented under the supervision of ONEOK. The intent of the mitigation procedures is to minimize construction-related disturbance to waterbodies by limiting the duration of construction in these areas and by minimizing erosion and sedimentation, as well as implementing appropriate procedures to restore the stream to pre-construction conditions.

ONEOK is proposing to avoid all streams and wetlands that would trigger a Preconstruction Notification (PCN) with the Army Corps of Engineers (USACE/Corps). ONEOK will accomplish this by either routing around PCNs or by using Horizontal Directional Drill (HDD) or conventional bore methods. Locations that would otherwise require a PCN will be identified in the field and on the alignment sheets as

Environmentally Sensitive Areas (ESAs). Mitigation and avoidance measures at ESAs are described throughout Sections 2.0 and 3.0.

3.1 DRAINAGE DITCHES AND EPHEMERAL/INTERMITTENT STREAMS

Ephemeral/intermittent streams and agricultural ditches that are not identified as ESAs will typically be crossed using the wet trench method (see Section 2.8.1), as specified in the applicable permits. For ephemeral streams; small, dry intermittent streams; and agricultural drainage ditches, standard upland construction procedures may be used, which involve stringing, welding, excavating the trench with backhoes, installing the pipe in the trench, and backfilling the trench with native material unless stipulated otherwise in the Project's applicable permits. Extra workspace setbacks will be implemented in accordance with Section 2.6. The banks of each crossing will be reshaped to pre-construction contours, mulched, and, if required, seeded in accordance with ONEOK's *Revegetation Plan* to stabilize the crossing until permanent erosion control is implemented. No refueling, fuel storage, or equipment maintenance will be allowed within 100 feet of a drainage ditch or intermittent stream without approval from ONEOK with additional special provisions for containment. Where dry swales cross the ROW, silt fence or straw bales will be installed at the edge of the ROW to prevent the flow of sediment off the approved construction workspace.

3.2 TIME WINDOW FOR CONSTRUCTION

In-stream trenching will be conducted during periods permitted by the appropriate regulatory agencies and applicable permits. In-stream trenching is not permitted at ESAs.

3.3 AGENCY NOTIFICATION

ONEOK will notify applicable regulatory agencies as well as authorities responsible for potable surface water supply intakes located within three (3) miles downstream of the crossing prior to beginning in-stream work (e.g., excavation or blasting), in accordance with applicable permit conditions or as otherwise specified by that authority. Installation or removal of bridges is not considered in-stream work for the purpose of notifying agencies of nearby public surface water intakes.

3.4 PRE-CONSTRUCTION CONSIDERATIONS

3.4.1 Hazardous Materials

Hazardous materials, chemicals, fuels, and lubricating oils will not be stored, and concrete coating activities will not be performed, within 100 feet of waterbodies and will be managed in accordance with ONEOK's *SPCC Plan*. Refer to the *SPCC Plan* for additional requirements pertaining to hazardous materials.

3.4.2 Refueling/Equipment Care

Construction equipment will be refueled at least 100 feet from streams and waterbodies. Where the Contractor and ONEOK determine that conditions require construction equipment to be refueled within 100 feet of streams, the Contractor must follow the procedures described in ONEOK's *SPCC Plan* and implement additional provisions based on site-specific conditions. No equipment will be washed within

100 feet of wetlands or waterbodies. Overnight parking of equipment is not allowed within 100 feet of a waterbody unless special provisions have been implemented in accordance with ONEOK's *SPCC Plan* and prior approval from ONEOK is obtained. Repair and maintenance (e.g., lubricating) of construction equipment will not be allowed within the 100-foot buffer zone without additional special provisions for containment and approval from ONEOK. The Contractor will ensure all equipment is free of leaks prior to use on the Project and prior to entering or working in or near waterbodies.

3.4.3 Aquatic Invasive Species Considerations

The State of North Dakota has no specific regulations in relation to Aquatic Invasive Species; therefore, there are no unique considerations regarding aquatic invasive species for this Project at this time.

3.5 CLEARING AND GRADING

The Contractor will leave a 20-foot buffer of undisturbed herbaceous vegetation on all stream banks during initial clearing, except where grading is needed for bridge installation or where restricted by applicable regulations and/or permit conditions (such as impaired waterways), or where the buffer would prevent safe equipment operation. Woody vegetation within this buffer may be cut and removed during clearing, leaving the stumps and root structure intact. Non-woody vegetation and the soil profile will be left intact until the Contractor is ready to begin trenching the crossing. This buffer should not be confused with the 50-foot setback required for extra workspace (see Section 2.6).

Sediment barriers will be promptly installed and properly maintained at waterbody crossings and waterbodies adjacent to the construction ROW in accordance with the Project's state-specific *Stormwater Pollution Prevention Plan (SWPPP)* until replaced by permanent erosion controls or restoration of adjacent upland areas is complete.

3.6 WORKSPACE AND EXTRA WORKSPACE

The permanent easement, temporary workspace, ATWS, and any special restrictions are depicted on the construction drawings.

Extra workspaces, as defined in Section 1.2, include work areas outside the boundary of the typical construction ROW. These spaces are typically used to assemble pipe segments, stage additional equipment or materials for the crossing, and for temporary spoil storage. Clearing of forested and brushy areas for extra workspace will be avoided as much as possible. Woody vegetation in wetlands and riparian areas will typically not be cleared for the purpose of extra workspace unless approved by appropriate regulatory agencies as stipulated in permits issued for the Project. Clearing of woody vegetation is never permitted at an ESA. Extra workspaces will be constructed as follows:

- Extra workspaces will be located 50 feet away from the water's edge where topographic or other physical conditions such as stream channel meanders allow (see Figures 14-16).
- If safe work practices or site conditions do not allow for a 50-foot setback, extra workspaces will be located as far from the water's edge as site-specific conditions allow.
- Extra workspaces will be limited to the minimum size needed to safely and efficiently construct the stream crossing.

3.7 BRIDGES and equipment crossing

Temporary bridges may be installed in certain locations to allow construction equipment to cross perennial waterbodies. Bridges may also be installed at intermittent waterbodies flowing at the time of construction or those which have a high probability of flowing during construction. Intermittent waterbodies may cause saturated conditions, which would increase the probability of rutting. Bridges may include clean rock fill over culverts, timber mats supported by flumes, railcar flatbeds, and flexi-float apparatus as described below and will be removed as soon as practical during final restoration. Construction equipment will be required to use the bridges, except the clearing crew and equipment necessary for installation of equipment bridges, which will be allowed a single pass across waterbodies prior to bridge installation unless restricted by applicable permits.

An equipment bridge is only permitted at ESAs if the site-specific ESA plan calls for one, if it is clear-span (no in-stream supports), and it is above the ordinary high water mark (OHWM).

3.7.1 Types of Bridges

Equipment bridges will be constructed using one of the following techniques:

- Timber mats (clear-span and in-stream support - see Figure 18);
- Rock flume (see Figure 19);
- Railroad flat cars; and
- Other methods as approved by ONEOK and appropriate agencies.

Soil will not be used to construct temporary equipment bridges.

3.7.2 Bridge Design and Maintenance

Bridges will be built and maintained in accordance with applicable permits. At a minimum, equipment bridges will be designed and installed to withstand the maximum foreseeable stream flow that may occur while the bridge is in place. Bridges at ESAs will be above the OHWM. Bridges will not restrict flow or cause water to pool and will be constructed with clean materials. Bridges will be designed and maintained to prevent soil from entering the waterbody. Erosion and sediment control barriers will be installed and maintained around vehicle access points as necessary to prevent sediment from reaching the waterway. Soil that accumulates on the bridge decking will be removed as needed or as deemed necessary by ONEOK.

3.8 STREAM AND RIVER CROSSING CONSTRUCTION METHODS

The following stream and river crossing methods are typically used and are subject to further restrictions by ONEOK and applicable permits and subject to modifications as approved by appropriate regulatory agencies during construction.

3.8.1 Wet Trench Method

3.8.1.1 Installation

The wet trench method (see Figure 14) will be used to cross streams and rivers that are not required by permit to be crossed using a dry crossing technique (i.e., flume, dam and pump, or directional drill (see Figure 17). The wet trench method is not permitted at ESA locations. The following procedures will be used during wet trench crossings:

- Prior to grading, sediment control measures will be in place from the 20-foot vegetative buffer left on each stream bank. Spoil containment structures will be installed back from the stream bank so spoil does not migrate into the stream. Grading will be directed away from the waterbody to minimize the potential for sediment to enter the stream. The grading of stream banks will be restricted to the trench line and areas necessary for safe bridge installation.
- After grading, backhoes or draglines will be used to excavate the trench. Excavating equipment will operate from one or both banks, without entering the stream. If equipment must encroach into the stream, it will operate on clean construction mats. Streambed material will be segregated and placed within a spoil containment structure in approved construction work area limits.
- In-stream trenching and backfilling on flowing waterbodies will typically be completed within 24 hours or less on minor waterbodies (<10 feet wide), 48 hours or less on intermediate waterbodies (>10 feet to 100 feet wide), and 72 hours at major (>100 feet wide) waterbodies, or as directed by applicable permits.
- Earthen trench plugs (hard plugs) between the stream and the upland or wetland trench will be left undisturbed during excavation of the in-stream trench to prevent diversion of the stream flow into the open trench and to prevent water that may have accumulated in the adjacent upland trench from entering the waterbody. Trench plugs will be removed immediately prior to pipe placement and replaced when the pipe is in place. Trench water accumulated upslope of trench plugs must be dewatered appropriately prior to trench plug removal.
- If trench dewatering is necessary, the pump intake will be suspended off the trench bottom and dewatering will take place into a sediment filter bag and/or a straw bale and geotextile dewatering structure (see Figures 20-23) where directed by ONEOK. The trench will be dewatered in such a manner that no heavily silt-laden water flows into streams or wetlands, typically in a well-vegetated upland area (see Section 5.0). Only non-woven fabric will be used for filter bags. Landowner approval is required in advance of placement of dewatering structures outside of the approved construction workspace.
- Backfilling will begin after the pipe is positioned in the trench at the desired depth. Backfill material will consist of the spoil material excavated from the trench and parent streambed unless otherwise specified in state or federal permits. The in-stream trench will be backfilled so the stream bottom is as near as practicable to its pre-construction condition with no impediments to normal water flow.

3.8.1.2 Temporary Stabilization

ONEOK will restore the stream banks as near as practicable to pre-construction conditions unless that slope is determined to be unstable (see Section 2.9). Once the banks have been reshaped, ECDs will be installed within 24 hours of backfilling the crossing. Temporary slope breakers will be installed on all sloped approaches to streams in accordance with the spacing requirements outlined in Section 1.7.6.

A temporary seed mix, as indicated in the *Revegetation Plan*, and mulch and/or erosion control blankets will be installed within a 50-foot buffer on either side of the stream. A sediment barrier will be installed upslope of the temporary seeding area.

3.8.2 Dam and Pump Method

3.8.2.1 Installation

The dam and pump method is a dry-crossing method that is suitable for low flow streams and is a preferred alternative to fluming for crossing meandering channels. The dam and pump method involves damming of the stream before excavation with sandbags, inflatable dams, and/or steel plates upstream and downstream of the proposed trench (see Figure 15) and pumping water around the construction area. The dam and pump method is not permitted at ESA locations. The following procedures will be implemented for dam and pump crossings:

- Pumping of the stream flow across the ROW will commence simultaneously with dam construction to prevent interruption of downstream flow. Stream flow will be pumped across the construction area through a hose(s) and will be discharged to an energy-dissipation device, such as plywood boards, to prevent scouring of the streambed.
- The pumps will be located on the upstream side of the crossing and will be placed in impermeable, sided structures which will act as containment units for the pumps and fuel containers. The pumps used for the dam and pump crossing method will not be placed directly in the stream or on the streambed. Pumps will have a pumping capacity greater than the anticipated stream flow. The pumping operation will be monitored and adjusted as necessary to maintain an even flow of water across the work area and near-normal water levels upstream and downstream from the crossing. Backup pumps of equal or greater capacity will be on-site at all times in the event that the primary pumps fail.
- The pump intake must be suspended to prevent the uptake of sediment from the stream bottom and must be equipped with a screen with less than one-inch-diameter openings, or equivalent device, to prevent fish uptake.
- Spill kits, as described in the *SPCC Plan*, will be stored adjacent to pumps and fuel containers.
- Dams will be constructed of sandbags, inflatable dams, aqua-dams, and/or steel plates. The dams will prevent the stream from flowing into the construction area. The dams will be continuously monitored for a proper seal. Additional sandbags, plastic sheeting, steel plating, or similar materials will be used where necessary to minimize the amount of water seeping around the dams and into the construction work area.

- Backhoes located on one or both stream banks will excavate a trench across the streambed. Existing streambed materials will be segregated and placed within a spoil containment structure in approved construction work area limits.
- Earthen trench plugs between the stream and the upland trench will be used during excavation of the in-stream trench to prevent the diversion of any groundwater that seeps into the open trench. Trench plugs will be removed immediately before pipe placement and then replaced when the pipe is in place.
- Standing water that is isolated in the construction area by the dams will be pumped into a sediment filter bag and/or a straw bale and geotextile dewatering structure, generally located in a well-vegetated upland area and discharged in such a manner that no heavily silt-laden water flows into streams or wetlands (see Section 5.0). Only non-woven fabric will be used for filter bags.
- Backfilling will begin after the pipe is positioned in the trench to the desired depth. Backfill material will consist of the spoil material and parent streambed excavated from the trench unless otherwise specified in state or federal permits. The in-stream trench will be backfilled so that the stream bottom is contoured to its pre-construction condition with no impediments to normal water flow.

3.8.2.2 Bank Stabilization

For dry-ditch crossings, streambed and bank stabilization will be completed before returning flow to the waterbody channel. Once the stream banks have been stabilized, the dams and pump will be removed in a manner to minimize streambed disturbance. Restoration of the banks will be completed as described in Section 2.9.

3.8.3 Flume Method

3.8.3.1 Installation

The flume method is a dry-crossing method that is suitable for crossing sensitive, relatively narrow streams that have straight channels and are relatively free of large rocks and bedrock at the point of crossing. This method involves placement of flume pipe(s) in the streambed to convey stream flow across the construction area without introducing sediment to the water (see Figure 16). The dam and flume method is not permitted at ESA locations. The procedures for using the flume method are described below.

- The flume(s) will be of sufficient diameter to transport the maximum flows anticipated to be generated from the watershed. The flume(s) typically 40 to 60 feet in length, will be installed before trenching and will be aligned so as not to impound water upstream of the flume(s) or cause downstream bank erosion. The flumes will not be removed until after the pipeline has been installed, the trench has been backfilled, and the stream banks have been stabilized.
- The upstream and downstream ends of the flume(s) will be incorporated into dams made of sand bags and plastic sheeting (or equivalent). The upstream dam will be constructed first and will funnel stream flow into the flume(s). The downstream dam will prevent backwash of

water into the trench and construction work area. The dams will be continuously monitored for a proper seal. Adjustments to the dams will be made where necessary to prevent large volumes of water from seeping around the dams and into the trench and construction work area.

- After the streambed is dewatered, backhoes located on one or both stream banks will excavate a trench across the streambed. Spoil generated during trenching will be stored in a straw bale/silt fence containment area located away from the stream banks within approved construction work areas.
- Earthen trench plugs between the stream and the upland trench will be used during excavation of the in-stream trench to prevent diversion of the stream flow into the open trench or upland sediment flowing into the stream via the trench. Trench plugs will be removed immediately before pipe placement and then replaced when the pipe is in place.
- If trench dewatering is necessary to complete the installation of the pipe, the discharge will be pumped into a sediment filter bag or a straw bale geotextile dewatering structure, then into a well-vegetated upland area, and discharged in such a manner that no heavily silt-laden water flows into streams or wetlands (see Section 5.0). Non-woven fabric must be used for filter bags.
- Backfilling will begin after the pipe is positioned in the trench to the desired depth. Backfill material will consist of the spoil material excavated from the trench and parent streambed unless otherwise specified in state or federal permits. The in-stream trench will be backfilled so that the stream bottom is similar to its pre-construction condition, with no impediments to normal water flow in a manner to minimize streambed disturbance.

3.8.3.2 Bank Stabilization

For dry-ditch crossings, streambed and bank stabilization will be completed before returning flow to the waterbody channel. After the stream banks have been stabilized, the dams and flume will be removed from the streambed allowing water to resume its flow in the channel. Restoration of the banks will be completed as described in Section 2.9.

3.8.4 Horizontal Directional Drill (HDD) Method

3.8.4.1 Installation

Installing the pipe underneath a stream will involve placing a drill unit on one side of the stream (see Figure 17). Minor hand clearing is typically required, unless otherwise specified by a Project permit, between the entry and exit points to facilitate the installation of the tracking wires, when wires are needed, and for visual inspection of the drill path. A small diameter pilot hole will be drilled under the stream along a prescribed profile. After the pilot hole has been completed, barrel reams will be used to enlarge the pilot hole to accommodate the desired pipeline diameter. Drilling mud will be necessary to remove cuttings and maintain the integrity of the hole. Water from a ONEOK-approved source will be used to prepare the slurry of drilling mud and will be appropriated according to applicable permits (see Section 7.0). The pipe section will be pulled through the hole by the drilling rig and then welded to the adjoining sections of pipe on each side of the river.

The HDD or conventional bore method will be used at all ESA locations.

3.8.4.2 Drilling Mud

During drilling operations, drilling mud and slurry will be stored back from the river bank in an earthen berm sediment control structure, in tanks, or by other methods so that it does not flow into the stream, adjacent wetlands, or off the approved construction workspace.

ONEOK has developed a contingency plan to address measures to be performed in the event of a release of drilling mud onto the ground surface or waterbody. The plan stipulates monitoring for an inadvertent release of drilling mud during the HDD operation. The plan also outlines procedures for an inadvertent release within an ESA. See the ONEOK *Horizontal Directional Drilling Inadvertent Release Control Plan* for additional details.

After the pipe is in place, excess drilling mud and slurry will be disposed of properly in accordance with applicable local, state, or federal regulations.

3.8.4.3 Bank Stabilization

The directional drilling method normally does not result in the disturbance of the stream banks or riparian vegetation, which reduces the potential for erosion and sedimentation at the stream crossing. Consequently, the ECDs that are installed at open-cut crossings typically are not necessary for drilled/bored crossings. However, ECDs may be utilized to assist in containing drilling mud or adjacent disturbed ROW on the approved construction workspace.

3.9 PERMANENT RESTORATION

3.9.1 Stream Banks

Stream banks disturbed during installation of the pipelines will be stabilized with erosion control materials such as jute or equivalent and seeded in accordance with ONEOK's *Revegetation Plan*. Permanent stabilization must occur prior to returning stream flow for dam and pump/flume crossings unless site and permit conditions delay permanent installation. Bank stabilization activity will not be more than 500 feet in length along the bank and no material will be placed in excess of the minimum needed for erosion protection. The stabilization activity will not exceed an average of one cubic yard per running foot below the OHWM. All activity should be properly maintained, including repairing after storms or erosion events.

Where the banks have been disturbed, ONEOK will restore the slopes as near as practicable to pre-construction conditions unless that slope is determined to be unstable. Where the slope of a bank is determined to be unstable or has the potential to erode or fail, the bank will be reshaped to transition the disturbed areas into the natural stream bank with the intent to stabilize the bank and create a blended, natural appearance. If the original stream bank is excessively steep and unstable and/or flow conditions are severe, a more stable final contour may be specified and alternate stabilization measures may be installed. Alternate stabilization measures must conform to existing permit conditions. The contractor and Environmental Inspection team will inform ONEOK when restoring preconstruction contours is not feasible.

Berms or other sediment filter devices will be installed at the base of sloped approaches to streams greater than 5 percent and the outlet of the berm will be directed away from the stream into a well-vegetated area (see Figures 8 and 12). Temporary ECDs will remain in place until the area has been stabilized and adequate revegetation has been established.

3.9.2 Vegetative Bank Restoration

Typically, waterbody banks will be restored as near as practicable to preconstruction conditions after backfilling is complete and will be seeded with an appropriate seed mix as specified in the *Revegetation Plan*. ECDs (e.g. erosion control blankets, silt fences, etc.) will be installed as necessary based on site-specific conditions. If installation of the pipeline creates unstable soil conditions due to either stream meanders or stream crossing angle, ONEOK will consult with the appropriate agencies to identify additional site stabilization techniques.

3.9.3 Rock Riprap Restoration

Unstable soils and/or site-specific factors such as stream velocity and flow direction may require additional restoration efforts, such as installation of rock rip-rap, to stabilize disturbed stream banks. Rock rip-rap will be used only where site-specific conditions require and where applicable state permits or approvals have been acquired. Geotextile fabric and rock riprap will be placed according to site and permit conditions (see Figure 24). Disturbed soils upslope and on either side of the riprap will be prepared for seeding according to the *Revegetation Plan* and other stream bank protection requirements.

Rock riprap will not be installed below the OHWM, which will be marked upon request, or within wetlands. Rock riprap is not to be used as a support for a bridge within a wetland or a waterbody.

3.9.4 Bridge Removal

Equipment bridges will be removed during final cleanup or, if access is needed, after final cleanup and permanent seeding. Restoration of the bridge area will be completed upon bridge removal. Bridges installed for winter construction (if applicable) will be removed before spring break up unless access is needed for final cleanup and restoration other portions of the ROW.

3.9.5 Swales

Swales will be restored as near as practicable to original conditions. Swales will be seeded and either mulched with straw or erosion control blankets will be installed to the perceivable top of bank for the width of the approved construction workspace.

3.9.6 Drainage Ditches and Intermittent Streams

Drainage ditches and intermittent streams will be permanently restored and stabilized with erosion control blanket, permanent seeding, or other appropriate measures.

4.0 WETLAND CROSSING GENERAL REQUIREMENTS

Typical pipeline construction in wetlands will consist of clearing, stringing, trenching, dewatering, installation, backfilling, final grading, cleanup, and revegetation. However, due to the unstable nature of some wetland soils, construction activities may differ somewhat from those described for upland areas. Construction activities will be minimized in wetlands to the extent practicable. ONEOK will also use special construction techniques to minimize the disturbance to plants and soils and to protect wetland hydrology.

Pre-construction planning is an essential part of wetland crossings. Wetland crossing requirements, including construction methods, timing, erosion control, and restoration, are described in this section and in the wetland crossing permits issued by state and federal agencies. Prior to construction, the Contractor may identify alternative provisions that would provide an equal or greater level of protection to wetland ecosystems if the Contractor considers certain parts of these procedures to be technically impractical due to site-specific engineering constraints. Any proposed alternative provisions must be submitted to ONEOK far enough in advance of construction to allow ONEOK an opportunity to review the alternatives and consult with the appropriate regulatory agencies without causing construction delays. The Contractor must receive written approval from ONEOK prior to implementing the alternative construction techniques.

The procedures in this section apply to all wetlands that will be affected by the Project. These procedures require that judgment be applied in the field and will be implemented under ONEOK's supervision. The intent of these procedures is to minimize construction-related disturbance and sedimentation of wetlands and to restore wetlands to pre-construction conditions to the extent possible. In the event a waterbody crossing is located within or adjacent to a wetland crossing, the measures in both Sections 2 and 3 will be implemented to the extent practicable.

4.1 WETLAND ACCESS

The Contractor must use the construction ROW, existing public roads, and approved access roads, such as private roads under landowner agreement, to access wetland areas.

4.2 SPILL PREVENTION

4.2.1 Storage of Fuels and Other Materials

No storage of hazardous materials, chemicals, fuels, and lubricating oils and no concrete coating activities will be permitted in, or within 100 feet of, any wetland boundary unless special provisions have been implemented in accordance with ONEOK's *SPCC Plan*.

4.2.2 Refueling, Fuel Handling, and Equipment Maintenance

Construction equipment will be refueled in upland areas at least 100 feet from a wetland. Where the Contractor and ONEOK determine that conditions require construction equipment (e.g., swamp hoe, trench dewatering pumps, or portable generators) to be refueled within 100 feet of a wetland, the Contractor must follow the procedures described in ONEOK's *SPCC Plan* and implement additional provisions based on site-specific conditions. No equipment will be washed within 100 feet of streams

or waterbodies. Vehicles and equipment left on the ROW overnight must be parked at least 100 feet from a delineated wetland boundary unless special provisions have been implemented in accordance with ONEOK's *SPCC Plan*, secondary containment structures are functional and properly placed, and prior approval is obtained from ONEOK.

4.3 CLEARING

Clearing the construction ROW in wetlands will be similar to clearing in uplands. For construction to proceed, obstructions (e.g., trees, brush, and logs) need to be removed. Typically, low ground pressure equipment will be used to limit disturbance to the wetland. When clearing in wetlands, the following restrictions will apply:

- The construction ROW width in wetlands will typically be limited to 75 feet as depicted in Figure 25 unless non-cohesive soil conditions require utilization of a greater width.
- Vegetation and trees within wetlands will be cut off at ground level, leaving existing root systems intact. Trees within ESAs will not be removed.
- Cuttings and debris will be removed from the wetland and disposed of properly.
- Between ETWS and the edge of wetlands, the clearing of vegetation will be limited to the construction ROW.
- Mechanized tree clearing will not be allowed in forested wetlands or ESAs as identified by ONEOK.

4.4 EXTRA WORKSPACE IN WETLANDS

ONEOK attempted to locate extra workspace outside of wetlands wherever practicable; however, extra workspaces have been sited in select wetlands where the wetland is adjacent to a waterbody, road, railroads, foreign utility crossings, and/or pipeline cross-over. Clearing of forested wetlands for extra workspace will be avoided as much as possible and never allowed at ESA locations. Woody vegetation in wetlands will not be cleared for the purpose of extra workspace unless approved by the appropriate regulatory agency.

Staging areas, additional spoil storage areas, and other additional work areas (extra workspace) will be located in upland areas at least 50 feet away from wetland boundaries (see Figure 25), where safe work practices or site conditions permit. These extra workspaces may be located closer if the area is disturbed agricultural land, such as a row crop. If site conditions do not permit a 50-foot setback, then these areas will be located as far away from the wetland as is practicable. Vegetation will not be cleared between these areas and the wetland in any event. No construction activities, including vegetation clearing or earthwork, will occur between the extra workspace and sensitive resource areas (wetlands or waterways). The size of the additional workspace areas will be limited to the minimum needed to construct the wetland crossing.

4.5 GRADING IN A WETLAND

Grading in a wetland, if required, will be conducted in a manner consistent with applicable federal, state, and local permits. Grading activities will be confined to directly over the trench line. Grading outside the

trench will only be allowed where required to ensure safety and restore the ROW after backfilling the trench. No grading is permitted within ESAs.

4.6 CONSTRUCTION MATTING

Supplemental equipment supports, such as timber mats (see Figure 25), will be used where necessary to provide temporary portable support for construction equipment and minimize soil compaction and/or soil mixing. No equipment supports are permitted within ESAs. To prevent the spread of noxious and invasive plant species, timber mats must be free of soil and plant material prior to being transported onto the ROW. The Contractor is responsible for having a sufficient number of construction mats to perform the work. Tree stumps, brush riprap, imported soil, and rock fill will not be brought in to stabilize the ROW or excavations in wetlands. Timber riprap (also known as corduroy road) cannot be used without prior written approval from ONEOK. Pre-existing corduroy roads in wetlands may be used but may not be improved, maintained, restored, or replaced without site-specific authorization from applicable agencies. Subsoil excavated from the pipeline trench in the wetland may be placed on top of equipment mats for additional stabilization.

All timber mats, construction debris, and larger woody vegetative debris will be removed during the cleanup of wetlands to pre-construction condition or equivalent to surrounding area.

4.7 TRENCHING

Excavation of the pipeline trench in wetlands typically will be accomplished using backhoe excavators. The duration of open trench will be minimized to the extent possible.

4.8 TOPSOIL SEGREGATION

Typically, when constructing in wetland areas without standing water, up to one foot of topsoil (organic layer) will be stripped from the trench line and stockpiled separately from trench spoil. In standing water wetlands, topsoil segregation is not typically practical; however, ONEOK will attempt to segregate as much of the organic layer as possible based on site/saturation conditions. If normally unsaturated wetlands are saturated at the time of construction, topsoil segregation will be attempted according to Figure 25 and based on recommendations from ONEOK and appropriate regulatory agencies. Topsoil will be restored to its approximate original stratum, after backfilling is complete.

4.9 TRENCH BREAKERS

Trench breakers will be installed as necessary, near the wetland boundary, to maintain the original wetland hydrology.

4.10 PIPELINE INSTALLATION

The following procedures are intended to minimize siltation and disturbance to wetlands during installation.

4.10.1 Push/Pull Method

Large wetlands with standing water can generally not be crossed with typical crossing methods. In these areas, the pipeline will be assembled in an upland area and positioned in the trench using the “push-pull" and/or "float" techniques. Typically, this fabrication requires use of extra workspace adjacent to the construction ROW. The trench will be dug by a backhoe (or equivalent) supported on timber mats. The prefabricated section of pipeline will then be pushed-pulled into position or floated across the wetland. When the pipeline is in position, the floats, if used, will be removed and the pipeline will sink into position. Barrels, floats, and banding will be recovered and removed prior to backfilling. The trench will then be backfilled, and the wetland will be restored by a backhoe or similar equipment working from construction mats or by low ground pressure equipment. The push/pull method is not permitted within ESAs.

4.11 TEMPORARY EROSION AND SEDIMENT CONTROLS

ECDs at approaches to wetlands will be installed as described in this section and Section 1.7.5, according to the specifications presented on Figures 3 and 4. ECDs (e.g., silt fence) will be installed across the entire construction ROW upslope of the wetland boundary, where necessary, to prevent sediment flow into the wetland. Where wetlands are adjacent to the construction ROW and the ROW slopes toward the wetlands, ECDs will be installed along the edge of the construction ROW as necessary to prevent sediment flow into the wetlands. ECDs will be installed along the edge of the construction ROW, as necessary, to contain spoil and sediment within the construction ROW which crosses through wetlands. In the travel lane, these may incorporate removable sediment barriers or drivable berms. Removable sediment barriers can be removed during the construction day and re-installed after construction has stopped for the day or when heavy precipitation is imminent.

ECDs will be maintained in proper working order to prevent the flow of sediment into wetlands from spoil piles or sloped approaches that are adjacent to the wetlands. When the depth of sediment reaches one-half of the height of a sediment barrier, the barrier will be replaced and/or the sediment removed. Non-functional sediment-control measures will be repaired, replaced, or supplemented.

4.12 BACKFILLING

The Contractor will restore wetlands as near as practicable to pre-construction conditions and must make a reasonable attempt to return the subsoil its pre-construction density. During the backfilling of wetland areas, subsoil material removed from the trench during construction will be replaced so the material is not mounded above the adjacent ground surface (undisturbed trench wall). Subsoil that exceeds the elevation of the ground adjacent to the trench will be removed from the wetland and disposed of in an upland area or a ONEOK-approved disposal site. After the trench has been backfilled with subsoil, previously segregated topsoil will be spread over the trench area and mounded no more than 12 inches above the adjacent, undisturbed soil.

4.13 ROUGH GRADING, CLEANUP, AND TEMPORARY RESTORATION

Cleanup and rough grading activities may take place simultaneously. Cleanup activities typically will involve removing construction debris and replacing fences removed during construction. Rough grading will include restoring original conditions within the disturbed areas (i.e., ditch line, spoil storage areas,

and equipment travel lane) and installing or repairing temporary ECDs. Temporary slope breakers will be installed near the boundary between the wetland and adjacent sloped approaches, to prevent sediment flow into the wetland.

4.13.1 Timing

Cleanup and rough grading (including installation of ECDs) will begin as soon as practical after the trench is backfilled, weather permitting.

4.13.2 Temporary Stabilization

Where necessary to prevent erosion and in accordance with *ONEOK's Revegetation Plan*, disturbed wetland areas will be stabilized by seeding with a temporary cover at a rate adequate for germination and ground cover unless standing water is present. For farmed wetlands, seeding requirements will be applied for agricultural lands or as required by the landowner.

The Contractor will not use fertilizer, lime, or mulch in wetlands unless required in writing by the appropriate land management agency. ONEOK does not propose permanent planting or seeding in wetlands.

5.0 HIGHWAY, ROAD, AND RAIL CROSSINGS

5.1 EXTRA WORKSPACE

Extra workspaces for bored road and railroad crossings and open-cut road crossings will be determined on a site-specific basis and must be approved by ONEOK prior to use. These workspaces will be adjacent to the road or railroad (see Figure 26).

5.2 MAINTENANCE

Roadway crossings will be maintained in a condition that will prevent the tracking of mud onto the roadway. If mud is tracked onto a roadway, the Contractor will remove accumulated material from the road and place within a sediment barrier as soon as practical.

5.3 Temporary EROSION and Sediment controls

Temporary ECDs (e.g., silt fence and/or double-staked straw bales) will be installed on sloped approaches to road crossings where vegetation has been disturbed as discussed in Section 1.7.5 and installed according to the specifications presented on Figures 3 and 4.

6.0 CONSTRUCTION DEWATERING

6.1 TRENCH DEWATERING

The following additional guidance is provided regarding trench dewatering activities to employ the maximum amount of reasonable protective measures to sensitive resource areas.

At each location where dewatering is to be conducted, the contractor must consider the following conditions in planning the dewatering event. Prior to initiating dewatering activities, the contractor must check the water discharge situation to ensure that the BMPs are applied in such a way as to minimize the potential for water containing sediment from reaching a sensitive resource area. Landowner approval must be acquired in advance of placement of dewatering structures outside of the approved construction ROW, if required. If dewatering off the ROW, a well-vegetated upland area will be selected.

- **Water Discharge Setting** – The contractor will assess each water discharge situation to include:
- Soil Type - The soil types the discharged water would flow over. The management of discharged water traveling over sandy soil will vary compared to clay soils, as runoff is more likely to soak into sandy soils than clay soils.
- Ground Surface - The topography and vegetation in the area that would influence the surface flow of the discharged water.
- Adjustable Discharge rate - The flow rate of the discharged water (which may need to vary) should be managed based on site conditions and applicable permits to minimize instances of water from reaching a sensitive resource area. For example, water discharged at 500 gallons per minute may soak into the ground while if discharged at a higher flow rate would cause water to flow via overland runoff into a waterbody.
- Discharge Outfall - The amount of hose needed to attempt to discharge water at a location which drains away from waterbodies or wetlands.
- **Pump Intake** - Install a float near the suction end of the intake hose to prevent the uptake of sediment from the trench bottom (see Figures 20 and 23). Alternative methods may be used where the performance of the alternative method is equal to or greater than the use of a float.
- **Overwhelming Existing Drainage** - If clean discharged water will reach a waterbody, control the discharge rate to prevent downstream flooding and/or erosion.
- **Filtering Mechanism** – All dewatering discharges will be directed through a filtering device as indicated below.
- Well-Vegetated Upland Area – Water can be directed to a well-vegetated upland area through a geotextile filter bag. The ground at the discharge location will be protected as necessary to prevent scouring/erosion of the ground surface at the end of the discharge hose. Geotextile bags will be sized appropriately for the discharge flow rate and suspended sediment particle size.
- Straw Bale Dewatering Structure – Where the dewatering discharge point cannot be located in an upland area due to site conditions and/or distance, the discharge will be directed into a straw bale dewatering structure. The size of the straw bale dewatering structure is dependent on the maximum water discharge rate. A straw bale dewatering structure should be used in conjunction with a geotextile filter bag to provide additional filtration near sensitive resource areas.

- Alternative dewatering methods (e.g., use of water cannons) may be approved by ONEOK on a site-specific basis.
- **Monitoring** – Trench dewatering activities will be monitored at all times by the contractor.

6.1.1 Regulatory Notification and Reporting

ONEOK will notify appropriate agencies as required by all permits/authorizations. Reports regarding the volume and quality of the water withdrawn and discharged will be submitted by ONEOK, if required by the applicable permits. The Contractor will assist ONEOK in collecting appropriate data and any water samples required or in determining volumes of water appropriated.

6.1.2 Flow Measurement

The volume of water discharged from the trench will be recorded if required by the applicable permits. The volume may be determined using a flow meter or equivalent method as dictated by permit stipulations.

6.1.3 Water Sampling

Water discharged from trench dewatering locations may need to be sampled as required by NPDES discharge permits. If required, the Contractor will assist ONEOK in obtaining these samples and will be responsible for complying with permit limitations.

7.0 HYDROSTATIC TESTING

Hydrostatic testing involves filling the new pipeline segments with water acquired in accordance with applicable permits, raising the internal pressure level, and holding that pressure for a specific period of time per federal Department of Transportation (DOT) regulation 49 CFR 195 to verify there are no flaws in the pipe or welds. Pre-built sections (e.g., HDD sections) may be hydrostatically tested prior to installation. After the hydrostatic test is completed, the line will be depressurized and the test water will be discharged. Contractor(s) will refer to the NPDES permit issued for water discharge and plan accordingly to meet the conditions of the permit. Depending on the water source and applicable permits, the hydrostatic test water may be discharged to the ground, hauled off to a ONEOK-approved disposal location, or reused for dust control.

7.1 SITING OF TEST MANIFOLDS

Hydrostatic test manifolds will be installed where necessary to ensure proper test pressures. To prevent the spread of noxious and invasive species, hydrostatic test equipment must be dry and free of soil and plant material prior to being transported onto the ROW. The selected location of test manifolds is based on engineering requirements to meet proper test pressures and incorporates changes due to topography. Where feasible, ONEOK will incorporate minor adjustments to the test manifold locations to avoid placement in wetlands and riparian areas. However, completely avoiding the placement of a test manifold in a wetland may not always be possible. The Contractor will install appropriate erosion and spill control measures where ONEOK determines that topographic conditions, primarily elevation changes, require test sections to be located in a wetland or riparian area.

The operation and refueling of hydrostatic test equipment will be in accordance with the conditions outlined in ONEOK's *SPCC Plan*.

8.0 WATER APPROPRIATION SOURCES AND DISCHARGE LOCATIONS

During construction, water required for hydrostatic testing of the mainline pipe and HDD pipe sections, directional drilling, and dust control operations may be obtained from local sources, such as lakes, streams, and private or municipal wells. Water will only be withdrawn from sources approved by ONEOK and in accordance with applicable permits. Where water is appropriated from lakes or streams, the intake hose will be suspended off the stream or lake bottom and will be screened to prevent entrainment of fish. If appropriation is scheduled to occur during possible periods of low flow, including frozen conditions, a backup source will be identified. Water used for dust control activities will be applied to roads, disturbed areas, and soil piles as described in ONEOK's *Dust Control Plan*.

8.1 APPROPRIATION FLOW MEASUREMENT

During withdrawal, adequate waterbody flow rates and volumes will be maintained to protect aquatic life and allow for downstream uses. At no time will the withdrawal rate for the water source exceed the rate specified in the applicable permits.

The volume and rate of withdrawal will be monitored to comply with applicable permit conditions. The withdrawal rate and total volume of water appropriated will be measured with a flow meter (or equivalent) and recorded. In North Dakota the submittal of an Annual Report is required after water use ends.

8.2 TEST WATER DISCHARGE

Hydrostatic test water discharges, sampling, testing, and recordkeeping will be conducted in compliance with state-issued NPDES permits. Water used for hydrostatic testing of the mainline and HDD pipe sections will typically be discharged back to the waterbody from which it was appropriated (via direct discharge or through a dewatering structure built in an adjacent upland area) unless an alternate discharge location has been approved by the applicable agencies. Hydrostatic test waters will not be transferred from one waterbody to another, across watershed, or major drainage divides unless specifically allowed by applicable permits. No additives to the water are permitted unless written approval is received from ONEOK and applicable permits authorize such additives.

Prior to hydrostatic testing the pipeline, ONEOK will prepare the pipe by removing accumulated construction debris, mill scale, dirt, and dust using a cleaning pig. The debris will be collected in a temporary receiver and will be properly disposed of by the Contractor. Upon completion of the cleaning operation, the pipeline will be sealed with the test headers.

Test headers and pigs will be arranged to allow for rinse water to be installed ahead of the fill pigs. Rinse water must be treated and disposed of in accordance with applicable permit conditions.

Following testing, the test section will be depressurized and the water will be discharged to a well-vegetated, upland area and/or an appropriate dewatering structure, as described in the applicable permit. Dewatering structures include geotextile filter bags and/or a straw bale structure that may or

may not be lined with geotextile fabric depending on the flow rate and overall volume of the discharge. Direct discharges to surface waters will be directed through an energy dissipation device such as a splash pup. Additional BMPs, such as the use of plastic sheeting or other material to prevent scour, will be used as necessary to prevent excessive sedimentation during dewatering. For example, in areas where highly erodible soils exist, the contractor may use layers of visqueen (or similarly effective fabric) anchored in place during the discharge.

To minimize the potential for introduction and/or spread of invasive species due to hydrostatic testing activities, ONEOK proposes to discharge water to the same source watershed from which it was appropriated, unless otherwise specified in a Project permit. If water is used to test multiple test sections, it will be relayed back to the source water through the pipeline for final discharge. Test water will not be discharged to a waterbody other than the appropriation source or a location within the same watershed, unless coordinated and permitted through the applicable agencies.

8.2.1 Discharge Flow Measurement

The volume and rate of discharge will be monitored to comply with applicable permit conditions. The discharge rate and total volume of water discharged will be measured with a flow meter (or equivalent) and recorded. At no time will the discharge rate exceed the rate specified in the applicable permits. In the event no maximum discharge rate is identified, discharges will be monitored and adjusted as necessary to avoid overwhelming the discharge structure and scouring or sediment transport from the discharge location.

8.2.2 Discharge Water Sampling

Where required by permit conditions, ONEOK will sample the water during discharge. The Contractor will assist ONEOK in obtaining these samples. Chlorinated source water will be sampled at appropriation. If chlorine levels are at or above aquatic toxicity standards, the water will not be discharged directly to surface water.

8.3 REGULATORY NOTIFICATION AND REPORTING

ONEOK will notify appropriate agencies of the time of appropriations and/or discharges in accordance with applicable permit conditions. Reports regarding the volume and quality of the water withdrawn will be submitted by ONEOK if required by the applicable permits.

9.0 REVEGETATION

Permanent revegetation will involve preparing the seedbed and seeding disturbed, non-agricultural areas. The approved construction workspaces will be seeded as soon as possible after backfilling, weather and soil conditions permitting. With the exception of wetland areas, fertilizer and pH modifying agents (e.g., lime) will be applied as specified by ONEOK and in consultation with appropriate state and federal agencies and landowners. Refer to ONEOK's *Revegetation Plan* for specific information.

Revegetation will occur in accordance with applicable permits, in accordance with ONEOK's Project *Revegetation Plan* and *SWPPP*, and will be considered to have reached final stabilization when all soil disturbing activities are complete and a uniform perennial vegetative cover with a density of 70 percent

of the typical or existing background vegetative cover for the area has been established on disturbed unpaved areas and areas not covered by permanent structures.

Construction Mitigation and Restoration Plan
Figures

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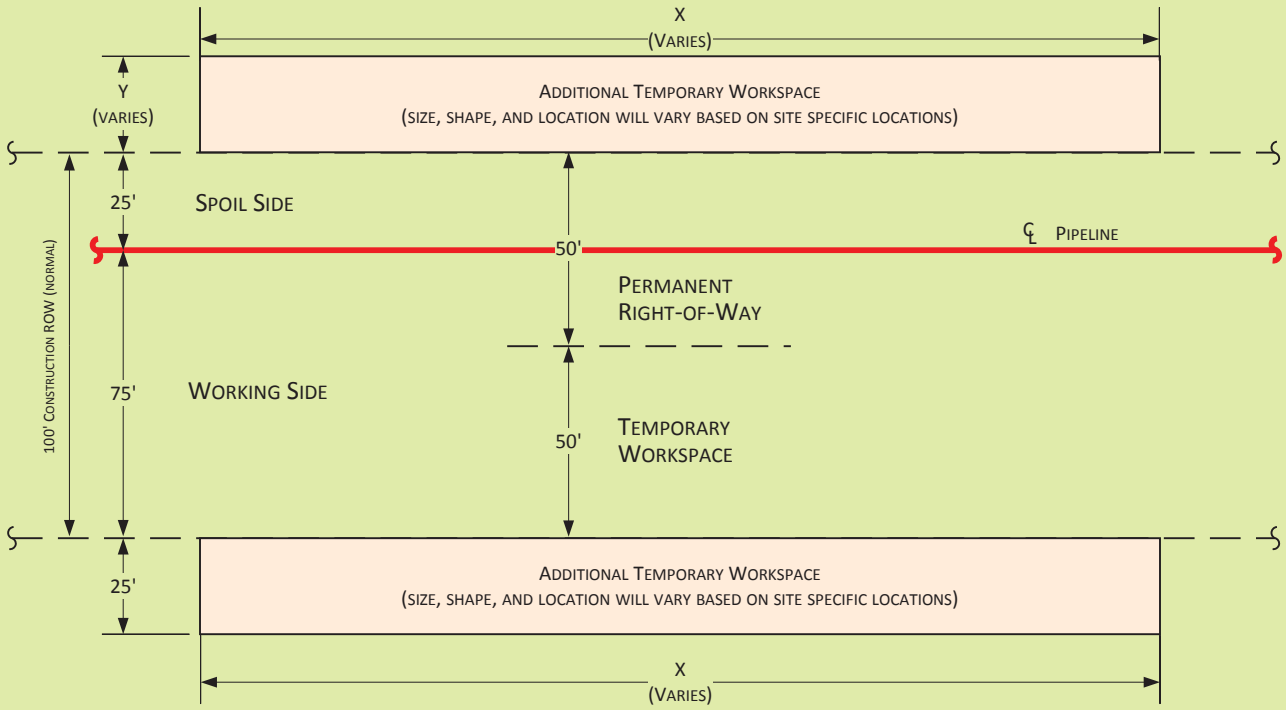

For environmental review purposes only.

ONEOK

Figure 1
Typical Construction Layout

ERM

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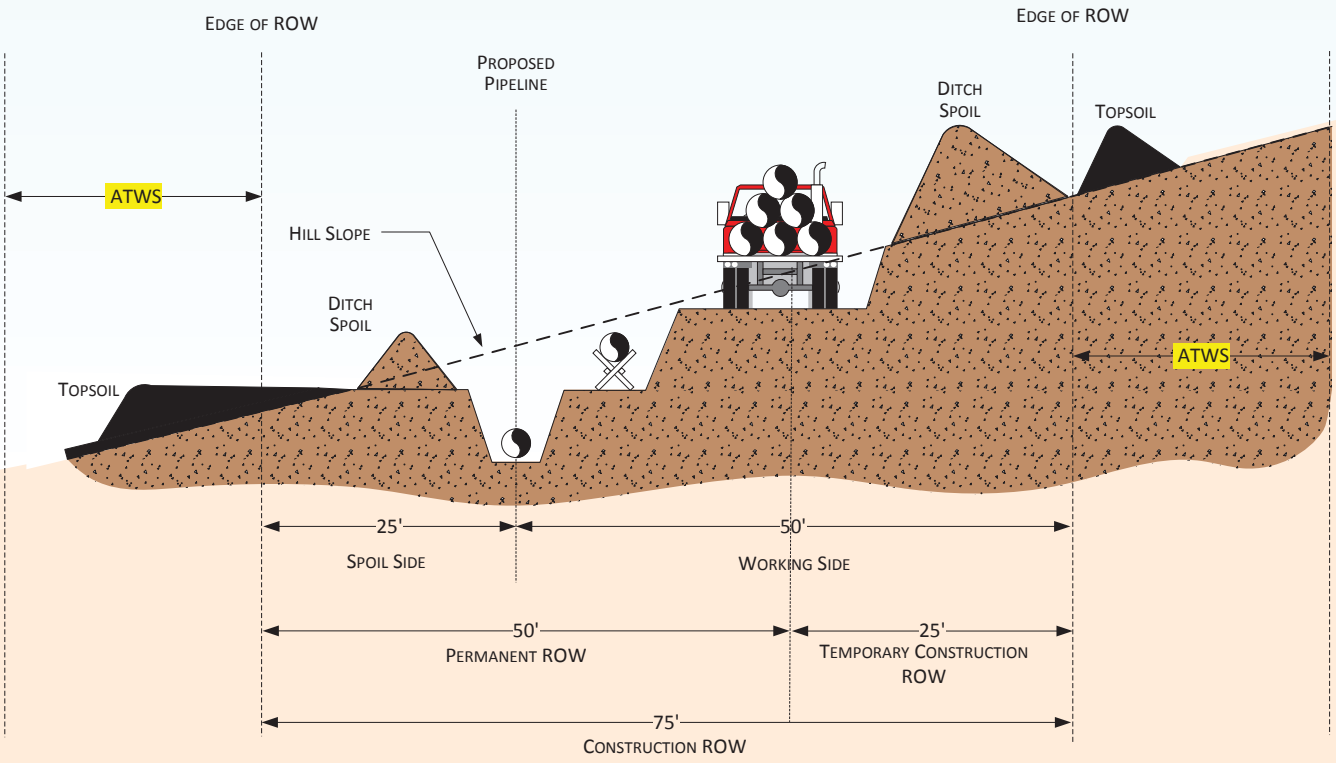

NOTES:

1. GRADE TO BE RESTORED AS NEAR AS PRACTICABLE TO PRECONSTRUCTION CONDITIONS DURING RESTORATION.

For environmental review purposes only.

ONEOK

Figure 2

Typical Construction ROW
on Sloping Terrain

ERM

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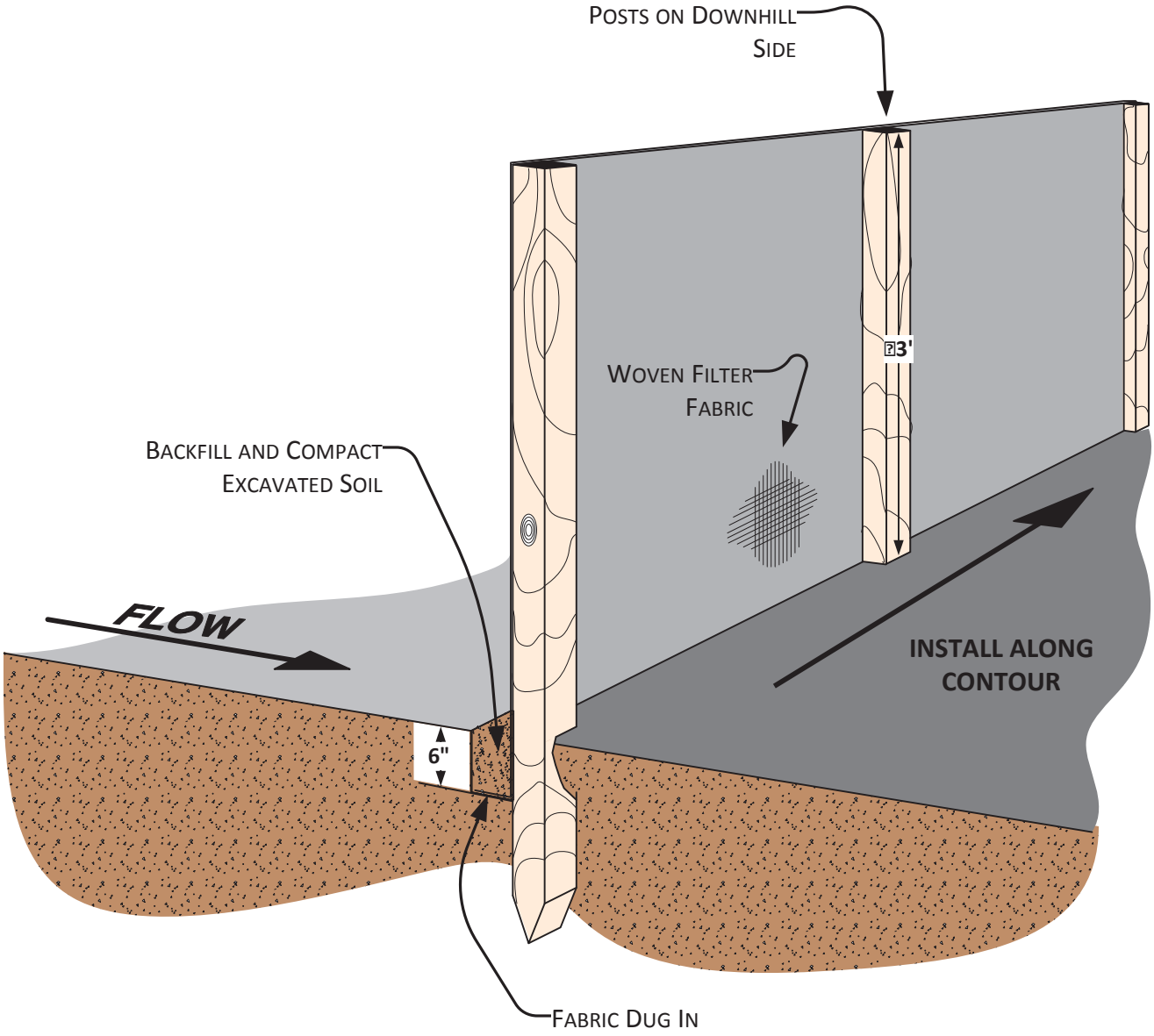

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ONEOK

Figure 3

Typical Silt Fence Installation
(OKS-7901-ENV-01)

ERM

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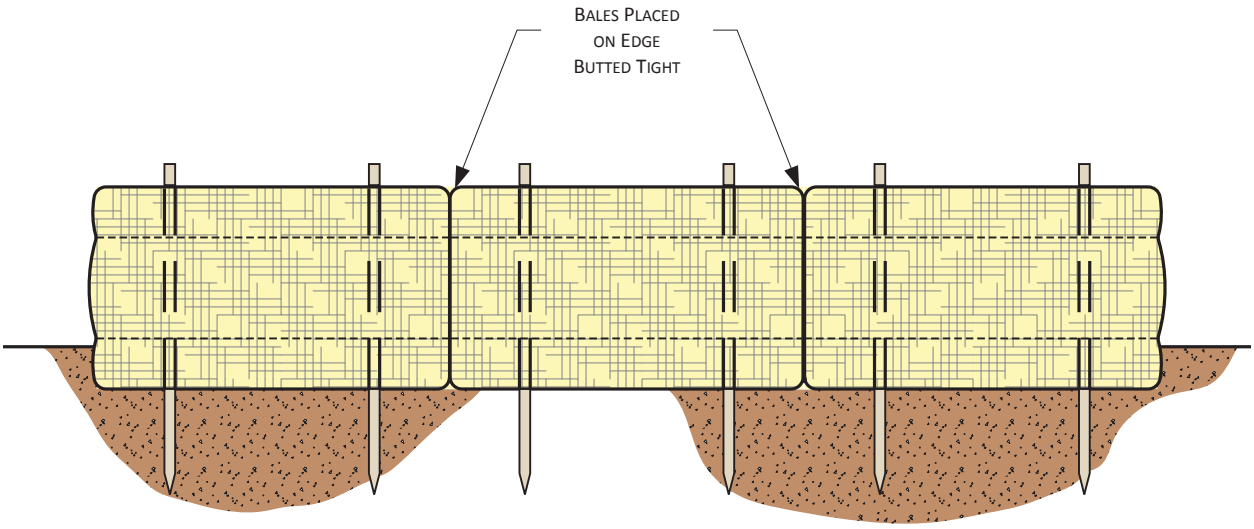
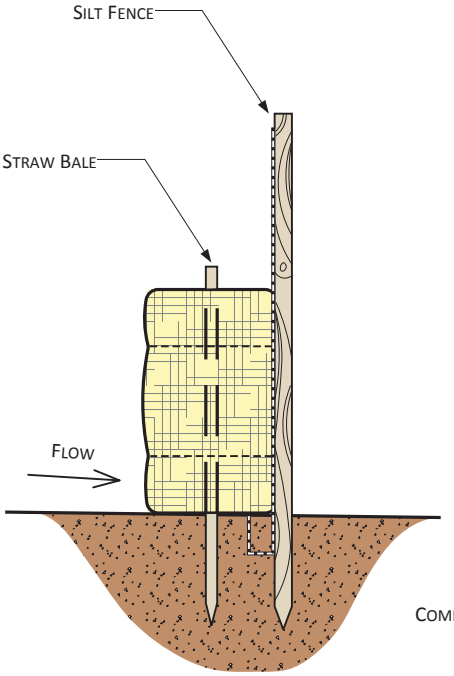
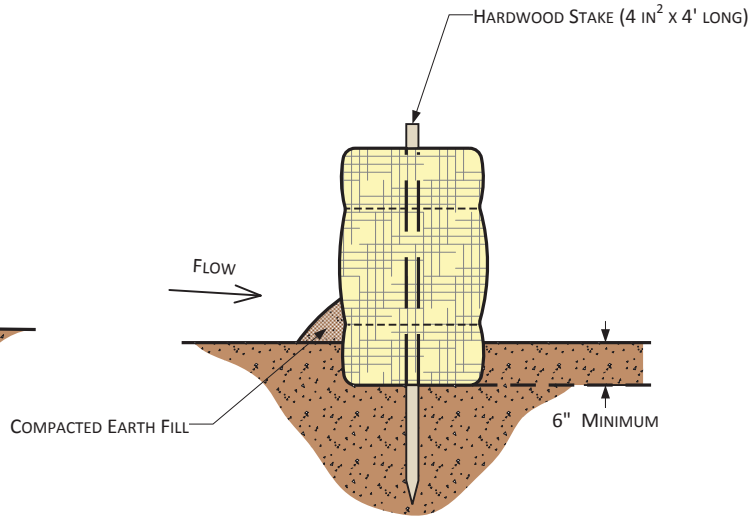




Straw Bales & Silt Fence



Straw Bales Only

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ONEOK

Figure 4

Typical Straw Bale Installation
(OKS-7901-ENV-02)

ERM

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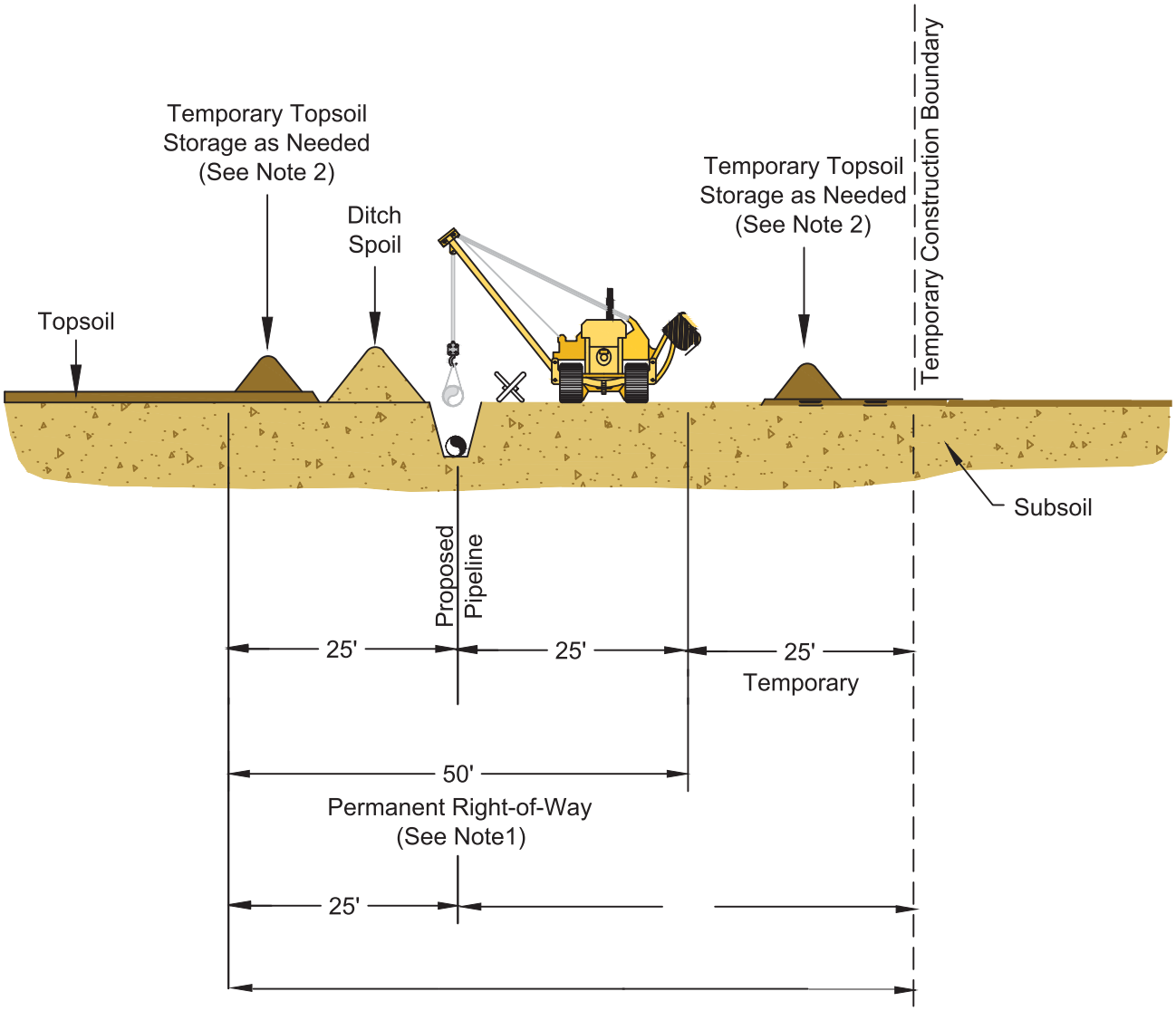

Notes:

1. Construction right-of-way will typically be 75 feet wide. The spoil side will be approximately 25 feet wide. The working side will be 50 feet wide.

2. This drawing reflects "Full Right of Way " topsoil stripping procedure. Stockpile topsoil separately from ditch spoil as shown or in other configurations approved by the company.

ONEOK

Figure 5
Typical Topsoil Segregation Trench
Right-of-Way
(OKS-7901-CONST-01c)

ERM

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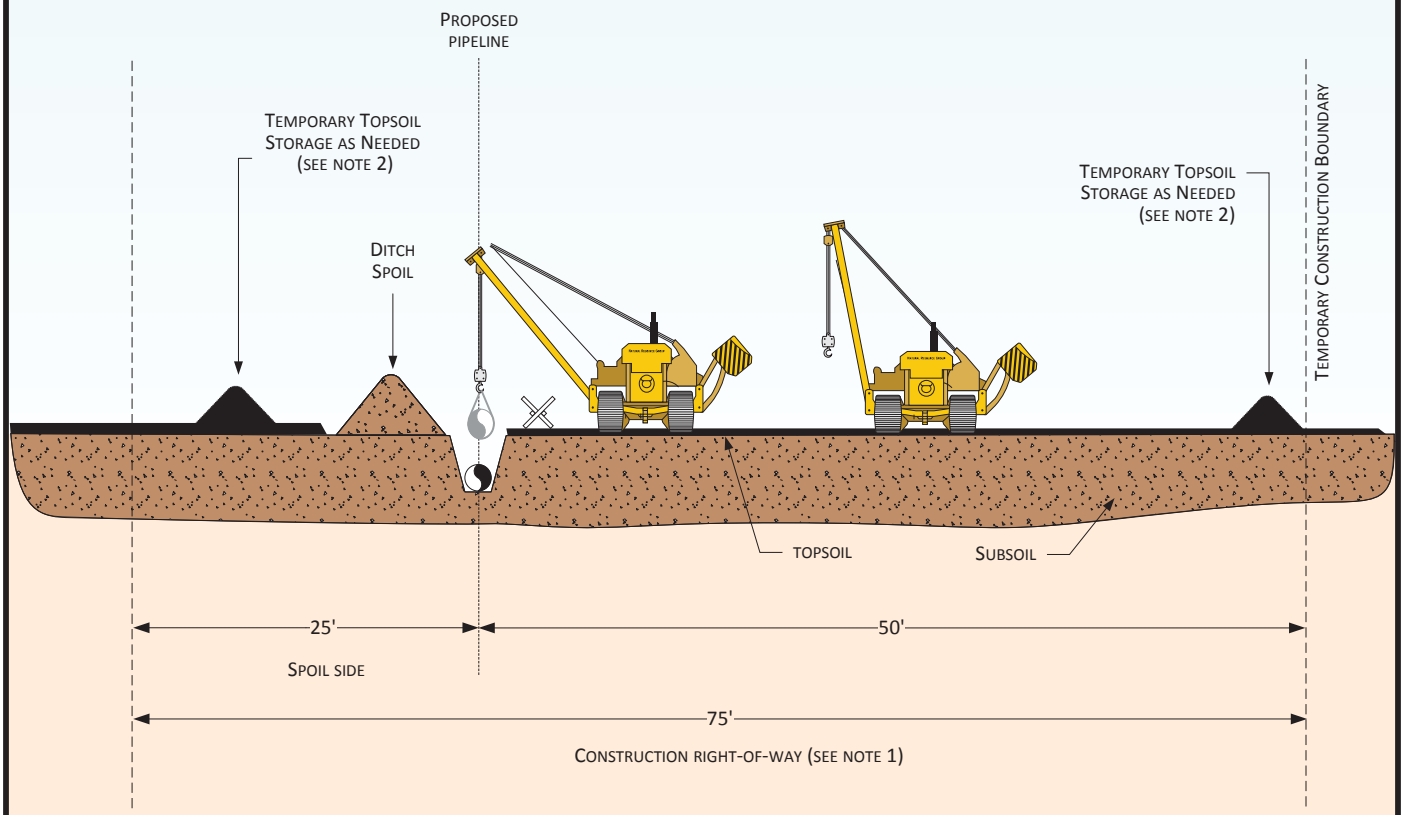

PROFILE

NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75' WIDE. THE SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE. THE WORKING SIDE WILL BE 50' WIDE.
2. THIS DRAWING REFLECTS "DITCH PLUS SPOIL" TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY.

Figure 6

Typical Topsoil Segregation
Ditch Plus Spoil

ONEOK

ERM

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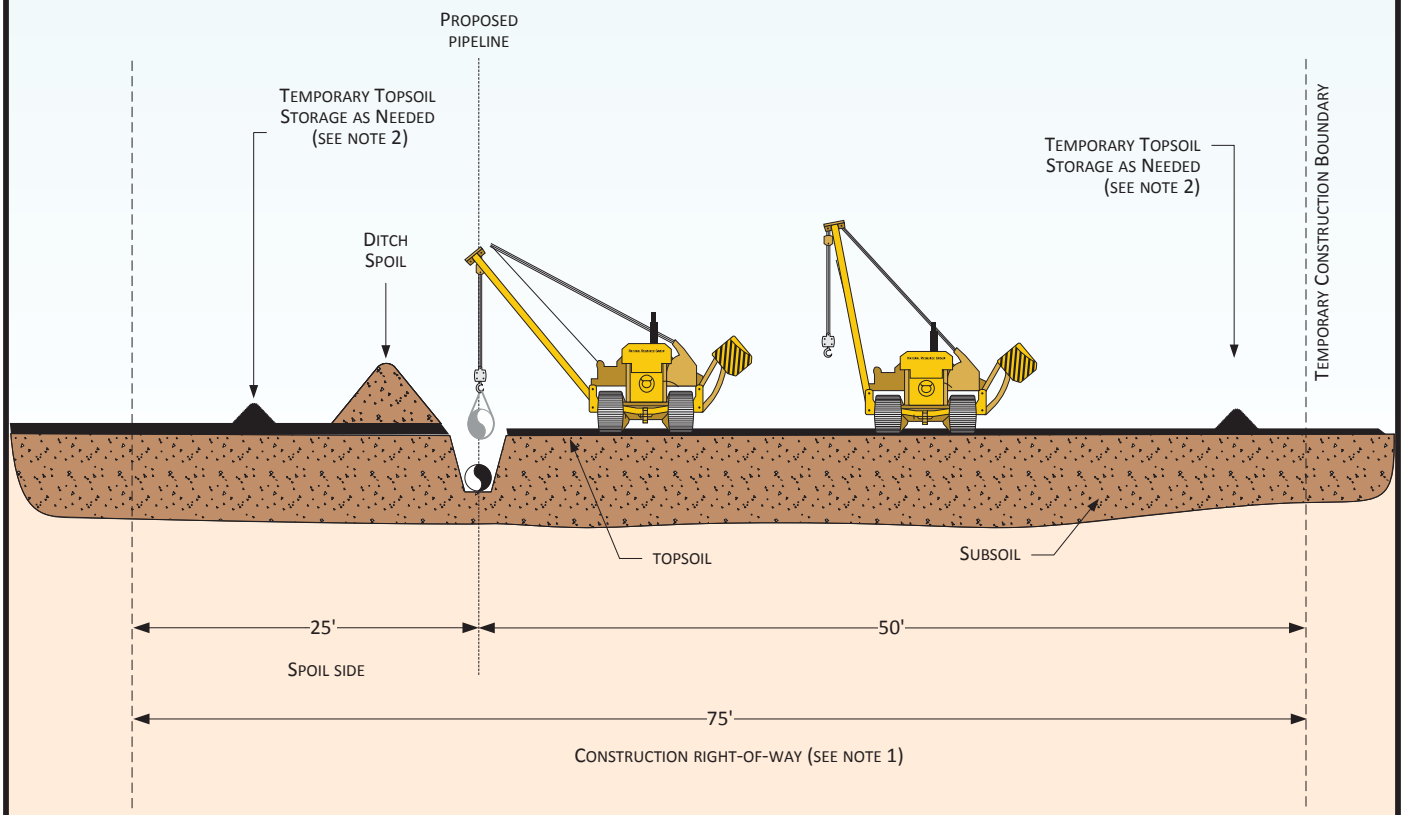

PROFILE

NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75' WIDE. THE SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE. THE WORKING SIDE WILL BE 50' WIDE.
2. THIS DRAWING REFLECTS "TRENCH LINE ONLY" TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY.

ONEOK

Figure 7

Typical Topsoil Segregation
Trench Line Only

ERM

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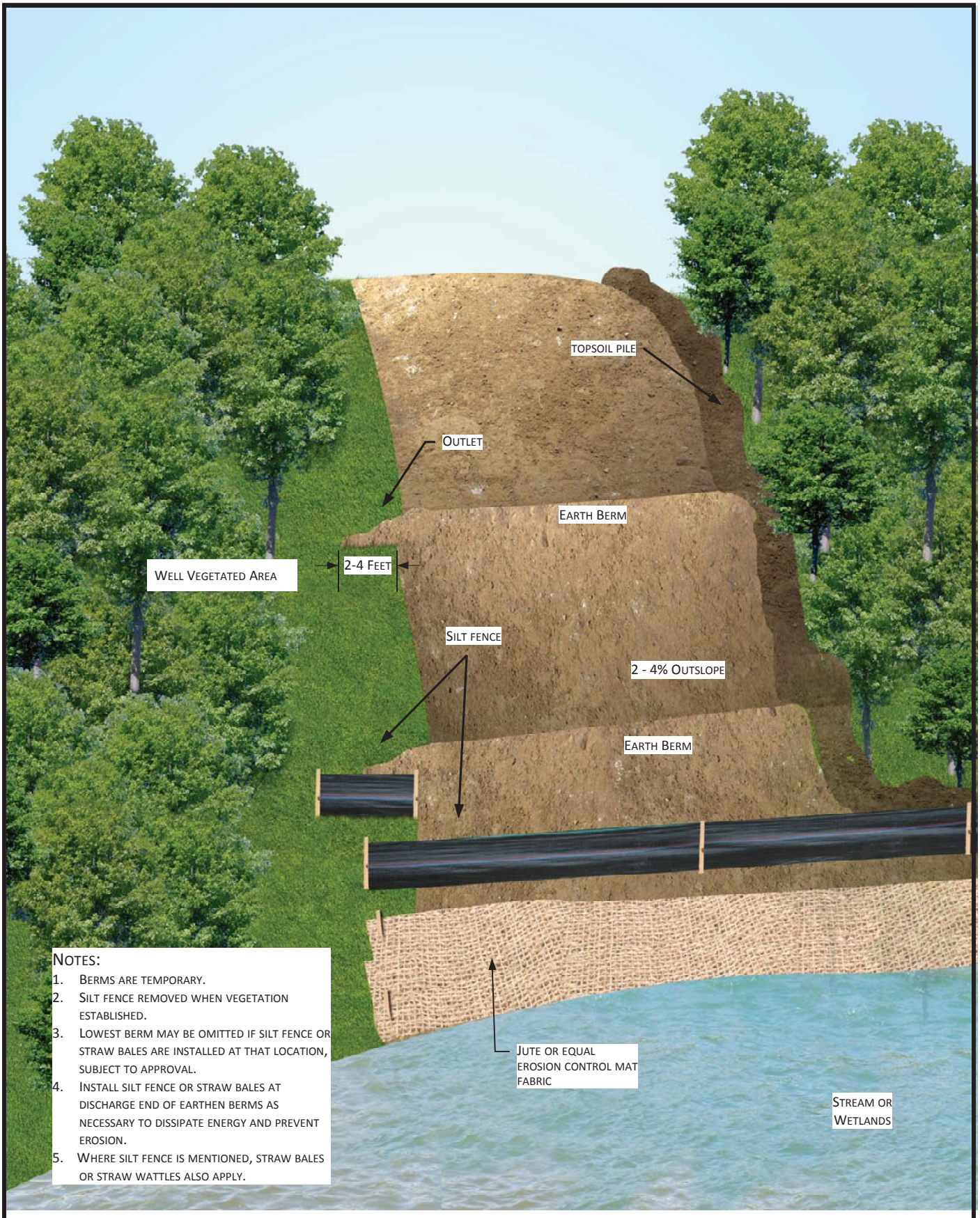

Figure 8

Typical Temporary Berms
Perspective View

ONEOK

ERM

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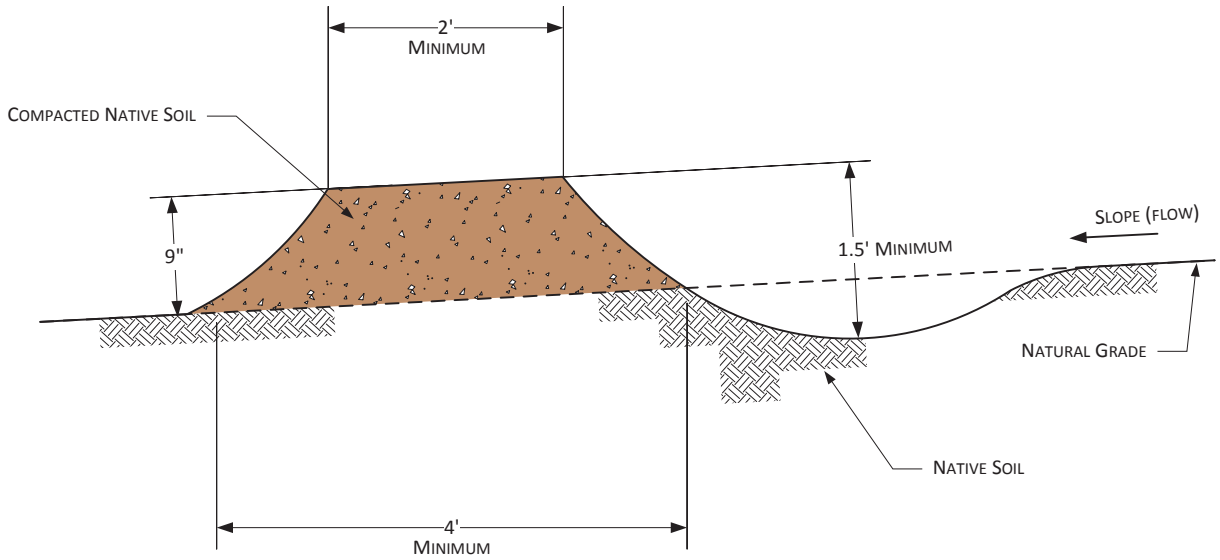

NOTES

1. BERMS SHALL BE CONSTRUCTED WITH 2 TO 4 PERCENT OUTSLOPE.
2. BERMS SHALL BE OUTLETED TO WELL VEGETATED STABLE AREAS, SILT FENCES, STRAW BALES OR ROCK APRONS.
3. BERMS SHALL BE SPACED AS DESCRIBED IN CONSTRUCTION SPECIFICATIONS.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

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Figure 9

Typical Temporary or Permanent Berms
Elevation View

ONEOK

ERM

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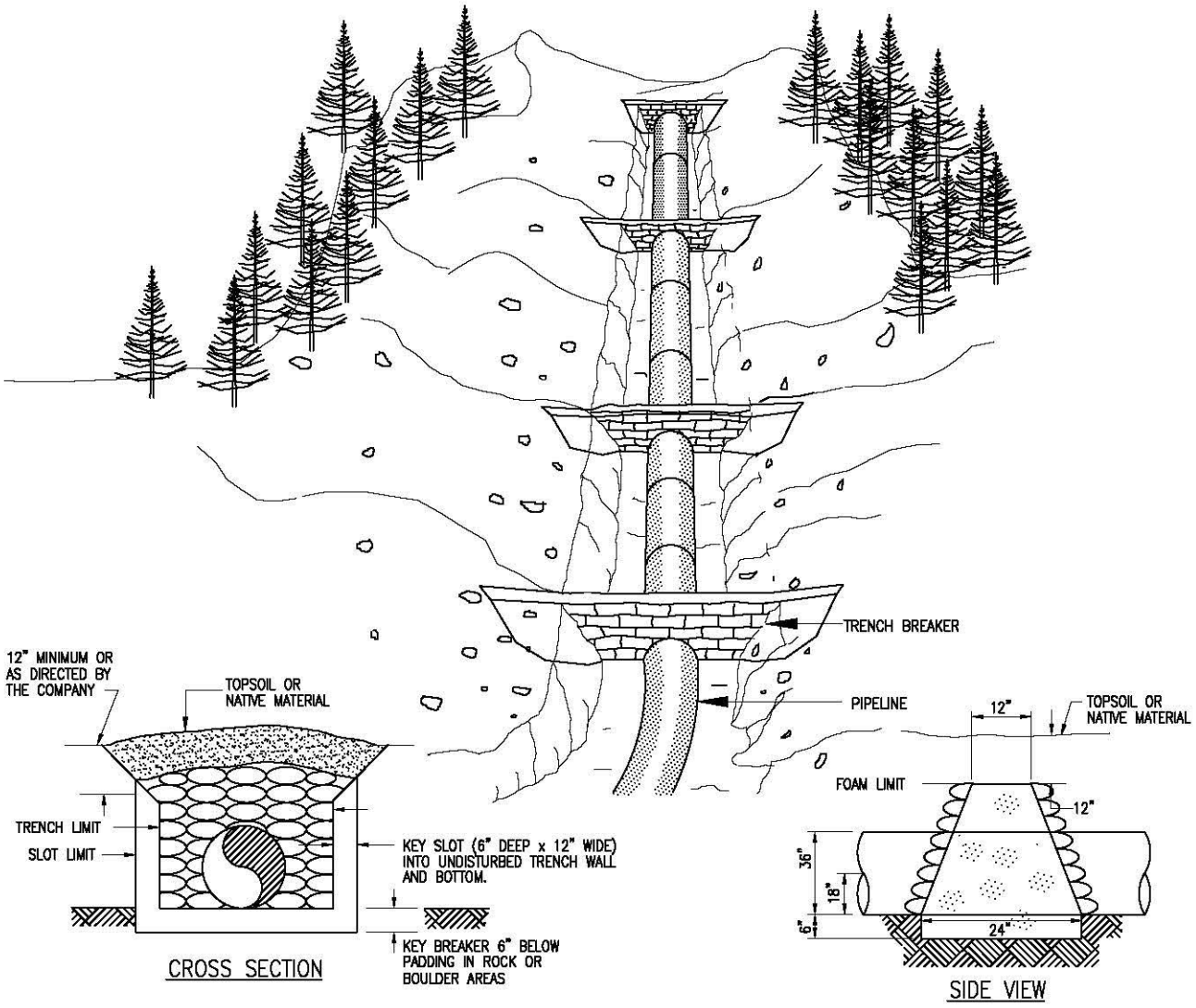

NOTES:

1. TRENCH BREAKERS SHALL BE INSTALLED:
   - ON SLOPES ALONG THE TRENCH LINE WHERE THE NATURAL DRAINAGE PATTERN, PROFILE, AND TYPE OF BACKFILL MATERIAL MAY RESULT IN LOSS OF BACKFILL MATERIAL OR ALTERATION OF THE NATURAL PATTERN;
   - AT THE BASE OF SLOPES ADJACENT TO WATERBODIES AND WETLANDS;
   - WHERE NEEDED TO AVOID DRAINING A WETLAND;
   - ON UPLAND SLOPES, AT THE SAME SPACING AS SLOPE BREAKERS AND UP SLOPE OF SLOPE BREAKERS;
   - IN CULTIVATED LAND AND RESIDENTIAL AREAS WHERE PERMANENT SLOPE BREAKERS ARE NOT TYP. INSTALLED, AT THE SAME SPACING AS IF PERMANENT SLOPE BREAKERS WERE REQUIRED.
2. EACH SAND BAG SHALL BE OF DIMENSION 14"X26" AND SHALL BE WOVEN POLY SPECIFICATION. EACH BAG SHALL BE FILLED TO 20" HIGH WITH 3/8" CLEAN, WASHED, AND SCREENED SAND AND FILLED TO A MINIMUM OF 55LBS.
3. BREAKER SPACING AND CONFIGURATION MAY CHANGE AS DETERMINED BY COMPANY OR SIMILARLY QUALIFIED PROFESSIONAL.
4. ALL MATERIALS SHALL BE SUPPLIED BY CONTRACTOR.
5. INSTALL ONE TRENCH BREAKER UNDER EVERY SLOPE BREAKER.

Figure 10

Typical Trench Breaker Perspective View

(OKS-7901-CONST-07)

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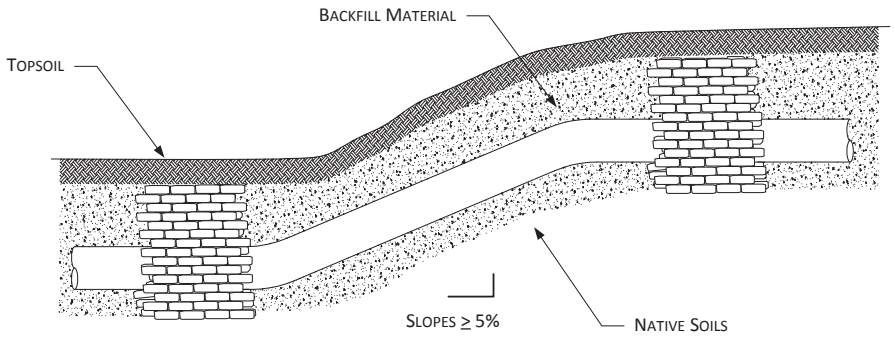
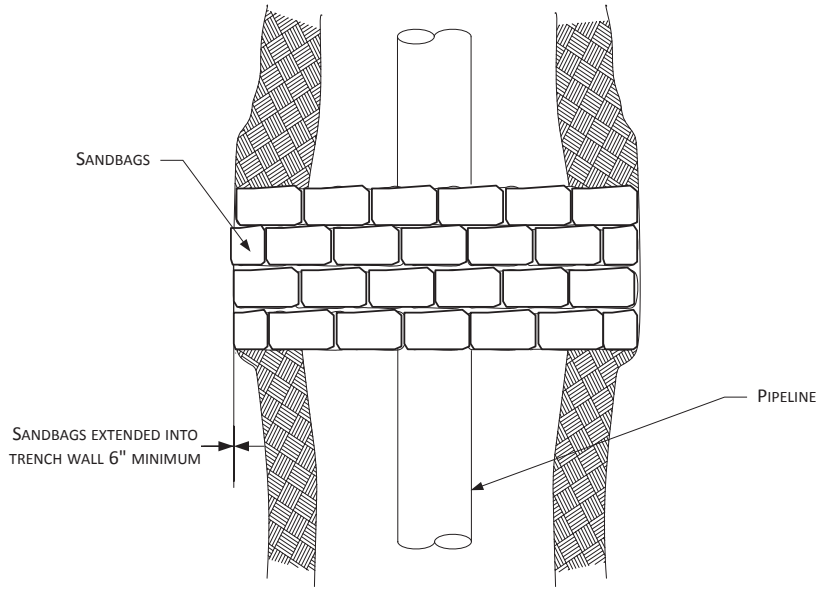
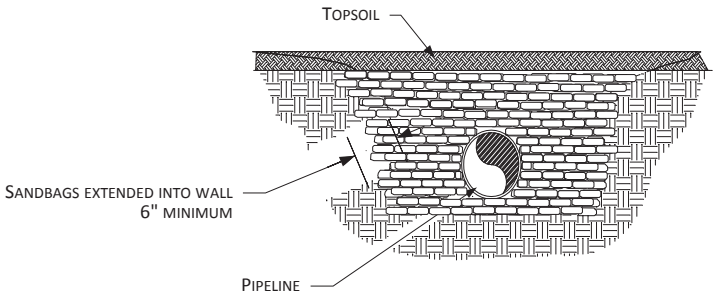


PROFILE VIEW
(NOT TO SCALE)



PLAN VIEW
(NOT TO SCALE)



FACE VIEW
(NOT TO SCALE)

NOTES

1. BAGS WILL NOT BE FILLED WITH TOPSOIL
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS
3. STAGGER COURSES OF BAGS

For environmental review purposes only.

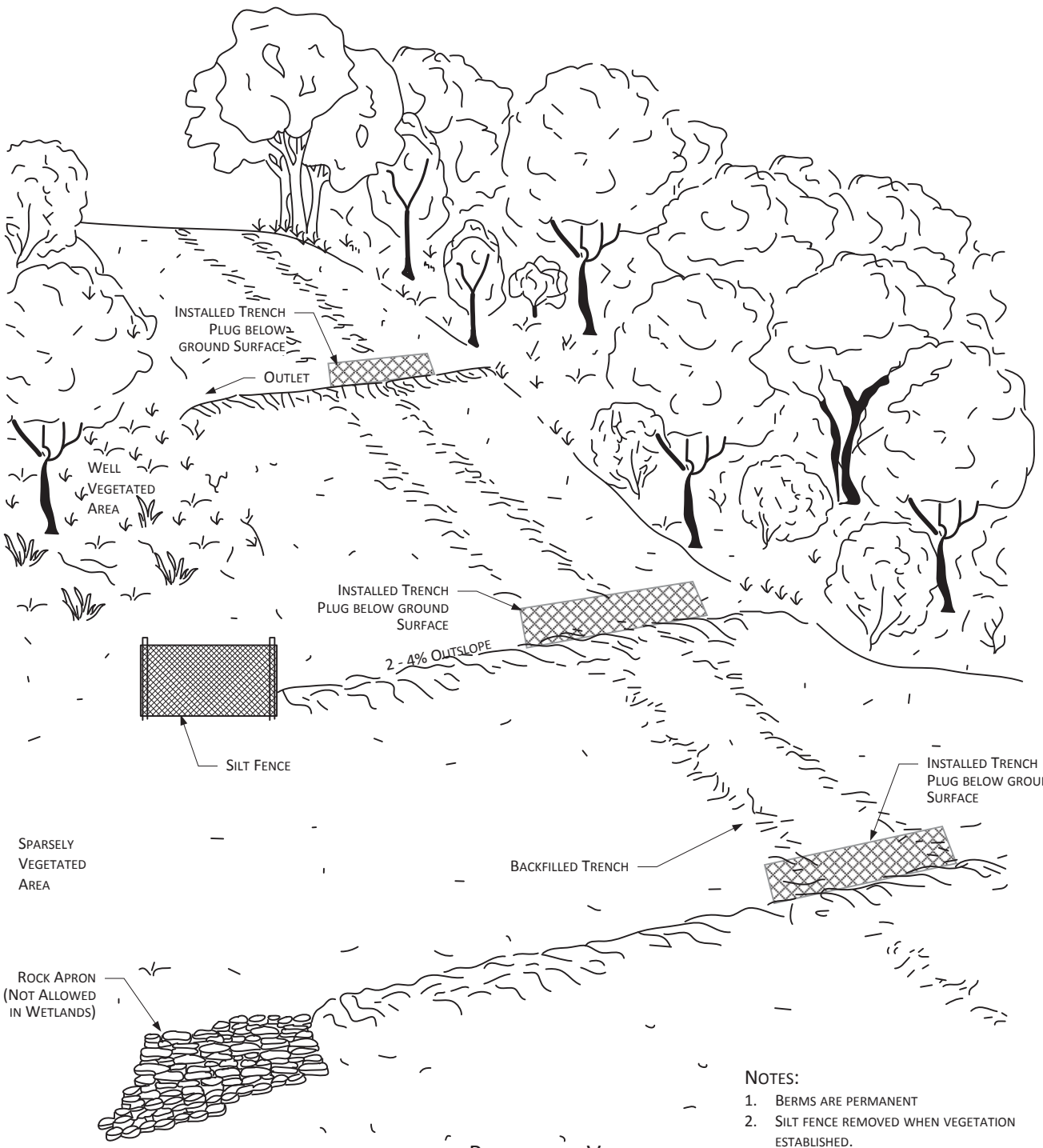
Figure 11

Typical Trench Breakers
Plan & Profile Views

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMPLLC_CMRP\Fig_11_Trench_Breaker_Plan_Profile_View.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting



Perspective View
(not to scale)

Slope %	Approximate Spacing (ft)
5-15	300
15-30	200
>30	<100

Notes:

1. Berms are permanent
2. Silt fence removed when vegetation established.
3. Lowest berm may be omitted if silt fence or straw bales are installed at that location, subject to approval.
4. Install silt fence or straw bales at discharge end of earthen berms as necessary to dissipate energy and prevent erosion.

For environmental review purposes only.

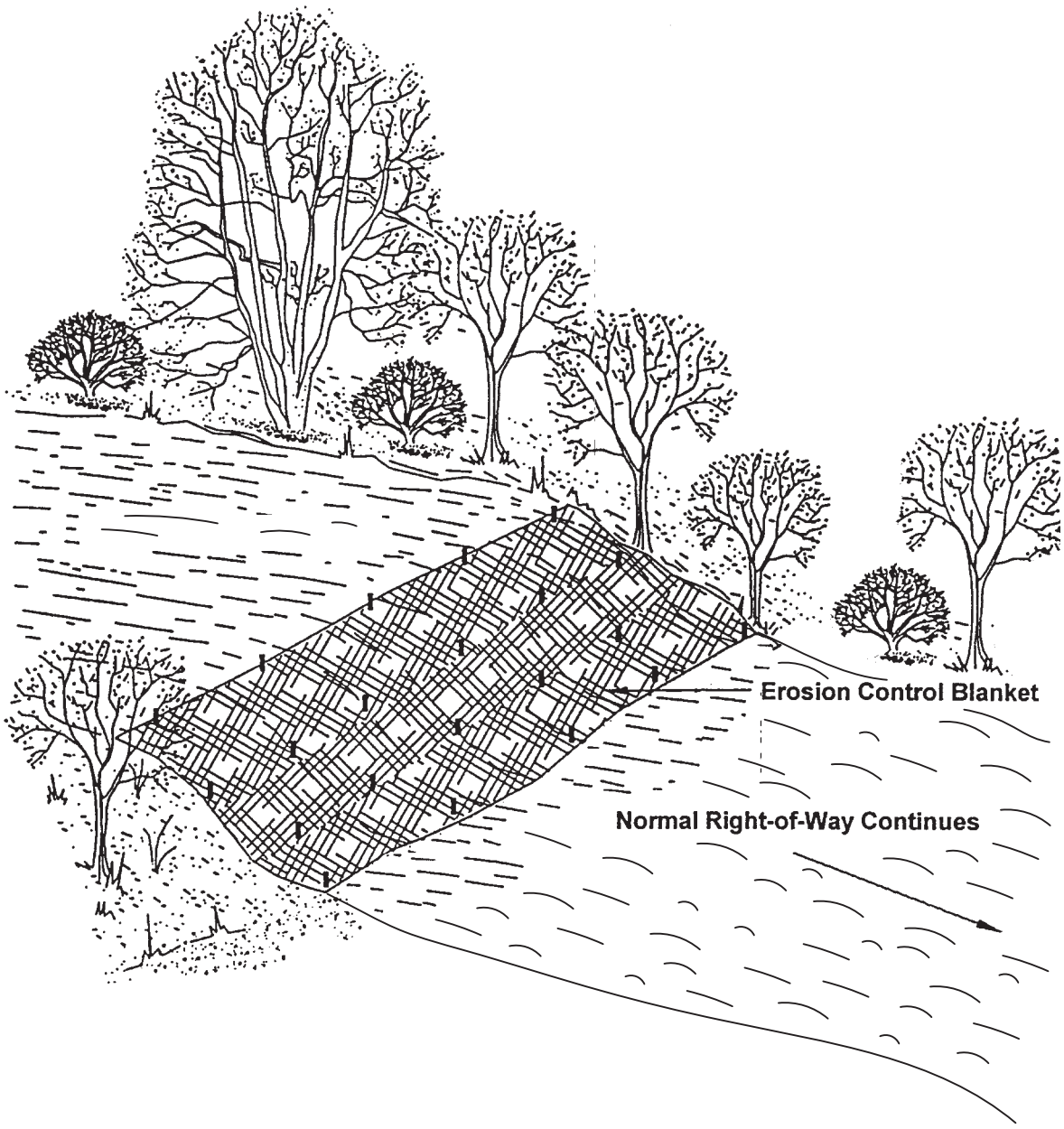
Figure 12

Permanent Slope Breakers
Perspective View

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_12_Slope_Breakers_Perspective_View.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



NOTES

1. INSTALL EROSION CONTROL BLANKET AS PER MANUFACTURER'S SPECIFICATIONS.
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

For environmental review purposes only.

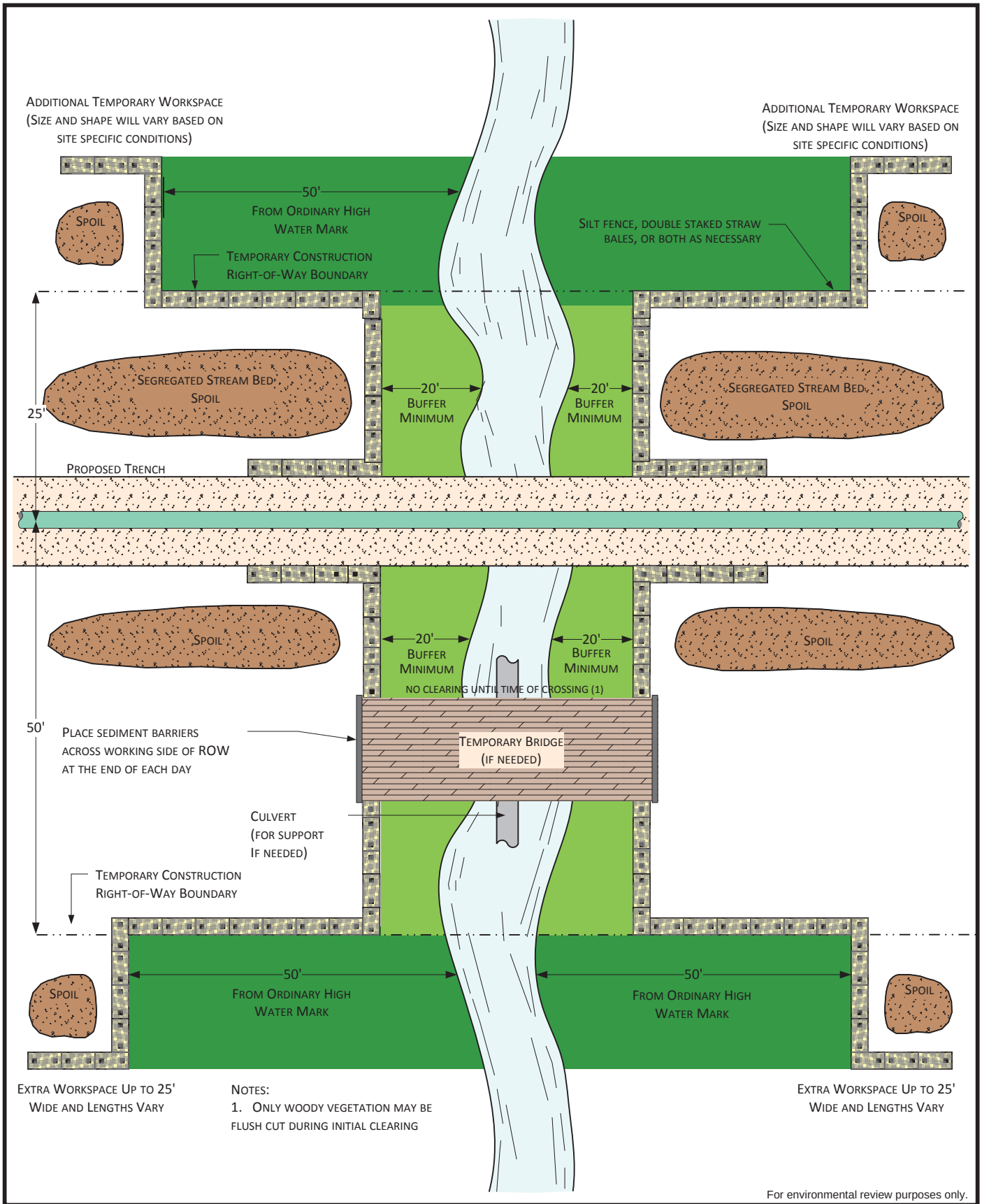
ONEOK

Figure 13

Erosion Control Blanket - Steep Slopes (≥30%)

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_13_Erosion_Control_Blanket.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



For environmental review purposes only.

Figure 14

Typical Waterbody Crossing
Open Cut - Wet Trench Method

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_14_Waterbody_Wet_Trench.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

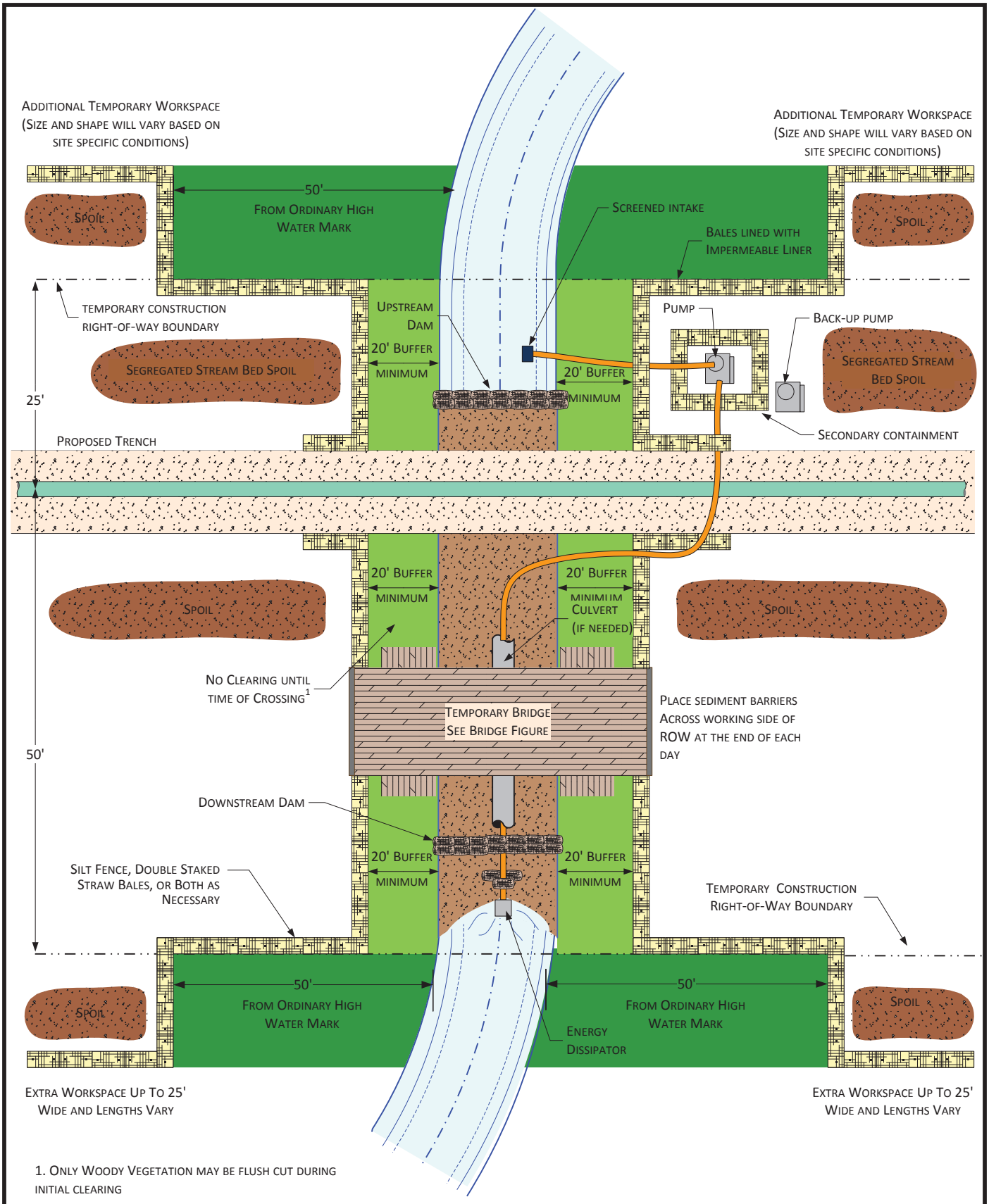
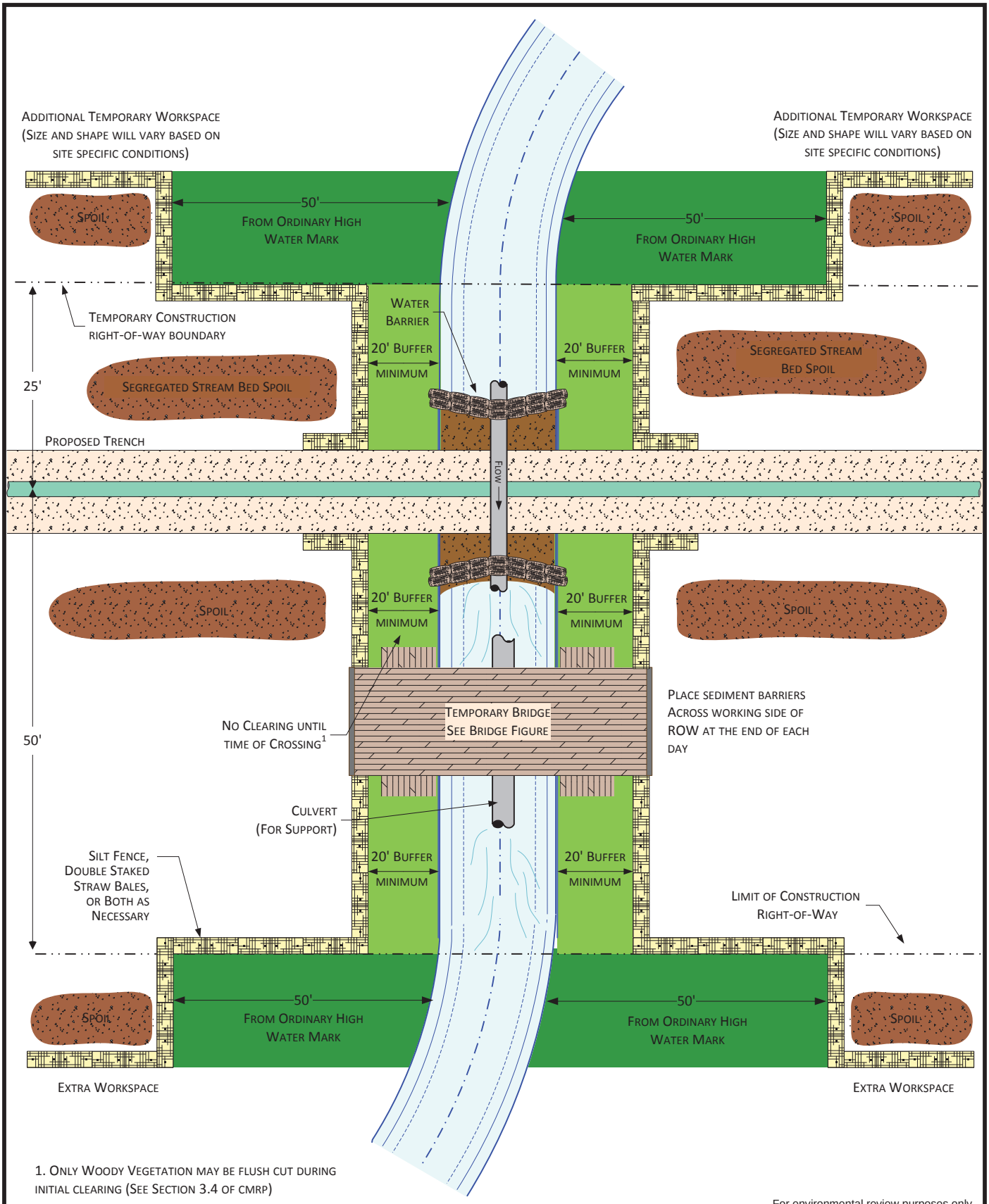


Figure 15
Typical Waterbody Crossing
Dam and Pump Method

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_15_Waterbody_Dam_Pump.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



1. ONLY WOODY VEGETATION MAY BE FLUSH CUT DURING INITIAL CLEARING (SEE SECTION 3.4 OF CMRP)

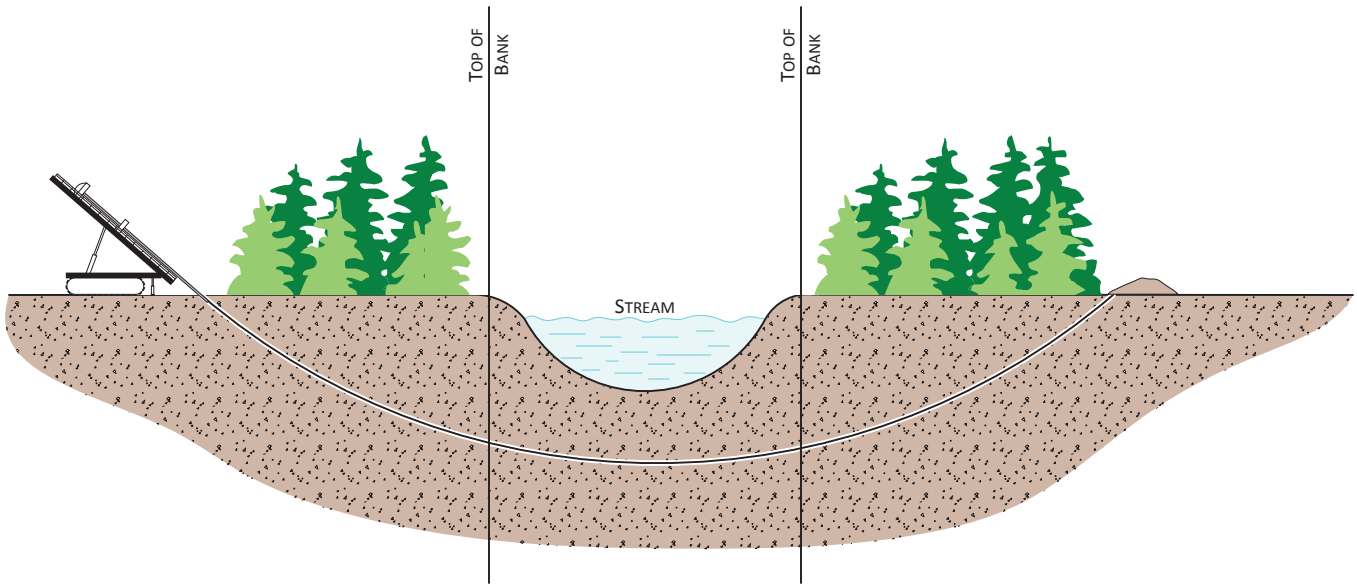
For environmental review purposes only.

Figure 16
Typical Waterbody Crossing
Flume Method

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMPR\Fig_16_Waterbody_Flume.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



For environmental review purposes only.

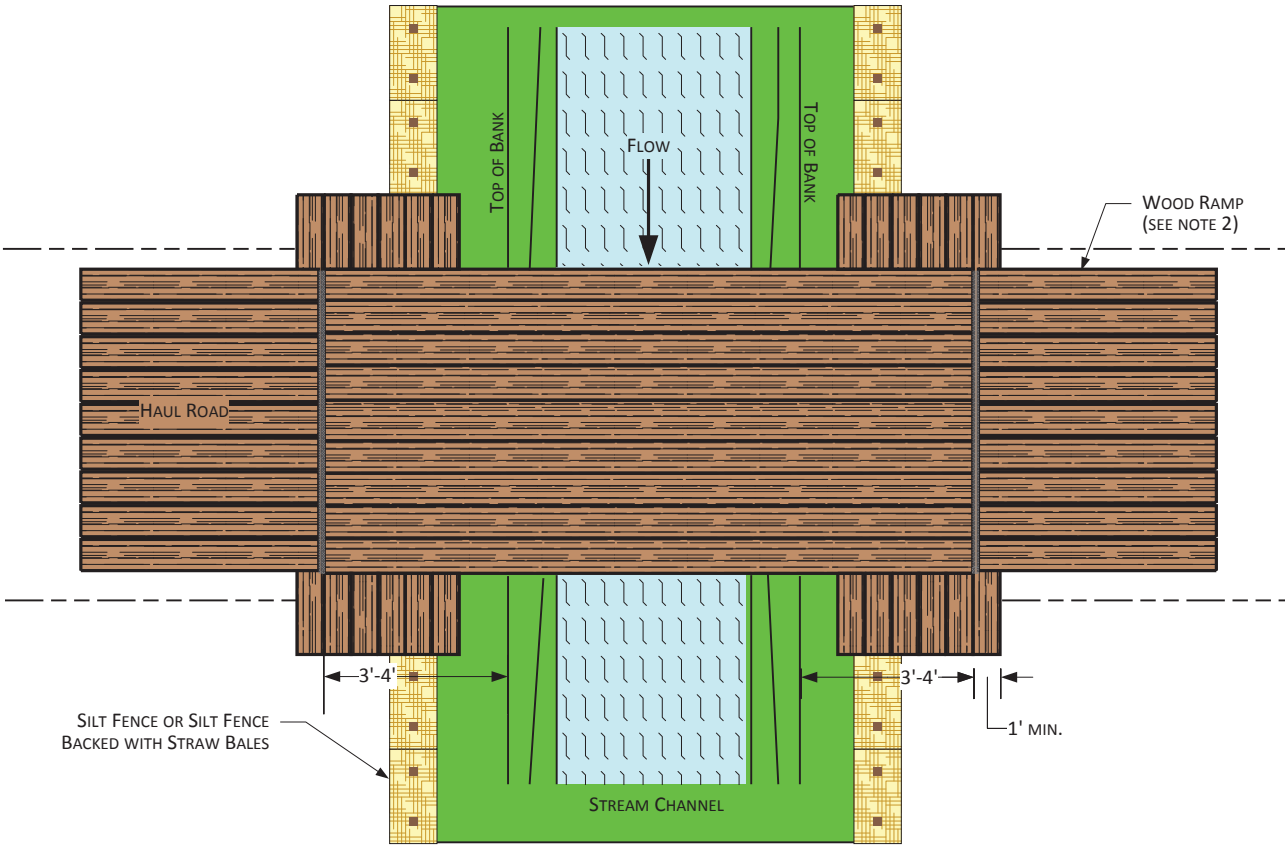
Figure 17
Typical Waterbody Crossing
Directional Drill Method

ONEOK

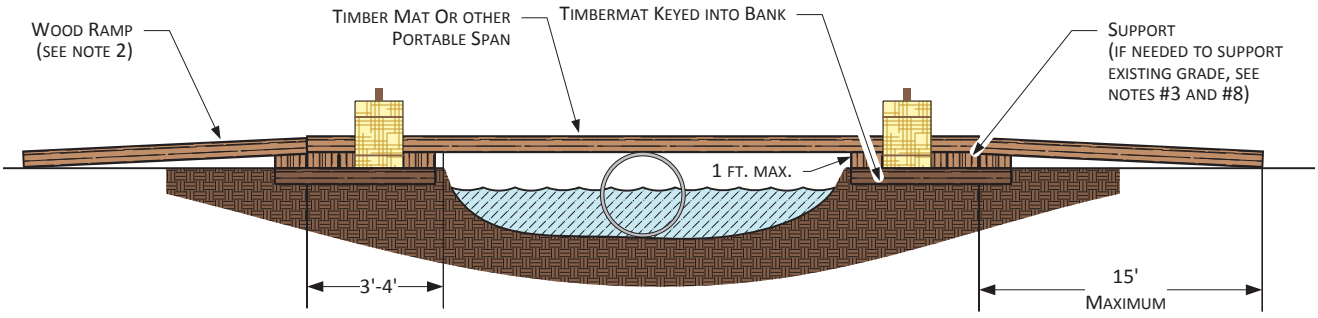
ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_17_Waterbody_Directional_Drill.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

Plan View



Profile View



Notes:

1. Inspect bridge opening periodically and following rainfalls of over ½". Remove any debris restricting flow and deposit it at an upland site outside of floodplain.
2. If physical circumstances prohibit wood or metal ramps, earthen ramps may be used as approved.
3. Inspect bridge elevation so bridge remains supported above high bank and does not sink into bank.
4. The culvert support must be anchored to the stream bottom and may not be supported with fill.
5. The bridge must span from top of bank to top of bank.
6. Additional support must be added on top of bank and under span if initial support starts to settle.
7. Erosion and sedimentation control measures shall be inspected and maintained in accordance with the company's Environmental Mitigation Plan

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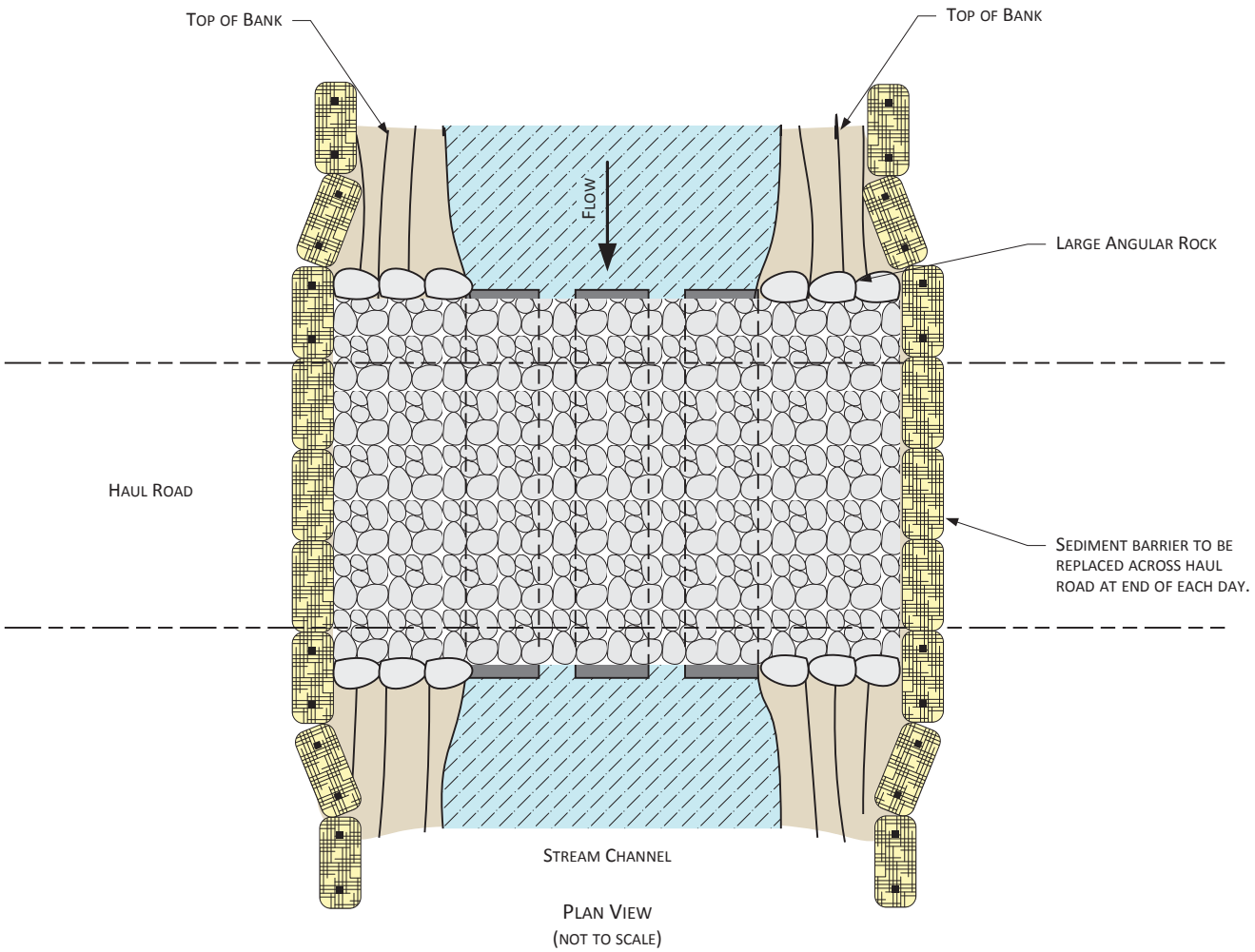
Figure 18

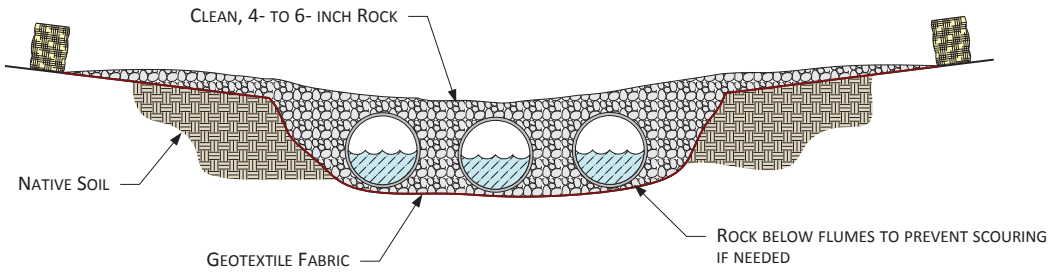
Typical Span Type Bridge
With or Without Instream Support
(OKS-7901-ENV-04)

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_18_Span_Type_Bridge.vsd	Scale: NTS	Date: 5/20/2007	Revised: 08/17/2018	Drawn By: AGPeterson





NOTES:

1. STEEL FLUME PIPE(S) SIZED TO ALLOW FOR STREAM FLOW AND EQUIPMENT LOAD.
2. STRAW BALES (OR EQUIVALENT) SHALL BE PLACED ACROSS BRIDGE ENTRANCE EVERY NIGHT.
3. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

For environmental review purposes only.

Figure 19

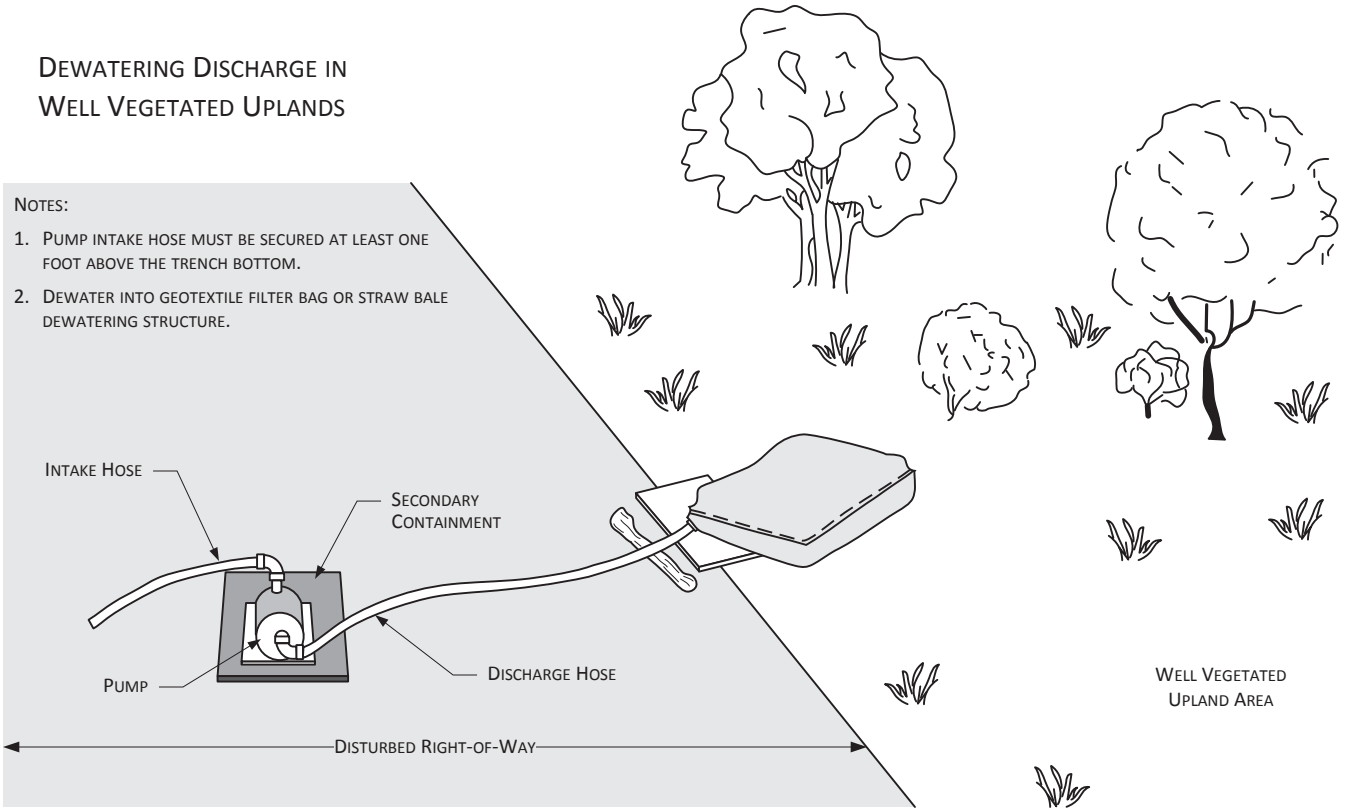
Typical Rock Flume Bridge
Method 4
(OKS-7901-ENV-03d)

ONEOK

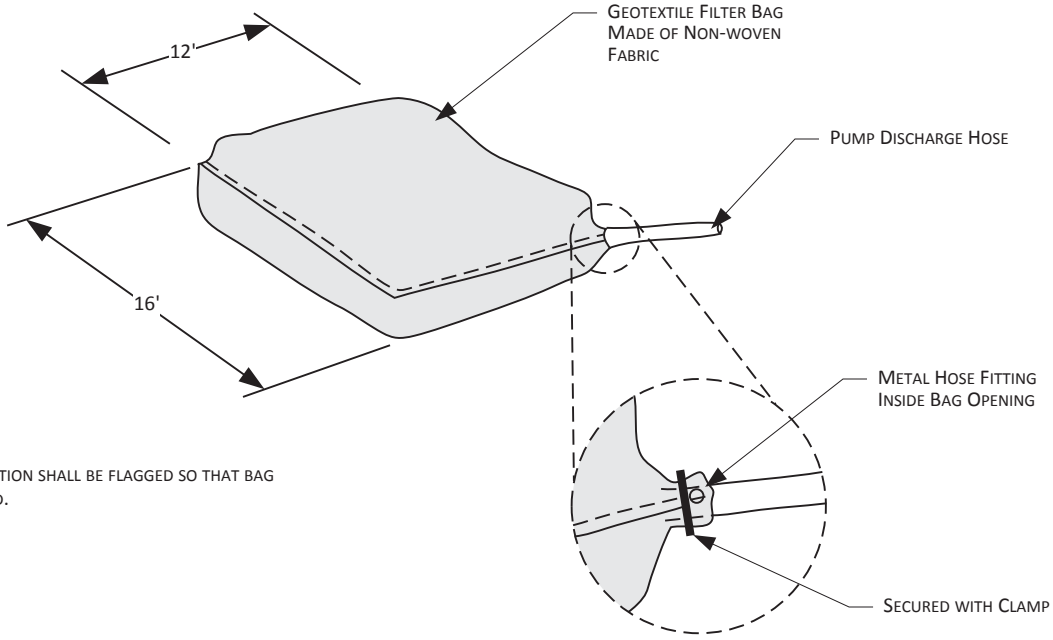
ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_19_Rock_Flume_Bridge.vsd	Scale: NTS	Date: 5/20/2007	Revised: 08/17/2018	Drawn By: AGPeterson

Dewatering Discharge in Well Vegetated Uplands



Geotextile Filter Bag



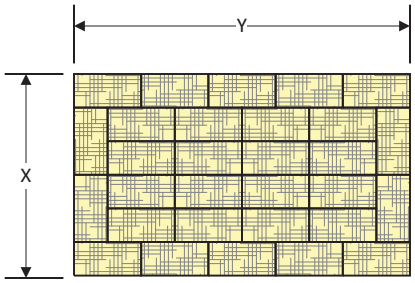
Note:

1. Filter bag location shall be flagged so that bag can be removed.

For environmental review purposes only.

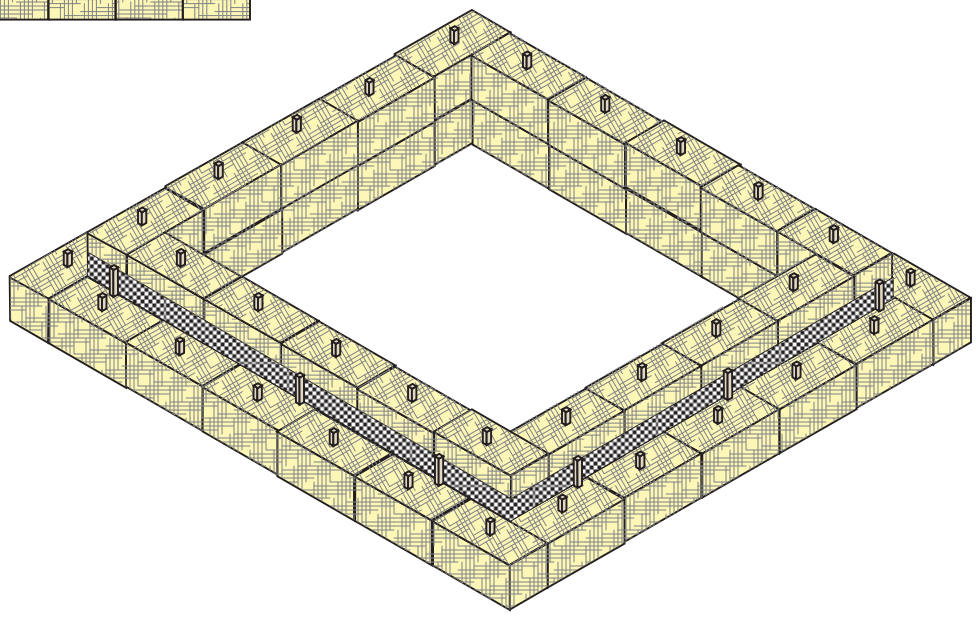
Figure 20
Typical Dewatering Measures

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_20_Dewatering_Measures.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

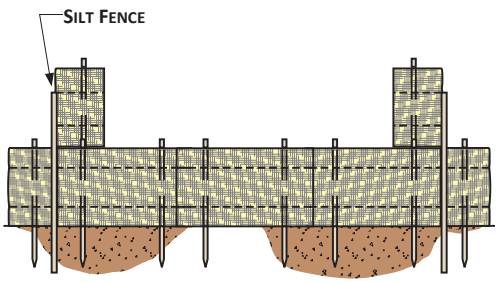


NOTES

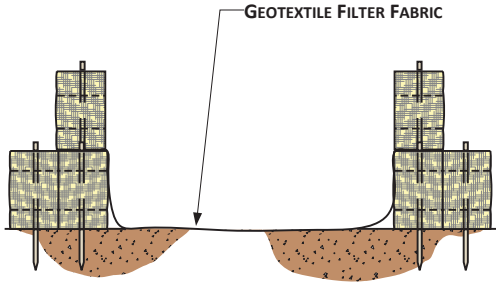
1. ARRANGE THE STRAW BALES TO THE X AND Y DIMENSIONS AS SPECIFICIED BELOW.
2. IF BOTTOM OF STRUCTURE IS NOT LINED WITH STRAW BALES (OPTION 1), LINE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC.



PERSPECTIVE VIEW



OPTION 1



OPTION 2

MINIMUM SUMP DIMENSIONS (FEET)		MAXIMUM PUMPING RATE
X	Y	GALLONS PER MINUTE
10	20	300
15	20	350
20	20	400
20	25	450
25	25	500
25	30	550
30	30	660

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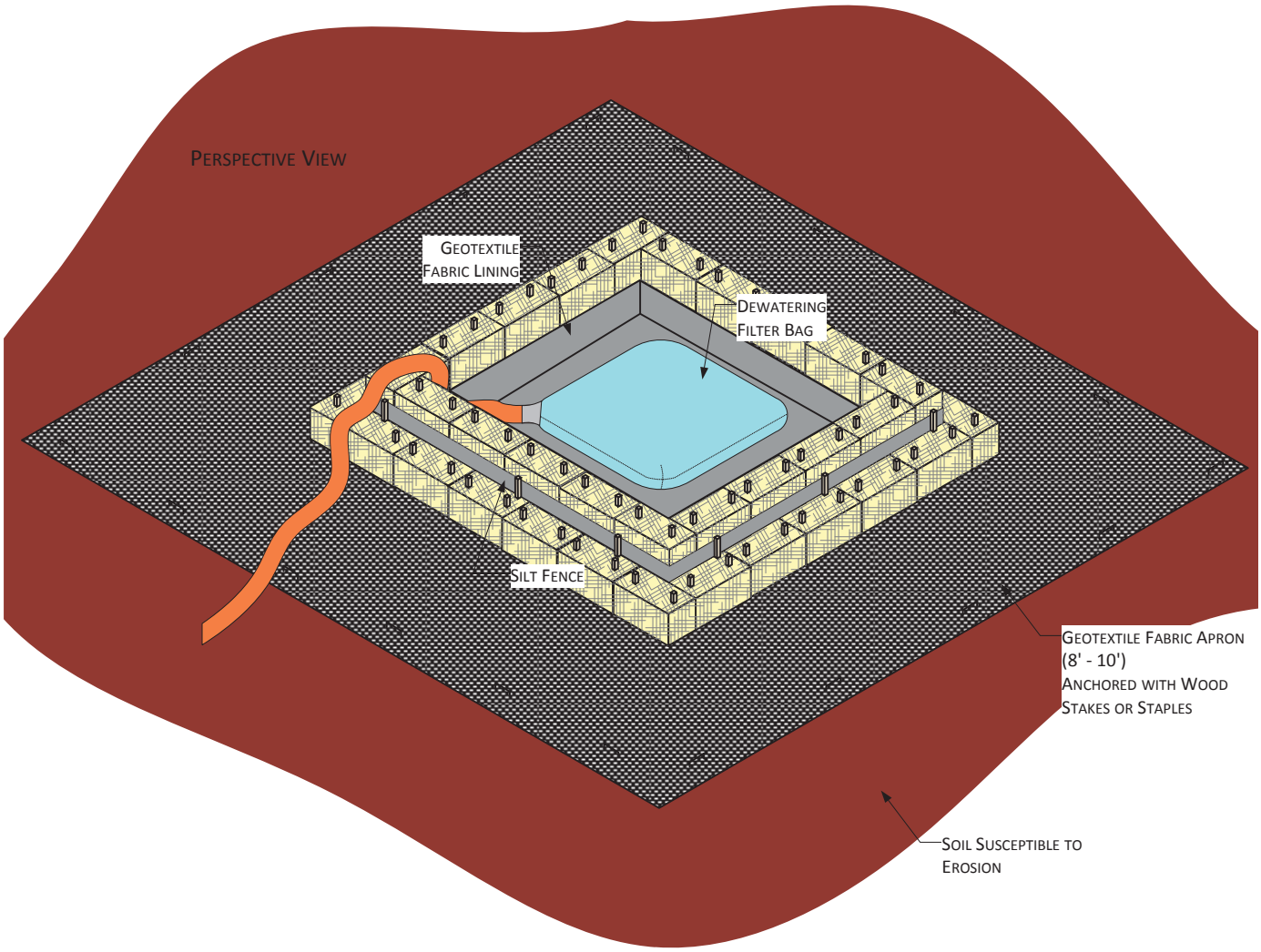
Figure 21

Straw Bale Dewatering Structure
(OKS-7901-ENV-05)

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_21_Straw_Bale_Dewatering.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting



Construct Dewatering Structure to accommodate anticipated pumping rates. See example below.

Example Pumping rate = 200 g.p.m.
Storage volume (c.f.) = 16 x 200 g.p.m. = 3200 c.f.
Height of straw bale structure = 3 feet (2 bales stacked) (based on height of bales, not silt fence)
Inside dimensions of structure = 33 x 33 feet square

Notes:

1. Silt fence ends must be wrapped to join two sections.
2. Install silt fence 2 inches above top of straw bales, and anchor a minimum of 8 inches straight down.
3. Spacing between silt fence post stakes must be 4 feet or less.
4. Dewatering intake hose supported at least 1 foot from bottom of trench being dewatered.
5. Erosion and sedimentation control measures shall be inspected and maintained in accordance with the company's upland erosion control, revegetation, and maintenance plan.

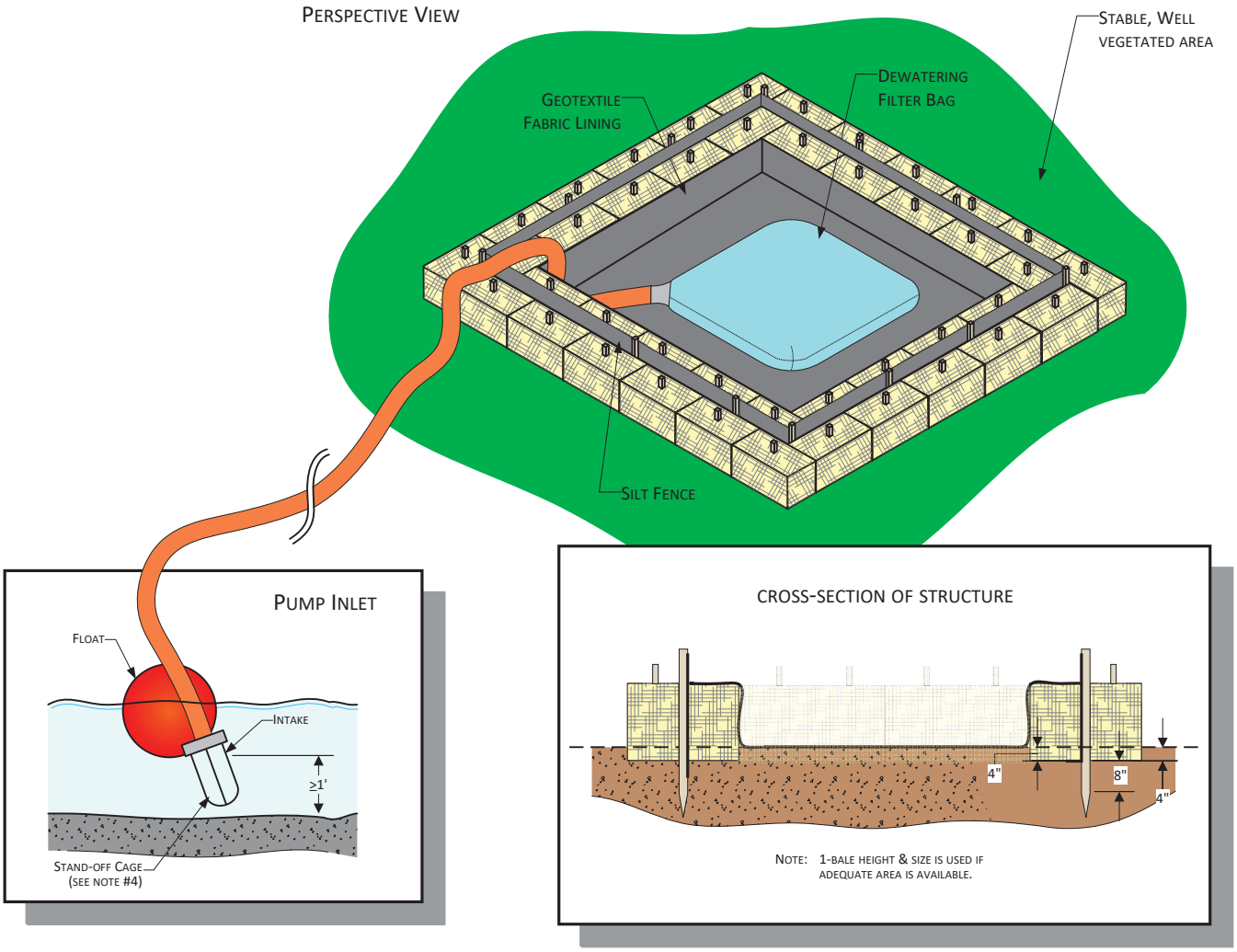
For environmental review purposes only.

Figure 22
Straw Bale Dewatering Structure
(OKS-7901-ENV-06a)

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_22_Straw_Bale_Dewatering.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting



CONSTRUCT DEWATERING STRUCTURE TO ACCOMMODATE ANTICIPATED PUMPING RATES. SEE EXAMPLE BELOW.

EXAMPLE PUMPING RATE = 200 G.P.M.
STORAGE VOLUME (C.F.) = 16 X 200 G.P.M. = 3200 C.F.
HEIGHT OF STRAW BALE STRUCTURE = 1.5 FEET (1 BALE) (BASED ON HEIGHT OF BALES, NOT SILT FENCE)
INSIDE DIMENSIONS OF STRUCTURE = 46 X 46 FEET SQUARE

NOTES:

1. SILT FENCE ENDS MUST BE WRAPPED TO JOIN TWO SECTIONS.
2. INSTALL SILT FENCE 2 INCHES ABOVE TOP OF STRAW BALE, AND ANCHOR A MINIMUM OF 8 INCHES STRAIGHT DOWN.
3. SILT FENCE POST STAKING MUST BE 4 FEET OR LESS.
4. DEWATERING INTAKE HOSE SUPPORTED AT LEAST 1 FOOT FROM BOTTOM OF TRENCH BEING DEWATERED.
5. USE A FILTER BAG AT THE DISCHARGE HOSE END.
6. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE COMPANY'S CMRP.

For environmental review purposes only.

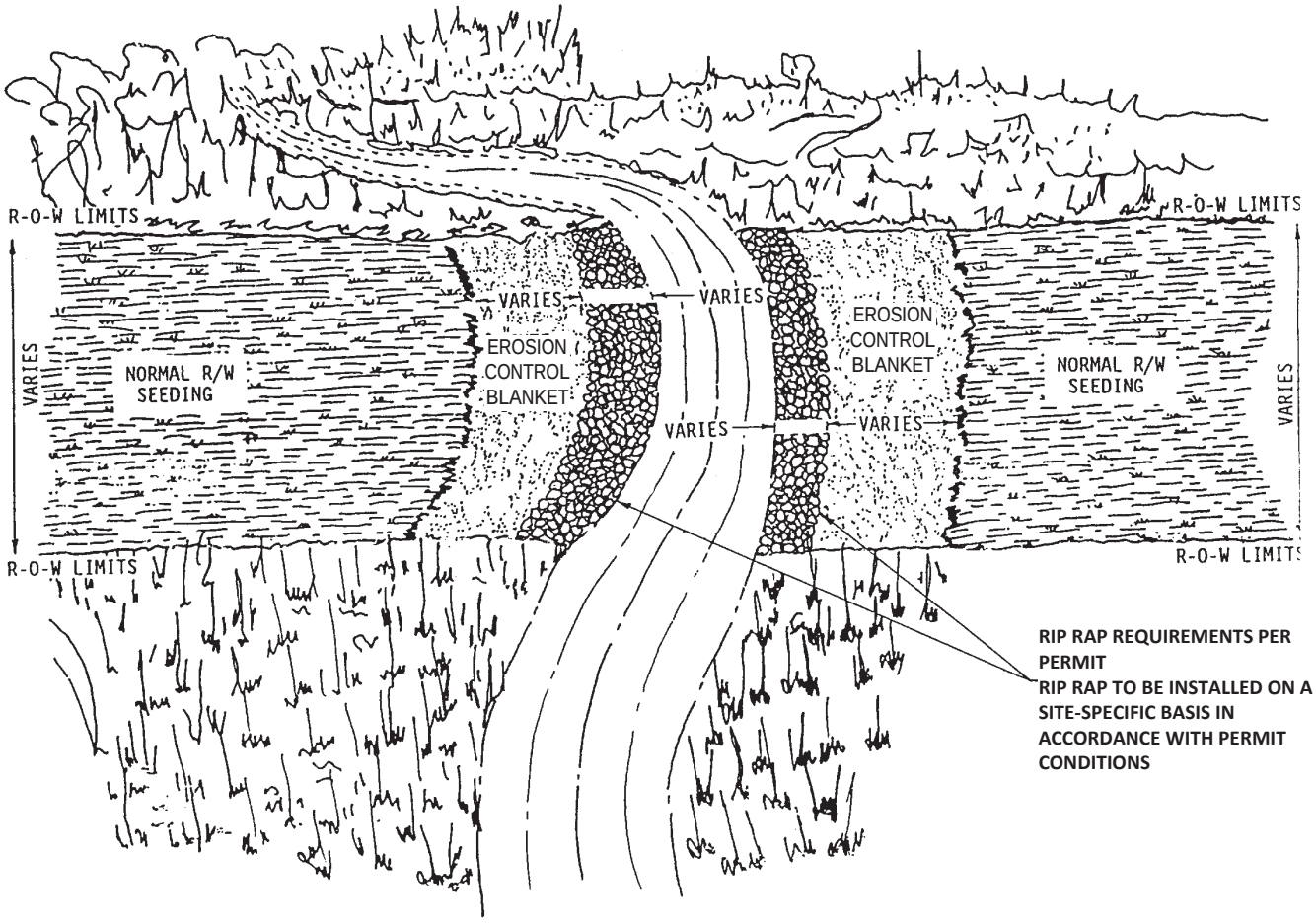
ONEOK

Figure 23
Straw Bale Dewatering Structure
(OKS-7901-ENV-06b)

ERM

K:_Client_Projects\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_23_Straw_Bale_Dewatering.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting

NOTE: PLACE EROSION CONTROL BLANKET A MINIMUM OF ONE (1) FOOT UNDER RIP RAP. EXTEND JUTE BLANKET FROM MEAN HIGH WATER LEVEL TO SEVERAL FEET BEHIND HIGH BANK.



For environmental review purposes only.

Figure 24

Typical Final Stream Bank Stabilization
Rip Rap & Erosion Control
(OKS-7901-ENV-07)

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_24_Stream_Bank_Stabilization.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting

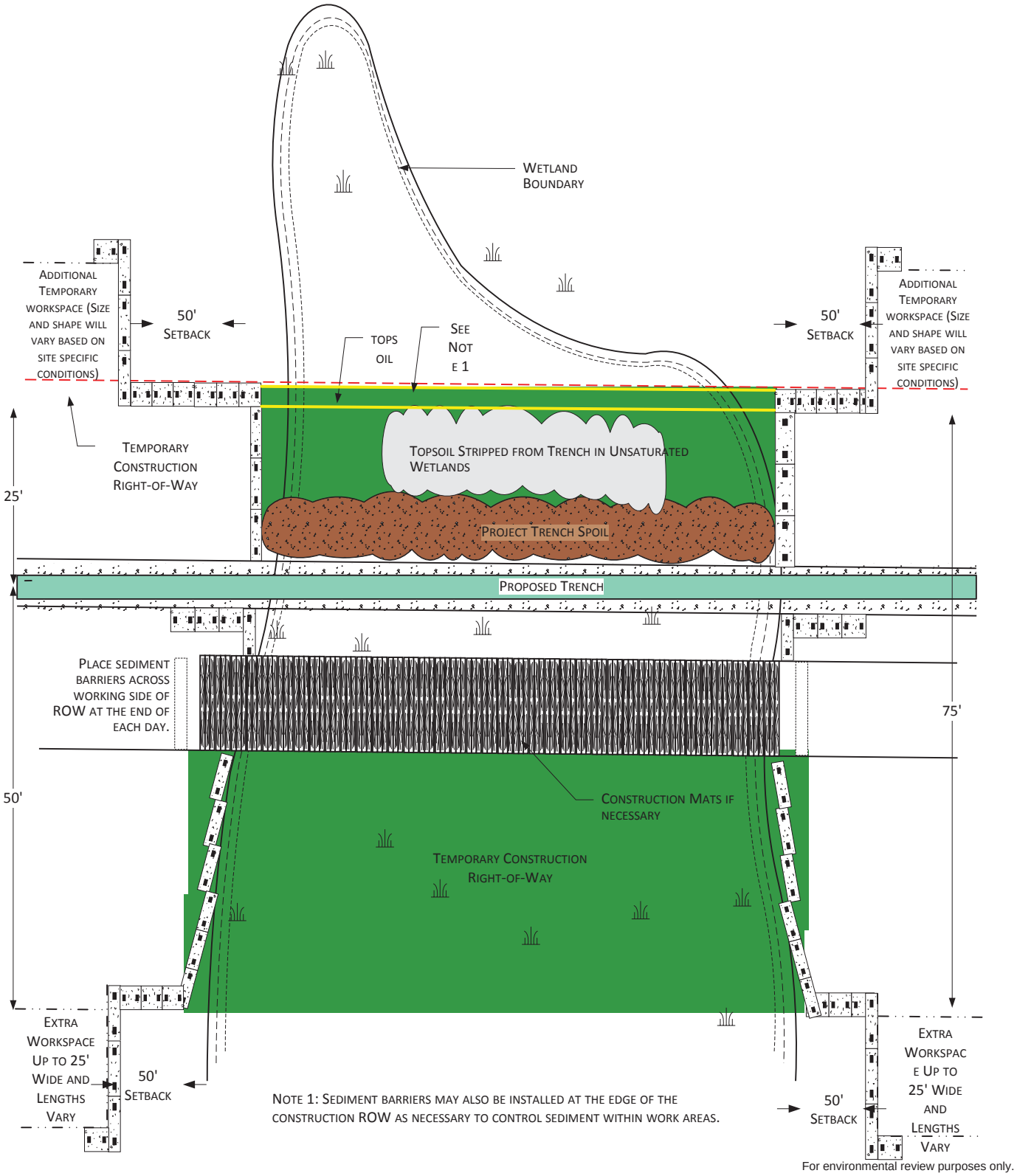


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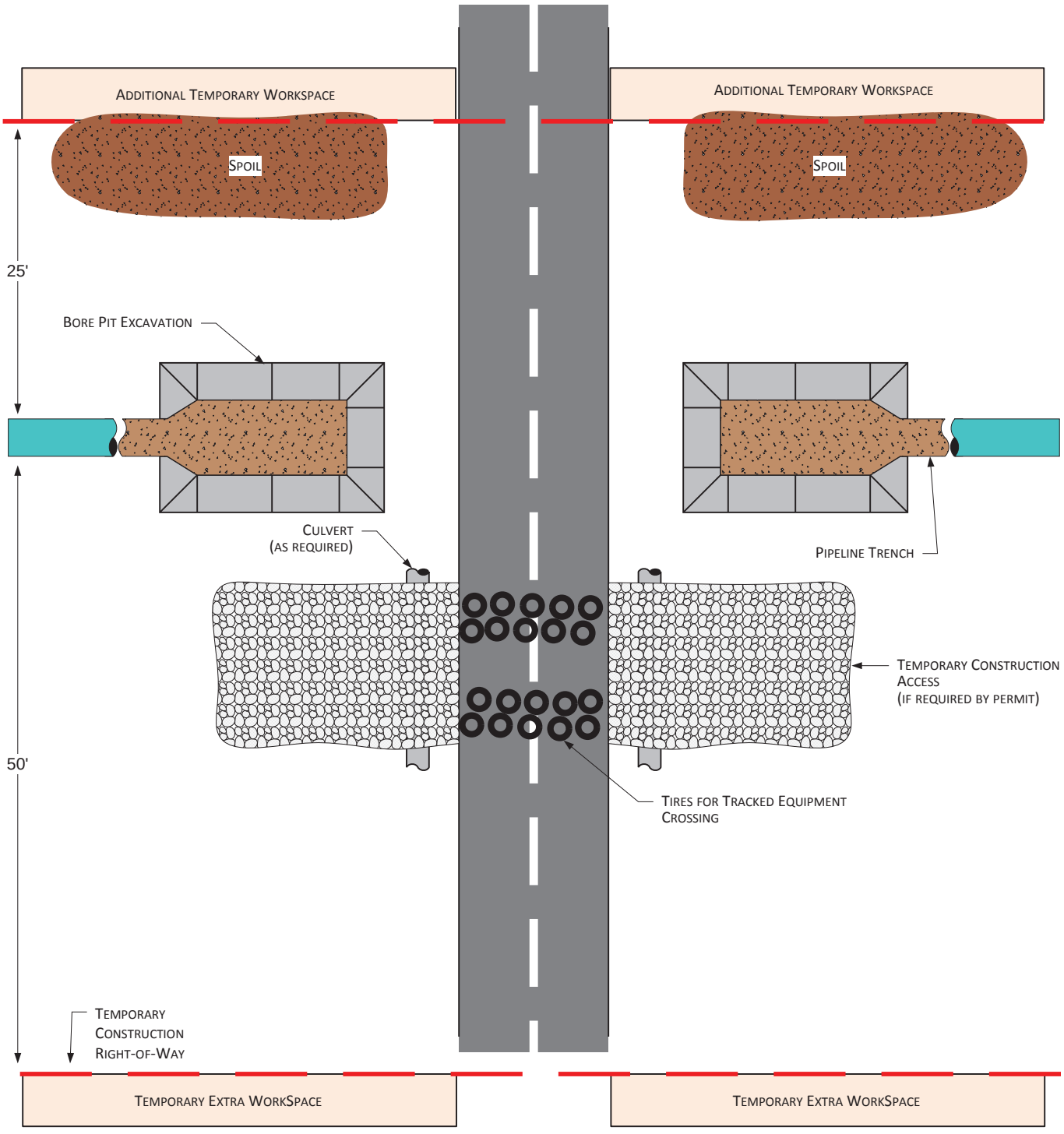
Figure 25

Typical Wetland Crossing Method
Method 5
(OKS-7901-ENV-03e)

ONEOK

ERM

K:_Client_Projects\M-O\ONE\Niobrara\EMP\Fig_24_Wetland_Crossing.vsd	Scale: NTS	Revised: 0820/2018	Drawn By: RGCutting



PLAN VIEW

NOTES

1. PROCEDURES SHOWN IN THIS DRAWING APPLY TO IMPROVED ROADS.
2. ROADS MUST BE CLEANED AFTER EQUIPMENT CROSSES AND DIRT PLACED IN SPOIL CONTAINMENT AREAS.
3. TEMPORARY ACCESS MATERIALS MUST BE REMOVED UPON PROJECT COMPLETION.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS OR PERMITS.
5. CONSTRUCTION AREAS LOCATED OUTSIDE ROAD ROW.
6. INSTALL EROSION AND SEDIMENT CONTROLS AS NEEDED BASED ON SITE SPECIFIC CONDITIONS

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ONEOK

Figure 26
Typical Improved Road Crossing
Directional Bore Method

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_26_Improved_Road_Crossing.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

H.2 Migratory Bird Plan

Tioga Lateral Pipeline Project

MIGRATORY BIRD CONSERVATION AND COMPLIANCE PLAN

ISSUED FOR PERMITTING

November 2019

1. INTRODUCTION

ONEOK Bakken Pipeline, L.L.C. (ONEOK), developed this Migratory Bird Conservation and Compliance Plan (Plan) to outline measures it would implement to minimize and reduce possible impacts on migratory birds. Conservation measures were developed in consideration of statutory authority, regulatory guidance, and through experience with state and federal agencies on past projects in the region. The Plan demonstrates a good-faith effort by ONEOK to protect species of concern and achieve compliance with regulations as they relate to the Tioga Lateral Pipeline Project (Project) as described below.

2. REGULATORY FRAMEWORK

This Plan was developed in consideration of federal laws including the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). This regulatory framework is defined and described in this section as it applies to the Project.

2.1 Migratory Bird Treaty Act

The MBTA prohibits the "take" of individual birds, their eggs and chicks, and active nests. For purposes of the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, wound, kill, trap, capture, or collect" (50 Code of Federal Regulations [CFR] 10.12). Unlike the federal Endangered Species Act (ESA), the MBTA does not include harassment or destruction of habitat in its list of prohibitions or within its definition of take. The MBTA applies to migratory birds that are identified in 50 CFR 10.13 (defined hereafter as "migratory birds"). Activities which result in intentional take of migratory birds are prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (USFWS).

On December 22, 2017, the U.S. Department of the Interior's Office of the Solicitor issued a memorandum stating that the MBTA does not prohibit incidental take of migratory birds, and the "prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing..." (U.S. Department of the Interior, 2017). As such, activities which result in unintentional take are not in violation of the MBTA.

2.2 Bald and Golden Eagle Protection Act

The BGEPA provides protection to bald and golden eagles in addition to the MBTA. The BGEPA prohibits the take; possession; sale; purchase; barter; offer to sell, purchase, or barter; transport; export; or import of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 USC 668(a)). "Take" under this statute is defined as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, or molest or disturb (50 CFR 22.3). "Disturb," in turn, is defined as to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

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3. MIGRATORY BIRD SPECIES POTENTIALLY UTILIZING THE PROJECT AREA

Although the MBTA provides protection for all migratory birds, the USFWS developed lists of Birds of Conservation Concern (BCC) to foster proactive conservation actions by federal and state agencies and private parties by focusing first on species of concern (USFWS, 2008). The United States is divided into Bird Conservation Regions (BCRs); each BCR has a list of birds present or possibly present within the region that are considered BCC. The Project is located within BCR 11 (Prairie Potholes) (U.S. NABCI Committee, 2000). In addition, each USFWS Regional Office identifies BCC that are potentially present within their region. ONEOK used the list of BCC known to breed within BCR 11 and USFWS Region 6 as a starting point for prioritizing bird conservation measures.

4. POTENTIAL CONSTRUCTION IMPACTS ON MIGRATORY BIRDS

The Project is most likely to impact migratory birds if construction and operation activities occur during the nesting season. Within the Project areas, birds generally nest from April 15 through July 31. Vegetative clearing during the nesting season would increase the potential for the Project to result in impacts to migratory birds. Typically, impacts related to pipeline construction are not of adult birds or juveniles that have fledged from the nest (because they are mobile and avoid project-related activities); instead, impacts are typically associated with the loss of eggs and nestlings due to nest destruction.

5. PLAN IMPLEMENTATION AND PROPOSED CONSERVATION MEASURES

This section describes the conservation measures ONEOK would implement during construction of the Project, all of which focus on efforts to minimize potential impacts on migratory birds.

5.1 Points of Contact for Plan Implementation

The Plan identifies actions and conservation measures that facilitate reduction of impacts to migratory birds during Project construction. While minimizing impacts to migratory birds should be the concern of all members of the Project team, ONEOK also expects that all Project staff would notify the –Environmental Project Manager when an active migratory bird nest is identified so that appropriate protection measures could be implemented, as described in more detail below.

Points of Contact for Plan implementation can be found in Appendix B.

5.2 Environmental Training

Prior to initiating pre-clearing activities and construction, ONEOK would conduct environmental training for company and contractor supervisory personnel. The training program would include the conservation measures described within this Plan. In addition, ONEOK would provide large-group training sessions before each crew commences construction with periodic follow-up training for groups of newly assigned personnel. Contractors would be obligated to comply with the conservation measures and protect active nests or face disciplinary actions, including dismissal from the Project.

In addition, Project staff would be informed that they should assume that any active bird nest they encounter could be protected unless a trained biologist with experience in bird identification

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(hereinafter referred to as Avian Biologist) determines the nest need not be protected. If additional active nests are identified after pre-clearing surveys, the additional nests should be brought to the attention of the Points of Contact identified in Appendix B, so that appropriate conservation measures can be implemented.

5.3 Surveys

This section provides descriptions of the surveys and a summary of the methods for ground-based surveys that could be completed in support of this Plan.

5.3.1 Pre-Clearing Surveys

Where constructing the Project outside of the peak nesting season for migratory birds is not feasible, ONEOK would conduct ground surveys to identify migratory bird nests that could be impacted by construction activities. The peak nesting season for migratory birds in the Project area begins April 15 and ends July 31, at which time surveys will cease.

The boundaries of the Project workspace and any additional or extra workspace areas would be demarcated prior to clearing and grading. Pre-clearing surveys would be conducted by an Avian Biologist assigned to the Project. The surveys would typically be completed up to 14 days ahead of clearing/construction, where feasible. The Avian Biologist would also be responsible for training the Project's Environmental Inspectors (EIs), who would conduct follow-up nest surveys, if needed.

Surveys would occur within the planned construction workspace and along access roads where Project traffic could impact nesting birds such as vegetated two-tracks or newly established roads. Based on the expertise of the Avian Biologist, and with authorization from ONEOK, previously disturbed areas such as active farmland, developed land, and other intensively used areas may be excluded from surveys since use of these areas for nesting by migratory birds is unlikely.

Along private access roads that occur outside of the survey area described above, visual surveys would be conducted for raptor nests within line of site of the road. Landscape barriers between any nests and the access road will sufficiently buffer noise or visual disturbance on nesting raptors that could occur as a result of Project-related traffic.

Conservation measures to be implemented around nests identified during these surveys are described below. Upon completion of surveys and marking of active nests and associated buffers as discussed below, the surveyed area found free of active nests would be available for construction.

5.4 Activity Restriction Buffers

Varying activity restriction buffers around active nests would be utilized as conservation measures for the Plan. The buffers would be implemented based on the species or class of bird and would be based on consultations with the Avian Biologist.

5.4.1 Birds of Conservation Concern

For nests of BCC (see Table 1), a buffer will be placed around active nests; appropriate buffer distances will be determined in consultation with the Avian Biologist. Construction

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activities within the buffer would be avoided where feasible. If necessary to meet key Project objectives, ONEOK may authorize limited activity within the buffer to move equipment within the construction area and through a nest buffer in order to facilitate construction in adjacent areas. See Section 5.5, Nest Monitoring, for more information.

5.4.2 Raptor Species

For raptor nests, spatial buffers and seasonal timing restrictions may be placed around active nests; these will also be determined in consultation with the Avian Biologist.

Per the BGEPA, construction activities are prohibited within 0.5 mile of active eagle nests, and eagle nests may not be destroyed by Project activities without a permit from the USFWS, regardless of whether the nest is inactive or active.

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Table 1 Tioga Lateral Pipeline Project Birds of Conservation Concern	
Common Name	**Scientific Name**
American bittern [a, b]	*Botaurus lentiginosus*
Baird's sparrow [a, b]	*Ammodramus bairdii*
Bald eagle [a, b]	*Haliaeetus leucocephalus*
Bell's Vireo [b]	*Vireo bellii*
Bewick's wren (bewickii ssp.) [b]	*Thryomanes bewickii*
Black-billed cuckoo [a, b]	*Coccyzus erythropthalmus*
Black rail [b]	*Laterallus jamaicensis*
Black rosy finch [b]	*Leucosticte atrata*
Black tern [a]	*Chlidonias niger*
Brown-capped rosy finch [b]	*Leucosticte australis*
Burrowing owl [b]	*Athene cunicularia*
Cassin's finch [b]	*Haemorhous cassinii*
Chestnut-collared longspur [a, b]	*Calcarius ornatus*
Dickcissel [a]	*Spiza americana*
Ferruginous hawk [b]	*Buteo regalis*
Flammulated owl [b]	*Psiloscops flammeolus*
Grasshopper sparrow [a, b]	*Ammodramus savannarum*
Gray vireo [b]	*Vireo vicinior*
Golden eagle [b]	*Aquila chrysaetos*
Gunnison sage-grouse [b, c]	*Centrocercus minimus*
Henslow's sparrow [b]	*Ammodramus henslowii*
Horned grebe [a, b]	*Podiceps auritus*
Least bittern [a, b]	*Ixobrychus exilis*
Lesser prairie-chicken [b, d]	*Tympanuchus pallidicinctus*
Lewis's woodpecker [b]	*Melanerpes lewis*
Loggerhead shrike [b]	*Lanius ludovicianus*
Long-billed curlew [a, b]	*Numenius americanus*
Marbled godwit [a, b]	*Limosa fedoa*
McCown's longspur [a, b]	*Rhynchophanes mccownii*
Mountain plover [a, b]	*Charadrius montanus*
Nelson's sharp-tailed sparrow [a, b]	*Ammodramus nelsoni*
Peregrine falcon [a, b]	*Falco peregrinus*
Pinyon jay [b]	*Gymnorhinus cyanocephalus*
Prairie falcon [b]	*Falco mexicanus*
Red-headed woodpecker [a, b]	*Melanerpes erythrocephalus*
Sage sparrow [b]	*Artemisiospiza nevadensis*
Sage thrasher [b]	*Oreoscoptes montanus*
Short-eared owl [a, b]	*Asio flammeus*
Snowy plover [b]	*Charadrius nivosus*
Sprague's pipit [a, b]	*Anthus spragueii*
Swainson's hawk [a]	*Buteo swainsoni*
Upland sandpiper [a, b]	*Bartramia longicauda*
Willow flycatcher [b]	*Empidonax traillii*
Yellow rail [a, b]	*Coturnicops noveboracensis*
[a] BCR 11 [b] USFWS Region 6 [c] Endangered Species Act (ESA) Listed Threatened [d] ESA Candidate species	

5.4.3 Other Migratory Bird Buffer Restrictions

For nests of other bird species not described in the preceding sections, a buffer may be placed around active nests, as determined in consultation with the Avian Biologist. In

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instances where this buffer cannot be implemented, ONEOK may attempt to reconfigure the workspace to leave the vegetation containing the nest undisturbed.

5.5 Nest Monitoring

Active nests would be monitored by the Project's Avian Biologist or trained surveyors and buffers would be maintained until the young fledge. Nests would generally be visited every 7 to 10 days once identified. Once a nest has been determined to be inactive, any buffer would be removed, and construction activities may continue without restriction.

If a nest buffer and its associated restrictions pose a substantial risk to key Project objectives, ONEOK may determine that construction activities can proceed through a buffer (i.e., pass-through), avoiding direct impact to the nest. Where ONEOK authorizes a pass-through of a non-eagle raptor buffer or BCC buffer, the Avian Biologist (or other appropriately trained staff) will first attempt to determine the stage of development of the young in the nest. If young are near fledging, ONEOK may choose to maintain the buffer until the young fledge upon evaluation of alternatives. If the nest is at an earlier stage of development (e.g., eggs just laid, young just hatched), construction equipment may be allowed through the buffer in an escalating frequency and duration. As the disturbance in the buffer is escalated, the nest will be monitored by the Avian Biologist or trained surveyors to determine if the adults or young are being disturbed by construction activities. If the Avian Biologist or trained surveyor notes that bird activities appear to be such that the success of the nest is at risk, construction actions will be reduced to a point where nest success is not at risk from construction.

Nest monitoring may also include determining that construction activities are not visible from a non-eagle raptor nest location. On a case-by-case basis ONEOK, with input from the Avian Biologist may determine that construction can proceed through the non-eagle raptor buffer without disturbing the nest. If this similar exception is to be applied to an eagle nest, vigilant monitoring of the nest by the Avian Biologist or a trained surveyor must occur in order to ensure the eagles are not disturbed.

If non-raptor nests are identified adjacent to the construction workspace after ground clearing activities have commenced in an area, ONEOK will attempt to limit extensive disturbance in the area, but will assume that because the birds initiated nesting after construction began in an area that the nesting individuals are acclimated to construction-related noise and disturbance and, therefore, additional protections will not be implemented.

6. CONCLUSION

ONEOK is committed to implementing the pre-construction survey program, environmental training for key construction personnel, appropriate spatial buffers, seasonal timing restrictions, and nest monitoring. ONEOK expects its Project team to take reasonable, prudent, and effective measures towards protection of migratory birds. While minimizing impacts to migratory birds should be the concern of all members of the Project team, ONEOK has designated key staff (identified in Appendix B) to oversee and help implement this Plan. Please contact these individuals if you have questions regarding implementation of the Plan.

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7. LITERATURE CITED

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USFWS. 2007. National Bald Eagle Management Guidelines.

U.S. NABCI Committee. 2000. North American Bird Conservation Initiative Bird Conservation Regions map. U.S. Fish and Wildlife Service, Arlington, Virginia. http://nabci-us.org/resources/bird-conservation-regions-map/

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APPENDIX A

Project Description

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Project Description

ONEOK Bakken Pipeline, L.L.C. (ONEOK), a wholly owned subsidiary of ONEOK, Inc., owns and operates natural gas liquids (NGLs) assets in North Dakota. ONEOK is proposing the Tioga Lateral Pipeline Project (Project). The Project is a new 16-inch-diameter steel NGL pipeline that would originate at the Hess Corporation's (HESS) Tioga Gas Processing Plant and terminate at ONEOK Bakken Pipeline, L.L.C.'s Stateline to Riverview NGL pipeline. The Project would be approximately 75.0 miles in length, and is entirely located in Williams County, North Dakota.

Construction activities are currently proposed to begin in March 2020 and be completed in the fourth quarter of 2020. Restoration activities may extend through 2021, if needed.

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APPENDIX B

Key Points of Contact

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Position	Name	Phone #	Responsibility
ONEOK Project Manager	Contact information to be provided to Contractor.		Responsible party for implementing the Plan
ONEOK Environmental Project Manager			Primary Point of Contact
ONEOK Construction Manager			Key point of contact in the field during construction
Environmental Inspector			Key Point of Contact in the field during construction

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H.3 Stormwater Pollution Prevention Plan

Tioga Lateral Pipeline Project

STORMWATER POLLUTION PREVENTION PLAN

ISSUED FOR PERMITTING

November 2019

REVISION INDEX

Revision	Date	Affected Pages	Description
Initial	November 2019	Global	Development of new SWPPP

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LIST OF ACRONYMS AND ABBREVIATIONS

ATWS	Additional Temporary Workspace
BMP	Best Management Practices
CMRP	Construction Mitigation and Restoration Plan
EI	Environmental Inspector
General Permit	North Dakota National Pollutant Discharge Elimination System Stormwater Discharge from Construction Activities General Permit
NDDEQ	North Dakota Department of Environmental Quality
NGL	Natural Gas Liquids
ONEOK	ONEOK Bakken Pipeline, L.L.C.
NOI	Notice of Intent
Project	Tioga Lateral Pipeline Project
SDS	Safety Data Sheets
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
SWPPP/Plan	Stormwater Pollution Prevention Plan

PLANS INCORPORATED BY REFERENCE

The following plans are incorporated by reference. Refer to most recent version of the plan for implementation.	
Construction Mitigation and Restoration Plan (CMRP)	This plan describes construction practices and Best Management Practices (BMPs) to be implemented to contain sediment, minimize runoff and erosion, and restore areas disturbed by construction activities. The Environmental Inspector (EI) will verify that the appropriate *CMRP* is implemented.
Spill Prevention, Control, and Countermeasure Plan (SPCC)	This plan identifies specific preventive measures and practices that will be employed during construction of the project to reduce the likelihood of an accidental release of a hazardous or regulated material. This includes the details for the project's protocols and procedures related to training, release response equipment, equipment storage and inspection, regulated materials storage and handling, refueling area restrictions, equipment maintenance restrictions, spill response, chain of communication, as well as notification and reporting requirements.
Dust Control Plan	This plan identifies requirements associated with the application of dust suppressants along the right-of-way (ROW) and access roads, limitations associated with dust-generating activities during high winds, implementation of speed limits and vehicle access limitations on access roads and along the ROW and use of best management practices along the ROW to control fugitive dust emissions.
Revegetation Plan	This plan describes procedures to be followed during the revegetation of areas disturbed as a result of constructing the project and specifically applies to all areas of perennial vegetation disturbed by construction.
Horizontal Directional Drill Release Plan	This plan describes procedures to be followed during an inadvertent release of drilling material. This includes the details for the project's protocols and procedures related to training and appropriate response and notifications to an inadvertent release.
Weed Management Plan	This plan describes procedures and requirements associated with known noxious weed locations. Environmental Inspectors and ONEOK will work with the contractor to determine when appropriate measures will be implemented at known and newly discovered locations.

1 INTRODUCTION

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is committed to meeting or exceeding applicable federal, state, and local environmental requirements during the planning, construction, and operation of the Tioga Lateral Pipeline (Project).

Per EPA regulations 40 CFR 122.26(c)(1)(iii), the operator of an existing or new discharge composed entirely of stormwater from an oil or gas exploration, production, processing, or treatment operation, or transmission facility is not required to obtain Permit coverage in accordance with paragraph (c)(1)(i) of this section, unless the facility:

(A) Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at any time since November 16, 1987; or

(B) Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or

(C) Contributes to a violation of a water quality standard.

As North Dakota acknowledges the EPA's exemption and items A, B, and C above are not applicable to this Project, ONEOK does not intend to submit a Notice of Intent (NOI) to obtain coverage from the NDDEQ under the NPDES program for construction stormwater. Although formal permit coverage will not be secured, ONEOK has prepared this *Stormwater Pollution Prevention Plan (SWPPP)* using the requirements of the North Dakota Department of Environmental Quality (NDDEQ) National Pollutant Discharge Elimination System (NPDES) Authorization to Discharge Stormwater Associated with Construction Activities General Permit (General Permit/Permit) as a guide. The General Permit is located in Appendix A for reference.

By implementing the industry best management practices (BMPs) described in this *SWPPP* to control erosion and prevent sediment from violating surface water quality standards, construction stormwater discharges from the construction site are not anticipated to be contaminated with substances that could result in discharge of a reportable quantity (e.g., oil sheen) and are not anticipated to violate a water quality standard (e.g., sediment discharges violating a water quality criteria or causing loss of fishing resources). Procedures for reportable quantities are detailed in the Project *Spill Prevention, Control, and Countermeasure (SPCC) Plan*.

The Project is an approximately 75-mile, 16-inch diameter natural gas liquids pipeline that will be constructed in Williams County, North Dakota. Construction is currently scheduled to begin in March 2020 with restoration activities expected to continue through 2022, if needed.

This *SWPPP* details relevant site information and the implementation sequence for construction activities that require BMPs for the purpose of minimizing erosion and sediment loss from the area of ground disturbance as a result of construction activities. In addition, this *SWPPP* describes general construction practices and BMPs to be implemented by ONEOK or its contractor(s) during construction of the pipeline to minimize impacts to the environment during the installation of the pipeline and the restoration of areas disturbed by construction activities. This *SWPPP* will be implemented during the entire construction phase of the Project, beginning with initial ground disturbance through restoration and final stabilization of disturbed areas. This document will be kept onsite during active construction activities.

Construction of the pipeline facilities will generally use 75-foot-wide construction right-of-way (ROW) comprised of both permanent and temporary ROW easements. During construction, temporary work areas alongside the permanent easement will be necessary to accommodate temporary storage of trench spoil; areas needed to string, weld, and install the pipeline; and movement and operation of construction equipment. Additional workspaces may be required in areas of rocky soils, steep slopes, and rugged terrain and for staging areas, truck turnarounds, utility crossovers, and utility, road, railroad, waterbody, and wetland crossings. Only the permanent easement (50 feet) will be required for the operation of the pipeline.

ONEOK has also developed a comprehensive and Project-specific *Construction, Mitigation, and Restoration Plan (CMRP)* to be implemented during construction of the Project. The Environmental Inspector (EI) will verify that the *CMRP* is implemented. The CMRP describes general construction practices and BMPs to be implemented by ONEOK or its contractor(s) during construction of the pipeline to minimize impacts to the environment and will be included as part of Project specifications and contracts to ensure implementation during construction activities. The *CMRP* includes an extensive description of the various BMPs to be implemented during installation of the pipeline to contain sediment and minimize runoff and erosion during installation of the pipeline and restoration of areas disturbed by construction activities. Typical drawings from the *CMRP* relevant to this *SWPPP* are included as Appendix B.

1.1 SWPPP ADMINISTRATION

Copies of ONEOK's *SWPPP* will be available at ONEOK's construction management field offices located along the pipeline route. The official *SWPPP* and inspection records will be maintained at ONEOK's corporate office located in Tulsa, Oklahoma. ONEOK and its contractors will be responsible for implementation of this *SWPPP* including installation, inspection, maintenance, and repair of BMPs. ONEOK will provide copies of this *SWPPP* upon request from any federal, state, or local government officials.

ONEOK will employ one or more full-time EIs to ensure appropriate BMPs are employed throughout construction where necessary to minimize erosion. The EI(s) will be on-site during construction activities to document compliance with this *SWPPP*. All inspections will be documented and recorded to demonstrate compliance with this *SWPPP*. Inspection related documents may be stored in an electronic database or similar method due to the scope of the Project and the number of anticipated inspectors. ONEOK and its contractor are responsible for developing, implementing, maintaining, and revising this *SWPPP*. ONEOK will be responsible for ensuring this *SWPPP* and related plans and drawings are available at the Project field offices throughout construction; providing EIs to monitor performance and ensure compliance with this *SWPPP* and related plans; and providing training to construction personnel about Project sediment and pollution control measures. This *SWPPP's*

Administrator is identified in Table 2.0-1.

TABLE 2.0-1
Tioga Lateral Pipeline Project
Administrator Contact Information

Title	Company	Contact Information
Project Manager	ONEOK	Contact information to be provided to Contractor
Environmental Project Manager	ONEOK	Contact information to be provided to Contractor
Environmental Consultant	Contact information to be provided to Contractor	
Environmental Inspector	To Be Determined	To Be Determined

The contractor will be responsible for committing all necessary labor and equipment to implement and maintain the BMPs identified in this *SWPPP* and related plans; conducting additional workforce training as necessary; and performing regular inspection, maintenance, and repair of BMPs. ONEOK's EI(s) will be responsible for training staff on sediment and pollution control measures, conducting regular inspections of BMPs, and ensuring that the contractor is aware of BMP's necessitating repair or maintenance.

2 SITE DESCRIPTION

2.1 SITE LOCATION

TABLE 2.1-1 Legal Description of the Project		
State, County, Township	**Range**	**Sections**
Williams County, ND		
155 North	100 West	4, 9, 10, 14, 15, 22-24
155 North	102 West	3, 9, 10, 16-19
155 North	103 West	21-24, 26, 27
155 North	98 West	2, 8-11, 17, 18
155 North	99 West	13-19, 21, 22
156 North	100 West	28-30, 33
156 North	101 West	25-31, 34, 35
156 North	102 West	34-36
156 North	95 West	5-8
156 North	96 West	1-4, 8, 9, 17, 20, 29, 30
156 North	97 West	25, 26, 31-35
156 North	98 West	35, 36
157 North	95 West	23-26, 35

2.2 AREA OF DISTURBANCE

Workspace associated with the construction and installation of pipelines requires careful planning to provide sufficient space and proper configuration to allow a safe work environment while satisfying regulatory obligations. ONEOK plans to use a 75-foot-wide construction ROW for the majority of the pipeline route, with 50 feet to be retained as permanent ROW for operation of the new pipeline. The actual breakdown of workspace within the construction ROW (e.g., spoil storage areas, equipment travel lanes) will vary depending on site-specific conditions. The workspace configuration is generally comprised of three major elements: spoil storage, trenchline, and work area. A diagram portraying the typical ROW configuration is included in Appendix B.

Spoil Storage – Construction of pipelines requires management of spoils. Several factors ranging from soil type, depth of cover requirements, and land use must be accounted for when evaluating how much workspace will be reserved for spoil management. Topsoil will generally be stored along the outer boundary of the construction workspace. Subsoil originating from trenchline excavation will generally be stored between the topsoil and the excavated trench. A minimum of 25 feet of construction ROW is typically allocated for spoil storage.

Trenchline – A portion of the workspace will be dedicated to the trenchline. Several factors including depth of cover requirements and soil types will influence the amount of space required for the trenchline. Buried pipelines that are 16 inches in diameter typically require a minimum of 15 feet of construction workspace to facilitate excavation. In order to meet standard industry safety requirements and construction BMPs, the trench for this pipe diameter may be 3 feet wide at the base and over 20 feet wide at the top of the trench. The balance of the remaining space remains available to heavy equipment to excavate the trench while minimizing trench wall failure.

Work Area – The work area is the largest portion of the construction workspace. This space must

accommodate equipment and various construction activities. A portion of this space is dedicated to pipeline fabrication activities associated with field layout, welding, bending, coating, and testing. In addition to the space allocated to pipeline fabrication, this space is sized to allow for equipment operation and a travel lane for construction equipment and personnel to pass safely and unimpeded.

In addition to the construction ROW, ONEOK will use additional temporary workspaces (ATWS) for staging areas; truck turnarounds; and utility, road, railroad, waterbody, and wetland crossings; and in areas of rocky soils, steep slopes, and rugged terrain. These temporary workspaces will be located adjacent and contiguous to the construction ROW. These areas are shown on the Project maps included in Appendix C.

ONEOK will primarily use public roadways and private access roads to access the construction ROW. Use of private access roads may require improvements or maintenance to provide access for construction personnel and/or delivery of construction materials and equipment. Previously unimproved access roads likely to be used during construction activities, if applicable, are shown on the maps included in Appendix C. These access roads include new roads to be developed during construction of the Project and previously unimproved access roads (i.e., existing two-track roads) which will likely require improvements prior to use or extensive restoration following installation of the pipeline. Prior to the commencement of Project activities, ONEOK will clearly mark the boundaries of approved work areas. Construction activities are not planned outside these areas.

The total estimated areas to be disturbed, as well as the location and approximate size of new impervious areas as a result of the Project, are summarized in Table 2.2-1. The locations of these facilities are identified on the maps provided in Appendix C.

TABLE 2.2-1
Tioga Lateral Pipeline Project
Estimated Area of Disturbance[1]

	Land Disturbed by Construction (acres)	
	Temporary Workspace[1]	**Permanent Land Disturbance[1]**
Pipeline Right-of-Way	218.37	454.16
Additional Temporary Workspaces	67.78	NA
Access Roads	TBD	TBD
Valve Sites	0.32	0.32
Total	**286.47**	**545.48**

[1] Acreages to be updated upon finalization of construction workspace prior to construction.

[1] Area of Disturbance will be updated upon finalization of Project workspace

ONEOK will site these facilities in such a manner to minimize potential impacts on nearby wetlands and waterbodies. In general, the planned impervious areas associated with these facilities are small and not located near surface waters of the State. ONEOK does not anticipate discharge of construction stormwater from these facilities will result in a new point source to surface waters of the State. ONEOK does not plan to install permanent stormwater management systems (i.e., permanent sediment basins) within the facilities to treat stormwater which may be discharged from the sites.

Minor modifications to the pipeline route, location or size of temporary workspaces, or additional access roads may occur. These changes may result from negotiations with the landowner or the need for additional or modified workspace necessary due to site-specific factors encountered during installation of the pipeline. ONEOK will periodically update the maps located in Appendix C of this *SWPPP* to reflect the current footprint of the Project.

2.3 NATURE OF CONSTRUCTION ACTIVITIES

Conventional pipeline construction is composed of specific activities that make up a linear construction sequence (see Figure 2.3-1). These operations collectively include survey and staking of the ROW; clearing and grading; trenching; pipe stringing, bending, and welding; lowering the pipeline into the trench; backfilling the trench; hydrostatic testing; final tie-ins; commissioning; and ROW cleanup and restoration.

Pipeline construction activities such as clearing, grading, trench excavation, and backfilling, as well as the movement of construction equipment along the ROW, will result in soil disturbance. Clearing removes protective cover and exposes soil to the effects of wind and precipitation, which may increase the potential for soil erosion and movement of sediments into sensitive environmental areas (such as waterbodies and wetlands). Grading and equipment traffic may compact soil, reducing porosity and percolation rates, which could result in increased runoff potential.

Grading of the construction workspace and ATWS may be required in areas where the planned pipeline route crosses steep slopes. Steep slopes often need to be graded down to a gentler slope to accommodate pipe bending limitations and provide level working areas to safely operate construction equipment. In such areas, the slopes will be cut away, and, after the pipeline is installed, reconstructed as near as practicable to their original contours.

ONEOK has sized its construction workspace and ATWS to accommodate safe installation of the pipeline while minimizing the area resulting soil disturbance and ultimately requiring restoration. ONEOK assumes that the majority of the areas identified within the construction area and depicted on the maps in Appendix C will be disturbed by construction activities.

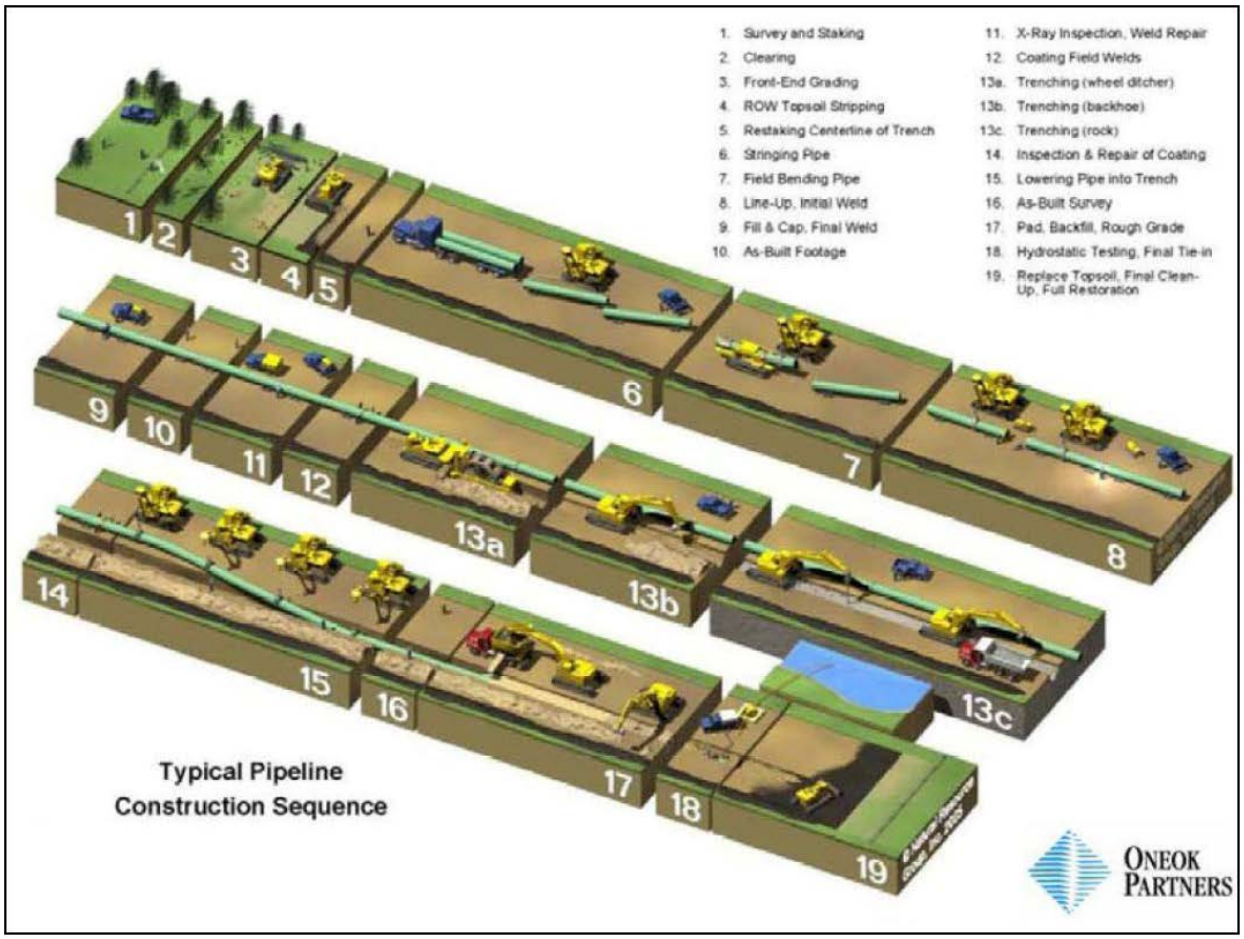
2.1 SEQUENCE OF ACTIVITIES

Construction of the new pipeline will occur in the following sequence:

- Stake the workspace boundaries and utilities;
- Clearing of construction area;
- Install temporary erosion and sediment controls;
- Grade and stump removal, if necessary;
- Segregation of topsoil, where necessary;
- Pipe delivery, bending, and welding;
- Trenching;
- Pipe installation;
- Backfilling excavations;
- Cleanup and final grading;
- Soil compaction treatment, where necessary;
- Stone removal, where necessary;
- Final restoration; and
- Final stabilization.

The general sequence of construction activities is shown on Figure 2.3-1. The *CMRP* provides a detailed description of the above referenced construction activities. Installation of soil erosion and sedimentation control devices will occur after clearing and before grading activities commence.

Figure 2.3-1 – Typical Pipeline Construction Sequence



2.2 SCHEDULE

Construction of the pipeline is scheduled to begin in March 2020. Construction of the pipeline may commence simultaneously at several locations. Construction of the segments of pipeline (referred to as a construction spreads) will proceed in a linear fashion as described in Sections 3.3 and 3.4. Installation of the pipeline at select locations (e.g., valve sites) may occur separately from mainline construction spreads. In general, ONEOK anticipates that all initial grading of the construction ROW will be completed in Spring 2020 and that the entire pipeline will be installed by the end of 2020. Restoration of the construction ROW will commence immediately following the installation of the pipeline. ONEOK estimates that areas disturbed by the Project will reach final stabilization by the end of 2022.

2.3 EXISTING VEGETATION AND GROUND COVER

The predominant vegetation communities crossed by the pipeline route consists of cultivated lands and rangeland. Cultivated land includes areas that are actively involved in farming operations resulting in tilling of the soils. Such land along the pipeline route is likely to include corn, beans, sugar beets, alfalfa, and wheat. Rangeland consists of lands involved in the production of hay, those that are actively being grazed by livestock, and shortgrass and tallgrass prairies. Following completion of construction activities, actively cultivated areas and rangeland will be restored to pre-construction land use, unless otherwise requested by the landowner.

2.4 RECEIVING WATERS

The pipeline crosses numerous drainage basins. The pipeline route crosses 13 waterbodies (6 intermittent, 1 ephemeral, and 6 perennial), and 59 wetlands (54 palustrine emergent [PEM], 4 palustrine unconsolidated bottom [PUB], and 1 palustrine scrub shrub)[2]. Appendix D contains the complete table of waterbodies and wetlands that will be crossed by the Project and are expected to receive stormwater discharges. Construction activities and grading of the ROW are generally considered temporary disturbances. Areas graded as a result of construction activities will be returned to their previous contours to the extent practicable following installation of the pipeline. Construction of the pipeline will not result in distinguishable point source discharges or new outfalls to surface waters.

2.5 MUNICIPAL SEPARATE STORM SEWER SYSTEMS

No areas serviced by Municipal Separate Storm Sewer Systems (MS4s) are crossed by the pipeline route.

2.6 IMPAIRED AND SPECIAL WATERS

The Project crosses one waterbody that is listed as impaired (fecal coliform) with respect to Section 303(d) of the federal Clean Water Act (Little Muddy River at milepost 52.7[3]). The Project will not generate fecal coliform, as such, no impacts to this impairment are anticipated. This waterbody is also listed as a Class II waterbody and a special fishery for waterbody fishing. In addition, Beaver Creek (milepost 17.1[4]) is listed as a Class II waterbody. ONEOK is currently planning to cross both of these areas via the horizontal directional drill method which will avoid in-stream impacts.

3 EROSION PREVENTION AND SEDIMENT CONTROL PRACTICES

3.1 BEST MANAGEMENT PRACTICES

ONEOK requires that erosion and sediment transport is minimized. ONEOK will implement BMPs for erosion and sediment control as described in the *CMRP* and this *SWPPP* to minimize run-off of sediments from the pipeline construction ROW. BMPs are intended to reduce or eliminate any possible water quality impacts from stormwater flowing through the construction site. BMPs will be used to minimize erosion and sediment transport during construction and restoration of the Project. BMPs will be selected and properly installed and maintained in accordance with specifications provided in the *CMRP*. BMPs will be installed in accordance with manufacturer specifications.

Specific BMPs to be implemented are discussed in the following sections. ONEOK's *CMRP* contains additional details regarding the installation and maintenance of BMPs to be implemented during construction of the pipeline. BMPs will be designed to divert flows from exposed soils, filter runoff, or otherwise reduce sediment-laden runoff from entering surface water or stormwater conveyance systems (e.g., road ditches, grassed waterways). As stated, ONEOK plans to use a combination of BMPs during the course of the Project to provide the best prevention and control of sediment erosion during construction-related activities.

ONEOK will install and maintain all structural and non-structural BMPs as outlined in the *CMRP*.

[2] Current as of November 4, 2019. Number of crossing locations to be updated upon finalization of route and construction workspaces.

[3] Milepost to be verified/updated prior to construction.

[4] Milepost to be verified/updated prior to construction.

ONEOK and the EIs will track the location of all structural and non-structural BMPs on the inspection reports (Appendix E) and the BMP tracking table (Appendix F).

Deficient BMPs noted during required site inspections will be addressed as soon as possible. It is the responsibility of the contractor to select BMPs appropriate to the location of the installation.

3.2 EROSION PREVENTION PRACTICES

3.3 VEGETATIVE BUFFERS

The most effective erosion control BMP is the minimization of soil disturbance. Therefore, removal of existing vegetation within the Project footprint will be avoided to the extent practicable. ONEOK will also minimize soil disturbance immediately adjacent to waterbodies until the pipeline is installed under the feature. In general, ONEOK will leave a 20-foot buffer of undisturbed herbaceous vegetation at waterbody crossings except where grading is necessary for bridge installation. The use of vegetated buffers is further described in the *CMRP*.

3.4 EROSION CONTROL BLANKETS AND MATS

ONEOK will install erosion control blankets or mats on slopes greater than 30 percent or where necessary to minimize erosion upslope of sensitive areas (e.g., surface waters of the State). Erosion control blankets, matting, and/or rip rap appropriately designed for the expected flows will also be installed on stream banks disturbed during construction and within defined stormwater conveyances (e.g., road ditches). The contractor will select erosion control blanket products suitable to the location of installation and the duration which the product is intended to perform. Installation of erosion control mats will be in accordance with the manufacture's specifications. Figure 13 of Appendix B identifies the intended use of erosion control blankets. Installation of rip rap must be above the ordinary high water mark (OHWM) and approved by ONEOK in advance.

3.5 DUST SUPPRESSION

ONEOK's contractors will implement dust suppression BMP's as necessary to prevent nuisance conditions and to prevent significant particle or dust generation resulting from construction activities, as described in ONEOK's *Dust Control Plan.*

ONEOK's planned dust suppression methods include stabilization of temporary stockpiles, spraying of water on the construction ROW in areas of active construction, use of chemical suppressants (e.g., calcium chloride) on public or private roads, and enforcing a 25-mile-per-hour speed limit on unimproved roads. When opacity along dirt roads and the ROW exceeds 20 percent (objects partially obscured), construction activity will cease until dust control measures are employed. Earthwork activities will cease when sustained wind speed exceeds 30 miles per hour.

3.6 SEDIMENT CONTROL PRACTICES

Sediment Barriers

ONEOK and/or its contractors will install temporary sediment barriers during clearing and before grading where necessary and as defined by the *CMRP* and this *SWPPP*. In general, temporary sediment barriers will be installed at the edge of the ROW as needed, and/or in other areas determined by ONEOK to prevent sediment from entering waterbodies and wetlands crossed by the pipeline route or located downslope of the construction ROW. Figures 8 and 14-18 of Appendix B identify the general configuration of temporary sediment barriers to be installed at waterbodies and wetlands crossed by the pipeline route. The actual layout of the silt fence to be installed in the field

by the contractor will vary in accordance with the site-specific conditions present at each waterbody location. Installation of BMPs will be overseen by ONEOK's environmental inspection staff to ensure that wetlands and waterbodies crossed by the route are adequately protected from runoff based upon the conditions present on either side of the crossing (e.g., slope, soil types).

Use of silt fence is preferred as the primary sediment barrier unless site-specific conditions (e.g., rock or stony soil, sustained winds) prevent proper installation or reasonable maintenance. Temporary sediment barriers will typically be installed and maintained at side slope and downslope boundaries of the construction area adjacent to wetlands and waterbodies and at other locations as directed by ONEOK's inspection personnel. These locations may include the base of slopes adjacent to road ditches, stormwater conveyance systems (e.g., road ditches, grass waterways, inlets), along the edge of the approved work area, or other stormwater conveyances that are directly adjacent to the approved work area. Heavy-duty silt fence is available for locations which are subject to high stormwater flows. Velocity dissipation devices (e.g., riprap, straw bales) must be installed at discharge locations as necessary to provide a non-erosive flow velocity between the structure and receiving waterbody.

The contractor will choose and install sediment barriers in areas with high potential for sediment transport. Installation of other devices such as straw bales, fiber roles, or wattles may be approved by ONEOK where the potential for erosion is minimal.

Sediment barriers will be cleaned, repaired, and/or replaced when functionality begins to decrease (e.g., sediment reaches intolerable levels, fabric begins to tear, and/or the silt fence begins to become undermined). Repairs and/or maintenance of sediment control devices within active construction areas will be completed as soon as possible after identification. Additional sediment barriers will be considered for locations prone to failure.

Temporary sediment barriers will be maintained until final stabilization is reached or the site has been returned to its previous function (e.g., cultivated agriculture). Final stabilization is defined as all soil-disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of 70% of the cover which is typical for undisturbed areas, unpaved areas, or areas not covered by permanent structures in the geographic location of the construction site, has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed (as defined by the General Permit). Once the site has reached final stabilization, the barriers will be removed and disposed of properly.

Temporary and Permanent Slope Breakers

ONEOK will install temporary and permanent earthen slope breakers within the construction ROW to direct stormwater runoff to adjacent stabilized areas. Slope breakers will be constructed with appropriate energy-dissipation devices (e.g., temporary sediment barriers, rip-rap) to prevent erosion at their outfall. During construction, ONEOK will install temporary slope breakers on slopes greater than 5 percent in accordance with the spacing provided in the *CMRP*. In order to maintain sheet flow and minimize rills and/or gullies, there will be no unbroken slope length of greater than 75 feet for slopes with a grade of 3:1 or greater.

Temporary slope breakers will be maintained throughout construction and will be replaced at the end of each day if disturbed by construction activities. Permanent slope breakers will be constructed in accordance with the *CMRP*. In general, permanent slope breakers will be constructed in all non-cultivated areas, except where agreements with landowners prevent installation.

Vehicle Tracking

Sediment control BMPs will be installed to minimize soil disturbance and prevent or minimize sediment leaving the construction site. If necessary, a combination of crushed stone access pads, matting, and culverts will also be installed at ingresses and egresses to the construction site to minimize the tracking of sediments onto paved roads. If sediment is tracked onto a paved road street sweeping or scraping will be performed immediately to minimize sediment leaving the construction site. Sediment will be returned to the ROW.

4 STABILIZATION PRACTICES

Stabilization practices include temporary and permanent measures designed to prevent erosion and sediment from leaving the construction site. This includes revegetation, installation of mulch and/or erosion control blankets, and preserving natural vegetation within the construction ROW to the extent possible.

ONEOK's contractors will permanently stabilize by revegetating non-cultivated areas disturbed by construction activities to prevent and minimize erosion with the exception of sites where impervious areas will be installed, such as valve sites. ONEOK's contractor will initiate revegetation of disturbed areas as soon as soil conditions permit seedbed preparation and seed germination following installation of the pipeline, per the requirements in the *CMRP* and *Revegetation Plan,* or according to the Contractor's ONEOK-approved revegetation plan.

ONEOK will also initiate temporary stabilization measures where necessary to minimize erosion. Temporary stabilization measures consist of temporary seeding and/or mulching or surface roughening. Temporary stabilization measures will be employed where erosion is likely to occur, including locations such as stream banks, road ditches, steep slopes, and areas subject to stormwater flow. Temporary stabilization measures will also be employed where completion of construction activities or where final stabilization may be delayed. ONEOK's specification for installation of mulch and temporary stabilization measures are discussed in the *CMRP* and the *Revegetation Plan*.

5 CONSTRUCTION SITE DEWATERING

In the event that dewatering activities are necessary, the water will be discharged to a well-vegetated upland area or suitable BMP (e.g., geotextile filter bag or straw bale dewatering structure) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any waterbody, wetland, or stormwater sewer system (including drain tile inlets or irrigation systems). The discharged water will not (1) be in violation of the water quality standards as defined by the NDDEQ; (2) adversely affect downstream landowners; and (3) cause erosion or scouring at the outlet or in the receiving waterbody.

6 POLLUTION PREVENTION MANAGEMENT MEASURES

6.1 SOLID WASTE DISPOSAL AND GOOD HOUSEKEEPING

Non-hazardous wastes generated during construction will be containerized and properly disposed of off-site in compliance with state and federal requirements. Non-hazardous pipeline construction wastes include human waste, trash, pipe banding and spacers, waste from coating products, welding rods, timber skids, cleared vegetation, stumps, and rocks. All wastes not native to the construction site will be disposed off-site at a licensed waste disposal facility.

Site inspections will include surveying the site for refuse, which will be disposed of as soon as

possible. The contractor will not permit paper from wrapping or coating products or lightweight items to be scattered by the wind. Upon final stabilization, all existing erosion and sediment control structures will be removed from the Project area.

The contractor will provide portable, self-contained toilets during construction operations. Wastes from these units will be collected for disposal at licensed and approved facilities. Portable toilets must be properly secured to prevent tipping by vandals or blowing over in wind events.

6.2 HAZARDOUS MATERIALS HANDLING

Secondary containment will be provided for any hazardous materials, including oil, fuels, coolants, and paint temporarily stored on the construction ROW. Safety Data Sheets (SDS) for all hazardous materials will be maintained on site. All employees dealing with hazardous materials will be informed of proper handling procedures.

In the event that hazardous wastes are generated during construction activities, such wastes will be stored and disposed of in compliance with state and federal regulations. ONEOK will follow the procedures in its *Spill Prevention, Control, and Countermeasure (SPCC) Plan* for handling of hazardous materials such as fuels and lubricants. ONEOK does not anticipate significant volumes of hazardous materials (e.g., fuels, lubricants, fertilizer) will be stored overnight within the construction ROW.

6.3 CONCRETE WASHOUT AND RELATED WASTE

Concrete wash water has a high pH and contains high-levels of chromium which could pollute surface waters and/or groundwater. Concrete wash waters, grindings, slurry, or other related wastes may be produced as a result of construction activities. ONEOK anticipates that use of uncured concrete during construction activities will be limited to the installation of piers and footings, etc. associated with installation of pump stations and valves located along the pipeline route. ONEOK does not anticipate that concrete coating of pipeline joints or the manufacturing of concrete set-on weights will be conducted within the construction ROW.

The discharge of concrete washout or uncured concrete wastes to surface waters of the State (e.g., wetlands, waterbodies, storm drains), etc. is prohibited. ONEOK's contractor will designate concrete washout facilities where pouring of concrete is planned. The contractor must post signs to identify the washout facilities. Washout facilities may include prefabricated watertight containers or facilities constructed on site such as bermed earthen structures or sumps lined with plastic sheeting. Concrete washout facilities will be sized to accommodate the amount of concrete wastes both liquid and solid to be generated at the site. The structure will also be sized with adequate freeboard to prevent overflow during discharge or following precipitation events.

Concrete washout facilities will be designed and sized to promote evaporation of liquids and curing of the concrete wastes prior to disposal. Facilities constructed on site will be constructed of multiple layers of thick plastic sheeting to prevent leaks and puncturing of the barrier. Washout facilities will be covered when precipitation is imminent to prevent precipitation collecting and intermingling with wastes or prolonging the curing of solids. Concrete washout and associated wastes will be treated as a hazardous waste until all solids have cured. Once cured, concrete solids may be disposed of as solid waste. Concrete washout facilities must be located at least 100 feet away from wetlands and waterbodies unless approved by ONEOK.

6.4 VEHICLE AND EQUIPMENT MAINTENANCE AND WASHING

Maintenance of vehicles and equipment will be conducted at contractor yards to the extent practicable. ONEOK does not anticipate that vehicle or equipment maintenance will be conducted along the construction ROW, except in situations where the equipment is immobile and cannot be transported to a yard for maintenance or repairs. All repairs or maintenance will be conducted in accordance with ONEOK's *SPCC Plan,* which requires maintenance or repairs to be conducted at least 100 feet from waters of the State unless an exception is approved by ONEOK. ONEOK's approval of each exception would be after consideration of the site conditions and additional measures or precautions that could be taken to contain potential pollutants. No wastes from vehicle or equipment repair or maintenance will be stored on the construction ROW.

No vehicle or equipment washing using detergents or degreasers will be performed on the construction ROW. Cleaning of equipment and vehicles may be required on the construction ROW to prevent the spread of undesirable or invasive species, as described in ONEOK's *Weed Management Plan*. These areas will be marked by ONEOK's EIs. ONEOK will construct equipment cleaning stations away from waters of the State. In no event will runoff from vehicle and equipment washing be allowed to enter waters of the State. ONEOK will dispose of wastes resulting from equipment washing stations in accordance with its *CMRP*.

7 CONSTRUCTION SPILL PREVENTION AND REPORTING

In the event of a spill, ONEOK will follow procedures outlined in its *SPCC Plan*. ONEOK will perform any necessary notifications to federal and state agencies following construction-related spills as required by permits or applicable regulations. Soils contaminated by construction related spills will be removed from the construction site in accordance with federal and state regulations. If temporary storage of contaminated soils is required on-site, stockpiled soil will be covered with plastic sheeting to prevent potential contact with stormwater.

Bulk storage of fuels and lubricants and other hazardous liquids are not expected to occur on the construction ROW. Small volumes of fuel or extra fuel tanks may occur on the ROW to support stationary pumps such as those used for dewatering and hydrostatic testing. All fuel stored on the ROW will be placed in secondary containment or be housed in dual-wall storage tanks. Stormwater that collects in secondary containment suitable for waste will be visually inspected for signs of contamination or visible sheen prior to drainage. If contamination is suspected, the stormwater will be disposed of in compliance with state and federal regulations.

The following practices will be followed during the course of the Project for spill prevention. To protect against accidental release of a lubricant, coolant, or fuel, equipment will have catch pans and absorbing pads present at all times. The contractor will have equipment and materials on site needed to prevent and/or contain an accidental spill. Equipment will be inspected each morning before work starts and during the workday to check for leaks and to repair or replace hoses or connections that are in danger of failure. ONEOK will follow the procedures in its *SPCC Plan* when refueling equipment and storing hazardous liquids on the ROW

<u>Fuels and Hazardous Materials Handling</u>

- Refueling of equipment or hazardous material transfer will occur in designated areas only.
- No refueling or hazardous material transfer will occur within 100 feet of a Water of the State, spring, or well.

- Hazardous materials, including oils, fuels, and lubricants, will be stored a minimum of 100 feet away from waters of the State. Construction equipment will also be staged a minimum of 100 feet away from waters of the State when parked/stored overnight.
- ONEOK's approval of each exception would be after consideration of site conditions and additional measures or precautions that could be taken to contain potential pollutants. For example, where conditions require that construction equipment (e.g., pumps used in trench dewatering) be refueled within 100 feet of waters of the State, sufficient oil and fuel containment booms and absorbent materials will be on-hand to allow for rapid containment and recovery of a spill.

8 INSPECTIONS AND MAINTENANCE

An inspection report will be prepared after each inspection (Appendix E). Records of each inspection and maintenance activities will include:

- Date of inspection;
- Name and title of person(s) conducting inspection;
- Construction phase and type of inspection being conducted;
- Scope and findings of inspection, including:
    - Locations of sediment or other pollutant discharges from the site;
    - Locations of BMPs that need to be maintained;
    - Locations of BMPs that failed to operate as designed or proved inadequate at controlling pollutants;
    - Locations where additional BMPs are needed or that were not in place at the time of the inspection; and
    - Locations where BMP's are no longer necessary and have been removed;
    - Description of corrective actions taken; and
    - Documentation of any changes made to this *SWPPP* as a result of the inspection, including any deviation from the minimum inspection schedule as in this *SWPPP*.

Where an inspection does not identify any incidents of non-compliance, the report will contain a signed statement indicating that the site is in compliance with this *SWPPP* to the best of the signer's knowledge and belief.

8.1 INSPECTION SCHEDULES

Inspections will be conducted at least once every 7 days within areas of active construction and at least once every month for areas of the construction ROW where activities are no longer active and the ROW has been temporarily stabilized. Inspections must also be completed in active construction areas within 24 hours after the end of any precipitation event of 0.5 inches or greater. Post-storm event construction inspections may be postponed up to 72 hours if construction activities are idle (e.g., wet weather shut down or non-working weekends/federal holidays). However, inspections must be completed before construction activities recommence. Regular inspection of inactive construction areas is not required where snow cover or frozen ground conditions exist over the ROW for an extended period and melting conditions posing a risk of erosion do not exist. Winter conditions inspection exclusions will be documented in the inspection records (Appendix E); documentation will include dates when snow cover occurred, date when construction activities ceased, and date melting conditions began.

8.2 MAINTENANCE

ONEOK or its contractors are responsible for maintaining all erosion control measures including replacement or modification of BMPs as necessary to prevent or minimize sediments from entering waterbodies or wetlands or from leaving the construction site. All sediment control devices (e.g., silt fences, fiber rolls) will be repaired, replaced, or supplemented when they become nonfunctional or have retained sediment in amounts exceeding the manufacturer's specifications.

If a sediment control device has failed or is determined to be no longer effective the contractor will perform maintenance or replace the device as soon as possible, or immediately in most cases, to minimize the discharge of pollutants from the construction ROW.

8.3 EROSION AND RETRIEVAL OF SEDIMENTS

Visible or measurable erosion associated with the construction of the Project, which leaves the construction ROW as a result of ineffective BMPs, is prohibited by ONEOK. If inspections identify sediment that has escaped the construction site, the off-site accumulations of sediment will be removed in a manner and at a frequency sufficient to minimize off-site impacts. Under no condition will the sediment be washed into surface Waters of the State. Where a determination is made that sediment must be removed to prevent deposition within surface waters or stormwater conveyances, the sediment will be removed as soon as practicable. Recovery of sediment from sensitive resources must be approved by ONEOK prior to entry.

8.4 NON-COMPLIANCE REPORTING

ONEOK will complete inspections to ensure and document compliance with this *SWPPP*. Inspections documenting implementation and effectiveness of erosion and sediment control measures will be conducted in accordance with the requirements outlined in Section 7.1. If inspections identify any instances of non-compliance that may endanger human health or the environment or exceed North Dakota water quality rules and regulations, ONEOK will verbally notify the NDDEQ within 24 hours of becoming aware of the noncompliance. Within 5 days after becoming aware of a noncompliance issue, the NDDEQ will receive the following information in writing:

- A description of the noncompliance and its cause;
- The period of noncompliance, including exact dates and times; or if not identified, the anticipated time the noncompliance is expected to continue; and
- Additional measures being taken to reduce, eliminate, and prevent recurrences of the non-complying discharge or other cause of noncompliance.

8.5 UPDATING THE SWPPP

ONEOK will maintain and update this *SWPPP* to reflect current conditions whenever there is a change in site design or construction methods which require the implementation of new or revised BMPs, or which may have a significant effect on the potential for the discharge of pollutants. The Plan will also be amended to improve observed deficiencies associated with treatment of stormwater discharges.

Changes to this *SWPPP* will be made prior to changes in site conditions or for responsive *SWPPP* changes (e.g., changes to BMP's made in the field) within 72 hours after the change in BMP installation and/or implementation occurs at the site. Access to an electronic copy of this *SWPPP* and General Permit will be readily available to applicable personnel at the Project site. Updates to this

SWPPP will be provided to construction personnel as needed.

9 EMPLOYEE TRAINING

All ONEOK and construction personnel working on the Project will receive an environmental orientation session prior to accessing the construction ROW. The environmental orientation will provide an overview of the erosion and sediment control measures to be implemented during construction activities, construction-related spill prevention, clean-up, and reporting and good housekeeping practices to implement on the construction ROW. Supervisory personnel (e.g., construction foremen, craft inspectors) will attend a more thorough environmental training session which will provide a detailed overview of the regulatory permits required for the Project and specific erosion and sediment control measures to be implemented during construction. A training log will be maintained as Appendix G.

ONEOK's EIs will oversee compliance with ONEOK's *CMRP* and environmental permits and regulations specific to the Project. The EIs will be experienced in the application of erosion and sediment control BMPs and knowledgeable of the contents and requirements of this *SWPPP* and other environmental procedures applicable to the Project. The EIs will conduct additional training sessions with specific construction crew as necessary to properly implement this *SWPPP.* These additional training sessions will focus on maintaining compliance with permits and regulations and will be conducted prior to construction activities in sensitive areas or changing of seasons, etc. when use of erosion and sediment control measures may be modified.

10 CONSTRUCTION STORMWATER NOTICE OF TERMINATION

This section is not applicable unless ONEOK submits an NOI for Permit coverage.

11 RETENTION OF RECORDS

ONEOK will retain copies of all inspection forms, records, and information resulting from the monitoring activities required by this *SWPPP*. In addition to inspection and maintenance reports, records of the construction activities conducted at the site including the dates when major grading activities occurred, when the site was temporarily or permanently seeded, and when temporary or permanent stabilization was reached will be recorded and maintained as part of this *SWPPP*.

APPENDIX A

North Dakota NPDES Storm Water Authorization to Discharge Stormwater Associated with Construction Activities General Permit (NDR10-0000)

Permit No: NDR10-0000
Effective Date: April 01, 2015
Expiration Date: March 31, 2020

AUTHORIZATION TO DISCHARGE UNDER THE

NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with Chapter 33-16-01 of the North Dakota Department of Health rules as promulgated under Chapter 61-28 (North Dakota Water Pollution Control Act) of the North Dakota Century Code,

Facilities both qualifying for and satisfying the requirements identified in Part I of the permit

are authorized to discharge stormwater associated with **construction activity**

to waters of the state

in accordance with conditions set forth in this permit.

This permit and the authorization to discharge shall expire at midnight,

March 31, 2020.

Signed this 31 day of March, 2015.

Karl H. Rockeman, P.E.
Director
Division of Water Quality

BP 2014.06.12

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I. PERMIT COVERAGE AND LIMITATIONS

A. Discharges Covered

1. This permit applies to all areas within the state of North Dakota, except for those areas defined as Indian Country. Construction activity located within Indian Country within the state of North Dakota must obtain a permit through the United States Environmental Protection Agency. If the construction activity is located with the jurisdiction of the state of North Dakota, and the United States Environmental Protection Agency, a permit must be obtained from both regulatory entities.

2. This permit applies to stormwater discharges associated with construction activity and small construction activity as defined in Title 40 of the Code of Federal Regulations (CFR), Parts 122.26(b)(14)(x) and (b)(15), respectively. The reference to construction activity in this permit includes both large construction activity and small construction activity as described below.

   a. Large construction activity includes clearing, grading and excavation, that disturbs land of equal to or greater than five (5) acres and includes the disturbance of less than five (5) acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five (5) acres or more.

   b. Small construction activity includes clearing, grading and excavation, that disturbs land of equal to or greater than one (1) acre, and includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater that one (1) and less than five (5) acres.

   c. Discharges of stormwater from oil and gas exploration, production, processing or treatment operations, or transmission facilities composed of contaminated runoff by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations.

3. Stormwater discharges from support activities (e.g., equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) may be covered by this permit as part of a related construction site. The support activities may only be in association with one project. If the support activity is associated with more than one project, a separate stormwater permit (Industrial or mining, extraction or paving material preparation) is required.

4. Certain non-stormwater discharges from facilities covered by this permit and meeting the requirements specified in Part II(A).

5. Stormwater discharges from construction activity covered by the previous permit, issued October 12, 2009, where a notice has been submitted to obtain coverage under this permit.

6. Projects which have obtained coverage under this permit shall amend and implement a Stormwater Pollution Prevention Plan (SWPPP) that meets the requirements of this permit within ninety (90) days of the effective date of this permit.

7. Discharges from dewatering activities related to construction activities (discharges of uncontaminated stormwater).

8. Local Authority. This permit does not preempt or supersede the authority of local agencies or operators of municipal separate storm sewer systems to prohibit, restrict, or control discharges of stormwater to storm sewer systems or other water courses within their jurisdiction.

B. Discharges Not Covered

1. Stormwater discharges associated with industrial activity from any source other than construction activities described in Part I(A).

2. Post-construction discharges from industrial activity that originate from the site after construction activities have been completed at the site. Industrial and post-construction stormwater discharges may need to be covered by a separate stormwater permit.

3. The placement of fill into waters of the state requiring local, state, or federal authorizations (such as U.S. Army Corps of Engineers Section 404 permits).

4. This permit does not substitute for obligations under the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), Wild and Scenic Rivers Act, or National Historic Preservation Act (NHPA), it is your responsibility to ensure the project and resulting discharges comply with the respective requirements.

5. Discharges to waters for which there is a total maximum daily load (TMDL) allocation for sediment and/or parameters associated with sediment transport are not covered unless you develop a Stormwater Pollution Prevention plan (SWPPP) that is consistent with the assumptions and requirements in the approved TMDL. To be eligible for coverage under this general permit, the SWPPP must incorporate the conditions applicable to the discharge necessary for consistency with the assumptions, allocations and requirements of the TMDL. If a specific numeric wasteload allocation has been established that would apply to discharges from construction activity, the permittee must incorporate that allocation into the SWPPP and implement necessary steps to meet that allocation. Information about TMDL allocations may be found at the following website: www.ndhealth.gov/WQ/SW/Z2_TMDL/default.htm.

6. Stormwater discharges that the department determines will cause, or have the reasonable potential to cause or contribute to a violation of the standards for quality for waters of the state (North Dakota Administrative Code (N.D.A.C.) 33-16-02.1).

7. Discharges from hydrostatic testing, well points, water line disinfection and treatment of gasoline or diesel contaminated groundwater.

8. Discharges of wash water using detergents, wastewater, or sanitary waste.

C. Obtaining Coverage and Authorization Effective Date

1. To obtain authorization under this general permit for stormwater discharges you must submit a complete application and develop a SWPPP in accordance with Part II(C) of this permit. A SWPPP must be in place as a condition of the permit and a copy of the SWPPP must be retained by the permittee.

2. Permit coverage will become effective seven (7) days after you submit a complete application unless otherwise notified by the department (based on the department receipt date).

3. Upon the effective date of permit coverage you, as the permit applicant, are authorized to discharge stormwater from eligible activities under the terms and conditions of this permit.

D. Application (Notice of Intent) Process

1. You must use a Notice of Intent (NOI) to complete your application. An NOI form (or a replacement application form) is available at the following website: www.ndhealth.gov/WQ/Storm/Construction/ConstructionHome.htm.

2. Application Content and Conditions.

   a. The owner, or owner jointly with the operator (usually the general contractor), shall submit a completed application for this permit. The owner is responsible for compliance with all terms and conditions of this permit. The operator has day to day supervision of construction activities and is jointly responsible with the owner for compliance with the permit conditions as they pertain to the construction activities delegated to the operator.

   b. The application (Notice of Intent) shall contain, at a minimum, the following information:

      (1) Owner name, mailing address and phone number;
      (2) Project contact name and phone number;
      (3) Project/site name;
      (4) Project/site location (street address; section, township, range; or latitude and longitude) and county;
      (5) A brief description of the construction activity;
      (6) The anticipated start date and the anticipated completion date for the project (if known);
      (7) The estimated total area of the site and the total area of disturbance in acres;
      (8) The name of receiving water(s), or the name of the municipal storm sewer system and receiving water(s);
      (9) The signature of the applicant(s), owner (and operator if co-applicants) signed in accordance with the signatory requirements in Part IV(A)(6) of this permit.

   c. A SWPPP (Part II(C)) for the project must be prepared and available for review, upon request, by the department at the time of application. A partially complete plan is acceptable when it clearly identifies the item(s) to be completed, the person(s) responsible for completing the item(s) and the deadline for completing the item(s). The SWPPP must be completed prior to the start of construction (or the applicable construction phase). You are not required to submit the SWPPP with the application unless otherwise notified by the department.

3. For residential construction activity occurring within a common plan of development (such as a subdivision) subject to the permit requirements, coverage may be obtained by the following:

   a. The owner of the lot(s) shall submit one (1) NOI for all of the owner's construction activity within the common plan of development, or

   b. The operator, such as a homebuilder who may represent one (1) or more lot owners, shall submit one (1) NOI for all of the operator's construction activity within each addition of the common plan of development.

      In addition, a SWPPP must be developed and implemented for the permittee's activities within the common plan of development. Additional phases of the common plan of development may be included under the initial application and permit coverage provided the SWPPP is amended to include the additional area or phases.

4. For oil and gas exploration, production, processing, treatment operations, or transmission facilities, which discharge contaminated stormwater, permit applications may be submitted for individual project sites or for an area of operations such as well field or by county.

5. Completed applications and any reports required by this permit shall be submitted to:

North Dakota Department of Health
Division of Water Quality
918 East Divide Avenue
Bismarck, ND 58501-1947

E. Notice of Termination (NOT)

1. Permittees wishing to terminate coverage under this permit must submit a Notice of Termination (NOT) or other written request identifying the facility, reason why the permit is no longer needed and signed in accordance with Part IV(A)(6) of this permit. Compliance with the conditions of this permit is required until a NOT is submitted to the department.

2. Permittees may only submit a NOT after one of the following conditions have been met:

   a. Final stabilization (Part II(E)) has been achieved on all portions of the site for which the permittee is responsible.

   b. Another owner/operator/permittee has assumed control, in accordance with the transfer provisions (Part I(F)), over all areas of the site that have not achieved final stabilization.

   c. For residential construction only, a NOT is not required for each lot that is sold, transferred, or has achieved final stabilization. The permittee must modify their SWPPP to indicate that permit coverage is no longer required for that lot. The SWPPP shall indicate the reason why coverage is no longer needed and the date the lot was sold, transferred, or achieved final stabilization. In order to terminate coverage, all lots under the control of the owner or operator must be sold, transferred, or achieved final stabilization (Part II(E)).

F. Transfer of Ownership or Control

1. When the owner or operator of a construction project changes, the new owner or operator must submit a written request for permit transfer/modification within fourteen (14) days of assuming control of the site or commencing work on-site, or of the legal transfer, sale or closing on the property; except as provided in Part I(F)(2). Late submittals will not be rejected; however the department reserves the right to take enforcement for any unpermitted discharges or permit noncompliance. For stormwater discharges from construction activities where the owner or operator changes, the new owner or operator can implement the original SWPPP created for the project or develop and implement their own SWPPP. Permittee(s) shall ensure either directly or through coordination with other operators that their SWPPP meets all terms and conditions of this permit and that their activities do not interfere with another party's erosion and sediment control practices.

2. A permit transfer/modification request is not required for the legal transfer, sale or closing on a property between permittees covered by this permit. Examples include the sale of a property parcel from a developer to a builder, or the transfer of an easement from a developer to a local government authority. If the new party is not covered by this permit at the time of transfer or sale, then the new owner/operator must submit a completed application/NOI within 14 days of assuming control of the site.

II. STORMWATER DISCHARGE REQUIREMENTS

A. Prohibition of Non-Stormwater Discharges

The discharge of wastewater is not authorized by this permit. The following sources of non-stormwater discharges are allowed if they are not a significant source of pollution and are identified in the SWPPP: fire-fighting, fire hydrant flushing, potable water line flushing, equipment wash down without detergents or hazardous cleaning products, uncontaminated foundation drains, springs, surface water, lawn watering, chemical treatment of stormwater and air conditioning condensate. Impervious surface wash water may not be directed into any surface water or storm drain inlet unless appropriate pollution prevention measures have been implemented. Discharges may not come into contact with oil and grease deposits or any other toxic or hazardous materials (unless cleaned up using dry clean-up methods). The SWPPP must include a description of the pollution prevention measures to be implemented while non-stormwater discharges are occurring.

If chemical treatment for sediment removal is intended to be used on-site, the permittee shall provide the department with the information outlined in Appendix 1(A)(14) of this permit for approval prior to use. This information shall be provided to the department no later than sixty (60) days prior to use.

B. Releases in Excess of Reportable Quantities

This permit does not relieve the permittee of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302, nor the reporting requirements found in Chapter 33-16-02.1 of the North Dakota Administrative Code. Any releases which meet any reporting requirement, must be reported to the agencies identified in Part IV(A)(7).

C. Stormwater Pollution Prevention Plans

All permittees shall implement a SWPPP for any construction activity requiring this permit until final stabilization is achieved. The SWPPP and revisions are subject to review by the department. The objectives of the SWPPP is to identify potential sources of sediment and other sources of pollution associated with construction activity, and to ensure practices are implemented and maintained to reduce the contribution of pollutants in stormwater discharges from the construction site to waters of the state and storm sewer systems. Stormwater management documents developed under other regulatory programs may be included or incorporated by reference in the SWPPP, or used in whole as a SWPPP if it meets the requirements of this part.

The SWPPP may identify more than one permittee and may specify the responsibilities of each permittee by task, area, and/or timing. Permittees may coordinate and prepare more than one SWPPP to accomplish this. However, in the event there is a requirement under the SWPPP for which responsibility is ambiguous or is not included in the SWPPP, each permittee shall be responsible for implementation of that requirement. Each permittee is responsible for assuring that their activities do not render another permittee's controls ineffective.

The SWPPP must incorporate the requirements provided in Appendix 1 and shall include the following information.

1. **Site Description**. Each plan shall provide a description of the construction activity and potential sources of pollution as indicated below:

    a. A description of the overall project and the type of construction activity;

b. Estimates of the total area of the site and the total area that is expected to be disturbed by excavation, grading, grubbing, or other activities during the life of the project;

c. A proposed timetable/schedule, or chart, of activities that includes major phases/stages, BMP implementation, BMP removal, disturbances, and stabilization for major portions of the site;

d. A description of the soil within the disturbed area(s);

e. The name of the surface water(s) and municipal storm sewer system at or near the disturbed area that will receive stormwater runoff from the project site; and

f. A site map which indicates the following items as applicable (more than one (1) map may be needed). If an item is not applicable, provide rationale describing why the item is not applicable to the construction activity:

1) Project boundaries;
2) Areas of ground disturbance during each phase/stage of the project;
3) Areas where disturbance will not occur, such as avoidance areas (e.g. wetlands, critical habitat, Threatened and Endangered Species, etc);
4) Drainage patterns including: flow direction (run-on and runoff);
5) Dividing lines, discharge points, and storm sewer system inlets which the site drains to or may be affected by the activity;
6) Pre-existing and final grades;
7) Location of all temporary and permanent sediment and erosion controls during each particular phase;
8) Location of any stormwater conveyances such as: retention ponds, detention ponds, ditches, pipes, swales, stormwater diversions, culverts, and ditch blocks;
9) Location of potential sources of pollution (e.g. portable toilets, trash receptacles, etc.);
10) Location of soil stockpiles;
11) Identify steep slopes;
12) Surface waters, including an aerial extent of wetland acreage;
13) Location of surface water crossings;
14) Locations where stormwater is discharged to surface waters;
15) Location of dewatering discharge points;
16) Locations of where chemical treatment of stormwater will be performed, including discharge points;
17) Fueling locations, vehicle and equipment maintenance areas, designated wash water collection site, lubricant and chemical storage, paint storage, material storage, staging areas, and debris collection area;
18) Location of any impervious surfaces upon completion of construction; and
19) Where included as part of the project, the site maps for off-site concrete/asphalt batch plants, equipment staging areas, borrow sites or excavated fill material disposal sites. Site maps must show items 1 through 18 of this section.

g. Projects that discharge stormwater which flows to a water body listed as impaired under section 303(d) of the Federal Clean Water Act due to sediment, suspended solids or turbidity must identify the water body and impairment in the SWPPP. The Department's 303(d) list may be found at the following website under Integrated Reports: www.ndhealth.gov/WQ/SW/Z2_TMDL/Integrated_Reports/B_Integrated_Reports.htm.

h. For water bodies which have a TMDL, the SWPPP must describe and conform to the Waste Load Allocations (WLA) of the water body as per Part II(C)(4)(g) of this permit. Information about TMDL allocations may be found at the following website: www.ndhealth.gov/WQ/SW/Z2_TMDL/default.htm.

2. **Narrative.** The SWPPP must include a narrative description of the selected operational controls and sediment and erosion controls as outlined in Part II(C)(3), Part II(C)(4), and Appendix 1 of this permit. When applicable, a description of the requirements for any additional environmental regulations (federal) and local requirements related to the project, as it relates to waters of the state, must also be included or incorporated by reference (e.g. The Wild and Scenic Rivers Act, The National Historic Preservation Act, The Endangered Species Act, Fish and Wildlife Coordination Act, National Environmental Policy Act, Section 404 of the Clean Water Act, etc.).

   The narrative shall describe at a minimum:

   a. The installation, removal (if applicable), and maintenance requirements of selected Best Management Practices (BMPs) for each phase/stage of construction activity;
   b. The rationale for the selection of all BMPs (calculations should be included if appropriate);
   c. Whether selected BMPs are temporary or permanent;
   d. Any descriptions of infeasibility or explanations as required in Part II, Part III(A), and Appendix 1 of this permit.

3. **Operational Controls**. The SWPPP shall describe the BMPs used in day to day operations on the project site that reduce the contribution of pollutants in stormwater runoff.

   a. The SWPPP must identify a person knowledgeable and experienced in the application of erosion and sediment control BMPs who will oversee the implementation of the SWPPP, and the installation, inspection and maintenance of the erosion and sediment control BMPs before and during construction, until a NOT is filed or the permit is transferred. A knowledgeable and experienced person is someone who meets the requirements of Part II(C)(3)(e) of this permit.

      The owner shall develop a chain of responsibility with all operators on the site to ensure that the SWPPP will be implemented and stay in effect until the construction project is complete, the entire site has undergone final stabilization, and a NOT has been submitted to the department.

   b. The SWPPP must include a description of good housekeeping practices used to maintain a clean and orderly site. The SWPPP shall describe how litter, debris, chemicals and parts will be handled to minimize exposure to stormwater. The SWPPP also shall describe what measures will be used to reduce and remove sediment tracked off-site by vehicles or equipment. In addition, the SWPPP shall describe methods which will be used to reduce the generation of dust.

   c. The SWPPP shall describe preventative maintenance practices used to ensure the proper operation of erosion and sediment control devices (e.g., fiber rolls, erosion control blankets and silt fences) and equipment used or stored on site. The SWPPP shall describe proper inspection procedures for ensuring proper operation of erosion and sediment control devices.

   d. The SWPPP shall describe spill prevention and response procedures where potential spills can occur. Specific handling procedures, storage requirements, spill containment, cleanup procedures, and disposal must be identified. Storage structures for petroleum products and other chemicals shall have adequate leak and spill protection to prevent any spilled materials from entering waters of the state or storm sewer systems.

      The potential discharge of hazardous substances in stormwater discharges shall be minimized by including measures onsite, detailed in the SWPPP to prevent and respond to releases of hazardous substances. If a reportable quantity release occurs, the SWPPP shall be revised to prevent the reoccurrence of such a release.

e. The SWPP shall outline how employees and responsible parties shall be trained on the implementation of the SWPPP. Training must be provided at least annually, as new employees or responsible parties are hired or as necessary to ensure compliance with the SWPPP and the general permit. Employees and responsible parties include individuals who are responsible for design, installation, maintenance and repair of stormwater controls and conducting inspections.

    1) On-site personnel must understand the requirements of this permit as it pertains to their role in implementing the SWPPP. On-site personnel must know:

        a. The purpose of the SWPPP, requirements of the SWPPP, and how the SWPPP will be implemented;

        b. The location of all BMPs identified in the SWPPP; and

        c. Correct installation, function, maintenance and removal (if applicable) of BMPs identified in the SWPPP.

    2) Personnel responsible for performing site inspections must understand when inspections must be conducted (Part III(A)), what must be inspected (Part II(C)(7), how to record findings, when to initiate corrective actions, and properly document corrective actions.

    3) Maintenance personnel must understand when maintenance must be performed on BMPs in order to maintain properly functioning BMPs and what needs to be recorded for corrective actions/maintenance records in accordance with Part III(A)(5) of this permit.

f. The SWPPP must describe how concrete grindings and slurry will be managed. Wastewater from concrete washout, cleanout or washout from: stucco, paint, joint compound, and other building materials shall not be discharged to waters of the state, storm sewer systems or curb and gutter systems.

    1) Wash water must be collected in leak-proof containers or leak-proof pits. Containers or pits must be designed and maintained so that overflows cannot occur due to inadequate sizing, precipitation events, or snowmelt.

g. The SWPPP shall describe any dewatering activities planned at the site. Dewatering or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) related to the permitted activity must be managed with appropriate BMPs, such that the discharge does not adversely affect the receiving water. The following conditions apply to dewatering activities:

    1) Dewatering is limited to un-contaminated stormwater, surface water, and groundwater that may collect on-site and those sources identified in Part II(A), if they are not a significant source of pollution. A separate permit must be obtained to discharge water from other sources such as hydrostatic testing of pipes, tanks, or other similar vessels; disinfection of potable water lines; pump testing of water wells; and the treatment of gasoline or diesel contaminated groundwater or surface water.

    2) The permittee(s) must operate the discharge to minimize the release of sediment and provide adequate BMPs where necessary to minimize erosion due to the discharge. Discharges must not lead to the deposition of sediment within stormwater conveyance systems or surface waters. Discharges must not cause or potentially cause a visible plume within a surface water body.

3) When dewatering, utilize structures or BMPs which allow for draw down to occur from the surface of the water, unless infeasible. If infeasible, documentation must be provided in the SWPPP. In addition, you must describe what BMP(s) will be used in its place.

4) In addition to the inspection requirements in Part III, dewatering activities shall be inspected daily. The inspection must include the dewatering site, areas where BMPs are being implemented and the discharge location. A record shall be maintained to document the inspections of the dewatering operation and actions taken to correct any problems that may be identified.

   a. Records shall contain at a minimum:

      i. Date and time of the inspection,
      ii. Inspector name,
      iii. Approximate volume of water discharged,
      iv. Findings of the inspection, including recommendations and schedule for corrective actions;
      v. Corrective actions taken (including dates, times, and party completing maintenance activities); and
      vi. Documentation that the SWPPP has been amended when changes are made to the dewatering activity in response to inspections.

5) Local authorities may require specific BMPs for discharges affecting their storm sewer system.

4. **Erosion and Sediment Controls**. Erosion and sediment controls and stabilization requirements must be implemented for each major phase of site activity (e.g., clearing, grading, building, and landscaping phases). A description of the erosion and sediment controls and site stabilization methods must be provided in accordance with Part II(C)(2) of this permit. Erosion and sediment controls, and site stabilization must conform to the requirements provided in Appendix 1. The description and implementation of controls shall address the following minimum components:

   a. The selection of erosion and sediment controls, and site stabilization shall consider the following:

      1. The expected amount, frequency, intensity, and duration of precipitation events;

      2. The nature of stormwater run-on and runoff from the site as well as changes during, and as a result of, construction activity. This includes changes to impervious surfaces, slopes, seasonal changes, and drainage features on-site;

      3. Channelized flow, must be handled in order to minimize erosion at outlets and to minimize impacts to downstream receiving waters;

      4. Soil types (wind and water erodibility, and settling time); and

      5. Seasonal conditions.

   b. Sediment basins, or an appropriate combination of equivalent sediment controls such as smaller sediment basins and/or sediment traps, silt fences, fiber logs, vegetative buffer strips, berms, etc., are required for all down slope boundaries of the disturbance area and for those side slope boundaries as may be appropriate for site conditions.

c. Temporary or permanent erosion protection and stabilization (such as cover crop planting or mulching) must be initiated immediately, as described in Appendix 1(A), for all exposed soil areas where activities have been completed or temporarily ceased.

d. All control measures must be properly selected, installed and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the permittee must replace or modify the control for site situations. Corrective actions must be made prior to the next anticipated rainfall event of within 24 hours of discovery (whichever comes first) or as soon as field conditions allow. Documentation must be provided in the maintenance records if field conditions do not allow access along with a plan of action for performing maintenance activities.

   The permittee may deviate from the manufacturer's specifications and erosion and sediment control requirements in Appendix 1 if they provide justification for the deviation and document the rationale for the deviation in the SWPPP. Any deviation must provide equivalent erosion and sediment control.

e. If sediment escapes from the site, off-site accumulations of sediment must be removed in a manner and frequency sufficient to minimize off-site impacts as outlined in Appendix 1(B). The SWPPP must be modified to prevent further sediment deposition off-site.

f. Stormwater controls are expected to withstand and function properly during precipitation events of up to the 2-year, 24-hour storm event. Visible erosion and/or off-site sediment deposition from such storm events should be minimal. The 2-year, 24-hour rainfall event in North Dakota ranges from about 1.9 inches in the west to 2.3 inches in the east.

g. For projects that discharge stormwater which flows to a water body for which there is a TMDL allocation for sediment and/or parameters associated with sediment transport, the SWPPP must be consistent with the assumptions, allocations, and requirements in the approved TMDL. If a TMDL specifies certain BMPs or controls to meet a WLA applicable to the project's discharges, the BMPs or controls must be incorporated into the SWPPP. Information about TMDL allocations may be found at the following website: www.ndhealth.gov/WQ/SW/Z2_TMDL/default.htm.

5. **Stormwater Management**. The SWPPP must identify permanent practices incorporated into the project to control pollutants in stormwater discharges occurring after construction operations have been completed.

   a. Identify stormwater ponds; flow reduction methods; infiltration of runoff on-site; sequential systems which combine several practices or other post-construction stormwater management features.

   b. Identify velocity / energy dissipation devices placed at discharge locations and appropriate erosion protection for outfall channels and ditches.

   c. Maintenance for on-site stormwater management features is the responsibility of the permittee until the NOT is submitted or the feature is accepted by the party responsible for long term maintenance.

   d. The design, installation and use of stormwater management features must comply with applicable local, state or federal requirements.

6. **Maintenance**. All erosion and sediment control measures and other protective measures identified in the SWPPP must be maintained in effective operating condition. The SWPPP must indicate, as appropriate, the maintenance or clean out interval for sediment controls. If site inspections, required in Part III of this permit, identify BMPs that are not operating effectively, maintenance shall be arranged and accomplished in accordance to Appendix 1 or as soon as practicable.

7. **Inspections**. The SWPPP must provide for site inspections as outlined in Part III. The permittee shall ensure that personnel conducting site inspections are familiar with permit conditions and the proper installation and operation of control measures. Inspectors must be knowledgeable in their role of the SWPPP, as outlined in Part II(C)(3)(e) of this permit. The erosion and sediment control measures and stabilized areas identified in the SWPPP shall be observed to ensure they are operating correctly and in serviceable condition. Inspections shall include areas used for storage of materials, permanent stormwater control measures and vehicle maintenance areas. These areas shall be inspected for evidence of, or the potential for, pollutants entering a drainage system. If necessary, the plan shall be revised based on the observations and deficiencies noted during the inspection.

8. **SWPPP Review and Revisions**.

    a. The SWPPP shall be signed in accordance with the Signatory Requirements, Part IV(A)(6), and retained on-site for the duration of activity as outlined in Part III(B).

    b. The permittee shall make the SWPPP available upon request to the department, EPA, or, in the case of discharges to a municipal storm sewer system, the operator of the municipal system.

    c. The permittee shall amend the SWPPP whenever there is a change in design, construction, operation, maintenance, or BMPs. The SWPPP shall be amended if the plan is found to be ineffective in controlling pollutants present in stormwater. The SWPPP shall be amended as soon as practicable.

D. Local Requirements

All stormwater discharges must comply with the requirements, policies, or guidelines of municipalities and other local agencies as applicable to the construction site. Any discharges to a storm sewer, ditch or other water course under the jurisdiction of a municipality must comply with any specific conditions or BMPs required by the municipality or agency.

E. Final Stabilization

The permittee(s) must ensure final stabilization of the site. The permittee(s) should submit a NOT within 30 days after final stabilization has been achieved, or another owner/operator (permittee) has assumed control according to Part I(F) for all areas of the site that have not undergone final stabilization. Final stabilization can be achieved in one of the following ways.

1. All soil disturbing activities at the site have been completed and all soils must be stabilized by a uniform perennial vegetative cover with a density of 70 percent of the pre-existing cover over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions and;

    a. All drainage ditches, constructed to drain water from the site after construction is complete, must be stabilized to preclude erosion;

b. All temporary erosion prevention and sediment control BMPs (such as silt fence) must be removed as part of the site final stabilization; and

c. The permittee(s) must remove all sediment from conveyances and temporary sedimentation basins that will be used as permanent water quality management basins. Sediment must be stabilized to prevent it from being washed into basins, conveyances or drainage ways discharging off-site or to surface waters. The cleanout of permanent basins must be sufficient to return the basin to design capacity.

2. For areas of the state where the average annual rainfall is less than 20 inches, all soil disturbing activities at the site have been completed and erosion control measures (e.g., degradable rolled erosion control product) and stabilization methods are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years and achieve 70 percent of the pre-existing vegetative cover within three (3) years without active maintenance. Sites must meet the criteria outlined in items 1(a), (b), and (c) above.

3. Disturbed areas on land used for agricultural purposes that are restored to their pre-construction agricultural use are not subject to these final stabilization criteria. If the construction activity removed standing crop, the area must be restored in accordance with the landowner.

   Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to waters of the state, and areas which are not being returned to their pre-disturbance use must meet the final stabilization criteria in (1) or (2) above.

4. For residential construction only, final stabilization may be achieved when soil is stabilized (see Appendix 1(A)(3)) and down gradient perimeter control for individual lots has been implemented and the residence has been transferred to the homeowner. Additionally, the permittee must distribute a “homeowner fact sheet” to the homeowner to inform the homeowner of the need for, and benefits of, final stabilization. The permittee also must demonstrate that the homeowner received the fact sheet.

III. SELF MONITORING AND REPORTING

A. Inspection and Maintenance Requirements

1. Inspections shall be performed by or under the direction of the permittee at least once every 14 calendar days and within 24 hours after any storm event of greater than 0.25 inches of rain per 24-hour period. Inspections are only required during normal working hours. The permittee shall use a rain gauge on-site or utilize the nearest National Weather Service precipitation gauge station. Rain gauge locations or stations must be representative of the site.

   a. “Within 24 hours after any storm event greater than 0.25 inches rain per 24-hour period” means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. If there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

2. There may be times when a site inspection may not be practical at the specified time. Adverse climatic conditions, such as flooding, high winds, tornadoes, electrical storms, site access constraints, etc., may prohibit inspections. The permittee must include a description of why the inspection(s) could not be performed at the designated time in the next inspection record. If an inspection is delayed due to adverse weather conditions or rain events outside normal working hours, an inspection must be conducted during the next working day, or as conditions allow.

3. Some erosion and sediment control measures may require more frequent inspection based on location (e.g., sensitive areas or waters of the state) or as a result of recurring maintenance issues. Erosion or sediment control measures found in need of maintenance between inspections must be repaired or supplemented with appropriate measures as soon as practicable. Erosion and sediment control measures which require more frequent inspection based on location or as a result of recurring maintenance issues must be identified in the SWPPP.

4. All inspections conducted during construction must be recorded in writing and these records must be retained in accordance with Part III(B). Records of each inspection activity shall include:

    a. Date and time of inspections;

    b. Name of person(s) conducting inspections;

    c. Findings of inspections, including recommendations and schedule for corrective actions;

    d. Date and amount of all rainfall events greater than 1/4 inch (0.25 inches) in 24 hours; and

    e. Documentation that the SWPPP has been amended when changes are made to BMPs in response to inspections.

    f. All inspection reports shall be signed in accordance with Part IV(A)(6) of this permit.

5. Corrective actions (maintenance activities) performed during construction must be recorded in writing and these records must be retained in accordance with Part III(B). Records for maintenance activity shall include:

    a. Best Management Practice corrected;

    b. Date and time of corrective action;

    c. Name of person(s) performing corrective actions;

    d. Corrective actions taken; and

    e. Corrective actions/maintenance records shall be signed in accordance with Part IV(A)(6) of this permit.

6. Completed areas that have been stabilized but do not meet the 70 percent perennial vegetative cover criteria for final stabilization may be inspected once per month. Inspections may be suspended for parts of the construction site that meet final stabilization requirements of Part II(E) of this permit. The SWPPP must update to identify any areas which meet this condition.

7. Inspections may be suspended where earthwork has been suspended due to frozen ground conditions. The required inspections and maintenance must resume as soon as runoff occurs or the ground begins to thaw at the site. The permittee must record freeze/thaw and runoff dates as part of the inspection records.

B. Records Location

A copy of the completed and signed NOI, coverage letter from the department, SWPPP, site inspection records, and this general permit shall be kept at the site of the construction activity in a field office, trailer, shed, or in a vehicle that is on-site during normal working hours. If the site does not have a reasonable on-site location, then the documents must be retained at a readily available alternative location; preferably with the individual responsible for overseeing the implementation of the SWPPP. Electronic copies of records are acceptable if the records can be accessed on-site. If the site is inactive, then the documents may be stored at a local office. Permittees should avoid using personal electronic devices for storing electronic records.

IV. STANDARD CONDITIONS

A. COMPLIANCE RESPONSIBILITIES BP 2014.12.08

1. Duty to Comply
The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

2. Proper Operation and Maintenance
The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. If necessary to achieve compliance with the conditions of this permit, this shall include the operation and maintenance of backup or auxiliary systems.

3. Planned Changes
The department shall be given advance notice of any planned changes at the permitted facility or of an activity which may result in permit noncompliance. Any anticipated facility expansions, production increase, or process modifications which might result in new, different, or increased discharges of pollutants shall be reported to the department as soon as possible. Changes which may result in a facility being designated a "new source" as determined in 40 CFR 122.29(b) shall also be reported.

4. Duty to Provide Information
The permittee shall furnish to the department, within a reasonable time, any information which the department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the department, upon request, copies of records required to be kept by this permit. When a permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in a permit application or any report, it shall promptly submit such facts or information.

5. Records Retention
All records and information (including calibration and maintenance) required by this permit shall be kept for at least three years or longer if requested by the department or EPA.

6. Signatory Requirements
All applications, reports, or information submitted to the department shall be signed and certified.

All permit applications shall be signed by a responsible corporate officer, a general partner, or a principal executive officer or ranking elected official.

All reports required by the permit and other information requested by the department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described above and submitted to the department; and

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

If an authorization under 6. Signatory Requirements is no longer accurate for any reason, a new authorization satisfying the above requirements must be submitted to the department prior to or together with any reports, information, or applications to be signed by an authorized representative.

Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

7. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The following occurrences of noncompliance shall be included in the oral report to the department at 701.328.5210:

    a. Any lagoon cell overflow or any unanticipated bypass which exceeds any effluent limitation in the permit under 8. Bypass of Treatment Facilities;

    b. Any upset which exceeds any effluent limitation in the permit under 9. Upset Conditions; or

    c. Violation of any daily maximum effluent or instantaneous discharge limitation for any of the pollutants listed in the permit.

2. A written submission shall also be provided within five days of the time that the permittee became aware of the circumstances. The written submission shall contain:

    a. A description of the noncompliance and its cause;

    b. The period of noncompliance, including exact dates and times;

    c. The estimated time noncompliance is expected to continue if it has not been corrected; and

    d. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

    Reports shall be submitted to the address in **Part I(D) Application (Notice of Intent) Process**. The department may waive the written report on a case by case basis if the oral report has been received within 24 hours by the department at 701.328.5210 as identified above.

    All other instances of noncompliance shall be reported no later than at the time of the next Discharge Monitoring Report submittal. The report shall include the four items listed in this subsection.

8. Bypass of Treatment Facilities

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to any of the following provisions in this section.

Bypass exceeding limitations-notification requirements.

a. Anticipated Bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of bypass.

b. Unanticipated Bypass. The permittee shall submit notice of an unanticipated bypass as required under 7. Twenty-four Hour Notice of Noncompliance Reporting.

2. Prohibition of Bypass. Bypass is prohibited, and the department may take enforcement action against a permittee for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. The permittee submitted notices as required under the 8(a). Anticipated Bypass subsection of this section.

The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three (3) conditions listed above.

9. Upset Conditions

An upset constitutes an affirmative defense to an action brought for noncompliance with erosion and sediment or site stabilization methods if the requirements of the following paragraph are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and the permittee can identify its cause(s);

2. The permitted facility was, at the time being, properly operated;

3. The permittee submitted notice of the upset as required under 7. Twenty-four Hour Notice of Noncompliance Reporting and

4. The permittee complied with any remedial measures required under 10. Duty to Mitigate.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

10. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. The permittee, at the department's request, shall provide accelerated or additional monitoring as necessary to determine the nature and impact of any discharge.

11. Removed Materials

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner to prevent any pollutant from entering any waters of the state or creating a health hazard.

12. Duty to Reapply

Any request to have this permit renewed should be made 15 days prior to its expiration date.

B. GENERAL REQUIREMENTS

1. Inspection and Entry

The permittee shall allow department and EPA representatives, at reasonable times and upon the presentation of credentials if requested, to enter the permittee's premises to inspect the construction activity and monitoring equipment, to sample any discharges, and to have access to and copy any records required to be kept by this permit.

2. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the department and EPA. As required by the Act, permit applications, permits, and effluent data shall not be considered confidential.

3. Transfers

This permit is not transferable except upon the filing of a Transfer/Modification request (Part I(F)) by the new party. The current permit holder should inform the new controller, operator, or owner of the existence of this permit and also notify the Department of the possible change.

4. New Limitations or Prohibitions

The permittee shall comply with any effluent standards or prohibitions established under Section 306(a), Section 307(a), or Section 405 of the Act for any pollutant (toxic or conventional) present in the discharge or removed substances within the time identified in the regulations even if the permit has not yet been modified to incorporate the requirements.

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or sewage sludges. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

6. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation preserved under Section 510 of the Act.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

9. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

V. DEFINITIONS Permit Specific BP 2009.02.05

“303(d) List” or “Section 303(d) List” means a list of North Dakota’s water quality-limited waters needing total maximum daily loads or TMDLs developed to comply with section 303(d) of the Clean Water Act. A copy of the latest integrated report is available on the state’s web site at: www.ndhealth.gov/WQ/SW/Z2_TMDL/Integrated_Reports/B_Integrated_Reports.htm.

“Act” means the Clean Water Act.

“Bankfull” means the channel is filled to the top of one or both of its banks.

"BMP" or "Best Management Practices" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMPs also include treatment requirements, operating procedures and practices to control construction site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

“Common Plan of Development or Sale” means a contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. One plan is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land-disturbing activities may occur.

“Construction Activity” means construction activity as defined in 40 CFR part 122.26(b)(14)(x) and small construction activity as defined in 40 CFR part 122.26(b)(15). This includes a disturbance to the land that results in a change in topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated stormwater runoff, leading to soil erosion and movement of sediment into surface waters or drainage systems. Examples of construction activity may include clearing, grading, filling and excavating. Construction activity includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) acre or more. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility.

"Department" means the North Dakota Department of Health, Division of Water Quality.

"Energy Dissipation" means methods employed at pipe outlets to prevent erosion. Examples include, but are not limited to: concrete aprons, riprap, splash pads, and gabions that are designed to prevent erosion.

“Indian Country” means (1) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservations; (2) All dependent Indian communities within the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (3) All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

“Infeasible” means not technologically possible or not economically practicable and achievable in light of best industry practices.

“Immediately” means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

“Large Construction Activity” means land disturbance of equal to or greater than five (5) acres. Large construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan will ultimately disturb equal to or greater that five acres.

“Normal Wetted Perimeter” means the area of a conveyance, such as a ditch, channel, or pipe that is in contact with water during flow events that are expected to occur once every year.

“Non-Stormwater Discharges” means discharges other than stormwater. The term includes both process and non-process sources. Process wastewater sources that require a separate NDPDES permit include, but are not limited to industrial processes, domestic facilities and cooling water. Non-stormwater sources that may be addressed in this permit include, but are not limited to: fire-fighting, fire hydrant flushing, potable water line flushing, equipment wash down without detergents or hazardous cleaning products, uncontaminated foundation drains, springs, surface water, lawn watering, chemical treatment of stormwater and air conditioning condensate.

“Operator” means the person (usually the general contractor) designated by the owner who has day to day operational control and/or the ability to modify project plans and specifications related to the SWPPP. The person must be knowledgeable in those areas of the permit for which the operator is responsible and must perform those responsibilities in a workmanlike manner.

“Owner” means the person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the construction activity.

“Permanently Ceased” means clearing and excavation within any area of your construction site that will not include permanent structures has been completed.

“Permanent Cover” means final stabilization. Examples include grass, gravel, asphalt, and concrete.

"Severe Property Damage" means substantial physical damage to property, damage to best management practices which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in construction.

"Significant Materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

"Significant Spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (see 40 CFR 110.10 and CFR 117.21) or Section 102 of CERCLA (see 40 CFR 302.4).

“Small Construction Activity” means land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan will ultimately disturb equal to or greater than one and less than five acres

"Stabilized" means the exposed ground surface has been covered by appropriate materials such as mulch, staked sod, riprap, erosion control blanket, or other material that prevents erosion from occurring. Grass seeding alone is not stabilization. Snow cover and frozen ground conditions are not considered stabilized.

“Steep Slopes” means slopes which are fifteen (15) percent or greater in grade.

"Stormwater" means stormwater runoff, snow melt runoff, and surface runoff and drainage.

“Stormwater Associated with Industrial Activity” means stormwater runoff, snow melt runoff, or surface runoff and drainage from industrial activities as defined in 40 CFR 122.26(b)(14).

“Stormwater Associated with Small Construction Activity” means the discharge of stormwater from:

(i) Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than once acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility.

(ii) Any other construction activity designated by EPA or the department, based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of the state.

“Temporarily Ceased” means clearing, grading, and excavation within any area of the site that will not include permanent structures, will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future.

"Temporary Erosion Protection" means methods employed to prevent erosion. Examples of temporary cover include; mulch, straw, erosion control blanket, wood chips, tackifiers, and erosion netting.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with permit requirements because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed erosion and sediment controls or site stabilization methods, inadequate erosion and sediment controls or site stabilization methods, lack of preventive maintenance, or careless or improper operation.

“Waters of the State” means any and all surface waters that are contained in or flow in or through the state of North Dakota as defined in NDCC 61-28-02. This definition includes all water courses, even if they are usually dry.

“You” means the owner, operator or permittee as appropriate.

Appendix 1 – Erosion and Sediment Control Requirements

Requirements for designing, implementing and maintaining erosion and sediment controls.

A. Erosion and Sediment Control Practices

1. Sites using temporary (or permanent) sediment basins must meet the following requirements:

    a. Sediment basins shall be designed for a calculated volume of runoff from a 2-year, 24-hour storm per acre drained to the basin and provides not less than 1,800 cubic feet of sediment storage below the invert of the outlet pipe from each acre drained to the basin; or

    b. Basins shall be sized to provide 3,600 cubic feet of sediment storage below the invert of the outlet pipe per acre drained to the basin if calculations are not performed.

    c. Basin outlets must be designed to avoid short-circuiting and the discharge of floating debris. Basins must be designed with the ability to allow complete basin drawdown for maintenance activities. Basins must release the storage volume in at least 24 hours. Outlet structures must be designed to withdraw water from the surface, unless not practicable. If not practicable, rationale must be provided in the SWPPP. The basin must have a stabilized emergency overflow to prevent failure of pond integrity. Energy dissipation must be provided for the basin outlet.

2. Erosion, sediment, and stabilization practices shall be provided. Erosion, sediment and stabilization practices include such things as: silt fences, fiber logs, vegetative buffer strips, erosion control blankets, mulch, hydro-seeding combined with mulch or tackifiers, etc.

3. All exposed soil areas must be stabilized (see definitions). Stabilization must be initiated immediately where activities have been permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding fourteen (14) calendar days. Stabilization must be completed as soon as practicable, but no later than fourteen (14) calendar days after the initiation of soil stabilization. Temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) are exempt from this requirement.

    a. For slopes with a grade of 3:1 or greater, stabilization must be initiated immediately once activities have been completed or temporarily ceased. Stabilization must be completed as soon as practicable, but no later than seven (7) calendar days after the initiation of soil stabilization.

4. Temporary soil stockpiles must have effective sediment controls, and cannot be placed in surface waters, including stormwater conveyances such as curb and gutter systems, or conduits and ditches.

5. The normal wetted perimeter of any temporary or permanent drainage ditch that drains water from a construction site, or diverts water around a site, must be stabilized at least 200 linear feet from the property edge, or from the point of discharge to any surface water. Stabilization shall be completed prior to connection with a surface water. Any remaining portion of the temporary or permanent drainage ditch must be stabilized within fourteen (14) calendar days for portions which construction activities have temporarily or permanently ceased.

6. If stabilization requirements cannot be met due to circumstances beyond the control of the permittee, the permittee may comply with following:

    a. If vegetative stabilization is to be used, immediately initiate, and within 14 calendars days complete, the installation of temporary non-vegetated stabilization; or

    b. Complete all methods of initiating stabilization as soon as conditions or circumstances allow.

If any conditions in parts a or b above are encountered, the permittee must document the circumstances which prevented you from meeting the stabilization requirements in the SWPPP of this paragraph and provide a schedule in the SWPPP which will be followed in order to meet the stabilization requirements.

Permittees are responsible for implementing winter stabilization methods during frozen ground conditions if the site was not stabilized prior to the ground freezing.

7. Stream diversions or any temporary or permanent drainage ditch or trench, which will have continuous flow, shall be stabilized with appropriate controls prior to connection with any surface water. The entire area (channel and bank) of the stream diversion or temporary or permanent drainage ditch, or trench, must be appropriately stabilized to bankfull height.

8. While working in or around surface waters, sediment and erosion controls must be used above the anticipated level of the surface water. Floating silt curtain does not satisfy the down slope and side slope boundary requirements in Part II(C)(4)(b) of this permit, unless the construction activity is on or below the elevation of the surface water. The floating silt curtain must be placed as close to shore as possible. Sediment control must be installed where exposed soils drain to the surface water immediately after construction activity along the waterline has been completed.

9. Pipe and culvert outlets must be provided with energy dissipation within 24 hours of connection to a surface water.

10. Splash pads and/or downspout extensions must be provided for roof drains to prevent erosion from roof runoff.

11. All storm drain inlets in the immediate vicinity of the construction site must be protected by appropriate BMPs during construction until all disturbed areas and stockpiles with the potential to discharge to the inlet have been stabilized. This includes storm drain inlets which may be affected by sediment tracked onto paved surfaces by vehicles or equipment.

12. Inlet protection devices are a last line of control – erosion and sediment control practices must be used on-site. Inlet protection devices must conform to local ordinances or regulations. In general, inlet protection devices need to provide for adequate drainage to prevent excessive roadway flooding. Inlet protection may be removed for a particular inlet if a specific concern (i.e., street flooding/freezing, snow removal) has been identified and documented in the SWPPP. In this situation, additional erosion and sediment control practices, or stabilization methods must be used to supplement the loss of the inlet protection device to prevent sediment from entering the storm sewer system.

13. Vegetated buffers must have a minimum width of 1 foot for every 5 feet of disturbed area that drains to the buffer. The width of the buffer shall have a slope of 5 percent or less and the area draining to the buffer shall have a slope of 6 percent or less. Concentrated flows should be minimized throughout the buffer.

    Buffers shall consist of dense grassy vegetation, 3 to 12 inches tall with uniform coverage over 90 percent of the buffer. Woody vegetation shall not be counted for the 90 percent coverage. No more than 10 percent of the overall buffer may be comprised of woody vegetation.

14. A 50 foot natural buffer or equivalent erosion and sediment controls must be provided when a project is within 50 feet of a surface water and stormwater flows to the surface water. If equivalent erosion and sediment controls are used, rationale for using equivalent controls must be provided in the SWPPP.

If working within 100 feet of a surface water listed as impaired for sediment, suspended solids or turbidity, a 100 foot natural buffer or equivalent sediment and erosion controls must be provided. If equivalent erosion and sediment controls are to be used, rationale for using equivalent controls must be provided in the SWPPP.

15. If the permittee(s) intend to use chemical treatment for sediment removal, they must be used in accordance with the manufacturer's specifications. Treatment chemicals must be selected appropriately for the anticipated soil particle size and characteristics of the stormwater (pH, turbidity, flow rate of stormwater flowing into the chemical treatment system, etc.). A description of the chemical treatment process must be included in the SWPPP.

    a. To ensure selection and management of chemicals minimize the potential for harmful effects in the discharge, the permittee shall provide a written request to the department for review and approval. Additional monitoring and reporting may be required as a condition for the approval to discharge.

       A request to discharge chemically treated water shall include all of the following information and be provided sixty (60) days prior to use:

       i. Material Safety Data Sheet/Safety Data Sheet (MSDS/SDS);
       ii. Proposed water additive discharge concentration;
       iii. Discharge frequency (i.e., number of hours per day and number of days per year);
       iv. Monitoring point for product discharge;
       v. Type of removal treatment, if any, that the water additive receives prior to discharge;
       vi. Product function (e.g., coagulant, flocculant, etc.);
       vii. A 48-hour LC_{50} or EC_{50} for a North American freshwater planktonic crustacean (*Ceriodaphnia* sp., *Daphnia* sp., or *Simocephalus* sp.); and
       viii. Results for a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean).

    b. Discharges from the chemical treatment of stormwater must not cause a violation of the standards of quality for waters of the state (N.D.A.C. § 33-16-02.1). The discharge must meet the dewatering or basin draining requirements provided in Part II(C)(3)(g) of this permit.

16. Minimize the duration of exposed soils on steep slopes.

B. Maintenance Requirements for Erosion and Sediment Controls

1. All erosion prevention and sediment control BMPs must be inspected to ensure integrity and effectiveness. All nonfunctional BMPs must be repaired, replaced, maintained or supplemented with functional BMPs. If a nonfunctioning BMP is supplemented, the nonfunctional BMP shall be removed. Corrective actions must be made prior to the next anticipated rainfall event or within 24 hours of discovery (whichever comes first), or as soon as field conditions allow access. Documentation must be provided in the maintenance records if field conditions do not allow access along with a plan of action for performing maintenance activities.

   Permittee(s) must investigate and comply with the following inspection and maintenance requirements:

   a. All control devices similar to, and including, silt fence or fiber rolls must be repaired, replaced, maintained or supplemented when they become nonfunctional (torn from posts, visible tears, etc.). Collected sediment must be removed as it approaches 1/2 of the above ground capacity of the control device.

   b. Fiber rolls must be replaced when 1/2 of the original above ground height of the device when it was installed has been lost as a result of flattening or other damage.

c. Sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 1/2 the storage volume. Drainage and removal must be completed within 72 hours of discovery, or as soon as field conditions allow access. Documentation must be provided in the maintenance records if field conditions do not allow access along with a plan of action for performing maintenance activities.

d. Maintenance and cleaning of inlet protection devices must be performed when sediment accumulates, the filter becomes clogged, and/or performance is compromised.

2. Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of sediment deposited by erosion. Permittees must remove all deltas and sediment deposits in surface waters, drainage ways, catch basins, and other drainage systems. Areas where sediment removal results in exposed soil must be stabilized. Removal and stabilization must take place immediately, but no more than, seven (7) calendar days after the discovery unless precluded by legal, regulatory or physical access constraints. Permittees shall use all reasonable efforts to obtain access. If precluded, removal and stabilization shall take place immediately, but no more than, seven (7) calendar days after obtaining access. Permittees are responsible for contacting all local, regional, state, and federal authorities, and receiving any applicable permits prior to conducting any work.

3. Vehicle tracking of sediment from the site must be minimized by BMPs. This may include having a designated egress with aggregate surfacing from the site or by designating off-site parking. Permittees are responsible for (or making the arrangements for) street sweeping and/or scraping if BMPs are not adequate to prevent sediment from being tracked onto the street from the site.

   Construction site egress locations must be inspected for evidence of sediment being tracked offsite by vehicles or equipment onto paved surfaces. Accumulations of tracked and deposited sediment must be removed from all off-site paved surfaces by the end of the work day, shift or if applicable, within a shorter time specified by local authorities or the department.

4. If sediment escapes the construction site, off-site accumulations of sediment must be removed in a manner and at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in streets could be washed into storm sewers by the next rain event and/or pose a safety hazard to users of public streets).

5. Vegetative buffers must be inspected for proper distribution of flows, sediment accumulation and signs of rill formation. If a buffer becomes silt covered, contains rills, or is otherwise rendered ineffective, other control measures shall be implemented. Eroded areas shall be repaired and stabilized within 24 hours of discovery, or as soon as conditions allow access. Documentation must be provided in the maintenance records if field conditions do not allow access along with a plan of action for performing maintenance activities.

C. Operational Controls

1. Properly handle construction debris and waste materials.

   a. Debris and waste must be handled appropriately until disposal. Litter and debris shall be collected and stored to reduce the potential for wind and water to carry the materials off-site or leachate discharging from a site. Collected material shall be taken to the appropriate facility for disposal or recycling.

   b. Liquid or soluble materials including oil, fuel, paint and any other hazardous substances must be properly stored, to prevent spills, leaks or other discharges. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of liquid or soluble material must be in compliance with applicable regulations.

2. Wash water containments must be cleaned out (solids and liquid) before 80 percent of storage capacity is attained.

3. Best management practices used in surface waters must be cleaned immediately upon removal from surface waters to prevent the transfer of aquatic nuisance species.

APPENDIX B

Construction Mitigation and Restoration Plan and Construction Typicals

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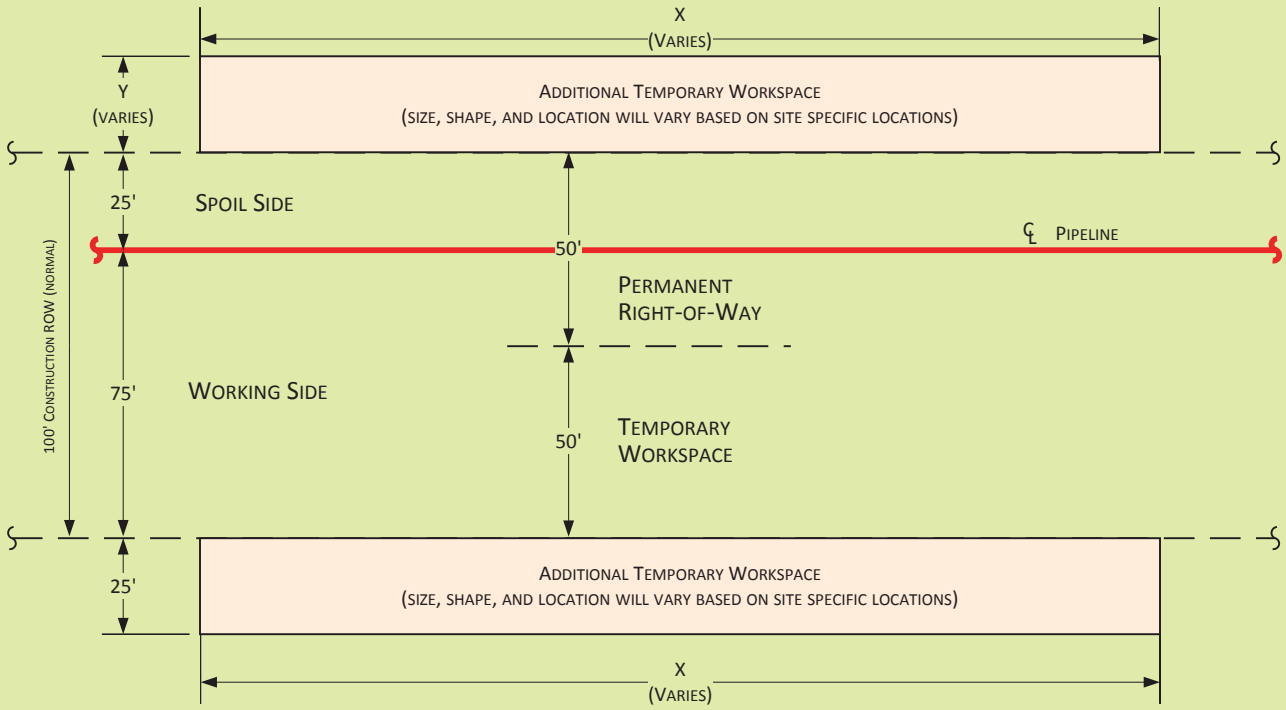


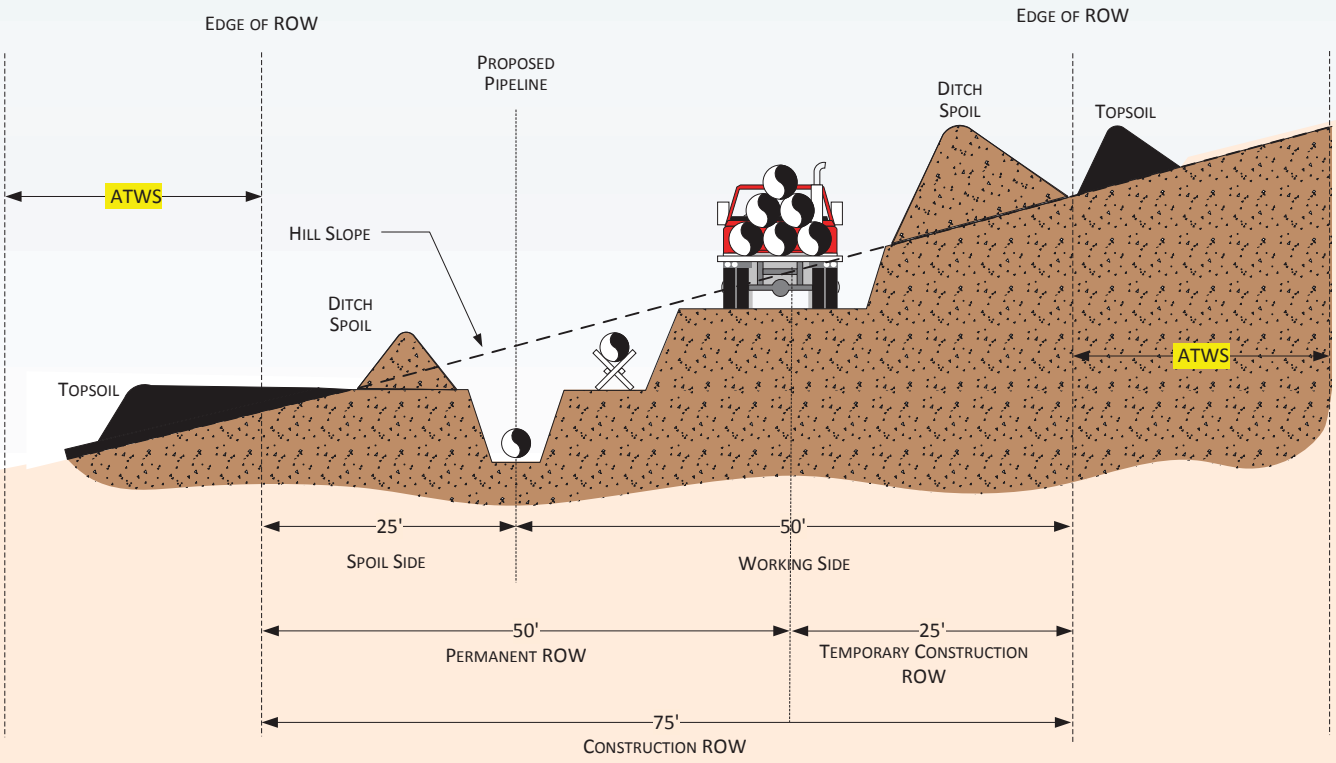
For environmental review purposes only.

ONEOK

Figure 1
Typical Construction Layout

ERM

MPLS: M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\	Fig_1_Construction_ROW.vsd	Scale: NTS	Revised: 8/20/2018	Drawn By: GIS



NOTES:

1. GRADE TO BE RESTORED AS NEAR AS PRACTICABLE TO PRECONSTRUCTION CONDITIONS DURING RESTORATION.

For environmental review purposes only.

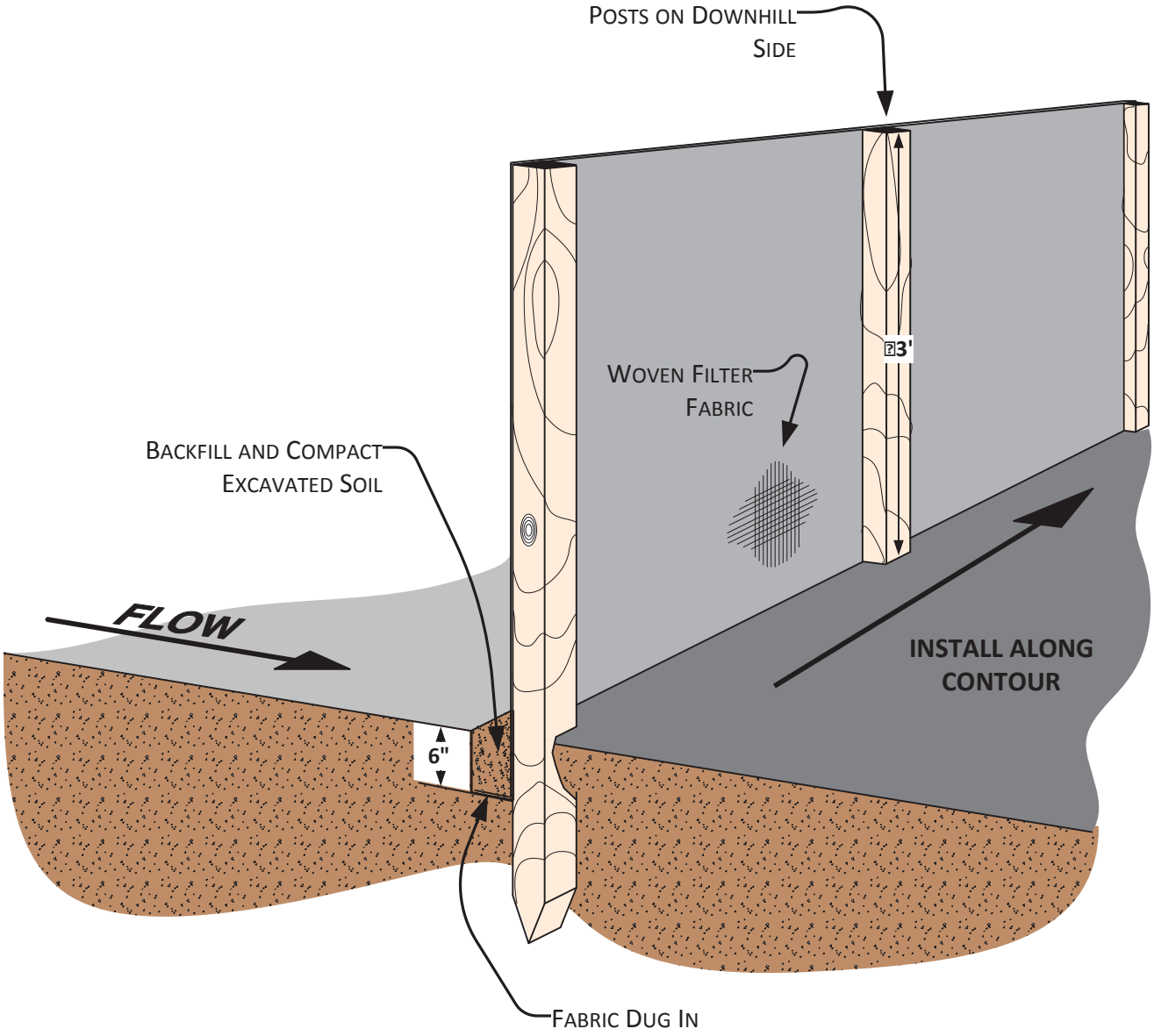
ONEOK

Figure 2

Typical Construction ROW
on Sloping Terrain

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_2_Typical_Construction_ROW_Sloping Terrain.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting



For environmental review purposes only.

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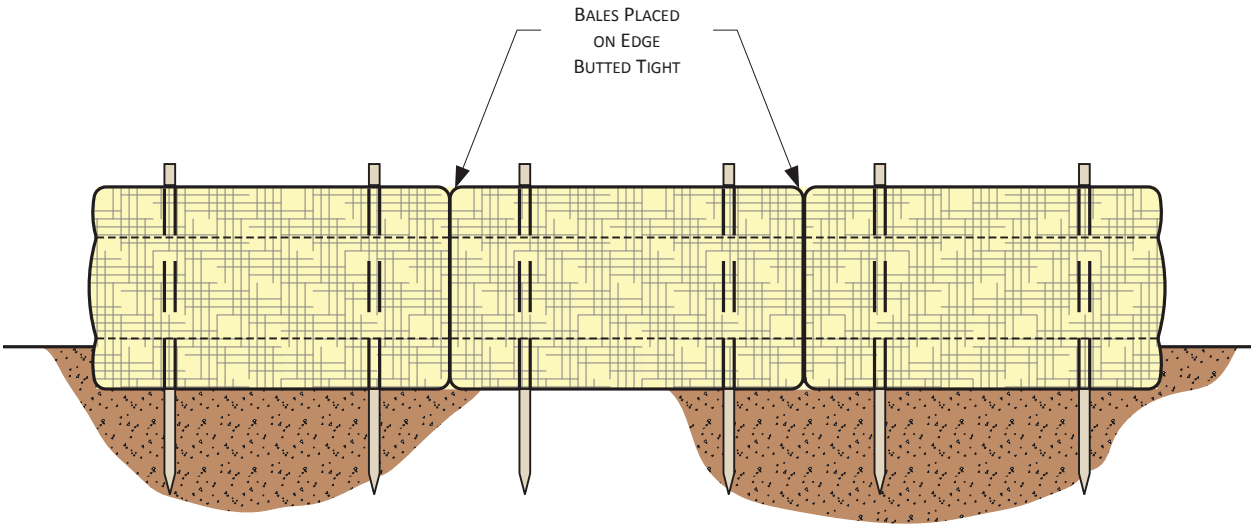
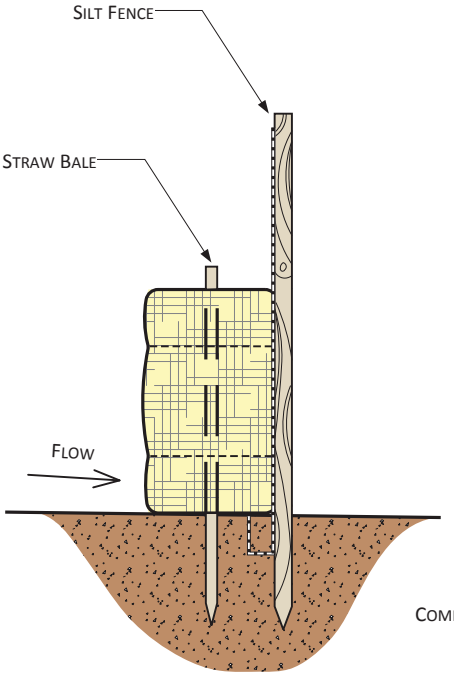
Figure 3

Typical Silt Fence Installation
(OKS-7901-ENV-01)

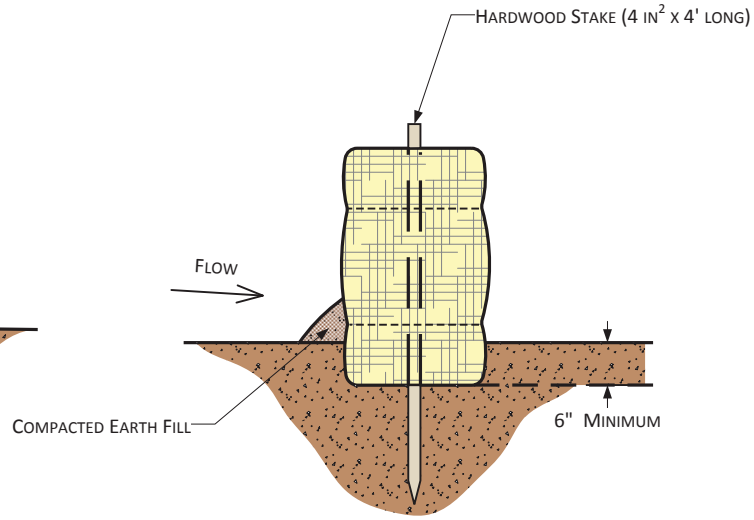
ERM

M:Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_3_Silt_Fence_Installation.vsd	Scale: NTS	Date: 5/20/2007	Revised: 08/17/2018	Drawn By: AGPeterson





Straw Bales & Silt Fence



Straw Bales Only

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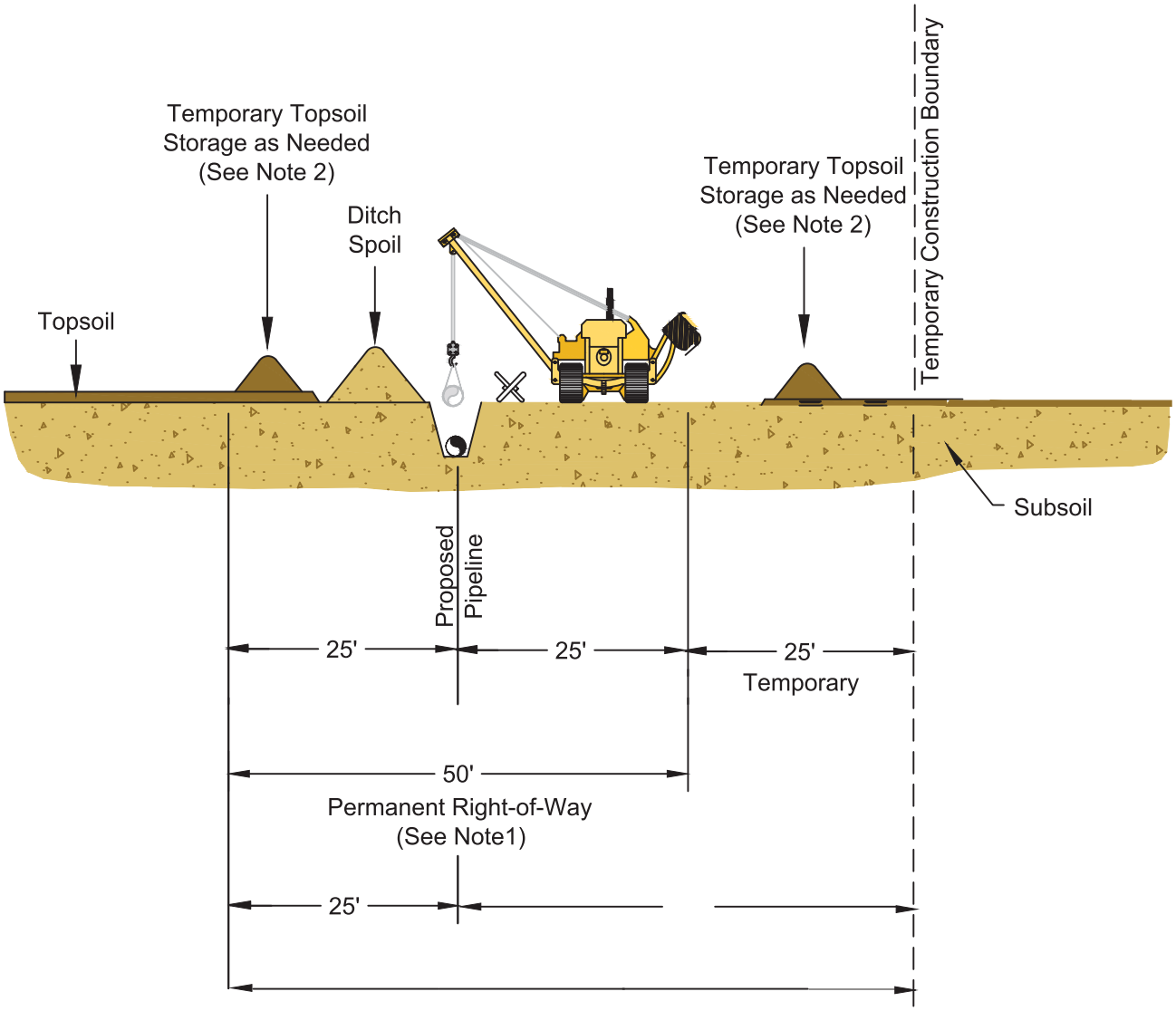
Figure 4

Typical Straw Bale Installation
(OKS-7901-ENV-02)

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_4_Typical_Straw_Bale.vsd	Scale: NTS	Date: 5/20/2007	Revised: 08/17/2018	Drawn By: AGPeterson



Notes:

1. Construction right-of-way will typically be 75 feet wide. The spoil side will be approximately 25 feet wide. The working side will be 50 feet wide.

2. This drawing reflects "Full Right of Way " topsoil stripping procedure. Stockpile topsoil separately from ditch spoil as shown or in other configurations approved by the company.

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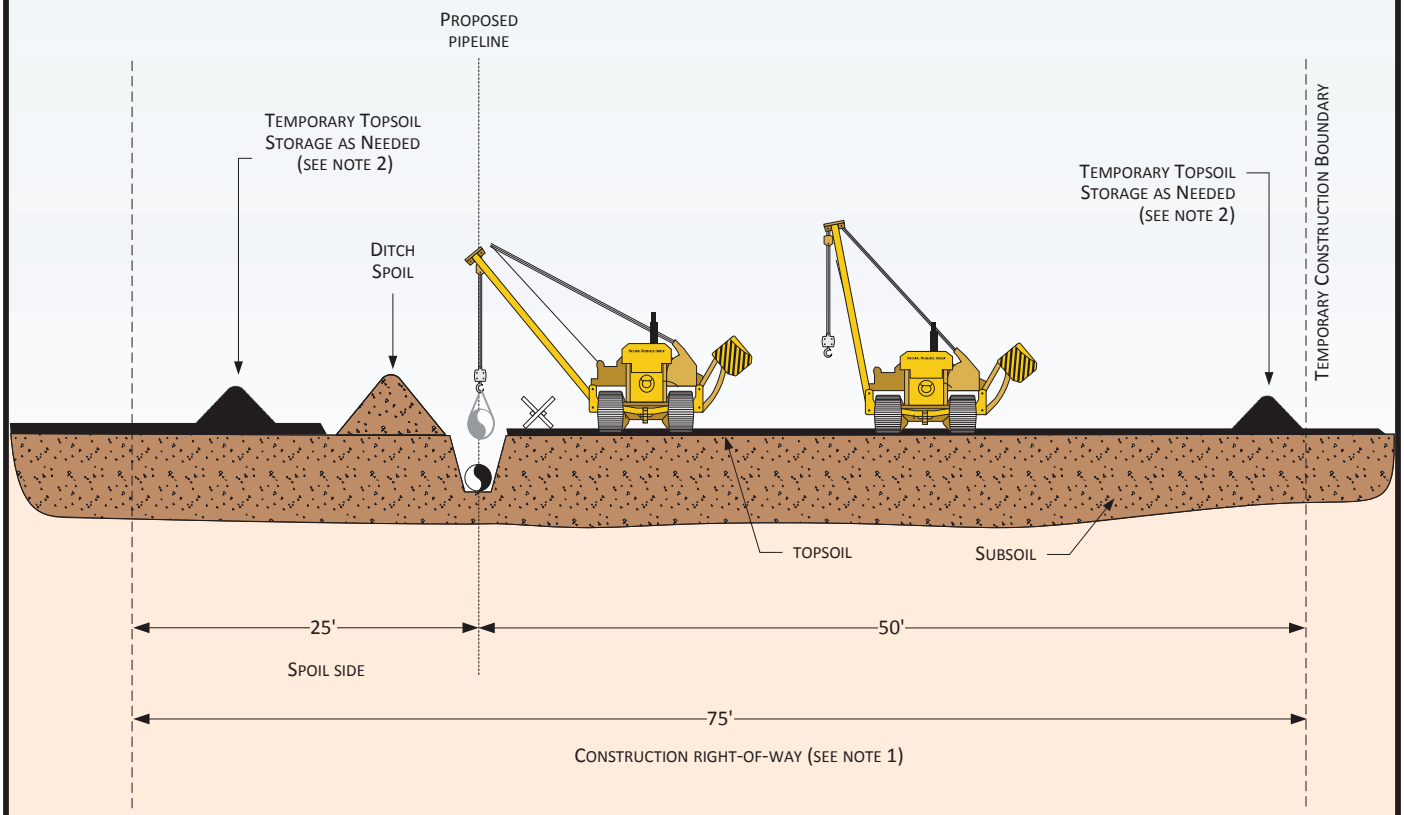
Figure 5
Typical Topsoil Segregation Trench
Right-of-Way
(OKS-7901-CONST-01c)

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_5_Typical_Topsoil_Segregation.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



PROFILE

NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75' WIDE. THE SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE. THE WORKING SIDE WILL BE 50' WIDE.
2. THIS DRAWING REFLECTS "DITCH PLUS SPOIL" TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY.

Figure 6

Typical Topsoil Segregation
Ditch Plus Spoil

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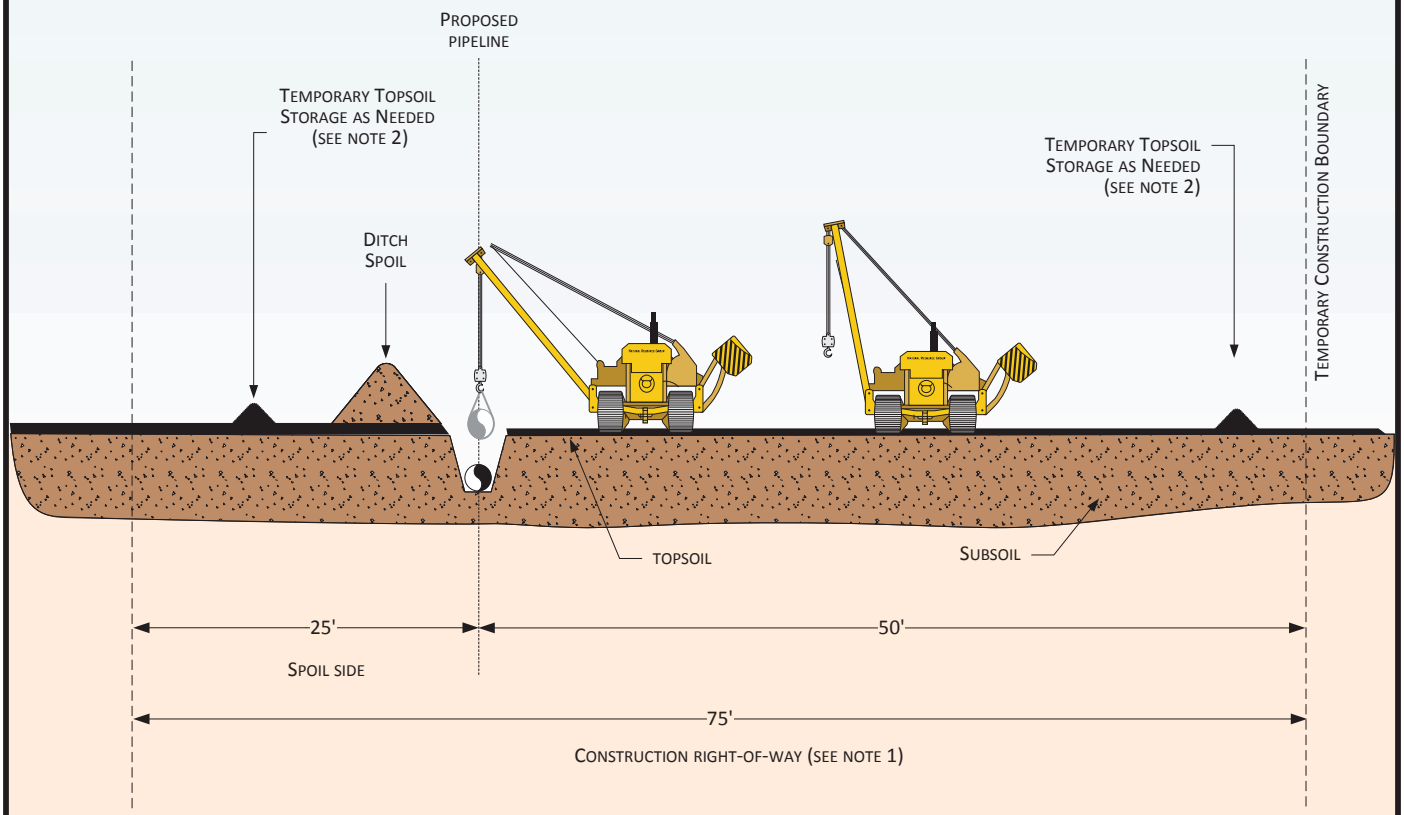
ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_6_Typical_Topsoil_Segregation.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



PROFILE

NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75' WIDE. THE SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE. THE WORKING SIDE WILL BE 50' WIDE.
2. THIS DRAWING REFLECTS "TRENCH LINE ONLY" TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY.

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Figure 7

Typical Topsoil Segregation
Trench Line Only

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_7_Typical_Topsoil_Segregation.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

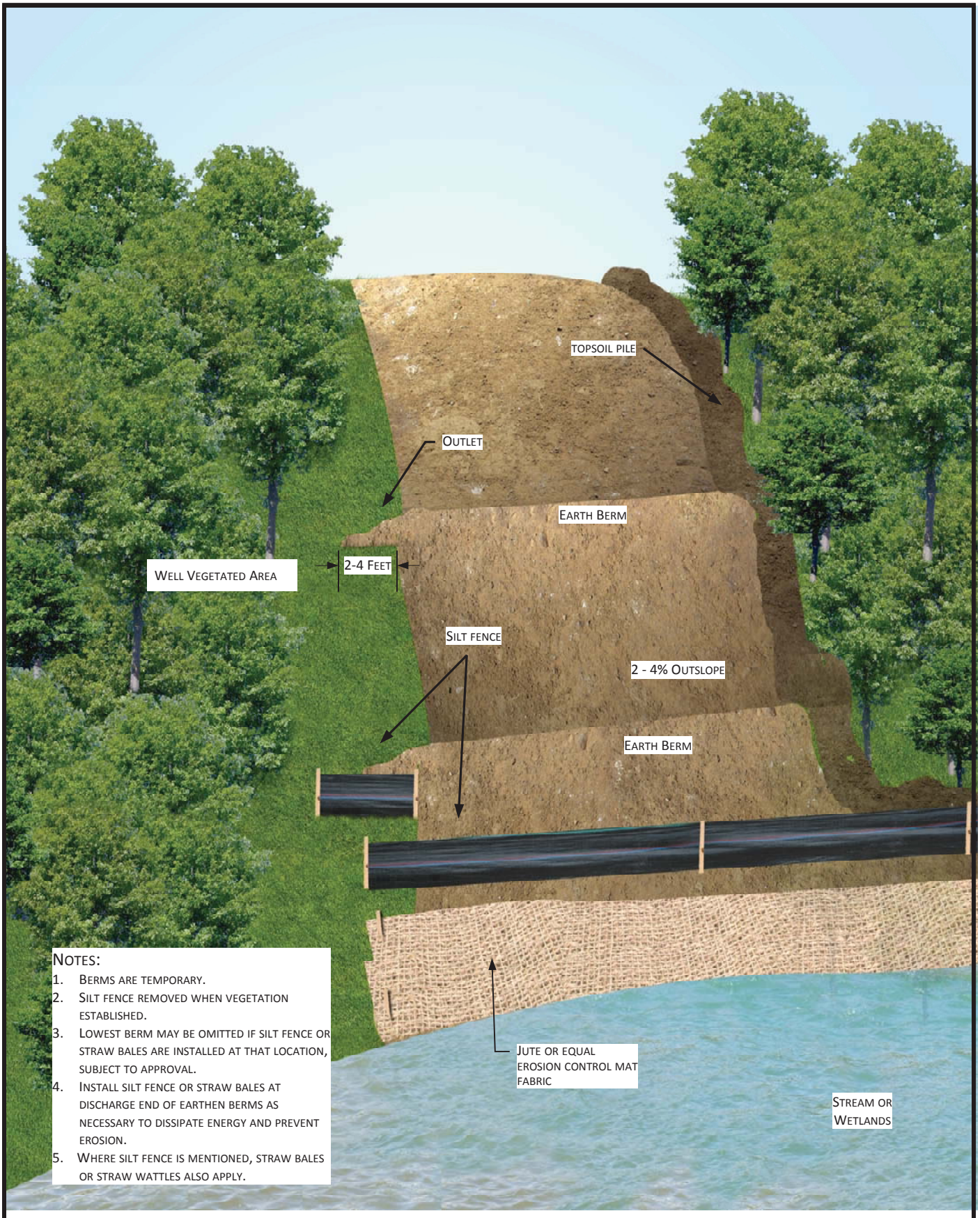


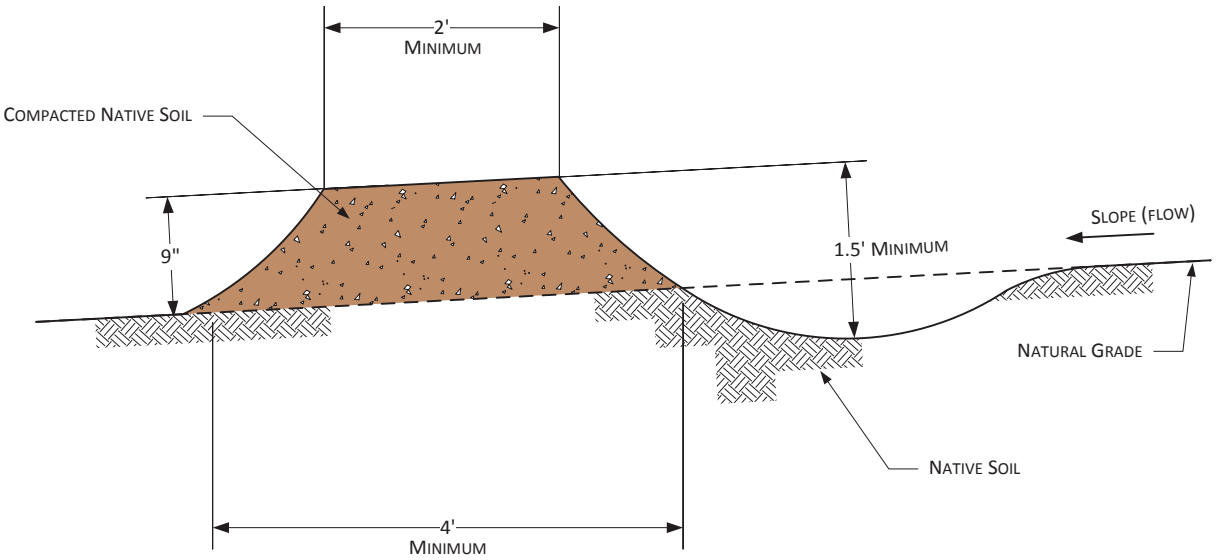
Figure 8

Typical Temporary Berms
Perspective View

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_8_Berms_Perspective_View.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



NOTES

1. BERMS SHALL BE CONSTRUCTED WITH 2 TO 4 PERCENT OUTSLOPE.
2. BERMS SHALL BE OUTLETED TO WELL VEGETATED STABLE AREAS, SILT FENCES, STRAW BALES OR ROCK APRONS.
3. BERMS SHALL BE SPACED AS DESCRIBED IN CONSTRUCTION SPECIFICATIONS.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

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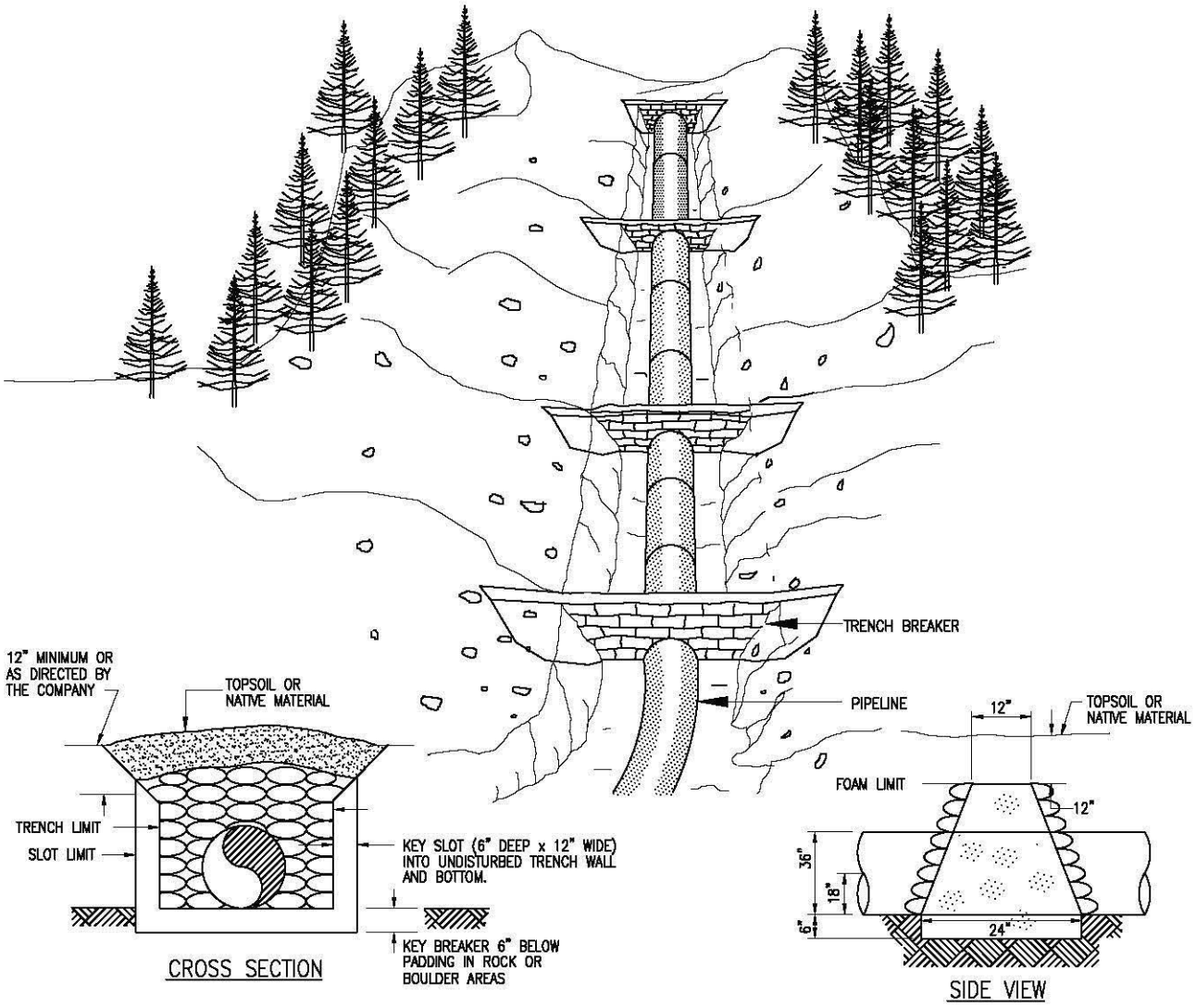
Figure 9

Typical Temporary or Permanent Berms
Elevation View

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_9_Berms_Elevation_View.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



NOTES:

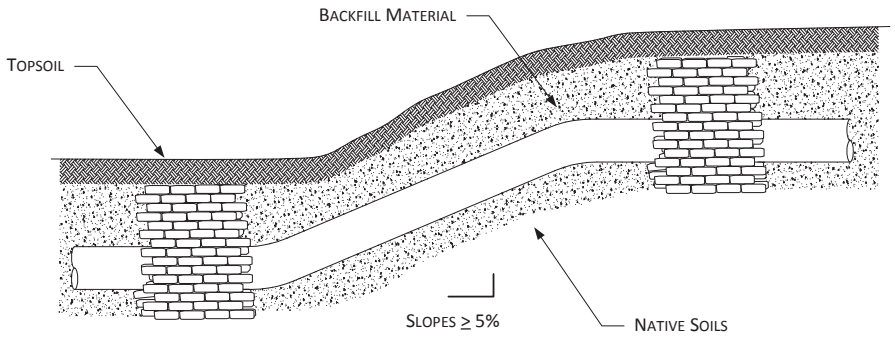
1. TRENCH BREAKERS SHALL BE INSTALLED:
   - ON SLOPES ALONG THE TRENCH LINE WHERE THE NATURAL DRAINAGE PATTERN, PROFILE, AND TYPE OF BACKFILL MATERIAL MAY RESULT IN LOSS OF BACKFILL MATERIAL OR ALTERATION OF THE NATURAL PATTERN;
   - AT THE BASE OF SLOPES ADJACENT TO WATERBODIES AND WETLANDS;
   - WHERE NEEDED TO AVOID DRAINING A WETLAND;
   - ON UPLAND SLOPES, AT THE SAME SPACING AS SLOPE BREAKERS AND UP SLOPE OF SLOPE BREAKERS;
   - IN CULTIVATED LAND AND RESIDENTIAL AREAS WHERE PERMANENT SLOPE BREAKERS ARE NOT TYP. INSTALLED, AT THE SAME SPACING AS IF PERMANENT SLOPE BREAKERS WERE REQUIRED.
2. EACH SAND BAG SHALL BE OF DIMENSION 14"X26" AND SHALL BE WOVEN POLY SPECIFICATION. EACH BAG SHALL BE FILLED TO 20" HIGH WITH 3/8" CLEAN, WASHED, AND SCREENED SAND AND FILLED TO A MINIMUM OF 55LBS.
3. BREAKER SPACING AND CONFIGURATION MAY CHANGE AS DETERMINED BY COMPANY OR SIMILARLY QUALIFIED PROFESSIONAL.
4. ALL MATERIALS SHALL BE SUPPLIED BY CONTRACTOR.
5. INSTALL ONE TRENCH BREAKER UNDER EVERY SLOPE BREAKER.

Figure 10

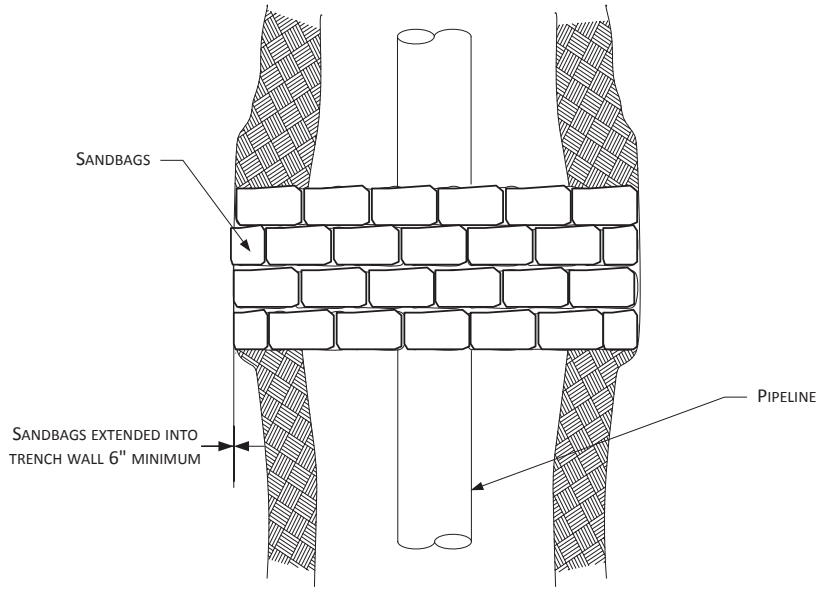
Typical Trench Breaker Perspective View

(OKS-7901-CONST-07)

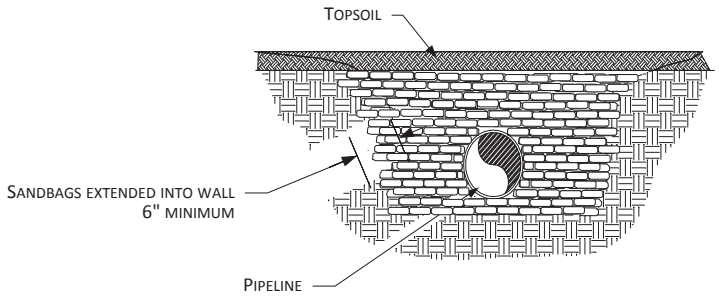
M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_5_Typical_Topsoil_Segregation.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



PROFILE VIEW
(NOT TO SCALE)



PLAN VIEW
(NOT TO SCALE)



FACE VIEW
(NOT TO SCALE)

NOTES

1. BAGS WILL NOT BE FILLED WITH TOPSOIL
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS
3. STAGGER COURSES OF BAGS

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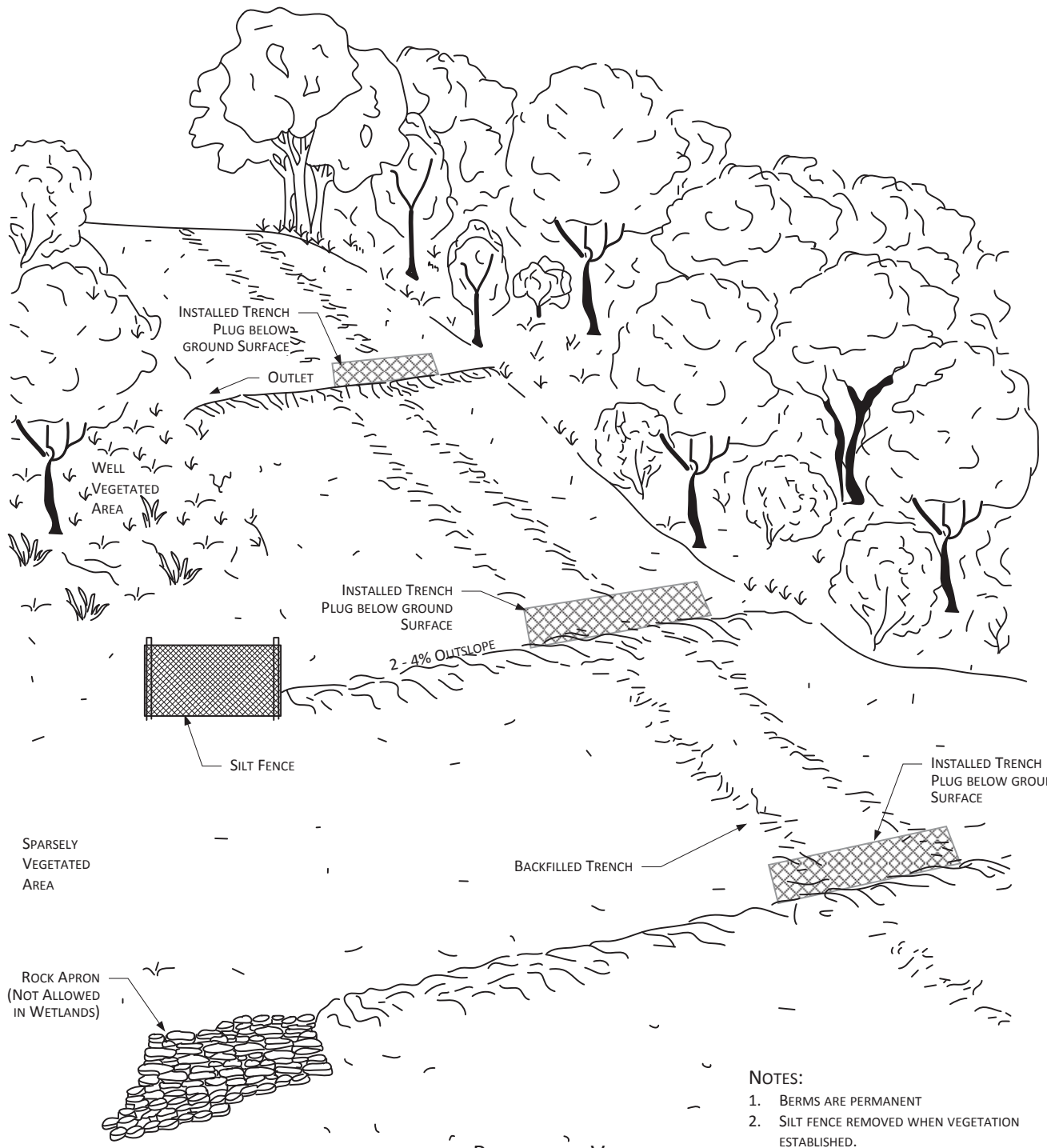
Figure 11

Typical Trench Breakers
Plan & Profile Views

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMPLLC_CMRP\Fig_11_Trench_Breaker_Plan_Profile_View.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting



Perspective View
(not to scale)

Slope %	Approximate Spacing (ft)
5-15	300
15-30	200
>30	<100

Notes:

1. Berms are permanent
2. Silt fence removed when vegetation established.
3. Lowest berm may be omitted if silt fence or straw bales are installed at that location, subject to approval.
4. Install silt fence or straw bales at discharge end of earthen berms as necessary to dissipate energy and prevent erosion.

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Figure 12

Permanent Slope Breakers
Perspective View

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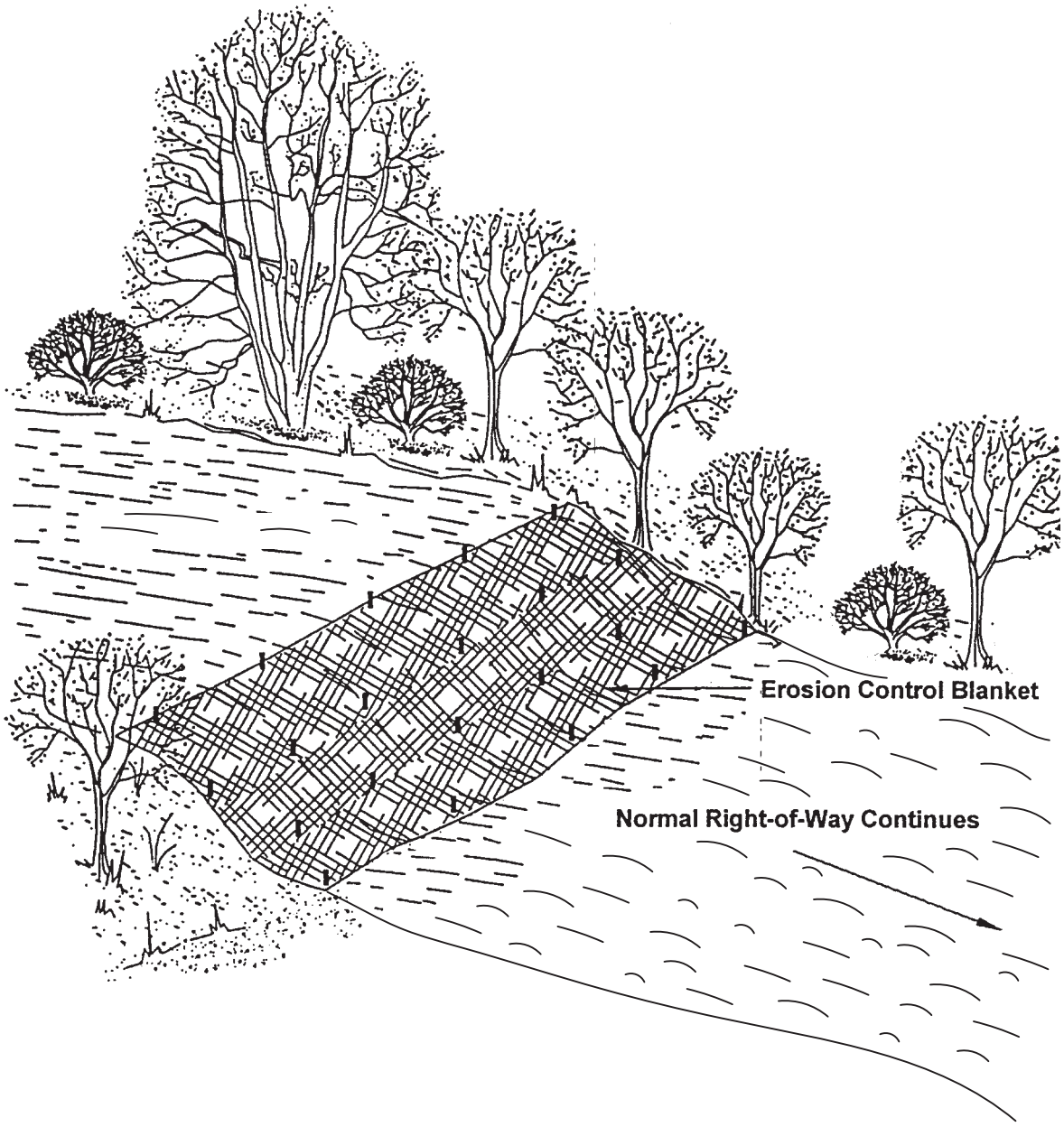
ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_12_Slope_Breakers_Perspective_View.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



NOTES

1. INSTALL EROSION CONTROL BLANKET AS PER MANUFACTURER'S SPECIFICATIONS.
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

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Figure 13

Erosion Control Blanket - Steep Slopes (≥30%)

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_13_Erosion_Control_Blanket.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

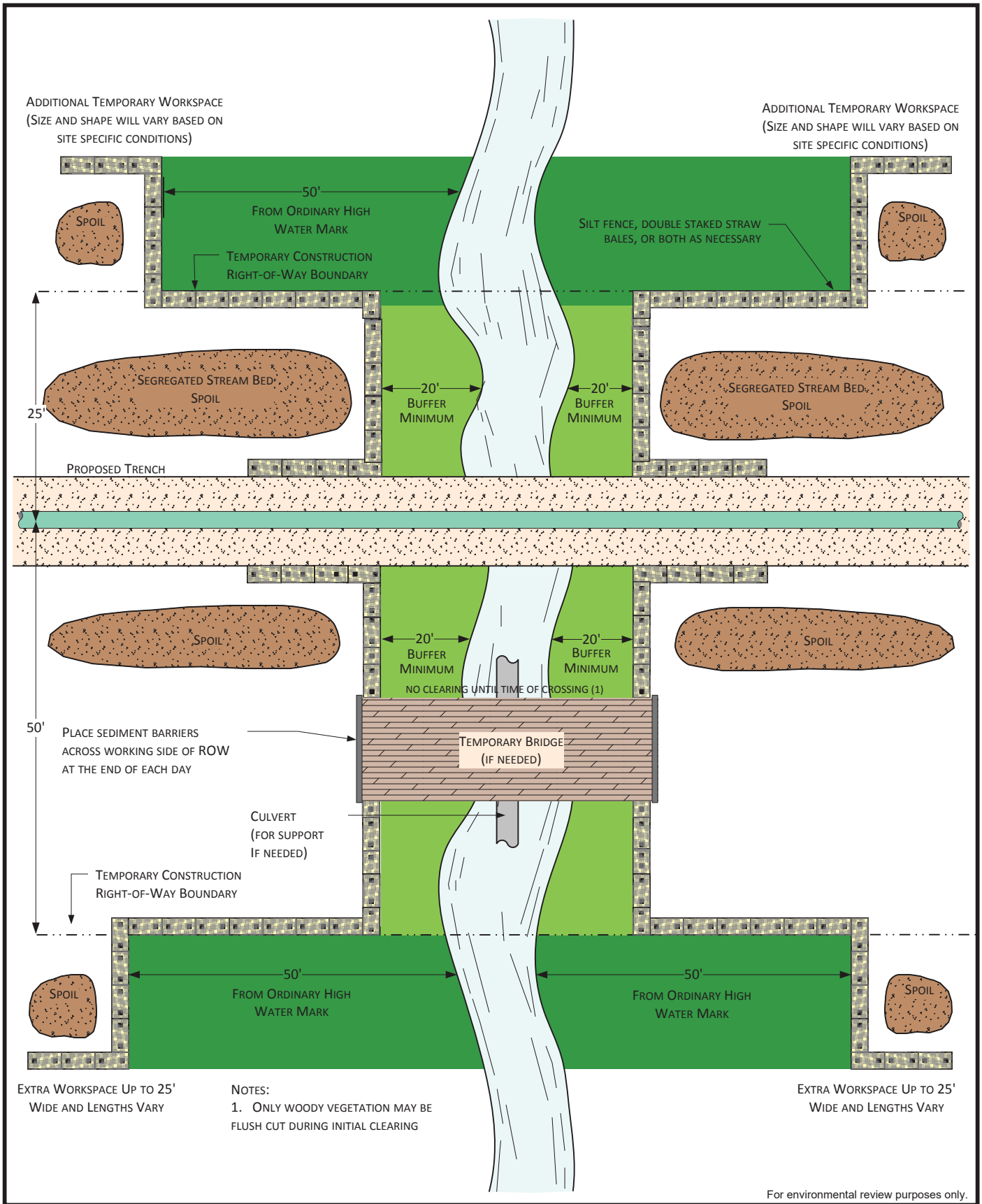

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Figure 14

Typical Waterbody Crossing
Open Cut - Wet Trench Method

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_14_Waterbody_Wet_Trench.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

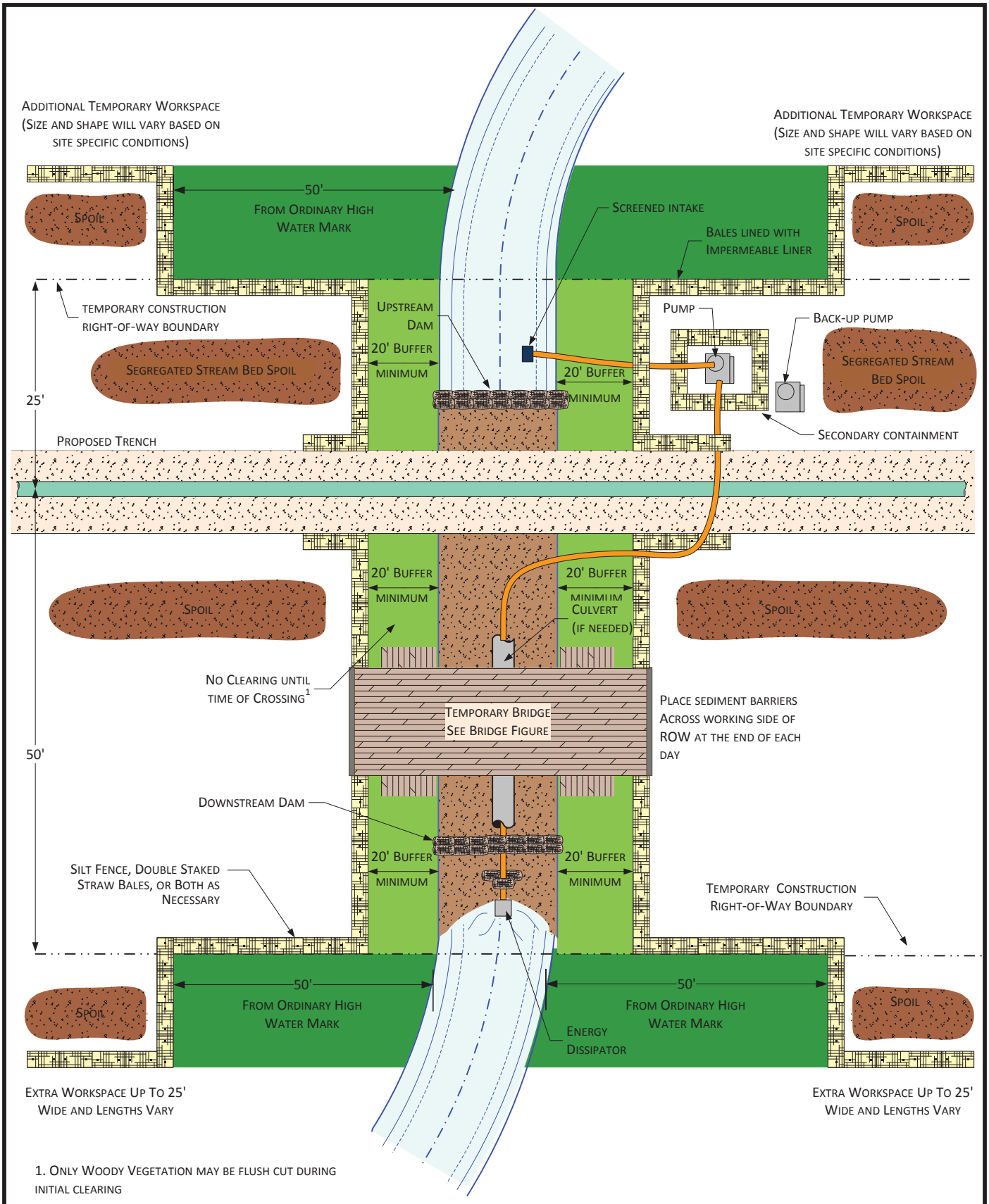
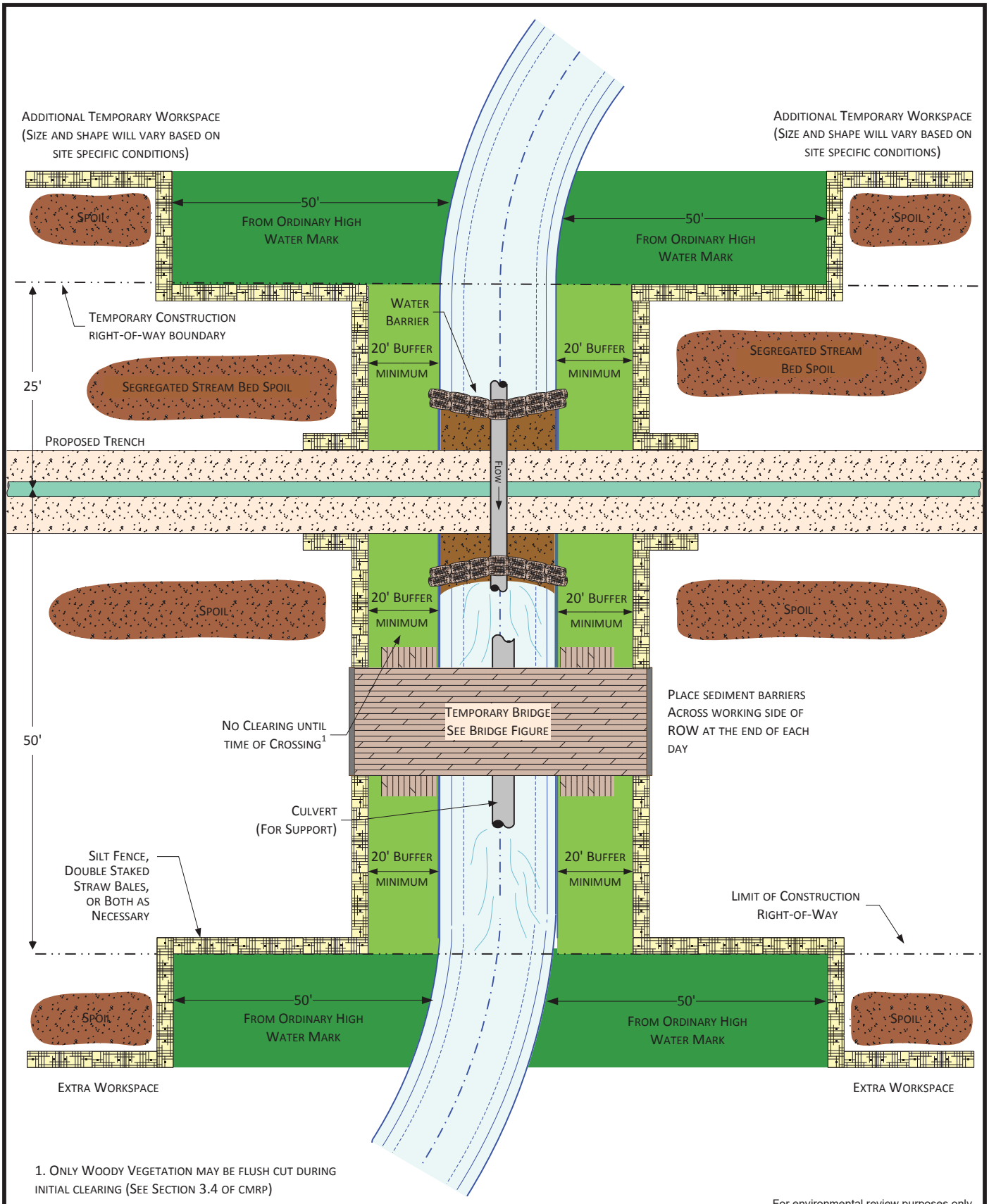


Figure 15
Typical Waterbody Crossing
Dam and Pump Method

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_15_Waterbody_Dam_Pump.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



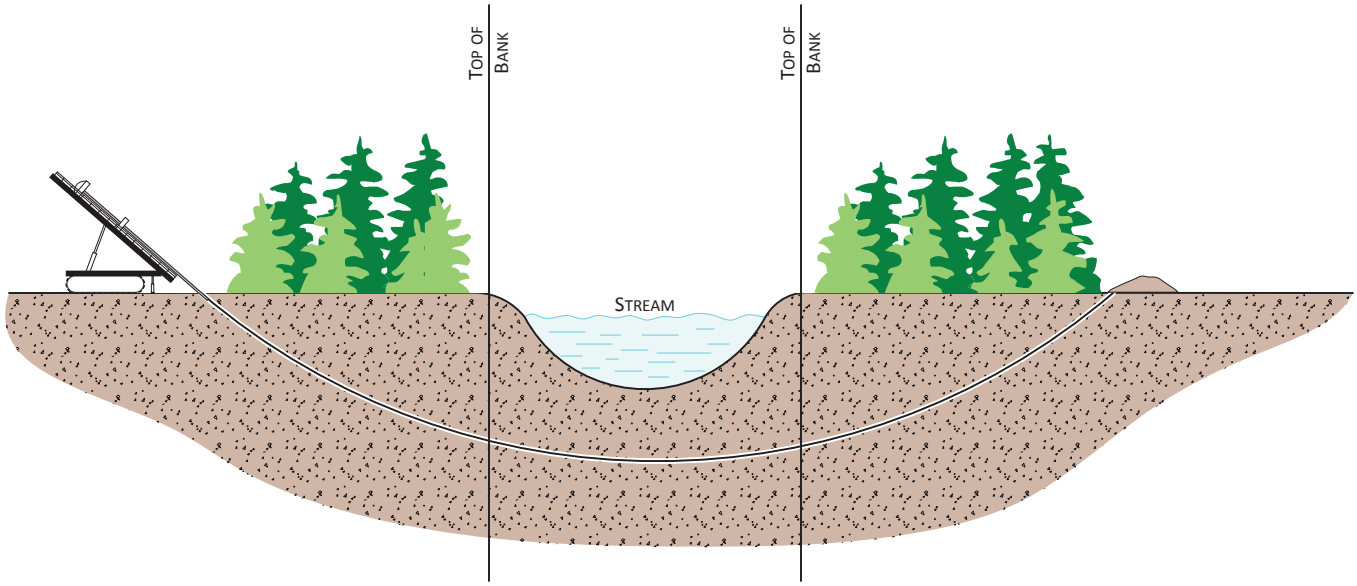
For environmental review purposes only.

Figure 16
Typical Waterbody Crossing
Flume Method

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMPR\Fig_16_Waterbody_Flume.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting



For environmental review purposes only.

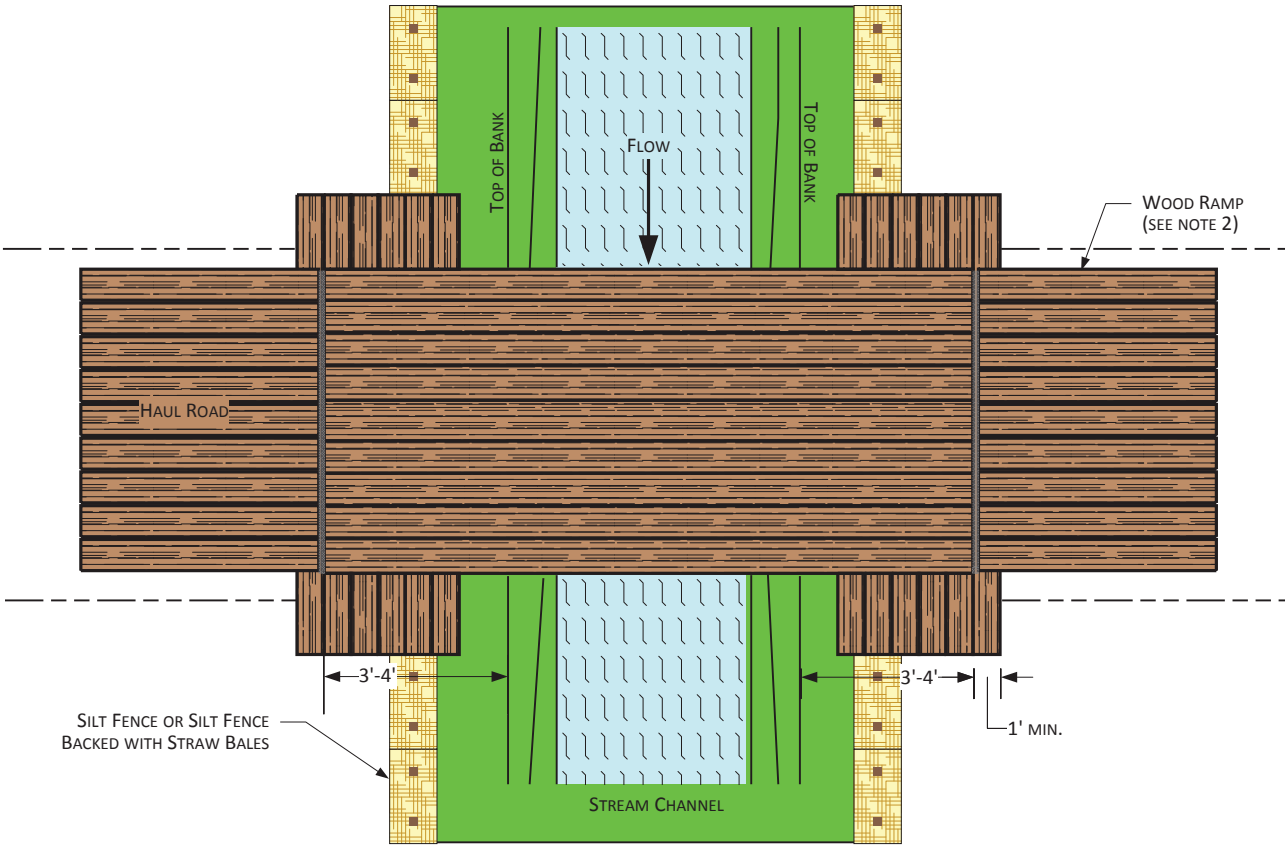
Figure 17
Typical Waterbody Crossing
Directional Drill Method

ONEOK

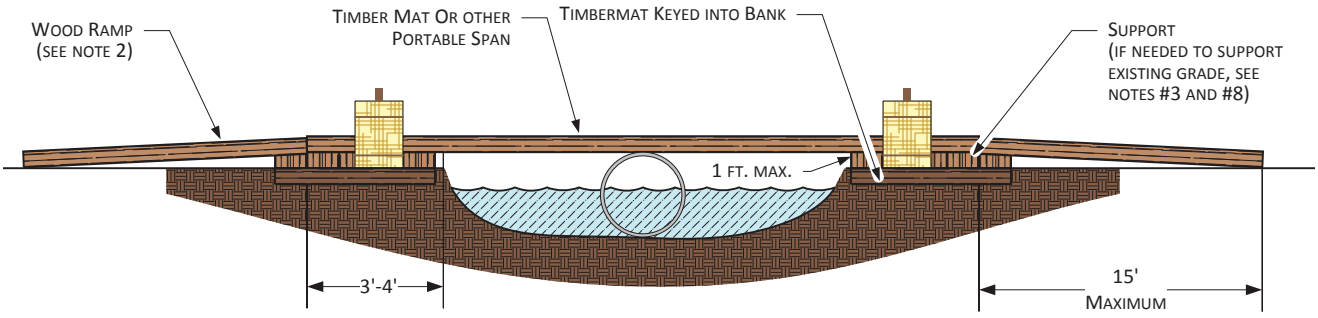
ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_17_Waterbody_Directional_Drill.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

Plan View



Profile View



Notes:

1. Inspect bridge opening periodically and following rainfalls of over ½". Remove any debris restricting flow and deposit it at an upland site outside of floodplain.
2. If physical circumstances prohibit wood or metal ramps, earthen ramps may be used as approved.
3. Inspect bridge elevation so bridge remains supported above high bank and does not sink into bank.
4. The culvert support must be anchored to the stream bottom and may not be supported with fill.
5. The bridge must span from top of bank to top of bank.
6. Additional support must be added on top of bank and under span if initial support starts to settle.
7. Erosion and sedimentation control measures shall be inspected and maintained in accordance with the company's Environmental Mitigation Plan

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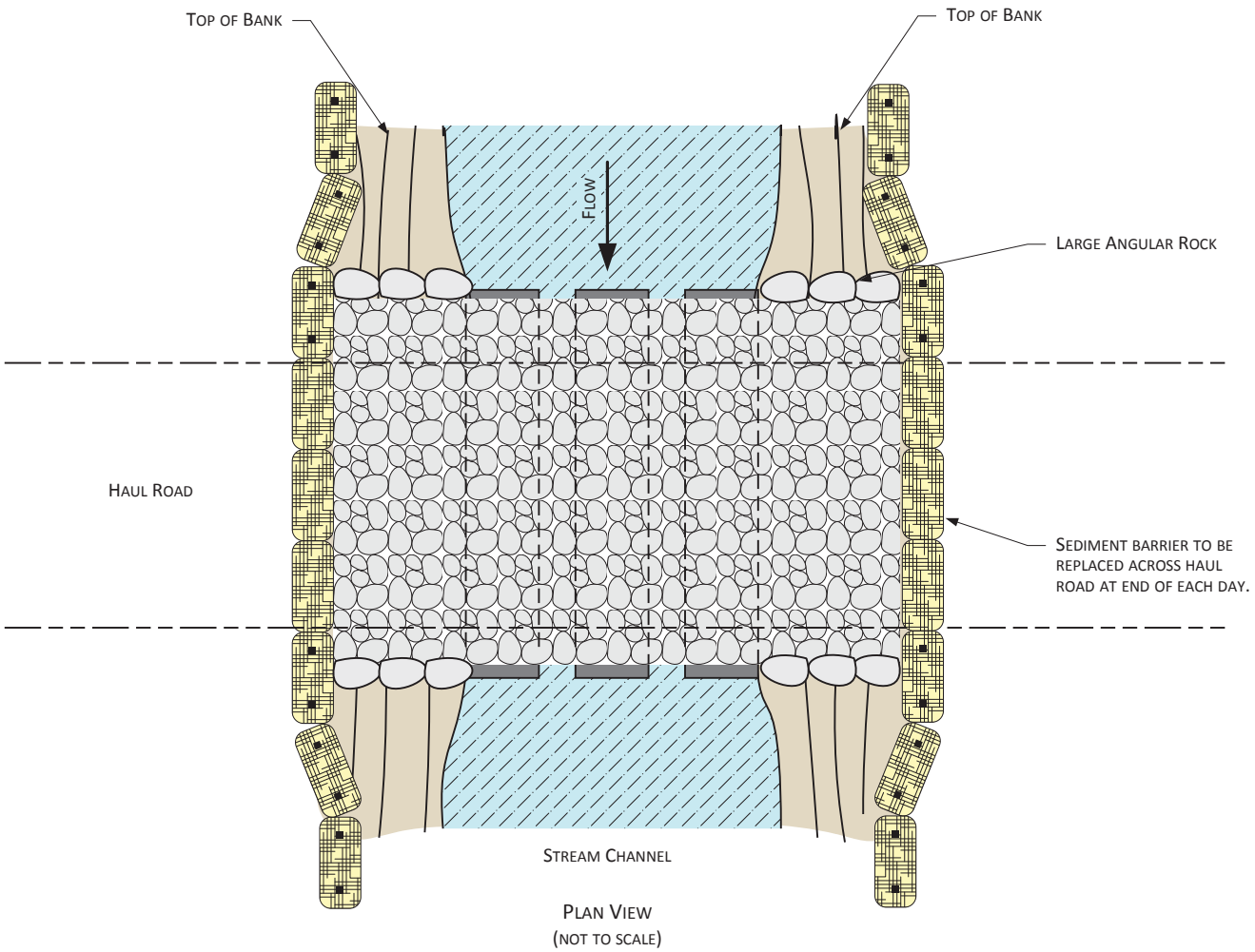
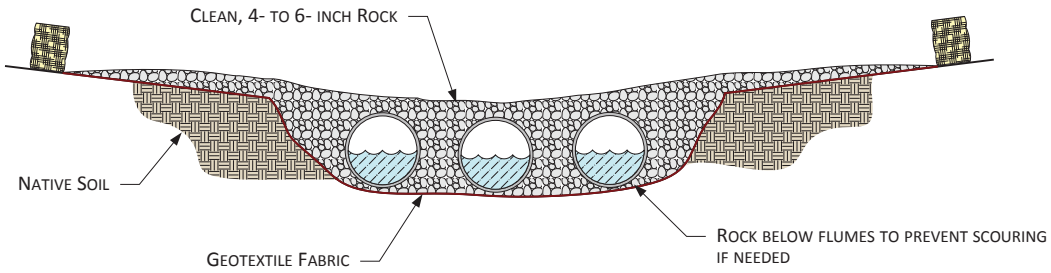
Figure 18

Typical Span Type Bridge
With or Without Instream Support
(OKS-7901-ENV-04)

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_18_Span_Type_Bridge.vsd	Scale: NTS	Date: 5/20/2007	Revised: 08/17/2018	Drawn By: AGPeterson





NOTES:

1. STEEL FLUME PIPE(S) SIZED TO ALLOW FOR STREAM FLOW AND EQUIPMENT LOAD.
2. STRAW BALES (OR EQUIVALENT) SHALL BE PLACED ACROSS BRIDGE ENTRANCE EVERY NIGHT.
3. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

For environmental review purposes only.

Figure 19

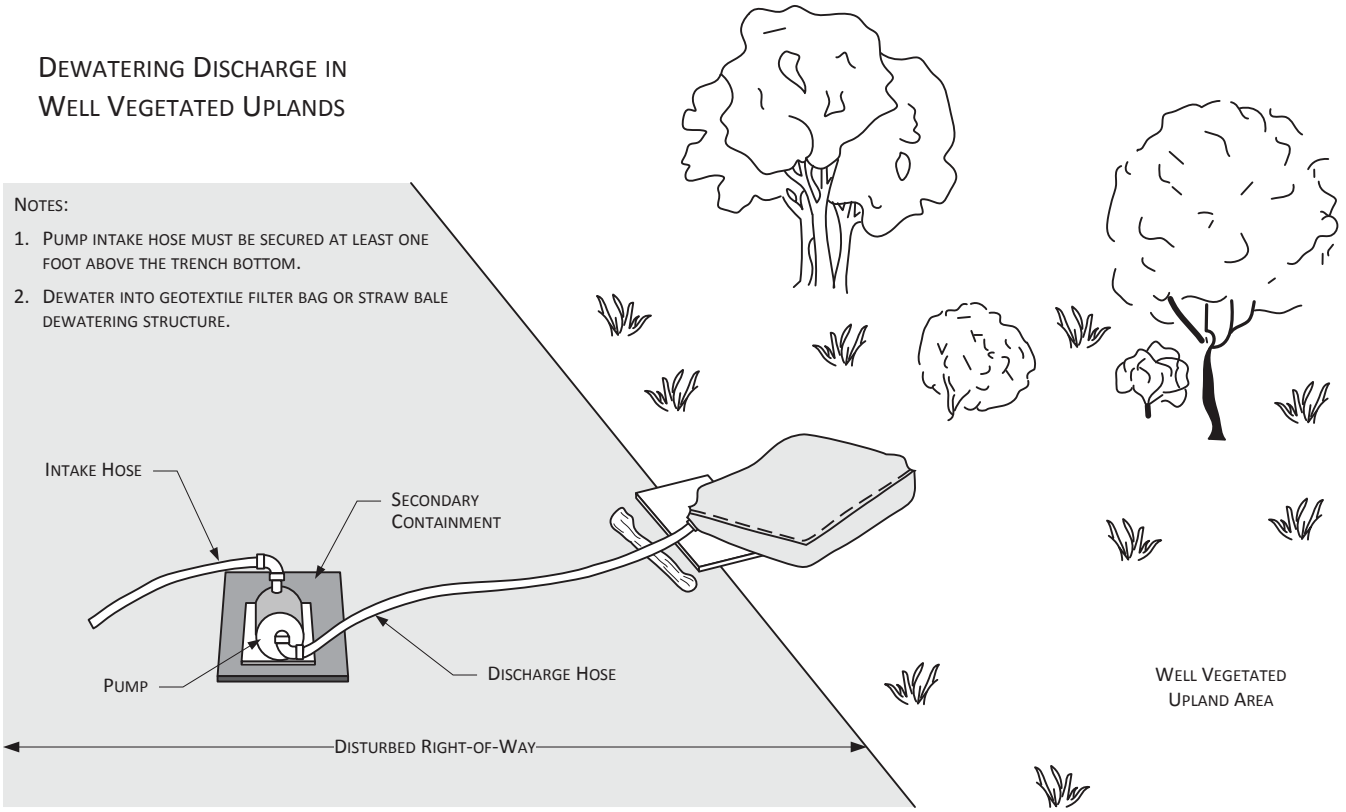
Typical Rock Flume Bridge
Method 4
(OKS-7901-ENV-03d)

ONEOK

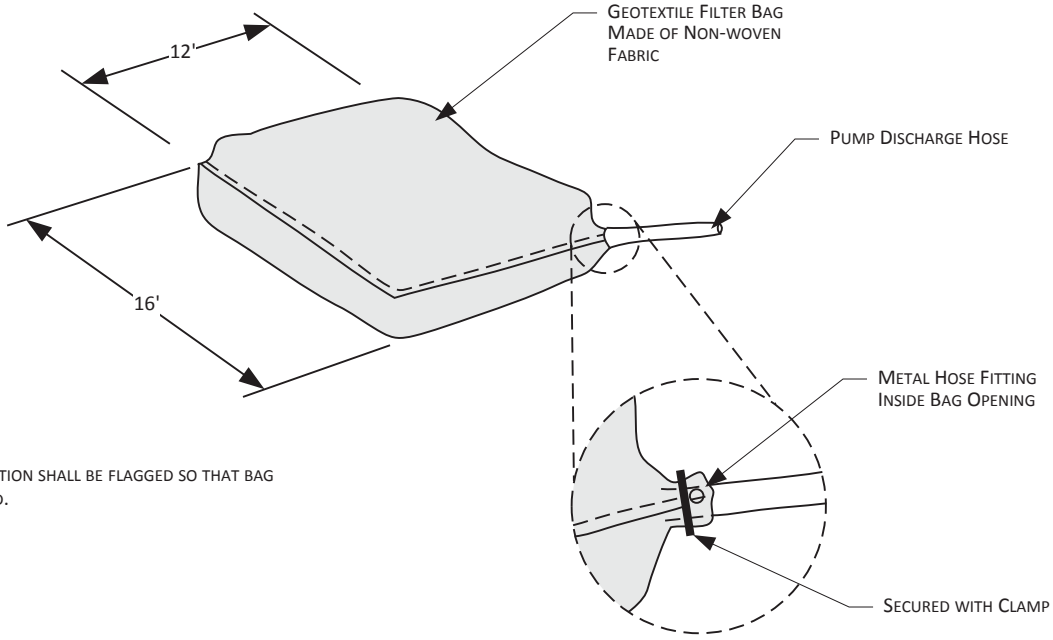
ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_19_Rock_Flume_Bridge.vsd	Scale: NTS	Date: 5/20/2007	Revised: 08/17/2018	Drawn By: AGPeterson

Dewatering Discharge in Well Vegetated Uplands



Geotextile Filter Bag



Note:

1. Filter bag location shall be flagged so that bag can be removed.

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Figure 20
Typical Dewatering Measures

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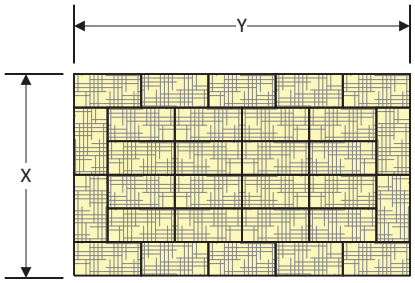
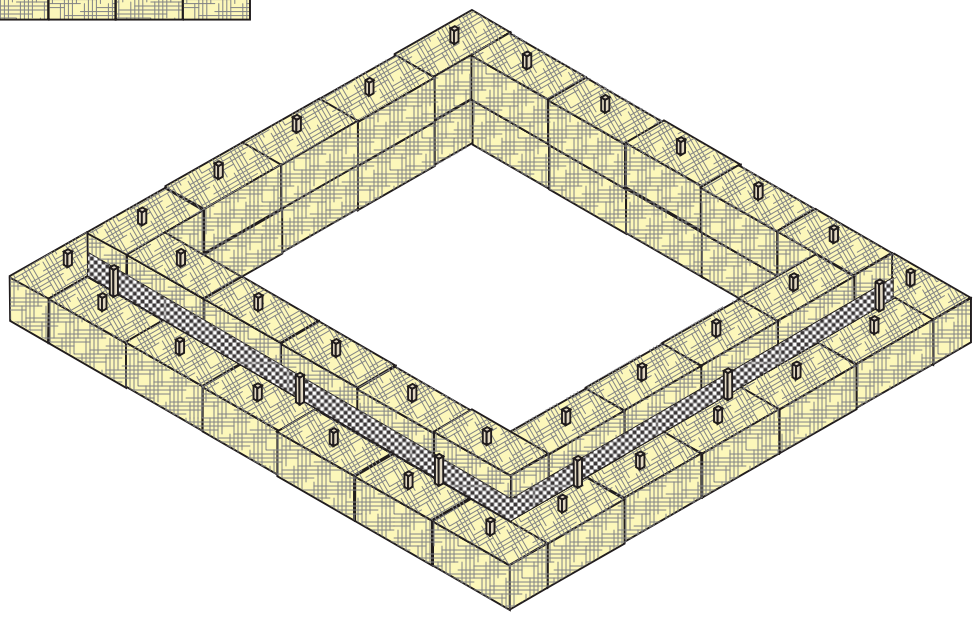
ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_20_Dewatering_Measures.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

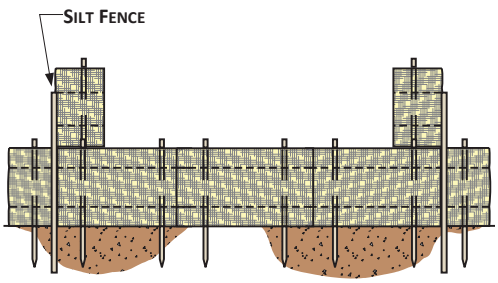


NOTES

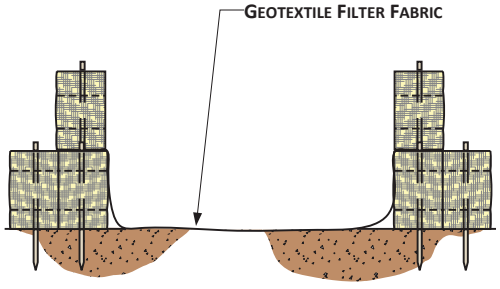
1. ARRANGE THE STRAW BALES TO THE X AND Y DIMENSIONS AS SPECIFICIED BELOW.
2. IF BOTTOM OF STRUCTURE IS NOT LINED WITH STRAW BALES (OPTION 1), LINE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC.



PERSPECTIVE VIEW



OPTION 1



OPTION 2

MINIMUM SUMP DIMENSIONS (FEET)		MAXIMUM PUMPING RATE
X	Y	GALLONS PER MINUTE
10	20	300
15	20	350
20	20	400
20	25	450
25	25	500
25	30	550
30	30	660

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Figure 21

Straw Bale Dewatering Structure
(OKS-7901-ENV-05)

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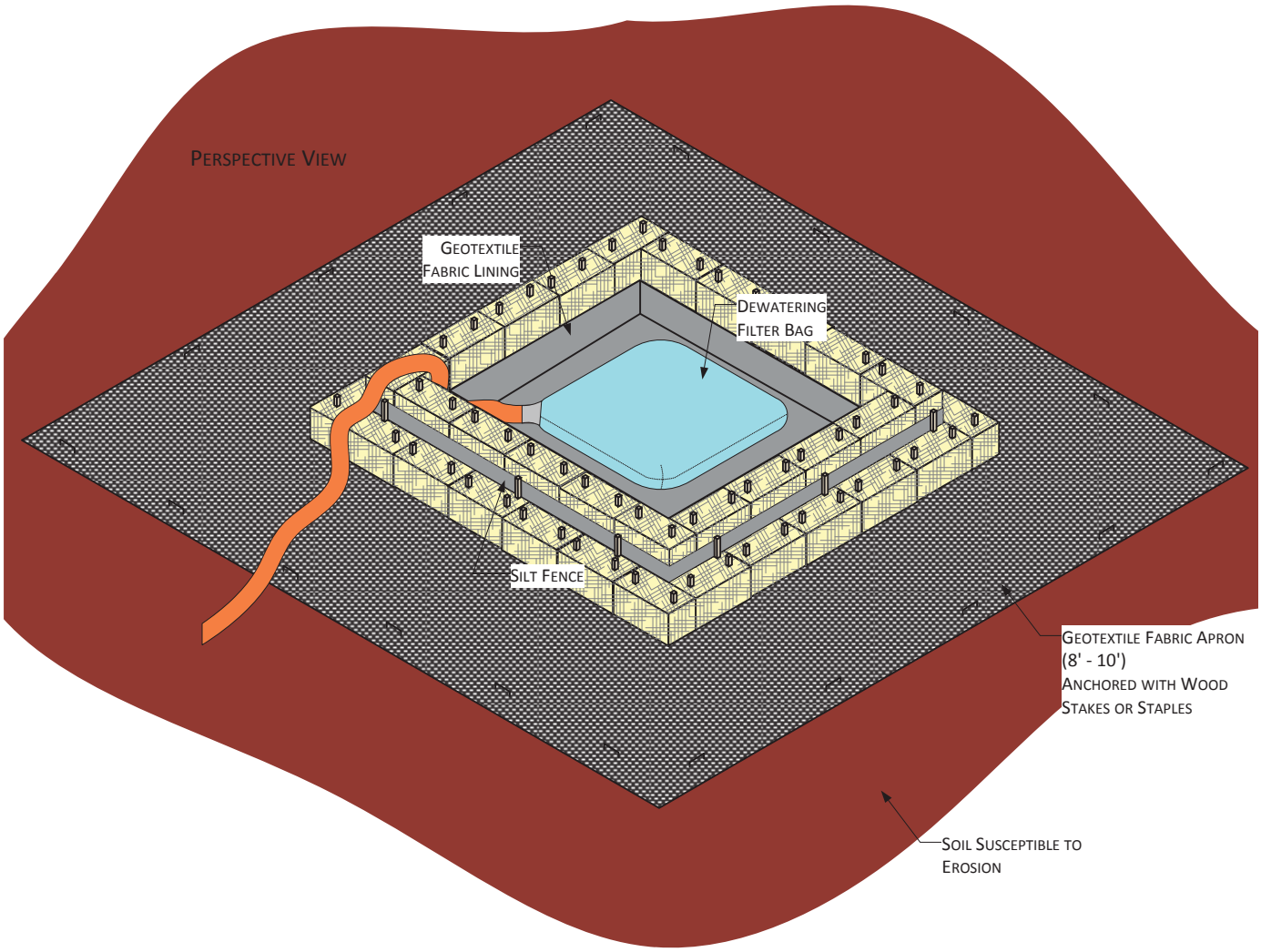
ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_21_Straw_Bale_Dewatering.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting



Construct Dewatering Structure to accommodate anticipated pumping rates. See example below.

Example Pumping rate = 200 g.p.m.
Storage volume (c.f.) = 16 x 200 g.p.m. = 3200 c.f.
Height of straw bale structure = 3 feet (2 bales stacked) (based on height of bales, not silt fence)
Inside dimensions of structure = 33 x 33 feet square

Notes:

1. Silt fence ends must be wrapped to join two sections.
2. Install silt fence 2 inches above top of straw bales, and anchor a minimum of 8 inches straight down.
3. Spacing between silt fence post stakes must be 4 feet or less.
4. Dewatering intake hose supported at least 1 foot from bottom of trench being dewatered.
5. Erosion and sedimentation control measures shall be inspected and maintained in accordance with the company's upland erosion control, revegetation, and maintenance plan.

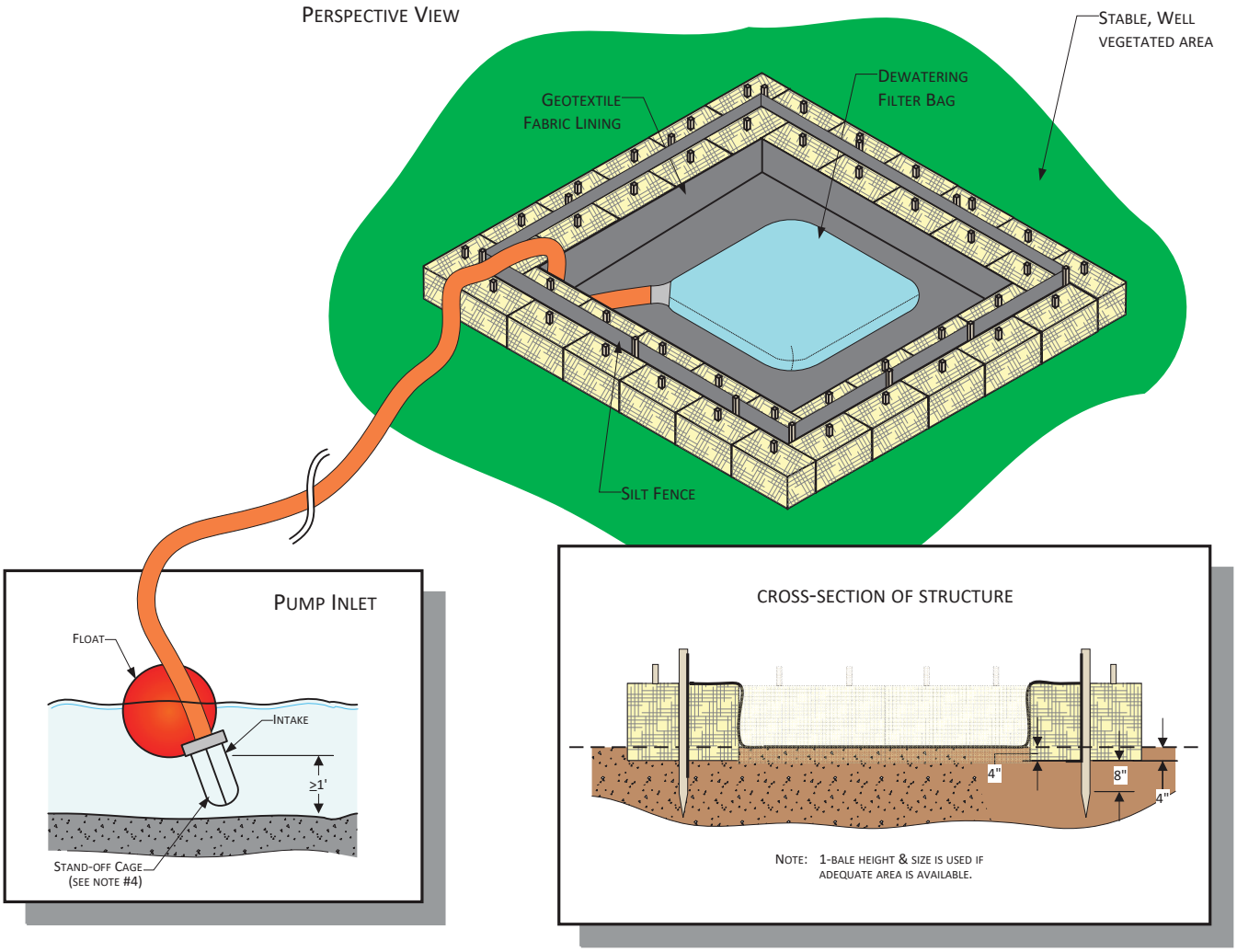
For environmental review purposes only.

Figure 22
Straw Bale Dewatering Structure
(OKS-7901-ENV-06a)

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_22_Straw_Bale_Dewatering.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting



CONSTRUCT DEWATERING STRUCTURE TO ACCOMMODATE ANTICIPATED PUMPING RATES. SEE EXAMPLE BELOW.

EXAMPLE PUMPING RATE = 200 G.P.M.
STORAGE VOLUME (C.F.) = 16 X 200 G.P.M. = 3200 C.F.
HEIGHT OF STRAW BALE STRUCTURE = 1.5 FEET (1 BALE) (BASED ON HEIGHT OF BALES, NOT SILT FENCE)
INSIDE DIMENSIONS OF STRUCTURE = 46 X 46 FEET SQUARE

NOTES:

1. SILT FENCE ENDS MUST BE WRAPPED TO JOIN TWO SECTIONS.
2. INSTALL SILT FENCE 2 INCHES ABOVE TOP OF STRAW BALE, AND ANCHOR A MINIMUM OF 8 INCHES STRAIGHT DOWN.
3. SILT FENCE POST STAKING MUST BE 4 FEET OR LESS.
4. DEWATERING INTAKE HOSE SUPPORTED AT LEAST 1 FOOT FROM BOTTOM OF TRENCH BEING DEWATERED.
5. USE A FILTER BAG AT THE DISCHARGE HOSE END.
6. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE COMPANY'S CMRP.

For environmental review purposes only.

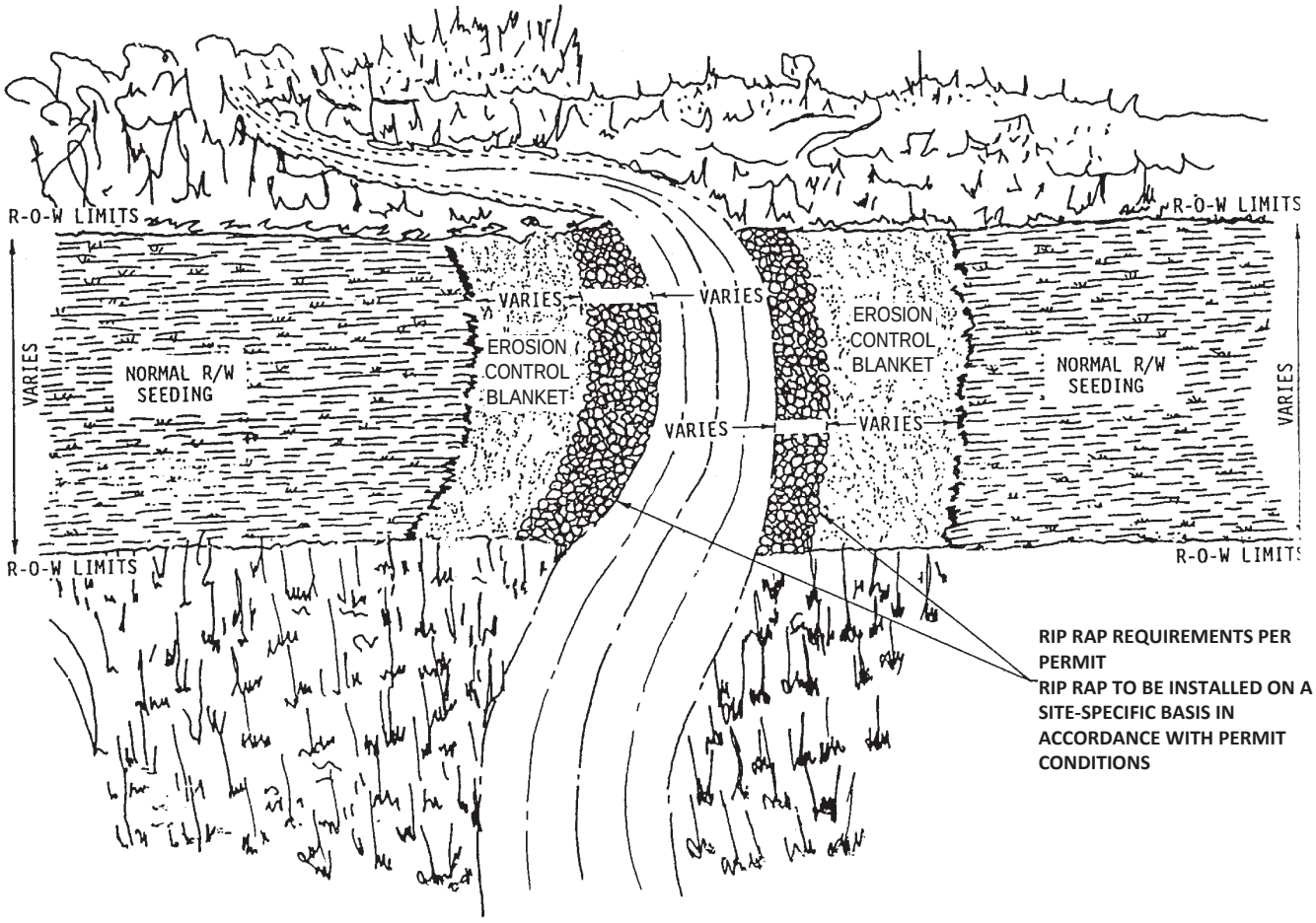
ONEOK

Figure 23
Straw Bale Dewatering Structure
(OKS-7901-ENV-06b)

ERM

K:_Client_Projects\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_23_Straw_Bale_Dewatering.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting

NOTE: PLACE EROSION CONTROL BLANKET A MINIMUM OF ONE (1) FOOT UNDER RIP RAP. EXTEND JUTE BLANKET FROM MEAN HIGH WATER LEVEL TO SEVERAL FEET BEHIND HIGH BANK.



RIP RAP REQUIREMENTS PER PERMIT
RIP RAP TO BE INSTALLED ON A SITE-SPECIFIC BASIS IN ACCORDANCE WITH PERMIT CONDITIONS

For environmental review purposes only.

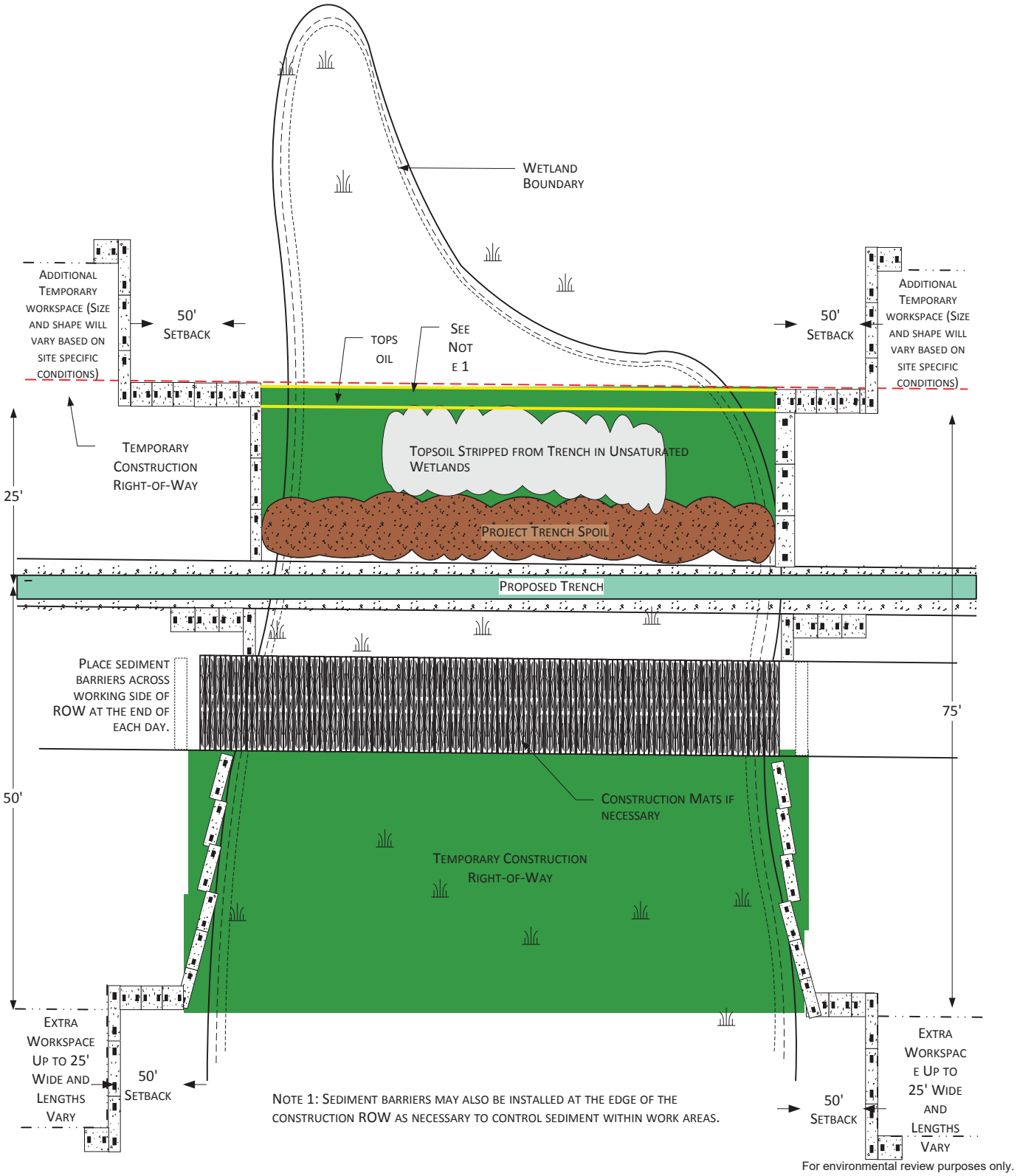
Figure 24

Typical Final Stream Bank Stabilization
Rip Rap & Erosion Control
(OKS-7901-ENV-07)

ONEOK

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_24_Stream_Bank_Stabilization.vsd	Scale: NTS	Revised: 08/17/2018	Drawn By: RGCutting



For environmental review purposes only.

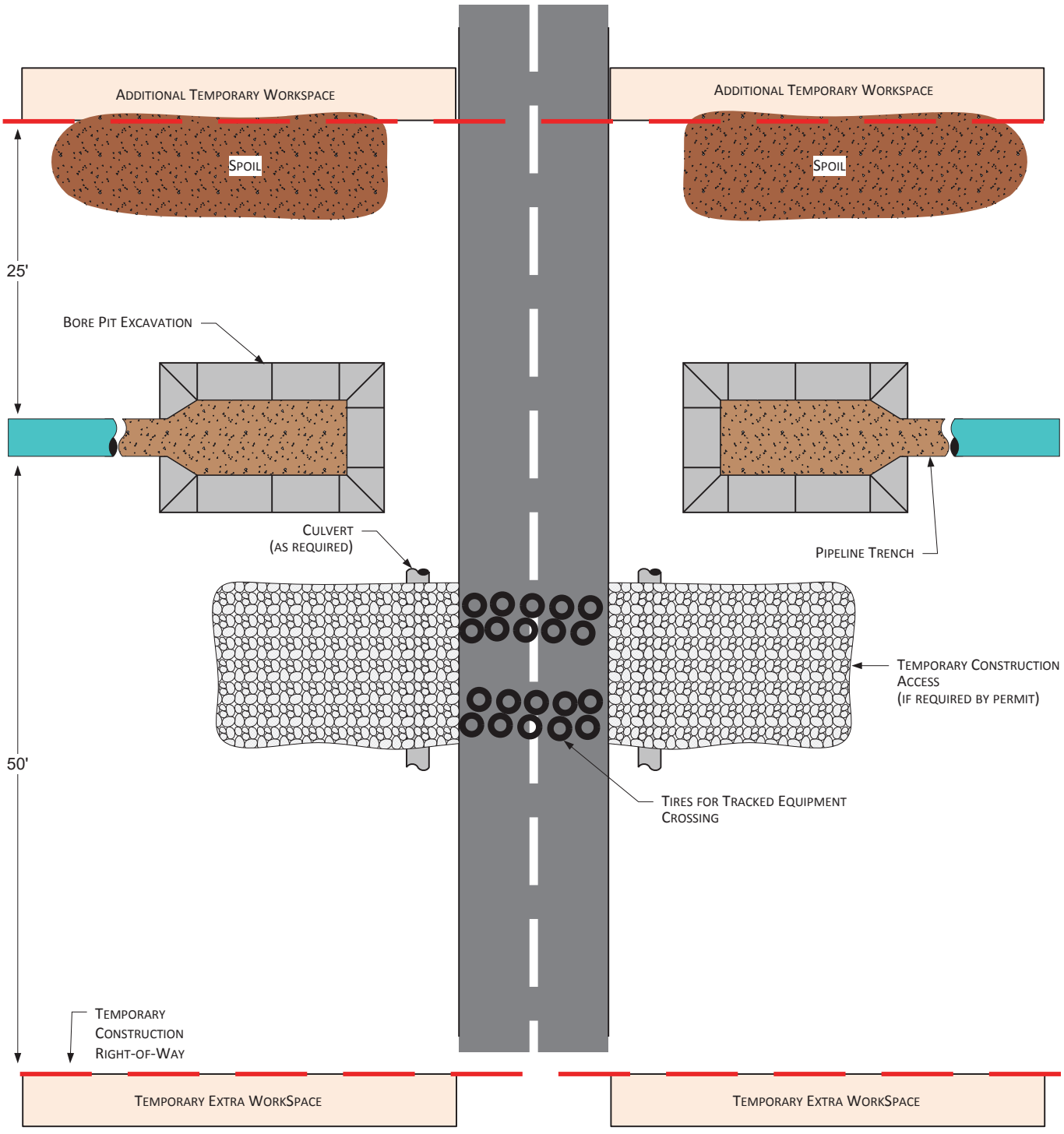
Figure 25

Typical Wetland Crossing Method
Method 5
(OKS-7901-ENV-03e)

ONEOK

ERM

K:_Client_Projects\M-O\ONE\Niobrara\EMP\Fig_24_Wetland_Crossing.vsd	Scale: NTS	Revised: 0820/2018	Drawn By: RGCutting



PLAN VIEW

NOTES

1. PROCEDURES SHOWN IN THIS DRAWING APPLY TO IMPROVED ROADS.
2. ROADS MUST BE CLEANED AFTER EQUIPMENT CROSSES AND DIRT PLACED IN SPOIL CONTAINMENT AREAS.
3. TEMPORARY ACCESS MATERIALS MUST BE REMOVED UPON PROJECT COMPLETION.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS OR PERMITS.
5. CONSTRUCTION AREAS LOCATED OUTSIDE ROAD ROW.
6. INSTALL EROSION AND SEDIMENT CONTROLS AS NEEDED BASED ON SITE SPECIFIC CONDITIONS

For environmental review purposes only.

ONEOK

Figure 26
Typical Improved Road Crossing
Directional Bore Method

ERM

M:\Typicals\Clients\M-O\ONE\Elk_Creek\EMP\LLC_CMRP\Fig_26_Improved_Road_Crossing.vsd	Scale: NTS	Revised: 08/20/2018	Drawn By: RGCutting

APPENDIX C

Project Maps

<<<UPDATED MAPS WILL BE ATTACHED PRIOR TO COMMENCING CONSTRUCTION>>>

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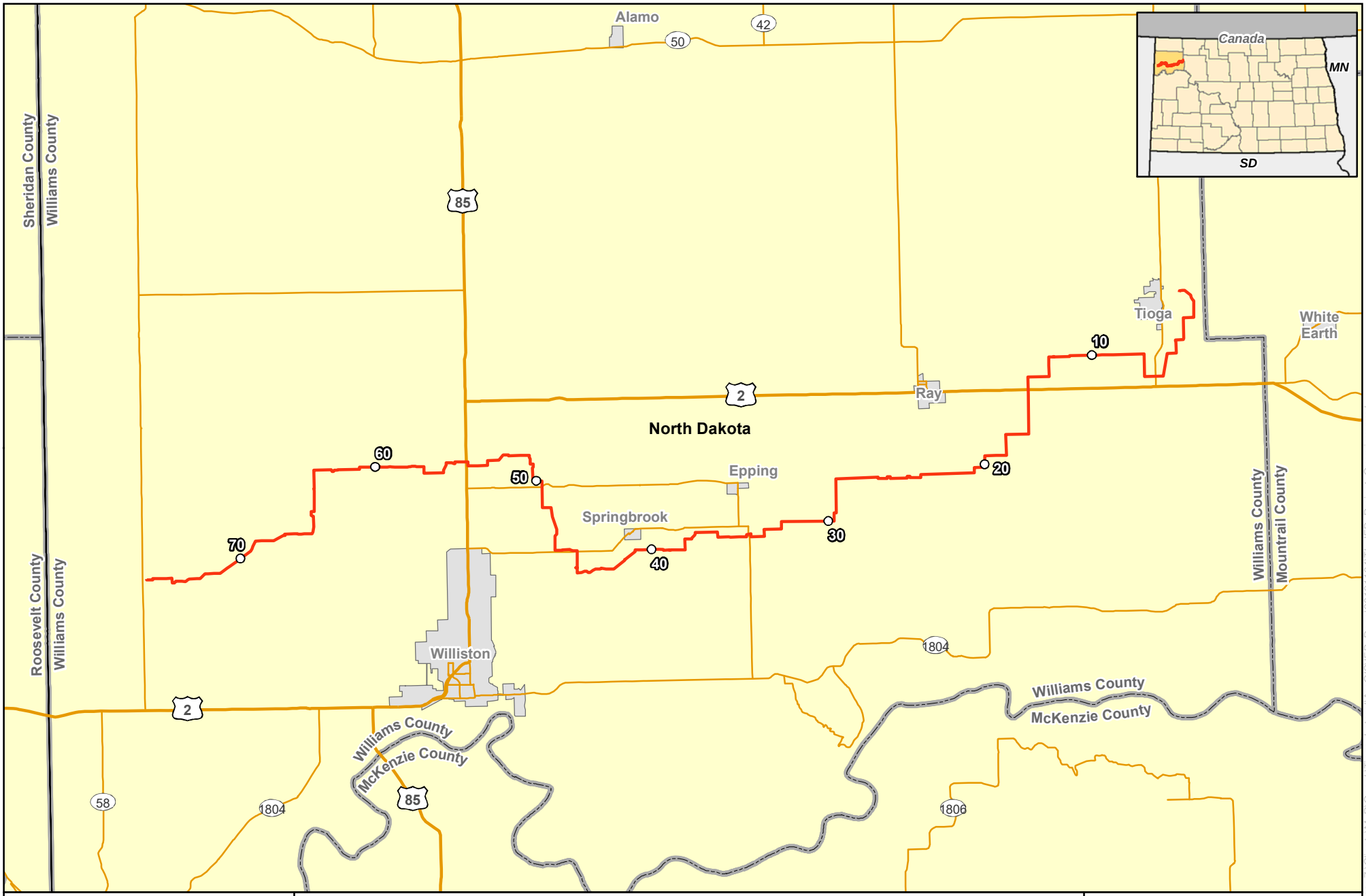
Alamo
50
42
85
Sheridan County
Williams County
Canada
MN
SD
Tioga
White Earth
10
2
Ray
North Dakota
60
50
Epping
20
Springbrook
30
70
40
Roosevelt County
Williams County
Williams County
Mountrail County
Williston
1804
2
Williams County
McKenzie County
Williams County
McKenzie County
85
58
1804
1806
0 3 6
Miles
1 inch = 6 miles
N
W
E
S
For Environmental Review Purposes Only
ONEOK Bakken Pipeline, L.L.C.
Tioga Lateral Pipeline Project
Project Overview
Williams County, ND
Milepost
Proposed Route
Source: Z:\Clients\M_P\Oneok\Tioga_Lateral\ArcGIS\IFB_Docs\20191104\TL_IFB_Project_Overview.mxd
Date: (11/11/2019)

APPENDIX D

Receiving Waters

Crossing table under development

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APPENDIX E

Stormwater Inspection Form and Reports

Site Inspection Record Template
Construction
(07-2010)

Project Name: _____

Coverage Number: _____

Inspector: _____ Date: _____ Time: _____

Precipitation Amount: _____ Date: _____

Areas Inspected (Choose Applicable): ☐ Active areas

☐ Stabilized areas with less than 70% cover

☐ Areas that have achieved final stabilization

Is there evidence of, or the potential for, pollutants entering drainage systems or waters of the state from:

- Material Storage Areas ☐ Y ☐ N
- Vehicle Maintenance Areas ☐ Y ☐ N

Observations / Corrective Actions:

_____

_____

_____

☐ Y ☐ N	Have all erosion and sediment controls and best management practices identified in the plan been installed or implemented?
☐ Y ☐ N	Are erosion and sediment controls operating correctly and in serviceable condition?
☐ Y ☐ N	Are erosion and sediment controls operating consistently and effectively?
☐ Y ☐ N	Are there any devices similar to silt fence or fiber rolls where sediment has reached more than 1/3 the height of the device? (Removal and repairs must be made within 24 hours.)
☐ Y ☐ N	Are there any sediment basins where collected sediment has reduced the storage capacity by 1/2? (Drainage and removal must be completed within 72 hours.)
☐ Y ☐ N	Is there evidence of sediment deposits in surface waters, drainage ditches or other stormwater conveyance systems? (Removal and stabilization must be completed within 7 days unless prohibited by legal, regulatory or physical access constrains. All reasonable efforts must be made to obtain access. Once permission is granted, removal must take place within 7 days.)
☐ Y ☐ N ☐ NA	Is there evidence of sediment being tracked off-site by vehicles or equipment? (Sediment tracked or deposited on paved surfaces must be removed within 24 hours.)
☐ Y ☐ N	Is there evidence of sediment depositing off-site other than in surface waters, drainage ditches and stormwater conveyance systems? (Sediment must be recovered in a manner and frequency sufficient to minimize off-site impacts – for example, sediment could wash away during the next precipitation event.)
☐ Y ☐ N ☐ NA	Is stormwater flow distributed evenly over vegetative buffers?
☐ Y ☐ N ☐ NA	Is sediment accumulating in vegetative buffers?
☐ Y ☐ N ☐ NA	Are rills forming within vegetative buffers? (If vegetative buffers are silted covered, contain rills or are otherwise rendered ineffective, other erosion and sediment controls must be implemented. Eroded areas must be repaired and stabilized.)
☐ Y ☐ N	Are litter, debris, chemicals and parts being managed properly to minimize stormwater pollution?
☐ Y ☐ N	Are liquid or soluble materials like oil, fuel, paint, etc., properly stored to prevent spills, leaks or other discharges?

☐ Y ☐ N	Is there evidence of concrete wash water discharging to waters of the state, storm sewer systems or onto adjacent properties?
☐ Y ☐ N	Is there evidence of wastewater from processing operations or sanitary facilities (i.e., portable toilets) discharging from the site? (These types of discharges are not covered by the construction general permit, NDR10-0000. They must be stopped immediately if they are not covered by another type of permit. The following non-stormwater discharges are allowable if the appropriate prevention measures are in place: fire-fighting, fire hydrant flushing, potable water line flushing, infrequent building and equipment wash down without detergents, uncontaminated foundation drains, springs, lawn watering and air conditioning condensate. Please note that discharges from temporary dewatering activities, such as hydrostatic testing or disinfection of new pipelines may require coverage under the temporary dewatering general permit, NDG07-0000.)
☐ Y ☐ N	Is there evidence of wash water from tools or equipment draining to waters of the state, drainage ditches or storm sewer systems?
☐ Y ☐ N ☐ NA	Are permanent stormwater management measures (e.g., oil-water separators, rain gardens) functioning properly?

Corrective Actions and Schedule:

_____

_____

_____

- Are best management practices effective to minimize the discharge of sediment from the site? ☐ Y ☐ N
- Do best management practices need to be adjusted? ☐ Y ☐ N
- Are additional best management practices needed? ☐ Y ☐ N

Comments:

_____

_____

_____

List all spills, leaks or hose-breaks that have occurred since the last inspection:

-Size	-Location	-Was it reportable?	-Was it reported?
_____	_____	☐ Y ☐ N	☐ Y ☐ N
_____	_____	☐ Y ☐ N	☐ Y ☐ N
_____	_____	☐ Y ☐ N	☐ Y ☐ N

- Were Spill Prevention Procedures adequate? ☐ Y ☐ N
- What Spill Response Procedures were used?

Comments

_____

_____

_____

- Has the SWPP Plan been updated as a result of this inspection? ☐ Y ☐ N
- Has the Site Map been updated as a result of this inspection? ☐ Y ☐ N

APPENDIX F

Best Management Practice Tracking Table

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Appendix G – Erosion and Sediment Controls Checklist

Prior to commencing and throughout construction activities, please review and ensure the following are completed in accordance with the SWPPP and with the General Permit. On the following page is a table in which all ECDs installed onsite will be recorded.

1. Access Drives and Tracking. Provide access drive(s) for construction vehicles that minimize tracking of soil off site using BMPs such as stone tracking pads, tire washing or grates. Minimize runoff and sediment from adjacent areas from flowing down or eroding access drive.
2. Diversion of Upslope Runoff. Divert excess runoff from upslope land, rooftops, or other surfaces, if practicable, using BMPs such as earthen diversion berms, silt fence and downspout extenders. Prevent erosion of the flow path and the outlet.
3. Inlet Protection. Protect inlets to storm drains, culverts and other stormwater conveyance systems from siltation until the site is stabilized.
4. Soil Stockpiles. Locate soil stockpiles away from channelized flow and no closer than 50 feet from roads, ditches, lakes, streams, ponds, wetlands, or environmental corridors. Control sediment from soil stockpiles. Any soil stockpile that remains for more than 7 days must be stabilized.
5. Cut and Fill Slopes. Minimize the length and steepness of proposed cut and fill slopes and stabilize them as soon as practicable.
6. Channel Flow. During construction, trap sediment in channelized flow before discharge from the site using BMPS such as sediment traps and sediment basins. Complete final grading and stabilize open channels in accordance with Permit standards.
7. Outlet Protection. Protect outlets from erosion during site dewatering and stormwater conveyance, including velocity dissipation at pipe outfalls or open channels entering or leaving a stormwater management facility.
8. Overland Flow. Trap sediment in overland flow before discharge from the site using BMPs such as silt fence and vegetative filter strips.
9. Site Dewatering. Treat pumped water to remove sediment prior to discharge from the site, using BMPs such as sediment basins and portable sediment tanks. Discharge to well-vegetated upland sites only.
10. Dust Control. Prevent excessive dust from leaving the construction site though construction phasing and timely stabilization or the use of BMPs such as site watering and mulch – especially with very dry or fine sandy soils.
11. Topsoil Application. Save existing topsoil and reapply a minimum of 4 inches to all disturbed areas for final stabilization, such as for temporary seeding or stormwater infiltration BMPs.
12. Waste Material. Recycle or properly dispose all waste and unused building materials in a timely manner. Control runoff from waste materials until they are removed or reused.
13. Sediment Cleanup. By the end of each workday, clean up all off-site sediment deposits or tracked soil that originated from the permitted site.
14. Final Site Stabilization. Stabilize all other disturbed areas within 7 days of final grading and topsoil application. Any soil erosion that occurs after final grading or the application of stabilization measures must be repaired, and the stabilization work redone.
15. Temporary Site Stabilization. Any disturbed site that remains inactive for greater than 7 days shall be stabilized with temporary stabilization measures such as soil treatment, temporary seeding, or mulching. For purposes of this subsection, “inactive” means that no site grading, landscaping, or utility work is occurring on the site and that precipitation events are not limiting these activities. Frozen soils do not exclude the site from this requirement.
16. Removal of Practices. Remove all temporary BMPs such as silt fences, ditch checks and sediment traps as soon as all disturbed areas have been stabilized.

Erosion and Sediment Controls Installed Onsite

ECD Type[1]	Location Installed[2]	Date Installed

[1] e.g., silt fence, fiber log, inlet protection (include type).

[2] Use one line for each location an ECD is installed.

APPENDIX G

Training Log

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Appendix H: Training Log

Training Date	Name	Title	Signature

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H.4 Spill Prevention, Control, and Countermeasure Plan



Tioga Lateral Pipeline Project

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

ISSUED FOR PERMITTING

November 2019

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1.0 INTRODUCTION

ONEOK Bakken Pipeline, L.L.C, (ONEOK) is committed to meeting or exceeding applicable federal, state, and local environmental requirements during the planning, construction, and operation of ONEOK's Tioga Lateral Pipeline Project (Project). This *Spill Prevention, Control, and Countermeasure (SPCC) Plan* was developed to establish basic procedures to prevent the discharge of hazardous or regulated materials during construction of the Project. The *SPCC Plan* is a guideline that sets forth minimum standards for the prevention of spills (handling and storing regulated substances) and for the minimization of impacts resulting from spills of fuels, petroleum products, or other regulated substances as a result of pipeline construction should a spill occur. This document is not a complete summary of all requirements.

The provisions of this SPCC Plan will be implemented by Project personnel during the construction of the Project. The Contractor (i.e. pipeline construction general contractor) is responsible for understanding and complying with all applicable federal, state, and local requirements related to all aspects of work on the Project, including the transportation, storage, and disposal of polluting and hazardous materials. Other contractors (i.e. the reclamation contractor) are responsible for understanding and complying with applicable federal, state, and local requirements relating to their work on the Project, including the transportation, storage, and disposal of polluting and hazardous materials.

2.0 PLANNING AND PREVENTION

ONEOK's goal is to prevent spills and/or exposure to hazardous or dangerous substances during construction of the Project. The *SPCC Plan* is designed to reduce the likelihood of a spill, provide for prompt containment and clean up if a spill does occur, comply with applicable state and federal laws as well as other Project permit conditions throughout construction and restoration of the Project, and protect human health and the environment.

ONEOK requires its Contractors to implement proper planning and preventive measures to minimize the potential of spilling regulated substances such as fuels and petroleum products and to quickly and successfully clean up a spill should one occur. Potential sources of construction-related spills include (but are not limited to) storage tank leaks, machinery and equipment failure, and fuel handling and transfer accidents. The Contractor will be responsible for implementing, at a minimum, the planning and prevention measures contained in this document.

2.1 ROLES AND RESPONSIBILITIES

The following roles and responsibilities have been developed by ONEOK for the Project.

2.1.1 Environmental Project Manager

The Environmental Project Manager will be a designated ONEOK Employee or a third-party Designee.

Environmental Project Manager contact information to be provided to Contractor.

- The Environmental Project Manager will have a Lead Environmental Inspector (EI) located on each construction spread. The Lead EI may act on the behalf of the Environmental Project Manager on certain issues that will be defined before construction is started.
- The Environmental Project Manager will promptly report spills to appropriate federal, state, and local agencies when required.

- The Environmental Project Manager will coordinate with these agencies regarding contacting additional parties or agencies. The Environmental Project Manager may request that the Contractor's Spill Coordinator assist with these additional notifications.
- The Environmental Project Manager will help direct further response actions in accordance with the U.S. Environmental Policy Agency (EPA) guidelines and assist throughout the cleanup and disposal of wastes.
- All spills defined as "Reportable Spills" (Appendices B and C) must be reported immediately to the Field Construction Manager, Environmental Project Manager, and Lead EI.

2.1.2 Lead Environmental Inspector

- The Lead EI will monitor the Contractor's compliance with the provisions of this *SPCC Plan*.
- The Lead EI may act on the behalf of the Environmental Project Manager on certain issues that will be defined before construction is started.
- The Lead EI is an initial point of contact of the Spill Coordinator (in addition to the Field Construction Manager) when a spill occurs and will verify information is correctly reported on the spill form and conduct a follow up inspection, if required, to ensure that the spill was properly cleaned up.

2.1.3 Field Construction Manager

- The Field Construction Manager referred to in this Plan will be a designated ONEOK employee or a third-party designee who is responsible for the management of construction activities on this Project (representing the Construction Manager for ONEOK).
- The Field Construction Manager is the initial point of contact of the Spill Coordinator (in addition to the Lead EI) when a spill occurs and determines the containment measures that may be required.
- The Field Construction Manager is responsible for documenting the general information regarding any spills such as work stoppages, injuries, fires, and the extent of exposure to workers on the site.
- The Field Construction Manager is responsible for overseeing the Contractor's response to a spill to ensure that appropriate notifications are completed, spill response resources are allocated, and cleanup is accomplished in accordance with the *SPCC Plan* and applicable agency requirements.
- The Field Construction Manager is responsible for coordinating any emergency response services that may be required such as the Fire Department, the Sheriff Department, or for contacting Emergency Response Contractors.

2.1.4 Contractor Construction Superintendent

- The Contractor's Construction Superintendent is responsible for designating the Spill Coordinator and communicating who that person is to the Environmental Project Manager, Lead EI, and Field Construction manager.

2.1.5 Contractor Spill Coordinator

- A Spill Coordinator will be designated by Contractor's Construction Superintendent and employed by the Contractor.

- The Spill Coordinator is responsible for completing a Spill Report Form (Appendix A) for every spill event, regardless of the size/volume of material spilled. The completed Spill Report Form must be submitted to the Lead EI within 24 hours of the occurrence of the spill. The Spill Coordinator must then upload the spill information to ONEOK's various data management systems (e.g., STOMP).
- The Spill Coordinator will notify the Field Construction Manager and Lead EI immediately of any spill. All spills defined as "Reportable Spills" must be reported immediately to the Field Construction Manager, Environmental Project Manager, and Lead EI. Reportable spills will be defined by federal- and state-specific guidelines. (See Appendices B and C).
- The Spill Coordinator will mobilize on-site personnel, equipment, and materials for containment and/or cleanup commensurate with the extent of the spill.
- Prior to the start of construction, the Spill Coordinator must identify Emergency Response Contractors located in the area of the Project. The list of identified Emergency Response Contractors must be submitted to ONEOK for review and approval.
- The Spill Coordinator is responsible for coordinating the proper transport and disposal of contaminated media associated with the cleanup of a spill. Media will be disposed of at a state- and ONEOK-approved facility.
- The Spill Coordinator will assist the appropriate Emergency Response Contractor (Appendix H) and monitor containment activities to ensure that the actions are consistent with the requirements of this *SPCC Plan*.
- The Spill Coordinator will coordinate with the Environmental Project Manager regarding the need to contact additional parties or agencies. The Spill Coordinator should not contact an agency regarding a spill without authorization from the Environmental Project Manager and/or Lead EI.
- The Spill Coordinator and/or Lead EI or the Field Construction Manager, in consultation with appropriate agencies, will determine when it is necessary to evacuate spill sites to safeguard human health.

2.1.6 Authorized Personnel

- Authorized Personnel are representatives of the Contractor who are designated and properly trained to handle fuel, lubricants, or other regulated substances.
- Authorized Personnel will be familiar with the requirements of the *SPCC Plan* and the consequences of non-compliance.

2.1.7 Construction Personnel

- Construction Personnel are representatives of the Contractor involved with the pipeline Project.
- Construction Personnel will notify the crew foreman or Spill Coordinator immediately of any spill of a petroleum product or hazardous liquid, regardless of volume.

2.2 TRAINING

- The Contractor will instruct construction personnel in the operation and maintenance of equipment to prevent an accidental discharge or spill of fuel, oil, and lubricants. Personnel will also be made aware of the pollution control laws, rules, and regulations applicable to their work.
- The Contractor will train construction personnel who handle fuels and other regulated substances on the proper methods to quickly and effectively contain and clean up spills that may occur, in accordance with applicable regulations.
- A spill prevention briefing will be scheduled and conducted by Contractor prior to the initiation of construction to assure adequate understanding of this *SPCC Plan*. The topics to be addressed at the briefing will include the following:
    - *SPCC Plan* contents;
    - Possible equipment failure and malfunction;
    - Precautionary measures;
    - Standard operating procedures in case of a spill;
    - Location of emergency response materials;
    - Refueling and maintenance restriction areas; and
    - Equipment, materials, and supplies to be maintained by Contractor and available for cleanup of a spill.

3.0 GENERAL BEST MANAGEMENT PRACTICES

The following general preventive actions and procedures will be implemented prior to and throughout construction.

3.1 TYPICAL FUELS, LUBRICANTS, AND HAZARDOUS MATERIALS MANAGEMENT

The table in Appendix G identifies fuels, lubricants, coolants, and other hazardous materials generally present on pipeline construction spreads and identifies typical total volumes, storage, and transportation methods. The Contractor must provide ONEOK with a list of fuels, lubricants, and hazardous materials and the expected quantities that will be stored and/or maintained on each construction spread. Contractors must also have appropriate Safety Data Sheets (SDS) on-site for each product, as required by the Occupational Safety and Health Administration (OSHA).

3.1.1 Fuel, Lubricants, and Hazardous Material Storage Areas

- All petroleum products used by Contractor necessary for fueling and maintenance of construction equipment will be stored at a designated, well-maintained, and secured/supervised location to minimize the environmental and safety impacts associated with releases of fuel, lubricants, or hazardous substances.
- Fuel, lubricant, or hazardous materials will be stored only in the designated staging areas and equipment storage yards and will be at least 100 feet from all waterbodies, wetlands, environmentally sensitive areas, or municipal watersheds.
- Storage of potentially hazardous materials will not occur within a 150-foot radius of a private well or within a 400-foot radius of a municipal or community water supply well.

- Fuels, lubricants, waste oil, and any other regulated substances will be stored in aboveground tanks only. Storage tanks and containers must conform to all applicable industry codes (National Fire Protection Association (NFPA), Unified Facilities Criteria [UFC], etc.).
- A suitable secondary containment structure must be utilized at each fuel, lubricant, and waste oil storage site. These structures must be lined with suitable plastic sheeting (seamless); provide a minimum containment volume equal to 150 percent of the volume of the largest storage vessel; and provide at least one (1) foot of freeboard.
- Secondary containment areas must not have drains. Precipitation may be drawn off as necessary. If visual inspection indicates that no spillage has occurred in the secondary containment structure, accumulated water may be drawn off and sprayed on the surrounding upland areas. If spillage has occurred in the structure, accumulated waste will be drawn off and pumped into drum storage for proper disposal.
- If earthen containment dikes are used, they will be constructed with slopes no steeper than 3:1 (horizontal to vertical) to limit erosion and provide structural stability.
- Tools and materials to stop the flow of leaking tanks and pipes will be kept on-site. Such equipment may include, but not be limited to, plugs of various sizes, tank patches, hammer, screwdriver, plastic tape, and assorted sizes of metal screws with rubber washers. Fully furbished spill kits must be located at all fuel storage areas.
- Proper signage must be installed at and adjacent to fuel storage areas to include “Fuel Storage Area – No smoking within 50 feet.”
- No hazardous or potentially hazardous materials, other than essential materials (coating, sandblasting media, etc.), essential equipment fuel (gasoline, diesel, etc.), or standard lubricants (engine oils, grease, etc.) will be transported onto the right-of-way (ROW) or construction area without Environmental Project Manager coordination and approval.
- Construction equipment will be removed from wetlands and parked a minimum of 100 feet away from streams, wetlands, ditches, and other waterbodies at the end of each work day. Stationary equipment (e.g., pumps) or mainline construction equipment located within the 100-foot restriction zone must be placed within proper secondary containment upon approval from the Lead EI, if there are no practical upland areas available.

3.1.2 Equipment Maintenance and Lubrication Areas

- The Contractor will ensure that all equipment is free of leaks prior to use on the Project, and prior to entering or working in or near waterbodies or wetlands. The Contractor will perform, and provide documentation to ONEOK of, a pre-construction inspection and test of all equipment to ensure that it is in good repair prior to the equipment reaching the ROW.
- During construction, the Contractor will regularly (minimum of once daily) inspect hoses, pipes, valves, and tanks to ensure equipment is free of leaks. Any equipment that is leaking or in need of repair will be immediately removed from service and repaired prior to resuming use of the equipment. Buckets/containment materials and absorbent materials (as necessary) will be placed under the equipment until the leak can be repaired.
- Equipment that requires extensive repairs will be removed from the ROW until the repairs are completed or a protection plan will be developed by the Spill Coordinator and the Lead EI if the equipment cannot be moved.

- Precautionary measures will be implemented when performing equipment maintenance or repair activities including placing absorbent pads (or equivalent materials) on the ground beneath the equipment when changing crankcase oil, repairing hydraulic lines, or adding coolant to construction equipment and when appropriate for other repair activities.
- Maintenance, refueling, and lubrication of construction equipment will not be allowed within 100 feet of a waterbody, wetland boundary, environmentally sensitive area, or within a municipal watershed, except as specified in Section 3.2.
- Equipment maintenance wastes, including used oils and other fluids, will be handled and managed by properly trained personnel. All equipment maintenance waste (e.g., oils and lubricants) will be collected in proper containers within the designated storage, refueling, and lubrication areas and disposed of in accordance with Section 7.0 of this *SPCC Plan*. All equipment maintenance wastes will be properly disposed of at facilities permitted to receive hydrocarbon waste.

3.2 REFUELING

- Fuels will be dispensed by Authorized Personnel during daylight hours only unless otherwise approved by the Lead EI.
- Fuel dispensing operations will be attended by Authorized Personnel at all times. Personnel must be stationed at both ends of the hose during fueling unless both ends are visible and are readily accessible by one person.
- During refueling, the Contractor will take appropriate measures to reduce the risk of a spill, including not overfilling fuel tanks and placing an absorbent pad under the fuel nozzle while fueling equipment. Contractor personnel will observe and control refueling at all times to prevent overfilling.
- Fuel dispensing equipment (i.e., portable gas cans, nozzles, hoses, etc.) will be of the appropriate type.
- Refueling within 100 feet of waterbodies, wetland boundaries, environmentally sensitive areas, or within a municipal watershed is not allowed without approval from the Lead EI.
- In large wetlands where no upland site is available for refueling, auxiliary fuel tanks on construction equipment are recommended.
- Refueling will not occur within a 150-foot radius of all private wells and a 400-foot radius of all municipal or community water supply wells.
- When unique conditions require refueling within the restricted zones listed above the Contractor will consult with the Lead EI to determine necessary emergency equipment that will be in place and emergency response actions that will be conducted prior to refueling activities. At a minimum, the determination will consider the environmental and/or safety risks of relocating equipment to a refuel/lubrication area verses risks involved with refuel/lubrication in place. If requested by the Contractor, the Lead EI will evaluate site-specific conditions within the restricted zone and may require implementation of additional precautionary measures prior to approval of refueling within the restricted zones. In addition, absorbent materials or other spill containment materials will be available for immediate deployment prior to commencing refueling activities.

3.3 SPILL RESPONSE EQUIPMENT

- The Contractor must maintain spill kits containing a sufficient quantity of absorbent and barrier materials to adequately contain and recover foreseeable spills. These kits may include, but are not limited to absorbent pads, commercial absorbent materials, spill containment barriers, plastic bags and/or sheeting, skimmer pumps, holding tanks, and shovels. This equipment will be located near fuel storage areas and other locations as necessary to be readily available to control foreseeable spills.
- Each construction crew will have on hand sufficient supplies of absorbent materials, barrier material, and U.S. Department of Transportation (DOT) -approved containers to allow for rapid containment and recovery of any spill which may occur.
- All fuel, and where necessary, service vehicles, will carry spill containment materials adequate to control foreseeable spills.
- The Spill Coordinator will identify the locations of spill control equipment and materials and have them readily accessible during construction activity.
- All fuel nozzles will be equipped with functional automatic shut-offs and over-flow alarms.
- Fuel trucks transporting fuel to on-site construction equipment will travel only on approved access roads.
- Suitable plastic lining materials will be available for placement below and on top of temporarily-stored contaminated soils and materials.

4.0 GENERAL SPILL RESPONSE

The following guidelines specify the procedures used to control a release, notify appropriate Project personnel, complete site cleanup activities, and document corrective actions. In the event of a spill, the Contractor will abide by all applicable federal, state, and local regulations for cleaning up the spill. Refer to the following appendices for federal and state reporting requirements:

Appendix B - Federal spill reporting requirements

Appendix C - State of North Dakota spill reporting requirements

All spills, regardless of size, will be reported to the Spill Coordinator and Lead Environmental Inspector. All spills will also be recorded in ONEOK's data management system.

4.1 IMMEDIATE CONTAINMENT AND CLEANUP RESPONSE

Controlling spills and releases will be accomplished by stopping or segregating the source of the release, using the required stockpiled materials to contain the spill and, if warranted, stopping operations within the affected areas.

Immediately upon learning of any fuel, oil, hazardous material, or other regulated substance spill, the person discovering the situation will:

- Identify the source of the spill;
- Deploy absorbent materials and initiate actions to contain the fluid that has spilled;
- Initiate action to eliminate the source of the spill (e.g., shut off valves, upright containers, stop pumps, etc.) to the maximum extent that is safely possible; and

- Notify the crew foreman and/or the Spill Coordinator and provide them with the following information:
    - Location and cause of the spill;
    - The type of material that has spilled; and,
    - Whether the spill has reached or is likely to reach any surface water

Personnel should only respond to a spill if they have adequate training to do so safely.

Upon learning of a spill or a potential spill the Spill Coordinator will:

- Accumulate as much information as possible as to the nature and size of the spill. This information will be recorded using the Construction Spill Report Form (see Appendix A) for documentation of the spill;
- Assess the situation and determine the need for further action which may include mobilizing additional personnel, equipment, and materials for containment and/or cleanup commensurate with the extent of the spill;
- Direct subsequent activities and/or further assign responsibilities to other personnel;
- Notify Project individuals as outlined in Section 2.1.5;
- If the Spill Coordinator determines that a spill is beyond the scope of on-site equipment and personnel, the Spill Coordinator will immediately notify the Environmental Project Manager and the Field Construction Manager that an Emergency Response Contractor is needed to contain and/or clean up the spill. Available Emergency Response Contractors are identified in Appendix H; and
- The Spill Coordinator will assist the Emergency Response Contractor and monitor containment procedures to ensure that the actions are consistent with the requirements of this *SPCC Plan*.

4.1.1 Spills Occurring in Uplands

In addition to the above measures, the following procedures will be followed for any spill occurring in an upland area:

- The source of the spill must be identified and contained immediately to the maximum extent that is safely possible;
- If a spill should occur during refueling operations, the refueling operation will be stopped until the spill can be controlled and the situation corrected;
- Absorbent material(s) will be placed over spills to minimize spreading and to reduce penetration into the soil;
- If free-standing fluid is present, actions will be taken to skim fluids and place into DOT-approved containers;
- It is the responsibility of the Contractor to ensure that spilled material, contaminated soil, and other materials associated with these releases is treated, collected, and/or disposed of in accordance with all applicable federal, state, and local agency requirements (see Sections 6.0 and 7.0 of this *SPCC Plan*); and

- Flowing spills must be contained and/or absorbed before reaching sensitive resource areas such as surface waters or wetlands.
    - All storm drains the spill may reach will be plugged and
    - Terrace dams or ditches will be constructed to stop the spill's flow.

4.2 SPILLS OCCURRING IN WETLANDS OR WATERBODIES

In addition to the above measures, the following conditions will apply if a spill occurs near or into a stream, wetland, or other waterbody, regardless of the size of the spill:

- For spills into streams, lakes, or other waterbodies containing standing or flowing water, regardless of size, the Spill Coordinator must apprise the Field Construction Manager, Environmental Project Manager, and Lead EI of the incident immediately.
- For spills in standing water, sorbent booms and pads will be on hand and used by the Contractor to contain and recover released materials. In addition, other spill response materials and equipment will be on hand, as appropriate for each waterbody, and used to contain and recover foreseeable spills. This may include containment booms, skimmer pumps, holding tanks, boats, and other equipment.
- If contaminated soils are present in wetlands, as much of the spill as possible will be contained and the appropriate agencies will be contacted before excavating the soil. Unless the agency deems otherwise, the contaminated soil will be excavated and temporarily placed on plastic sheeting in a bermed area at a minimum distance of 100 feet from the wetland. Contaminated soils will be covered with plastic sheeting while being stored temporarily (5 days unless otherwise approved by ONEOK) and properly disposed of as soon as possible, in accordance with this *SPCC Plan* (see Sections 6.0 and 7.0).

4.3 NOTIFICATIONS

- The Field Construction Manager and Lead EI will be notified of any spill and provided the necessary information by using the Construction Spill Report Form (Appendix A);
- All agency notifications will be accomplished at the direction of the Environmental Project Manager;
- If the situation warrants, the Field Construction Manager will notify appropriate local police, fire department, and/or area residents;
- Other Contractor, ONEOK, and agency notifications will be made per the *SPCC Plan*, or as instructed by the Environmental Project Manager; and
- The Contractor will have designated employees on-call 24 hours per day for notification of the emergency response companies referenced in Appendix H.

4.4 RECORDS

The Contractor will maintain written records of all actions taken during the course of a spill event.

5.0 REPORTABLE QUANTITY SPILL RESPONSE

The reporting, disposal, and pre-cleanup sampling requirements in this section apply to all spills of reportable quantities (Appendices B and C).

5.1 IMMEDIATE SPILL RESPONSE ACTIONS

In addition to the responses listed above, the Contractor will implement the following steps in response to any spill of fuel, oil, hazardous materials, or other regulated substance of a reportable quantity:

- Stop operation of affected equipment/area, if warranted;
- Turn off utilities to the area, if necessary;
- Cordon the area to prevent entry of unnecessary personnel or equipment. Establish a single point of ingress and egress to control access to the spill area;
- Accumulate as much information as possible as to the nature and size of the spill. Use the Construction Spill Report Form (see Appendix A) for the type of information required; and
- The Spill Coordinator and/or Field Construction Manager, in consultation with appropriate agencies, will determine when spill sites should be evacuated as necessary to safeguard human health. Evacuation parameters will include consideration for the potential of fire, explosion, and hazardous gases.

5.2 SPILL EVENT LOG ESTABLISHMENT

In addition to the Construction Spill Report Form, the Spill Coordinator will complete a Spill Event Log for reportable spills that documents all spill-related events and clean-up activities. The Spill Event Log will include the following information in the log:

- Time and date of initial notification of spill and approximate time the spill occurred.
- Start and completion time of all key activities.
- A detailed description of all activities undertaken and identification of personnel accomplishing these activities.
- Note time of all correspondence, personnel involved with the correspondence, and nature of the correspondence.

The log will be maintained by the Spill Coordinator until actions to clean up the spill are complete (within approximately 24 hours unless conditions extend the response to the emergency).

5.3 NOTIFICATIONS

The Spill Coordinator will:

- Notify the Environmental Project Manager, Lead EI, and the Field Construction Manager immediately of any reportable quantity spill and provide the necessary information by using the Construction Spill Report Form (Appendix A).
- Make other Contractor, ONEOK, and agency notifications per the *SPCC Plan*, or as instructed by the Environmental Project Manager. The Spill Coordinator will not contact an agency regarding a spill without authorization from the Environmental Project Manager and/or Lead EI.
- Notify local police or fire department if assistance is necessary.

5.4 REPORTABLE SPILL CONTAINMENT

In addition to the requirements listed in Section 4.0, the following procedures will also be implemented.

- All possible efforts will be made to limit the migration of the surface spill until properly equipped cleanup teams can arrive.
    - Terrace dams or ditches will be constructed to stop the spill's flow, as needed.
    - Hay, straw, sand, or other similar materials will be scattered to absorb the spill.
- Flowing spills will be contained and/or absorbed before reaching sensitive resource areas such as surface waters or wetlands.
- If free-standing fluid is present, actions will be taken to skim fluids and place into DOT-approved containers or pump into tank trucks.
- Skimmers, pumps, or available absorbent materials will be used to remove spill from water.
- If possible, a back current will be created to limit out-flow of material into open or flowing water.

6.0 CLEANUP REQUIREMENTS

6.1 GENERAL REQUIREMENTS

- All equipment will be wiped down with absorbent pads (or equivalent) where fuel, lubricants, or other materials have spilled.
- All soil within the spill area (e.g., visible traces of soil and a lateral and vertical buffer around the visible traces) will be excavated.
- All excavated material will be stored and disposed of in accordance with local, state, and federal regulations.
    - All cleanup soil and wastes will be collected in DOT-approved containers. See Appendix D for a listing of approved containers.
    - Appendix E contains guidance on how to manage the area used to temporarily store waste containers.
    - Appendix F contains guidance on inspection procedures for stored waste containers required by EPA Regulations.
- The ground will be restored to its original configuration by back-filling with clean soil.
- Cleanup requirements of a spill area will be completed within 48 hours after notification or knowledge of the spill.

6.1.1 Determination of Spill Boundaries in the Absence of Visible Traces

For spills where there are insufficient visible traces, yet there is evidence of a leak or spill, the boundaries of the spill will be determined using a statistically based sampling scheme. The Environmental Project Manager will provide sampling assistance.

6.1.2 Effect of Emergency or Adverse Weather:

Completion of cleanup may be delayed beyond 48 hours in case of circumstances including, but not limited to:

- Civil emergency;
- Adverse weather conditions;

- Lack of access to the site; and/or,
- Emergency operating conditions.

The occurrence of a spill on a weekend, after hours overtime costs, or that the spill would require the shutdown of construction activities are not acceptable reasons to delay response.

Completion of cleanup may be delayed only for the duration of the adverse conditions. If the adverse weather conditions or time lapse due to other emergencies has left insufficient visible traces, a statistically based sampling scheme to determine the spill boundaries will be developed and implemented.

6.2 REPORTABLE SPILL RECORDS

All records that document reportable spill events and corrective actions taken will be maintained in the Project files for three (3) years from the date the corrective actions were completed. Documentation and certification of area decontamination will be conducted upon completion of and during all cleanup operations. The records and certifications will be completed, as follows:

- Identification of the source of the spill (e.g., type of equipment or container).
- Location and estimated area of spill.
- Estimated quantity of material spilled.
- Estimated or actual date and time of the spill occurrence.
- The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather, the nature, and duration of the delay).
- A brief description of the spill location.
- Pre-cleanup sampling data used to establish the spill boundaries if required due to insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.
- A brief description of the solid surfaces cleaned and of the wash/rinse method used.
- Approximate depth of soil excavation and the amount of soil removed.
- A certification statement signed by the Construction Director, Spill Coordinator, and the Environmental Project Manager stating the cleanup requirements have been met and the information contained in the record is true to the best of his/her knowledge.
- The estimated cost of pre- or post-cleanup and sampling by man-hours, dollars, or both.

7.0 WASTE STORAGE AND DISPOSAL

7.1 STORAGE OF CONTAMINATED MATERIALS

- All contaminated soils, solvents, rags, and other materials generated during construction will be stored in DOT-approved containers in accordance with the applicable state and federal regulations. See Appendix D for a list of approved containers.
- Containers will be labeled with required waste label(s), dated, and inventoried.
- Spent oils, lubricants, filters, etc. will be collected and disposed of, or recycled, at an approved location in accordance with state and federal regulations.
- Containers will be placed in a designated accumulation point for disposal.

- Containers may be stored at the construction site in the identified staging areas for up to 90 days from the date waste accumulation begins.
    - Appendix E contains guidance on how to manage the area used to temporarily store waste containers.
    - Appendix F contains guidance on inspection procedures for stored waste containers required by EPA Regulations.
- If it is necessary to temporarily store excavated soils on site, these materials will be placed on, and covered by, plastic sheeting or placed in properly labeled ring-top 55-gallon drums and the storage area bermed to prevent and contain runoff.
- Any hazardous or contaminated material stored on ONEOK property or the ROW will be properly labeled in accordance with state and federal labeling requirements.

7.2 DISPOSAL OF CONTAMINATED MATERIALS

- All contaminated soils, solvents, rags, and other materials resulting from the cleanup actions will also be properly disposed of in accordance with the applicable state and federal regulations using permitted transporters and permitted disposal facilities.
- Only licensed carriers may be used to transport contaminated material from the site to a disposal facility.
- The Contractor will recycle those wastes, such as motor oil, where there is an established recycling program available.
- All hazardous waste containers will be properly manifested prior to departure from the construction area. The Contractor will be listed as the waste generator on the waste manifest. The Contractor and ONEOK will maintain all manifest records with the Project file for at least three years after the containers were shipped for disposal.
- Appendix H of this *SPCC Plan* lists potential treatment and disposal facilities for contaminated materials, petroleum products, and other construction-related wastes.

APPENDIX A

CONSTRUCTION SPILL REPORT FORM

APPENDIX A
CONSTRUCTION SPILL REPORT FORM

If a spill is below the reportable quantity complete only Section 1.

If the spill exceeds the reportable quantity complete both Sections 1 and 2.

Section 1 (All Spills)

Facility Name:_____ District/Region:_____

Facility Phone Number:_____

Facility Address:_____

Date of Spill:_____ Date of Spill Discovery:_____

Time of Spill:_____ Time of Spill Discovery:_____

Location of release: _____ County/State_____

Type of material spilled and manufacturer's name:_____

Substance released to (Check all that apply): Land__ Air__ Water__ Secondary Containment__

Estimated volume of spill: _____ Estimated volume recovered:_____

Brief description of the incident including cause and corrective action:_____

_____

_____

Person Completing Form (Contact):_____ Date:_____

Contact's Phone Number:_____

Section 2 (Reportable Spills)

Facility Type (well, tank, flow line, pit):_____

Spill Location: Address:_____

County:_____ Coordinates: Latitude_____ Longitude_____

PLSS: Township_____Range_____ Section_____

Additional Location Details:_____

_____

Spill medium (pavement, sandy soil, water, etc.):_____

Topography and surface conditions of spill site:_____

Soil/Geology Description:_____

Weather Conditions: Wind Direction ___ Wind Speed___ Temperature___ Precipitation_____

Proximity of spill to surface waters: _____

Did the spill reach Ground Water? _____ Yes _____ No

Did the spill reach Surface Water? _____ Yes _____ No

If so, was a sheen present? _____ Yes _____ No

Current Land Use:_____

Distance to nearest…

Surface Water _____Wetland _____Building _____Livestock_____Water Wells_____

Spill Coordinator must complete this for any spill, regardless of size, and submit the form to the Company Environmental Project Manager and Chief Environmental Inspector within 24 hours of the occurrence.

APPENDIX A
CONSTRUCTION SPILL REPORT FORM

Depth to shallowest groundwater _____

Was there a fire associated with the release? ___Yes _____ No

Did the incident result in death or injury? ___Yes _____ No

Was there any immediate damage observed to plants or animals? ___Yes _____ No

Describe the extent of observed contamination, both horizontal and vertical (i.e., spill-stained soil in a 5-foot radius to a depth of 1 inch):

_____

_____

How was the extent of the spill determined? _____

Current status of cleanup actions: _____

Proposed Remediation Activities: _____

Describe measures to prevent reoccurrence: _____

Did the spill occur while in transit? _____

Duration of spill occurrence? _____

Directions from nearest community: _____

Name and Title of Discoverer: _____

Name of Operator: _____

Address of Operator: _____

Operator Contact Person: _____

Is the Operator the responsible party? _____Yes _____No

If no, what is the responsible party's name and contact information? _____

_____

List all parties and agencies notified (Counties, BLM, EPA, DOT, Local, etc.)

Date	Agency	Contact	Phone Number	Response

Spill Coordinator must complete this for any spill, regardless of size, and submit the form to the Company Environmental Project Manager and Chief Environmental Inspector within 24 hours of the occurrence.

APPENDIX A
CONSTRUCTION SPILL REPORT FORM

Any additional information:_____

Name/Company/Address/Phone Number for the following:

Construction Superintendent:_____

Spill Coordinator:_____

Environmental Project Manager:_____

Person Who Reported the Spill:_____

Environmental Inspector:_____

Spill Coordinator must complete this for any spill, regardless of size, and submit the form to the Company Environmental Project Manager and Chief Environmental Inspector within 24 hours of the occurrence.

APPENDIX B

FEDERAL SPILL REPORTING REQUIREMENTS

APPENDIX B
FEDERAL SPILL REPORTING REQUIREMENTS

PURPOSE:

This procedure identifies reportable quantities for releases of oil or hazardous substances in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, Emergency Planning and Community Right-to-Know Act (EPCRA) Section 304, the Clean Water Act (CWA), the Oil Pollution Act of 1990 (OPA 90), and the Toxic Substances Control Act (TSCA).

RESPONSIBILITY FOR ADMINISTRATION:

Contractor's Spill Coordinator is responsible for administration of this procedure.

GENERAL:

I. Reportable quantity is the quantity of a release which requires agency notification.

II. A list of Reportable Quantities (RQs) for chemicals subject to spill reporting specified by the EPA can accessed at: http://www2.epa.gov/epcra/consolidated-list-lists.

III. RQs for materials are based on the chemical's constituents and concentrations. Please refer to a Data Safety Sheet (SDS) to determine the constituents and concentrations of the material that has been spilled. If the concentration of all of the constituents of a material are known, notification is required where an RQ of any constituent is exceeded. If the concentration of the constituents of a mixture is unknown, notification is required where the total amount of mixture released exceeds the RQ for the constituent with the lowest RQ.

IV. Any amount of oil spill into navigable waters is reportable. Oil spills onto land may be required to be reported, depending upon quantity spilled and state regulations. State spill requirements are detailed in Appendix C.

V. Typical materials stored on a construction spread are detailed in Appendix G.

REPORTING REQUIREMENTS:

I. If any quantity of oil or a hazardous substance is discharged into or upon the navigable waters of the United States, or adjoining shorelines; or the spill causes a sheen on a waterway (pond, lake, river, wetland, etc.) report the spill to the National Response Center (NRC) (800-424-8802). The NRC may determine that a spill report, as described in Section II below, be completed and submitted.

II. If oil is discharged in an amount greater than 1,000 gallons in one spill or if there are two discharges of 42 gallons or more of oil within a 12-month period.

A. Report the spill to the NRC (800) 424-8802.

B. Submit a written report within 60 days to the U.S. Environmental Policy Agency (EPA) Regional Administrator (Region 8) and the state agency.

C. The report to the EPA Regional Administrator and the state agency will include:

1. Name of facility;

2. Name(s) of the owner or operator of the facility;

3. Location of the facility;

Spill Coordinator must complete this for any spill, regardless of size, and submit the form to the Company Environmental Project Manager and Chief Environmental Inspector within 24 hours of the occurrence.

4. Date and year of initial facility operation;
5. Maximum storage or handling capacity of the facility and normal daily throughput;
6. Description of facility, including maps, flow diagrams, and topographical maps;
7. A complete copy of the *Spill Prevention, Control, and Countermeasure (SPCC) Plan* with amendments;
8. The cause of the spill, including a failure analysis of the system or subsystem in which the failure occurred;
9. The corrective actions and/or countermeasures taken, including description of equipment repairs and replacements;
10. Additional preventive measures taken or contemplated to minimize the possibility of recurrence; and,
11. Any additional information the EPA Regional Administrator may require pertinent to the *SPCC Plan* or spill event.

III. If a release of hazardous substance or extremely hazardous substance in excess of RQs listed in 40 Code of Federal Regulations 302 or a hazardous waste spill has been released into the environment the National Response Center (NRC) ((800) 424-8802), State Emergency Planning Commission (SERC) ((701) 328-8100), and the Williams County Local Emergency Planning Commission (LEPC) ((701) 577-7707) must be notified.

A. Contact the required agencies with the pertinent spill information.

B. Provide verbal notification of the following information:

1. Name and telephone number of reporter;
2. Name and address of facility;
3. Type of substance discharged;
4. Quantity of substance discharged;
5. Location of discharge;
6. Actions the person reporting the discharge proposes to take to contain, cleanup and remove the substances, if any; and,
7. Any other information concerning the discharge which may be requested by the Agency at the time of notification.

C. Submit a written report on the incident to the appropriate state and local agency. The report will include the following:

1. Name, address, and telephone number of the owner or operator;
2. Name, address, and telephone number of the facility and a detailed location of the spill;

Spill Coordinator must complete this for any spill, regardless of size, and submit the form to the Company Environmental Project Manager and Chief Environmental Inspector within 24 hours of the occurrence.

3. Date, time, and type of incident;
4. Name and quantity of material(s) involved;
5. The extent of injuries, if any;
6. An assessment of actual or potential hazards to human health or the environment, where this is applicable;
7. Assessment of the scope and magnitude of the spill;
8. Description of the immediate actions that have been taken and the estimated quantity and disposition of recovered material that resulted from the incident; and,
9. Provide an implementation schedule for undertaking suggested measures to eliminate the spill.

Spill incident reports will be maintained in the Project files for a minimum period of three (3) years.

RESPONSIBILITY FOR PROCEDURE:

Address any questions to the Environmental Project Manager:

Contact information to be provided to Contractor.

Spill Coordinator must complete this for any spill, regardless of size, and submit the form to the Company Environmental Project Manager and Chief Environmental Inspector within 24 hours of the occurrence.

APPENDIX C

STATE SPILL REPORTING REQUIREMENTS

These guidelines are intended to help the Environmental Project Manager determine reportable spills in the state through which the Project passes. In addition to the guidelines listed below, any substantial natural gas release which could cause an agency to initiate an unneeded emergency response should be considered reportable. The Environmental Project Manager and Spill Coordinator will maintain a copy of the latest edition of the TITLE III List of Lists.

NORTH DAKOTA

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY (NDDEQ) EMERGENCY RESPONSE at (701) 328-5210 or (800) 472-2121 (State Radio 24-Hour Hotline - valid only in North Dakota).

All releases or spills of hazardous or deleterious substances or other wastes, regardless of size, must be properly and expeditiously managed, contained, and removed to protect public health and the environment.

NDDEQ must be notified of a spill of any size that could enter a waterway (stream, river, pond, lake, shoreline, wetland, ditch). You should consider reporting any spill that cannot be cleaned up immediately or that has entered or is likely to enter a storm drain at your facility.

All releases and spills should be reported immediately to NDDEQ-Environmental Incident Reporting at:

- (800) 472-2121 (emergency, 24 hours)
- (701) 328-8020 or (701) 328-5210 (non-emergency, M-F 9-5:00)

The following types of spills must be reported:

- Releases or spills of hazardous substances in amounts that meet or exceed the reportable quantities in 40 Code of Federal Regulations (CFR) Part 302.
- Spills, overfills, and suspected releases from underground storage tanks and petroleum storage tanks (ARM 17.56.501, et seq.).
- Releases or spills of any materials that would lower the quality of groundwater below water quality standards (ARM 17.30.1045).
- Any spill or discharge of liquid or solid (not gaseous) waste which may cause pollution of waters of the State **must be reported immediately**.

Online Incident Report Form: https://deq.nd.gov/eir/NonOilField/.

APPENDIX D

DOT-APPROVED CONTAINERS

APPENDIX D
DOT-APPROVED CONTAINERS

PURPOSE:

This procedure provides a listing of containers which have been approved by the U.S. Environmental Policy Agency for storage of contaminated materials or wastes. These drums may be ordered from drum suppliers by specification number:

I. Specification 5 - steel barrel or drum with removable head:

   A. Body seams welded;

   B. Chime (reinforced rim) reinforced;

   C. Heads closed by 12 gauge bolted ring with drop forged lugs;

   D. Marked “DOT-5.”

II. Specification 5B - steel barrel or drum with removable head:

   A. Body seams welded;

   B. Chime (reinforced rim) reinforced;

   C. Heads closed by 12 gauge bolted ring with drop forged lugs;

   D. Marked “DOT-5B.”

III. Specification 6D Overpack; cylindrical steel overpack, straight sided, for inside plastic container. Specification 6D Overpack must be used with the specification 2S of 2SL plastic container.

IV. Specification 2S - polyethylene container:

   A. No removable heads;

   B. Constructed with new polyethylene resin;

   C. Marked “DOT-2S;”

   D. Must fit snugly in overpack container (Spec. 6D).

V. Specification 2SL - molded or thermoformed polyethylene container:

- A. No removable heads;
- B. Constructed with new polyethylene resin;
- C. Marked “DOT-2SL;”
- D. Must fit snugly in overpack container (Spec. 6D).

VI. Specification 17C - single trip container, steel drum:

- A. Removable heads are authorized;
- B. Crowned head;
- C. Heads closed by 12 gauge bolted ring with drop forged lugs;
- D. Marked “DOT-17C.”

APPENDIX E

HANDLING CONTAINERS AND DRUMS

APPENDIX E
HANDLING CONTAINERS AND DRUMS

PURPOSE:

This procedure provides general requirements for the design of areas used to store containers and drums, in accordance with U.S. Environmental Policy Agency regulations 40 Code of Federal Regulations (CFR) Part 112 and 40 CFR Part 265.170.

RESPONSIBILITY FOR ADMINISTRATION:

The Contractor's Spill Coordinator will be responsible for this procedure.

GENERAL:

I. This procedure covers container and drum storage areas storing oils and petroleum distillates and non-permitted Hazardous Waste container and drum storage areas.

II. It is not necessary to permit Hazardous Waste container and storage areas if the waste is stored for less than 90 days. Secondary containment is not required for non-permitted Hazardous Waste container and drum storage areas.

PROCEDURE:

I. All containers and drums must be stored to avoid contact with the ground and standing water and protected to prevent rupture or leakage and to facilitate inspection.

II. The areas with containers and drums in which oil and petroleum distillate are stored and have the potential to be spilled off site must be designed to contain spills and releases. Appropriate secondary containment may include dikes, berms or retaining walls sufficiently impermeable (10^{-5} centimeters per second) to contain spill oils.

III. The following applies to hazardous waste containers and drums:

   A. Containers and drums holding ignitable or reactive Hazardous Waste must be stored at least 50 feet from the property line of boundary. Follow manufacturer's instructions regarding appropriate storage of product containers and drums.

   B. Hazardous Waste containers and drums must be separated and protected from incompatible materials by means of dike, berm, retaining wall or other approved means. Incompatible materials are wastes which, when mixed, can produce effects which are harmful to human health and the environment, such as (1) heat and pressure, (2) fire or explosion, (3) violent reaction, (4) toxic fumes or, (5) flammable fumes.

   C. Hazardous Waste containers and drums must be inspected weekly. That inspection will be documented, as per requirements listed in Appendix F.

IV. The Contractor will comply with all rules for Hazardous Waste Generators for satellite accumulation under 40 CFR 262.24(c)(1)(ii):

   A. Mark each container with the words "Hazardous Waste."

   B. Containers must be in good condition and kept closed except when adding or emptying waste. In addition, containers must not contain waste that is incompatible with the containers.

V. Conditionally Exempt Small Quantity Generators and Small Quantity Generators of Hazardous Waste must comply with the following:

APPENDIX E
HANDLING CONTAINERS AND DRUMS

A. Meet all conditions outlined in Procedure Section II.

B. Mark each drum or container with the words “Hazardous Waste.”

C. Label each drum or container with the date it is first used and the date it is last used.

RECORDS:

Storage area inspection records must be kept with the Project files for a minimum period of three (3) years.

RESPONSIBILITY FOR PROCEDURES:

Address any questions to the:

Environmental Project Manager
Contact information to be provided to Contractor.

APPENDIX F

INSPECTION OF WASTE DRUMS AND CONTAINERS

APPENDIX F
INSPECTION OF WASTE DRUMS AND CONTAINERS

PURPOSE:

This procedure outlines inspection requirements for waste drums and containers as required by Federal Regulations 40 Code of Federal Regulations (CFR) 262 - 265 and 40 CFR 761.

RESPONSIBILITY:

The Contractor's Spill Coordinator is responsible for implementation of this procedure.

GENERAL:

I. Drums and containers used to store hazardous substances and wastes will be inspected for leaks, malfunctions, deterioration, operator errors, and discharges which may lead to a release into the environment or a threat to human health.

II. If problems are discovered during the inspection, remedial action will be taken immediately. The action taken will be noted on the inspection report form.

PROCEDURE:

I. Each waste drum and container will be inspected, and records maintained on a Waste Container Inspection Form. Inspection records will include the date and time of the inspection, the name of the inspector, observations, and the date and nature of any problems, repairs, and remedial action.

   A. Waste drum and container storage areas will be inspected weekly for the following:

      1. Leaking containers, deterioration of containers, and deterioration of the spill containment system.

      2. Drums and containers will be properly labeled and dated.

      3. Drums and containers will be stored on pallets or drum racks.

   B. If a drum or container is leaking, the incident will be recorded on the inspection form and immediately cleaned up according to the Spill Prevention, Control, and Countermeasure Plan.

APPENDIX F
INSPECTION OF WASTE DRUMS AND CONTAINERS

RECORDS:

I. Inspection records will be maintained in the Project files for three (3) years from the date of inspection.

II. A report of the remedial action taken for leaks will be prepared and kept with either the original inspection forms, inspection log or in the records of the Project. These records will be maintained for three (3) years with the Project files.

RESPONSIBILITY FOR PROCEDURE:

Address any questions to the:

Environmental Project Manager
Contact information to be provided to Contractor.

APPENDIX F
INSPECTION OF WASTE DRUMS AND CONTAINERS

WASTE CONTAINER INSPECTION FORM		
Facility: _____	**Type of Container: _____**	
Date	**Deficiencies Noted**	**Inspected By**

APPENDIX G

TYPICAL PETROLEUM STORAGE AND HANDLING VOLUMES ON A CONSTRUCTION SPREAD

APPENDIX G
TYPICAL PETROLEUM STORAGE AND HANDLING VOLUMES ON A CONSTRUCTION SPREAD

	Fluids	Typical Amounts	Storage	Typical Transport Mode
Fuels	Diesel	6,000-12,000 Gallons	1-3 Tanks or Tankers stored at Contractor locations 5-gallon cans, 100-gallon storage in pickups, etc.	1-3 Fuel Trucks, 1-3 "Fuel Skids"
	Military Aviation Kerosene [1]	6,000-12,000 Gallons		
	Kerosene [1]	6,000-12,000 Gallons		
	Gasoline	5,000 Gallons		
Lubricant	Engine Oil	< 500 Gallons	Bulk Storage or Retail Packaging at Contractor Yard Warehouse	1-3 "Grease" Trucks
	Transmission/ Drive Train Oil	< 500 Gallons		
	Hydraulic Oil	< 500 Gallons		
	Gear Oil	< 500 Gallons		
	Lubricating Grease	20-30 cases of 24 cans per case		
Coolants	Ethylene Glycol	100 Gallons		
	Propylene Glycol	100 Gallons		

[1] Used straight or as additives only in extremely cold weather.

APPENDIX H

EMERGENCY RESPONSE CONTRACTORS;
DISPOSAL AND TREATMENT FACILITIES

APPENDIX H
EMERGENCY RESPONSE CONTRACTORS; DISPOSAL AND TREATMENT FACILITIES

The Contractor must dispose of all wastes according to applicable state and local requirements and is responsible for complying with all interstate requirements for transporting hazardous materials across state lines. A listing of potential Emergency Spill Response Contractors and waste disposal facilities is provided below. This list was developed from state-wide databases. This list represents firms operating at the time the data base was produced. These firms are not necessarily endorsed by ONEOK. The Contractor is responsible for verifying if a contractor or facility is currently operating under appropriate permits or licenses. Selection of an Emergency Response Contractor or disposal facility is subject to approval by ONEOK. The Contractor is responsible for ensuring wastes are disposed of properly.

Spill Response Contractors

Name/ Company	Under Contract	Phone Number(s)	Location	Services Provided
Clean Harbors Environmental Services	☐ Yes ☐ No	(800) 645-8265	Locations Nationwide	24-hour Emergency Response
SWAT Consulting	☐ Yes ☐ No	(866) 610-7928	12 Sunrise Estates Rd, Watford City, ND 58854	24-hour Emergency Response
JMAC Resources	☐ Yes ☐ No	(701) 774-8511	121 48th Ave. SW Williston, ND 58801	Emergency Spill Response Hazardous Waste Transport

Waste Handling/Disposal Contractors

Name/ Company	Under Contract	Phone Number(s)	Location	Services Provided
Nuverra Environmental Solutions	☐ Yes ☐ No	(701) 580-0336	13195 26th St NW Arnegard, ND 58835	Petroleum Contaminated Soil disposal facility
IHD Environmental	☐ Yes ☐ No	(701) 774-8514	14070 43rd St NW, Alexander, ND 58831	Petroleum Contaminated Soil disposal facility

H.5 Horizontal Directional Drilling Inadvertent Release Control Plan

Tioga Lateral Pipeline Project

HORIZONTAL DIRECTIONAL DRILLING INADVERTENT RELEASE CONTROL PLAN

ISSUED FOR PERMITTING

November 2019

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LIST OF ACRONYMS AND ABBREVIATIONS

EI(s)	Environmental Inspector(s)
ESA	Environmentally Sensitive Area
HDD	Horizontal Directional Drill
IR	Inadvertent Release
ONEOK	ONEOK Bakken Pipeline, L.L.C.
PCN	Preconstruction Notification
Plan	Horizontal Directional Drilling Inadvertent Release Control Plan
Project	Tioga Lateral Pipeline Project
ROW	Right-of-Way
SDS	Safety Data Sheet
USACE	United States Army Corps of Engineers

1.0 PURPOSE AND NEED

ONEOK Bakken Pipeline, L.L.C. (ONEOK) has developed this *Horizontal Directional Drilling Inadvertent Release Control Plan* (*Plan*) for the Tioga Lateral Pipeline Project (Project). The horizontal directional drill (HDD) method will be used to install the pipeline at selected waterbody crossings and certain other features that will not be open cut/trenched and are not suitable for conducting a bore. Under optimal conditions, the HDD method involves no disturbance to the bed or bank of the waterbody being crossed or allows the highway, steep slope, or environmentally sensitive area (ESA) to be crossed without excavating between the HDD entry and exit points. However, if a natural fracture or unconsolidated area in the ground is encountered, an unexpected release of drilling fluid to the environment could occur. The objective of this *Plan* is to provide procedures that will minimize the potential for release of drilling fluid into sensitive resource areas such as wetlands, waterbodies, and ESAs, or onto the adjacent surface soils, and should a release occur, prescribe measures to control the extent of the release and cleanup and dispose of the drilling fluid.

2.0 DRILLING BASICS

The HDD method is a technically advanced process involving specialized equipment and skilled operators. The method involves placing a drill unit on one side of the feature to be avoided (e.g., a stream) and drilling a small-diameter pilot hole under the feature along a prescribed profile. After the pilot hole has been completed, specialized reaming tools are used to enlarge the pilot hole to accommodate the desired diameter for the pipeline. Once the properly-sized hole is established, the pipe section is pulled through the hole by the drilling rig and welded to the adjoining sections of pipe on each side of the feature.

3.0 DRILLING FLUID AND DRILLING FLUID SYSTEM

The directional drilling process uses drilling fluid consisting primarily of water and bentonite, a naturally occurring clay. Drilling fluid removes the cuttings from the bore hole, stabilizes the walls of the bore hole, and acts as a coolant and lubricant to the drill bit during the drilling process. The drilling fluid mixture consists of a small percentage of bentonite clay and inert solids generated during the drilling process from the bore hole cuttings with the remainder being water. Under certain conditions an additive may need to be mixed with the drilling fluids/mud for viscosity or lubricating reasons. Only non-hazardous additives will be used and a Safety Data Sheet (SDS) for all additives will be maintained on-site.

The drilling fluid is prepared in the mixing tank using both new and clean recycled drilling fluid. The fluid is pumped through the center of the drill pipe to the drilling tools. Return flow is through the annulus created between the wall of the drilled hole and the drill pipe. During pilot hole drilling the cuttings are returned to a small excavation at the entry point called the entry pit. From the entry pit, the returned fluid is pumped to the fluid processing equipment. Typically, shaker screens, desanders, desilters, and centrifuges process and remove increasingly finer cuttings from the drilling fluid. The cleaned fluid is recycled to the mixing tank for reuse in the borehole. The cuttings removed by the cleaning process are disposed of at a site approved to accept this type of material.

4.0 DRILLING FLUID RELEASE

The primary environmental risk associated with the HDD crossing method comes from the potential for inadvertent release (IR) of drilling fluid into a waterbody, wetland, or ESA. A drilling fluid release is indicated when pressure in the drill hole is not maintained and/or a loss of circulation of drilling fluids occurs. Minimal, consistent losses of drilling fluid are common during the drilling process due to the fluid filling natural voids in layers of loose sand, gravel, or fractured rock encountered along the drilling path. Larger losses of circulating drilling fluid and a reduction in drilling pressure indicate that seepage is occurring outside of the hole.

4.1 PREVENTION

Drilling fluid releases can occur when the drilling path encounters naturally occurring fractures in bedrock or other voids in the strata that allow the pressurized drilling fluid a less resistant path to the surface. Drilling fluid releases may also be caused by blockage of the return flow path around the drill pipe where pressurization of the drilling fluid rises above the containment capability of the overburden soil material. The following will be implemented as preventive measures to reduce the potential for a release of drilling fluid.

4.1.1 Suitable Material and Adequate Overburden

Prevention of drilling fluid seepage is a major consideration in determining the profile of the HDD crossing. A minimum 15-foot depth of cover below the bottom of a waterbody is required to provide a margin of safety against drilling fluid seepage.

The areas that present the highest potential for drilling fluid seepage are the drill entry and exit points where the overburden depth is minimal. Appropriate containment materials will be staged near the entrance and exit locations for quick deployment should an inadvertent return occur within these areas.

4.1.2 Pipeline Geometry

The geometry of the pipeline profile can affect the potential for drilling fluid seepage. In a profile which forces the pipe to make compound or excessively tight radius turns, key-seating of the drill pipe may develop, blocking the return flow to surface, allowing down-hole pressures to build up, thereby increasing the potential for drilling fluid seepage. The profiles for ONEOK's pipeline crossings minimize this potential, with very smooth and gradual vertical curves in the crossing profile, therefore affording consistent cover under the waterbody. Therefore, the potential for pressure buildup caused by pipeline geometry has been minimized.

4.1.3 Pre-construction Planning

Prior to initiating the drill, IR response equipment required by this *Plan* will be staged on site. All personnel working the drill site will be trained on the requirements of this *Plan* and, where applicable, on-site briefings about the sensitive nature of the feature being crossed will be conducted.

4.1.4 Pre-construction Measures for Environmentally Sensitive Areas

ONEOK will avoid all streams and wetlands that would trigger a Preconstruction Notification (PCN) with the U.S. Army Corps of Engineers (USACE/Corps). ONEOK will accomplish this by either routing around PCNs or by using an HDD or conventional bore methods to avoid the features. Locations on or immediately adjacent to the right-of-way (ROW) will have specific mitigation measures on the ESA plans.

The Tioga Lateral Pipeline may cross ESAs using the HDD or conventional bore method. Instructions for ESA crossings are given throughout this *Plan*. Refer to site-specific ESA plans for further information.

Prior to construction in an ESA, the following measures will be implemented:

- ESAs will be marked with signage, exclusion fencing, or both;
- Cultural and Biological surveys will be conducted of the drilling entry and exit areas, surrounding work areas, and the drilling route to ensure that there are no cultural materials present on the surface;
- Excavation of all entry and exit points will receive full-time monitoring where required by ONEOK;
- Barriers will be installed between the bore site and the sensitive resource(s) to prevent released mud from reaching the sensitive resources;
- Ensure that all personnel understand their responsibility for timely reporting of IRs of drilling mud by conducting on-site briefings;
- Maintain necessary response equipment at an accessible location; for each wetland or waterbody crossed equipment will be available on both sides of the feature outside of the ESA; and
- Mats will only be allowed at some ESAs. The contractor will need to review the ESA plans prior to construction for restrictions.

4.1.5 Responsibility of HDD Contractor and Operator

ONEOK's HDD contactor is responsible for execution of the HDD, including actions for detecting and controlling drilling fluid seepage as well as containment and cleanup of inadvertent returns.

4.2 DETECTION AND MONITORING PROCEDURES

To determine if an IR has occurred, HDD activities will be constantly monitored on this project. Monitoring procedures will include:

- Continuous inspection along the drill path during active drilling with mud circulation. Construction observers will be briefed on what to watch for and will be made aware of the importance of timely detection and response actions to any release of drilling mud.
- Construction observers will have appropriate operational communication equipment (e.g., radio and/or cell phone) available at all times during installation of the HDD crossing, with the ability to communicate directly with the HDD operations control center.
- Continuous examination of drilling mud pressure gauges and return flows to the surface pits. If the HDD operator realizes a sustained loss in fluid pressure or loss of circulation, the operator will immediately notify the construction observers of the assumed position of the drill head who will attempt to locate the potential release. The environmental and construction inspectors will be immediately notified of a release or potential release.
- If a release occurs in a wetland, containment of the drilling fluids and continued inspection to determine any potential for movement of released drilling mud within the wetland, and collection of drilling mud returns at the location for future analysis, as required.
- If a release occurs in a wetland or waterbody, monitoring of the release will be documented by ONEOK. Access to edge of waterbody will be necessary so that ONEOK will keep photographs of release events on record.

5.0 NOTIFICATION PROCEDURES

Corrective action will begin immediately when monitoring indicates a release is occurring or has occurred. The Construction Inspector or ONEOK will immediately notify ONEOK's construction management personnel and Lead Environmental Inspector (EI). In the case of an IR during the crossing of a designated ESA, wetland or waterbody, the contactor will notify the Spill Coordinator, the Environmental Manager, Lead EI, and the designated Cultural Resources Specialist (in the case of a release within an ESA).

ONEOK will notify the appropriate agencies upon discovery of an IR to an ESA, waterbody, or wetland, detailing the location and nature of the release, corrective actions being taken, and whether the release poses any threat to public health and safety.

6.0 CORRECTIVE ACTION

In the event an inadvertent drilling mud release is observed during an HDD crossing, the release will be assessed to determine the amount of drilling mud being released and potential for the release to reach sensitive resource areas (e.g., wetlands, waterbodies, or environmentally sensitive areas). Response measures will vary based on location of IR as discussed below.

As discussed above, the greatest potential for drilling fluid seepage is during drill entry and exit where the overburden is reduced for entry and exit of drilling tools at the low approach angle. In the contingency planning for the pipeline crossings, drilling fluid seepage containment will be incorporated into the drill plan. The entry or exit locations will generally be located in upland areas on a dry land segment where drilling fluid seepage can be readily detected and contained. Containment response and clean-up equipment is required to be available at both sides of the HDD crossing location prior to the commencement of the HDD to assure a timely response in the event of an IR of drilling fluid.

Containment and response equipment may include but is not limited to:

- Silt fence;
- Plastic sheeting;
- Shovels and other appropriate hand tools;
- Squeegees;
- Pails;
- Push brooms;
- Pumps and sufficient hose;
- Mud storage tanks;
- Vacuum truck on 24-hour call (arrange for this service before drilling begins);
- Pre-filled sandbags;
- Geotextile fabric;
- One small boat (for larger rivers and open water wetlands);
- Steel box or large-diameter pipe section (or the equivalent) that, under appropriate conditions, could be used to contain an IR of drilling mud; and
- Light plant/generator.

ONEOK will address an IR immediately upon discovery. The following measures will be implemented to minimize or prevent further release, contain the release, and clean up the affected area:

Upland Release:

These measures apply to upland releases unless the release occurs adjacent to a wetland, waterbody, or ESA such as a stream bank or steep slope, where drilling mud releases could quickly reach a resource. If the release occurs adjacent to a wetland, waterbody, or ESA use the measures listed below that apply:

- Any modifications to the drilling technique or composition of drilling fluid will be determined and implemented (e.g., thickening of mud by increasing bentonite content, temporary lowering of the downhole pressures) to minimize or prevent further releases of drilling mud.
- Containment structures will be placed at the accessible affected area to prevent migration of the release.
- If the amount of the release is large enough to allow collection, the drilling mud will be collected and returned to either the drilling operations or a disposal site by hose or tanker.
- If the amount of the release is not large enough to allow collection, the released drilling fluid will be swept, shoveled, or mixed with sand and temporarily left in place to dry. If the amount of the release is not large enough to allow for the practical physical collection from the affected area, it will be diluted with clean water.
- If not in a designated ESA, drilling operations will be reduced if the mud release cannot be effectively contained within accessible containment areas. Within a designated ESA, drilling operations will be suspended if drilling mud cannot be effectively contained.
- If public health and safety are threatened by an IR, drilling operations will be shut down until the threat is eliminated. This measure will be taken as a last resort because of the potential for drill hole collapse resulting from loss of down-hole pressure.

Waterbody Release:

- If a release occurs within a waterbody, the Environmental Manager will contact the appropriate agency as soon as possible to inform them if there is a potential threat to public health and safety and explain whether the release can be corrected without incurring additional environmental impact. If necessary, drilling operations will be reduced to assess the extent of the release and to implement corrective actions.
- Drill pressures and pump volume rates will be continuously reviewed and adjusted to minimize the extent of the release.
- If the release is a single-point release accessible with a hose and truck, the release will be ‘capped’, if possible, by placing a section of pipe over the release to contain the fluid within the pipe section. With a larger release, a water-filled bladder will be placed, if possible, around the release in order to isolate it from the waterbody prior to removal. After the release is contained, the fluid will be pumped into trucks and reused or disposed of at an appropriate facility.
- If public health and safety are threatened, drilling fluid circulation pumps will be turned off. This measure will be taken as a last resort because of the potential for drill hole collapse resulting from loss of down-hole pressure.
- ONEOK will assist agencies by collecting water samples, if required.

- If monitoring indicates that the intake water quality at downstream user locations is impacted to the extent that it is no longer suitable for treatment, alternative water sources (i.e., trucked or bottled water) will be provided to impacted users.

Wetland/Riparian Area Release:

- The release will be evaluated to determine if containment structures are warranted and can effectively contain the release. When making this determination, ONEOK will also consider if placement of containment structures will cause additional adverse environmental impact.
- If a release occurs within the wetland, reasonable measures, within the limitation of directional drilling technology and Contractor's capability, will be taken to re-establish drilling mud circulation.
- Any modifications to the drilling technique or composition of drilling fluid will be determined and implemented (e.g., thickening of mud by increasing bentonite content, temporary lowering of the downhole pressures) to minimize or prevent further releases of drilling mud.
- Upon completion of the drilling operations, ONEOK will consult with applicable regulatory agencies to determine any final clean-up requirements for the IR.
- If public health and safety are threatened by the IR, drilling operations will be shut down until the threat is eliminated. This measure will be taken as a last resort because of the potential for drill hole collapse resulting from loss of down-hole pressure.
- ONEOK will assist regulatory agencies with any sampling they may require.

ESA Release:

- If a release occurs within an ESA, the Lead EI will be contacted immediately so that they may assess the situation. The EI will contact the Environmental Manager who will notify the appropriate agency as soon as possible to inform them of a release. The Environmental Manager will communicate whether the release can be corrected without incurring additional environmental impact. If necessary, drilling operations will be reduced to assess the extent of the release and to implement corrective actions. Depending on circumstances, federal, state, and/or local agencies may require further action.
- The release will be continuously monitored.
- The release will be evaluated to determine if containment structures are warranted and can effectively contain the release. When making this determination, ONEOK will also consider if placement of containment structures will cause additional adverse environmental impact.
- Drill pressures and pump volume rates will be continuously reviewed and adjusted as needed to minimize the extent of the release.
- If public health and safety are threatened, drilling fluid circulation pumps will be turned off. This measure will be taken as a last resort because of the potential for drill hole collapse resulting from loss of down-hole pressure.
- All mitigation measures employed for releases within ESAs will be closely documented to assist with ONEOK's agency notification process.

7.0 ABANDONMENT

If corrective actions do not prevent the threat to public health and safety, or if the pipeline installation is unsuccessful, ONEOK may opt to re-drill the hole along a different alignment after receiving appropriate regulatory approvals. In this case, the following procedures will be implemented to abandon the previous drill hole.

- To seal the abandoned drill hole, thickened drilling mud and cuttings will be pumped into the hole as the drill assembly is extracted.
- Within approximately 10 vertical feet of the surface, drilling mud and cuttings will be removed, then the drill end points and any mud pits will be filled with soil, and the location graded to the original contour.
- In the case of an ESA crossing, no alternative crossing methods would be implemented without the proper notification and approvals from ONEOK.

8.0 FOLLOW-UP

After the drilling fluid seepage has been contained, the drilling contractor will try to determine the cause of the seepage. After the cause has been determined, measures will be implemented to control the factors causing the seepage and to minimize the chance of recurrence.

In some cases, the corrective measure may involve a determination that the existing hole encountered a void, which could be bypassed with a slight change in the profile. In other cases, it may be determined that the existing hole encountered a zone of unsatisfactory soil material and the hole may have to be abandoned. If the hole is abandoned, it will be filled with cuttings and drilling fluid, as described in Section 7.0.

9.0 CLEAN UP

Clean-up measures following mud releases in uplands, wetlands, and waterbodies will be implemented as determined by this Plan and in consultation with the appropriate regulatory agencies. The following measures are to be considered as appropriate:

- Drilling mud will be cleaned up by hand using hand shovels, buckets, and soft-bristled brooms as possible without causing extensive ancillary damage to existing vegetation. Clean water washes may also be employed if deemed beneficial and feasible by the Lead EI and monitor.
- Backhoes or other mechanized earth-moving equipment will not be used to clean up drilling fluid seepage within ESAs, waterbodies, or wetlands.
- Containment structures will be pumped out and the ground surface scraped to bare topsoil without causing undue loss of topsoil or ancillary damage to existing and adjacent vegetation.
- Material will be collected in containers for temporary storage prior to removal from the site.
- Potential for secondary impact from the clean-up process will be regularly evaluated and clean-up activities terminated if physical damage to the site is deemed to exceed the benefits of removal activities in consultation with the appropriate regulatory agencies and/or field representatives.

H.6 Unanticipated Discoveries Plan

Tioga Lateral Pipeline Project

UNANTICIPATED DISCOVERIES PLAN

ISSUED FOR PERMITTING

November 2019

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LIST OF ACRONYMS AND ABBREVIATIONS

EI(s)	Environmental Inspector(s)
Merjent	Merjent, Inc.
NRPH	National Register of Historic Places
ONEOK	ONEOK Bakken Pipeline, L.L.C.
UDP or Plan	Unanticipated Discoveries Plan
Project	Tioga Lateral Pipeline Project
SHSND	State Historical Society of North Dakota
USACE	United States Army Corps of Engineers

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1.0 INTRODUCTION

ONEOK Bakken Pipeline, L.L.C. (ONEOK) has established procedures to be followed by ONEOK personnel and their contractors in the event previously unreported and unanticipated cultural resources or human remains are found during construction of the Tioga Lateral Pipeline Project (Project).

The identification of possibly significant cultural materials is addressed in Sections 2.0 and 3.0 of this *Unanticipated Discoveries Plan (UDP or Plan)*. The discovery of possible human remains is addressed in Section 4.0.

Prior to the commencement of construction, Environmental Inspector(s) (EIs) and Contractor personnel will receive environmental training, which will include guidance on identifying potential cultural materials and human remains. The orientation will consist of two parts. The first part will provide training in the recognition of both prehistoric and historic cultural resources and human remains as briefly described below. The second part will provide the chain of communication and protocols that must be followed if unanticipated cultural resources or human remains are discovered during construction.

A cultural resource discovery could consist of, but is not limited to:

- Prehistoric features such as stone circles or cairns, storage pit features, postmolds, hearths, occupational surfaces, middens, and anthropogenic soil horizons;
- Prehistoric artifact concentrations such as projectile points, waste flakes/debitage, and clay pottery;
- Historic features such as trails, roads, canals, wells, cisterns, foundations, and trash pits at least 50 years in age; and,
- Historic artifact concentrations such as glass bottles, tin cans (e.g., hole-in-top cans) tableware, dishware, architectural debris (e.g., bricks, mortar, window glass), hardware (e.g., square nails), and farm implements at least 50 years in age.

Evidence of a burial site could consist of, but is not limited to:

- Any human remains including articulated or disarticulated bones, teeth, hair, preserved soft tissue, etc.;
- Burial pit or grave shaft outlines in the soil;
- Headstones or footstones; and,
- Coffin wood fragments and coffin hardware.

Archaeological discoveries may be classified as simple or complex. Simple archaeological discoveries consist of isolated artifacts or isolated features with minimal artifacts or diagnostic characteristics. Complex discoveries are those that entail a significant number of artifacts or features, or sensitive or unique finds such as housepits, bone beds, or human remains.

2.0 UNANTICIPATED DISCOVERY OF CULTURAL MATERIALS

If a contractor believes that he or she has uncovered any cultural resources during construction the following steps will be taken.

1. The Contractor will cease work immediately within the area of the find to avoid disturbing the find and will immediately notify the on-site EI(s). No cultural material will be transported from its original location.

   Environmental Inspector: TBD
   Cell Phone Number: TBD
   Email: TBD

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2. The EI(s) will immediately notify ONEOK's Environmental Project Manager of the find. The call will be followed up by an email notification summary to ONEOK's Environmental Manager.

   ONEOK Project Environmental Mgr: Contact information to be provided to Contractor.
   Phone:
   Cell Phone:
   Email:
   Address:

   If applicable, ONEOK's Environmental Project Manager will promptly notify the lead federal agency of the find. If the find is within the U.S. Army Corps of Engineers (USACE) area of jurisdiction (i.e., within a delineated wetland or waterbody) ONEOK's Environmental Project Manager will notify the appropriate USACE's Omaha District Office:

   North Dakota Regulatory Office

   Contact: Patricia McQuery
   Phone: (701) 255-0015
   Email: Patricia.L.Mcquery@usace.army.mil

3. Cessation of ground-disturbing activity will encompass a sufficient area to protect the discovery itself and provide a buffer zone for adequate and safe investigation of the discovery and any other features or artifacts that may be associated with the discovery. The buffer zone will be fenced or delineated with signage by the on-site EI(s) to prevent further disturbance by vehicle and foot traffic. A general guideline is to create a buffer of at least 100 feet around the discovery. The fenced or signed area can be larger or smaller depending on the width of the ROW in order to protect the discovery adequately without unnecessary hindrance to construction and to allow for a passing lane, if appropriate. No fencing or signage will be installed outside of the construction workspace without prior approval from the landowner.

4. The on-site EI(s) will take photographs of the find, including photographs of artifacts, features, and general landscape in the vicinity of the find. NOTE: DO NOT TAKE PHOTOGRAPHS OF HUMAN REMAINS. Additionally, the EI(s) will provide a description of the discovery and note the location by tract, milepost, and/or stationing. This information will be provided by email to ONEOK's Environmental Project Manager and the Cultural Resources Manager at Merjent, Inc. (Merjent). The consulting archaeologist will meet the Secretary of Interior's Professional Qualification Standards as described in 36 CFR 61. Following notification, construction may resume outside of the 100-foot (or greater as necessary) buffer surrounding the find.

   Archaeological Consultant: Contact information to be provided to Contractor.
   Cultural Resources Manager:
   Phone:
   Cell Phone:
   Email:
   Address:

5. The Archaeological Consultant will determine whether the find was recorded during a previous survey. If the find is determined to be within a previously identified site area that has been determined as not eligible for listing in the National Register of Historic Places (NRHP), the EI(s) will notify the construction contractor that construction activities may resume after the fencing or signage is removed.

6. If the find is discovered in an area where a site was not previously recorded, the Consulting Archaeologist/Cultural Resource Manager will review the location and type of discovered material. If the

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discovery is determined to be non-cultural, the EI(s) will notify the Contractor that construction may resume. The Archaeological Consultant/Cultural Resource Manager will submit a letter report regarding the discovery and findings to ONEOK's Environmental Project Manager within 5 business days. ONEOK's Environmental Project Manager will submit the letter report to the lead federal agency, if appropriate.

7. If on-site assessment is necessary to determine the find's significance, the Cultural Resource Manager will arrange for an Archaeologist to travel from their home office to the discovery. Mobilization will occur within one (1) day of notification.
8. If the find is determined to lack integrity or not be significant, the Archaeologist will document the find and notify the Cultural Resource Manager and ONEOK's Environment Manager who will consult with the State Historic Preservation Office of North Dakota (SHSND), USFWS, or USACE, as appropriate, and will request approval to resume construction. ONEOK's Environmental Project Manager will inform the EI(s) that construction can proceed. The Archaeologist will submit a letter report regarding the discovery and findings to the Cultural Resources Manager within 5 business days for submittal to ONEOK's Environmental Project Manager. Additionally, the Archaeologist will submit a site form for the non-significant cultural site to the SHSND, as appropriate, for their records. ONEOK's Environmental Project Manager will provide the summary to the USACE, as appropriate.

   North Dakota Contact:

   Contact: Susan Quinnell, Review and Compliance Coordinator
   Agency : State Historical Society of North Dakota Historic Preservation Office
   Telephone: (701) 328-3576
   Email: squinnell@nd.gov

   If the Archaeologist determines that the discovery represents a significant find, the Archaeologist will notify the Cultural Resources Manager the same day and the procedures in Section 3.0 of this *Plan* will be followed. Merjent's Cultural Resources Manager will notify ONEOK's Environmental Project Manager of any significant discoveries by telephone and follow up email.
9. ONEOK or its representative will notify the landowner of the significant find as appropriate.
10. If the Archaeologist determines the discovery constitutes human remains, the procedures described in Section 4.0 of this *Plan* will be followed.

3.0 DISCOVERY OF POTENTIALLY SIGNIFICANT CULTURAL MATERIALS

As discussed in Section 2.0, the on-site EI(s) will ensure appropriate measures have been taken to protect the discovery from further disturbance. The Cultural Resources Manager will promptly notify the ONEOK Environmental Project Manager of significant finds by telephone and will follow up with an email.

1. If upon evaluation, and in consultation with the SHSND, the find is recommended to be significant and continuing construction may damage more of the site, ONEOK may authorize the Archaeological Consultant to develop a Treatment Plan for finds outside federal jurisdiction to avoid, minimize, or mitigate the adverse effect within the construction right-of-way.

   For all finds on federal lands or within federal jurisdiction, ONEOK's Environmental Project Manager will consult with the appropriate federal agency (i.e., USFWS or USACE) and will request approval to resume construction, subject to any mitigation or avoidance measures required by the federal agency. These measures may include:

   - Preparation of a treatment plan;

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- Visits to the site by the USFWS, USACE, or other parties;
- Implementation of the treatment plan through avoidance, monitoring, or data recovery; and
- Approval to resume construction following completion of the fieldwork component of the treatment plan.

The lead federal agency will initiate federal, state, and tribal consultation required to determine if the find is potentially eligible for listing on the NRHP, and if mitigation is required.

2. The Archaeological Consultant will carry out the fieldwork component of the Treatment Plan prior to construction activities resuming.
3. Construction will resume following the completion of the fieldwork component of the Treatment Plan. ONEOK will notify the EI(s) who will grant clearance for the Contractor to resume construction.
4. The Archaeological Consultant will prepare a report within six (6) weeks of resuming construction describing the results of the treatment. The report will be provided to the SHSND and, if appropriate, a copy of the report will be provided to the landowner and to the lead federal agency.

4.0 DISCOVERY OF HUMAN REMAINS

ONEOK will treat all human remains in accordance with federal and state law as it applies to all lands in North Dakota crossed by the Tioga Lateral Pipeline Project, and in accordance with North Dakota NDAC 40-02-03, which provides for the protection of human burial sites, human remains, and burial goods. As discussed above in Section 2.0, the on-site EI(s) will ensure that appropriate measures have been taken to protect the discovery from further disturbance. All human remains regardless of ancestry will be treated with dignity and respect. No photographs will be taken, nothing will be moved, and the find will be covered. The EI(s) will make notifications of the discovery to the ONEOK Environmental Project Manager and the Cultural Resources Manager.

If it is immediately obvious that the skeletal remains found are non-human and are in association with cultural material, the procedures described in Sections 2.0 and 3.0 of this *Plan* will be followed.

If the remains might be human, the following steps will be taken:

1. The county sheriff's office will be contacted immediately. As stipulated by NDAC 40-02-03-03, upon receiving notification of the discovery of human remains, a human burial, or burial goods, the local law enforcement agency will, as soon as practicable, report the receipt of such notification to the SHSND and North Dakota State Department of Health and Consolidated Laboratories.

   Williams County, North Dakota, Contacts:

Contact:	Verlan Kvande, Williams County Sheriff
Telephone:	(701) 577-7700
Email:	sheriff@co.williams.nd.us
Contact:	Williams County Coroner
Telephone:	(701) 774-7429

2. If local authorities determine the remains are not modern or do not reflect a crime scene and/or if they otherwise relinquish their jurisdiction over the remains, the SHSND will be contacted to assist in identifying the appropriate parties to notify and to determine additional steps to be followed. The Archaeological Consultant will assist as needed with identification efforts of the human remains. A forensic expert may be required to determine whether the remains are Native American. If the SHSND and the consulting

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experts determine the unanticipated discovery consists of Native American human remains, the SHSND, as stipulated by NDCC 23-06-27 will contact the North Dakota Intertribal Reinterment Committee.

North Dakota Contact: Susan Quinnell, Review and Compliance Coordinator
State Historical Society of North Dakota Historic Preservation Office
Telephone: (701) 328-3576
Email: squinnell@nd.gov

3. ONEOK's Environmental Project Manager and Merjent's Cultural Resources Manager will work with the SHSND, USACE, or USFWS, as applicable, and American Indian tribes to determine the appropriate treatment or other measures to resolve the discovery of human remains or burial goods.

ONEOK Environmental Project Mgr: Contact information to be provided to Contractor.
Phone:
Cell Phone:
Email:
Address: .

Archaeological Consultant: Contact information to be provided to Contractor.
Cultural Resources Manager:
Phone:
Cell Phone:
Email:
Address:

4 If the unanticipated discovery of human remains is located within a wetland or waterbody, ONEOK will consult immediately with the USACE regarding the appropriate measures to handle such a discovery.

Omaha District
North Dakota Regulatory Office
Contact: Patricia McQuery
Phone: (701) 255-0015
Email: Patricia.L.McQuery@usace.army.mil

6. ONEOK or its representative will contact the landowner to keep them apprised of parties that will inspect the find in order to determine the disposition of the remains.
7. The measures to protect the remains and any associated artifacts will remain in effect until they have been fully evaluated and the appropriate treatment of the discovery (if applicable) has been completed.
8. ONEOK will notify the EI(s) who will grant clearance for the Contractor to start work upon completion of the treatment of the discovery, and resolution of all issues.

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H.7 Revegetation Plan

Tioga Lateral Pipeline Project

REVEGETATION PLAN

ISSUED FOR PERMITTING

November 2019

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1.0 INTRODUCTION

This *Revegetation Plan* (Plan) was created to provide procedures to be followed during the revegetation of areas disturbed as a result of constructing the ONEOK Bakken Pipeline, L.L.C. (ONEOK) Tioga Lateral Pipeline Project (Project). This Plan incorporates comments from the Natural Resource Conservation Service (NRCS) and/or county conservation offices in Williams County, North Dakota; applicable agency permit conditions; the contractor's ONEOK-approved Revegetation Plan, and ONEOK's *Construction and Mitigation Restoration Plan (CMRP)*. Permit conditions, environmental and civil, or landowner agreements will take precedence over the requirements of this Plan.

1.1 Revegetation

This Plan applies to all areas of perennial vegetation disturbed by construction. ONEOK will not seed active or rotated croplands unless specifically requested to do so by the landowner or land management agency. ONEOK will coordinate with landowners to discourage livestock grazing of the construction right-of-way (ROW) during the first growing season by utilization of temporary fencing, deferred grazing (see Section 1.4), or increased grazing rotation frequency, especially in critical areas, such as sandy sites with blow-out potential.

1.1.1 Wetlands and Stream Banks

Temporary Revegetation

ONEOK's contractor will seed wetlands, excluding those inundated or farmed, and stream banks with an appropriate cover crop where necessary to prevent erosion (see Appendix A – Contractor Revegetation Plan). No fertilizer, lime, or mulch will be applied in wetlands.

Permanent Restoration

Stream banks will be seeded with the same seed mix as the adjacent upland area, except where a specific streambank seed mix was requested by a county NRCS or conservation district (see Appendix B, NRCS Herbaceous Vegetation Establishment Guide). ONEOK does not propose permanent planting or seeding in wetlands. In wetlands, the root mat/vegetative layer should be left in place during construction, except directly over the trench line. By leaving the root mat/vegetative layer intact, revegetation of the wetland to its pre-construction composition will occur naturally through native recruitment.

1.1.2 Uplands

Temporary Revegetation and Stabilization

If final grading and installation of permanent erosion control measures will not be completed in an area within 10 days after the trench is backfilled, then temporary stabilization measures will be employed. Temporary stabilization measures will also be employed where construction activity is interupted for extended periods and when seeding cannot be completed, e.g. due to seeding period restrictions.

Temporary stabilization measures consist of surface roughening (e.g. plowing or discing to achieve a rough surface), temporary seeding, or temporary mulching. Surface roughening will predominantly be used for temporary stabilization of the soils until soil conditions permit seedbed preparation and seed germination. Surface roughening may include equipment tracking, scarifying, imprinting, or tilling a disturbed area. These techniques are only adequate when the soils have a significant organic component. If the soils are sandy the surface roughening technique will be ineffective and will contribute

to fugitive dust emissions. ONEOK's Enivironmental Inspection Team and Construction Management team must approve the use of surface roughening.

Temporary seeding and/or mulching will be employed where erosion is likely to occur, including locations such as stream banks, road ditches, steep slopes, and areas subject to storm water flow, as described in the *Storm Water Pollution Prevention Plan (SWPPP).* ONEOK's specification for installation of mulch and temporary stabilization is discussed in Section 1.7.5 of the *CMRP*. The contractor will consult with ONEOK and the Lead Environmental Inspector (EI) if there is a need for temporary stabiliation measures.

Permanent Revegetation

All upland areas disturbed by construction activities, excluding active and rotated cropland, will be seeded within 10 days of completion of final clean up. Ideally, seeding will be done before the ground freezes. Fertilizer and pH modifying agents (e.g., lime) may be used and will be based on local soil moisture conditions, germination requirements of selected species, and adaptation of seed soil temperature.

1.1.3 Seedbed Preparation

Seeding will follow cleanup and topsoil replacement as closely as practicable. The contractor will scarify, till, disk, or harrow the seedbed as needed in order to enhance seed germination. Soil compact treatment will be applicable as described in the *CMRP*. Sites where this method is not practical (e.g., steep slopes, rocky areas, etc.) will be dozer-tracked perpendicular to the slope or otherwise left with adequate roughness, following topsoil placement, to provide micro-sites for seed germination and to reduce soil movement. If mulch was applied prior to seeding for temporary erosion control, the contractor will remove and dispose of the mulch prior to seedbed preparation to ensure that seedbed preparation equipment and seed drills do not become plugged with excess mulch; to support an adequate seedbed; and to ensure that seed incorporation or soil packing equipment can operate without becoming plugged with mulch.

1.1.4 Seeding Method

Based on site-specific conditions, seeding will be accomplished by drilling or broadcasting. A range-type drill, or similar device, will be employed on level to gently sloping areas where rock fragment content allows drilling operations. The seeder will be followed with a drag packer or roller to ensure uniform coverage of the seed and adequate compaction. Drill seeding will be done along contour lines where practical, not up and down the slope. The drill seeder will apply seed mixes with mechanisms such as seed box agitators to allow even distribution of all species in each seed mix, with an adjustable metering mechanism to accurately deliver the specified seeding rate, and with a mechanism such as depth bands to accurately place the seed at the specified depth. Planting depth will not exceed local and regional agriculture practices. Seeders will be calibrated and operated at an appropriate speed so that the specified seeding rate is planted. The row spacing on drill seeders will not exceed 8 inches, unless otherwise recommended due to growth characteristics of a certain species.

Broadcast seeding will be employed on steep (> 15 % slope) and/or rocky areas where drill seeding is not practical. Seed will be broadcast using manually-operated, cyclone-type bucket spreaders, mechanical seed spreaders or blowers, or hydroseeders. Broadcast seeding will be performed at 2 times the rate for drill seeding. Seeds will be mixed frequently in spreader hoppers to discourage settling. Broadcast seeding may be delayed during high wind conditions if even distribution of seed is impeded.

Where possible, broadcast areas will be chained or harrowed to cover seed. On small or inaccessible areas, hand raking will be used to cover seed. On steeper slopes where tilling or harrowing are not feasible, the areas will be dozer-tracked perpendicular to the slope prior to seeding, or-otherwise left in a roughened state, to provide micro-sites for seed germination.

Hydro seeding may be used, on a limited basis, where the slope is too steep, or soil conditions do not warrant conventional seeding methods. Fertilizer, where specified, may be included in the seed, virgin wood fiber, tackifier, and water mixture. When hydro-seeding, virgin wood fiber will be applied at the rate of approximately 3,000 pounds per acre on an air-dry weight basis as necessary to provide at least seventy-five (75) percent ground cover. Tackifier will consist of biodegradable, vegetable-based material and will be applied at the rate recommended by the manufacturer. The seed, mulch, and tackifier slurry will be applied so that it forms a uniform, mat-like covering of the ground.

1.1.5 Revegetation Mixtures and Rates

In cooperation with the applicable agencies and private landowners, seed mixtures have been developed for the soil types within the Project area (see Appendices A and B). Disturbed areas (with the exception of cultivated fields and wetlands) will be seeded in accordance with written recommendations for seed species, rates, techniques, and planting dates from the NRCS or county conservation districts (unless otherwise specified in landowner agreements) as outlined in the contractors revegetation plan (Appendix A) or the NRCS Herbaceous Vegetation Establishment Guide (Appendix B). Seed included in mixtures developed in collaboration with agencies assume use of local strains or cultivars to assure seeds. Seed will be acquired from local sources that can verify appropriate cultivars are used.

Conservation Reserve Program (CRP) seed mixture will be applied to CRP lands. The property owner is responsible for identifying CRP lands crossed by the Project. All disturbed areas will be re-seeded in accordance with the specifications outlined below. The ROW will be re-seeded at the end of construction.

In some instances, seed mixtures may need to be modified as a result of limited species availability, poor seed quality, or site differences. With ONEOK approval, these modifications will be made based on site-specific conditions and requirements.

1.1.6 Seed Installation Timing

Seeding of permanent native seed mixes should not occur outside of the dormant seeding windows listed in Table 1.1.7-1. to prevent premature germination of vunerable native seedlings during the hottest and driest time of the year. Temporary stablization measures should be utilized during the summer period and prior to the winter dormant seeding date for each respective state. These dates are subject to annual and local variability across the project, but should be used as a general rule of thumb and deviation of more than a week from these dates should only be considered on a case by case basis, with the EI team's recommendations and ONEOK's approval. Replanting of alfalfa fields requires two growing season and communciation with the landowner will take place during this timeframe.

1.1.7 Dormant Seeding

Dormant seeding is most effective in restoration of disturbed areas because early spring is the most reliable period for moist soil conditions. Low temperatures and dormant vegetation during the winter months help soils retain beneficial amounts of moisture into the spring (WYRRC, 2010). Dormant seeding is conducted after soil temperatures are cool enough to prevent seed germination; generally

when soil temperature at two inches below the soil surface is 40 degrees or less for a minimum of five consecutive days (NRCS, 2018). The dormant seeding timeframe in North Dakota occurs after November 1. Dormant seeding is only practicable if the soil is not frozen and snow is not present. Procedures for applying soil amendments, seedbed preparation, seeding, and mulching are the same as outlined for permanent revegetation in this Plan.

Where dormant seeding is conducted, one or more of the following temporary erosion and sediment controls will be put in place over the freshly seeded area unless the local soil conservation authority, landowner, or land managing agency specifies otherwise. The temporary measures are as follows:

- Straw mulch, at 4,000 lbs/acre, anchored;
- Hydromulch, at 1,500 to 2,000 lbs/acre; and/or
- Erosion control blanket, 1 layer on soil surface

Additional erosion control measures will be applied as outlined in ONEOK's *CMRP*.

1.2 Weed Control

Weed control practices will be implemented to limit the growth and spread of weeds and to ensure that revegetation is successful with the proposed seed mixtures in accordance with ONEOK's project-specific *Weed Management Plan*.

1.3 Seed Inspection

Seed Tag Inspection

Restoration contractors will collect tags from the seed used to document compliance with agency and landowner seeding requirements and provide the tags and associated records to the appropriate EI. The restoration contractor will be responsible for inspecting seed and seed tags to ensure compliance with the above requirements. Seed purchased by the contractor will be on a "Pure Live Seed" (PLS) basis. The restoration contractor will inspect seed prior to use. Seed tags will identify:

- Purity;
- Germination;
- Date tested;
- Total weight and PLS weight;
- Weed seed content; and
- Suppliers name and business information.

Seed Purity

The germination and purity tests conducted by the vendor will be completed within 12 months of seed utilization. The seed tags on the seed sacks will also certify that the seed is "Noxious Weed Free". Seed rates used on the Project will be based on PLS rate, not actual weight basis.

1.4 Grazing Deferment

Excessive livestock grazing is detrimental to the germination of permanent vegetative cover over the ROW. In order to ensure that the ROW is properly restored with sufficient vegetative cover, ONEOK will develop grazing deferment plans with landowners, tenants, or other grazing permit holders that address

construction timing, fence cutting and bracing, temporary fencing, cattle guard locations, and water requirements for livestock.

The NRCS recommends all range plantings are not grazed until the stand is fully established, which is a minimum of one full growing season. If, after one full growing season, the stand has not adequately established, or seedlings do not have well-developed root systems with adventitious roots above the sown seed, grazing should be deferred for a second growing season (NRCS, 2018; Appendix B).

1.5 Revegetation Monitoring

Monitoring will be conducted in compliance with the *SWPPP* during the construction phase as well as the post construction phase of the Project to verify adequate vegetation establishment to stabilize the soil and satisfy permit conditions.

2.0 REFERENCES

U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). April 2018. Herbaceous Vegetation Establishment Guide. Available online at: https://efotg.sc.egov.usda.gov/references/Public/ND/Herbaceous_Veg_Est_Guide.pdf. Accessed November 4, 2019.

Wyoming Reclamation and Restoration Center (WYRRC). 2010. Successful Restoration of Severely Disturbed Lands: Seeding Essentials for Reclaiming Disturbed Lands

APPENDIX A

Contractor Revegetation Plan

To be developed upon completion of pre-construction topsoil surveys

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APPENDIX B

NRCS Herbaceous Vegetation Establishment Guide

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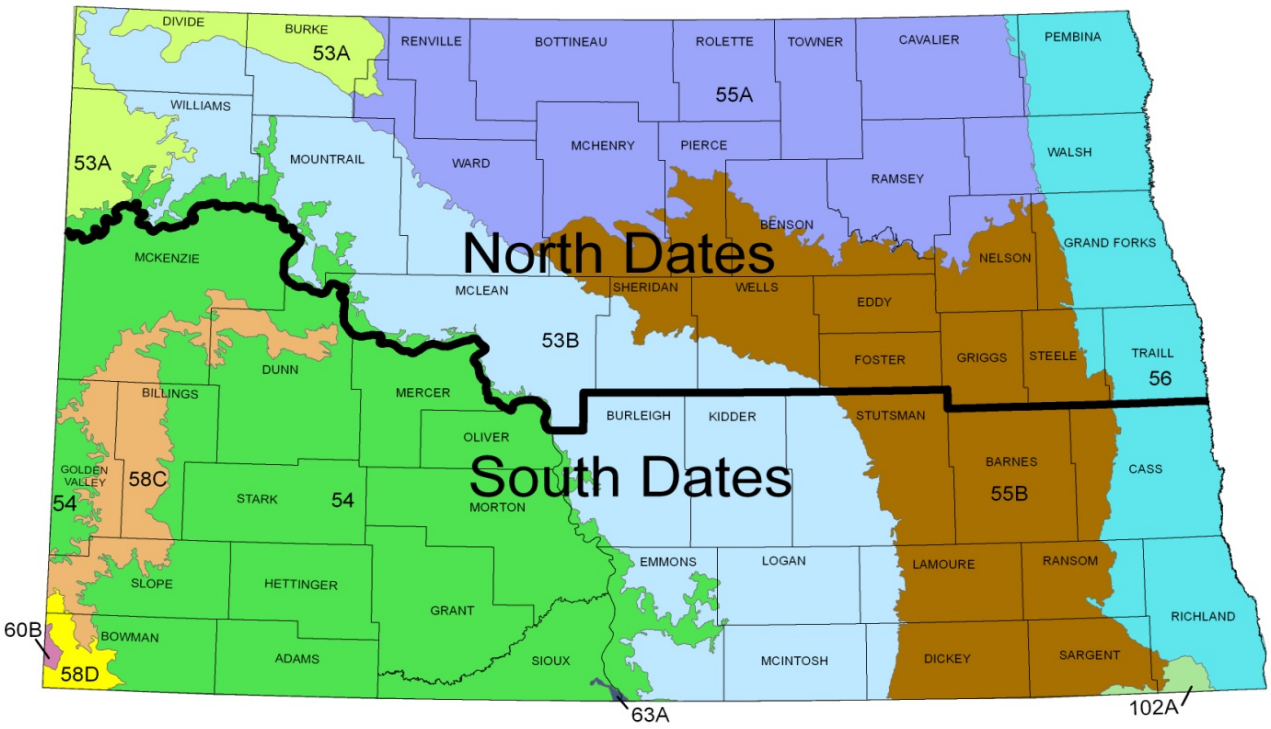
Herbaceous Vegetation Establishment Guide

Seeding Dates:

Seeding dates are based on climatic records, research, and experience; and represent optimum periods for grass and legume establishment. These dates should provide for adequate development of adventitious roots prior to stressful periods, such as hot, dry summers and cold, open winters. The following table shows recommended seeding dates by Major Land Resource Areas (MLRAs). Variation from these dates plus or minus 5 days may be made if justified by moisture and temperature conditions.



Seeding Dates		
Species Type and Season of Planting	**NORTH** (53A, N.1/2 53B, 55A, N. ½ 56, N. 1/3 55B)	**SOUTH** (58C, 58D, 54, S. ½ 53B, S. 2/3 55B, S. 56)
Cool Season Species		
Spring[3]	Prior to May 20	Prior to May 10
Late summer [1]	August 10 to September 1	August 10 to September 15
Late fall (dormant) [2, 3]	See footnote [2]	See footnote [2]
Warm Season Species		
Spring	May 10 to June 25	May 10 to June 25
Warm/Cool Season Mix		
Spring	May 1 to June 15	April 20 to June 1

[1] If legumes are part of a mixture, seed by August 25th. For winter survival, it is essential that alfalfa plants reach the 6-leaf stage prior to fall dormancy. Alfalfa requires 6-8 weeks growth after emergence to develop the 6-leaf stage.

[2] Seeding may occur once soil temperatures drop to 40º Fahrenheit for a minimum of 5 consecutive days (usually after November 1) based upon North Dakota Agriculture Weather Network http://ndawn.ndsu.nodak.edu/index.html or actual field measurements at a depth of 2 inches.

[3] Pollinator plantings consisting of forbs only (no grasses) will be seeded during the spring or dormant seeding windows. Pollinator plantings consisting of forbs and grass mixtures will be seeded during the appropriate seeding window for the grass component of the mixture.

Seedbed Preparation:

A seedbed will be prepared that is free of competing vegetation and is not subject to excessive erosion. A firm seedbed will be provided so the seed is placed at the designed depth. **IT SHOULD BE FIRM ENOUGH SO THAT ADULT FOOTPRINTS ARE HARDLY VISIBLE**.

The presence or absence of weed populations, especially noxious weeds, will impact seedbed preparations. Each field should be evaluated for weed pressure. Seeding on fields with significant weed populations will be delayed until weeds are controlled. This may mean a protective cover crop may need to be planted.

When planning a seeding, the previous two years of herbicide application should be considered. Any potential carryover problems should be addressed by delaying seeding, establishing a cover crop, and/or changing species to be planted. If a cover crop is necessary, refer to part 6 of this tech note.

Seedbed alternatives:

No-Till Method - Seeding into standing stubble of a previous crop without further seedbed preparation. Excess straw or chaff should be removed prior to seeding. Use of harvest equipment, which spreads straw along a minimum of 80 percent of the header width, will prevent excess chaff problems. If weeds or excessive volunteering of previous crop is present, control with appropriate herbicide(s) in accordance with product label directions and current recommendations from North Dakota State University Cooperative Extension Service, ND Weed Control Guide, Cir. W-253 Rev.

Rye produces an allelopathic agent that may inhibit germination in many grass species. If possible, avoid seeding into rye stubble or heavy rye residue. Other commonly grown crops provide good cover and do not inhibit germination.

Cover Crop Method - Plant a cover crop (high residue producing crop) of oats, barley, flax, grain sorghum, millet, or sudangrass during the growing season before seeding perennial forages if existing cover is insufficient to control erosion. If the cover crop method is to be used, see part 7.

Clean-Till Method - Seed into a new, clean tilled, firmly packed seedbed. If erosion or potential climatic factors are a potential concern, a cover crop may be used. See part 6 if a cover crop is to be used.

Seeding Equipment:

Seeding equipment that ensures proper seed placement and good seed-soil contact will be used. Modern grass seeding attachments that allow for proper seed flow, seed placement and soil packing are needed to ensure a successful seeding.

Slower seeding speeds should be used for fluffy or rough-coated seed species. Three to five miles per hour should be the seeding speed for most types of grass drills. Seeding speeds in excess of 6 miles per hour may result in uneven or inconsistent grass and legume stands.

If a carrier is needed to help feed seed through the drill cracked corn or rolled oats may be added to the mixture.

Grass Drill

Grass drills are specifically designed and equipped to properly meter and place various grass, legume and/or forb seed and share the following design characteristics:

- Different seed boxes are normally required to handle the three types of grass seed commonly used. This includes the relatively clean, smooth seed characteristic of many cool-season grasses, the chaffy or trashy seed characteristic of many warm-season grasses, and fine, smooth seed, characteristic of legumes or grasses such as switchgrass, hard fescue, or reed canarygrass. Seed boxes having the capability of seeding chaffy or awned grasses (i.e. blue grama, bluestems, and indiangrass) are needed, only if such species are planned in the seeding mixture; likewise, fine-seed or legume seed boxes are needed, only if such species are to be seeded.
- Agitators or similar mechanisms that prevent bridging of chaffy or trashy seed and ensure a constant flow of seed at the desired rate with uniform mixing of the species in the mixture.
- Feeder mechanism (picker wheels, fluted feed, etc.) that ensures uniform flow of all types of grass seed either separately or in a mixture.
- Oversized feeder tubes that allow constant flow of chaffy or trashy type seed from boxes to placement point (if such seed is used).
- Individually mounted, adjustable, spring loaded, double-disc openers.
- Depth bands or other depth-control systems that provide positive seed placement for final planting depth of one-fourth to one inch over varying degrees of seedbed firmness.
- Press/packer wheels that provide adequate covering and firming of soil over and around the seed for necessary seed/soil contact after proper seed placement. They should be mounted individually on each furrow opener or independently to follow behind each opener. Press/packer wheels are not intended to provide the basic "firm seedbed." The firm seedbed must exist before the drilling operation begins.
- Drill calibration should be completed for both grass and grain drills prior to seeding. Refer to item 4 for guidance in completing drill calibration.

Small Grain Drill

Free-flowing grass seed (i.e., wheatgrasses) and legume seed can be successfully planted with a small grain drill provided proper seeding depth can be maintained throughout the field. Seeding depth is the most limiting factor to seeding success and contributes to most of the seeding failures when using a grain drill. It is extremely important to have a firm seedbed when using a grain drill. Periodic inspections should be done to check seeding depth especially when seeding across different soil types. Seeding depth will vary under actual planting conditions.

Checking the drill frequently and hand mixing the seed is essential to achieving a properly blended seed mix and helps ensure that seeds of different sizes are seeded evenly across the field. Periodic feeder

mechanism adjustments are usually necessary to ensure proper seeding rates. A separate legume box is desirable for seeding small seeded species. (i.e. switchgrass, hard fescue, reed canarygrass, and alfalfa). Ensure that the grain drill's drop tubes are placed in front of the packer wheels to allow for proper seed-soil contact.

Chaffy or awned seeds (i.e. bluestems, indiangrass, and blue grama) are extremely difficult to plant with a grain drill. It is recommended that a grass drill be used for these types of grasses. Proper agitation is needed to prevent "bridging" of seed in the seedbox, and the feeder mechanism must be capable of metering a uniform flow of seed at the desired rate. Very few grain drills have this capability. Use of debearded seeds is strongly recommended when considering seeding chaffy or awned seeds in a grain drill.

Broadcast Seeder

Broadcasting may only be used when one or more of the following conditions apply to the planting area:

- Slope makes use of a drill impractical;
- Soil conditions prohibit effective use of a drill;
- Area is 5 acres or less;
- Seeding pure stands of alfalfa.

Broadcast plantings exceeding 5 acres require a variance approved by the State Resource Conservationist. All areas to be broadcast will have properly prepared seedbed (minimal residue cover with a smooth, firmly packed surface). Following the broadcast operation, an additional operation will incorporate the seed into the soil at the proper depth. This can include use of a drag or harrow, culti-packer, roller packer, or other suitable implement to cover and press the seed into the soil surface, to attain the goal of good seed to soil contact. All broadcast plantings will utilize 150% of full seeding rates listed in Table 1. Forbs planned for pollinator plantings which normally exceed 100% rates, will not exceed 150% of the full seeding rate.

Air-seeders

Some air-seeders and similar types of equipment may be used to seed free flowing grass seed (i.e., wheatgrasses) and legume seed if proper seeding depth can be obtained (as specified in part 6). However, seeding mixtures containing varying seed sizes may require an inert carrier to work properly in air-seeders. The shallow planting depths for grasses and legumes can be difficult to maintain with this type equipment. The equipment must be able to provide a uniform flow of seed at the desired rate. Use packer wheels or other suitable packing implement to press soil firmly around the seeds.

Drill Calibration:

Grass or grain drills may be calibrated using the following methods.

Bulk Weight Method:

Raise the drill's drive wheel and measure its circumference in **feet**. Next, measure the distance between seed spouts or disc openers. Use Table A to determine the number of revolutions (R) to turn the drive wheel for the row spacing and wheel circumference in feet (C) for your drill.

Table A

Row spacing in inches	No. of seed spouts to use	Turns of drive wheel	Row spacing in inches	No. of seed spouts to use	Turns of drive wheel
6	4	96/C = R	24	1	96/C = R
7	4	82/C = R	30	1	77/C = R
8	3	96/C = R	36	1	64/C = R
10	3	77/C = R	42	1	55/C = R
12	2	96/C = R	48	1	48/C = R

Place enough seed in the box to cover spouts from which you will collect seed. Turn the drive wheel until all spouts are feeding. Place a container under the correct number of seed spouts (as determined from the Table A) and turn the drive wheel the number of revolutions previously determined. Weigh the sample in grams. Multiply this weight by 0.5. The result is the pounds per acre at that setting. Make adjustments in the drill setting and continue trials until the desired seeding rate is obtained.

Remember: Seeding rates as determined by this method are in terms of **bulk seed**. You need to convert your seeding rate from pure live seed per acre to bulk seed per acre when using this calibration method.

Example:

Row spacing = 7 inches
Number of seed spouts = 4
Circumference of drive wheel = 6.8 ft
Revolutions of drive wheel (R) = 82/C
R = 82/6.8 = 12 revolutions
Bulk seeding rate is 15.1 lbs/ac. The drill is properly set when the 4 seed spouts yield 30 grams of seed after 12 revolutions of the drive wheel.
30 grams x 0.5 = 15 lbs/ac

Seeds Per Row Foot Method:

This method of determining the amount of seed being distributed by the seeding equipment is to count the number of seeds per foot of drill row while the machine is in operation.

Fill the drill with seed, make setting, and drive equipment over a hard ground surface or canvas. Count the number of seeds per foot of row and adjust until proper seeding rate is attained. Use Table B to determine the linear foot of row necessary to equal one square foot planted.

Table B

Row spacing in inches	Linear foot of row to equal one square foot
6	2.0 feet
7	1.8 feet
8	1.5 feet
10	1.2 feet
12	1.0 foot

To determine the proper number of seeds per foot of drill row for a specific seeding mixture; you will first need to calculate the bulk seeding rate for each species in the mix. From Table 1, calculate the number of seeds per square foot (ft^2) for each pound seeded (seeds per pound divided by 43,560ft^2/acre). Multiply the number of seeds per square foot for each pound seeded by the bulk seeding rate for each species. Total the resulting numbers to determine the number of seeds per square foot for the mixture.

For example: If you want to calibrate a drill for a mixture of 4.5 lbs. PLS/ac green needlegrass (80% purity and 70% germination) and 4.0 lbs. PLS/ac western wheatgrass (92% purity and 85% germination), we would calculate the bulk seeding rate for each species. Bulk seeding rate would be 8 lbs/ac for the green needlegrass and 5.1 lbs/ac for the western wheatgrass. Table 1 shows one pound of green needlegrass seed contains,

180,000 or 4.1 seeds/ft^2 for each pound seeded (180,000/43,560 ft^2/acre). Western wheatgrass has 112,000 seeds per pound or about 2.6 seeds/ft^2 for each pound seeded.

8 lbs/ac x 4.1 seeds/ft^2/lb. = 32.8 seeds/ft^2
5.1 lbs/ac x 2.6 seeds/ft^2/lb. = 13.3 seeds/ft^2

The total seeds per square foot for the mix would be 46. If the drill we are calibrating has 7-inch row spacing, the drill calibration would be 46 seeds per 1.8 feet of row length.

Seed Requirements:

A. All seed must meet the requirements of North Dakota State Seed Laws and Regulations. Information on State seed law is available at Chapter 4.1-53 of the ND Century Code or ND Seed Labeling Requirements. All seed, including homegrown seed, must be officially tested for purity and germination to enable pure live seed (PLS) calculations for determining the proper seeding rate. Tests must be made within a 12-month period, exclusive of the test month, prior to seeding. Recommend re-testing of seed within the 12-month period if stored improperly (high humidity and/or high temperature).

B. Use certified seed when available.

C. Approved Varieties and Seed Selection:

   a. Origin of non-varietal ('common') grass seed (and for those varieties not listed in table 2) of both native and introduced species for Forage and Biomass Planting is limited to ND, SD, NE, MT, MN, WY, and the Canadian provinces of Alberta, Manitoba and Saskatchewan.

   b. Origin of non-varietal ('common') native forbs and legumes (and for those varieties not listed in table 2) will originate or be grown in ND, SD, NE, MT, WY, ID, WA, OR, MN, WI, IA, CO, and the Canadian provinces of Alberta, Manitoba and Saskatchewan.

   c. Approved named varieties are located in Table 2. All approved seed varieties must originate from the contiguous United States or Canada. If the origin is from someplace other than the contiguous United States or the Canadian provinces of Alberta, Manitoba and Saskatchewan the producer or vendor must provide a DNA analysis that proves the variety is bona fide.

   d. Alfalfa named varieties must have a Winter Survival Index (WSI) of 2 or less to meet specifications. The term winter hardiness rating is sometimes used synonymously with winter survival index, a number of 2 or less is acceptable. If the winter hardiness rating uses letters (e.g. EH, extremely hardy) those will not be acceptable, only a number of 2 or less will be accepted. Origin of **non-varietal** ('common') alfalfa types and introduced legumes is limited to ND, SD, MN, MT, and the Canadian provinces of Alberta, Manitoba and Saskatchewan.

   e. Organic grass seed. Grass seed produced in a manner which meets the requirements of the National Organic Program is presently limited by availability and species. If organic grass seed which meets the requirements of Section 5 of this document is not available for the species identified on the ND-CPA-9, substitution of non-organically raised grass seed of the same species is permitted under Section 205.204(a) of the Code of Federal Regulations – National Organic Program.

   f. Legume seed should be inoculated with the proper culture just prior to seeding in order to increase the potential for nitrogen fixation by the plant.

D. No noxious weed amounts are allowed on any seed tags.

E. All seeding rates will be based on pure live seed (PLS). PLS can be calculated from information on the seed tag. PLS is derived by multiplying percent pure seed by percent germination (plus

percent hard and dormant seed, if present) and dividing by 100. See ND Extension Service Publication A-353 "Farmer's Guide for Seed Buying".

F. Additional information on seed tag interpretation can be found at:
http://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/ndpmcnl11797.pdf

G. Seed coating is considered inert matter which is reflected in the purity and inert percentages on the seed tag. The extra weight of the coating reduces the number of pure live seeds per pound, resulting in need to use higher seeding rates to achieve a full stand. Seed coating is considered inert matter which is reflected in the purity and inert percentages on the seed tag. The extra weight of the coating reduces the number of pure live seeds per pound, resulting in need to use higher seeding rates to achieve a full stand.
http://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/ndpmcnl12597.pdf

H. Total PLS pounds seeded must be within 10% of the planned design.

Seeding Depth:

Proper seeding depth is extremely important in successfully establishing native and introduced vegetation from seed. Native grasses, forbs, and shrubs need to be seeded at a shallow depth, as light plays a key role in the germination of many native species. Optimum seeding depths are ¼ to ¾ inch.

Cover and Companion Crops:

Cover Crops

A cover crop is an annual residue-producing crop, planted during the growing season(s) before seeding the perennial cover. Its purpose is to provide cover and residues to reduce evaporation, maintain cool soil temperatures, smother or reduce weeds, improve soil structure, enhance soil biology, trap snow, protect seedlings from extreme climatic conditions and control wind and water erosion.

See Practice 340 *Cover Crop* for guidance on selecting and managing cover crops. See Table 1: *Cover Crop – Common Species and Properties* for cover crop species characteristics, seeding rates, mycorrhizal association, etc.

Companion Crops

A companion crop is an annual that is planted with the perennial species. Seeding rates for companion crops are lower than normal seeding rates for those crops to reduce competition with the seeded perennial species.

Barley	10 lbs/acre
Oats	10 lbs/acre
Spring wheat	15 lbs/acre
Flax	7 lbs/acre

If used, the companion crop should be clipped above the new perennial seedlings and removed before it becomes competitive with the perennial species.

Management and Protection During Establishment:

Grazing

Do not graze until stand is fully established. This period will be a minimum of one full growing season. If an adequate stand has not established during the first growing season, or if seedlings do not have well-developed root systems with adventitious roots above the sown seed, then deferment should be extended through the second growing season. Grazing during the deferment period for weed control will be handled on a case-by-case basis provided no damage will be done to the seeded species.

Weed Control

During the establishment period, excessive amounts of competitive weeds will be controlled. Control weeds that compete with seedlings for sunlight and/or moisture during the growing season of the species planted. The first weed control operation will be needed as recommended or prior to weed seed maturity. Repeated weed control operations may be needed. Competitive weeds can be controlled either mechanically or chemically, or by a combination of these methods.

Mechanical - When controlling competitive weeds by clipping or mowing, adjust the equipment to cut above the new seedlings, and clip before the weeds set seed or mature. If the clippings are dense enough to smother the new seedlings, promptly remove clippings from the field.

Mowing Height – Eight to ten inches is the preferred stubble height. This will be over the top of most 1- to 2-year old forb and legumes species in early summer. Certain species are especially sensitive to clipping height and removal of the basal leaves may result in death of the plant. Some grass species such as switchgrass have high growing points, and once established should not be mowed at a height less than 10 inches until after the growing season.

Equipment – Swathers generally work best because of operator visibility, maneuverability, and ease of height adjustment. The operator can quickly raise or lower the platform. If the windrows are heavy enough to smother new seedlings they should be promptly removed. Sickle bar mowers are good if an adequate, consistent stubble height can be maintained. Rotary mowers can work well if they are set at the highest wheel setting. This will usually result in about an 8-inch clipping height. A level mowing height should be maintained and travel speed as appropriate to disperse the clippings. A sharp blade is essential.

Timing – Mowing must be done early enough in the season before most of the weed seed become viable and so the seeded species can still benefit from the "opened canopy" and put on new growth before fall. Multiple mowings in a season may be necessary with high density/biomass weed competition. Mowing in late summer or early fall provides little benefit to the seeded species and probably causes more harm than good. Check local/state regulations of individual conservation practices for the earliest allowable mowing dates.

Whenever new seedings are mowed some injury occurs to the seeded species. Young forb and legume seedlings are especially vulnerable and may be killed by driving over them. If weeds are a competition problem to the new seeding, then mowing is probably justified. Spot mowing is encouraged whenever possbile. This eliminates damage to the seeded species in areas where you don't have to mow, and maintains the taller wildlife cover. Spot mowing also creates "edge" structure which enhances landscape diversity within the field and may provide additional wildlife benefits.

Chemical - To control competitive weeds with herbicides use the appropriate herbicide(s) applied according to the manufacturer's label. The best control will generally be obtained when weeds are in the early stages of growth. Precautions should be taken to ensure that grass or legume seedlings are not

injured by the selected herbicide(s). Refer to North Dakota State University, ND Weed Control Guide (Cir. W-253 Rev.) for specific herbicide recommendations on forage crops in North Dakota. Noxious weeds must be controlled in accordance with State law.

Insect Control
Insects can be a threat to seedlings. Contact the County Extension Service for recommendations on control of specific insects affecting seeded species.

Cautions when using pesticides:
Some herbicides have residual activity that can adversely impact stand establishment of sensitive species or may have haying or grazing restrictions. Use of pesticides must be consistent with the manufacturer's label requirements and in accordance with State and Federal laws and regulations.

Guidelines for Stand Evaluation:
To determine adequacy of stands and to determine if reseeding or reinforcement seeding is required, use ND-CPA-9a, Stand Evaluation Worksheet, and the following guidelines:

It should be recognized that environmental factors, such as climate, insects, soils, and fertility affect time required for establishment of stands. Timeliness of precipitation, drought, extreme temperatures, severe winds, or late soil thaw can delay seedling emergence and/or development.

Seedling emergence should be relatively uniform over the area. The density of established plants required for an adequate stand will depend upon the planned purpose of the seeding and may vary from program-to-program. Consult program specific guidelines for additional information.

If specific practice or program guidelines are not available, stand counts should indicate a density of at least 3 to 5 seedlings per square foot of area. If at least 3 of the seedlings are rhizomatous species, the lower limit of 3 seedlings per square foot is adequate. The upper limit of 5 seedlings per square foot is necessary when all are bunch-type species or a mixture of rhizomatous and bunch-type species.

The adequacy of a stand will be based on density of established plants and stage of morphological development needed to ensure perenniality. To be considered established, a grass plant must have a well-developed adventitious root system and should exhibit signs of tillering or rhizome development. See Figure 1. An alfalfa plant must have a well-developed taproot with secondary and tertiary roots and a well-developed crown set below the soil surface and/or branch rhizome.

For more information on alfalfa seedling development, see these online publications:

University of Wisconsin, Alfalfa Germination & Growth, A-3681

NDSU, Time of Seeding for New Alfalfa Establishment, R648

Preliminary stand evaluation can be made 4 to 8 weeks after germination; evaluate for progress and management problems (i.e. weeds, insects, etc.) - not for final establishment.

All stands must go through at least one winter before making final stand evaluation.

Stands resulting from late fall (dormant) or spring seedings must go through the first growing season and subsequent winter; evaluation for final establishment can be made any time during the second growing season.

Stands resulting from late summer seeding cannot be evaluated for final establishment until the end of subsequent, full growing season.

Most stands will require 2 growing seasons to become established; warm-season species may require 3 growing seasons for establishment.

Stand counts may either be done using a 1-square foot frame or the row count method. If a frame count is used, all plants rooted within the frame should be counted. If the row count method is used, 2 side-by-side rows should be counted, the length to be determined by the row spacing. 6-inch row spacing would require the observer to count all plants in 2 rows for a length of 12 inches; a 7-inch row spacing would require a 10.3-inch length of 2 rows; and an 8-inch row spacing would require a 9-inch length.

A predetermined number of steps should be taken diagonal or perpendicular to the drill rows and the frame dropped at the toe of the foot on the final step. The frame should be dropped in a consistent alignment to the drill rows. The same procedure would be used when making a row count. Instead of dropping the frame at the toe of the foot, this point would then mark the beginning of the row count.

The number of samples required depends on factors such as stand uniformity and the number of species to be counted. Generally, a minimum of 10 counts (or frames) per 10 acres or less of field size would result in a representative sample. End rows, turn around areas or other areas that may have been double seeded should be avoided. Ten counts per 10 acres of field size should only be used as a starting point. For example, a 70 to 80 acre pasture planting with a uniform stand may be sampled accurately using 40 counts or less. Whatever the situation, enough counts must be taken so that a representative sample is obtained.

ND-CPA-9A, Stand Evaluation Worksheet, may be used to document the stand counts.

If evaluation reveals a marginal stand, consideration should be given to allowing a second growing season for establishment. Seedings that contain a high percentage of "hard seed" are more likely to produce new seedlings during the second growing season.

The alternative of a partial reinforcement seeding, in lieu of the full seeding rate, should be considered during the evaluations.

"Spot" seeding weak areas may be a logical alternative in the case of spotty or intermittent stands, in lieu of whole field reseeding. Grazing deferment should follow spot seedings.

Table 1. Full Seeding Rates [1,2]					
Species	**Seeds/Pound**	**MLRA 55 A/B & 56 [4]**		**MLRA 53 A/B, 54 & 58 C/D [4]**	
		Seed/SqFt	**#PLS/Ac**	**Seed/SqFt**	**#PLS/Ac**
Introduced Cool-Season Grasses					
Bromegrass					
Meadow (BRBI2)	80,000	30	16.5	25	13.5
Smooth (BRIN2)	135,000	25	8	20	6.5
Creeping foxtail (ALAR)	750,000	60	3.5	60	3.5
Hard fescue (FEBR7)	565,000	50	4	35	3
Timothy (PHPR3)	1,300,000	30	1	NR	NR
Wheatgrass					
Green (ELHO3)	135,000	46	14	33	10
Crested (AGCR)	175,000	28	7	25	6
Intermediate (THIN6)	88,000	20	10	17	8.5
Pubescent (THIN6)	88,000	20	10	17	8.5
Siberian (AGFR)	175,000	30	7.5	25	6
Tall (THPO7)	79,000	23	13.5	20	11
Wildrye					
Altai (LEAN3)	68,000	30	19	25	16
Dahurian (ELDA3)	86,000	20	10	17	8.5
Mammoth (LERA5)	55,000	30	24	25	20
Manystem (LEMU11)	150,000	30	8.5	25	7.5
Russian (PSJU3)	175,000	30	7.5	25	6
Native Cool-Season Grasses					
Bluejoint (CACA4)	4,480,000	50	0.5	50	0.5
Fowl bluegrass (POPA2)	2,080,000	48	1	48	1
Green needlegrass (NAVI4)	180,000	30	7.5	25	6
Mannagrass					
American (GLGR)	1,280,000	45	1.5	45	1.5
Fowl (GLST)	1,440,000	37	1	37	1
Needle and thread (HECO26)	115,000	25	9.5	25	9.5
Nutall alkaligrass (PUNU2)	2,108,000	50	1	50	1

Table 1. Full Seeding Rates [1,2]					
Species	**Seeds/Pound**	**MLRA 55 A/B & 56 [4]**		**MLRA 53 A/B, 54 & 58 C/D [4]**	
		Seed/SqFt	**#PLS/Ac**	**Seed/SqFt**	**#PLS/Ac**
Native Cool-Season Grasses (cont.)					
Porcupine grass (HESP11)	57,000	25	19	25	19
Prairie junegrass (KOMA)	2,315,000	50	1	50	1
Reed canarygrass (PHAR3)	530,000	40	3.5	40	3.5
Wheatgrass					
Bluebunch (PSSP6)	140,000	NR	NR	25	8
Slender, awned & bearded (ELTR7)	155,000	25	5.5	17	5
Streambank/Thickspike (ELLAL)	155,000	NR	NR	25	7
Western (PASM)	112,000	25	10	20	8
Whitetop (Sprangletop) (SCFE)	191,000	11	2.4	NR	NR
Wildrye					
Basin (LECI4)	140,000	NR	NR	25	8
Beardless (LETR5)	150000	30	8.5	25	7.5
Canada (ELCA4)	115,000	20	7.5	17	6.5
Virginia (ELSU)	96,000	20	10	NR	NR
Native Warm-Season Grasses					
Alkali sacaton (SPAI)	1,758,000	NR	NR	40	6
American sloughgrass (BESY)	1,150,000	25	0.9	25	0.9
Bluestem					
Big (ANGE)	176,000	30	7.5	25	6
Little (SCSC)	286,000	30	4.5	25	4
Sand (ANHA)	113,000	30	12	25	9.5
Buffalograss (BODA2)	50,000	30	26	25	23
Grama					
Blue (BOGR2)	750,000	40	2.5	30	2
Sideoats (BOCU)	180,000	30	7.5	25	6
Inland saltgrass (DISP)	520,000	35	5.5	35	5.5
Indian ricegrass (ACHY)	235,000	30	5.5	25	4.5
Indiangrass (SONU2)	193,000	30	7	25	5.5
Prairie cordgrass (SPPE)	183,000	30	7	30	7

Table 1. Full Seeding Rates [1,2]					
Species	**Seeds/Pound**	**MLRA 55 A/B & 56 [4]**		**MLRA 53 A/B, 54 & 58 C/D [4]**	
		Seed/SqFt	**#PLS/Ac**	**Seed/SqFt**	**#PLS/Ac**
Native Warm-Season Grasses (cont.)					
Prairie dropseed (SPHE)	224,000	25	5	25	5
Prairie sandreed (CALO)	275,000	30	5	25	4
Sand dropseed (SPCR)	5,680,000	70	0.5	70	0.5
Switchgrass (PAVI)	390,000	40	4.5	30	3.5
Native Grass-likes					
Fox sedge (CAVU2)	1,600,000	37	1	37	1
Slough sedge (CAAT2)	230,490	25	4.7	25	4.7
Native Forbs and Legumes					
American vetch (VIAM)	30,000	25	36	25	36
Aster					
Blue (SYLAL3)	880,000	30	1.5	30	1.5
Heath (SYER)	3,200,000	30	0.4	30	0.4
New England (SYNO2)	1,300,000	25	0.8	NR	NR
Black-eyed Susan (RUHI2)[3]	1,450,000	25	0.8	25	0.8
Black samson (ECAN2)	120,000	25	9	25	9
Blanket flower (GAAR)	157,000	25	7	25	7
Blue vervain (VEHA2)	1,488,000	34	1	34	1
Canada anemone (ANCA8)	128,000	29	10	29	10
Canada milkvetch (ASCAC6)	266,000	25	4	25	4
Canada tickclover (DECA7)	88,000	25	12.3	25	12.3
Columbine (AQCA)	362,000	25	3	25	3
Coneflower					
Grayhead (RAPI)	625,000	25	1.7	NR	NR
Prairie (Yellow) (RACO3)[3]	737,000	25	1.5	25	1.5
Cudweed sagewort (ARLU)[3]	4,000,000	25	0.3	25	0.3
Culver's root (VEVI4)	12,800,000	30	0.1	NR	NR
Cup plant (SIPE2)	22,400	10	9	NR	NR

Table 1. Full Seeding Rates [1,2]					
Species	**Seeds/Pound**	**MLRA 55 A/B & 56 [4]**		**MLRA 53 A/B, 54 & 58 C/D [4]**	
		Seed/SqFt	**#PLS/Ac**	**Seed/SqFt**	**#PLS/Ac**
Native Forbs and Legumes (cont.)					
Evening primrose (OEBI)	1,376,000	25.3	0.8	25.3	0.8
Gayfeather					
Dotted (LIPU)	136,000	25	8	25	8
Thickspike (LIPY)	136,000	25	8	NR	NR
False boneset (EUPE3)	2,560,000	25	0.4	25	0.4
Giant blue hyssop (AGFO)	1,440,000	25	0.8	25	0.8
Golden Alexander (ZIAU)	176,000	25	6.2	25	6.2
Goldenrod					
Canada (SOCA6)	4,600,000	25	0.2	25	0.2
Missouri (SOMI2)	1,998,000	25	0.5	25	0.5
Stiff (SORI2)	772,000	25	1.4	25	1.4
Tall smooth (SOGI)	700,000	25	0.5	25	0.5
Hoary vervain (VEST)	450,000	25	2.4	25	2.4
Illinois bundleflower (DEIL)	60,000	25	18	25	18
Ironweed (VEFA2)	385,000	25	2.8	25	2.8
Joe Pye weed (EUMAB)	1,520,000	25	0.7	25	0.7
Lewis flax (LILE3)	287,000	25	3.8	25	3.8
Milkweed					
Butterfly (ASTU)	67,000	25	16.2	25	16.2
Showy (ASSP)	85,000	25	13	25	13
Swamp (ASIN)	72,000	25	15	25	15
Partridge pea (CHFAF)	43,000	10	10	10	10
Plains coreopsis (COTI3)	1,650,000	25	0.7	25	0.7
Prairieclover					
Purple (DAPU5)	290,000	25	3.8	25	3.8
White (DAAL)	278,000	25	3.9	25	3.9
Prairie onion (ALST)	176,000	25	6.2	25	6.2
Prairie phlox (PHAN4)	304,000	28	4	28	4

Table 1. Full Seeding Rates [1,2]					
Species	**Seeds/Pound**	**MLRA 55 A/B & 56 [4]**		**MLRA 53 A/B, 54 & 58 C/D [4]**	
		Seed/SqFt	**#PLS/Ac**	**Seed/SqFt**	**#PLS/Ac**
Native Forbs and Legumes (cont.)					
Purple meadow rue (THDA)	176,000	25	6.2	25	6.2
Rocky Mountain Bee plant (CLSE)	64,000	29.6	20	29.6	20
Scarlet globemallow (SPCO)	500,000	25	2	25	2
Silvery lupine (LUAR3)	126,000	NR	NR	25	8
Shell-leaf penstemon (PEGR7)	273,000	25	4	25	4
Sneezeweed (HEAU)	2,100,000	25	0.4	25	0.4
Spiderwort					
Long bract (TRBR)	166,000	25	7	25	7
Prairie (TROC)	166,000	25	7	25	7
Sunflower					
False (HEHES)	60,000	25	18	25	18
Maximilian (HEMA2)	250,000	6	1	6	1
Sawtooth (HEGR)	630,000	25	1.7	NR	NR
Stiff (HEPAS)[3]	85,000	5	2.5	5	2.5
Western yarrow (ACMIO)[3]	2,800,000	25	0.4	25	0.4
Wild bergamot (MOFI)	1,200,000	25	0.9	25	0.9
Introduced Legumes					
Alfalfa (MESA)	210,000	30	6.5	25	5.5
Birdsfoot trefoil (LOCO6)	418,000	50	5	NR	NR
Cicer milkvetch (ASCI4)	134,000	30	10	25	8
Clover					
Alsike (TRHY)	680,000	50	3	50	3
Red (TRPR2)	275,000	30	5	NR	NR
Strawberry (TRFR2)	300,000	25	3.5	25	3.5
Sweet (MEOF)	260,000	25	4	20	3
White / Ladino (TRRE3)	800,000	25	1.5	25	1.5
Sainfoin (ONVI)	18,500	15	35 (hull)	15	35 (hull)

Table 1. Full Seeding Rates [1,2]					
Species	**Seeds/Pound**	**MLRA 55 A/B & 56 [4]**		**MLRA 53 A/B, 54 & 58 C/D [4]**	
		Seed/SqFt	**#PLS/Ac**	**Seed/SqFt**	**#PLS/Ac**
Native Shrubs					
Buffaloberry (SHAR)	41,000	4	4.2	4	4.2
Chokecherry (PRVIV)	5,000	3	26	3	26
False indigo (AMNA)	52,000	30	25	25	21
Golden currant (RIAU)	240,000	30	5.5	25	4.5
Juneberry (AMAL2)	82,000	30	16	25	13
Leadplant (AMCA6)	200,000	30	6.5	25	5.4
Prairie rose (ROAR3)	45,000	30	29	25	24
Saltbush					
Fourwing (dewinged) (ATCA2)	52,000	7	6	7	6
Gardner (ATGA)	110,000	30	12	25	10
Western snowberry (SYOC)	74,400	30	17.5	25	14.6
Winterfat (KRLA2)	150,000	30	8.5	25	7
WY big sagebrush (ARTRW8)	2,466,000	NR	NR	28	0.5

Footnotes for Table 1.

[1] See individual practice specifications (e.g. 550 Range Planting) for planning and application details and requirements.

[2] For additional information see http://plants.usda.gov/.

[3] These species are limited to no more than 2% of the seeding mix.

[4] See map on page 1 or Major Land Resource Areas (MLRA) of North Dakota in FOTG - Section I - Maps.

Table 2. Approved Named Varieties [1]		
Species	**Recommended Varieties for North Dakota**	
Introduced Cool-Season Grasses		
Bromegrass	Meadow	Fleet, Paddock, Regar, Montana, MacBeth, Cache
	Smooth[1]	Carlton, Signal, Magna, Manchar, Badger, Radisson, Rebound, Beacon, Barton, Baylor, Saratoga, Lincoln, AC Rocket, Bravo, Polar, Jubilee, Alpha, Cottonwood, York
Creeping foxtail		Retain, Garrison
Hard fescue		Discovery, Aurora, Reliant, Durar
Timothy		Climax, Itasca, Winmor, Comtal, Goliath, Timfor, Toro
Wheatgrass	Crested	
	Type: Standard	Nordan, RoadCrest, Summit
	Fairway	Ephraim, Ruff, Parkway, Fairway, Douglas
	Hybrid	HyCrest II, HyCrest, NU-ARS AC2
	Green	NewHy, AC Saltlander
	Intermediate	Reliant, Clarke, Slate, Chief, Oahe, Haymaker, Beefmaker, Manifest, Rush [4]
	Pubescent	Manska, Greenleaf, Luna
	Siberian	Vavilov, P-27
	Tall	Orbit, Platte, Jose, Alkar
Wildrye	Altai	Pearl, Eejay, Prairieland, Mustang
	Beardless	Shoshone
	Dahurian	Arthur, James
	Mammoth	Volga
	Manystem	Shoshone
	Russian	Mankota, Tetracan, Bozoisky Select, Swift, Bozoisky II, Cabree, Mayak
Native Cool-Season Grasses		
Bluejoint		Common
Fowl bluegrass		Common
Green needlegrass		Lodorm, AC Mallard, Fowler
Mannagrass	American	Common
	Fowl	Common
Needle and thread		Common, AC Sharptail
Nutall's alkaligrass		Common
Porcupine grass		Common
Prairie junegrass		Common
Reed canarygrass		Palaton, Venture, Vantage, Rise, Rival, Chiefton, Marathon
Wheatgrass	Bluebunch	Goldar, Secar, Anatone, P-7, Whitmax
	Slender awned, bearded	Adanac, Pryor, Revenue, Primar, Firststrike
	Streambank/ Thickspike	Bannock, Critana, Sodar, AC Polar, Elbee
	Western	Rodan, Walsh, Flintlock, Rosana, W.R.Poole, Recovery
Whitetop (Sprangletop)		Common
Wildrye	Basin	Trailhead, Magnar, Continental, Washoe
	Canada	Mandan
	Virginia	Omaha

Table 2. Approved Named Varieties [1]		
Species	**Recommended Varieties for North Dakota**	
Native Warm-Season Grasses		
Alkali sacaton		Common
American sloughgrass		Common
Bluestem	Big	Sunnyview, Bison, Bonilla, Bounty, Champ
	Little	Badlands, Itasca
	Sand	Goldstrike, Garden
Buffalograss		Bowie, Cody
Grama	Blue	Bad Rivean
	Sideoats	Killdeer, Pierre, Butte
Inland saltgrass		Common
Indian ricegrass		Rimrock, Nezpar
Indiangrass		Tomahawk
Prairie cordgrass		Red River
Prairie sandreed		Goshen, Bowman, Koch
Prairie dropseed		Common
Sand dropseed		Common
Switchgrass		Dacotah, Forestburg, Sunburst, Summer
Native Grass-likes		
Fox sedge (*Carex vulpinoidea*)		Common
Slough sedge (*Carex atherodes*)		Common
Native Legumes and Forbs		
American vetch		Common
Aster	Blue	Common
	Heath	Common
	New England	Common
Black-eyed Susan		Common
Black Samson		Bismarck
Blanket flower		Meriwether
Blue vervain		Common
Canada anemone		Common
Canada milkvetch		Sunrise
Canada tickclover		Common
Columbine		Common
Coneflower	Grayhead	Common
	Prairie (yellow)	Stillwater
Cudweed sagewort		Summit
Culver’s root		Common
Cup plant		Common
Evening primrose		Common
False boneset		Common
Giant blue hyssop		Common
Gayfeather	Dotted	Common
	Thickspike	Common

Table 2. Approved Named Varieties [1]		
Species	**Recommended Varieties for North Dakota**	
Native Legumes and Forbs (cont.)		
Golden Alexander		Common
Goldenrod	Canada	Common
	Missouri	Common
	Stiff	Common
Hoary vervain		Common
Illinois bundleflower		Common
Ironweed		Common
Joe Pye weed		Common
Lewis flax		Appar, Maple Grove
Milkweed	Butterfly	Common
	Showy	Common
	Swamp	Common
	Tall smooth	Common
Partridge pea		Common
Plains coreopsis		Common
Prairie onion		Common
Prairie phlox		Common
Purple meadow rue		Common
Prairieclover	Purple	Bismarck
	White	Antelope
Rocky Mountain Bee plant		Common
Scarlet globemallow		Common
Shell-leaf penstemon		Common
Silvery lupine		Common
Sneezeweed		Common
Spiderwort	Long bract	Common
	Prairie	Common
False sunflower	False	Common
	Maximilian	Medicine Creek
	Sawtooth	Common
	Stiff	Bismarck
Western yarrow		Great Northern, Eagle
Wild bergamot (Monarda)		Common
Introduced Legumes		
Alfalfa [2]		Winter Survival Index (WSI) of 2 or less [3]
Birdsfoot trefoil		Leo, Empire, Viking
Cicer milkvetch		Lutana, Monarch, Windsor
Clover	Alsike	Common
	Red	Common
	Strawberry	Common
	Sweet	Common
	White / Ladino	Common
Sainfoin		Eski

Table 2. Approved Named Varieties [1]		
Species	**Recommended Varieties for North Dakota**	
Native Shrubs		
Buffaloberry		Sakakawea
Chokecherry		Common
Currant	Golden	Common
False indigo		Survivor
Fourwing saltbush	Dewinged	Wytana, Snake River
Gardner saltbush		Common
Juneberry		Common
Leadplant		Common
Prairie rose		Common
Western snowberry		Trapper
Winterfat		Open Range
WY big sagebrush		Common

Footnotes for Table 2.

[1] See individual practice specification (e.g. 512 – Forage and Biomass Planting) for planning and application details and requirements.

[2] A partial list of grazable type alfalfas can be found in the NDSU report, "Developing Alfalfa Adapted to Grazing in the Northern Great Plains".

[3] The following web sites are approved for use in determining alfalfa varieties that are acceptable and planners are strongly encouraged to use these web sites for selecting acceptable varieties: http://www.alfalfa.org/ or http://www.extension.umn.edu/agriculture/forages/variety-selection-and-genetics/#legumes . Alfalfa named varieties must have a Winter Survival Index (WSI) of 2 or less to meet specifications. The term winter hardiness rating is sometimes used synonymously with winter survival index, a number of 2 or less is acceptable. If the winter hardiness rating uses letters (e.g. EH, extremely hardy) those will not be acceptable, only a number of 2 or less will be accepted.

Generally, the higher the fall dormancy score, the greater the production potential of the alfalfa variety. However, the higher FDS, the shorter the life span/persistence of the alfalfa variety. Origin of non-varietal ('common') alfalfa types is limited to ND, SD, MN, MT, and the Canadian provinces of Alberta, Manitoba and Saskatchewan.

NOTE: Approved varieties which may not be shown on these web sites include Alogonquin, Anik, Blazer, Champ, Drylander, Grim, Ladak, Ladak 65, Prowler, Rambler, Rangelander, Ramsey, Ranger, Spredor 2, Teton, Travois, Vernal, and Wrangler. Alfalfa varieties not listed here or shown on these web sites will require documentation from the distributor or developer to determine suitability. Consult the appropriate area or state office specialist for assistance as needed.

[4] Limited ND production trials indicate Rush intermediate wheatgrass is less productive than other approved intermediate varieties; therefore, Rush will be used for conservation cover plantings only. In addition, Rush is a Protected Plant Variety (PPV) and should only be available as commercial certified seed as designated by blue seed tag.

Table 3. Grass and Grass-like Species Characteristics									
Species	**Growth Characteristics [1,10]**	**Drought Tolerance [2]**	**Flood Tolerance [3]**	**Saline Tolerance (dS/m) [4]**	**Recovery After Harvest**	**Season Of Use [6]**	**Longevity [7]**	**Grazing Preference [8]**	**Stand Establishment [9]**
Introduced Grasses									
Bromegrass									
Meadow (BRBR14)	B/M	Fair	Fair	5-10	Good	Sp, F	Medium	High	Medium
Smooth (BRIN2)	R/M	Fair	Good	5-10	Good	Sp, F	Long	High	Rapid
Creeping foxtail (ALAR)	R/M	Poor	Good	10-15	Good	Sp, Su, F	Long	High	Medium
Hard fescue (FEBR7)	B/S	Good	Fair	NR	Good	Sp, F	Medium	Medium	Medium
Timothy (PHPR3)	B/M	Poor	Good	NR	Good	Sp, F	Short	Medium	Rapid
Wheatgrass									
Green (ELHO3)	B/M	Fair	Good	15-25	Good	Sp	Long	High	Medium
Crested (AGCR)	B/M	Good	Poor	10-15	Fair	Sp, F	Long	Medium	Rapid
Intermediate (THIN6)	R/M	Fair	Fair	10-15	Fair	Sp	Long	High	Medium
Pubescent (THIN6)	R/M	Fair	Fair	10-15	Fair	Sp	Long	High	Medium
Siberian (AGFR)	R/M	Good	Poor	NR	Fair	Sp, F	Long	Medium	Rapid
Tall (THPO7)	B/T	Fair	Good	15-25	Fair	Sp, F, W	Medium	Low	Medium
Wildrye									
Altai (LEAN3)	B/M	Fair	Good	15-25	Poor	Sp, F, W	Medium	Medium	Slow
Dahurian (ELDA3)	B/M	Fair	Fair	NR	Good	Sp	Short	Medium	Rapid
Mammoth (LERA5)	R/T	Good	Poor	NR	Fair	Sp	Long	Low	Slow
Manystem (LEMU11)	R/M	Fair	Fair	15-25	Poor	Su, F	Long	Medium	Slow
Russian (PSJU3)	B/M	Good	Fair	15-25	Good	Sp, F, W	Medium	High	Medium
Native Cool-Season Grasses									
Bluejoint fowlgrass (CACA4)	R/M	Poor	Good	NR	Fair	Sp,Su	Long	Medium	Medium
Fowl bluegrass(POPA2)	B/M	Poor	Good	Poor	Poor	Sp, F	Med	Low	Medium
Green needlegrass (NAVI4)	B/M	Good	Fair	NR	Good	Sp, F	Long	High	Medium
Mannagrass									
American (GLGR)	R/T	Poor	Good	NR	NR	NR	NR	NR	NR
Fowl (GLST)	R/T	Poor	Good	NR	Poor	NR	Short	High	Medium
Needle and thread (HECO26)	B/M	Good	Fair	NR	Fair	Sp	Long	Medium	Slow
Nutall's Alkaligrass (PUNU2)	B/S	Poor	Good	15-25	Fair	Sp	Long	High	Slow
Porcupinegrass (HESP11)	B/M	Good	Fair	NR	Good	Sp	Long	Medium	Slow
Prairie junegrass (KOMA)	B/S	Good	Poor	NR	Poor	Sp	Long	High	Slow
Reed canarygrass (PHAR3)	R/T	Fair	Good	5-10	Good	Sp, Su	Long	High	Medium
Wheatgrass									
Bluebunch (PSSP6)	B/M	Good	Poor	NR	Poor	Sp, Su, F	Long	High	Medium

Table 3. Grass and Grass-like Species Characteristics									
Species	**Growth Characteristics [1,10]**	**Drought Tolerance [2]**	**Flood Tolerance [3]**	**Saline Tolerance (dS/m) [4]**	**Recovery After Harvest**	**Season Of Use [6]**	**Longevity [7]**	**Grazing Preference [8]**	**Stand Establishment [9]**
Native Cool-Season Grasses (cont.)									
Wheatgrass (cont.)									
Slender/Awned/Bearded (ELTR7)	B/M	Good	Good	15-25	Fair	Sp, Su, F	Short	Medium	Rapid
Streambank/Thickspike (ELLAL)	R/M	Good	Fair	10-15	Fair	Sp. F	Long	Medium	Medium
Western (PASM)	R/M	Good	Good	15-25	Fair	Sp, Su, F	Long	Medium	Medium
Whitetop (Sprangletop) (SCFE)	R/T	Poor	Good	NR	NR	NR	Medium	NR	NR
Wildrye									
Basin (LECI4)	B/T	Good	Fair	NR	Fair	Sp, F	Long	High	Slow
Beardless (LETR5)	R/M	Fair	Fair	15-25	Poor	Su, F	Long	Medium	Slow
Canada (ELCA4)	B/M	Fair	Good	10-15	Fair	Sp, F	Short	Medium	Rapid
Virginia (ELSU)	B/M	Fair	Good	Poor	Poor	Sp	Short	Medium	Rapid
Native Warm-Season Grasses									
Alkali sacaton									
American sloughgrass (BESY)	St/S	Poor	Good	NR	Poor	NR	NR	NR	NR
Bluestem									
Big (ANGE)	R/T	Fair	Good	NR	Good	Su	Long	High	Slow
Little (SCSC)	B/M	Good	Poor	NR	Fair	Su, F	Long	Medium	Medium
Sand (ANHA)	R/T	Good	Fair	NR	Fair	Su, F	Long	High	Slow
Buffalograss (BODA2)	St/S	Good	Poor	10-15	Fair	Su	Long	High	Medium
Grama									
Blue (BOGR2)	B/S	Good	Poor	NR	Poor	Su	Long	High	Medium
Sideoats (BOCU)	R/S	Good	Poor	NR	Fair	Su, F	Long	High	Medium
Inland saltgrass (DISP)									
Indian ricegrass (ACHY)	B/M	Good	Poor	NR	Fair	Su	Long	High	Slow
Indiangrass (SONU2)	R/T	Fair	Good	NR	Good	Su, F	Long	High	Medium
Prairie cordgrass (SPPE)	R/T	Poor	Good	10-15	Fair	Sp	Long	Medium	Slow
Prairie sandreed (CALO)	R/T	Good	Poor	NR	Fair	Su, F	Long	Medium	Slow
Prairie dropseed (SPHE)	B/M	Fair	Good	NR	Fair	Su	Long	Medium	Slow
Sand dropseed (SPCR)	B/M	Good	Poor	NR	Poor	Su	Short	Low	Rapid
Switchgrass (PAVI)	R/T	Fair	Good	5-10	Fair	Su, F	Long	Medium	Medium
Native Grass-likes									
Fox sedge (CAVU2)	B/S	Poor	Good	None	Poor	Sp	Long	Medium	Medium
Slough sedge (CAAT2)	R/M	Poor	Good	None	Poor	Sp, Su	Long	Low	Low

NR = Not Rated

Table 4. Pollinator / Forb Species Characteristics											
Species	**Growth Character-istics[1,10]**	**Establish-ment List[12]**	**Drought Tolerance [2]**	**Flood Tolerance [3]**	**Saline Tolerance (dS/m) [4]**	**Recovery After Harvest**	**Season of Use [6]**	**Longevity[7]**	**Grazing Preference[8]**	**Stand Establish-ment[9]**	**Bloom Period[11]**
Native Forbs/Legumes											
American vetch (VIAM)	Pr/P	B	Good	Poor	Poor	NR	NR	Medium	NR	Medium	Er / Mi
Aster											
Blue (SYLAL3)	E/P	B	Fair	Poor	None	Poor	NR	Short	NR	NR	Mi / L
Heath (SYER)	E/P	B	Good	Fair	NR	NR	Su	Long	Low	NR	Mi / L
New England (SYNO2)	E/P/R	B	Poor	Good	NR	NR	NR	Long	NR	Medium	Mi / L
Black samson (ECAN2)	E/P	A	Good	Poor	Poor	NR	NR	Long	NR	Slow	Mi / L
Black-eyed susan (RUHI2)	E/P	A	Good	Good	Poor	NR	NR	Short	NR	Rapid	Mi / L
Blanketflower (GAAR)	E/P	A	Good	Fair	2-6	NR	NR	Medium	NR	Medium	Mi
Blue vervain (VEHA2)	E/P	B	NR	NR	NR	NR	NR	NR	NR	NR	Mi / L
Canada anemone (ANCA8)	P/R/M	B	Fair	NR	NR	Poor	NR	Medium	NR	NR	Er / Mi
Canada milkvetch (ASCAC6)	E/P	A	Fair	Good	2-6	NR	NR	Short	NR	Medium	Mi
Canada tickclover (DECA7)	E/P	B	Fair	Fair	NR	NR	Sp, Su	Medium	Medium	NR	Mi
Columbine (AQCA)	P/M	B	Fair	NR	NR	NR	NR	Medium	NR	Rapid	Er / Mi
Coneflower											
Grayhead (RAPI)	E/P/T	B	Good	Fair	NR	Poor	Sp, Su	Medium	Medium	Medium	L
Prairie (Yellow) (RACO3)	E/P	A	Good	Fair	2-6	NR	NR	Long	NR	Medium	Mi
Cudweed sagewort (ARLU)	E/P	B	Good	Poor	NR	NR	NR	Long	NR	Medium	L
Culver's root (VEVI4)	E/P	B	Fair	Fair	NR	NR	NR	Long	NR	NR	Mi
Cup plant (SIPE2)	E/P/T	B	Poor	Good	Poor	NR	NR	Long	NR	Medium	L
Evening primrose (OEBI)	Bi/M	B	Medium	NR	None	Slow	NR	Short	NR	Rapid	Mi / L
False boneset (EUPE3)	E/P	A	NR	NR	NR	NR	NR	NR	NR	NR	Mi /L
Gayfeather											
Dotted (LIPU)	E/P	A	Good	Poor	Poor	NR	NR	Long	NR	Slow	Mi / L
Thickspike (LIPY)	E/P	B	Poor	Fair	Poor	Poor	Su	Medium	NR	Medium	Mi / L
Giant blue hyssop (AGFO)	E/P/R	A	Poor	Fair	NR	NR	NR	Medium	NR	Rapid	Mi / L
Golden Alexander (ZIAU)	E/P	B	Poor	Fair	NR	NR	Sp, Su	Medium	NR	Medium	Er
Goldenrod											
Canada (SOCA6)	E/P	B	Fair	NR	NR	Fair	NR	Long	NR	NR	Mi / L
Missouri (SOMI2)	E/P	B	Good	NR	NR	Poor	NR	Short	NR	NR	Mi / L
Stiff (SORI2)	E/P/B	A	Good	NR	NR	Fair	NR	Medium	NR	NR	Er / Mi / L
Tall smooth (SOGI)	E/P/B	B	Medium	NR	NR	NR	NR	Medium	NR	NR	L
Hoary vervain (VEST)	E/P	B	NR	NR	NR	NR	NR	NR	NR	NR	Mi / L

Table 4. Pollinator / Forb Species Characteristics											
Species	**Growth Character-istics[1,10]**	**Establish-ment List[12]**	**Drought Tolerance [2]**	**Flood Tolerance [3]**	**Saline Tolerance (dS/m) [4]**	**Recovery After Harvest**	**Season of Use [6]**	**Longevity[7]**	**Grazing Preference[8]**	**Stand Establish-ment[9]**	**Bloom Period[11]**
Native Forbs/Legumes (cont.)											
Illinois bundleflower (DEIL)	E/P	A	Fair	Good	Poor	Fair	Sp, Su	Short	High	Rapid	Mi / L
Ironweed (VEFA2)	E/P	B	Fair	Good	NR	Fair	Sp, Su	Short	High	Rapid	Mi / L
Joe Pye weed (EUMAB)	E/P	B	Fair	Good	NR	NR	NR	Medium	NR	NR	Mi / L
Lewis flax (LILE3)	E/P	A	Good	Fair	2-6	NR	NR	Medium	NR	Rapid	Er
Milkweed											
Butterfly (ASTU)	E/P	A	Good	Poor	None	Poor	Sp, Su	Medium	NR	NR	Er / Mi / L
Showy (ASSP)	E/P	B	Low	NR	NR	Poor	NR	Long	NR	NR	Er / Mi
Swamp (ASIN)	E/P	B	Poor	NR	NR	Poor	NR	Medium	NR	NR	Mi / L
Partridge pea (CHFAF)	E/P	B	NR	NR	NR	NR	NR	NR	NR	NR	L
Plains coreopsis (COTI3)	E/A	A	Good	Good	NR	NR	NR	Short	NR	Rapid	Er / Mi
Prairieclover											
Purple (DAPU5)	E/P	A	Good	Fair	2-6	NR	NR	Medium	NR	Medium	Mi
White (DAAL)	E/P	B	Good	Fair	NR	NR	NR	Medium	NR	Medium	Mi
Prairie onion (ALST)	E/P	B	Good	Poor	NR	NR	NR	NR	NR	NR	Mi
Prairie phlox (PHAN4)	P/R/M	B	NR	NR	NR	NR	Sp, Su	Long	Fair	Slow	Mi
Purple meadow rue (THDA)	E/P	B	Poor	Good	NR	NR	NR	NR	NR	NR	Mi
Rocky Mountain Bee plant (CLSE)	A/L/T	B	Low	NR	NR	Slow	NR	Short	Low	Rapid	Er
Scarlet globemallow (SPCO)	E/P	A	Good	Poor	NR	Good	NR	Short	Fair	NR	Mi
Shell-leaf penstemon (PEGR7)	E/P	A	Good	Poor	NR	NR	NR	Short	NR	Medium	Er
Silvery lupine (LUAR3)	E/P	B	Fair	NR	NR	Good	NR	Short	NR	NR	Er / Mi
Sneezeweed (HEAU)	E/P	B	Poor	NR	NR	Poor	Sp, Su	Medium	NR	NR	L
Spiderwort											
Long bract (TRBR)	E/P/R	B	NR	NR	NR	NR	NR	NR	NR	NR	Er / Mi
Prairie (TROCO)	E/P	B	Good	Good	NR	NR	NR	NR	NR	NR	Er / Mi / L
Sunflower											
False sunflower (HEHES)	E/R	B	Good	NR	None	Poor	NR	Short	NR	NR	Mi / L
Maximilian (HEMA2)	E/P/R	A	Poor	Good	2-6	NR	NR	Long	NR	Medium	Mi /L
Sawtooth (HEGR4)	E/P/R	B	Fair	NR	NR	Poor	NR	Medium	NR	NR	Mi / L
Stiff (HEPAS)	E/P/R	B	Fair	NR	NR	Poor	NR	Long	High	Slow	Mi / L
Western yarrow (ACMIO)	E/P	A	Good	Good	2-6	NR	NR	Long	NR	Medium	Er / Mi
Wild bergamot (MOFI)	R/P	A	Poor	Good	NR	Poor	Sp	Medium	Medium	Medium	Mi / L
Introduced Legumes											
Alfalfa (MESA)	E/P	A	Good	Poor	5-10	Good	Sp, Su	Medium	High	Rapid	Er / Mi

Table 4. Pollinator / Forb Species Characteristics											
Species	**Growth Character-istics[1,10]**	**Establish-ment List[12]**	**Drought Tolerance [2]**	**Flood Tolerance [3]**	**Saline Tolerance (dS/m) [4]**	**Recovery After Harvest**	**Season of Use [6]**	**Longevity[7]**	**Grazing Preference[8]**	**Stand Establish-ment[9]**	**Bloom Period[11]**
Introduced Legumes (cont.)											
Birdsfoot trefoil (LOCO6)	Pr/P	A	Fair	Fair	5-10	Good	Sp, Su	Medium	High	Rapid	Er
Cicer milkvetch (ASCI4)	Pr/P	A	Good	Fair	5-10	Good	Sp	Long	High	Medium	Mi
Clover											
Alsike (TRHY)	Pr/P	A	Poor	Good	5-10	Good	Sp, Su	Short	High	Medium	Mi
Red (TRPR2)	Pr/P	A	Fair	Fair	5-10	Fair	Sp, Su	Short	High	Medium	Er / Mi
Strawberry (TRFR2)	E/P	A	Fair	Good	15-25	Fair	Sp, Su	Medium	Medium	Rapid	Er / Mi
Sweet (MEOF)	E/Bi	A	Good	Fair	5-10	Poor	Sp, Su	Medium	Medium	Rapid	Mi
White / Ladino (TRRE3)	Pr/P	A	Poor	Good	5-10	Fair	Sp, Su	Short	High	Medium	Er / Mi / L
Sainfoin (ONVI)	E/P	A	Good	Poor	NR	Fair	Sp, Su	Medium	High	Slow	Er
Native Shrubs											
Buffaloberry (SHAR)	E/P/R	A	Good	Poor	8-15	NR	NR	Long	NR	Slow	Er
Chokecherry (PRVIV)	E/P/R	A	Fair	Fair	4-8	NR	NR	Long	NR	Slow	Er
False indigo (AMFR)	E/P	A	Poor	Good	NR	NR	NR	Medium	NR	Slow	Mi
Golden currant (RIAU)	E/P	A	Good	Fair	8-15	NR	NR	Medium	NR	Slow	Er
Juneberry (AMAL2)	E/P/R	A	Poor	Good	4-8	NR	NR	Long	NR	Slow	Er
Leadplant (AMCA6)	E/P	A	Good	Poor	NR	NR	NR	Long	NR	Slow	Mi / L
Prairie rose (ROAR3)	E/P/R	A	Good	Fair	NR	NR	NR	Long	NR	Slow	Er / Mi
Saltbush											
Fourwing, dewinged (ATCA2)	E/P	A	Good	Poor	8-15	NR	NR	Long	NR	Slow	Mi
Gardner (ATGA)	E/P	A	Good	Poor	8-15	NR	NR	Long	NR	Slow	Mi
Western snowberry (SYOC)	E/P/R	A	Fair	Fair	NR	NR	NR	Long	NR	Slow	Er / Mi
Winterfat (KRLA2)	E/P	A	Good	Poor	NR	NR	NR	Long	NR	Slow	Er
WY big sagebrush (ARTRW8)	E/P	A	Good	NR	NR	NR	NR	Long	NR	NR	L

NR = Not Rated

Footnotes for Table 3 and Table 4.

[1]For additional information refer to the USDA Plants Database at: http://plants.usda.gov/.
[2]**Drought Tolerance**: Based on species being on an adapted site.
[3]**Flood Tolerance**: Good = 28-42 days; Fair = 14-28 days; Poor = less than 14 days. Creeping foxtail and reed canarygrass can tolerate up to 60 days.
[4]**Plant salinity tolerance** ratings are based upon saturated paste measurements in decisiemens per meter (dS/m). USDA-NRCS March 2007. Plant Materials for Salt-Affected Sites in the Northern Great Plains. Soil surface layer salinity measurements may be taken in the field using a 1:1 solution and a handheld EC Meter. To convert EC Meter readings to dS/m, multiply meter reading by 0.5.
[5]**Recovery after Harvest**: Based on adequate soil moisture.
[6]**Season of Use**: Sp – spring; Su – summer; F – fall; W – winter.
[7]**Longevity**: Short 1-4 years; Medium 5-10 years; Long – longer than 10 years with proper management.
[8]**Grazing Preference**: Based on season of rapid growth. Palatability is relative, depending on quantity, quality, and availability of other species. Grazing preference shown is for cattle and will vary for other species of domestic livestock or wildlife.
[9]**Stand Establishment**: Rapid – usually 1 growing season after planting; Medium – usually 1-2 growing seasons after planting; Slow usually 2-3 growing seasons after planting.

10.

Growth Characteristics	
A	Annual
B	Bunch
Bi	Biennial
E	Erect
M	Mid 18" - 36"
P	Perennial
Pr	Prostrate
R	Rhizomatous
S	Short < 18"
St	Stoloniferous
T	Tall > 36"

.

11.

Bloom Period		
Er	Early bloom period	April - May
Mi	Mid-bloom period	May - July
L	Late bloom period	July - September

[12]**Establishment List:** Pollinator species listed as “A” have demonstrated consistent establishment and persistence on various sites state-wide, based on field reviews of pollinator plantings. At least 75% of native forbs must be “A” Establishment list species. Additional species to consider for pollinator plantings are noted as “B”. Grass species do not have a rating.

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H.8 Weed Management Plan

Tioga Lateral Pipeline Project

WEED MANAGEMENT PLAN

ISSUED FOR PERMITTING

November 2019

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LIST OF ACRONYMS AND ABBREVIATIONS

EI	Environmental Inspectors
MP	Milepost
ONEOK	ONEOK Bakken Pipeline, L.L.C.
Plan	Weed Management Plan
Project	Tioga Lateral Pipeline Project
ROW	Right-of-Way
SPCC	Spill Prevention, Control, and Countermeasure Plan
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

Noxious weed control practices for the ONEOK Bakken Pipeline, L.L.C. (ONEOK) Tioga Lateral Pipeline Project (Project) are described in the *Weed Management Plan (Plan)* and were developed to comply with the State's Noxious Weed Law (NDCC § 4.1-47-02) which is administered by county-level Weed Control Boards. In preparation for the Project, ONEOK consulted with the Williams County Weed Control Board. The Weed Control Board does not currently have a permit program with respect to noxious and invasive weeds and does not require this plan to be submitted for review or approval. ONEOK will continue to work with the Williams County Weed Control Board, as needed.

2.0 GOALS AND OBJECTIVES

This Plan prescribes methods to prevent and control the spread of noxious weeds during and following construction of the Project. ONEOK and its contractors will be responsible for implementing the methods described in this Plan.

This Plan is applicable to the construction and operation of the proposed pipeline facilities, including the pipeline right-of-way (ROW), the proposed aboveground facilities, and extra temporary workspaces (ETW) disturbed during the construction and operation of the proposed facilities.

3.0 NOXIOUS WEED SPECIES LISTS

A weed is commonly defined as a plant that grows out of place. A noxious weed is any plant officially designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property (Sheley, Petroff, and Borman, 1999). Noxious weeds are opportunistic plant species that readily flourish in disturbed areas, thereby preventing native plant species from establishing successive communities.

3.1 NORTH DAKOTA

Invasive species in North Dakota are controlled and regulated under North Dakota Law (NDCC § 4.1-47-02). Counties and cities have the option to add additional weeds for enforcement only in their jurisdiction.

The State of North Dakota has 13 state-listed noxious and invasive weeds:

Absinth wormwood	Leafy spurge	Russian knapweed	Palmer amaranth
Canada thistle	Musk thistle	Saltcedar	Houndstongue
Dalmatian toadflax	Purple loosestrife	Spotted knapweed	Yellow toadflax
Diffuse knapweed			

Williams County, North Dakota recognizes one additional species as invasive:

Narrowleaf hawksbeard

To comply with North Dakota Law (NDCC § 4.1-47-02), ONEOK has prepared this Plan specifying the weed management procedures to be implemented. Regulations also require that ONEOK reseed, plant, or otherwise manage the area to establish a beneficial plant cover. To this end, ONEOK has developed a *Revegetation Plan* that describes the methods to be used to accomplish revegetation, the time and method of seeding, fertilization practices, and recommended plant species.

4.0 NOXIOUS WEED SPECIES MANAGEMENT

This Plan is designed to:

- Treat specific infestation areas as recommended by weed districts prior to construction, pending landowner approval and seasonal limitations;
- Prevent the introduction and spread of weeds via construction equipment during construction;
- Contain weed seeds and propagules by preventing segregated topsoil from being spread to adjacent areas or along the construction ROW; and
- Treat infestations that may develop during operations.

4.1 IDENTIFICATION OF PROBLEM AREAS

ONEOK will work with the County Weed Control Board and landowners to identify known locations of weed infestations in the Project area.[1] In addition to infestation areas identified by the county and landowners, additional 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. Identification of existing noxious weed locations will alert environmental inspection and construction personnel to implement weed control measures during construction.

4.2 TREATMENT MEASURES

ONEOK will implement weed control measures, pending landowner approval of specific control measures, at identified infestation areas based on County weed agency input or by the EIs. Weed control measures may include the application of herbicide or mechanical, and/or alternative methods. The weed control measure chosen will be the best method available for the time, place, and species of weed as identified through consultation with the landowner and the appropriate regulatory agencies. Should landowners not allow the use of herbicides, ONEOK will investigate potential alternative methods to be implemented, with approval by the landowners.

Herbicide application is an effective means of reducing the size of weed populations. Herbicide treatment methods will be based on species-specific and area-specific conditions (e.g., proximity to wetlands, open water, riparian areas or agricultural areas, and time of year) and will be coordinated with the local counties and regulatory agencies. Spot herbicide applications will be the preferred option. In areas of dense infestation, a broader application may be used. Pending the seasonal start of construction, preconstruction treatment of infestation areas may be conducted and will be controlled as described in Section 6.1, to minimize the impacts on the surrounding vegetation. Preconstruction applications will be completed in accordance with applicable chemical contact times (as specified by the manufacturer) in advance of clearing and grading within the construction ROW. Treatment may be restricted in areas that are not readily accessible (e.g., difficult topography, saturated/inundated soils, etc.).

Mechanical control (e.g., mowing) can also be an effective control measure specifically for annual species (i.e., not for perennial rhizomatous species). The efficacy of mechanical control measures is dependent upon proper timing to cut the vegetation prior to the maturation of seed and may require multiple treatments during the growing season.

4.3 PREVENTIVE MEASURES

The following measures will be implemented to prevent the spread of noxious weeds.

[1] To date, the County has not identified any known locations of noxious weeds.

- Prior to the beginning of construction of the project, all contractor vehicles and equipment (including timber mats) will be cleaned of soil and debris capable of transporting weed propagules. The contractor will maintain logs documenting the cleaning history of each piece of equipment and will make logs available to ONEOK, upon request. Contractor vehicles and equipment will be inspected and may require additional cleaning if necessary prior to mobilization to the ROW. Cleaning will be conducted using high pressure washing equipment or compressed air, and/or manually remove excess soil from the tracks, tires, and blades of equipment.
- Stations will be sited at least 0.25 mile from perennial waterbodies. Station design and post-construction removal will be included in the contract bid documents. Stations will utilize high pressure water or compressed air and/or manually remove excess soil and plant debris from the tracks, tires, and blades of equipment prior to movement of equipment out of weed infested areas.
- Areas of the ROW where weed infestations are identified will be clearly marked prior to construction. In these areas, the contractor may elect to conduct full ROW topsoil stripping and will stockpile cleared vegetation and segregated topsoil along the ROW. The stockpiles will be identified as noxious weed stockpiles with signs and be maintained adjacent to the areas from which they were obtained to eliminate the transport of soil-borne noxious weed propagules to other areas along the ROW. During reclamation, the contractor will return topsoil and vegetative material to the areas from which they were obtained. Alternately, for annual weed species the contractor may elect to mow the infested area before the species begins seeding, thus eliminating the threat of spreading seeds during topsoiling and construction.
- In areas where full ROW topsoil stripping is implemented, equipment required for initial vegetation clearing and topsoil segregation will be cleaned using one of the methods described above prior to leaving the area. Once the topsoil has been segregated, subsequent equipment will not require cleaning, as it will not come into contact with noxious weeds or the topsoil containing weed seeds and propagules. Equipment required for topsoil restoration will also be cleaned prior to moving out of an infested area identified by ONEOK.
- The contractor will ensure straw bales used to construct sediment control devices or used as mulch applications are certified weed free and obtained from approved certified sources as recommended by local and state agencies .
- The contractor will ensure seed mixes and mulching materials used for revegetation are certified weed free and obtained from approved certified sources as recommended by local and state agencies.

4.4 POST-CONSTRUCTION TREATMENT METHODS

ONEOK's objective is to comply with the requirements to prevent the spread of noxious weeds and treat areas of the ROW where weed species form a significant portion of the vegetation community in comparison to adjacent undisturbed areas. ONEOK will implement established reclamation practices to prevent the spread of noxious weeds in reclaimed construction areas and pipeline ROW.

The contractor will implement reclamation procedures immediately following construction. Rapid reclamation and revegetation will discourage the establishment of noxious weeds. In areas of severe weed infestation, as determined by ONEOK's EI(s), ONEOK may elect to delay reclamation efforts

and conduct intensive weed control prior to implementing reclamation procedures where allowed by applicable laws.

The contractor will limit the use of fertilizer in reclaimed areas. Fertilizer will only be applied where specified by the jurisdictional land management agency or the property owner.

In the event noxious weed species become established in the ROW, ONEOK will make good faith efforts to control weeds within the ROW and to work with adjacent landowners to prevent the spread of the species to adjacent lands. Post-construction weed control measures may include the application of herbicide or mechanical methods, pending landowner approval. Should ONEOK receive calls from landowners concerning noxious weed on the ROW, ONEOK will work with the landowners to determine the appropriate action to control the spread of the weeds. The weed control measure chosen will be the best method available for the time, place, and species of weed as determined through consultation with the appropriate regulatory agencies. ONEOK will control noxious weed species at ONEOK-managed aboveground facility sites to prevent the spread onto adjacent properties.

Individuals wishing to report noxious weeds on the ROW should call ONEOK at (605) 642-2197, extension #5. ONEOK staff will work with the County or landowner on an appropriate treatment method.

Post-construction herbicide applications will be conducted prior to seed maturation where possible. Applications will be controlled, as described in Section 7, to minimize the impacts on the surrounding vegetation. As discussed in Section 5.2, herbicide treatment methods will be based on species-specific and area-specific conditions (e.g., proximity to water, riparian areas or agricultural areas, and time of year) and will be coordinated with the local county and regulatory agencies. Spot herbicide applications will be the preferred option. In areas of dense infestation, a broader application will be used and a follow-up seeding program implemented according to the *Revegetation Plan*. The timing of subsequent revegetation efforts will be based on the persistence of the selected herbicide. ONEOK will communicate with a designated representative of each county to inform them of the location and type of treatment administered by ONEOK or its contractor.

Mechanical methods entail the use of equipment to mow weed populations for annual species (i.e., not for perennial rhizomatous species). Mechanical treatments will be conducted prior to seed maturation where required. If such a method is used, subsequent seeding will be conducted if necessary to re-establish a desirable vegetative cover that will stabilize the soils and slow the potential re-invasion of weeds.

During routine operations activities, if noxious weed species are identified that are not listed on the county or state weed lists, ONEOK will treat the affected area as quickly as possible.

ONEOK will consult with local agencies regarding the use of biological and alternate noxious weed control methods, which may be implemented through agreements with private landowners.

5.0 MONITORING

Following construction, weed infestations reported by landowners will be monitored as part of ONEOK's operations and maintenance surveys. EIs will periodically monitor the ROW to capture revegetation growth. Should the EIs identify noxious weed populations in the ROW, they will report their findings to the ONEOK operations and maintenance division to determine the appropriate action

to control the spread of the weeds. Noxious weed management will be conducted in accordance with local and state regulations.

6.0 HERBICIDE USE

6.1 HERBICIDE APPLICATION AND HANDLING

Herbicide application will be based on information gathered from consultations with local and state agencies as well as discussions with landowners. Before application, ONEOK or its contractor will obtain required permits from the local weed districts or the state agencies, and landowner approval. Herbicide application will be conducted in accordance with applicable laws and regulations by a state-licensed contractor, or via contract with the County Weed Board if requested by the landowner.

All herbicide applications will follow United States Environmental Protection Agency (USEPA) label instructions. Application of herbicides will be suspended when any of the following conditions exists:

- Wind velocity exceeds 6 miles per hour during application of liquid or granular herbicides;
- Snow or ice covers the foliage of noxious weeds; or
- Precipitation is occurring or is imminent.

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

Herbicides will be transported to the project site daily with the following provisions:

- On-site herbicide quantities will be limited where practical;
- Concentrate will be transported in approved containers only, in a manner that will prevent tipping or spilling, and in a compartment that is isolated from food, clothing, and safety equipment;
- Mixing will be conducted in an upland area at a distance greater than 100 feet from open or flowing water and wetlands, greater than 200 feet from private wells, and greater than 400 feet from public wells. The property owner would be consulted about the presence and location of wells prior to herbicide application; and
- All herbicide equipment and containers will be maintained as needed and inspected for leaks daily.

6.2 HERBICIDE SPILLS AND CLEANUP

ONEOK has developed a *Spill Prevention, Control, and Countermeasure (SPCC) Plan* that incorporates all reasonable precautions to be taken to avoid spills of all potentially hazardous materials. In the event of a spill, cleanup will be immediate and will be conducted in accordance with the *SPCC Plan*.

Herbicide contractors are responsible to keep spill kits in their vehicles and in herbicide storage areas to allow for quick and effective response to spills. Items to be included in the spill kit are:

- Protective clothing and gloves;
- A minimum of 20 pounds of suitable commercial adsorbent and barrier materials;

- Plastic bags and bucket;
- Shovel;
- Fiber brush and screw-in handle;
- Dust pan;
- Caution tape; and
- Detergent.

Response to an herbicide spill will vary depending on the material spilled and the size and location of the spill. The order of priorities after discovering a spill are to protect the safety of personnel and the public, minimize damage to the environment, and conduct cleanup and remediation activities.

6.3 WORKER SAFETY AND SPILL REPORTING

All herbicide contractors will obtain and have readily available copies of the appropriate safety data sheets and the herbicide labels for the herbicides used. All herbicide spills will be reported in accordance with applicable laws and requirements. Further information regarding spill response and reporting is detailed in the *SPCC Plan*.

H.9 Dust Control Plan



Tioga Lateral Pipeline Project

DUST CONTROL PLAN

ISSUED FOR PERMITTING

November 2019

Introduction

ONEOK Bakken Pipeline, L.L.C. (ONEOK) proposes to construct the Tioga Lateral Pipeline Project (Project), an approximately 75 mile, 16-inch-diameter natural gas liquids pipeline in Williams County, North Dakota.

Construction of the Project will involve land-disturbing activities, which can increase the susceptibility of soils to erosion caused by wind and water. Wind erosion can damage the productivity of the land by reducing soil moisture, altering soil structure, and carrying away soil nutrients and topsoil. A small amount of soil loss from wind erosion occurs naturally; however, human activity, such as pipeline construction, can dramatically increase soil loss due to wind erosion (fugitive dust) and potentially create conditions that could be detrimental to air quality and safety. Fugitive dust is a type of non-point source air pollution that can cause respiratory distress for construction workers, as well as for nearby residents and wildlife. Additionally, fugitive dust can create a safety hazard by obscuring visibility for equipment operators, construction personnel, and traffic on public roads near the Project.

ONEOK has developed this *Dust Control Plan* (Plan) as a guide for construction and field personnel for the implementation of appropriate measures to minimize and control the generation of fugitive dust during construction activities associated with the Project. It will be the responsibility of the Project contractors, working with ONEOK's field representatives, to identify activities that are generating dust and to at all times control airborne dust levels during construction activities to acceptable levels that are in compliance with any applicable standards, including those established by the North Dakota Department of Environmental Quality (NDDEQ), local ordinances, and other regulating agencies.

Fugitive Dust Sources

ONEOK has attempted to identify the primary potential sources of fugitive dust, which include:

- Vegetation clearing activities;
- Initial grading of topsoil and subsoil, including cut-and-fill areas on steep sideslopes;
- Excavation, temporary side casting of spoil, and backfilling;
- Blasting;
- Grading associated with reestablishing contours and restoring segregated topsoil;
- Vehicle traffic down unimproved public and private access roads;
- Vehicle and equipment travel down the Project right-of-way (ROW);
- Open-bodied trucks hauling sand, soil, gravel, or other materials; and
- Activities at Project facilities such as material storage yards, contractor yards, parking areas, and aboveground facility locations.

ONEOK's Contractors and field representatives will identify activities that are generating fugitive dust, implement feasible dust abatement techniques or Best Management Practices (BMPs) to control dust, and maintain compliance with applicable fugitive dust regulations.

Fugitive Dust Control Measures

Dust suppression measures will be employed as necessary to control fugitive dust emissions where construction activities approach dwellings, farm buildings, commercial areas, and other areas occupied by people; where the pipeline parallels an existing road or highway; and where dust could compromise safety or become a public nuisance. This will also apply to access roads where dust raised by construction vehicles may irritate or inconvenience local residents. To minimize wind erosion and fugitive dust emissions during construction, ONEOK will implement the following reasonably available control measures:

- Disturb no more earth than required for construction to occur;
- Use dust abatement techniques (i.e., applying water or approved nontoxic chemical dust suppressants) on unpaved or un-vegetated areas or other areas susceptible to wind erosion, including the Project ROW, approved work areas, and unpaved roads, at least daily in areas of active construction. (Note: utilization of chloride-containing additives is limited to roads. Application of dust suppressants will be repeated as necessary and as determined by the Environmental Inspector(s) (EIs) or ONEOK representative);
- Water for dust control will be obtained from wells, municipal sources, and nearby rivers where the necessary water purchase agreements and permits required by federal, state, and local agencies for the procurement of water have been secured. No unapproved water sources will be used for Project activities, including dust control;
- Temporarily stockpiled soils (topsoil and spoil) will be sprayed with water or approved chemical dust suppressant to create a semi-hard protective layer to minimize wind erosion, if necessary, and as determined by the EI(s) or ONEOK representative. (Note: utilization of chloride-containing additives is limited to roads and is not permitted on stockpiled soils);
- Appropriate precautions will be taken to prevent fugitive dust emissions caused by sand-blasting from reaching any residence or public building. Curtains of suitable material will be placed, as necessary, to prevent wind-blown particles from sand blasting operations from reaching any residence or public building;
- Emissions from construction equipment combustion, open burning, and temporary fuel transfer systems and associated tanks will be controlled to the extent required by state and local agencies through the permitting process;
- Project-related traffic speeds will be controlled on the construction ROW and within other Project facilities; where construction activities approach dwellings, farm buildings, commercial areas, and other areas occupied by people; where the pipeline parallels an existing road or highway; and on unpaved access roads. A speed limit of 25 mph will be followed on unimproved roads. Additional speed limit restrictions may be required by the property owner/tenant on private lands or by the county on public roads (e.g., posted speed limits);
- Speed limits will be decreased when excessive winds prevail and where sensitive areas such as public roads are adjacent to access roads or the construction ROW;

- Open-bodied trucks carrying sand, soil, gravel, or other materials will be covered where necessary to prevent such materials from being expelled;
- Construction entrance/exit access locations onto paved roads will be cleaned at a minimum of once every 48 hours, or as needed or specified by the EI(s) if materials are observed to be accumulating on the road surface;
- In construction areas adjacent to highways where dust could cause poor visibility, ONEOK will implement additional BMPs to minimize dust and potential safety issues. These additional BMPs may include applying water as close to earth-moving equipment as possible, slowing the speed of construction equipment, spacing equipment further apart, increased traffic control, or shutting down operations during high wind periods. ONEOK will coordinate with the appropriate highway authorities to ensure adequate traffic control measures are in place, including the possibility of using flaggers to control traffic if extreme low-visibility conditions develop;
- When opacity along dirt roads and the ROW exceeds 20 percent (objects partially obscured), construction activity will cease until dust control measures are employed; and
- Other dust control measures, such as the use of wind fences or berms, may also be implemented as needed.

The frequency of water application will largely depend on weather conditions. Additionally, ONEOK will attempt to begin cleanup and rough grading within 72 hours after backfilling and complete cleanup within 14 days after backfilling, weather and soil conditions permitting. If seasonal or other weather conditions prevent compliance with the time frames, the contractor will stabilize the ROW and maintain erosion and sediment control measures until cleanup can be conducted. Disturbed areas will be permanently revegetated in accordance with applicable permit conditions and landowner requirements.

Regulatory Applicability

The NDDEQ is responsible for air quality management in areas of Project construction activities. This *Dust Control Plan* has been developed to meet the regulatory requirements of North Dakota Administrative Code Article 33-15. While the State of North Dakota has no specific regulations in relation to construction dust control, ONEOK and its contractors will utilize measures outlined in this Plan to minimize dust during construction.

H.10 Emergency Response Plan

EMERGENCY OFFICIAL AGENCY RESPONSE

INFORMATION BOOK

Operated by:

ONEOK BAKKEN PIPELINE, L.L.C.

ISSUED FOR PERMITTING

For emergencies, please call:

1-855-348-7258

November 2019

Introduction

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing the Tioga Lateral Pipeline Project (Project). ONEOK's proposed Project is a new, 75- mile, 16-inch diameter steel natural gas liquids (NGL) pipeline that would be constructed in Williams County, North Dakota. ONEOK's top priority is the safety of emergency responders, the public, and the safety of the environment. ONEOK's vision is to be the operator and partner of choice for customers, business owners, public officials, employees, and communities.

In order to achieve this vision, ONEOK manages operations in a manner that protects the environment and the safety of employees, customers, contractors, and the public, and complies with laws and regulations. The primary regulation that provides regulation for the construction, operations, and maintenance of the pipeline systems is CFR 49 Part 195, which is established and regulated by the U.S. Department of Transportation (DOT) and the Pipeline and Hazardous Material Safety Administration (PHMSA). ONEOK's principles and beliefs dictate that safety and environmental performance are mandatory for success. ONEOK employees have the personal right, responsibility, and ability to prevent accidents and adhere to ONEOK's culture that accidents and unauthorized releases are unacceptable.

Additionally, ONEOK's policy commits the company to continually improve its environmental, safety, and health (ES&H) performance by proactively evaluating its operations and implementing programs and practices to reduce the number and severity of ES&H incidents toward an ultimate goal of zero.

Accordingly, ONEOK is committed to providing pipeline safety and operational information to emergency response agencies that might be called upon in the unlikely event of a pipeline emergency to assist ONEOK in protecting the public and the environment and in mitigating the consequences of the event. This Emergency Official Agency Information Book represents the initial step in this partnership by sharing certain information about the ONEOK pipelines in your community.

If you have additional questions or comments on public safety or ONEOK Pipeline systems, please call our Spearfish, SD, office at 620-642-2197, extension 5.

ONEOK Tioga Lateral Pipeline Overview

The Project will be approximately 75 miles in length and located entirely within Williams County, North Dakota. The purpose of the Project is to provide take-away capacity for Y-grade natural gas liquids (NGLs, a mixture of ethane, propane, butanes, iso-butane mix, pentanes, and natural gasoline) for processing prior to distribution to various markets.

ONEOK Damage Prevention Measures

ONEOK is committed to protecting the safety of the communities and the environment in which it operates. Consistent with this commitment, ONEOK is continually improving its ES&H performance by proactively evaluating its operations and implementing processes to reduce ES&H incidents toward an ultimate goal of zero. The company's damage prevention measures are key components of this commitment.

There are several damage prevention measures ONEOK employs to help ensure pipeline integrity including, but not limited to: electronic methods of corrosion prevention, internal inspection with metal loss and deformation sensing devices, pipeline repair or replacement, maintaining automated pressure and flow control monitoring systems, and on-ground surveys to evaluate right-of-way (ROW) conditions, pipeline markers, and depth of cover. Another aspect of these measures is ONEOK's public pipeline safety education program that is designed to introduce to the affected public, excavation

contractors, local public officials, and emergency response officials, the basics of pipeline recognition and to encourage these groups to utilize state-sponsored one-call underground damage prevention programs.

ONEOK regularly inspects and surveys the pipelines it operates, searching for circumstances that may affect the pipelines' integrity. This surveillance is conducted in three ways:

1. The first surveillance method utilizes aerial patrol. ONEOK and contract aircraft are flown over the pipeline ROW on a scheduled and frequent basis. The pilots are trained to observe the ROW for conditions that may pose a threat to the safety and integrity of the pipeline system. Should the pilots notice a discoloration on the ground, the presence of heavy machinery on or around the ROW, or a number of other conditions, they report these items to ONEOK field personnel who are dispatched to the site to further investigate. ONEOK utilizes GPS coordinates as one of the methods of communication between patrol and response personnel.
2. The second surveillance method utilizes visual inspection performed by ONEOK and contract field personnel on a scheduled basis. There are numerous inspections and tests done on each pipeline every year. Such tests include the checking of the Corrosion Prevention System on the pipeline, equipment, and pumps, and emergency shutdown equipment and procedures. All of these activities are performed regularly to assure system integrity and to help prevent pipeline emergency conditions.

   The pipeline ground marker signs, similar to the one below, show the approximate location of ONEOK-operated pipelines and identify the owner and/or operators of the pipelines. They also show a general description of the materials moved through the line and the pipeline emergency telephone number. However, these signs do not indicate the exact location of the pipeline, nor do the signs indicate the depth of the pipeline. The pipeline may not follow a straight line between the signs



   It is likely that you may notice ONEOK employees and/or contractors inspecting or conducting normal maintenance activities on the pipeline(s) in your community. Individuals performing these duties or activities along ONEOK's ROW should identify themselves if requested to do so. Additionally, they should have material with them that identifies them as pipeline personnel. They should be able to communicate clearly with you regarding the work they are performing or the tests they are conducting on the pipeline. If you have any questions or concerns about the activities or personnel you observe on a ONEOK-operated pipeline ROW, ONEOK respectfully requests that you contact ONEOK and other appropriate authorities immediately at the number provided on the cover of this document. ONEOK will attempt to verify the presence of the ONEOK personnel and the nature and extent of their work.

It is possible that persons may conduct unauthorized construction and excavation activities near a ONEOK-operated pipeline. Third-party damage to ONEOK's pipelines from such activities is a concern. ONEOK wants to know when someone is going to perform work close to a ONEOK pipeline ROW. If people enter and dig in a ROW without notice, injuries and environmental and property damage may occur.

3. The third method of pipeline surveillance utilizes satellite and other remote communication technology to monitor pipeline operating conditions. Pressure, flow, and temperature monitors and other sensors are placed on the ONEOK pipelines and related equipment, even in remote areas. These devices transmit, via satellite communications, the operating characteristics of the pipeline to the ONEOK Pipeline Control Center. Operating personnel at the Pipeline Control Center have the capability to analyze the operational status of the pipeline and control its transportation activity using sophisticated computer software designed to optimize the pipeline and notify the operator of indications of leaks or other abnormal conditions.

   As an additional tool within the satellite monitoring capability, ONEOK Pipelines contain a Leak Detection System that is housed within the Pipeline Control Center and is staffed 24 hours a day, seven days a week. Deviations from normal flow conditions are detected by monitoring the pressure in the lines, as well as the temperature of the product transported in them, from origination to destination. Should there be an unusual change noted in the pressure, temperature, or flow, that change could be indicative of a leak, and ONEOK personnel will be dispatched to conduct a more thorough inspection.

   In the unlikely event of a pipeline emergency condition, operators in the pipeline control center have the ability to remotely operate pumps, valves, and emergency shutdown equipment to minimize the impact of the emergency condition and to protect the safety of the surrounding community and environment. Both the Leak Detection System and its attendant satellite communications system have proven to be effective in detecting significant leaks on pipeline systems and are often the quickest way to minimize an emergency condition's impact. In addition to remote operations capability, the Leak Detection System enables operators in the Pipeline Control Center to quickly dispatch trained ONEOK field employees to the scene of an emergency condition for on-location Incident Command and response. However, you should know that most often, operators in the Pipeline Control Center are already taking mitigative action even before ONEOK personnel arrive on scene.

Preventing third-party damage to pipelines is a ONEOK priority. ONEOK has a continuing educational program to communicate pipeline safety information to the affected public, local public officials, emergency response agencies, and excavators. ONEOK is a member of one-call notification systems in states where it operates pipelines. One-call centers take detailed information from anyone doing excavation work and notify member underground facility operators. Underground facility operators determine whether they have a conflict with the excavation and, when necessary, mark the approximate horizontal location of underground facilities. In some cases, in order to protect the public and the environment, ONEOK employees remain on-site during excavation work near the pipeline. Underground facility locations are provided as a free service to anyone performing excavation work.

State law requires that the public and excavators contact their local one-call system 48 hours prior to commencing any excavation work. In North Dakota, we encourage all parties that excavate to call 811 the "call before you dig" number.

Integrity Management Plan Overview

Ensuring the mechanical integrity of our pipelines helps us to successfully meet our goal of protecting

the public, employees, contractors, and the environment. The ONEOK Pipeline Integrity Management Program defines how we work to achieve this goal and comply with applicable laws and regulations.

The ONEOK Pipeline Integrity Management Program ensures that pipelines that could affect High Consequence Areas (HCAs) are identified, threats to pipeline integrity are evaluated, and that preventive and mitigative actions are implemented to manage the integrity of the pipelines to reduce the probability of releases and to limit the consequences of releases if they do occur.

Leak Prevention Program

Our leak prevention program includes specific practices and procedures to continually assess and monitor, regularly test and inspect, and prevent corrosion and excavation damage on the pipelines we operate. ONEOK regularly tests and inspects the condition of the pipelines and the effectiveness of our day-to-day leak prevention activities using timely data evaluation, investigation, and corrective action procedures. Employees and contractors who perform work must attend training and meet qualification requirements.

The following practices and procedures are among many that ONEOK has developed to ensure safe and reliable pipeline operations:

- Routine pipeline operations and maintenance.
- Excavation damage prevention education and communication.
- SCADA – ONEOK applies **Supervisory Control and Data Acquisition** (SCADA) systems for safe and efficient pipeline operation. The Operations Control Center electronically monitors our pipelines. Information is communicated between the Control Center and remote monitoring sites 24 hours a day, seven days a week, using satellite and other remote communication technology.
- ROW patrols and surveys – ROW conditions are evaluated by routine aerial and walking patrols. Surveys are conducted to evaluate changing conditions on the pipeline ROW to consider waterways, erosion, and soil subsidence, and unauthorized excavation or construction activity.
- External corrosion prevention – Prior to pipeline burial, an external coating is applied to the outer pipe surface to prevent corrosion. This coating, combined with the application of **cathodic protection**, minimizes the potential for corrosion.
- Integrity testing – ONEOK regularly performs in-line inspections and pressure testing of its pipelines to evaluate their condition and effectiveness of leak prevention activities. High resolution in-line inspection equipment, capable of detecting metal loss and deformations, is used to inspect our pipelines. Inspection data is evaluated, and investigations are performed if necessary. To confirm safe operation at normal pressures, ONEOK may also perform pressure testing that utilizes water at pressures exceeding normal operating pressures to ensure the integrity of the pipelines.

Spill Mitigation Program

Through our spill mitigation program, we endeavor to **educate and communicate**. This is accomplished by way of public awareness activities, carefully monitored leak detection systems, and emergency response plans.

High Consequence Areas Consideration

HCAs are defined in federal regulations as populated areas, commercially navigable waterways, and areas that are unusually sensitive to environmental damage. ONEOK has identified pipeline sections that could affect an HCA and has made special considerations in these areas when developing its

integrity management program.

Program Evaluation and Improvement

At ONEOK we regularly evaluate and audit the implementation of our practices and procedures to ensure consistent application and identify improvement opportunities. ONEOK enlists its own auditors and subject matter experts, along with independent auditors and state and federal inspectors to perform evaluations and inspections.

If you want additional information on Integrity Management or wish to comment to ONEOK about public safety, protection of HCAs under your jurisdiction, emergency preparedness, or other concerns, please contact the ONEOK office in Spearfish, SD, at 605-642-2197, extension 5.

In Case of an Emergency

Responding to a pipeline emergency requires teamwork and coordination between public safety officials, environmental agencies, and ONEOK. ONEOK needs and welcomes your assistance and the following information can help ONEOK's preparation for response if incidents occur.

ONEOK defines an emergency condition as a fire, explosion, natural disaster, accidental release, or operational failure that disrupts normal pipeline operating conditions.

ONEOK Emergency Condition Course of Action

In the unlikely event that an emergency does occur, ONEOK personnel are dispatched to the location and certain pipeline operations may be conducted remotely by operators in ONEOK's Pipeline Control Center. ONEOK operations personnel are trained to recognize and to respond appropriately to minimize hazards. They use Lower Explosive Limit meters and other monitoring devices to determine the extent of a vapor cloud release. Please familiarize yourself with the Safety Data Sheet (SDS) information contained at the conclusion of this informational packet. Familiarization with this information now may assist with the decision-making process if an emergency should arise.

ONEOK's Emergency Response Telephone Number

ONEOK emergency response telephone number is 1-855-348-7258 and should be called in the event of a ONEOK emergency. Technicians are available 24 hours a day, seven days a week.

Emergency Official Agency Response Resources and Capabilities

Please help ONEOK confirm your agency's response capabilities by sharing information regarding your agency's equipment, personnel, communications capabilities, coverage territory, and availability to assist in the event of a ONEOK emergency.

Pipeline Product Information

The product transported through this pipeline is a Raw NGL. Raw NGL product is a mixture consisting of ethane, propane, butane, and natural gasoline. Please refer to the SDS information contained at the conclusion of this informational packet for complete safety and hazard information.

ONEOK NGL Mapping System

To view pipeline systems in your area, refer to the National Pipeline Mapping System (NPMS) Web site. This Web site can be accessed at www.npms.phmsa.dot.gov.

ONEOK Area (Local) Representative(s)

For information how to receive local contact numbers for ONEOK Area Representative(s), please call our ONEOK operations office at 1-605-642-2197, extension 5.

Location of ONEOK Emergency Plans

The Emergency Response Plans for your jurisdiction are located in Spearfish, South Dakota, and with our local Area Representative. If you would like access to these Plans, please call the ONEOK operations office at 605-642-2197, extension 5.

ONEOK Pipeline Safety Tips for Emergency Official Agencies

ONEOK offers the following pipeline safety tips to emergency response agencies in dealing with a ONEOK emergency condition whether such a condition is caused by fire, explosion, natural disaster, accidental release, or operational failure:

Validate the request for help

Calls that come in where members of the public are seeking help because of and/or are reporting a pipeline incident should be verified. The purpose of this validation is to eliminate prank calls. If, in your judgment, the request is valid, and an emergency exists, advise the caller what to do to evacuate the area. Be sure to determine the exact location of the emergency.

Call the ONEOK Pipeline Control Center at 1-855-348-7258

Please call the ONEOK Pipeline Control Center immediately at the telephone number above. This number is attended 24 hours a day, 365 days a year. ONEOK's operator will appropriately operate remote equipment to assist in minimizing the impact of a condition and will contact other ONEOK personnel for response to the situation.

Determine Wind Direction

When you arrive at an emergency site, make sure you know the wind direction. Approach all leaks and ruptures from an upwind direction.

Upon Arrival at the Scene

Do not walk or drive into a vapor cloud or any puddle of liquid on the ground. Upon arrival at the emergency, park vehicles a safe distance from any vapor cloud or fire. Turn off the vehicle's engine. Failure to do so could result in immediate explosion and burning of the product resulting in injury or death.

Evacuate the Area

Evacuate everyone from the danger area to an upwind location immediately. Do not attempt to start any vehicles in the vicinity of the leak or spill and eliminate all ignition sources.

Medical Help

Provide medical assistance as necessary.

Barricade the Area

Barricade the emergency area so that unauthorized people cannot enter. Block any highway or roadways that pass through or near the area.

Eliminate Ignition Sources

Eliminate all sources of ignition. Sources include, but are not limited to, such items as engines, electric motors, pilot lights, burn barrels, and smoking materials. Ignition can result in immediate explosion and burning of the product, resulting in injury or death. If the engine in your vehicle

stops unexpectedly, do not attempt to restart the engine. It may have stopped due to lack of oxygen and attempts to restart could ignite the leaked or spilled product.

If you arrive and a fire is already burning from the pipeline rupture site, ONEOK recommends you do not attempt to put out the fire. Putting out the fire from the primary source of fuel may allow vapors to migrate to other areas, awaiting alternative sources of ignition. Perimeter fires, or secondary fires, may be extinguished at your discretion.

Maintain contact with the ONEOK control center technician until ONEOK operations personnel arrive and identify themselves to you.

ONEOK Representative in Charge

When ONEOK personnel arrive on location, they will identify themselves to you as soon as possible. The ONEOK representative is trained to operate within the Incident Command System. The ONEOK representative will establish contact with the incident commander upon arrival at the site. ONEOK may ask for assistance with evacuation, traffic control, and area security. ONEOK response personnel are trained and will perform their activities in compliance with applicable laws and regulations and ONEOK Emergency Action Plans.

Railroad Safety

If a railroad passes through the emergency area, we may ask you to contact the railroad and request that they stop movement of trains through the area until notified that the area is safe.

Vapor Cloud Movement

Determine if a vapor cloud is moving or expanding in size. A vapor cloud will often tend to flow to low areas. Keep people away from nearby low spots. ***Do not attempt to ignite the vapor cloud.*** This can be a dangerous procedure and will be done by ONEOK personnel only if the situation requires such action.

Termination of Emergency

When on-site ONEOK personnel determine the pipeline emergency condition is over, you will be informed.

Summary

The following is a checklist of recommended safety tips for public emergency response agencies in case of a pipeline emergency:

1. Validate the emergency phone call by returning the call promptly.
2. Call the ONEOK Pipeline Control Center at 1-855-348-7258 if the call comes from the public. This phone is attended 24 hours a day, 365 days a year.
3. Determine the wind direction at the site.
4. Upon arrival at the emergency site, do not walk or drive into a vapor cloud or any puddle of liquids on the ground. Park vehicles a safe distance upwind from the vapor cloud or fire and turn off engines. If the engine or your vehicle stops unexpectedly, do not attempt to restart it. Ignition can result in immediate explosion and burning of the product, resulting in injury or death.
5. Evacuate everyone from the spill area to an upwind location. Stay away from the vapor cloud.
6. Provide medical help to those who need it.
7. Barricade the emergency area so that people will not enter. Blockade any highway or roadway that passes through or near the area.
8. Eliminate all sources of ignition. Sources such as: engines, electric motors, pilot lights, burn barrels and smoking materials. Ignition can result in immediate explosion and burning of the product, resulting in injury or death.
9. Maintain contact with ONEOK's control center operator until ONEOK personnel arrive on scene. ONEOK representatives will identify themselves.
10. Do not attempt to extinguish any primary fire source until ONEOK employees arrive and direct such action. Perimeter fires (grass or adjoining property) may be extinguished, if necessary. Only ONEOK representatives will shut off the fuel source and allow the fire to extinguish itself.
11. If a railroad passes through the emergency areas, you may be asked to contact the railroad and request that they stop movement of trains through the area until notified that the area is safe.
12. Determine if the vapor cloud is moving or expanding in size. Vapors will tend to collect in low areas; keep people away from nearby low spots if the vapor cloud is at a nearby high elevation.
13. Do not attempt to ignite the vapor cloud. This is a dangerous procedure and will be performed by ONEOK personnel only if the situation requires such action.
14. ONEOK employees will tell you when the pipeline emergency condition is over.

Your ONEOK representative will document specific agency resources, communications capabilities, and ways to minimize hazards to life, the environment and property during a pipeline emergency condition.

Conclusion

The best course of action in an emergency is avoiding one initially. ONEOK Pipeline representatives are continually taking appropriate measures to do this. In the unlikely event of an emergency, the safety of our neighbors and our personnel, and the health of our environment, are our key concerns.

This Emergency Official Agency Response Information Book is intended to share certain information about the ONEOK pipelines in your community. Should you need further information or have questions regarding the ONEOK facilities in your area, feel free to call upon your ONEOK representative by calling 1-605-642-2197, extension 5.

Exhibit I

ONEOK Certificate of Standing

State of North Dakota
SECRETARY OF STATE

Certificate of Good Standing
of
ONEOK BAKKEN PIPELINE, L.L.C.

SOS Control ID#: 0000126001

Certificate #: 017471228

The undersigned, as Secretary of State of the state of North Dakota, hereby certifies that, according to the records of this office,

ONEOK BAKKEN PIPELINE, L.L.C.

a Limited Liability Company - Business - Foreign was formed under the laws of DELAWARE and filed with this office effective March 15, 2013. This entity has, as of the date set forth below, complied with all applicable North Dakota laws.

ACCORDINGLY, the undersigned, as such Secretary of State, and by virtue of the authority vested in him by law, hereby issues this Certificate of Good Standing.

DATE: November 12, 2019

Alvin A. Jaeger
Secretary of State