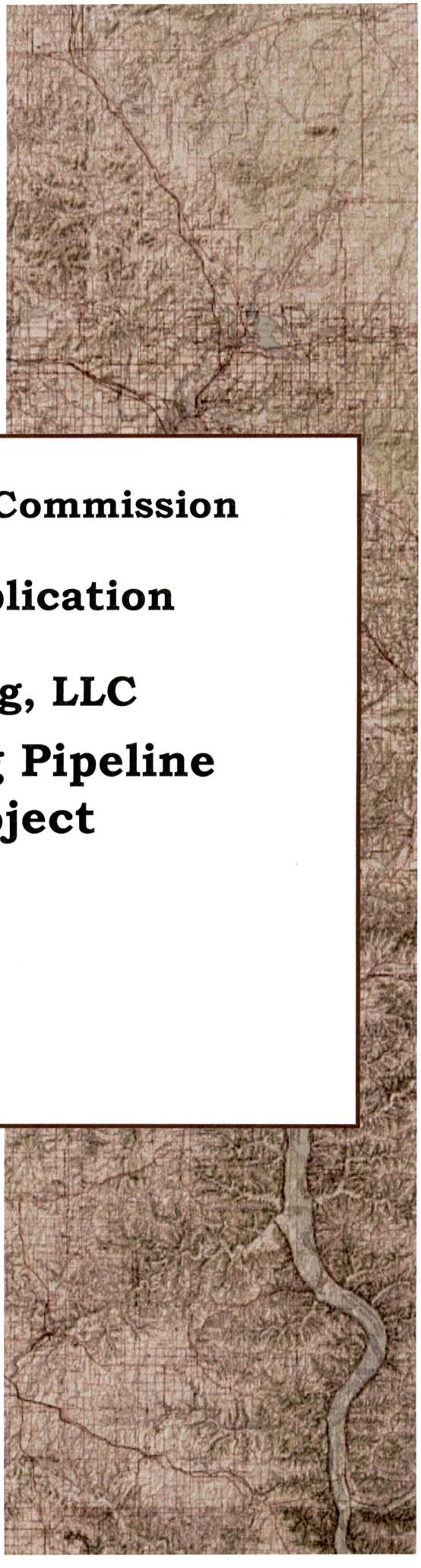


North Dakota Public Service Commission

Consolidated Siting Application

Grayson Mill Operating, LLC

Missouri River Crossing Pipeline Reinstatement Project

Prepared by:
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TABLE OF CONTENTS

Introduction 1
Section 1: Transmission Facility Description 2
1.1 Type of Transmission Facility 2
1.2 Purpose and Need for Project 2
1.2.1 Location of Facility 2
1.3 Technology to be Deployed 3
1.4 Type, Source and Final Destination of Product 3
1.5 Width of Right-of-Way 3
1.6 Length of Facility 3
1.7 Pipe Specifications 4
1.8 Designed Operating Specifications 4
1.9 Aboveground Facilities 4
1.10 Project Schedule 5
1.10.1 Certificate of Corridor Compatibility 5
1.10.2 Route Permit 5
1.10.3 Completing Right-of-Way Acquisition 5
1.10.4 Construction Commencement 5
1.10.5 Additional Project Permits or Authorizations 5
Section 2: Corridor, Survey Corridor and Route 6
2.1 Corridor 6
2.2 Survey Corridor 6
2.3 Route 6
Section 3: Environmental Studies 7
3.1 Agency Consultations 7
3.1.1 North Dakota Deparment of Trust Lands 7
3.1.2 North Dakota Department of Water Resources 7
3.1.3 North Dakota Game and Fish 7
3.1.4 North Dakota Geological survey 8
3.1.5 North Dakota parks and Recreation Department 8
3.1.6 North Dakota State Historic Preservation Office 8
3.1.7 North Dakota Department of Environmental Quality 8

3.2 Wildlife Inventory 9
3.2.1 Corridor 9
3.2.2 Survey Corridor 12
3.3 Wetland/Waterbodies 12
3.3.1 Corridor 12
3.3.2 Survey Corridor 13
3.4 Trees and Shrubs 13
3.4.1 Corridor 13
3.4.2 Survey Corridor 13
3.5 Noxious Weeds 13
3.5.1 Corridor 13
3.5.2 Survey Corridor 13
3.6 Cultural Resources 14
3.6.1 Corridor 14
3.6.2 Survey Corridor 14
Section 4: Siting Criteria Analysis 15
4.1 Policies and Commitments to Limit Environmental Impact 15
4.2 Factors Addressed in North Dakota Century Code Section 49-22.1-09 ... 15
4.2.1 Feasible Alternatives to the Proposed Corridor or Route 15
4.2.2 Effects of the Location, Construction and Operation of Transmission Facility on Public Health and Welfare, Natural Resources and the Environment 16
4.2.3 Effect of New Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects 16
4.2.4 Adverse Direct and Indirect Environmental Effects that Cannot Be Avoided 16
4.2.5 Irreversible and Irretrievable Commitments of Natural Resources should the Proposed Corridor be Designated 16
4.2.6 Direct and Indirect Economic Impacts 16
4.2.7 Existing Plans of the State, Local Government and Private Entities for Other Developments at or in the Vicinity of the Proposed Corridor or Route 17
4.2.8 Effect of Route on Existing Scenic Areas, Historic Sites and Structures, and Paleontological or Archaeological Sites 17

4.2.9 Effect of the Proposed Route on Areas that are Unique Due to Biological Wealth or Because the Route is Habitat for Rare or Endangered Species 17
4.2.10 Problems Raised by Federal, State or Local Agencies or Entities 17
4.3 Exclusion Areas (NDAC 69-06-08-02.1) 17
4.3.1 Federal Exclusion Areas 18
4.3.2 State Exclusion Areas 18
4.3.3 County Exclusion Areas 19
4.3.4 Other Exclusion Areas 19
4.4 Avoidance Areas (NDAC 69-06-08-02.2) 20
4.4.1 Federal Avoidance Areas 20
4.4.2 State Avoidance Areas 21
4.4.3 Other Avoidance Areas 21
4.5 Selection Criteria (NDAC 69-06-08-02.3) 22
4.5.1 Agricultural Impact 22
4.5.2 The Impacts Upon Other Resources 22
4.6 Policy Criteria (NDAC 69-06-08-02.4) 23
4.6.1 Location and Design 24
4.6.2 Training and Utilization of Available Labor in this State for the General and Specialized Skills Required 24
4.6.3 Use of Citizen Coordinating Committees 24
4.6.4 Commitment of a Portion of the Transmitted Product for Use in this State 24
4.6.5 Labor Relations 25
4.6.6 The Coordination of Facilities 25
4.6.7 Monitoring of Impacts 25
4.6.8 Utilization of Existing and Proposed Rights-of-Way and Corridors 25
Section 5: Mitigative Measures 26
5.1 Location 26
5.2 Construction 26
5.3 Operation 26
Section 6: Description of Right-of-Way Preparation, Construction and Reclamation Procedures 27

Section 7: Easement Acquisition, Landowner Notification and Easement Compensation Plan 2

Section 8: List of Preparers 3

APPENDICES

Appendix A: Engineering Drawings

Appendix B: Project Maps

Appendix C: Agency Consultation and Consultation Summary Table

Appendix D: Natural Resource Report

Appendix E: Cultural Resource Report

INTRODUCTION

Grayson Mill Operating, LLC (Grayson Mill) is planning the Missouri River Crossing Pipeline Project (Project).

An affiliate of Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. ("Equinor") in January of 2021. As is relevant to this application, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline was constructed in approximately 2012 by Brigham Oil and Gas LP ("Brigham"). Statoil acquired the assets of Brigham, including the Pipeline, and subsequently changed its name and became Equinor. The Pipeline was drained, cleaned, and filled with nitrogen at some point in late 2017 or early 2018 and has been inactive since that time.

After acquisition of the Pipeline by its affiliate, and evaluating plans to return it to operation, Grayson Mill became aware that no Certificate of Corridor Compatibility or Route Permit appear to have been obtained from the North Dakota Public Service Commission. Grayson Mill did not have any operations in the State of North Dakota prior to the Equinor acquisition in 2021 and does not have any information surrounding the initial Pipeline construction and permitting related to that construction nearly a decade earlier. However, other permits have been secured for the construction and operation of the Pipeline. Glacier Peak Midstream LLC, a Grayson Mill subsidiary, has secured a transfer of USACE NOW-2011-2353-BIS and Consent to Easement DACW45-9-12-8007 from the US Army Corps. of Engineers. The North Dakota Sovereign Land Permit S-1749 originally issued to Brigham and transferred to Equinor for crossing the Missouri River has now been transferred to Grayson Mill.

The Project seeks to properly site, and return to service, the 14.72 miles of existing8-inch diameter crude oil pipeline ("Pipeline") and its associated facilities between the Aune Oil Terminal in Williams County, North Dakota, and the Alexander Oil Terminal in McKenzie County. Refer to the maps in Appendices A and B for an overview of the Project.

Grayson Mill submits to the North Dakota Public Service Commission (PSC) a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project.

The application provides the requisite information as stipulated by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22.1; and,
- North Dakota Administrative Code, Chapter 69-06-05, Transmission Facility Permit.

SECTION 1: TRANSMISSION FACILITY DESCRIPTION

1.1 TYPE OF TRANSMISSION FACILITY

The proposed Project is an existing 8-inch crude oil pipeline constructed by Brigham Oil and Gas LP in approximately 2012. Grayson Mill intends to upgrade certain safety features on the existing Pipeline and return it to service. The steel Pipeline will meet all applicable U.S. Department of Transportation ("DOT") regulations as outlined in 49 Code of Federal Regulations ("CFR") Part 195.

1.2 PURPOSE AND NEED FOR PROJECT

The purpose of the Project is to provide additional markets and provide increased take-away capacity for crude oil produced in the state while not requiring construction of a new pipeline.

1.2.1 LOCATION OF FACILITY

The Project extends approximately 14.72 miles between the existing Aune and Alexander crude oil terminals in Williams and McKenzie Counties as reflected in the maps attached in Appendix B.

The Aune Terminal is located on a 30-acre tract in Lot 4 of Section 5, Township 152 North, Range 103 West, Williams County, ND, 4.3 miles southwest of Trenton ND, and receives crude oil from a Grayson Mill gathering system through two trunk lines. It provides short term storage for crude oil that can then be shipped to market by rail via the neighboring Savage rail loading facility immediately to the north of the terminal. The Aune Terminal includes two 40,000-barrel storage tanks, incoming skidded meter assemblies, outgoing metering assemblies with delivery pumps, pipeline pig receivers, a high BS&W storage tank with transfer pump, automation and electrical equipment and other site infrastructure.

The Alexander Terminal is located on a 20-acre tract in the N½NE¼NE¼ of Section 24, Township 152 North, Range 102 West, McKenzie County, ND, 12 miles South of Williston ND, and receives oil from Grayson Mill's South and McKenzie gathering systems and two truck unloading skids. Additionally, there will be the ability to ship and receive crude oil to and from the Aune Terminal once the Pipeline becomes operational. The Alexander Terminal is designed for a throughput of 20,000 barrels per day with crude oil exiting through the Bridger Sales LACT skid or the Enbridge/NorthStar Sales LACT skid which include pumps and metering to allow sales by pipeline. The Alexander Terminal also includes one 40,000-barrel API-650 internal floating roof storage tank, incoming skidded meter assemblies, outgoing metering assemblies with delivery pumps, pipeline pig receivers, automation and electrical equipment and other site infrastructure.

1.3 TECHNOLOGY TO BE DEPLOYED

The proposed Project is a return to service project; as such, there will be minimal construction and associated ground-disturbance activities. Grayson Mill will install a new Isolation valve on the west side of the Missouri River which will result in surface disturbance and replace the existing valve on the east side of the river which will not require any new surface disturbance. Aboveground facilities associated with the Project are detailed in Section 1.9 below and their locations are depicted on the maps in Appendix B. The Pipeline contains a leak detection system. Volumes leaving the Alexander terminal will have a Coriolis meter at the booster skid to measure crude oil shipped in the Pipeline. There will also be an inlet Coriolis meter to measure the received barrels from the Pipeline to the Aune terminal. If the received barrel versus shipped barrel percentage difference is above the acceptable limits, the Pipeline will be shut in so no oil can enter the Pipeline and the isolation valves on both sides of the river will be closed. Prior to operation, the Pipeline will be hydrostatically tested, and an internal line inspection will be performed.

1.4 TYPE, SOURCE AND FINAL DESTINATION OF PRODUCT

The Project would transport crude oil between the Alexander Terminal and the Aune Terminal, direction of flow dependent on market conditions.

1.5 WIDTH OF RIGHT-OF-WAY

Grayson Mill maintains permanent easements along the existing Pipeline that vary from 25- 50 feet in width.

A typical construction right-of-way (ROW) of 100-feet was utilized during Pipeline construction.

1.6 LENGTH OF FACILITY

The proposed Project is approximately 14.72 miles in length.

1.7 PIPE SPECIFICATIONS

The Project pipeline specifications are as follows:

- Hazardous Liquid Pipeline (extends between the Alexander Terminal and the Aune Terminal)
  - 8-inch outside diameter steel pipe
  - 0.219-inch wall thickness
  - 0.250-inch wall thickness
  - 0.312-inch wall thickness
  - 0.322-inch wall thickness
  - 0.344-inch wall thickness
  - 0.375-inch wall thickness
  - 0.438-inch wall thickness
  - 0.500-inch wall thickness (bore pipe)

1.8 DESIGNED OPERATING SPECIFICATIONS

- Normal Operating Pressure: 365 psig
- Maximum Operating Pressure: 1,480 psig
- Normal Throughput: approximately 20,000 barrels per day (bpd)
- Maximum Throughput: approximately 50,000 bpd
- Maximum Operating Temperature: 150 degrees Fahrenheit

1.9 ABOVEGROUND FACILITIES

The Project will utilize both existing and new aboveground facilities. The table below outlines the type and location and indicates the new or existing status of each of these facilities. Refer to Appendix A for typical engineering schematics of these facilities and Appendix B for maps providing the location of the aboveground facilities.

Type	Approximate Location	New or Existing	Other Comment
Alexander Launcher/ Receiver	MP 0.0	Existing	Located within facility boundary.
East Missouri River Valve	MP 6.96	Existing Will be replaced with new valve.	Located at existing facility.
West Missouri River Valve	MP 9.13	New	
Aune Terminal Launcher/Receiver	MP 18.1	Existing	Located at Aune Terminal

1.10 PROJECT SCHEDULE

1.10.1 CERTIFICATE OF CORRIDOR COMPATIBILITY

Grayson Mill seeks a Certificate of Corridor Compatibility by or before December 2024.

1.10.2 ROUTE PERMIT

Grayson Mill seeks a Route Permit by or before December 2024.

1.10.3 COMPLETING RIGHT-OF-WAY ACQUISITION

The Project will result in the return to service of the existing Pipeline, as such all right-of-way (ROW) acquisition is complete.

1.10.4 CONSTRUCTION COMMENCEMENT

Grayson Mill has planned construction activities to commence during the second half of 2024; and would take approximately four months to complete. Commissioning and restoration activities would commence immediately after construction is complete.

1.10.5 ADDITIONAL PROJECT PERMITS OR AUTHORIZATIONS

The Project will be constructed in compliance with applicable federal, state, and local laws, regulations, or plans. Grayson Mill will obtain necessary permits or approvals for the construction and operation of the Project. Glacier Peak Midstream LLC, a Grayson Mill subsidiary, has secured a transfer of USACE NOW-2011-2353-BIS and Consent to Easement DACW45-9-12-8007 from the US Army Corps. of Engineers. The North Dakota Sovereign Land Permit S-1749 originally issued to Brigham and transferred to Equinor for crossing the Missouri River has now been transferred to Grayson Mill.

SECTION 2: CORRIDOR, SURVEY CORRIDOR AND ROUTE

2.1 CORRIDOR

The Study Corridor is a one-mile-wide area centered upon the existing pipeline alignment (*i.e.*, one-half mile on either side of the existing pipeline alignment) (Study Corridor), this alignment was selected utilizing the existing Pipeline centerline and the location of existing facilities.

2.2 SURVEY CORRIDOR

Field studies were conducted of the Survey Corridor; the Survey Corridor was typically a 250-foot corridor centered upon the existing Pipeline. The maps in Appendix B depict the Survey Corridor for the Project.

2.3 ROUTE

For the purpose of this application, the Route is the centerline of the existing Pipeline.

SECTION 3: ENVIRONMENTAL STUDIES

To assess the potential Project impacts to sensitive environmental resources Carlson McCain completed desktop studies of the Study Corridor, and augmented these efforts with field survey of the Survey Corridor. The results of these efforts will be discussed in more detail in the subsequent sections.

3.1 AGENCY CONSULTATIONS

A comprehensive desktop analysis of the Study Corridor included consultations with the federal and state agencies identified below. These consultations were conducted for the purpose of environmental resource assessment as stipulated by the PSC's siting requirements for a Gas or Liquid Transmission Facility. Consultation letters were distributed on July 20, 2023. At that time, Grayson Mill planned to reinstate the pipeline as a crude oil transmission line and the consultation letters reflect that decision. Records of the agency consultations are provided in Appendix C.

3.1.1 NORTH DAKOTA DEPARMENT OF TRUST LANDS

The North Dakota Department of Trust Lands (NDDTL) oversees managing surface acres and mineral interests held in trust for various schools and institutions Any proposed projects and construction crossing NDDTL managed property need to apply for a Rights of Way and would be subject to review and approval by the Board of University and School Lands.

3.1.2 NORTH DAKOTA DEPARTMENT OF WATER RESOURCES

The ND Department of Water Resources administers water appropriation, drainage and sovereign lands permit programs and may have relevant information regarding rural water supply systems. The project crosses a regulatory floodplain and the Missouri River. Work within the floodplain should be coordinated with the local floodplain administrator of zoning authority. No work will be required within the floodplain. Work within the Ordinary High-Water Mark (OHWM) of the Missouri River would require a permit from the Department of Water Resources. The North Dakota Sovereign Land Permit S-1749 originally issued to Brigham and transferred to Equinor for crossing the Missouri River has now been transferred to Grayson Mill. Additionally, A permit for water appropriation would be need if surface or groundwater would be diverted for construction of the Project. No surface or groundwater will be diverted for construction. Refer to Appendix C for a copy of the correspondence.

3.1.3 NORTH DAKOTA GAME AND FISH

The Missouri River is an important habitat for the paddlefish and the federally endangered pallid sturgeon. The Missouri River is also an important recreation resource and provides aquatic habitat for many species. The ND Game and Fish recommends precautions should be implemented into design of the pipeline to limit the potential for an oil spill within or near the river. Refer to Appendix C for a copy of the correspondence.

3.1.4 NORTH DAKOTA GEOLOGICAL SURVEY

The North Dakota Geological Survey notes that the area of the pipeline on the southeastern side of the Missouri river is in an area where several landslides have been mapped. Refer to Appendix C for a copy of the correspondence.

3.1.5 NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

The NDPRD Natural Resource Division's scope of authority and expertise covers recreation and biological resources (in particular, rare species and ecological communities). The NDPRD also maintains a database comprised of the location 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.

The Project does not appear to affect properties owned, leased, or managed by the Parks and Recreation Department or the Land and Water Conservation fund. No known plant or animal species of concern or significant ecological communities are documented within or immediately adjacent to the Project site. Refer to Appendix C for a copy of the correspondence.

3.1.6 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

The SHPO is responsible for managing the historic and archaeological resources of the state; as such, the SHPO maintains records of all previously recorded cultural inventories and resources within the state.

Class I and Class III field investigations have been completed of the Survey Corridor. Reports were prepared and submitted to the SHPO, concurrence for survey reports and conclusions were received on October 31, 2023. Appendix E contains a redacted abstract of the Cultural Resource Report and a concurrence letter from the ND SHPO.

3.1.7 NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY

The North Dakota Department of Environmental Quality (NDDEQ) administers regulatory programs that monitor and enforce compliance with state and Federal laws related to air and water quality.

3.1.7.1 NDDEQ POLLUTION DISCHARGE ELIMINATION SYSTEM

The North Dakota Pollution Discharge Elimination System (NDPDES) is the regulatory program that regulates water discharges such as construction stormwater, site dewatering, and hydrostatic discharge permits.

Construction Stormwater: Since this is a return to service project, the minimal ground-disturbing activities at the valve sites will not meet the threshold for a construction stormwater permit. Grayson Mill will implement industry standard best management practices (BMPs), which will be designed to manage run-off and trench

dewatering discharges in a manner that will minimize exposure to chemicals, waste, and petroleum products where ground-disturbing activities occur.

Hydrostatic test water discharges: Grayson Mill would seek coverage under NDG07-0000 *Authorization to Discharge Under the North Dakota Pollutant Discharge Elimination* general permit if hydrostatic test water discharges will occur in conjunction with the Project.

3.2 WILDLIFE INVENTORY

3.2.1 CORRIDOR

3.2.1.1 FEDERALLY PROTECTED SPECIES REVIEW

The U.S. Fish and Wildlife Service (USFWS) identifies and maintains a list of species and critical habitats that have been afforded protection by the Endangered Species Act (ESA). The ESA provides a program for the conservation of threatened and endangered plants and animals and their critical habitats. A desktop evaluation was conducted which was augmented with a field evaluation to confirm the presence or absence of potentially suitable habitat for federally listed species within the Survey Corridor. Background data was collected for preliminary review and to aid in the field inventory of biological resources. The data utilized included the USFWS list of federally listed species for North Dakota, USFWS Designated Critical Habitat for Threatened and Endangered Species Geospatial Data, along with known range and habitat requirements for each species. Carlson McCain identified the following listed species and assessed the potential for the species or their habitat to occur within the Corridor.

Common Name	Scientific Name	Federal Status
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered
Whooping Crane	*Grus americana*	Endangered
Dakota Skipper	*Hesperia dacotae*	Threatened
Piping Plover	*Charadrius melodus*	Threatened, Critical Habitat
Red Knot	*Calidris canutus rufa*	Threatened
Pallid Sturgeon	*Scaphirhynchus albus*	Endangered

Northern Long-Eared Bat: The northern long-eared bat is a forest dwelling mammal. The home range of the northern long-eared bat is approximately 150 acres (60.7 ha) including a summer and winter habitat. In the summer, northern long-eared bats roost under bark or in crevices of trees, preferring to roost in tall trees with greater than 3" diameter at breast height (DBH), and under the exfoliating bark of dead or dying trees. In the winter, northern long-eared bats hibernate in caves and mines. The northern long-eared bat prefers foraging in edge habitats and forests comprised of trees with a diversity of life stages. Occurrences of the northern long-eared bat are uncertain in North Dakota. White-nose syndrome (WNS) is the predominant threat to the northern

long-eared bat currently.

Because this is a return to service of an existing pipeline, trees will not be cleared during any construction activities. Impacts to this species are not anticipated.

Whooping crane: The Aransas Wood Buffalo Population of Whooping Cranes engages in semi-annual migration through North Dakota. This flock breeds in the Wood Buffalo National Park in Alberta and Northwest Territories, Canada, and winters in the Aransas National Wildlife Refuge in Texas. North Dakota provides migratory habitat for the species, providing roosting and feeding opportunities during migration. During migration, the species is most closely associated with larger wetland complexes for roosting habitat, typically using adjacent uplands to forage. Desktop screening identified that the Project is located within the migratory corridor for the whopping crane and potential foraging habitat exists within the Corridor. Because this is a return to service of an existing pipeline, no construction is anticipated within suitable habitat areas. Impacts to this species are not anticipated.

Dakota skipper: The Dakota skipper is a butterfly species listed as federally threatened due to habitat conversion from native prairie to agricultural. The Dakota skipper is identified by its one-inch wingspan and thick body, with an orange-brown color and brown characteristic wing markings. The Dakota skipper is a low mobility species, therefore has short dispersal ranges. Suitable Dakota skipper habitat is described as native prairie grasslands with minimal degradation due to anthropogenic disturbance or encroachment by invasive species. Desktop and field studies identified potential suitable habitat within the Corridor.

Because this is a return to service of an existing pipeline, no construction is anticipated within suitable habitat areas. Impacts to this species are not anticipated.

Piping plover: In North Dakota, the Piping plover is seasonal resident that can be found nesting along alkali wetlands as well as along the shores and sand flats of both Lake Sakakawea and the Missouri River. The Project crosses the Missouri River, which is listed as critical habitat. However, since this is a return to service of an existing pipeline, no construction is anticipated within suitable habitat areas. Impacts to this species are not anticipated.

Rufa red knot: The rufa red knot is a seasonally transient species that passes through North Dakota when migrating between its breeding and wintering grounds. Preferred migratory habitat is closely associated with foraging and has been characterized as wetlands with mudflats and/or sandbars associated with larger waterbody features. The shoreline of the Missouri River provides stopover habitat for red knots that utilize a midcontinental migratory route during annual migrations. However, the species is rare and is not reported in North Dakota every year. Impacts to this species are not anticipated.

Pallid sturgeon: The pallid sturgeon is an aquatic fish that is federally endangered. The pallid sturgeon is identified by its flat, shovel-shaped snout, with a long, slender, and fully plated caudal peduncle. The pallid sturgeon is a large river obligate, primarily in Missouri and Mississippi River Systems, in areas with diverse habitat options. The Project crosses the Missouri River, which is suitable habitat for the pallid sturgeon. However, since this is a return to service of an existing pipeline system, no construction is anticipated to impact any suitable habitat areas. Impacts to this species are not anticipated.

3.2.1.2 MIGRATORY TREATY CONSULTATION

The management of Migratory Bird Treaty Act (MBTA) concerns correspond with the regional timing associated with annual phenology of migratory species. In North Dakota, species protected under the MBTA are present throughout the year. However, it is acknowledged that most protected species seasonally present in North Dakota nest from February 1st through July 15th annually. During this nesting period, birds are more vulnerable to human activities. The proposed Project construction is scheduled to commence the third quarter of 2024 and take approximately four months to reach completion. Due to the Project schedule and phenology of resident birds, MBTA mitigation is not expected. Should mitigation be required, Grayson Mill would continue to consult with agencies as necessary and would develop an MBTA mitigation plan as appropriate.

3.2.1.3 BALD AND GOLDEN EAGLE PROTECTION ACT CONSULTATION

The Bald and Golden Eagle Act (BGEA) prohibits anyone without a permit from taking a bald or golden eagle including their parts, nests, or eggs. The BGEA defines "take" as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites. No bald or golden eagles or nests were identified during the field survey.

3.2.1.4 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS

The USFWS administers National Wildlife Refuges and WPAs as well as wetland and grassland easements throughout 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 PAD-US dataset, and the USFWS Information for Planning and Consultation (IPaC) has been completed for the Corridor. Desktop analysis indicates no USFWS managed lands are located within the Corridor.

The USFWS identifies and maintains a list of species and critical habitats that have been afforded protection by the ESA. The ESA provides a program for the conservation of threatened and endangered plants and animals and their critical habitats.

3.2.2 SURVEY CORRIDOR

Natural Resource field studies of the Survey Corridor included surveys for threatened or endangered species or their critical habitat. Project potential impacts to federally listed species are discussed below.

Northern long eared bat: Potentially suitable habitat in the form green ash coulees and small riparian galleries occur within the Survey Corridor. These trees have the potential to be summer roosting habitat for the northern long-eared bat. Since this is a return to service of an existing pipeline, no trees will be cleared and no impacts to this species are anticipated.

Whooping crane: The Project is located within the migratory corridor for the whopping crane and potential foraging habitat exists within the Survey Corridor. Because this is a return to service of an existing pipeline, construction activities will be small in scale and limited to tie-in locations at existing facilities and installation of one new valve and replacement of one existing valve, any impacts to this species are not anticipated.

Dakota skipper: Potential Dakota skipper habitat exists within the Survey Corridor. However, because this is a return to service of an existing pipeline. Construction activities will be small in scale and limited to tie-in locations at existing facilities and installation of one new valve and replacement of one existing valve; impacts to this species are not anticipated.

Piping plover: Critical habitat (Missouri River) is present within the Survey Corridor. However, since this is a return to service of an existing pipeline, no construction will occur within or near critical habitat area(s). Construction activities will be small in scale and limited to tie-in locations at existing facilities and installation of one new valve and replacement of one existing valve; impacts to this species are not anticipated.

Rufa red knot: Potential stopover habitat for the Rufa red knot exists within the Survey Corridor. However, because this is a return to service of an existing pipeline. Construction activities will be small in scale and limited to tie-in locations at existing facilities and installation of one new valve and replacement of one existing valve; impacts to this species are not anticipated.

Pallid sturgeon: The Project crosses the Missouri River, which is a critical habitat for the pallid sturgeon. However, since this is a return to service of an existing pipeline no impacts to critical habitat will occur. Therefore, the Project will have no impact on this species.

3.3 WETLAND/WATERBODIES

3.3.1 STUDY CORRIDOR

To evaluate the location and extent of mapped wetlands and waterbodies within the Study Corridor a desktop analysis of aerial photography, National Hydrography Data

set (NHD) and National Wetland Inventory (NWI) maps was completed. Desktop analysis did not identify any wetlands within the corridor. One waterbody (Missouri River) and one ephemeral drain were identified. Additionally, several drainage canals were identified within the Corridor.

3.3.2 SURVEY CORRIDOR

The field survey identified 14 wetland features in total. Five of the wetlands are within drainage features, seven wetlands are isolated depressions, and the remaining two are fed by groundwater seeps. Two waterbodies, the Missouri River and an unnamed tributary to the Missouri River were identified within the Survey Corridor. Wetland and waterbody features are mapped on the maps in Appendix B and discussed in detail in the Natural Resource Survey Report contained in Appendix D.

3.4 TREES AND SHRUBS

3.4.1 CORRIDOR

The density of the woody cover in this region is generally sparse, and typically associated with significant topographic relief such as defined banks or incised drainage channels or agricultural windrows.

3.4.2 SURVEY CORRIDOR

Grayson Mill commissioned field studies to inventory the Survey Corridor for woody vegetation. The detailed results of the field studies are documented in Appendix D. Because this is a return to service of an existing pipeline, tree and shrub clearing is not anticipated.

3.5 NOXIOUS WEEDS

3.5.1 CORRIDOR

Noxious weeds are defined by the Federal Noxious Weed Act of 1974 as "a plant which is of foreign origin, is new to, or is not widely prevalent in the United States, and can directly or indirectly injure crops or other useful plants, livestock or the fish and wildlife resources of the United States, or public health". The State of North Dakota defines noxious weeds as "weeds that are difficult to control, easily spread, and injurious to public health, crops, livestock, land, or other property." North Dakota has County Weed Boards in all 53 counties, each of which can add noxious weeds to the state list for regulation only within their jurisdiction. Carlson McCain, on behalf of Grayson Mill, provided a consultation letter to the McKenzie and Williams Counties Weed Control Board. No response has been received. Refer to Appendix C for a complete record of this communication.

3.5.2 SURVEY CORRIDOR

Field surveys recorded 29 noxious weed occurrences (Appendix D). The most common weed recorded was Canada thistle. Common burdock was observed intermittently

during the survey, typically associated with woodland margins or rights-of-way. A single occurrence of leafy spurge was recorded. Since this is a return to service of an existing pipeline, spreading noxious weeds would not occur.

3.6 CULTURAL RESOURCES

3.6.1 STUDY CORRIDOR

A Class I cultural resources inventory (literature review) was conducted of records from the State Historical Society of North Dakota to identify previously completed cultural resource investigations and recorded cultural resources within the Corridor. The site files search revealed that 47 cultural resources have been previously recorded in the search area. Of these resources, there are 15 prehistoric sites, six prehistoric isolate sites, one prehistoric site lead, one prehistoric/historic site, one prehistoric/historic architecture site, eight historic sites, one historic isolate site, and 13 historic architecture sites. Of these sites, four have been determined *eligible* for the NRHP, 20 sites have been determined *not eligible* for the NRHP, and the remaining 22 sites are *unevaluated* for the NRHP.

Refer to the Cultural Resource Report in Appendix E for a detailed accounting of these previously recorded resources.

3.6.2 SURVEY CORRIDOR

Class I efforts were augmented with Class III Pedestrian Surveys of the Survey Corridor. The survey was conducted on June 13-16, 2023. Survey efforts visited three previously recorded resources and identified two new resources within the Survey Corridor. Refer to Appendix E for the Cultural Resource Survey Report.

SECTION 4: SITING CRITERIA ANALYSIS

4.1 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

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

4.2 FACTORS ADDRESSED IN NORTH DAKOTA CENTURY CODE SECTION 49-22.1-09

4.2.1 FEASIBLE ALTERNATIVES TO THE PROPOSED CORRIDOR OR ROUTE

Implementation of the proposed Project will result in firm, reliable service capacity for up to 100,000 barrels of crude oil per day between the Alexander Terminal and the Aune Terminal. From here, the product would continue through interconnecting pipelines and become available for transport to refineries across the United States. Grayson Mill identified and evaluated several project alternatives; however, none of these alternatives effectively satisfied the Project objective. These alternatives included:

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

4.2.1.1 NO ACTION ALTERNATIVE

This alternative would leave the region constrained by limited transport capacity for safe and reliable transmission of crude oil products to markets. A no action alternative could result in the curtailment of crude oil production. For these reasons, Grayson Mill rejected a *No Action Alternative.*

4.2.1.2 TRUCKING ALTERNATIVE

This alternative was reviewed and eliminated due to the volume of crude oil to be transported. The normal daily throughput of the proposed Project would be approximately 20,000 barrels or 840,000 gallons of crude oil. The average load for a truck carrying crude oil is approximately 178 barrels (approximately 7,500 gallons) per truck. Thus, it would require 112trucks per day to transport the volume of product. This level of truck activity is not logistically feasible as it would cause significant amounts of heavy vehicle traffic for area residents, as well as additional wear and tear on the infrastructure. Disruption in the trucking capacity due to seasonal load restrictions on roads, inclement weather or road repairs would cause a delay in

delivering this valuable resource to market. This alternative is not desirable; therefore, Grayson Mill rejected a *Trucking Alternative.*

4.2.1.3 RAIL ALTERNATIVE

A Rail Alternative was also evaluated as a surface transportation alternative. However, this alternative was determined not feasible because of the associated environmental impacts and financial, logistic and time constraints necessary to acquire land and construct the requisite rail infrastructure. This alternative would also require a third-party rail operator. For these reasons, Grayson Mill rejected a *Rail Alternative.*

4.2.2 EFFECTS OF THE LOCATION, CONSTRUCTION AND OPERATION OF TRANSMISSION FACILITY ON PUBLIC HEALTH AND WELFARE, NATURAL RESOURCES AND THE ENVIRONMENT

The Project is designed to provide delivery throughput between the existing Alexander Terminal and the existing Aune Terminal.

Field studies were conducted to identify environmental, biological, and cultural resources along the Route; the results of this effort are discussed in Section 3 of this document. The Natural Resources report is provided in Appendix D. Refer to Appendix E for the Cultural Resources Report. The sections below discuss effects on public health and welfare.

4.2.3 EFFECT OF NEW TRANSMISSION TECHNOLOGIES AND SYSTEMS DESIGNED TO MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS

The Project does not include energy conversion or transmission technologies/systems specifically designed to minimize adverse environmental impacts.

The Project would result in the return to service of an existing crude oil pipeline. Refer to Section 5 of this document for a description of the mitigation measures to be employed.

4.2.4 ADVERSE DIRECT AND INDIRECT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Should the proposed Project be designated in the manner described herein, there will be no direct or indirect adverse environmental effects.

4.2.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES SHOULD THE PROPOSED CORRIDOR BE DESIGNATED

Grayson Mill is not aware of any irreversible or irretrievable commitments of natural resources that would result from the requested approvals.

4.2.6 DIRECT AND INDIRECT ECONOMIC IMPACTS

Construction of this Project will provide firm, reliable service for up to 50,000 bpd of crude oil and provide a transportation link between the Alexander Terminal and the Aune Terminal for delivery to market.

4.2.7 EXISTING PLANS OF THE STATE, LOCAL GOVERNMENT AND PRIVATE ENTITIES FOR OTHER DEVELOPMENTS AT OR IN THE VICINITY OF THE PROPOSED CORRIDOR OR ROUTE

Grayson Mill is not aware of any other future development plans within or near the Route.

4.2.8 EFFECT OF ROUTE ON EXISTING SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND PALEONTOLOGICAL OR ARCHAEOLOGICAL SITES

Grayson Mill has commissioned Class I and Class III Cultural Resource Surveys of the Route, the survey report can be found in Appendix E. As this is a return to service project, ground disturbance will be minimal and will not impact known cultural resources.

Project-specific consultation with various federal, state, and local agencies did not identify any scenic areas within the Route. All related correspondence can be found in Appendix C.

4.2.9 EFFECT OF THE PROPOSED ROUTE ON AREAS THAT ARE UNIQUE DUE TO BIOLOGICAL WEALTH OR BECAUSE THE ROUTE IS HABITAT FOR RARE OR ENDANGERED SPECIES

The proposed Route is not anticipated to result in permanent adverse impacts to the environment. Please see Section 3 for a comprehensive discussion of Grayson Mill's efforts to identify sensitive environmental resources along the proposed Route. As there would be minimal ground-disturbing activities taking place outside existing facilities, the Project will not result in impacts to listed or sensitive species or their habitats. See Appendix C for a complete record of federal and state agency consultations. Detailed survey results can be found in Appendix D.

4.2.10 PROBLEMS RAISED BY FEDERAL, STATE OR LOCAL AGENCIES OR ENTITIES

Grayson Mill has consulted with federal and state agencies to identify possible environmental resources within the Study Corridor and to provide them with an opportunity to raise any related agency concerns. No problems have been raised by agencies. A complete record of these consultations is provided in Appendix C.

4.3 EXCLUSION AREAS (NDAC 69-06-08-02(1))

Exclusion areas are geographical areas that must be excluded in the consideration of a route for a transmission facility. A buffer zone of a reasonable width to protect the integrity of the area must be included. Additionally natural screening may be considered in determining the width of the buffer zone.

Exclusion Area	Within Study Corridor	Within Survey Corridor	Crossed by Route
Federal			
National Parks or Memorial Parks	No	No	No
Historic Sites, or Landmarks	No	No	No
Natural Landmarks or Monuments	No	No	No
Wilderness Areas	No	No	No
State			
Historic Sites, Monuments, or Historical Markers	No	No	No
Archaeological Sites	Yes	Yes	Yes
Parks	No	No	No
Nature Preserves	No	No	No
County			
Parks	No	No	No
Recreation Areas	No	No	No
Municipal Parks	No	No	No
Parks Owned/Operated by other Governmental Subdivisions	No	No	No
Other			
Areas Critical to the Life Stages of Threatened and Endangered Animal or Plant Species	Yes	Yes	Yes
Areas where Animal or Plant Species that are Unique or Rare to this State would be Irreversibly Damaged	No	No	No
Areas within 1,200 feet of a geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	No	No	No
Areas within 30 feet on either side of a direct line between (ICBM) launch or launch control facilities to avoid microwave interference.	No	No	No

4.3.1 FEDERAL EXCLUSION AREAS

Grayson Mill has initiated consultations with appropriate federal agencies and conducted a comprehensive review of published information. Grayson Mill concluded no national or memorial parks, natural landmarks, historic sites listed on the NRHP, monuments or wilderness areas would be crossed or affected by the Project. Class I and III inventories identified archeological sites within the Study Corridor, Survey Corridor and Route. Refer to Section 3.6 of this application and Appendix E for a complete discussion of these resources. As this is a return to service project, ground disturbance will be minimal and will avoid these archaeological resources.

4.3.2 STATE EXCLUSION AREAS

Grayson Mill has initiated consultations with appropriate state agencies and conducted a comprehensive review of published information. Grayson Mill confirmed the absence

of state parks, monuments, historical markers, or nature preserves within the proposed Corridor.

4.3.3 COUNTY EXCLUSION AREAS

Grayson Mill has confirmed through a combination of agency consultations and review of publicly available information the absence of county parks or recreation areas, municipal parks, or parks owned by other subdivisions of government bodies within the proposed Corridor. Refer to Section 3 of this document for a comprehensive discussion of Grayson Mill consultations, and Appendix C for documentation of agency consultations.

4.3.4 OTHER EXCLUSION AREAS

Areas Critical to the Life Stages of Threatened and Endangered Animal or Plant Species: The pipeline crosses the Missouri River, which is designated critical habitat for the piping plover and pallid sturgeon. However, this is a return to service of an existing pipeline and no impacts to critical habitat are anticipated.

Areas where Animal or Plant Species That are Unique or Rare to this State would be Irreversibly Damaged: Grayson Mill conducted a comprehensive desktop review of the Corridor; these efforts were augmented with agency consultations and additional field surveys of the Survey Corridor to confirm the absence of critical habitat.

Refer to Appendix C for documentation of the agency consultations, and Section 3 of this Application for details of desktop and field studies.

Areas where Animal or Plant Species That are Unique or Rare to this State would be Irreversibly Damaged: Grayson Mill has engaged in federal and state agency consultations, reviewed published information and conducted a desktop analysis of the Corridor and commissioned subsequent field studies of the Survey Corridor to determine if areas of critical animal or plant habitat may occur. Refer to Appendix C for supporting documentation of agency consultations and Appendix D for the Natural Resource Survey report.

Areas Within 1,200 Feet of the Geographic Center of an ICBM Launch or Launch Control Facility: Upon review of tabular location data and aerial imagery compiled by the University of Wyoming, there are no areas of the Project within 1,200 feet of the geographic center of an Intercontinental Ballistic Missile (ICBM) launch or launch control facility.

Areas Within 30 Feet on Either Side of a Direct Line Between ICBM Launch or Launch Control Facilities to Avoid Microwave Interference: Upon review of tabular location data and aerial imagery compiled by the University of Wyoming it was confirmed that the Route is not within thirty (30) feet on either side of a direct line between ICBM launch or launch control facilities within the Survey Corridor or crossed by the Route.

4.4 AVOIDANCE AREAS (NDAC 69-06-08-02(2))

Avoidance areas are geographical areas that may not be considered in the routing of a transmission facility unless the applicant shows that under the circumstances there is no reasonable alternative.

Avoidance Area	Within Corridor	Within Survey Corridor	Crossed by Route
Federal			
Historic Districts	No	No	No
Wildlife Areas	No	No	No
Wild, Scenic or Recreational Rivers	No	No	No
Wildlife Refuges	No	No	No
Grasslands	No	No	No
State			
Wild, Scenic, or Recreational Rivers	No	No	No
Game Refuges or Game Management Areas	No	No	No
Forests or Forest Management Areas	No	No	No
Grasslands	No	No	No
Other			
Other Historic Resources not meeting Exclusion or Avoidance Areas Criterion	No	No	No
Areas of Geologic Instability	Yes	Yes	No
Areas within 500 Feet of a Residence, School, or Place of Business	No	No	No
Reservoirs and Municipal Water Supplies	No	No	No
Water Sources for Organized Rural Water Districts	No	No	No
Irrigated Land (not applicable to underground facilities)	NA	NA	NA
Areas of Recreational Significance which are not designated as Exclusion Areas	No	No	No

4.4.1 FEDERAL AVOIDANCE AREAS

Grayson Mill conducted agency consultations and a comprehensive review of publicly available information. This review indicated the absence of designated or registered historic districts, refuges, and wild, scenic, or recreational rivers within the Corridor. Refer to Appendix C for documentation of agency consultations.

4.4.2 STATE AVOIDANCE AREAS

Grayson Mill conducted a review of publicly available information and initiated project specific agency consultations and through these efforts has concluded there are no designated or registered management areas, forests, forest management lands, grasslands or wild, scenic, or recreational rivers within the Corridor. Refer to Appendix C for documentation of agency consultations.

4.4.3 OTHER AVOIDANCE AREAS

Historical Resources not Meeting Exclusion Area Criteria: Grayson Mill conducted a review of publicly available information, initiated project specific agency consultations and Grayson Mill agency review with field studies. Through these efforts, Grayson Mill has concluded there are no historic resources not meeting exclusion area criteria within the Corridor. Refer to Appendix C for documentation of agency consultations and Appendix E for additional Cultural Resource information.

Areas of Known Geologic Instability: Geologic instability refers to surface geology and areas where landslides have occurred. The North Dakota Geological Survey (NDGS) landslide mapping data was consulted for information regarding areas of landslides near the Project Area. Review of landslide deposit data from the NDGS indicated the presence of landslide deposits within the Corridor. These areas consist of a variable mixture of strata and deposits that have slid to the base of steep slopes on the south side of the Missouri River. Most of the landslides in this area are hundreds, if not thousands of years old. According to a review the U.S. Geological Survey abandoned mine data, no mining activities are in the Corridor.

Three landslide deposits are found within the Survey Corridor; however, none are crossed by the Route. Refer to the maps in Appendix B.

Areas Within 500 Feet of a Residence, School, or Place of Business: Based on the existing route of the Pipeline, there are currently no structures within 500ft of the Route.

Reservoirs and Municipal Water Supplies: Grayson Mill has confirmed the absence of reservoirs and municipal water supplies within the Corridor.

Water Sources for Organized Rural Water Districts: Four water wells were identified by the North Dakota Well Data set that were located within the Survey Corridor; these wells are used for irrigation, domestic, stock or observation purposes.

No known water sources for organized rural water districts were identified during the agency consultation process.

Irrigated Land: This criterion does not apply to underground transmission facilities; as such, it is not applicable to this Project.

Areas of Recreational Significance that are not Designated as Exclusion Areas: Grayson Mill confirmed the Corridor does not contain any other areas of recreational significance.

4.5 SELECTION CRITERIA (NDAC 69-06-08-02(3))

The selection criteria require assessment of the environmental impacts and alterations to land use that may result from the siting of the proposed project. Through this process, Grayson Mill believes the Project would avoid or minimize these effects to the maximum extent practicable.

4.5.1 AGRICULTURAL IMPACT

Agricultural Production: Approximately 71% of the land located within the project area can be characterized as agricultural. The Project will not have measurable impact on agricultural land as it is a return to service project and ground disturbance will be minimal and occur primarily within existing facilities.

Family Farms and Ranches: As there will be minimal ground-disturbing activities associated with the Project, impacts on family farms and ranches is not anticipated.

Buried pipelines will not impact typical farm or ranch operations, and those areas directly impacted by construction will be restored to their pre-construction condition.

The location of pipeline markers is defined under 49 CFR 195 for pipelines. Grayson Mill 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 nor cause damage to landowner or county equipment.

Lands Suitable for Irrigation: The Project will not result in temporary or permanent impacts to areas suitable for irrigation to the best of Grayson Mill's knowledge.

Surface Drainage: As there will be minimal ground-disturbing activities occurring outside of existing facilities, there will be little to no change in surface drainage. Care would be taken throughout the construction process to minimize environmental impacts, including modification of drainage patterns.

Ground Water: As this is a return to service project there will be minimal ground disturbance associated with the Project outside of existing facilities;' as such, construction impacts on groundwater resources are not expected. No concerns were raised by agencies during the consultation process regarding Project impacts to ground water.

4.5.2 THE IMPACTS UPON OTHER RESOURCES

Sound-Sensitive Land Uses: The Project is in a rural setting, effectively isolating it from most sensitive receptors. As there would be minimal construction activities

associated with the Project outside of existing facilities, the Project would have no permanent impact on noise-sensitive resources.

Visual Effect on Adjacent Areas: The proposed Project includes one existing valve set/riser. A valve pump would be installed at one location; this location will be a new above ground facility. The location would be clearly marked with a small placard that details ownership and contact information. These features are common throughout the landscape and are not obtrusive. No other permanent aboveground features are to be installed as a part of the Project.

Extractive and Storage Resources: This Project would not affect any extractive or storage resources.

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 Corridor confirmed the presence of these resources. Grayson Mill commissioned field surveys to identify and record the locations of these resources within the Survey Corridor. Refer to Section 3 in this document for a comprehensive discussion of the field study results, as well as Appendix C for copies of agency consultations.

Radio and Television Reception, and other Communication or Electronic Control Facilities: Grayson Mill does not anticipate the Project would affect radio, television, or other electronic control facilities.

Human Health and Safety: Grayson Mill's Health and Safety Policy meets or exceeds federal and state laws, rules, and regulations, and is enforced equally with respect to both Grayson Mill and contractor employees. The implementation of this policy promotes a safe and healthy workplace during construction and operation of all Grayson Mill assets. In addition, the operation of the pipeline would be monitored in accordance with DOT regulations.

Animal Health and Safety: The wildlife currently inhabiting the Corridor is common and is mobile. The local wildlife inhabitants would not be displaced by the Project and no measurable impact to the viability of these populations would occur. Grayson Mill does not anticipate species of special concern to experience direct impacts due to construction or operation of the proposed Project.

Plant Life: There would be minimal impacts to plant life associated with the construction or operation of the pipeline. No species of special concern would be impacted by the Project.

4.6 POLICY CRITERIA (NDAC 69-06-08-02(4))

Grayson Mill selects pipeline corridors and routes to minimize impact as required by the statutes, rules, and regulations of the Commission. As appropriate, Grayson Mill may

employ local environmental consultants and archaeologists to assist with planning. Local farmers may also be employed for restoring cropland to tillable condition following construction. Grayson Mill is proud of its safety record in the operation of facilities in North Dakota and is prepared to meet any emergency that should arise to minimize the impact of any pipeline failure.

The operation of the pipeline conforms to DOT standards; as such, Grayson Mill maintains a rigid pipeline integrity program and periodically runs internal line inspection tools to find anomalies, and perform repairs as required.

4.6.1 LOCATION AND DESIGN

The Project would be in McKenzie and Williams Counties, North Dakota and result in a Hazardous Liquid Pipeline originating at the Alexander Terminal and terminating at the Aune Terminal. Project maps are provided in Appendix B.

The Project will be designed to the minimum specifications outlined in Section 1 of this application.

The proposed pipeline would meet US Department of Transportation regulations.

4.6.2 TRAINING AND UTILIZATION OF AVAILABLE LABOR IN THIS STATE FOR THE GENERAL AND SPECIALIZED SKILLS REQUIRED

Project construction would require a specialized niche construction market and the labor force needed to complete the Project would be primarily comprised of a specialized workforce.

4.6.3 ECONOMICS OF CONSTRUCTION AND OPERATION

Grayson Mill would invest approximately $1 million total to finish developing this Project. The continued cost of maintenance and operation of the pipeline is minimal.

4.6.4 USE OF CITIZEN COORDINATING COMMITTEES

Grayson Mill has established and maintains a good relationship with the local community officials and the local population. These relationships provide multiple grass roots communication channels to inform residents regarding the developments associated with the Project.

4.6.5 COMMITMENT OF A PORTION OF THE TRANSMITTED PRODUCT FOR USE IN THIS STATE

The proposed Project would interconnect with existing facilities. The products currently handled, transferred, and shipped are currently delivered to markets located primarily out of the state.

4.6.6 LABOR RELATIONS

Grayson Mill maintains positive labor relations with its staff and contract work force and does not anticipate encountering any adverse labor relations on this Project. The labor market in the region is supportive of the oil and gas industry.

4.6.7 THE COORDINATION OF FACILITIES

Grayson Mill owns and operates all the facilities, and the Project would provide transport of crude oil between the Alexander Terminal to the Aune Terminal. As such, coordination is expected to be seamless.

4.6.8 MONITORING OF IMPACTS

Grayson Mill 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. Grayson Mill would monitor landowner concerns through its right-of-way (ROW) department and would respond to all reasonable requests. In a similar manner, Grayson Mill would monitor community concerns and would respond to all reasonable concerns brought to its attention by local community leaders.

4.6.9 UTILIZATION OF EXISTING AND PROPOSED RIGHTS-OF-WAY AND CORRIDORS

Grayson Mill chose the preferred Project alignment as it is an existing crude oil pipeline. Several utilities are collocated throughout the alignment.

SECTION 5: MITIGATIVE MEASURES

5.1 LOCATION

The location of the proposed Route is a function of the locations of the existing facilities. Grayson Mill commissioned field surveys to address specific agency concerns expressed during consultations, inventory the resources present throughout the Survey Corridor, and define the location and boundaries of resources that intersect the proposed Route.

Trees and shrubs: Grayson Mill shall comply with the Commission's tree and shrub mitigation specifications. Field surveys included a pre-construction tree and shrub inventory. As there will be minimal ground-disturbing construction activities outside of existing facilities, clearing or removal of trees or shrubs is not anticipated.

Wetlands and Waterbodies: There will be no ground-disturbing construction activities within wetlands or waterbodies, as such; no wetlands and waterbodies will be impacted.

Migratory Bird Treaty Act: Grayson Mill, in the interest of maintaining full compliance with the MBTA. Given that there will be minimal construction-related activities associated with the Project, impacts to breeding birds is not anticipated.

5.2 CONSTRUCTION

Minimal ground-disturbing activities will take place outside of the confines of existing facilities. Return to service to a fully functioning crude oil pipeline is estimated to require four (4) months.

5.3 OPERATION

Once constructed and put into service, the proposed Project will operate continuously transporting crude oil between the Alexander Terminal and the Aune Terminal. Normal pipeline operations are imperceptible to the public, as they are silent, buried and therefore not visible, and require only minimal aboveground activity. Standard operating procedures for the regulated portions of the system will conform to DOT standards and requirements and as such, periodic inspection and maintenance of the right-of-way will be required.

SECTION 6: DESCRIPTION OF RIGHT-OF-WAY PREPARATION, CONSTRUCTION AND RECLAMATION PROCEDURES

A minimal amount of construction activities will occur outside of the footprint of existing facilities including the construction of the West Missouri River Valve. Construction of the valve would require surveying, staking, clearing, and grading. Disturbed areas will be restored to pre-construction conditions as appropriate

SECTION 7: EASEMENT ACQUISITION, LANDOWNER NOTIFICATION AND EASEMENT COMPENSATION PLAN

The Project is the return to service of an existing crude oil pipeline. As such, one new easement and one additional acquisition of property or right-of-way will be required to install an isolation valve on the West side of the Missouri River. There will be minimal ground disturbance associated with the Project.

Grayson Mill's practice for determining landowner compensation for easements is based upon research of comparable fair market pricing and prior experience negotiating easements locally.

SECTION 8: LIST OF PREPARERS

Todd Hartleben, PE
Principal Engineer
Carlson McCain, 3831 Lockport St, Suite C, Bismarck ND 58503

B.S. Civil Engineering, North Dakota State University; and B. A. Math and Biology, University of Jamestown. Mr. Hartleben is a civil engineer with over 20 years of environmental consulting experience working with various energy assets and regulatory agencies. He has managed the environmental requirements for facility siting, pipeline routing, and various federal, state, and local permits.

Danny Margarit, PhD, CHMM
Carlson McCain, 15650 36th Ave N, Suite 110, Plymouth, MN 55446

B.S., Natural Resources Management, North Dakota State University; Masters of Natural Resources Management, NDSU; Ph.D., Natural Resources Management, NDSU. Mr. Margarit is an environmental scientist with experience in the identification of range and riparian plant species, invasive plant species control, soil sampling and analysis, and wetland delineation. He is also proficient in the manipulation and analysis of data using ArcGIS, the collection of data in the field using a Trimble device, and using data to create informative figures.

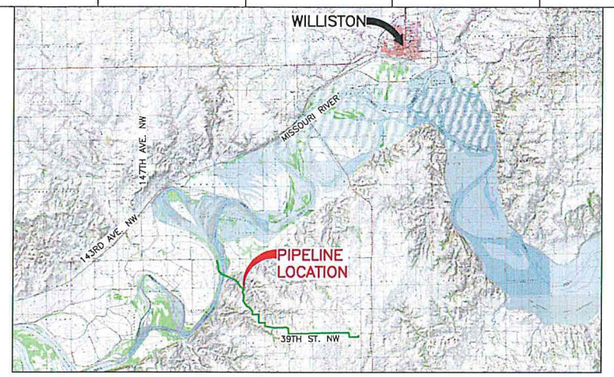
Kerry Morgan
PHMSA/DOT Specialist
Grayson Mill Operating, LLC, 840 Sam Houston Pkwy N., STE 300 Houston, TX 77024

B.S Business Administration, University of Southern Mississippi.
NACE Certification; NACE Senior Corrosion Technologist No. 5037
Mr. Morgan has over 35 years of pipeline operations, PHMSA/DOT compliance, pipeline integrity management and corrosion control.

Adam Novelli
Midstream Engineering Manager
Grayson Mill Operating, LLC, 840 Sam Houston Pkwy N., STE 300 Houston, TX 77024

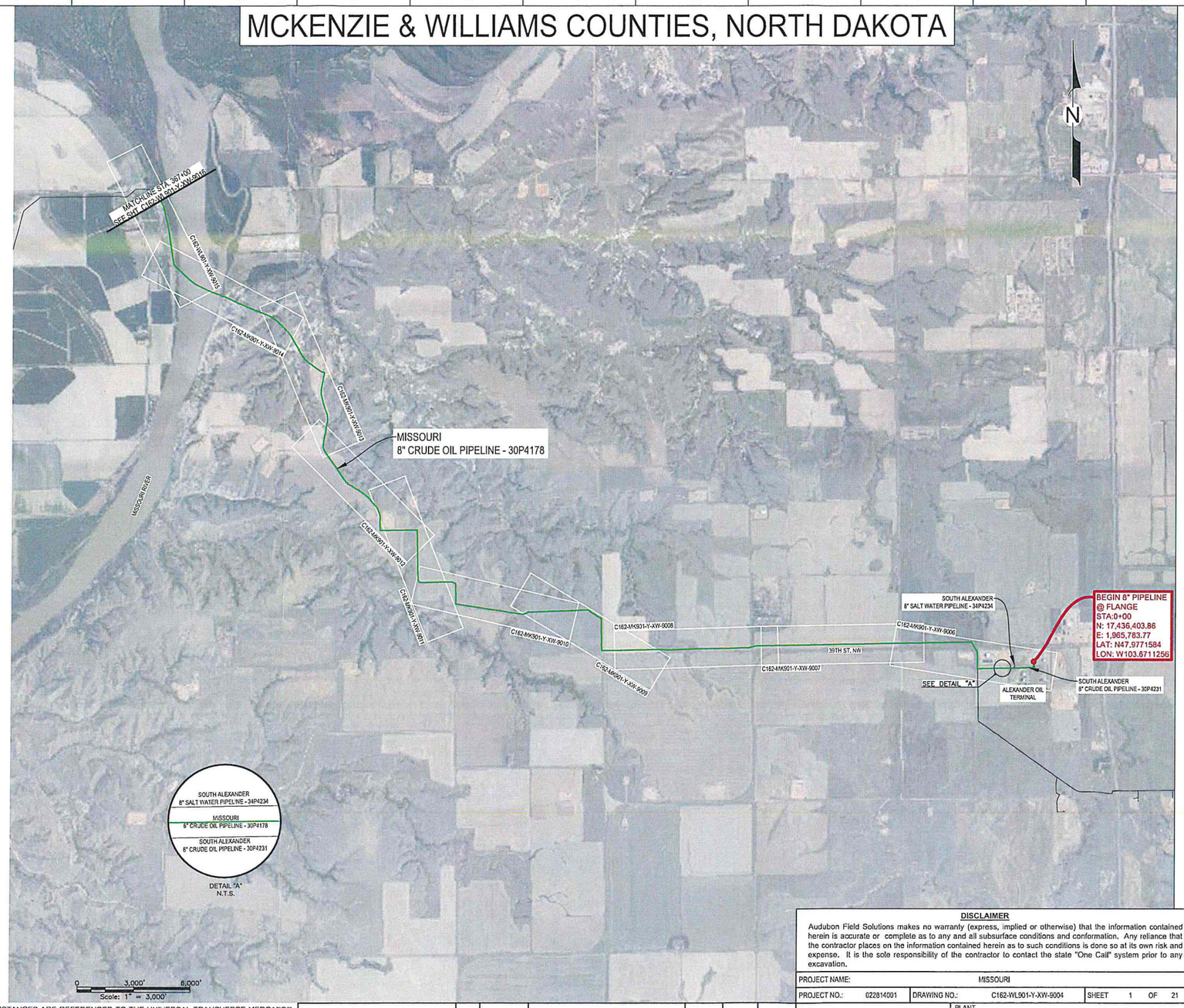
B.S Ocean Engineering, Texas A&M University
Mr. Novelli has over 12 years of experience in pipeline/facilities engineering, construction, and operations.

APPENDIX A: ENGINEERING DRAWINGS



VICINITY
N.T.S.

MCKENZIE & WILLIAMS COUNTIES, NORTH DAKOTA



DETAIL "A"
N.T.S.

TABLE OF CONTENTS

DRAWING NUMBER	REVISION NO.	DESCRIPTION
C162-WL901-Y-XW-9004	01	COVER SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 1 OF 21
C162-WL901-Y-XW-9005	01	COVER SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 2 OF 21
C162-WL901-Y-XW-9006	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 3 OF 21
C162-WL901-Y-XW-9007	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 4 OF 21
C162-WL901-Y-XW-9008	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 5 OF 21
C162-WL901-Y-XW-9009	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 6 OF 21
C162-WL901-Y-XW-9010	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 7 OF 21
C162-WL901-Y-XW-9011	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 8 OF 21
C162-WL901-Y-XW-9012	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 9 OF 21
C162-WL901-Y-XW-9013	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 10 OF 21
C162-WL901-Y-XW-9014	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 11 OF 21
C162-WL901-Y-XW-9015	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 12 OF 21

BILL OF MATERIALS - MISSOURI 8" CRUDE OIL PIPELINE - 30P4178

QUANTITY	UNIT	DESCRIPTION
50,731	FT	8.625" O.D. X 0.25" W.T., X42, HFW
22,577	FT	8.625" O.D. X 0.322" W.T., X42, HFW
4,519	FT	8.625" O.D. X 0.5" W.T., X42, HFW
2	EA	8.625" O.D. STD BEND, 30 DEGREE, WPB
7	EA	8.625" O.D. STD BEND, 25 DEGREE, WPB
2	EA	8.625" O.D. STD BEND, 30 DEGREE, WPB
5	EA	8.625" O.D. STD BEND, 35 DEGREE, WPB
6	EA	8.625" O.D. STD BEND, 40 DEGREE, WPB
9	EA	8.625" O.D. STD BEND, 45 DEGREE, WPB
2	EA	8.625" O.D. STD BEND, 50 DEGREE, WPB
3	EA	8.625" O.D. STD BEND, 60 DEGREE, WPB
2	EA	8.625" O.D. STD BEND, 65 DEGREE, WPB
2	EA	8.625" O.D. STD BEND, 70 DEGREE, WPB
1	EA	8.625" O.D. STD BEND, 75 DEGREE, WPB
3	EA	8.625" O.D. STD BEND, 80 DEGREE, WPB
4	EA	8.625" O.D. STD BEND, 85 DEGREE, WPB
5	EA	8.625" O.D. STD BEND, 90 DEGREE, WPB
2	EA	8"X8"X8.625" O.D. STD STRAIGHT TEE, WPB
8	EA	8.625" O.D. FLANGE, ANSI 600, RFWN
3	EA	8.625" O.D. MLV BALL VALVE, ANSI 600
41	EA	PIPELINE MARKER
2	EA	AERIAL MARKER

LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS
- HIGH CONSEQUENCE AREAS

GENERAL NOTES:

1. ALL BEARINGS AND DISTANCES ARE REFERENCED TO THE UNIVERSAL TRANSVERSE MERCATOR COORDINATE SYSTEM, ZONE 13 NORTH, NORTH AMERICAN DATUM OF 1983 (2011) EPOCH 2010, GEOID12B, US SURVEY FEET BASED ON GPS OBSERVATIONS MADE BY AUDUBON FIELD SOLUTIONS, DISTANCES ARE GROUND. VERTICAL DATUM: NAVD 88. SECTION, TOWNSHIP, AND RANGE ARE GENERATED FROM THE NORTH DAKOTA BUREAU OF LAND MANAGEMENT PUBLIC LAND SURVEY SYSTEM.
2. EXISTING GRADE ELEVATIONS, WATERBODY DEPTHS, AND EXISTING ABOVE GROUND/BELOW GROUND UTILITIES/PIPELINES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED ON THE BEST INFORMATION AVAILABLE, INCLUDING SURVEY PERFORMED BY OTHERS, AT THE TIME OF PREPARING THIS CONSTRUCTION DRAWING. AUDUBON FIELD SOLUTIONS MAKES NO WARRANTY (EXPRESS, IMPLIED, OR OTHERWISE) THAT THE INFORMATION CONTAINED HEREIN IS ACCURATE OR COMPLETE AS TO ANY AND ALL SUBSURFACE CONDITIONS AND CONFORMATIONS.
3. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE VICINITY MAP.

DISCLAIMER

Audubon Field Solutions makes no warranty (express, implied or otherwise) that the information contained herein is accurate or complete as to any and all subsurface conditions and conformation. Any reliance that the contractor places on the information contained herein as to such conditions is done so at its own risk and expense. It is the sole responsibility of the contractor to contact the state "One Call" system prior to any excavation.

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	MH	JG	JRC

audubon
1620S Westheimer Road Houston, TX 77042 281.669.0590

PROJECT NAME:	MISSOURI
PROJECT NO.: 022814001	DRAWING NO.: C162-WL901-Y-XW-9004 SHEET 1 OF 21

equinor

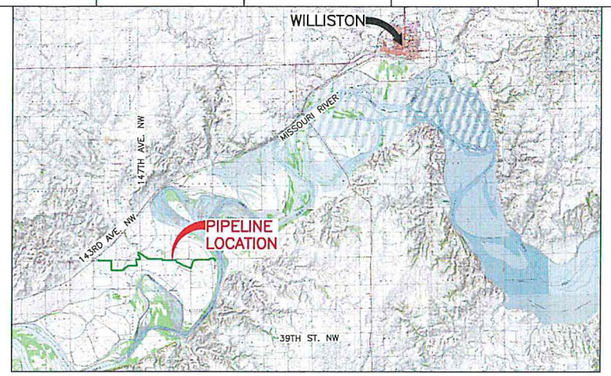
PLANT
AUNE TERMINAL

DRAWING TITLE: COVER SHEET 1 OF 2
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO			
4600025696			
3000 AT D	WL901	30	C162-WL901-Y-XW-9004
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER

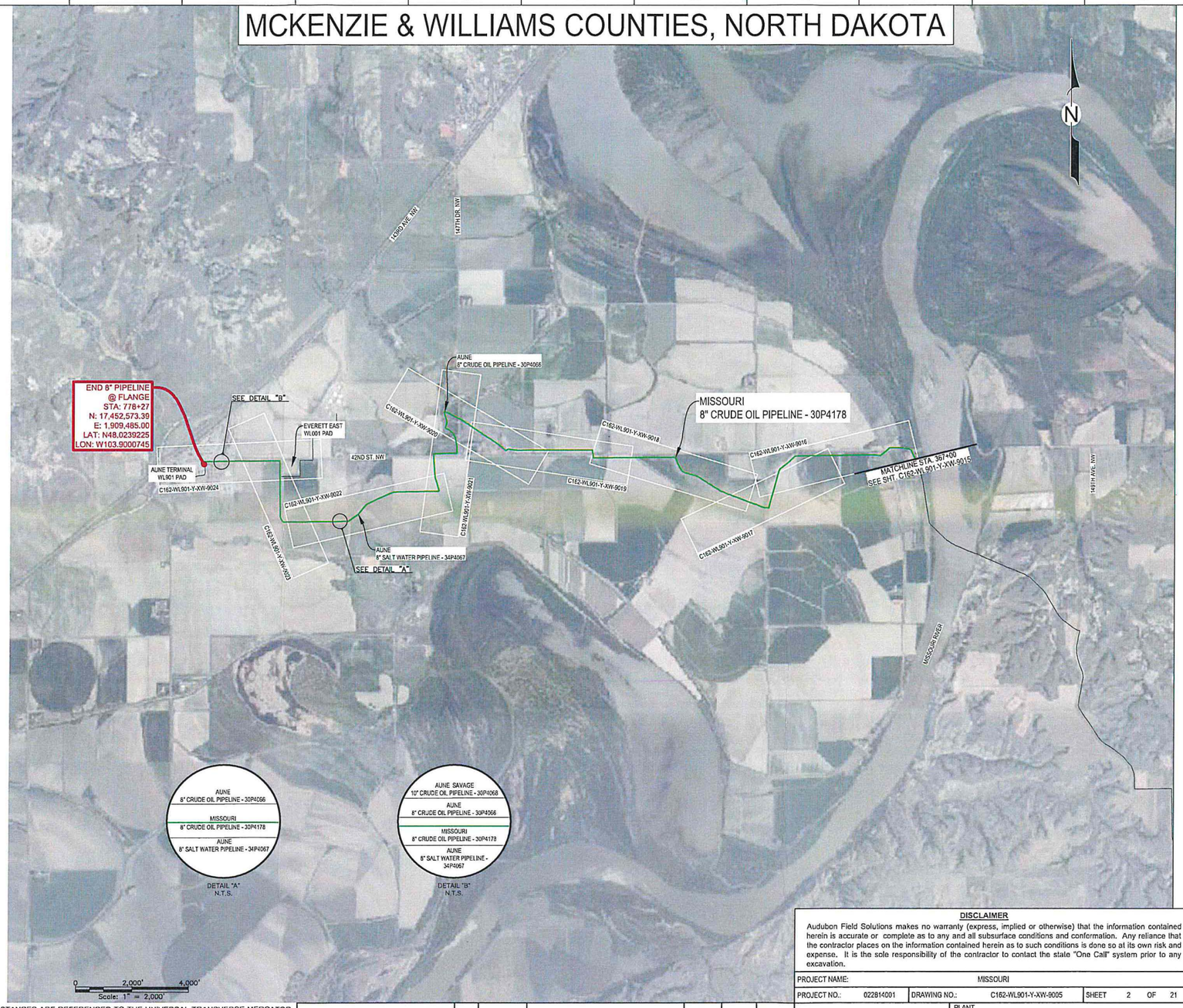
01 REV.

FILEINFO:S:\OCHA\PUBLIC\AFIELD\EPROJECTS\EQUINOR\CICO\TOOLDEC\DWG\MXD\C162-WL901-Y-XW-9004_REV 01.MXD LAYOUT:C162-WL901-Y-XW-9004_REV 01 LAYOUT LAST SAVED BY: JAY.DEER ON 2022-09-26



VICINITY
N.T.S.

MCKENZIE & WILLIAMS COUNTIES, NORTH DAKOTA



DETAIL "A"
N.T.S.

DETAIL "B"
N.T.S.

TABLE OF CONTENTS

DRAWING NUMBER	REVISION NO.	DESCRIPTION
C162-WL901-Y-XW-9016	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 13 OF 21
C162-WL901-Y-XW-9017	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 14 OF 21
C162-WL901-Y-XW-9018	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 15 OF 21
C162-WL901-Y-XW-9019	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 16 OF 21
C162-WL901-Y-XW-9020	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 17 OF 21
C162-WL901-Y-XW-9021	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 18 OF 21
C162-WL901-Y-XW-9022	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 19 OF 21
C162-WL901-Y-XW-9023	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 20 OF 21
C162-WL901-Y-XW-9024	01	ALIGNMENT SHEET - MISSOURI TO AUNE OIL FACILITY - SHEET 21 OF 21

LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS
- HIGH CONSEQUENCE AREAS

GENERAL NOTES:

1. ALL BEARINGS AND DISTANCES ARE REFERENCED TO THE UNIVERSAL TRANSVERSE MERCATOR COORDINATE SYSTEM, ZONE 13 NORTH, NORTH AMERICAN DATUM OF 1983 (2011) EPOCH 2010, GEOID12B, US SURVEY FEET BASED ON GPS OBSERVATIONS MADE BY AUDUBON FIELD SOLUTIONS, DISTANCES ARE GROUND. VERTICAL DATUM: NAVD 88. SECTION, TOWNSHIP, AND RANGE ARE GENERATED FROM THE NORTH DAKOTA BUREAU OF LAND MANAGEMENT PUBLIC LAND SURVEY SYSTEM.
2. EXISTING GRADE ELEVATIONS, WATERBODY DEPTHS, AND EXISTING ABOVE GROUND/BELOW GROUND UTILITIES/PIPELINES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED ON THE BEST INFORMATION AVAILABLE, INCLUDING SURVEY PERFORMED BY OTHERS, AT THE TIME OF PREPARING THIS CONSTRUCTION DRAWING. AUDUBON FIELD SOLUTIONS MAKES NO WARRANTY (EXPRESS, IMPLIED, OR OTHERWISE) THAT THE INFORMATION CONTAINED HEREIN IS ACCURATE OR COMPLETE AS TO ANY AND ALL SUBSURFACE CONDITIONS AND CONFORMATIONS.
3. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE VICINITY MAP.

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audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	MH	JG	JRC

PROJECT NAME:	MISSOURI			
PROJECT NO.:	022814001	DRAWING NO.:	C162-WL901-Y-XW-9005	SHEET 2 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: COVER SHEET 2 OF 2
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

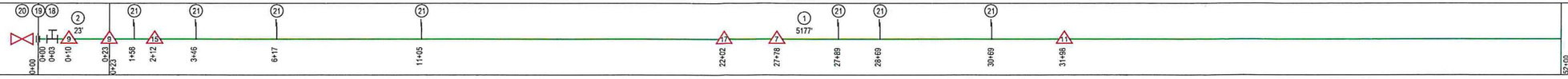
CONTR. NO	4600025696		
3000 AT D	WL901	30	C162-WL901-Y-XW-9005 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

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TRACT NO.		150027250		150027205		150027200		150027240	39TH ST NW	39TH ST NW	150022200					
OWNERSHIP		GLACIER PEAK MIDSTREAM LLC		WEST DAKOTA WATER LLC		NST EXPRESS LLC		CONTINENTAL RESOURCES INC	NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	BYRON HELGESON & CHARLOTTE REHBERG					
FOOTAGE		156'		146'		1942'		622'	58'	55'	2221'					
RODS	0+00	9.5	1+56	8.8	3+02	117.7	22+44	37.7	28+66	3.5	29+24	3.3	29+79	134.6		52+00
DESIGN FACTOR	0.72															
MAOP	600															
CLASS LOCATION	CLASS 1															

MATERIALS

8" CRUDE OIL PIPELINE



DEPTH OF COVER

-4 -4 5 8 6 5 6 6 5 5 5 5 5 4 4 4 5 4 5 6 4 5 5 5 6 7 4 11 14 14 12 10 4 6 6 6 5 5 6 6 5 6 5 4 5 6

PIPE STATIONING

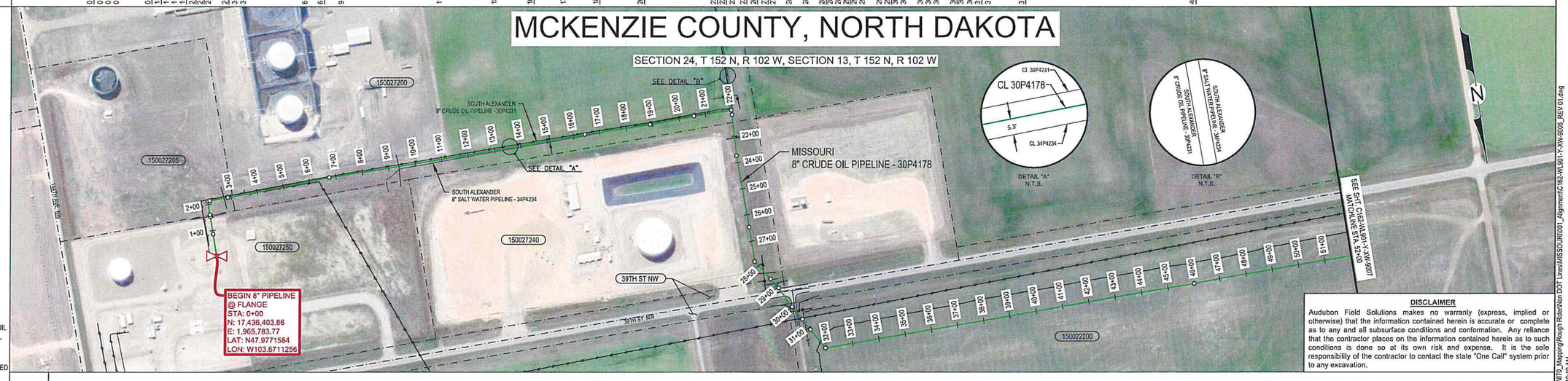
0+00.0 BEGIN STA. @ FLANGE
0+02.9 STRAIGHT PIPE
0+05.6 45° OVERBEND
0+22.5 45° SAG BEND
0+66.8 P.I. <1°00'50" RT.
1+53.0 P.I. <6°44'43" LT.
1+55.4 FENCE LINE
1+57.6 PIPELINE MARKER, 2.7' LT.
1+60.6 P.I. <6°32'28" RT.
2+19.2 P.I. <9°17'05" RT.
2+74.7 MCKENZIE BURIED ELECTRIC LINE
3+66.4 PIPELINE MARKER, 6.1' RT.
3+82.4 CROSS PIPELINE (APPROX. LOCATION)
6+17.4 PIPELINE MARKER, 3.6' RT.
6+76.0 P.I. <2°01'39" RT.
9+38.9 MCKENZIE BURIED ELECTRIC LINE
11+04.9 PIPELINE MARKER, 1.4' RT.
15+10.0 HILAND CRUDE PIPELINE
16+44.7 P.I. <1°30'01" RT.
17+68.3 8" SOUTH ALEXANDER PIPELINE
18+91.5 P.I. <2°21'42" LT.
20+58.0 P.I. <1°53'37" RT.
22+01.6 P.I. <90°11'29" RT.
22+28.8 P.I. <95°11'27" RT.
23+05.5 HILAND CRUDE PIPELINE
23+73.7 P.I. <3°17'50" LT.
26+17.3 P.I. <1°15'24" RT.
27+18.1 P.I. <30°37'31" LT.
27+66.7 PIPELINE MARKER, 0.3' LT.
28+26.4 WEST DAKOTA WATER LINE
28+37.2 MCKENZIE BURIED ELECTRIC LINE
28+65.9 P.I. <1°32'39" RT.
28+69.3 PIPELINE MARKER, 0.1' RT.
28+90.1 TOE OF BANK
29+14.7 P.I. <38°38'30" RT.
29+31.4 CL OF 39TH ST. NW (ASPHALT)
29+50.9 EDGE OF ROAD
29+99.6 P.I. <3°34'24" LT.
30+10.1 EDGE OF DRIVEWAY
30+17.3 CL OF DRIVEWAY (GRAVEL)
30+19.8 OVERHEAD POWER LINE
30+29.1 EDGE OF DRIVEWAY
30+36.3 CL OF DRIVEWAY
30+60.2 P.I. <2°10'32" RT.
30+68.7 PIPELINE MARKER, 0.6' LT.
30+74.4 FENCE LINE
30+76.5 P.I. <1°43'42" LT.
31+08.5 2" MCKENZIE COUNTY WATER DISTRICT POLY LINE (APPROX. LOCATION)
31+98.0 P.I. <89°37'14" LT.
46+01.3 P.I. <17°08'16" LT.

LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
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- REDUCER
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- RECTIFIER
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- AS-BUILT CRUDE OIL
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- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

MCKENZIE COUNTY, NORTH DAKOTA

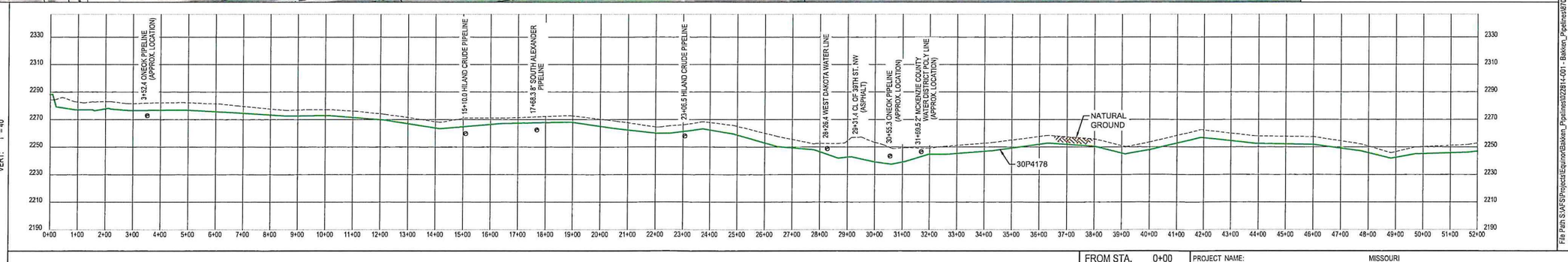
SECTION 24, T 152 N, R 102 W, SECTION 13, T 152 N, R 102 W



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PIPELINE FROFILE
HORIZ: 1" = 200'
VERT: 1" = 40'



FROM STA.	0+00
TO STA.	52+00

PROJECT NAME:	MISSOURI				
PROJECT NO.:	02214001	DRAWING NO.:	C162-WL901-Y-XW-9006	SHEET	3 OF 21

MATERIAL SUMMARY

ITEM NO.	DESCRIPTION	QTY.
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	5177'
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	23'
7	8.625" O.D. STD BEND, 35 DEGREE, WPB (SEE NOTE 1)	1
9	8.625" O.D. STD BEND, 45 DEGREE, WPB (SEE NOTE 1)	2
11	8.625" O.D. STD BEND, 60 DEGREE, WPB (SEE NOTE 1)	1
15	8.625" O.D. STD BEND, 80 DEGREE, WPB (SEE NOTE 1)	1
17	8.625" O.D. STD BEND, 90 DEGREE, WPB (SEE NOTE 1)	1
18	8"X8"X8.625" O.D. STD STRAIGHT TEE, WPB (SEE NOTE 1)	1
19	8.625" O.D. FLANGE, ANSI 600, RFWN (SEE NOTE 1)	1
20	8.625" O.D. MLV BALL VALVE, ANSI 600 (SEE NOTE 1)	1
21	PIPELINE MARKER	7

REFERENCE DRAWINGS

DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR RUPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
4. ANY MISSING ATTRIBUTES FROM THE MATERIAL SUMMARY ARE DUE TO INSUFFICIENT OR INCOMPLETE DOCUMENTATION. THESE PIPE LISTINGS ALONG WITH MAOP WILL BE UPDATED IF FURTHER DOCUMENTATION IS FOUND OR FUTURE PROJECTS ARE UNDERTAKEN WHICH DETERMINE PIPE ATTRIBUTES.
5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO	4600025696		
200 AT D	WL901	30	C162-WL901-Y-XW-9006 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

File Path:S:\AFS\Projects\Equinor\Bakken_Pipelines\02214-001 - Bakken_Pipelines\970_Mapping\Rough Rider\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9006_REV 01.dwg
Saved by: Tech, NAME on: 9/7/22 - 9:43 AM Plotted by: Tech, NAME on: 9/7/22 - 10:10 AM

TRACT NO.		150022200	150022600	150022700
OWNERSHIP		BYRON HELGESON & CHARLOTTE REHBERG	TIM ROEN REVOCABLE LIVING TRUST PETER H FURUSETH TRUSTEE	TIM ROEN REVOCABLE LIVING TRUST PETER H FURUSETH TRUSTEE
FOOTAGE		522'	2641'	2037'
RODS		31.6	160.1	123.5
	52+00	57+22	83+63	104+00
DESIGN FACTOR	0.72			
MAOP	600			
CLASS LOCATION	CLASS 1			
MATERIALS: 8" CRUDE OIL PIPELINE	52+00	(21) 57+04; (21) 57+62; (1) 5200'		104+00
DEPTH OF COVER	6 5 13 15 6 6 6 5 5 6 6 6 6 5 5 6 6 6 6 6 6 6 5 6 6 5			

PIPE STATIONING

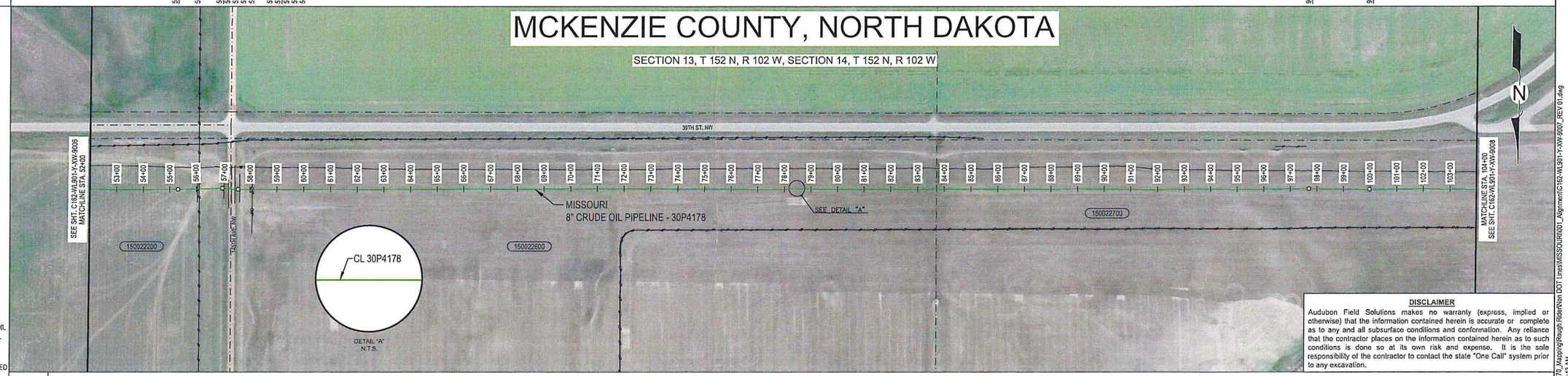
55+31.8 P.I. <1°17'27" LT.
56+04.8 CALIBER MIDSTREAM PIPELINE
56+97.4 P.I. <5°21'12" RT.
57+03.2 FENCE LINE
57+04.1 PIPELINE MARKER, 4.2' RT.
57+20.0 EDGE OF ROAD
57+30.8 CL OF 145TH AVE. NW (GRAVEL)
57+43.3 EDGE OF ROAD
57+55.5 P.I. <3°52'13" LT.
57+61.5 FENCE LINE
57+62.2 PIPELINE MARKER, 0.0' RT.
58+46.3 OVERHEAD POWER LINE
97+69.7 P.I. <1°09'44" RT.
99+98.7 P.I. <1°00'59" LT.

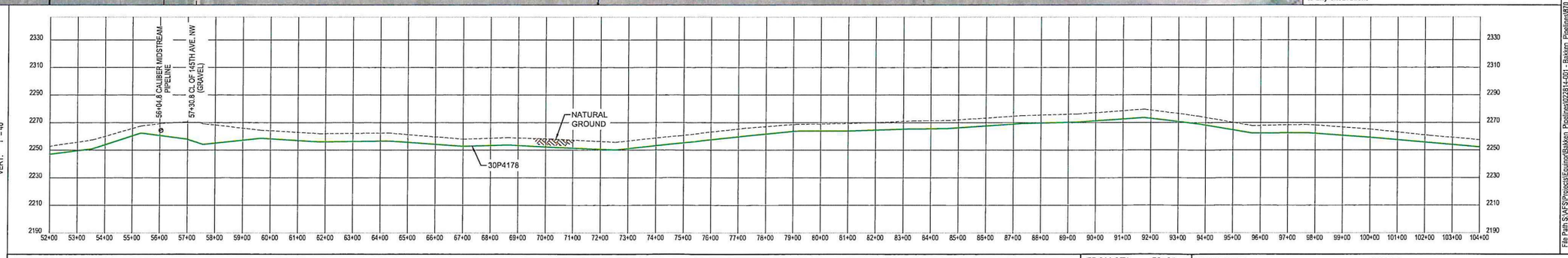
LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
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- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

MCKENZIE COUNTY, NORTH DAKOTA

SECTION 13, T 152 N, R 102 W, SECTION 14, T 152 N, R 102 W





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File Path:S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\970_Mapping\Rough Rider\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9007_REV 01.dwg
Saved by: Tech. NAME on: 9/7/22 - 8:43 AM Plotted by: Tech. NAME on: 9/7/22 - 10:13 AM

MATERIAL SUMMARY

ITEM NO.	DESCRIPTION	QTY.
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	5200'
21	PIPELINE MARKER	2

REFERENCE DRAWINGS

DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
4. ANY MISSING ATTRIBUTES FROM THE MATERIAL SUMMARY ARE DUE TO INSUFFICIENT OR INCOMPLETE DOCUMENTATION. THESE PIPE LISTINGS ALONG WITH MAOP WILL BE UPDATED IF FURTHER DOCUMENTATION IS FOUND OR FUTURE PROJECTS ARE UNDERTAKEN WHICH DETERMINE PIPE ATTRIBUTES.
5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 52+00
TO STA. 104+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 DRAWING NO.: C162-WL901-Y-XW-9007 SHEET 4 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO 4600025696

SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.
200 AT D		WL901	30	C162-WL901-Y-XW-9007	01

TRACT NO.		150022700			150023200			150023000				150023300				
OWNERSHIP		TIM ROEN REVOCABLE LIVING TRUST PETER H FURUSETH TRUSTEE			MICHELLE NOEL			TIM ROEN REVOCABLE LIVING TRUST PETER H FURUSETH TRUSTEE				THE FRED AND CLARA ECKERT FOUNDATION FOR CHILDREN				
FOOTAGE		611'			1332'			1329'				1928'				
RODS	104+00	37.0		110+11	80.7		123+43	80.5			136+72	116.8				156+00
DESIGN FACTOR	0.72															
MAOP	600															
CLASS LOCATION	CLASS 1															
MATERIALS: 8" CRUDE OIL PIPELINE	104+00	21 109+82			21 110+53			21 123+41			1 5200'	21 136+71				156+00
DEPTH OF COVER	5	5	5	7	8	9	6	6	5	5	5	6	6	8	6	6
	5	6	6	5	6	6	5	6	6	6	6	6	6	6	6	6
	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

PIPE STATIONING

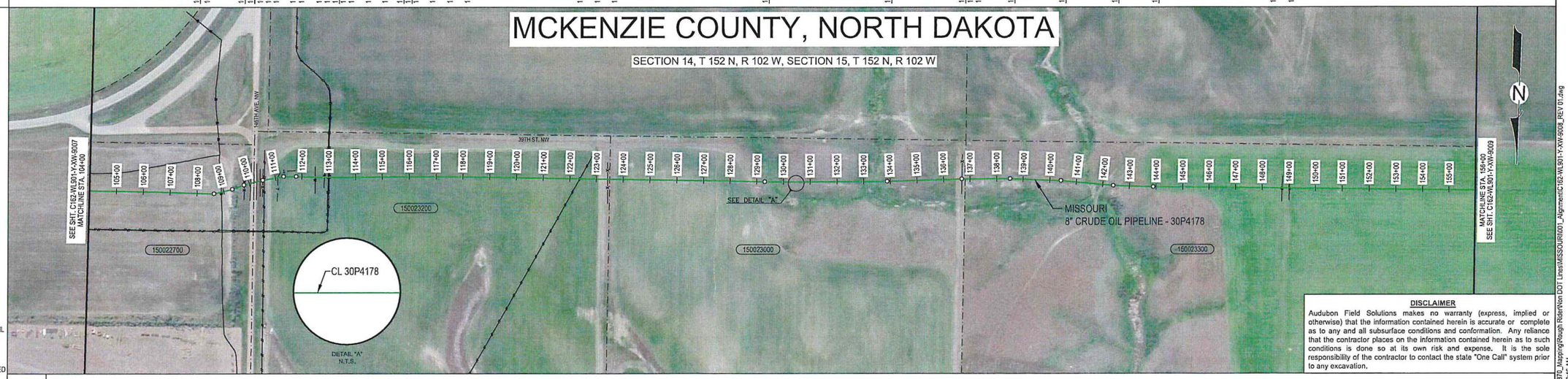
108+63.0 P.I. <15°09'43" LT.
108+90.9 2" MCKENZIE COUNTY WATER DISTRICT POLY LINE (APPROX. LOCATION)
109+33.2 P.I. <2°13'09" LT.
109+79.2 P.I. <2°13'09" RT.
109+80.4 FENCE LINE
109+81.0 OVERHEAD POWER LINE
109+81.6 PIPELINE MARKER, 0.1' LT.
110+05.9 EDGE OF ROAD
110+18.3 CL OF 146TH AVE. NW (GRAVEL)
110+28.7 EDGE OF ROAD
110+41.7 TOE OF BANK
110+51.4 P.I. <8°07'07" RT.
110+52.2 PIPELINE MARKER, 0.1' LT.
110+55.1 PIPELINE MARKER, 0.1' LT.
110+57.8 ONEOK PIPELINE (APPROX. LOCATION)
111+05.0 REMONT BURIED PIPELINE CROSSING
111+31.8 P.I. <9°24'10" RT.
111+76.8 P.I. <1°32'59" RT.
112+49.3 WEST DAKOTA WATER PIPELINE
112+64.5 CALIBER MIDSTREAM WATER LINE
112+98.7 10" XTO PIPELINE
113+02.8 CALIBER MIDSTREAM WATER LINE
122+37.4 ONEOK PIPELINE (APPROX. LOCATION)
123+41.4 PIPELINE MARKER, 4.1' RT.
123+42.1 FENCE LINE
129+31.3 P.I. <1°03'20" LT.
133+69.0 P.I. <1°55'03" LT.
135+69.7 P.I. <1°07'43" RT.
135+69.7 FENCE LINE
135+70.8 PIPELINE MARKER, 29.6' LT.
138+51.7 P.I. <2°29'33" RT.
140+42.0 P.I. <3°18'52" RT.
142+39.5 P.I. <3°39'59" LT.
143+89.3 P.I. <1°29'59" LT.
148+74.4 HILAND PARTNERS PIPELINE
149+03.1 HILAND PARTNERS PIPELINE

LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

MCKENZIE COUNTY, NORTH DAKOTA

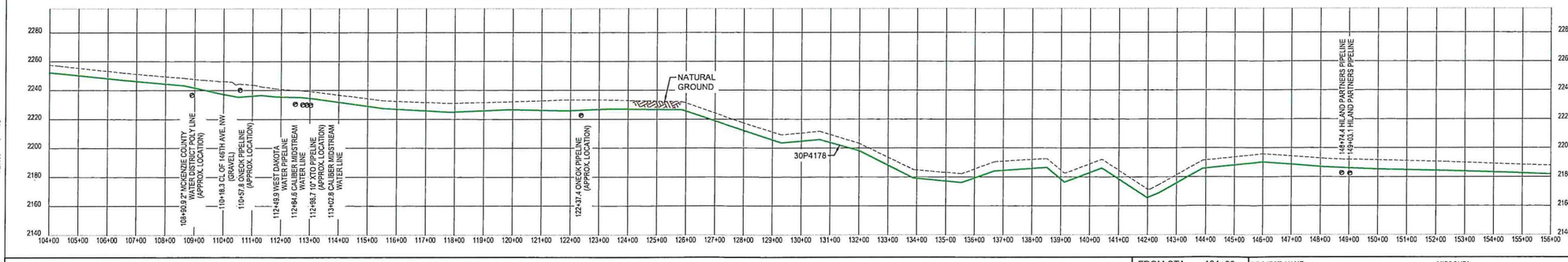
SECTION 14, T 152 N, R 102 W, SECTION 15, T 152 N, R 102 W



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PIPELINE PROFILE
HORIZ: 1" = 200'
VERT: 1" = 40'



MATERIAL SUMMARY		
ITEM NO.	DESCRIPTION	QTY.
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	5200'
21	PIPELINE MARKER	4

REFERENCE DRAWINGS	
DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
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6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 104+00
TO STA. 156+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 | DRAWING NO.: C162-WL901-Y-XW-9008 | SHEET 5 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY 8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO 4600025696

SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.
200	D	WL901	30	C162-WL901-Y-XW-9008	01

File Path:S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\970_Mapping\Rough Rider\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9008_REV 01.dwg
Saved by: Tech. NAME on: 9/7/22 - 10:15 AM
Plotted by: Tech. NAME on: 9/7/22 - 9:43 AM

TRACT NO.	150023300 / 150023700
OWNERSHIP	THE FRED AND CLARA ECKERT FOUNDATION FOR CHILDREN / STATE OF N DAK
FOOTAGE	731' / 2769'
RODS	44.3 / 167.8
	156+00 – 163+31 / 163+31 – 191+00
DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1
MATERIALS: 8" CRUDE OIL PIPELINE	21 @ 163+39; 17 @ 163+63; 1 @ 3500'; 8 @ 174+90; 8 @ 180+60
DEPTH OF COVER	6 6 6 6 5 5 5 5 6 5 5 5 5 5 6 6 5 6 6 6 6 6 5

PIPE STATIONING

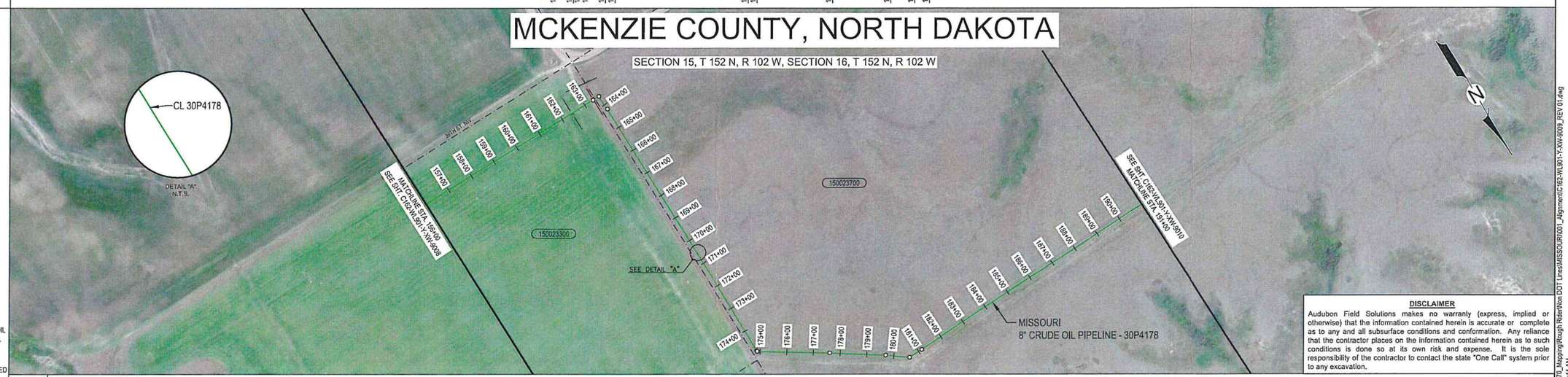
- 162+42.3 NEMONT BURIED TELEPHONE LINE
- 163+37.0 PIPELINE L.T.
- 163+38.3 FENCE LINE
- 163+39.0 PIPELINE MARKER, 5.0' RT.
- 163+62.6 P.I. <88°39'51" RT.
- 164+19.8 P.I. <2°27'04" RT.
- 174+65.8 P.I. <16°16'58" LT.
- 174+69.3 P.I. <41°29'48" LT.
- 177+61.6 P.I. <1°05'05" RT.
- 179+71.0 P.I. <2°41'42" RT.
- 180+60.3 P.I. <37°55'29" LT.
- 181+15.1 P.I. <1°12'33" LT.

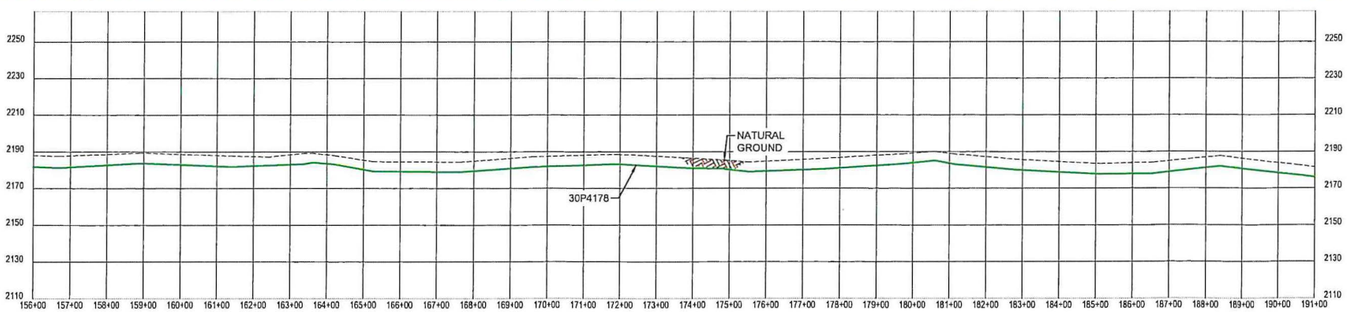
LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

MCKENZIE COUNTY, NORTH DAKOTA

SECTION 15, T 152 N, R 102 W, SECTION 16, T 152 N, R 102 W





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File Path:S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\MT0_Mapping\Rough Rider\Non DOT Lines\MISSOURI\601_Alignment\C162-WL901-Y-XW-9009_REV 01.dwg
Saved by: Tech, NAME on: 9/7/22 - 9:43 AM Plotted by: Tech, NAME on: 9/7/22 - 10:44 AM

MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	3500'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE
8	8.625" O.D. STD BEND, 40 DEGREE, WPB (SEE NOTE 1)	2		
17	8.625" O.D. STD BEND, 90 DEGREE, WPB (SEE NOTE 1)	1		
21	PIPELINE MARKER	1		

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT, PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
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5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Wallisheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 156+00
TO STA. 191+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 | DRAWING NO.: C162-WL901-Y-XW-9009 | SHEET 6 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

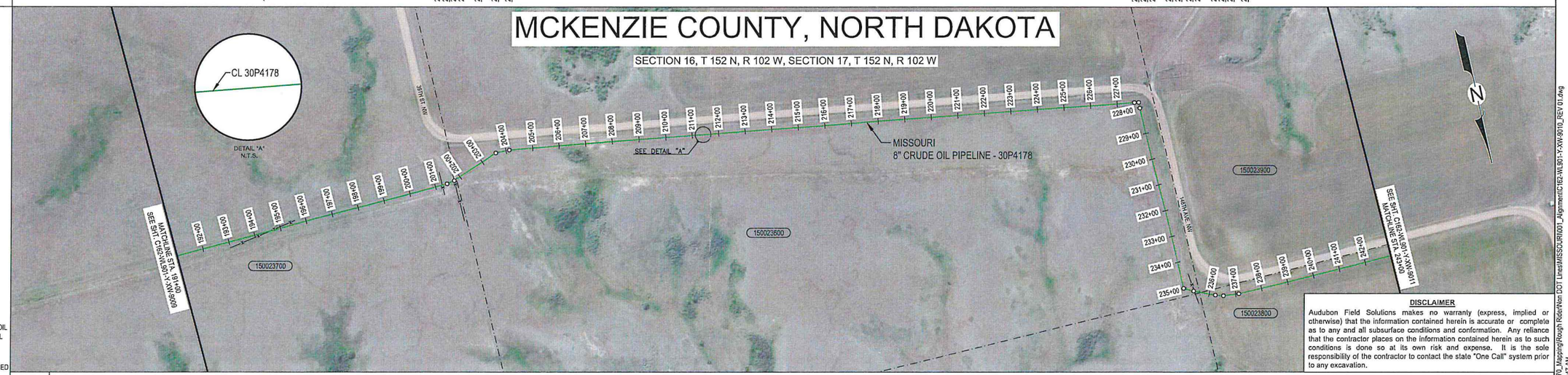
CONTR. NO 4600025696

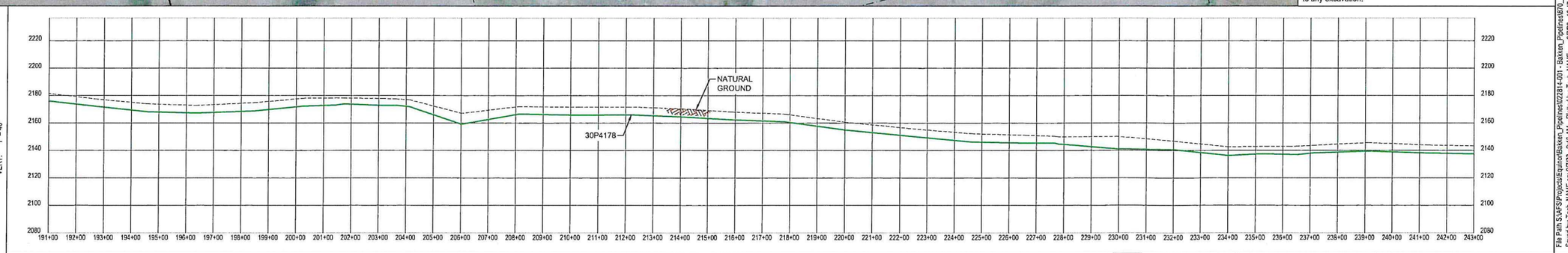
SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.
200 AT D		WL901	30	C162-WL901-Y-XW-9009	01

TRACT NO.		150023700					150023600					150023900		150023800		
OWNERSHIP		STATE OF N DAK					KAY R STEPANEK TRUST					KAY R STEPANEK TRUST		KAY R STEPANEK TRUST		
FOOTAGE		1071'					3376'					7'		746'		
RODS	191+00	64.9	201+71				204.6				235+47	0.4	235+54	45.2	243+00	
DESIGN FACTOR	0.72															
MAOP	600															
CLASS LOCATION	CLASS 1															
MATERIALS: 8" CRUDE OIL PIPELINE	191+00		201+75 (21)	203+62 (4)			5200' (1)				227+81 (15)	227+84 (21)	235+01 (11)	235+41 (21)	243+00	
DEPTH OF COVER	5	6	6	6	6	5	4	5	4	5	8	6	6	6	6	6
	6	6	6	6	5	5	6	9	6	6	5	5	6	6	5	6
PIPE STATIONING	194+59.3 FENCE LINE		201+26.1 FENCE LINE; 201+45.7 P.I. <4°20'05" LT.; 201+74.4 FENCE LINE; 201+74.5 PIPELINE MARKER, 1.3' RT.; 201+74.9 P.I. <10°03'15" LT.; 203+62.0 P.I. <22°24'25" RT.; 204+13.2 P.I. <7°08'44" RT.								227+64.4 P.I. <1°14'10" RT.; 227+80.6 P.I. <8°20'28" RT.; 227+84.1 PIPELINE MARKER, 2.7' LT.; 228+02.3 P.I. <1°51'34" LT.; 235+40.2 P.I. <4°37'26" LT.; 235+40.8 PIPELINE MARKER, 2.8' LT.; 235+42.6 FENCE LINE; 236+29.7 P.I. <5°35'55" LT.; 236+53.7 P.I. <12°36'00" LT.; 237+12.5 P.I. <6°13'22" LT.						

MCKENZIE COUNTY, NORTH DAKOTA

SECTION 16, T 152 N, R 102 W, SECTION 17, T 152 N, R 102 W





LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

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File Path: S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\870_Mapping\Rough Roder\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9010_REV 01.dwg
Saved by: Tech, NAME on: 9/7/22 - 9:43 AM Plotted by: Tech, NAME on: 9/7/22 - 10:47 AM

MATERIAL SUMMARY

ITEM NO.	DESCRIPTION	QTY.
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	5200'
4	8.625" O.D. STD BEND, 20 DEGREE, WPB (SEE NOTE 1)	1
11	8.625" O.D. STD BEND, 60 DEGREE, WPB (SEE NOTE 1)	1
15	8.625" O.D. STD BEND, 80 DEGREE, WPB (SEE NOTE 1)	1
21	PIPELINE MARKER	3

REFERENCE DRAWINGS

DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

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audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 191+00
TO STA. 243+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 | DRAWING NO.: C162-WL901-Y-XW-9010 | SHEET 7 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO			
4600025696			
200 AT D	WL901	30	C162-WL901-Y-XW-9010 01
SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.

TRACT NO.	150023800
OWNERSHIP	KAY R STEPANEK TRUST
FOOTAGE	2500'
RODS	151.5
DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1
MATERIALS: 8" CRUDE OIL PIPELINE	2500'
DEPTH OF COVER	6 6 5 6 6 6 6 6 6 6 5 5 6 6 5 5 6 6 6

243+00 | 248+26 | 265+77 | 267+14 | 267+70 | 268+00

PIPE STATIONING

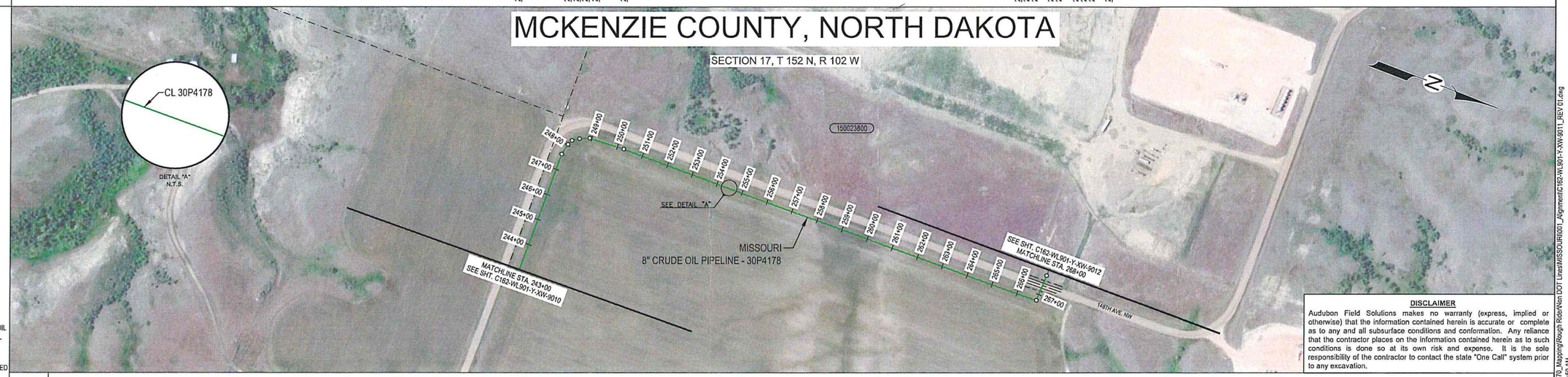
247+60.9 P.I. <13°14'24" RT.
248+04.4 P.I. <12°06'44" RT.
248+25.6 P.I. <31°14'08" RT.
248+54.8 P.I. <10°15'31" RT.
248+92.9 P.I. <19°56'31" RT.
250+26.1 P.I. <2°55'47" RT.
265+76.9 P.I. <85°54'51" LT.
267+13.9 TOE OF BANK
267+14.1 PIPELINE MARKER, 0.7' RT.
267+26.8 EDGE OF ROAD
267+37.2 CL OF 148TH AVE. NW (GRAVEL)
267+48.7 EDGE OF ROAD
267+56.6 TOE OF BANK
267+69.7 PIPELINE MARKER, 1.1' LT.
267+77.6 P.I. <2°27'44" LT.

LEGEND

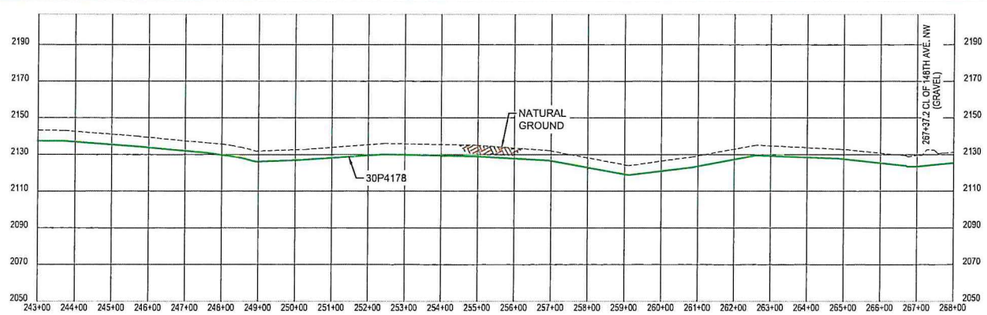
- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

MCKENZIE COUNTY, NORTH DAKOTA

SECTION 17, T 152 N, R 102 W



PIPELINE PROFILE
HORIZ: 1" = 200'
VERT: 1" = 40'



DISCLAIMER

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File Path S:\AFS\Projects\Equinor\Bakken_Pipelines\870_Mapping\Rough Rider\Non DOT Lines\MISSOURI\901_Alignment\C162-WL901-Y-XW-9011_REV 01.dwg
Saved by: Tech. NAME on: 9/7/22 - 8:43 AM Plotted by: Tech. NAME on: 9/7/22 - 10:50 AM

FROM STA. 243+00
TO STA. 268+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 | DRAWING NO.: C162-WL901-Y-XW-9011 | SHEET 8 OF 21

MATERIAL SUMMARY

ITEM NO.	DESCRIPTION	QTY.
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	2500'
6	8.625" O.D. STD BEND, 30 DEGREE, WPB (SEE NOTE 1)	1
16	8.625" O.D. STD BEND, 85 DEGREE, WPB (SEE NOTE 1)	1
21	PIPELINE MARKER	2

REFERENCE DRAWINGS

DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
4. ANY MISSING ATTRIBUTES FROM THE MATERIAL SUMMARY ARE DUE TO INSUFFICIENT OR INCOMPLETE DOCUMENTATION. THESE PIPE LISTINGS ALONG WITH MAOP WILL BE UPDATED IF FURTHER DOCUVENTATION IS FOUND OR FUTURE PROJECTS ARE UNDERTAKEN WHICH DETERMINE PIPE ATTRIBUTES.
5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

equinor

PLANT: AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO	4600025696		
200 AT D	WL901	30	C162-WL901-Y-XW-9011 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

TRACT NO.	150023800 / 150024200 / 150019200
OWNERSHIP	KAY R STEPANEK TRUST / GLENN A & JULIENNE C AAMODT / LARRY O KELTER
FOOTAGE	1842' / 70' / 3288'
RODS	111.6 / 4.2 / 199.3
	268+00 / 286+42 / 287+12 / 320+00
DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1
MATERIALS: 8" CRUDE OIL PIPELINE	21 @ 286+55; 21 @ 287+47; 1 @ 5200'; 21 @ 303+72; 21 @ 316+68; 17 @ 279+84; 5 @ 317+27; 268+00 / 320+00
DEPTH OF COVER	6 7 7 5 6 5 5 5 6 5 6 6 7 6 6 6 6 5 6 6 7 6 6 5 6 6 6 6 6 6 6 5

PIPE STATIONING

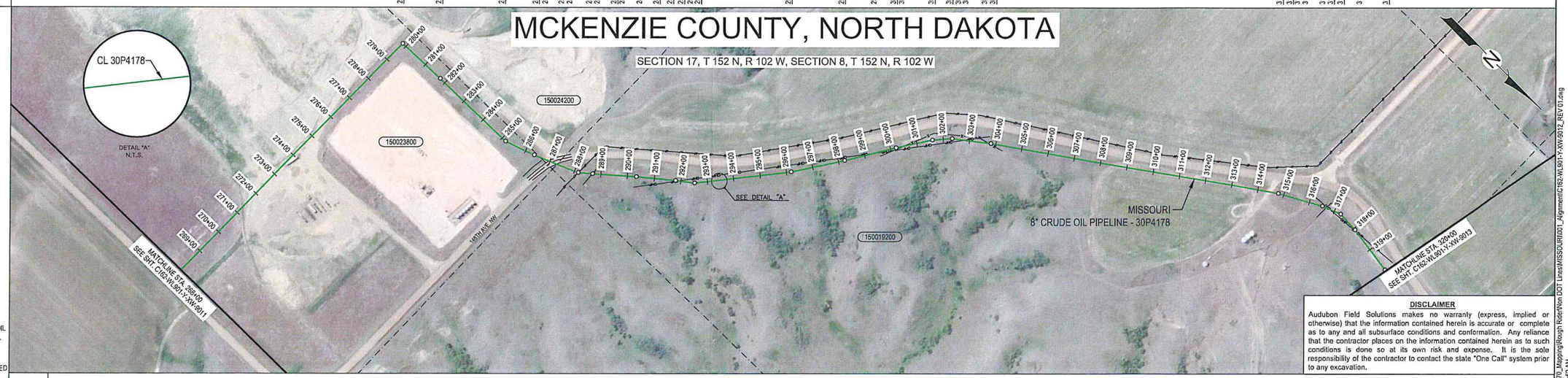
279+84.1 P.I. =88°24'42" RT.
281+76.7 P.I. =1°21'54" RT.
285+18.2 P.I. =17°58'59" LT.
286+37.3 P.I. =3°47'22" LT.
286+55.4 PIPELINE MARKER, 4.4' RT.
286+97.1 EDGE OF ROAD 287+10.7 CL OF 148TH AVE. NW (GRAVEL)
287+28.7 EDGE OF ROAD
287+46.9 PIPELINE MARKER, 0.4' RT.
288+15.4 P.I. =16°19'03" LT.
288+15.7 ONEOK PIPELINE CROSSING (APPROX. LOCATION)
288+58.4 WEST DAKOTA WATER LINE
289+08.4 P.I. =1°43'00" RT.
290+34.4 P.I. =1°36'00" RT.
291+80.8 P.I. =1°44'40" RT.
291+91.9 OVERHEAD POWER LINE
292+53.6 P.I. =13°46'26" LT.
295+18.8 P.I. =5°30'15" LT.
298+23.9 P.I. =1°57'35" LT.
299+38.5 OVERHEAD POWER LINE
300+21.5 P.I. =2°00'35" RT.
300+52.5 FENCE LINE
301+60.7 P.I. =7°51'35" RT.
302+35.8 P.I. =11°14'56" RT.
302+36.1 OVERHEAD POWER LINE
303+67.1 PIPELINE MARKER, 0.7' LT.
303+72.5 FENCE LINE
303+82.0 P.I. =2°58'27" RT.
314+79.6 P.I. =5°53'15" RT.
316+50.8 P.I. =7°01'11" RT.
316+67.0 FENCE LINE
316+67.8 PIPELINE MARKER, 4.4' LT.
316+81.0 OVERHEAD POWER LINE
317+22.2 P.I. =24°58'35" RT.
316+07.6 P.I. =4°58'11" RT.
318+20.7 OVERHEAD POWER LINE
319+95.4 P.I. =2°35'04" RT.

LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
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- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
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- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

MCKENZIE COUNTY, NORTH DAKOTA

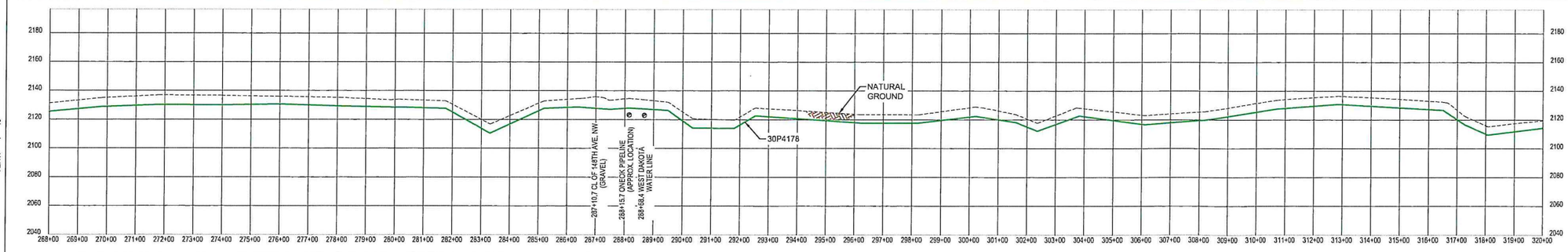
SECTION 17, T 152 N, R 102 W, SECTION 8, T 152 N, R 102 W



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PIPELINE PROFILE
HORZ: 1" = 200'
VERT: 1" = 40'



FROM STA. 268+00
TO STA. 320+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 | DRAWING NO.: C162-WL901-Y-XW-9012 | SHEET 9 OF 21

MATERIAL SUMMARY

ITEM NO.	DESCRIPTION	QTY.
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	5200'
5	8.625" O.D. STD BEND, 25 DEGREE, WPB (SEE NOTE 1)	1
17	8.625" O.D. STD BEND, 90 DEGREE, WPB (SEE NOTE 1)	1
21	PIPELINE MARKER	4

REFERENCE DRAWINGS

DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
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5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	03/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO 4600025696

SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.
200	AT D	WL901	30	C162-WL901-Y-XW-9012	01

File Path:S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\870_Mapping\Rough Rdct\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9012_REV 01.dwg
Saved by: Tech. NAME on: 9/7/22 - 8:43 AM Plotted by: Tech. NAME on: 9/7/22 - 10:52 AM

TRACT NO.	150019200 / 150019500 / 150018100 / 150018600 / 150018400
OWNERSHIP	LARRY O KELTER / LARRY O KELTER / LARRY O KELTER / LARRY O KELTER / JACOB & CASEY & JORDAN SCHMITZ & CODI AUSTREIM
FOOTAGE	74' / 2997' / 301' / 1358' / 470'
RODS	4.5 / 181.6 / 18.2 / 82.3 / 28.5
	320+00 / 320+74 / 350+71 / 353+72 / 367+30 / 372+00
DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1

MATERIALS

8" CRUDE OIL PIPELINE

320+00 | 326+46 (21) | 1 4726' | 344+85 (15) | 344+93 (21) | 345+31 (21) | 345+51 (5) | 350+49 (21) | 367+26 (5) | 367+38 (5) | 367+41 (2) 37' 367+43 | 367+45 (19 19 19 20 19 21) | 367+46 (5) | 367+49 (5) | 367+56 (5) | 367+63 3 437' 367+63 | 372+00

DEPTH OF COVER

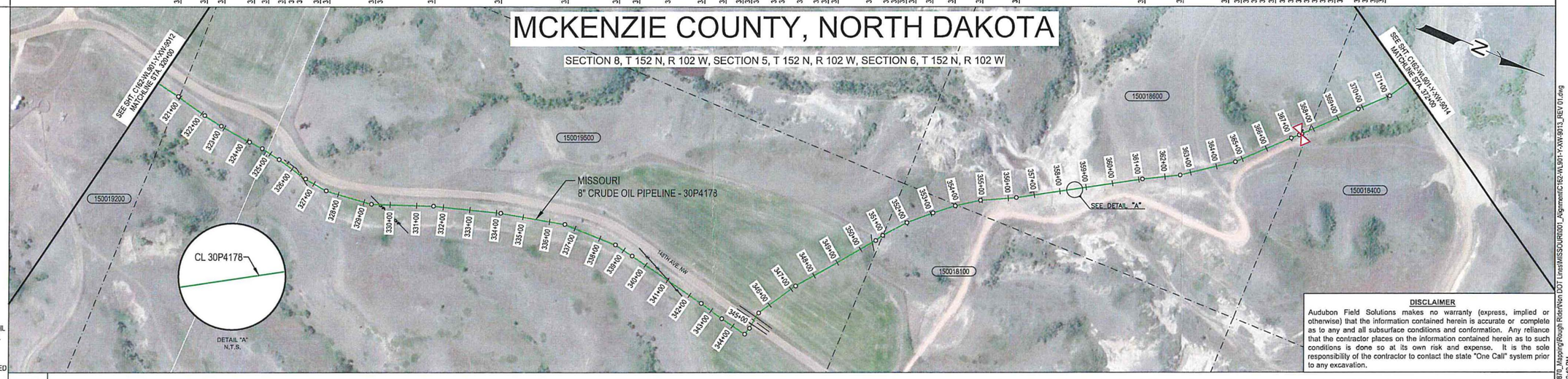
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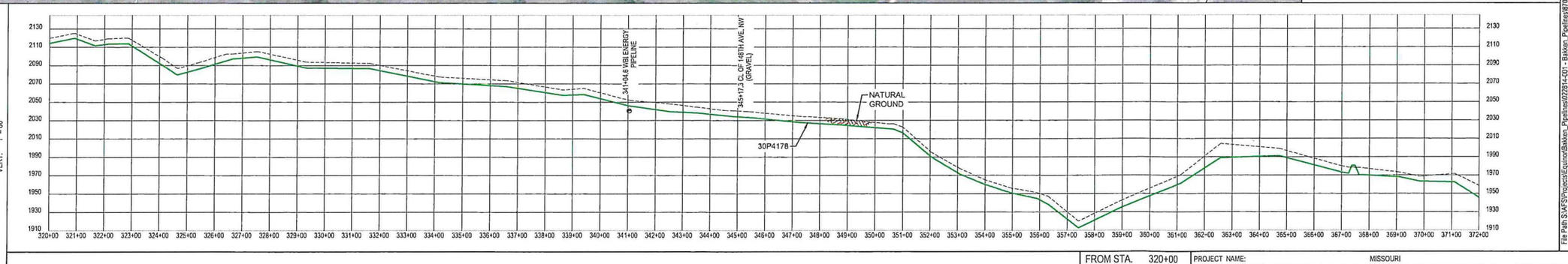
PIPE STATIONING

320+91.4 P.I. <1°50'37" RT.
322+13.6 P.I. <2°44'36" LT.
322+87.0 P.I. <3°36'04" LT.
324+10.8 P.I. <2°46'18" LT.
324+64.3 P.I. <6°13'07" RT.
325+40.1 P.I. <3°02'46" RT.
326+41.3 FENCE LINE
326+46.3 PIPELINE MARKER, 2.0' RT.
326+64.1 P.I. <6°10'52" LT.
327+53.3 P.I. <13°26'13" LT.
329+00.0 P.I. <14°47'16" LT.
329+60.9 OVERHEAD POWER LINE
331+69.4 P.I. <4°17'27" RT.
334+16.5 P.I. <4°00'59" RT.
335+59.3 P.I. <11°56'45" RT.
338+63.7 P.I. <11°23'40" RT.
339+39.6 P.I. <1°03'13" RT.
341+04.6 WBI ENERGY PIPELINE
342+54.0 P.I. <1°18'38" RT.
343+51.6 P.I. <1°46'13" LT.
344+55.3 P.I. <84°31'16" LT.
344+68.0 P.I. <9°04'52" LT.
344+92.6 PIPELINE MARKER, 10.2' LT.
345+02.2 EDGE OF ROAD
345+17.3 CL OF 148TH AVE. NW (GRAVEL)
345+31.4 PIPELINE MARKER, 10.2' LT.
345+92.4 EDGE OF ROAD
347+22.0 P.I. <6°45'55" RT.
350+49.1 PIPELINE MARKER, 2.3' RT.
350+50.2 FENCE LINE
350+65.9 P.I. <5°44'23" LT.
350+98.7 P.I. <8°03'57" RT.
352+03.7 P.I. <7°27'40" RT.
353+09.7 P.I. <2°18'43" RT.
353+98.2 P.I. <5°59'17" RT.
354+94.4 P.I. <7°49'57" RT.
355+31.0 P.I. <3°29'58" LT.
361+14.2 P.I. <2°37'43" RT.
362+58.4 P.I. <7°35'21" LT.
364+71.9 P.I. <9°26'40" LT.
367+02.6 P.I. <1°29'46" RT.
367+25.6 45° SAG BEND
367+33.3 FENCE LINE
367+38.1 45° OVERBEND
367+38.1 P.I. <3°09'33" LT.
367+41.1 FLANGE
367+41.4 FLANGE
367+43.3 FLANGE
367+44.1 VALVE
367+45.8 VALVE
367+48.8 45° OVERBEND
367+48.8 P.I. <1°31'03" RT.
367+55.9 PIPELINE MARKER, 0.7' LT.
367+57.0 FENCE LINE
367+61.4 45° SAG BEND
369+83.3 P.I. <1°11'57" RT.
371+11.1 P.I. <12°39'41" LT.

MCKENZIE COUNTY, NORTH DAKOTA

SECTION 8, T 152 N, R 102 W, SECTION 5, T 152 N, R 102 W, SECTION 6, T 152 N, R 102 W





LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
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File Path S:\AFS\Projects\Equinor\Bakken_Pipelines\02814-001 - Bakken_Pipelines\970_Mapping\Rough Rider\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9013_REV 01.dwg
Saved by: Tech. NAME on: 9/7/22 - 9:43 AM Plotted by: Tech. NAME on: 9/7/22 - 12:49 PM

MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	4726'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	37'		
3	8.625" O.D. X 0.5" W.T., X42, HFW (SEE NOTE 1)	437'		
5	8.625" O.D. STD BEND, 25 DEGREE, WPB (SEE NOTE 1)	1		
9	8.625" O.D. STD BEND, 45 DEGREE, WPB (SEE NOTE 1)	4		
16	8.625" O.D. STD BEND, 85 DEGREE, WPB (SEE NOTE 1)	1		
19	8.625" O.D. FLANGE, ANSI 600, RFWN (SEE NOTE 1)	4		
20	8.625" O.D. MLV BALL VALVE, ANSI 600 (SEE NOTE 1)	1		
21	PIPELINE MARKER	5		

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY, THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
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audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 320+00
TO STA. 372+00

PROJECT NAME: MISSOURI
PROJECT NO.: 02281400 | DRAWING NO.: C162-WL901-Y-XW-9013 | SHEET 10 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO	4600025696		
200 AT D	WL901	30	C162-WL901-Y-XW-9013 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

TRACT NO.				150018400						MISSOURI RIVER		57-152-02-00-06-020				
OWNERSHIP				JACOB & CASEY & JORDAN SCHMITZ & CODI AUSTREIM						UNKNOWN		BAUSTE, IVA				
FOOTAGE			372+00	2413'					396+13	1134'	407+47	453'		412+00		
RODS				146.2						68.7		27.5				
DESIGN FACTOR								0.72								
MAOP								600								
CLASS LOCATION								CLASS 1								
MATERIALS: 8" CRUDE OIL PIPELINE			372+00	③ 4000'										412+00		

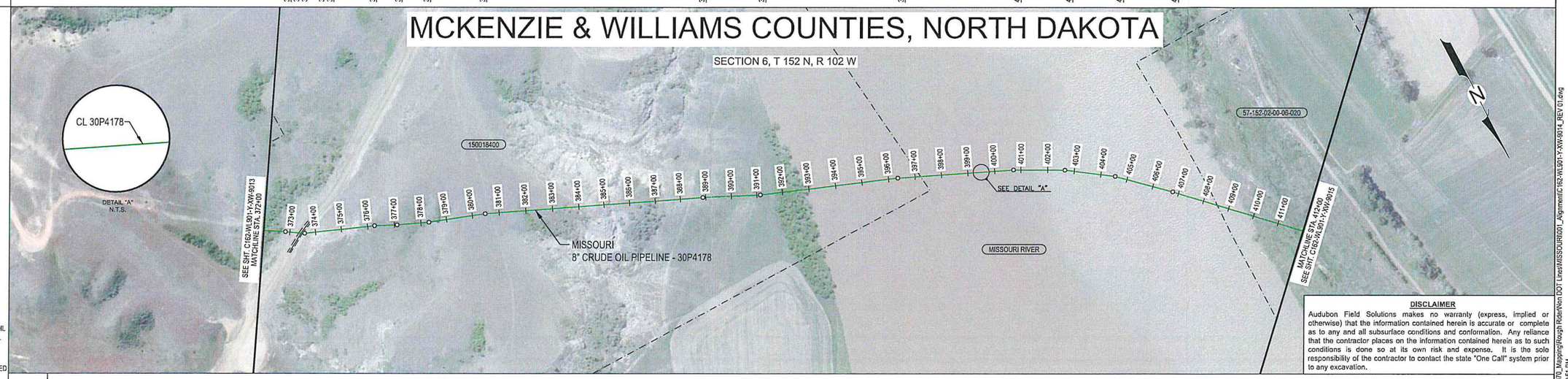
DEPTH OF COVER: 10 9 9 5 5 4 4 4 4 4 4 4 4 4 4 4 4 6 15 31 44 57 69 81 77 78 80 81 84 87 90 91 97 101 103 104 105 105 104 103 102 102 101 99 97 94 90 88 87 85 84 84 83 83 83 84 85 90 90 89 87 84 76 67 59 51 43 37 33 27

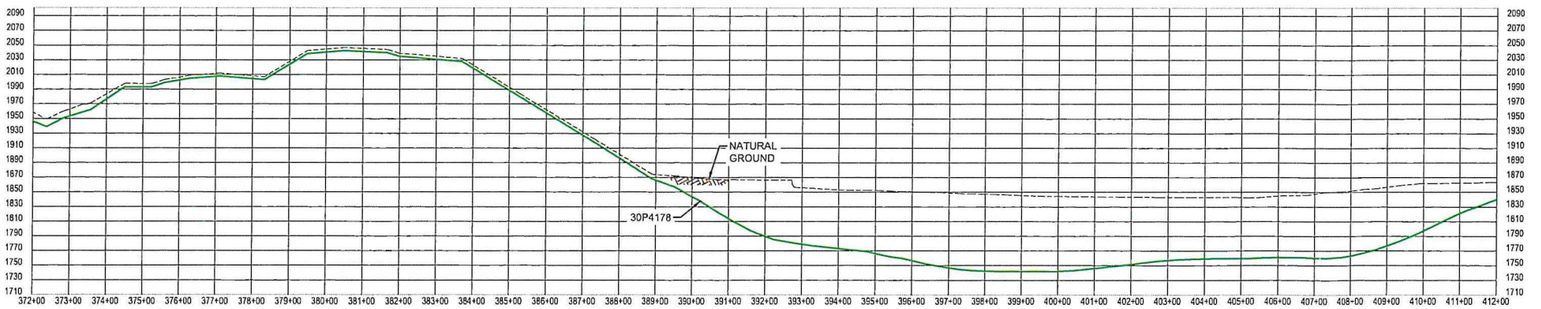
PIPE STATIONING:
372+84.2 P.I. <1°11'15" RT.
373+34.7 EDGE OF ROAD
373+42.6 GRAVEL ACCESS RD.
373+48.3 EDGE OF ROAD
373+57.0 P.I. <11°32'10" LT.
376+27.0 P.I. <3°51'13" RT.
377+11.0 P.I. <2°07'09" LT.
378+31.0 P.I. <4°29'13" LT.
380+48.7 P.I. <3°57'11" RT.
388+89.7 P.I. <1°32'16" RT.
391+14.8 P.I. <3°50'20" LT.
396+35.4 P.I. <2°49'06" RT.
400+72.6 P.I. <3°57'20" RT.
402+65.5 P.I. <6°28'18" RT.
404+55.3 P.I. <7°16'07" RT.
408+78.0 P.I. <1°23'03" RT.

LEGEND
- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

MCKENZIE & WILLIAMS COUNTIES, NORTH DAKOTA

SECTION 6, T 152 N, R 102 W





PIPELINE PROFILE HORIZ: 1" = 200' VERT: 1" = 100'

DISCLAIMER

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File Path:S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\870_Mapping\Rough Route\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9014_REV 01.dwg
Saved by: Tech. NAME on: 9/7/22 - 9:43 AM Plotted by: Tech. NAME on: 9/7/22 - 12:51 PM

MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
3	8.625" O.D. X 0.5" W.T., X42, HFW (SEE NOTE 1)	4000'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:
1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
4. ANY MISSING ATTRIBUTES FROM THE MATERIAL SUMMARY ARE DUE TO INSUFFICIENT OR INCOMPLETE DOCUMENTATION. THESE PIPE LISTINGS ALONG WITH MAOP WILL BE UPDATED IF FURTHER DOCUMENTATION IS FOUND OR FUTURE PROJECTS ARE UNDERTAKEN WHICH DETERMINE PIPE ATTRIBUTES.
5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 372+00
TO STA. 412+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 | DRAWING NO.: C162-WL901-Y-XW-9014 | SHEET 11 OF 21

equinor

PLANT: AUNE TERMINAL
DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY 8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO			
4600025696			
200 AT D	WL901	30	C162-WL901-Y-XW-9014 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

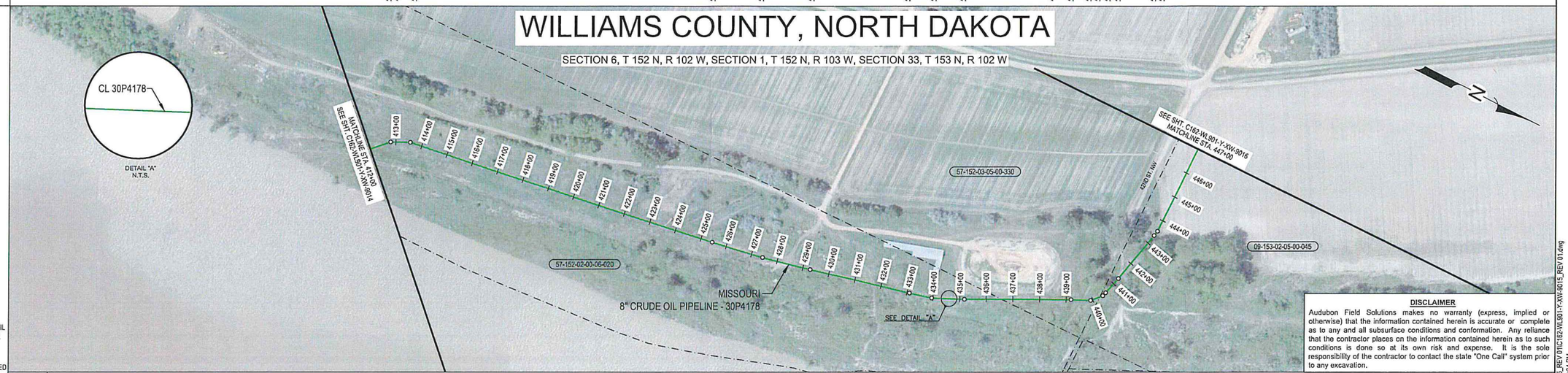
TRACT NO.	57-152-02-00-06-020 / 57-152-03-05-00-330 / 09-153-02-05-00-045
OWNERSHIP	BAUSTE, IVA / BAUSTE, DEAN / BAUSTE, DEAN
FOOTAGE	2339' / 371' / 790'
RODS	141.8 / 22.5 / 47.9
DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1
MATERIALS — 8" CRUDE OIL PIPELINE	412+00 to 447+00: 82' of 8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1); 3418' of 8.625" O.D. X 0.5" W.T., X42, HFW (SEE NOTE 1); 2 x 8.625" O.D. STD BEND, 25 DEGREE, WPB (SEE NOTE 1); 2 x PIPELINE MARKER
DEPTH OF COVER	17 11 4 6 6 6 6 6 5 6 5 6 6 5 6 6 5 7 4 5 5 5 6 5

PIPE STATIONING

412+61.9 P.I. <19°59'13" RT.
413+46.8 PIPELINE MARKER, 41' LT.
413+55.6 P.I. <17°28'46" RT.
425+45.3 P.I. <1°20'05" LT.
427+43.6 P.I. <2°27'59" LT.
429+28.8 P.I. <1°17'50" LT.
433+09.9 P.I. <1°04'05" LT.
433+95.6 P.I. <10°25'37" LT.
435+18.4 P.I. <2°22'39" LT.
438+66.9 PIPELINE MARKER, 21' LT.
439+18.2 P.I. <1°43'57" RT.
439+92.0 P.I. <31°38'40" LT.
440+40.1 P.I. <25°56'32" LT.
440+56.0 P.I. <2°00'02" LT.
441+27.3 P.I. <2°07'14" LT.
443+36.6 P.I. <2°52'39" LT.
443+56.8 P.I. <10°32'10" LT.

WILLIAMS COUNTY, NORTH DAKOTA

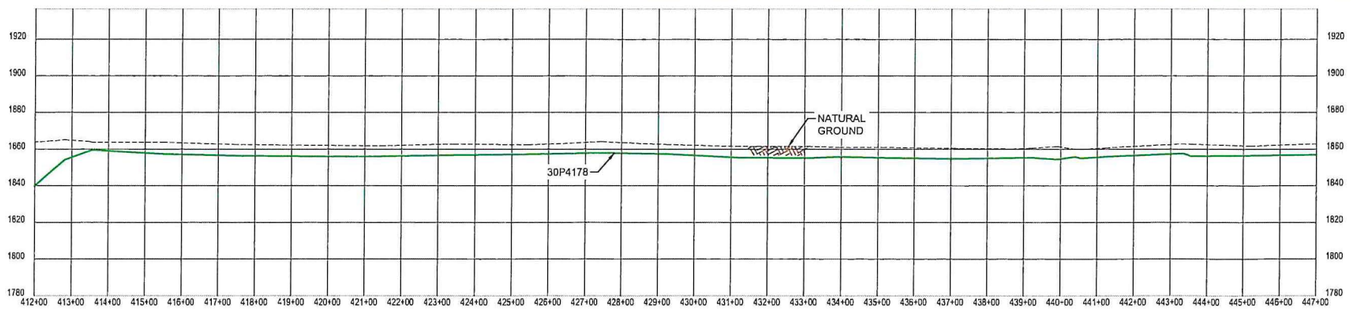
SECTION 6, T 152 N, R 102 W, SECTION 1, T 152 N, R 103 W, SECTION 33, T 153 N, R 102 W



LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
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- RAILROAD CL
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- PROPERTY/ FENCE/R.O.W.
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- SECTION LINE
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- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

PIPELINE PROFILE
HORIZ: 1" = 200'
VERT: 1" = 40'



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MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	3418'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE
3	8.625" O.D. X 0.5" W.T., X42, HFW (SEE NOTE 1)	82'		
5	8.625" O.D. STD BEND, 25 DEGREE, WPB (SEE NOTE 1)	2		
21	PIPELINE MARKER	2		

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT, PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
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5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 412+00
TO STA. 447+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 | DRAWING NO.: C162-WL901-Y-XW-9015 | SHEET 12 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO 4600025696

SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.
200 AT D		WL901	30	C162-WL901-Y-XW-9015	01

File Path: S:\Eou-Public\Jeffcher\Projects\Equinor\Check Folder\C162-WL901-Y-XW-9015_REV 01\C162-WL901-Y-XW-9015_REV 01.dwg
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| | | |

TRACT NO.						57-152-03-00-01-010				57-152-03-05-00-245						
OWNERSHIP						SANDVIK, LEE T 1/14				DAHL FAMILY TRUST, ROGER & BETTY						
FOOTAGE						1122'				1378'						
RODS						68.0				83.5						
					492+00				503+22					517+00		
DESIGN FACTOR	0.72															
MAOP	600															
CLASS LOCATION	CLASS 1															
MATERIALS: 8" CRUDE OIL PIPELINE					492+00			2 2500'	21	21				517+00		
								503+86	504+65	505+25						
DEPTH OF COVER					5	6	5	5	5	5	5	9	4	5	6	6	6	5	5

PIPE STATIONING

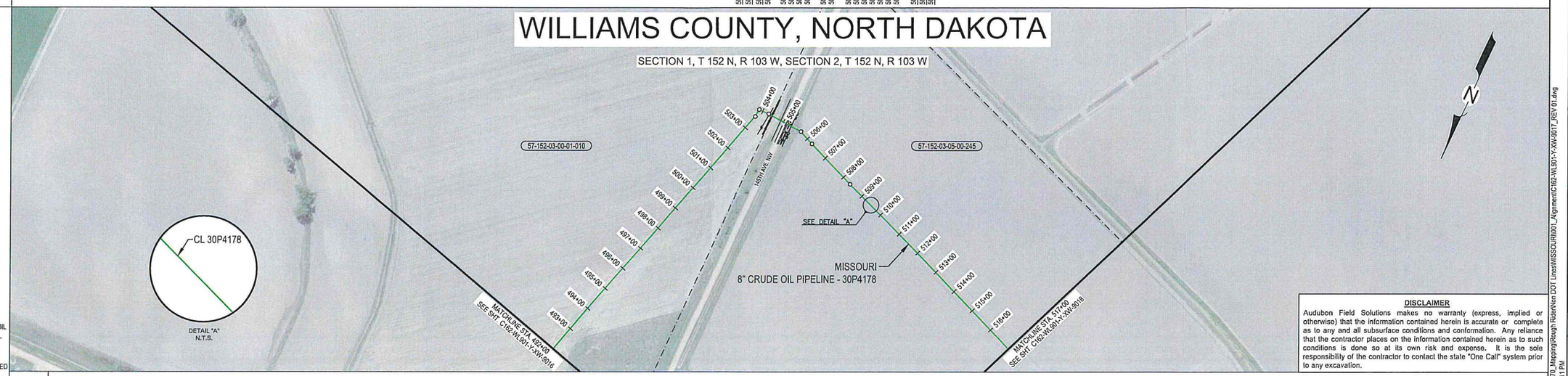
503+56.2 P.I. <10°41'37" LT.
503+86.2 P.I. <84°23'43" RT.
504+26.7 P.I. <41°09'28" RT.
504+28.2 HILAND PARTNERS PIPELINE
504+36.8 TOP OF BANK
504+39.3 TOE OF BANK
504+44.1 TOP OF BANK
504+49.8 PIPELINE MARKER, 6.6' RT.
504+76.9 EDGE OF ROAD
504+89.3 CL OF 145TH AVE. NW (DIRT)
505+01.4 EDGE OF ROAD
505+05.3 TOP OF BANK
505+11.9 TOE OF BANK
505+21.4 TOE OF BANK
505+22.4 TOP OF BANK
505+22.7 OVERHEAD POWER LINE
505+24.8 PIPELINE MARKER, 2.7' RT.
505+64.4 P.I. <19°52'11" RT.
508+07.2 P.I. <4°09'30" LT.
508+31.2 P.I. <11°08'27" LT.

LEGEND

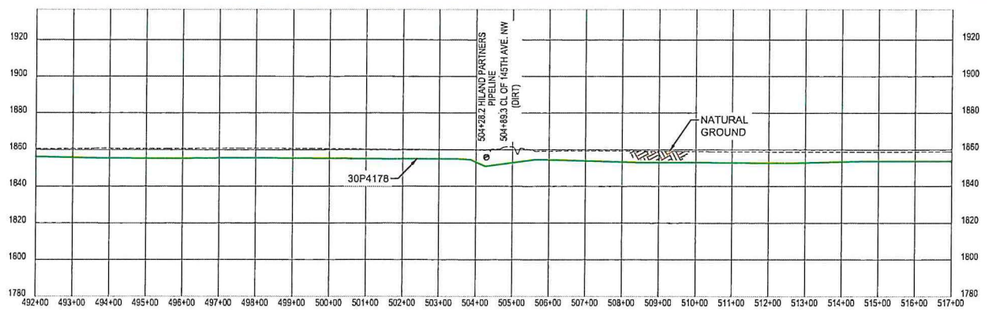
- SIDE TAP VALVE
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- TREE
- MANHOLE
- PIPE BEND
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- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
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- CASING
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- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
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- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

WILLIAMS COUNTY, NORTH DAKOTA

SECTION 1, T 152 N, R 103 W, SECTION 2, T 152 N, R 103 W



PIPELINE PROFILE
HORIZ: 1" = 200'
VERT: 1" = 40'



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File Path: S:\AFS\Projects\Equinor\Bakken_Pipelines\02261401 - Bakken_Pipelines\BTO_Mapping\Brough Rider\Non DOT Lines\MISSOURI\901_Alignment\C162-WL901-Y-XW-9017_REV 01.dwg
Saved by: Tech. NAME on: 9/7/22 - 1:11 PM
Plotted by: Tech. NAME on: 9/7/22 - 9:43 AM

FROM STA. 492+00
TO STA. 517+00

MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	2500'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE
16	8.625" O.D. STD BEND, 85 DEGREE, WPB (SEE NOTE 1)	1		
21	PIPELINE MARKER	2		

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
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5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

PROJECT NAME: MISSOURI
PROJECT NO.: 02261401 | DRAWING NO.: C162-WL901-Y-XW-9017 | SHEET 14 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO
AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO	4600025696		
200 AT D	WL901	30	C162-WL901-Y-XW-9017 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

TRACT NO.	57-152-03-05-00-245
OWNERSHIP	DAHL FAMILY TRUST, ROGER & BETTY
FOOTAGE	3798'
RODS	230.2
DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1
MATERIALS: 8" CRUDE OIL PIPELINE	5000'

517+00 | 537+53 | 543+14 | 557+46 | 567+00

57-152-03-05-00-240 — OSTER, STEVEN — 120Z' — 72.8

554+98

DEPTH OF COVER: 6 6 8 6 6 6 6 5 5 6 5 4 5 5 5 5 4 6 6 5 6 5 6 5 5 6 5

PIPE STATIONING:

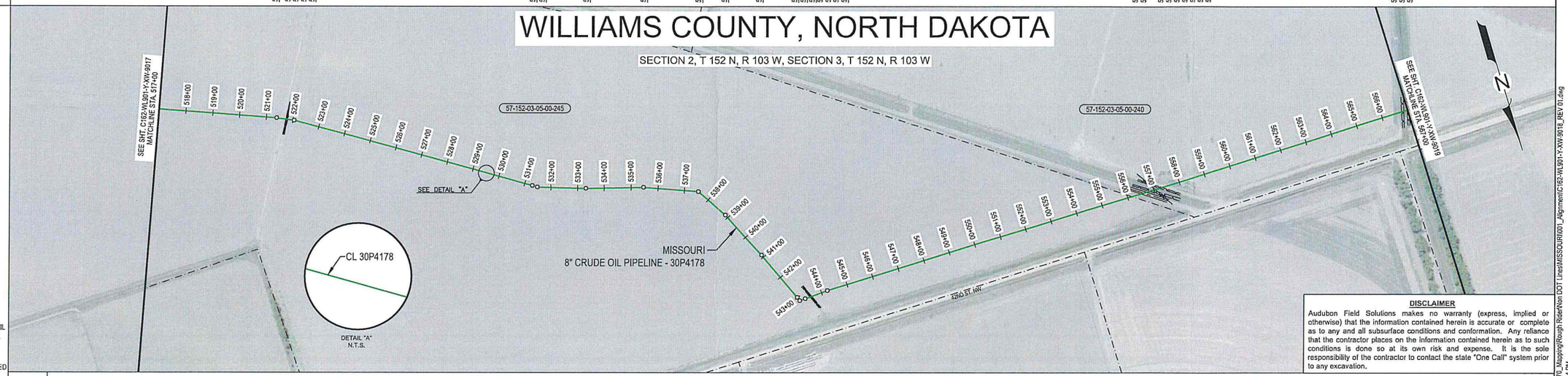
521+38.9 P.I. <2°29'59" RT.
521+73.6 TOP OF BANK
521+77.0 TOE OF BANK
521+80.1 TOP OF BANK
522+05.1 P.I. <5°57'59" RT.
531+29.7 P.I. <1°34'11" RT.
531+49.3 P.I. <15°42'11" LT.
533+31.2 P.I. <2°35'48" LT.
535+46.5 P.I. <5°20'28" RT.
537+53.9 P.I. <36°27'49" RT.
539+87.6 P.I. <7°05'55" RT.
540+89.6 P.I. <1°34'22" RT.
542+90.9 P.I. <31°03'52" RT.
543+14.2 P.I. <71°26'42" LT.
543+35.8 P.I. <17°20'07" LT.
543+54.6 TOP OF BANK
543+56.5 TOE OF BANK
543+60.6 TOP OF BANK
544+20.0 P.I. <2°16'56" RT.
556+50.2 EDGE OF ROAD
556+61.0 CL OF UNKNOWN RD. (DIRT)
556+72.3 EDGE OF ROAD
556+86.4 TOP OF BANK
556+96.4 TOE OF BANK
557+06.6 OVERHEAD POWER LINE
557+23.1 TOP OF BANK
557+33.1 TOP OF BANK
557+46.4 PIPELINE MARKER, 8.2' RT.
566+76.1 TOP OF BANK
566+84.6 TOE OF BANK
566+88.3 TOE OF BANK

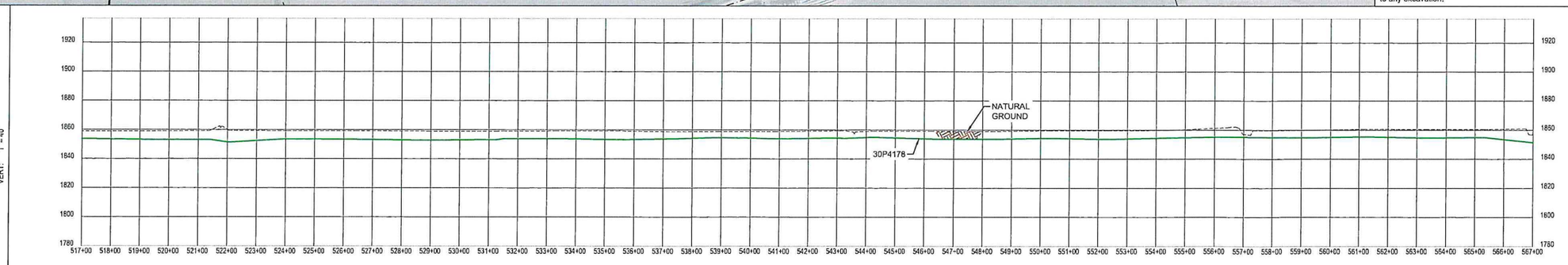
LEGEND

- SIDE TAP VALVE
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- POWER POLE
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- AS-BUILT CRUDE OIL
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- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
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- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

WILLIAMS COUNTY, NORTH DAKOTA

SECTION 2, T 152 N, R 103 W, SECTION 3, T 152 N, R 103 W





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File Path S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\870_Mapping\Rough Rider\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9018_REV 01.dwg
Saved by: Tech. NAME on: 9/7/22 - 8:43 AM Plotted by: Tech. NAME on: 9/7/22 - 1:14 PM

FROM STA. 517+00
TO STA. 567+00

PROJECT NAME:	MISSOURI				
PROJECT NO.:	022814001	DRAWING NO.:	C162-WL901-Y-XW-9018	SHEET	15 OF 21

MATERIAL SUMMARY

ITEM NO.	DESCRIPTION	QTY.
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	5000'
7	8.625" O.D. STD BEND, 35 DEGREE, WPB (SEE NOTE 1)	1
13	8.625" O.D. STD BEND, 70 DEGREE, WPB (SEE NOTE 1)	1
21	PIPELINE MARKER	1

REFERENCE DRAWINGS

DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
4. ANY MISSING ATTRIBUTES FROM THE MATERIAL SUMMARY ARE DUE TO INSUFFICIENT OR INCOMPLETE DOCUMENTATION. THESE PIPE LISTINGS ALONG WITH MAOP WILL BE UPDATED IF FURTHER DOCUMENTATION IS FOUND OR FUTURE PROJECTS ARE UNDERTAKEN WHICH DETERMINE PIPE ATTRIBUTES.
5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

equinor

PLANT: AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO	4600025696			
200 AT D	WL901	30	C162-WL901-Y-XW-9018	01
SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.

WILLIAMS COUNTY, NORTH DAKOTA

SECTION 3, T 152 N, R 103 W, SECTION 31, T 153 N, R 102 W

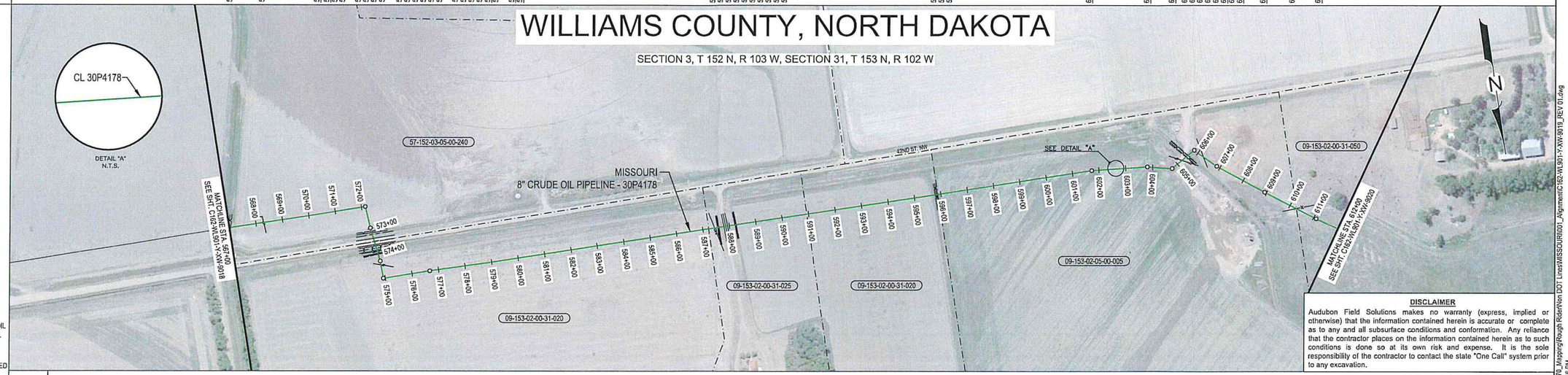
TRACT NO.	57-152-03-05-00-240 / 09-153-02-00-31-020 / 09-153-02-00-31-025 / 09-153-02-00-31-020 / 09-153-02-05-00-005 / 09-153-02-00-31-050
OWNERSHIP	OSTER, STEVEN / DOWNIE, DORIS / DOWNIE, DORIS / DOWNIE, DORIS / JOHNSRUD, KEITH / JOHNSRUD, KEITH J
FOOTAGE	532' / 1371' / 372' / 495' / 1438' / 292'
RODS	32.2 / 83.1 / 22.5 / 30.0 / 87.2 / 17.7
DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1
MATERIALS: 8" CRUDE OIL PIPELINE	4500'

567+00 · 572+15 (16) · 573+14 (21) · 573+88 (21) · 573+93 (22) · 574+93 (17) · 604+75 (9) · 605+63 (14) · 612+00

DEPTH OF COVER: 9 6 5 4 10 12 7 5 6 6 6 6 5 5 6 5 7 6 6 6 5 9 9 5 6 5

PIPE STATIONING

- 567+15.2 TOP OF BANK
- 568+29.3 HILAND CRUDE PIPELINE
- 572+15.2 P.I. -94°53'54" RT.
- 572+88.0 P.I. <3°40'01" LT.
- 573+14.3 PIPELINE MARKER, 22.0' LT.
- 573+14.3 TOE OF BANK
- 573+43.7 EDGE OF ROAD
- 573+51.5 CL OF 42ND ST. NW (DIRT)
- 573+62.7 EDGE OF ROAD
- 573+76.5 TOP OF BANK
- 573+86.1 TOP OF BANK
- 573+88.0 OVERHEAD POWER LINE
- 573+88.2 PIPELINE MARKER, 53.3' LT.
- 573+89.4 AERIAL MARKER, 12.2' LT.
- 573+96.1 TOE OF BANK
- 573+98.7 TOE OF BANK
- 574+01.3 TOP OF BANK
- 574+41.1 P.I. 5°00'57" LT.
- 574+41.9 HILAND PARTNERS PIPELINE
- 574+93.1 P.I. -88°13'59" LT.
- 575+97.5 P.I. <1°12'28" RT.
- 587+44.2 OVERHEAD POWER LINE
- 591+54.9 TOP OF BANK
- 587+58.1 TOE OF BANK
- 587+60.8 TOP OF BANK
- 587+80.1 EDGE OF DRIVEWAY
- 588+06.4 CL OF 42ND ST. NW (DIRT)
- 587+98.3 EDGE OF DRIVEWAY
- 588+21.3 TOP OF BANK
- 588+24.1 TOE OF BANK
- 588+26.9 TOP OF BANK
- 595+77.5 TOP OF BANK
- 595+82.4 TOE OF BANK
- 595+87.4 TOP OF BANK
- 601+73.3 P.I. -4°54'32" RT.
- 603+81.2 P.I. <7°25'07" RT.
- 604+74.5 P.I. -43°09'42" LT.
- 605+22.6 HILAND CRUDE PIPELINE
- 605+44.1 TOE OF BANK
- 605+44.2 TOE OF BANK
- 605+49.6 TOE OF BANK
- 605+51.7 TOP OF BANK
- 605+62.4 P.I. 1°25'35" RT.
- 606+24.9 FENCE LINE
- 608+87.1 P.I. -6°27'55" LT.
- 608+92.6 P.I. <1°27'26" LT.
- 610+26.2 FENCE LINE
- 611+10.3 P.I. <2°28'02" LT.



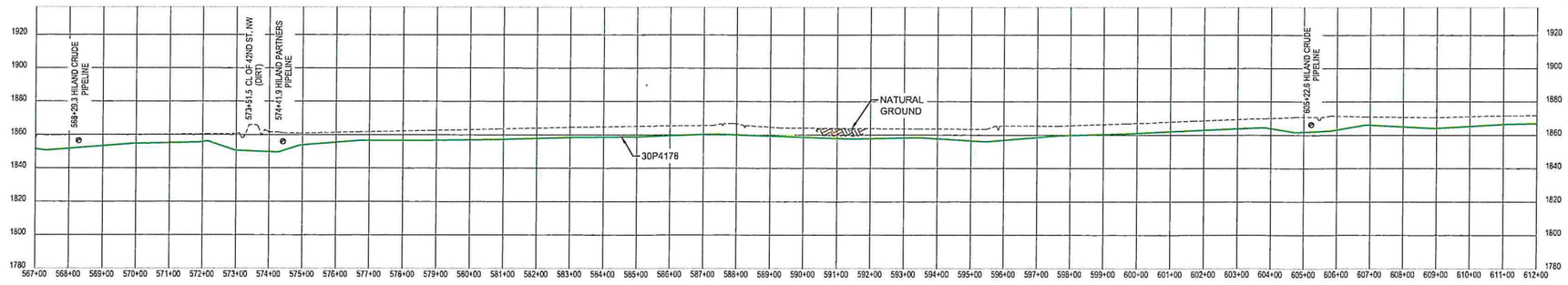
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LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

PIPELINE PROFILE HORIZ: 1" = 200' VERT: 1" = 40'



MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	4500'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE
9	8.625" O.D. STD BEND, 45 DEGREE, WPB (SEE NOTE 1)	1		
14	8.625" O.D. STD BEND, 75 DEGREE, WPB (SEE NOTE 1)	1		
16	8.625" O.D. STD BEND, 85 DEGREE, WPB (SEE NOTE 1)	1		
17	8.625" O.D. STD BEND, 90 DEGREE, WPB (SEE NOTE 1)	1		
21	PIPELINE MARKER	2		
22	AERIAL MARKER	1		

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT, PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
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5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

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10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 567+00
TO STA. 612+00

PROJECT NAME:	MISSOURI		
PROJECT NO.:	022814001	DRAWING NO.:	C162-WL901-Y-XW-9019
SHEET	16 OF 21		

equinor

PLANT: AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO	4600025696		
200 AT D	WL901	30	C162-WL901-Y-XW-9019 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

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Saved by: Tech. NAME on: 9/7/22 - 9:43 AM Plotted by: Tech. NAME on: 9/7/22 - 2:46 PM

TRACT NO.							09-153-02-00-31-050				58-153-03-00-36-020					
OWNERSHIP							JOHNSRUD, KEITH J				SHADOW INDUSTRIES LLP					
FOOTAGE						612+00	1284'			624+84	716'			632+00		
RODS							77.6				43.4					
DESIGN FACTOR	0.72															
MAOP	600															
CLASS LOCATION	CLASS 1															
MATERIALS: 8" CRUDE OIL PIPELINE						612+00	2 (2000')		21 624+75	22 624+76		21 626+41		15 631+64	632+00	
DEPTH OF COVER						5	5	5	4	5	5	13	5	5	6	5	5
PIPE STATIONING						613+15.0 P.I. <1°09'01" RT.			623+36.1 P.I. <4°39'49" LT. 624+74.3 FENCE LINE 624+74.3 PIPELINE MARKER, 4.1' RT. 624+76.1 AERIAL MARKER, 4.8' RT. 624+86.7 TOP OF BANK 624+94.1 TOE OF BANK 625+34.1 TOE OF BANK 625+40.3 TOP OF BANK 625+61.4 OVERHEAD POWER LINE 625+91.8 EDGE OF ROAD 626+04.2 CL OF 147TH AVE. NW (DIRT) 626+19.2 EDGE OF ROAD 626+22.7 P.I. <2°39'57" LT. 626+41.4 PIPELINE MARKER, 19.4' RT.				631+52.4 P.I. <1°26'37" LT. 631+63.5 P.I. <82°11'47" LT. 631+77.8 P.I. <8°35'09" LT.		

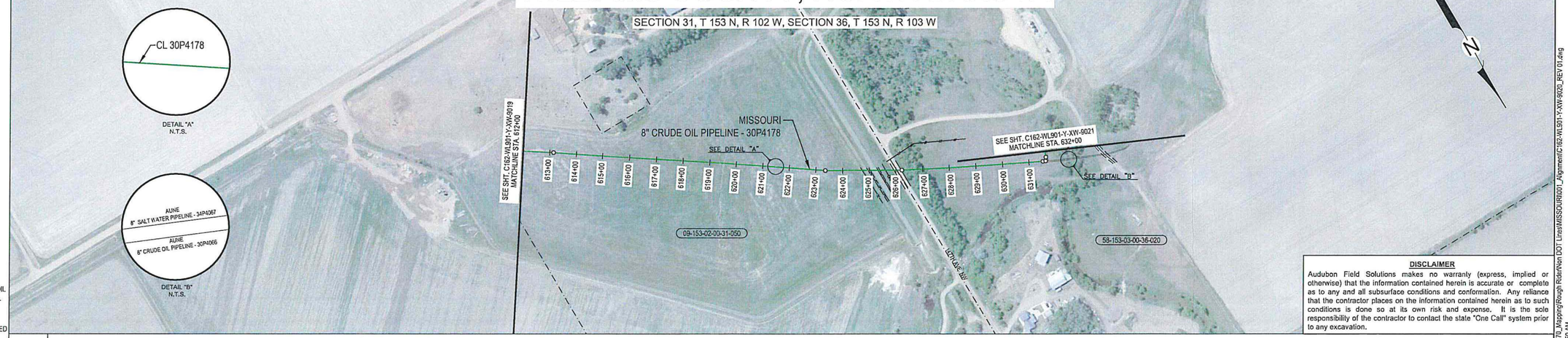
LEGEND

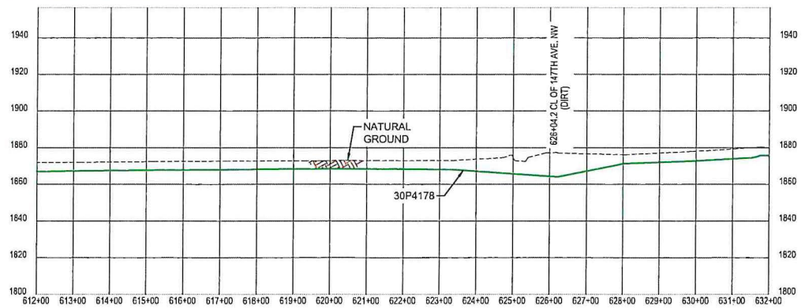
- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
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- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

PIPELINE PROFILE
HORIZ: 1" = 200'
VERT: 1" = 40'

WILLIAMS COUNTY, NORTH DAKOTA

SECTION 31, T 153 N, R 102 W, SECTION 36, T 153 N, R 103 W





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MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	2000'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE
15	8.625" O.D. STD BEND, 80 DEGREE, WPB (SEE NOTE 1)	1		
21	PIPELINE MARKER	2		
22	AERIAL MARKER	1		

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
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5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 612+00
TO STA. 632+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 DRAWING NO.: C162-WL901-Y-XW-9020 SHEET 17 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY 8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO			
4600025696			
200 AT D	WL901	30	C162-WL901-Y-XW-9020
SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.
					01

File Path:S:\AES\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\870_Mapping\Rough Rider\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9020_REV 01.dwg
Saved by: Tech. NAME on: 9/8/22 - 6:50 AM Plotted by: Tech. NAME on: 9/8/22 - 6:50 AM

TRACT NO.	58-153-03-00-36-020 / 57-152-03-05-00-230 / 57-152-03-05-00-225
OWNERSHIP	SHADOW INDUSTRIES LLP / HOFFMAN REVOCABLE LIVING TRUST, DAVID J & SHEILA R / PATCH, MERNA V (LIFE ESTATE)
FOOTAGE	2435' / 1285' / 279'
RODS	147.6 / 77.9 / 16.9
DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1

MATERIALS — 8" CRUDE OIL PIPELINE

632+00 | 632+08 (8) | 635+72 (8) | 637+78 (12) 637+78 | 640+64 (6) | 648+40 (17) | 656+39 (6) | 656+62 (10) | 657+16 (21) | 669+61 (10) | 670+09 (12) | 672+00

(2) 578' (1) 3422'

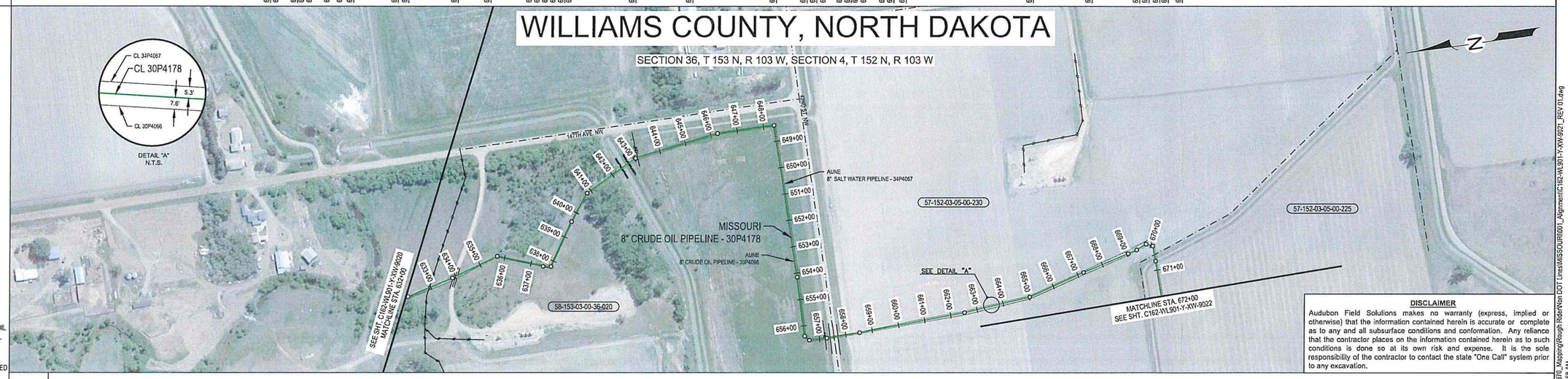
DEPTH OF COVER: 4 | 11 | 5 | 7 | 5 | 5 | 6 | 14 | 4 | 3 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 5 | 5 | 6 | 5 | 7 | 6 | 5 | 12 | 10

PIPE STATIONING

632+08.1 P.I. <39°17'10" LT. ONEOK PIPELINE (APPROX. LOCATION)
632+93.9 ONEOK PIPELINE (APPROX. LOCATION)
633+91.1 EDGE OF ROAD
634+00.4 CL OF ACCESS RD. (GRAVEL)
634+08.9 EDGE OF ROAD
635+33.5 8" AUNE PIPELINE
635+71.9 P.I. <38°31'56" RT.
637+47.6 P.I. <10°27'37" LT.
637+77.6 P.I. <67°25'43" LT.
639+62.1 P.I. <4°18'54" RT.
640+83.7 P.I. <25°24'56" RT.
642+40.6 TOP OF BANK
642+45.0 TOE OF BANK
642+72.5 TOE OF BANK
642+76.3 TOP OF BANK
643+06.8 P.I. <19°34'18" RT.
643+14.4 OVERHEAD POWER LINE
646+27.1 P.I. <8°29'15" RT.
648+40.3 P.I. <69°07'11" RT.
654+16.2 P.I. <1°17'33" RT.
656+39.0 P.I. <41°05'35" LT.
656+62.2 P.I. <48°39'09" LT.
657+17.6 PIPELINE MARKER, 5.3' RT.
657+20.6 OVERHEAD POWER LINE
657+26.1 P.I. <2°18'54" LT.
657+45.4 EDGE OF ROAD
657+55.4 CL OF 42ND ST. NW (GRAVEL)
657+70.2 EDGE OF ROAD
658+52.6 P.I. <1°10'39" LT.
662+52.8 P.I. <2°50'19" LT.
665+03.6 P.I. <11°11'54" LT.
667+24.0 P.I. <2°01'19" RT.
669+05.8 P.I. <2°00'48" LT.
669+40.3 P.I. <7°27'19" LT.
669+81.1 P.I. <48°16'55" RT.
670+08.8 P.I. <62°45'40" RT.
670+66.7 P.I. <1°37'44" RT.

WILLIAMS COUNTY, NORTH DAKOTA

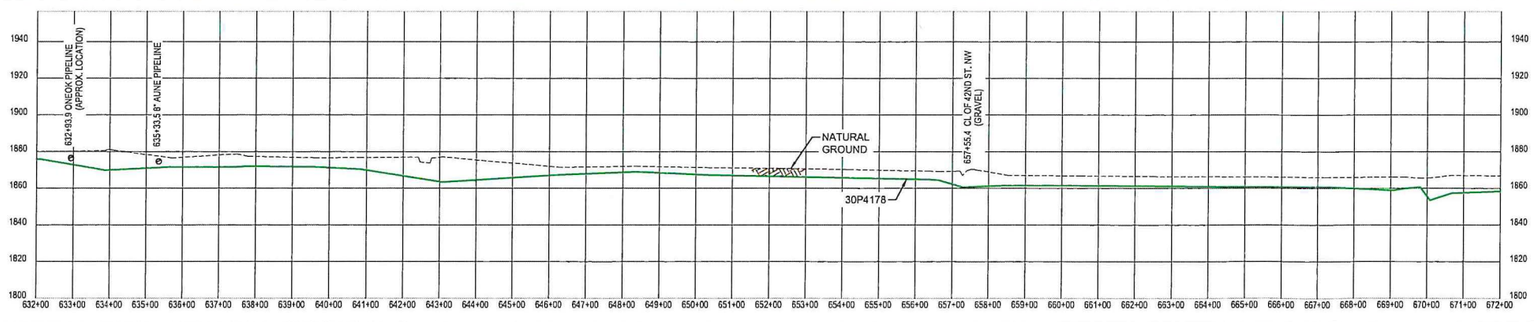
SECTION 36, T 153 N, R 103 W, SECTION 4, T 152 N, R 103 W



LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
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- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
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- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

PIPELINE PROFILE HORZ: 1" = 200' VERT: 1" = 40'



MATERIAL SUMMARY

ITEM NO.	DESCRIPTION	QTY.
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	3422'
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	578'
5	8.625" O.D. STD BEND, 25 DEGREE, WPB (SEE NOTE 1)	1
8	8.625" O.D. STD BEND, 40 DEGREE, WPB (SEE NOTE 1)	3
10	8.625" O.D. STD BEND, 50 DEGREE, WPB (SEE NOTE 1)	2
12	8.625" O.D. STD BEND, 65 DEGREE, WPB (SEE NOTE 1)	2
17	8.625" O.D. STD BEND, 90 DEGREE, WPB (SEE NOTE 1)	1
21	PIPELINE MARKER	1

REFERENCE DRAWINGS

DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

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2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
3. EFFORTS HAVE BEEN MADE TO LOCATE EXISTING UNDERGROUND FACILITIES. HOWEVER, THIS DOCUMENT DOES NOT GUARANTEE OR IMPLY THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING NOR DOES IT ACCEPT ANY RESPONSIBILITY FOR ERRORS IN THE LOCATION OF OR FOR THE FAILURE TO IDENTIFY SUCH FACILITIES.
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5. MACP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0580

DISCLAIMER

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REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 632+00
TO STA. 672+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 DRAWING NO.: C162-WL901-Y-XW-9021 SHEET 18 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY 8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO			
4600025696			
200 AT D	WL901	30	C162-WL901-Y-XW-9021 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

File Path S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\970_Mapping\Rough Route\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9021_REV 01.dwg
Saved by: Tech. NAME on: 9/8/22 - 6:58 AM Plotted by: Tech. NAME on: 9/8/22 - 6:58 AM

WILLIAMS COUNTY, NORTH DAKOTA

SECTION 4, T 152 N, R 103 W, SECTION 5, T 152 N, R 103 W

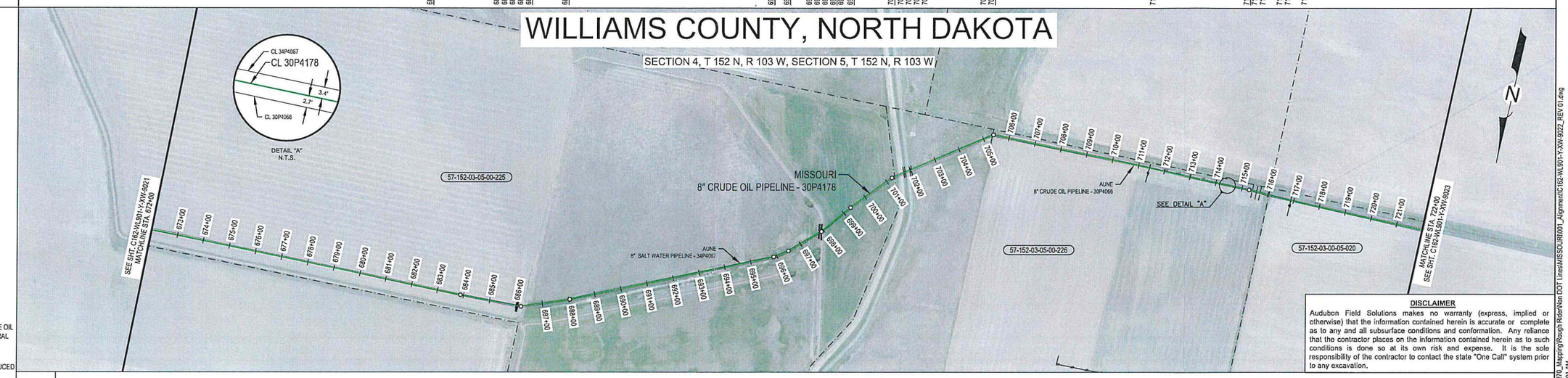
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OWNERSHIP		PATCH, MERNA V (LIFE ESTATE)								PATCH, MERNA V (LIFE ESTATE)				GIBBINS IRREVOCABLE FARM TRUST B, HOOT		
FOOTAGE	672+00	2814'							700+14	1468'			714+82	718'		722+00
RODS		170.5								89.0				43.5		
DESIGN FACTOR	0.72															
MAOP	600															
CLASS LOCATION	CLASS 1															
MATERIALS: 8" CRUDE OIL PIPELINE	672+00	1 5000'								7 705+41				21 715+96		722+00
DEPTH OF COVER	8	6	6	6	7	6	5	6	5	6	6	6	6	10	11	16	9	7	6	6	6	8	6	4	5	5

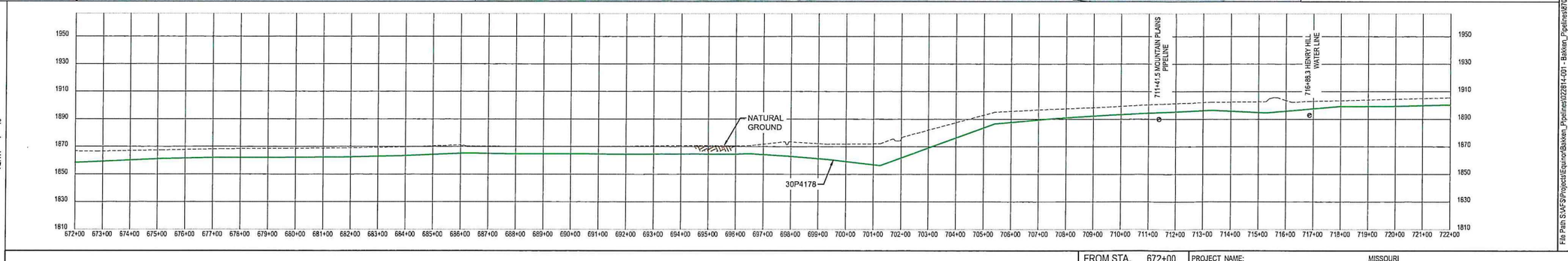
PIPE STATIONING

- 683+89.3 P.I. <11°18'30" LT.
- 686+02.4 TOP OF BANK
- 686+03.9 TOE OF BANK
- 686+05.5 TOE OF BANK
- 686+08.3 TOP OF BANK
- 686+19.9 P.I. <18°55'08" LT.
- 688+04.8 P.I. <3°47'37" LT.
- 695+88.0 P.I. <10°32'09" LT.
- 696+47.6 P.I. <8°17'05" LT.
- 697+78.9 TOP OF BANK
- 697+87.5 TOE OF BANK
- 697+97.6 TOE OF BANK
- 697+99.1 TOP OF BANK
- 697+91.7 TOP OF BANK
- 699+33.5 P.I. <3°54'18" RT.
- 701+24.6 P.I. <12°41'45" RT.
- 701+71.3 TOP OF BANK
- 701+78.2 TOE OF BANK
- 701+86.4 TOE OF BANK
- 702+03.5 TOP OF BANK
- 705+38.6 OVERHEAD POWER LINE
- 705+40.8 P.I. <35°12'08" RT.
- 711+41.5 MOUNTAIN PLAINS PIPELINE
- 715+28.2 P.I. <2°09'44" RT.
- 715+53.3 TOE OF BANK
- 715+56.2 CL OF ACCESS RD. (GRAVEL)
- 715+69.9 EDGE OF ROAD
- 715+86.2 PIPELINE MARKER. 8" CRUDE OIL PIPELINE RT.
- 716+88.3 HENRY HILL WATER LINE

LEGEND

- SIDE TAP VALVE
- MAIN LINE VALVE
- PIPELINE MARKER
- CATHODIC TEST STATION
- PIPELINE P.I.
- POWER POLE
- HDD ENTRY/EXIT
- LAND HOOK
- FIRE HYDRANT
- TREE
- MANHOLE
- PIPE BEND
- TEE
- FLANGE
- COUPLING
- CAD WELD
- LAUNCHER
- RECEIVER
- REDUCER
- TAP
- RECTIFIER
- CASING
- AS-BUILT CRUDE OIL
- AS-BUILT NATURAL GAS
- AS-BUILT MULTI-PHASE
- AS-BUILT PRODUCED WATER
- FENCE
- EXISTING PIPELINE
- POWERLINES
- RAILROAD CL
- RIGHT OF WAY
- PROPERTY LINE
- PROPERTY/FENCE
- PROPERTY/ FENCE/R.O.W.
- ROAD CL
- ROAD EDGE
- SECTION LINE
- SECTION/PROPERTY
- TOE OF SLOPE
- TOP OF SLOPE
- CL WATER
- EDGE OF WATER
- WATER LINE
- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)





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File Path:S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\970_Mapping\Rough Rider\Van DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9022_REV 01.dwg
Saved by: Tech. NAME on: 9/8/22 - 7:01 AM Plotted by: Tech. NAME on: 9/8/22 - 7:01 AM

MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	5000'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE
7	8.625" O.D. STD BEND, 35 DEGREE, WPB (SEE NOTE 1)	1		
21	PIPELINE MARKER	1		

NOTES:

1. PER CLIENT REQUEST, MISSING MATERIAL ATTRIBUTES WERE POPULATED USING DATA FROM SIMILAR PIPE AND FITTINGS PURCHASED AND INSTALLED IN THIS AREA DURING OR AT THE TIME OF CONSTRUCTION.
2. RIGHT OF WAY: THIS PIPELINE IS LOCATED WITHIN A 75' PERMANENT EASEMENT. PRIOR TO ANY FUTURE CONSTRUCTION THE PLACEMENT OF THE PIPELINE SHOULD BE VERIFIED.
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6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 672+00
TO STA. 722+00

PROJECT NAME: MISSOURI
PROJECT NO.: 02281400 | DRAWING NO.: C162-WL901-Y-XW-9022 | SHEET 19 OF 21

equinor

PLANT
AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO 4600025696

SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.
200 AT D		WL901	30	C162-WL901-Y-XW-9022	01

TRACT NO.	57-152-03-00-05-020
OWNERSHIP	GIBBINS IRREVOCABLE FARM TRUST B, HOOT
FOOTAGE	598'
RODS	36.2

TRACT NO.	57-152-03-00-05-039
OWNERSHIP	AIC ENERGY CORP
FOOTAGE	2402'
RODS	145.6

DESIGN FACTOR	0.72
MAOP	600
CLASS LOCATION	CLASS 1

MATERIALS — 8" CRUDE OIL PIPELINE

722+00 — 7 (728+68) — 4 (730+73) — 1 (3000') — 6 (750+45) — 11 (750+57) — 752+00

DEPTH OF COVER

6 6 5 5 5 11 10 8 6 5 5 5 5 4 5 5 5 6 4 4 4 5 5 7 6 6 5

PIPE STATIONING

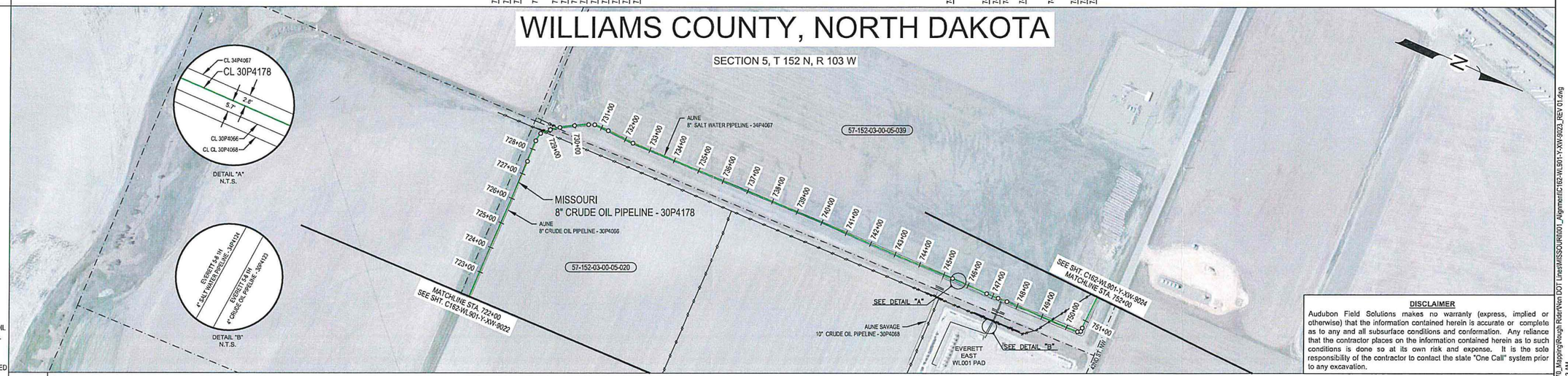
727+50.1 P.I. <1°34'51" LT.
728+33.3 P.I. <13°13'11" RT.
728+65.8 P.I. <34°22'58" RT.
728+81.7 ONEOK PIPELINE (APPROX. LOCATION)
728+89.5 ONEOK PIPELINE
729+05.7 P.I. <8°14'06" RT.
729+33.8 OVERHEAD POWER LINE
729+42.8 P.I. <8°03'44" RT.
729+97.3 P.I. <2°22'08" RT.
730+50.6 P.I. <7°12'40" RT.
730+73.3 P.I. <21°06'39" RT.
731+27.5 P.I. <2°48'08" RT.
732+20.2 P.I. <3°59'27" LT.
745+36.4 P.I. <1°23'11" RT.
746+76.5 P.I. <1°06'47" LT.
747+22.5 P.I. <2°11'27" LT.
747+35.1 4" EVERETT 5-8 1H PIPELINE
747+58.2 P.I. <2°21'24" RT.
749+37.4 ONEOK PIPELINE (APPROX. LOCATION)
750+45.0 P.I. <28°07'25" LT.
750+57.0 P.I. <60°41'44" LT.
751+71.2 P.I. <2°03'33" RT.

LEGEND

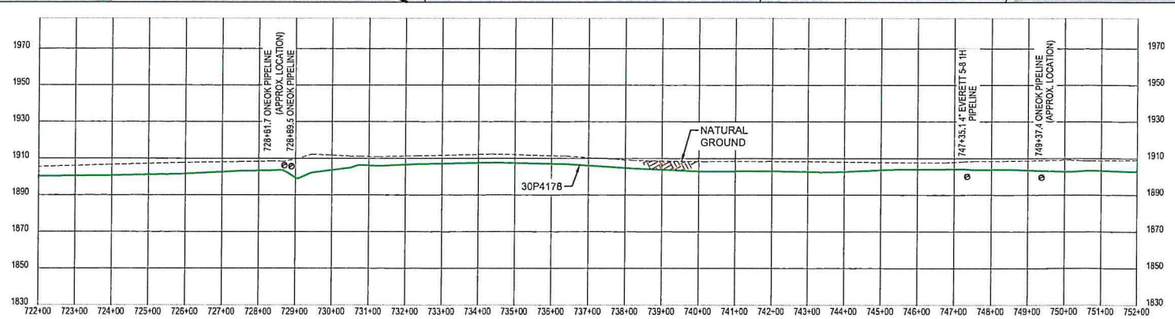
- SIDE TAP VALVE
- MAIN LINE VALVE
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- PIPELINE P.I.
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- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

WILLIAMS COUNTY, NORTH DAKOTA

SECTION 5, T 152 N, R 103 W



PIPELINE PROFILE
HORIZ: 1" = 200'
VERT: 1" = 40'



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File Path: S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\1870_Mapping\Rough Route\Non DOT Lines\MISSOURI\R001_Alignment\C162-WL901-Y-XW-9023_REV 01.dwg
Saved by: Tech. NAME on: 9/8/22 - 7:03 AM Plotted by: Tech. NAME on: 9/8/22 - 7:03 AM

FROM STA. 722+00
TO STA. 752+00

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 | DRAWING NO.: C162-WL901-Y-XW-9023 | SHEET 20 OF 21

MATERIAL SUMMARY

ITEM NO.	DESCRIPTION	QTY.
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	3000'
4	8.625" O.D. STD BEND, 20 DEGREE, WPB (SEE NOTE 1)	1
6	8.625" O.D. STD BEND, 30 DEGREE, WPB (SEE NOTE 1)	1
7	8.625" O.D. STD BEND, 35 DEGREE, WPB (SEE NOTE 1)	1
11	8.625" O.D. STD BEND, 60 DEGREE, WPB (SEE NOTE 1)	1

REFERENCE DRAWINGS

DWG NO.	DESCRIPTION
C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE

NOTES:

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audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

equinor

PLANT: AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO	4600025696		
200 AT D	WL901	30	C162-WL901-Y-XW-9023 01
SCALE SIZE	AREA	SYSTEM	DRAWING NUMBER REV.

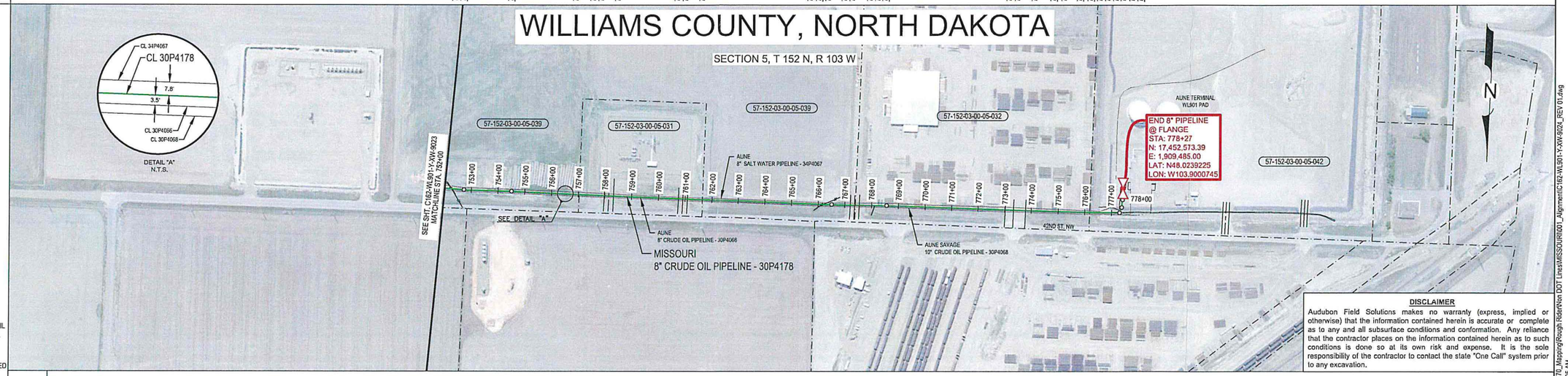
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OWNERSHIP					AIC ENERGY CORP		LOWER YELLOWSTONE RURAL ELECTRIC ASSOCIA		AIC ENERGY CORP		CORNELIUS DEVELOPMENT CORPORATION		GLACIER PEAK MIDSTREAM LLC			
FOOTAGE					381'		461'		575'		879'		205'			
RODS					23.1		27.9		34.8		53.3		12.4			
				752+00		755+81		760+42		766+17		774+96		777+01		
DESIGN FACTOR								0.72								
MAOP								600								
CLASS LOCATION								CLASS 1								
MATERIALS: 8" CRUDE OIL PIPELINE				752+00	757+34				767+10			777+31	778+06 778+08	778+17	778+21 778+22 778+23 778+27	778+27
DEPTH OF COVER				7	4	5	5	4	5	5	4	4	5	7	5	7	5	5	-3	-3

752+27.0 ONECK PIPELINE
752+72.5 P.I. <3°40'42" LT.
754+51.1 P.I. <1°09'48" RT.
757+33.6 PIPELINE MARKER, 1.2' LT.
757+98.3 EDGE OF ROAD
758+15.0 CL OF ACCESS RD. (GRAVEL)
758+32.4 EDGE OF ROAD
760+74.7 EDGE OF ROAD
760+91.0 CL OF ACCESS RD. (GRAVEL)
761+08.9 EDGE OF ROAD
766+18.6 PLAINS PIPELINE
765+51.2 P.I. <1°18'07" LT.
767+09.7 PIPELINE MARKER.
767+20.5 EDGE OF DRIVEWAY
767+39.2 CL OF DRIVEWAY (GRAVEL)
767+54.0 EDGE OF DRIVEWAY
768+12.2 UNKNOWN PIPELINE
769+88.8 P.I. <1°01'58" RT.
773+01.5 EDGE OF DRIVEWAY
773+33.1 CL OF DRIVEWAY (GRAVEL)
773+78.3 EDGE OF DRIVEWAY
777+30.5 P.I. <70°11'16" LT.
777+33.3 4" TRENTON ANDERSON PIPELINE
777+62.3 P.I. <3°25'11" LT.
777+66.1 P.I. <3°45'51" LT.
778+05.8 45° SAG BEND
778+17.0 45° OVERBEND
778+21.2 FLANGE
778+21.5 FLANGE
778+22.1 STRAIGHT TEE
778+27.3 END STA. @ FLANGE

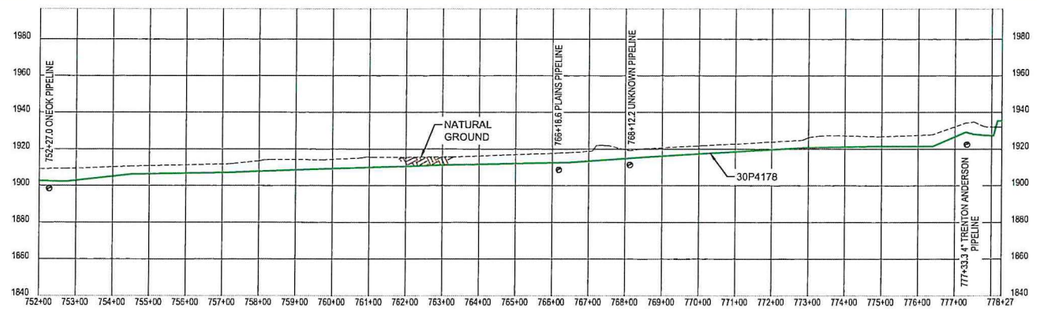
LEGEND
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- UNUSUALLY SENSITIVE AREAS (SEE NOTE 6)
- HIGH CONSEQUENCE AREAS (SEE NOTE 6)

WILLIAMS COUNTY, NORTH DAKOTA

SECTION 5, T 152 N, R 103 W



PIPELINE PROFILE
HORIZ: 1" = 200'
VERT: 1" = 40'



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File Path S:\AFS\Projects\Equinor\Bakken_Pipelines\022814-001 - Bakken_Pipelines\970_Mapping\Rough Rider\Non DOT Lines\MISSOURI\001_Alignment\C162-WL901-Y-XW-9024_REV 01.dwg
Saved by: Tech. NAME on: 9/8/22 - 7:05 AM Plotted by: Tech. NAME on: 9/8/22 - 7:05 AM

MATERIAL SUMMARY			REFERENCE DRAWINGS	
ITEM NO.	DESCRIPTION	QTY.	DWG NO.	DESCRIPTION
1	8.625" O.D. X 0.25" W.T., X42, HFW (SEE NOTE 1)	2606'	C162-WL901-Y-MZ-9004	MISSOURI DOCUMENT PACKAGE
2	8.625" O.D. X 0.322" W.T., X42, HFW (SEE NOTE 1)	21'		
9	8.625" O.D. STD BEND, 45 DEGREE, WPB (SEE NOTE 1)	2		
13	8.625" O.D. STD BEND, 70 DEGREE, WPB (SEE NOTE 1)	1		
18	8"X8"X8.625" O.D. STD STRAIGHT TEE, WPB (SEE NOTE 1)	1		
19	8.625" O.D. FLANGE, ANSI 600, RFWN (SEE NOTE 1)	3		
20	8.625" O.D. MLV BALL VALVE, ANSI 600 (SEE NOTE 1)	1		
21	PIPELINE MARKER	2		

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4. ANY MISSING ATTRIBUTES FROM THE MATERIAL SUMMARY ARE DUE TO INSUFFICIENT OR INCOMPLETE DOCUMENTATION. THESE PIPE LISTINGS ALONG WITH MAOP WILL BE UPDATED IF FURTHER DOCUMENTATION IS FOUND OR FUTURE PROJECTS ARE UNDERTAKEN WHICH DETERMINE PIPE ATTRIBUTES.
5. MAOP REPRESENTED ON THESE DRAWINGS REFLECT SYSTEM SHUTDOWN AND / OR ALARM PRESSURES.
6. ALL HIGH CONSEQUENCE AREAS AND UNUSUALLY SENSITIVE AREAS WHICH ARE IMPACTED BY THIS PIPELINE WILL BE CALLED OUT IN THE COVER SHEET.

audubon
10205 Westheimer Road Houston, TX 77042 281.669.0590

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
01	09/09/2022	ISSUED FOR AS-BUILT	BM	JG	JRC

FROM STA. 752+00
TO STA. 778+27

PROJECT NAME: MISSOURI
PROJECT NO.: 022814001 DRAWING NO.: C162-WL901-Y-XW-9024 SHEET 21 OF 21

equinor

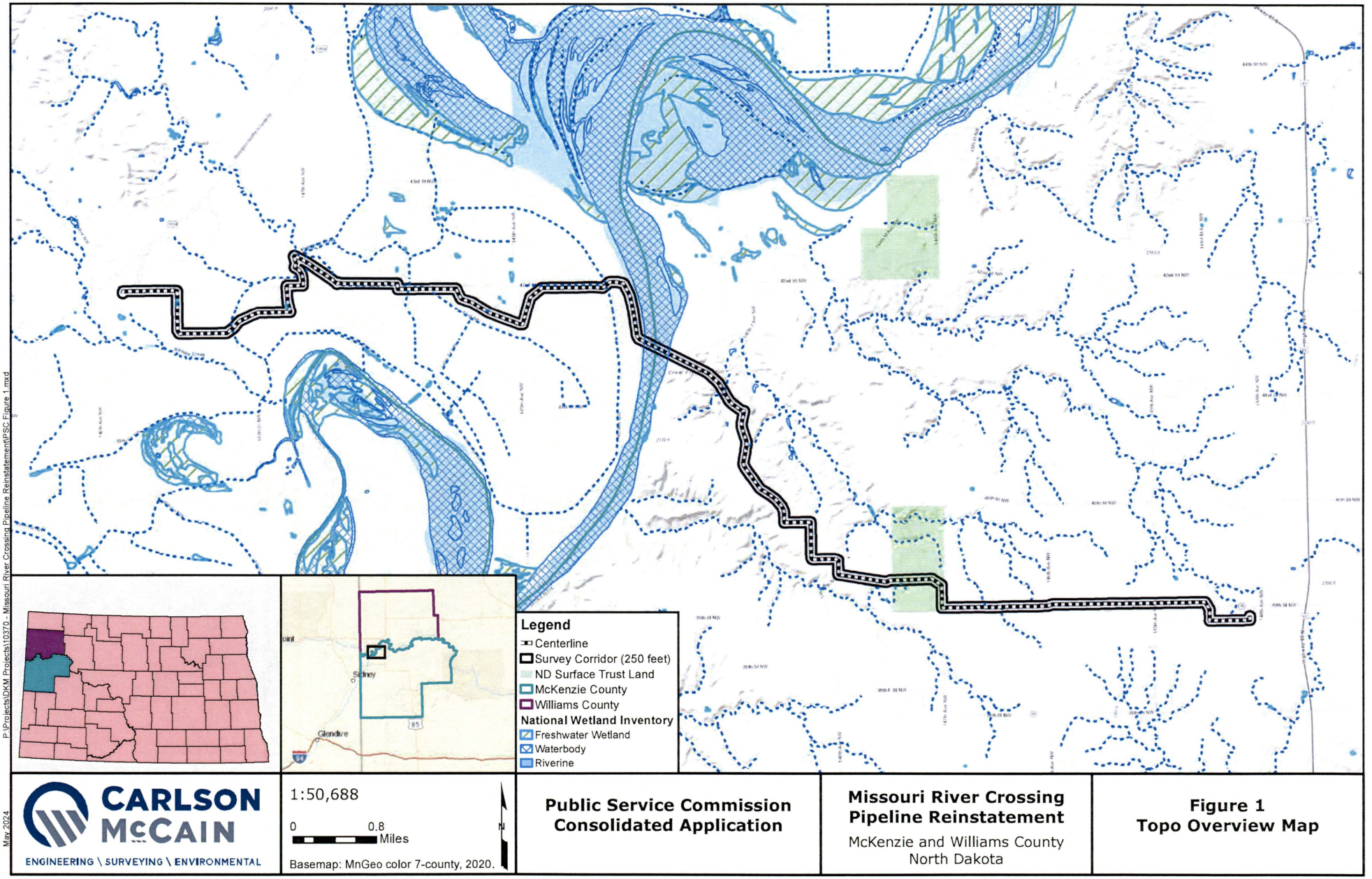
PLANT: AUNE TERMINAL

DRAWING TITLE: ALIGNMENT SHEET
MISSOURI TO AUNE OIL FACILITY
8" CRUDE OIL PIPELINE - 30P4178

CONTR. NO 4600025696

SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	REV.
200 AT D		WL901	30	C162-WL901-Y-XW-9024	01

APPENDIX B: PROJECT MAPS



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May 2024

CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

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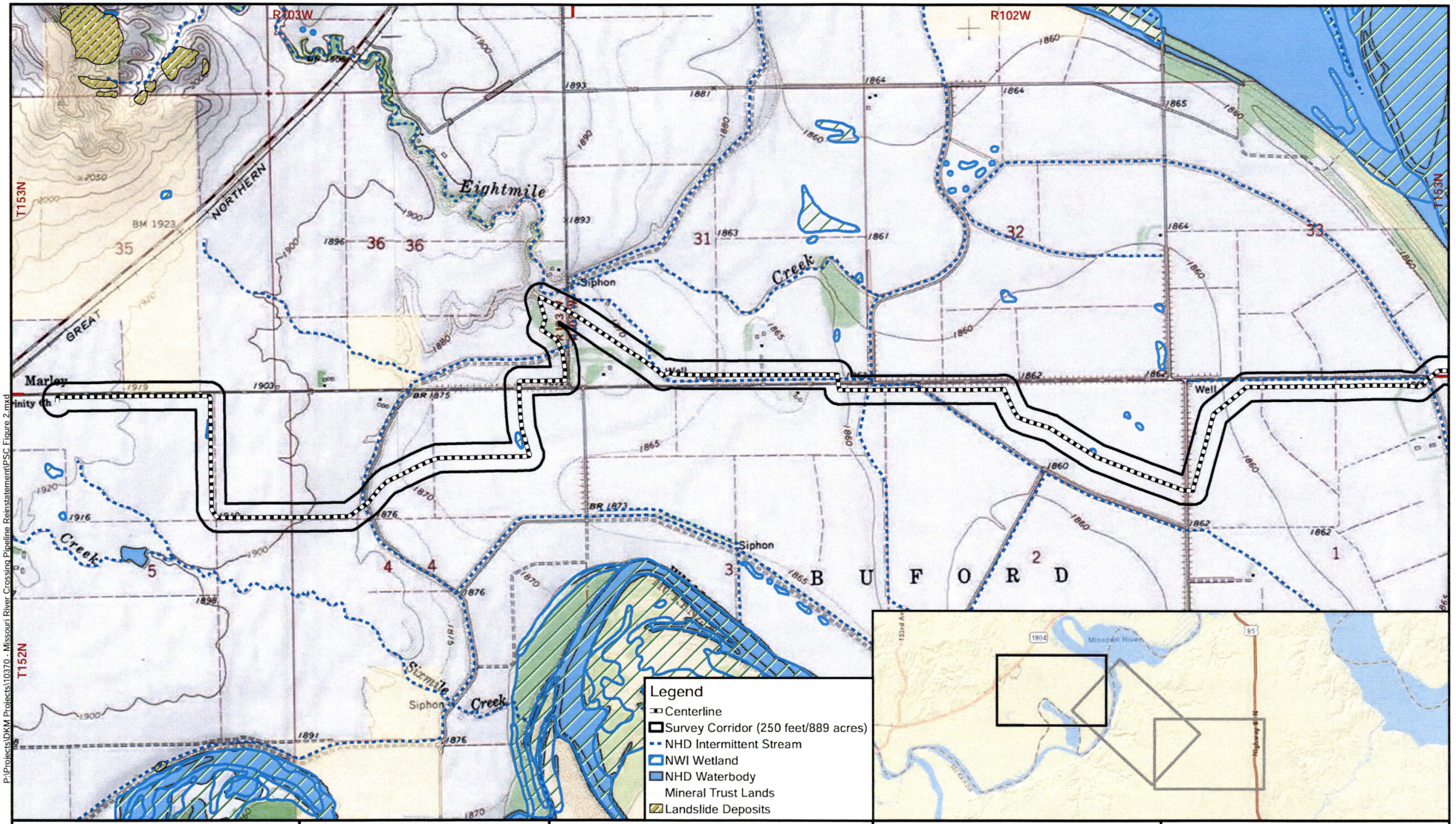
Basemap: MnGeo color 7-county, 2020.

Public Service Commission Consolidated Application

Missouri River Crossing Pipeline Reinstatement

McKenzie and Williams County
North Dakota

Figure 1
Topo Overview Map



P:\Projects\DKM Projects\10370 - Missouri River Crossing Pipeline Reinstatement\PSC Figure 2.mxd

May 2024

CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

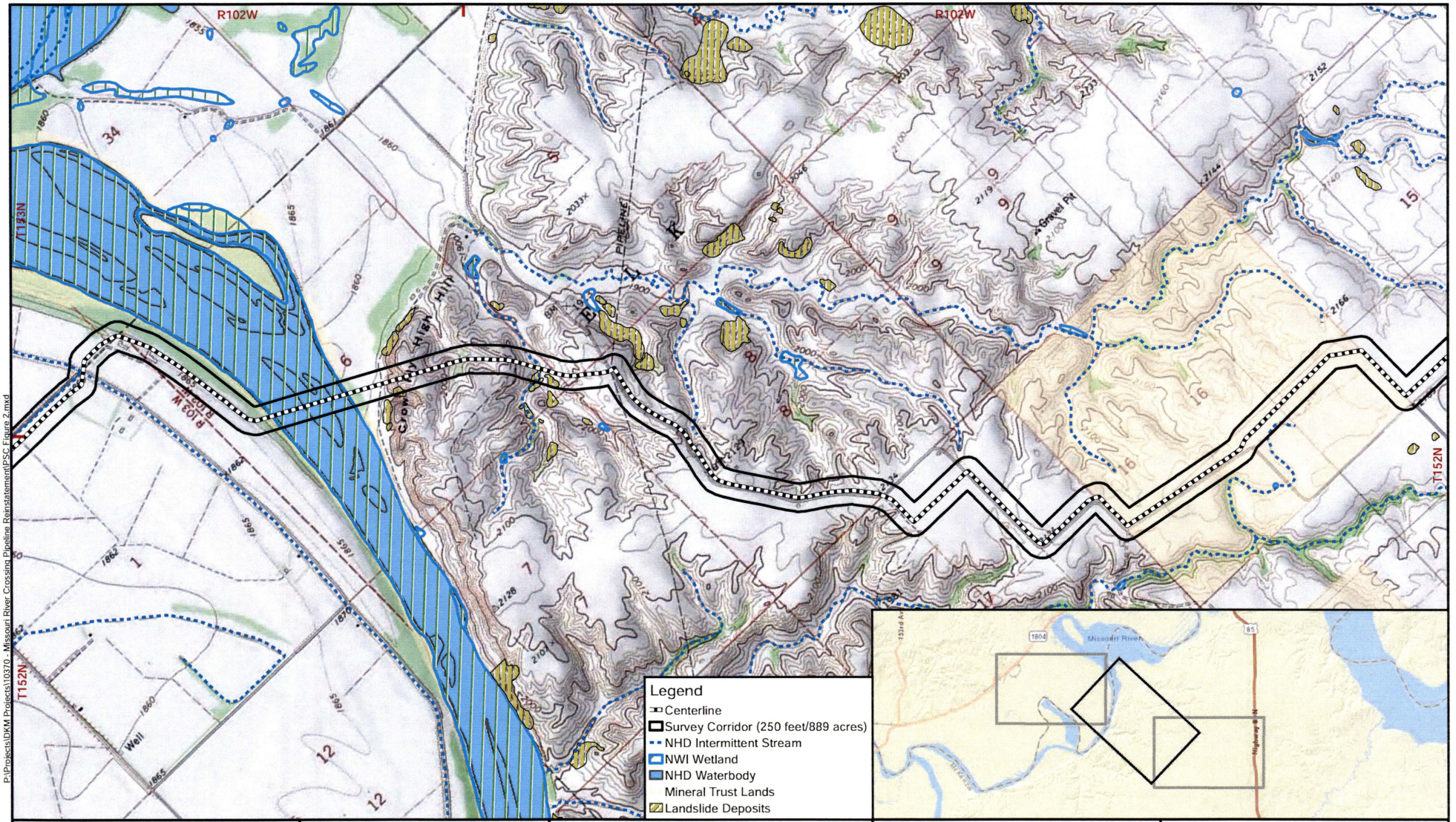
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0 0.3 Miles

Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 2.1
Natural Resource -
Topo Map



P:\Projects\DKM Projects\10370 - Missouri River Crossing Pipeline Reinstatement\PSC Figure 2.mxd

May 2024

CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

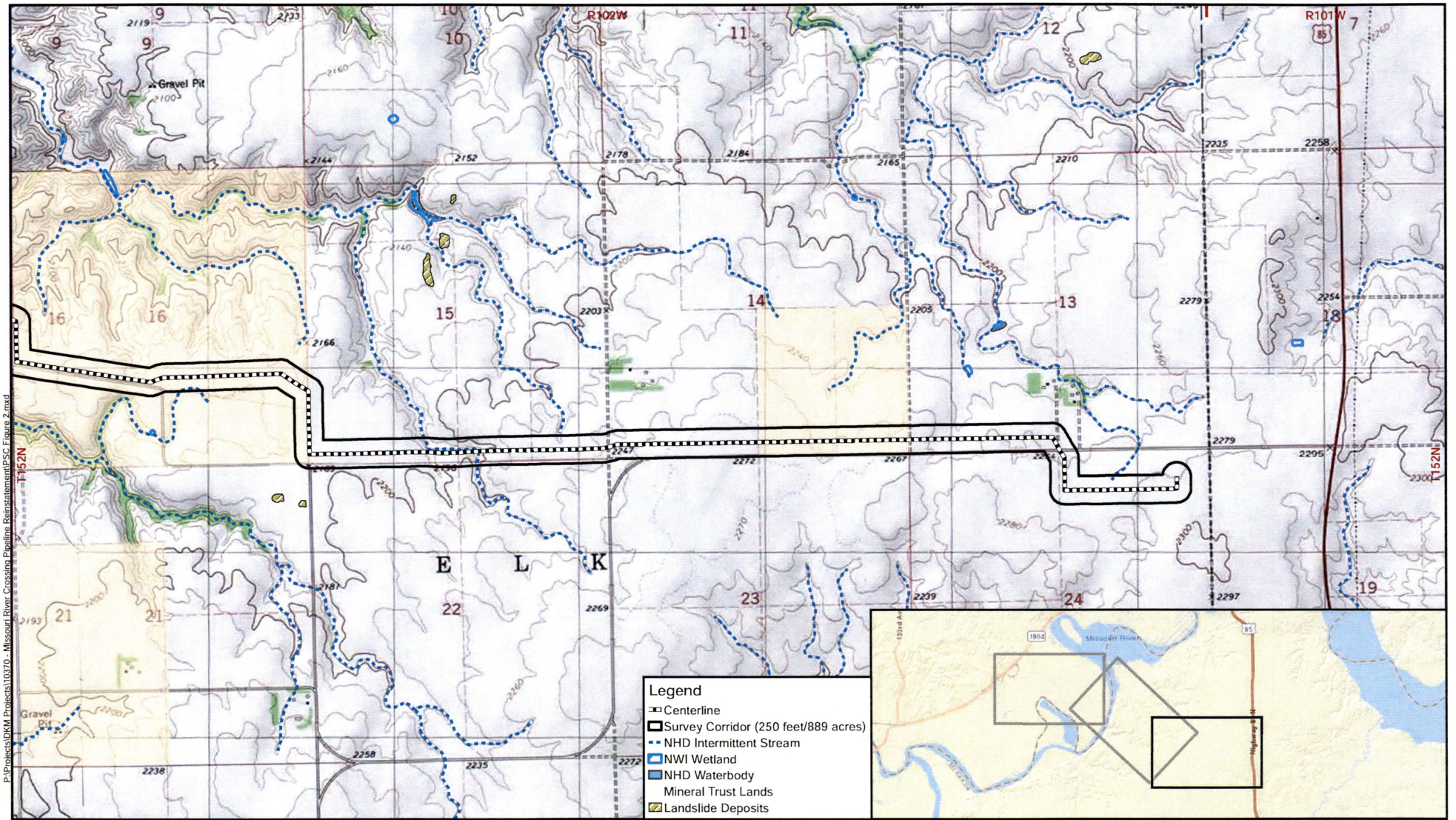
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0 0.3 Miles

Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 2.2
Natural Resource -
Topo Map



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May 2024

CARLSON McCAIN
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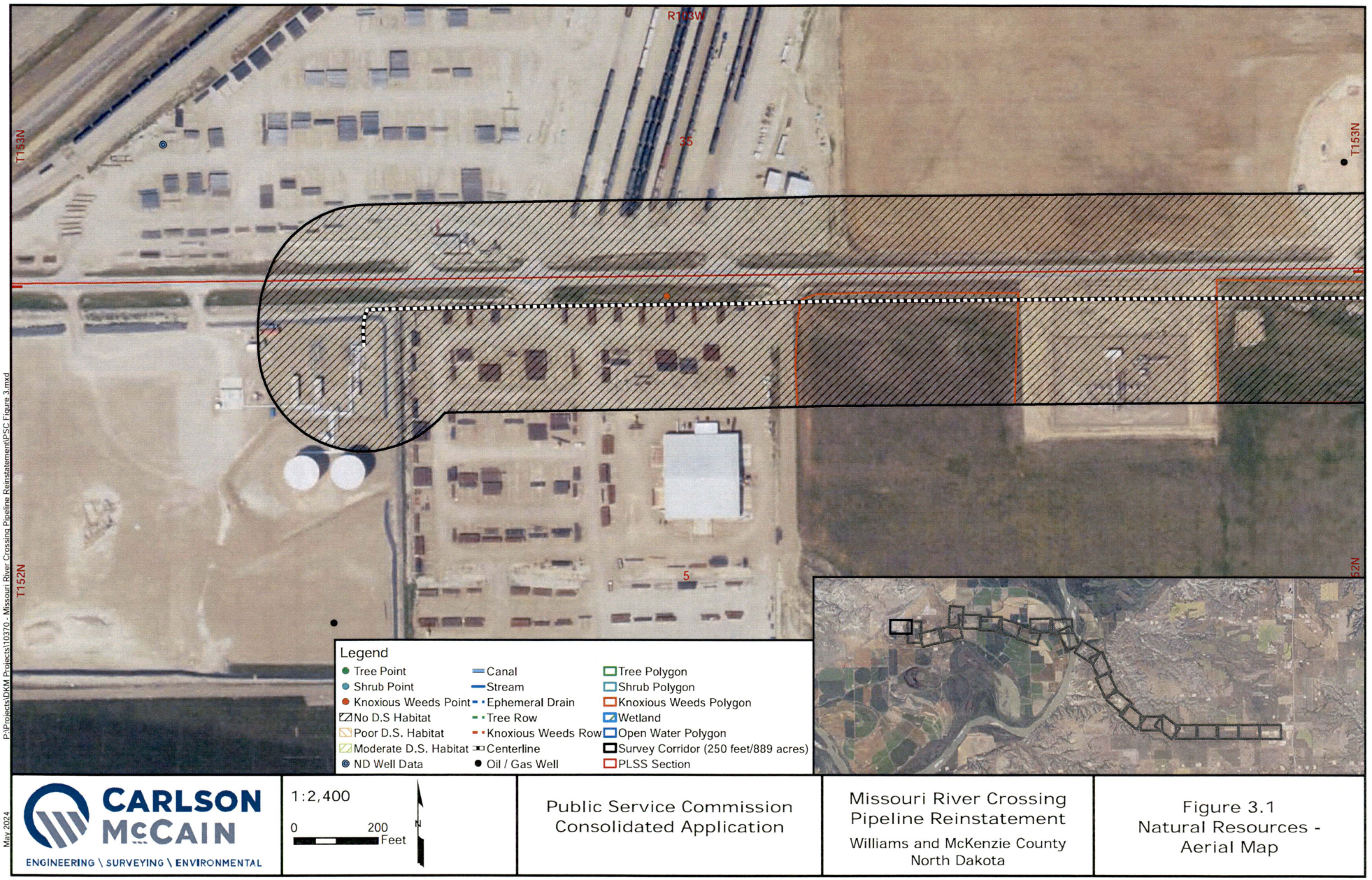
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0 0.3 Miles

Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 2.3
Natural Resource -
Topo Map



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May 2024

CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

1:2,400

0 200 Feet

N

Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement

Williams and McKenzie County
North Dakota

Figure 3.1
Natural Resources -
Aerial Map



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May 2024

CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

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0 200 Feet

Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.2
Natural Resources -
Aerial Map



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ENGINEERING \ SURVEYING \ ENVIRONMENTAL

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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.3
Natural Resources -
Aerial Map



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May 2024

CARLSON McCAIN
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.4
Natural Resources -
Aerial Map



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May 2024

CARLSON McCAIN
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.5
Natural Resources -
Aerial Map



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May 2024

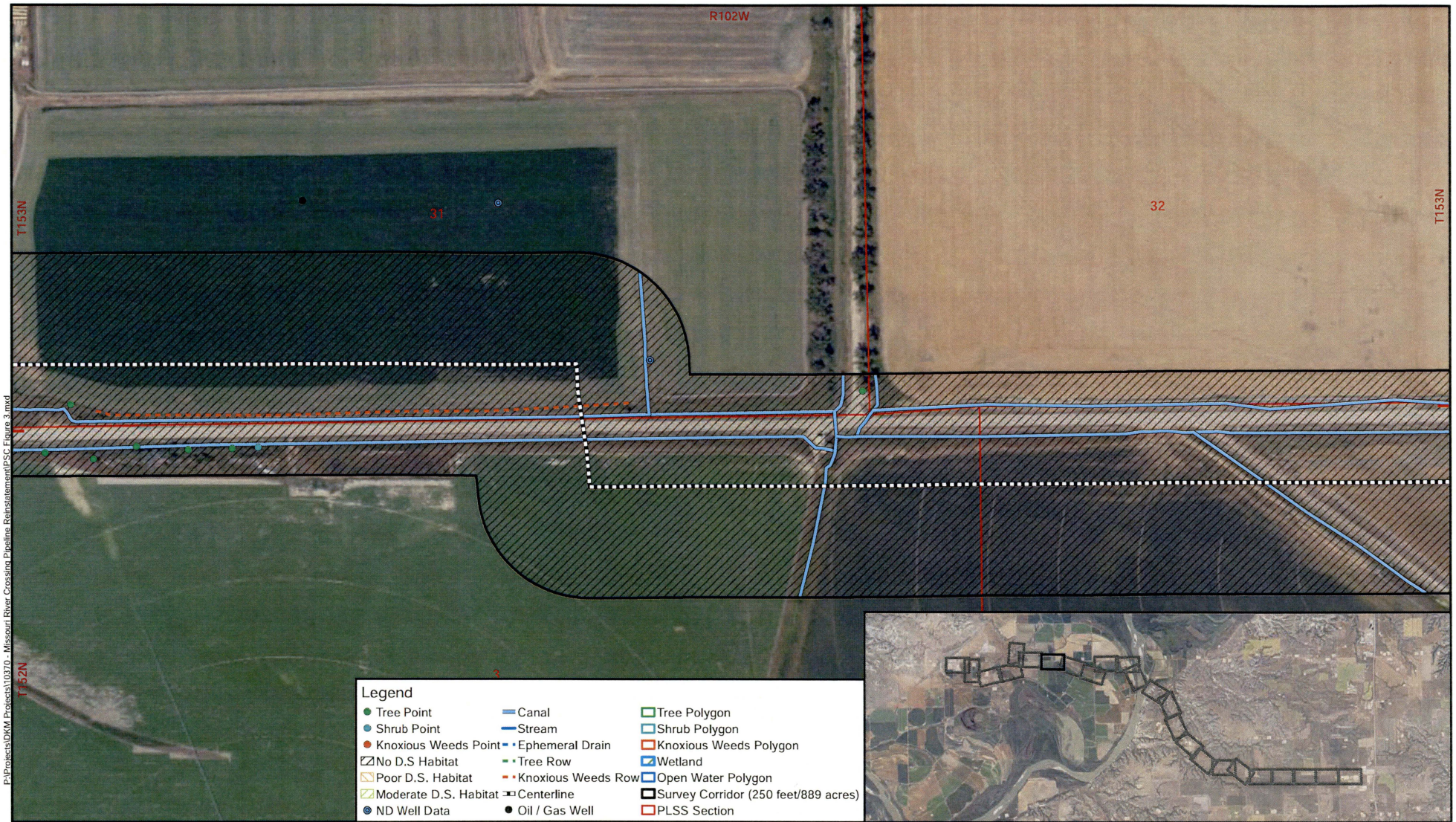
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.6
Natural Resources -
Aerial Map



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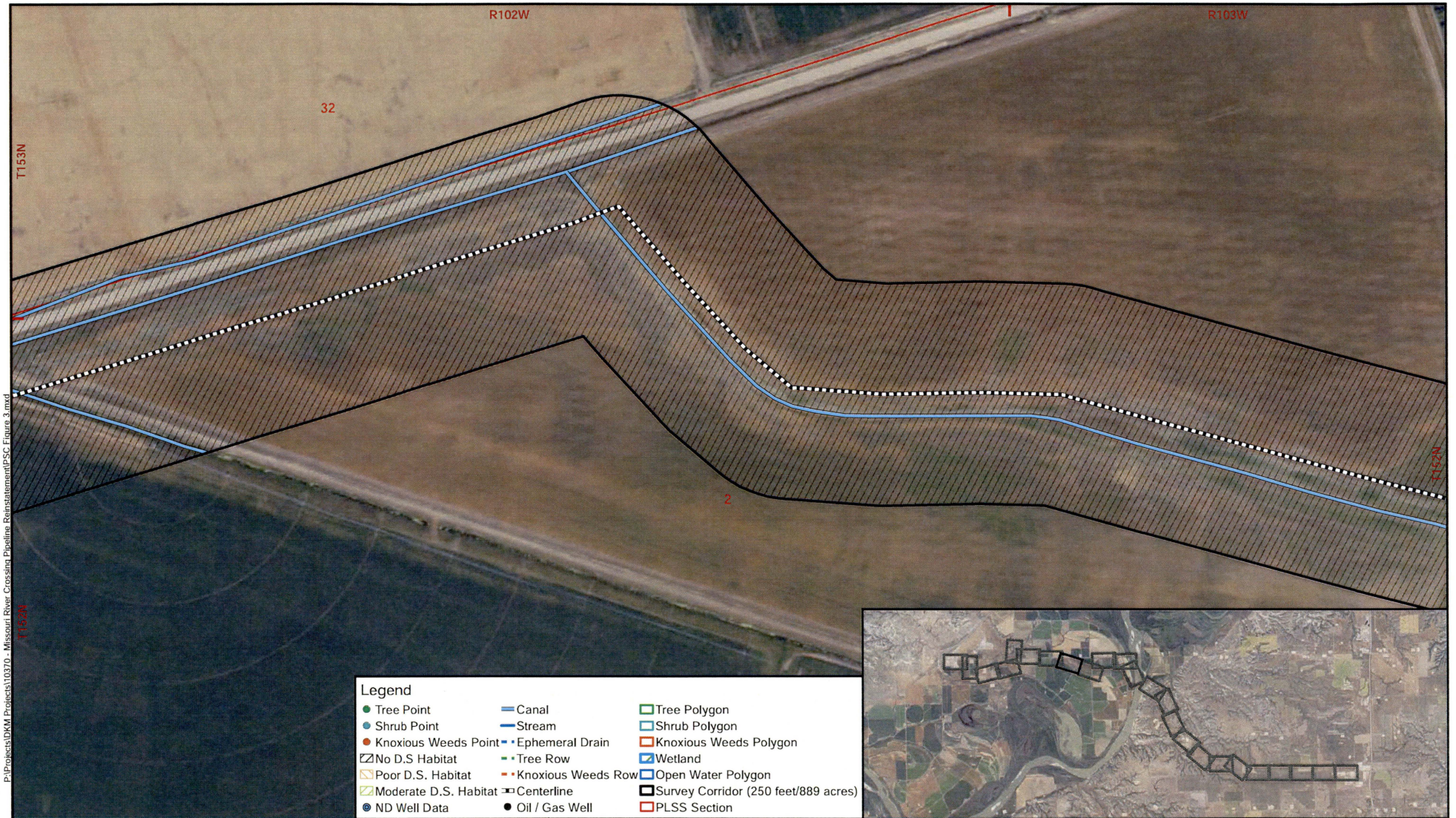
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.7
Natural Resources -
Aerial Map



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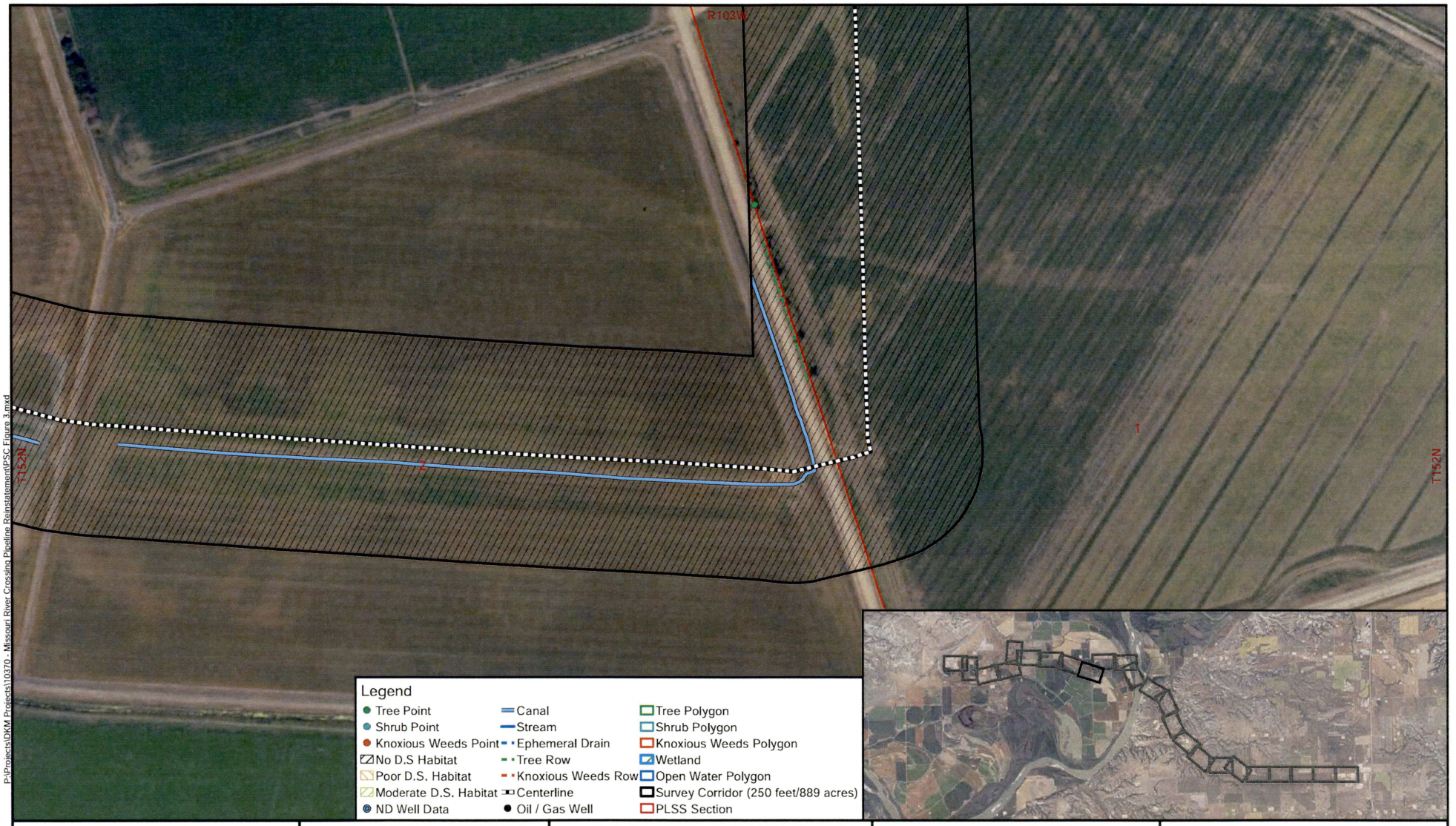
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.8
Natural Resources -
Aerial Map



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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.9
Natural Resources -
Aerial Map



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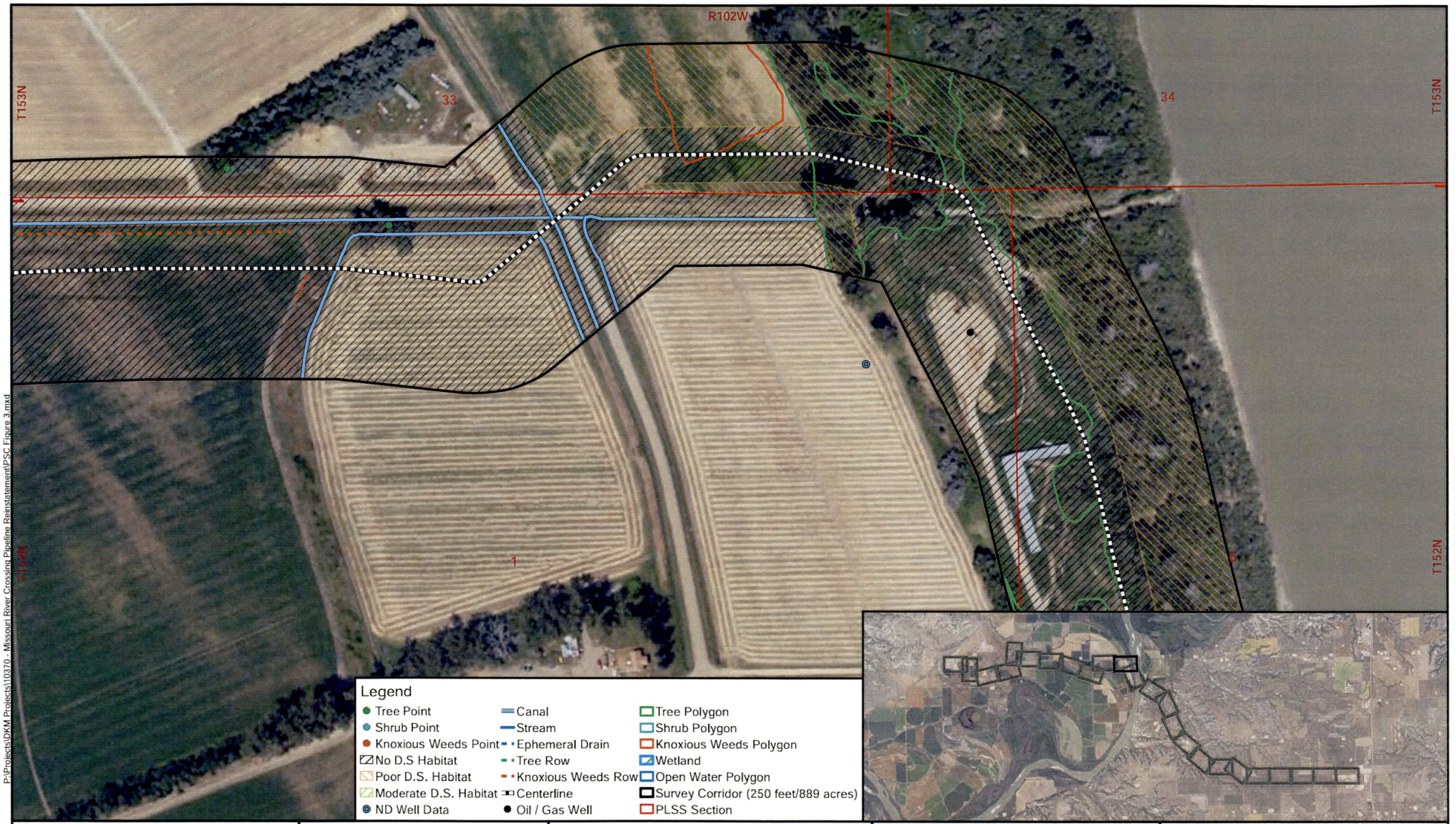
CARLSON McCAIN
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.10
Natural Resources -
Aerial Map



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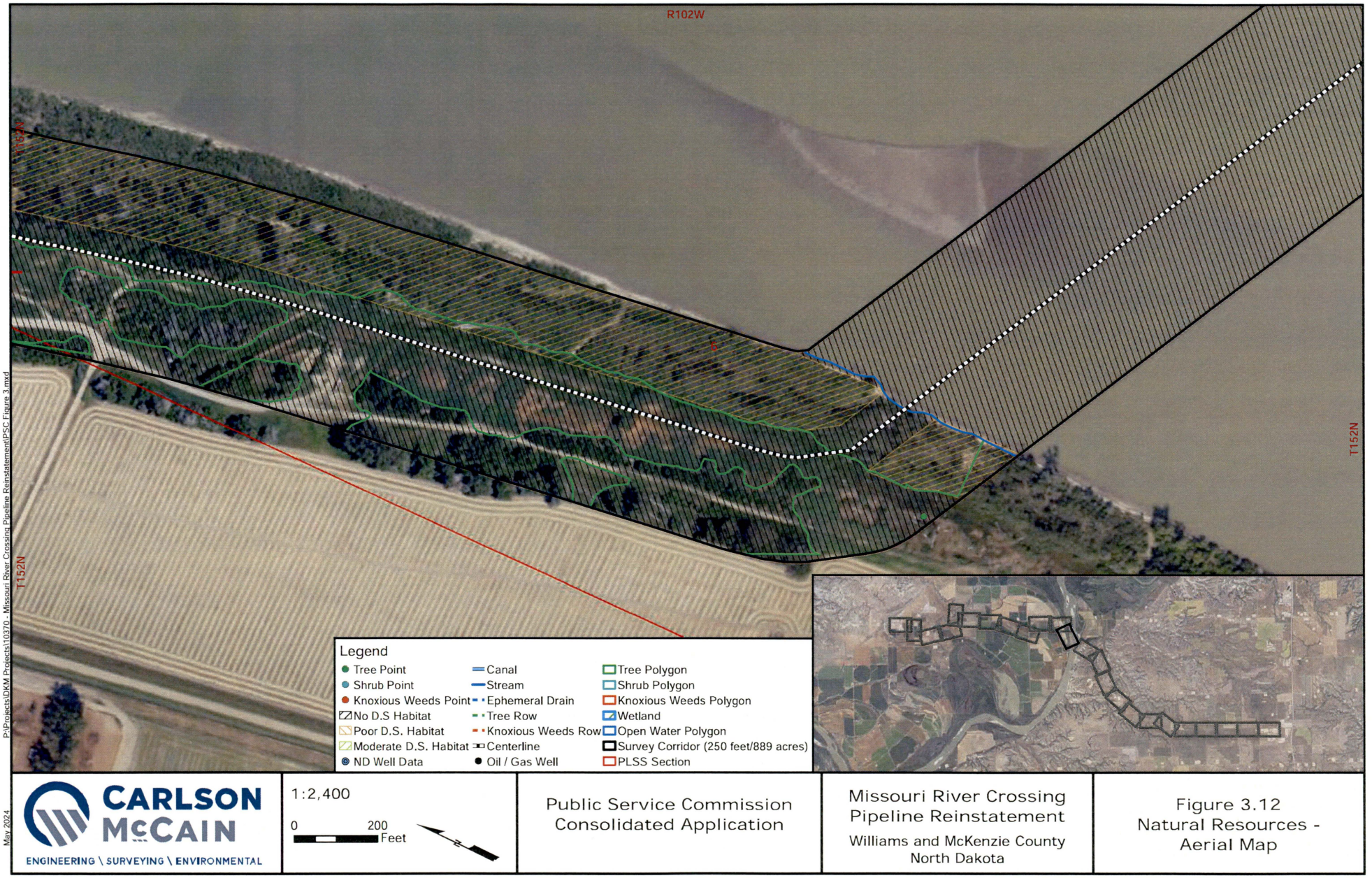
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.11
Natural Resources -
Aerial Map



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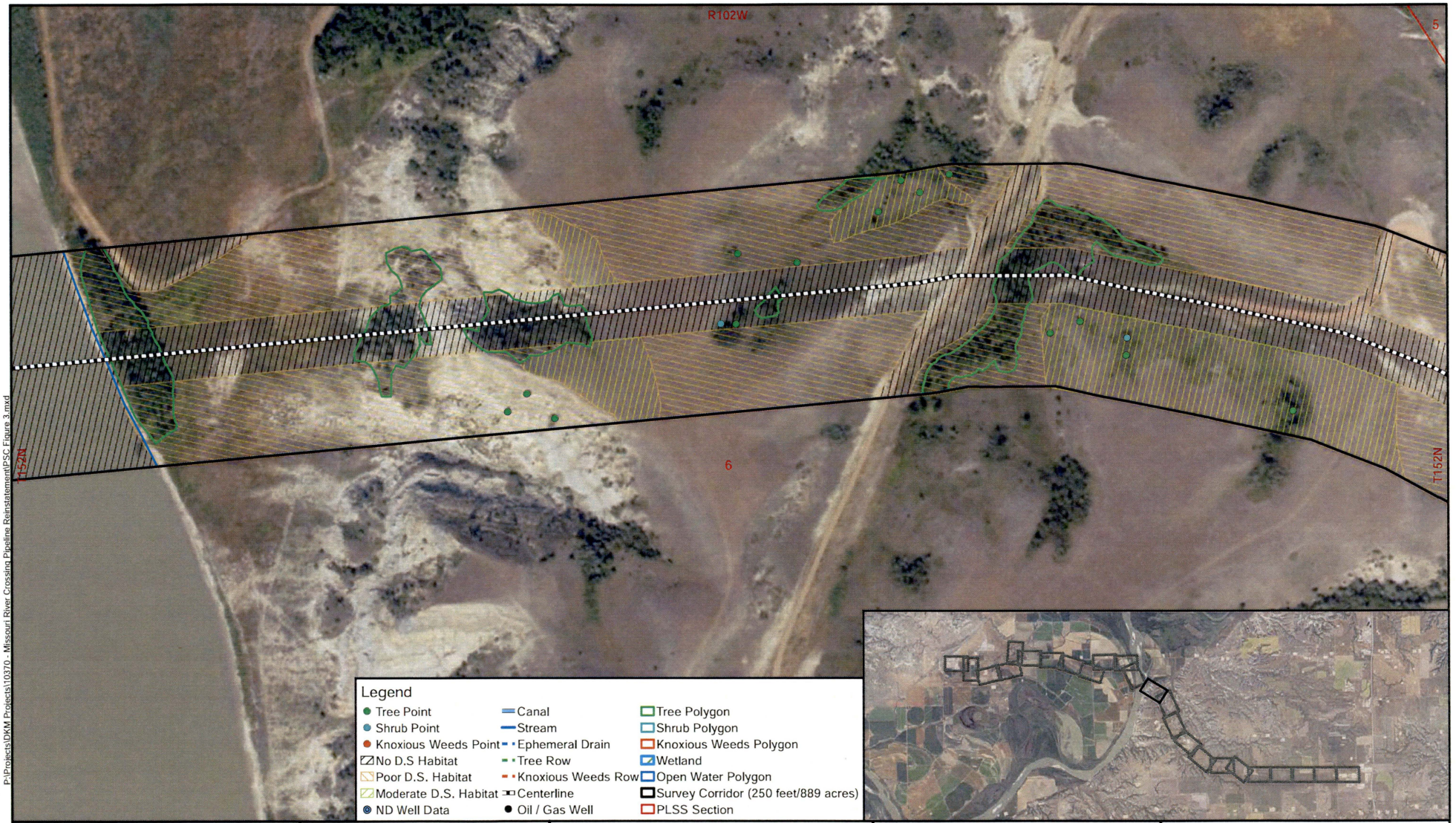
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.12
Natural Resources -
Aerial Map



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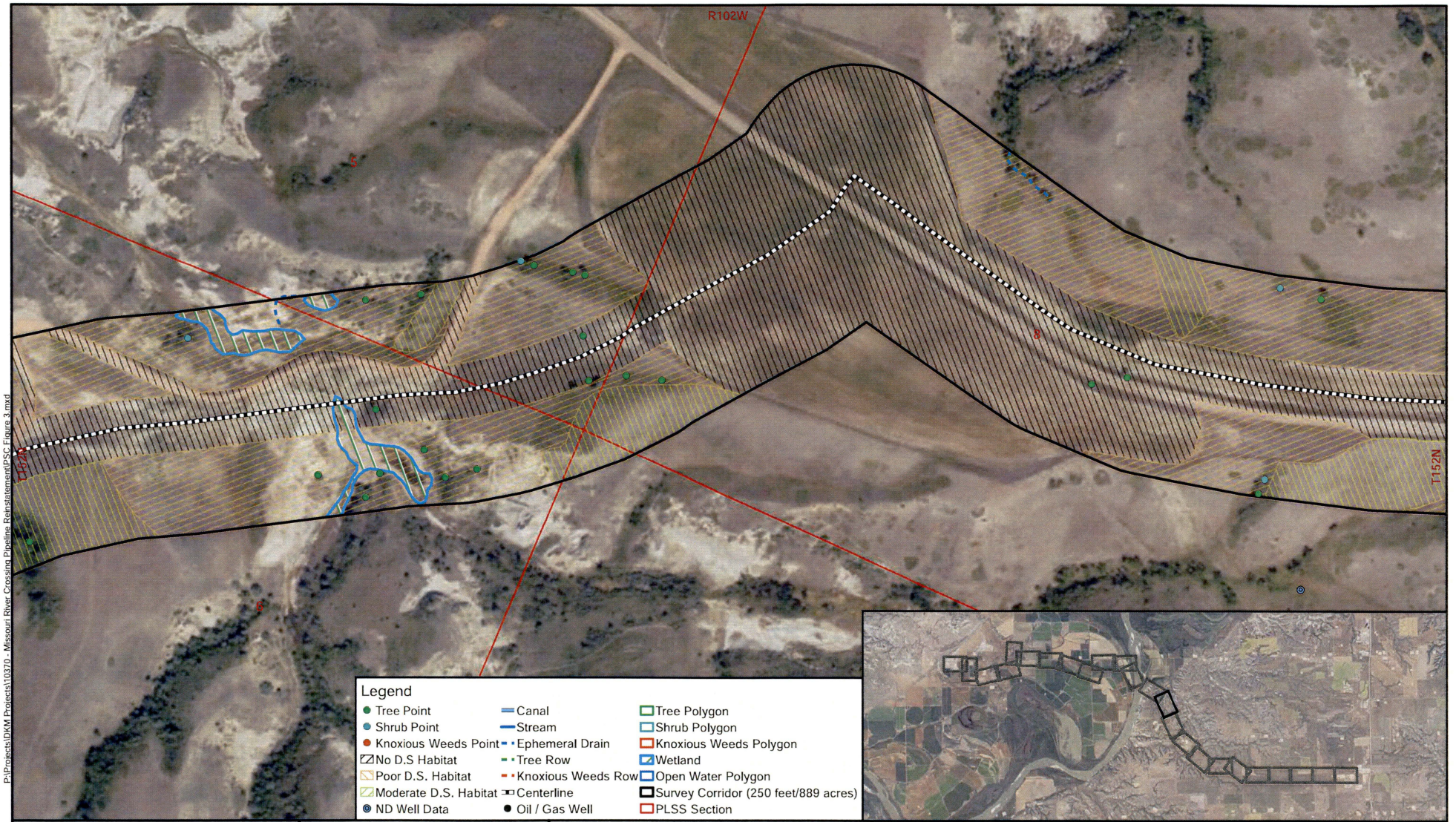
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.13
Natural Resources -
Aerial Map



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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.14
Natural Resources -
Aerial Map



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ENGINEERING \ SURVEYING \ ENVIRONMENTAL

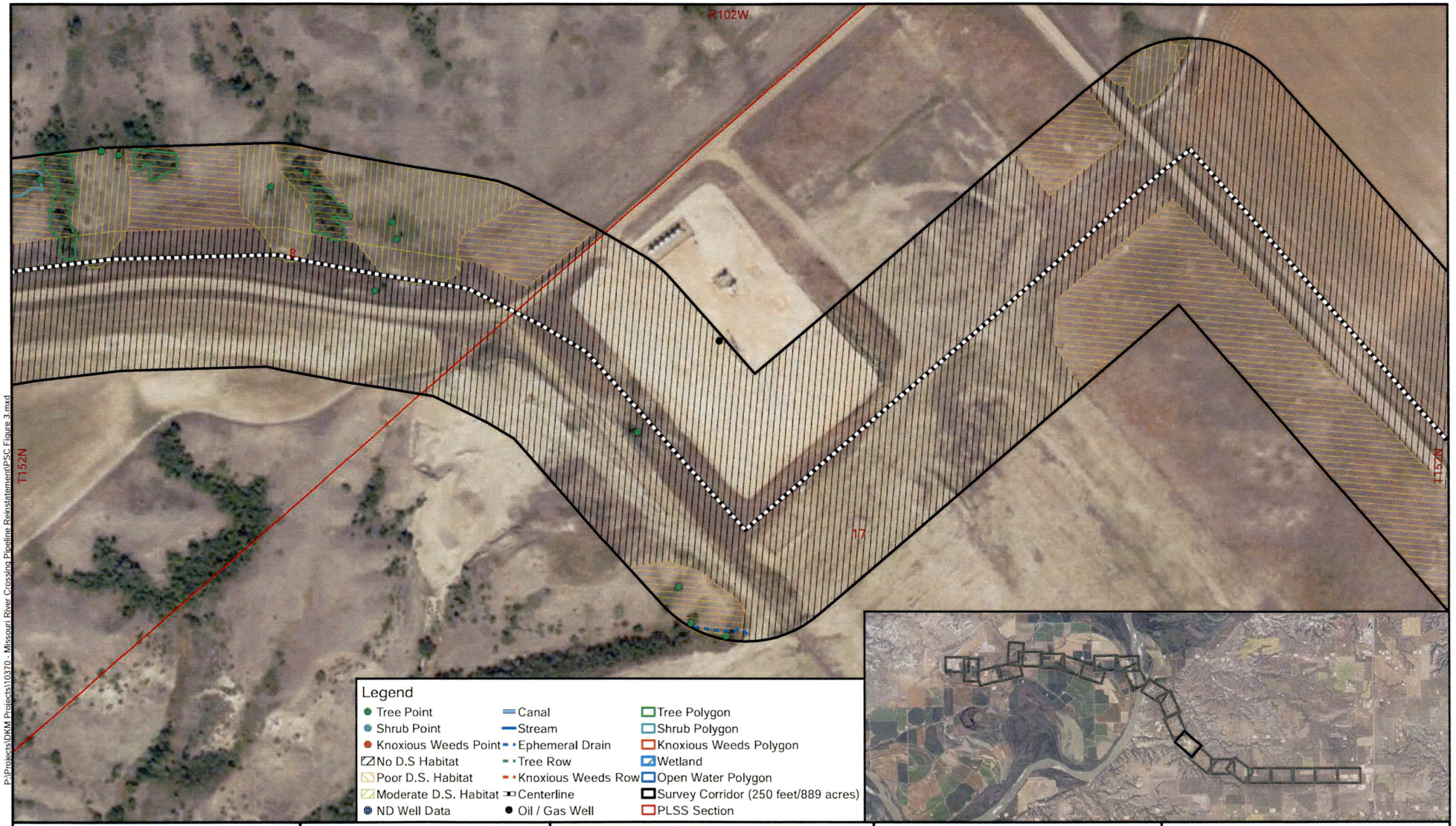
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.15
Natural Resources -
Aerial Map



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CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

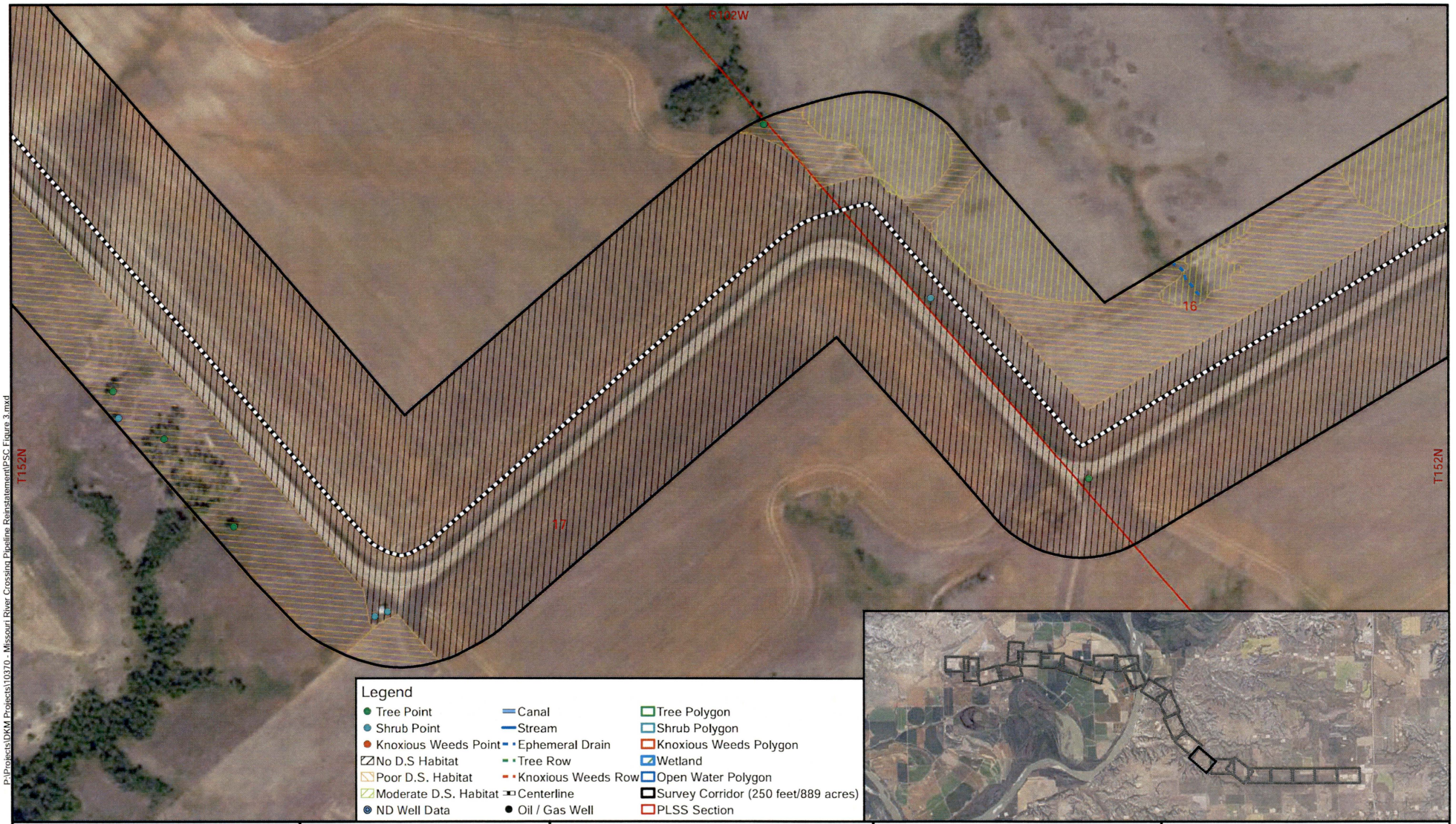
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.16
Natural Resources -
Aerial Map



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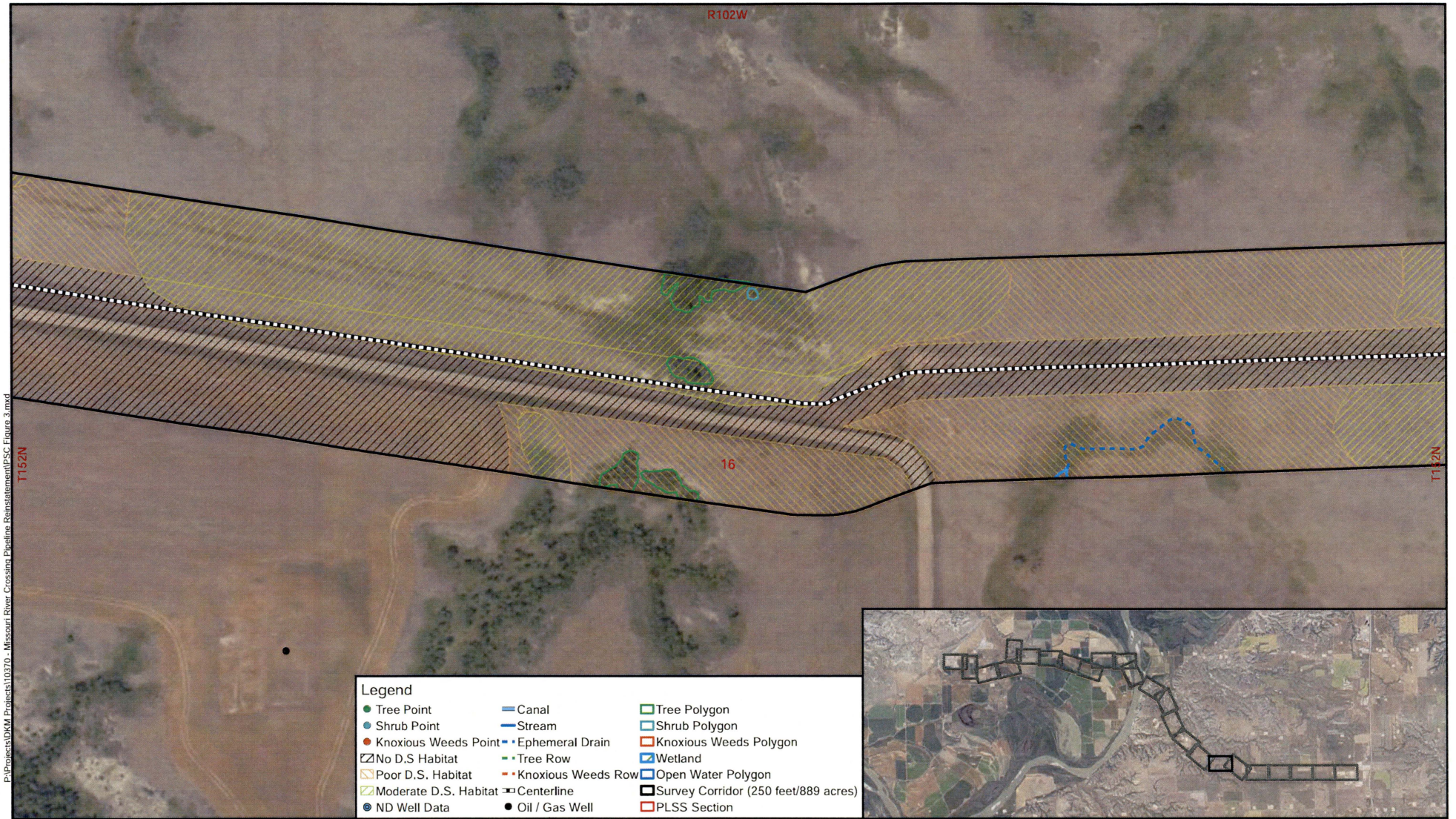
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.17
Natural Resources -
Aerial Map



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May 2024

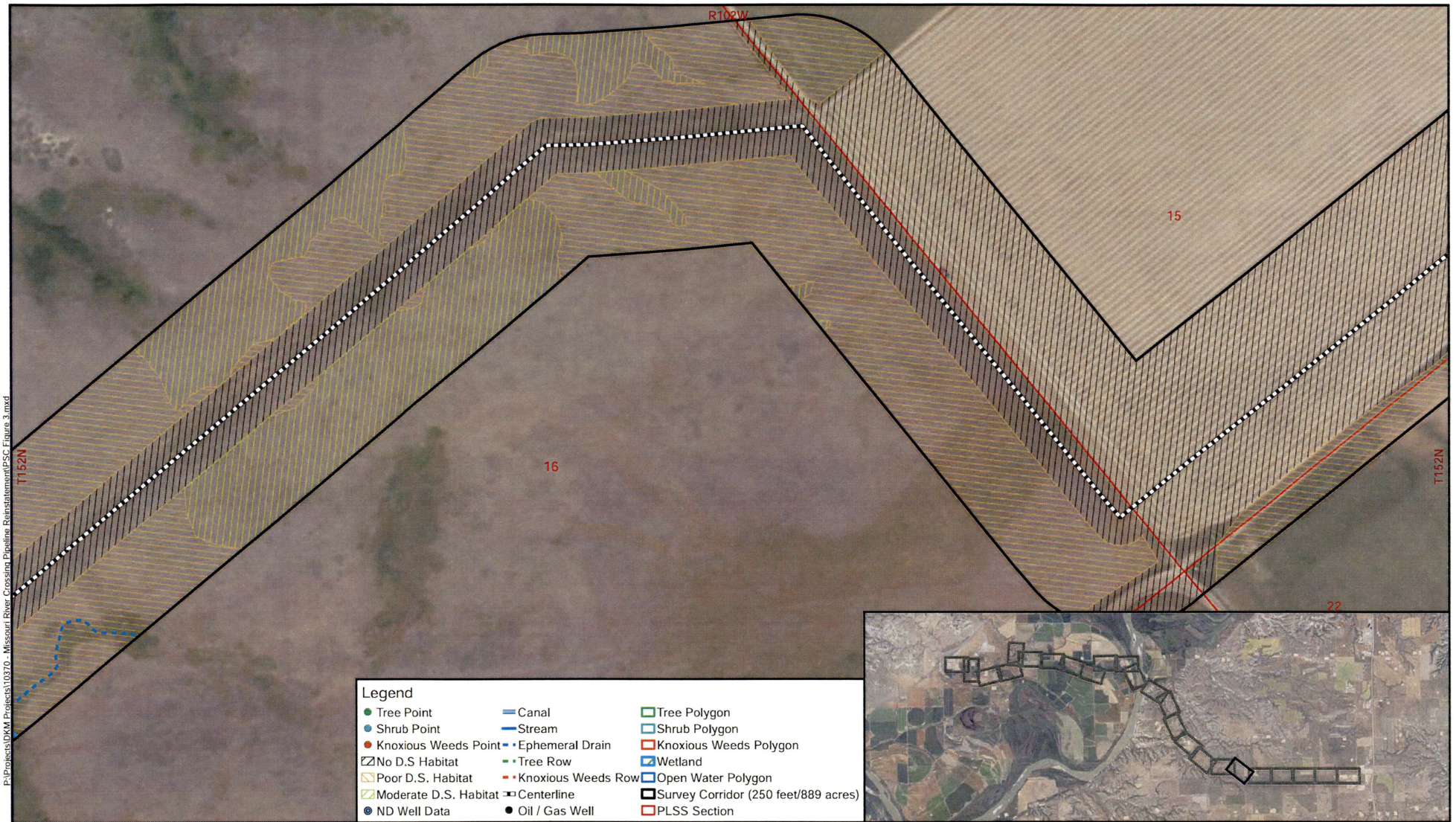
CARLSON McCAIN
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.18
Natural Resources -
Aerial Map



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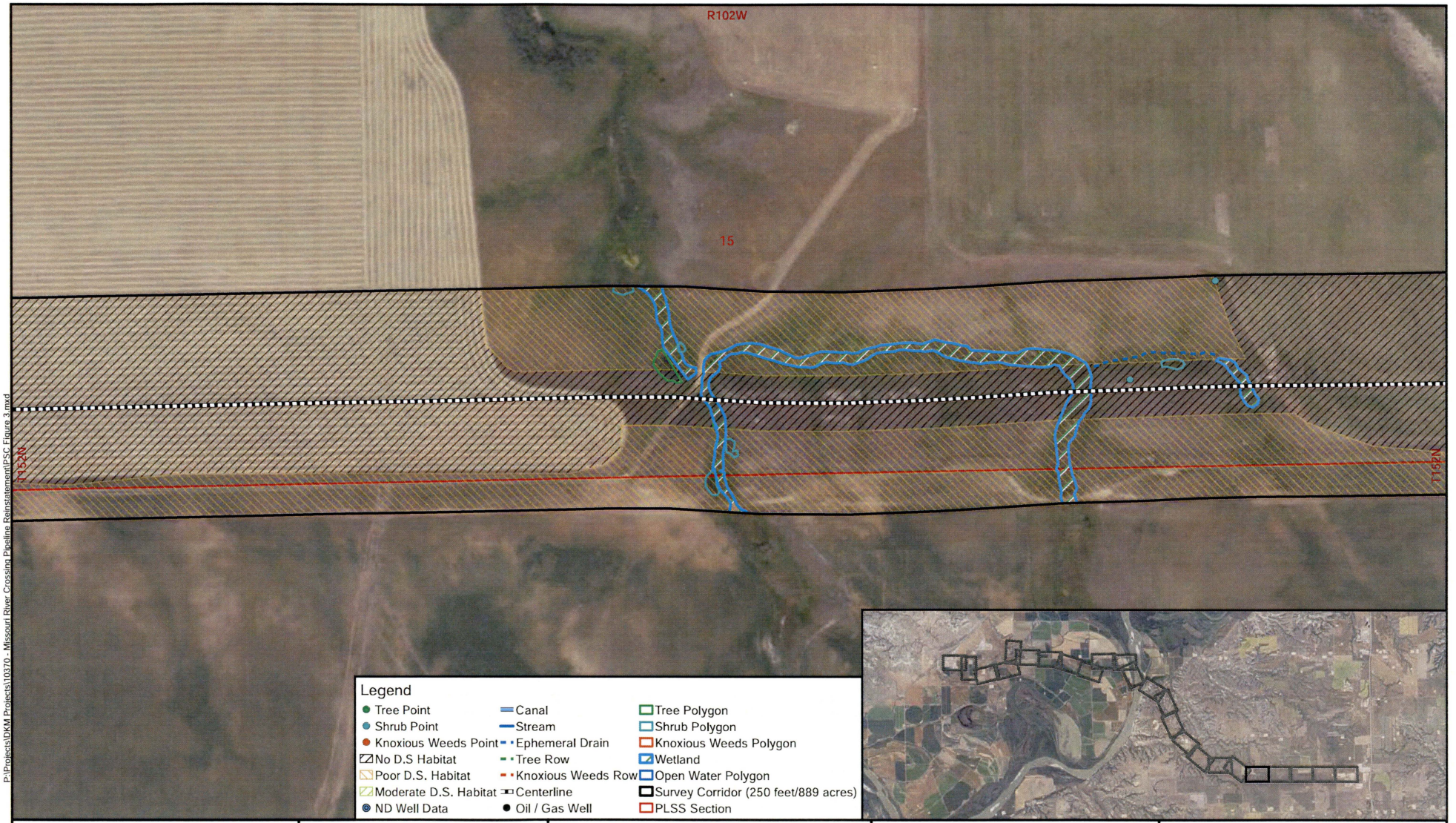
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.19
Natural Resources -
Aerial Map



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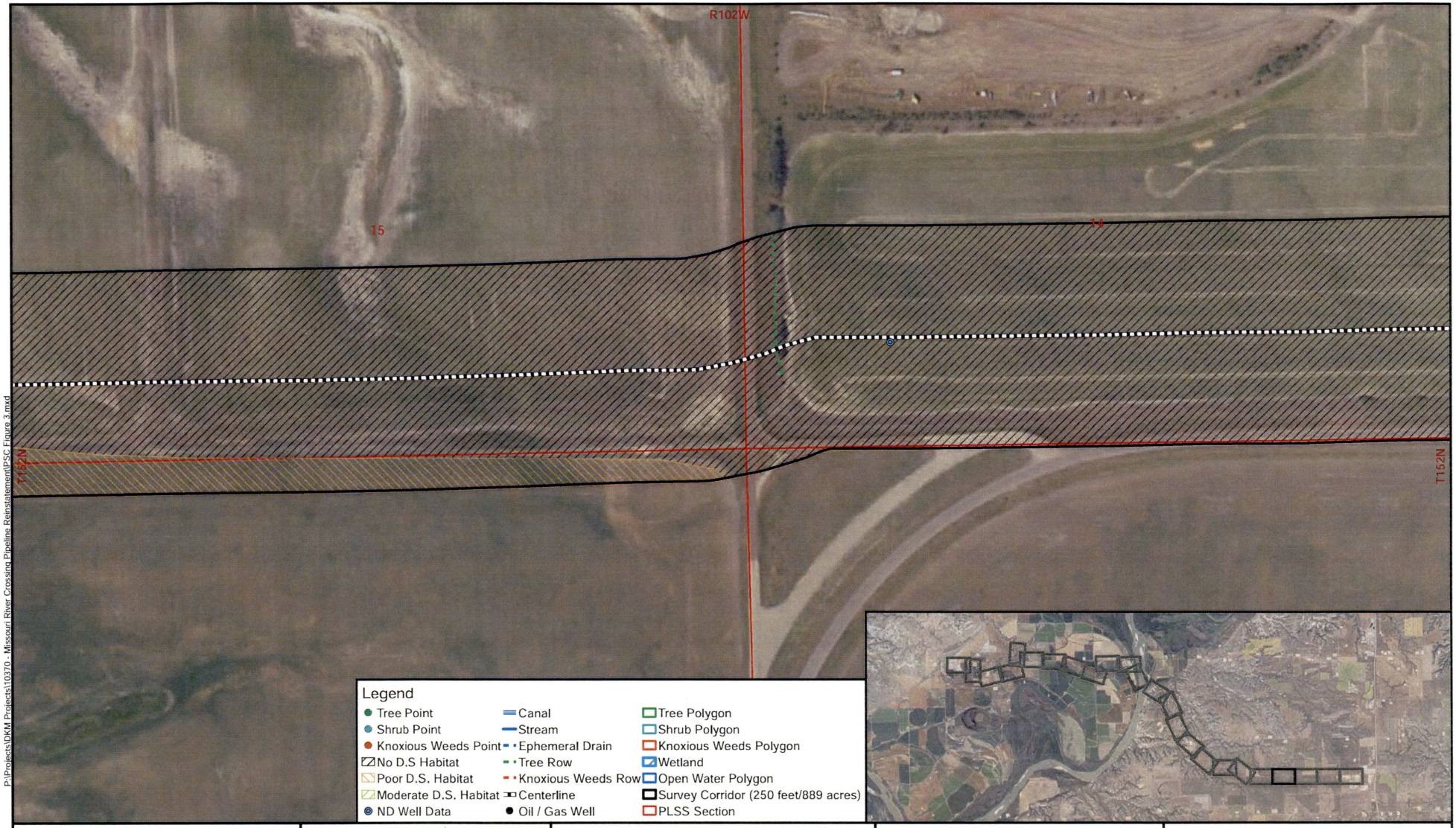
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.20
Natural Resources -
Aerial Map



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ENGINEERING \ SURVEYING \ ENVIRONMENTAL

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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.21
Natural Resources -
Aerial Map



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CARLSON McCAIN
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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.22
Natural Resources -
Aerial Map



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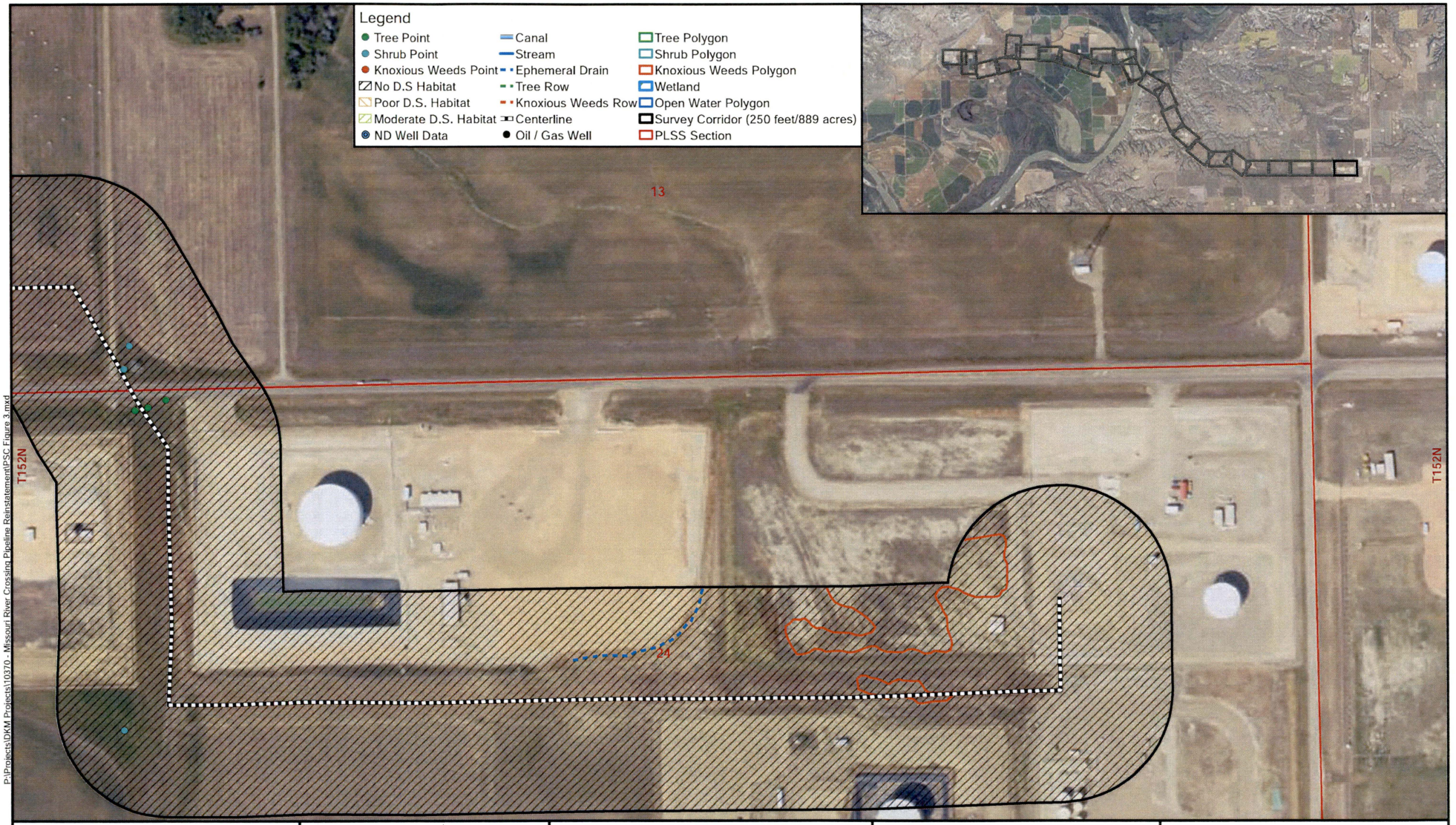
CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.23
Natural Resources -
Aerial Map



CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

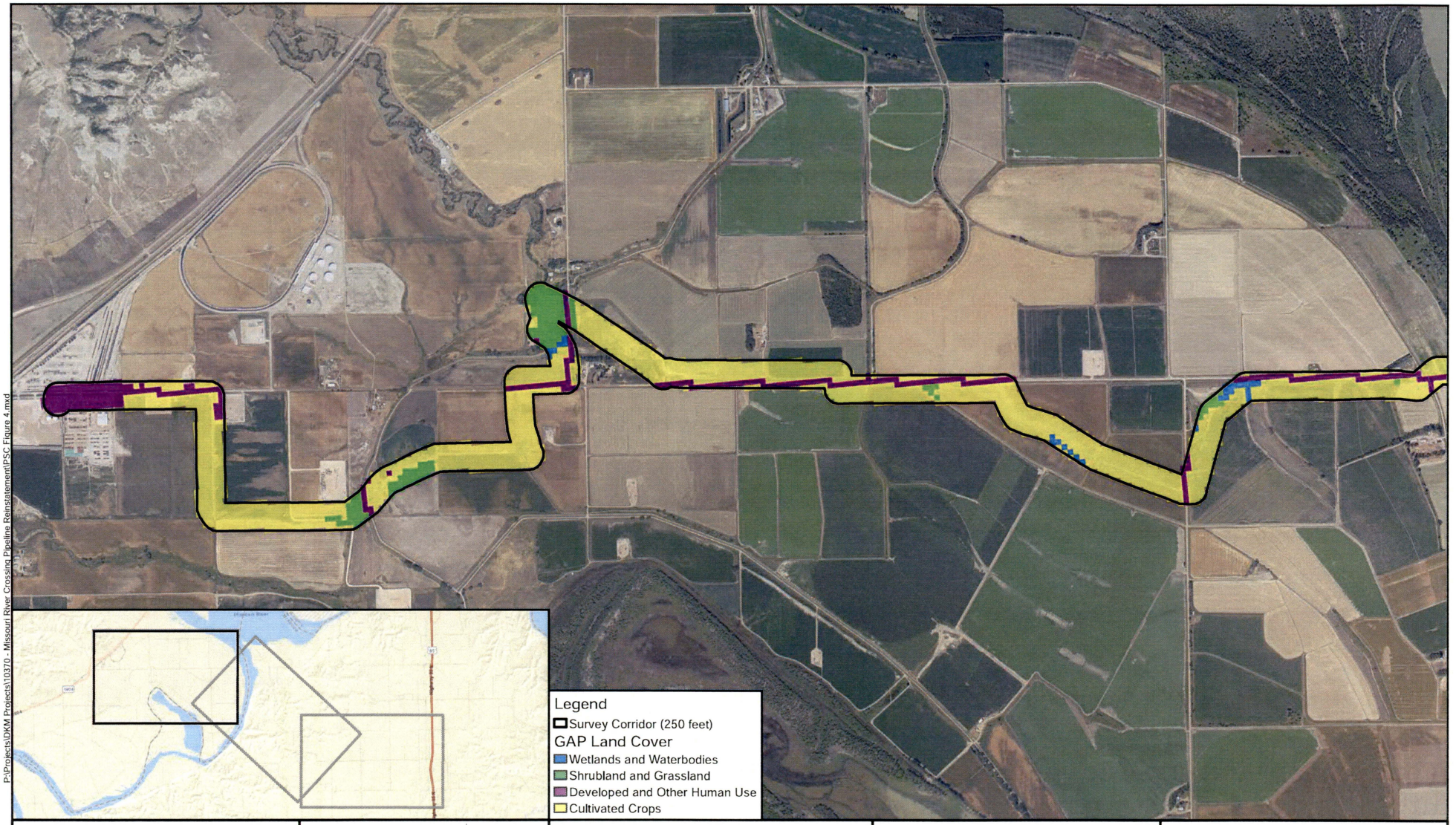
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0 200 Feet
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May 2024

Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
Williams and McKenzie County
North Dakota

Figure 3.24
Natural Resources -
Aerial Map



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May 2024

CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

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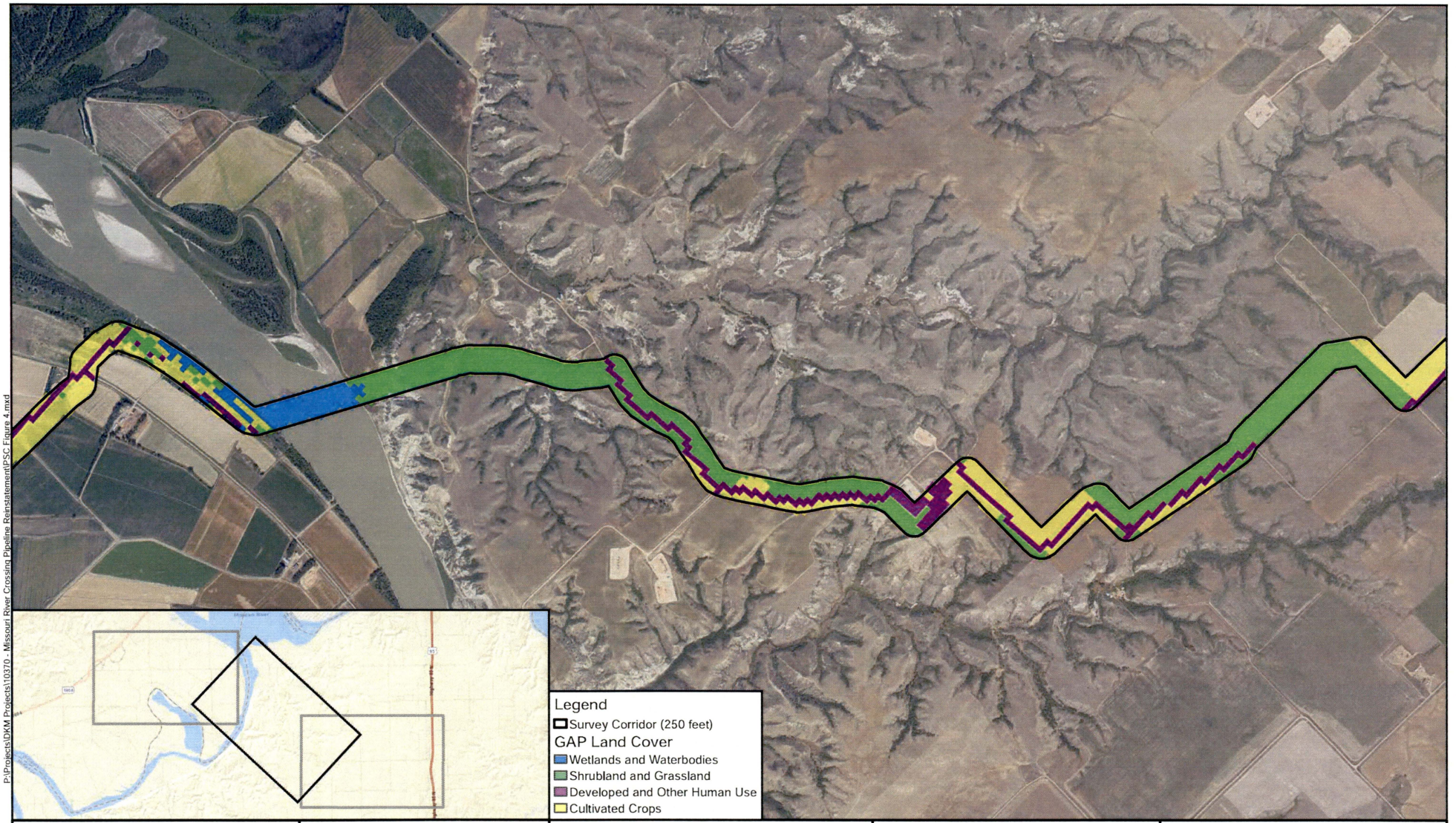
0 0.3 Miles

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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
McKenzie and Williams County
North Dakota

Figure 4.1
Land Cover Map



P:\Projects\DKM Projects\10370 - Missouri River Crossing Pipeline Reinstatement\PSC Figure 4.mxd

May 2024

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ENGINEERING \ SURVEYING \ ENVIRONMENTAL

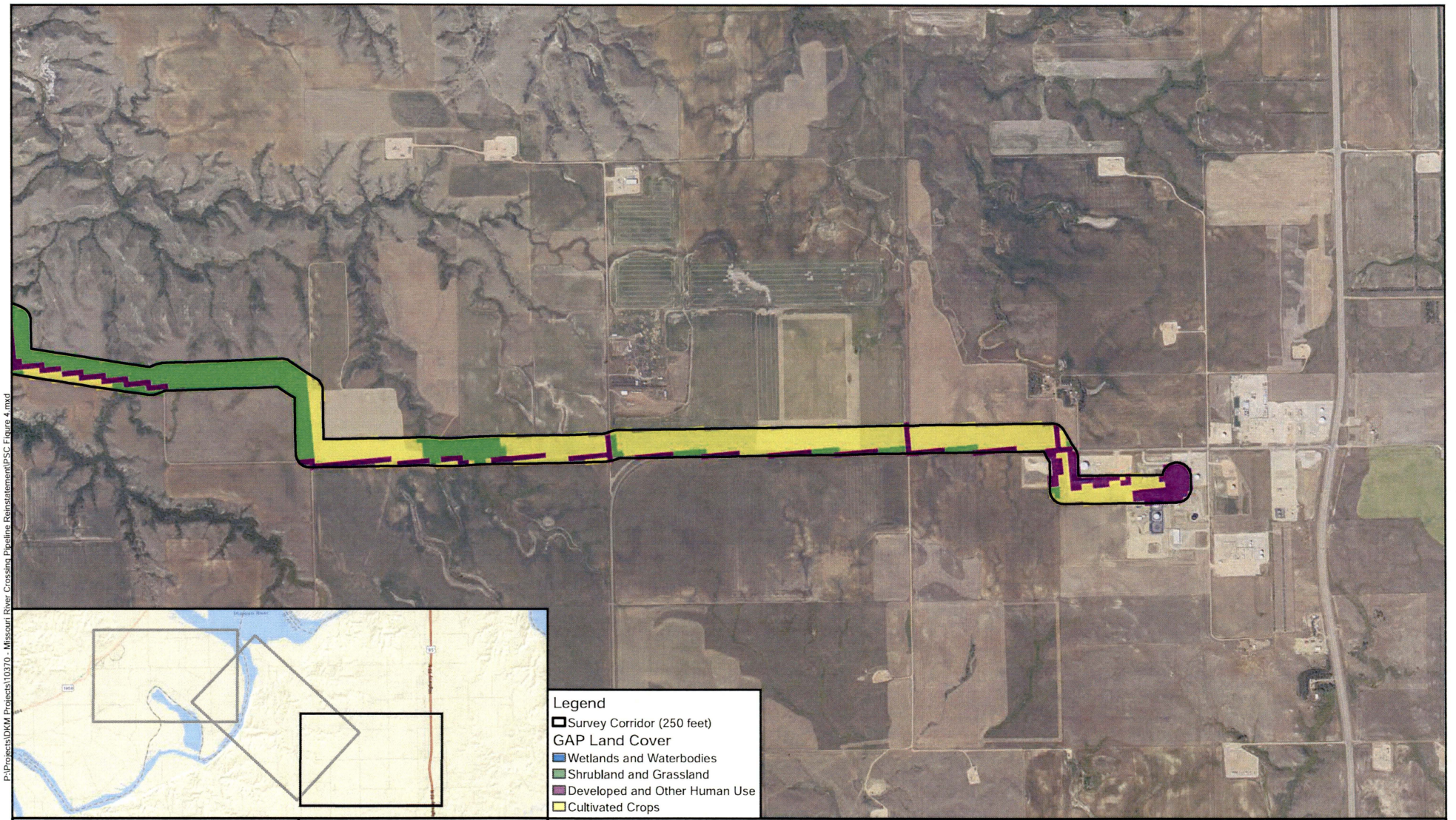
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0 0.3 Miles

Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
McKenzie and Williams County
North Dakota

Figure 4.2
Land Cover Map



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May 2024

CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

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0 0.3 Miles

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Public Service Commission
Consolidated Application

Missouri River Crossing
Pipeline Reinstatement
McKenzie and Williams County
North Dakota

Figure 4.3
Land Cover Map

APPENDIX C: AGENCY CONSULTATION AND CONSULTATION SUMMARY TABLE

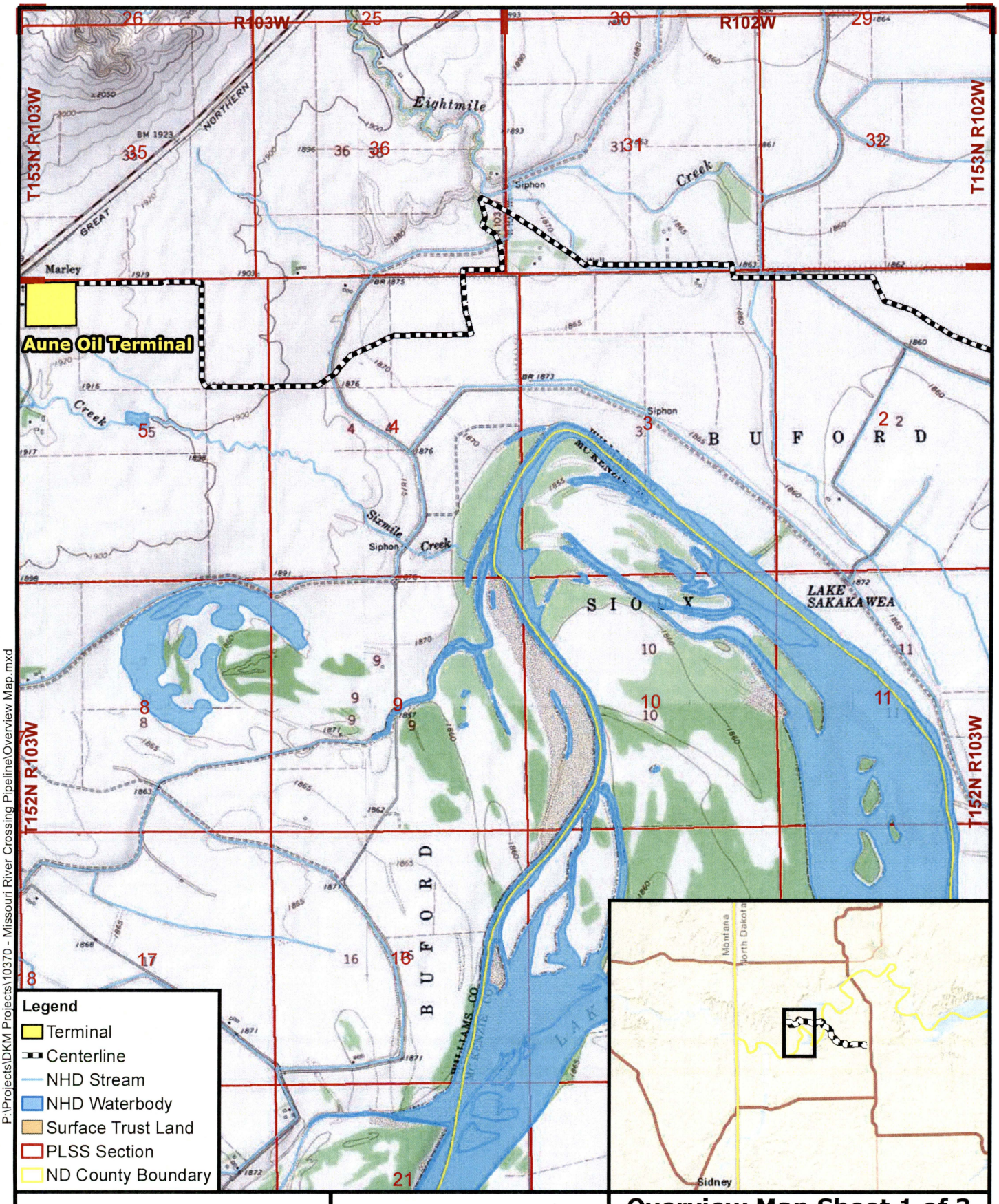
Agency	Date Mailed	Agency Response Date	Agency Comments	Response to Agency	Response Summary
U.S. Fish and Wildlife Services North Dakota Ecological Services Field Office	07/20/23	Did not respond			
USACE-Regulatory Office Omaha District	07/20/23	11/29/23	No additional permitting required. The existing permit needs to be transferred to Grayson Mill.		
USACE-Garrison Project	07/20/23	Did not respond			
North Dakota Department of Environmental Quality-Environmental Health Section	07/20/23	Did not respond			
North Dakota Department of Trust Lands-School/Surface Lands	07/20/23	08/01/23	Access needs to occur within the granted permanent ROW space. Any new proposed project and construction would need to apply for a ROW.		
North Dakota Game and Fish Department-Conservation and Communication Division	07/20/23	07/25/23	Department recommends additional precautions be implemented into the pipeline due to importance of Missouri River habitat (i.e., pressure sensing valves on both sides of waterway).		
North Dakota Geological Survey	07/20/23	08/07/23	Identified potential landslide areas near pipeline.		
North Dakota Indian Affairs Commission	07/20/23	Did not respond			
North Dakota Industrial Commission-Pipeline Authority	07/20/23	Did not respond			

Agency	Date Mailed	Agency Response Date	Agency Comments	Response to Agency	Response Summary
North Dakota Parks and Recreation Department	07/20/23	08/14/23	The NDPRD's authority and expertise covers properties that the NDPRD owns, leases, or manages; properties protected under Section 6(f) of the Land and Water Conservation Fund (LWCF); and rare plants and ecological communities established through the Natural Heritage Program. The are no properties that NDPRD owns leases or manages affected by the Project. The Project does not affect any properties protected under Section 6(f) of the LWCF. The National Heritage biological conservation database currently does not contain records of historical plants or animal species of concern or other significant ecological communities within the Project area.		
North Dakota Department of Water Resources	07/20/23 04/02/24	08/15/23 04/17/24	• Project is located in a FEMA National Flood Insurance Program (NFIP) regulatory floodplain. The state of North Dakota does not have permitting authority; recommend working with local floodplain administrator. • Missouri River is considered navigable and therefore a sovereign water. Project(s) under or over navigable waters require authorization from the Department of Water Resources. • Relocation of emergency shut-off valves does not require authorization from the Department. Also, a change in Project ownership does not require a new or amended sovereign land permit. Project file for S-1749 will be updated to reflect the location of the east emergency shut-off valve and that the permit holder is now Grayson Mill Operating, LLC.		

Agency	Date Mailed	Agency Response Date	Agency Comments	Response to Agency	Response Summary
State Historical Society of North Dakota-Archaeology Historic Preservation Office	08/23	10/31/23	Concurrence letter received from William D. Peterson, State Historic Preservation Officer. See Appendix E		
Western Area Water Supply Authority	07/20/23	Did not respond			
McKenzie County Board of Commissioners	07/20/23	Did not respond			
McKenzie County Emergency Management	07/20/23	Did not respond			
McKenzie County Planning and Zoning	07/20/23	Did not respond			
McKenzie County Water Resources District	07/20/23	Did not respond			
Williams County Commissioners	07/20/23	Did not respond			
Williams County Planning & Zoning Department	07/20/23	Did not respond			
Williams County Water Resources Board	07/20/23	08/15/23	Williams County Resource District Board has no objections to the Project.		

Consultation Maps

Maps utilized for all Agency consultations.



P:\Projects\DKM Projects\10370 - Missouri River Crossing Pipeline\Overview Map.mxd

July 2023

CARLSON McCAIN
ENGINEERING \ SURVEYING \ ENVIRONMENTAL

1:31,680

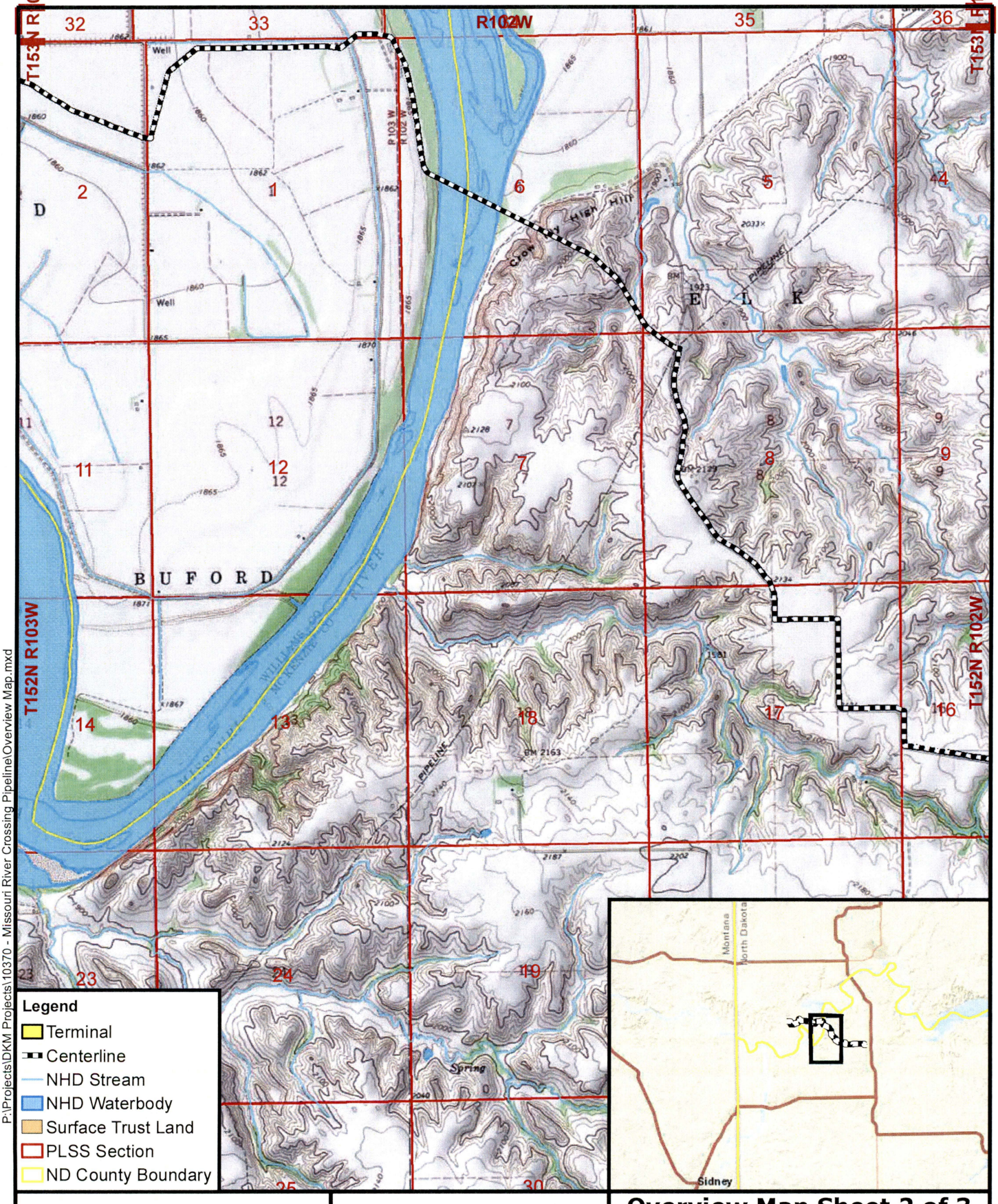
0 0.5 Miles

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Basemap: USGS 7.5 Min Quadrangle

Overview Map Sheet 1 of 3
Missouri River Crossing Pipeline Reinstatement

Grayson Mill Energy
Williams & McKenzie County, ND



P:\Projects\DKM Projects\10370 - Missouri River Crossing Pipeline\Overview Map.mxd

July 2023

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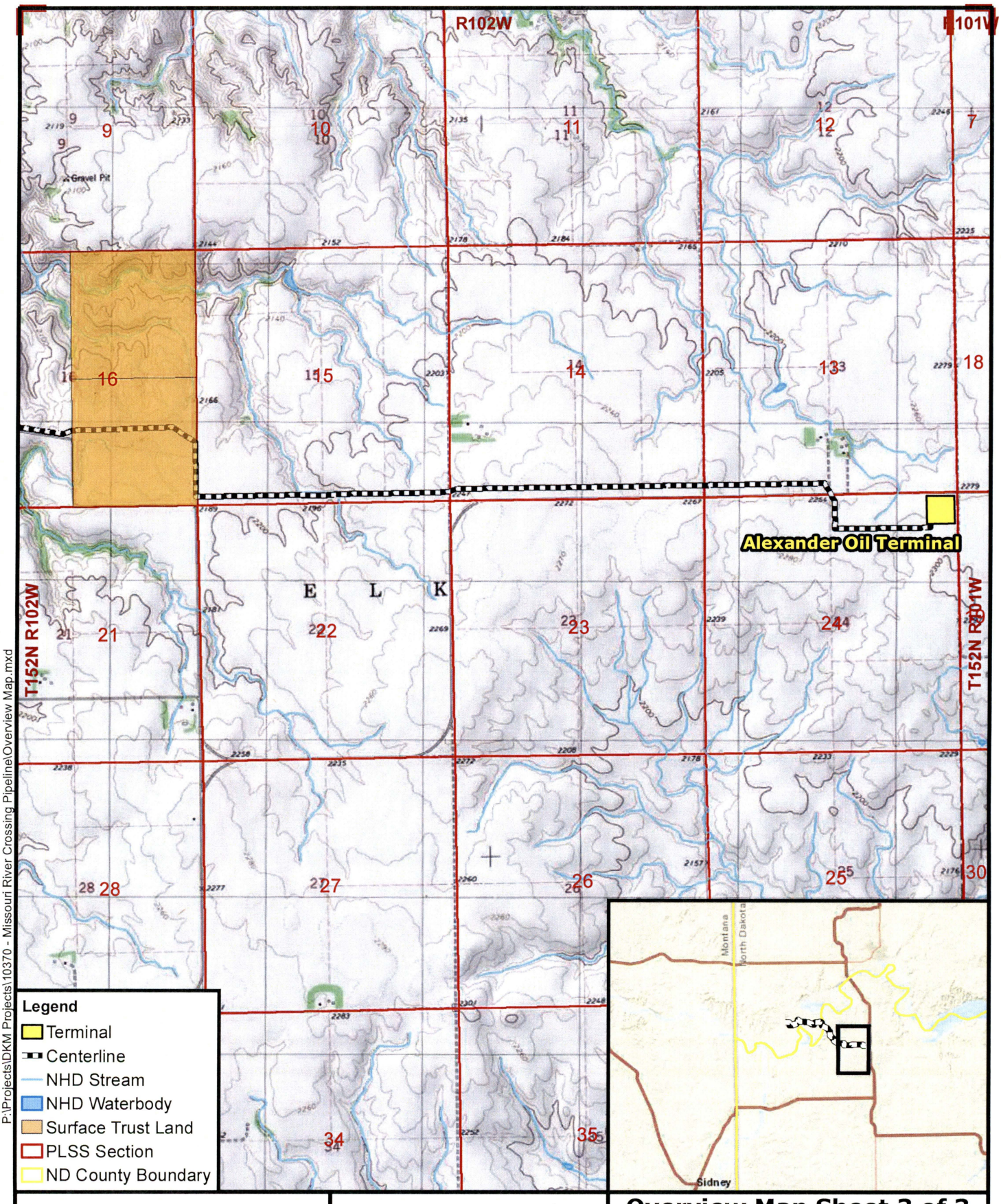
0 0.5 Miles

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Basemap: USGS 7.5 Min Quadrangle

Overview Map Sheet 2 of 3
Missouri River Crossing Pipeline Reinstatement

Grayson Mill Energy
Williams & McKenzie County, ND



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July 2023

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Overview Map Sheet 3 of 3
Missouri River Crossing Pipeline Reinstatement

Grayson Mill Energy
Williams & McKenzie County, ND

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Luke Toso
U.S. Fish and Wildlife Service
North Dakota Ecological Services-Field Office
3425 Miriam Ave.
Bismarck, ND 58501-7926

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Mr. Toso,

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

Description of Facilities

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However, other permits have been secured for the construction and operation of the Pipeline. Glacier Peak Midstream LLC, a Grayson Mill subsidiary, has secured a transfer of USACE NOW-2011-BIS and Consent to Easement DACW45-9-12-8007 from the US Army Corps. of Engineers. The North Dakota Sovereign Land Permit S-1749-B originally issued to Brigham and transferred to Equinor for crossing the Missouri River has now been transferred to Grayson Mill.

The Pipeline contains a leak detection system. Volumes leaving the Alexander terminal will have a Coriolis meter at the booster skid to measure crude oil shipped in the Pipeline. There will also be an inlet Coriolis meter to measure the received barrels from the Pipeline to the Aune terminal. If the received barrel versus shipped barrel percentage difference is above the acceptable limits, the Pipeline will be shut in so no oil can enter the Pipeline. Prior to operation, the Pipeline will be hydrostatically tested and an internal line inspection will be performed.

After acquiring the Pipeline and evaluating plans to return it to operation, Grayson Mill became aware that no Certificate of Corridor Compatibility or Route Permit (Permit) appear to have been obtained from the North Dakota Public Service Commission (Commission). This letter is notification that Grayson Mill intends to obtain a permit from the Commission and to advise you that your agency has the opportunity to participate in the regulatory process should you choose to comment on the Project. should you choose to comment, a timely response is respectfully requested.

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

U.S. Army Corps of Engineers - Regulatory

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Jason Renschler
U.S. Army Corps of Engineers-Omaha District
3319 University Street
Bismarck, ND 58504

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

From:	Kerry Morgan
To:	Todd Hartleben
Subject:	FW: DACW45-9-12-8007, NWO-2011-2353-BIS
Date:	Wednesday, November 29, 2023 2:54:25 PM
Attachments:	image001.png

GRAYSON MILL
ENERGY

Kerry Morgan |DOT/PHMSA Specialist
kmorgan@gmellc.com
Cell: 701.580.9399

From: Erhardt, Toni R CIV USARMY CENWO (USA) <Toni.R.Erhardt@usace.army.mil>
Sent: Wednesday, October 19, 2022 3:27 PM
To: Kerry Morgan <kmorgan@gmellc.com>
Cc: Kuhn, Francis D CIV USARMY USACE (USA) <Francis.D.Kuhn@usace.army.mil>; Kjelstrup, Taryn L CIV USARMY CENWO (USA) <Taryn.L.Kjelstrup@usace.army.mil>; Couchey, Luke D CIV USARMY CENWO (USA) <Luke.D.Couchey@usace.army.mil>
Subject: RE: DACW45-9-12-8007, NWO-2011-2353-BIS

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::Please click the Report Message Add-In if you don't recognize the sender::

Changing out the ESD valve would be considered maintenance of the pipeline for easement purposes. And as long as the valve is not located in waters of the US, changing it out wouldn't trigger the need for additional authorization from Regulatory.

With that being said, just be aware that neither the permit nor the easement is in GMO's name. I can't stress enough the importance of getting this issue resolved as soon as possible.

Real Estate should be getting in touch with you soon about the process and information necessary to request a transfer and modification of the easement.

Toni

From: Kerry Morgan <kmorgan@gmellc.com>
Sent: Wednesday, October 19, 2022 1:40 PM
To: Erhardt, Toni R CIV USARMY CENWO (USA) <Toni.R.Erhardt@usace.army.mil>
Subject: [Non-DoD Source] RE: DACW45-9-12-8007, NWO-2011-2353-BIS

Toni, one thing that came up here. The conversion to gas service is 2 years away, in the interim GMO plans install a new ESD valve on the west side of the river. So I also need to find out what would be required for this work.

Thanks

GRAYSON MILL
ENERGY

Kerry Morgan | DOT/PHMSA Specialist
kmorgan@gmellc.com
Cell: 701.580.9399

From: Erhardt, Toni R CIV USARMY CENWO (USA) <Toni.R.Erhardt@usace.army.mil>
Sent: Wednesday, October 19, 2022 10:42 AM
To: Kerry Morgan <kmorgan@gmellc.com>
Subject: RE: DACW45-9-12-8007, NWO-2011-2353-BIS

!!CAUTION!!
This email originated from outside of the organization. DO NOT click links or open attachments unless you recognize the sender and know the content is safe!!!
::Please click the Report Message Add-In if you don't recognize the sender::

Kerry, As long as no work in the Lake needs to occur to accommodate the conversion of use, our permit can be transferred as it covers construction and not operation. The easement may be a little more complicated and real estate is discussing what needs to happen. As soon as the decision is made, we'll let you know. FYI. The processes need to be done concurrently. Toni

From: Kerry Morgan <kmorgan@gmellc.com>
Sent: Friday, October 14, 2022 11:35 AM
To: Kjelstrup, Taryn L CIV USARMY CENWO (USA) <Taryn.L.Kjelstrup@usace.army.mil>; Erhardt, Toni R CIV USARMY CENWO (USA) <Toni.R.Erhardt@usace.army.mil>
Subject: [Non-DoD Source] DACW45-9-12-8007, NWO-2011-2353-BIS

Grayson Mill Operating LLC proposes to convert the 8" Crude Oil Line in the above referenced permits to Natural Gas service.
What are the Corp requirements for moving forward with this project.

Would it require a new Section 408 Permit and then a new Consent to easement permit, or can the existing permits be revised.

Best Regards

GRAYSON MILL
ENERGY

U.S. Army Corps of Engineers - Garrison Project

July 20, 2023

US Army Corps of Engineers
Garrison District
201 First St
Riverdale, ND 58565

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Sir or Madam,

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

David L. Glatt, PE
Director
North Dakota Department of Environmental Quality
4201 Normandy Street
Bismarck, ND 58503-1324

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

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CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Mike Humann, Director
North Dakota Department of Trust Lands
School/Surface Trust Lands
1707 North 9th Street
Bismarck, ND 58501

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

From:	Danielle Karasov
To:	Todd Hartleben
Subject:	FW: Missouri River Crossing Pipeline Reinstatement - Grayson Mill
Date:	Monday, August 14, 2023 6:54:39 PM
Attachments:	SCAN_23072510250.pdf ROW #5877Conveyance.pdf image001.png

Thank you,

Danielle Karasov
Environmental Consultant

CARLSON McCAIN

15650 36TH AVE N, SUITE 110 \ PLYMOUTH, MN 55446
TEL 952-346-3874 \ CELL 763-284-4667 \ FAX 952-346-3874
CARLSONMCCAIN.COM

This message is intended for the individual or entity named above. If you are not the intended recipient, please do not read, copy or disclose this communication to others. Thank you.

From: -Info-Land Dept. ROW <landrow@nd.gov>
Sent: Tuesday, August 1, 2023 5:29 PM
To: Danielle Karasov <dkarasov@carlsonmccain.com>
Cc: -Info-DTL General Inquiries <dtlrequest@nd.gov>
Subject: RE: Missouri River Crossing Pipeline Reinstatement - Grayson Mill

Hello,

Thank you for the notification. The attached received letter references ROW 5877 (originally granted to Brigham Oil & Gas LP in 2011; attached) and crosses McKenzie T152N-R102W- Sec 16-SE4. Please remember that all access needs to occur within the granted permanent ROW space as depicted and described in the respective agreement(s).

Any damage must be reported to NDDTL and repaired in accordance with the respective agreement. NDDTL reclamation contacts are Cory Barth (cjbarth@nd.gov) and Garret Hecker (ghecker@nd.gov).

Any new proposed projects and construction 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 Department via emailing landrow@nd.gov or calling 701-328-2800.

Sincerely,

North Dakota Department of Trust Lands

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Greg Link
North Dakota Game and Fish Department
Conservation and Communication Division
100 North Bismarck Expressway
Bismarck, ND 58501-5095

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Mr. Link,

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

Description of Facilities

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However, other permits have been secured for the construction and operation of the Pipeline. Glacier Peak Midstream LLC, a Grayson Mill subsidiary, has secured a transfer of USACE NOW-2011-BIS and Consent to Easement DACW45-9-12-8007 from the US Army Corps. of Engineers. The North Dakota Sovereign Land Permit S-1749-B originally issued to Brigham and transferred to Equinor for crossing the Missouri River has now been transferred to Grayson Mill.

The Pipeline contains a leak detection system. Volumes leaving the Alexander terminal will have a Coriolis meter at the booster skid to measure crude oil shipped in the Pipeline. There will also be an inlet Coriolis meter to measure the received barrels from the Pipeline to the Aune terminal. If the received barrel versus shipped barrel percentage difference is above the acceptable limits, the Pipeline will be shut in so no oil can enter the Pipeline. Prior to operation, the Pipeline will be hydrostatically tested and an internal line inspection will be performed.

After acquiring the Pipeline and evaluating plans to return it to operation, Grayson Mill became aware that no Certificate of Corridor Compatibility or Route Permit (Permit) appear to have been obtained from the North Dakota Public Service Commission (Commission). This letter is notification that Grayson Mill intends to obtain a permit from the Commission and to advise you that your agency has the opportunity to participate in the regulatory process should you choose to comment on the Project. should you choose to comment, a timely response is respectfully requested.

Carlson McCain Inc. has been retained by Continental Resources, Inc. to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 763-284-4667 or dkarasov@carlsonmccain.com.

Sincerely,

Danielle Karasov

Attachment: Project Overview Map

NORTH Dakota | Game and Fish

Be Legendary.™

July 25, 2023

Danielle Karasov
Carlson McCain
15650 36th Avenue North, Suite 110
Plymouth, Minnesota 55446

Dear Ms. Karasov:

Re: Grayson Mill Missouri River Crossing Pipeline Reinstatement

The North Dakota Game and Fish Department has received notification of Grayson Mill proposing to reinstate a 14.72-mile long, 8-inch diameter crude oil pipeline connecting two terminals. The pipeline was originally constructed in 2012 but was drained, cleaned and filled with nitrogen in late 2017 or early 2018 and has not been operational since that time. The pipeline runs underneath the Missouri River equipped with a leak detection system that measures the volumes leaving the Alexander terminal and measured at the Aune terminal. If the received barrel versus shipped barrel percentage difference is above the acceptable limits, the pipeline will be shut so no oil can enter the pipeline. The pipeline crosses the Missouri River in Section 6, Township 152 North, Range 102 West in McKenzie County, North Dakota.

The Missouri provides excellent sportfishing opportunities and aquatic habitat within the State of North Dakota for which measures need to be taken to protect these resources. Additionally, this area of the Missouri River is important habitat for paddlefish and the federally endangered pallid sturgeon. Given the importance of the Missouri River and the risk for oil spills and pipe failures, the Department recommends additional precautions should be implemented into the design of pipes under the State's waterways. One primary means of minimizing a potentially large pipeline failure causing major impacts to aquatic species is to incorporate pressure sensing valves on both sides of the water way. These valves should be placed as close to the waterway as possible yet out of the flood plain to reduce the potential to get damaged from ice and other floating debris.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

blk

Governor Doug Burgum | Director Jeb Williams | Deputy Director Scott A. Peterson

100 North Bismarck Expressway | Bismarck ND, 58504-5095 | (701) 328-6300 | Fax: (701) 328-6352

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Fred Anderson
North Dakota Geological Survey
600 East Boulevard, Dept. 405
Bismarck, ND 58505

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Mr. Anderson,

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

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However, other permits have been secured for the construction and operation of the Pipeline. Glacier Peak Midstream LLC, a Grayson Mill subsidiary, has secured a transfer of USACE NOW-2011-BIS and Consent to Easement DACW45-9-12-8007 from the US Army Corps. of Engineers. The North Dakota Sovereign Land Permit S-1749-B originally issued to Brigham and transferred to Equinor for crossing the Missouri River has now been transferred to Grayson Mill.

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

From:	Danielle Karasov
To:	Todd Hartleben
Subject:	FW: N.D. Geological Survey: Grayson Mill - Missouri River Crossing Pipeline Reinstatement Comments
Date:	Monday, August 14, 2023 6:52:45 PM
Attachments:	image001.png image002.png

Thank you,

Danielle Karasov
Environmental Consultant

CARLSON McCAIN

15650 36TH AVE N, SUITE 110 \ PLYMOUTH, MN 55446
TEL 952-346-3874 \ CELL 763-284-4667 \ FAX 952-346-3874
CARLSONMCCAIN.COM

This message is intended for the individual or entity named above. If you are not the intended recipient, please do not read, copy or disclose this communication to others. Thank you.

From: Anderson, Fred J. <fjanderson@nd.gov>
Sent: Monday, August 7, 2023 10:11 AM
To: Danielle Karasov <dkarasov@carlsonmccain.com>
Subject: N.D. Geological Survey: Grayson Mill - Missouri River Crossing Pipeline Reinstatement Comments

Hello Ms. Karasov,

Thank you for the notice and opportunity to review the proposed project reinstatement.

It should be noted that the area of the pipeline crossing on the southeastern side of the Missouri River is an area where several landslide areas have been mapped. This suggests that this may be an area where future slope stability may be of concern and should receive additional review.

All our landslide maps and shapefiles are available on our website:
https://www.dmr.nd.gov/ndgs/landslides/

Please feel free to contact us if there are any additional questions or comments.

Regards,

Fred J. Anderson

Geologist, North Dakota Geological Survey

701.328.8000 (Survey Main Office) • 701.328.8037 (Office Direct) • fjanderson@nd.gov • www.dmr.nd.gov/ndgs

NORTH Dakota | Mineral Resources
Be Legendary.

701.328.8020 (Front Office) • oilandgasinfo@nd.gov • www.dmr.nd.gov • 600 E Boulevard Ave, Dept. 405 • Bismarck, ND 58505

ND Industrial Commission - Pipeline Authority

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Justin Kringstad
North Dakota Industrial Commission
Pipeline Authority
600 East Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Mr. Kringstad,

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Kathy Duttenhefner
North Dakota Dept. of Parks and Recreation
1600 East Century Ave., Suite 3
Bismarck, ND 58503-0649

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Ms. Duttenhefner.

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

NORTH Dakota | Parks & Recreation
Be Legendary.™

August 14, 2023

Carlson McCain
Danielle Karasov
15650 36th Ave. North, Suite 110
Plymouth, MN 55446

Re: Missouri River Crossing Pipeline Reinstatement Grayson Mill

Dear Danielle,

The North Dakota Parks and Recreation Department (NDPRD) has reviewed the above-referenced Missouri River Crossing Pipeline Reinstatement-Grayson Mill projectin Williams County, North Dakota.

NDPRD's scope of authority and expertise covers properties that NDPRD owns, leases, or manages; properties protected under Section 6(f) of the Land and Water Conservation Fund (LWCF); rare plants; and ecological communities established through the Natural Heritage Program.

The project does not appear to affect properties NDPRD owns, leases, or manages.
The project does not appear to affect any properties protected under Section 6(f) of the LWCF.

A North Dakota Natural Heritage biological conservation database query determines 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, no known plant or animal species of concern or significant ecological communities are documented within or immediately adjacent to the project site.

We appreciate your commitment to rare plant, animal, and ecological community conservation, management, and inter-agency cooperation. For additional information, please contact me at 701-328-5370, 701-220-3377 (cell), or kgduttenhefner@nd.gov.

Thank you for the opportunity to comment on the proposed project.

Sincerely,

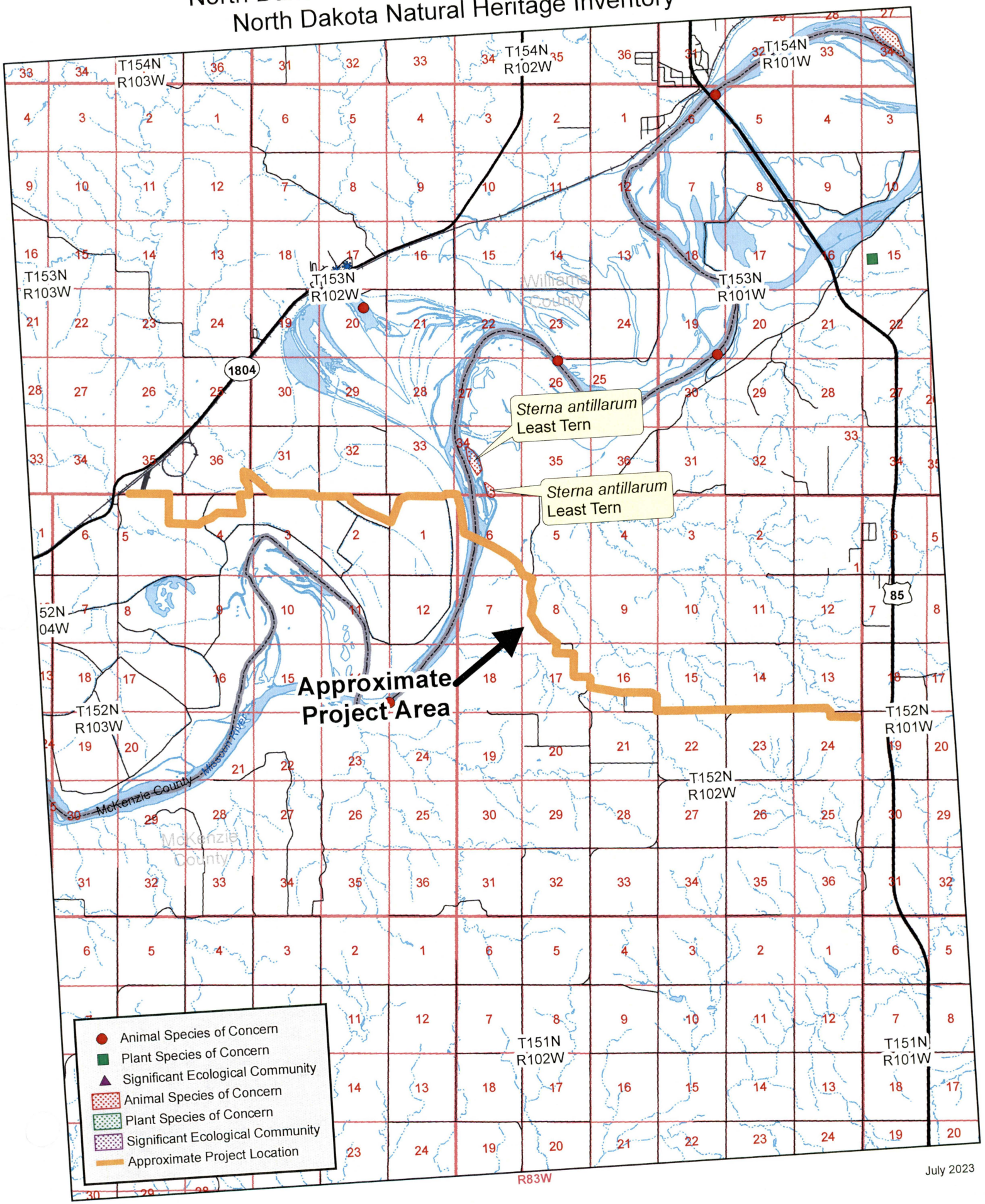
Kathy Duttenhefner

Kathy Duttenhefner, Chief Natural Resources Division

604 E Boulevard Ave Dept. 750 | Bismarck, ND 58505

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



July 2023

North Dakota | Parks & Recreation
Be Legendary.

North Dakota Natu ritage Inventory

Rare Animal and Plant Species and Significant Ecological Communities

State Scientific Name	State Common Name	State Rank	Global Rank	Federal Status	Township Range Section	County	Last Observation	Estimated Representation Accuracy	Precision
Sterna antillarum	Least Tern	S1	G4	PS:LE	153N102W - 34	McKenzie	2001-06-18	Medium	
Sterna antillarum	Least Tern	S1	G4	PS:LE	152N102W - 06; 153N102W - 34	McKenzie	1999-06-23	Medium	

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Department of Water Resources
C/O Project Review
900 East Boulevard Ave
Bismarck, ND 58505

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Sir or Madam,

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However, other permits have been secured for the construction and operation of the Pipeline. Glacier Peak Midstream LLC, a Grayson Mill subsidiary, has secured a transfer of USACE NOW-2011-BIS and Consent to Easement DACW45-9-12-8007 from the US Army Corps. of Engineers. The North Dakota Sovereign Land Permit S-1749-B originally issued to Brigham and transferred to Equinor for crossing the Missouri River has now been transferred to Grayson Mill.

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After acquiring the Pipeline and evaluating plans to return it to operation, Grayson Mill became aware that no Certificate of Corridor Compatibility or Route Permit (Permit) appear to have been obtained from the North Dakota Public Service Commission (Commission). This letter is notification that Grayson Mill intends to obtain a permit from the Commission and to advise you that your agency has the opportunity to participate in the regulatory process should you choose to comment on the Project. should you choose to comment, a timely response is respectfully requested.

Carlson McCain Inc. has been retained by Continental Resources, Inc. to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 763-284-4667 or dkarasov@carlsonmccain.com.

Sincerely,

Danielle Karasov

Attachment: Project Overview Map

NORTH Dakota | Water Resources

Be Legendary.

August 15, 2023

Danielle Karasov
Carlson McCain
15650 36 Avenue N, STE 110
Plymouth, MN 55446

Dear Ms. Karasov:

This is in response to your request for a review of the environmental impacts associated the Grayson Mill – Missouri River Crossing Pipeline Reinstatement project.

The proposed project has been reviewed by Department of Water Resources, and the following comments are provided:

- There is a FEMA National Flood Insurance Program (NFIP) regulatory floodplain identified or mapped where this proposed project is to take place. Impacted areas are designated to be in NFIP Zone A. The State of North Dakota has no formal NFIP permitting authority, as all NFIP permitting decisions are considered by impacted NFIP participating communities, which is the community with zoning authority for the area in question. Please work directly with the local floodplain administrator of the zoning authority impacted to achieve NFIP and community compliance.

- The Missouri River is considered navigable and therefore sovereign to the state of North Dakota. Any project which falls below, under or over the navigable water bodies in North Dakota require authorization from the Department of Water Resources. If there is any impact to the Ordinary High-Water Mark, a permit will be required. The application process requires the completion of the attached permit application, submittal of a map, and simple diagram of what the project may involve. There is no fee for the permit and we recommend about 90 days for processing. The permit lasts for the life of the project including repairs within the original footprint. If you have any questions, please reach out to Tia Dolechek at 701-328-4988, tdolechek@nd.gov or Jerry Heiser at 701-328-4935 or email gheiser@nd.gov.

- The project route traverses over, under, or through surface water resources. Consequently, the Department of Water Resources Engineering and Permitting Section requests to be notified regarding the project's impacts, if any, to water resources, such as watercourses (i.e., streams or rivers), agricultural drains, and wetlands (i.e. ponds, sloughs, lakes, or any series thereof), and dikes, levees, and other water control devices, as any alterations, modifications, improvements, or impacts to those may require a drainage permit(s) or a construction permit(s). For more information on these requirements, please visit the Regulation & Appropriation tab on the Department of Water Resources website (dwr.nd.gov) or contact the Regulatory Division directly at 701-328-2750 or dwrregpermits@nd.gov.

- 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 Department of Water Resources Water Appropriation Division if you have any questions at 701-328-2754 or appropinfo@nd.gov.

- The Department of Water Resources 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. Department of Water Resources 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 Appropriation Division. The Department of Water Resources 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 | Water Resources
Be Legendary.

April 17, 2024

Mr. Kerry Morgan
DOT/PHMSA Specialist
Grayson Mill Operating, LLC
840 W Sam Houston Pkwy N, Suite 300
Houston, TX 77024

Subject: Sovereign Land Permit No. S-1749

Dear Mr. Morgan:

Thank you for reaching out to the Department of Water Resources (Department) concerning Sovereign Land Permit No. S-1749 (S-1749) signed by the State Engineer on January 27, 2012, authorizing Brigham Oil & Gas, LP, Williston, North Dakota to install an 8-inch welded steel crude oil pipeline beneath the bed of the Missouri River in Williams and McKenzie Counties via horizontal directional drilling (HDD) (Project).

You stated that Grayson Mill Operating, LLC, Houston, Texas (Grayson Mill) has recently acquired the crude oil pipeline and is inquiring about the need and process to amend S-1749 to reflect the change in ownership and authorize the relocation of an emergency shut-off valve located on private land.

The Project as originally designed and authorized involved installing an 8-inch welded steel carrier pipe (Carrier Pipe) within a 12-inch welded steel casing pipe (Casing Pipe). The thought and intent of the design being that a "pipe within a pipe" would lessen the risk of crude oil loss into the environment should the Carrier Pipe fail. However, soon after the Project was authorized, the Department was made aware that the "pipe within a pipe" methodology of pipeline construction was no longer a recommended practice. Independent and pipeline industry research had concluded that the "pipe within a pipe" method of installation could actually increase the risk of pipeline failure due primarily to damage that can occur to the Carrier Pipe's cathodic protection while installing the Carrier Pipe in the Casing Pipe.

In keeping with those industry recommendations, Brigham installed the Carrier Pipe without pulling it through a Casing Pipe as originally designed and authorized. While S-1749 was not amended to reflect this design and installation modification, it was documented by the Department in the Project file.

You provided that Brigham put the pipeline into service without incident and eventually sold the pipeline and associated assets to Statoil USA, now doing business as Equinor Pipeline, LLC, Stanford, Connecticut (Equinor). Equinor took the pipeline out of service in 2017 to accommodate relocating the east emergency shut-off valve to a location closer to the river in order to minimize the length of

pipeline between the north and south ESVs. Equinor did not relocate the ESV and the pipeline remains out of service.

Grayson Mill acquired the pipeline and other assets from Equinor in 2021 with the intent of putting the crude oil pipeline back into service. In preparation for that, Grayson Mill is seeking authorization to relocate the east emergency shut-off valve, amend S-1749 to reflect their ownership of the Project, as well as obtain a siting permit from the North Dakota Public Service Commission.

As we discussed in an April 2, 2024, phone conversation, the State of North Dakota takes title to the bed and banks of the Missouri River up to the ordinary high water mark (OHWM) as sovereign lands of the state. Any projects located at least partially within the OHWM of a navigable waterbody requires authorization from the Department prior to construction. While the location of emergency shut-off valves and other upland safety features are imperative to the safe and reliable operation and maintenance of that portion of the pipeline crossing the Missouri River, the Department does not directly authorize those Project features that occur entirely above the OHWM of the river. As such, relocation of the emergency shut-off valves does not require authorization from the Department.

Also, a change in Project ownership does not require a new or amended sovereign land permit. The sovereign land permit is fully transferable to the new owner provided the new owner adheres to the project design and permit conditions as originally authorized or amended by the Department.

The Project file for S-1749 will be updated to reflect the location of the east emergency shut-off valve and that the permit holder is now:

Grayson Mill Operating, LLC
840 W Sam Houston Parkway N, Suite 300
Houston, TX 77024

Thank you again for reaching out to the Department and for your assistance in this effort. If you have any questions or if we can be of further assistance, please reach out to me by email at gheiser@nd.gov or by phone at (701) 328-4935.

Sincerely,



Gerald R. Heiser
Sovereign Land Manager

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Mark Owan, Chair
Western Area Water Supply Authority
117 East Broadway
PO Box 2343
Williston, ND 58802

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Mr. Owan,

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

Description of Facilities

The Aune Terminal is located on an approximately 30-acre tract in Lot 4 of Section 5, Township 152 North, Range 103 West, Williams County, ND, and receives crude oil from a Grayson Mill gathering system through two trunk lines. It provides short term storage for crude oil that can then be shipped to market by rail via the neighboring Savage rail loading facility immediately to the north of the terminal. The Aune Terminal includes two 40,000 barrel storage tanks, incoming skidded meter assemblies, outgoing metering assemblies with delivery pumps, pipeline pig receivers, a high BS&W storage tank with transfer pump, automation and electrical equipment and other site infrastructure.

The Alexander Terminal is located on an approximately 20-acre tract in the N½NE¼NE¼ of Section 24, Township 152 North, Range 102 West, McKenzie County, ND, and receives oil from Grayson Mill's South and McKenzie gathering systems and two truck unloading skids. Additionally, there will be the ability to ship and receive crude oil to and from the Aune Terminal once the Pipeline becomes operational. The Alexander Terminal is designed for a throughput of 20,000 barrels per day with crude oil exiting through the Bridger Sales LACT skid or the Enbridge/NorthStar Sales LACT skid which include pumps and metering to allow sales by pipeline. The Alexander Terminal also includes one 40,000 barrel API-650 internal floating roof storage tank, incoming skidded meter assemblies, outgoing metering assemblies with delivery pumps, pipeline pig receivers, automation and electrical equipment and other site infrastructure.

The Pipeline runs between the existing Aune and Alexander Terminals as reflected in the attached figure. It is an 8-inch outside diameter crude oil pipeline X42 with various wall thicknesses, including 0.219, 0.250, 0.312, 0.322 0.344, 0.375, 0.438 and 0.500. It was constructed in 2012 by Brigham Oil and Gas LP ("Brigham"). The majority of the line pipe is

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The Pipeline contains a leak detection system. Volumes leaving the Alexander terminal will have a Coriolis meter at the booster skid to measure crude oil shipped in the Pipeline. There will also be an inlet Coriolis meter to measure the received barrels from the Pipeline to the Aune terminal. If the received barrel versus shipped barrel percentage difference is above the acceptable limits, the Pipeline will be shut in so no oil can enter the Pipeline. Prior to operation, the Pipeline will be hydrostatically tested and an internal line inspection will be performed.

After acquiring the Pipeline and evaluating plans to return it to operation, Grayson Mill became aware that no Certificate of Corridor Compatibility or Route Permit (Permit) appear to have been obtained from the North Dakota Public Service Commission (Commission). This letter is notification that Grayson Mill intends to obtain a permit from the Commission and to advise you that your agency has the opportunity to participate in the regulatory process should you choose to comment on the Project. should you choose to comment, a timely response is respectfully requested.

Carlson McCain Inc. has been retained by Continental Resources, Inc. to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 763-284-4667 or dkarasov@carlsonmccain.com.

Sincerely,

Danielle Karasov

Attachment: Project Overview Map

McKenzie County Board of Commissioners

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Board of Commissioners
201 5th St NW
Ste. 543
Watford City, ND 58854

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

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Sincerely,

Danielle Karasov

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CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Karolin Jappe
Emergency Management
McKenzie County Public Works
1300 12th St SE
Watford City, ND 58854

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Ms. Jappe,

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Sincerely,

Danielle Karasov

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CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Sandee Kimpel
Planning & Zoning
1300 12th ST SE Suite 214
Watford City, ND 58854

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Ms. Kimpel,

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Danielle Karasov

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CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Water Resource District
1300 12th St SE
Suite 128
Watford City, ND 58854

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

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The Pipeline contains a leak detection system. Volumes leaving the Alexander terminal will have a Coriolis meter at the booster skid to measure crude oil shipped in the Pipeline. There will also be an inlet Coriolis meter to measure the received barrels from the Pipeline to the Aune terminal. If the received barrel versus shipped barrel percentage difference is above the acceptable limits, the Pipeline will be shut in so no oil can enter the Pipeline. Prior to operation, the Pipeline will be hydrostatically tested and an internal line inspection will be performed.

After acquiring the Pipeline and evaluating plans to return it to operation, Grayson Mill became aware that no Certificate of Corridor Compatibility or Route Permit (Permit) appear to have been obtained from the North Dakota Public Service Commission (Commission). This letter is notification that Grayson Mill intends to obtain a permit from the Commission and to advise you that your agency has the opportunity to participate in the regulatory process should you choose to comment on the Project. should you choose to comment, a timely response is respectfully requested.

Carlson McCain Inc. has been retained by Continental Resources, Inc. to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 763-284-4667 or dkarasov@carlsonmccain.com.

Sincerely,

Danielle Karasov

Attachment: Project Overview Map

Williams County Board of Commissioners

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Steve Kemp, Chair
Williams County Commissioners
206 E. Broadway
Williston, ND 58801

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Mr. Kemp,

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

Description of Facilities

The Aune Terminal is located on an approximately 30-acre tract in Lot 4 of Section 5, Township 152 North, Range 103 West, Williams County, ND, and receives crude oil from a Grayson Mill gathering system through two trunk lines. It provides short term storage for crude oil that can then be shipped to market by rail via the neighboring Savage rail loading facility immediately to the north of the terminal. The Aune Terminal includes two 40,000 barrel storage tanks, incoming skidded meter assemblies, outgoing metering assemblies with delivery pumps, pipeline pig receivers, a high BS&W storage tank with transfer pump, automation and electrical equipment and other site infrastructure.

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The Pipeline runs between the existing Aune and Alexander Terminals as reflected in the attached figure. It is an 8-inch outside diameter crude oil pipeline X42 with various wall thicknesses, including 0.219, 0.250, 0.312, 0.322 0.344, 0.375, 0.438 and 0.500. It was constructed in 2012 by Brigham Oil and Gas LP ("Brigham"). The majority of the line pipe is 0.250, 0.312, 0.322 and the river crossing is 0.500 wt. Flowrate ranges from 5,000 to 50,000

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Kameron Hymer
Development Services Director
Williams County Planning & Zoning Department
PO Box 2047
Williston, ND 58802-2047

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Mr. Hymer,

Grayson Mill acquired the North Dakota assets of Equinor Energy L.P. in January of 2021. As is relevant to this letter, the Equinor acquisition included the following assets: 1) the Aune Oil Terminal in Williams County, North Dakota; 2) the Alexander Oil Terminal in McKenzie County, North Dakota; and 3) an approximately 14.72-mile long, 8-inch diameter crude oil pipeline ("Pipeline") connecting the two terminals. The Pipeline has been inactive since prior to the Equinor acquisition. Grayson Mill is seeking to bring the Pipeline back into operation.

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Danielle Karasov

Attachment: Project Overview Map

Williams County Water Resources Board

CARLSON McCAIN

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

July 20, 2023

Beth Innis
Williams County Water Resources Board
PO Box 2047
Williston, ND 58802-2047

Re: Missouri River Crossing Pipeline Reinstatement
Grayson Mill

Dear Ms. Innis,

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Sincerely,

Danielle Karasov

Attachment: Project Overview Map

From:	Danielle Karasov
To:	Todd Hartleben
Subject:	Fwd: Missouri River Crossing Pipeline Reinstatement - Williams County Water Resource District SOV Response
Date:	Friday, August 18, 2023 1:56:42 PM

Danielle Karasov
Environmental Consultant

15650 36TH AVE N, SUITE 110 \ PLYMOUTH, MN 55446
TEL 952-346-3874 \ CELL 763-284-4667 \ FAX 952-346-3874
CARLSONMCCAIN.COM

This message is intended for the individual or entity named above. If you are not the intended recipient, please do not read, copy or disclose this communication to others. Thank you.

Begin forwarded message:

From: Kevin Ploof <Kevin.Ploof@ackerman-estvold.com>
Date: August 18, 2023 at 09:09:46 CDT
To: Danielle Karasov <dkarasov@carlsonmccain.com>
Cc: "Beth M. Innis" <BethI@co.williams.nd.us>, "Drew (drewp@wdwnd.com)" <drewp@wdwnd.com>, tanner <tanner.overland@gmail.com>, Bill <bjsheldn@nccray.com>, "Buckshot (rockyhills@hotmail.com)" <rockyhills@hotmail.com>, Ken <btid@nemont.net>
Subject: Missouri River Crossing Pipeline Reinstatement - Williams County Water Resource District SOV Response

Danielle,

The Williams County Water Resource District Board (Board) reviewed the Solicitation of Views (SOV) letter regarding the Missouri River Crossing Pipeline Reinstatement from Grayson Mill. The Board has no objections to the reinstatement of the described pipeline.

Regards,
Kevin

Kevin Ploof, REHS/RS
Environmental Specialist
Williams County Water Board Engineer
Ackerman-Estvold
1907 17th Street SE
Minot, ND 58701
Office: 701.837.8737
Direct: 701.857.9165

www.ackerman-estvold.com
Follow us on Facebook LinkedIn Instagram and Twitter


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APPENDIX D: NATURAL RESOURCE REPORT

NATURAL RESOURCES REPORT

Missouri River Crossing Pipeline Reinstatement
McKenzie and Williams County, North Dakota

Carlson McCain Project #10370-00

Prepared for:

Grayson Mill
840 West Sam Houston Parkway North
Suite 300
Houston, TX 77024

June 9, 2023

CARLSON McCAIN

15650 36TH AVENUE N, SUITE 110
PLYMOUTH, MN 55446

TEL 952.346.3900
FAX 952.346.3901

CARLSONMCCAIN.COM

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

TABLE OF CONTENTS

1.0 SCOPE OF WORK 1

2.0 PROCEDURES 2

2.1 Wetland and Waterbody Field Determination 2

2.2 Federally Listed Wildlife Species Evaluation 2

2.3 Noxious Weed Inventory 3

2.4 Woody Vegetation (tree and shrub) Inventory 3

2.5 Nesting Raptor Survey 3

3.0 RESULTS 4

3.1 Wetlands 4

3.2 Waterbodies 4

3.3 Ephemeral Drains 4

3.4 Threatened and Endangered Species Habitat Assessment 5

3.4.1 Northern Long-eared bat 5

3.4.2 Whooping Crane 6

3.4.3 Pallid Sturgeon 6

3.4.4 Dakota Skipper 7

3.4.5 Piping Plover 8

3.4.6 Rufa Red Knot 8

3.5 Noxious Weed Inventory 9

3.6 Woody Vegetation (Tree and Shrub) Inventory 10

3.7 Raptor Nest Survey 16

4.0 REFERENCES 17

TABLES

Table 1. Legal Descriptions 1

Table 2. Potential Federally Listed Threatened and Endangered Species 2

Table 3. North Dakota State and Williams County Listed Noxious and Invasive Weeds 3

Table 4. Project Wetlands 4

Table 5. Project Ephemeral Drains 5

Table 6. Noxious Weed Polygons 9

Table 7. Shrubs Locations (Polygons) 10

Table 8. Tree Locations (Points) 12

TABLE OF CONTENTS

APPENDICES

Appendix A	Figure 1. General Location
	Figure 2. Field Survey
	Figure 3. T/E Species Observations and Critical Habitat
Appendix B	Project Photographs

1.0 SCOPE OF WORK

Grayson Mill has proposed to develop the Missouri River Crossing Pipeline Reinstatement (Project) in Williams and McKenzie Counties, North Dakota. Carlson McCain was retained by Grayson Mill to provide environmental field services which included the identification of waterbody/wetland boundaries, an evaluation of the Project for federally listed species, a noxious weeds inventory, a woody vegetation inventory, and a line-of-sight raptor nest survey. The Project is approximate 14.7 miles in length (Appendix A, Figure1). Table 1 identifies the Public Land Survey System (PLSS) Sections that the Project is located within. The results of this evaluation are discussed in this report.

Table 1. Legal Descriptions

Sections	Township	Range	Project Feature
5-8, 13-17, & 21-24	152 North	102 West	Pipeline Centerline
31-34	153 North	102 West	Pipeline Centerline
1-5	152 North	103 West	Pipeline Centerline
35 & 36	153 North	103 West	Pipeline Centerline

The Survey Corridor was 250-feet wide; 125-feet either side of the proposed pipeline centerline. The Survey Corridor of the Project contains approximately 889.4 acres. Carlson McCain environmental scientist, Danny Margarit, performed the field survey May 15-17, 2023. Geospatial field data was collected using a Sony Xperia Android Tablet paired with an EOS ARROW Lite global positioning system capable of recording data to sub-meter accuracy.

2.0 PROCEDURES

2.1 Wetland and Waterbody Field Determination

Wetland identification utilized hydrological indicators found on-site such as the presence or absence of hydric vegetation and topographic position. Waterbody boundaries were recorded utilizing the criteria and definitions provided by the U.S. Army Corps of Engineers Ordinary High Water Mark criteria and definitions provided by the U.S. Environmental Protection Agency in *Draft Guidance on Identifying Waters Protected by the Clean Water Act*. Wetlands and waterbodies were field classified in accordance with guidelines set forth in the *Classification of Wetlands and Deepwater Habitats of the United* States by the Federal Geographic Data Committee. The following resources were reviewed prior to the wetland field delineation to aid in identifying potential wetlands within the Project Area: National Agriculture Imagery Program (NAIP) aerial photographs; U.S. Fish and Wildlife Service National Wetland Inventory; U.S. Geological Survey National Hydrography Dataset; and the digital web soil survey. The vegetation within the area surveyed was characterized using the hydrophytic criteria as outlined in the Manual and the *National Wetland Plant List*. No soil data was collected.

2.2 Federally Listed Wildlife Species Evaluation

Assessments for federally listed threatened and endangered species were conducted by evaluating historic accounts and reported occurrences of listed species within the Project Area. A desktop evaluation was conducted which was augmented with a field evaluation to confirm the presence or absence of potentially suitable habitat for federally listed species within the Survey Corridor. Background data was collected for preliminary review and to aid in the field inventory of the biological resources. The data utilized included the USFWS list of federally listed species for North Dakota, USFWS Designated Critical Habitat for Threatened and Endangered Species Geospatial Data, along with known range and habitat requirements for each species. Table 2 identifies the federally listed species with a potential of occurrence within the Survey Corridor.

Table 2. Potential Federally Listed Threatened and Endangered Species

Common Name	Scientific Name	Status
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered
Whooping Crane	*Grus americana*	Endangered
Dakota Skipper	*Hesperia dacotae*	Threatened
Piping Plover	*Charadrius melodus*	Threatened, Critical Habitat Designated
Red Knot	*Calidris canutus rufa*	Threatened
Pallid Sturgeon	*Scaphirhynchus albus*	Endangered
(USFWS IPaC 2023)		

2.3 Noxious Weed Inventory

North Dakota has 13 state-listed noxious weeds. Williams County lists one and the McKenzie County lists four additional species as invasive (NDDA 2023). Table 3 provides a list of noxious and/or invasive weed species listed for the Survey Corridor.

Table 3. State and County Listed Noxious and Invasive Weeds

North Dakota State Listed Noxious Weeds		Williams County Invasive Weeds	
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Absinth Wormwood	*Aremisia absinthium*	Narrowleaf Hawksbeard	*Crepis tectorum*
Canada Thistle	*Cirsium arvense*	**McKenzie County Invasive Weeds**	
Dalmatian Toadflax	*Linaria genistifolia*	**Common Name**	**Common Name**
Diffuse Knapweed	*Centaurea diffusa*	Halogeton	*Halogeton glomeratus*
Houndstongue	*Cynoglossum officinale*	Burdock	*Arctium minus*
Leafy Spurge	*Euphorbia esula*	Black Henbane	*Hyoscyamus niger*
Musk Thistle	*Carduus nutans*	Baby's Breath	*Gypsophila paniculata*
Palmer Amaranth	*Amaranthus palmeri*		
Purple Loosestrife	*Lythrum salicaria*		
Russian Knapweed	*Acroptilon repens*		
Saltcedar	*Tamarix chinensis*		
Spotted Knapweed	*Centaurea maculosa*		
Yellow Toadflax	*Linaria vulgaris*		

2.4 Woody Vegetation (tree and shrub) Inventory

The tree and shrub inventory utilized a methodology previously approved by the North Dakota Public Service Commission. Trees and shrubs were recorded within the Survey Corridor that could potentially be cleared by the Project, including those that are considered invasive species. The location, number, and species of each tree and shrub were documented for this inventory. The potential impact to trees and shrubs was enumerated by one of two methods: individual count; or by inference utilizing a representative subsample plot, to count and then extrapolate the number of individuals or stems based upon the area within the Survey Corridor.

2.5 Nesting Raptor Survey

A one-half mile line-of-sight survey for nesting raptors was conducted for the Project. Binoculars with 10 power magnification were used to aid in the efforts.

3.0 RESULTS

3.1 Wetlands

A total of 14 wetlands were recorded ", "during the field visit to the Survey Corridor. The combined acreage of the 14 wetlands is approximately 2.37 acres. Five of the wetlands are within drainage features, seven wetlands are isolated depressions, and the remaining two are fed by groundwater seeps. Wetland information is summarized in Table 4 and their locations are identified in Appendix A, Figure 2. Photographs of the Survey Corridor are included in Appendix B.

Table 4. Project Wetlands

Feature	Type	Cowardin Classification	Acres	Comments	Latitude	Longitude
Wetland 1	Man-Made	PSSA	0.033	Drainage	48.0243988	-103.814003
Wetland 2	Man-Made	PEMC	0.091	Depression	48.0242004	-103.814003
Wetland 3	Man-Made	PEMC	0.110	Depression	48.0241013	-103.8119965
Wetland 4	Man-Made	PEMC	0.038	Depression	48.0241013	-103.810997
Wetland 5	Natural	PEMC	0.107	Depression	48.0144997	-103.7860031
Wetland 6	Natural	PEMB	0.412	Saline seep	48.0085983	-103.7770004
Wetland 7	Natural	PEMA	0.294	Drainage	48.0096016	-103.7770004
Wetland 8	Natural	PEMB	0.049	Hillside seep	48.009201	-103.776001
Wetland 9	Natural	PEMC	0.062	Depression	47.9872017	-103.7610016
Wetland 10	Natural	PEMC	0.008	Depression	47.9822998	-103.7429962
Wetland 11	Natural	PUBH	0.139	Drainage	47.9794998	-103.7249985
Wetland 12	Natural	PUBH/PEMC	0.938	Drainage	47.9790993	-103.7229996
Wetland 13	Natural	PEMC	0.069	Drainage	47.9790993	-103.7200012
Wetland 14	Natural	PEMC	0.021	Depression	47.9766006	-103.6790009
Total			**2.37**			

3.2 Waterbodies

The Missouri River intersects the Survey Corridor, at approximately its midway point. It spans approximately 1,624 feet at this location. In addition, an unnamed creek meanders through the Survey Corridor in Section 36, T 153N, R 103W. It spans approximately 507 feet at this location.

3.3 Ephemeral Drains

The field survey identified seven ephemeral drains within the Survey Corridor. These features convey upland water during high moisture periods, but the hydrology of these sites is insufficient to support hydric vegetation. The delineated ephemeral drains have a combined length of 1,684 feet. Ephemeral drain information is summarized in Table 5 and their locations are identified in Appendix A, Figure 2. Photographs of the Survey Corridor are included in Appendix B.

Table 5. Project Ephemeral Drains

Feature	Type	Cowardin Classification	Length	Latitude	Longitude
Ephemeral Drain 1	Upland Drainage	R6-Ephermal Riverine	134	48.0094986	-103.7770004
Ephemeral Drain 2	Upland Drainage	R6-Ephermal Riverine	157	48.0056	-103.7730026
Ephemeral Drain 3	Upland Drainage	R6-Ephermal Riverine	142	47.9906998	-103.7659988
Ephemeral Drain 4	Upland Drainage	R6-Ephermal Riverine	103	47.9841995	-103.7529984
Ephemeral Drain 5	Upland Drainage	R6-Ephermal Riverine	497	47.982399	-103.7419968
Ephemeral Drain 6	Upland Drainage	R6-Ephermal Riverine	278	47.9793015	-103.7210007
Ephemeral Drain 7	Stormwater Drainage	R6-Ephermal Riverine	372	47.9770012	-103.6750031
Total			**1,684**		

3.4 Threatened and Endangered Species Habitat Assessment

Threatened and endangered species that have been documented and/or have the potential to occur within the Survey Corridor are listed in Table 2 along with designated critical habitat (USFWS 2023.) A review of USFWS species information datasets along with habitat data gathered from the on-site field surveys was conducted for the proposed Project. Threatened and endangered species information gathered from the review is documented below in the species discussions.

During the field surveys, no federally listed species were observed. Numerous trees with the potential to provide summer roosting habitat for the northern long-eared bat were documented throughout the Survey Corridor as were grain fields which may act as feeding grounds for migrating whooping crane flocks. The Missouri River (where it crosses the Survey Corridor) is designated as USFWS *Critical Habitat* for the Piping Plover, home of a documented Pallid Sturgeon population, and a potential food source for the Rufa Red Knot. Native wildflower stands that may provide a source of nectar for the Dakota Skipper were recorded throughout the Survey Corridor.

3.4.1 Northern Long-eared bat

The northern long-eared bat is a forest dwelling mammal. The home range of the northern long-eared bat is approximately 150 acres (60.7 ha) including a summer and winter habitat. In the summer, northern long-eared bats roost under bark or in crevices of trees, preferring to roost in tall trees with greater than 3" diameter at breast height (DBH), and under the exfoliating bark of dead or dying trees. In the winter, northern long-eared bats hibernate in caves and mines. The northern long-eared bat prefers foraging in edge habitats and forests comprised of trees with a diversity of life stages

(USFWS 2014).

Occurrences of the northern long-eared bat are uncertain in North Dakota. White-nose syndrome (WNS) is the predominant threat to the northern long-eared bat currently.

Numerous Green Ash, Siberian Elm, Black Ash, and Eastern Cottonwood trees were identified throughout the Survey Corridor (Appendix A, Figure 2). These trees have the potential to be summer roosting habitat for the northern long-eared bat. No potential winter hibernacula were observed within the Survey Corridor.

3.4.2 Whooping Crane

The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Aransas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Parks and Wildlife 2006).

The whooping crane is federally listed in all counties of North Dakota. Land use within the Project is a mixture of cropland, rangeland, woodlands, and oil/gas development. The USFWS Database (USFWS 2018) shows Williams County has had 28 verified whooping crane sightings and McKenzie County has had 8. The closest confirmed sighting to the Project was of two adults in 1998, approximately 7.0 miles southwest of the Project in Section 20, T152N, R104W. The sighting locations are depicted in Appendix A, Figure 3.

Noise and vehicle activity during construction activities may cause migratory cranes to divert from the area but would be unlikely to contribute to any indirect or direct effect that would result in an increase of fatalities and, therefore, would be considered insignificant. If a crane is sighted within one mile of the project area, construction activities utilizing heavy equipment would be suspended, and the sighting would be promptly reported to the USFWS. In coordination with the USFWS, suspended activities would resume once the bird(s) have left the area. Following these guidelines, it is reasonable to expect that the Project **may affect** but is **not likely to adversely affect** whooping cranes.

3.4.3 Pallid Sturgeon

Pallid sturgeon are found in the Mississippi, Missouri, and Yellowstone River systems and are adapted for living close to the bottom of large, shallow rivers with sand and gravel bars. Pallid sturgeon populations in North Dakota have decreased since the 1960s (Grondahl and Martin, no date). Weighing up to 85 pounds, pallid sturgeons are long lived with individuals possibly reaching 50 or more years of age.

A known pallid sturgeon population occurs from the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the Lower Yellowstone River up the confluence of the Tongue River, Montana (USFWS 2007). Factors leading to the decline of the pallid sturgeon and a listing as an endangered species by the USFWS in 1990 include the alteration of habitat through river channelization; creation of impoundments; and alteration of water flow regimes (USFWS 1990). The effect from these alterations within the Missouri River have reduced food sources by lowering productivity, destroying spawning habitat, altered flow conditions which can delay spawning cues, and blocked movements to spawning, feeding, and rearing areas (USFWS 2007).

3.4.4 Dakota Skipper

The Dakota skipper, a prairie obligate species, requires nectar producing native flowers and native grasses. Historically, Dakota skippers have been associated with low, wet, prairie dominated high quality tall grass prairie habitat (Type A habitat). Researchers have found that Dakota skippers also use upland mixed grass prairie that is relatively dry and includes ridges and hillsides (Type B habitat). These often have small inclusions of areas with species more commonly typified with tall grass prairie. Larvae require grass components of mixed-grass prairie that include bluestem grasses and needlegrasses, while adults require nectar sources; therefore, suitable prairie must include nectar-producing forbs. These may include purple coneflower, blue bells (Campanula rotundifolia), blanket flower (Gaillardia aristata), wood lily (Lilium philadelphicum), or other species that are in bloom during the adult life cycle of the Dakota skipper (Dana 1991).

Habitat within the Survey Corridor was assessed and divided into habitat grades. Areas that had been previously disturbed were graded as "no habitat". Areas that were dominated by woody vegetation or non-native species were graded as "poor habitat". Habitat areas that were dominated by native grassland species but lacked adequate numbers of requisite cover and/or nectar species required by the Dakota skipper were graded as "moderate habitat". The moderate habitat areas may provide a source of nectar for adult Dakota skippers but are unlikely to provide larval habitat. Habitat areas that were dominated by requisite grass species and contained requisite nectar species were graded as "good habitat". The good habitat areas would provide dense, moist habitat for larval production and nectar species for adults.

Field surveys confirmed the absence of "good habitat". The field survey recorded approximately 727.9 acres (82%) of "no habitat" within the Survey Corridor due to previous disturbance or open water (the Missouri River). Approximately 124.6 acres, or 14%, of the Survey Corridor was characterized as "poor habitat" due to non-native grassland vegetation and heavy livestock grazing. Approximately 37 acres (4%) of moderate habitat was documented, primarily south of the Missouri River. Appendix A, Figure 2 depicts the locations of the habitat grades.

3.4.5 Piping Plover

The piping plover is a migratory shorebird that breeds in North Dakota. Suitable nesting habitat for piping plovers includes alkaline wetlands and the shoreline of the Missouri River system; this habitat has been characterized as sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel. The piping plover feeds on worms, insects, and mollusk. The decline of piping plover populations is due to the loss of habitat from river impoundment(s) as well as the degradation of habitat related to the channelization river systems, nest predation, and human disturbance.

Critical habitat for the Northern Great Plains piping plover has been designated on alkali lakes and wetlands, the Yellowstone River, and Missouri River in North Dakota. The physical and biological features that are essential to the conservation of the species, referred to as the primary constituent elements, require special consideration for protection. These include sparsely vegetated alkaline wetlands, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel, all protected from disturbance. This Project crosses the Missouri River, which is listed as critical habitat. (Appendix A, Figure 3) (USFWS 2021).

3.4.6 Rufa Red Knot

The red knot is a shorebird breeds in the central Canadian Arctic, with primary breeding grounds in Nunavut Territory, but some potential breeding habitat extending into the Northwest Territories (FR 2013a). The rufa red knot winters along the Atlantic coasts of Argentina and Chile (particularly the island of Tierra del Fuego), the north coast of Brazil, and further north into Mexico and the southeast United States (USFWS 2014b). During migration, the rufa red knot primarily follows the Atlantic coastline to and from breeding and wintering grounds. However, geolocator results from red knots wintering in Texas showed that a small population of birds migrate using a central flyway across the Midwestern U.S. and may have a northern Great Plains stopover (FR 2013). Rufa red knots spend two to three months annually on their breeding grounds located in northern Canada.

Red knots are specialized molluscivores, feeding primarily on hard-shelled mollusks in soft wet sand/sediment (USFWS 2014b). In addition to mollusks, red knots may feed upon shrimp, crabs, marine worms, and horseshoe crab eggs and other similar invertebrates. On the breeding ground, rufa red knots feed mostly on terrestrial invertebrates and grass shoots/seeds (FR 2013).

The shoreline of the Missouri River provides stopover habitat for red knots that utilize a midcontinental migratory route during annual migrations. However, the species is rare and is not reported in North Dakota in every year. Reported historical sightings since 1900 (Igl 2015), are primarily comprised of single individuals or small flocks; however, on rare occasions, larger flocks have been reported. Many of these sightings have been made in the prairie pothole region during the spring migration in late April through May. An increase in future sightings may result from an increase in public awareness.

The red knot migrates twice annually from its breeding grounds in the Artic to wintering habitat in southern climates. It does not nest in North Dakota but may use areas along the Missouri River as stopover habitat. The Project crosses the Missouri River which may have suitable shoreline stopover habitat at that location.

3.5 Noxious Weed Inventory

A pedestrian survey of the Survey Corridor was conducted for state and county listed noxious weeds. Noxious weeds were identified in twenty-nine locations. Table 6 lists the attributes of the noxious weed populations.

Table 6. Noxious Weeds

Name	Species	Latitude	Longitude	Count	Length (ft)	Acres
Weed Point 1	Leafy Spurge	48.0242996	-103.8970032	30	--	--
Weed Point 2	Canadian Thistle	48.0181007	-103.8789978	20	--	--
Weed Point 3	Canadian Thistle	48.0178986	-103.8789978	40	--	--
Weed Point 4	Burdock	48.024601	-103.862999	3	--	--
Weed Point 5	Burdock	48.0261993	-103.8600006	8	--	--
Weed Point 6	Candian Thistle	48.0242996	-103.8550034	20	--	--
Weed Point 7	Candian Thistle & Bu	48.0242996	-103.8550034	25	--	--
Weed Point 8	Candian Thistle	48.024601	-103.8550034	30	--	--
Weed Point 9	Burdock	48.024601	-103.8099976	18	--	--
Weed Line 1	Canadian Thistle	48.024601	-103.8889999	--	254.07	--
Weed Line 2	Canadian Thistle	48.0228996	-103.8889999	--	490.31	--
Weed Line 3	Canadian Thistle	48.0181999	-103.8860016	--	232.89	--
Weed Line 4	Canadian Thistle	48.0181999	-103.8850021	--	216.44	--
Weed Line 5	Canadian Thistle	48.0186005	-103.8830032	--	260.54	--
Weed Line 6	Canadian Thistle	48.0181999	-103.8830032	--	36.06	--
Weed Line 7	Canadian Thistle	48.0181999	-103.8809967	--	10.86	--
Weed Line 8	Canadian Thistle	48.0181007	-103.8799973	--	249.71	--
Weed Line 9	Canadian Thistle	48.0242996	-103.8649979	--	1220.61	--
Weed Line 10	Burdock	48.0251007	-103.862999	--	363.43	--
Weed Line 11	Candian Thistle	48.024601	-103.8460007	--	1191.35	--
Weed Line 12	Burdock and Canadian Thistle	48.0242004	-103.8059998	--	1039.08	--
Weed Line 13	Burdock and Canadian Thistle	48.0238991	-103.8040009	--	98.16	--
Weed Poly 1	Canadian Thistle	48.0239983	-103.8949966	--	--	3.19
Weed Poly 2	Canadian Thistle	48.0227013	-103.8899994	--	--	12.27
Weed Poly 3	Canadian Thistle	48.0181007	-103.8840027	--	--	0.07
Weed Poly 4	Canadian Thistle	48.0182991	-103.8840027	--	--	0.01
Weed Poly 5	Canadian Thistle	48.0250015	-103.8000031	--	--	1.32
Weed Poly 6	Spotted Knapweed	47.9771996	-103.6719971	--	--	1.23
Weed Poly 7	Spotted Knapweed	47.9766998	-103.6729965	--	--	0.15

3.6 Woody Vegetation (Tree and Shrub) Inventory

The woody vegetation inventory included forty-eight growth shrub locations and 166 tree occurrences. A majority of the shrubs identified consisted of Chokecherry and Silver Buffaloberry; however, Russian olive, Fragrant Sumac, and Sandbar Willow were also observed. A majority of the trees consisted of Green Ash, Siberian Elm, Eastern Cottonwood, and Rocky Mountain Juniper. Black Ash was also observed, mainly along the Missouri River.

Appendix A, Figure 2 depicts the locations of the inventoried woody vegetation. Table 7 and Table 8 contain the attributes from the woody vegetation inventory.

Table 7. Shrubs Locations

Name	Species	Growth	Latitude	Longitude	Count	Acres
Shrubs Point 1	Russian Olive	Natural	48.018299	-103.887	1	--
Shrubs Point 2	Chokecherry	Natural	48.018299	-103.884	15	--
Shrubs Point 3	Chokecherry	Natural	48.024601	-103.865	10	--
Shrubs Point 4	Chokecherry	Natural	48.026001	-103.863	30	--
Shrubs Point 5	Fragrant Sumac	Natural	48.0261	-103.86	0	--
Shrubs Point 6	Sandbar Willow	Natural	48.0242	-103.81	15	--
Shrubs Point 7	Chokecherry	Natural	48.024399	-103.847	40	--
Shrubs Point 8	Chokecherry & Silver Buffaloberry	Natural	48.0126	-103.783	40	--
Shrubs Point 9	Fragrant Sumac	Natural	48.0112	-103.78	10	--
Shrubs Point 10	Silver Buffaloberry	Natural	48.009899	-103.777	20	--
Shrubs Point 11	Chokecherry, Sumac, & Silver Buffaloberry	Natural	48.008202	-103.775	45	--
Shrubs Point 12	Silver Buffaloberry	Natural	48.003899	-103.773	8	--
Shrubs Point 13	Silver Buffaloberry	Natural	48.003502	-103.774	15	--
Shrubs Point 14	Chokecherry and Silver Buffaloberry	Natural	48.002102	-103.774	18	--
Shrubs Point 15	Chokecherry and Silver Buffaloberry	Natural	48.0019	-103.774	5	--
Shrubs Point 16	Chokecherry and Silver Buffaloberry	Natural	48.0019	-103.774	12	--
Shrubs Point 17	Chokecherry	Natural	48.001499	-103.773	10	--
Shrubs Point 18	Chokecherry	Natural	48.001701	-103.773	15	--
Shrubs Point 19	Silver buffaloberry	Natural	48.001301	-103.773	10	--

Name	Species	Growth	Latitude	Longitude	Count	Acres	
Shrubs Point 20	Silver Buffaloberry	Natural	48.0014	-103.772	15	--	
Shrubs Point 21	Silver Buffaloberry	Natural	48.0014	-103.772	15	--	
Shrubs Point 22	Fragrant Sumac	Natural	48.001202	-103.772	10	--	
Shrubs Point 23	Chokecherry	Natural	48.001202	-103.772	15	--	
Shrubs Point 24	Fragrant Sumac	Natural	48.001099	-103.772	5	--	
Shrubs Point 25	Chokecherry and Silver Buffaloberry	Natural	48.001	-103.773	20	--	
Shrubs Point 26	Fragrant Sumac	Natural	48.0009	-103.773	30	--	
Shrubs Point 27	Chokecherry	Natural	48.000301	-103.772	100	--	
Shrubs Point 28	Chokecherry	Planted	47.998798	-103.772	10	--	
Shrubs Point 29	Chokecherry	Natural	47.995701	-103.771	40	--	
Shrubs Point 30	Chokecherry	Natural	47.987801	-103.761	10	--	
Shrubs Point 31	Chokecherry	Natural	47.985802	-103.761	20	--	
Shrubs Point 32	Chokecherry	Natural	47.985802	-103.76	10	--	
Shrubs Point 33	Chokecherry	Natural	47.9851	-103.755	5	--	
Shrubs Point 34	Silver Buffaloberry	Natural	47.979099	-103.721	6	--	
Shrubs Point 35	Chokecherry	Natural	47.979698	-103.72	15	--	
Shrubs Point 36	Siberian Elm	Natural	47.978901	-103.68	1	--	
Shrubs Point 37	Siberian Elm	Natural	47.978802	-103.68	6	--	
Shrubs Point 38	Chokecherry	Natural	47.976502	-103.68	0	--	
Shrubs Point 39	Chokecherry	Natural	48.024399	-103.847	40	--	
Shrubs Poly 1	Silver Buffaloberry	Natural	48.0014	-103.773	--	0.034	
Shrubs Poly 2	Chokecherry	Natural	47.995602	-103.768	--	0.077	
Shrubs Poly 3	Silver Buffaloberry	Natural	47.983398	-103.746	--	0.011	
Shrubs Poly 4	Chokecherry	Natural	47.979698	-103.726	--	0.016	

Name	Species	Growth	Latitude	Longitude	Count	Acres	
Shrubs Poly 5	Chokecherry	Natural	47.979401	-103.725	--	0.006	
Shrubs Poly 6	Silver Buffaloberry	Natural	47.978901	-103.725	--	0.001	
Shrubs Poly 7	Silver Buffaloberry	Natural	47.978699	-103.725	--	0.016	
Shrubs Poly 8	Chokecherry	Natural	47.9785	-103.725	--	0.026	
Shrubs Poly 9	Chokecherry	Natural	47.979199	-103.721	--	0.020	

Table 8. Tree Locations

Name	Species	Growth	Latitude	Longitude	Count	Acres
Tree Point 1	Siberian Elm	Natural	48.0182	-103.8820038	1	--
Tree Point 2	Siberian Elm	Natural	48.0182	-103.8820038	1	--
Tree Point 3	Siberian Elm	Natural	48.0182	-103.8820038	1	--
Tree Point 4	Siberian Elm	Natural	48.0182	-103.8820038	1	--
Tree Point 5	Silver Buffaloberry	Natural	48.0182	-103.8789978	4	--
Tree Point 6	Chokecherry	Natural	48.0182	-103.8789978	2	--
Tree Point 7	Eastern Cottonwood	Natural	48.0181	-103.8779984	5	--
Tree Point 8	Green Ash and Chokecherry	Natural	48.0183	-103.8769989	10	--
Tree Point 9	Siberian Elm	Natural	48.0188	-103.8779984	1	--
Tree Point 10	Green Ash	Natural	48.019	-103.8779984	1	--
Tree Point 11	Chokecherry	Natural	48.0199	-103.8769989	10	--
Tree Point 12	Chokecherry	Natural	48.0194	-103.8769989	15	--
Tree Point 13	Chokecherry	Natural	48.0201	-103.8769989	5	--
Tree Point 14	Eastern Cottonwood	Natural	48.0243	-103.8669968	15	--
Tree Point 15	Eastern Cottonwood	Planted	48.0248	-103.862999	8	--
Tree Point 16	Siberian Elm	Planted	48.0253	-103.862999	21	--
Tree Point 17	Eastern Cottonwood	Planted	48.0257	-103.862999	32	--
Tree Point 18	Green Ash	Natural	48.0262	-103.862999	3	--
Tree Point 19	Green ash	Planted	48.0261	-103.862999	1	--
Tree Point 20	Green Ash and Siberian Elm	Planted	48.0261	-103.862999	5	--
Tree Point 21	Green Ash	Natural	48.0277	-103.862999	1	--
Tree Point 22	Eastern Cottonwood	Natural	48.0268	-103.8649979	1	--
Tree Point 23	Green Ash	Natural	48.0274	-103.8649979	3	--
Tree Point 24	Green Ash	Natural	48.0276	-103.8649979	1	--
Tree Point 25	Eastern Cottonwood	Natural	48.0284	-103.8659973	16	--
Tree Point 26	Green Ash	Natural	48.029	-103.8639984	3	--
Tree Point 27	Green Ash	Natural	48.0291	-103.8639984	8	--
Tree Point 28	Green Ash	natural	48.026	-103.8600006	8	--
Tree Point 29	Green Ash	natural	48.0263	-103.8600006	3	--

Name	Species	Growth	Latitude	Longitude	Count	Acres
Tree Point 30	Green Ash	Natural	48.0257	-103.8580017	1	--
Tree Point 31	Siberian Elm	Natural	48.0254	-103.8580017	1	--
Tree Point 32	Siberian Elm	Planted	48.0257	-103.8570023	5	--
Tree Point 33	Siberian Elm	Planted	48.0255	-103.8570023	12	--
Tree Point 34	Siberian Elm	Planted	48.0254	-103.8570023	3	--
Tree Point 35	Siberian Elm	Planted	48.025	-103.8560028	2	--
Tree Point 36	Chokecherry	Natural	48.0246	-103.8539963	1	--
Tree Point 37	Siberian Elm	Natural	48.0244	-103.8499985	0	--
Tree Point 38	Green Ash	Natural	48.0243	-103.848999	1	--
Tree Point 39	Siberian Elm	Natural	48.0246	-103.8479996	1	--
Tree Point 40	Eastern Cottonwood	Natural	48.0243	-103.8479996	1	--
Tree Point 41	Siberian Elm	Natural	48.0244	-103.8479996	3	--
Tree Point 42	Green Ash and Siberian Elm	Natural	48.0244	-103.8470001	14	--
Tree Point 43	Green Ash	Natural	48.0244	-103.8470001	5	--
Tree Point 44	Green Ash	Natural	48.0247	-103.8410034	11	--
Tree Point 45	Green Ash	Planted	48.0206	-103.8190002	4	--
Tree Point 46	Eastern Cottonwood	Natural	48.0242	-103.814003	2	--
Tree Point 47	Eastern Cottonwood	Natural	48.0243	-103.814003	1	--
Tree Point 48	Eastern Cottonwood	Natural	48.0242	-103.8130035	4	--
Tree Point 49	Eastern Cottonwood	Natural	48.0241	-103.8130035	1	--
Tree Point 50	Eastern Cottonwood	Natural	48.0242	-103.8119965	1	--
Tree Point 51	Siberian Elm	Natural	48.0242	-103.8099976	1	--
Tree Point 52	Eastern Cottonwood	Natural	48.0242	-103.8030014	8	--
Tree Point 53	Eastern Cottonwood	Natural	48.0162	-103.7949982	6	--
Tree Point 54	Rocky Mt Juniper	Natural	48.0129	-103.7850037	1	--
Tree Point 55	Rocky Mt Juniper	Natural	48.0129	-103.7850037	1	--
Tree Point 56	Rocky Mt Juniper	Natural	48.0127	-103.7850037	4	--
Tree Point 57	Green Ash and Rocky	Natural	48.0126	-103.7829971	6	--
Tree Point 58	Rockey Mt Juniper	Natural	48.013	-103.7829971	2	--
Tree Point 59	Rocky Mt Juniper	Natural	48.0127	-103.7819977	2	--
Tree Point 60	Rocky Mt Juniper	Natural	48.0127	-103.7819977	6	--
Tree Point 61	Green Ash	Natural	48.0128	-103.7809982	15	--
Tree Point 62	Rocky Mt Juniper	Natural	48.0127	-103.7809982	2	--
Tree Point 63	Green Ash and Rocky	Natural	48.0127	-103.7809982	10	--
Tree Point 64	Rocky Mt Juniper	Natural	48.0115	-103.7809982	3	--
Tree Point 65	Rocky Mt Juniper	Natural	48.0115	-103.7809982	3	--
Tree Point 66	Rocky Mt Juniper	Natural	48.0111	-103.7799988	4	--
Tree Point 67	Green Ash and Rocky	Natural	48.0103	-103.7789993	13	--

Name	Species	Growth	Latitude	Longitude	Count	Acres
Tree Point 68	Rocky Mt Juniper	Natural	48.0099	-103.7770004	5	--
Tree Point 69	Rocky Mt Juniper	Natural	48.0088	-103.7779999	2	--
Tree Point 70	Rocky Mt Juniper	Natural	48.0085	-103.7779999	8	--
Tree Point 71	Rocky Mt Juniper	Natural	48.0085	-103.7779999	2	--
Tree Point 72	Green Ash	Natural	48.0246	-103.8040009	13	--
Tree Point 73	Rocky Mt Juniper	Natural	48.0087	-103.7770004	0	--
Tree Point 74	Rocky Mt Juniper	Natural	48.0083	-103.7770004	1	--
Tree Point 75	Rocky Mt Juniper	Natural	48.0081	-103.7770004	8	--
Tree Point 76	Rocky Mt Juniper	Natural	48.0079	-103.7770004	3	--
Tree Point 77	Rocky Mt Juniper	Natural	48.009	-103.776001	13	--
Tree Point 78	Green Ash and Rocky Mt Juniper	Natural	48.0087	-103.776001	13	--
Tree Point 79	Green Ash	Natural	48.0081	-103.7750015	1	--
Tree Point 80	Green Ash	Natural	48.0079	-103.7750015	2	--
Tree Point 81	Green Ash	Natural	48.0078	-103.7750015	2	--
Tree Point 82	Eastern Red Cedar	Natural	48.0077	-103.776001	1	--
Tree Point 83	Rocky Mt Juniper	Natural	48.0075	-103.776001	6	--
Tree Point 84	Rocky Mt Juniper	Natural	48.0073	-103.776001	2	--
Tree Point 85	Rocky Mt Juniper	Natural	48.0071	-103.776001	1	--
Tree Point 86	Fragrant Sumac	Natural	48.0047	-103.7740021	1	--
Tree Point 87	Fragrant Sumac	Natural	48.0045	-103.7740021	1	--
Tree Point 88	Green Ash	Natural	48.0036	-103.7730026	1	--
Tree Point 89	Green Ash	Natural	48.0035	-103.7750015	10	--
Tree Point 90	Green Ash	Natural	48.0023	-103.7740021	4	--
Tree Point 91	Green Ash	Nautral	48.0021	-103.7740021	7	--
Tree Point 92	Green Ash	Natural	48.0022	-103.7720032	2	--
Tree Point 93	Green Ash	Natural	48.0018	-103.7730026	1	--
Tree Point 94	Green Ash	Natural	48.0012	-103.7730026	3	--
Tree Point 95	Green Ash	Natural	48.0011	-103.7730026	1	--
Tree Point 96	Green Ash	Natural	48.0011	-103.7730026	1	--
Tree Point 97	Green Ash	Natural	48.0009	-103.7730026	4	--
Tree Point 98	Green Ash	Natural	48.0008	-103.7730026	1	--
Tree Point 99	Green Ash	Natural	48.0008	-103.7730026	1	--
Tree Point 100	Green Ash	Natural	48.0007	-103.7730026	7	--
Tree Point 101	Green Ash	Natural	48.0005	-103.7720032	8	--
Tree Point 102	Green Ash	Natural	48.0004	-103.7730026	1	--
Tree Point 103	Green Ash	Natural	48.0003	-103.7720032	9	--
Tree Point 104	Green Ash	Natural	48.0003	-103.7730026	4	--
Tree Point 105	Green Ash	Natural	48.0004	-103.7730026	11	--

Name	Species	Growth	Latitude	Longitude	Count	Acres
Tree Point 106	Green Ash	Natural	48.0001	-103.7730026	4	--
Tree Point 107	Green Ash	Natural	48	-103.7730026	1	--
Tree Point 108	Green Ash	Natural	47.9999	-103.7730026	3	--
Tree Point 109	Green Ash	Natural	47.9969	-103.7699966	3	--
Tree Point 110	Rocky Mt Juniper	Natural	47.9958	-103.7689972	1	--
Tree Point 111	Green Ash	Natural	47.9956	-103.7689972	1	--
Tree Point 112	Green Ash	Natural	47.9955	-103.7679977	3	--
Tree Point 113	Rocky Mt Juniper	Natural	47.9954	-103.7679977	1	--
Tree Point 114	Green Ash	Natural	47.9953	-103.7679977	3	--
Tree Point 115	Green Ash	Natural	47.9946	-103.7669983	1	--
Tree Point 116	Green Ash	Natural	47.9945	-103.7659988	23	--
Tree Point 117	Green Ash	Natural	47.9939	-103.7659988	1	--
Tree Point 118	Green Ash	Natural	47.9938	-103.7659988	1	--
Tree Point 119	Green Ash	Natural	47.9937	-103.7669983	1	--
Tree Point 120	Green Ash	Natural	47.9911	-103.7659988	1	--
Tree Point 121	Green Ash	Natural	47.9909	-103.7659988	2	--
Tree Point 122	Green Ash	Natural	47.9907	-103.7659988	5	--
Tree Point 123	Green Ash	Natural	47.9879	-103.7610016	4	--
Tree Point 124	Eastern Cottonwood	Natural	47.9875	-103.7610016	17	--
Tree Point 125	Green Ash	Natural	47.9868	-103.7610016	4	--
Tree Point 126	Green Ash	Natural	47.9866	-103.7549973	1	--
Tree Point 127	Green Ash	Natural	47.9836	-103.7549973	1	--
Tree Point 128	Siberian Elm	Natural	47.9788	-103.6869965	1	--
Tree Point 129	Siberian Elm	Natural	47.9786	-103.6790009	1	--
Tree Point 130	Siberian Elm	Natural	47.9785	-103.6790009	4	--
Tree Point 131	Siberian Elm	Natural	47.9785	-103.6790009	3	--
Tree Point 132	Green Ash	Natural	48.0002	-103.7730026	1	--
Tree Point 133	Green Ash	Natural	47.992	-103.7659988	4	--
Tree Line 1	Green Ash	Planted	48.026	-103.8639984	32	--
Tree Line 2	Green Ash	Planted	48.02	-103.8190002	58	--
Tree Line 3	Green Ash	Natural	48.0056	-103.7730026	25	--
Tree Line 4	Green Ash	Planted	47.9795	-103.711998	25	--
Tree Poly 1	Green Ash and Eastern Cottonwood	Natural	48.027	-103.8639984	--	3.69
Tree Poly 2	Green Ash and Eastern Cottonwood	Natural	48.0284	-103.862999	--	0.86
Tree Poly 3	Green Ash and Eastern Cottonwood	Natural	48.0279	-103.8649979	--	0.68
Tree Poly 4	Green Ash and Eastern Cottonwood	Natural	48.0288	-103.8649979	--	0.47

Name	Species	Growth	Latitude	Longitude	Count	Acres
Tree Poly 5	Black Ash	Natural	48.0292	-103.8649979	--	0.42
Tree Poly 6	Eastern Cottonwood	Natural	48.0287	-103.8659973	--	0.06
Tree Poly 7	Eastern Cottonwood and Black Ash	Natural	48.0246	-103.7979965	--	2.53
Tree Poly 8	Eastern Cottonwood, Black Ash, & Willows	Natural	48.0209	-103.7949982	--	16.58
Tree Poly 9	Green Ash and Siberian Elm	Natural	48.0217	-103.7969971	--	0.07
Tree Poly 10	Eastern Cottonwood, Green Ash and Siberian Elm	Natural	48.0211	-103.7959976	--	1.24
Tree Poly 11	Eastern Cottonwood, Green Ash, and Siberian Elm	Natural	48.0204	-103.7969971	--	0.37
Tree Poly 12	Eastern Black Ash and Siberian Elm	Natural	48.0182	-103.7959976	--	3.55
Tree Poly 13	Black Ash and Rocky Mt Juniper	Natural	48.0145	-103.788002	--	0.95
Tree Poly 14	Rocky Mt Juniper	Natural	48.0137	-103.7860031	--	0.71
Tree Poly 15	Rocky Mt Juniper	Natural	48.0133	-103.7850037	--	0.65
Tree Poly 16	Green Ash and Rocky	Natural	48.0126	-103.7829971	--	0.05
Tree Poly 17	Green Ash and Rocky	Natural	48.0129	-103.7819977	--	0.11
Tree Poly 18	Green Ash and Rocky	Natural	48.0118	-103.7809982	--	1.29
Tree Poly 19	Green Ash	Natural	48.0012	-103.7730026	--	0.06
Tree Poly 20	Green Ash	Natural	47.9968	-103.7699966	--	0.30
Tree Poly 21	Green Ash	Natural	47.9959	-103.7689972	--	0.39
Tree Poly 22	Green Ash	Natural	47.9953	-103.7679977	--	0.25
Tree Poly 23	Green Ash	Natural	47.9952	-103.7669983	--	0.10
Tree Poly 24	Green Ash and Rocky Mt Juniper	Natural	47.9942	-103.7669983	--	0.15
Tree Poly 25	Green Ash	Natural	47.9823	-103.7470016	--	0.11
Tree Poly 26	Green Ash	Natural	47.9822	-103.7460022	--	0.10
Tree Poly 27	Green Ash	Natural	47.9829	-103.7460022	--	0.10
Tree Poly 28	Green Ash	Natural	47.9834	-103.7460022	--	0.19
Tree Poly 29	Chokecherry	Natural	47.9792	-103.7249985	--	0.05

3.7 Raptor Nest Survey

A one-half mile line-of-sight survey from the Project's Survey Corridor was performed to determine the presence/absence of nesting raptors. There were no raptor nests identified during the field survey.

4.0 REFERENCES

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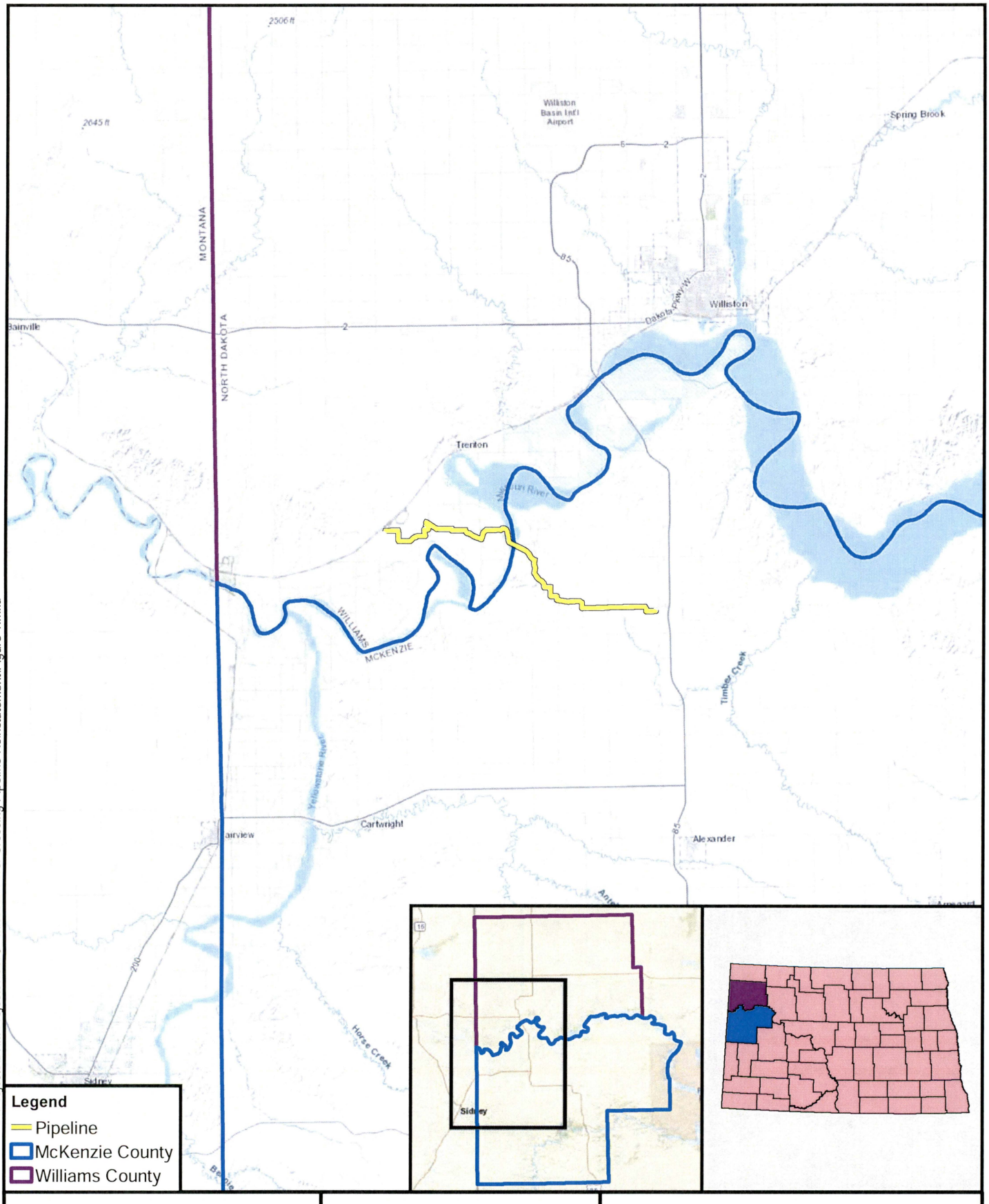
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Appendix A

Figures



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June 2023

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Basemap: ESRI Topographic Map, 2023.

Figure 1
Site Location Map
Missouri River Crossing Pipeline Reinstatement



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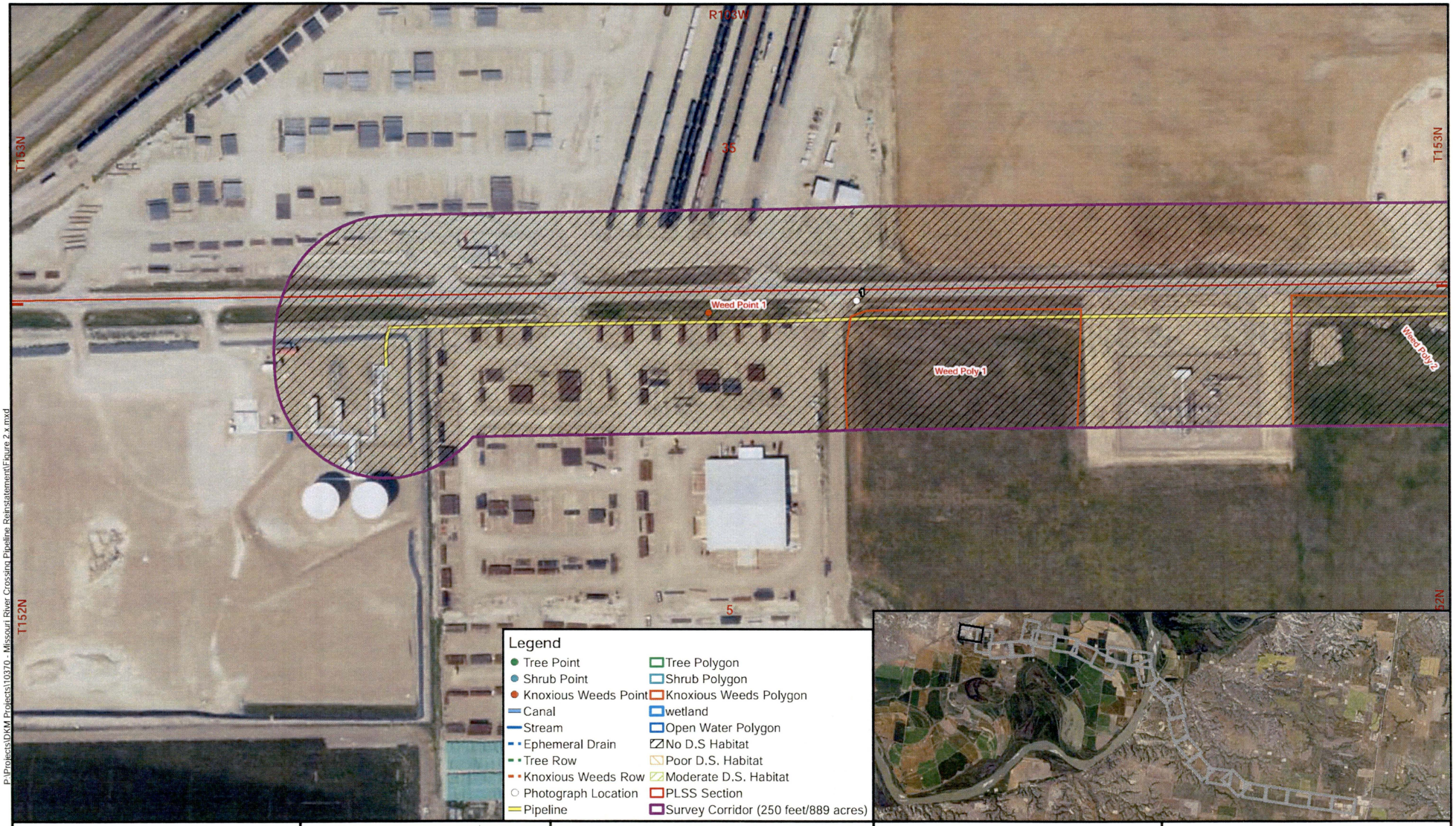
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2
Survey Results



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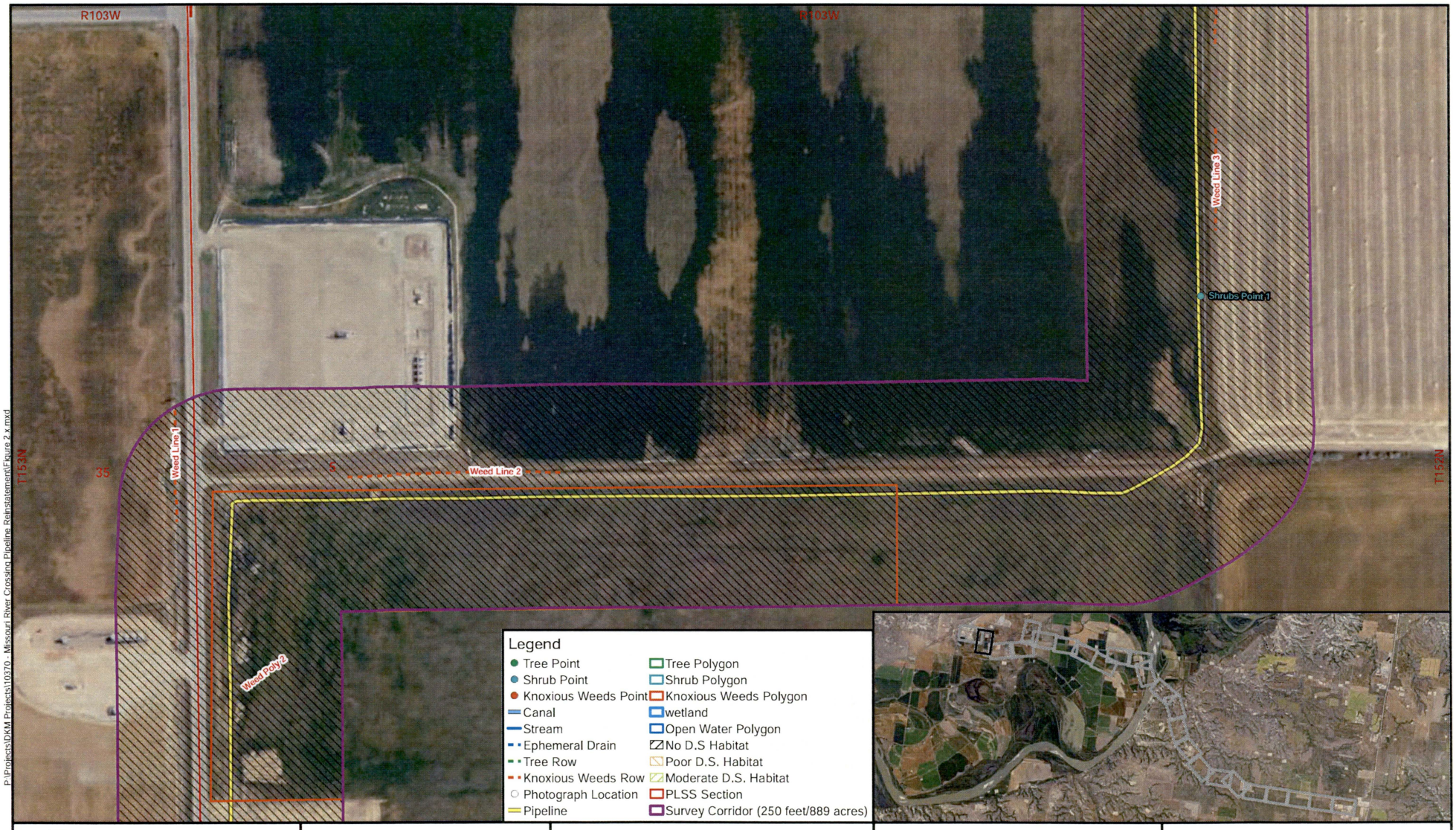
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.1
Survey Results



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Natural Resource Survey

Missouri River Crossing
Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.2
Survey Results



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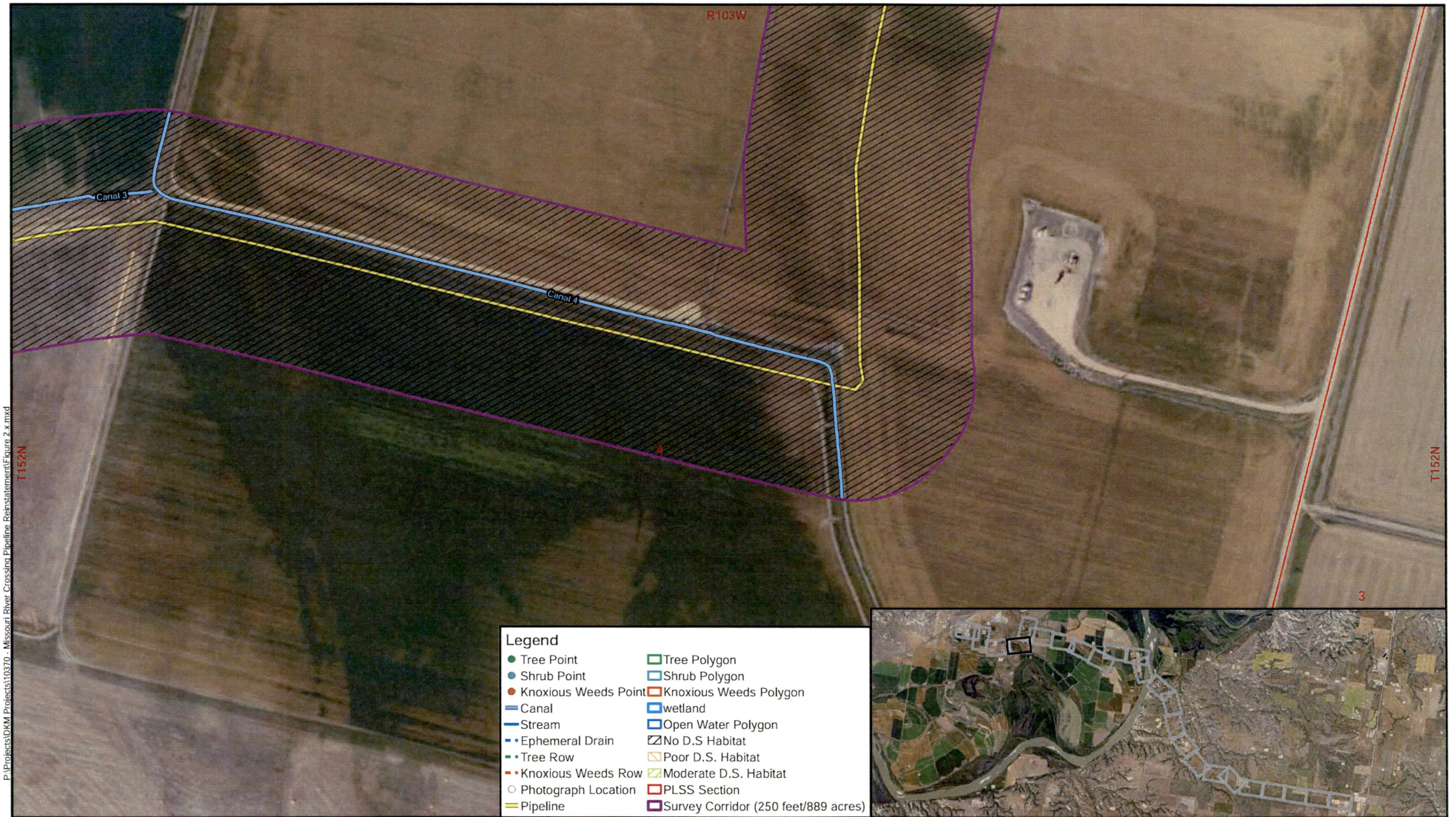
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.3
Survey Results



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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.4
Survey Results



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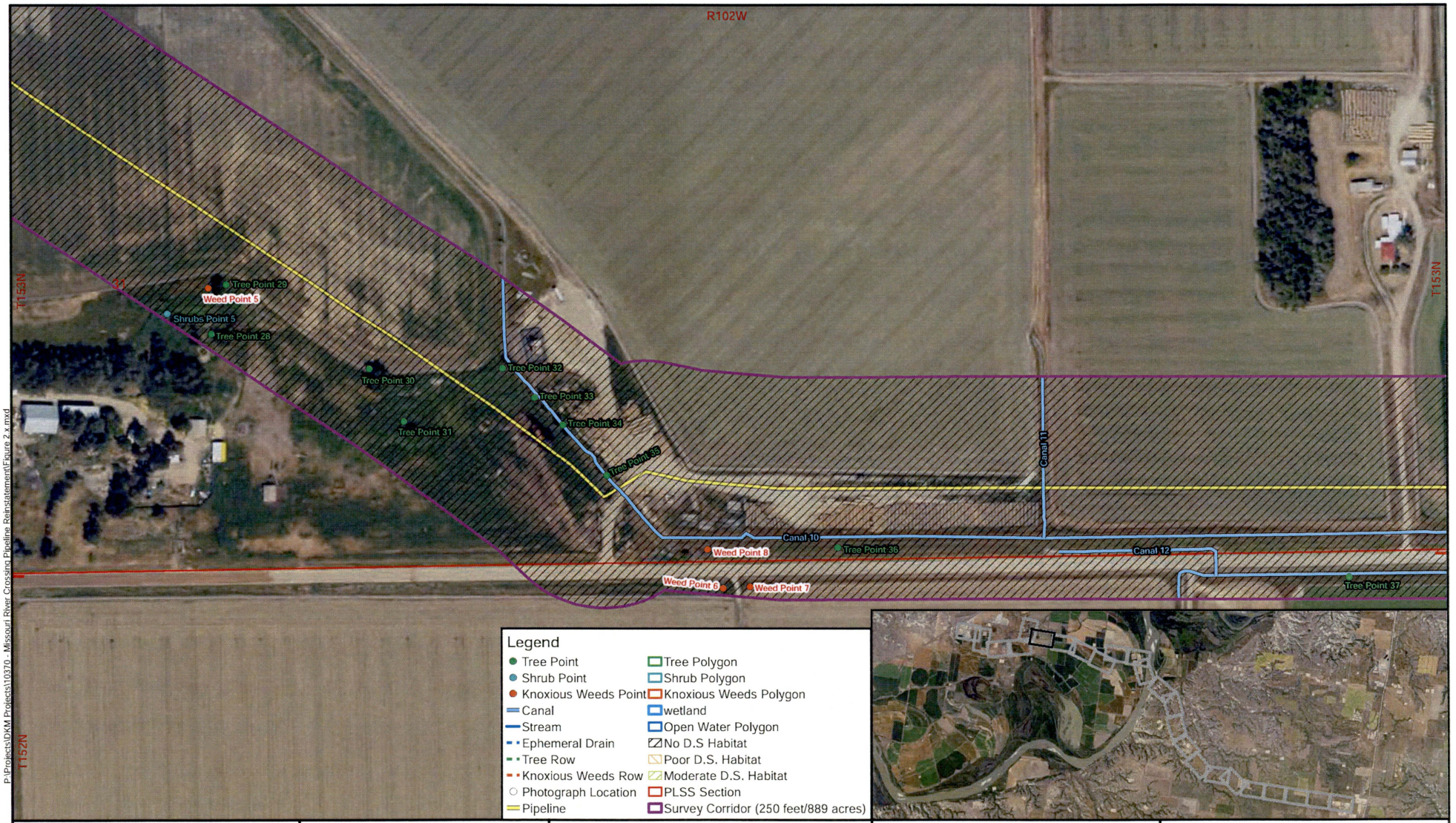
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.5
Survey Results



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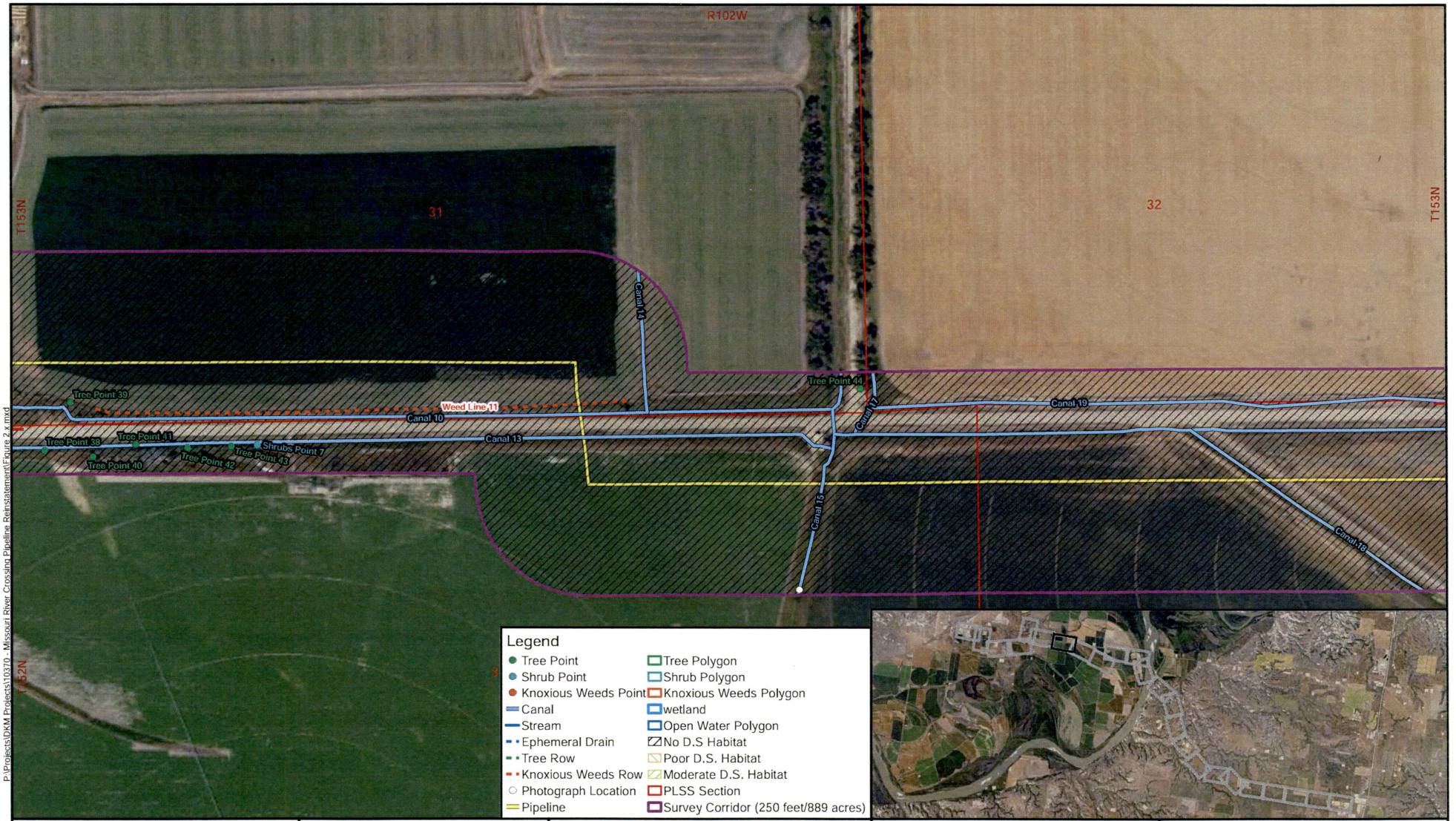
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.6
Survey Results



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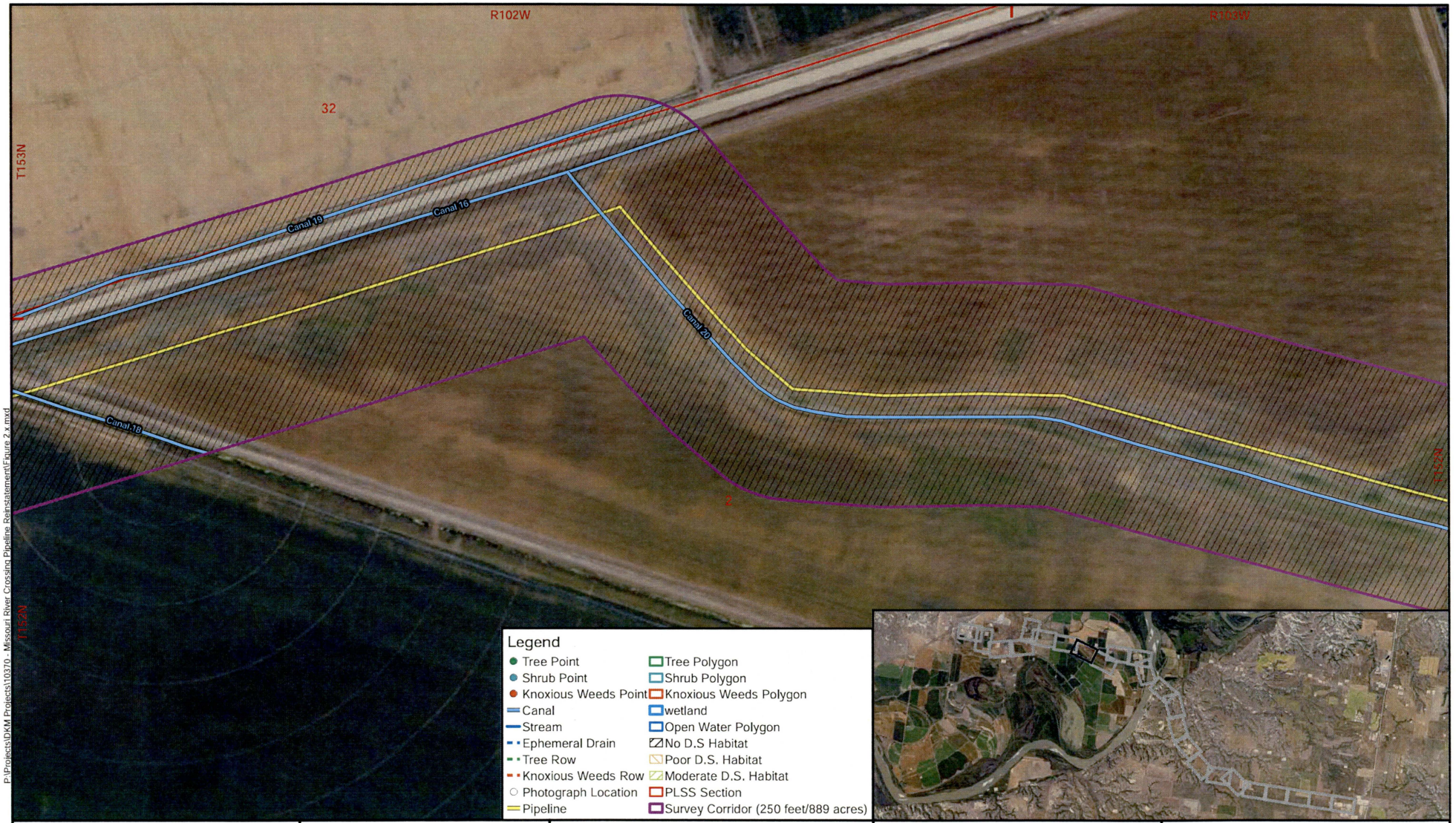
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.7
Survey Results



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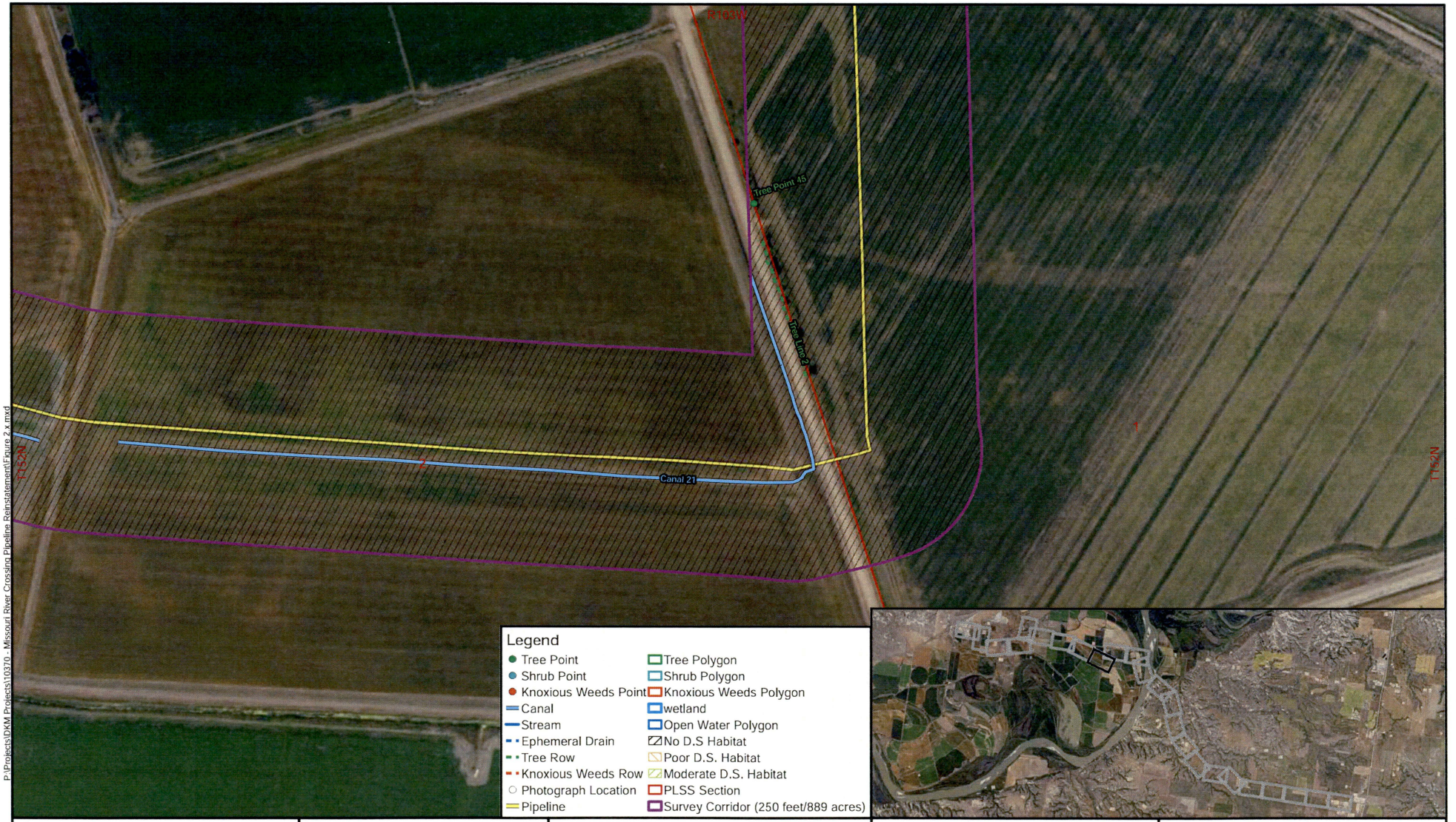
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.8
Survey Results



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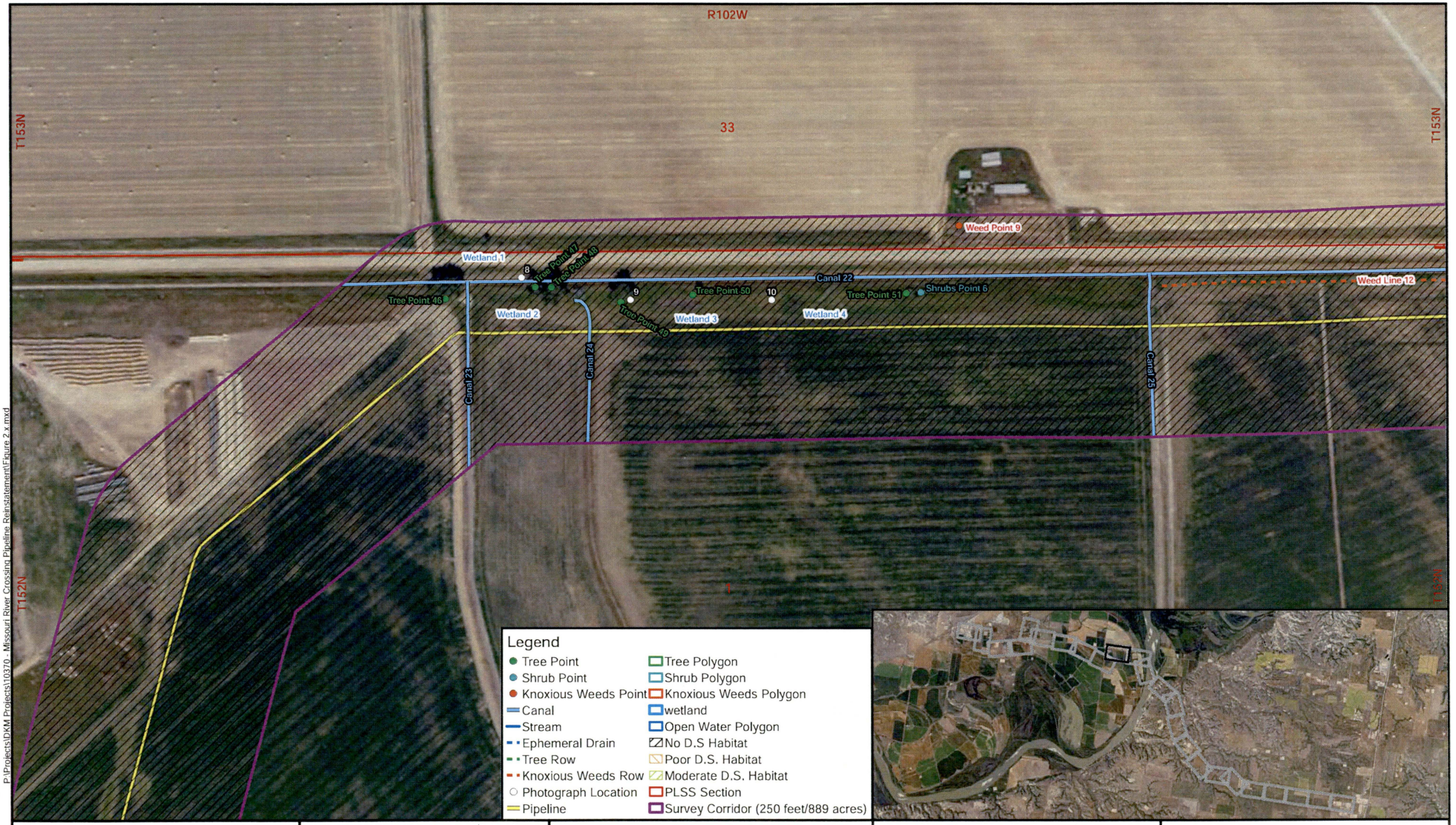
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.9
Survey Results



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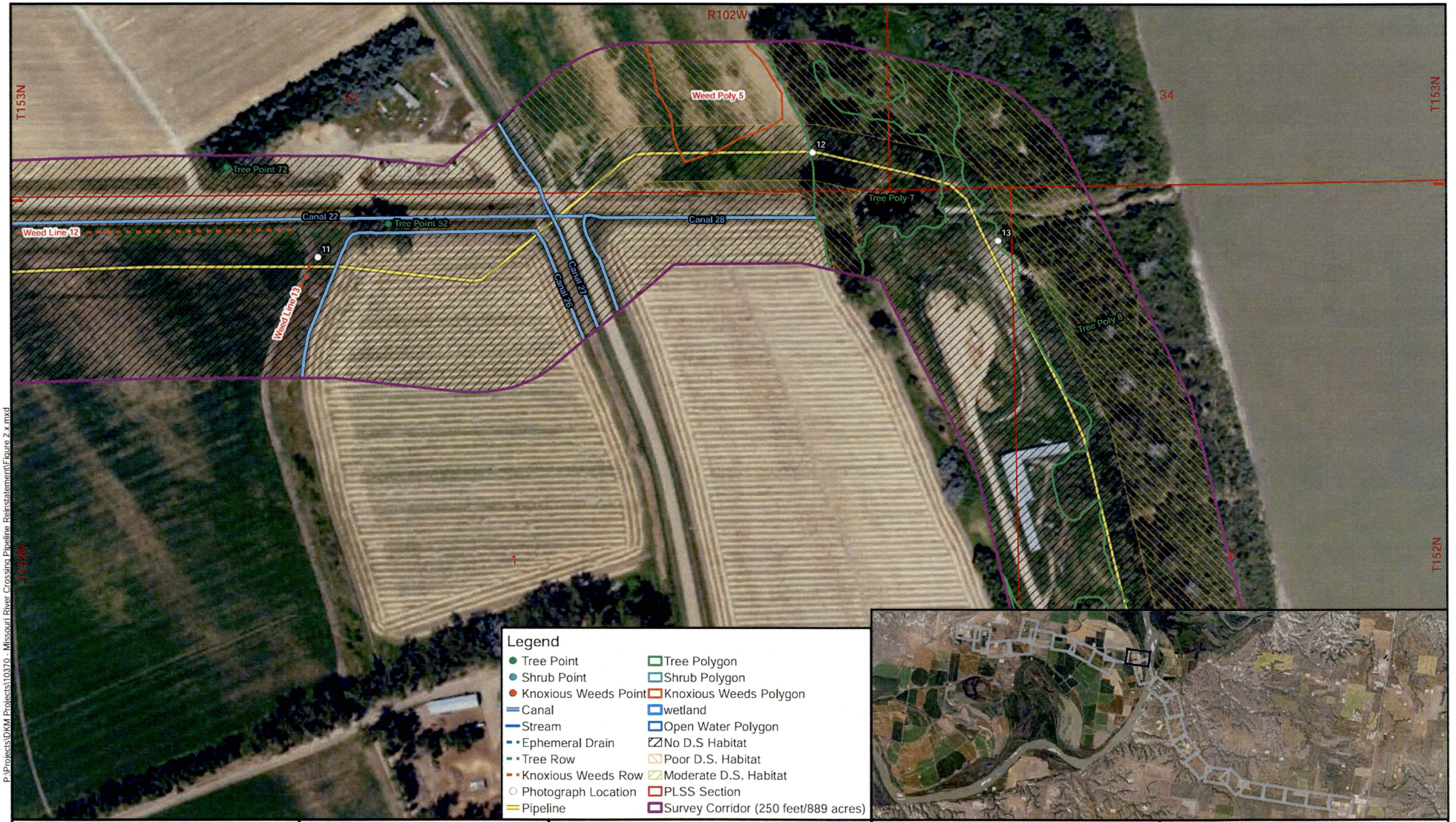
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.10
Survey Results



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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.11
Survey Results



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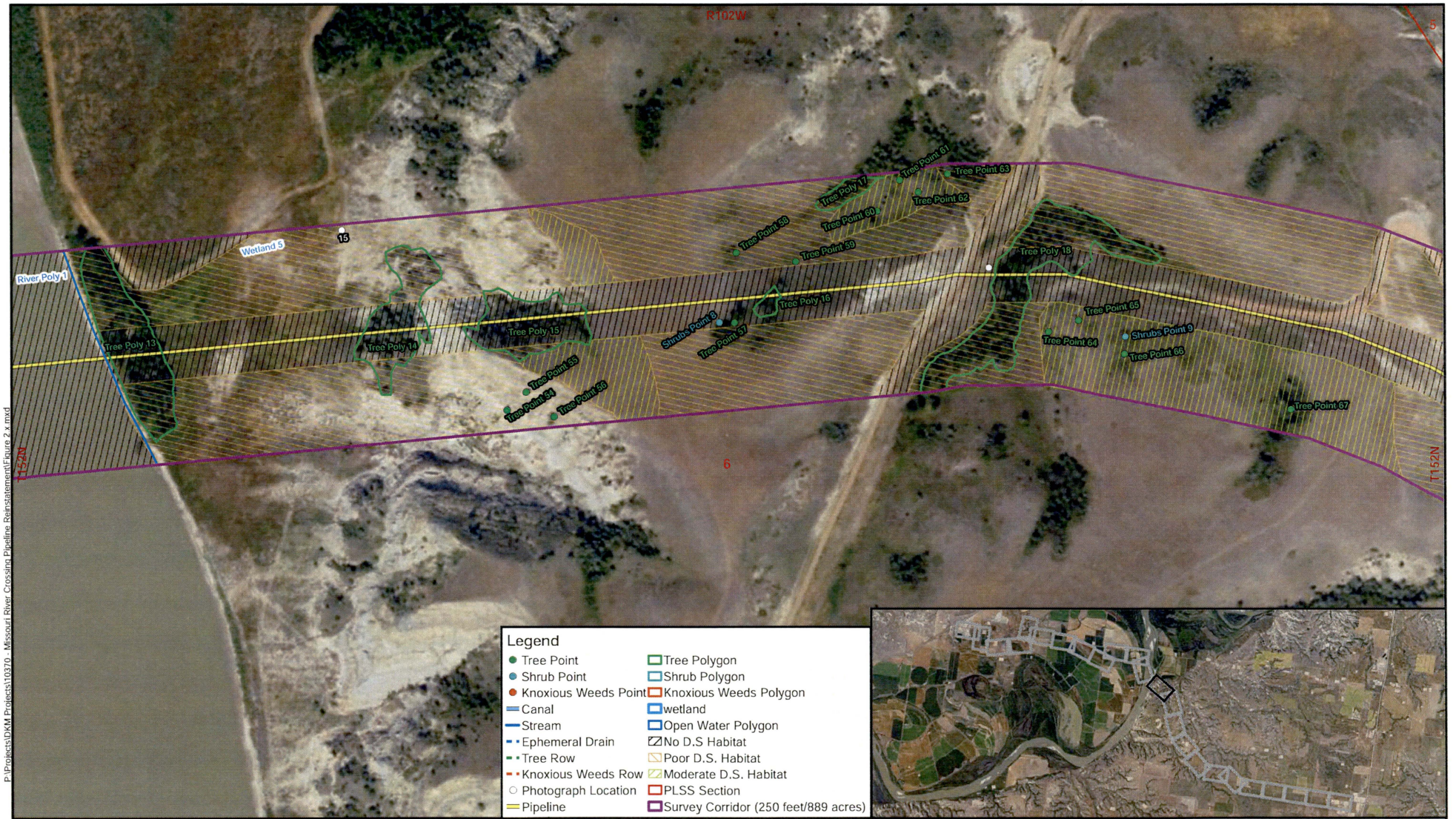
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.12
Survey Results



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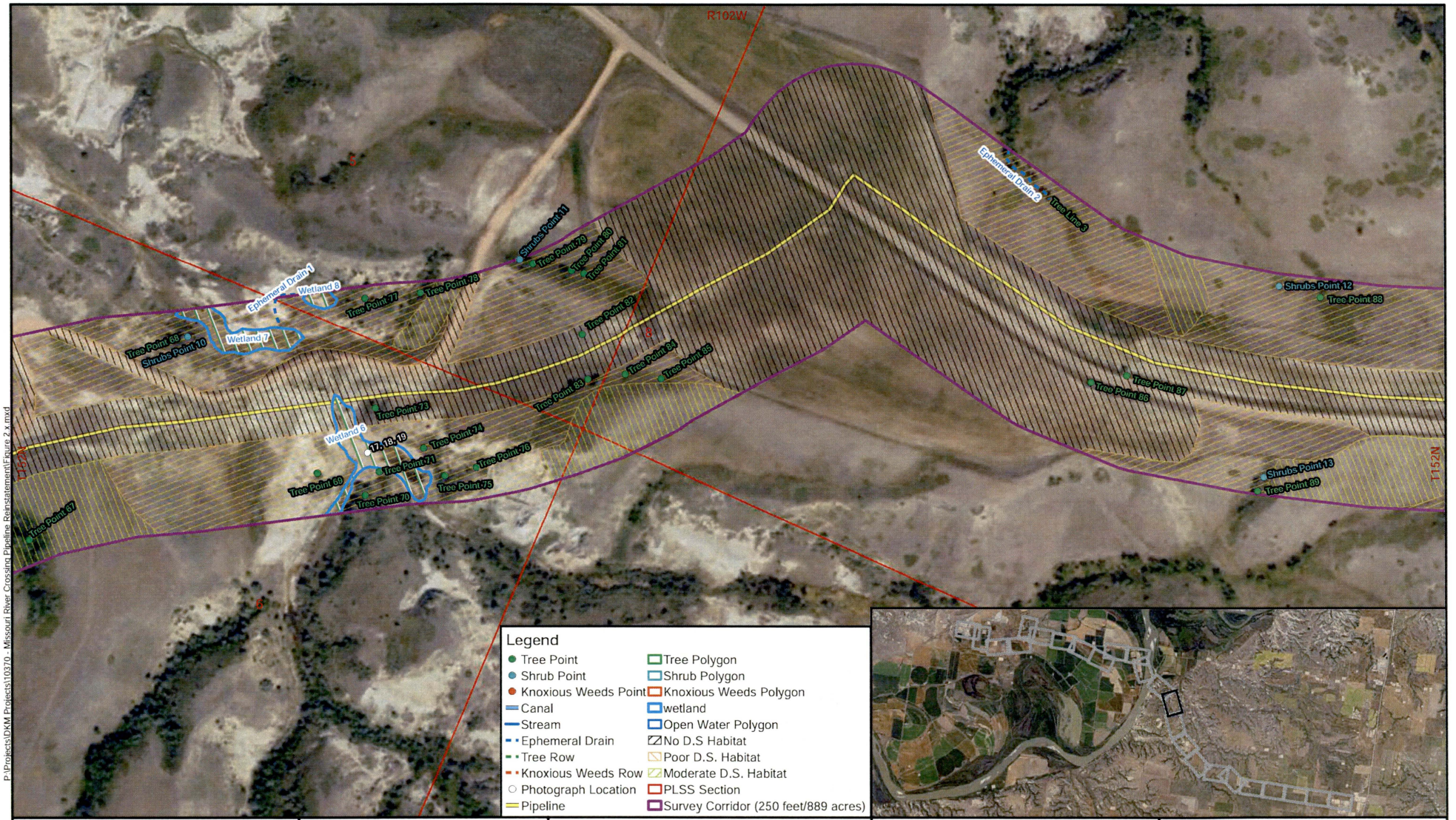
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.13
Survey Results



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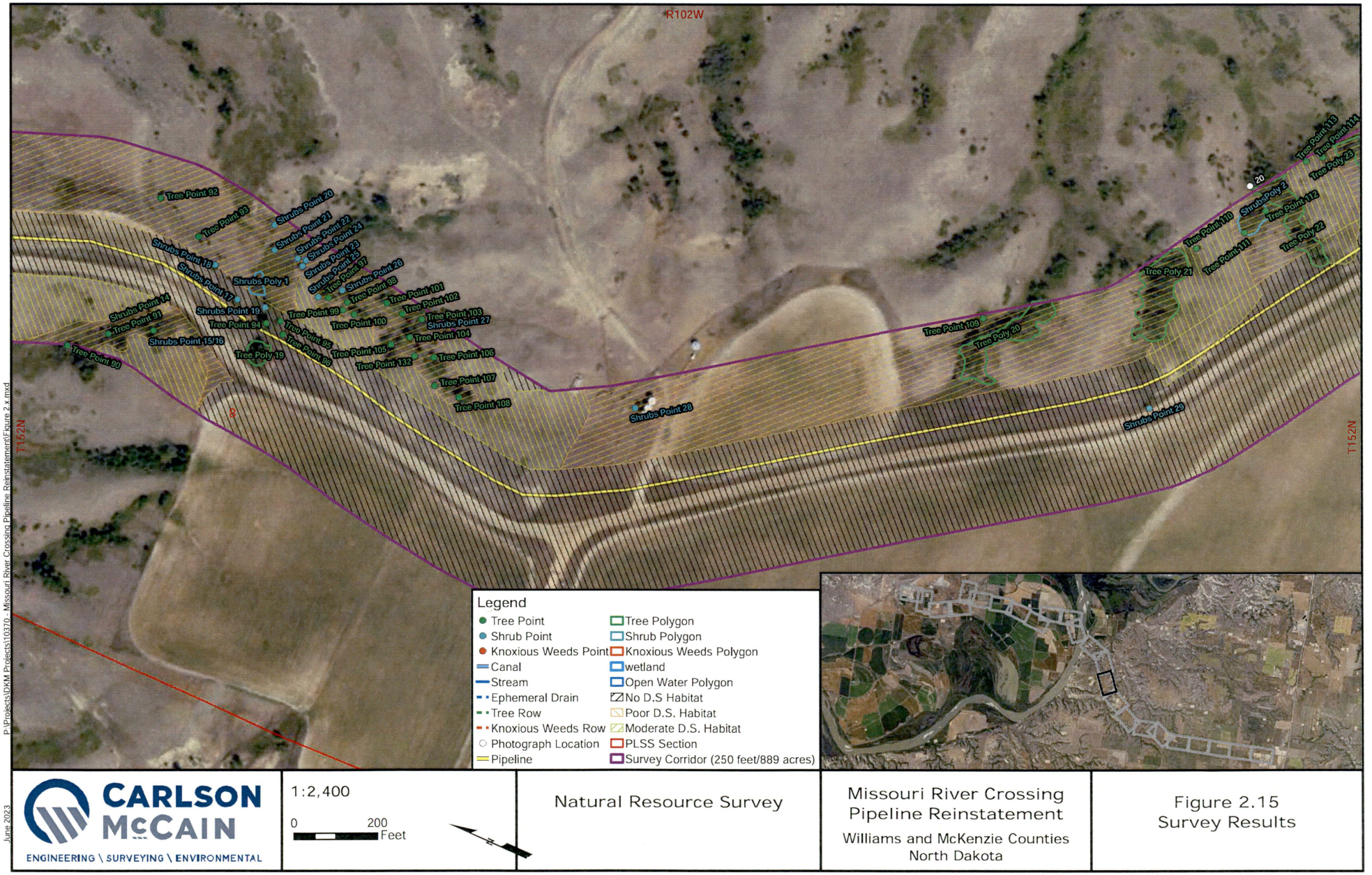
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.14
Survey Results



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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.15
Survey Results



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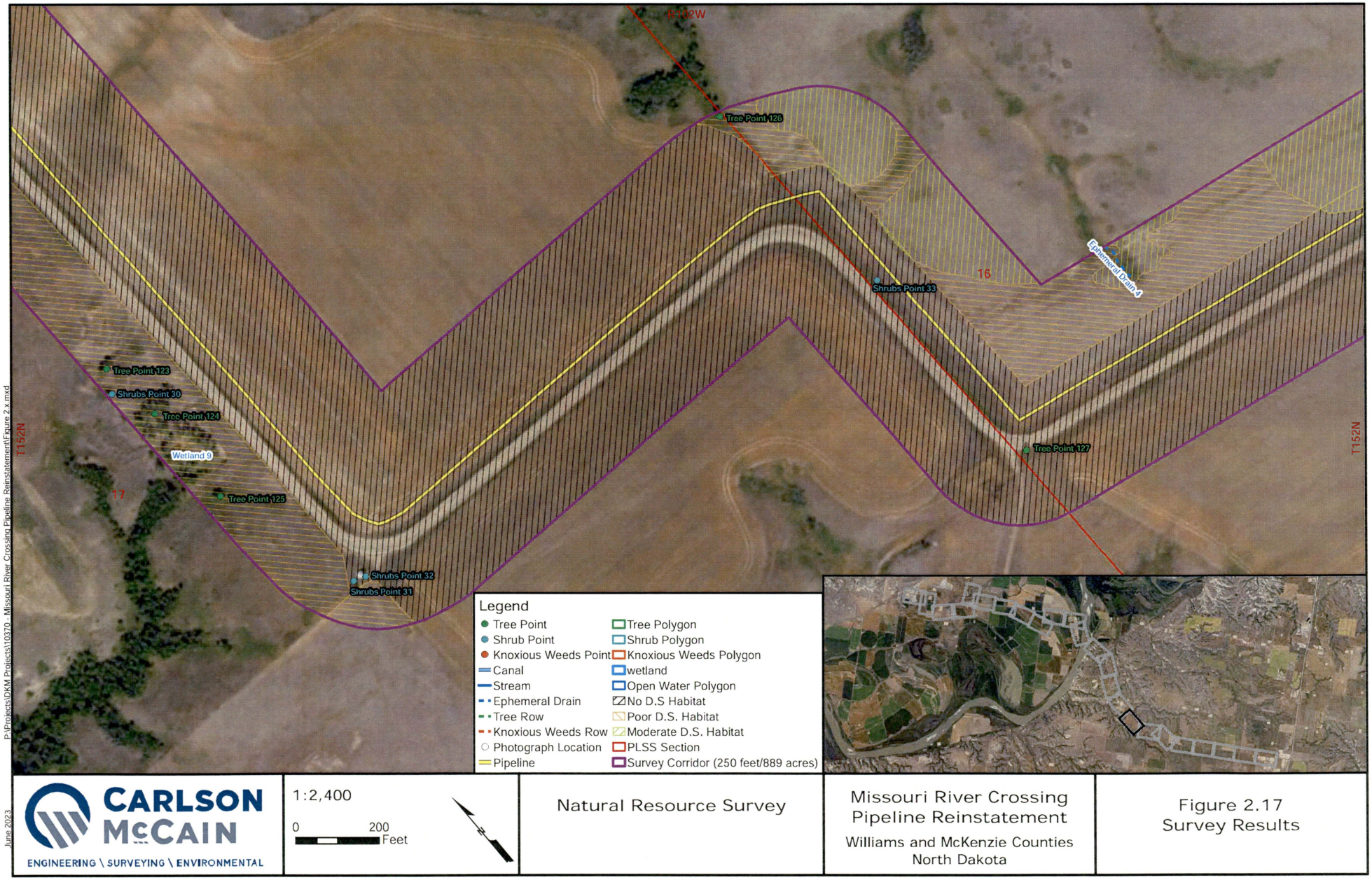
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.16
Survey Results



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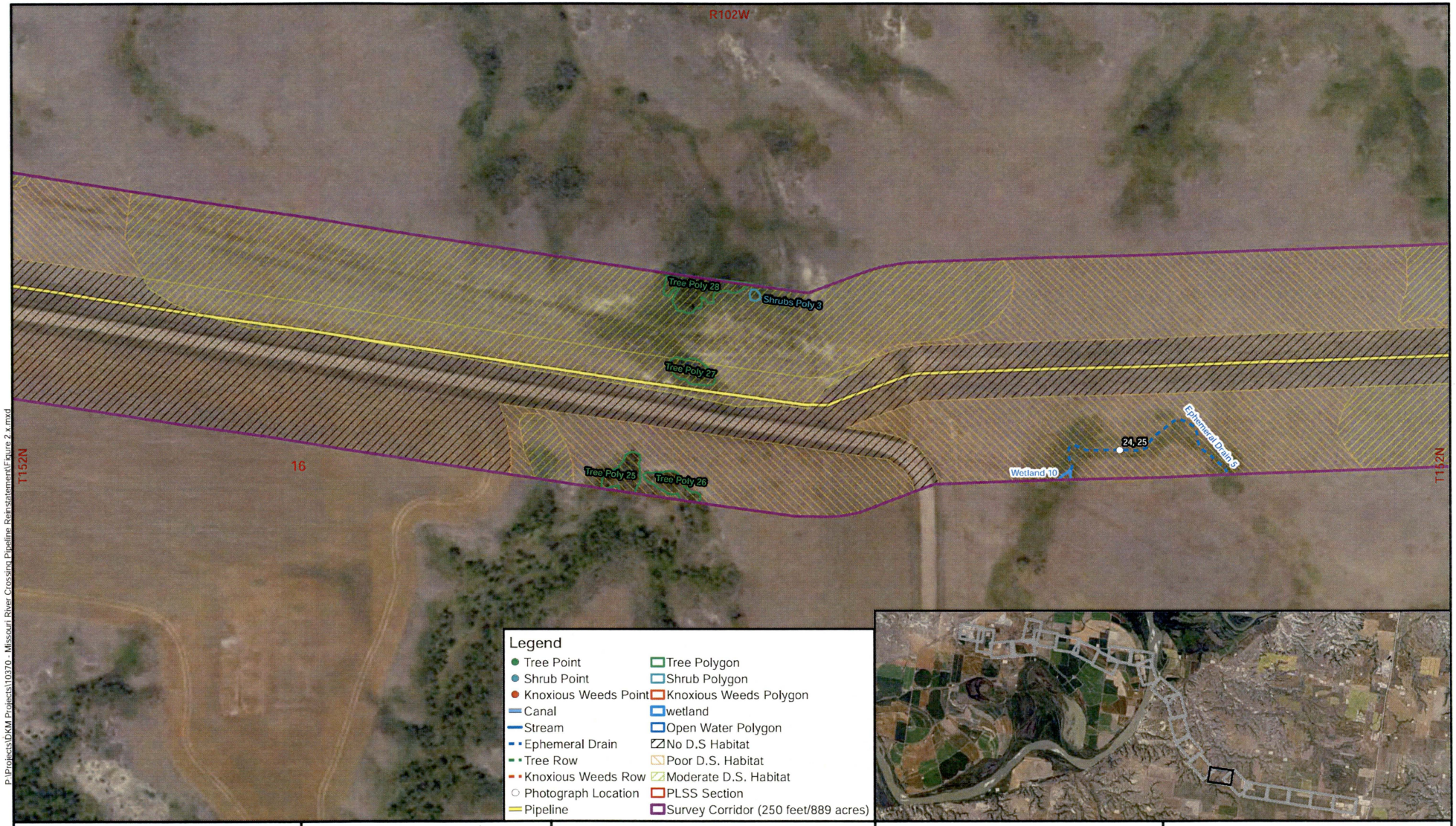
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.17
Survey Results



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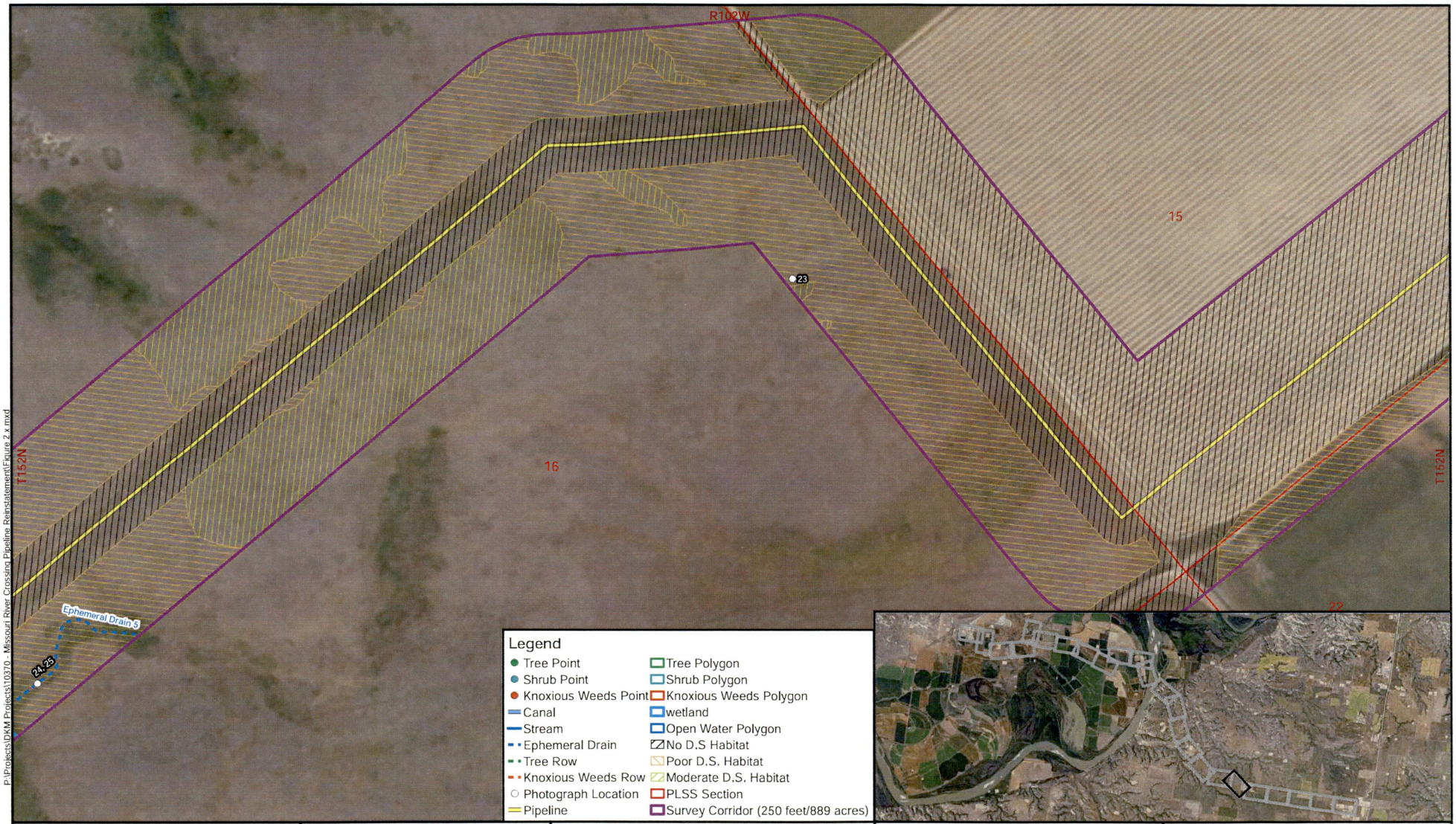
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.18
Survey Results



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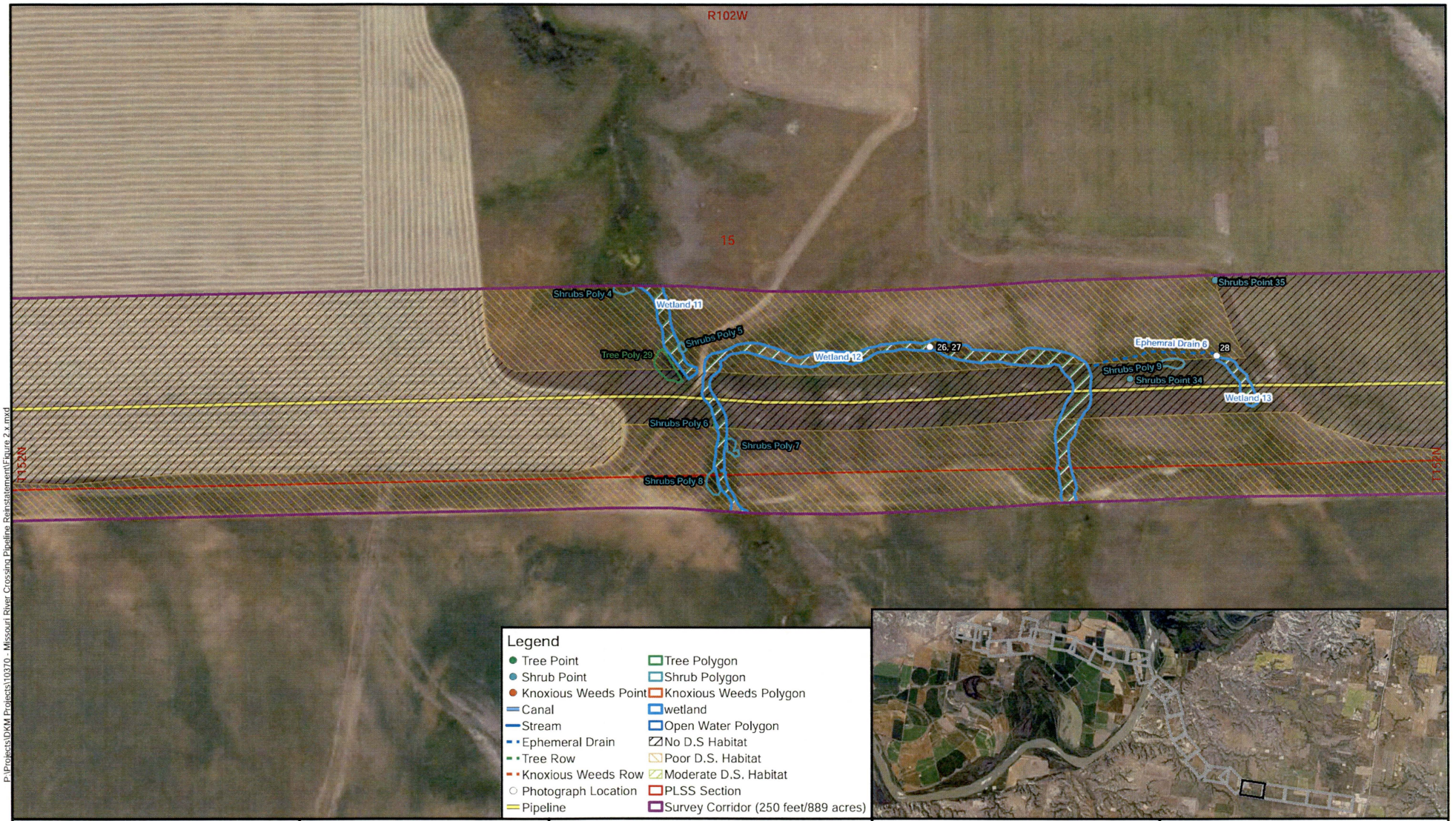
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.19
Survey Results



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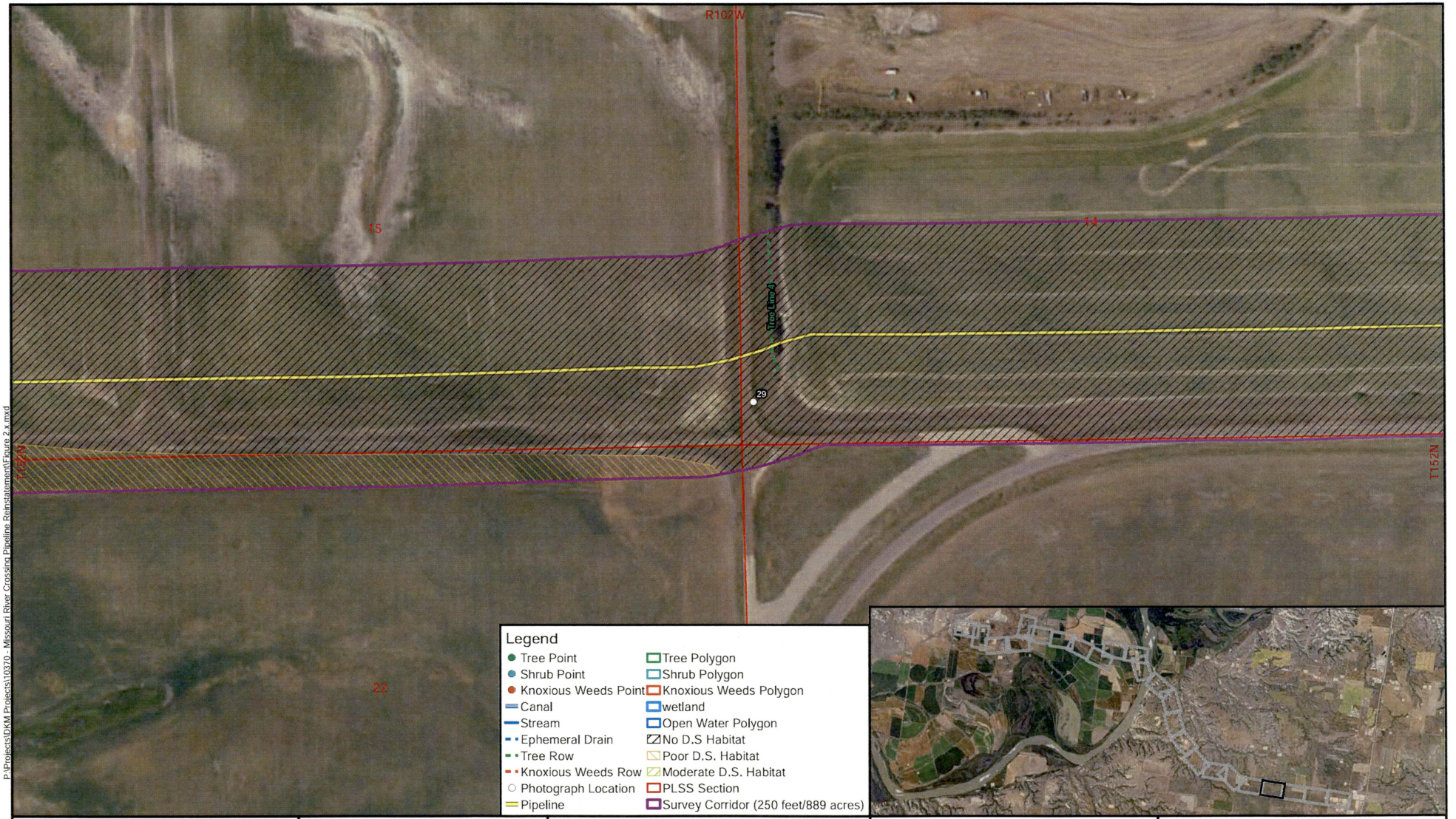
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.20
Survey Results



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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.21
Survey Results



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June 2023

CARLSON McCAIN
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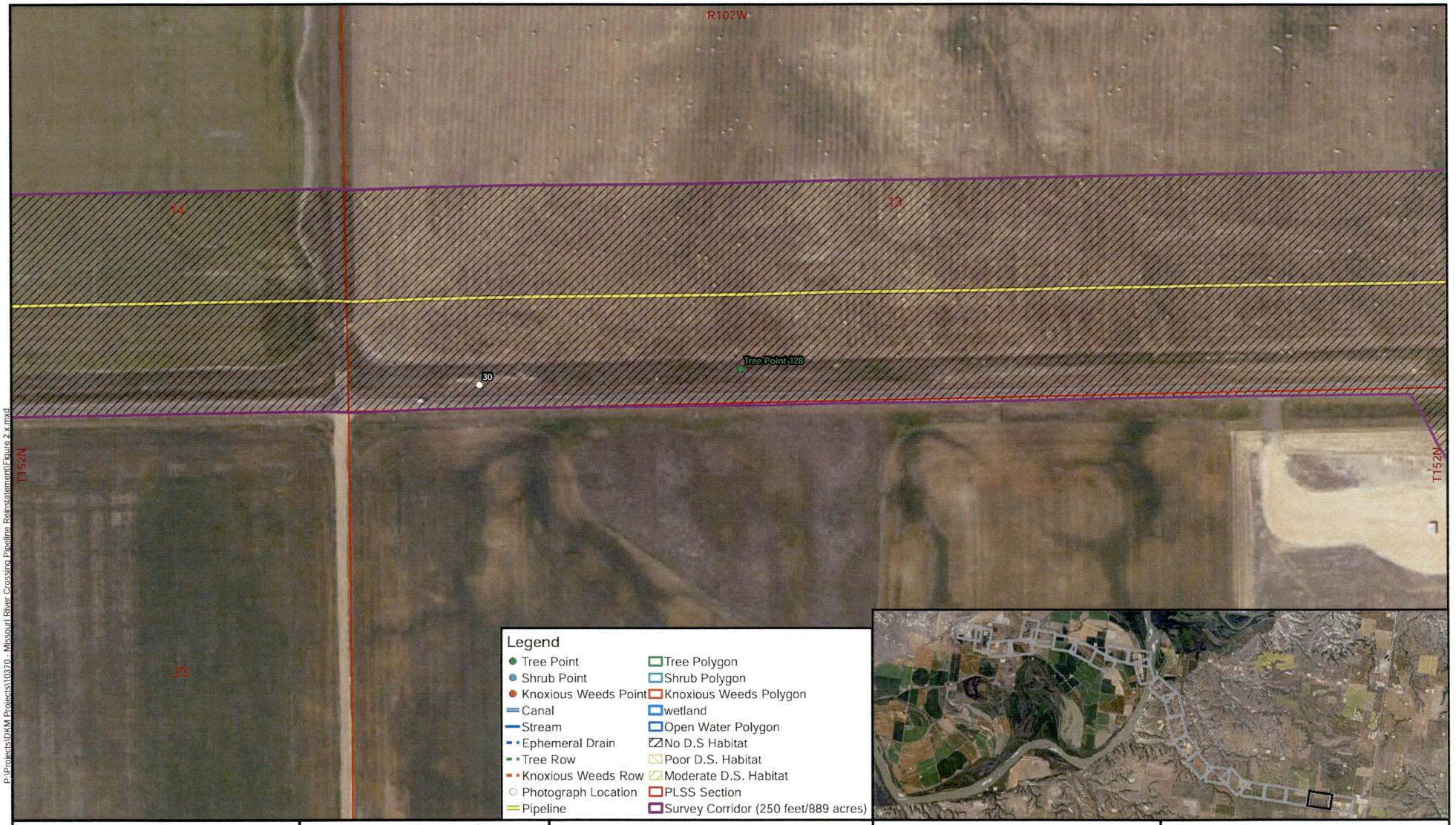
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.22
Survey Results



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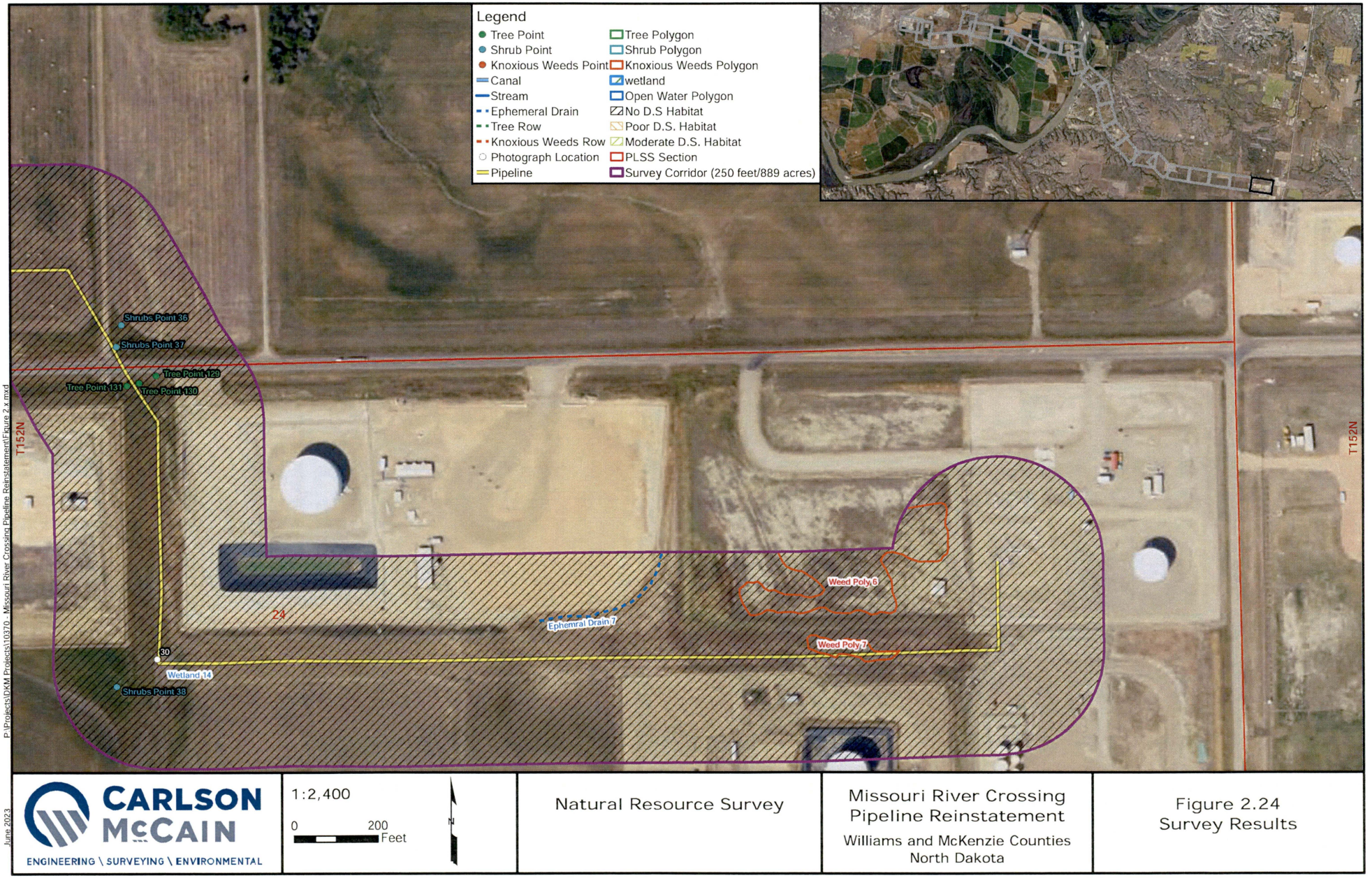
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement

Williams and McKenzie Counties
North Dakota

Figure 2.23
Survey Results



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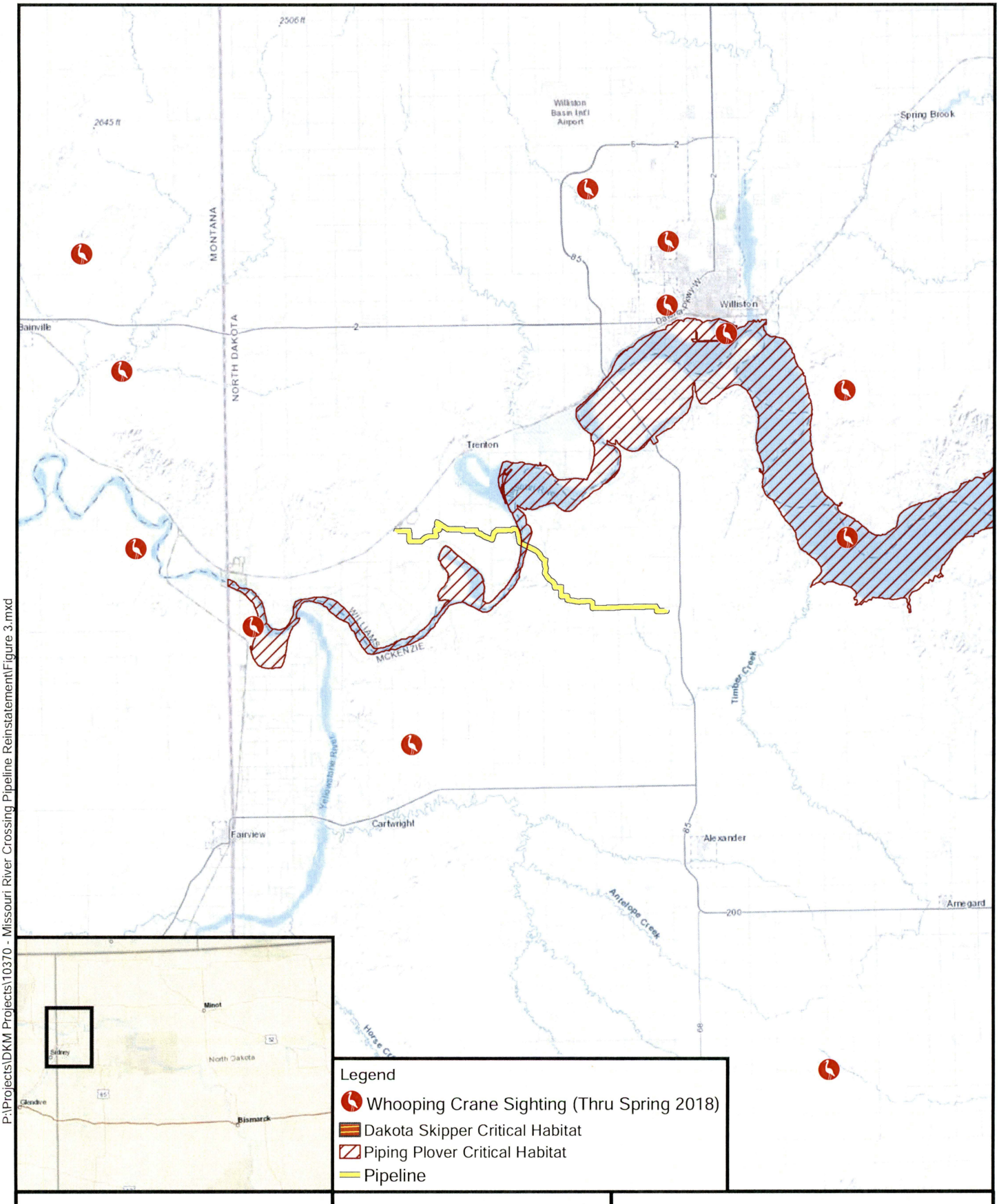
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Natural Resource Survey

Missouri River Crossing Pipeline Reinstatement
Williams and McKenzie Counties
North Dakota

Figure 2.24
Survey Results



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Figure 3
T/E Species Map
Missouri River Crossing Pipeline Reinstatement

Appendix B

Project Photographs



Photograph 1. View looking east down the Survey Corridor from the western start.



Photograph 2. View of Canada thistle in Weed Poly 3, facing east.



Photograph 3. View of Canal 1, facing south.



Photograph 4. View of Tree Poly 1, facing east.



Photograph 5. View of Canal 9, facing southeast.



Photograph 6. View of Creek 1, facing west.



Photograph 7. View of Canal 15, facing north.



Photograph 8. View of Wetland 1, facing west.



Photograph 9. View of Wetland 3, facing east.



Photograph 10. View of Wetland 4, facing east.



Photograph 11. View of Burdock and Canada Thistle at the start of Weed Line 13, facing southwest.



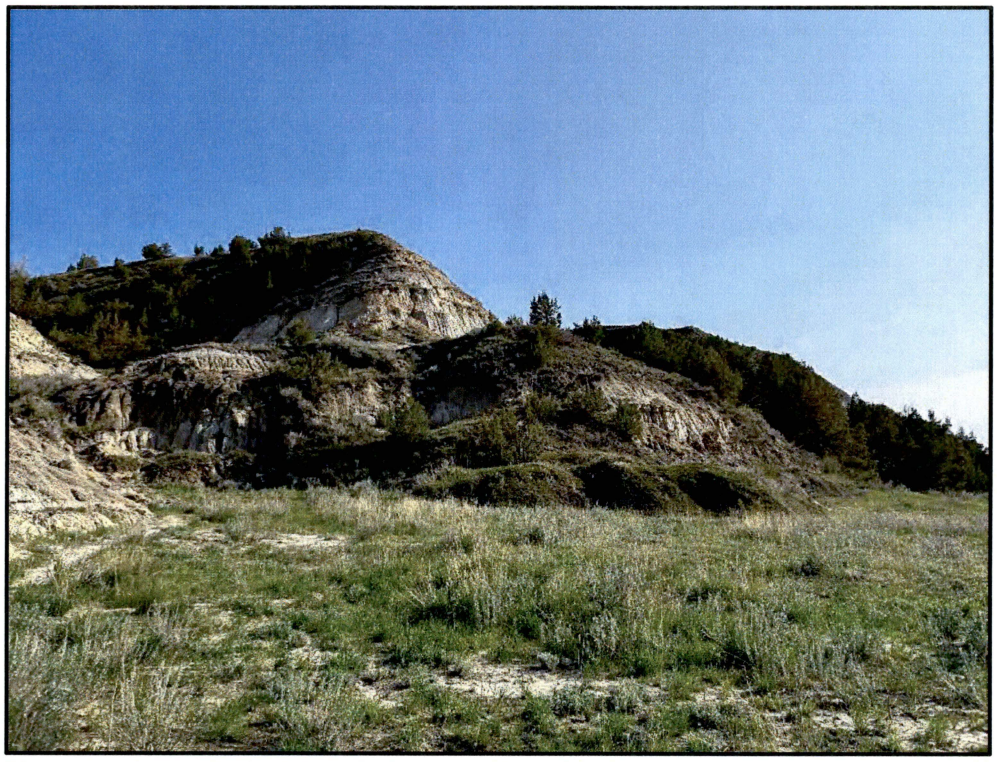
Photograph 12. View of Tree Poly 7, facing north.



Photograph 13. View of Tree Poly 8, facing southeast.



Photograph 14. View of Tree Polys 8 and 12, facing south.



Photograph 15. View of Tree Polys 14 and 15, facing southeast.



Photograph 16. View of Tree Poly 18, facing northeast.



Photograph 17. View of Wetland 6, from the center, facing west.



Photograph 18. View of Wetland 6, from the center, facing south.



Photograph 19. View of Wetland 6, from the center, facing northeast.



Photograph 20. View of Tree Poly 22, facing southwest.



Photograph 21. View of Ephemeral Drain 3, facing southeast.



Photograph 22. View of the Survey Corridor, facing south.



Photograph 23. View of Forbs Poly 26, facing south, typical of the Coneflower patches observed throughout the Survey Corridor.



Photograph 24. View of Ephemeral Drain 5 facing west.



Photograph 25. View of Ephemeral Drain 5 facing east.



Photograph 26. View of Wetland 12, from the center facing west.



Photograph 27. View of Wetland 12, from center facing east.



Photograph 28. View of Ephemeral Drain 6, facing west.



Photograph 29. View of the Survey Corridor, facing west.



Photograph 30. View of the Survey Corridor, facing east .



Photograph 31. View of Wetland 14, facing south.

APPENDIX E: CULTURAL RESOURCE REPORT

CULTURAL RESOURCE ABSTRACT

On behalf of Carlson McClain, Inc., In Situ Archaeological Consulting, LLC (In Situ) conducted a cultural resource investigation for the proposed Missouri River System Pipeline Reinstatement Project (Project). The proposed Project will update, repurpose, and convert an existing pipeline. Due to the nature of the repurposing of the existing pipeline, there is no new proposed construction for the Project. This report presents the results of an intensive Class I and Class III cultural resource investigation conducted by In Situ for the proposed Project. The Project area consists of an approximately 14-mile-long area with a survey corridor of 250 ft in width and two block terminal stations. A total of 473.7 acres were surveyed for this Project.

The proposed Project area is located within McKenzie and Williams Counties, North Dakota. The Class I and Class III cultural resource investigation included a background literature review within and surrounding the proposed Project area along with an intensive survey of the proposed Project area.

The proposed Project will be seeking a North Dakota Public Service Commission Permit. Therefore, the cultural resource assessment is subject to review by the North Dakota State Historic Preservation Office (SHPO). The investigation was necessary to identify any sites or properties and to evaluate them for the National Register of Historic Places (NRHP) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 [36 CFR 800]).

During the field survey, a total of 473.7 acres were inventoried for the proposed Project. Three previously recorded cultural resources (32MZX116, 32MZX1728, and 32WI1367) were revisited and two cultural resources (32MZ3501 and 32WI2484) were newly recorded during the cultural resource survey of the Project. Of these resources, three (32MZX1728, 32MZ3501, and 32WI2484) are recommended as *not eligible* for the NRHP. No further work is recommended for the resources that are recommended as *not eligible* for the NRHP.

Of the remaining two resources, 32MZX116 is *unevaluated* for the NRHP and 32WI1367 is *eligible* for the NRHP. 32MZX116 consists of a prehistoric artifact scatter site lead and 32WI1367 consists of a historic irrigation system site. For this Project, for site lead 32MZX116, In Situ recommends No Historic Properties Affected and no further work necessary. For site 32WI1367, avoidance is recommended for this site. However, the proposed Project consists of an existing pipeline that is being repurposed, and no new proposed construction/ground disturbances will take place for the proposed Project. Therefore, the proposed Project will not introduce any new potential impacts to the resource. Since the Project will not have any impacts to the resource, there should be no discernable change to these segments of 32WI1367. Provided that the project avoids site 32WI1367, In Situ recommends a finding of No Adverse Effects to the Historic Property and no further work is recommended for this resource for this Project.

Provided the Project avoids site 32WI1367, In Situ recommends a finding of No Adverse Effects to Historic Properties for the proposed Project. If the agencies agree with these findings, a recommendation of No Further Cultural Resource Work is considered appropriate.

October 31, 2023

Craig Picka
In Situ Archaeological Consulting, LLC
7630 Executive Drive
Eden Prairie, MN 55344

SHSND Ref: 23-0271 Missouri River System Pipeline Reinstatement Project in portions of 19 sections in McKenzie and Williams Counties, North Dakota

Dear Craig,

We received SHSND Ref: 23-0271 "Class I and III Cultural Resource Investigation for the Missouri River System Pipeline Reinstatement Project, McKenzie and Williams Counties, North Dakota" in portions of T152N R102W Sections 5-8, 13-17, 24, T152N R103W Sections 1-5, T153N R102W Sections 31, 33-34, and T153N R103W Sections 35-36 and find this In Situ Archaeological Consulting report by Craig Picka, Benjamin W. Schweer, and Abraham Ledezma acceptable. We will add it to our Manuscript Collection.

Thank you for the opportunity to review this report. Please be advised that acceptance of this report does not constitute concurrence with the determinations therein. If you have any questions, please contact either Margie Patton, Research Archeologist, at (701) 328-3576 or mmpatton@nd.gov or Lorna Meidinger, Lead Historic Preservation Specialist, at (701) 328-2089 or lbmeidinger@nd.gov.

Sincerely,

for William D. Peterson, PhD
Director, State Historical Society of North Dakota

23-0271

October 31, 2023

Craig Picka
In Situ Archaeological Consulting, LLC
7630 Executive Drive
Eden Prairie, MN 55344

SHSND Ref: 23-0271 Missouri River System Pipeline Reinstatement Project in portions of 19 sections in McKenzie and Williams Counties, North Dakota

Dear Craig,

From your submission on behalf of Carlson McCain, Inc. in Bismarck, North Dakota, it is our understanding that SHSND Ref: 23-0271 Missouri River System Pipeline Reinstatement Project involves no ground disturbance or new construction. Therefore, it is our determination that there are no significant sites affected by this project provided it takes place in the location and in the manner described in the documentation.

Thank you for the opportunity to review this project under North Dakota cultural resources consultation. This letter does not serve as federal agency consultation or SHPO consultation for compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, (36 CFR Part 800), or the National Environmental Policy Act, as amended, (42 U.S.C. §§ 4321- 4347).

If you have any questions, please contact Lorna Meidinger, Lead Historic Preservation Specialist at lbmeidinger@nd.gov or (701) 328-2089.

Sincerely,

for William D. Peterson, PhD
Director, State Historical Society of North Dakota

23-0271