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December 1, 2023

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, D.C. 20426

Re: WBI Energy Transmission, Inc.
Wahpeton Expansion Project
Docket No. CP22-466-000
Responses to the Environmental Conditions of the Order Issuing Certificate

Dear Ms. Bose:

WBI Energy Transmission, Inc. (WBI Energy), herewith submits for filing with the Federal Energy Regulatory Commission (FERC or Commission) in the above-referenced docket its responses to the Environmental Conditions included in the Appendix of the Order Issuing Certificate (Order) issued by the Commission on October 23, 2023, including its Implementation Plan in response to Environmental Condition 7.

On October 30, 2023, WBI Energy, pursuant to Section 157.20(a) of the Commission's regulations, accepted the Commission's Order.

WBI Energy acknowledges that as of the date of this filing, it has not yet met the following requirements to request authorization to proceed with construction activities associated with the Project:

- In accordance with Ordering Paragraph (B)(3) and Environmental Condition 11, WBI Energy has yet to receive its Clean Water Act Section 404 (Waters of the U.S.) permit via the Nationwide Permit 12 program from the U.S. Army Corps of Engineers (USACE). It anticipates approval in December 2023 and will file the approval with the Commission upon receipt.
- In accordance with Ordering Paragraph (B)(3) and Environmental Condition 16, WBI Energy is completing consultation with the North Dakota Historic Preservation Office (ND SHPO) on an addendum survey report for cultural resources submitted to the ND SHPO on October 19, 2023. It anticipates the completion of consultation in December 2023, and will file the results of the consultation with the Commission when complete.

WBI Energy will submit a written request to the Director of the Office of Energy Projects for authorization to commence construction activities upon the receipt and filing of the Section 404 permit from the USACE and concurrence from the ND SHPO as indicated above.

The filing includes the following volumes:

Volume I – consists of the responses to the Environmental Conditions and related attachments. The information contained in Volume I is public.

Volume II – consists of privileged information included in certain attachments to the Environmental Conditions. WBI Energy requests privileged treatment of this information, which is labeled “CUI/PRIV – DO NOT RELEASE.” The information contained in Volume II includes:

- Attachment 4-2 – Landowner List with tract numbers; and
- Attachment 7-1 - Addendum to Cultural Resources Survey Report

Should you have any questions or comments regarding this filing, please call the undersigned at (701) 530-1563.

Sincerely,

/s/ Lori Myerchin

Lori Myerchin
Director, Regulatory Affairs and
Transportation Services

Attachments

cc: via email

David Hanobic, FERC Environmental Project Manager
Dawn Ramsey, FERC
Official Service List

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated this 1st day of December, 2023.

By /s/ Lori Myerchin
Lori Myerchin
Director, Regulatory Affairs and
Transportation Services
WBI Energy Transmission, Inc.
1250 West Century Avenue
Bismarck, ND 58503
Telephone: (701) 530-1563

STATE OF NORTH DAKOTA)
COUNTY OF BURLEIGH)

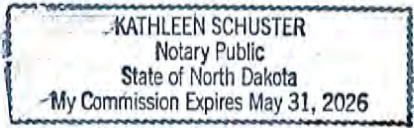
I, Lori Myerchin, being first duly sworn, do hereby depose and say that I am the Director, Regulatory Affairs and Transportation Services for WBI Energy Transmission, Inc.; that I have read the foregoing document; that I know the contents thereof; that I am authorized to execute such document; and that all such statements and matters set forth therein are true and correct to the best of my knowledge, information and belief.

Dated this 1st day of December, 2023.

By *Lori Myerchin*
Lori Myerchin
Director, Regulatory Affairs and
Transportation Services

Subscribed and sworn to before me this 1st day of December, 2023.

Kathleen Schuster
Kathleen Schuster, Notary Public
Burleigh County, North Dakota
My Commission Expires: 5/31/2026





WBI ENERGY TRANSMISSION, INC.

Wahpeton Expansion Project

Docket No. CP22-466-000

**Final
Implementation Plan**

December 2023

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ATTACHMENTS

- ATTACHMENT 3-1 Signed Affirmative Statement regarding Environmental Training and Environmental Inspectors’ Authority
- ATTACHMENT 4-1 Alignment Sheets (Public)
- ATTACHMENT 4-2 Landowner List with Tract Numbers (filed under separate cover in Volume II as Controlled Unclassified Information [CUI]/Privileged and Confidential [PRIV])
- ATTACHMENT 5-1 Proposed Project Modifications Figures
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- ATTACHMENT 7-1 Cultural Resources Survey Report Addendum (filed under separate cover in Volume II as CUI//PRIV)
- ATTACHMENT 7-2 Natural Resources Survey Report Addendum
- ATTACHMENT 7-3 Project Construction Schedule
- ATTACHMENT 10-1 Complaint Resolution Procedure Letter
- ATTACHMENT 11-1 Applicable Authorizations
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- ATTACHMENT 15-1 Summary of Proposed Surface Water Use
- ATTACHMENT 17-1 Revised Sheyenne River Drill Noise Modeling Results

ACRONYMS AND ABRREVIATIONS

Certificate	Certificate of Public Convenience and Necessity
Commission	Federal Energy Regulatory Commission
CUI	Controlled Unclassified Information
dBA	A-weighted decibels
EI	Environmental Inspector
EIS	Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
HDD	horizontal directional drill
Ldn	day-night average sound level
NDDEQ	North Dakota Department of Environmental Quality
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NTP	Notice to Proceed
OEP	Office of Energy Projects
Order	Order Issuing Certificate
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
PRIV	Privileged and Confidential
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Project	Wahpeton Expansion Project
WBI Energy	WBI Energy Transmission, Inc.

1.0 INTRODUCTION

On May 27, 2022, WBI Energy Transmission, Inc. (WBI Energy) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) under section 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission’s regulations for a Certificate of Public Convenience and Necessity (Certificate) authorizing WBI Energy to construct, modify, operate, and maintain natural gas transmission facilities in Cass and Richland counties, North Dakota, collectively known as the Wahpeton Expansion Project (Project). WBI Energy’s Application was assigned Docket No. CP22-466-000.

The Project will provide an incremental 20,600 equivalent dekatherms per day of firm natural gas transportation capacity to meet a growing demand for natural gas in southeastern North Dakota. The Project will include the construction and operation of approximately 60.2¹ miles of new 12-inch-diameter natural gas pipeline, minor modifications at WBI Energy’s existing Mapleton Compressor Station, the construction of the new Montana-Dakota Utilities Company (MDU)-Kindred and MDU-Wahpeton Border Stations, seven block valve settings, four pig launcher/receiver settings, and ancillary facilities.

The Commission prepared and issued a final environmental impact statement (EIS) for the Project on April 7, 2023, to satisfy the requirements of the National Environmental Policy Act of 1969 (NEPA) and the Commission’s implementing regulations under Title 18 of the Code of Federal Regulations Part 380. The Commission concluded that construction and operation of the Project would not result in significant environmental impacts, except for climate change impacts that are not characterized in the EIS as significant or insignificant. This is in accordance with the Energy Policy Act of 2005 Section 313(a), Pub. L. 109-58, 119 Stat. 594, codified as Sections 15(a)-(d), 15 U.S.C. §§ 717n(a)-(d), which designates FERC as the lead federal agency for all NEPA analyses related to NGA authorizations sought by proposed interstate natural gas pipeline and storage projects and liquefied natural gas terminal facilities.

The Commission issued its Order Issuing Certificate (Order) on October 23, 2023 approving the Project. As explained herein, this Implementation Plan addresses all environmental conditions included in the Order relevant to the Project necessary for compliance with the EIS and Order. This Implementation Plan was prepared and is being filed by WBI Energy in accordance with the Order’s Environmental Condition Number (No.) 7², and any revisions or supplements to this Implementation Plan will be completed in accordance with this environmental condition.

All required preconstruction documents that have been received and/or prepared by WBI Energy and have not been filed with the Commission are included in Attachment 11-2 of this Implementation Plan. Any required documents that have not yet been received and/or prepared

¹ Due to adoption of the Wild Rice River Route Alternative – MP 55, the proposed pipeline is now 60.2 miles compared to 60.5 miles in the Project’s Application. WBI Energy did not modify its mileposting of Project facilities before or after the reroute segment (MP 55.13 and 59.63) and the end of the Project, the MDU—Wahpeton Border Station, and associated facilities still are located at MP 60.5.

² WBI Energy notes that the Order appears to have inadvertently split Condition No. 5 into two conditions (Condition No. 5 and Condition No. 6). The effect of this was to numerically advance all of the subsequent condition numbers. For example, FERC’s typical Condition No. 6, which relates to the Implementation Plan became Condition No. 7 in the Order. For the purposes of this Implementation Plan, WBI Energy has retained the condition numbering specified in the Order.

are identified herein in Attachment 11-1 and will be provided to the Commission as supplements to the Implementation Plan and/or along with WBI Energy's request for Notice(s) to Proceed (NTP) prior to construction of the Project.

PROJECT MODIFICATIONS

WBI Energy hereby requests approval from the Commission of certain modifications to the certificated Project to address constructability/engineering issues and address landowner concerns. These modifications are described below in Section 2.5, WBI Energy's Response to Environmental Condition No. 5. Responses to Environmental Condition Nos. 4 and 5 include revised detailed alignment maps/sheets identifying proposed reroutes, facility expansions, a new contractor yard, and other modifications to temporary workspace that will be used or disturbed and have not been previously identified in filings with the Secretary.

The proposed modifications have been surveyed for cultural resources, threatened and endangered species, and wetlands and waterbodies. Landowner approval has been obtained for all Project modifications. All correspondence not previously filed with the Commission is included in Section 2.10, Response to Condition No. 11.

2.0 RESPONSE TO COMMISSION ORDER ENVIRONMENTAL CONDITIONS

This section describes WBI Energy's plan to comply with the environmental conditions of the Order. Each condition of the Order is duplicated in this document as it appears in the Order, with WBI Energy's response immediately following the condition.

2.1 CONDITION 1

WBI Energy shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EIS, unless modified by the Order. WBI Energy must:

- a. *request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);*
- b. *justify each modification relative to site-specific conditions;*
- c. *explain how that modification provides an equal or greater level of environmental protection than the original measure; and*
- d. *receive approval in writing from the Director of the Office of Energy Projects (OEP), or the Director's designee, **before using that modification.***

Response:

WBI Energy will follow the construction procedures and mitigation measures described in its May 2022 Application, supplements (including responses to staff data requests), as identified in the EIS, unless modified by the Order. WBI Energy will:

- a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
- b. justify each modification relative to site-specific conditions;

- c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
- d. receive approval in writing from the Director of OEP, or the Director's designee, before using that modification.

2.2 CONDITION 2

The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the Project. This authority shall allow:

- a. *the modification of conditions of the Order;*
- b. *stop-work authority; and*
- c. *the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.*

Response:

WBI Energy acknowledges that the Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations to carry out the conditions of the Order, and take action to ensure the protection of environmental resources during construction of the Project. The Director of OEP's delegated authority allows:

- a. the modification of conditions of the Order;
- b. stop-work authority; and
- c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from the Project construction and operation.

2.3 CONDITION 3

Prior to any construction, WBI Energy shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, Environmental Inspectors (EI), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities.

Response:

An Affirmative Statement certified by WBI Energy's Executive Vice President, Operations is included as Attachment 3-1. The statement affirms that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the

implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities associated with the Project.

2.4 CONDITION 4

*The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, WBI Energy shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.*

WBI Energy's exercise of eminent domain authority granted under section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. WBI Energy's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

Response:

This Implementation Plan includes detailed construction-version alignment sheets no smaller than a scale of 1:6,000 for all facilities approved by the Order. Attachment 4-1 contains aerial photo-based alignment sheets depicting public information. The Landowner List, identifying the landowners by tract number, is provided as Controlled Unclassified Information (CUI)//Privileged and Confidential (PRIV) in Attachment 4-2 of Volume II and labeled "CUI//PRIV - DO NOT RELEASE."

The alignment sheets incorporate the revisions to the Project (e.g., proposed reroutes, facility expansions, a new contractor yard and other modifications to temporary workspaces) that will be required prior to the start of construction. Detailed information regarding these revisions/modifications is provided in the response to Environmental Condition No. 5.

WBI Energy further understands that its right of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to this Order must be consistent with the authorized facilities and locations. WBI Energy's right of eminent domain granted under NGA section 7(h) does not authorize WBI Energy to increase the size of the natural gas facilities to accommodate future needs or to acquire rights-of-way for a pipeline to transport a commodity other than natural gas.

2.5 CONDITIONS 5 AND 6

WBI Energy shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs.

*Each area must be approved in writing by the Director of OEP, or the Director's designee, **before construction in or near that area.***

This requirement does not apply to extra workspace allowed by the Commission's Upland Erosion Control, Revegetation, and Maintenance Plan and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

6. Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;*
- b. implementation of endangered, threatened, or special concern species mitigation measures;*
- c. recommendations by state regulatory authorities; and*
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental resources.*

Response:

Attachment 5-1 includes an overview map set and detailed maps/figures with an aerial photographic base at a scale not smaller than 1:6,000 identifying the proposed reroutes, facility expansions, a new contractor yard, and other modifications to temporary workspaces that have not been identified in previous filings with the Secretary. Table 5-1 in Attachment 5-1 provides a description of the land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area for each of these Project revisions/modifications. The table also provides a description of and justification for the requested Project modifications. With this filing, WBI Energy hereby requests approval by the Director of OEP, or the Director's designee, for these Project revisions/modifications.

WBI Energy acknowledges that use of new or other additional areas must be explicitly requested in writing and acknowledges that each area shall be approved in writing by the Director of OEP, or the Director's designee, before construction in or near that area.

WBI Energy recognizes that this requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands. Where additional areas are needed that qualify as minor field realignments, WBI Energy will describe them as part of its weekly report. WBI Energy shall attain all appropriate clearances prior to implementation of the minor field realignments.

2.6 CONDITION 7

Within 60 days of the acceptance of the Order and before construction begins, WBI Energy shall file an Implementation Plan with the Secretary for review and written approval by the

Director of OEP, or the Director's designee. WBI Energy must file revisions to the plan as schedules change. The plan shall identify:

- a. how WBI Energy will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EIS, and required by the Order;*
- b. how WBI Energy will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;*
- c. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;*
- d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;*
- e. the location and dates of the environmental compliance training and instructions WBI Energy will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s)*
- f. the company personnel (if known) and specific portion of WBI Energy's organization having responsibility for compliance;*
- g. the procedures (including use of contract penalties) WBI Energy will follow if noncompliance occurs; and*
- h. for each discrete facility, a Gantt or PERT chart (or similar Project scheduling diagram), and dates for:
 - i. the completion of all required surveys and reports;*
 - ii. the environmental compliance training of onsite personnel;*
 - iii. the start of construction; and*
 - iv. the start and completion of restoration.**

Response:

WBI Energy has developed this Implementation Plan and associated attachments to file with the Secretary for review and approval by the Director of OEP, or the Director's designee, in compliance with Condition No. 7 above. WBI Energy's response to each requirement is detailed below under condition subparts 7a through 7h. WBI Energy will file revisions to the plan as schedules change.

Subpart 7a: Implementation of Construction Procedures and Mitigation Measures

WBI Energy is committed to developing the means to achieve a high level of environmental compliance during construction of the Project. WBI Energy plans to achieve this goal by: retaining the services of a contractor well experienced in the type of construction planned, through use of an inhouse construction management group and retaining a third party inspection team consisting of knowledgeable and effective craft inspectors, EIs, and other personnel with the skills and capability of clearly communicating environmental procedures and mitigation requirements in Project documents. WBI Energy management and inspection

personnel will work in close coordination with key contractor personnel to ensure compliance with applicable requirements. An environmental training program ranging from formal group meetings to "tailgate" sessions with individual crews will also be implemented. Additionally, WBI Energy welcomes the opportunity to have FERC staff representatives onsite during construction to provide for additional Project oversight.

The construction procedures and mitigation measures that are described in WBI Energy's Application and supplements (including responses to staff data requests), identified in the EIS, and required by the Order will be provided to WBI Energy's EIs and contractor prior to construction, and will be reviewed during preconstruction environmental training. As described in WBI Energy's response to Condition 7b, below, WBI Energy has incorporated these documents by reference into the construction contracts. WBI Energy's construction contract requires the contractor, including any subcontractors, to comply with all environmental requirements including all environmental permits related to the Project. Further, WBI Energy's Project Manager, project engineers, and environmental personnel will review daily inspection reports prepared by WBI Energy's EIs and will periodically inspect the Project site to ensure these measures are being implemented.

Subpart 7b: Incorporation of Requirements into Project Documents

The construction procedures and mitigation requirements will be incorporated into the bid documents and construction contracts by reference during bidding and contracting, and the construction drawings have also been updated to identify locations where specific requirements will apply.

WBI Energy's aerial photograph-based construction alignment sheets depict the proposed pipeline centerline (refer to Attachments 4-1). The alignment sheets include information such as property tract numbers, limits of the construction right-of-way, and temporary extra workspaces. The alignment sheets also clearly identify waterbody and wetland crossing locations, and sensitive features or areas along the pipeline route that require special construction techniques or mitigation measures.

The bid documents and construction contracts specify that the contractor must comply with WBI Energy's environmental commitments. The Project permits, plans, and procedures will be compiled into an Environmental Compliance Manual, or "Permit Book," which will be provided as a reference document to appropriate construction and inspection personnel.

In addition to WBI Energy's environmental commitments and regulatory permits, WBI Energy's construction contract includes language that specifies the consequences for noncompliance with environmental requirements, including the following penalties and affirmative obligations:

- A provision stating that the contractor and any subcontractors will comply with all applicable federal, state, and local health, safety, and environmental laws, rules, and regulations governing the Project.
- A provision outlining the authority for WBI Energy and its authorized representatives to stop activities that are not in compliance.

- A provision that the contractor shall correct any work that fails to conform to the requirements of the contract as determined by WBI Energy's inspection by engineers, inspectors, or other representatives, including the environmental conditions and mitigation measures, and that the contractor shall, at its own expense, immediately repair or replace the work found to be defective in a manner complying with the specifications and to the satisfaction of WBI Energy. This commitment by the contractor shall apply in equal force to each of the contractor's subcontractors.
- A provision stating that a holdback of sufficient payment will occur to ensure specific aspects of the contract provisions have been satisfactorily completed.
- A provision stating that repair or restoration of any damages arising from careless or tortious acts of the contractor to the environment or right-of-way shall be at the contractor's expense.
- A provision stating that the contractor shall pay and hold WBI Energy harmless from and against any and all costs, fines, penalties, and damages that result from the contractor's violation of, failure to conform to or failure to complete the Project within the time allowed for completion of the rights-of-way, Project environmental mitigation requirements, and permit provisions.

In addition to the above penalties for noncompliance, WBI Energy will include certain contract features that could also provide a mechanism to encourage compliance with environmental mitigation. These incentives include:

- Unit pricing for installation of erosion and sediment controls as may be deemed necessary.

Subpart 7c: Environmental Inspection Staffing Plan

Based on preliminary feedback provided by pipeline contractors, WBI Energy will construct the Project using either one (1) or two (2) construction spreads, pending the award of the construction contract.

WBI Energy will employ a minimum of one EI per spread but may use up to three EIs for the Project, one (1) Lead EI, and two (2) EIs (one EI per spread), to ensure adequate coverage during construction activities. The EIs will be supported by off-site staff to facilitate processing of daily and weekly reports, variance requests, and other administrative and construction support duties. This will allow the EIs to focus on compliance monitoring in the field. Due to WBI Energy's plan to employ a minimum of one and up to three EIs and to employ off-site support staff, WBI Energy believes it will be able to monitor all construction areas adequately.

The specific responsibilities of the EI(s), as described in the FERC Plan and the Wetland and Waterbody Construction and Mitigation Procedures (Procedures), is clearly stated in the construction bid and contract documents. In general, the EI(s) responsibilities include monitoring the contractor's activities to ensure the contractor's compliance with environmental permits, approvals, and environmental mitigation measures; providing guidance for the proper implementation of environmental measures; facilitating communication between the various

Project teams regarding environmental compliance; and acting as a liaison between WBI Energy and federal, state and local resource agency representatives. WBI Energy will proactively anticipate the need for additional EIs and will employ additional EIs, if necessary.

As construction of the Project proceeds, WBI Energy's construction management staff, including the EI(s), will be in daily communication with the contractor, and will be aware of the contractor's progress, schedule, and plans. The EI(s) will prepare daily inspection reports that WBI Energy will utilize to prepare the weekly status reports to be filed with the Secretary until all construction and restoration activities are complete. The weekly status reports will include information about each topic listed in Environmental Condition 9 of the Order and will be provided upon request to other federal, state, and local agencies with permitting responsibilities.

Subpart 7d: Distribution of Project-Related Materials

WBI Energy will distribute copies of environmental materials to the appropriate company representatives, including those identified in response to subpart 7f below, that have environmental compliance responsibilities. At a minimum, environmental permit books consisting of complete copies of the environmental permits, plans, and associated materials will be provided to the EIs and WBI Energy's Environmental personnel. Additional copies may also be distributed to WBI Energy's project engineers, Chief Inspector, contractor site supervisors, subcontractors, and construction craft or activity inspectors, as appropriate, to facilitate Project compliance.

Subpart 7e: Environmental Compliance Training and Instruction

WBI Energy will provide various types and levels of environmental training in order to disseminate information about the environmental requirements and associated mitigation measures for the Project. A mandatory formal training program will be conducted prior to the start of activities for all supervisory construction and inspection personnel involved in the Project. WBI Energy anticipates the training will be held on April 1, 2024. In addition, a second training program is anticipated to be held on April 15, 2024 for all heavy-equipment operators and other construction personnel involved in mainline construction. These training programs will make appropriate use of presentations by Project management personnel, technical experts, and personnel involved in Project permitting; and will include review and discussion of environmental documents. The training will be specific to the Project and will be designed to achieve compliance with environmental requirements. WBI Energy will provide OEP staff with the time and location of these training sessions as they are finalized to provide them the opportunity to participate.

The level of training for other Project personnel will be commensurate with the roles and responsibilities of the individuals. The EI(s) will receive the most comprehensive training and will begin their review of all Project-related construction and restoration requirements, including field review of the Project area, prior to commencement of construction. The EI(s) will be expected to provide the requisite training to other Project personnel that arrive during construction. Training for other inspection staff, construction managers, and foremen is planned to take a half day. Laborers, welders, operators, etc., can receive sufficient training in about an hour.

Follow-up training will be conducted as needed to provide existing personnel with updated or revised environmental requirements. Construction crews or individuals who may be

involved in a noncompliance may be required to repeat training or be subject to dismissal depending on the circumstance of noncompliance or if another occasion of noncompliance were to occur.

All participants in environmental training will be required to sign an attendance roster. Completed rosters will be retained in Project files. Participants completing the training will be provided with documentation of attendance.

Through its environmental training program, WBI Energy will have informed and trained all personnel working on the Project in the proper implementation of the environmental requirements and the responsibility for compliance. Specifically, pipeline craft or activity inspectors will be trained to recognize the environmental impacts that could arise from the particular activity they are inspecting, and they will be empowered to enforce the environmental specifications.

Subpart 7f: WBI Energy Personnel with Compliance Responsibility

All company personnel involved in the Project are responsible for knowing and understanding the requirements applicable to the work they are performing. WBI Energy has identified the following personnel in having a key role in maintaining compliance during the construction and operation phases of the Project:

- Andrew Bates / Gay Lynn Lueder – Regulatory Affairs – Responsible for managing requirements in the Certificate Order, including communication requirements to Project personnel and submittal of notifications, reports and other communications to the Commission.
- Jill Linn / Robbyn Reukauf – Environmental Affairs - Responsible for managing compliance of environmental commitments in the application and Certificate Order as well as other environmental permits obtained for the Project, including the inspection, recordkeeping and reporting requirements in these permits. Environmental inspectors will be contracted and managed by the Environmental Affairs team and will provide the team with daily inspection reports documenting compliance activities.
- Steve Kelly – Project Manager - Responsible for the overall management of the Project's engineering, right-of-way, and construction phases and supporting the Regulatory Affairs and Environmental Affairs personnel to maintain compliance. The Project Manager will ensure the requirements of the Certificate Order and other environmental permits are provided to the construction contractor and appropriate penalties for noncompliance are included in contract documents. Other compliance responsibilities include attending environmental training, reviewing and being knowledgeable of compliance conditions in Project documents, and providing Project information in a timely manner to support reporting efforts. Supporting these activities will be:
 - Duane Pruitt – Construction Project Coordinator
 - Alex Palmer – Senior Planner/Scheduler
 - Justin Pabst, Mike Robinson, and Jerrit Schmierer – Project Engineers

- Wade Nielsen – Land Supervisor – Responsible for landowner communication and addressing concerns raised through the environmental complaint resolution process.

Subpart 7g: Noncompliance Procedures

In the event that noncompliance occurs, action(s) will be taken by WBI Energy personnel to correct the problem, as appropriate. Minor noncompliance, such as littering or incorrect placement of silt fence, typically will be handled on an informal basis by the EIs providing a reminder directly to the individual or crew. More serious noncompliance, such as working off the right-of-way, mixing topsoil and subsoil, or implementing incorrect waterbody crossing methods, will result in a formal process to document, communicate, correct, and follow-up on the incident. As necessary, additional WBI Energy personnel or contract personnel ranging from the Chief Inspector to the Environmental Manager or beyond will be involved to address more serious issues.

If an EI observes that the methods or manner of performance of an activity represents an immediate danger to the environment, they will use their delegated authority to stop the activity until WBI Energy is satisfied that alternative methods will be utilized so that further noncompliance is avoided. As part of the corrective process for reportable noncompliance events, the EIs will document and communicate details of the noncompliance to the appropriate Project personnel, including the Environmental personnel, the contractor's supervisory representatives, and WBI Energy's Project management and construction inspection personnel. The EIs will then work with the appropriate construction and inspection personnel by providing additional environmental training, if necessary, and by developing a plan to correct the noncompliance. The EI(s) will re-inspect the areas and construction personnel activities as necessary after a noncompliance event to document that corrective measures have been implemented. Noncompliance reporting will be a component of the weekly reports prepared by WBI Energy and filed with FERC in accordance with Environmental Condition 9 of the Order.

As appropriate, WBI Energy will implement the contract penalties for noncompliance that are discussed under subpart 7b, above.

Subpart 7h: Project Schedule

WBI Energy has completed required surveys and reports for 100 percent of the Project alignment. WBI Energy has included as Attachments 7-1 and 7-2, respectively, addendums to its cultural and natural resources survey reports that have not previously been filed with the Secretary. Attachment 7-1 is filed under separate cover in Volume II and marked "CUI//PRIV – DO NOT RELEASE".

WBI Energy has identified anticipated dates for environmental compliance training for on-site personnel, the start of construction, and the start and completion of restoration (refer to Attachment 7-3). WBI Energy notes that the start of construction date is tentative and is dependent upon receipt of the NTP from the Director of OEP, or the Director's designee.

2.7 CONDITION 8

WBI Energy shall employ at least one EI per construction spread. The EI shall be:

- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;*
- b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;*
- c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;*
- d. [a full-]time position, separate from all other activity inspectors;*
- e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and*
- f. responsible for maintaining status reports.*

Response:

WBI Energy plans to employ a minimum of one and up to three EIs to cover the construction spread(s) as described in the response to Environmental Condition No. 7, subpart 7c. WBI Energy's contract documents will establish the EIs as having the responsibility for monitoring and ensuring compliance with all mitigation measures required by the Order, and other grants, environmental regulations, permit conditions, certificates, or other authorizing documents, as well as stop-work authority to prevent significant environmental damage from occurring. The EIs will also be responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract. The Supervision and Inspection section (Section II) of the Commission's Plan and the Environmental Inspectors section (Section III) of the Commission's Procedures outline the responsibilities and requirements of the EIs. The EIs will be authorized to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document. The EI(s) will have a full-time position and will not have any other non-environmental inspection responsibilities. The EI(s) will document compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies and will submit status reports.

2.8 CONDITION 9

*Beginning with the filing of its Implementation Plan, WBI Energy shall file updated status reports with the Secretary on a **weekly** basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:*

- a. an update on WBI Energy's efforts to obtain the necessary federal authorizations;*
- b. an update on WBI Energy's efforts to obtain the necessary federal authorizations;*

- c. *the construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;*
- d. *a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);*
- e. *a description of the corrective actions implemented in response to all instances of noncompliance;*
- f. *the effectiveness of all corrective actions implemented;*
- g. *a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and*
- h. *copies of any correspondence received by WBI Energy from other federal, state, or local permitting agencies concerning instances of noncompliance, and WBI Energy's response.*

Response:

WBI Energy is submitting its first status report concurrently with this Implementation Plan. An updated status report will be filed with the Secretary on a weekly basis until all construction and restoration activities are complete. The status reports will contain the information described in subparts 9a through 9h above. If status reports contain sensitive information not appropriate for public disclosure, such as identification of landowners and/or the locations of protected environmental resources, these reports will be filed as Privileged and Confidential under separate cover and marked "CUI//PRIV - DO NOT RELEASE". On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities.

2.9 CONDITION 10

*WBI Energy shall develop and implement an environmental complaint resolution procedure, and file such procedure with the Secretary, for review and approval by the Director of OEP, or the Director's designee. The procedure shall provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the Project and restoration of the right-of-way. **Prior to construction**, WBI Energy shall mail the complaint procedures to each landowner whose property will be crossed by the Project.*

- a. *In its letter to affected landowners, WBI Energy shall:*
 - i. *provide a local contact that the landowners should call first with their concerns; the letter should indicate how soon a landowner should expect a response;*
 - ii. *instruct the landowners that if they are not satisfied with the response, they should call WBI Energy's Hotline; the letter should indicate how soon to expect a response; and*

- iii. *instruct the landowners that if they are still not satisfied with the response from WBI Energy's Hotline, they should contact the Commission's Landowner Helpline at 877-337-2237 or at LandownerHelp@ferc.gov.*
- b. *In addition, WBI Energy shall include in its **weekly status report** a copy of a table that contains the following information for each problem/concern: In its letter to affected landowners, WBI Energy shall:*
 - i. *the identity of the caller and date of the call;*
 - ii. *the location by milepost and identification number from the authorized alignment sheet(s) of the affected property;*
 - iii. *a description of the problem/concern; and*
 - v. *an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.*

Response:

WBI Energy has developed an environmental complaint resolution procedure that will be mailed to affected landowners, following approval by the Director of OEP, or the Director's designee, prior to construction. The complaint resolution procedure provides contact information for WBI Energy personnel and directions for identifying, reporting, and resolving environmental mitigation problems/concerns during construction of the Project and restoration of the right-of-way. A copy of the complaint resolution procedure that will be mailed to affected landowners prior to construction is provided as Attachment 10-1.

In its weekly status report to FERC, WBI Energy will include a summary table identifying each problem/concern reported. The table will include:

- the identity of the caller and date of the call;
- the location by milepost and identification number from the authorized alignment sheet(s) of the affected property;
- description of the problem/concern; and
- an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.

2.10 CONDITION 11

*WBI Energy must receive written authorization from the Director of OEP, or the Director's designee, **before commencing construction of any Project facilities**. To obtain such authorization, WBI Energy must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).*

Response:

Attachment 11-1 lists the applicable authorizations and the dates the authorizations were issued and those that are pending. Copies of authorizations, not previously filed with the

Commission are provided as Attachment 11-2 of this Implementation Plan. WBI Energy will seek written authorization from the Director of OEP, or the Director's designee, before commencing construction of the Project facilities.

2.11 CONDITION 12

*WBI Energy must receive written authorization from the Director of OEP, or the Director's designee, **before placing the Project into service.** Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.*

Response:

WBI Energy acknowledges that it must receive written authorization from the Director of OEP, or the Director's designee, before placing the Project into service. WBI Energy understands that such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.

2.12 CONDITION 13

Within 30 days of placing the authorized facilities in service, WBI Energy shall file an affirmative statement with the Secretary, certified by a senior company official:

- a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or*
- b. identifying which of the conditions in the Order WBI Energy has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.*

Response:

Within 30 days of placing the certificated facilities in service, WBI Energy will file an affirmative statement with the Secretary, certified by a senior company official, stating that the facilities have been constructed and installed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions, or identifying which of the Certificate conditions WBI Energy has complied with or will comply with. The statement will also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in the filed status reports, and the reason for noncompliance.

2.13 CONDITION 14

Within 5 days of receipt of a water quality certification issued by North Dakota Department of Environmental Quality, Division of Water Quality, WBI Energy shall file the complete certification, including all conditions, for review by the Director of OEP, or the Director's designee, under 40 CFR 121.9. All conditions attached to the water quality certification except those that the Director of OEP, or the Director's designee, may identify as waived pursuant to 40 CFR 121.9,

constitute mandatory conditions of this Certificate Order. Prior to construction, WBI Energy shall file, for review and written approval of the Director of OEP, or the Director's designee, any revisions to its project design necessary to comply with the water quality certification conditions.

Response:

Pursuant to the FERC Order, on October 26, 2023 (Accession No. 20231026-5127), WBI Energy filed a complete water quality certification from the North Dakota Department of Environmental Quality (NDDEQ), Division of Water Quality, for review by the Director of OEP, or the Director's designee.

2.14 CONDITION 15

***Prior to construction**, WBI Energy shall file with the Secretary, the specific surface water source and volume of water anticipated from each source for hydrostatic testing, dust suppression, and drilling fluid for guided bore operations, for review and written approval by the Director of OEP, or the Director's designee.*

Response:

The specific surface water source and maximum volume of water that can be obtained from each source for hydrostatic testing, dust suppression, and drilling fluid for guided bore operations is provided in Attachment 15-1.

2.15 CONDITION 16

*WBI Energy shall **not begin** construction of facilities and/or use of all contractor yards or temporary workspaces and new or to-be-improved access roads **until**:*

- a. *WBI Energy files with the Secretary:*
 - i. *the deep testing report and monitoring plan;*
 - ii. *the North Dakota State Historic Preservation Officer's comments on the report and plan; and*
 - iii. *any additional studies, as required, and the SHPO's comments.*
- b. *The Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and*
- c. *The FERC staff reviews and the Director of OEP, or the Director's designee, approves the cultural resources reports and plans, and notifies WBI Energy in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.*

*All materials filed with the Commission containing **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CUI//PRIV-DO NOT RELEASE.**"*

Response:

Copies of WBI Energy's addendum survey reports for cultural resources are included in Attachment 7-1. Correspondence received from the North Dakota State Historic Preservation Office concurring with the results and recommendations of the survey reports are included in Attachment 11-2. As required, all material WBI Energy files with the Commission that contains location, character, and ownership information about cultural resources will be filed as Privileged and Confidential in Volume II and clearly labeled in bold lettering: "CUI//PRIV - DO NOT RELEASE."

2.16 CONDITION 17

Prior to construction of the Sheyenne River guided bore crossing, WBI Energy shall file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, a noise mitigation plan to reduce the projected noise level attributable to the proposed drilling operations at NSAs nearest to the Sheyenne River guided bore entry and exit points. During drilling operations, WBI Energy shall implement the approved plan, monitor noise levels, document the noise levels in the construction status reports, and restrict the noise attributable to the drilling operations to no more than a day-night sound level of 55 decibels on the A-weighted scale at the noise sensitive areas.

Response:

WBI Energy has conducted additional noise modeling based on its current drill design utilizing one drill rig to complete the horizontal directional drill (HDD). The updated noise modeling results, which are included in Attachment 17-1, reveal that with only one drill rig in operation, Ldn noise levels at the nearby NSA would be below 55 Ldn with 24-hour drilling, regardless of whether the drill is located at the entry or exit point. Therefore, no noise mitigation measures are required to maintain the noise attributable to the drilling operation below an Ldn of 55 A-weighted decibels (dBA).

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

Implementation Plan

ATTACHMENT 3-1

**Signed Affirmative Statement Regarding Environmental Training and
Environmental Inspector's Authority**

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

WBI Energy Transmission, Inc.)

Docket No. CP22-466-000

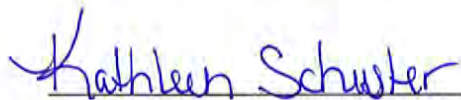
AFFIRMATIVE STATEMENT

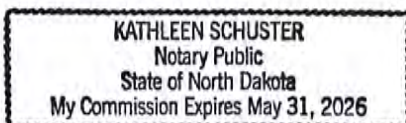
In compliance with Environmental Condition No. 3 in the Appendix to the October 23, 2023 “Order Issuing Certificate” in the above-referenced docket, the undersigned hereby certifies that all company personnel, environmental inspectors (EI), and contractor personnel will be informed of the EI’s authority, and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities associated with the Wahpeton Expansion Project.

Dated this 14 day of November, 2023.

By 
Jeffrey J. Rust
Executive Vice President, Operations

Subscribed and sworn to before me this 14th day of November, 2023.


Kathleen Schuster, Notary Public
Burleigh County, North Dakota
My Commission Expires: 5/31/2026



**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

Implementation Plan

ATTACHMENT 4-1

Alignment Sheets

WBI ENERGY TRANSMISSION, INC
WAHPETON EXPANSION
PROJECT



*WAHPETON
EXPANSION PROJECT*

<i>Horizontal Project Length</i>	<i>Revision</i>
<i>317,634' / 60.16 mi</i>	<i>R2</i>
<i>Drawing Date</i>	<i>01/19/22</i>

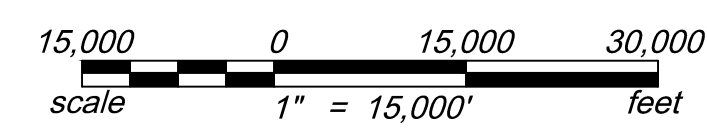
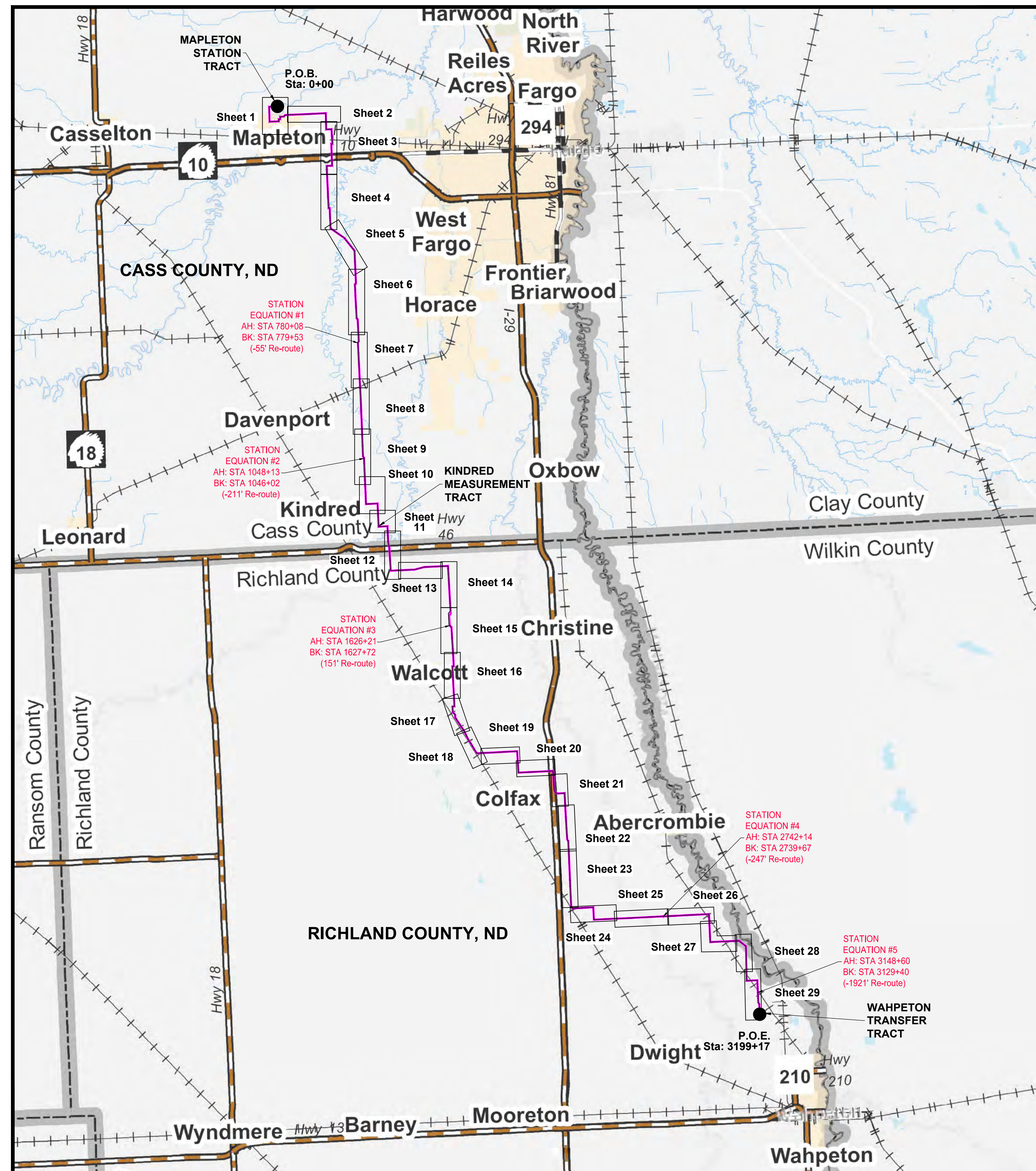


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FAX (502) 254-6093

WAHPETON EXPANSION PROJECT

Cass County, North Dakota
Richland County, North Dakota

Sheet Index	
Sheet 1	Sta 1+00 - 120+00
Sheet 2	Sta 120+00 - 220+00
Sheet 3	Sta 220+00 - 360+00
Sheet 4	Sta 360+00 - 500+00
Sheet 5	Sta 500+00 - 630+00
Sheet 6	Sta 630+00 - 760+00
Sheet 7	Sta 760+00 - 870+00
Sheet 8	Sta 870+00 - 980+00
Sheet 9	Sta 980+00 - 1090+00
Sheet 10	Sta 1090+00 - 1200+00
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Sheet 22	Sta 2270+00 - 2380+00
Sheet 23	Sta 2380+00 - 2500+00
Sheet 24	Sta 2500+00 - 2640+00
Sheet 25	Sta 2640+00 - 2750+00
Sheet 26	Sta 2750+00 - 2860+00
Sheet 27	Sta 2860+00 - 2970+00
Sheet 28	Sta 2970+00 - 3060+00
Sheet 29	Sta 3060+00 - 3199+17



LEGEND	
	Proposed Pipeline Corridor



WAHPETON EXPANSION PROJECT

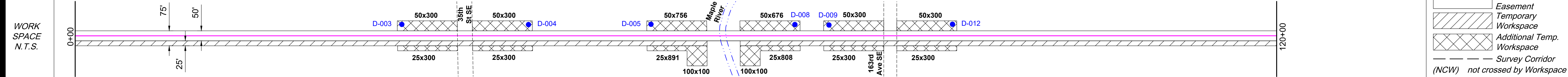
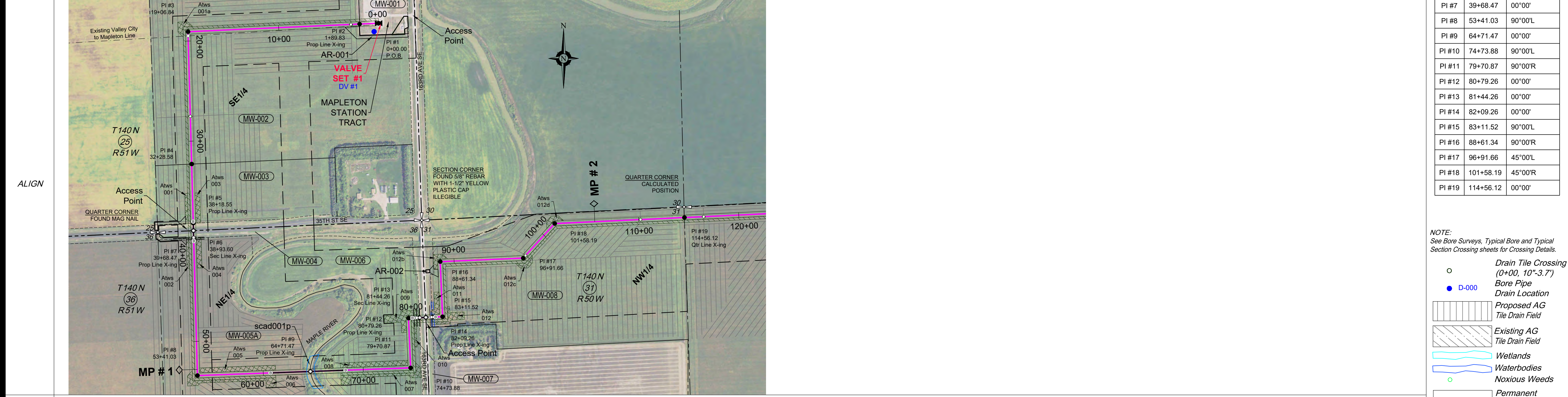
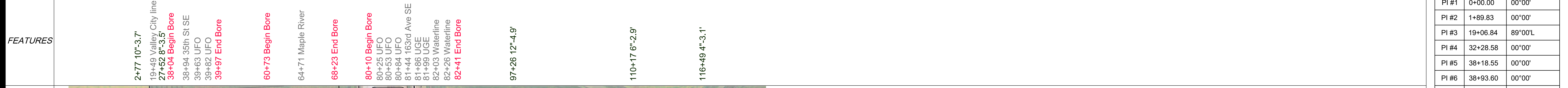
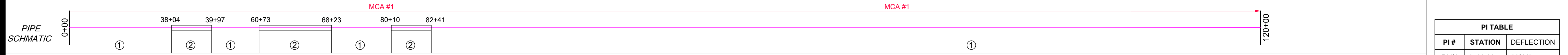
HSE INC.
HARNED SURVEYING & ENGINEERING, INC.
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LOUISVILLE, KY 40243
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FAX (502) 254-6093

Date Surveyed: JULY 2021	HSE Project #
Surveyed By: AL	19-21
Drawing Date: 7/12/21	
Drawn By: D. Smith	
Checked By: J. Hamed	Coversheet
Revision No.: R2	
Revision Date: 8-24-22	

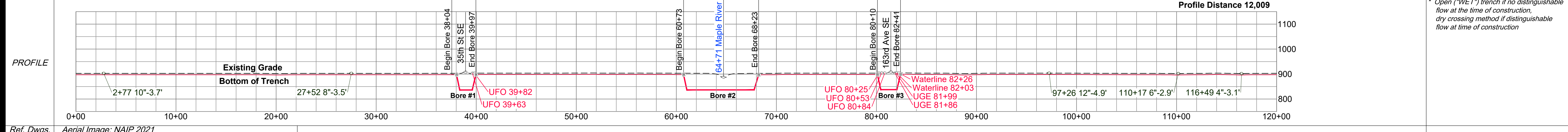


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Co, State	MW-001	MW-002	MW-003	MW-004	MW-005A	MW006	MW-007	MW-008
OWNER	LOT 1, BLOCK 1, MINOR SUB SEC. 25, T140N, R51W 190' Uncultivated	PART OF N1/2 OF SE1/4 & N1/2 OF S1/2 OF SE1/4 LESS R/W, SEC. 25, T140N, R51W 3039' Cultivated	PART OF S1/2 OF S1/2 OF SE1/4 LESS R/W, SEC. 25, T140N, R51W 590' Cultivated	SEC. 25, 36, T140N, R51W 150' Uncultivated	GOVT LOT 1 OF NE 1/4 LESS R/W SEC. 36, T140N, R51W 2382' Cultivated - 121' Uncultivated	GOVT LOT 2 OF NE 1/4 LESS R/W SEC. 36, T140N, R51W 1491' Cultivated - 116' Uncultivated	SEC. 36, T140N, R51W SEC. 31, T140N, R50W 130' Uncultivated	N1/2 OF NW1/4 WITH EXCEPTIONS LESS R/W, SEC. 31, T140N, R50W 3219' Cultivated - 28' Uncultivated
RODDAGE	189.83' / 11.50 Rods	3038.74' / 184.17 Rods	589.98' / 35.76 Rods	149.92' / 9.09 Rods	2502.99' / 151.70 Rods	1607.78' / 97.44 Rods	130.00' / 7.87 Rods	3246.85' / 196.78 Rods



Water Crossing	Name	Crossing Method	scad001p
Welland <td>Maple River <td>No Bridge <td></td> </td></td>	Maple River <td>No Bridge <td></td> </td>	No Bridge <td></td>	
Environmental Feature <td>Maple River <td>Intermediate <td></td> </td></td>	Maple River <td>Intermediate <td></td> </td>	Intermediate <td></td>	
Miscellaneous/Comments		Approx. 150' ECD	
HUC-12 Watershed		Approx. 100' mats	
Seeding Mix			090202050704



Ref. Dwgs. Aerial Image: NAIP 2021

<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Water Line Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> <tr> <td>1</td> <td>10,636</td> <td>12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE</td> </tr> <tr> <td>2</td> <td>1364</td> <td>12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO</td> </tr> </table>	Mark	Quantity	Description	1	10,636	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	2	1364	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	<p>REVISIONS</p> <table border="1"> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	No.	Date	Description				<p>WHA PETON EXPANSION PROJECT</p> <p>Scale: 1" = 500' HORIZ. / 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 25, 36, T140N, R51W, Sec. 31, T140N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 1 R2</p>
	Mark	Quantity	Description																		
1	10,636	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE																			
2	1364	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO																			
No.	Date	Description																			

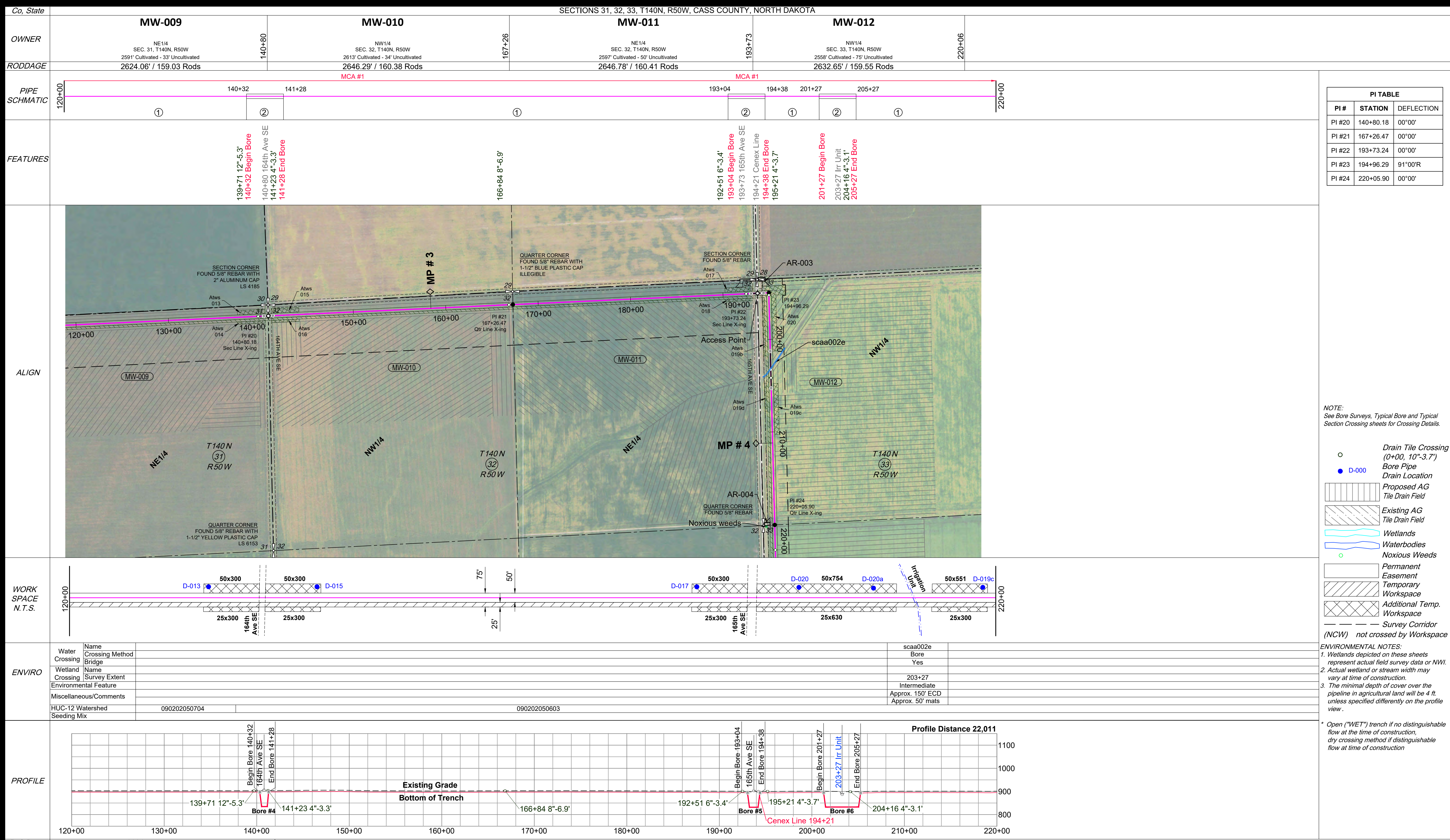
PI #	STATION	DEFLECTION
PI #1	0+00.00	00°00'
PI #2	1+89.83	00°00'
PI #3	19+06.84	89°00'L
PI #4	32+28.58	00°00'
PI #5	38+18.55	00°00'
PI #6	38+93.60	00°00'
PI #7	39+68.47	00°00'
PI #8	53+41.03	90°00'L
PI #9	64+71.47	00°00'
PI #10	74+73.88	90°00'L
PI #11	79+70.87	90°00'R
PI #12	80+79.26	00°00'
PI #13	81+44.26	00°00'
PI #14	82+09.26	00°00'
PI #15	83+11.52	90°00'L
PI #16	88+61.34	90°00'R
PI #17	96+91.66	45°00'L
PI #18	101+58.19	45°00'R
PI #19	114+56.12	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- Proposed AG Tile Drain Field
- Existing AG Tile Drain Field
- Wetlands
- Waterbodies
- Noxious Weeds
- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace
- Survey Corridor
- (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
3. The minimal depth of cover over the pipeline in agricultural land will be 4 ft. unless specified differently on the profile view.

* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction



PI TABLE		
PI #	STATION	DEFLECTION
PI #20	140+80.18	00°00'
PI #21	167+26.47	00°00'
PI #22	193+73.24	00°00'
PI #23	194+96.29	91°00'R
PI #24	220+05.90	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
 - D-000 Bore Pipe
 - Drain Location
 - ▨ Proposed AG Tile Drain Field
 - ▨ Existing AG Tile Drain Field
 - ▨ Wetlands
 - ▨ Waterbodies
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Ref. Dwgs. Aerial Image: NAIP 2021

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LOUISVILLE, KY 40243
OFFICE (502) 254-3921
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HSE Project # 19-21

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:			
▨	Proposed Block Valve	—	Alignment
○	Proposed Bore	---	Section Line
●	Alignment PI	---	Quarter Line
○	Utility Pole	-x-x-x-	Fence Line
⊙	Well	— — — —	UG Fiber Optic
⊙	Valve	— — — —	UG Electric
—	Water Line	— — — —	Overhead Elec
---		---	Existing Pipeline
---		---	Dirt Road

SUMMARY of MATERIALS			
Mark	Quantity	Description	
1	9,370	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	
2	630	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	

REVISIONS		
No.	Date	Description

WAHPETON EXPANSION PROJECT

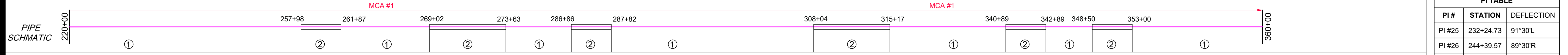
1" = 500' HORIZ.
1" = 200' VERT.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Sec. 31, 32, 33, T140N, R50W,
5th P.M., CASS Co., North Dakota

Sheet 2 R2

Co, State	MW-013	MW-014	MW-015	MW-016	MW-017	MW-018	MW-019	MW-020	MW-021	MW-022	MW-023	MW-024	MW-025
OWNER	N1/2 OF THE SW1/4 SEC. 33, T140N, R50W 2544' Cultivated	PART OF THE S1/2 OF SW1/4 SEC. 33, T140N, R50W 1264' Cultivated	SEC. 33, T140N, R50W 130' Uncultivated	PART OF THE N1/2 LYING NORTH OF RAILROAD RW SEC. 4, T139N, R50W 821' Cultivated - 168' Uncultivated	SEC. 4, T139N, R50W 159' Cultivated - 243' Uncultivated	LOT 1, BLOCK 1, KINDRED 194 EXIT SUBD SEC. 4, T139N, R50W 1395' Cultivated - 39' Uncultivated	SW1/4 WITH EXCEPTION LESS RW SEC. 4, T139N, R50W 2141' Cultivated	SEC. 4 & 9, T139N, R50W 60' Cultivated - 515' Uncultivated	LOT 1, BLOCK 1, LEO'S SUBD WITH EXCEPTIONS SEC. 9, T139N, R50W 2620' Cultivated	SEC. 8 & 9, T139N, R50W 30' Cultivated - 140' Uncultivated	PART OF NE1/4 WITH EXCEPTIONS SEC. 8, T139N, R50W 808' Cultivated	PART OF NE1/4 SEC. 8, T139N, R50W 100' Cultivated	PART OF NE1/4 WITH EXCEPTIONS SEC. 8, T139N, R50W 148' Cultivated
RODDAGE	2543.88' / 154.17 Rods	1263.49' / 76.58 Rods	130.00' / 7.88 Rods	988.53' / 59.91 Rods	402.11' / 24.37 Rods	1434.04' / 86.91 Rods	2141.34' / 129.78 Rods	575.13' / 34.86 Rods	2619.77' / 158.77 Rods	170.00' / 10.30 Rods	781.70' / 47.38 Rods	99.75' / 6.05 Rods	174.08' / 10.55 Rods



FEATURES

222+76 4"-2.7'

257+41 8"-3.7' Waterline

257+98 Begin Bore

258+16 OHE

258+22 Waterline

258+25 Nustar Line

258+46 UFO

258+78 36th St SE

259+35 UFO

259+66 UFO

259+80 UFO

261+23 10"-4.1' Bore #7

261+68 End Bore

269+02 Begin Bore

271+43 BNSF RR

272+15 UFO

273+63 End Bore

277+38 6"-4.0' Bore #8

279+08 Cenex Line

286+86 Begin Bore

287+34 Driveway

287+82 End Bore

308+04 Begin Bore

309+44 12"-5.1' Bore #9

309+68 Access Rd

312+09 Interstate 94

314+12 Access Rd

314+90 UGE

315+17 Cenex Line

315+70 End Bore

328+25 Cenex Line

331+26 10"-3.2' Bore #10

340+88 Begin Bore

342+04 165th Ave SE

342+68 UFO

342+89 End Bore

348+50 Begin Bore

350+21 4"-3.9' Bore #11

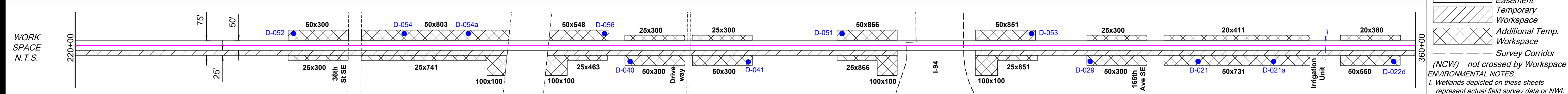
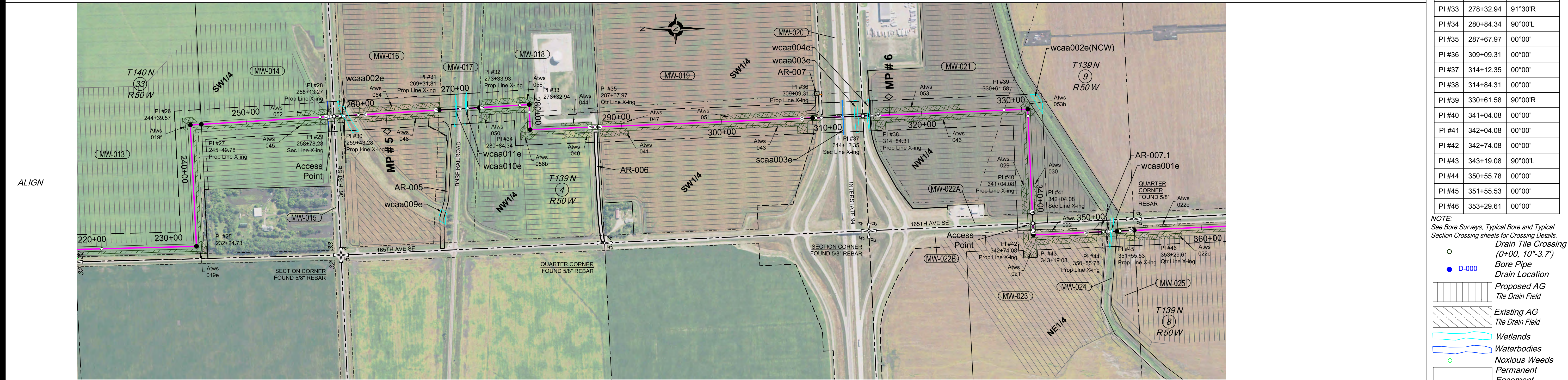
350+57 Culvert 14

350+72 Culvert 14

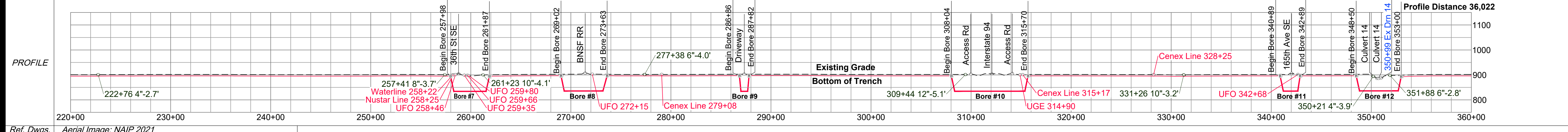
350+99 Ex Dm 14

351+88 6"-2.8' Bore #12

353+00 End Bore



ENVIRO	Name	Crossing Method	Wetland Name	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
	wcaa002e	Bridge	Wetland	259+66	Wetland	Approx. 175' ECD	090202050603	
	wcaa009e	Bridge	Wetland	269+00	Wetland	Approx. 100' mats		
	wcaa010e	Bridge	Wetland	271+00	Wetland	Approx. 100' mats		
	wcaa011e	Bridge	Wetland	271+98	Wetland	Approx. 200' mats		
	scaa003e	Bore	Wetland	312+12	Wetland	Approx. 50' mats		
	wcaa003e	Bore	Wetland	313+47	Wetland	Approx. 50' mats		
	wcaa004e	Bore	Wetland	314+68	Wetland	Approx. 50' mats		
	wcaa001e	Bore	Wetland	350+99	Wetland	Approx. 50' mats		



HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM

North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Water Line
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	11,639	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	2361	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS

No.	Date	Description

WHAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

500 0 500 1000
scale 1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Sec. 33, T140N, R50W,
Sec. 4, 8, 9, T139N, R50W,
5th P.M., Cass Co., North Dakota

Sheet 3 R2

PI TABLE

PI #	STATION	DEFLECTION
PI #25	232+24.73	91°30'L
PI #26	244+39.57	89°30'R
PI #27	245+49.78	00°00'
PI #28	258+13.27	00°00'
PI #29	258+78.28	00°00'
PI #30	259+43.28	00°00'
PI #31	269+31.81	00°00'
PI #32	273+33.93	00°00'
PI #33	278+32.94	91°30'R
PI #34	280+84.34	90°00'L
PI #35	287+67.97	00°00'
PI #36	309+09.31	00°00'
PI #37	314+12.35	00°00'
PI #38	314+84.31	00°00'
PI #39	330+61.58	90°00'R
PI #40	341+04.08	00°00'
PI #41	342+04.08	00°00'
PI #42	342+74.08	00°00'
PI #43	343+19.08	90°00'L
PI #44	350+55.78	00°00'
PI #45	351+55.53	00°00'
PI #46	353+29.61	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

○ Drain Tile Crossing (0+00, 10"-3.7')

● D-000 Bore Pipe

○ Drain Location

Proposed AG Tile Drain Field

Existing AG Tile Drain Field

Wetlands

Waterbodies

Noxious Weeds

Permanent Easement

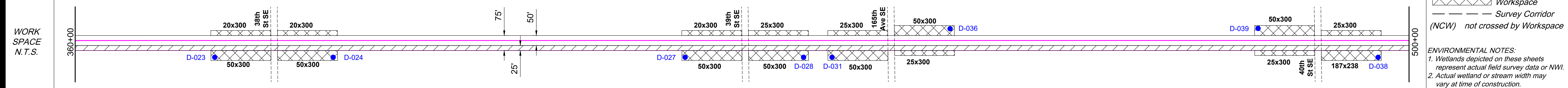
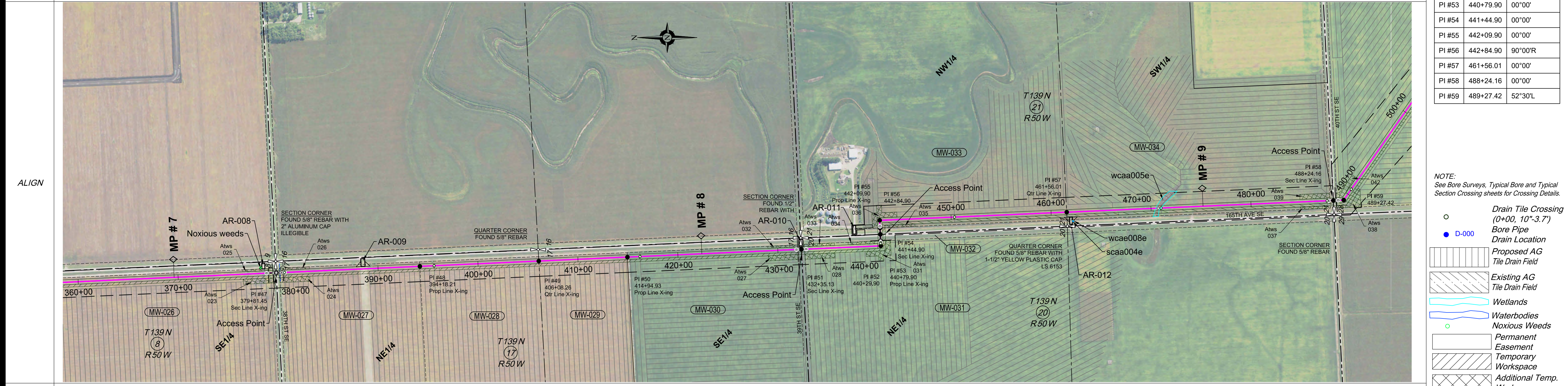
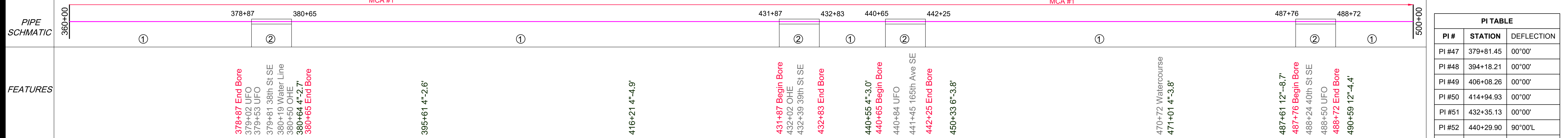
Temporary Workspace

Additional Temp. Workspace

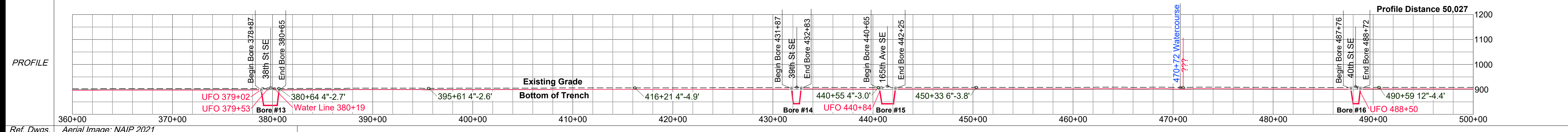
Survey Corridor (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
3. The minimal depth of cover over the pipeline in agricultural land will be 4 ft unless specified differently on the profile view.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

Co, State	SECTION 8, 17, 20, 21, 28, T139N, R50W, CASS COUNTY, NORTH DAKOTA									
OWNER	MW-026 PART OF SE1/4 WITH EXCEPTIONS SEC. 8, T139N, R50W 2619' Cultivated - 33' Uncultivated	MW-027 PART OF NE1/4 WITH EXCEPTIONS SEC. 17, T139N, R50W 1283' Cultivated - 154' Uncultivated	MW-028 PART OF SOUTH 72 RODS WITH EXCEPTIONS SEC. 17, T139N, R50W 1190' Cultivated	MW-029 AUDITORS LOT 3 OF SOUTH HALF SEC. 17, T139N, R50W 887' Cultivated	MW-030 AUDITORS LOT 1 OF SE1/4 SEC. 17, T139N, R50W 1707' Cultivated - 33' Uncultivated	MW-031 NE1/4 SEC. 20, T139N, R50W 845' Cultivated	MW-032 SEC. 21 & 22, T139N, R50W 130' Uncultivated	MW-033 NW1/4 SEC. 21, T139N, R50W 1949' Cultivated	MW-034 PART OF THE SW 1/4 LESS RW SEC. 21, T139N, R50W 2518' Cultivated - 148' Uncultivated	
RODDAGE	2651.84' / 160.72 Rods	1436.77' / 87.08 Rods	1190.05' / 72.12 Rods	886.67' / 53.74 Rods	1740.20' / 105.47 Rods	844.77' / 51.20 Rods	130.00' / 7.88 Rods	1946.10' / 117.95 Rods	2668.16' / 161.71 Rods	



ENVIRO	Name	scaa004e	
	Crossing Method	wcae008e	
Wetland	Name	462+11	wcaa005e
	Crossing	Wetland	Wetland
Environmental Feature	Survey Extent	Approx. 100' ECD	Approx. 100' ECD
	Feature	Approx. 50' mats	Approx. 50' mats
Miscellaneous/Comments	HUC-12 Watershed	090202050603	090202050602
	Seeding Mix		090202040605



<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Water Line Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> <tr> <td>1</td> <td>13,469</td> <td>12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE</td> </tr> <tr> <td>2</td> <td>531</td> <td>12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO</td> </tr> </table>	Mark	Quantity	Description	1	13,469	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	2	531	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	<p>REVISIONS</p> <table border="1"> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	No.	Date	Description				<p>WHAHPETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 8, 17, 20, 21, 28, T139N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 4 R2</p>
	Mark	Quantity	Description																		
1	13,469	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE																			
2	531	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO																			
No.	Date	Description																			

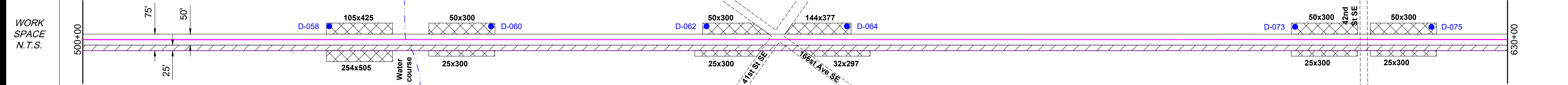
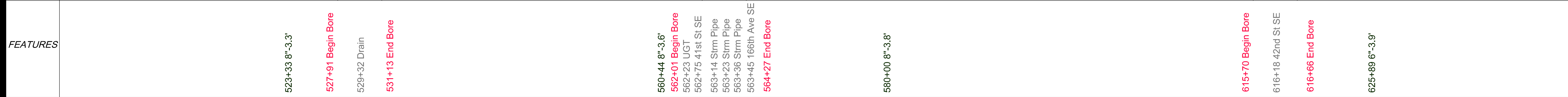
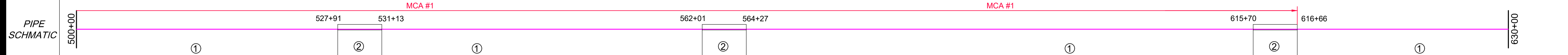
PI #	STATION	DEFLECTION
PI #47	379+81.45	00°00'
PI #48	394+18.21	00°00'
PI #49	406+08.26	00°00'
PI #50	414+94.93	00°00'
PI #51	432+35.13	00°00'
PI #52	440+29.90	90°00'L
PI #53	440+79.90	00°00'
PI #54	441+44.90	00°00'
PI #55	442+09.90	00°00'
PI #56	442+84.90	90°00'R
PI #57	461+56.01	00°00'
PI #58	488+24.16	00°00'
PI #59	489+27.42	52°30'L

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

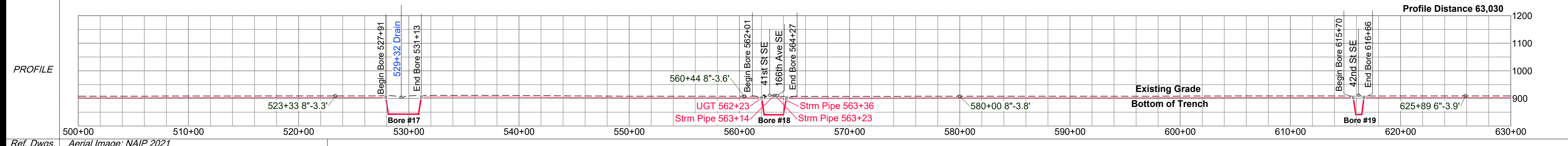
- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▤ Existing AG Tile Drain Field
- ~ Wetlands
- ~ Waterbodies
- Noxious Weeds
- ▭ Permanent Easement
- ▨ Temporary Workspace
- ▤ Additional Temp. Workspace
- Survey Corridor (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
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2. Actual wetland or stream width may vary at time of construction.
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* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

Co, State	SECTIONS 28, 33, 34, T139N, R50W, SECTIONS 3, T138N, R50W, CASS COUNTY, NORTH DAKOTA									
OWNER	MW-035 NW1/4 LESS PARCELS SEC. 28, T139N, R50W 3220' Cultivated - 33' Uncultivated 3253.52' / 197.18 Rods	MW-036 NE1/4 SEC. 28, T139N, R50W 878' Cultivated - 58' Uncultivated 935.55' / 56.70 Rods	MW-037 SE1/4 SEC. 28, T139N, R50W 3191' Cultivated - 71' Uncultivated 3261.75' / 197.68 Rods	MW-038 NE1/4 SEC. 33, T139N, R50W 70' Uncultivated 69.93' / 4.24 Rods	MW-038A NW1/4 SEC. 34, T139N, R50W 2594' Cultivated - 33' Uncultivated 2626.89' / 159.21 Rods	MW-038B SW1/4 SEC. 34, T139N, R50W 2613' Cultivated - 33' Uncultivated 2646.29' / 160.38 Rods	MW-041 NW1/4 SEC. 3, T138N, R50W 2440' Cultivated - 98' Uncultivated 2539.77' / 153.93 Rods			



ENVIRO	Water Crossing	Name	scab001e	scab002i	scab002e
	Bridge	Method	Bore	Bore	
Wetland	Name	wcaa006e			
	Survey Extent	529+32			
Environmental Feature	Feature	Wetland	563+08	567+07	616+46
	Comments	Approx. 150' ECD	Minor	Minor	Minor
Miscellaneous/Comments	Comments	Approx. 100' mats			
	HUC-12 Watershed	090202040605			
Seeding Mix	Seeding Mix				



PI TABLE		
PI #	STATION	DEFLECTION
PI #60	520+77.68	00°00'
PI #61	527+91	16°30'R
PI #62	530+13.23	00°00'
PI #63	562+74.98	00°00'
PI #64	563+44.91	00°00'
PI #65	565+41.59	36°00'R
PI #66	589+71.80	00°00'
PI #67	616+18.09	00°00'

- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Drain Tile Crossing (0+00, 10"-3.7')
 - D-000 Bore Pipe
 - Drain Location
 - ▨ Proposed AG Tile Drain Field
 - ▨ Existing AG Tile Drain Field
 - ▨ Wetlands
 - ▨ Waterbodies
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HSE Project # 19-21

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
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Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

▨ Proposed Block Valve	— Alignment
○ Proposed Bore	- - - Section Line
● Alignment PI	- - - Quarter Line
○ Utility Pole	- - - Fence Line
⊙ Well	- - - UG Fiber Optic
⊗ Valve	- - - UG Electric
— Water Line	- - - Overhead Elec
	- - - Existing Pipeline
	- - - Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	690	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	11,666	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
3	644	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS

No.	Date	Description

Scale: 1" = 500' HORIZ. / 1" = 200' VERT.

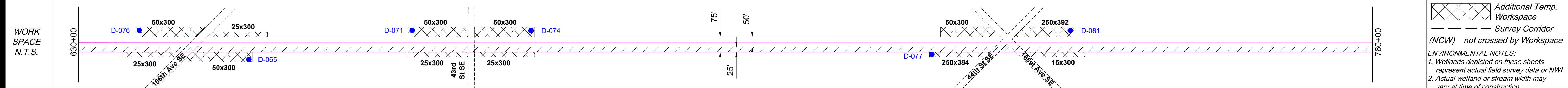
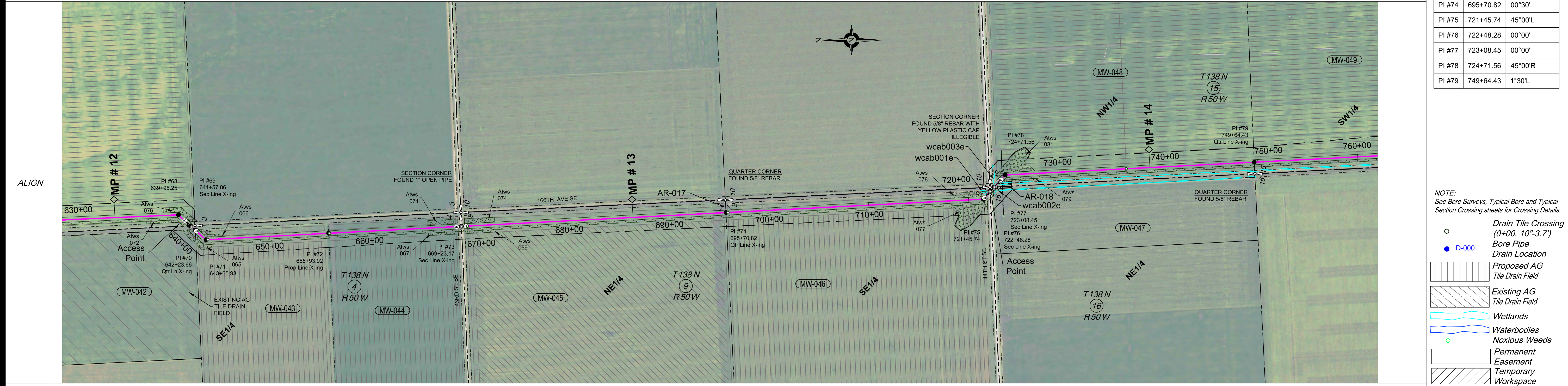
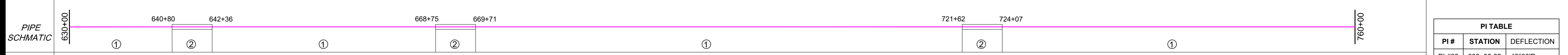
WAHPETON EXPANSION PROJECT

WBI ENERGY TRANSMISSION
An MDU Resources Group company

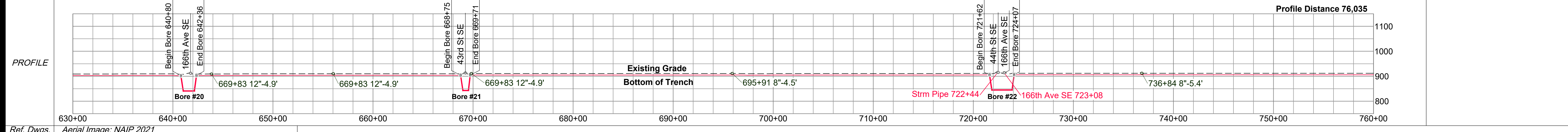
Sec. 28, 33, T139N, R50W,
Sec. 3, 4, T138N, R50W,
5th P.M., Cass Co., North Dakota

Sheet 5 of R2

Co, State	SECTIONS 4, 9, 15, 16, T138N, R50W, CASS COUNTY, NORTH DAKOTA									
OWNER	641+58 GOVT LOT 4 & SE1/4 OF THE NE1/4 SEC. 4, T138N, R50W 66' Uncultivated	642+24 N1/2 OF THE SE1/4 SEC. 4, T138N, R50W 1370' Cultivated	655+94 S1/2 OF THE SE1/4 WITH EXCEPTION SEC. 4, T138N, R50W 1296' Cultivated - 33' Uncultivated	669+23 NE1/4 SEC. 9, T138N, R50W 2615' Cultivated - 33' Uncultivated	695+71 SE1/4 SEC. 9, T138N, R50W 2630' Cultivated - 47' Uncultivated	722+48 E1/2 OF THE E1/2 OF THE NE1/4 SEC. 16, T138N, R50W 60' Uncultivated	723+08 NW1/4 SEC. 15, T138N, R50W 2609' Cultivated - 47' Uncultivated	749+04 SW1/4 SEC. 15, T138N, R50W 2616' Cultivated - 49' Uncultivated		
RODDAGE	65.79' / 3.99 Rods	1370.26' / 83.05 Rods	1329.25' / 80.56 Rods	2647.65' / 160.46 Rods	2677.45' / 162.27 Rods	60.17' / 3.65 Rods	2655.98' / 160.97 Rods	2665.36' / 161.54 Rods		



ENVIRO	<table border="1"> <tr><td>Name</td><td></td></tr> <tr><td>Water Crossing</td><td>Bridge</td></tr> <tr><td>Wetland</td><td>Wetland</td></tr> <tr><td>Environmental Feature</td><td>Wetland</td></tr> <tr><td>Miscellaneous/Comments</td><td></td></tr> <tr><td>HUC-12 Watershed</td><td>090202040605</td></tr> <tr><td>Seeding Mix</td><td></td></tr> </table>	Name		Water Crossing	Bridge	Wetland	Wetland	Environmental Feature	Wetland	Miscellaneous/Comments		HUC-12 Watershed	090202040605	Seeding Mix		<table border="1"> <tr><td>wcab001e</td><td>wcab002e</td><td>wcab003e</td></tr> <tr><td>722+12</td><td>722+87</td><td>723+54</td></tr> <tr><td>Wetland</td><td>Wetland</td><td>Wetland</td></tr> <tr><td>Approx. 50' ECD</td><td>Approx. 50' ECD</td><td>Approx. 50' ECD</td></tr> <tr><td>Approx. 40' mats</td><td>Approx. 40' mats</td><td>Approx. 40' mats</td></tr> </table>	wcab001e	wcab002e	wcab003e	722+12	722+87	723+54	Wetland	Wetland	Wetland	Approx. 50' ECD	Approx. 50' ECD	Approx. 50' ECD	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats
Name																															
Water Crossing	Bridge																														
Wetland	Wetland																														
Environmental Feature	Wetland																														
Miscellaneous/Comments																															
HUC-12 Watershed	090202040605																														
Seeding Mix																															
wcab001e	wcab002e	wcab003e																													
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Wetland	Wetland	Wetland																													
Approx. 50' ECD	Approx. 50' ECD	Approx. 50' ECD																													
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Ref. Dwgs. Aerial Image: NAIP 2021

<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Water Line Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <tr><th>Mark</th><th>Quantity</th><th>Description</th></tr> <tr><td>1</td><td>12,503</td><td>12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE</td></tr> <tr><td>2</td><td>497</td><td>12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO</td></tr> </table>	Mark	Quantity	Description	1	12,503	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	2	497	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	<p>REVISIONS</p> <table border="1"> <tr><th>No.</th><th>Date</th><th>Description</th></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	No.	Date	Description							<p>WHAHPETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 4, 9, 15, 16, T138N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 6 R2</p>
	Mark	Quantity	Description																					
1	12,503	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE																						
2	497	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO																						
No.	Date	Description																						

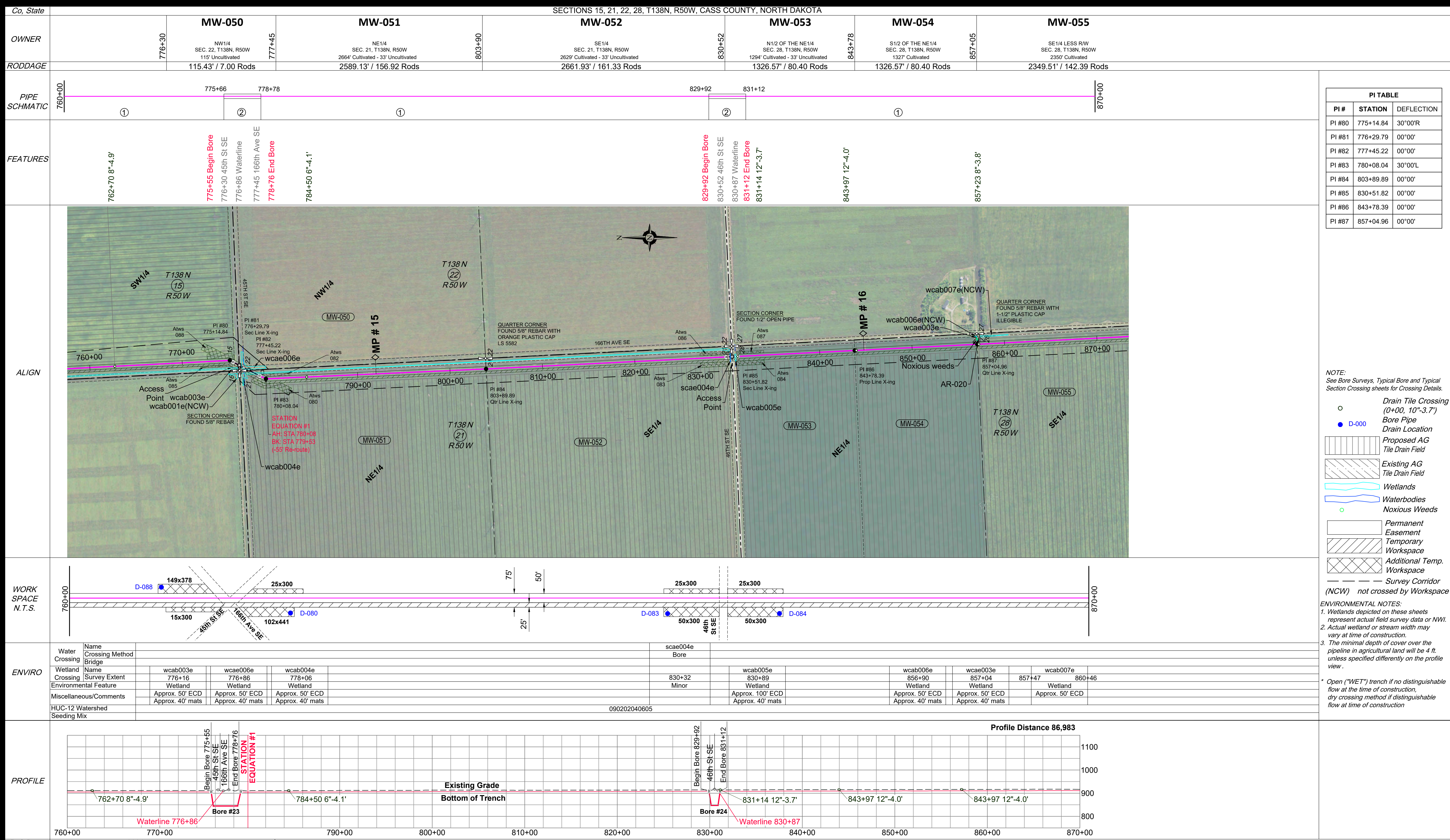
PI #	STATION	DEFLECTION
PI #68	639+95.25	45°00'R
PI #69	641+57.86	00°00'
PI #70	642+23.66	00°00'
PI #71	643+65.93	45°00'L
PI #72	655+93.92	00°00'
PI #73	669+23.17	00°00'
PI #74	695+70.82	00°30'
PI #75	721+45.74	45°00'L
PI #76	722+48.28	00°00'
PI #77	723+08.45	00°00'
PI #78	724+71.56	45°00'R
PI #79	749+64.43	1°30'L

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
 - D-000 Bore Pipe
 - Drain Location
 - Proposed AG Tile Drain Field
 - Existing AG Tile Drain Field
 - Wetlands
 - Waterbodies
 - Noxious Weeds
 - Permanent Easement
 - Temporary Workspace
 - Additional Temp. Workspace
 - Survey Corridor
- (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
3. The minimal depth of cover over the pipeline in agricultural land will be 4 ft. unless specified differently on the profile view.

* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

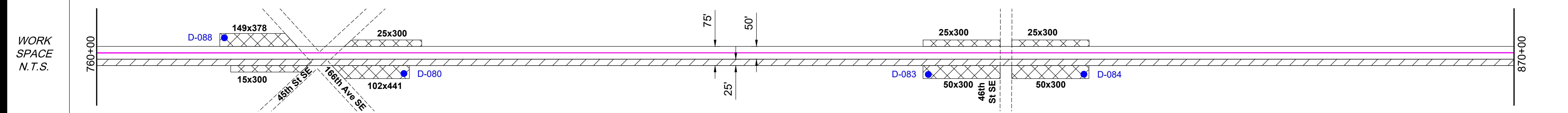


PI TABLE		
PI #	STATION	DEFLECTION
PI #80	775+14.84	30°00'R
PI #81	776+29.79	00°00'
PI #82	777+45.22	00°00'
PI #83	780+08.04	30°00'L
PI #84	803+89.89	00°00'
PI #85	830+51.82	00°00'
PI #86	843+78.39	00°00'
PI #87	857+04.96	00°00'

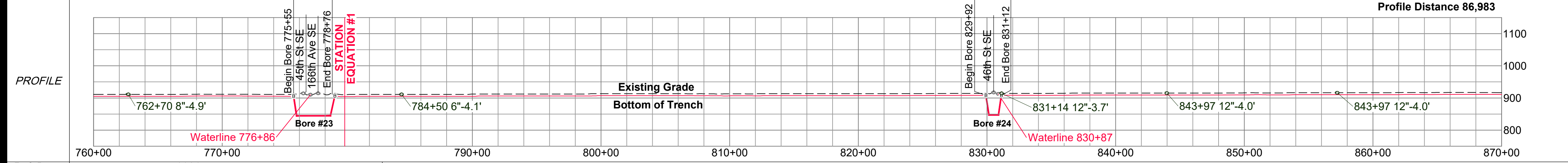
NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- Tile Drain Field
- ▨ Proposed AG
- ▨ Existing AG
- ▨ Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
- ▨ Temporary Workspace
- ▨ Additional Temp. Workspace
- ▨ Survey Corridor (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
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Water Crossing	Name	Bridge	Method	scab004e	Bore	wcab005e	wcab006e	wcab003e	wcab007e	860+46
Wetland	wcab003e	wcab006e	wcab004e	830+32	830+89	856+90	857+04	857+47	860+46	
Environmental Feature	Wetland	Wetland	Wetland	Minor	Wetland	Wetland	Wetland	Wetland	Wetland	
Miscellaneous/Comments	Approx. 50' ECD	Approx. 50' ECD	Approx. 50' ECD		Approx. 100' ECD	Approx. 50' ECD	Approx. 50' ECD	Approx. 50' ECD	Approx. 50' ECD	
HUC-12 Watershed	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats		Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	
Seeding Mix										



Ref. Dwgs. Aerial Image: NAIP 2021

HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99998766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

▨ Proposed Block Valve	— Alignment
○ Proposed Bore	--- Section Line
● Alignment PI	--- Quarter Line
○ Utility Pole	-x-x-x-x- Fence Line
○ Well	--- UG Fiber Optic
○ Valve	--- UG Electric
--- Water Line	--- Overhead Elec
	--- Existing Pipeline
	--- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	10,559	12.75" OD, .250" WT, X65, FBE, TRL
2	441	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

No.	Date	Description

500 0 500 1000
scale 1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

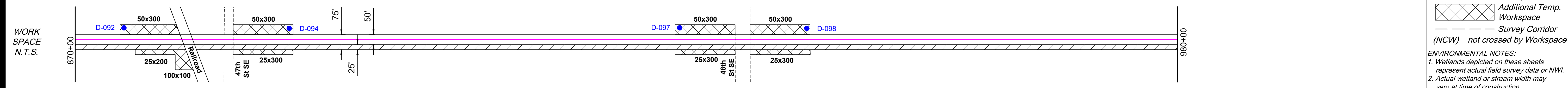
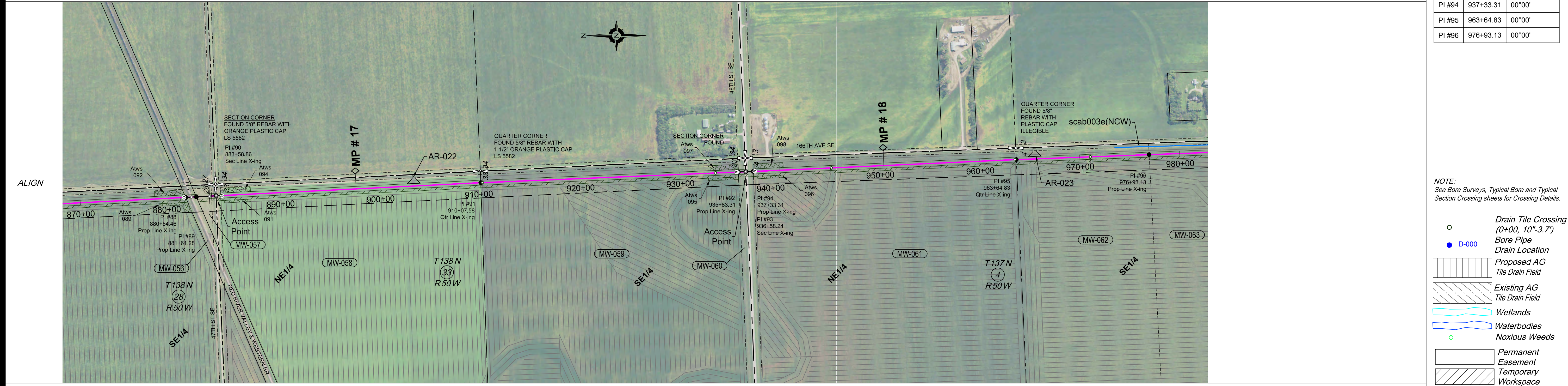
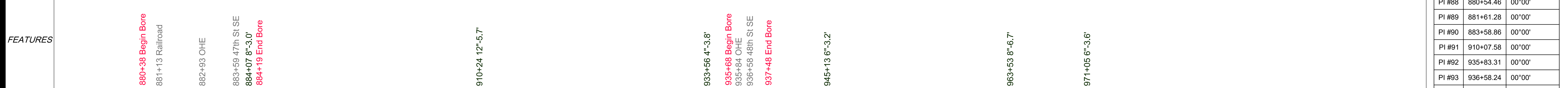
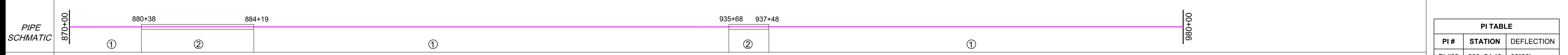
WAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

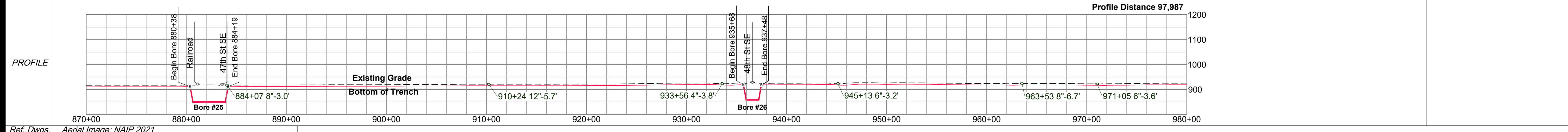
Sec. 15, 21, 22, 28, T138N, R50W,
5th P.M., Cass Co., North Dakota

Sheet 7 R2

Co, State	SECTION 28, 33, T138N, R50W, SECTION 4, T137N, R50W, CASS COUNTY, NORTH DAKOTA											
OWNER	880+54	MW-056	MW-057	MW-058	MW-059	MW-060	MW-061	MW-062	MW-063	976+93	980+00	
	SEC. 28, T138N, R50W 107' Uncultivated	SE1/4 LESS RW SEC. 3, T138N, R50W 198' Uncultivated	SE1/4 SEC. 33, T138N, R50W 2245' Cultivated - 304' Uncultivated	SE1/4 SEC. 33, T138N, R50W 2230' Cultivated - 346' Uncultivated	SE1/4 SEC. 33, T138N, R50W 150' Uncultivated	NE1/4 LESS RW SEC. 4, T137N, R50W 2378' Cultivated - 254' Uncultivated	N1/2 OF THE NE1/4 LESS RW SEC. 4, T137N, R50W 1065' Cultivated - 263' Uncultivated	S1/2 OF THE SE1/4 SEC. 4, T137N, R50W 1031' Cultivated - 263' Uncultivated				
RODDAGE	106.82' / 6.47 Rods	197.58' / 11.97 Rods	2548.72' / 160.538 Rods	2575.73' / 156.10 Rods	150.00' / 9.09 Rods	2631.52' / 159.49 Rods	1328.30' / 80.50 Rods	1294.16' / 78.43 Rods				



ENVIRO	Water Crossing	Name: scab003e	Method: Bridge
	Wetland	Name: 973+51	Survey Extent: 983+66
	Environmental Feature	Minor	
	Miscellaneous/Comments		
	HUC-12 Watershed	090202040605	
	Seeding Mix		



PI #	STATION	DEFLECTION
PI #88	880+54.46	00°00'
PI #89	881+61.28	00°00'
PI #90	883+58.86	00°00'
PI #91	910+07.58	00°00'
PI #92	935+83.31	00°00'
PI #93	936+58.24	00°00'
PI #94	937+33.31	00°00'
PI #95	963+64.83	00°00'
PI #96	976+93.13	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
- ▨ Temporary Workspace
- ▨ Additional Temp. Workspace
- ▨ Survey Corridor (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
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HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot	
*Distances are Grid Distances. Combined Scale Factor = 0.99998766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
▨	Proposed Block Valve
○	Proposed Bore
●	Alignment PI
○	Utility Pole
⊙	Well
⊗	Valve
—	Water Line
—	Proposed Alignment
---	Section Line
---	Quarter Line
-x-x-x-	Fence Line
---	UG Fiber Optic
---	UG Electric
---	Overhead Elec
---	Existing Pipeline
---	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	10,439	12.75" OD, .250" WT, X65, FBE, TRL
2	561	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS		
No.	Date	Description

WHAHPETON EXPANSION PROJECT

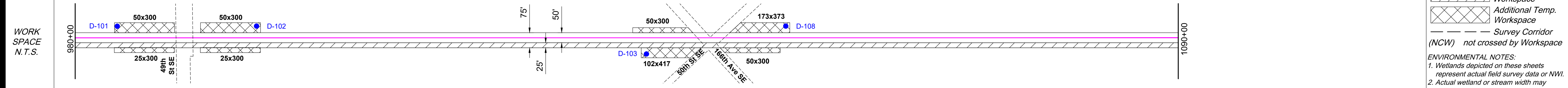
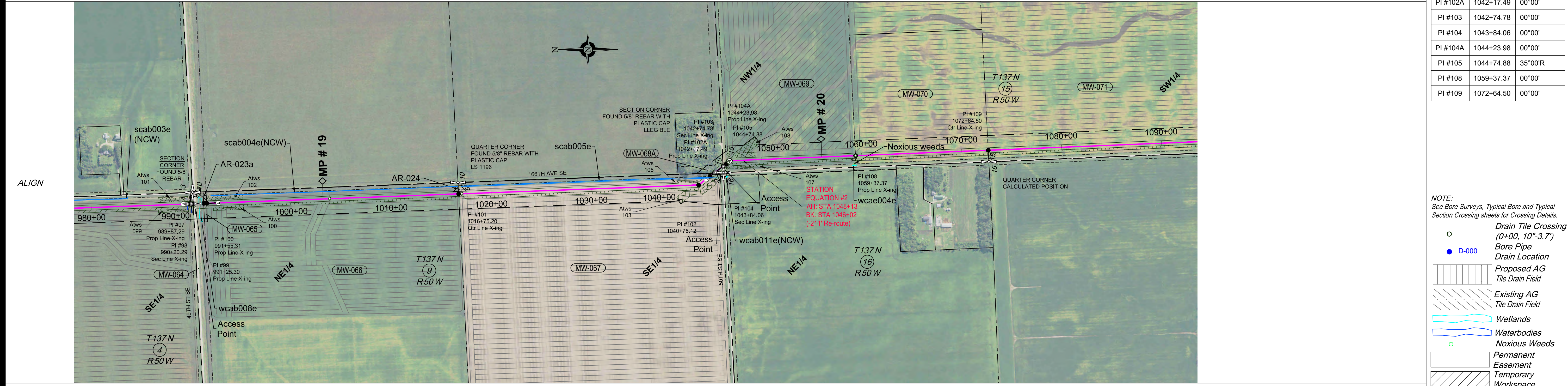
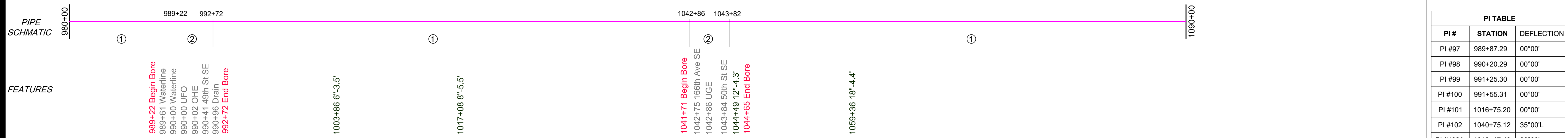
1" = 500' HORIZ.
1" = 200' VERT.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

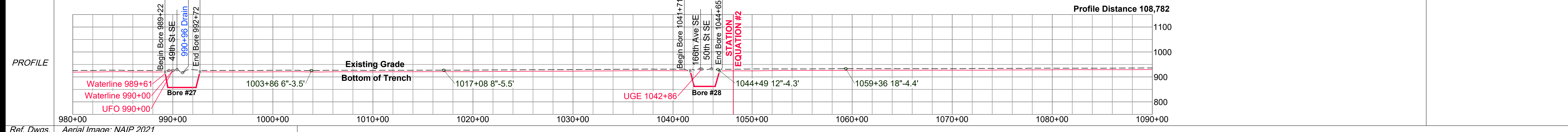
Sec. 28, 33, T138N, R50W,
Sec. 4, T137N, R50W,
5th P.M., Cass Co., North Dakota

Sheet 8 R2

Co, State	SECTIONS 4, 9, 15, 16, T137N, R50W, CASS COUNTY, NORTH DAKOTA											
OWNER	989+87	MW-064	MW-065	MW-066	MW-067	MW-068A	MW-069	MW-070	MW-071	1072+65	1090+00	
RODDAGE	138.01' / 8.36 Rods	30.01' / 1.82 Rods	2519.89' / 152.72 Rods	2542.29' / 154.08 Rods	206.49' / 12.51 Rods	1513.39' / 91.72 Rods	1327.14' / 80.43 Rods	2654.39' / 160.87 Rods				



ENVIRO	Water Crossing	Name	scab003e	scab004e	scab005e	wcae004e			
	Wetland Crossing	Survey Extent	973+51	983+66	991+98	1016+67	1017+07	1043+09	1059+19
	Environmental Feature	Minor	Wetland	Intermediate	Intermediate	Wetland			
	Miscellaneous/Comments		Approx. 150' ECD	Approx. 50' mats	Intermediate	Intermediate	Approx. 150' ECD	Approx. 50' mats	
HUC-12 Watershed	090202040605		090202040604		090202040604				
Seeding Mix									



PI TABLE		
PI #	STATION	DEFLECTION
PI #97	989+87.29	00°00'
PI #98	990+20.29	00°00'
PI #99	991+25.30	00°00'
PI #100	991+55.31	00°00'
PI #101	1016+75.20	00°00'
PI #102	1040+75.12	35°00'L
PI #102A	1042+17.49	00°00'
PI #103	1042+74.78	00°00'
PI #104	1043+84.06	00°00'
PI #104A	1044+23.98	00°00'
PI #105	1044+74.88	35°00'R
PI #108	1059+37.37	00°00'
PI #109	1072+64.50	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
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- ▨ Additional Temp. Workspace
- Survey Corridor (NCW) not crossed by Workspace

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HSE Project # 19-21

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- ▨ Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- ⊙ Well
- ⊗ Valve
- w — w — Water Line
- Alignment
- Section Line
- Quarter Line
- x - x - x - Fence Line
- - - - - UG Fiber Optic
- - - - - UG Electric
- - - - - Overhead Elec
- - - - - Existing Pipeline
- - - - - Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	10,356	12.75" OD, .250" WT, X65, FBE, TRL
2	644	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS		
No.	Date	Description

WAHPETON EXPANSION PROJECT

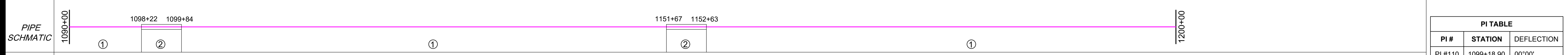
1" = 500' HORIZ.
1" = 200' VERT.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

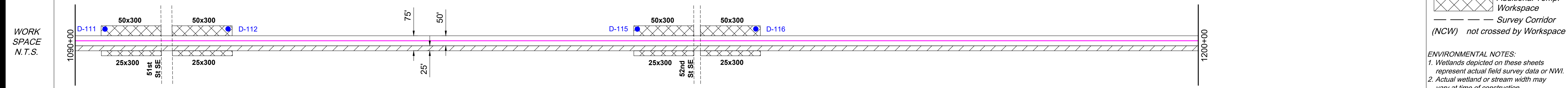
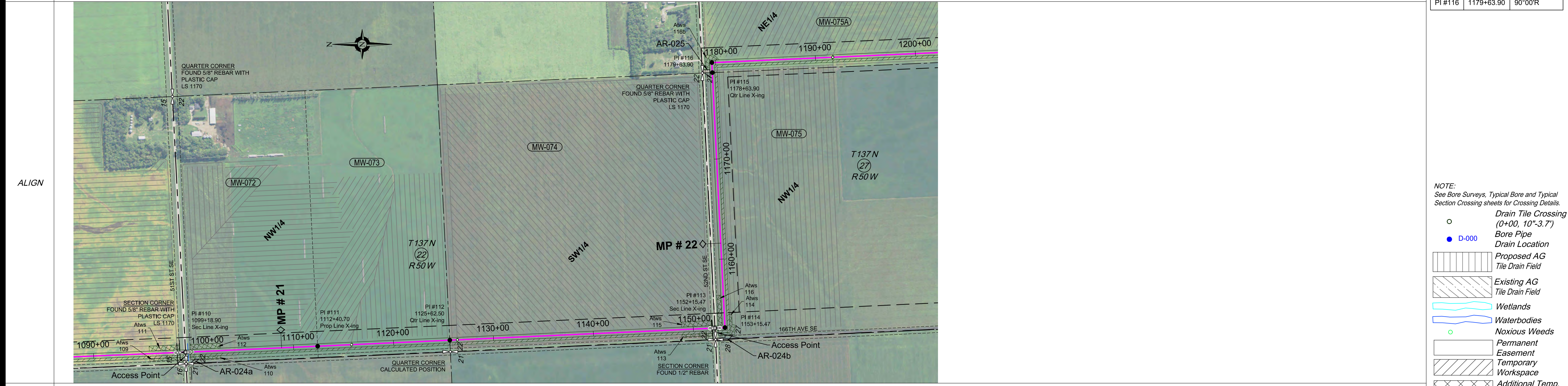
Sec. 4, 9, 15, 16, T137N, R50W,
5th P.M., Cass Co., North Dakota

Sheet 9 R2

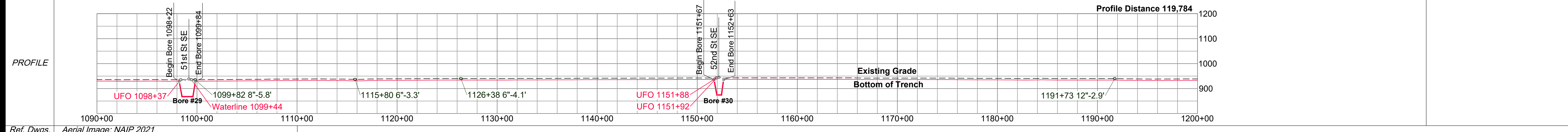
OWNER	1099+19	MW-072	MW-073	MW-074	MW-075	MW-075A				
RODDAGE	1099+19	N1/2NW1/4 SEC. 22, T137N, R50W 1289' Cultivated - 33' Uncultivated 1321.80' / 80.11 Rods	1112+41	S1/2 OF THE NW1/4 SEC. 22, T137N, R50W 1322' Cultivated 1321.80' / 80.11 Rods	1125+63	SW1/4 SEC. 22, T137N, R50W 2620' Cultivated - 33' Uncultivated 2652.97' / 160.79 Rods	1152+15	PART OF THE NW1/4 SEC. 27, T137N, R50W 2615' Cultivated - 33' Uncultivated 2648.42' / 160.51 Rods	1178+64	NE1/4 SEC. 27, T137N, R50W 2650' Cultivated 2649.80' / 160.59 Rods



PI TABLE		
PI #	STATION	DEFLECTION
PI #110	1099+18.90	00°00'
PI #111	1112+40.70	00°00'
PI #112	1125+62.50	00°00'
PI #113	1152+15.47	00°00'
PI #114	1153+15.47	90°00'L
PI #115	1178+63.90	00°00'
PI #116	1179+63.90	90°00'R



ENVIRO	Water Crossing	Name	
		Crossing Method	
Wetland	Name		
	Crossing	Survey Extent	
Environmental Feature			
Miscellaneous/Comments			
HUC-12 Watershed			090202040604
Seeding Mix			



<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Water Line Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10,742</td> <td>12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE</td> </tr> <tr> <td>2</td> <td>258</td> <td>12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	10,742	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	2	258	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				<p>WHA PETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 22, 27, T137N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 10 R2</p>
	Mark	Quantity	Description																		
1	10,742	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE																			
2	258	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO																			
No.	Date	Description																			

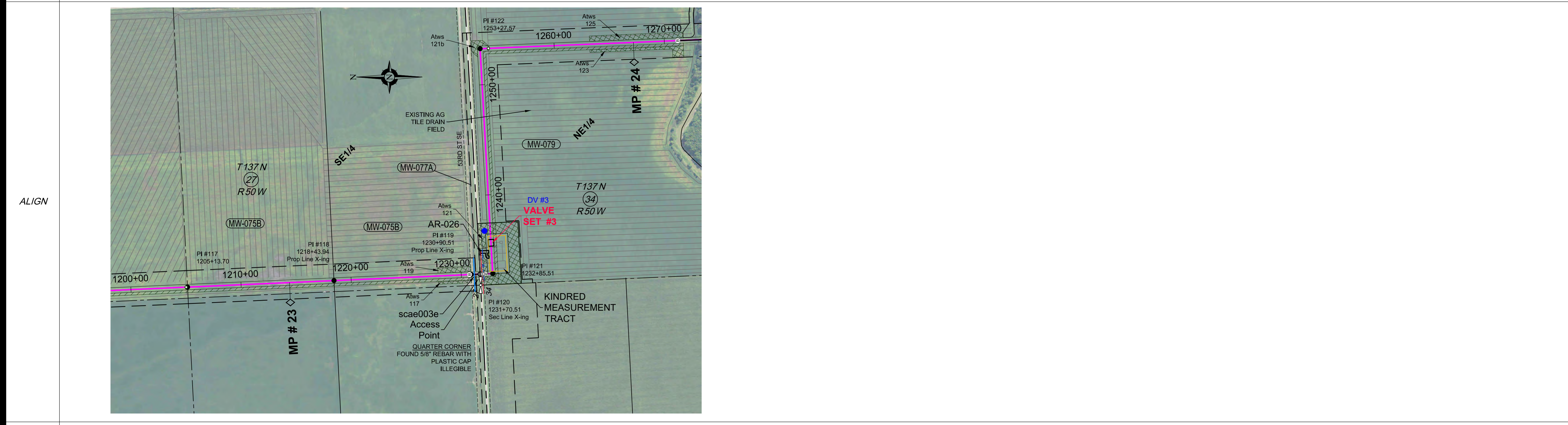
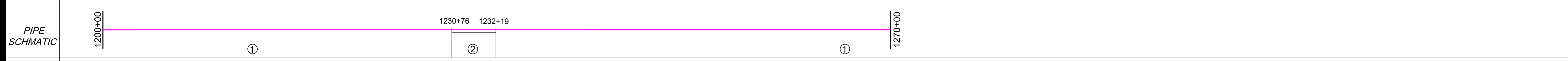
NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
- ▨ Temporary Workspace
- ▨ Additional Temp. Workspace
- ▨ Survey Corridor (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
3. The minimal depth of cover over the pipeline in agricultural land will be 4 ft. unless specified differently on the profile view.

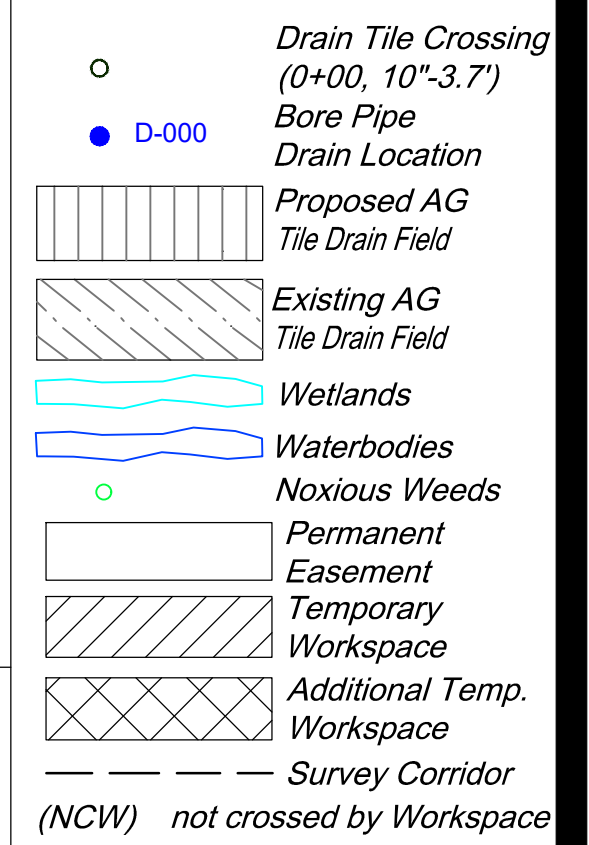
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

Co, State	NORTH DAKOTA				
OWNER	MW-075B N1/2SE1/4 SEC. 27, T137N, R50W 1330' Uncultivated	MW-075C SW1/4SE1/4 SEC. 27, T137N, R50W 1247' Uncultivated	MW-077A SOUTH 80 FEET OF THE SW1/4 SEC. 27, T137N, R50W 80' Uncultivated	MW-079 PART OF NE1/4 NORTH OF RIVER SEC. 34, T137N, R50W 4117' - 203' Uncultivated	
RODDAGE	1205+14 1330.24' / 80.62 Rods	1218+44 1246.57' / 75.55 Rods	1230+91 80.00' / 4.85 Rods	1231+71 4319.94' / 261.81 Rods	



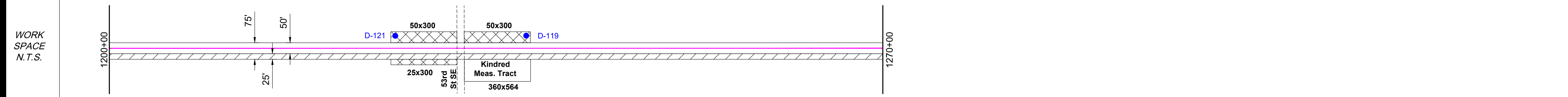
PI TABLE		
PI #	STATION	DEFLECTION
PI #117	1205+13.70	00°00'
PI #118	1218+43.94	00°00'
PI #118	1218+43.94	00°00'
PI #119	1230+90.51	00°00'
PI #120	1231+70.51	00°00'
PI #121	1232+85.51	90°00'L
PI #122	1253+27.57	90°00'R

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

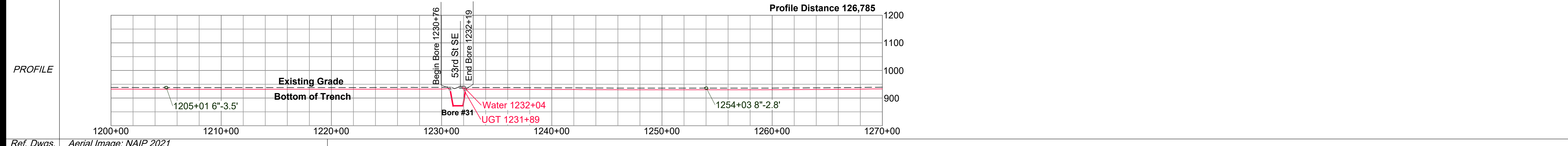


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3. The minimal depth of cover over the pipeline in agricultural land will be 4 ft. unless specified differently on the profile view.

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ENVIRO	Name	scae003e
	Crossing Method	Bore
	Wetland Name	
	Survey Extent	1231+18
	Environmental Feature	Minor
Miscellaneous/Comments		
HUC-12 Watershed	090202040604	
Seeding Mix		



Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
⊠	Proposed Block Valve
⊕	Proposed Bore
●	Alignment PI
○	Utility Pole
⊙	Well
⊗	Valve
— w — w —	Water Line
—	Alignment
- - - - -	Section Line
- - - - -	Quarter Line
- x - x - x -	Fence Line
- - - - -	UG Fiber Optic
- - - - -	UG Electric
- - - - -	Overhead Elec
- - - - -	Existing Pipeline
- - - - -	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	6,857	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	143	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS		
No.	Date	Description

Wahpeton Expansion Project

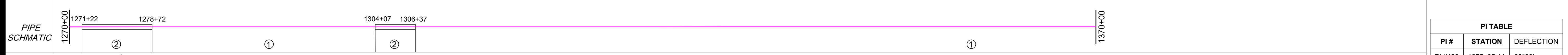
1" = 500' HORIZ.
1" = 200' VERT.

Sec. 27, 34, T137N, R50W,
5th P.M., Cass Co., North Dakota

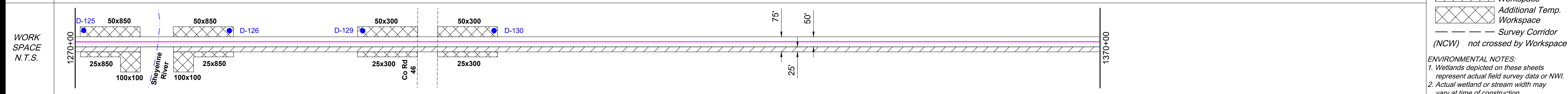
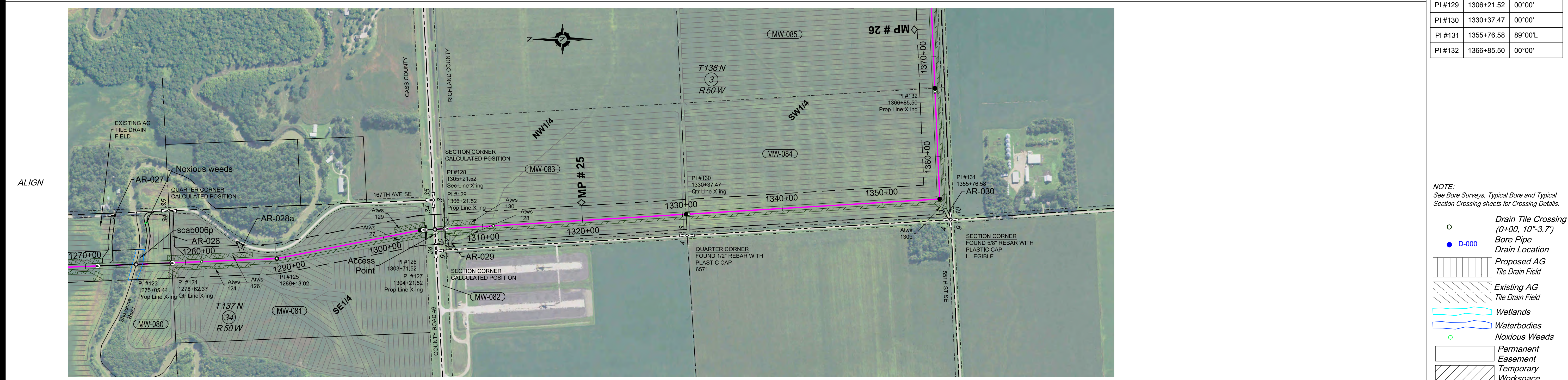
Sheet 11 R2

Co, State SECTION 34, T137N, R50W, CASS COUNTY, SECTION 3, T136N, R50W, RICHLAND COUNTY, NORTH DAKOTA

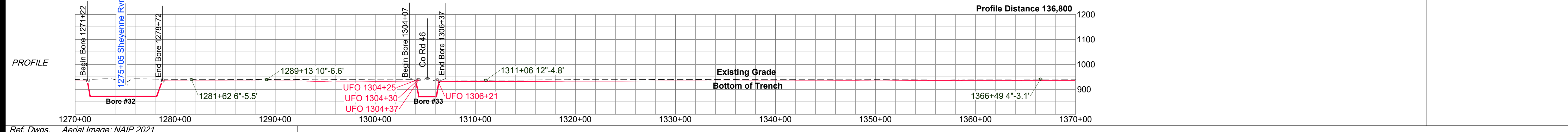
OWNER	MW-080	MW-081	MW-082	MW-083	MW-084	MW-085
1275+05	PART OF NE1/4 SOUTH OF RIVER SEC. 34, T137N, R50W 261' Cultivated - 93' Uncultivated	E1/2 OF THE SE1/4 SEC. 34, T137N, R50W 2555' Cultivated	SEC. 3, T136N, R50W 201' Uncultivated	GOVT LOT 4 & SW1/4 OF THE NW1/4 EXCEPT HIGHWAY SEC. 3, T136N, R50W 2416' Cultivated	W1/2 OF THE SW1/4 SEC. 3, T136N, R50W 3648' Cultivated	E1/2 OF THE SW1/4 SEC. 3, T136N, R50W 1322' Cultivated
RODDAGE	356.93' / 21.63 Rods	2555.09' / 154.85 Rods	201.48' / 12.12 Rods	2416.27' / 146.44 Rods	3648.03' / 221.09 Rods	1321.51' / 80.09 Rods



FEATURES	1271+22 Begin Bore	1275+05 Sheyenne Rvr	1278+72 End Bore	1281+62 6"-5.5'	1289+13 10"-6.6'	1304+07 Begin Bore	1304+25 UFO	1304+30 UFO	1304+37 UFO	1305+22 Co Rd 46	1306+21 UFO	1306+26 OHE	1306+37 End Bore	1311+06 12"-4.8'	1330+65 12"-5.2'	1366+49 4"-3.1'
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ENVIRO	Water Crossing Name: scab006p, Crossing Method: Bore, Bridge: No Bridge	Wetland Name: No Bridge	Survey Extent: 1275+05	Environmental Feature: Intermediate	Miscellaneous/Comments: HUC-12 Watershed Seeding Mix	090202040604	090201051005
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PI #	STATION	DEFLECTION
PI #123	1275+05.44	00°00'
PI #124	1278+62.37	00°00'
PI #125	1289+13.02	9°00'L
PI #126	1303+71.52	8°00'R
PI #127	1304+21.52	00°00'
PI #128	1305+21.52	00°00'
PI #129	1306+21.52	00°00'
PI #130	1330+37.47	00°00'
PI #131	1355+76.58	89°00'L
PI #132	1366+85.50	00°00'

NOTE: See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
- ▨ Temporary Workspace
- ▨ Additional Temp. Workspace
- Survey Corridor (NCW) not crossed by Workspace

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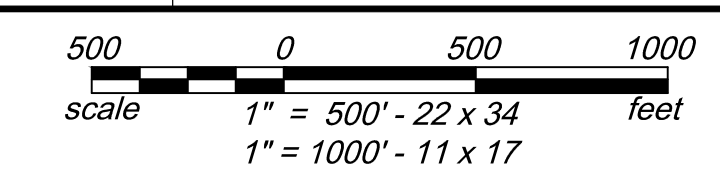
Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
▨ Proposed Block Valve	— Alignment
⊕ Proposed Bore	--- Section Line
● Alignment PI	- - - Quarter Line
○ Utility Pole	- x - x - x - Fence Line
⊕ Well	- - - UG Fiber Optic
⊕ Valve	- - - UG Electric
- w - w - Water Line	- - - Overhead Elec
	- - - Existing Pipeline
	- - - Dirt Road

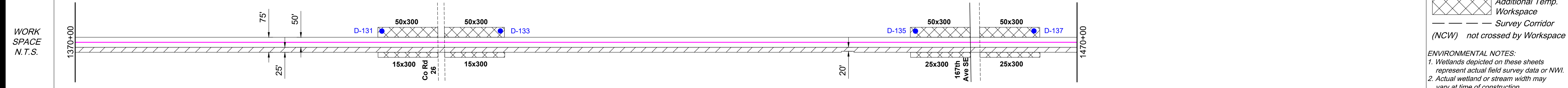
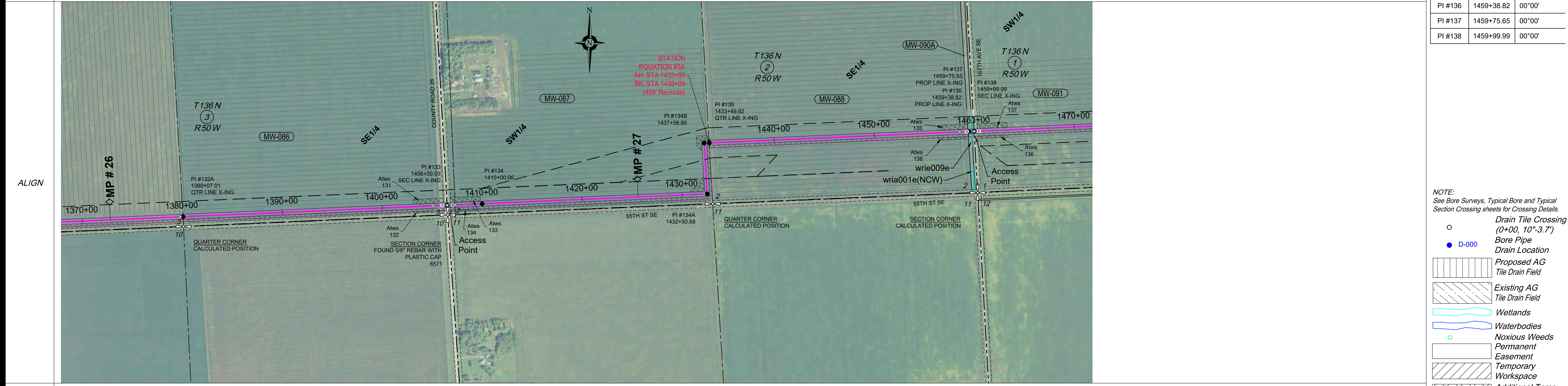
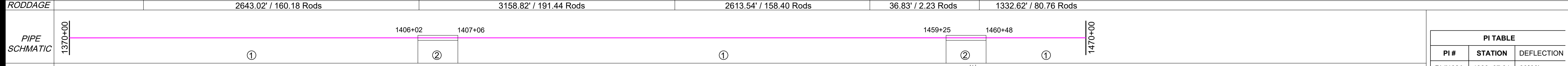
SUMMARY of MATERIALS		
Mark	Quantity	Description
1	9,020	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	980	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS		
No.	Date	Description

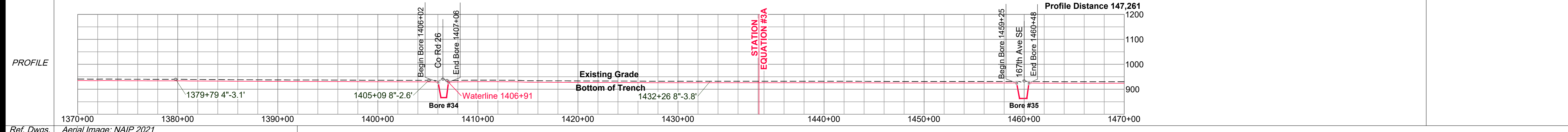


WAHPETON EXPANSION PROJECT
 1" = 500' HORIZ.
 1" = 200' VERT.

Co, State	SECTIONS 1, 2, 3, T136N, R50W, RICHLAND COUNTY, NORTH DAKOTA					
OWNER	MW-086	MW-087	MW-088	MW-090A	MW-091	
RODDAGE	1378+59 SE 1/4, EXCEPT 1.5 AC DRAIN SEC. 3, T136N, R50W 2610' Cultivated - 33' Uncultivated 2643.02' / 160.18 Rods	1405+02 SW1/4, WITH EXCEPTIONS SEC. 2, T136N, R50W 3126' Cultivated - 33' Uncultivated 3158.82' / 191.44 Rods	1438+09 SE1/4, WITH EXCEPTIONS SEC. 2, T136N, R50W 2590' Cultivated - 24' Uncultivated 2613.54' / 158.40 Rods	1459+39 3.10 AC DRAIN IN SE1/4 SEC. 2, T136N, R50W 37' Uncultivated 36.83' / 2.23 Rods	1460+00 SW1/4 OF THE SW1/4 SEC. 1, T136N, R50W 1300' Cultivated - 33' Uncultivated 1332.62' / 80.76 Rods	



ENVIRO	Water Crossing	Name	Bridge		
	Wetland Crossing	Name	Survey Extent	wrie009e	wria001e
Environmental Feature				Wetland	Wetland
Miscellaneous/Comments				Approx. 150' ECD	Approx. 100' mats
HUC-12 Watershed					
Seeding Mix					



PI TABLE		
PI #	STATION	DEFLECTION
PI #132A	1380+07.01	00°00'
PI #133	1406+50.03	00°00'
PI #134	1410+00.06	12°30'L
PI #134A	1432+50.68	90°00'L
PI #135	1433+49.62	12°30'R
PI #134B	1437+58.85	90°00'R
PI #136	1459+38.82	00°00'
PI #137	1459+75.65	00°00'
PI #138	1459+99.99	00°00'

- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Drain Tile Crossing (0+00, 10"-3.7')
 - D-000 Bore Pipe
 - Drain Location
 - ▨ Proposed AG Tile Drain Field
 - ▨ Existing AG Tile Drain Field
 - ▨ Wetlands
 - ▨ Waterbodies
 - Noxious Weeds
 - ▨ Easement
 - ▨ Temporary Workspace
 - ▨ Additional Temp. Workspace
 - Survey Corridor (NCW) not crossed by Workspace

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- * Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Water Line
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	9,773	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	227	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS		
No.	Date	Description

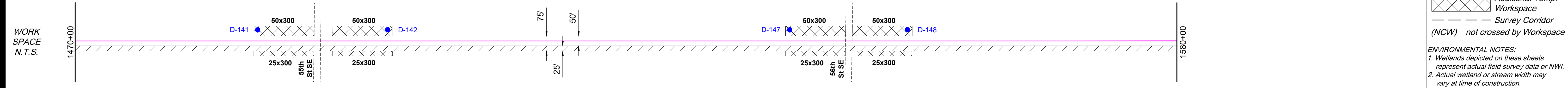
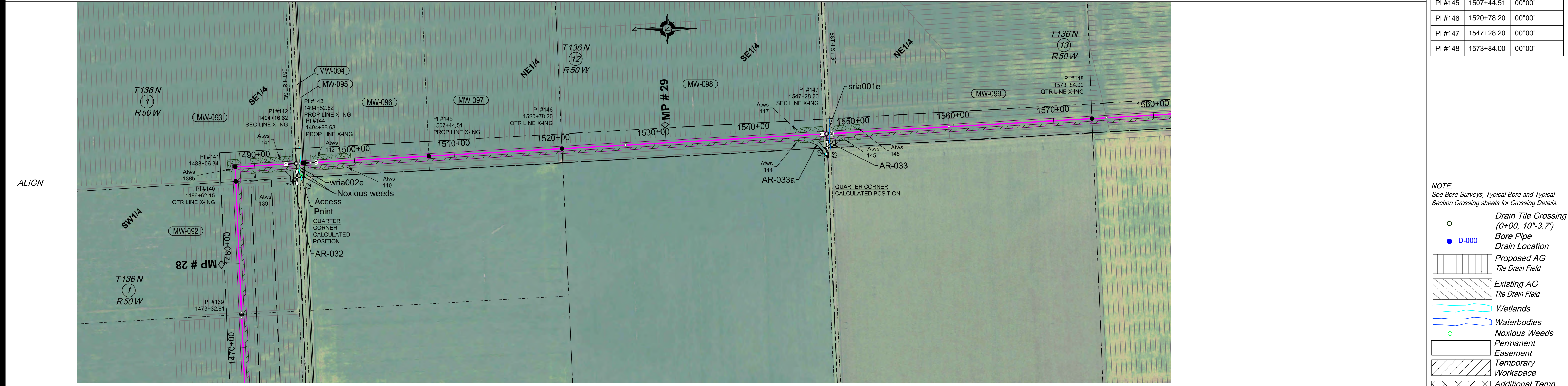
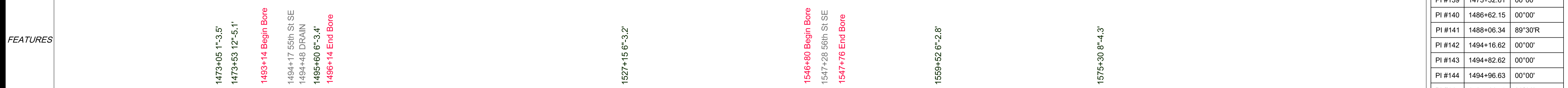
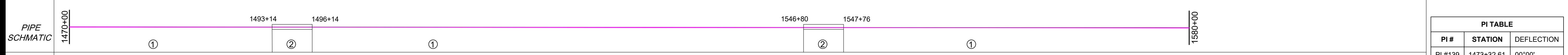
WHAPELTON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

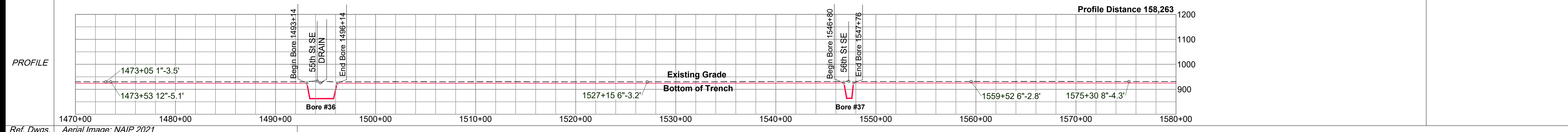
Sec. 1, 2, 3, T136N, R50W,
5th P.M., Richland Co., North Dakota

Sheet 13 R2

OWNER	MW-092	MW-093	MW-094	MW-095	MW-096	MW-097	MW-098	MW-099
E1/2 OF THE SW1/4 SEC. 1, T136N, R50W 1330' Cultivated	SE1/4, WITH EXCEPTIONS SEC. 1, T136N, R50W 751' Cultivated - 33' Uncultivated	N1/2 OF THE NE1/4 WITH EXCEPTIONS SEC. 12, T136N, R50W 66' Uncultivated	S1/4 OF N80' OF THE NE1/4 SEC. 12, T136N, R50W 14' Uncultivated	N1/2 OF THE NE1/4 WITH EXCEPTIONS SEC. 12, T136N, R50W 1248' Cultivated	S1/2 OF THE NE1/4 SEC. 12, T136N, R50W 1334' Cultivated	SE1/4 SEC. 12, T136N, R50W 2650' Cultivated	NE1/4, WITH EXCEPTIONS SEC. 13, T136N, R50W 2596' Cultivated - 60' Uncultivated	
RODDAGE	1329.54' / 80.58 Rods	754.47' / 45.73 Rods	66.00' / 4.00 Rods	14.00' / 0.85 Rods	1247.88' / 75.63 Rods	1333.69' / 80.83 Rods	2650.00' / 160.61 Rods	2655.80' / 160.96 Rods



ENVIRO	Name	Crossing Method	Bridge	Wetland Name	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
	sria001e	Bore		wria002e	1494+48	Wetland	Approx. 150' ECD Approx. 50' mats	090201051005	



PI #	STATION	DEFLECTION
PI #139	1473+32.61	00°00'
PI #140	1486+62.15	00°00'
PI #141	1488+06.34	89°30'R
PI #142	1494+16.62	00°00'
PI #143	1494+82.62	00°00'
PI #144	1494+96.63	00°00'
PI #145	1507+44.51	00°00'
PI #146	1520+78.20	00°00'
PI #147	1547+28.20	00°00'
PI #148	1573+84.00	00°00'

- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Drain Tile Crossing (0+00, 10'-3.7')
 - D-000 Bore Pipe
 - Drain Location
 - ▨ Proposed AG Tile Drain Field
 - ▨ Existing AG Tile Drain Field
 - ▨ Wetlands
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HSE Project # 19-21

SURVEY DATUM

North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

⊠ Proposed Block Valve	— Alignment
⊙ Proposed Bore	- - - Section Line
● Alignment PI	- - - Quarter Line
○ Utility Pole	- - - Fence Line
⊙ Well	- - - UG Fiber Optic
⊗ Valve	- - - UG Electric
— Water Line	- - - Overhead Elec
	- - - Existing Pipeline
	- - - Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	10,604	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	396	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS

No.	Date	Description

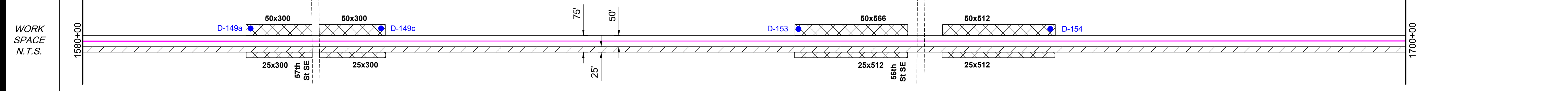
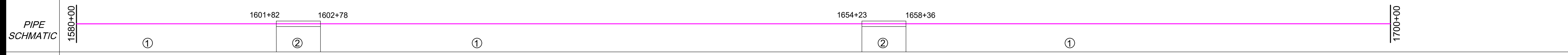
Scale: 1" = 500' HORIZ. 1" = 200' VERT.

WAHPETON EXPANSION PROJECT

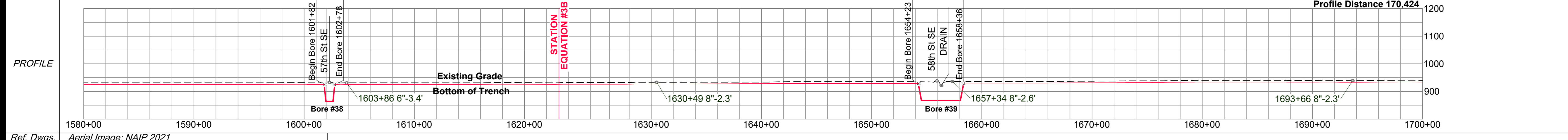
Sec. 1, 12, 13, T136N, R50W,
5th P.M., Richland Co., North Dakota

Sheet 14 R2

Co, State	SECTIONS 13, 24, 25, T136N, R50W, RICHLAND COUNTY, NORTH DAKOTA									
OWNER	MW-100	MW-101	MW-102	MW-103	MW-104	MW-106	MW-105	MW-108	MW-109	
RODDAGE	1906.38' / 115.54 Rods	939.82' / 56.96 Rods	2783.01' / 168.67 Rods	83.69' / 5.07 Rods	2643.92' / 160.24 Rods	66.00' / 4.00 Rods	2550.47' / 154.57 Rods	1321.81' / 80.11 Rods	1323.75' / 80.23 Rods	



ENVIRO	Name								
	Water Crossing	Bridge							
ENVIRO	Wetland Name								
	Crossing	Survey Extent							
ENVIRO	Environmental Feature								
	Miscellaneous/Comments								
HUC-12 Watershed									
Seeding Mix									



PI TABLE		
PI #	STATION	DEFLECTION
PI #149	1590+92.38	45°00'R
PI #150	1592+90.37	00°00'
PI #151	1598+49.65	45°00'L
PI #152	1602+30.20	00°00'
PI #153	1625+25.44	43°30'L
PI #154	1628+64.71	00°00'
PI #155	1629+48.40	00°00'
PI #156	1631+51.21	43°30'R
PI #157	1655+92.32	00°00'
PI #158	1656+25.32	00°00'
PI #159	1656+91.32	00°00'
PI #160	1682+41.79	00°00'
PI #161	1695+63.60	00°00'

- NOTE:
 See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Drain Tile Crossing (0+00, 10"-3.7')
 - Bore Pipe
 - D-000 Drain Location
 - ▨ Proposed AG Tile Drain Field
 - ▨ Existing AG Tile Drain Field
 - ▨ Wetlands
 - ▨ Waterbodies
 - Noxious Weeds
 - ▨ Permanent Easement
 - ▨ Temporary Workspace
 - ▨ Additional Temp. Workspace
 - ▨ Survey Corridor
- (NCW) not crossed by Workspace

- ENVIRONMENTAL NOTES:
- Wetlands depicted on these sheets represent actual field survey data or NWI.
 - Actual wetland or stream width may vary at time of construction.
 - The minimal depth of cover over the pipeline in agricultural land will be 4 ft. unless specified differently on the profile view.
- * Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

HSE INC.
 HARNED SURVEYING & ENGINEERING, INC.
 11815 ROBINDALE ROAD
 LOUISVILLE, KY 40243
 OFFICE (502) 254-3921
 FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM
 North Dakota North (NAD 83)(2011)
 International Foot
 *Distances are Grid Distances.
 Combined Scale Factor = 0.99989766
 Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
 Drawn By: D. Smith
 Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Water Line
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	11,491	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	509	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS		
No.	Date	Description

WAHPETON EXPANSION PROJECT

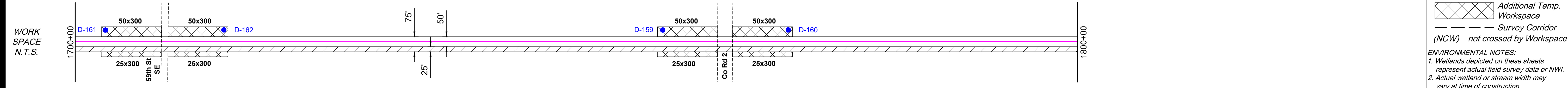
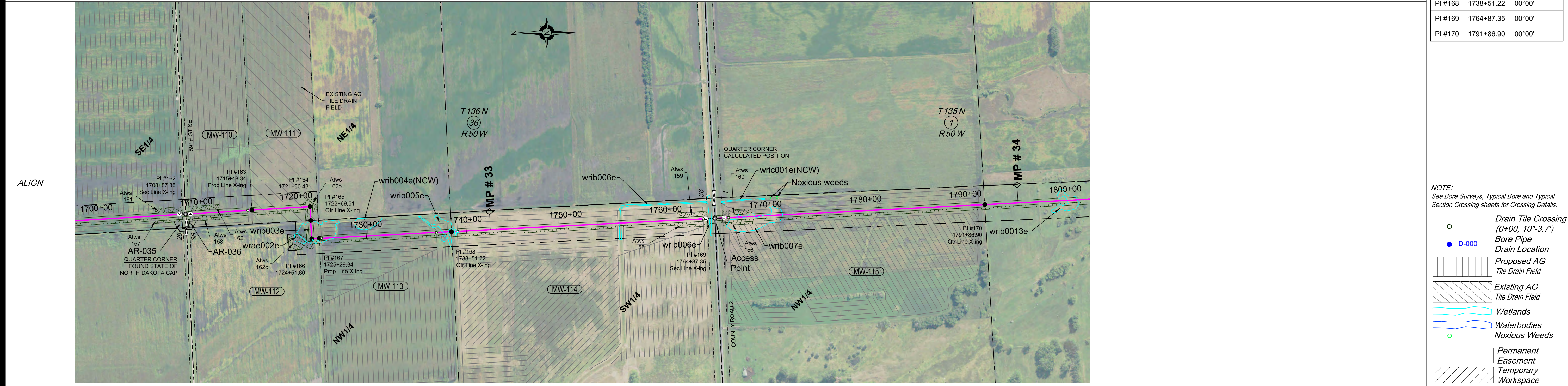
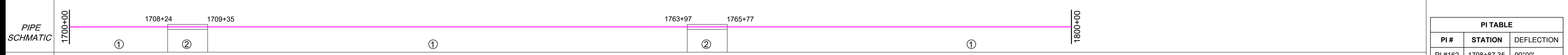
1" = 500' HORIZ.
 1" = 200' VERT.

WBI ENERGY TRANSMISSION
 An MDU Resources Group company

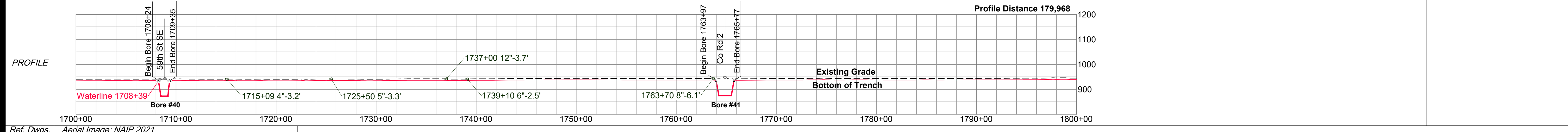
Sec. 13, 24, 25, T136N, R50W,
 5th P.M., Richland Co., North Dakota

Sheet 15 R2

OWNER	MW-110	MW-111	MW-112	MW-113	MW-114	MW-115
1708+87	N1/2 OF THE N1/2, OF THE NE1/4 SEC. 36, T136N, R50W 628' Cultivated - 33' Uncultivated	S1/2 OF THE N1/2, OF THE NE1/4 SEC. 36, T136N, R50W 721' Cultivated	N1/2 OF THE NW1/4 SEC. 36, T136N, R50W 260' Uncultivated	S1/2 OF THE NW1/4, WITH EXCEPTIONS, SEC. 36, T136N, R50W 929' Cultivated - 393' Uncultivated	SW1/4, WITH EXCEPTIONS SEC. 36, T136N, R50W 2529' Cultivated - 107' Uncultivated	GOVT LOT 3 & SE1/4 OF THE NW1/4 SEC. 1, T135N, R50W 2625' Cultivated - 75' Uncultivated
RODDAGE	660.99' / 40.06 Rods	721.17' / 43.71 Rods	259.83' / 15.75 Rods	1321.87' / 80.11 Rods	2636.14' / 159.77 Rods	2699.55' / 163.61 Rods



ENVIRO	Name	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
Water Crossing	Bridge					
Wetland	wrae002e	1724+37	Wetland	Approx. 200' ECD		
Wetland	wrib003e	1722+82	Wetland	Approx. 200' ECD		
Wetland	wrib004e	1726+72 1728+94	Wetland	Approx. 200' ECD		
Wetland	wrib005e	1731+56 1737+68	Wetland	Approx. 100' ECD		
Wetland	wrib006e	1755+39	Wetland	Approx. 200' ECD		
Wetland	wrib007e	1764+42 1767+12	Wetland	Approx. 100' ECD		
Wetland	wric001e	1771+65 1765+59	Wetland	Approx. 600' mats		
Wetland	wrib013e	1800+15 1801+18	Wetland	Approx. 100' ECD		
					090201051005	



HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
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HSE Project # 19-21

SURVEY DATUM

North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- ⊠ Proposed Block Valve
- ⊙ Proposed Bore
- Alignment PI
- Utility Pole
- ⊕ Well
- ⊗ Valve
- Water Line
- Alignment
- Section Line
- - - Quarter Line
- x - x - Fence Line
- - - UG Fiber Optic
- - - UG Electric
- - - Overhead Elec
- - - Existing Pipeline
- - - Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	9,709	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	291	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS

No.	Date	Description

WHA PETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Sec. 36, T136N, R50W,
Sec. 1, T135N, R50W,
5th P.M., Richland Co., North Dakota

Sheet 16 R2

PI TABLE

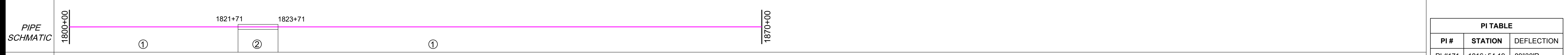
PI #	STATION	DEFLECTION
PI #162	1708+87.35	00°00'
PI #163	1715+48.34	00°00'
PI #164	1721+30.48	90°30'R
PI #165	1722+69.51	00°00'
PI #166	1724+51.60	90°00'L
PI #167	1725+29.34	00°00'
PI #168	1738+51.22	00°00'
PI #169	1764+87.35	00°00'
PI #170	1791+86.90	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

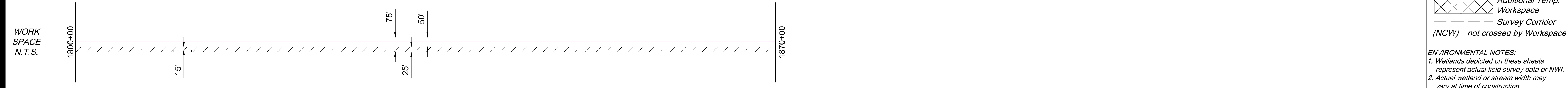
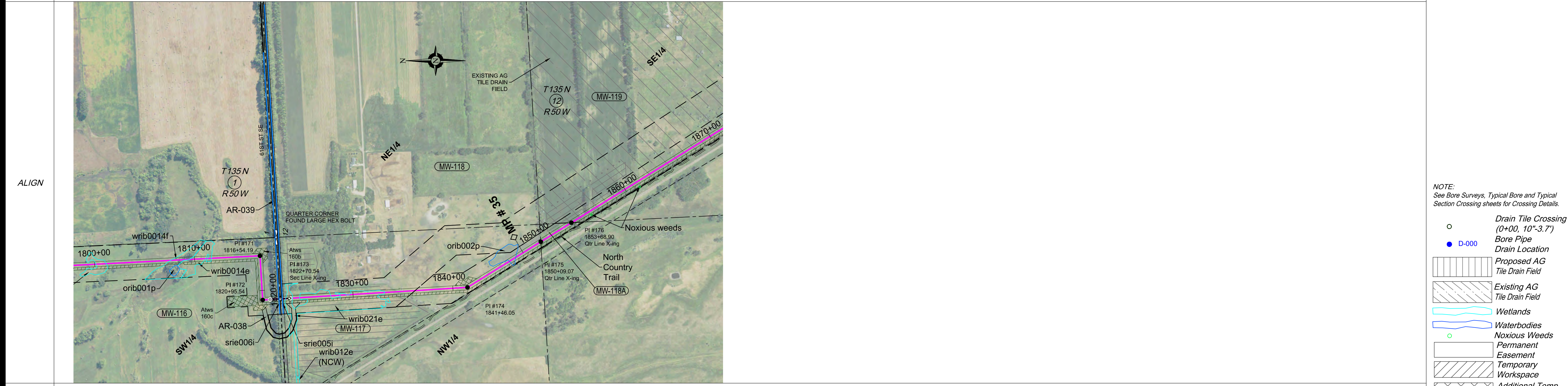
- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
- ▨ Temporary Workspace
- ▨ Additional Temp. Workspace
- Survey Corridor (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
3. The minimal depth of cover over the pipeline in agricultural land will be 4 ft. unless specified differently on the profile view.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

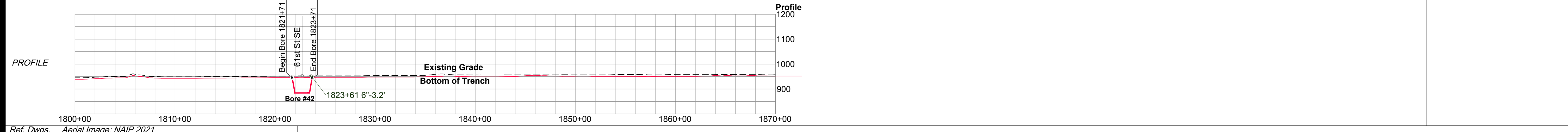
OWNER	MW-116 SW1/4, EXCEPT RAILROAD SEC. 1, T135N, R50W 713' Cultivated - 2371' Uncultivated	MW-117 PART OF NW1/4 LYING NE OF RAILROAD SEC. 12, T135N, R50W 2739' Uncultivated	MW-118A NE1/4, WITH EXCEPTIONS SEC. 12, T135N, R50W 360' Uncultivated	MW-119 SE1/4 LYING EAST OF RAILROAD SEC. 12, T135N, R50W 2636' Uncultivated
RODDAGE	3083.64' / 186.89 Rods	2738.53' / 165.97 Rods	359.83' / 21.81 Rods	2636.01' / 159.76 Rods



PI #	STATION	DEFLECTION
PI #171	1816+54.19	89°30'R
PI #172	1820+95.54	90°00'L
PI #173	1822+70.54	00°00'
PI #174	1841+46.05	28°30'L
PI #175	1850+09.07	00°00'
PI #176	1853+68.90	00°00'



ENVIRO	Name	Crossing Method	Station	Notes
Water Crossing	orib001p	Bore	1820+00	
Wetland	wrib014f	Bridge	1807+50 - 1809+16	
Wetland	wrib014e	Wetland	1808+01 - 1811+67	
Wetland	wrib012e	Wetland	1823+97	
Wetland	wrib021e	Wetland	1823+21 - 1833+12	
Wetland	orib002p	Bore	1846+20 - 1848+70	
Environmental Feature				Pond
Miscellaneous/Comments				Approx. 50' ECD
HUC-12 Watershed				Approx. 100' ECD
Seeding Mix				Approx. 1000' mats



HARNED SURVEYING & ENGINEERING, INC.
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HSE Project # 19-21

SURVEY DATUM

North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Water Line
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	6,800	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	200	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS

No.	Date	Description

WHAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

500 0 500 1000
scale 1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Sec. 1, 12, T135N, R50W,
5th P.M., Richland Co., North Dakota

Sheet 17 R2

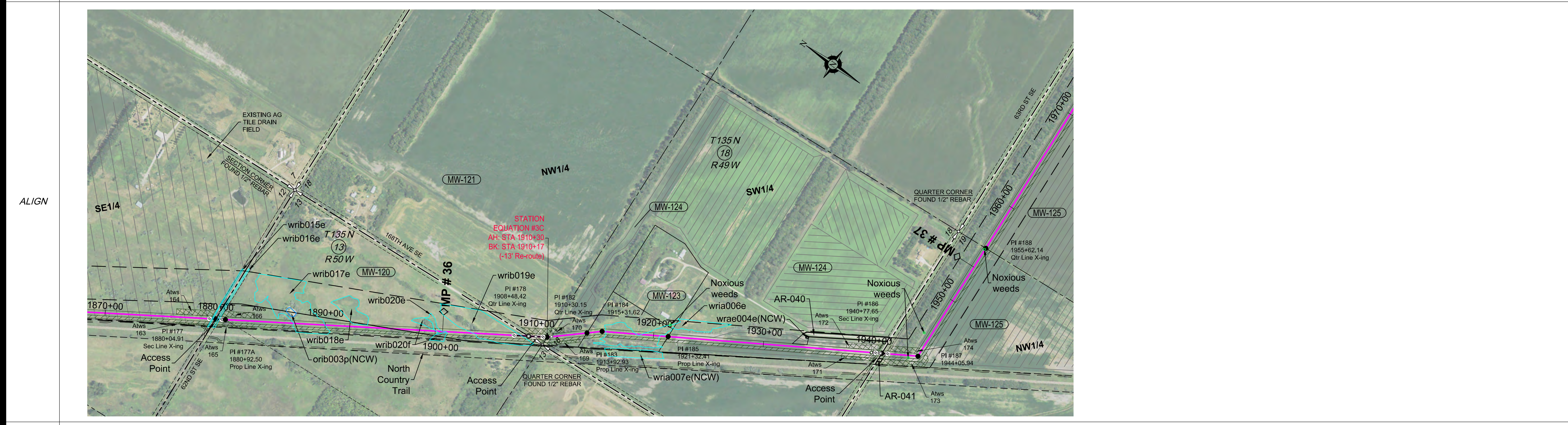
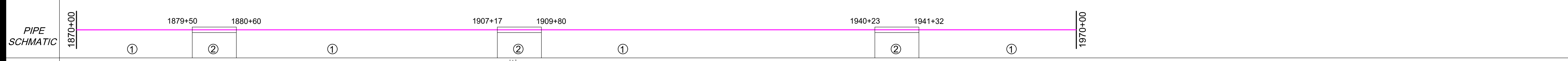
NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- Proposed AG Tile Drain Field
- Existing AG Tile Drain Field
- Wetlands
- Waterbodies
- Noxious Weeds
- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace
- Survey Corridor (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
3. The minimal depth of cover over the pipeline in agricultural land will be 4 ft. unless specified differently on the profile view.

* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

Co, State											
OWNER	1880+05	MW-119A	MW-120	MW-121	MW-124	MW-123	MW-124	MW-125			
	W1/2NE1/4 SEC. 13, T135N, R50W 88' Uncultivated	NE1/4 LYING EAST OF RAILROAD WITH EXCEPTIONS SEC. 13, T135N, R50W 2756' Uncultivated	GOVT LOT 2 & SE1/4 OF THE NE1/4 SEC. 18, T135N, R49W 210' Uncultivated	GOVT LOTS 3-4 & E1/2 OF THE SW1/4 WITH EXCEPTIONS SEC. 18, T135N, R49W 501' Uncultivated	PART OF THE SW1/4 SEC. 18, T135N, R49W 739' Uncultivated	GOVT LOTS 3-4 & E1/2 OF THE SW1/4 WITH EXCEPTIONS SEC. 18, T135N, R49W 1945' Uncultivated	ALL LYING EAST OF RAILROAD WITH EXCEPTIONS SEC. 19, T135N, R49W 3507' Cultivated - 619' Uncultivated				
RODDAGE	1880+05	1880+93	1908+48	1910+30	1915+32	1921+32	1940+78				
	87.59' / 5.31 Rods	2755.92' / 167.03 Rods	209.85' / 12.72 Rods	501.47' / 30.39 Rods	739.49' / 44.82 Rods	1945.24' / 117.89 Rods	4126.49' / 250.27 Rods				

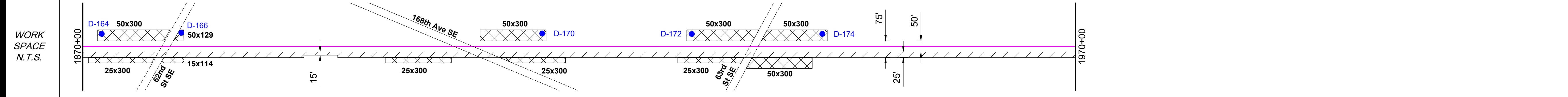


PI TABLE		
PI #	STATION	DEFLECTION
PI #177	1880+04.91	00°00'
PI #177A	1880+92.50	00°00'
PI #178	1908+48.42	00°00'
PI #182	1910+30.15	15°30'L
PI #183	1913+92.93	00°00'
PI #184	1915+31.62	10°30'R
PI #185	1921+32.41	00°00'
PI #186	1940+77.65	00°00'
PI #187	1944+05.94	62°30'L
PI #188	1955+62.14	00°00'

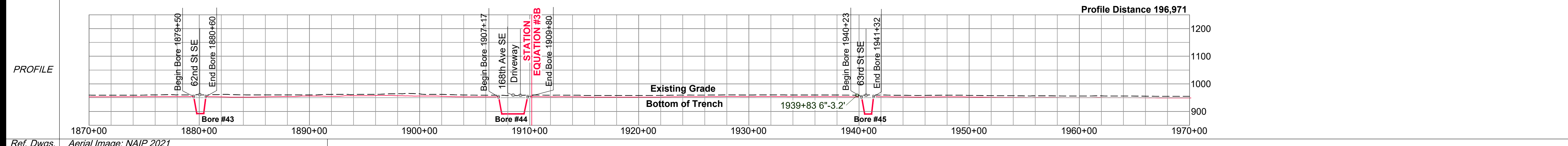
NOTE:
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- Drain Tile Crossing (0+00, 10"-3.7')
- D-000
- Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
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- ▨ Additional Temp. Workspace
- Survey Corridor (NCW) not crossed by Workspace

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ENVIRO	Name	Crossing Method	orib003e	wrib015e	wrib016e	wrib017e	wrib018e	wrib020f	wrib020e	wrib019e	wria006e	wria007e	wrae004e
Water Crossing	Bridge												
Wetland Name	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland
Environmental Feature	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD	Approx. 100' ECD
Miscellaneous/Comments	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats	Approx. 40' mats
HUC-12 Watershed	090201051005	090201051005	090201051005	090201051005	090201051005	090201051005	090201051005	090201051005	090201051005	090201051005	090201051005	090201051005	090201051005
Seeding Mix													



Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM
North Dakota North (NAD 83)(2011) International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.
Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- ▨ Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Water Line
- Alignment
- Section Line
- Quarter Line
- x-x-x-x- Fence Line
- o-o-o-o- UG Fiber Optic
- u-u-u-u- UG Electric
- e-e-e-e- Overhead Elec
- d-d-d-d- Existing Pipeline
- r-r-r-r- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	9,505	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	482	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

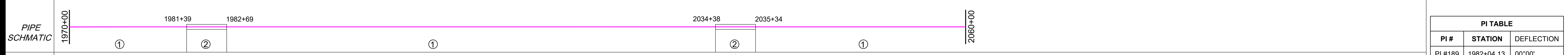
REVISIONS

No.	Date	Description

Scale: 1" = 500' HORIZ. 1" = 200' VERT.

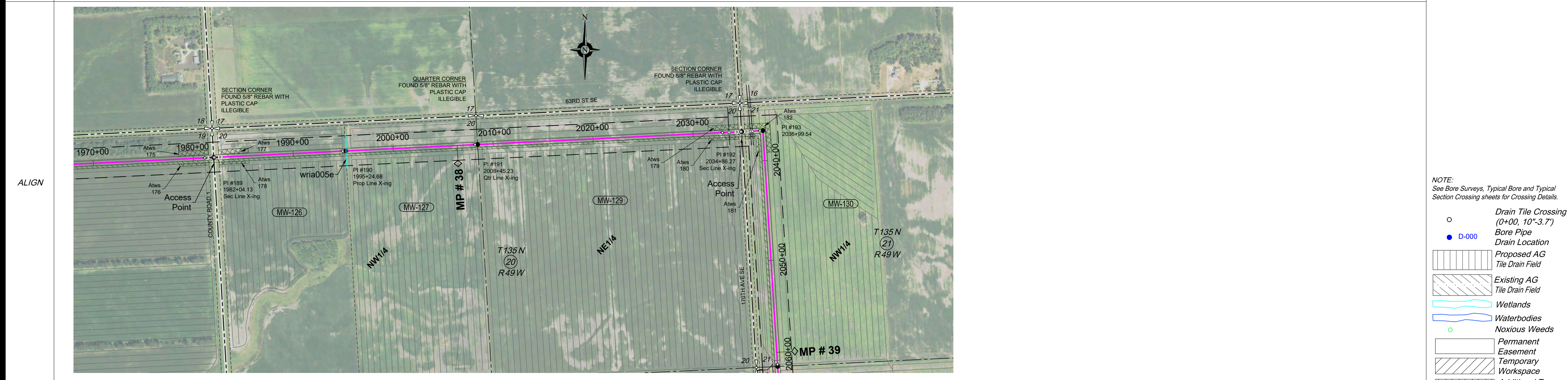
WAHPETON EXPANSION PROJECT

OWNER	1982+04	MW-126	1995+25	MW-127	2008+45	MW-129	2034+86	MW-130
RODDAGE	W1/2 OF THE W1/2 SEC. 20, T135N, R49W 1288' Cultivated - 33' Uncultivated	1320.55' / 80.03 Rods	E1/2 OF THE W1/2, WITH EXCEPTIONS SEC. 20, T135N, R49W 1321' Cultivated	1320.55' / 80.03 Rods	NE1/4 SEC. 20, T135N, R49W 2608' Cultivated - 33' Uncultivated	2641.04' / 160.06 Rods	W1/2 OF THE NW1/4 SEC. 21, T135N, R49W 2542' Cultivated - 33' Uncultivated	2575.35' / 156.08 Rods

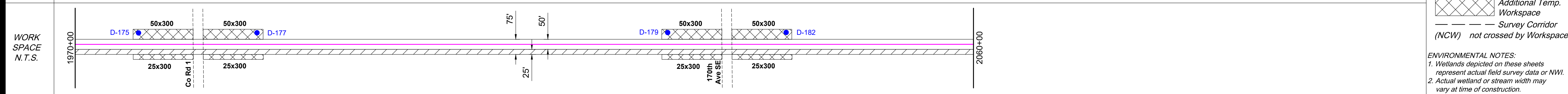


FEATURES	Station	Description
	1981+15 8"-2.6'	1981+39 Begin Bore
	1982+09 Co Rd 1	1982+69 End Bore
	1994+95 10"-2.9'	
	2008+19 12"-3.2'	
	2032+95 8"-3.8'	2034+38 Begin Bore
	2033+61 OHE	2035+34 End Bore
	2034+80 170th Ave SE	
	2035+74 OHE	
	2035+95 OHE	
	2036+70 6"-3.1'	
	2060+42 8"-3.5'	

PI TABLE		
PI #	STATION	DEFLECTION
PI #189	1982+04.13	00°00'
PI #190	1995+24.68	00°00'
PI #191	2008+45.23	00°00'
PI #192	2034+86.27	00°00'
PI #193	2036+99.54	89°00'R

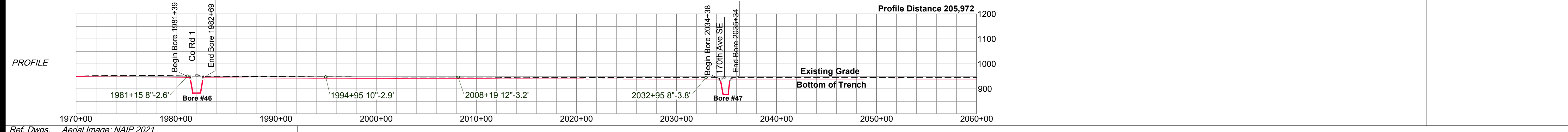


- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Drain Tile Crossing (0+00, 10"-3.7')
 - D-000 Bore Pipe
 - Drain Location
 - Proposed AG Tile Drain Field
 - Existing AG Tile Drain Field
 - Wetlands
 - Waterbodies
 - Noxious Weeds
 - Permanent Easement
 - Temporary Workspace
 - Additional Temp. Workspace
 - Survey Corridor (NCW) not crossed by Workspace



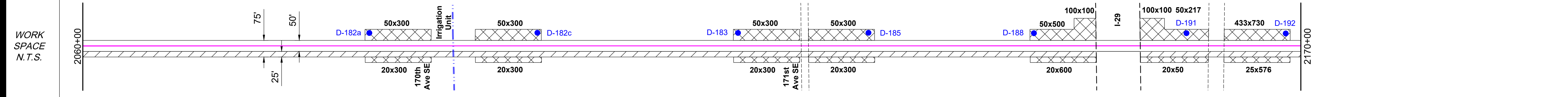
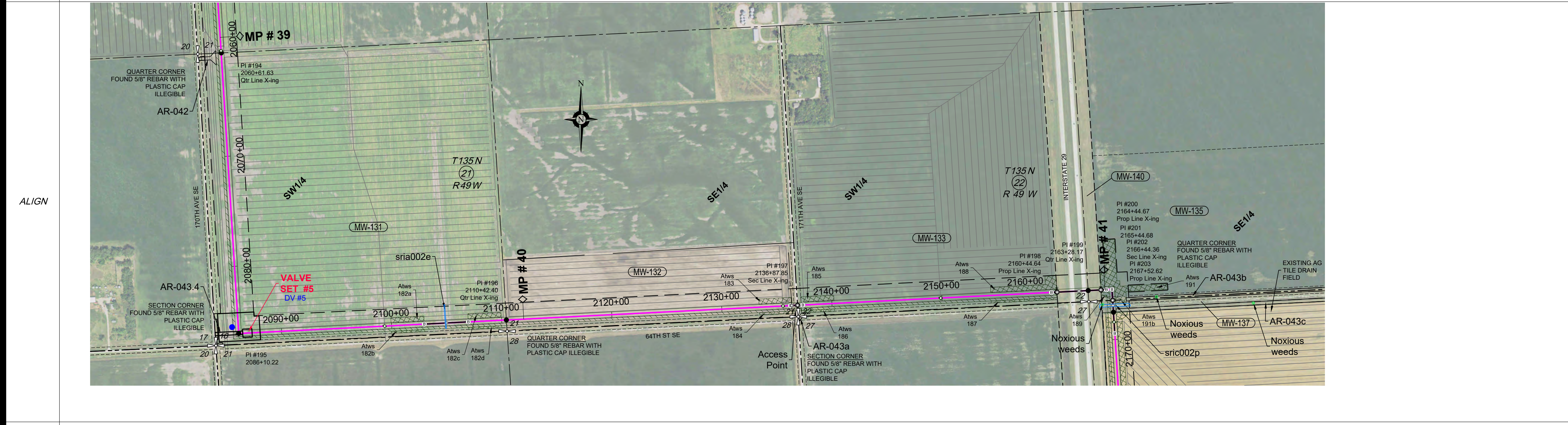
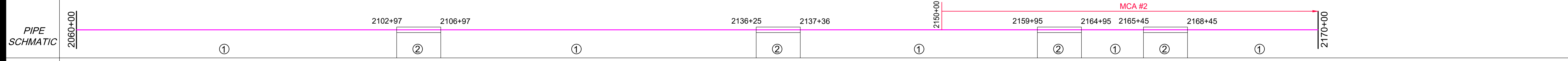
ENVIRO	Water Crossing	Name	
	Bridge	Method	
	Wetland	Name	wria005e
	Survey Extent		1995+37
Environmental Feature			Wetland
Miscellaneous/Comments			Approx. 100' ECD
HUC-12 Watershed			Approx. 40' mats
Seeding Mix			090201051004

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- * Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

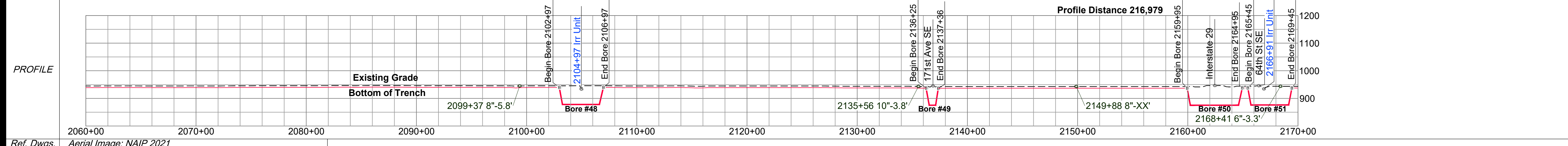


<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> ⊠ Proposed Block Valve ⊕ Proposed Bore ● Alignment PI ○ Utility Pole ⊙ Well ⊗ Valve — Water Line — Alignment --- Section Line - - - Quarter Line - x - x - Fence Line - - - UG Fiber Optic - - - UG Electric - - - Overhead Elec - - - Existing Pipeline - - - Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8,774</td> <td>12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE</td> </tr> <tr> <td>2</td> <td>226</td> <td>12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	8,774	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	2	226	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				<p>WHAHPETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>500 0 500 1000 scale 1" = 500' - 22 x 34 feet 1" = 1000' - 11 x 17</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p>	<p>Sec. 20, 21, T135N, R49W, 5th P.M., Richland Co., North Dakota</p> <p>Sheet 19 R2</p>
	Mark	Quantity	Description																				
1	8,774	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE																					
2	226	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO																					
No.	Date	Description																					

Co, State	SECTIONS 21, 22, 27, T135N, R49W, RICHLAND COUNTY, NORTH DAKOTA																				
OWNER	2060+62	MW-131 SW1/4 SEC. 21, T135N, R49W 4981' Cultivated			2110+42	MW-132 S1/2 OF THE S1/2 OF THE SE1/4 SEC. 22, T135N, R49W 2592' Cultivated - 53' Uncultivated			2136+88	MW-133 SW1/4, WITH EXCEPTIONS SEC. 22, T135N, R49W 2324' Cultivated - 33' Uncultivated		2160+45	MW-140 SEC. 22, T135N, R49W 400' Uncultivated		2164+45	MW-135 SE1/4 EXC 1-29 ROW SEC. 22, T135N, R49W 200' Cultivated		2166+44	MW-137 S7/8 OF N108.5' LESS E3/4 & W116.8' OF NE1/4 SEC. 27, T135N, R49W 108' Uncultivated		2167+63
RODDAGE	4980.78' / 301.87 Rods		2645.44' / 160.33 Rods			2356.79' / 142.84 Rods		400.04' / 24.24 Rods		199.69' / 12.10 Rods		108.26' / 6.68 Rods									

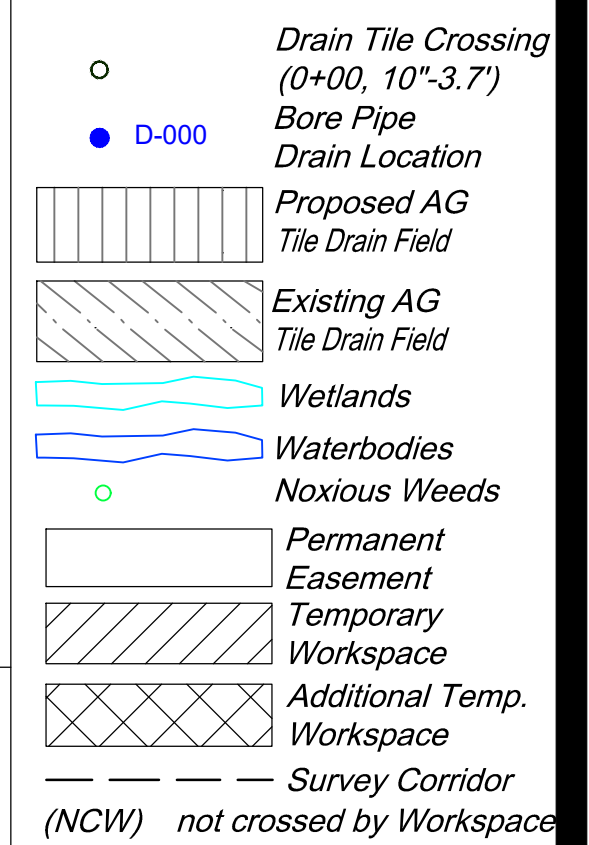


ENVIRO	Water Crossing	Name	sria002e																		
	Water Crossing	Bridge	Bore																		
	Wetland	Name	2104+97																		
	Environmental Feature	Survey Extent	Minor																		
Miscellaneous/Comments	090201051004																				
HUC-12 Watershed	090201051003																				
Seeding Mix																					



PI TABLE		
PI #	STATION	DEFLECTION
PI #194	2060+61.63	00°00'
PI #195	2086+10.22	89°30'L
PI #196	2110+42.40	00°00'
PI #197	2136+87.85	00°00'
PI #198	2160+44.64	00°00'
PI #199	2163+28.17	00°00'
PI #200	2164+44.67	00°00'
PI #201	2165+44.68	89°30'R
PI #202	2166+44.36	00°00'
PI #203	2167+52.62	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.



ENVIRONMENTAL NOTES:
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3. The minimal depth of cover over the pipeline in agricultural land will be 4 ft. unless specified differently on the profile view.

* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot	
*Distances are Grid Distances.	
Combined Scale Factor = 0.99989766	
Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
	Proposed Block Valve
	Proposed Bore
	Alignment PI
	Utility Pole
	Well
	Valve
	Water Line
	Alignment
	Section Line
	Quarter Line
	Fence Line
	UG Fiber Optic
	UG Electric
	Overhead Elec
	Existing Pipeline
	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	8,489	12.75" OD, .250" WT, X65, FBE, TRL
2	511	12.75" OD, .312" WT, X65, FBE w/ARO, TRL
3	1,200	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
4	800	12.750", 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

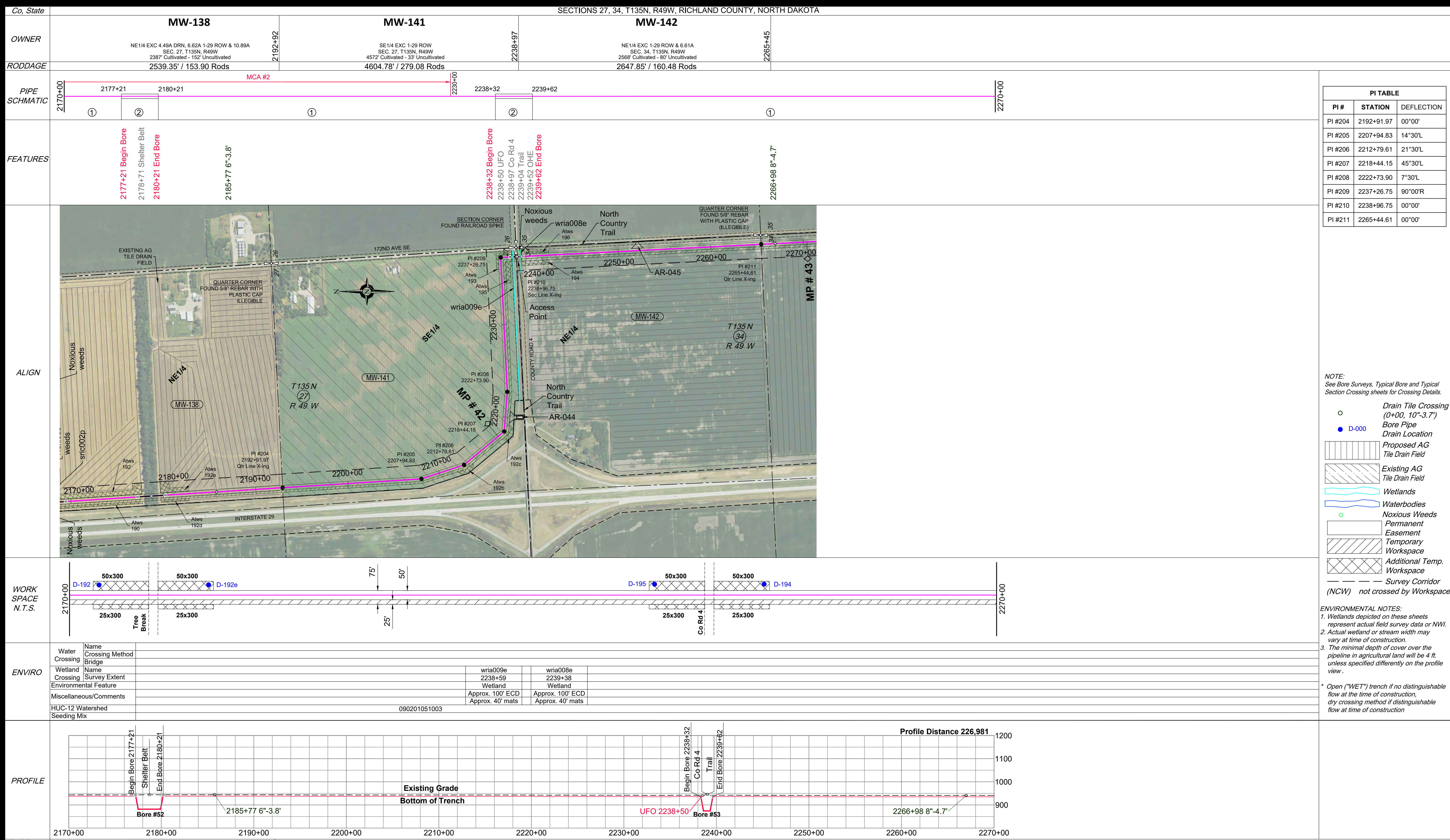
REVISIONS		
No.	Date	Description

WHAPELTON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

Sec. 21, 22, 27, T135N, R49W,
5th P.M., Richland Co., North Dakota

Sheet 20 R2

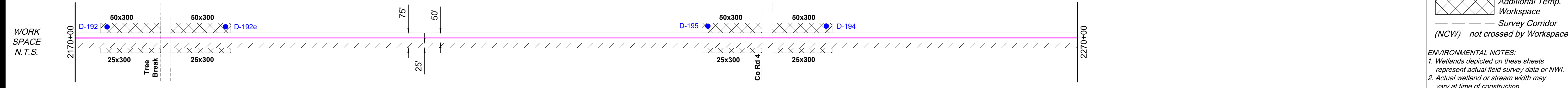


PI TABLE		
PI #	STATION	DEFLECTION
PI #204	2192+91.97	00°00'
PI #205	2207+94.83	14°30'L
PI #206	2212+79.61	21°30'L
PI #207	2218+44.15	45°30'L
PI #208	2222+73.90	7°30'L
PI #209	2237+26.75	90°00'R
PI #210	2238+96.75	00°00'
PI #211	2265+44.61	00°00'

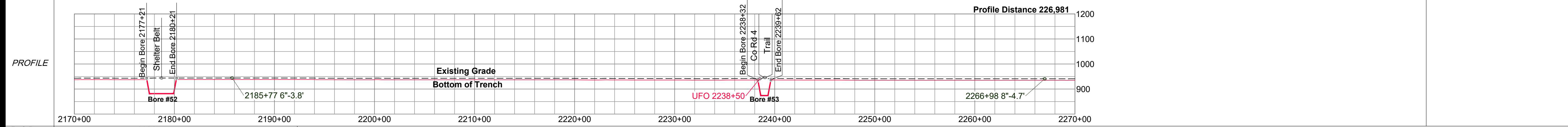
NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
- ▨ Temporary Workspace
- ▨ Additional Temp. Workspace
- Survey Corridor (NCW) not crossed by Workspace

ENVIRONMENTAL NOTES:
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Water Crossing	Name	Crossing Method
		Bridge
Wetland Crossing	Name	Survey Extent
	wria009e	2238+59
	wria008e	2238+38
Environmental Feature	Wetland	Environmental Feature
	Wetland	Wetland
Miscellaneous/Comments	Approx. 100' ECD	Approx. 100' ECD
	Approx. 40' mats	Approx. 40' mats
HUC-12 Watershed	090201051003	
Seeding Mix		



Ref. Dwgs. Aerial Image: NAIP 2021

HSE INC.
HARNED SURVEYING & ENGINEERING, INC.
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LOUISVILLE, KY 40243
OFFICE (502) 254-3921
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HSE Project # 19-21

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- ▨ Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- ⊙ Well
- ⊗ Valve
- Water Line
- Alignment
- Section Line
- Quarter Line
- x-x-x-x- Fence Line
- UFO-UFO-UG Fiber Optic
- UG-UG-UG Electric
- OHE-OHE-Overhead Elec
- - - Existing Pipeline
- - - Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	3,870	12.75" OD, .250" WT, X65, FBE, TRL
2	130	12.75" OD, .312" WT, X65, FBE w/ARO, TRL
3	5,700	12.75" OD, 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
4	300	12.75" OD, 0.500" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS		
No.	Date	Description

500 0 500 1000
scale 1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

WAHPETON EXPANSION PROJECT

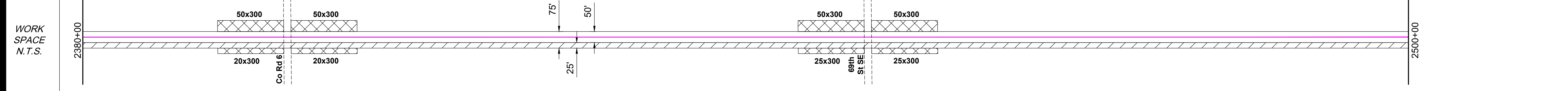
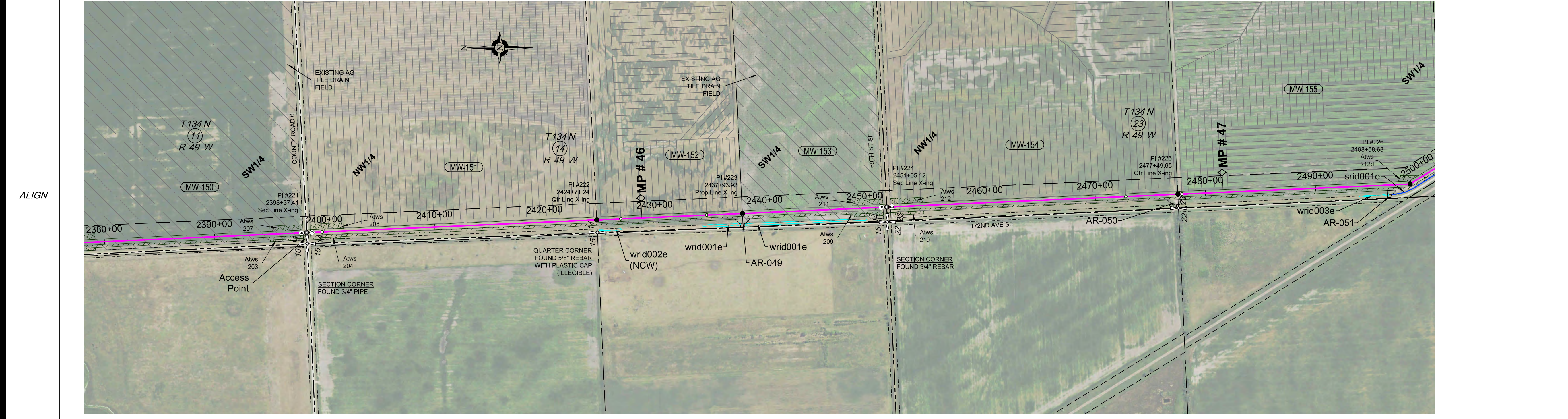
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WBI ENERGY TRANSMISSION
An MDU Resources Group company

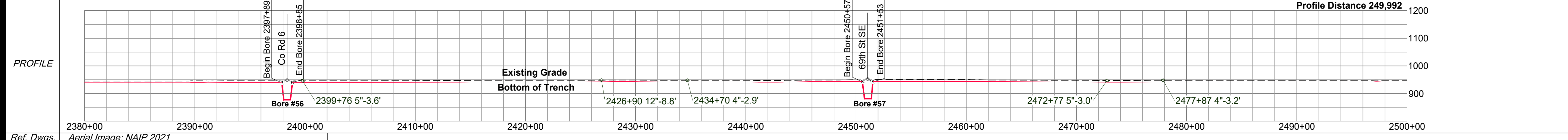
Sec. 27, 34, T135N, R49W,
5th P.M., Richland Co., North Dakota

Sheet 21 R2

Co, State	SECTIONS 11, 14, 23, T134N, R49W, RICHLAND COUNTY, NORTH DAKOTA											
OWNER	MW-150 SW1/4, WITH EXCEPTIONS SEC. 11, T134N, R49W 2490' Cultivated - 33' Uncultivated		MW-151 NW1/4 SEC. 14, T134N, R49W 2601' Cultivated - 33' Uncultivated		MW-152 N 1/2 OF THE SW1/4 SEC. 14, T134N, R49W 1323' Cultivated		MW-153 S 1/2 OF THE SW1/4 SEC. 14, T134N, R49W 1278' Cultivated - 353' Uncultivated		MW-154 NW1/4 SEC. 23, T134N, R49W 2510' Cultivated - 135' Uncultivated		MW-155 SW1/4 EXC 1-29 ROW SEC. 23, T134N, R49W 4821' Cultivated - 73' Uncultivated	
RODDAGE	2522.73' / 152.89 Rods		2633.83' / 159.63 Rods		1322.68' / 80.16 Rods		1311.20' / 79.47 Rods		2644.53' / 160.28 Rods		4894.17' / 296.62 Rods	



ENVIRO	Name	Crossing Method	Station	Notes
Water Crossing	Bridge	srld001e	open-cut	
Wetland	wrid002e	Wetland	2424+88 - 2426+89	
Wetland	wrid001e	Wetland	2437+91	Approx. 50' ECD
Wetland	wrid003e	Wetland	2493+96 - 2496+60 - 2496+89	Approx. 50' ECD
Environmental Feature			2552+20	Minor
Miscellaneous/Comments				
HUC-12 Watershed	090201051002			090201051001
Seeding Mix				



PI #	STATION	DEFLECTION
PI #221	2398+37.41	00°00'
PI #222	2424+71.24	00°00'
PI #223	2437+93.92	00°00'
PI #224	2451+05.12	00°00'
PI #225	2477+49.65	00°00'
PI #226	2498+58.63	29°00'L

- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Drain Tile Crossing (0+00, 10"-3.7')
 - D-000 Bore Pipe
 - Drain Location
 - ▨ Proposed AG Tile Drain Field
 - ▨ Existing AG Tile Drain Field
 - ▨ Wetlands
 - ▨ Waterbodies
 - Noxious Weeds
 - ▨ Permanent Easement
 - ▨ Temporary Workspace
 - ▨ Additional Temp. Workspace
 - Survey Corridor (NCW) not crossed by Workspace

- ENVIRONMENTAL NOTES:
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HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- ▨ Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- ⊙ Well
- ⊗ Valve
- Water Line
- Alignment
- Section Line
- Quarter Line
- x-x-x-x- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	11,808	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	192	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS

No.	Date	Description

WHAPELTON EXPANSION PROJECT

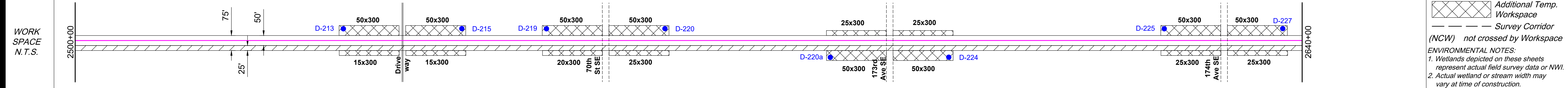
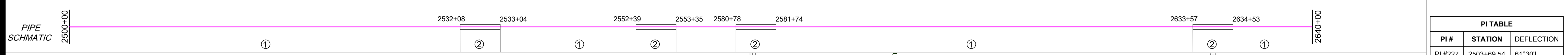
1" = 500' HORIZ.
1" = 200' VERT.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

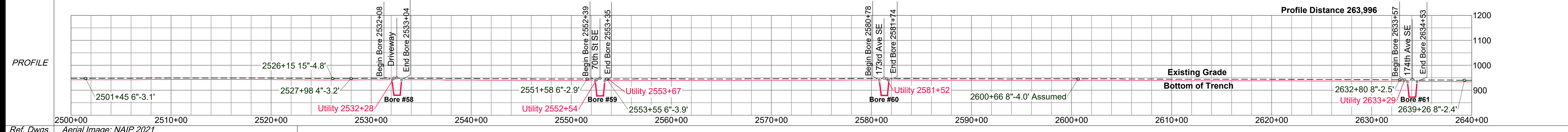
Sec. 11, 14, 23, T134N, R49W,
5th P.M., Richland Co., North Dakota

Sheet 23 R2

Co. State	SECTIONS 23, 25, 26, T134N, R49W, RICHLAND COUNTY, NORTH DAKOTA											
OWNER	MW-155	MW-156	MW-157	MW-158	MW-159	MW-160	MW-161	MW-162				
	SW1/4 EXC 1-29 ROW SEC. 23, T134N, R49W 4771' Cultivated - 73' Uncultivated	PART OF THE SE1/4 SEC. 23, T134N, R49W 781' Cultivated - 27' Uncultivated	W1/2 OF THE SE1/4 WITH EXCEPTIONS 514' Cultivated	E1/2 SE1/4 SEC. 23, T134N, R49W 1235' Cultivated - 86' Uncultivated	NE1/4 SEC. 26, T134N, R49W 2616' Cultivated - 33' Uncultivated	SE1/4, WITH EXCEPTIONS SEC. 26, T134N, R49W 155' Cultivated - 33' Uncultivated	SW1/4 SEC. 25, T134N, R49W 2607' Cultivated - 33' Uncultivated	SE1/4 SEC. 25, T134N, R49W 2607' Cultivated - 33' Uncultivated				
RODDAGE	4844.63' / 296.28 Rods	808.09' / 48.97 Rods	513.91' / 31.15 Rods	1321.20' / 80.07 Rods	2650.85' / 160.66 Rods	188.30' / 11.41 Rods	2639.47' / 159.97 Rods	2639.77' / 159.99 Rods				



ENVIRO	Water Crossing	Name Crossing Method
	Wetland	Name Crossing Survey Extent Environmental Feature
Miscellaneous/Comments		
HUC-12 Watershed Seeding Mix		
090201051001		



PI TABLE		
PI #	STATION	DEFLECTION
PI #227	2503+69.54	61°30'L
PI #228	2526+43.82	00°00'
PI #229	2534+51.91	00°00'
PI #230	2539+65.82	00°00'
PI #231	2551+81.75	90°00'R
PI #232	2552+87.02	00°00'
PI #233	2579+37.87	00°00'
PI #234	2580+21.36	90°00'L
PI #235	2581+26.18	00°00'
PI #236	2607+65.64	00°00'
PI #237	2634+05.41	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
- ▨ Temporary Workspace
- ▨ Additional Temp. Workspace
- Survey Corridor

(NCW) not crossed by Workspace

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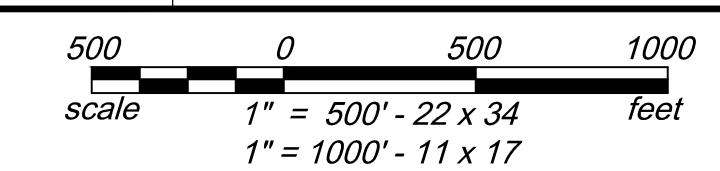
HSE Project # 19-21

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot	
*Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
▨	Proposed Block Valve
○	Proposed Bore
●	Alignment PI
○	Utility Pole
⊙	Well
⊗	Valve
—	Water Line
—	Alignment
---	Section Line
---	Quarter Line
-x-x-x-	Fence Line
---	UG Fiber Optic
---	UG Electric
---	Overhead Elec
---	Existing Pipeline
---	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	13,616	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	384	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS		
No.	Date	Description



WAHPETON EXPANSION PROJECT

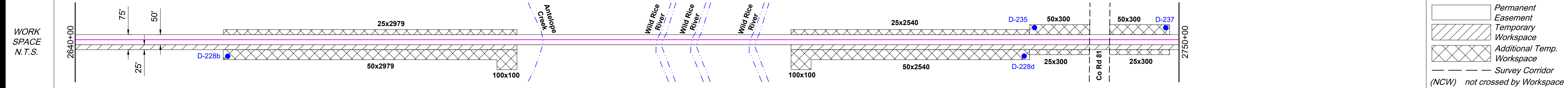
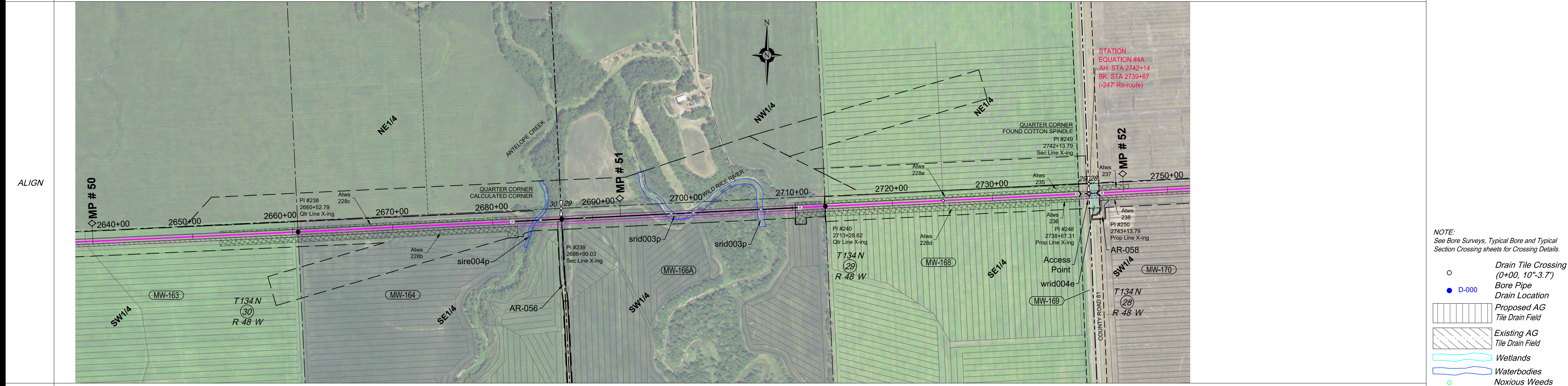
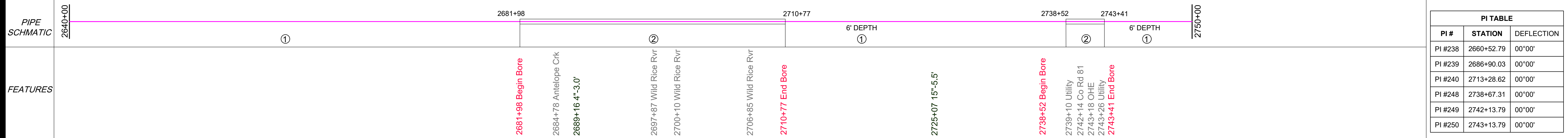
1" = 500' HORIZ.
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WBI ENERGY TRANSMISSION
An MDU Resources Group company

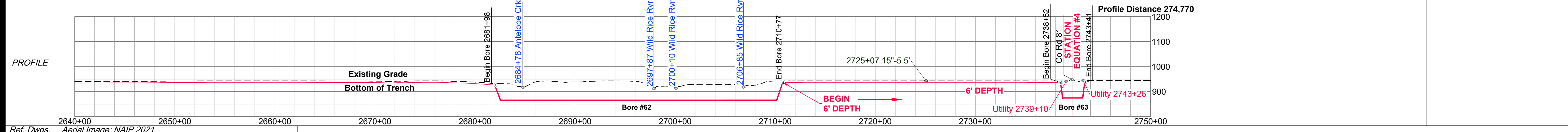
Sec. 23, 25, 26, T134N, R49W,
5th P.M., Richland Co., North Dakota

Sheet 24 R2

Co, State	SECTIONS 28, 29, 30, T134N, R48W, RICHLAND COUNTY, NORTH DAKOTA									
OWNER	MW-163	MW-164	MW-166A	MW-168	MW-169	MW-170				
RODDAGE	2647.37' / 160.45 Rods	2637.29' / 158.84 Rods	2638.59' / 159.92 Rods	2538.69' / 153.86 Rods	200.01' / 12.12 Rods	1880.01' / 113.94 Rods				



ENVIRO	Name	Crossing Method	Bridge	Water Crossing	Wetland Name	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
	srie004p	BORE	No Bridge	Antelope Creek			Intermediate		090201051001	090201050906
	srid003p	BORE	No Bridge	Wild Rice River			Major		090201050907	090201050907
	srid003p	BORE	No Bridge	Wild Rice River			Major		090201050805	090201050805
	wrid004e			Co Rd 81			Wetland	Approx. 50' ECD Approx. 40' mats	090201040401	090201040401



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HSE Project # 19-21

SURVEY DATUM

North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
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LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Water Line
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	7,632	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	3,368	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS

No.	Date	Description

WHAHPETON EXPANSION PROJECT

Scale: 1" = 500' HORIZ.
1" = 200' VERT.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Sec. 28, 29, 30, T134N, R48W,
5th P.M., Richland Co., North Dakota

Sheet 25 | R2

PI TABLE		
PI #	STATION	DEFLECTION
PI #238	2660+52.79	00°00'
PI #239	2686+90.03	00°00'
PI #240	2713+28.62	00°00'
PI #248	2738+67.31	00°00'
PI #249	2742+13.79	00°00'
PI #250	2743+13.79	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- ▨ Wetlands
- ▨ Waterbodies
- Noxious Weeds
- ▨ Permanent Easement
- ▨ Temporary Workspace
- ▨ Additional Temp. Workspace
- ▨ Survey Corridor

(NCW) not crossed by Workspace

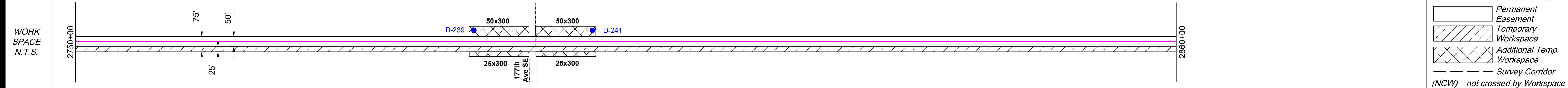
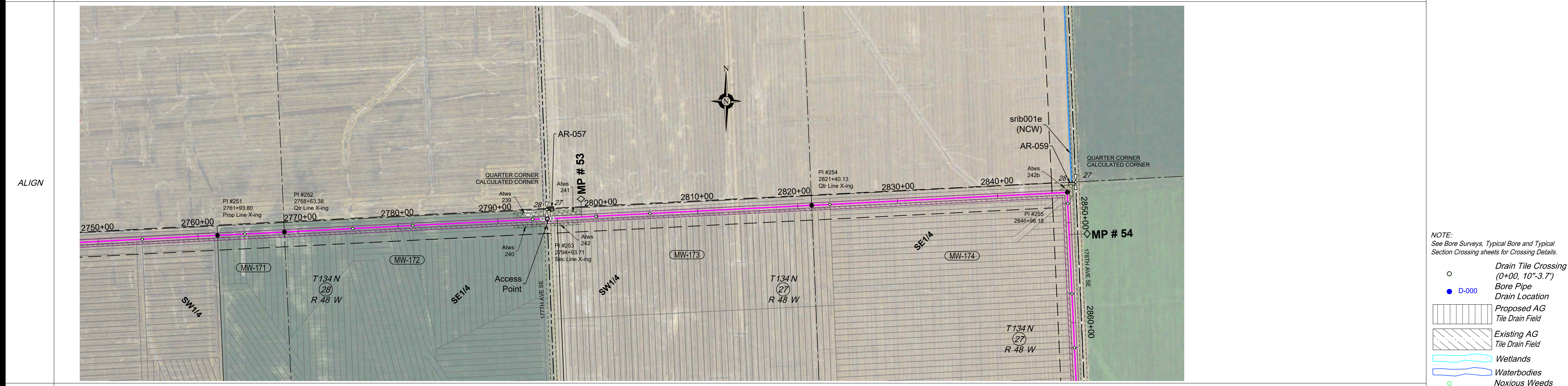
ENVIRONMENTAL NOTES:

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- Actual wetland or stream width may vary at time of construction.

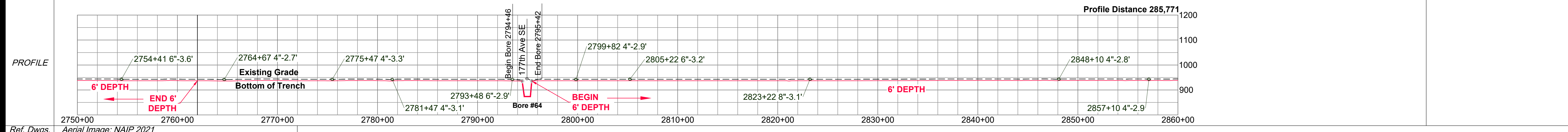
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

OWNER	MW-171	MW-172	MW-173	MW-174
RODDAGE	660.01' / 40.00 Rods	2639.89' / 159.99 Rods	2646.43' / 160.39 Rods	5110.67' / 309.74 Rods
PIPE SCHMATIC	6' DEPTH	5' DEPTH	6' DEPTH	6' DEPTH

PI #	STATION	DEFLECTION
PI #251	2761+93.80	00°00'
PI #252	2768+63.38	00°00'
PI #253	2794+93.71	00°00'
PI #254	2821+40.13	00°00'
PI #255	2846+98.18	90°00'R



Water Crossing	Name	Crossing Method	Station
Wetland Crossing <td>srib001e</td> <td>Bridge</td> <td></td>	srib001e	Bridge	
Environmental Feature			3046+23
Miscellaneous/Comments			Ditch
HUC-12 Watershed			Approx. 50' ECD
Seeding Mix			090201040401



<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Water Line Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10,904</td> <td>12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE</td> </tr> <tr> <td>2</td> <td>96</td> <td>12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	10,904	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	2	96	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				<p>WHAHPETON EXPANSION PROJECT</p> <p>Scale: 1" = 500' HORIZ. / 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION</p> <p>Sec. 27, 28, T134N, R48W, 5th P.M., Richland Co., North Dakota</p> <p>Sheet 26 R2</p>
	Mark	Quantity	Description																		
1	10,904	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE																			
2	96	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO																			
No.	Date	Description																			

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

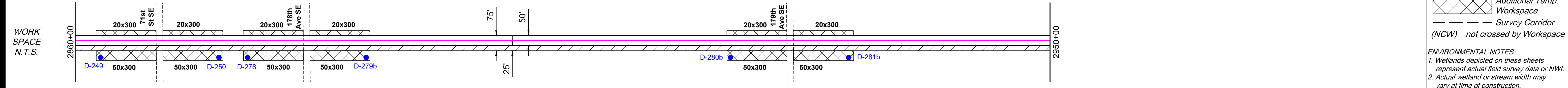
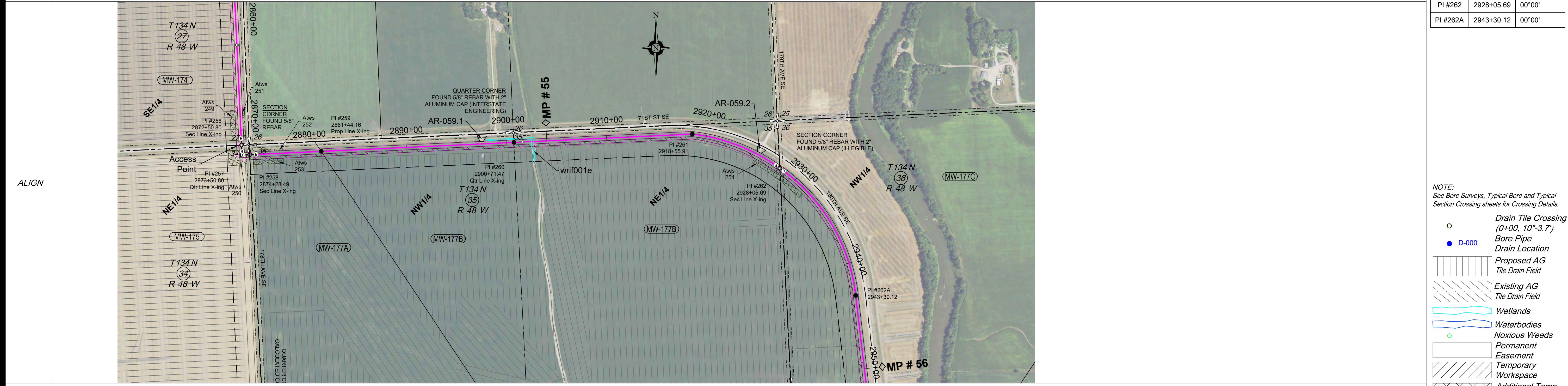
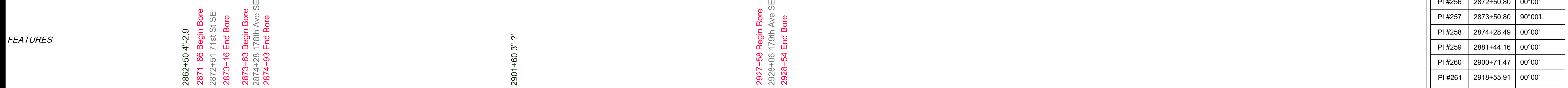
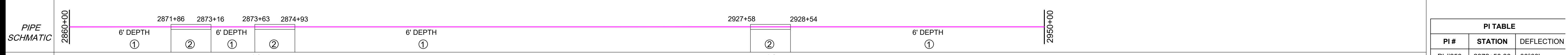
- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
- ▨ Existing AG Tile Drain Field
- Wetlands
- Waterbodies
- Noxious Weeds
- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace
- Survey Corridor

(NCW) not crossed by Workspace

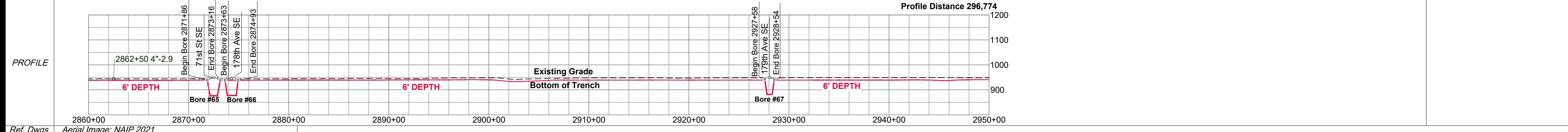
ENVIRONMENTAL NOTES:
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* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

OWNER	MW-175 NE 1/4 SEC. 34, T134N, R48W 178' Uncultivated	MW-177A ALL LYING WEST OF RAILROAD SEC. 35, T134N, R48W 683' Cultivated - 33' Uncultivated	MW-177B ALL LYING EAST OF RAILROAD WITH EXCEPTIONS SEC. 35, T134N, R48W 4662' Cultivated	MW-177C NW 1/4 GOVT LOTS 1-4 EXCEPT GRAHAM'S CROSSING 2392' Cultivated
RODDAGE	177.69' / 10.75 Rods	715.67' / 43.37 Rods	4661.53' / 282.52 Rods	2392.02' / 144.97 Rods



ENVIRO	Name	
	Water Crossing	Bridge
	Wetland Name	wrif001e
	Environmental Feature	2900+00 Wetland
	Miscellaneous/Comments	Approx. 50' ECD Approx. 40' mats
HUC-12 Watershed		090201040401
Seeding Mix		



Ref. Dwgs. Aerial Image: NAIP 2021

<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Water Line Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8,644</td> <td>12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE</td> </tr> <tr> <td>2</td> <td>356</td> <td>12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	8,644	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	2	356	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				<p>WHA PETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p>
	Mark	Quantity	Description																		
1	8,644	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE																			
2	356	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO																			
No.	Date	Description																			
<p>Scale: 500 0 500 1000 feet 1" = 500' - 22 x 34 1" = 1000' - 11 x 17</p>		<p>Sec. 27, 34, 35, 36, T134N, R48W, 5th P.M., Richland Co., North Dakota</p> <p>Sheet 27 R2</p>																			

PI TABLE		
PI #	STATION	DEFLECTION
PI #256	2872+50.80	00°00'
PI #257	2873+50.80	90°00'L
PI #258	2874+28.49	00°00'
PI #259	2881+44.16	00°00'
PI #260	2900+71.47	00°00'
PI #261	2918+55.91	00°00'
PI #262	2928+05.69	00°00'
PI #262A	2943+30.12	00°00'

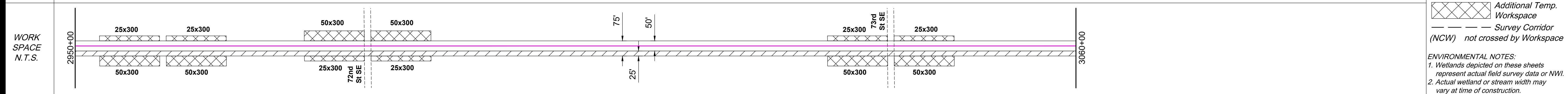
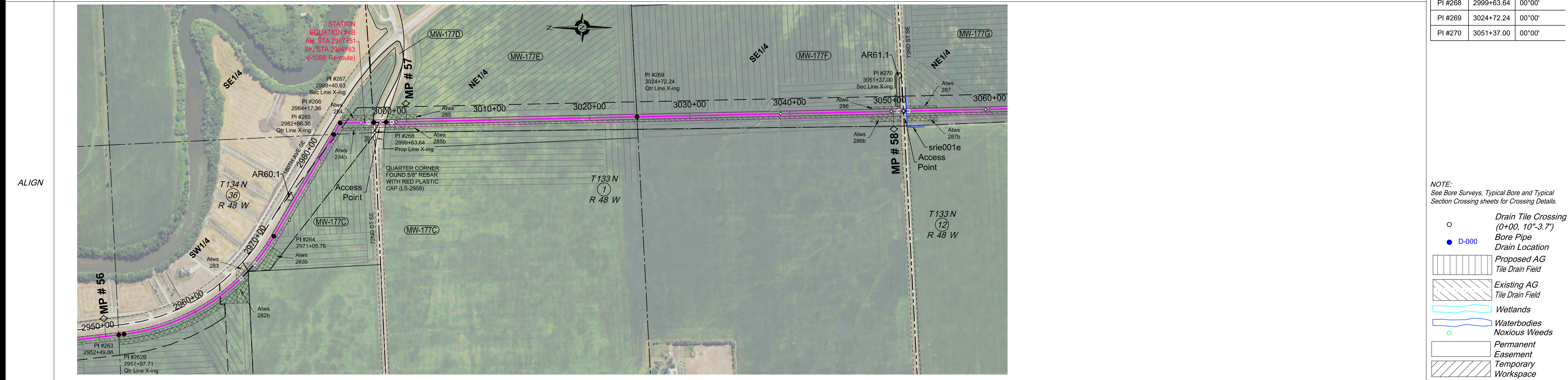
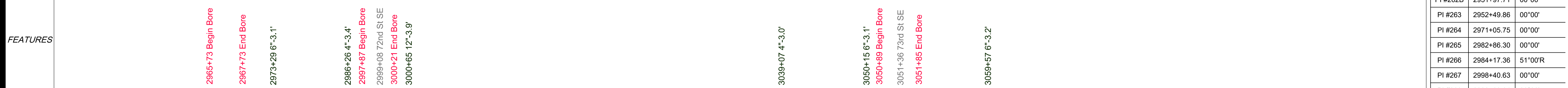
NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- Proposed AG Tile Drain Field
- Existing AG Tile Drain Field
- Wetlands
- Waterbodies
- Noxious Weeds
- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace
- Survey Corridor (NCW) not crossed by Workspace

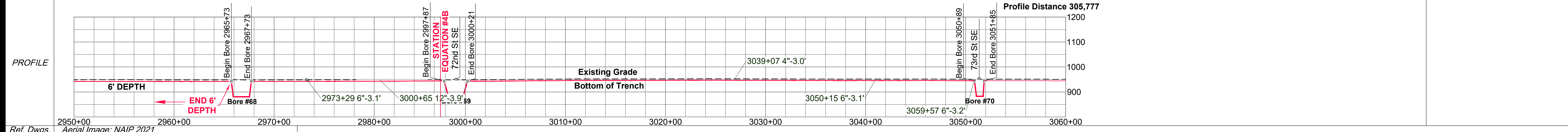
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* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

Co, State	ND, ND					
OWNER	MW-177C SW1/4, GOVT LOTS 1-4 EXCEPT GRAHAM'S CROSSING 3089' Cultivated	MW-177C SE1/4 SEC. 36, T134N, R48W 466' Cultivated	MW-177D PART OF GOVT LOTS 1 SEC. 1, T133N, R48W 123' Uncultivated	MW-177E SW1/4 - NE1/4, GOVT LOTS 1-2 WITH EXCEPTIONS SEC. 1, T133N, R48W 2509' Cultivated	MW-177F W1/2-SE1/4 SEC. 1, T133N, R48W 2632' Cultivated - 33' Uncultivated	MW-177G N1/2-NE1/4 SEC. 12, T133N, R48W 1287' Cultivated - 33' Uncultivated
RODDAGE	3088.59' / 187.19 Rods	466.32' / 28.26 Rods	123.01' / 7.46 Rods	2508.61' / 152.04 Rods	2664.76' / 161.50 Rods	1320.02' / 80.00 Rods



ENVIRO	Water Crossing	Name: srie001e Crossing Method: Bore
	Wetland Crossing	Name: 3051+67 Survey Extent: Minor
Miscellaneous/Comments		090201050805
HUC-12 Watershed		
Seeding Mix		



PI #	STATION	DEFLECTION
PI #262B	2951+97.71	00°00'
PI #263	2952+49.86	00°00'
PI #264	2971+05.75	00°00'
PI #265	2984+86.30	00°00'
PI #266	2984+17.36	51°00'R
PI #267	2998+40.63	00°00'
PI #268	2999+63.64	00°00'
PI #269	3024+72.24	00°00'
PI #270	3051+37.00	00°00'

NOTE:
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- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
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HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot	
*Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
▨	Proposed Block Valve
○	Proposed Bore
●	Alignment PI
○	Utility Pole
⊙	Well
⊗	Valve
—	Water Line
—	Proposed Alignment
---	Section Line
---	Quarter Line
-x-x-x-	Fence Line
---	UG Fiber Optic
---	UG Electric
---	Overhead Elec
---	Existing Pipeline
---	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	8470	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE
2	530	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO

REVISIONS		
No.	Date	Description

WHAHPETON EXPANSION PROJECT

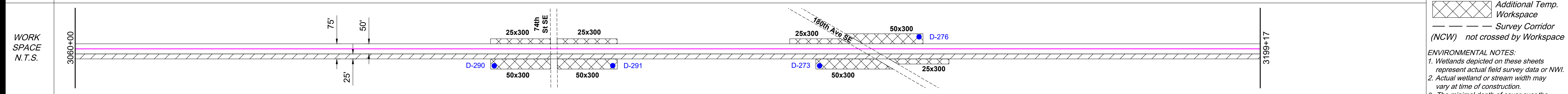
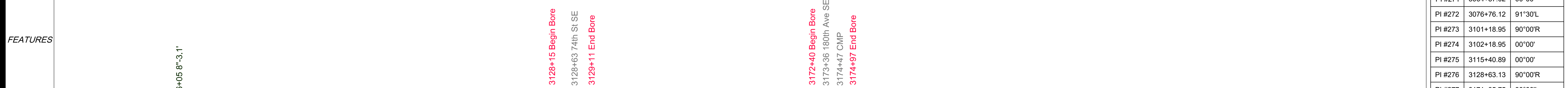
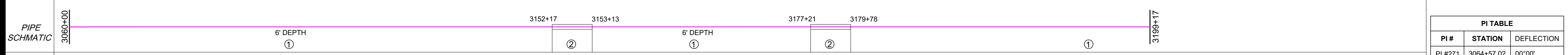
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WBI ENERGY TRANSMISSION
An MDU Resources Group company

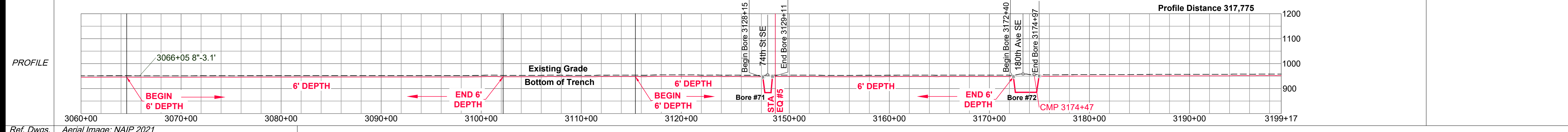
Sec. 36, T134N, R48W,
Sec. 1, 12, T133N, R48W,
5th P.M., Richland Co., North Dakota

Sheet 28 R2

OWNER	MW-177G N1/2-NE1/4 SEC. 12, T133N, R48W 2863' Cultivated - 136' Uncultivated	MW-177H S1/2-NE1/4 SEC. 12, T133N, R48W 3762' Cultivated	MW-177I N1/2-SE1/4 SEC. 12, T133N, R48W 1322' Cultivated	MW-177J S1/2-SE1/4 SEC. 12, T133N, R48W 1254' Cultivated - 68' Uncultivated	MW-189 NE1/4 SEC. 13, T133N, R48W 4993' Cultivated - 33' Uncultivated	MW-190 EXCEPT ABANDONED RAILROAD PLUS ABANDONED RAILROAD SEC. 18, T133N, R47W 127' Uncultivated	MW-191 sw1/4 SEC. 18, T133N, R47W 2553' Cultivated
RODDAGE	2999.07' / 181.76 Rods	3761.93' / 228.00 Rods	1321.94' / 80.12 Rods	1322.23' / 80.14 Rods	2552.19' / 154.68 Rods	127.21' / 7.71 Rods	2553.49' / 154.76 Rods



ENVIRO	Name						
	Crossing Method						
Wetland	Name						
	Survey Extent						
Miscellaneous/Comments	Environmental Feature						
HUC-12 Watershed	090201050805						
Seeding Mix							



<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99998766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Water Line Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> <tr> <td>1</td> <td>11,643</td> <td>12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE</td> </tr> <tr> <td>2</td> <td>353</td> <td>12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO</td> </tr> </table>	Mark	Quantity	Description	1	11,643	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE	2	353	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO	<p>REVISIONS</p> <table border="1"> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	No.	Date	Description				<p>WHAHPETON EXPANSION PROJECT</p> <p>Scale: 1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 13, 14, T133N, R48W, Sec. 18, T133N, R47W 5th P.M., Richland Co., North Dakota</p> <p>Sheet 29 R2</p>
	Mark	Quantity	Description																		
1	11,643	12.750", 0.250" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE																			
2	353	12.750", 0.312" WT, API 5L-X65 PSL2 Steel Pipe, ERW, FBE w/ARO																			
No.	Date	Description																			

PI TABLE		
PI #	STATION	DEFLECTION
PI #271	3064+57.02	00°00'
PI #272	3076+76.12	91°30'L
PI #273	3101+18.95	90°00'R
PI #274	3102+18.95	00°00'
PI #275	3115+40.89	00°00'
PI #276	3128+63.13	90°00'R
PI #277	3171+35.75	30°00'L
PI #278	3173+36.25	00°00'
PI #279	3174+63.46	00°00'
PI #280	3175+66.32	30°00'R
PI #281	3199+16.95	00°00'

NOTE:
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- Drain Tile Crossing (0+00, 10"-3.7')
- D-000 Bore Pipe
- Drain Location
- ▨ Proposed AG Tile Drain Field
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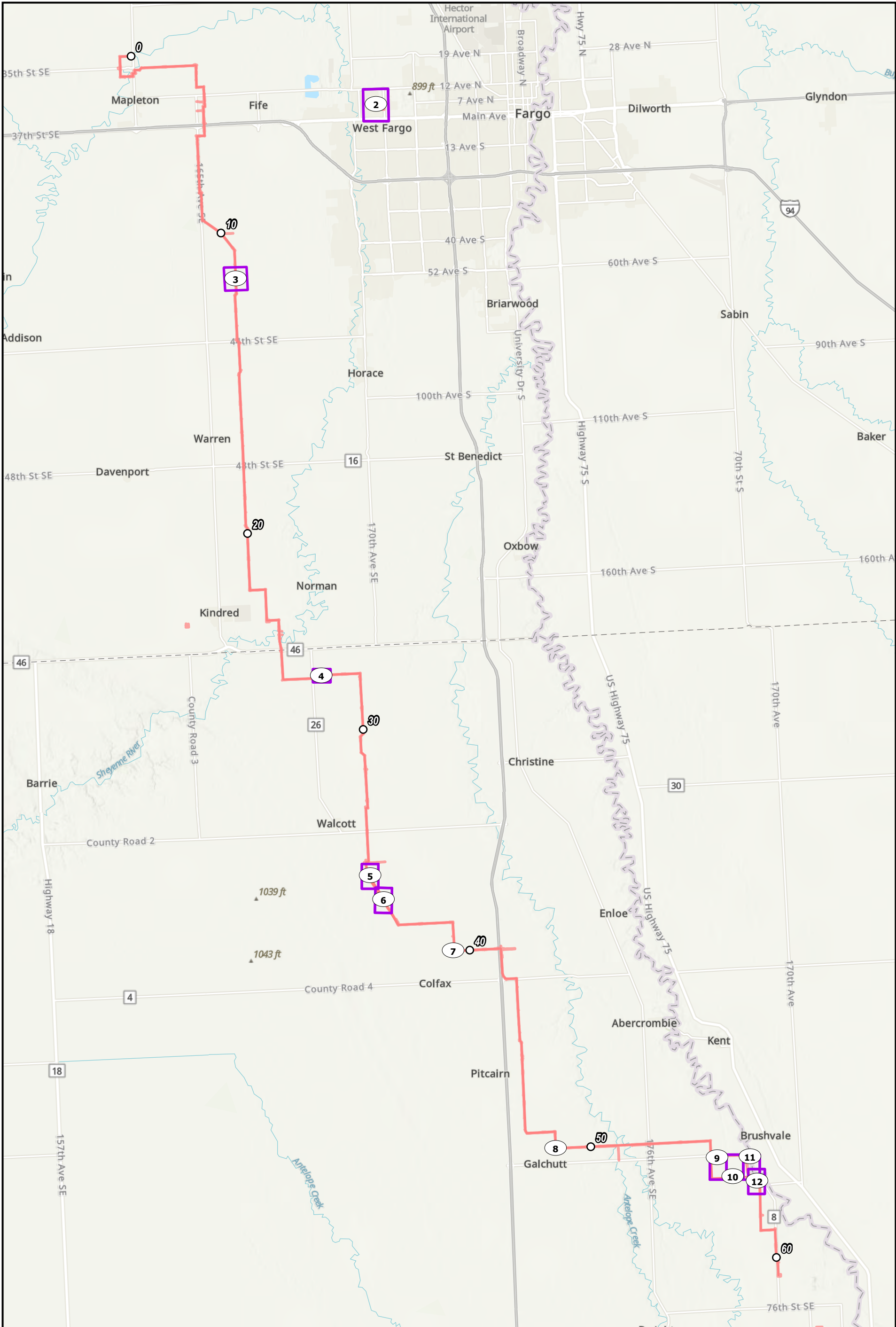
**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

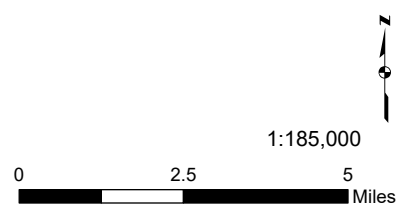
Implementation Plan

ATTACHMENT 5-1

Proposed Project Modifications





- Milepost
- Map Page
- Proposed Route

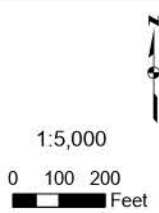


Project Modifications between the FERC Order and the Implementation Plan





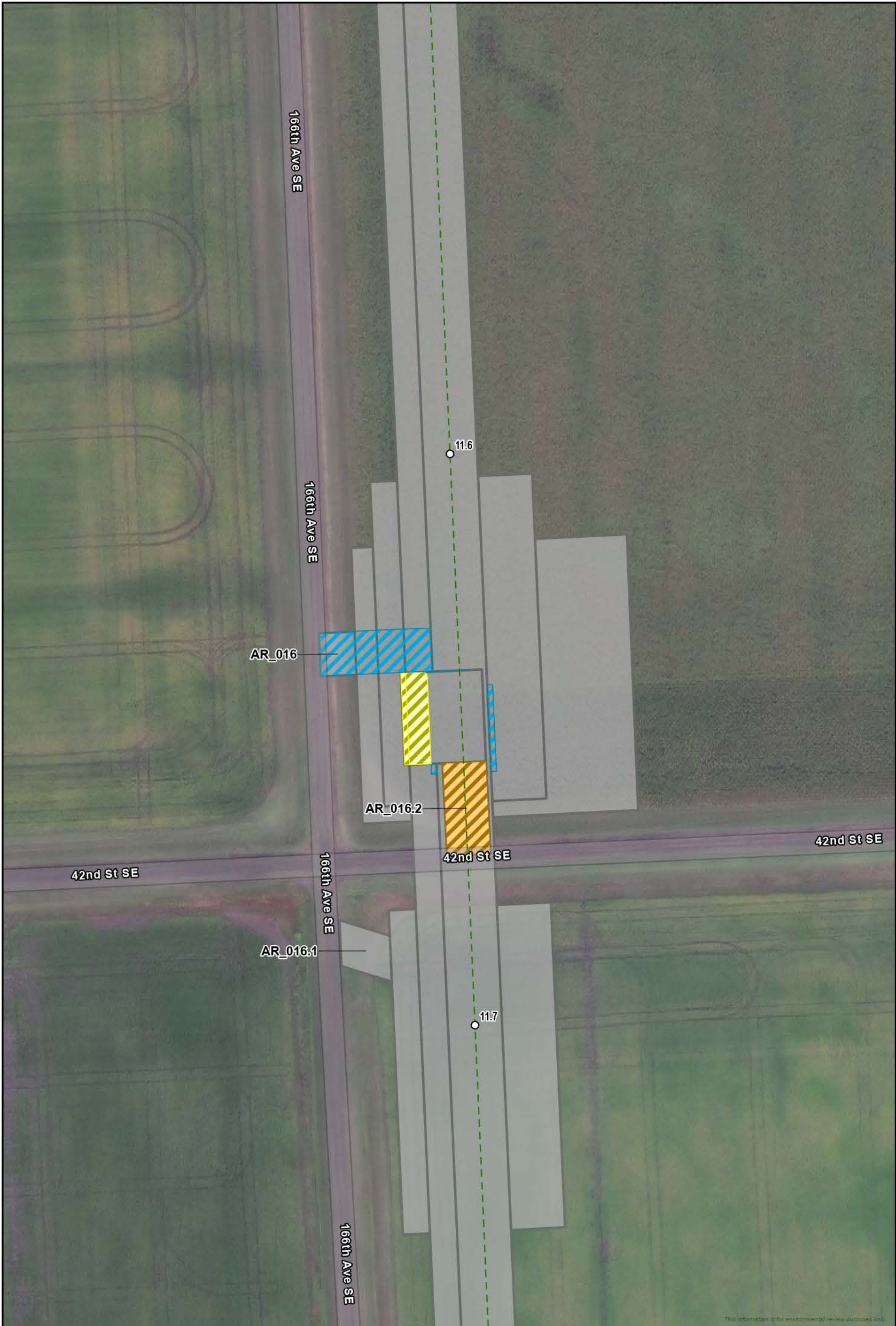
-  TEMP Workspace Added
-  No Change



**Project Modifications between the
FERC Order and the Implementation Plan**

4 Sons LLC Addition





This information is for environmental review purposes only.

○ Milepost	▨ TEMP Workspace to PERM Workspace
— Proposed Centerline	▨ New PERM Access Road
▨ PERM Workspace to TEMP Workspace	▨ No Change

1:1,000

0 100 200
Feet



**Project Modifications between the
FERC Order and the Implementation Plan**

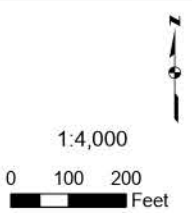
Valve Site 2





This information is for environmental review purposes only.

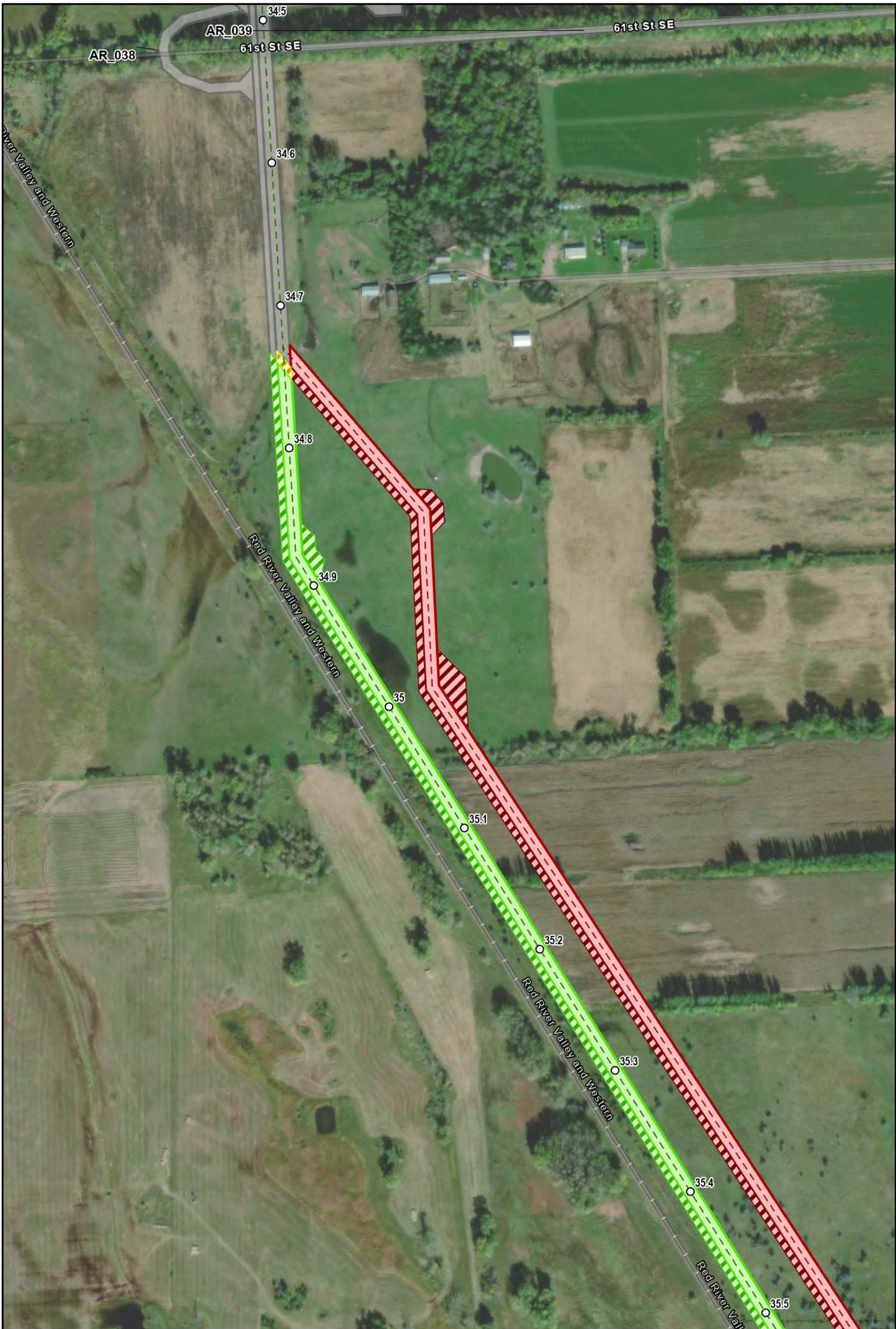
- Milepost
- Proposed Centerline
- - FERC Approved Centerline
- ▨ PERM Workspace Added
- ▨ PERM Workspace Removed
- ▨ PERM Workspace to TEMP Workspace
- ▨ TEMP Workspace Added
- ▨ TEMP Workspace Removed
- ▨ TEMP Workspace to PERM Workspace
- ▨ No Change



**Project Modifications between the
FERC Order and the Implementation Plan**

Milepost 26.7 to 27.2 Reroute





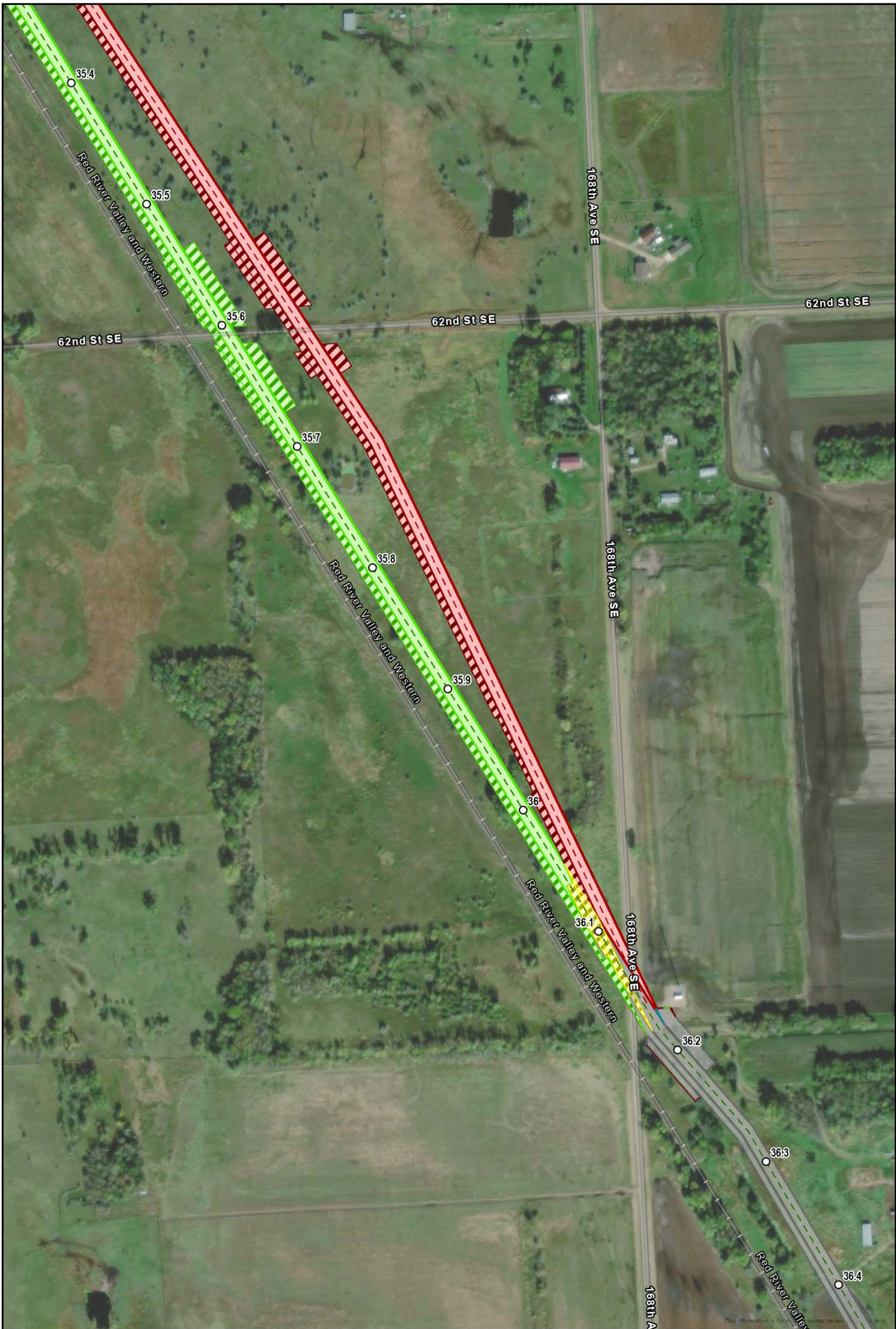
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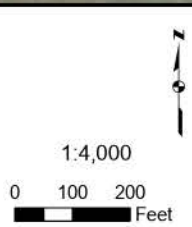


Project Modifications between the FERC Order and the Implementation Plan
Milepost 34.7 to 36.2 Reroute





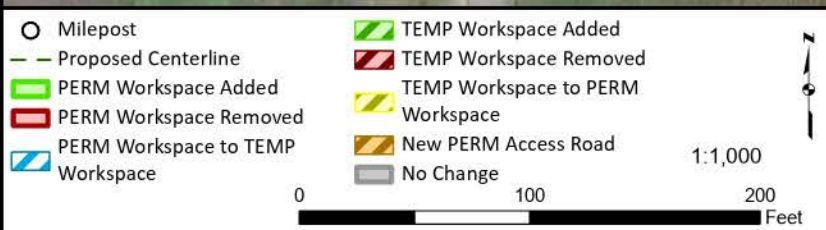
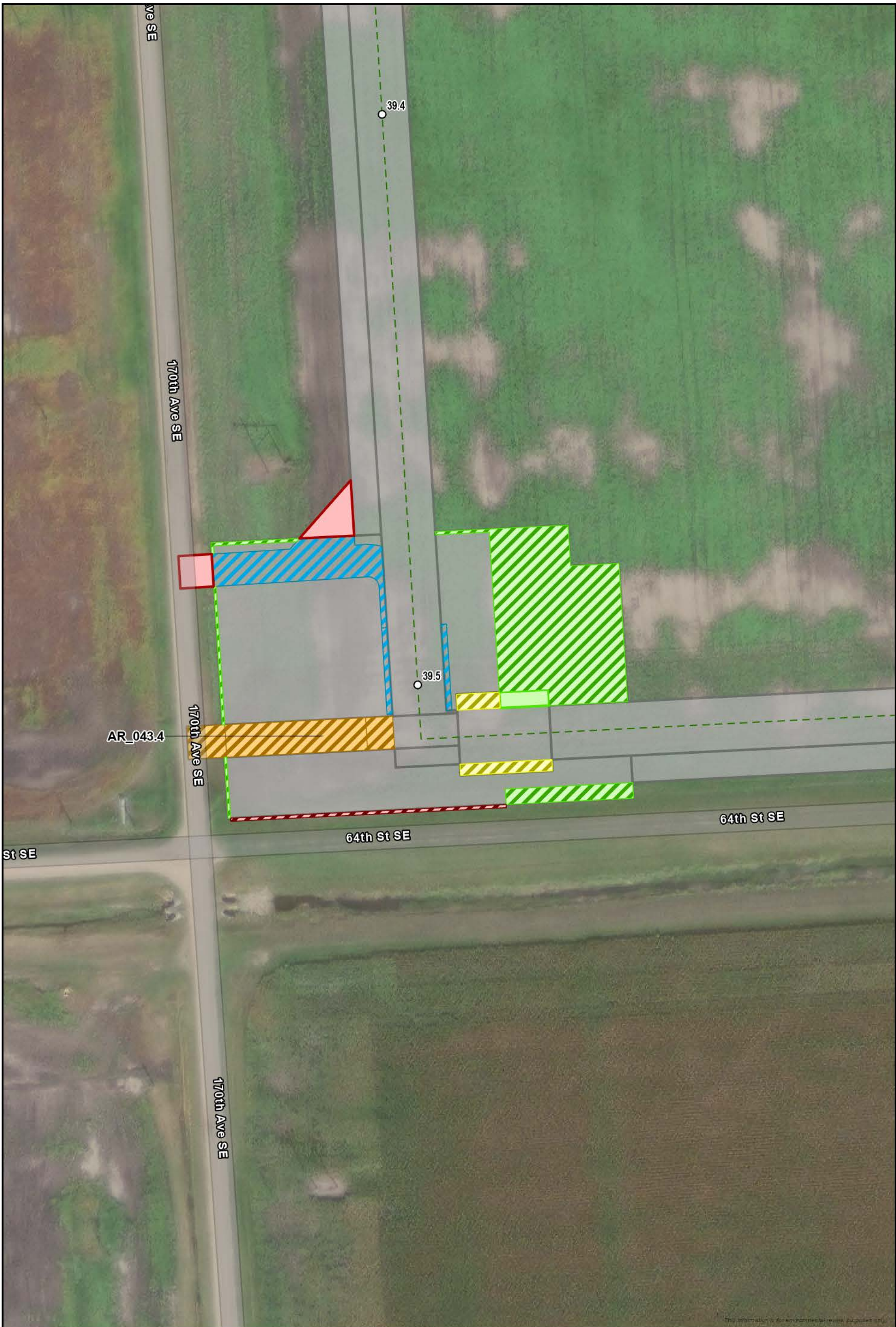
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**Project Modifications between the
FERC Order and the Implementation Plan**

Milepost 34.7 to 36.2 Reroute





**Project Modifications between the
FERC Order and the Implementation Plan**

Valve Site 5





This information is for environmental review purposes only.

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Proposed Centerline	TEMP Workspace to PERM Workspace
PERM Workspace to TEMP Workspace	No Change

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**Project Modifications between the
FERC Order and the Implementation Plan**

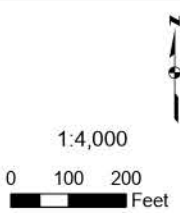
Valve Site 6





This information is for environmental review purposes only.

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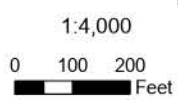
**Project Modifications between the
FERC Order and the Implementation Plan**

Milepost 54.4 to 57 Reroute





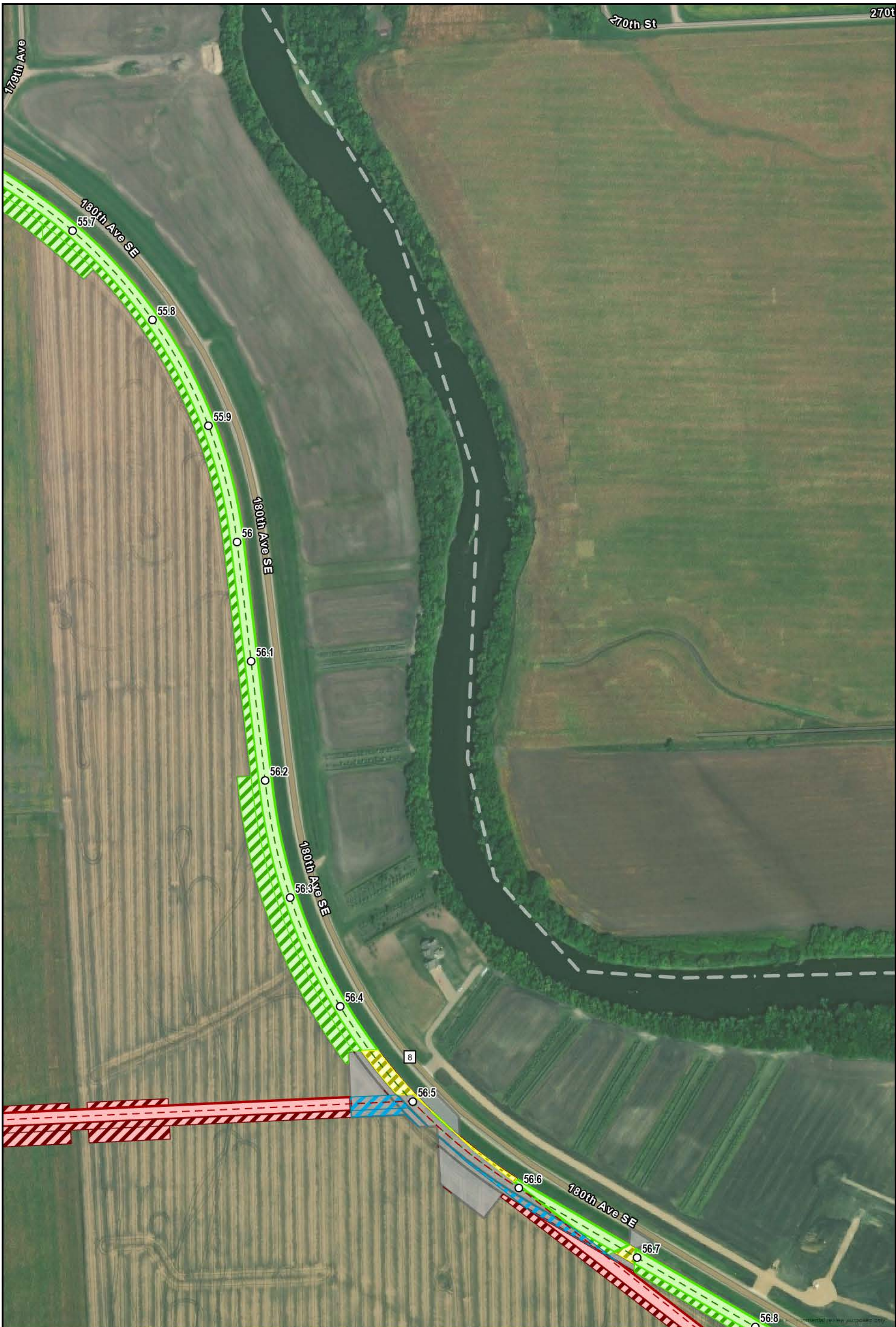
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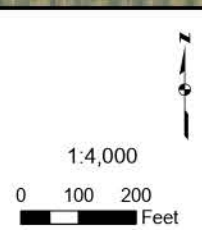
**Project Modifications between the
FERC Order and the Implementation Plan**

Milepost 54.4 to 57 Reroute





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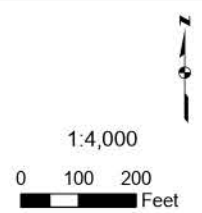
**Project Modifications between the
FERC Order and the Implementation Plan**

Milepost 54.4 to 57 Reroute





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- ▨ TEMP Workspace to PERM
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- ▨ PERM Workspace Removed
- ▨ PERM Workspace to TEMP
- ▨ Workspace
- ▨ No Change



**Project Modifications between the
FERC Order and the Implementation Plan**

Milepost 54.4 to 57 Reroute



**TABLE 5-1
Wahpeton Expansion Project
Summary of the Proposed Project Modifications**

Modification	Overview Map Set Page Number(s)	Detailed Map Set Page Number(s)	Alignment Sheet Number	County	Facility/Pipeline Milepost (MP)	Change on Construction Impacts (acres)	Change in Operation Impacts (acres)	Reason for Variance/Revision	Field Survey Complete – Environmental (Yes/No)	Field Survey Complete – Cultural (Yes/No)	Existing Land Use	Environmental Sensitive Areas Within or Abutting?	Federally Threatened or Endangered Species Affected?	Cultural Resources Affected?	Landowner Approval
4 Sons LLC Yard	1	2	NA	Cass	N/A	53.64	0	An additional contractor yard is necessary for the Project.	Yes	Yes	Developed	Yes, 0.17 acre of wetland. Located in same census block group as the Kost Yard. No additional EJ impacts anticipated.	No	No	Yes
Valve #2	1	3	5	Cass	11.6	0.0	-0.06	Modified workspace to reduce conflict with road bore (42 nd St SE), and length of permanent access road is reduced.	Yes	Yes	Agricultural Land/Developed	No	NLAA for NLEB; same as original route	No	Yes
Milepost 26.7 to 27.2 Reroute	1	4	13	Richland	26.7 to 27.2	1.26	0.54	Landowner requested pipeline be collocated with road/follow the property line.	Yes	Yes	Agricultural Land	No	NLAA for NLEB; same as original route	No	Yes
Milepost 34.7 to 36.2 Reroute	1	5-6	17-18	Richland	34.7 to 36.2	-0.28	-0.02	Landowner requested pipeline be collocated with railroad/follow the property line.	Yes	Yes	Agricultural Land/Open Land	Yes, 0.7 acres decrease of wetland impact.	NLAA for NLEB; same as original route	No	Yes
Valve #5	1	7	20	Richland	39.5	0.53	-0.02	Modification to reduce conflict with overhead power and reduces impact to usable field area.	Yes	Yes	Agricultural Land/Developed	No	NLAA for NLEB; same as original route	No	Yes
Valve #6	1	8	24	Richland	48.9	0.24	0.04	Modification to reduce impact to usable field area.	Yes	Yes	Agricultural Land/Developed	No	NLAA for NLEB; same as original route	No	Yes
Milepost 54.4 to 57.0 Reroute	1	9-12	27-28	Richland	54.4 to 57.0	-2.37	-1.36	Landowner requested pipeline be collocated with road/follow the property line.	Yes	Yes	Agricultural Land	Yes, 0.04 acre increase of wetland impact. NPS NCTA has no objection.	NLAA for NLEB; same as original route	No	Yes

Notes:
NLAA = Not Likely to Adversely Affect
NLEB = Northern Long-eared Bat

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

Implementation Plan

ATTACHMENT 7-2

Addendums to Environmental Survey Reports



WBI Energy Transmission, Inc.

Wahpeton Expansion Project

Wetland and Waterbody Delineation Report

October 2022

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Date	1 October 2022
Document details	The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.
Document title	Wahpeton Expansion Project
Document subtitle	Wetland and Waterbody Delineation Report
Project No.	0611161
Date	October 2022
Version	1.0
Author	ERM-West, Inc.
Client Name	WBI Energy Transmission, Inc.

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Table 2-1: Wetland and Water Resource Naming Protocol for Unique IDs 2

Acronyms and Abbreviations

Name	Definition
ERM	ERM-West, Inc.
GPS	Global Positioning System
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PEM	palustrine emergent wetland class
PFO	palustrine forested wetland class
Project	Wahpeton Expansion Project
PSS	palustrine scrub-shrub wetland class
USACE	US Army Corps of Engineers
USGS	US Geological Survey
WBI Energy	WBI Energy Transmission, Inc.

1. INTRODUCTION

WBI Energy Transmission, Inc. (WBI Energy), proposes to construct and operate the Wahpeton Expansion Project (Project) in Cass and Richland counties, North Dakota. The Project will consist of approximately 60.5 miles of new natural gas pipeline, minor modifications to the Mapleton Compressor Station, new delivery stations near Kindred and Wahpeton, block valve settings, and pig launcher/receiver settings. The Project may also include newly constructed lateral taps along the pipeline route, the locations of which have yet to be determined. ERM on behalf of WBI Energy, originally completed delineations and assessment of wetlands and waterbodies within the proposed pipeline construction corridor and other work areas during fall of 2021. During two separate mobilizations, one in June and a second in August 2022, ERM completed additional field assessments and delineations of wetlands and waterbodies along several route adjustments of the Project in Cass and Richland counties, North Dakota.

This report is an addendum to the original February 2022 report and it will be used to support permitting efforts for impacts to jurisdictional features regulated by the US Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. This report provides a description and summary of wetlands and waterbodies documented along the reroutes described above. In this addendum report, these newly surveyed reroute segments will be referred to as the Survey Area, which was generally 300 feet wide when following the pipeline reroute segments.

For a description of the physiography, geology, geomorphology, hydrology, and soil data crossed by the Project please refer to the original report dated February 2022, which also included Figures that illustrated desktop resources evaluated, including the National Hydrography Dataset (NHD) and National Wetlands Inventory (NWI), as well a map set that illustrates Natural Resource Conservation Service (NRCS) soil mapping units. This report includes an updated version of the aerial photo base maps that includes Project route and workspace, delineated wetlands and waterbodies, as well as NHD and NWI polygons utilized as reference during field surveys.

2. METHODS

Wetlands and waters were identified and delineated within Survey Area segments that covered the route adjustment segments that required survey during summer 2022. The Survey Area included a 300-foot-wide corridor typically centered on the proposed pipeline centerline, as well as the footprint of all aboveground facilities, access roads, and contractor yards.

Additional details that outline the desktop and field components of the delineation methods followed are described in the following sections.

2.1 Desktop Review

Prior to conducting field surveys, ERM completed a desktop review, including a broad overview of the environmental setting of the Survey Area, as well as a desktop evaluation of potential wetland and water features within the Survey Area to allow for further targeted assessment during field survey. The following data sources were reviewed in ArcGIS to identify areas that should be targeted in the field: high-resolution aerial photography, US Fish and Wildlife Service NWI data, US Geological Survey (USGS) NHD, NRCS Web Soil Survey data, and USGS topographic maps.

ERM reviewed high-resolution aerial photography and land cover data sets to identify areas with possible wetland signatures, and recent disturbances on the landscape that could influence the presence and extent of wetlands. For agricultural fields with potential farmed wetlands, the desktop review included reviewing the current year of aerial photography, as well as historic aerial photographs taken during notable wet years. Visual signatures noted during review included surface water, varying color changes in

vegetation, and isolated areas within farmland that were not successfully farmed due to poor drainage. In addition to areas identified on the aerial imagery, the field assessment also targeted features mapped by NWI and NHD, and any areas of hydric or partially hydric soils. Results of the desktop assessment were utilized to verify potential water resources either were or were not wetlands or waterbodies during field survey.

2.2 Field Survey

The field delineation was conducted from June 6 through 10 and August 15 through 17, 2022. A field team visited probable wetlands and waterbodies identified during the desktop review using resources outlined in section 2.1. Where wetlands or waterbodies were not present at these locations in the field, staff documented “non-water” points, including observations and photographs at these locations. Wetland boundaries, waterbody thalweg or banks, data collection points, open waterbody boundaries, and non-water points were recorded using a Trimble® R1 model GPS unit.

Each wetland or water feature documented within the survey limits was assigned a Project-specific unique identifier (Unique ID). Specific naming conventions were followed during field surveys in order to catalog each wetland and waterbody documented. Table 2-1 describes each part of the naming convention utilized to assign Unique IDs during field surveys.

Table 2-1: Wetland and Water Resource Naming Protocol for Unique IDs

Water Resource	Type	County	Field Crew Letter	Feature Number Example	Special Designation
Wetland	w = wetland	County initials (Cass = ca, Richland = ra)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	f = PFO ^a e = PEM ^a s = PSS ^a u = Upland point
Waterbody	s = stream o = open waterbody	County initials (Cass = ca, Richland = ri)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	Perennial ^b Intermittent ^b Ephemeral ^b
Non-water Point	no = non-water or non-wetland feature	County initials (Cass = ca, Richland = ri)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	Not applicable

^a Wetland Classification / acronym based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979): PEM = Palustrine emergent; PFO = Palustrine forested; PSS = Palustrine scrub-shrub.

^b Flow regime was determined in accordance with 33 Code of Federal Regulations (CFR) 330.

2.2.1 Wetlands

Wetlands were delineated using the USACE 1987 Manual (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (USACE 2012a). The field team completed wetland determination datasheets at sample points within each wetland community type making up the wetland or wetland complex, along with a minimum of one corresponding upland community sample point. A shared upland sample point was used for wetlands that were within close proximity to one another and had the same upland community type.

At each wetland or upland community sample point delineators documented the physical location of the sample point using the GPS, and documented observations of hydrology, soils, and vegetation at the sample point. Primary and secondary indicators of hydrology were documented according to the Regional Supplement. Soil profiles were documented to a depth to determine presence or absence of hydric soils at each sample point. Hydric soil indicators utilized to determine hydric soil presence included hydric soil

indicators described in *Field Indicators of Hydric Soils in the United States*, Version 8.2 (USDA-NRCS 2018). Observations of vegetation species and visual cover percentages were documented at each sample point. Hydrophytic vegetation indicator status was assigned using the *2020 National Wetland Plant List* (USACE 2020), and following the requirements of the Regional Supplement.

Wetland and water features were also classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al. 1979; referred to as the “Cowardin classification”). The following Cowardin classification types were assigned: palustrine emergent (PEM), palustrine scrub-shrub wetland (PSS), and palustrine forested (PFO).

2.2.2 Waterbodies

Waterbodies documented during field surveys were categorized according to their hydrology regimes. All waterbody data was documented on waterbody data sheets developed to document key physical and functional characteristics of waterbodies.

Linear or flowing waterbodies were identified as channelized landscape features possessing a bed and a bank in a concave landscape position where water flow resulted in a feature that possesses an ordinary high watermark (OHWM). Based on indicators of flow regime observed at the time of survey, linear waterbodies were spatially recorded with channel width and OHWM location according to the definitions provided by the USACE in the *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification* (USACE 2005), and assigned a hydrology regime of perennial, intermittent, or ephemeral.

Similarly, non-flowing, open waterbody features were assigned one of the four Cowardin hydrology regime modifiers based on evidence of inundation/saturation recorded at the time of survey: permanently flooded, semi-permanently flooded, seasonally flooded, or temporarily flooded.

2.2.3 Non-Water Points

The field team documented non-water points to record NHD or NWI-mapped features that did not meet the required criteria of wetlands or waterbodies when assessed in the field (i.e., upland habitat). Non-water points were also used to document areas that were investigated as potentially meeting wetland criteria based on signatures observed during the desktop assessment, but were ultimately determined to be non-wetland areas during the field investigation. Delineators recorded observations, took photographs, and collected a GPS point at each non-water point to document that wetland biologists visited the point and determined that a wetland or waterbody was not present. USACE wetland delineation forms and waterbody data sheets were used to record information for non-water points.

3. RESULTS

ERM delineated and recorded 16 wetlands and 9 waterbodies within the Survey Area along route change segments. These wetlands and waterbodies are illustrated on Figure Set “Aquatic Resources Delineation Map” in Appendix A and listed in Tables B-1 and B-2 in Appendix B, including useful summary data: Project-specific Unique ID, location (latitude/longitude), acreage (wetlands), linear feet (waterbodies) within the Survey Area, and Cowardin classification or hydrology regime. Data forms and photographs of wetlands or waterbodies documented during the June and August 2022 fieldwork are provided in Appendix C. Photos and datasheets for non-water points can be provided upon request but are not currently included in Appendix C. During the survey, field conditions were “Normal” according to USACE’s Antecedent Precipitation Tool (Deters. 2022).

3.1 Wetlands

A total of 16 wetland features (approximately 1.20 acres) were documented within the Survey Area, with all classified as palustrine emergent (herbaceous) wetlands (Table 2, Appendix B). Some of these wetlands are associated with intermittent and perennial streams, but the majority are found in depressions within agricultural fields or along roadside ditches and edges of agricultural fields. Dominant herbaceous wetland vegetation found in the Survey Area includes meadow cattail (*Alopecurus pratensis*), curly dock (*Rumex crispus*), and reed canary grass (*Phalaris arundinacea*).

3.2 Waterbodies

The acreage and characteristics of waterbodies surveyed within the Survey Area are summarized in Table 3, Appendix B. A total of 9 waterbody features (1.76 acres, 12,355 linear feet) were identified within the Survey Area, consisting of 3 intermittent and 5 ephemeral ditches, which primarily served as roadside or agricultural field drainage. One perennial waterway, Antelope Creek, was also identified. None of the waterbodies crossed by the Project are considered a Section 10 navigable water under the Rivers and Harbors Act (USACE 2012b).

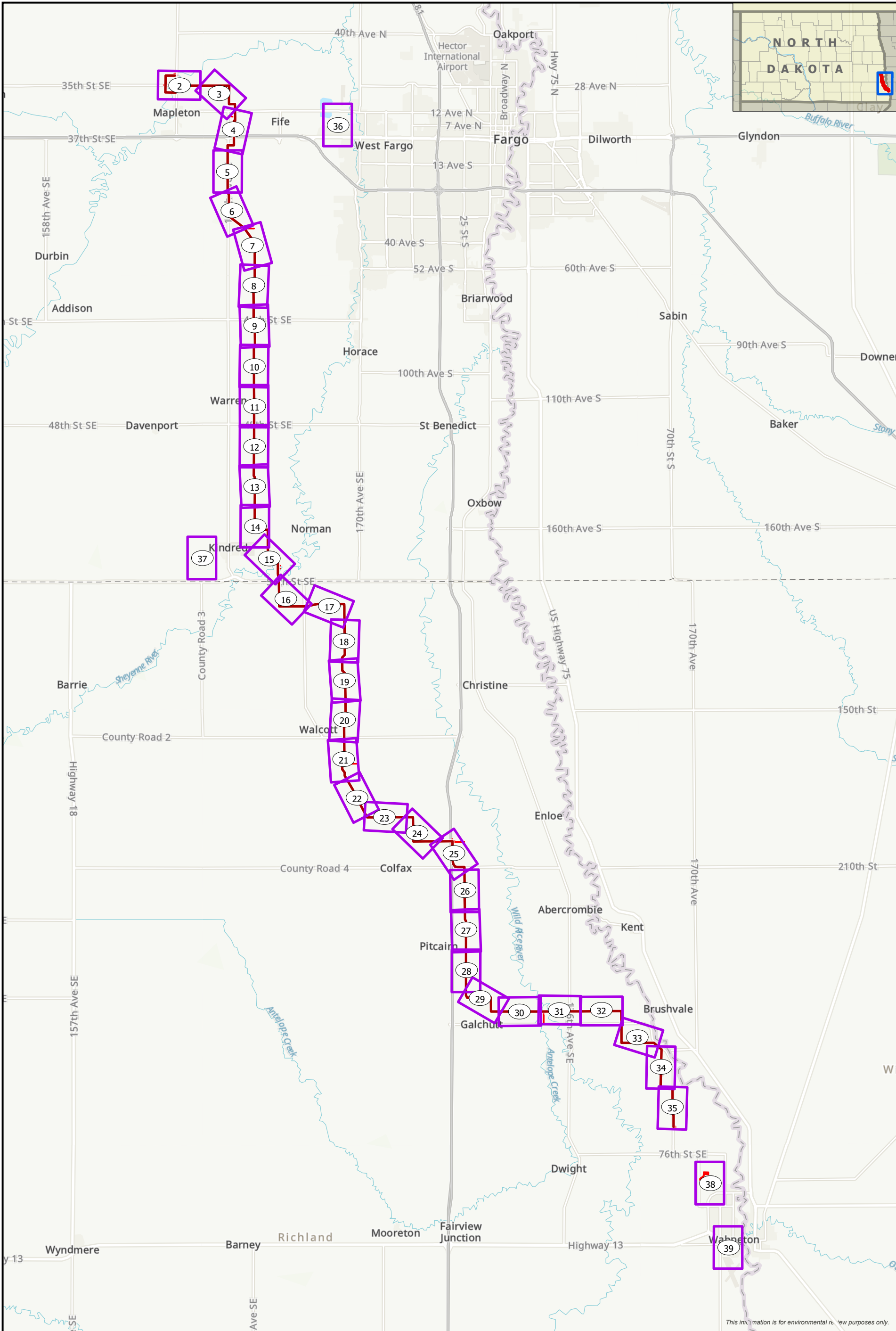
4. CONCLUSIONS

During summer 2022, wetland and waterbody delineations for the Project were completed on newly added portions of the Project due to route changes. This report presents the results of these surveys documenting 16 wetlands and 9 waterbodies.

5. REFERENCES

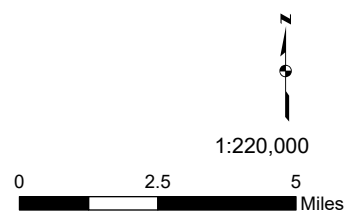
- Cowardin, L. M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79-31, US Department of the Interior, Fish and Wildlife Service.
- Deters, Jason C. 2022. USACE Antecedent Precipitation Tool (V1) [Computer software]. Engineer Research and Development Center.
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- USDA-NRCS. 2018. *Field Indicators of Hydric Soils in the United States*. A Guide for Identifying and Delineating Hydric Soils, Version 8.2. Accessed November 2021. Available online at http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf.

APPENDIX A AERIAL MAP SET



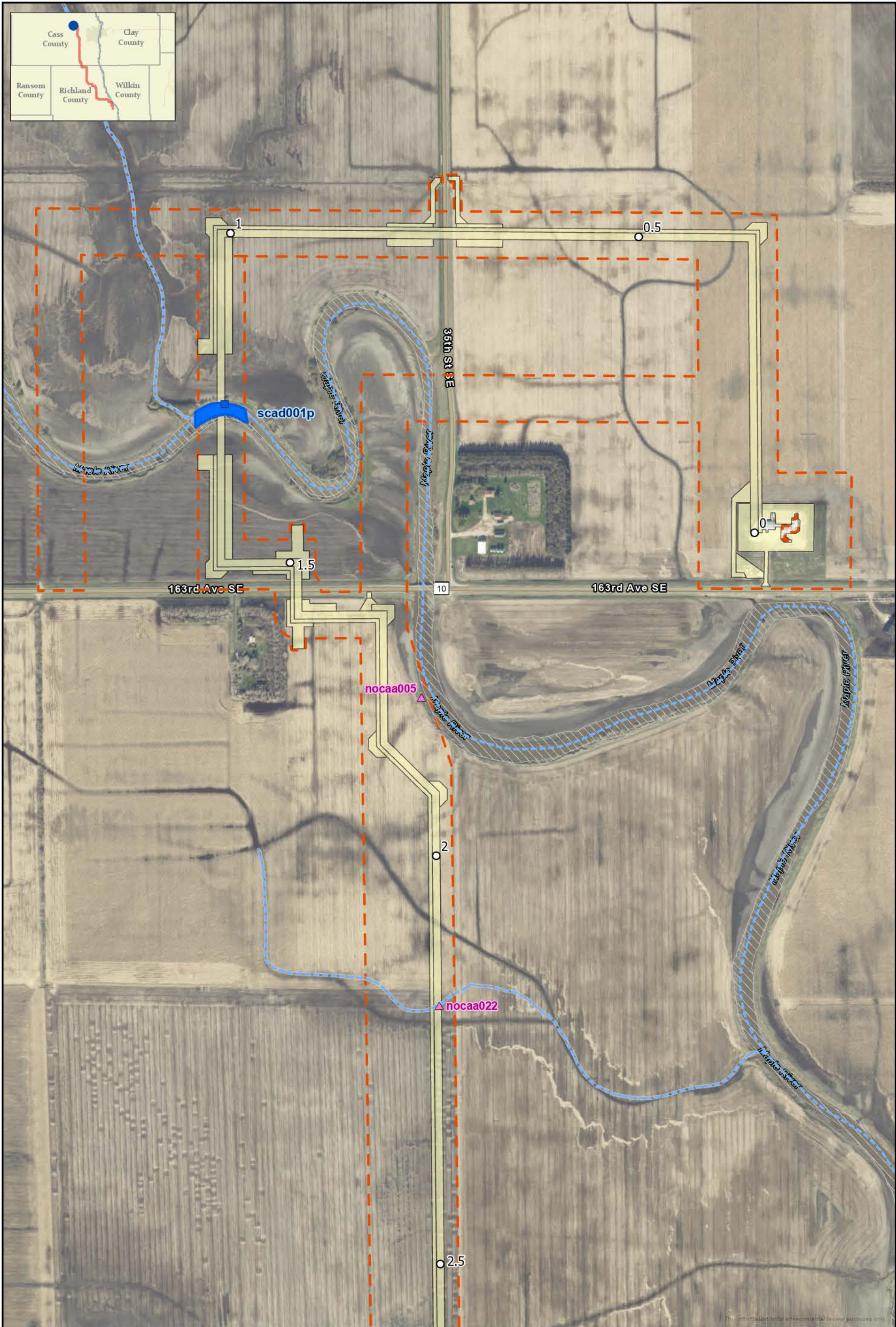
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- Map Page
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Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass and Richland County, North Dakota





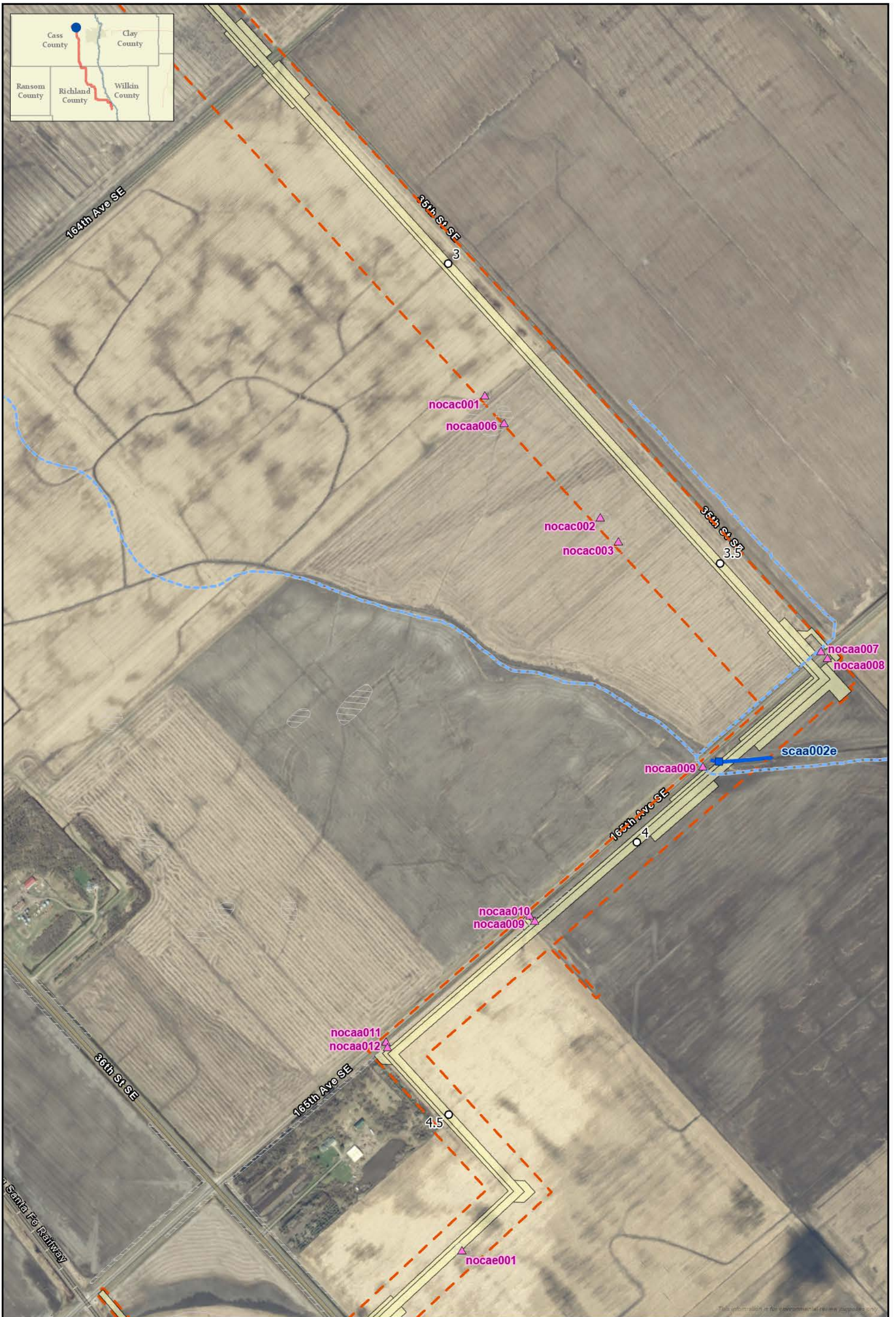
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■ Waterbody Data Point	▨ NWI Wetland
▲ Non-Water Data Point	--- Survey Boundary - Complete

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Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota





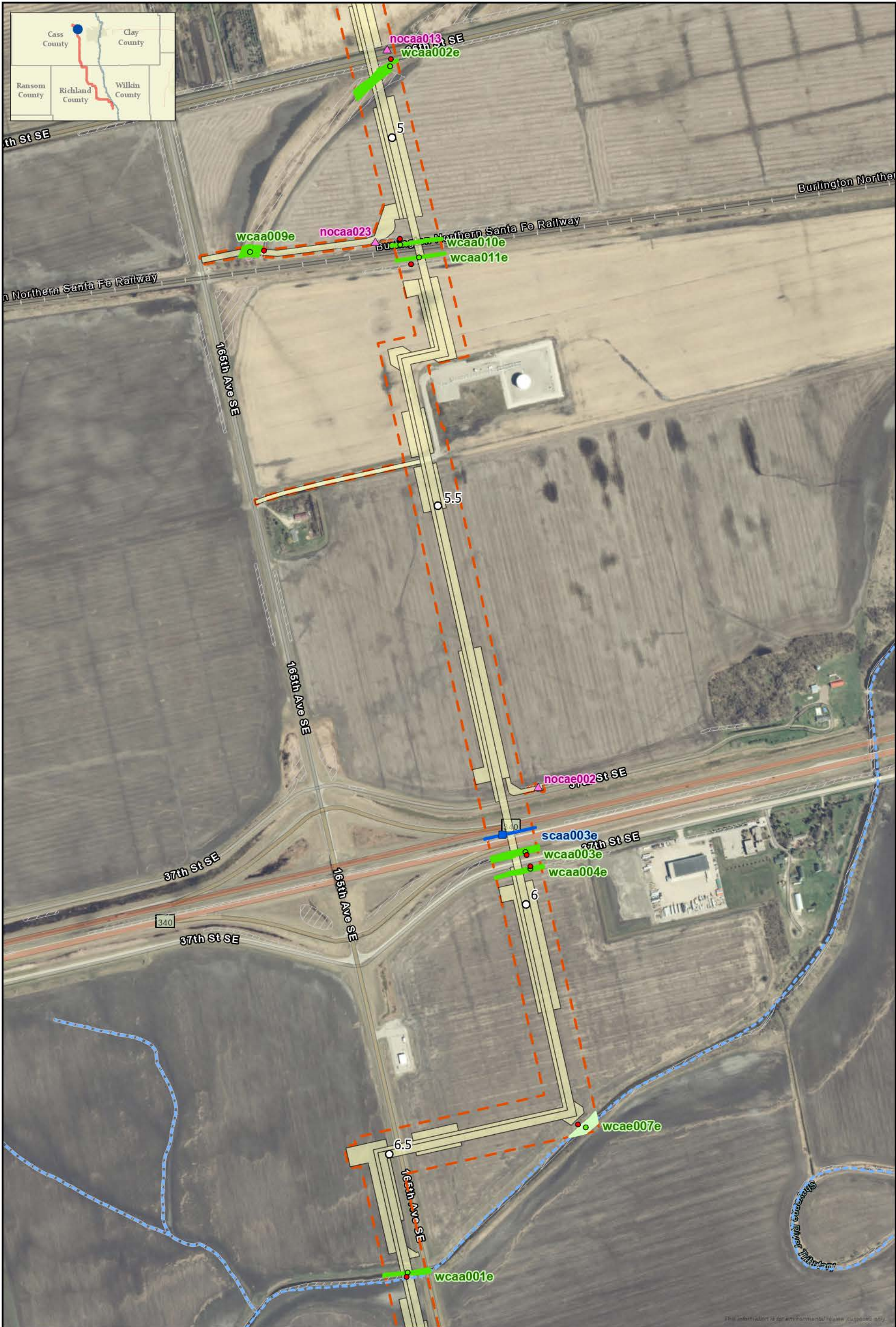
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■ Waterbody Data Point	▨ NWI Wetland
▲ Non-Water Data Point	--- Survey Boundary - Complete

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Feet

Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota



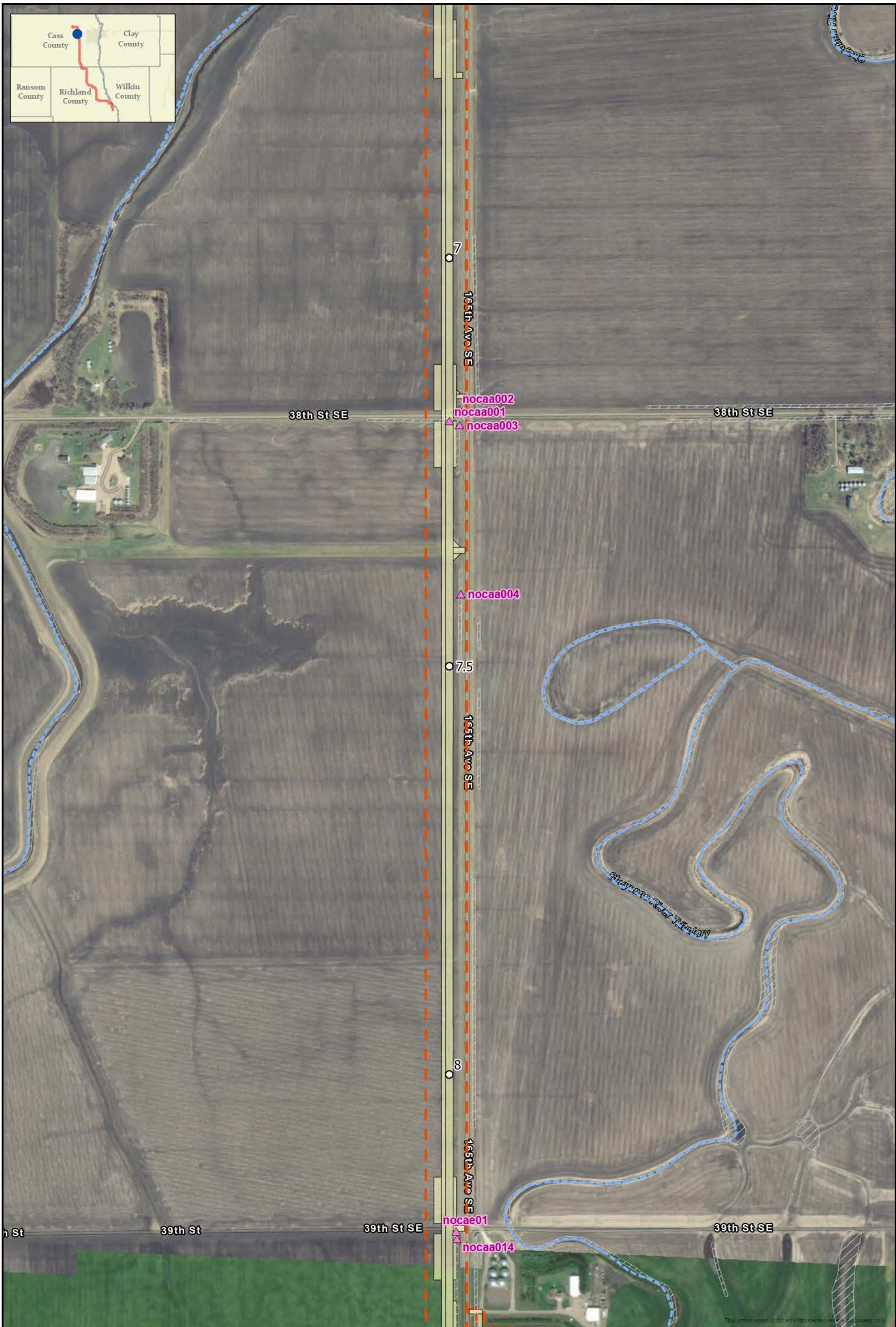


- Milepost
- Proposed Workspace
- Waterbody Data Point
- Upland Data Point
- Wetland Data Point
- ▲ Non-Water Data Point
- NHD Flowline
- NHD Waterbody
- ▨ NWI Wetland
- Survey Boundary - Complete



Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota





○ Milepost	NHD Waterbody
Proposed Workspace	NWI Wetland
▲ Non-Water Data Point	Survey Boundary - Complete
NHD Flowline	

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Feet

Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota





○ Milepost	--- NHD Flowline
■ Proposed Workspace	▒ NHD Waterbody
● Upland Data Point	▒ NWI Wetland
● Wetland Data Point	▒ Survey Boundary - Complete
▲ Non-Water Data Point	

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Feet

Page 6 of 39

Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota





- Milepost
- Proposed Workspace
- Waterbody Data Point
- Upland Data Point
- Wetland Data Point
- ▲ Non-Water Data Point
- NHD Flowline
- NHD Waterbody
- ▨ NWI Wetland
- Survey Boundary - Complete



Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota





This information is for environmental review purposes only.

○ Milepost	--- NHD Flowline	 1:7,000
■ Proposed Workspace	▨ NHD Waterbody	
■ Waterbody Data Point	▨ NWI Wetland	
▲ Non-Water Data Point	--- Survey Boundary - Complete	

Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota





○ Milepost	--- NHD Flowline
■ Proposed Workspace	■ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	▨ Survey Boundary - Complete
▲ Non-Water Data Point	

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Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota





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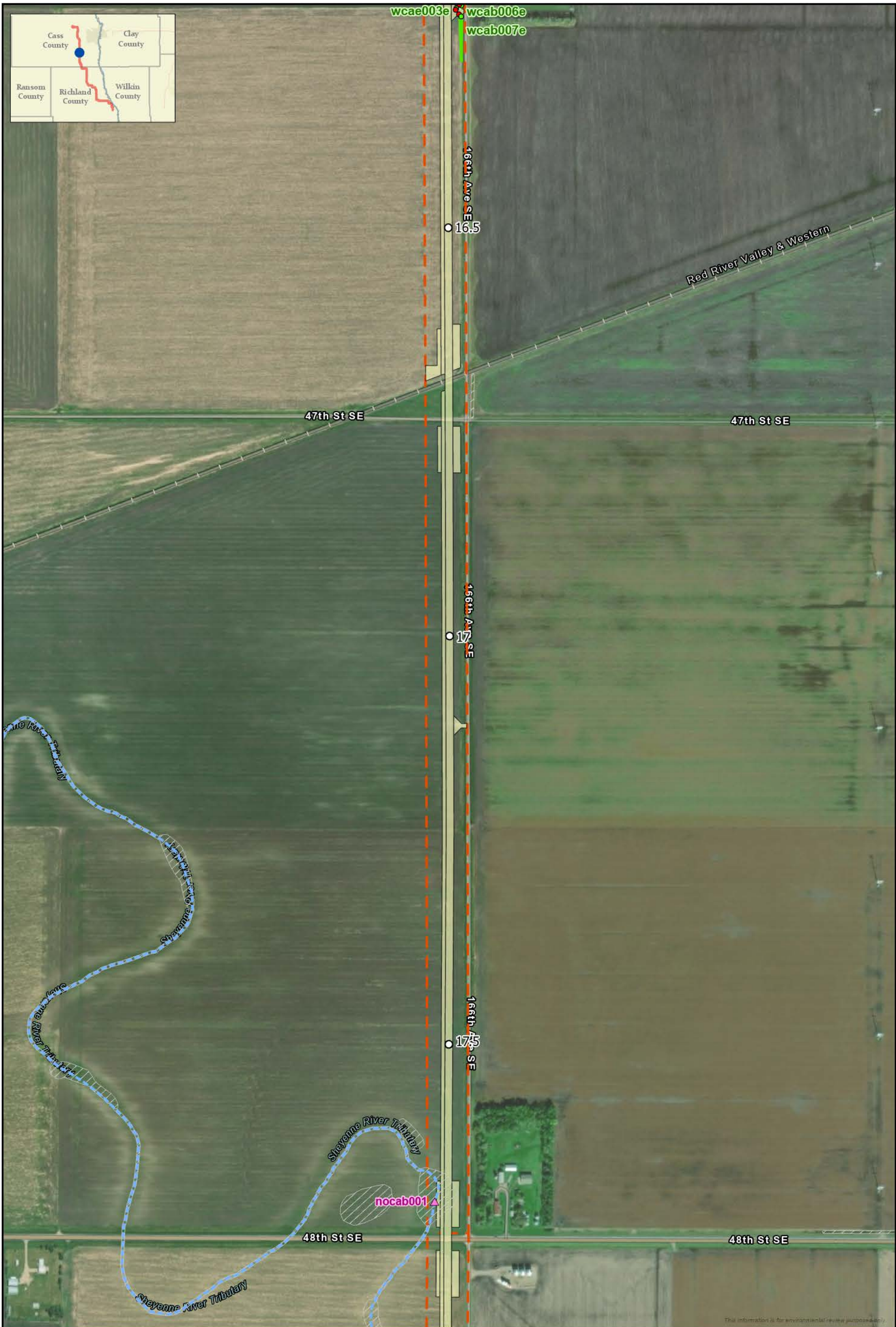
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● Wetland Data Point	
▲ Non-Water Data Point	

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Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota



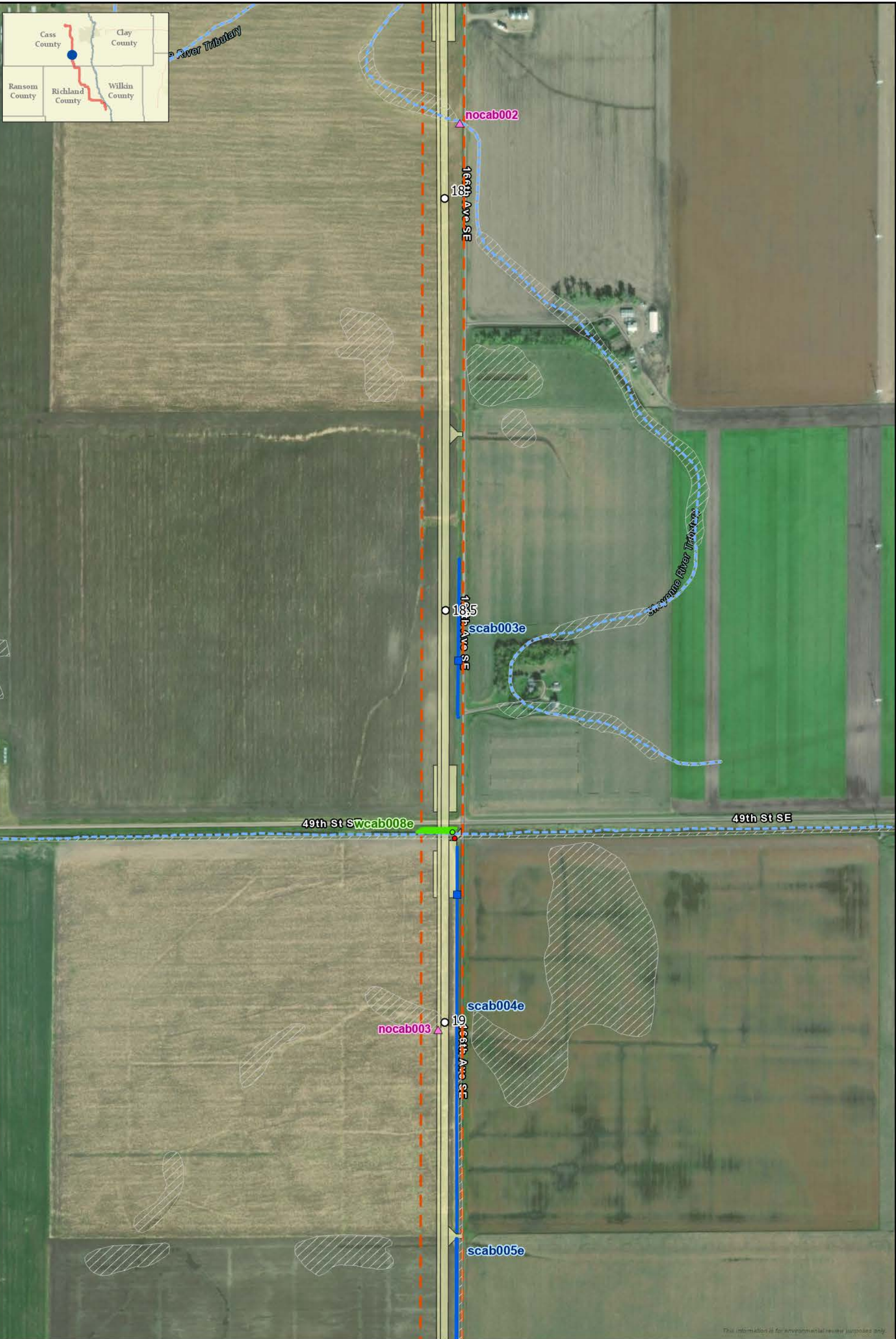


This information is for environmental review purposes only.

○ Milepost	--- NHD Flowline	 1:7,000 0 500 1,000 Feet
■ Proposed Workspace	▒ NHD Waterbody	
● Upland Data Point	▒ NWI Wetland	
● Wetland Data Point	▒ Survey Boundary - Complete	
▲ Non-Water Data Point		

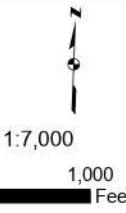
Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota





This information is for environmental review purposes only.

- Milepost
- Proposed Workspace
- Waterbody Data Point
- Upland Data Point
- Wetland Data Point
- ▲ Non-Water Data Point
- NHD Flowline
- ▨ NHD Waterbody
- ▨ NW1 Wetland
- Survey Boundary - Complete



Aquatic Resources Delineation Map
Wahpeton Expansion Project
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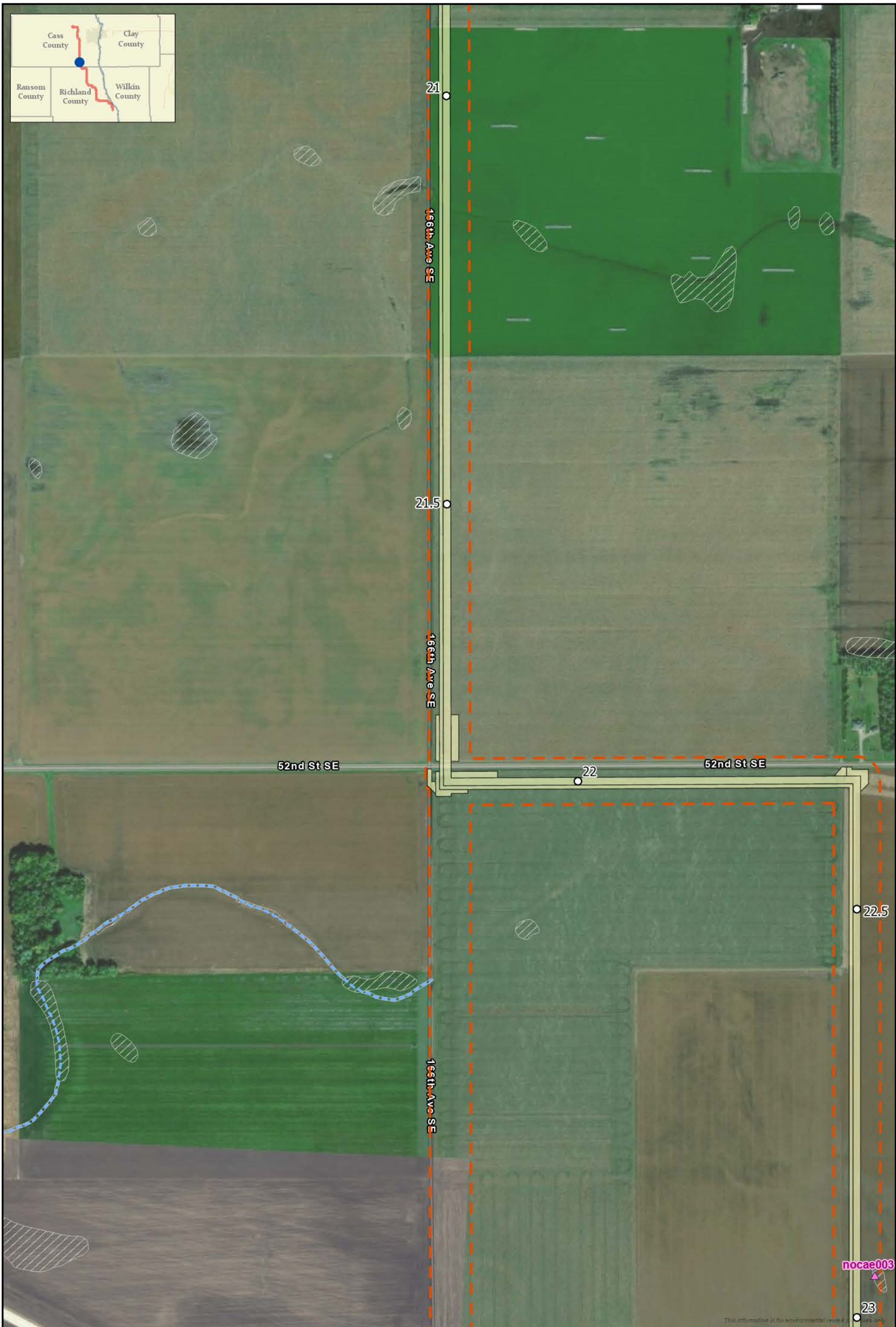


- Milepost
- Proposed Workspace
- Waterbody Data Point
- Upland Data Point
- Wetland Data Point
- ▲ Non-Water Data Point
- NHD Flowline
- NHD Waterbody
- ▨ NWI Wetland
- Survey Boundary - Complete



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Wahpeton Expansion Project
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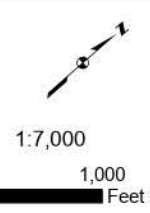
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Proposed Workspace	NWI Wetland
Non-Water Data Point	Survey Boundary - Complete
NHD Flowline	

1:7,000

0 500 1,000
Feet

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○ Milepost	▬ NHD Waterbody
▬ Proposed Workspace	▬ NWI Wetland
▲ Non-Water Data Point	▬ Survey Boundary - Complete
▬ NHD Flowline	

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0 500 1,000
Feet

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○ Milepost	--- NHD Flowline
▭ Proposed Workspace	▨ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	--- Survey Boundary - Complete
▲ Non-Water Data Point	

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0 500 1,000
Feet

Aquatic Resources Delineation Map
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 WBI Energy Transmission, Inc.
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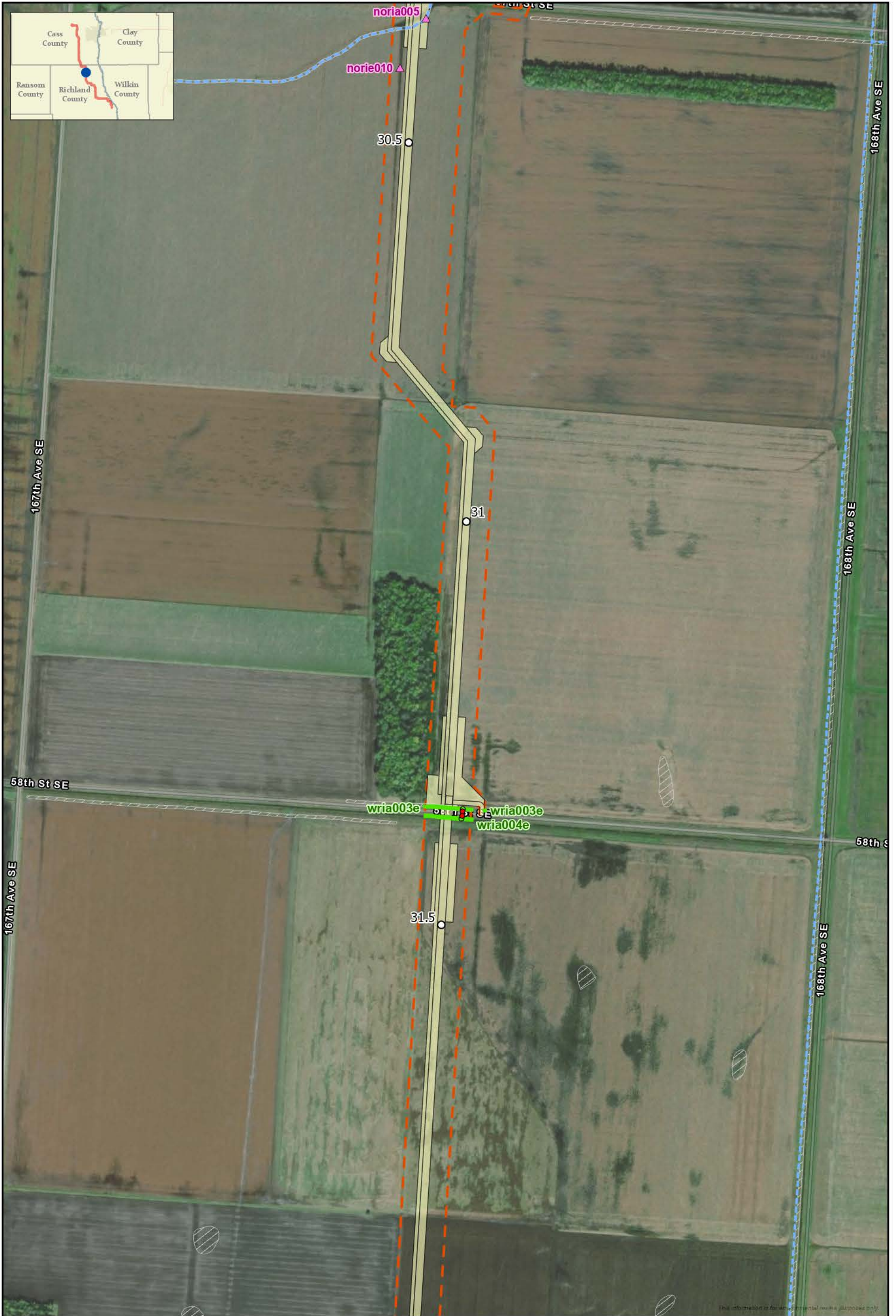


○ Milepost
 ■ Proposed Workspace
 ■ Waterbody Data Point
 ● Upland Data Point
 ● Wetland Data Point
 ▲ Non-Water Data Point
 - - - NHD Flowline
 ■ NHD Waterbody
 ■ NWI Wetland
 - - - Survey Boundary - Complete

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Aquatic Resources Delineation Map
Wahpeton Expansion Project
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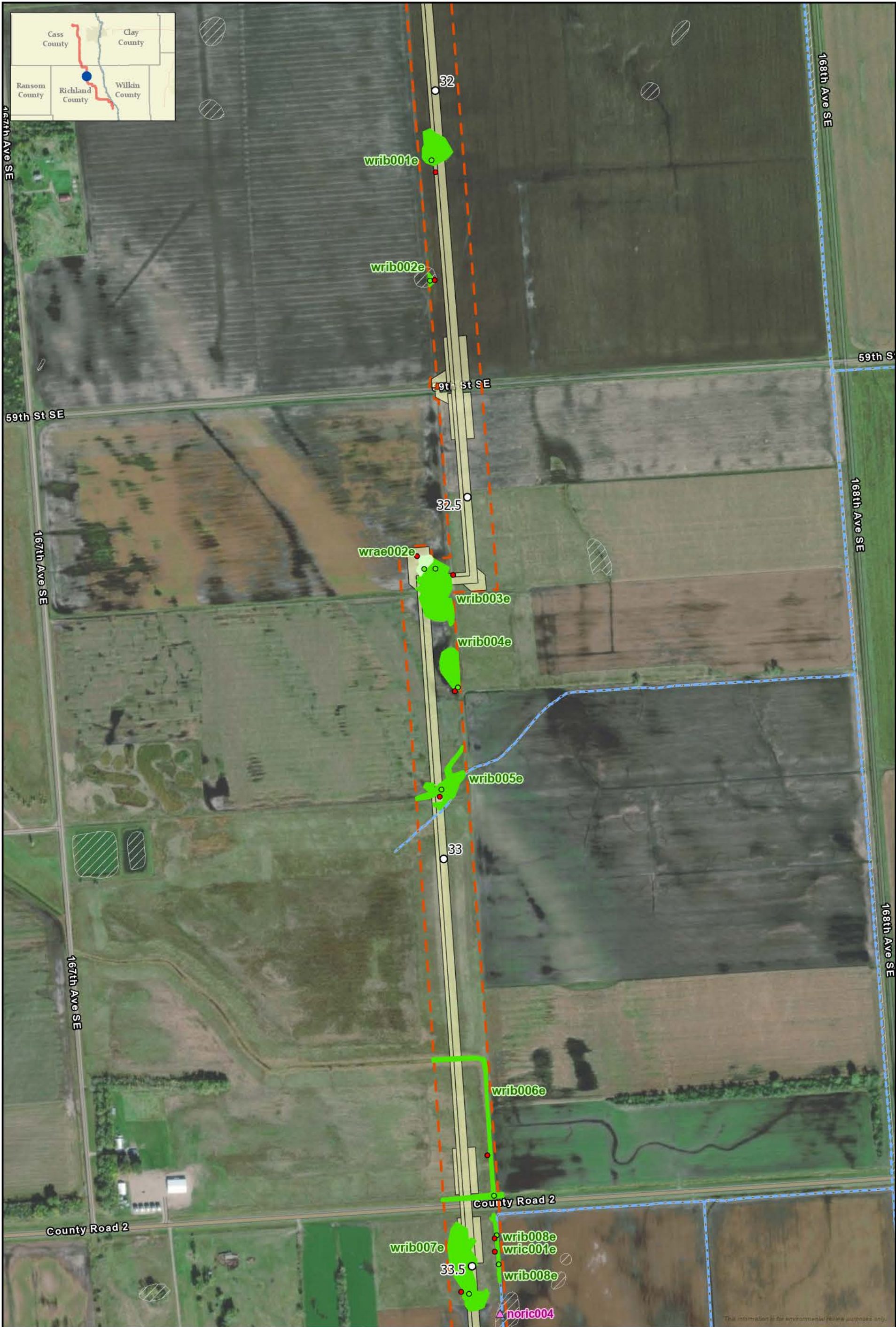


- Milepost
- Proposed Workspace
- Upland Data Point
- Wetland Data Point
- ▲ Non-Water Data Point
- NHD Flowline
- NHD Waterbody
- NWI Wetland
- Survey Boundary - Complete
- Survey Boundary - Incomplete



Aquatic Resources Delineation Map
Wahpeton Expansion Project
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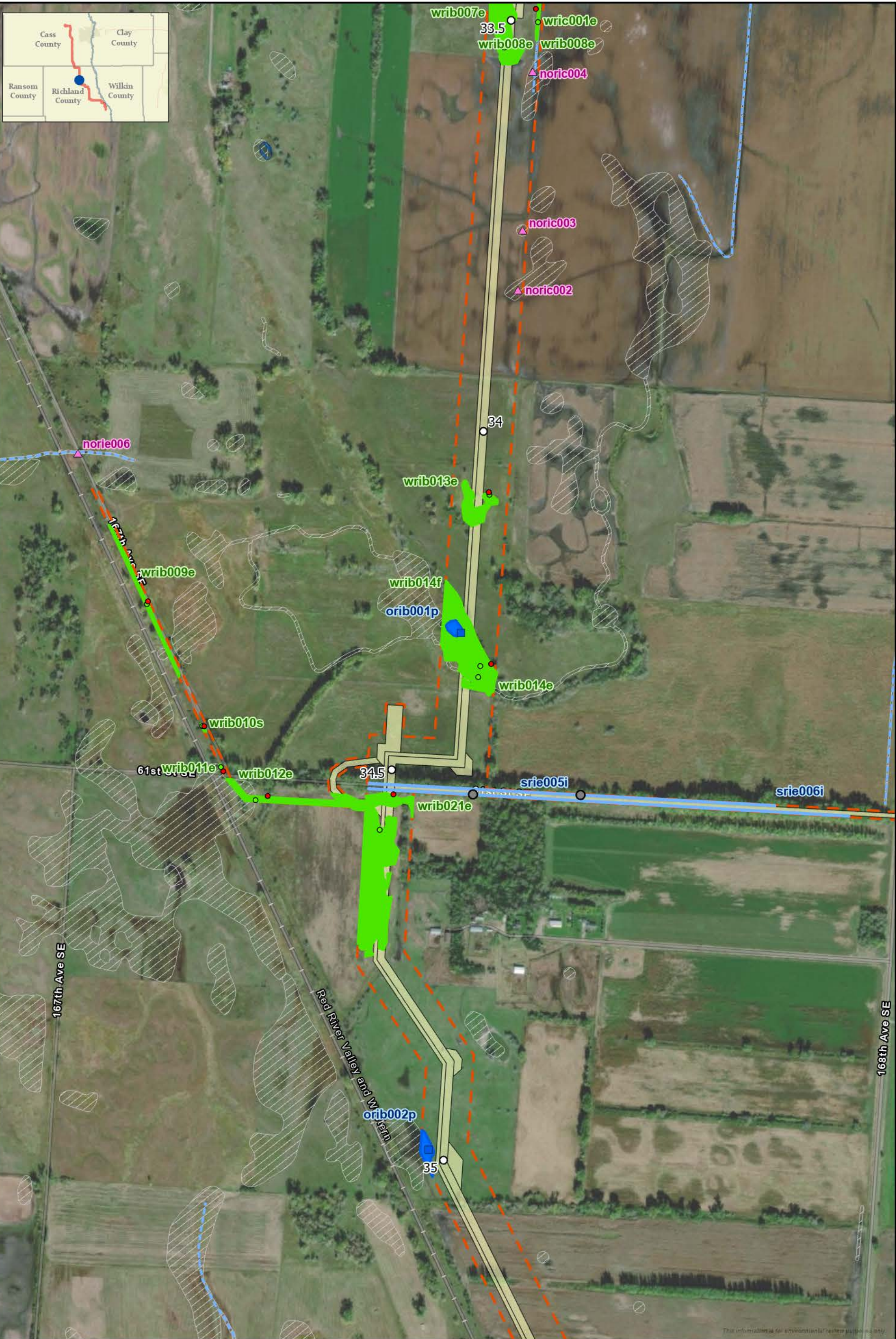
○ Milepost	--- NHD Flowline
■ Proposed Workspace	▒ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	--- Survey Boundary - Complete
▲ Non-Water Data Point	

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0 500 1,000
Feet

Aquatic Resources Delineation Map
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- Milepost
- Proposed Workspace
- Waterbody Data Point
- <all other values>
- Upland Data Point
- Wetland Data Point
- ▲ Non-Water Data Point
- NHD Flowline
- NHD Waterbody
- NWI Wetland
- Survey Boundary - Complete



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○ Milepost	--- NHD Flowline
■ Proposed Workspace	■ NHD Waterbody
■ Waterbody Data Point	▨ NWI Wetland
● Upland Data Point	--- Survey Boundary - Complete
● Wetland Data Point	
▲ Non-Water Data Point	

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0 500 1,000
Feet

Aquatic Resources Delineation Map
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○ Milepost	--- NHD Flowline
■ Proposed Workspace	▨ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	▨ Survey Boundary - Complete
▲ Non-Water Data Point	

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0 500 1,000
Feet

Aquatic Resources Delineation Map
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○ Milepost	--- NHD Flowline
■ Proposed Workspace	▨ NHD Waterbody
■ Waterbody Data Point	▨ NWI Wetland
▲ Non-Water Data Point	--- Survey Boundary - Complete

1:7,000

0 500 1,000
Feet

Aquatic Resources Delineation Map
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○ Milepost	--- NHD Flowline
▭ Proposed Workspace	▭ NHD Waterbody
▭ Waterbody Data Point	▭ NWI Wetland
● Upland Data Point	--- Survey Boundary - Complete
● Wetland Data Point	
△ Non-Water Data Point	

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0 500 1,000
Feet

Aquatic Resources Delineation Map
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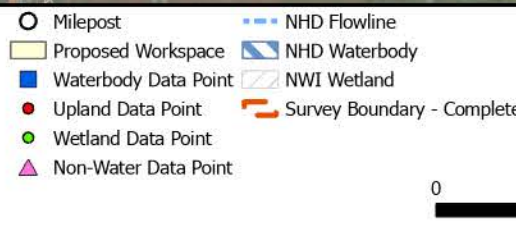
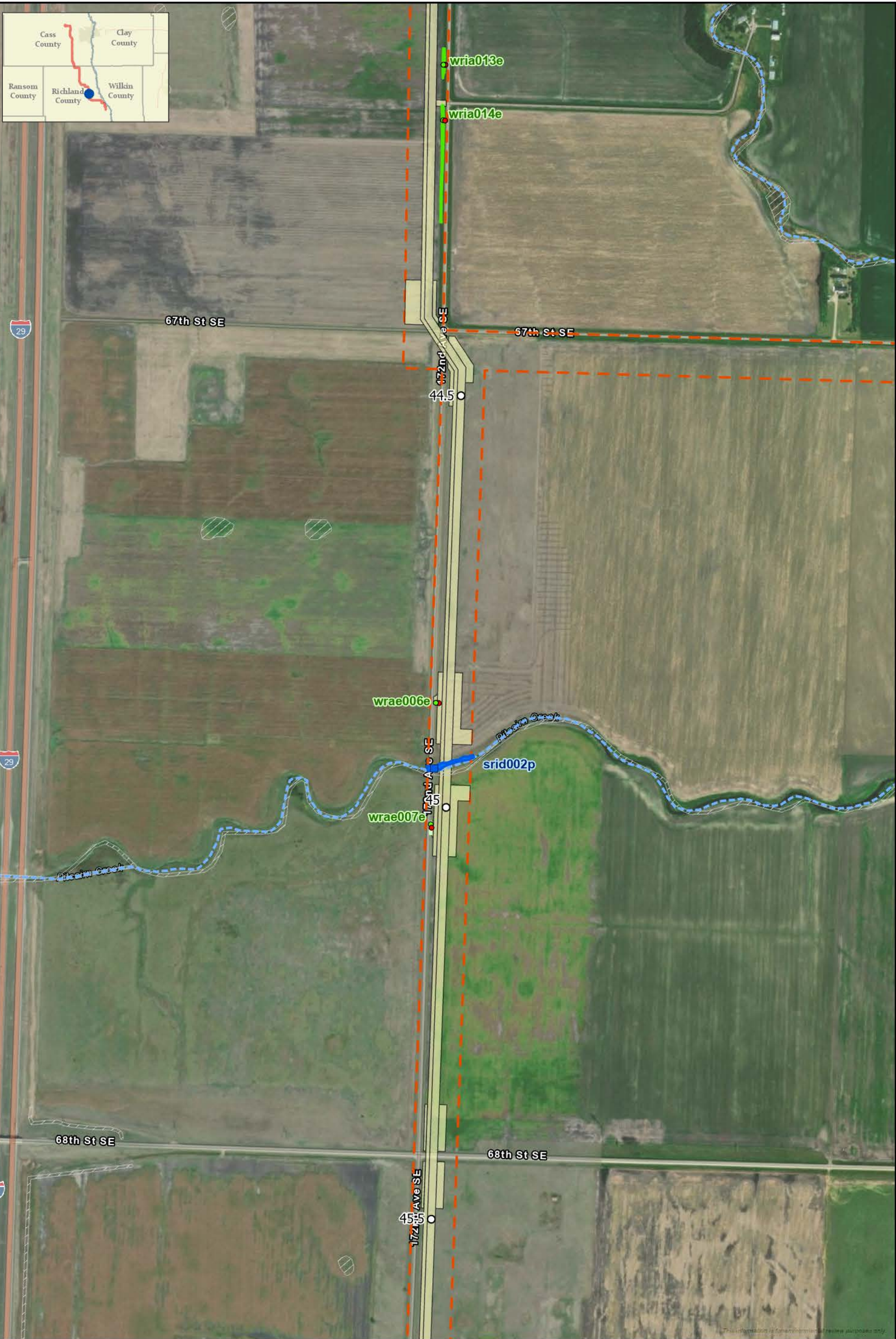
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■ Proposed Workspace	■ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	▨ Survey Boundary - Complete
▲ Non-Water Data Point	

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0 500 1,000
Feet

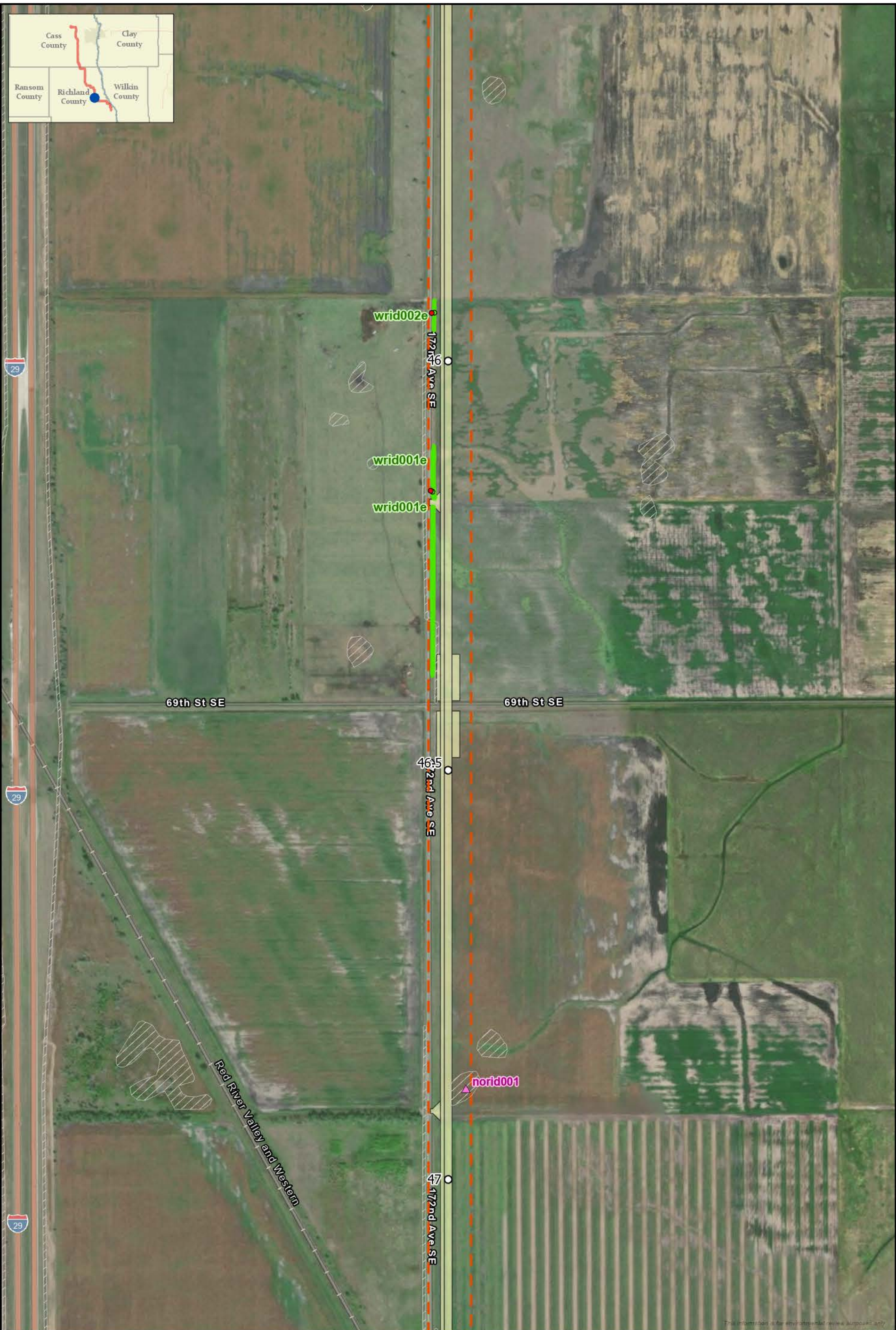
Aquatic Resources Delineation Map
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○ Milepost	--- NHD Flowline
■ Proposed Workspace	■ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	--- Survey Boundary - Complete
▲ Non-Water Data Point	

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0 500 1,000
Feet

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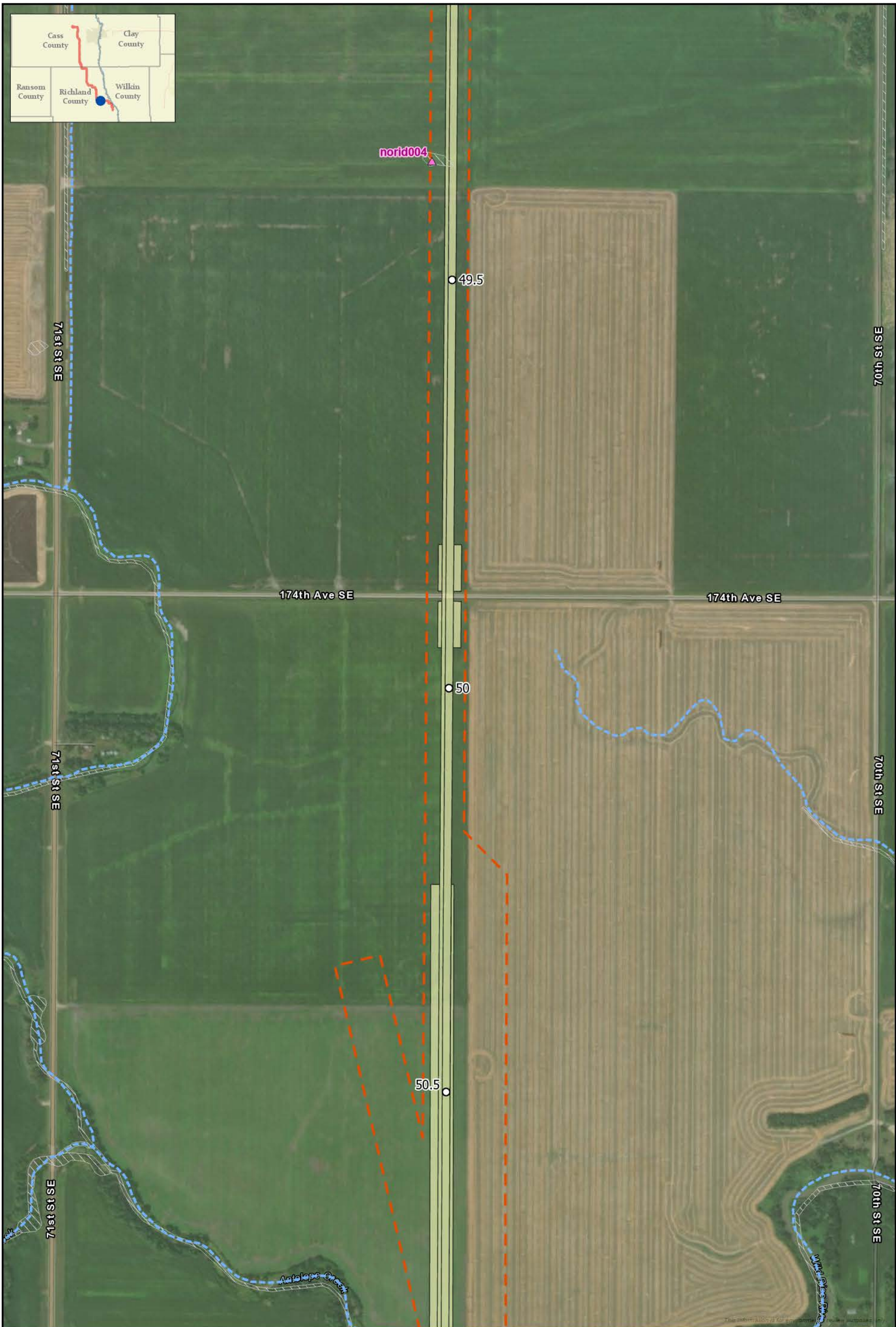
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▭ Proposed Workspace	▭ NHD Waterbody
■ Waterbody Data Point	▨ NWI Wetland
● Upland Data Point	--- Survey Boundary - Complete
● Wetland Data Point	
▲ Non-Water Data Point	

1:7,000

0 500 1,000 Feet

Aquatic Resources Delineation Map
Wahpeton Expansion Project
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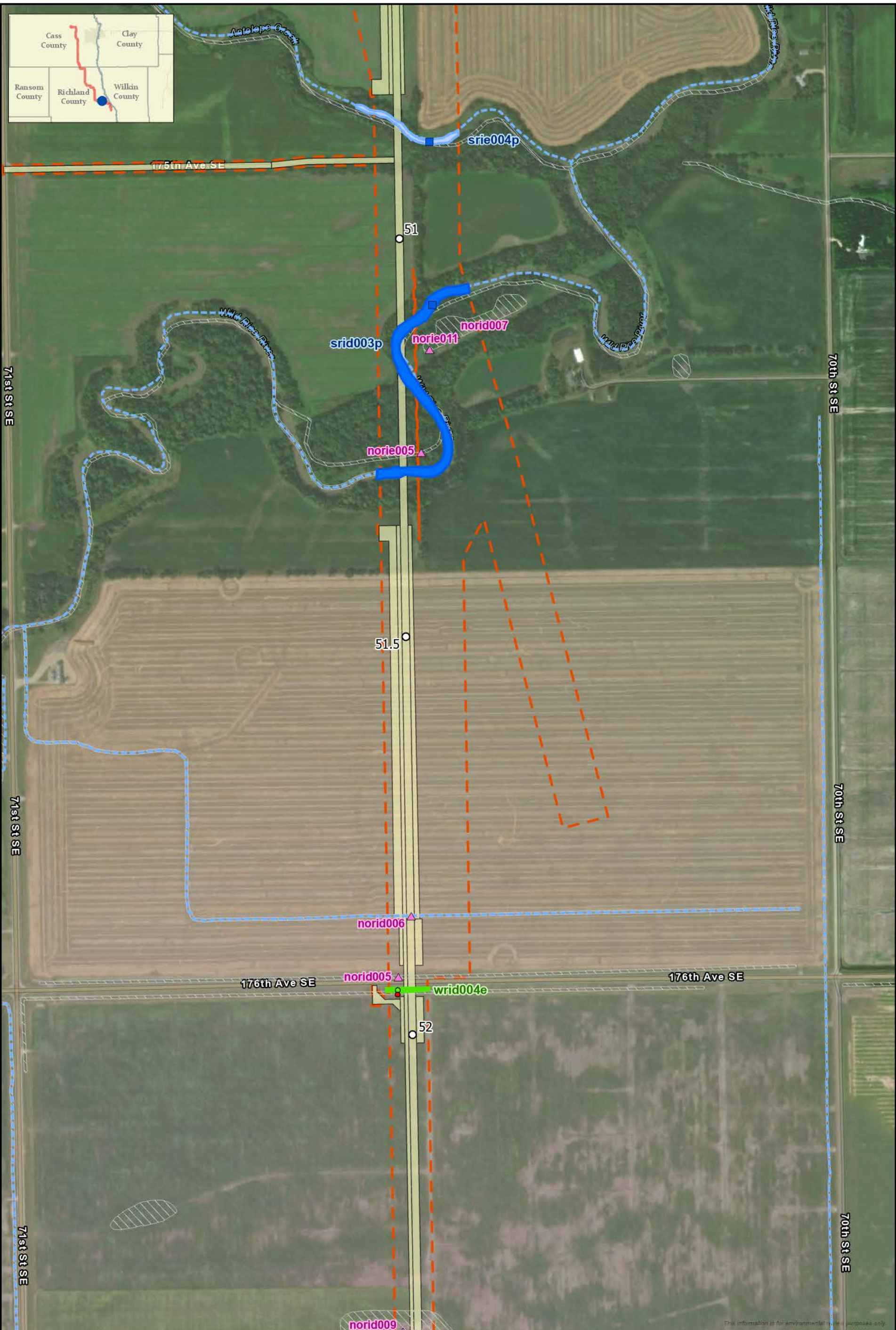
○ Milepost	NHD Waterbody
Proposed Workspace	NWI Wetland
Non-Water Data Point	Survey Boundary - Complete
NHD Flowline	

1:7,000

0 500 1,000
Feet

Aquatic Resources Delineation Map
Wahpeton Expansion Project
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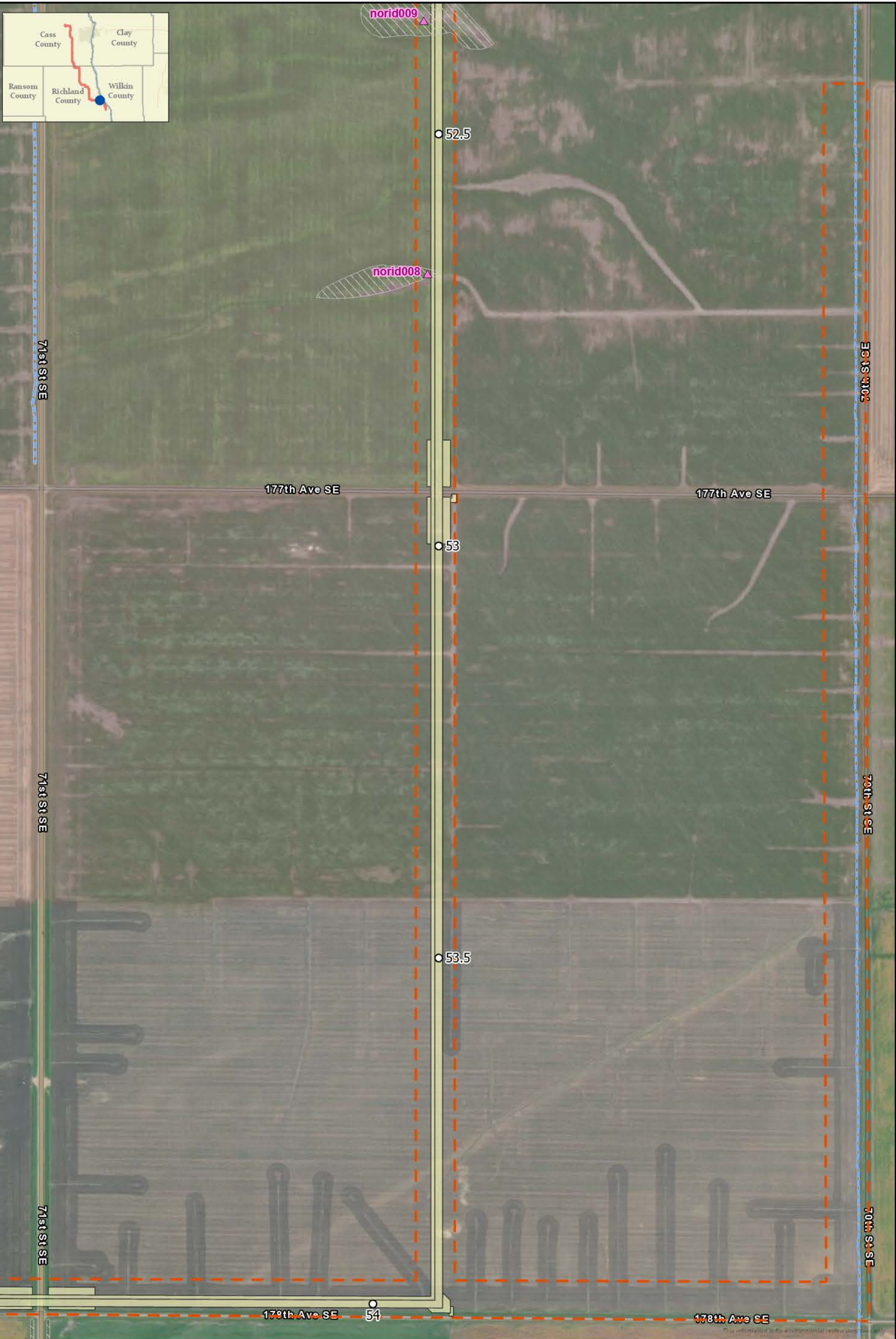
○ Milepost	--- NHD Flowline
■ Proposed Workspace	■ NHD Waterbody
■ Waterbody Data Point	■ NWI Wetland
● Upland Data Point	--- Survey Boundary - Complete
● Wetland Data Point	
▲ Non-Water Data Point	

1:7,000

0 500 1,000
Feet

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○ Milepost	NHD Waterbody
Proposed Workspace	NWI Wetland
Non-Water Data Point	Survey Boundary - Complete
NHD Flowline	

1:7,000

0 500 1,000
Feet

Aquatic Resources Delineation Map
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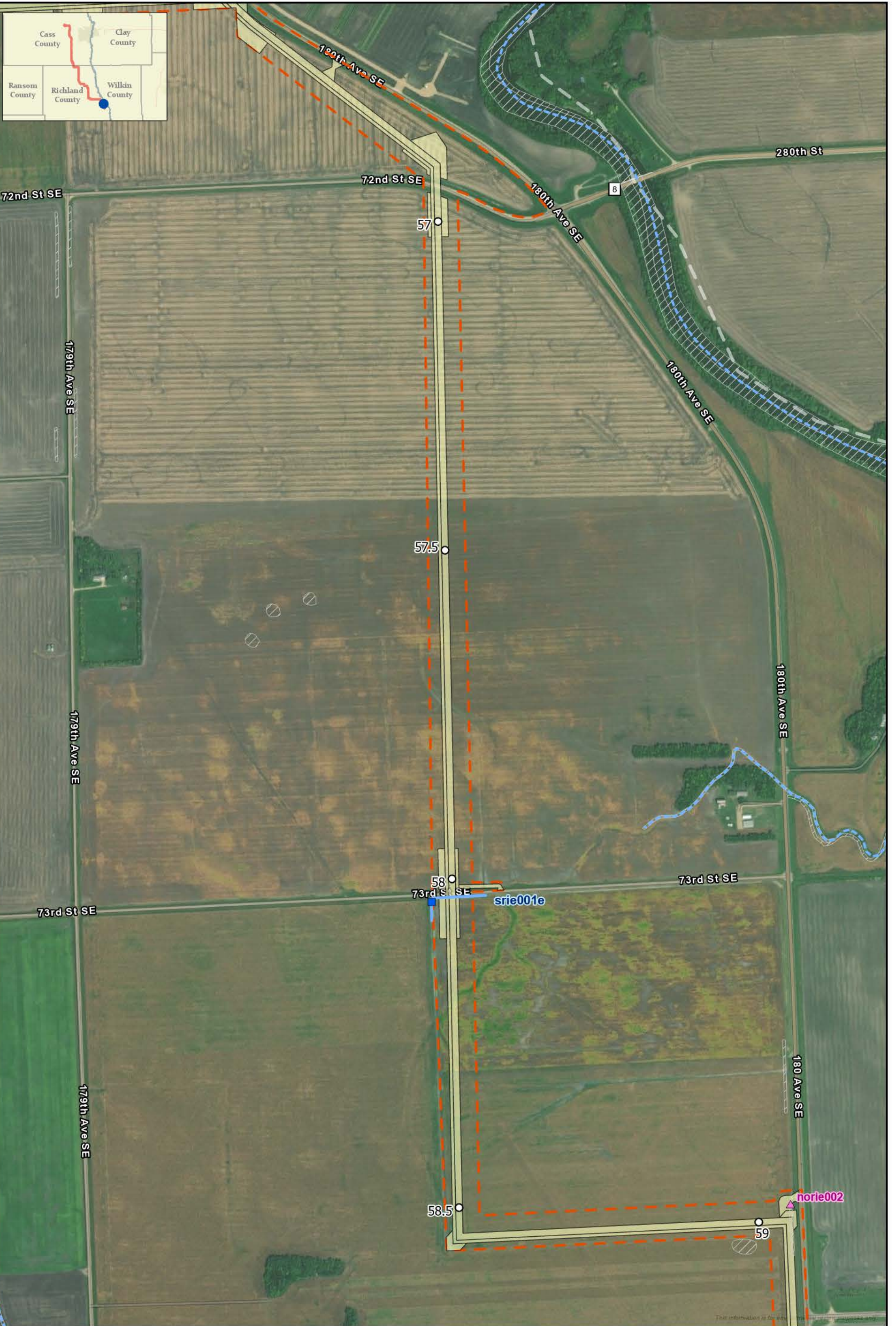
○ Milepost	--- NHD Flowline
■ Proposed Workspace	▨ NHD Waterbody
■ Waterbody Data Point	▨ NWI Wetland
▲ Non-Water Data Point	--- Survey Boundary - Complete

1:7,000

0 500 1,000
Feet

Aquatic Resources Delineation Map
Wahpeton Expansion Project
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○ Milepost	--- NHD Flowline
▭ Proposed Workspace	▨ NHD Waterbody
■ Waterbody Data Point	▨ NWI Wetland
▲ Non-Water Data Point	--- Survey Boundary - Complete

1:8,000

0 500 1,000
Feet

Aquatic Resources Delineation Map
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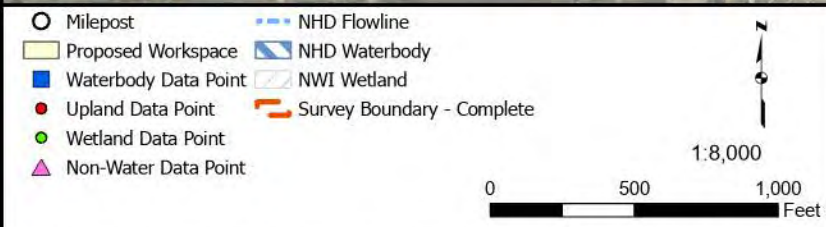
○ Milepost	--- NHD Flowline
■ Proposed Workspace	■ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	--- Survey Boundary - Complete
▲ Non-Water Data Point	

1:8,000

0 500 1,000
Feet

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○ Milepost	NHD Waterbody
Proposed Workspace	NWI Wetland
Non-Water Data Point	Survey Boundary - Complete
NHD Flowline	

1:8,000

0 500 1,000
Feet

Aquatic Resources Delineation Map
Wahpeton Expansion Project
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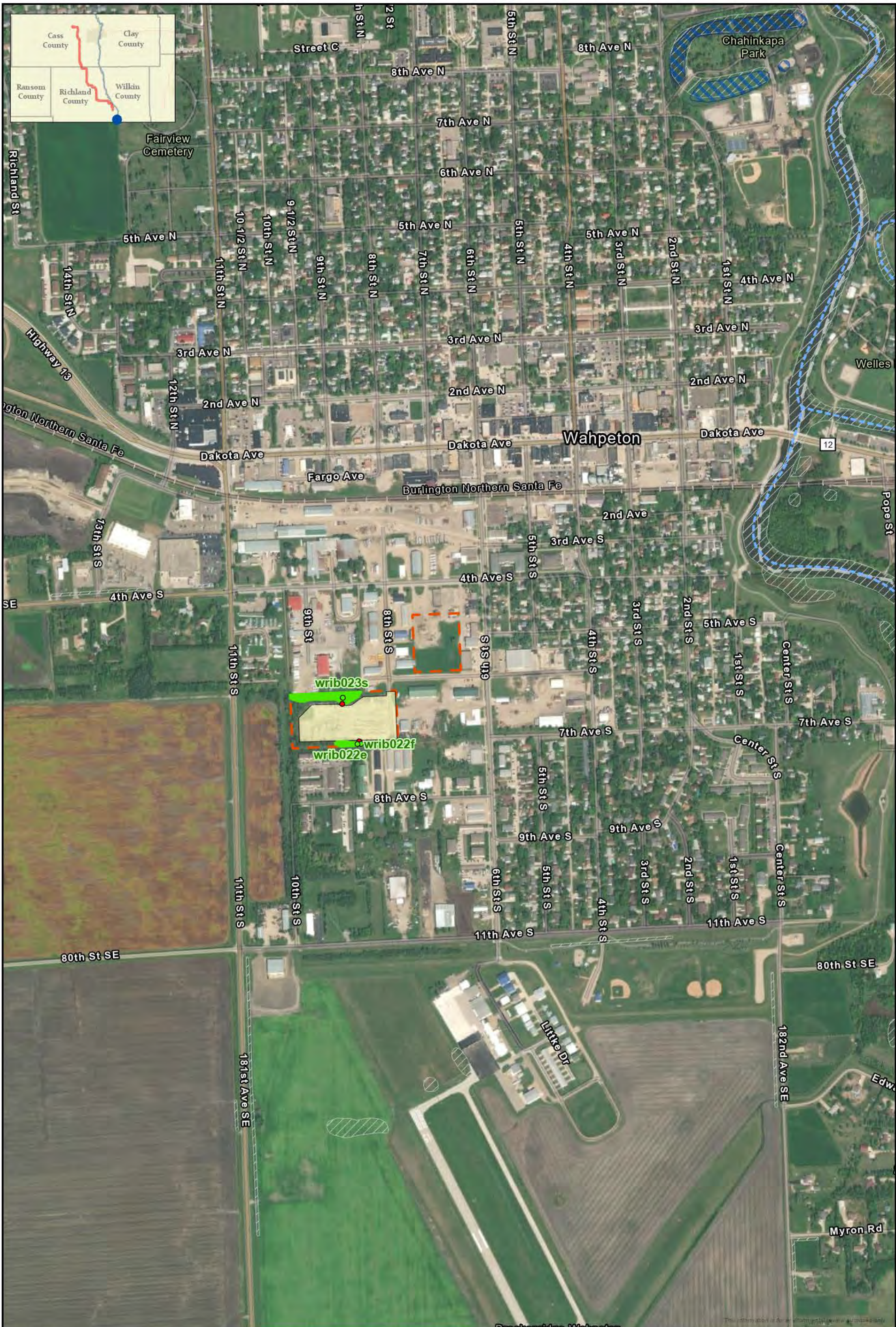


- Milepost
- Proposed Workspace
- Waterbody Data Point
- Upland Data Point
- Wetland Data Point
- ▲ Non-Water Data Point
- NHD Flowline
- NHD Waterbody
- ▨ NWI Wetland
- Survey Boundary - Complete



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○ Milepost	--- NHD Flowline
■ Proposed Workspace	▨ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	▨ Survey Boundary - Complete
▲ Non-Water Data Point	

1:8,000

0 500 1,000
Feet

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APPENDIX B TABLES

Table B-1: Additional Wetlands Delineated in 2022 within the Project Survey Area

Wetland ID	Cowardin Classification ^a	Data Point Coordinates		Acreage Within the Survey Area (acres)	Milepost	Page Number in Appendix A (Map Book)
		Latitude	Longitude			
wcae007e	PEM	46.87215	-97.00607	0.21	6.3	4
wcae008e	PEM	46.84052	-97.01074	<0.01	8.8	6
wcae002e	PEM	46.82514	-97.00340	0.04	9.9	6
wcae001e	PEM	46.76122	-96.98980	0.05	14.7	10
wcae006e	PEM	46.76076	-96.98938	0.25	14.7	10
wcae003e	PEM	46.73920	-96.98965	<0.01	16.2	10
wcae004e	PEM	46.68454	-96.98953	<0.01	20.1	13
wrie009e	PEM	46.61734	-96.92823	0.07	27.6	17
wrae001e	PEM	46.60136	-96.91753	<0.01	29.3	18
wrae002e	PEM	46.55471	-96.91713	0.15	32.6	20
wrae004e	PEM	46.50160	-96.90024	0.01	36.6	22
wrae005e	PEM	46.45645	-96.82009	0.01	43.4	26
wrae006e	PEM	46.43538	-96.81946	<0.01	44.9	27
wrae007e	PEM	46.43324	-96.81952	<0.01	45.0	27
wrie010e ^b	PEM	46.37324	-96.68075	0.21	55.8	33
wrie008e	PEM	46.33316	-96.65299	0.10	60.2	35

^a Based on Cowardin Classification of Wetlands and Deepwater Habitats, PEM= palustrine emergent

^b Feature was changed from an ephemeral stream to a PEM wetland after the completion of fieldwork. No USACE wetland data point is available for this feature.

Table B-2: Additional Waterbodies Surveyed in 2022 within the Project Survey Area

Unique ID (Waterbody Name)	Feature Type	Waterbody Regime ^a	Data Point Coordinates		Acreage Within the Survey Area ^b (acres)	Bank Length Within Survey Area (feet, single bank)	Milepost	Page Number in Appendix A (Map Book)
			Latitude	Longitude				
scaa004e	Ditch	E	46.84052	-97.01074	0.01	16	8.8	6
scae002i	Ditch	I	46.80494	-96.98979	0.49	5,340	10.7	7
scae004e	Ditch	E	46.74653	-96.98985	0.01	87	15.7	10
scae003e	Ditch	E	46.64481	-96.97867	0.03	299	23.3	7
srie005i	Stream	I	46.52846	-96.91682	0.35	3,081	34.5	15
srie006i	Stream	I	46.52874	-96.91386	0.30	2,609	34.5	15
srie004p (Antelope Creek)	River	P	46.39178	-96.75741	0.48	760	50.9	31
srie001e	Ditch	E	46.35492	-96.66334	0.05	560	58.0	34
srie003e	Ditch	E	46.29548	-96.62180	0.04	450	N/A	38

^a Waterbody Regime: E = Ephemeral, I = Intermittent, P = Perennial

^b Acreage values represent the entire 300-foot-wide survey corridor, and do not represent the area impacted by the Project

APPENDIX C WETLAND AND WATERBODY DATASHEETS AND PHOTOS

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-08-17
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae001_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 16 T138N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.761261 Long: -96.989856 Datum: NAD83
 Soil Map Unit Name: Fargo-Hegne silty clays, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>3</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Zea mays</u>	<u>0</u>	<u>N</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 0 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 0.00 x 2 = 0.00
 FAC species 0.00 x 3 = 0.00
 FACU species 0.00 x 4 = 0.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 0.00 (A) 0.00 (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
Site visit was conducted after crop harvest. Remnants of Zea mays is strewn across the sample plot.

SOIL

Sampling Point: wcae001_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100					SIC	
8-15	10YR 3/3	90	10YR 2/1	10	C	M	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present): Type: <u>Compacted soil</u> Depth (inches): <u>15</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

Remarks:
 Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Site visit was conducted after crop harvest. Hydrology has been affected due to the use of heavy machinery.



wcae001e_u, looking southwest

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-08-17
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae001e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 16 T138N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.761193 Long: -96.989813 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>3</u>)				
1. <u>Phalaris arundinacea</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 10.00 x 2 = 20.00
 FAC species 0.00 x 3 = 0.00
 FACU species 0.00 x 4 = 0.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 10.00 (A) 20.00 (B)
 Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:



wcae001e_w, looking southwest

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae002_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 28 T139N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.8251766 Long: -97.0033116 Datum: NAD83
 Soil Map Unit Name: Overly-Bearden silt loams, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				<u>0</u> = Total Cover
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				_____ = Total Cover
Herb Stratum (Plot size: <u>3</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Zea mays</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
				<u>10</u> = Total Cover
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				_____ = Total Cover
% Bare Ground in Herb Stratum _____				_____ = Total Cover

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 0.00 x 2 = 0.00
 FAC species 0.00 x 3 = 0.00
 FACU species 0.00 x 4 = 0.00
 UPL species 10.00 x 5 = 50.00
 Column Totals: 10.00 (A) 50.00 (B)
 Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
Site visit was conducted after crop harvest. Remnants of Zea mays is strewn across the sample plot.

SOIL

Sampling Point: wcae002_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1	90	10YR 5/2	10	C	M	SIL	Distinct redox.
4-16	10YR 2/2	100					SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted soil
 Depth (inches): 16

Hydric Soil Present? Yes No

Remarks:

Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site visit was conducted after crop harvest. Hydrology has been affected due to the use of heavy machinery.



WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae002e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 28 T139N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.8251504 Long: -97.0033284 Datum: NAD83
 Soil Map Unit Name: Overly-Bearden silt loams, 0 to 2 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>3</u>)				
1. <u>Phalaris arundinacea</u>	<u>90</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

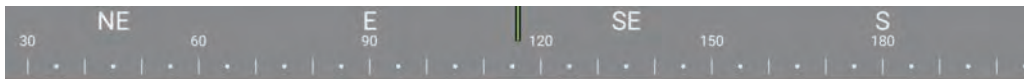
Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 90.00 x 2 = 180.00
 FAC species 0.00 x 3 = 0.00
 FACU species 0.00 x 4 = 0.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 90.00 (A) 180.00 (B)
 Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:



● 46.825187°, -97.003456°



WBI-M2W
ERM

wcae002e_w
07 Jun 2022, 10:51:22

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae003_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 08 T137N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.739177 Long: -96.9896956 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>3</u>)				
1. <u>Malva neglecta</u>	<u>75</u>	<u>Y</u>	<u>NI</u>	
2. <u>Taraxacum officinale</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
3. <u>Ellisia nyctelea</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Rumex crispus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. <u>Phalaris arundinacea</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 2.00 x 2 = 4.00
 FAC species 5.00 x 3 = 15.00
 FACU species 25.00 x 4 = 100.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 32.00 (A) 119.00 (B)
 Prevalence Index = B/A = 3.72

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks:

SOIL

Sampling Point: wcae003_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 2/1	100					SIC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted fill material
 Depth (inches): 12

Hydric Soil Present? Yes No

Remarks:

Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site visit was conducted after crop harvest. Hydrology has been affected due to the use of heavy machinery.



● 46.739176°, -96.989699°



WBI M2W
ERM

wcae003_u
07 Jun 2022, 12:20:27

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae003e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 28 T138N R050W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.7392023 Long: -96.9896804 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				_____ = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				_____ = Total Cover
<u>Herb Stratum</u> (Plot size: <u>3</u>)				
1. <u>Phalaris arundinacea</u>	<u>95</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
				_____ = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				_____ = Total Cover
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 95.00 x 2 = 190.00
 FAC species 0.00 x 3 = 0.00
 FACU species 10.00 x 4 = 40.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 105.00 (A) 230.00 (B)
 Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:



● 46.739187°, -96.989705°



WBI M2W
ERM

wcae003e_w
07 Jun 2022, 12:11:06

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae004_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 05 T137N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.6845715 Long: -96.9894784 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>3</u>)				
1. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Sonchus oleraceus</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
3. <u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Rumex crispus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				_____ = Total Cover
Remarks:				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0.00</u>	x 1 = <u>0.00</u>
FACW species <u>25.00</u>	x 2 = <u>50.00</u>
FAC species <u>5.00</u>	x 3 = <u>15.00</u>
FACU species <u>10.00</u>	x 4 = <u>40.00</u>
UPL species <u>20.00</u>	x 5 = <u>100.00</u>
Column Totals: <u>60.00</u> (A)	<u>205.00</u> (B)

Prevalence Index = B/A = 3.42

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

SOIL

Sampling Point: wcae004 u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 2/1	100					SIC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted fill material
 Depth (inches): 12

Hydric Soil Present? Yes No

Remarks:

Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site visit was conducted after crop harvest. Hydrology has been affected due to the use of heavy machinery.



● 46.684512°, -96.989485°



WBI M2W
ERM

wcae004_u
07 Jun 2022, 12:58:30

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae004e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 16 T137N R050W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.6845411 Long: -96.9895406 Datum: NAD83
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is located within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>3</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>95</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>105</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 95.00 x 2 = 190.00
 FAC species 0.00 x 3 = 0.00
 FACU species 10.00 x 4 = 40.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 105.00 (A) 230.00 (B)
 Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:



WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-08-17
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae006e_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 22 T138N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.760829 Long: -96.989399 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, depressional, 0 to 1 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa pratensis</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ambrosia artemisiifolia</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Xanthium strumarium</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
4. <u>Hibiscus sp.</u>	<u>20</u>	<u>N</u>	<u>Ni</u>	
5. <u>Zea mays</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 0.00 x 2 = 0.00
 FAC species 25.00 x 3 = 75.00
 FACU species 100.00 x 4 = 400.00
 UPL species 10.00 x 5 = 50.00
 Column Totals: 135.00 (A) 525.00 (B)
 Prevalence Index = B/A = 3.89

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks: _____



wace006e_u, looking south.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-08-17
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae006e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 16 T138N R050W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.7607623 Long: -96.9893853 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, depressional, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u><i>Alopecurus pratensis</i></u>	<u>75</u>	<u>Y</u>	<u>FACW</u>	
2. <u><i>Phalaris arundinacea</i></u>	<u>20</u>	<u>N</u>	<u>FACW</u>	
3. <u><i>Poa pratensis</i></u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>105</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 95.00 x 2 = 190.00
 FAC species 0.00 x 3 = 0.00
 FACU species 10.00 x 4 = 40.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 105.00 (A) 230.00 (B)
 Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:
 Roadside ditch has been recently mowed/maintained. Some vegetation cannot be identified.



wace006e_w, looking northeast.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-08-17
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae007e_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 09 T139N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.872242 Long: -97.006296 Datum: NAD83
 Soil Map Unit Name: Dovray silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Bromus inermis</u>	<u>50</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Ambrosia artemisiifolia</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Urtica dioica</u>	<u>20</u>	<u>N</u>	<u>FAC</u>	
4. <u>Persicaria pensylvanica</u>	<u>15</u>	<u>N</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 15.00 x 2 = 30.00
 FAC species 20.00 x 3 = 60.00
 FACU species 40.00 x 4 = 160.00
 UPL species 50.00 x 5 = 250.00
 Column Totals: 125.00 (A) 500.00 (B)
 Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks: _____



wcae007e_u, looking northeast.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-08-17
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae007e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 09 T139N R050W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.8721583 Long: -97.0060790 Datum: NAD83
 Soil Map Unit Name: Dovray silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Persicaria pensylvanica</u>	<u>75</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Trichophorum sp.</u>	<u>25</u>	<u>N</u>	<u>OBL</u>	
3. <u>Ambrosia artemisiifolia</u>	<u>25</u>	<u>N</u>	<u>FACU</u>	
4. <u>Phalaris arundinacea</u>	<u>20</u>	<u>N</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 25.00 x 1 = 25.00
 FACW species 95.00 x 2 = 190.00
 FAC species 0.00 x 3 = 0.00
 FACU species 25.00 x 4 = 100.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 145.00 (A) 315.00 (B)
 Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:
 Plot is located in the centerline of a waterway.



wcae007e_w, looking northeast.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae008_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 21 T139N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.8404578 Long: -97.0106265 Datum: NAD83
 Soil Map Unit Name: Fargo-Hegne silty clays, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>3</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Zea mays</u>	<u>0</u>	<u>N</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 0 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 0.00 x 2 = 0.00
 FAC species 0.00 x 3 = 0.00
 FACU species 0.00 x 4 = 0.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 0.00 (A) 0.00 (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
Site visit was conducted after crop harvest. Remnants of Zea mays is strewn across the sample plot.

SOIL

Sampling Point: wcae008_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-8	10YR 2/1	100					SIC		
8-15	10YR 3/3	90	10YR 2/1	10	C	M	SIL	Distinct redox.	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted soil
 Depth (inches): 15

Hydric Soil Present? Yes No

Remarks:

Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site visit was conducted after crop harvest. Hydrology has been affected due to the use of heavy machinery.



● 46.840453°, -97.010647°



WBI-M2W
ERM

wcae008_u

07 Jun 2022, 10:18:52

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wcae008e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 27 T139N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.8405209 Long: -97.0107426 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				_____ = Total Cover
				<u>0</u> = Total Cover
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				_____ = Total Cover
				_____ = Total Cover
Herb Stratum (Plot size: <u>3</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
				_____ = Total Cover
				<u>10</u> = Total Cover
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				_____ = Total Cover
				_____ = Total Cover
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 10.00 x 2 = 20.00
 FAC species 0.00 x 3 = 0.00
 FACU species 0.00 x 4 = 0.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 10.00 (A) 20.00 (B)
 Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:



● 46.840526°, -97.010763°



WBI M2W
ERM

wcae008e_w

07 Jun 2022, 10:12:26

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Cass County Sampling Date: 2022-06-07
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae001_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 14 T137N R049W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.6014035 Long: -96.9174832 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, depressional, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>3</u>)				
1. <u>Phalaris arundinacea</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	
2. <u>Zea mays</u>	<u>0</u>	<u>N</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 0 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 2.00 x 2 = 4.00
 FAC species 0.00 x 3 = 0.00
 FACU species 0.00 x 4 = 0.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 2.00 (A) 4.00 (B)
 Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
Site visit was conducted after harvest of crops. Remnants of Zea mays can be found throughout the sample plot.

SOIL

Sampling Point: wrae001_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR	2/2					SIC	
5-20	10YR	2/2	100				SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

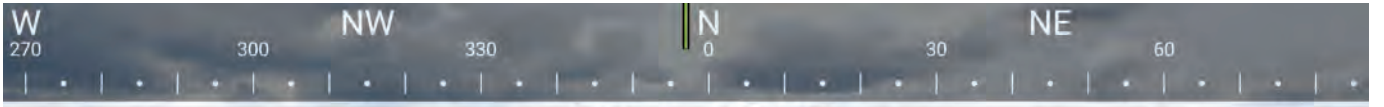
Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes _____ No Depth (inches): _____

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site visit was conducted after crop harvest. Hydrology has been affected due to the use of heavy machinery.



● 46.60147°, -96.917345°



WBI M2W
ERM

wrae001_u
07 Jun 2022, 14:36:43

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: NextEra Fisher City/County: Richland County Sampling Date: 2022-06-07
 Applicant/Owner: NextEra Energy State: North Dakota Sampling Point: wrae001e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 12 T136N R050W
 Landform (hillslope, terrace, etc.): Dip Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.6013689 Long: -96.9175317 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Poa pratensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: _____ _____ _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 25.00 x 2 = 50.00
 FAC species 0.00 x 3 = 0.00
 FACU species 5.00 x 4 = 20.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 30.00 (A) 70.00 (B)
 Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____



● 46.60139°, -96.917429°



WBI M2W
ERM

wrae001e_w
07 Jun 2022, 14:29:59

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae002_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 36 T136N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.5548548 Long: -96.9173103 Datum: NAD83
 Soil Map Unit Name: Aberdeen-Ryan silty clay loams, 0 to 2 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status															
<u>Tree Stratum</u> (Plot size: <u>30</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)														
1. _____																		
2. _____																		
3. _____																		
4. _____																		
	<u>0</u>	= Total Cover		Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0.00</u></td> <td>x 1 = <u>0.00</u></td> </tr> <tr> <td>FACW species <u>0.00</u></td> <td>x 2 = <u>0.00</u></td> </tr> <tr> <td>FAC species <u>0.00</u></td> <td>x 3 = <u>0.00</u></td> </tr> <tr> <td>FACU species <u>25.00</u></td> <td>x 4 = <u>100.00</u></td> </tr> <tr> <td>UPL species <u>0.00</u></td> <td>x 5 = <u>0.00</u></td> </tr> <tr> <td>Column Totals: <u>25.00</u> (A)</td> <td><u>100.00</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.0</u>	Total % Cover of:	Multiply by:	OBL species <u>0.00</u>	x 1 = <u>0.00</u>	FACW species <u>0.00</u>	x 2 = <u>0.00</u>	FAC species <u>0.00</u>	x 3 = <u>0.00</u>	FACU species <u>25.00</u>	x 4 = <u>100.00</u>	UPL species <u>0.00</u>	x 5 = <u>0.00</u>	Column Totals: <u>25.00</u> (A)	<u>100.00</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0.00</u>	x 1 = <u>0.00</u>																	
FACW species <u>0.00</u>	x 2 = <u>0.00</u>																	
FAC species <u>0.00</u>	x 3 = <u>0.00</u>																	
FACU species <u>25.00</u>	x 4 = <u>100.00</u>																	
UPL species <u>0.00</u>	x 5 = <u>0.00</u>																	
Column Totals: <u>25.00</u> (A)	<u>100.00</u> (B)																	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>Herb Stratum</u> (Plot size: <u>3</u>)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
1. <u>Ambrosia artemisiifolia</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Zea mays</u>	<u>0</u>	<u>N</u>	<u>UPL</u>															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
	<u>25</u>	= Total Cover																
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>														
1. _____																		
2. _____																		
	<u>0</u>	= Total Cover																
% Bare Ground in Herb Stratum _____																		

Remarks:
Site visit was conducted after harvest of crops. Remnants of Zea mays can be found throughout the sample plot.

SOIL

Sampling Point: wrae002_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features				Texture	Remarks	
	Color (moist)		%	Color (moist)	%	Type ¹	Loc ²			
0-3	10YR	2/1	90	7.5YR	5/2	10	C	M	SIL	Prominent redox.
3-11	10YR	2/1	100						SIL	
11-17	10YR	3/2	75	10YR	2/1	25	C	M	SIL	Faint redox.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:
Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	(where tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Site visit was conducted after crop harvest. Hydrology has been affected due to the use of heavy machinery.



© 46.554781°, -96.917334°



WBI M2W
ERM

wrae002_u
08 Jun 2022, 10:01:06

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae002e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 36 T136N R050W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.5547124 Long: -96.9171358 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Taraxacum officinale</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 40.00 x 2 = 80.00
 FAC species 0.00 x 3 = 0.00
 FACU species 2.00 x 4 = 8.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 42.00 (A) 88.00 (B)
 Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: _____

SOIL

Sampling Point: wrae002e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-19	10YR 2/1	100					SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
--	--

Remarks:
 Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

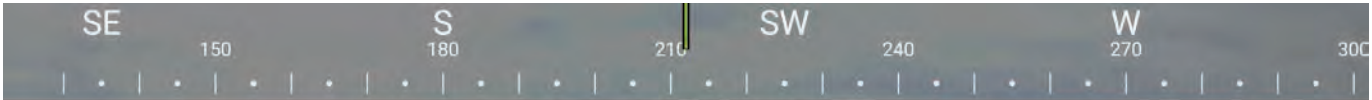
HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Site visit was conducted after crops had been harvested. Farming equipment tracks and marks are found throughout the field, and has affected hydrology by creating ruts.



● 46.554588°, -96.916985°



WBI M2W
ERM

wrae002e_w
08 Jun 2022, 09:42:45

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae004_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 15 T135N R049W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.5016689 Long: -96.9003262 Datum: NAD83
 Soil Map Unit Name: Overly silty clay loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is located within a roadside ditch	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u>	<u>(Plot size: 30)</u>				
1. _____					
2. _____					
3. _____					
4. _____					
		<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u>	<u>(Plot size: 15)</u>				
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
			= Total Cover		
<u>Herb Stratum</u>	<u>(Plot size: 3)</u>				
1. <u><i>Euphorbia cypressias</i></u>		<u>25</u>	<u>Y</u>	<u>NI</u>	
2. <u><i>Phalaris arundinacea</i></u>		<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. <u><i>Equisetum hyemale</i></u>		<u>15</u>	<u>Y</u>	<u>FACW</u>	
4. <u><i>Ambrosia artemisiifolia</i></u>		<u>10</u>	<u>N</u>	<u>FACU</u>	
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
		<u>75</u>	= Total Cover		
<u>Woody Vine Stratum</u>	<u>(Plot size: 30)</u>				
1. _____					
2. _____					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum _____					
Remarks:					

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 40.00 x 2 = 80.00
 FAC species 0.00 x 3 = 0.00
 FACU species 10.00 x 4 = 40.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 50.00 (A) 120.00 (B)
 Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: wrae004 u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR	3/1	100					SIL	
8-10	10YR	3/1	50	10YR	7/2	50	D	M	Prominent redox.
10-15	10YR	2/1	100					SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present): Type: <u>Compacted soil</u> Depth (inches): <u>15</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Site visit was conducted after crops had been harvested. Farming equipment tracks and marks are found throughout the field, and has affected hydrology by creating ruts.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae004e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 18 T135N R049W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.5016007 Long: -96.9002425 Datum: NAD83
 Soil Map Unit Name: Mantador-Delamere-Elmville fine sandy loams, moderately saline, clayey substratum, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation , Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Phalaris arundinacea</u>	<u>75</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Taraxacum officinale</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 75.00 x 2 = 150.00
 FAC species 0.00 x 3 = 0.00
 FACU species 5.00 x 4 = 20.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 80.00 (A) 170.00 (B)
 Prevalence Index = B/A = 2.12

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:



WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae005_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 34 T135N R049W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.4564754 Long: -96.8201146 Datum: NAD83
 Soil Map Unit Name: Ryan-Fargo silty clays, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>3</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Poa pratensis</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Taraxacum officinale</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>42</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 25.00 x 2 = 50.00
 FAC species 0.00 x 3 = 0.00
 FACU species 17.00 x 4 = 68.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 42.00 (A) 118.00 (B)
 Prevalence Index = B/A = 2.81

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

SOIL

Sampling Point: wrae005_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR 3/1	100					SIC	
11-17	10YR 2/1	75	10YR 4/1	25	C	M	CL	Faint redox.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:
Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:	
<u>Primary Indicators (minimum of one required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	(where tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Site visit was conducted after crops had been harvested. Farming equipment tracks and marks are found throughout the field, and has affected hydrology by creating ruts.



● 46.456487°, -96.820123°



WBI M2W

wrae005_u
08 Jun 2022, 13:08:46

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae005e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 34 T135N R049W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.4564593 Long: -96.8200955 Datum: NAD83
 Soil Map Unit Name: Ryan-Fargo silty clays, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Rumex crispus</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Taraxacum officinale</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>77</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 50.00 x 2 = 100.00
 FAC species 25.00 x 3 = 75.00
 FACU species 2.00 x 4 = 8.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 77.00 (A) 183.00 (B)
 Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:

SOIL

Sampling Point: wrae005e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1	60	10YR 5/6	40	RM	M	SIL	Prominent redox.
4-15	10YR 2/1	50	10YR 5/2	50	C	M	SIL	Distinct redox.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
 - Coast Prairie Redox (A16) (LRR F, G, H)
 - Dark Surface (S7) (LRR G)
 - High Plains Depressions (F16)
 - (LRR H outside of MLRA 72 & 73)
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Very Shallow Dark Surface (TF12)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted soil
 Depth (inches): 15

Hydric Soil Present? Yes No

Remarks:
 Due to the presence of surface water, no soil sample was obtained; assuming hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> (where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



WBI M2W

wrae005e_w
08 Jun 2022, 12:58:36

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae006_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 10 T134N R049W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.4353783 Long: -96.8193897 Datum: NAD83
 Soil Map Unit Name: Orthents-Aquents-Urban Land, highway complex, 0 to 35 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Zea mays</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
3. <u>Poa pratensis</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 25.00 x 2 = 50.00
 FAC species 0.00 x 3 = 0.00
 FACU species 15.00 x 4 = 60.00
 UPL species 25.00 x 5 = 125.00
 Column Totals: 65.00 (A) 235.00 (B)
 Prevalence Index = B/A = 3.62

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks: _____

SOIL

Sampling Point: wrae006_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR 3/2	90	10YR 5/4	10	C	M	SIC	Distinct redox.
1-13	10YR 3/1	75	10YR 3/2	25	C	M	SIL	Faint redox.
13-20	10YR 2/1	100					SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
 - Coast Prairie Redox (A16) (LRR F, G, H)
 - Dark Surface (S7) (LRR G)
 - High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Very Shallow Dark Surface (TF12)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes _____ No Depth (inches): _____

Wetland Hydrology Present? Yes No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site visit was conducted after crops had been harvested. Farming equipment tracks and marks are found throughout the field, and has affected hydrology by creating ruts.



● 46.435305°, -96.819423°



WBI M2W
ERM

wrae006_u
08 Jun 2022, 13:31:36

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae006e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 11 T134N R049W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.4353831 Long: -96.8194659 Datum: NAD83
 Soil Map Unit Name: Aberdeen-Ryan silty clay loams, 0 to 2 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Alopecurus pratensis</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Symphoricarpos occidentalis</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
4. <u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 75.00 x 2 = 150.00
 FAC species 0.00 x 3 = 0.00
 FACU species 10.00 x 4 = 40.00
 UPL species 25.00 x 5 = 125.00
 Column Totals: 110.00 (A) 315.00 (B)
 Prevalence Index = B/A = 2.86

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:

SOIL

Sampling Point: wrae006e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	95	10YR 3/2	5	C	M	SIL	Faint redox.
8-14	10YR 4/2	90	10YR 6/4	10	C	M	SIL	Distinct redox.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Due to the presence of surface water, no soil sample was obtained; assuming hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes _____ No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



● 46.435343°, -96.819428°



WBI M2W
ERM

wrae006e_w
08 Jun 2022, 13:22:02

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae007_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 14 T134N R049W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.4331941 Long: -96.8194877 Datum: NAD83
 Soil Map Unit Name: Aberdeen-Ryan silty clay loams, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Zea mays</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
3. <u>Poa pratensis</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: _____ _____ _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 25.00 x 2 = 50.00
 FAC species 0.00 x 3 = 0.00
 FACU species 15.00 x 4 = 60.00
 UPL species 25.00 x 5 = 125.00
 Column Totals: 65.00 (A) 235.00 (B)
 Prevalence Index = B/A = 3.62

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

SOIL

Sampling Point: wrae007_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-2	10YR 2/1	95	10YR 4/1	5	C	M	SIL	Faint redox.	
2-16	10YR 2/1	100					SIL		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
--	--

Remarks:
 Site visit was conducted after crops had been harvested. The soil has been upturned during the harvesting process.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	(where tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Site visit was conducted after crops had been harvested. Farming equipment tracks and marks are found throughout the field, and has affected hydrology by creating ruts.



© 46.433194°, -96.819487°



WBI M2W
ERM

wrae007_u
08 Jun 2022, 13:43:30

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-06-08
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrae007e_w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 11 T134N R049W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.4332431 Long: -96.8195222 Datum: NAD83
 Soil Map Unit Name: Overly silty clay loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Alopecurus pratensis</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Symphoricarpos occidentalis</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
4. <u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 75.00 x 2 = 150.00
 FAC species 0.00 x 3 = 0.00
 FACU species 10.00 x 4 = 40.00
 UPL species 25.00 x 5 = 125.00
 Column Totals: 110.00 (A) 315.00 (B)
 Prevalence Index = B/A = 2.86

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:



● 46.433279°, -96.819472°



WBI M2W
ERM

wrae007e_w
08 Jun 2022, 13:39:36

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-08-16
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrie008e_u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 22 T133N R049W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.312314 Long: -96.830312 Datum: NAD83
 Soil Map Unit Name: Orthents-Aquents-Urban Land, highway complex, 0 to 35 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa pratensis</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Ambrosia artemisiifolia</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Trifolium pratense</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>90</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 0.00 x 2 = 0.00
 FAC species 0.00 x 3 = 0.00
 FACU species 90.00 x 4 = 360.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 90.00 (A) 360.00 (B)
 Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks:



wrie008e_u. looking south.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-08-16

Applicant/Owner: WBI State: North Dakota Sampling Point: wrie008e_w

Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 18 T133N R047W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): LRR F, MLRA 56 Lat: 46.333164 Long: -96.652991 Datum: NAD83

Soil Map Unit Name: Clearwater-Reis silty clays, loamy substratum, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)

Are Vegetation , Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Dominance Test worksheet:				
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):				<u>1</u> (A)
Total Number of Dominant Species Across All Strata:				<u>2</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:				<u>50.00</u> (A/B)
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	<u>0.00</u>	x 1 =	<u>0.00</u>	
FACW species	<u>45.00</u>	x 2 =	<u>90.00</u>	
FAC species	<u>0.00</u>	x 3 =	<u>0.00</u>	
FACU species	<u>35.00</u>	x 4 =	<u>140.00</u>	
UPL species	<u>0.00</u>	x 5 =	<u>0.00</u>	
Column Totals:	<u>80.00</u> (A)		<u>230.00</u> (B)	
Prevalence Index = B/A =				<u>2.88</u>
Hydrophytic Vegetation Indicators:				
___ 1 - Rapid Test for Hydrophytic Vegetation				
___ 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹				
___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
___ Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks:				



wrie008e_u, looking south.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-08-17
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrie009e u
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 02 T136N R050W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.617340 Long: -96.928239 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Glycine max</u>	<u>75</u>	<u>Y</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 0.00 x 2 = 0.00
 FAC species 0.00 x 3 = 0.00
 FACU species 0.00 x 4 = 0.00
 UPL species 75.00 x 5 = 375.00
 Column Totals: 75.00 (A) 375.00 (B)
 Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks:



wrie009e_w, looking west.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI M2W City/County: Richland County Sampling Date: 2022-08-17
 Applicant/Owner: WBI State: North Dakota Sampling Point: wrie009e w
 Investigator(s): Mike Eldridge, Valerie Blamer Section, Township, Range: sec 02 T136N R050W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.617340 Long: -96.928239 Datum: NAD83
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample plot is location within a roadside ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				_____ = Total Cover
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				_____ = Total Cover
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Poa pratensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
				<u>55</u> = Total Cover
Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				_____ = Total Cover
% Bare Ground in Herb Stratum _____				_____ = Total Cover
Remarks:				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0.00 x 1 = 0.00
 FACW species 50.00 x 2 = 100.00
 FAC species 0.00 x 3 = 0.00
 FACU species 5.00 x 4 = 20.00
 UPL species 0.00 x 5 = 0.00
 Column Totals: 55.00 (A) 120.00 (B)
 Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: wrie009e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
 - Coast Prairie Redox (A16) (LRR F, G, H)
 - Dark Surface (S7) (LRR G)
 - High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Very Shallow Dark Surface (TF12)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Due to the presence of surface water, no soil sample was obtained; assuming hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): 3
 Water Table Present? Yes No Depth (inches): 0
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 0

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Plot is located in the centerline of a roadside ditch.



wrie009e_w, looking northwest.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 6/7/2022	Waterbody Survey ID: scae002i
State: North Dakota	County/Parish: Cass		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.811707	Longitude: -96.989673
Survey Type: <i>(check one)</i>	<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other		
Waterbody Type: <i>(check one)</i>	<input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other		
Water Appearance: <i>(check one)</i>	<input type="checkbox"/> No Water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other		
Feature Quality^a: <i>(check one)</i>	<input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low		
Feature Description: <i>(check one)</i>	<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated		
Flow Regime: <i>(check one)</i>	<input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale		
Sinuosity within Survey Corridor: <i>(check one)</i>	<input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		
Description Notes: Mud substrate, no water. Vegetated waterbody bottom.			
Measurements			
Depth of Water: _____ ft. N/A <input type="checkbox"/> Unknown <input type="checkbox"/>		Water Edge to Water Edge: <u>0</u> ft. N/A <input type="checkbox"/>	
OHWM Width: <u>4</u> ft.			
OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Dominant Substrate: <i>(check all that apply)</i>	<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic		
Observations			
Riparian Zone Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(check one)</i>			
Vegetation Layers: <input type="checkbox"/> Trees <input type="checkbox"/> Saplings/Shrubs <input checked="" type="checkbox"/> Herbs <i>(check all that apply)</i>			
Dominant Bank Vegetation (list): Reed canary grass			
Aquatic Habitats (ex: submerged or emergent aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes: Roadside ditch			



Downstream, looking south.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 6/7/2022	Waterbody Survey ID: scae003e
State: North Dakota	County/Parish: Cass		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.644679	Longitude: -96.978598
Survey Type: <i>(check one)</i>	<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other		
Waterbody Type: <i>(check one)</i>	<input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other		
Water Appearance: <i>(check one)</i>	<input type="checkbox"/> No Water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other		
Feature Quality^a: <i>(check one)</i>	<input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low		
Feature Description: <i>(check one)</i>	<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated		
Flow Regime: <i>(check one)</i>	<input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale		
Sinuosity within Survey Corridor: <i>(check one)</i>	<input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		
Description Notes: Mud substrate, no water. Vegetated waterbody bottom.			
Measurements			
Depth of Water: _____ ft. N/A <input type="checkbox"/> Unknown <input type="checkbox"/>		Water Edge to Water Edge: <u>0</u> ft. N/A <input type="checkbox"/>	
OHWM Width: <u>4</u> ft.			
OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Dominant Substrate: <i>(check all that apply)</i>	<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic		
Observations			
Riparian Zone Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(check one)</i>			
Vegetation Layers: <input type="checkbox"/> Trees <input type="checkbox"/> Saplings/Shrubs <input checked="" type="checkbox"/> Herbs <i>(check all that apply)</i>			
Dominant Bank Vegetation (list): Reed canary grass			
Aquatic Habitats (ex: submerged or emergent aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes: Roadside ditch			



Downstream, looking southeast.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 6/7/2022	Waterbody Survey ID: scae004e
State: North Dakota	County/Parish: Cass		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.74653	Longitude: -96.989855
Survey Type: <i>(check one)</i>	<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other		
Waterbody Type: <i>(check one)</i>	<input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other		
Water Appearance: <i>(check one)</i>	<input type="checkbox"/> No Water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other		
Feature Quality^a: <i>(check one)</i>	<input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low		
Feature Description: <i>(check one)</i>	<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated		
Flow Regime: <i>(check one)</i>	<input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale		
Sinuosity within Survey Corridor: <i>(check one)</i>	<input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		
Description Notes: Mud substrate, no water. Vegetated waterbody bottom.			
Measurements			
Depth of Water: _____ ft. N/A <input type="checkbox"/> Unknown <input type="checkbox"/>		Water Edge to Water Edge: <u>0</u> ft. N/A <input type="checkbox"/>	
OHWM Width: <u>4</u> ft.			
OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Dominant Substrate: <i>(check all that apply)</i>	<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic		
Observations			
Riparian Zone Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(check one)</i>			
Vegetation Layers: <input type="checkbox"/> Trees <input type="checkbox"/> Saplings/Shrubs <input checked="" type="checkbox"/> Herbs <i>(check all that apply)</i>			
Dominant Bank Vegetation (list): Reed canary grass			
Aquatic Habitats (ex: submerged or emergent aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes: Roadside ditch			



Downstream, looking west.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 8/16/2022	Waterbody Survey ID: scae004p
State: North Dakota	County/Parish: Cass		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.39178	Longitude: -96.757418
Survey Type: <small>(check one)</small>	<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other		
Waterbody Type: <small>(check one)</small>	<input checked="" type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other		
Water Appearance: <small>(check one)</small>	<input type="checkbox"/> No Water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other		
Feature Quality^a: <small>(check one)</small>	<input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low		
Feature Description: <small>(check one)</small>	<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated		
Flow Regime: <small>(check one)</small>	<input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale		
Sinuosity within Survey Corridor: <small>(check one)</small>	<input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		
Description Notes: Mud substrate, flowing water (steady pace, slow), multiple fallen trees located inside channel.			
Measurements			
Depth of Water: <u>0.5</u> ft. N/A <input type="checkbox"/> Unknown <input type="checkbox"/>		Water Edge to Water Edge: <u>10</u> ft. N/A <input type="checkbox"/>	
OHWM Width: <u>25</u> ft.			
OHWM Indicator: <small>(check all that apply)</small>	<input type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Dominant Substrate: <small>(check all that apply)</small>	<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic		
Observations			
Riparian Zone Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <small>(check one)</small>			
Vegetation Layers: <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Saplings/Shrubs <input checked="" type="checkbox"/> Herbs <small>(check all that apply)</small>			
Dominant Bank Vegetation (list): Reed canary grass, annual ragweed, Canadian wood nettle, Pennsylvania knotweed			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes: Antelope River			



Downstream, looking northwest.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 8/17/2022	Waterbody Survey ID: scae005i
State: North Dakota	County/Parish: Richland		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.528461	Longitude: -96.916825
Survey Type: <i>(check one)</i>	<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other		
Waterbody Type: <i>(check one)</i>	<input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other		
Water Appearance: <i>(check one)</i>	<input checked="" type="checkbox"/> No Water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other		
Feature Quality^a: <i>(check one)</i>	<input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low		
Feature Description: <i>(check one)</i>	<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated		
Flow Regime: <i>(check one)</i>	<input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale		
Sinuosity within Survey Corridor: <i>(check one)</i>	<input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		
Description Notes: Mud substrate, multiple fallen trees and trees growing inside channel.			
Measurements			
Depth of Water: _____ ft. N/A <input checked="" type="checkbox"/> Unknown <input type="checkbox"/>		Water Edge to Water Edge: _____ ft. N/A <input checked="" type="checkbox"/>	
OHWM Width: <u>5</u> ft.			
OHWM Indicator: <i>(check all that apply)</i>	<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Dominant Substrate: <i>(check all that apply)</i>	<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic		
Observations			
Riparian Zone Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(check one)</i>			
Vegetation Layers: <input checked="" type="checkbox"/> Trees <input checked="" type="checkbox"/> Saplings/Shrubs <input type="checkbox"/> Herbs <i>(check all that apply)</i>			
Dominant Bank Vegetation (list): Eastern cottonwood, multiple oak species, reed canary grass, poison ivy			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes:			



Upstream, looking west.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 8/17/2022	Waterbody Survey ID: scae006i
State: North Dakota	County/Parish: Richland		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.528741	Longitude: -96.91386
Survey Type: <i>(check one)</i>	<input checked="" type="checkbox"/> Centerline	<input type="checkbox"/> Re-Route	<input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other
Waterbody Type: <i>(check one)</i>	<input type="checkbox"/> River	<input checked="" type="checkbox"/> Stream	<input type="checkbox"/> Ditch <input type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other
Water Appearance: <i>(check one)</i>	<input checked="" type="checkbox"/> No Water	<input type="checkbox"/> Clear	<input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other
Feature Quality^a: <i>(check one)</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Moderate	<input type="checkbox"/> Low
Feature Description: <i>(check one)</i>	<input type="checkbox"/> Natural	<input checked="" type="checkbox"/> Artificial, man-made	<input type="checkbox"/> Manipulated
Flow Regime: <i>(check one)</i>	<input type="checkbox"/> Ephemeral	<input checked="" type="checkbox"/> Intermittent	<input type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale
Sinuosity within Survey Corridor: <i>(check one)</i>	<input checked="" type="checkbox"/> Straight	<input type="checkbox"/> Meandering	
Description Notes: Mud substrate, multiple fallen trees and trees growing inside channel.			
Measurements			
Depth of Water: _____ ft.	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Unknown <input type="checkbox"/>	Water Edge to Water Edge: _____ ft.	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> OHWM Width: <u>5</u> ft.
OHWM Indicator: <i>(check all that apply)</i>	<input type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving	<input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining
	<input checked="" type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change
Dominant Substrate: <i>(check all that apply)</i>	<input type="checkbox"/> Bedrock	<input type="checkbox"/> Boulder	<input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic
Observations			
Riparian Zone Present: <i>(check one)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Vegetation Layers: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Trees <input checked="" type="checkbox"/> Saplings/Shrubs <input type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Eastern cottonwood, multiple oak species, reed canary grass, poison ivy			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes:			



Upstream, looking west.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 8/16/2022	Waterbody Survey ID: srie001_e
State: North Dakota	County/Parish: Richland		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.354927	Longitude: -96.663349
Survey Type: <i>(check one)</i>	<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other		
Waterbody Type: <i>(check one)</i>	<input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other		
Water Appearance: <i>(check one)</i>	<input type="checkbox"/> No Water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other		
Feature Quality^a: <i>(check one)</i>	<input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low		
Feature Description: <i>(check one)</i>	<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated		
Flow Regime: <i>(check one)</i>	<input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale		
Sinuosity within Survey Corridor: <i>(check one)</i>	<input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		
Description Notes: Mud substrate, no water. Vegetated waterbody bottom.			
Measurements			
Depth of Water: _____ ft. N/A <input type="checkbox"/> Unknown <input type="checkbox"/>		Water Edge to Water Edge: <u>0</u> ft. N/A <input type="checkbox"/>	
OHWM Width: <u>4</u> ft.			
OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Dominant Substrate: <i>(check all that apply)</i>	<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic		
Observations			
Riparian Zone Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(check one)</i>			
Vegetation Layers: <input type="checkbox"/> Trees <input type="checkbox"/> Saplings/Shrubs <input checked="" type="checkbox"/> Herbs <i>(check all that apply)</i>			
Dominant Bank Vegetation (list): Reed canary grass, Kentucky blue grass			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes: Agricultural drainage ditch			



Upstream, looking southeast.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 8/16/2022	Waterbody Survey ID: srie002_e
State: North Dakota	County/Parish: Richland		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.373249	Longitude: -96.68075
Survey Type: <i>(check one)</i>	<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other		
Waterbody Type: <i>(check one)</i>	<input type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input checked="" type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other		
Water Appearance: <i>(check one)</i>	<input type="checkbox"/> No Water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other		
Feature Quality^a: <i>(check one)</i>	<input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low		
Feature Description: <i>(check one)</i>	<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated		
Flow Regime: <i>(check one)</i>	<input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale		
Sinuosity within Survey Corridor: <i>(check one)</i>	<input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		
Description Notes: Mud substrate, no water. Vegetated waterbody bottom.			
Measurements			
Depth of Water: _____ ft. N/A <input type="checkbox"/> Unknown <input type="checkbox"/>		Water Edge to Water Edge: <u>0</u> ft. N/A <input type="checkbox"/>	
OHWM Width: <u>4</u> ft.			
OHWM Indicator: <i>(check all that apply)</i>	<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Dominant Substrate: <i>(check all that apply)</i>	<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic		
Observations			
Riparian Zone Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(check one)</i>			
Vegetation Layers: <input type="checkbox"/> Trees <input type="checkbox"/> Saplings/Shrubs <input checked="" type="checkbox"/> Herbs <i>(check all that apply)</i>			
Dominant Bank Vegetation (list): Reed canary grass, Kentucky blue grass, annual ragweed.			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes: Agricultural drainage ditch			



Downstream, looking southeast.

Waterbody Data Sheet

Description			
Project Name: Wahpeton Expansion		Date: 8/16/2022	Waterbody Survey ID: srie003e
State: North Dakota	County/Parish: Cass		
Company: ERM	Crew Member Initials: ME, VB	Latitude: 46.295485	Longitude: -96.621801
Survey Type: <i>(check one)</i>	<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Facility <input type="checkbox"/> Other		
Waterbody Type: <i>(check one)</i>	<input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Swale <input type="checkbox"/> Canal <input type="checkbox"/> Other		
Water Appearance: <i>(check one)</i>	<input type="checkbox"/> No Water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on Surface <input type="checkbox"/> Surface Scum <input type="checkbox"/> Algal Mats <input type="checkbox"/> Other		
Feature Quality^a: <i>(check one)</i>	<input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low		
Feature Description: <i>(check one)</i>	<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated		
Flow Regime: <i>(check one)</i>	<input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial <input type="checkbox"/> Connecting Swale		
Sinuosity within Survey Corridor: <i>(check one)</i>	<input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		
Description Notes: Mud substrate, no water. Vegetated waterbody bottom.			
Measurements			
Depth of Water: _____ ft. N/A <input type="checkbox"/> Unknown <input type="checkbox"/>		Water Edge to Water Edge: <u>0</u> ft. N/A <input type="checkbox"/>	
OHWM Width: <u>4</u> ft.			
OHWM Indicator: <i>(check all that apply)</i>	<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Dominant Substrate: <i>(check all that apply)</i>	<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic		
Observations			
Riparian Zone Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(check one)</i>			
Vegetation Layers: <input type="checkbox"/> Trees <input type="checkbox"/> Saplings/Shrubs <input checked="" type="checkbox"/> Herbs <i>(check all that apply)</i>			
Dominant Bank Vegetation (list): Reed canary grass, foxtail meadow grass			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.):			
Aquatic Organisms Observed (list):			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):			
Observation Notes: Roadside ditch			



Downstream, looking southeast.



WBI Energy Transmission, Inc.

Wahpeton Project

Expansion

Wetland and Waterbody Delineation Report

August 2023

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Acronyms and Abbreviations

Name	Definition
ERM	ERM-West, Inc.
GPS	Global Positioning System
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PEM	palustrine emergent wetland class
PFO	palustrine forested wetland class
Project	Wahpeton Expansion Project
PSS	palustrine scrub-shrub wetland class
USACE	US Army Corps of Engineers
USGS	US Geological Survey
WBI Energy	WBI Energy Transmission, Inc.

1. INTRODUCTION

WBI Energy Transmission, Inc. (WBI Energy), proposes to construct and operate the Wahpeton Expansion Project (Project) in Cass and Richland counties, North Dakota. The Project will consist of approximately 60.5 miles of new natural gas pipeline, minor modifications to the Mapleton Compressor Station, new delivery stations near Kindred and Wahpeton, block valve settings, and pig launcher/receiver settings. The Project may also include newly constructed lateral taps along the pipeline route, the locations of which have yet to be determined. ERM on behalf of WBI Energy, originally completed delineations and assessment of wetlands and waterbodies within the proposed pipeline construction corridor and other work areas during fall of 2021 followed by additional field assessments in summer of 2022. In 2023, ERM completed an additional field assessment and delineation of wetlands and waterbodies along three route adjustments of the Project in Cass and Richland counties, North Dakota.

This report is an addendum to the original February 2022 report and October 2022 addendum, and it will be used to support permitting efforts for impacts to jurisdictional features regulated by the US Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. This report provides a description and summary of wetlands and waterbodies documented along the reroutes described above. In this addendum report, these newly surveyed reroute segments will be referred to as the Survey Area, which was generally 300 feet wide when following the pipeline reroute segments.

For a description of the physiography, geology, geomorphology, hydrology, and soil data crossed by the Project please refer to the original report dated February 2022, which also included Figures that illustrated desktop resources evaluated, including the National Hydrography Dataset (NHD) and National Wetlands Inventory (NWI), as well a map set that illustrates Natural Resource Conservation Service (NRCS) soil mapping units. This report includes an updated version of the aerial photo base maps that includes Project route and workspace, delineated wetlands and waterbodies, as well as NHD and NWI polygons utilized as reference during field surveys.

2. METHODS

Wetlands and waters were identified and delineated within Survey Area segments that covered the route adjustment segments that required survey during summer 2023. The Survey Area included a 300-foot-wide corridor typically centered on the proposed pipeline centerline, as well as the footprint of all access roads. Additional details that outline the desktop and field components of the delineation methods followed are described in the following sections.

2.1 Desktop Review

Prior to conducting field surveys, ERM completed a desktop review, including a broad overview of the environmental setting of the Survey Area, as well as a desktop evaluation of potential wetland and water features within the Survey Area to allow for further targeted assessment during field survey. The following data sources were reviewed in ArcGIS to identify areas that should be targeted in the field: high-resolution aerial photography, US Fish and Wildlife Service NWI data, US Geological Survey (USGS) NHD, NRCS Web Soil Survey data, and USGS topographic maps.

ERM reviewed high-resolution aerial photography and land cover data sets to identify areas with possible wetland signatures, and recent disturbances on the landscape that could influence the presence and extent of wetlands. For agricultural fields with potential farmed wetlands, the desktop review included reviewing the current year of aerial photography, as well as historic aerial photographs taken during notable wet years. Visual signatures noted during review included surface water, varying color changes in vegetation, and isolated areas within farmland that were not successfully farmed due to poor drainage. In addition to areas

identified on the aerial imagery, the field assessment also targeted features mapped by NWI and NHD, and any areas of hydric or partially hydric soils. Results of the desktop assessment were utilized to verify potential water resources either were or were not wetlands or waterbodies during field survey.

2.2 Field Survey

The field delineation was conducted in early July of 2023. A field team visited probable wetlands and waterbodies identified during the desktop review using resources outlined in section 2.1. Where wetlands or waterbodies were not present at these locations in the field, staff documented “non-water” points, including observations and photographs at these locations. Wetland boundaries, waterbody thalweg or banks, data collection points, open waterbody boundaries, and non-water points were recorded using a Trimble® R1 model GPS unit.

Each wetland or water feature documented within the survey limits was assigned a Project-specific unique identifier (Unique ID). Specific naming conventions were followed during field surveys in order to catalog each wetland and waterbody documented. Table 2-1 describes each part of the naming convention utilized to assign Unique IDs during field surveys.

Table 2-1: Wetland and Water Resource Naming Protocol for Unique IDs

Water Resource	Type	County	Field Crew Letter	Feature Number Example	Special Designation
Wetland	w = wetland	County initials (Cass = ca, Richland = ra)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	f = PFO ^a e = PEM ^a s = PSS ^a u = Upland point
Waterbody	s = stream o = open waterbody	County initials (Cass = ca, Richland = ri)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	Perennial ^b Intermittent ^b Ephemeral ^b
Non-water Point	no = non-water or non-wetland feature	County initials (Cass = ca, Richland = ri)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	Not applicable

^a Wetland Classification / acronym based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al 1979): PEM = Palustrine emergent; PFO = Palustrine forested; PSS = Palustrine scrub-shrub.

^b Flow regime was determined in accordance with 33 Code of Federal Regulations (CFR) 330.

2.2.1 Wetlands

Wetlands were delineated using the USACE 1987 Manual (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (USACE 2012a). The field team completed wetland determination datasheets at sample points within each wetland community type making up the wetland or wetland complex, along with a minimum of one corresponding upland community sample point. A shared upland sample point was used for wetlands that were within close proximity to one another and had the same upland community type.

At each wetland or upland community sample point delineators documented the physical location of the sample point using the GPS, and documented observations of hydrology, soils, and vegetation at the sample point. Primary and secondary indicators of hydrology were documented according to the Regional Supplement. Soil profiles were documented to a depth to determine presence or absence of hydric soils at each sample point. Hydric soil indicators utilized to determine hydric soil presence included hydric soil indicators described in *Field Indicators of Hydric Soils in the United States, Version 8.2* (USDA-NRCS 2018). Observations of vegetation species and visual cover percentages were documented at each sample

point. Hydrophytic vegetation indicator status was assigned using the *2020 National Wetland Plant List* (USACE 2020) and following the requirements of the Regional Supplement.

Wetland and water features were also classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al. 1979; referred to as the “Cowardin classification”). The following Cowardin classification types were assigned: palustrine emergent (PEM), palustrine scrub-shrub wetland (PSS), and palustrine forested (PFO).

2.2.2 Waterbodies

Waterbodies documented during field surveys were categorized according to their hydrology regimes. All waterbody data was documented on waterbody data sheets developed to document key physical and functional characteristics of waterbodies.

Linear or flowing waterbodies were identified as channelized landscape features possessing a bed and a bank in a concave landscape position where water flow resulted in a feature that possesses an ordinary high watermark (OHWM). Based on indicators of flow regime observed at the time of survey, linear waterbodies were spatially recorded with channel width and OHWM location according to the definitions provided by the USACE in the *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification* (USACE 2005), and assigned a hydrology regime of perennial, intermittent, or ephemeral.

Similarly, non-flowing, open waterbody features were assigned one of the four Cowardin hydrology regime modifiers based on evidence of inundation/saturation recorded at the time of survey: permanently flooded, semi-permanently flooded, seasonally flooded, or temporarily flooded.

2.2.3 Non-Water Points

The field team documented non-water points to record NHD or NWI-mapped features that did not meet the required criteria of wetlands or waterbodies when assessed in the field (i.e., upland habitat). Non-water points were also used to document areas that were investigated as potentially meeting wetland criteria based on signatures observed during the desktop assessment, but were ultimately determined to be non-wetland areas during the field investigation. Delineators recorded observations, took photographs, and collected a GPS point at each non-water point to document that wetland biologists visited the point and determined that a wetland or waterbody was not present. USACE wetland delineation forms and waterbody data sheets were used to record information for non-water points.

3. RESULTS

ERM delineated and recorded five modified wetlands, one additional wetland, and one additional waterbody within the Survey Area along route change segments. These wetlands and waterbody are illustrated on Figure Set “Aquatic Resources Delineation Map” in Appendix A and listed in Tables B-1 and B-2 in Appendix B, including useful summary data: Project-specific Unique ID, location (latitude/longitude), acreage (wetlands), linear feet (waterbodies) within the Survey Area, and Cowardin classification or hydrology regime. Data forms of wetlands or waterbodies documented during the July 2023 fieldwork is provided in Appendix C. Photos and datasheets for non-water points can be provided upon request but are not currently included in Appendix C. During the survey, field conditions were “Normal” according to USACE’s Antecedent Precipitation Tool (Deters. 2022).

3.1 Wetlands

A total of five modified and one additional wetland features were documented within the Survey Area, with all classified as palustrine emergent (herbaceous) wetlands (Table 2, Appendix B). Some of these

wetlands are associated with intermittent and perennial streams, but the majority are found in depressions within agricultural fields or along roadside ditches and edges of agricultural fields.

3.2 Waterbodies

The acreage and characteristics of waterbodies surveyed within the Survey Area are summarized in Table 3, Appendix B. A total of one ponded waterbody feature was identified within the Survey Area.

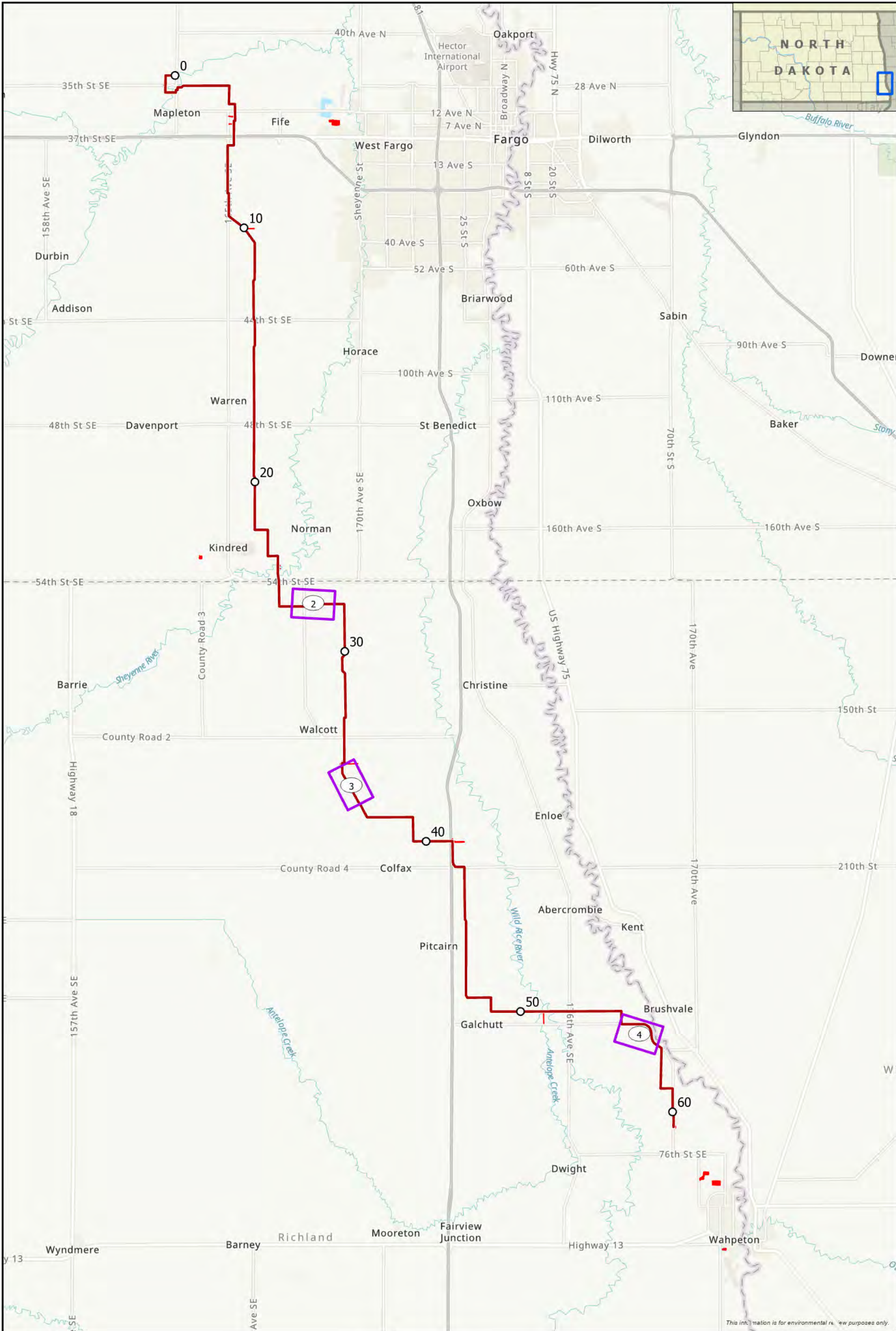
4. CONCLUSIONS

The July 2023, wetland and waterbody delineation for the Project were completed on newly added portions of the Project due to route changes. This report presents the results of these surveys documenting five modified wetlands, one additional wetland, and one additional waterbody.

5. REFERENCES

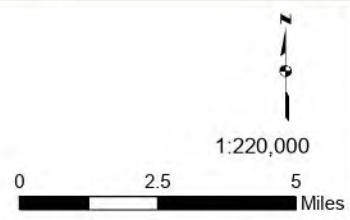
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APPENDIX A AERIAL MAP SET



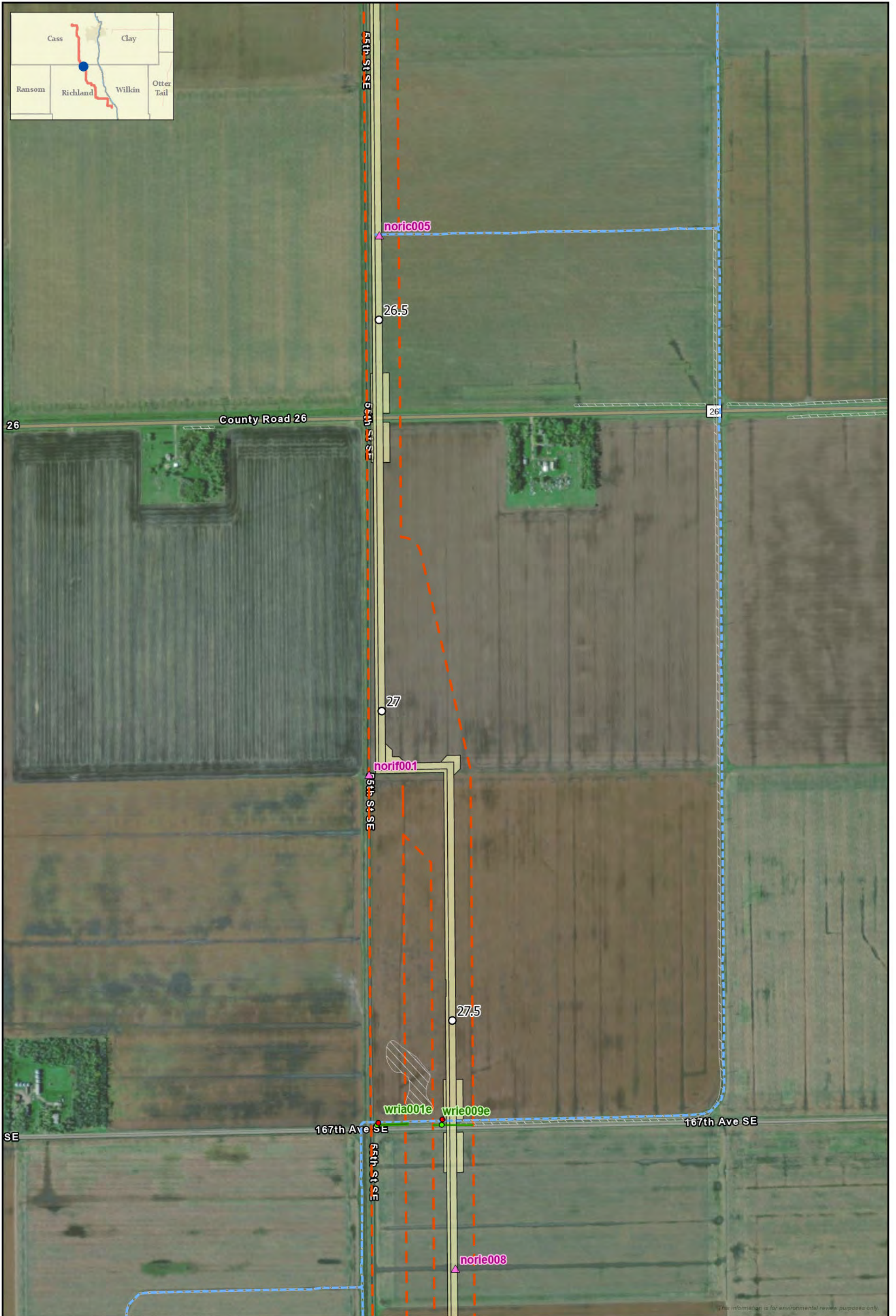
This information is for environmental review purposes only.

- Milepost
- ▭ Map Page
- Proposed Centerline



2023 Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass and Richland County, North Dakota





This information is for environmental review purposes only.

○ Milepost	--- NHD Flowline
▲ Non-Water Data Point	▨ NWI Wetland
● Upland Data Point	▭ Proposed Workspace
● Wetland Data Point	--- Environmental Survey Area
■ Previously Surveyed Wetland	

1:8,000

0 500 1,000
Feet

2023 Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Richland County, North Dakota





○ Milepost	■ Previously Surveyed Wetland
▲ Non-Water Data Point	--- NHD Flowline
■ Waterbody Data Point	▨ NHD Waterbody
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	▨ Proposed Workspace
■ Previously Surveyed Waterbody	▨ Environmental Survey Area

Page 3 of 4

1:7,000

0 500 1,000 Feet

2023 Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Richland County, North Dakota



This information is for environmental review purposes only.

○ Milepost	■ Previously Surveyed Wetland
■ Waterbody Data Point	--- NHD Flowline
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	▨ Proposed Workspace
■ Previously Surveyed Waterbody	--- Environmental Survey Area
■ 2023 Surveyed Wetland	

1:13,000

0 500 1,000 Feet

2023 Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Richland County, North Dakota



APPENDIX B TABLES

Table B-1: Additional Wetlands Delineated in 2023 within the Project Survey Area

Wetland ID	Cowardin Classification ^a	Data Point Coordinates		Acreage Within the Survey Area (acres)	Milepost	Page Number in Appendix A (Map Book)
		Latitude	Longitude			
wrif001e	PEM	46.383711	-96.683361	0.25	55	4
wrib016e	PEM	46.51425	-96.90983	0.19	35.7	3
wrib017e	PEM	46.512947	-96.909181	4.04	35.7	3
wrib019e	PEM	46.508575	-96.906142	3.09	36.0	3
wrib020f	PFO	46.50963	-96.90721	0.41	36.0	3
wrib020e	PEM	46.50961	-96.90702	0.19	36.0	3

^aBased on Cowardin Classification of Wetlands and Deepwater Habitats, PEM= palustrine emergent

^b Feature was changed from an ephemeral stream to a PEM wetland after the completion of fieldwork. No USACE wetland data point is available for this feature.

Table B-2: Additional Waterbodies Surveyed in 2023 within the Project Survey Area

Unique ID (Waterbody Name)	Feature Type	Waterbody Regime ^a	Data Point Coordinates		Acreage Within the Survey Area ^b (acres)	Bank Length Within Survey Area (feet, single bank)	Milepost	Page Number in Appendix A (Map Book)
			Latitude	Longitude				
orib002p	Pond	P	46.5222	-96.91772	0.85	NA	35.0	3

^a Waterbody Regime: E = Ephemeral, I = Intermittent, P = Perennial

^b Acreage values represent the entire 300-foot-wide survey corridor, and do not represent the area impacted by the Project

APPENDIX C WETLAND AND WATERBODY DATASHEETS

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: _____ City/County: _____ Sampling Date: _____
 Applicant/Owner: _____ State: _____ Sampling Point: _____
 Investigator(s): _____ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): _____ (A)
 Total Number of Dominant Species Across All Strata: _____ (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks: _____

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR F)**
- 1 cm Muck (A9) **(LRR F, G, H)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR I, J)**
- Coast Prairie Redox (A16) **(LRR F, G, H)**
- Dark Surface (S7) **(LRR G)**
- High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
 Water Table Present? Yes _____ No _____ Depth (inches): _____
 Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



WBI Energy Transmission, Inc.

Wahpeton Expansion Project

Wetland and Waterbody Delineation Report

October 2023

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Table 2-1: Wetland and Water Resource Naming Protocol for Unique IDs 2

Acronyms and Abbreviations

Name	Definition
ERM	ERM-West, Inc.
GPS	Global Positioning System
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PEM	palustrine emergent wetland class
PFO	palustrine forested wetland class
Project	Wahpeton Expansion Project
PSS	palustrine scrub-shrub wetland class
USACE	US Army Corps of Engineers
USGS	US Geological Survey
WBI Energy	WBI Energy Transmission, Inc.

1. INTRODUCTION

WBI Energy Transmission, Inc. (WBI Energy), proposes to construct and operate the Wahpeton Expansion Project (Project) in Cass and Richland counties, North Dakota. The Project will consist of approximately 60.2 miles of new natural gas pipeline, minor modifications to the Mapleton Compressor Station, new delivery stations near Kindred and Wahpeton, block valve settings, and pig launcher/receiver settings. The Project may also include newly constructed lateral taps along the pipeline route, the locations of which have yet to be determined. ERM on behalf of WBI Energy, originally completed delineations and assessment of wetlands and waterbodies within the proposed pipeline construction corridor and other work areas during fall of 2021 followed by additional field assessments in summer of 2022 and 2023. In October of 2023, ERM completed an additional field assessment and delineation of wetlands and waterbodies for the new pipe yard located at 46.88278380, -96.8893203 within a privately owned property.

This report is an addendum to the original February 2022 report, October 2022 addendum, and August 2023 addendum, and it will be used to support permitting efforts for impacts to jurisdictional features regulated by the US Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. This report provides a description and summary of wetlands and waterbodies documented within the new pipe yard described above. In this addendum report, these newly surveyed areas will be referred to as the Survey Area, which was within the predefined fenced in area of the privately owned property.

2. METHODS

Wetlands and waters were identified and delineated within Survey Area of the privately owned property. The Survey Area included all areas within the predesignated fenced in area.

Additional details that outline the desktop and field components of the delineation methods followed are described in the following sections.

2.1 Desktop Review

Prior to conducting field surveys, ERM completed a desktop review, including a broad overview of the environmental setting of the Survey Area, as well as a desktop evaluation of potential wetland and water features within the Survey Area to allow for further targeted assessment during field survey. The following data sources were reviewed in ArcGIS to identify areas that should be targeted in the field: high-resolution aerial photography, US Fish and Wildlife Service NWI data, US Geological Survey (USGS) NHD, NRCS Web Soil Survey data, and USGS topographic maps.

ERM reviewed high-resolution aerial photography and land cover data sets to identify areas with possible wetland signatures, and recent disturbances on the landscape that could influence the presence and extent of wetlands. Visual signatures noted during review included surface water, varying color changes in vegetation, and recent disturbance throughout the yard. In addition to areas identified on the aerial imagery, the field assessment also targeted features mapped by NWI and NHD, and any areas of hydric or partially hydric soils. Results of the desktop assessment were utilized to verify potential water resources either were or were not wetlands or waterbodies during field survey.

2.2 Field Survey

The field delineation was conducted in early October of 2023. A field team visited probable wetlands and waterbodies identified during the desktop review using resources outlined in section 2.1. Where wetlands or waterbodies were not present at these locations in the field, staff documented “non-water” points, including observations and photographs at these locations. Wetland boundaries, waterbody

thalweg or banks, data collection points, open waterbody boundaries, and non-water points were recorded using a Trimble® R1 model GPS unit.

Each wetland or water feature documented within the survey limits was assigned a Project-specific unique identifier (Unique ID). Specific naming conventions were followed during field surveys in order to catalog each wetland and waterbody documented. Table 2-1 describes each part of the naming convention utilized to assign Unique IDs during field surveys.

Table 2-1: Wetland and Water Resource Naming Protocol for Unique IDs

Water Resource	Type	County	Field Crew Letter	Feature Number Example	Special Designation
Wetland	w = wetland	County initials (Cass = ca, Richland = ra)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	f = PFO ^a e = PEM ^a s = PSS ^a u = Upland point
Waterbody	s = stream o = open waterbody	County initials (Cass = ca, Richland = ri)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	Perennial ^b Intermittent ^b Ephemeral ^b
Non-water Point	no = non-water or non-wetland feature	County initials (Cass = ca, Richland = ri)	Crew letter (e.g., a, b, c)	001, 002, 003, ...	Not applicable

^a Wetland Classification / acronym based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979); PEM = Palustrine emergent; PFO = Palustrine forested; PSS = Palustrine scrub-shrub.

^b Flow regime was determined in accordance with 33 Code of Federal Regulations (CFR) 330.

2.2.1 Wetlands

Wetlands were delineated using the USACE 1987 Manual (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (USACE 2012a). The field team completed wetland determination datasheets at sample points within each wetland community type making up the wetland or wetland complex, along with a minimum of one corresponding upland community sample point. A shared upland sample point was used for wetlands that were within close proximity to one another and had the same upland community type.

At each wetland or upland community sample point delineators documented the physical location of the sample point using the GPS, and documented observations of hydrology, soils, and vegetation at the sample point. Primary and secondary indicators of hydrology were documented according to the Regional Supplement. Soil profiles were documented to a depth to determine presence or absence of hydric soils at each sample point. Hydric soil indicators utilized to determine hydric soil presence included hydric soil indicators described in *Field Indicators of Hydric Soils in the United States, Version 8.2* (USDA-NRCS 2018). Observations of vegetation species and visual cover percentages were documented at each sample point. Hydrophytic vegetation indicator status was assigned using the *2020 National Wetland Plant List* (USACE 2020) and following the requirements of the Regional Supplement.

Wetland and water features were also classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al. 1979; referred to as the “Cowardin classification”). The following Cowardin classification types were assigned: palustrine emergent (PEM), palustrine scrub-shrub wetland (PSS), and palustrine forested (PFO).

2.2.2 Waterbodies

Waterbodies documented during field surveys were categorized according to their hydrology regimes. All waterbody data was documented on waterbody data sheets developed to document key physical and functional characteristics of waterbodies.

Linear or flowing waterbodies were identified as channelized landscape features possessing a bed and a bank in a concave landscape position where water flow resulted in a feature that possesses an ordinary high watermark (OHWM). Based on indicators of flow regime observed at the time of survey, linear waterbodies were spatially recorded with channel width and OHWM location according to the definitions provided by the USACE in the *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification* (USACE 2005), and assigned a hydrology regime of perennial, intermittent, or ephemeral.

Similarly, non-flowing, open waterbody features were assigned one of the four Cowardin hydrology regime modifiers based on evidence of inundation/saturation recorded at the time of survey: permanently flooded, semi-permanently flooded, seasonally flooded, or temporarily flooded.

2.2.3 Non-Water Points

The field team documented non-water points to record NHD or NWI-mapped features that did not meet the required criteria of wetlands or waterbodies when assessed in the field (i.e., upland habitat). Non-water points were also used to document areas that were investigated as potentially meeting wetland criteria based on signatures observed during the desktop assessment, but were ultimately determined to be non-wetland areas during the field investigation. Delineators recorded observations, took photographs, and collected a GPS point at each non-water point to document that wetland biologists visited the point and determined that a wetland or waterbody was not present. USACE wetland delineation forms and waterbody data sheets were used to record information for non-water points.

3. RESULTS

ERM delineated and recorded one wetland within the Survey Area within the new pipe yard. This wetland is illustrated on Figure Set “Aquatic Resources Delineation Map” in Appendix A and listed in Tables B-1 in Appendix B, including useful summary data: Project-specific Unique ID, location (latitude/longitude), acreage (wetlands) within the Survey Area, and Cowardin classification. Data forms and photographs of this wetland documented during the October 2023 fieldwork is provided in Appendix C. Photos and datasheets for non-water points or upland swales can be provided upon request but are not currently included in Appendix C. During the survey, field conditions were “Normal” according to USACE’s Antecedent Precipitation Tool (Deters. 2023).

3.1 Wetlands

One wetland feature (approximately 0.17 additional acres) was documented within the Survey Area and classified as a palustrine emergent (herbaceous) wetland (Table 2, Appendix B). This wetland is connected via a set of culverts.

3.2 Waterbodies

No additional waterbodies were identified.

4. CONCLUSIONS

The October 2023, wetland and waterbody delineation for the Project were completed on newly added portions of the Project. This report presents the results of these surveys documenting one additional wetland.

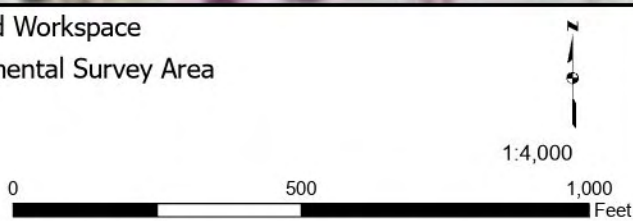
5. REFERENCES

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APPENDIX A AERIAL MAP SET

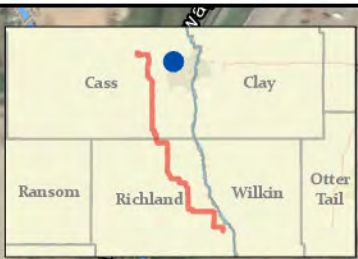


- Proposed Workspace
- Environmental Survey Area



**Aquatic Resources Topographic Map
(5 ft Contours)**
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 County, North Dakota






○ Culvert Point	--- NHD Flowline
● Upland Data Point	▨ NWI Wetland
● Wetland Data Point	▭ Proposed Workspace
■ Surveyed Wetland	--- Environmental Survey Area

1:4,000

0 500 1,000
Feet

2023 Aquatic Resources Delineation Map
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Cass County, North Dakota

APPENDIX B TABLES

Table B-1: Additional Wetlands Delineated in 2023 within the Project Survey Area

Wetland ID	Cowardin Classification ^a	Data Point Coordinates		Acreage Within the Survey Area (acres)	Milepost	Page Number in Appendix A (Map Book)
		Latitude	Longitude			
wcan001e	PEM	46.882755	-96.889256	0.17	Pipe Yard	2

^a Based on Cowardin Classification of Wetlands and Deepwater Habitats, PEM= palustrine emergent

APPENDIX C WETLAND AND WATERBODY DATASHEETS AND PHOTOS

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI Wahpeton Expansion Project City/County: Fargo, Cass Sampling Date: 10/5/2023
 Applicant/Owner: WBI Energy State: ND Sampling Point: wcan001e_u
 Investigator(s): Nicole Wahlborg Section, Township, Range: 5-139N-49W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): Convex Slope (%): 0-2%
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.882595 Long: -96.889672 Datum: NAD83
 Soil Map Unit Name: Urban Land-Aquerts complex, 0 to 2 percent slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Data plot is located within a gravel pathway. APT results ran for 10/6/2023 depicted "normal" conditions.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Melilotus officinalis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>20</u> (A)	<u>80</u> (B)

 Prevalence Index = B/A = 0.25

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: wcan001e_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR F)**
- 1 cm Muck (A9) **(LRR F, G, H)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR I, J)**
 - Coast Prairie Redox (A16) **(LRR F, G, H)**
 - Dark Surface (S7) **(LRR G)**
 - High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Very Shallow Dark Surface (TF12)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Gravel
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Gravel restrictive layer present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? Yes _____ No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: WBI Wahpeton Expansion Project City/County: Fargo, Cass Sampling Date: 10/5/2023
 Applicant/Owner: WBI Energy State: ND Sampling Point: wcan001e_w
 Investigator(s): Nicole Wahlborg Section, Township, Range: 5-139N-49W
 Landform (hillslope, terrace, etc.): Other Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR): LRR F, MLRA 56 Lat: 46.882741 Long: -96.889596 Datum: NAD83
 Soil Map Unit Name: Urban Land-Aquerts complex, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: wcan001e; APT results ran for 10/6/2023 depicted "normal" conditions.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Eleocharis palustris</u>	60	Y	OBL	
2. <u>Panicum maculosum</u>	20	Y	FACW	
3. <u>Typha</u>	10	N	OBL	
4. <u>Xanthium strumarium</u>	10	N	FAC	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 4 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>70</u>	x 1 = <u>70</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>140</u> (B)

Prevalence Index = B/A = 1.4

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:
 Pycnanthemum muticum, echinocloa colona, trifolium hybridum, setaria, populus deltoides, asclepias syriaca, elymus elymoides, and helianthus annuus were also identified in small percentages in the data plot.

Photo 1: View of the survey area.



Photo 2: View of the survey area and culverts.



Photo 3: View of the survey area.



Photo 4: View of the survey area.



Photo 5: View of the survey area.



Photo 6: View of the survey area.



Photo 7: View of wcan001e_w datapoint (wetland) within wetland wcan001e.



Photo 8: View of wcan001e_u datapoint (upland).



**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No. CP22-
466-000**

Implementation Plan

ATTACHMENT 7-3

Project Construction Schedule

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

Implementation Plan

ATTACHMENT 10-1

Complaint Resolution Procedure Letter



1250 West Century Avenue
Mailing Address:
P.O. Box 5601
Bismarck, ND 58506-5601
(701) 530-1600

[Date]

**[Landowner Name
Address
City, State Zip Code]**

Re: WBI Energy Transmission, Inc.
Wahpeton Expansion Project
Docket No. CP22-466-000
Environmental Complaint Resolution Procedures

Greetings,

As you are aware, WBI Energy Transmission, Inc. (WBI Energy) will be constructing new natural gas transmission pipeline and associated aboveground facilities in Cass and Richland Counties, North Dakota. This work is collectively known as the Wahpeton Expansion Project (Project).

The Project includes the following facilities:

- 60.2 miles of new 12-inch-diameter transmission pipeline from WBI Energy's Mapleton Compressor Station near Mapleton in Cass County to a new delivery station near Wahpeton in Richland County;
- Minor modifications at the existing Mapleton Compressor Station;
- A new delivery station near Kindred in Cass County; and
- Seven new block valves and four pig launcher/receiver settings along the new pipeline.

WBI Energy anticipates beginning construction in the first quarter of 2024 with full Project construction by April 2024. It is anticipated construction will be completed by November 2024.

WBI Energy has worked diligently with landowners to identify the best possible route for the proposed pipeline and locations for the aboveground facilities. WBI Energy values the relationships it forms with landowners and will continue to work with landowners throughout the construction and restoration of the Project. WBI Energy will make every effort to resolve any environmental mitigation problems and concerns as soon as possible after being notified of a problem. By this letter, WBI Energy is providing you, as a landowner whose property will be impacted by the Project, WBI Energy's environmental complaint resolution procedures before construction of the Project begins.

Environmental Complaint Resolution Procedures

If you have any questions or concerns regarding the work associated with the Project, or during construction and restoration of the right-of-way, please feel free to contact Wade Nielsen, WBI Energy's Land Supervisor, at 406-359-7207, toll free at 1-800-437-4630 ext. 7207, or by email at wade.nielsen@wbienergy.com. The best times to reach Mr. Nielsen are between the hours of 9:00 a.m. and 5:00 p.m., Central Time, Monday through Friday. If you are unable to reach Mr. Nielsen, please leave the following information in your message:

- Your name or the name of the property owner;
- A detailed description of the issue and the date you first became aware of the problem; and
- A phone number where you can be reached as well as the best time to reach you.

If you are not satisfied with the response, your questions or concerns can be directed to the undersigned, Steve Kelly, WBI Energy's Wahpeton Expansion Project Manager, by calling 406-359-7202, toll-free at 1-800-437-4630 ext. 7202, or by email at steve.kelly@wbienergy.com. If you are unable to reach Mr. Kelly, please leave your name and provide the information noted above. You will be contacted within two business days to discuss your concern and coordinate a resolution.

If you are still not satisfied with the response received from WBI Energy, you may wish to contact the Federal Energy Regulatory Commission's (FERC) Landowner Helpline toll-free at 1-877-337-2237 or by emailing LandownerHelp@ferc.gov. The FERC Landowner Helpline, managed by the FERC Dispute Resolution Service, facilitates communication between landowners and natural gas companies. The FERC Landowner Helpline Staff will informally seek information from you and will attempt to resolve disputes without litigation or other formal proceedings. More information is available online at FERC's website at www.ferc.gov.

WBI Energy looks forward to working with you throughout this process.

Respectfully,

/s/ Steve Kelly

Steve Kelly

Wahpeton Expansion Project Manager

WBI Energy Transmission, Inc.

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

Implementation Plan

ATTACHMENT 11-1

Applicable Authorizations

Table 11-1 lists the major permits, consultations, and approvals for the Project. WBI Energy is responsible for obtaining all permits and approvals required to implement the Project, regardless of whether they appear in the table.

TABLE 11-1 Applicable Authorizations for the Wahpeton Expansion Project		
Regulatory Agency	Permit, Approval, Consultation	Status
Federal		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity pursuant to Section 7 of the NGA and 18 CFR 157	Request to use the Pre-Filing Process submitted September 22, 2021. Pre-filing request approved September 27, 2021. Application for a Certificate of Public Convenience and Necessity filed May 27, 2022. Supplemental filings made on September 1, 2022 and December 22, 2022. FEIS issued on April 7, 2023. FERC Certificate issued on October 23, 2023. Implementation Plan filed on December 1, 2023.
U.S. Army Corps of Engineers Omaha District	CWA section 404 (Waters of the U.S.) via the Nationwide Permit 12 program	Initially submitted May 31, 2022; updated preconstruction notification submitted on December 21, 2022, September 7, 2023, September 14, 2023, and October 17, 2023. Approval pending and anticipated the 4th quarter of 2023.
U.S. Fish and Wildlife Service	Informal section 7 ESA Consultation; MBTA Coordination; BGEPA Coordination; Fish and Wildlife Coordination Act; and federal conservation easements for grasslands and wetlands	Submitted May 27, 2022 and supplemented November 17, 2022 and September 5, 2023. Concurrences received June 29, 2022, December 13, 2022, September 26, 2023, October 10, 2023, and November 8, 2023.
U.S. Department of Agriculture, Natural Resources Conservation Service North Dakota	Erosion and Sediment Control Consultation Seed mix consultation Agricultural Conservation Easement Program consultation	Submitted January 2022. Consultation complete February 2022.
Federal Aviation Agency	Hazard Determination for MDU-Kindred Station	Revised Application submitted May 23, 2022 and updated submittal on July 28, 2023. Approval received August 8, 2022 and August 24, 2023.
State (North Dakota)		
North Dakota Department of Environmental Quality, Division of Water Quality	General Permit for Construction Stormwater Discharge under the National Pollutant Discharge Elimination System Temporary Discharge General Permit NDG070000 under the North Dakota Pollutant Discharge Elimination System	Anticipated submittal December 2023. Anticipated approval December 2023. Anticipated submittal January 2024. Anticipated approval February 2024.

TABLE 11-1
Applicable Authorizations for the Wahpeton Expansion Project

Regulatory Agency	Permit, Approval, Consultation	Status
	Water Quality Certificate under section 401 of the CWA (a Water Quality Certificate under section 401 of the Clean Water Act is automatically issued with the use of Nationwide Permit 12)	Submitted May 31, 2022. Received August 14, 2023.
North Dakota State Water Commission	Navigable Water Crossing Permit under North Dakota Century Code Chapter 61 33 (Sovereign Lands) Temporary Water Permit Water appropriation permit for withdrawals associated with hydrostatic test water and drilling mud	Submitted October 20, 2023. Anticipated approval January 2024. Anticipated submittal January 2024. Anticipated approval February 2024.
North Dakota Department of Game and Fish	Consultation for impacts on fisheries and wildlife Approval to use water from designated waters of the state known to be infested with aquatic nuisance species	Consultation initiated December 3, 2021. Consultation complete May 13, 2022. Anticipated submittal February 2024. Anticipated approval March 2024.
North Dakota Parks and Recreation Department	Consultation under the North Dakota Natural Heritage Program	Submitted September 2021. Consultation complete January 2022.
State Historical Society of North Dakota	Section 106 Consultation, NHPA	Submitted December 2, 2022. Supplemented August 7, 2023. Addendum and additional deep testing assessment submitted September 7, 2023. Addendum II submitted October 19, 2023. Consultation anticipated to be complete 4th quarter of 2023.
North Dakota Department of Transportation	Utility Crossing permits for state highway right-of-way	Anticipated submittal January 2024. Anticipated approval March 2024.
County/Local		
Cass and Richland Counties	County Road, Section Line, Building and above ground facilities, and Legal Drain Crossing Permits	Anticipated submittal January 2024. Anticipated approval March 2024.
BNSF Railway Company	Railroad Crossing Permits	Anticipated submittal January 2024. Anticipated approval March 2024.
Red River Valley and Western Railroad	Railroad Crossing Permits	Anticipated submittal January 2024. Anticipated approval March 2024.
Cass County - Mapleton Township	Conditional Use Permit and Floodplain Permit	Anticipated submittal January 2024. Anticipated approval April 2024.
Cass County – Normanna Township	Building Permit and Floodplain Permit	Anticipated submittal January 2024. Anticipated approval April 2024.

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

Implementation Plan

ATTACHMENT 11-2

Authorizations Not Previously Filed



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2023-AGL-15050-OE
Prior Study No.
2022-AGL-11834-OE

Issued Date: 08/24/2023

Stephanie Gooch
ERM
1155 Perimeter Center West
c/o WeWork
Atlanta, GA 30346

****DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Kindred Valve Site #3 Temp Construction Crane
Location:	Kindred, ND
Latitude:	46-38-39.00N NAD 83
Longitude:	96-58-41.00W
Heights:	942 feet site elevation (SE) 100 feet above ground level (AGL) 1042 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does exceed obstruction standards but would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

****SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION****

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Air Missions (NOTAM).

If you have any questions, please contact our office at (847) 294-7458, or fred.souchet@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2023-AGL-15050-OE

Signature Control No: 594949510-597422466

(TMP)

Fred Souchet
Specialist

Additional Condition(s) or Information for ASN 2023-AGL-15050-OE

Proposal: To construct and/or operate a(n) Mobile Crane to a height of 100 feet above ground level, 1042 feet above mean sea level.

Location: The structure will be located 0.91 nautical miles east of K74 Airport reference point.

Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:

At 1042 AMSL, 4D, Robert Odegaard FLD (K74) Kindred, ND. Obstacle penetrates RWY 12 40:1 departure surface. Qualifies as low, close-in penetration with climb gradient termination altitude 200 feet or less above DER, requiring TAKE-OFF MINIMUM AND (OBSTACLE) DEPARTURE PROCEDURES, ORIG-A, NOTE: RWY 11, CRANE MOBILE 3776 feet from departure end of runway, 1011 feet LEFT of centerline.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, flags/red lights-Chapters 3(Marked),4,5(Red),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

As a condition to this determination, the temporary structure must be lowered to the ground when not in use and during the hours between sunset and sunrise.

It is required that the FAA be notified 3 business days prior to the temporary structure being erected and again when the structure is removed from the site. Notification should be made to this office through your registered e-filing account. Notification is necessary so that aeronautical procedures can be temporarily modified to accommodate the structure.

NOTIFICATION IS REQUIRED AGAIN THROUGH YOUR REGISTERED E-FILING ACCOUNT WHEN THE TEMPORARY STRUCTURE IS REMOVED FROM THE SITE FOR NOTICE TO AIR MISSIONS (NOTAM) CANCELLATION.

It is required that the manager of ROBERT ODEGAARD FLD, (701) 367-6710 be notified at least 3 business days prior to the temporary structure being erected and again when the structure is removed from the site.

This determination expires on 02/24/2024 unless extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.



September 19, 2023

Dr. Kevin Malloy
ERM
222 South 9th Street
Suite 2900
Minneapolis, MN 55402

ND SHPO Ref: 21-6245 WBI Energy Wahpeton Expansion Project, Cass and Richland Counties, North Dakota

Dear Kevin,

We received the monitoring plan for ND SHPO Ref: 21-6245 "Avoidance and Monitoring Plan WBI Energy Transmission, Inc., Wahpeton Expansion Project, Cass and Richland Counties, North Dakota" from ERM by Kevin Malloy and Harry Brignac Jr., and the report "Targeted Phase 2 Geomorphological and Geoarchaeological Testing for Presence, Absence and Geological Potential for Buried Cultural Deposits at Seven Locations on the Glacial Lake Agassiz Plain, Wahpeton Expansion Project, Cass and Richland Counties, Southeast North Dakota" from GeoArc Research by Edwin Hajic. We find the avoidance and monitoring plan and the geological testing report acceptable. We would concur with a determination of "No Historic Properties Affected" for the project provided that the avoidance and monitoring plan is followed.

Thank you for the opportunity to review these reports. If you have any questions, please contact Andrew Robinson, State Archaeologist at (701) 328-3575 or andrewrobinson@nd.gov or Margaret Patton, Research Archaeologist at 701-328-3576 or mmpatton@nd.gov.

Sincerely,

for William D. Peterson, PhD
State Historic Preservation Officer
(North Dakota)

21-6245



September 26, 2023

Kevin Malloy
Senior Consultant
ERM
222 South 9th Street
Suite 2900
Minneapolis, MN 55402

ND SHPO Ref: 21-6245 Phase 1 Geomorphological and Geoarchaeological Desktop Assessment of Geological Potential for Deeply Buried Cultural Deposits Along the Milepost (MP) 55/56 Reroute, WBI Energy Transmission, Inc. Wahpeton Expansion Project, Southeast North Dakota

Dear Kevin,

We received ND SHPO Ref: 21-6245 Phase 1 Geomorphological and Geoarchaeological Desktop Assessment of Geological Potential for Deeply Buried Cultural Deposits Along the Milepost (MP) 55/56 Reroute, WBI Energy Transmission, Inc. Wahpeton Expansion Project, Southeast North Dakota and find the report acceptable. We concur with the determination that no deep testing is necessary for this re-route.

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 Andrew Clark at (701) 328-3574 or andrewclark@nd.gov or Lisa Steckler at (701) 328-3577 or lsteckler@nd.gov.

Sincerely,

for William D. Peterson, PhD
State Historic Preservation Officer
(North Dakota)

21-6245



IN REPLY REFER TO:
2022-0000981
Wahpeton Expansion
Project

United States Department of the Interior

FISH AND WILDLIFE SERVICE

North Dakota Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501



September 26, 2023

Ms. Jill Lynn
Environmental Affairs
WBI Energy Transmission, Inc.
2010 Montana Avenue
Glendive, Montana 59330

Dear Ms. Lynn:

Thank you for the opportunity to provide comments on the proposed minor route adjustments for the Wahpeton Expansion Project, submitted to our office on September 5, 2023. As stated in your letter, WBI Energy Transmission, Inc. (WBI) previously submitted a Biological Assessment (BA) on May 27, 2022 and a supplemental consultation letter on November 17, 2022. After US Fish and Wildlife Service (FWS) concurrence on these documents, additional minor route adjustments were proposed for the project. The proposed reroute would be to avoid portions of agriculture land and drain tiles per landowners' requests. Under the authority of and in accordance with the Endangered Species Act (ESA) (16 U.S.C. 1531 *et seq.*), we have reviewed the alternatives and have concluded that the proposed modifications to the action are consistent with the determinations made in previous consultations. We concur with the determinations for the amended project.

The FWS appreciates the opportunity to work with WBI and the Federal Energy Regulatory Commission (FERC) on our shared conservation goals. Should you have any questions regarding these comments, please have your staff contact Jessica Johnson at (701) 355-8507 or at the letterhead address or contact me at (720) 793-6797.

Luke Toso
ND Ecological Services Supervisor



November 3, 2023

Price Laird
ERM
222 South 9th Street
Suite 2900
Minneapolis, MN 55402

ND SHPO Ref: 21-6245 WBI Wahpeton Expansion in portions of Richland and Cass Counties, North Dakota

Dear Price,

We received the report for ND SHPO Ref: 21-6245 titled "Class III Archaeological Survey, Addendum Report 1, WBI Energy Transmission, Inc., Wahpeton Expansion Project, Cass and Richland Counties, North Dakota" from ERM by Elizabeth Wilk and find the report acceptable. We will add it to our manuscript collection.

We concur with "No Historic Properties Affected" provided the avoidance and monitoring plan approved on September 19, 2023 ("Avoidance and Monitoring Plan WBI Energy Transmission, Inc., Wahpeton Expansion Project, Cass and Richland Counties, North Dakota" from ERM by Kevin Malloy and Harry Brignac Jr.) is followed.

Thank you for the opportunity to review this report. Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions, please contact Margaret Patton, Research Archaeologist at 701-328-3576 or mmpatton@nd.gov.

Sincerely,

for William D. Peterson, PhD
State Historic Preservation Officer
(North Dakota)

21-6245



United States Department of the Interior



FISH AND WILDLIFE SERVICE North Dakota Ecological Services

IN REPLY REFER TO:
2022-0000981
Wahpeton Expansion
Project

3425 Miriam Avenue
Bismarck, North Dakota 58501

November 8, 2023

Ms. Jill Lynn
Environmental Affairs
WBI Energy Transmission, Inc.
2010 Montana Avenue
Glendive, Montana 59330

Dear Ms. Lynn:

Thank you for the opportunity to provide comments on the proposed minor adjustments for the Wahpeton Expansion Project, submitted to our office on October 10, 2023. As stated in your letter, previously WBI Energy Transmission, Inc. (WBI) submitted a Biological Assessment (BA) on May 27, 2022, and supplemental consultation letters on November 17, 2022 and September 5, 2023. After US Fish and Wildlife Service (FWS) concurrence, adjustments were again proposed for the project. WBI is proposing to lease an existing ware yard for staging and equipment materials. Under the authority of and in accordance with the Endangered Species Act (ESA) (16 U.S.C. 1531 *et seq.*), we have reviewed the alternatives and have concluded that the proposed modifications to the action will not cause an effect to the listed species or critical habitat that was not considered in the previous consultation.

The FWS appreciates the opportunity to work with WBI and the Federal Energy Regulatory Commission (FERC) on our shared conservation goals. Should you have any questions regarding these comments, please have your staff contact Jessica Johnson at (701) 355-8507 or at the letterhead address or contact me at (720) 793-6797.

Luke Toso
ND Ecological Services Supervisor

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

Implementation Plan

ATTACHMENT 15-1

Summary of Proposed Surface Water Use

**TABLE 15-1
Wahpeton Expansion Project
Summary of Proposed Surface Water Use**

Waterbody Name	Mile Post	Station	Flow Regime	Proposed Use	Approximate Water Volume (gal)¹
Maple River	1.23	64+71	Perennial	Hydrostatic Test, Drilling Fluid	1,727,055
Sheyenne River	24.15	1275+05	Perennial	Hydrostatic Test, Drilling Fluid	1,727,055
Wild Rice River Tributary	41.04	2166+91	Perennial	Dust Suppression, Drilling Fluid	345,411
Pitcairn Creek	44.95	2373+24	Perennial	Dust Suppression, Drilling Fluid	345,411
Antelope Creek	50.85	2684+78	Perennial	Dust Suppression, Drilling Fluid	345,411
Wild Rice River	51.27	2706+85	Perennial	Hydrostatic Test, Drilling Fluid	1,727,055

1. The water volumes in the table represent the maximum amount that could be taken from the listed surface water source. The total amount of water needed for the Project is unchanged.

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT**

**Docket No.
CP22-466-000**

Implementation Plan

ATTACHMENT 17-1

Revised Sheyenne River Drill Noise Modeling Results



WBI ENERGY TRANSMISSION, INC.

Wahpeton Expansion Project

Revised Sheyenne River Drill Noise Modeling Results

**Docket No.
CP22-466-000**

December 2023

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT
REVISED SHEYENNE RIVER DRILL NOISE MODELING RESULTS**

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LIST OF FIGURES

Figure 1 Noise Sensitive Areas within 1/2 Mile of the Sheyenne River Crossing Guided Bore

ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
dBA	A-weighted sound level
ERM	Environmental Resources Management
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
L _{dn}	day-night noise level
L _{eq}	equivalent sound level
NMP	noise mitigation plan
NSA	noise sensitive area
Project	Wahpeton Expansion Project
STC	sound transmission class
WBI Energy	WBI Energy Transmission, Inc.

**WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT
REVISED SHEYENNE RIVER DRILL NOISE MODELING RESULTS**

1.0 INTRODUCTION

Drilling at the Sheyenne River is scheduled to be conducted over a four-to-six day period and may require some nighttime construction. WBI Energy Transmission, Inc.'s (WBI Energy) original noise analysis, as described in the Federal Energy Regulatory Commission's (FERC) Final Environmental Impact Statement (FEIS), Docket No. CP22-466, was based on the simultaneous use of two drill rigs (one at the drill entry and one at the drill exit location). Under this two drill rig scenario, the noise level at the nearest noise sensitive area (NSA 3 as shown in Figure 1) was projected to be 56.8 dBA L_{dn} . Following the issuance of the FEIS, WBI Energy modified the drill design and now plans to use only one drill rig operating at either the drill entry or drill exit location to complete the installation of the pipeline under the Sheyenne River. To determine how this change from two to one drill rig would impact noise levels, WBI Energy commissioned additional noise modeling. As part of the revised modeling, WBI Energy also incorporated realistic attenuation factors (i.e., atmospheric absorption and a partially acoustically absorptive ground cover). The results and supporting documentation regarding the noise modeling methodology are included below.

2.0 ADDITIONAL MODELING METHODOLOGY

Environmental Resources Management (ERM) performed computer modeling to calculate noise levels that would be generated from the operation of one Vermeer D24X40 S3 drill rig located either at the drill entry or drill exit location. The analysis used the commercially available CadnaA model software developed by DataKustik GmbH. This software has the ability to account for spreading losses, ground and atmospheric effects, shielding from barriers and buildings, and reflections from surfaces. The software is standards-based. The International Organization for Standardization (ISO) 9613 standard for air absorption and other noise propagation calculations was applied. ERM assumed only a partially acoustically absorptive ground surface (0.5 setting in the model). For context, a setting of "0" corresponds to an acoustically reflective surface, such as pavement or water, while a setting of 1.0 corresponds to loose soils and grassy surfaces. No credit (i.e., acoustic sound dampening) was taken for any vegetation or foliage. ERM also included reflections in each model.

3.0 REVISED NOISE MODELING RESULTS

A summary of the noise model settings is provided Table 1. Model input data are provided in Table 2. Model output information is provided in Table 3.

Table 1 Noise Model Settings and Assumptions

Item	Setting
Noise Propagation Standard	ISO 9613
Temperature	10 C
Humidity	70 Percent
Reflection Order	1
Ground Cover	0.5
Source Height	1.8 Meters Above Grade
NSA Height	1.5 Meters Above Grade

Table 2 Noise Model Source Input Sound Power Level (dB)

Source	Octave Band Center Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
Vermeer D24X40 S3	98	103	106	101	99	96	90	84	104.3

Source: Vermeer sound power level data provided as dBA. Octave spectrum developed utilizing typical spectrum for diesel engine.

Table 3 Noise Model Sound Pressure Level Output (dB)

Nearest NSA	Octave Band Center Frequency (Hz)								dBA	L _{dn}
	63	125	250	500	1000	2000	4000	8000		
Drill Rig At Entry Point	46	48	45	43	44	40	30	8	47.2	53.8
Drill Rig At Exit Point	43	44	42	39	40	36	24	0	43.8	50.4

The updated noise modeling indicates that the calculated noise levels at the nearest NSA (i.e. NSA 3) using one drill rig would be lower than the noise of using two drill rigs. Table 4 compares the unmitigated calculated noise levels as presented in the FEIS, which assumed two drill rigs, and the revised drill noise levels with one drill rig with the aforementioned attenuation factors included.

Table 4 Noise Analysis for the 24-Hour Guided Bore Crossing at Sheyenne River

Guided Bore Name	Distance and Direction to NSA	Unmitigated Noise Level of Two Guided Bore Equipment as Presented in the FEIS (L_{dn}) (dBA)	Noise Level of One Guided Bore Equipment with Realistic Attenuation Factors (L_{dn}) (dBA)⁽¹⁾
Sheyenne River Entry ⁽¹⁾	610 / SE	55.3	53.8
Sheyenne River Exit ⁽¹⁾	870 / NE	51.6	50.4

(1) The L_{dn} sound levels for either rig location are presented, although only one of the drill rig locations will be used.

The noise modeling results presented in Tables 3 and 4 reveal that with only one drill rig in operation, L_{dn} noise levels at the nearby NSA would be below 55 dBA L_{dn} with 24-hour drilling, regardless of whether the one drill is located at the entry or exit point. As such, no noise mitigation measures will be required to maintain noise levels below the 55 dBA L_{dn} threshold.

4.0 REFERENCES

FERC, 2023. Wahpeton Expansion Project Final Environmental Impact Statement (April 2023).
Docket No. CP22-466-000.

FIGURES

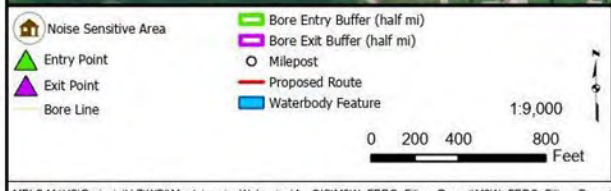


Figure 1
Noise Sensitive Areas within 1/2 Mile of the
Sheyenne River Crossing Guided Bore
Wahpeton Expansion Project
 WBI Energy Transmission, Inc.
 Richland County, North Dakota

