APPLICATION FOR A CORRIDOR
CERTIFICATE AND A ROUTE PERMIT

Southwest Oliver 230 kV Transmission Line Supplemental Filing

Case No. PU-11-620

February 2012

minnesota power
AN ALLETE COMPANY

HDR

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David R. Moeller, Senior Attorney – Legal Services

Fax 218-723-3955 / E-mail dmoeller@allete.com

February 21, 2011

Mr. Darrel Nitschke
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard Avenue, Department 408
Bismarck, ND 58505-0480

RE: Minnesota Power's Application for a Corridor Certificate and a Route Permit
Southwest Oliver 230 kV Transmission Line
Case No. PU-11-620

Dear Mr. Nitschke:

Enclosed are an original and 10 copies of supplemental information to Minnesota Power's Certificate of Corridor Compatibility and Route Permit Application for the proposed Southwest Oliver 230 kV Transmission Line in advance of the March 5, 2012, public hearing. The documents are labeled as follows:

Exhibit 1 ─ Wetland and Water Body Delineation and Habitat Assessment Report

Exhibit 2 ─ U.S. Fish and Wildlife notification letter

Exhibit 3 ─ U.S. Fish and Wildlife response letter

Exhibit 4 ─ Class III Cultural Resource Inventory

Exhibit 5 ─ State Historic Preservation Office Concurrence

Exhibit 6 ─ Project Plan and Profile

Please do not hesitate to contact me at the number below should you have any questions.

Sincerely,

David R. Moeller

Cc: Dan McCourtney, Minnesota Power
Kelly Garvey, HDR Engineering, Inc.

Wetland and Waterbody Delineation and Habitat Assessment Report

Southwest Oliver 230_kV Transmission Line
Oliver, Morton and Mercer Counties, North Dakota
Project #3598

Prepared for:

Minnesota Power.

December 2, 2011

Carlson McCain

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ENVIRONMENTAL • ENGINEERING • LAND SURVEYING

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APPENDICES

1.0 SCOPE OF WORK

The Southwest Oliver 230_kV Transmission Line is being developed by Minnesota Power to expand electrical transportation capacity from new and proposed wind energy projects within North Dakota. The project involves the construction of an 11-mile 230 kilovolt (kV) transmission line that begins at the existing Bison Windfarm Substation and runs west through Oliver, Morton and Mercer Counties. Carlson McCain delineated the extent of wetland areas and waterbodies, inventoried trees and shrubs, and assessed potential habitat of endangered and threatened species and raptor species within the 130-foot project right of way (Project Area) and adjacent to the proposed project **(Appendix A, Index Map).** Table 1 lists the sections within the Project Area.

Table 1-Project Area

Sections	Township, Range
31-36	T141N, R87W
31-35	T141N, R86W
4	T140N, R86W

The Project Area consists of agricultural fields, native and tame grasslands, depression wetlands, and shallow drainages (**Appendix A, Figures 1**). Wheat and sunflowers are common crops in agricultural fields although many of the fields were fallow at the time of the survey(s). The project is located within the Lower Heart (10130203) and Knife (10130201) Hydrologic Unit Codes (HUC). Numerous wetlands, consisting of isolated depressions, and intermittent and perennial drainages, are located in the Project Area.

The wetland and waterbody field delineation, tree and shrub inventory, and habitat assessment was conducted October 24 and November 1-4, 2011, by Miranda Meehan, Natural Resource Specialist, Chad Tucker, Wildlife Biologist, and John Snyder, GIS Specialist, Carlson McCain, Inc.

2.0 SAMPLING PROCEDURES

2.1 Wetland and Waterbody Delineation

The wetland field delineation was conducted in accordance with the U.S. Army Corps of Engineers (USACE) *1987 Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (Manual).

Wetland areas were systematically evaluated by using numerous observation points to define their boundaries. The frequency of observation points was increased in transitional areas between uplands and lower areas to accurately identify wetland boundaries based on soils, vegetation, hydrology, and landscape. Boundaries were digitally recorded with a Trimble GeoXH Global Positioning System (GPS).

Wetland areas were documented with a single or multiple observation points. Paired upland and wetland soil pits were evaluated for wetland areas. The Wetland Determination Data Form of the Great Plains Manual was completed for the observation points. Climatic conditions were considered typical prior to and during the evaluation.

Existing vegetation was classified using hydrophytic vegetation criteria outlined in the Manual and the *National List of Plant Species that Occur In Wetlands: 1996 National Summary* (Kartesz 1996), and *National list of plant species that occur in wetlands: North Plains (Region 4)* (Reed 1988). Hydric soil indicators were determined using the *Field Indicators of Hydric Soils in the United States*; *Guide for Identifying and Delineating Hydric Soils, Version 7.0* (USDA-NRCS 2010). Hydrology was determined on-site by observation of hydrologic indicators. Aerial photography was used to assist hydrologic determinations.

Field conditions and existing resource information were used to identify possible wetlands within the Project Area. Oliver County NAIP 2009 and 2006 aerial photographs, U.S. Fish and Wildlife Service National Wetland Inventory (USFWS 2011), and the digital soil survey of Oliver County (USDA-NRCS 2011), were consulted prior to the wetland field delineation. Possible waterbodies were identified with the U.S. Geological Survey (USGS) Water100k Line GIS shapefile and by Ordinary High Water Mark (OHWM) criteria.

2.2 Tree and Shrub Inventory

Carlson McCain utilized the North Dakota Public Service Commission approved "Tree and Shrub Inventory Plan – "Southwest Oliver 230_kV Transmission Line" (Inventory Plan) while conducting the tree and shrub inventory. Standard data forms were completed for each inventoried tree/shrub site. Each site was assigned a unique identification that consisted of the site's section, township, range, and identification number, i.e. 1414760-01. Data collected at each site included: observer, date, site id, woodland type, tree/shrub species, invasive species, tally, and total number.

Trees and shrubs located in windbreaks, shelterbelts, and other planted areas in the Project Area were counted by direct stem count or by the approved Tree Sampling Method. These inventoried trees were categorized into two groups:

1) Less than two inches diameter at breast height (DBH)
2) Greater than two inches DBH

In native growth areas, trees ≥ 1 inch DBH were inventoried for replacement. Direct stem counts were conducted for small native growth areas while the Tree Sampling Method was used in high-density woodland areas. Inventoried trees were categorized into two groups:

1) one-inch to two inches DBH
2) greater than two inches DBH

The extent of colony-forming shrubs were delineated with a GPS unit in the field or on aerial photos. Colony-forming shrubs include June berry, hawthorn, chokecherry, plum, western snowberry, buffaloberry, and sandbar willow.

3.0 RESULTS

3.1 Wetland and Waterbody Delineation

Eight wetlands and nine waterbodies were identified and delineated within the Project Area **(Appendix A, Figures 1-1 – 1-8).** The Project Area includes two isolated depressions, six riparian wetlands, and nine waterbody crossings (Table 2). Perennial and intermittent waterbodies that contained hydrophytic vegetation and other wetland indicators within their pools and runs were identified as wetlands. Table 2 summarizes the evaluation criteria for the wetland within the Project Area. A total of 3.55 wetland acres and 1.91 drainage feature acres were identified and delineated in the Project Area.

Table 2- Wetland Summary

Wetland / Waterbody Feature ID	Acreage	NWI	Wetland Type
33141086-W1	0.23	PUBFx	Depression (Isolated)
32141086-W1	0.17	NA	Perennial Stream (Connected)
31141086-W1	2.20	NA	Depression (Isolated)
31141086-W2	0.06	NA	Perennial Stream (Connected)
36141087-W1	0.26	NA	Intermittent Stream (Connected)
34141087-W1	0.15	NA	Perennial Stream (Connected)
34141087-W2	0.38	NA	Intermittent Stream (Connected)
33141087-W1	0.10	NA	Intermittent Stream (Connected)
34141086-S1	0.09	NA	Intermittent Stream (Connected)
32141086-S1	0.20	NA	Perennial Stream (Connected)
32141086-S2	0.27	NA	Perennial Stream (Connected)
31141086-S1	0.08	NA	Perennial Stream (Connected)
36141087-S1	0.43	NA	Intermittent Stream (Connected)
34141087-S1	0.19	NA	Perennial Stream (Connected)
34141087-S2	0.40	NA	Intermittent Stream (Connected)
33141087-S1	0.11	NA	Intermittent Stream (Connected)
31141087-S1	0.14	NA	Intermittent Stream (Connected)

Prairie cordgrass (*Spartina pectinata*) and cattails dominate the isolated depression wetland located within a cultivated field (3314106-W1). The remaining wetlands within the Project Area were associated with intermittent and perennial streams. Streams located within cropland are characterized by the native species prairie cordgrass (*Spartina pectinata*), broadleaf cattail (*Typha latifolia*), and northern reedgrass (*Calamagrostis stricta*) and the introduced species foxtail barley (*Hordeum jubatum*) and reed canarygrass (*Phalaris arundinacea*). Depressional and connected wetlands and waterbodies located within grassland communities are characterized by prairie

cordgrass (*Spartina pectinata*), narrow-leaf cattail (*Typha angustifolia*), slender wheatgrass (*Agropyron caninum* v. majus), woolly sedge (*Carex lanuginose*), and quackgrass (*Agropyron* repens).

A description of the wetland type and documentation of the vegetation, hydrology, and hydric soils were recorded on the associated USACE Wetland Determination Data Forms (**Appendix B**) and are identified by observation point number (e.g., 090154095-w1, 09154095-u1). The observation points are identified as wetland (w) or upland soils (u).

3.2 Tree and Shrub Inventory

Native and planted trees and shrubs were inventoried at 15 individual sites along the proposed Project. Nine tree and shrub species were identified within the Project Area (**Appendix A, Figures 2-1 – 2-8**), (Table 3). The majority of tree and shrub areas within the Project Area are planted and include windbreaks and tree rows adjacent to cropland. However, there are two native tree and shrub areas located in an area of native prairie and adjacent to a drainage feature. Green ash (*Fraxinus pennsylvanica*) is the most common tree species in the Project Area. Green ash (*Fraxinus pennsylvanica*), a native species, has been extensively planted in the state. The invasive tree species Siberian elm (*Ulmus pumila)* is common throughout the Project Area in planted areas. Buffaloberry (*Shepherdia argentea)* is the most prevalent native shrub and chokecherry (*Prunus virginiana*) is common. Tree and Shrub Count Forms are included in **Appendix C**.

Table 3-Summary of Tree and Shrub Inventory

Species	Species (CODE)	Common Name	Growth Form	Reproduction	Invasive or Non-native	Native			Planted			Overall Total
						1-2"	2"+	Total	<2"	2"+	Total	
Caragana arborescens	cararb	Peashrub (Siberian)	shrub	seed	Yes				9		9	9
Fraxinus pennsylvanica	frapen	Ash (Green)	tree	seed	No				23	216	239	239
Populus deltoides	popdel	Cottonwood	tree	seed/ suckering	No		3	3		3	3	6
Prunus virginiana	pruvir	Chokecherry	shrub	seed/ suckering	No				70		70	70
Salix amygdaloides	salamy	Willow (Peachleaf)	tree	seed	No					6	6	6
Shepherdia argentea	shearg	Buffaloberry	shrub	rhizomatous, colony forming	No	1,265		1,265				1,265
Syringa vulgaris	syrvul	Lilac (Common)	shrub	rhizomatous, colony forming	Yes				11		11	11
Ulmus americana	ulmame	Elm (American)	tree	seed	No					13	13	13
Ulmus pumila	ulmpum	Elm (Siberian)	tree	seed	Yes				3	105	108	108
Totals						1,265	3	1,268	116	343	459	1,727

4.0 HABITAT ASSESSMENT

Agricultural fields and native grasslands surrounding waterbodies comprise the majority of the habitat within and around the Project Area. Intermittent streams and depression wetlands are located in and around the Project Area. The native grasslands are heavily encroached upon by non-native grassland species including smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), and crested wheat grass (*Agropyron cristatum*). Native areas are displayed on the Wetland and Waterbody Figures in **Appendix A**. Table 4 summarizes the native grassland areas identified during the survey.

Table 4- Native Areas

Section	Township	Range	Tract	Acres	Habitat
36	141	88	Southeast 1/4	39	Native Prairie
31	141	87	Southwest 1/4	37	Native Prairie
31	141	87	East 1/2	264	Native Prairie
32	141	87	South 1/2	121	Native Prairie
33	141	87	Southwest 1/4	131	Native Prairie
34	141	87	Southeast 1/4	241	Native Prairie
31	141	86	Southwest 1/4	64	Native Prairie

Assessments for federally listed endangered, threatened, and candidate species were conducted by evaluating historic and present occurrences, and by determining if potential habitat exists within the Project Area. Determinations were made concerning direct and cumulative effects of the proposed activity on each species and their habitat. Determinations made for federally listed species are:

- No effect
- Not likely to adversely affect
- Is likely to adversely affect

Currently, six federally listed species have been documented in Oliver County including the interior least tern (*Sterna antillarum*), whooping crane (*Grus americana*), black-footed ferret (*Mustela nigripes*), pallid sturgeon (*Scaphirhynchus albus*), gray wolf (*Canis lupus*), and piping plover (*Charadrius melodus*). In addition, critical habitat for the piping plover is listed as present in the county (USFWS 2011a). Suitable habitat for the interior least tern and pallid sturgeon is limited to the Missouri River system and therefore none of this habitat is in the Project Area. The least tern typically utilizes the Missouri River as a flyway, however, because this is a migratory species it may occur in areas where habitat does not generally exist. These species are not addressed in this report (USFWS 2011b and 2011c).

The Sprague's pipit (*Anthus spragueii*) and the Dakota skipper (*Hesperia dacotae*) are candidate species for federal listing in Oliver County under the Endangered Species Act No legal requirement exists to protect candidate species; however, the U.S. Fish and Wildlife Service (USFWS) considers these species to have significant value and are worth protecting.

Table 5 - Federally Protected Species

Oliver County	
Species	**Status**
Interior Least Tern	Endangered
Whooping Crane	Endangered
Black-footed Ferret	Endangered
Pallid Sturgeon	Endangered
Gray Wolf	Endangered
Piping plover	Threatened – Designated Critical Habitat
Dakota Skipper	Candidate
Sprague's Pipit	Candidate

4.1 Endangered Species

4.1.1 Gray Wolf

Gray wolves (*Canis lupus*) historically ranged throughout North America. With the exception of Minnesota, Wisconsin, Michigan, Montana, Idaho, Washington, and Wyoming, the gray wolf is absent from the lower 48 states. Gray wolves have been documented in North Dakota since 1990; however, their presence in North Dakota is sporadic, consisting of occasional dispersing animals from Minnesota and Manitoba (USFWS 2008). Gray wolf habitat varies from woodlands to grasslands, but they generally avoid populated areas and areas with high road densities (Johnson 1999).

Gray wolves were not observed during the field surveys and there is no potential habitat located in the Project Area due to the prevalence of agricultural fields. Wolves are long distance dispersers and with the surrounding areas of Montana, Saskatchewan, and Minnesota having breeding wolf populations, there is the potential for transient wolves to enter the Project Area.

4.1.2 Whooping Crane

Whooping cranes (*Grus americana*) historically nested in North Dakota in the 19th Century, but now only migrate through the state in the spring and fall. Along their migration route, whooping cranes use large shallow marshes for roosting and loafing while feeding in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Park and Wildlife 2008). Twenty-five cranes were reported in the 2009 fall migration and twelve were reported in the 2010 spring migration through North Dakota (Stehn 2010).

Suitable resting and feeding habitat is located within the Project Area. Whooping cranes may fly over, temporarily feed, or loaf in the area. A field survey for Whooping cranes was conducted along the route and no cranes were observed.

Minnesota Power will coordinate with the US Fish and Wildlife Service to mark new transmission lines with bird flight diverters. Minnesota Power will also coordinate with the US Fish and Wildlife Service to

mark an equal length of existing and previously unmarked transmission lines within the Corridor to help reduce the potential for mortality associated with transmission line collisions.

4.1.3 Black-footed Ferret

Historically, black-footed ferrets (*Mustela nigripes*) were found in the southwest portion of North Dakota but their occurrence is unlikely or questionable at this time. The black-footed ferret requires expansive black-tailed prairie dog (*Cynomys ludovicianus)* colonies for food and den habitat. The Black-Footed Ferret Survey Guidelines (USFWS 1989) states that 80 acres is the minimum size prairie dog habitat needed to support black-footed ferrets. Black-footed ferret reintroduction into the wild began in 1991 (Black-footed Ferret Recovery Implementation Team 2009). There have been nineteen reintroduction sites, but none in North Dakota at this time.

At present time, there is no population of black-footed ferrets within the Project Area. There is no suitable habitat within the Project Area, as there are no prairie dog colonies in or near the Project Area.

4.2 Threatened Species / Critical Habitat

4.2.1 Piping Plover

North Dakota's population of piping plovers *(Charadrius melodus)* was 496 breeding pairs in 1991 and was reduced to 399 breeding pairs by 1996. Approximately 75% of piping plovers in North Dakota nest on prairie alkali lakes, and 25% use the Missouri River (USFWS 2011d). The USFWS designated the piping plover as threatened in North Dakota and with specific areas in Oliver, Mercer and Morton Counties as designated Critical Habitat (USFWS 2010). Nest locations are most likely selected due to their sparse vegetation. In North Dakota, they nest on alkali lakes, sandy relatively narrow beaches (300 - 1,200 feet wide), and barren river sandbars.

There are no large alkali wetlands or river sandbars within one mile of the Project Area; therefore, no suitable nesting habitat is located within or adjacent to the Project Area. No individuals were sighted during the habitat assessment.

4.3 Candidate Species

4.3.1 Sprague's pipit

The Sprague's pipit (*Anthus spragueii*) is a ground nesting bird that breeds and winters on open grasslands. It feeds mostly on insects, spiders, and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota and South Dakota as well as south-central Canada. Between 1996 and 2007, the population of Sprague's pipits in North Dakota declined by 2% (Sauer et. al. 2008). During the breeding season, Sprague's pipits prefer large patches of native grassland with a minimum size requirement thought to be approximately 145 ha (358.3 ac). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. Preferred grass height is estimated to be between 10 and 30 cm. They may avoid roads, trails, and habitat edges.

Sprague's pipits were not observed during the habitat assessment; however, native grassland and potential habitat is located in and adjacent to the Project Area. The largest native area that the Project Area dissects is 264 acres. The Project Area is located in close proximity to section line roads where habitat fragmentation has already occurred.

4.3.2 Dakota Skipper

Dakota skippers (*Hesperia dacotae*) are currently listed as a candidate species in North Dakota and have been documented in Oliver County. Larvae of the Dakota skipper feed on grasses, favoring little bluestem. Adults emerge in mid-Jun, feeding on the nectar of flowering native forbs. Harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*) are common components of their diet (Canadian Wildlife Service, 2004). Dakota skippers are most likely to be found along river valleys or in mesic segments of mixed grass prairie.

The Project Area does not contain suitable habitat for the Dakota skipper, as the grasslands inside the Project Area are dominated by non-native species. Activities inside the Project Area may temporarily disturb some forage species of the Dakota skipper, but is not likely to cause a decline in the Dakota skipper population.

4.4 Raptor Survey

Northern harriers (*Circus cyaneus*) were observed during field surveys. Raptor nests were not observed during the habitat assessment; however, nesting habitat is in and adjacent to the Project Area. The field survey was conducted at a time when these species are not actively nesting; therefore, it is recommended that a raptor nest survey be conducted if construction of the project is delayed until the next nesting season.

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Appendix A
Figures

Mercer

Oliver

Morton

25141088 30141087 29141087 28141087 27141087 26141087 25141087 30141086 29141086 28141086 27141086 26141086 25141086

36141088 31141087 32141087 33141087 34141087 35141087 36141087 31141086 32141086 33141086 34141086 35141086 36141086

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3140088 2140088 1140088 6140087 5140087 4140087 3140087 2140087 1140087 6140086 5140086 4140086 3140086

12140088 7140087 8140087 9140087 10140087 11140087 12140087 7140086 8140086 9140086 10140086

Legend

- Transmission Line
- Survey Corridor
- Counties
- Figure Index

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1:48,000 1 inch = 4,000 feet

0 4,000 8,000 Feet

Base Map: NAIP 2010 Oliver County; USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

INDEX SHEET

Aerial & Topography Map

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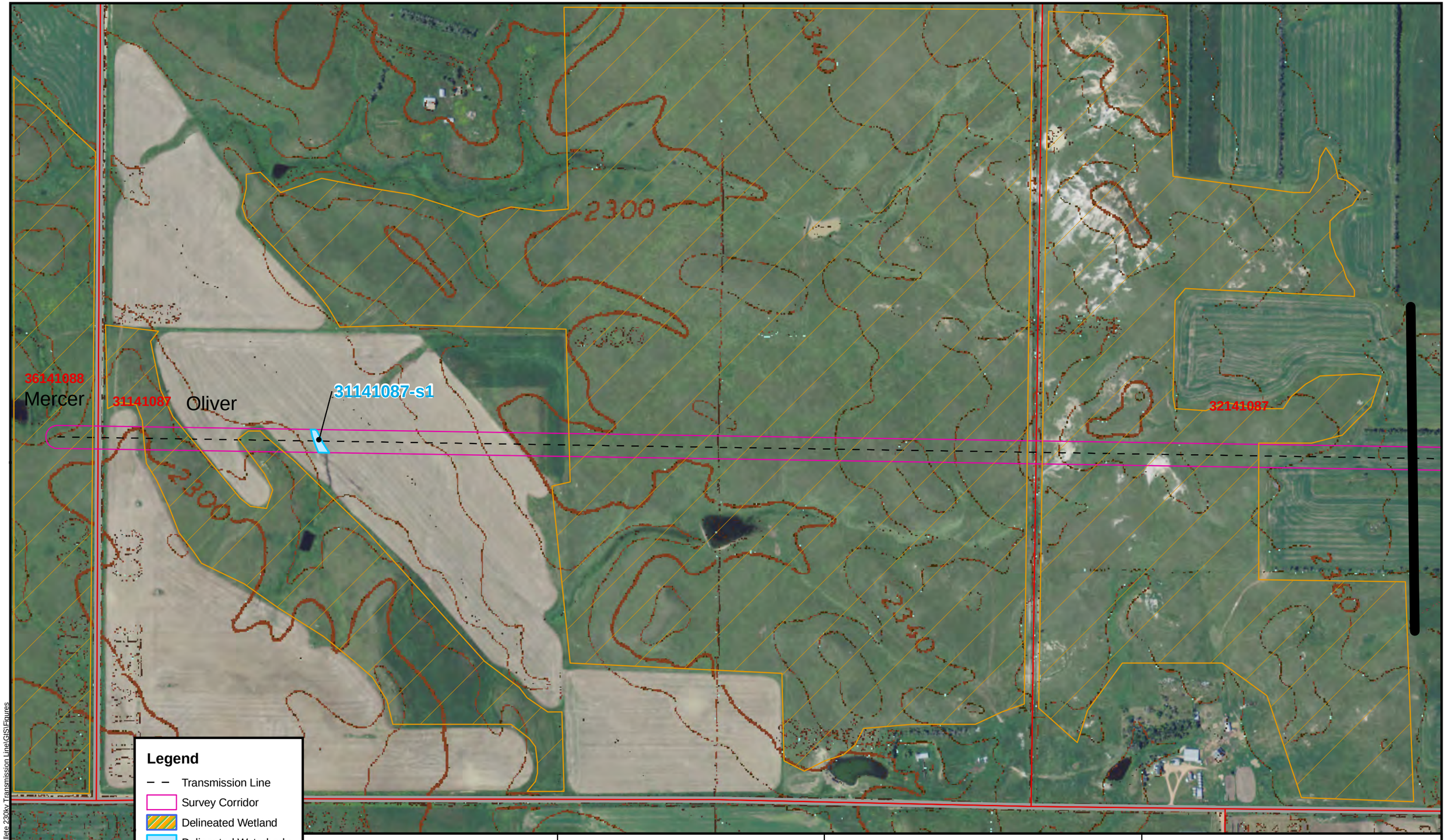

Legend

- Transmission Line
- Survey Corridor
- Delineated Wetland
- Delineated Waterbody
- Native Areas
- Counties
- matchlines

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1:6,000 1 inch = 500 feet

0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County; USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 1-1
Wetland and Waterbody Aerial & Topography Map

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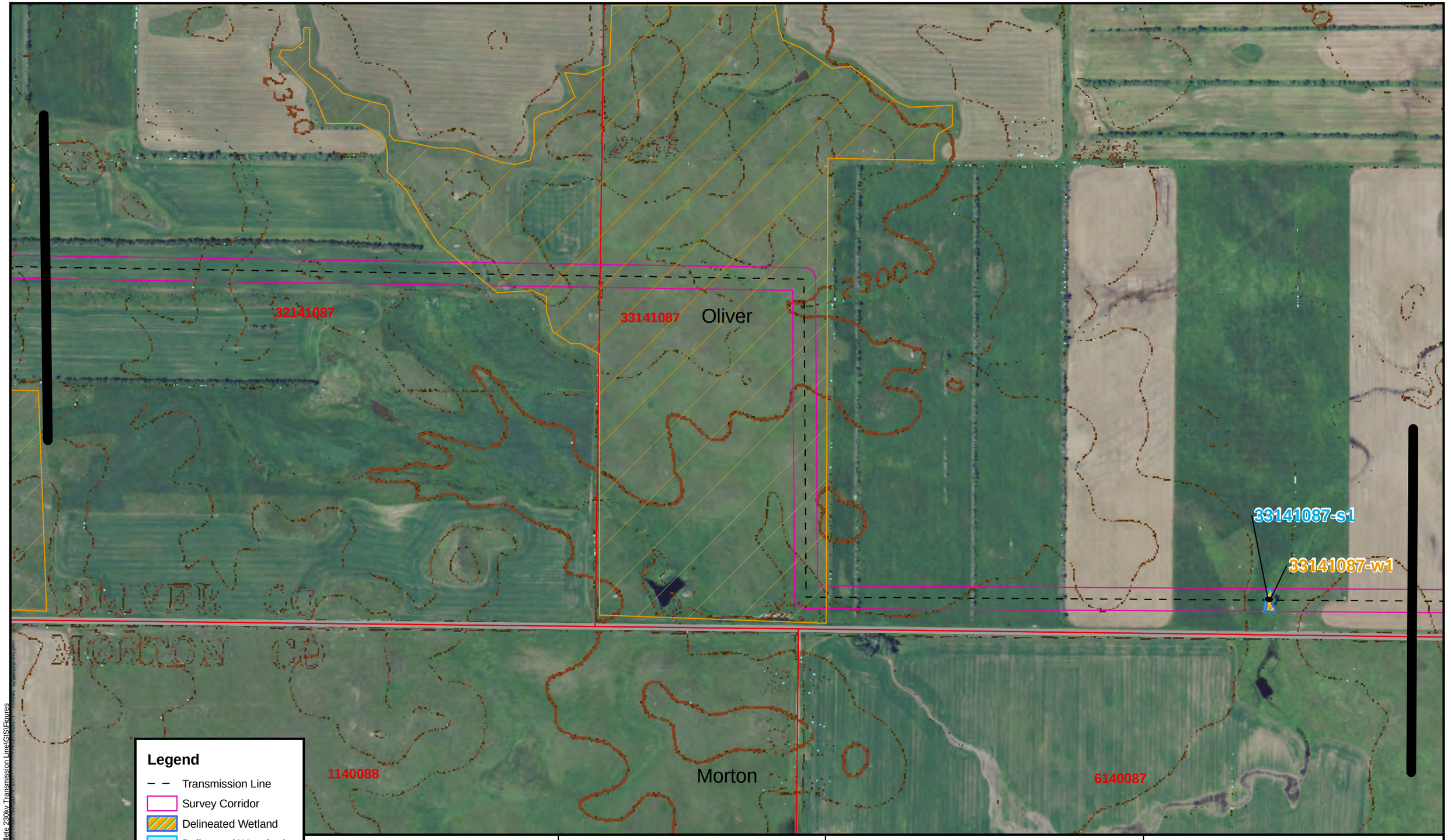

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1:6,000 1 inch = 500 feet

0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

Southwest Oliver_230 kV Transmission Line Project
Minnesota Power

FIGURE 1-2
Wetland and Waterbody Aerial & Topography Map

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1:6,000 1 inch = 500 feet

0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County; USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 1-3
Wetland and Waterbody Aerial & Topography Map

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35141087

36141087 Oliver

36141087-s1

36141087-w1

4140087

3140087 Morton

MORTON CO

2260

2240

2280

Legend

- Transmission Line
- Survey Corridor
- Delineated Wetland
- Delineated Waterbody
- Native Areas
- Counties
- matchlines

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1:6,000 1 inch = 500 feet

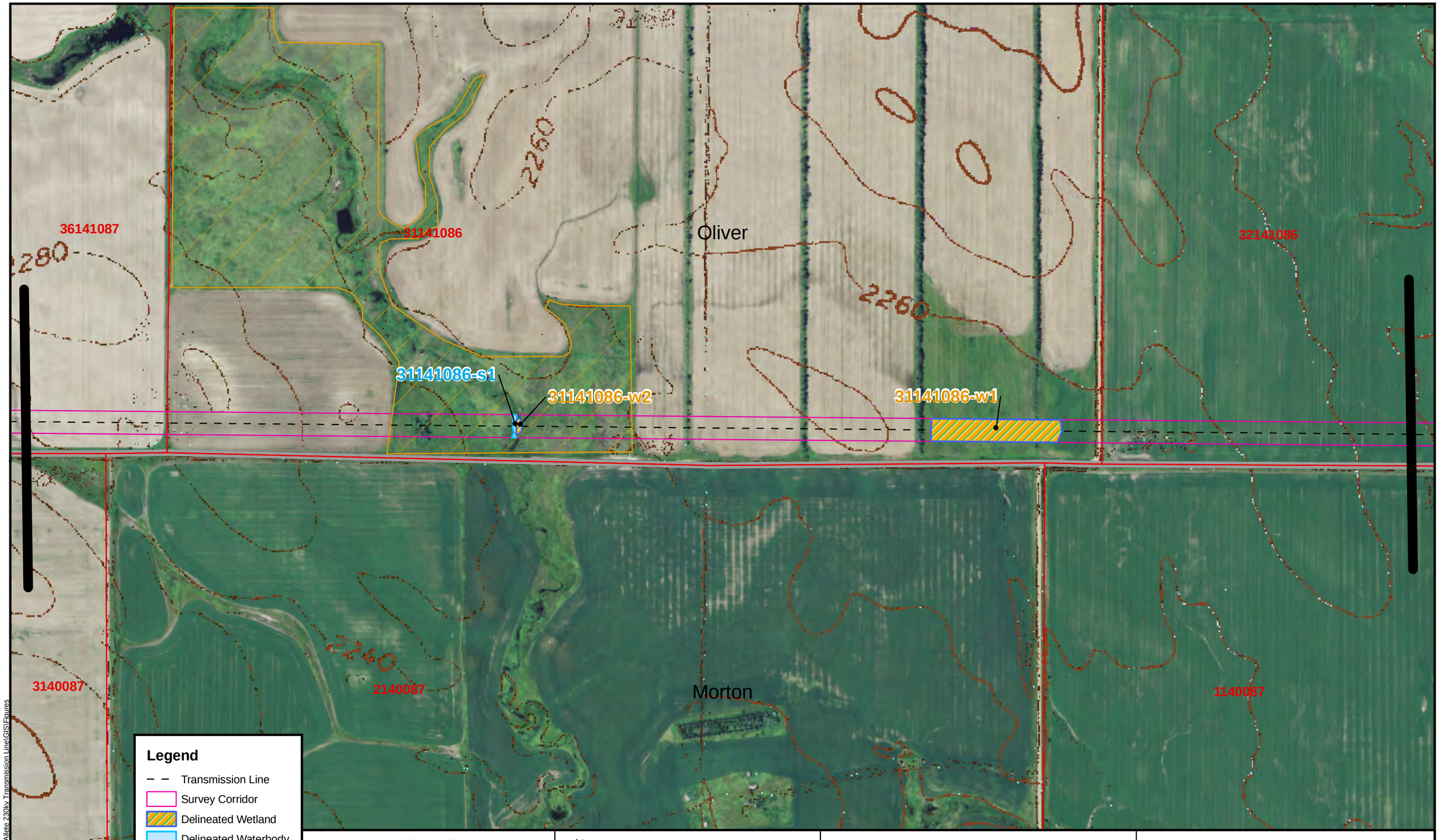
0 500 1,000 Feet

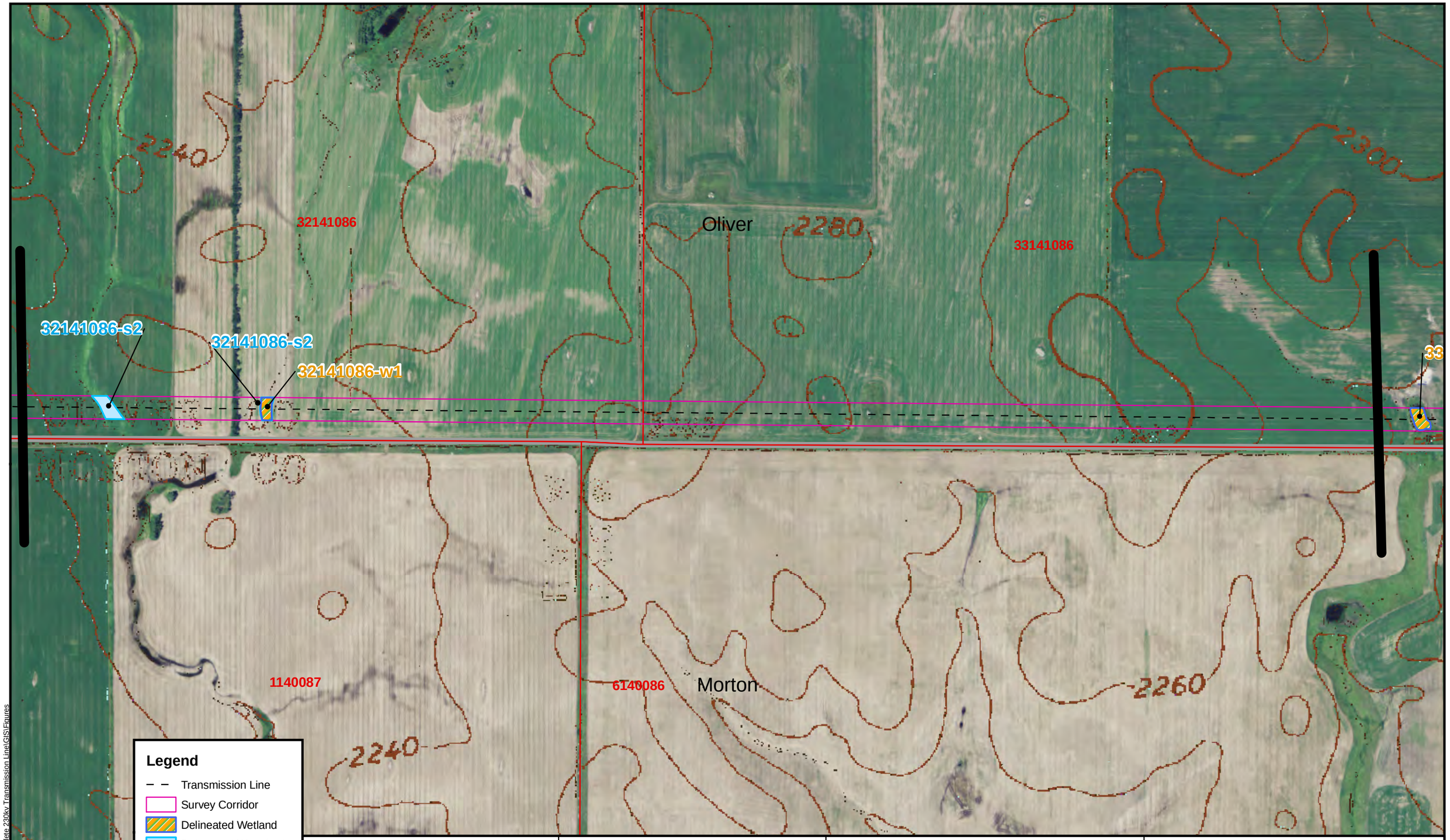
Base Map: NAIP 2010 Oliver County; USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project Minnesota Power

FIGURE 1-4
Wetland and Waterbody Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures


36141087
31141086
Oliver
32141086
2260
2260
2280
31141086-s1
31141086-w2
31141086-w1
3140087
2140087
Morton
1140087
2240
Legend
Transmission Line
Survey Corridor
Delineated Wetland
Delineated Waterbody
Native Areas
Counties
matchlines
Carlson McCain
ENVIRONMENTAL•ENGINEERING•SURVEYING
1:6,000
1 inch = 500 feet
0
500
1,000
Feet
Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin
Southwest Oliver 230_kV
Transmission Line Project
Minnesota Power
FIGURE 1-5
Wetland and Waterbody
Aerial & Topography Map
R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures


2240
32141086
Oliver
2280
33141086
2300
32141086-s2
32141086-s2
32141086-w1
33
1140087
6140086
Morton
2260
2240
Legend
Transmission Line
Survey Corridor
Delineated Wetland
Delineated Waterbody
Native Areas
Counties
matchlines
Carlson McCain
ENVIRONMENTAL•ENGINEERING•SURVEYING
1:6,000
1 inch = 500 feet
0
500
1,000
Feet
Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin
Southwest Oliver 230_kV
Transmission Line Project
Minnesota Power
FIGURE 1-6
Wetland and Waterbody
Aerial & Topography Map
R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures

33141086

34141086

Oliver

35141086

2300

2200

33141086-w1

34141086-s1

6140086

5140086

Morton

4140086

2300

Legend

- Transmission Line
- Survey Corridor
- Delineated Wetland
- Delineated Waterbody
- Native Areas
- Counties
- matchlines

Carlson McCain
ENVIRONMENTAL•ENGINEERING•SURVEYING

1:6,000 1 inch = 500 feet

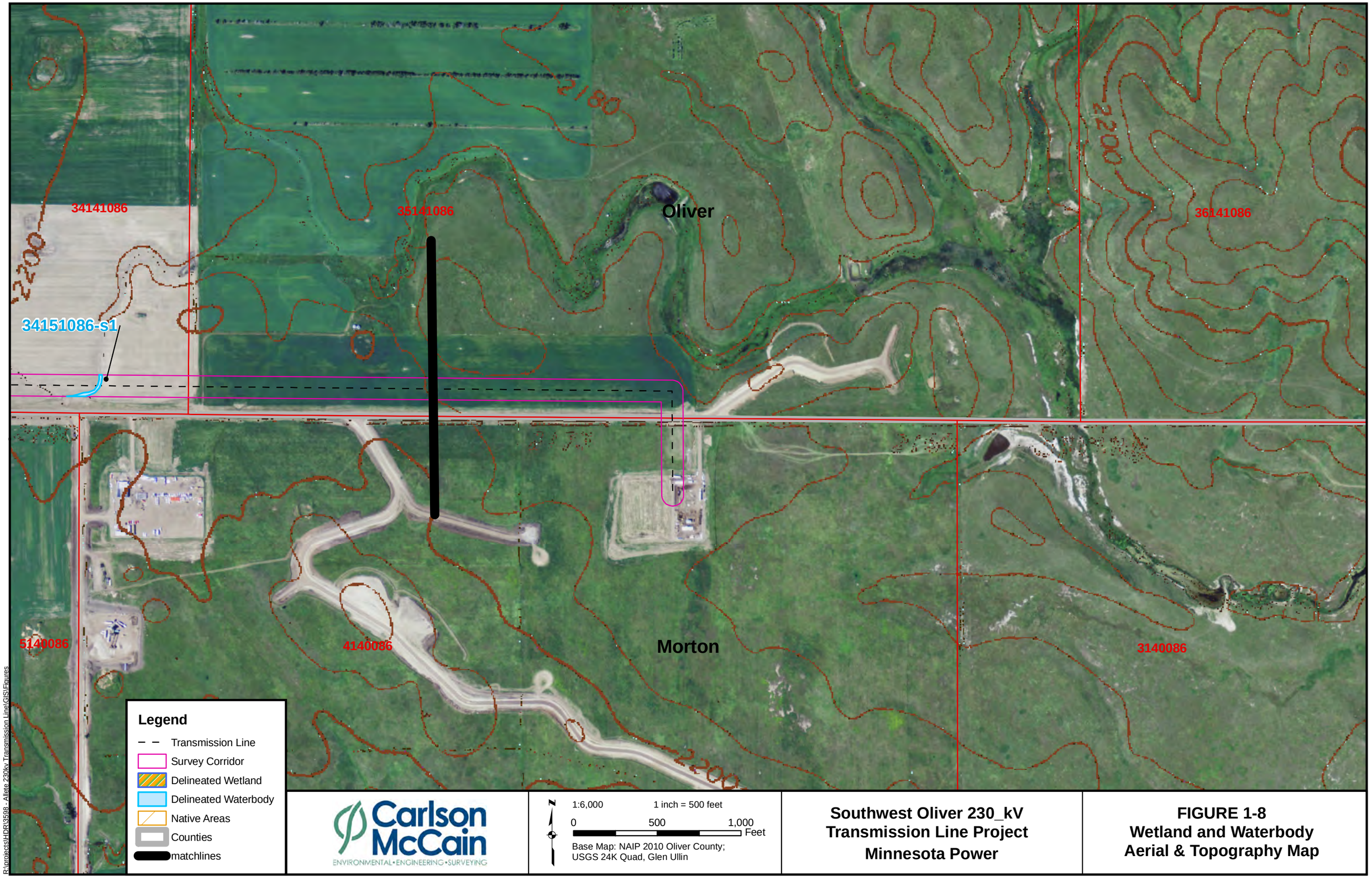
0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 1-7
Wetland and Waterbody Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures



Carlson McCain
ENVIRONMENTAL • ENGINEERING • SURVEYING

1:6,000 1 inch = 500 feet

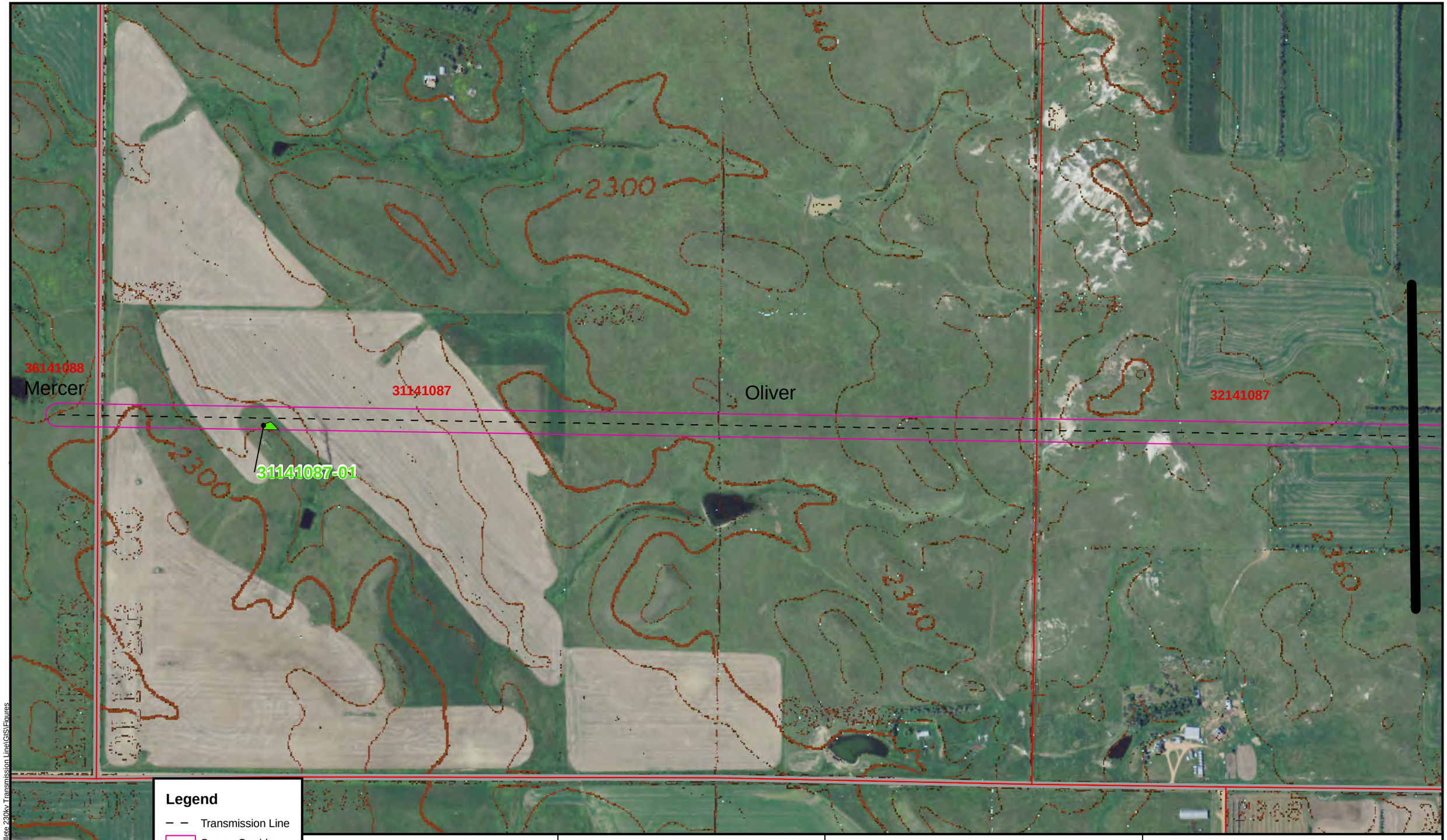
0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 1-8
Wetland and Waterbody Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures



Legend

- Transmission Line
- Survey Corridor
- TreeShrub
- Counties
- Matchlines

Carlson McCain
ENVIRONMENTAL•ENGINEERING•SURVEYING

1:6,000 1 inch = 500 feet

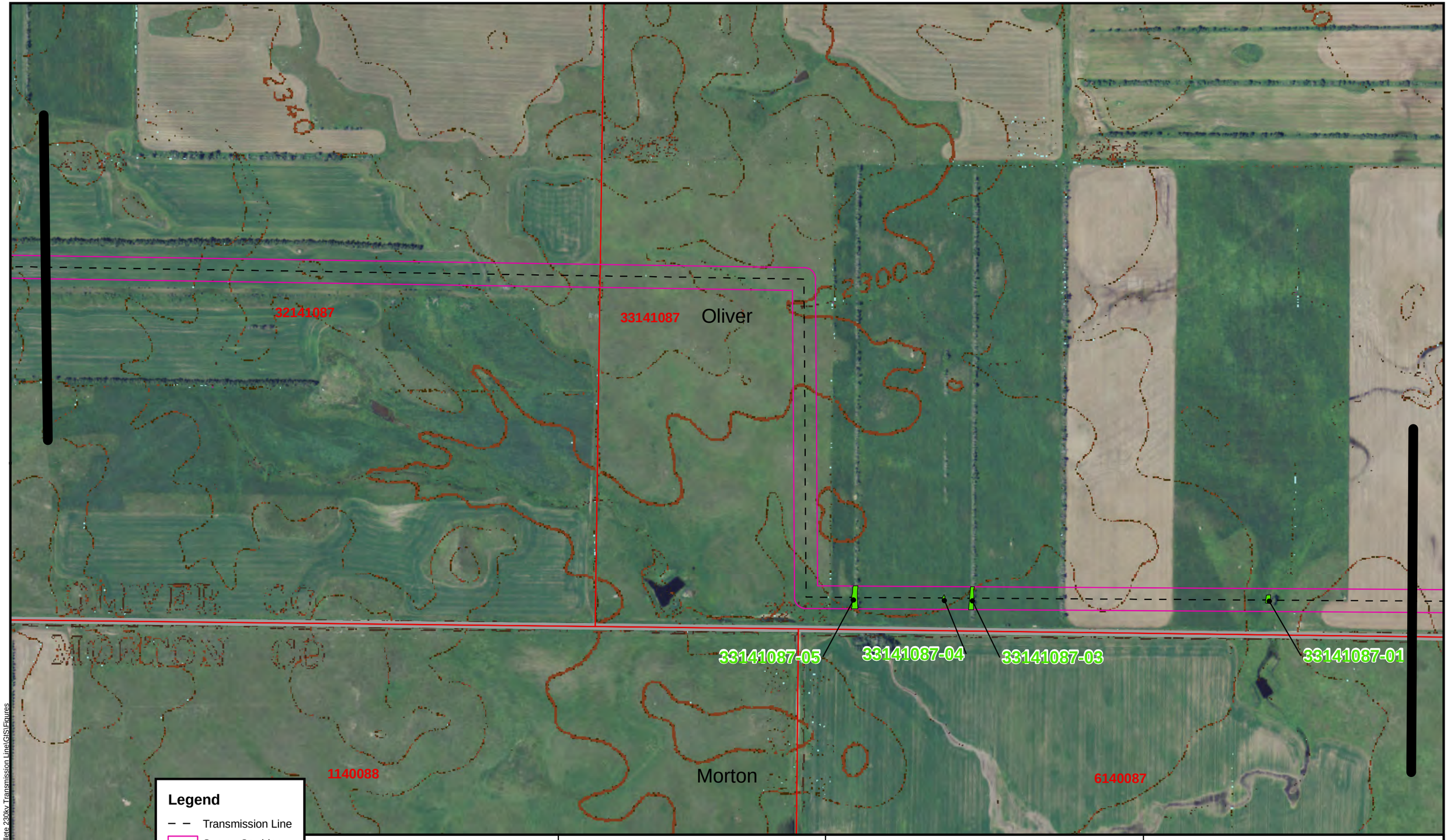
0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County; USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 2-1
Trees and Shrubs
Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures



Carlson McCain
ENVIRONMENTAL • ENGINEERING • SURVEYING

1:6,000 1 inch = 500 feet

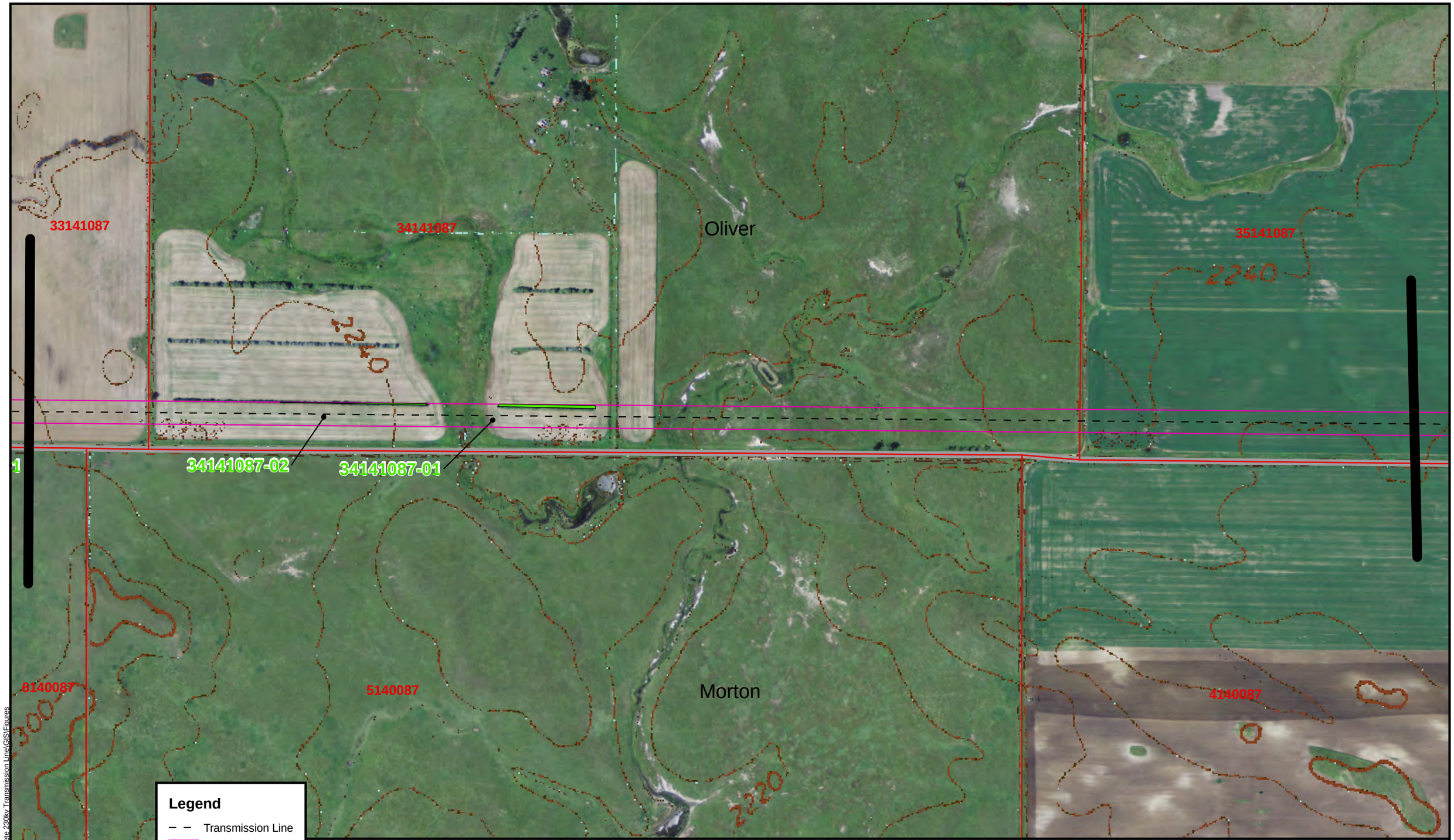
0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 2-2
Trees and Shrubs
Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures


33141087
34141087
Oliver
35141087
2240
34141087-02
34141087-01
6140087
5140087
Morton
4140087
2220
Legend
Transmission Line
Survey Corridor
TreeShrub
Counties
Matchlines
Carlson McCain
ENVIRONMENTAL•ENGINEERING•SURVEYING
N
1:6,000
1 inch = 500 feet
0
500
1,000
Feet
Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin
Southwest Oliver 230_kV
Transmission Line Project
Minnesota Power
FIGURE 2-3
Trees and Shrubs
Aerial & Topography Map
R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures

35141087

36141087 Oliver

36141087-01

4140087

3140087 Morton

Legend

- Transmission Line
- Survey Corridor
- TreeShrub
- Counties
- matchlines

Carlson McCain
ENVIRONMENTAL • ENGINEERING • SURVEYING

1:6,000 1 inch = 500 feet

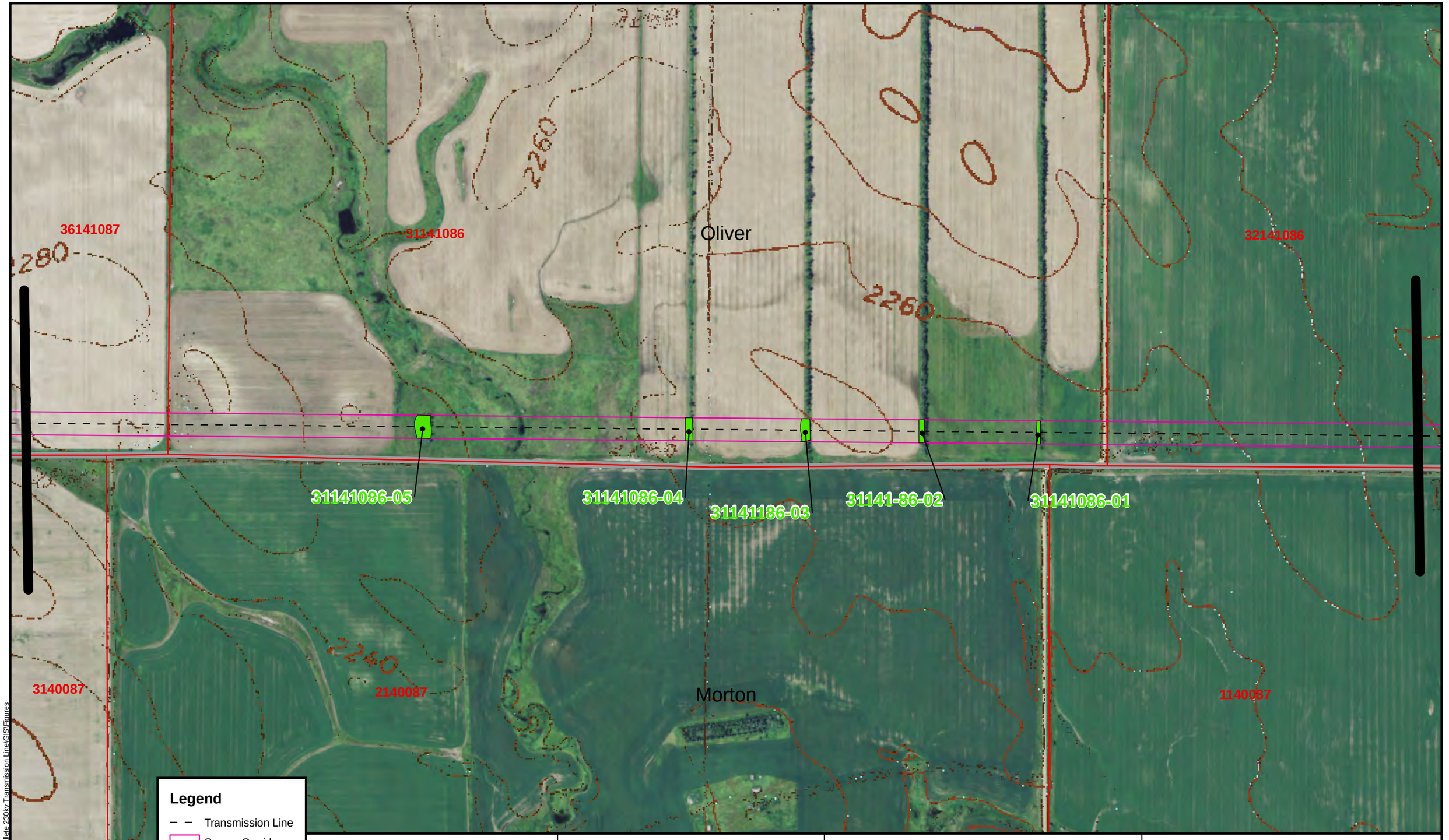
0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 2-4
Trees and Shrubs
Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures



Legend

- Transmission Line
- Survey Corridor
- TreeShrub
- Counties
- matchlines

Carlson McCain
ENVIRONMENTAL • ENGINEERING • SURVEYING

1:6,000 1 inch = 500 feet

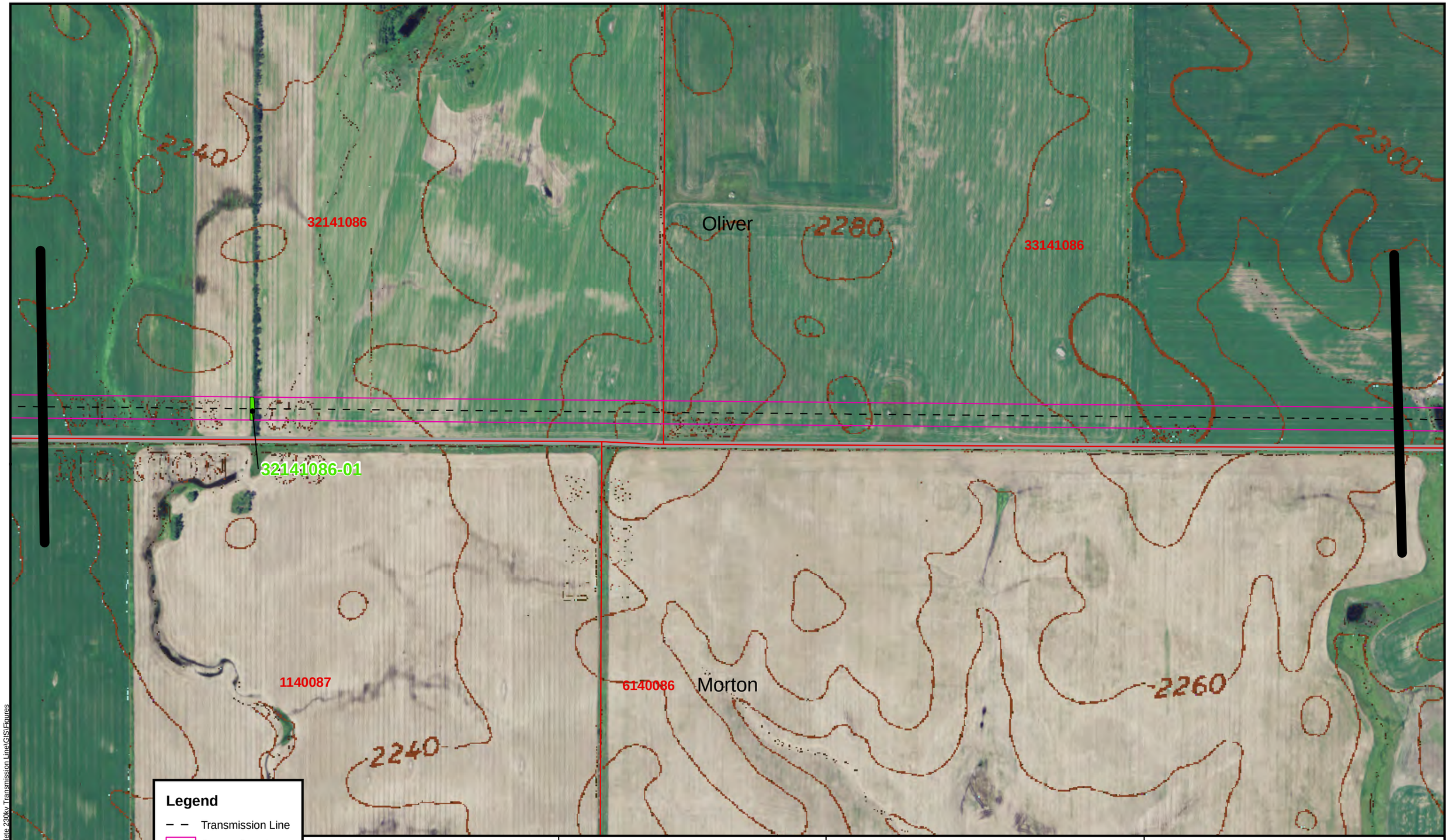
0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County; USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 2-5
Trees and Shrubs
Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures



Legend

- Transmission Line
- Survey Corridor
- TreeShrub
- Counties
- matchlines

Carlson McCain
ENVIRONMENTAL•ENGINEERING•SURVEYING

1:6,000 1 inch = 500 feet

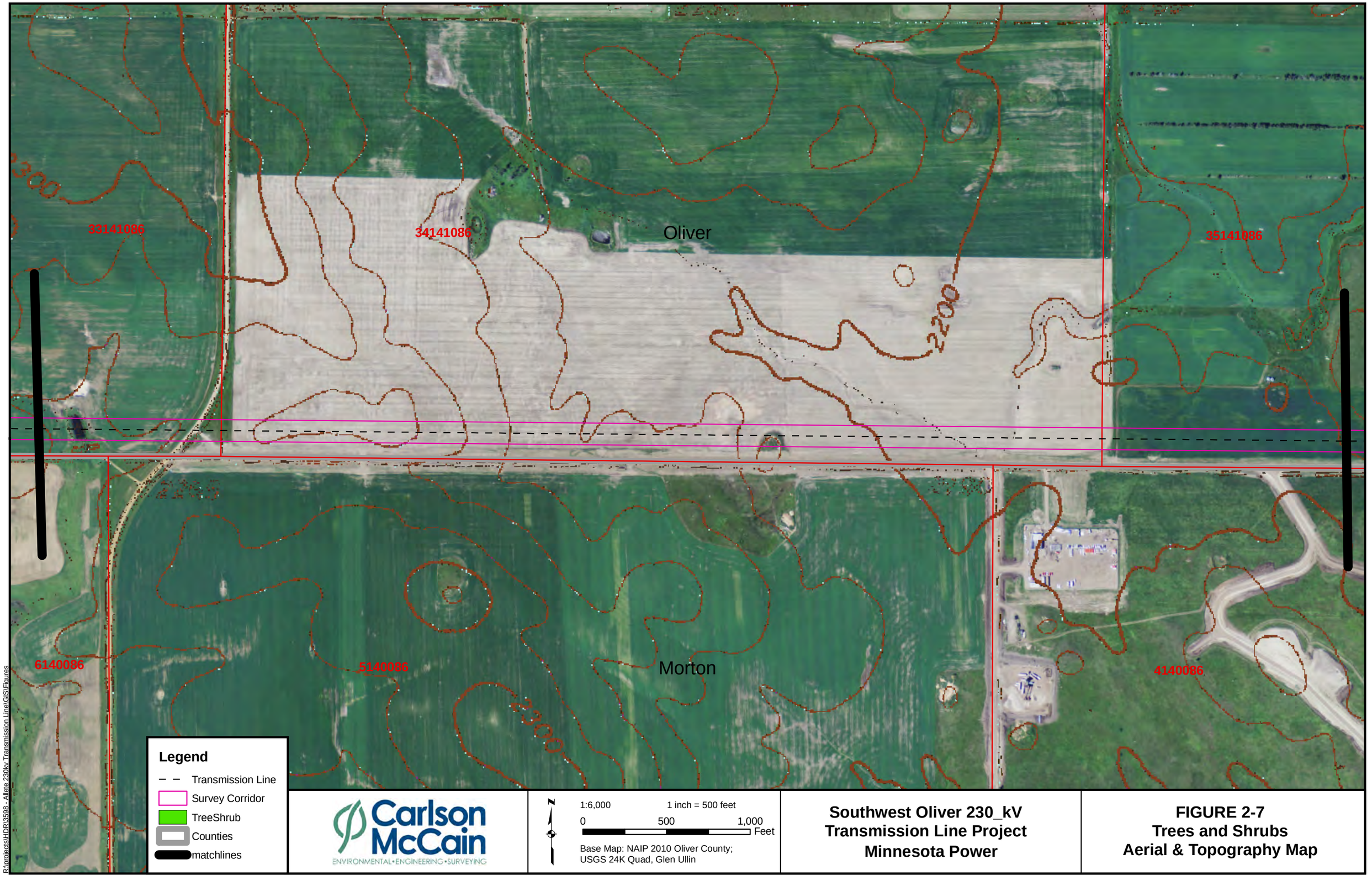
0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County; USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnestoa Power

FIGURE 2-6
Trees and Shrubs
Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures


33141086
34141086
Oliver
35141086
2300
2200
6140086
5140086
Morton
4140086
Legend
Transmission Line
Survey Corridor
TreeShrub
Counties
matchlines
Carlson McCain
ENVIRONMENTAL•ENGINEERING•SURVEYING
1:6,000
1 inch = 500 feet
0
500
1,000
Feet
Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin
Southwest Oliver 230_kV
Transmission Line Project
Minnesota Power
FIGURE 2-7
Trees and Shrubs
Aerial & Topography Map
R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures

34141086

35141086

Oliver

36141086

2180

2200

2200

5140086

4140086

Morton

3140086

2200

Legend

- Transmission Line
- Survey Corridor
- TreeShrub
- Counties
- matchlines

Carlson McCain
ENVIRONMENTAL • ENGINEERING • SURVEYING

1:6,000 1 inch = 500 feet

0 500 1,000 Feet

Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

Southwest Oliver 230_kV Transmission Line Project
Minnesota Power

FIGURE 2-8
Trees and Shrubs
Aerial & Topography Map

R:\projects\HDR\3598 - Allete 230kv Transmission Line\GIS\Figures

Appendix B
USACE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 10/25/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 33141086 wet 1

Investigator(s): Miranda Meehan, John Snyder Section, Township, Range: 33, 141, 086

Landform (hillslope, terrace, etc.): deppression/stream Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): F Lat: 46.981588 Long: -101.577427 Datum: NAD 83

Soil Map Unit Name: Morton silt loam, 3 to 6 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 ☐		
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐	**Is the Sampling Area within a Wetland?**	**Yes ☒ No ☐**

Remarks:

old stock dam

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. **Spartina pectinata**	80	Yes	FACW
2. **Typha latifolia**	10	No	OBL
3. **Rumex crispus**	2	No	FACW
4. **Agropyron repens**	5	No	FAC
5. **Hordeum jubatum**	3	No	FACW
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: ____ (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	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
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 ≤3.0[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 ☒ No ☐

Remarks:

SOIL

Sampling Point: 33141086 wet 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 2/1	85	7.5YR 4/6	15			Cly	
20-25	2.5Y 3/1	90	7.5YR 4/6	10			Cly	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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):	12
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 10/25/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 33141086 up 1

Investigator(s): Miranda Meehan, John Snyder Section, Township, Range: 33, 141, 086

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 2

Subregion (LRR): F Lat: 46.981692 Long: -101.577046 Datum: NAD 83

Soil Map Unit Name: Morton silt loam, 3 to 6 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 ☒		
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒	**Is the Sampling Area within a Wetland?**	**Yes ☐ No ☒**

Remarks:

sunflower field

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. **Sunflower**	45	Yes	UPL
2. **wheat**	5	No	UPL
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: ____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☐ No ☒

Remarks:

upland

SOIL

Sampling Point: 33141086 up 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2						Fn Sy Lm	
12-18	10YR 4/3						Fn Sy Lm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 32141086 wet 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 32, 141, 086

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): F Lat: 46.981529 Long: -101.603625 Datum: NAD 83

Soil Map Unit Name: Belfield-Daglum 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 ☐		
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐	**Is the Sampling 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. **Typha latifolia**	50	Yes	OBL
2. **Calamagrostis stricta**	20	No	OBL
3. **Hordeum jubatum**	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot Size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum **20**

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or 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	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
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 ≤3.0[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 ☒ No ☐

Remarks:

SOIL

Sampling Point: 32141086 wet 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	98	10YR 5/6	2			Cly Lm	
10-20	10YR 4/2						Cly Lm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☒ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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): 2

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: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 32141086 up 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 32, 141, 086

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR): F Lat: 46.981532 Long: -101.603186 Datum: NAD 83

Soil Map Unit Name: Belfield-Daglum 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 ☒		
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒	**Is the Sampling 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. **Setaria glauca**	80	Yes	FACU
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 **20**

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or 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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☐ No ☒

Remarks:

SOIL

Sampling Point: 32141086 up 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 4/1						Sy Lm	
8-18	10 YR 4/3						Sy Lm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 10/25/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 31141086 wet 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 31, 141, 086

Landform (hillslope, terrace, etc.): plane Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): F Lat: 46.981598 Long: -101.618091 Datum: NAD 83

Soil Map Unit Name: Regent-Janesburg silty clay loams, 0 to 3 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 ☐		
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐	**Is the Sampling 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. **Calamagrostis stricta**	80	Yes	OBL
2. **Hordeum jubatum**	15	No	FACW
3. **Rumex crispus**	3	No	FACW
4. **Typha latifolia**	2	No	OBL
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: ____ (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	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
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 ≤3.0[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 ☒ No ☐

Remarks:

SOIL

Sampling Point: 31141086 wet 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 2/1						Cly	
12-18	2.5 Y 4/1						Cly	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 10/25/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 31141086 up 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 31141086

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): <1

Subregion (LRR): F Lat: 46.981677 Long: -101.620443 Datum: NAD 83

Soil Map Unit Name: Morton silt loam, 3 to 6 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 ☒		
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒	**Is the Sampling 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. **Bromus inermis**	30	No	UPL
2. **Poa pratensis**	70	Yes	FACU
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: _____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☐ No ☒

Remarks:

Upland - field edge

SOIL

Sampling Point: 31141086 up 1

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]		
0-10	10 YR 3/2						Lm	
10-18	10 YR 4/3						Lm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 31141086 wet 2

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 31, 141, 086

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 4

Subregion (LRR): F Lat: 46.981633 Long: -101.629571 Datum: NAD 83

Soil Map Unit Name: Rhoades-Daglum complex, 0 to 9 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 ☐		
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐	**Is the Sampling Area within a Wetland?**	**Yes ☒ No ☐**

Remarks:

riparian wetland

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. **Spartina pectinata**	75	Yes	FACW
2. **Typha angustifolia**	10	No	OBL
3. **Agropyron repens**	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	= 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: _____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point: 31141086 wet 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 2/1	98	5 YR 4/6	2			Cly Lm	
8-12	10 YR 4/1	100					Si Cly Lm	
12-18	10 YR 4/1	80	10 YR 4/6	20			Si Cly Lm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☒ Oxidized Rhizospheres along 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): 12
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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 31141086 up 2

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 31141086

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2

Subregion (LRR): F Lat: 46.981666 Long: -101.629372 Datum: NAD 83

Soil Map Unit Name: Rhoades-Daglum complex, 0 to 9 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 ☒		
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒	**Is the Sampling 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. **Bromus inermis**	50	Yes	UPL
2. **Poa pratensis**	40	No	FACU
3. **Medicago sativa**	10	NO	UPL
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: _____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☐ No ☒

Remarks:

SOIL

Sampling Point: 31141086 up 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 3/2						Lm	
10-15	10 YR 4/3						Lm	
15-20	10 YR 5/4						Cly Lm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 36141087 wet 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 36141087

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): F Lat: 46.981645 Long: -101.653027 Datum: NAD 83

Soil Map Unit Name: Belfield-Daglum silt loams, 2 to 6 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 ☐		
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐	**Is the Sampling Area within a Wetland?**	**Yes ☒ No ☐**

Remarks:

riparian wetland

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. **Spartina pectinata**	15	No	FACW
2. **Phalaris arundinacea**	85	Yes	FACW+
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = 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: ____ (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	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
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 ≤3.0[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 ☒ No ☐

Remarks:

SOIL

Sampling Point: 36141087 wet 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 2/1	98	7.5 YR 4/6	2			Cly Lm	
12-22	2.5 Y 4/2	95	7.5 YR 5/8	5			Cly Lm	
22-30	2.5 Y 5/3	80	7.5 YR 5/8	20			Cly	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☒ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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):	24
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	4

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: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 36141087 up 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 36141087

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): <1

Subregion (LRR): F Lat: 46.981691 Long: -101.652841 Datum: NAD 83

Soil Map Unit Name: Belfield-Daglum silt loams, 2 to 6 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 ☒		
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒	**Is the Sampling 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. **Bromus inermis**	70	Yes	UPL
2. **Poa pratensis**	30	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = 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: _____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☐ No ☒

Remarks:

SOIL

Sampling Point: 36141087 up 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10 YR 3/2						Si Lm	
15-18	2.5 Y 5/6						Cly Lm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 34141087 wet 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 34, 141, 087

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): F Lat: 46.981623 Long: -101.689274 Datum: NAD 83

Soil Map Unit Name: Straw 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 ☒	No ☐		
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐	**Is the Sampling Area within a Wetland?**	**Yes ☒ No ☐**

Remarks:

riparian wetland

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. **Spartina pectinata**	87	Yes	FACW
2. **Agropyron trachycaulum**	10	NO	FACU
3. **Eleocharis compressa**	3	No	FACW
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: ____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☒ No ☐

Remarks:

SOIL

Sampling Point: 34141087 wet 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 2/1	97	10 YR 3/3	3			Cly Lm	
8-18	10 YR 2/1	73	10 YR 4/3	25			FnSiClLm	
18+	10YR2/1		7.5 YR 5/8	3				

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☒ Oxidized Rhizospheres along 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):	12
Water Table Present?	Yes	☒	No	☐	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	1

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: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 34141087 up 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 34141087

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): <1

Subregion (LRR): F Lat: 46.981592 Long: -101.689489 Datum: NAD 83

Soil Map Unit Name: Straw 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 ☐	No ☒		
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒	**Is the Sampling Area within a Wetland?**	**Yes ☐ No ☒**

Remarks:

upland

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. **Agropyron smithii**	28	NO	FACU
2. **Poa pratensis**	68	Yes	FACU
3. **Symphoricarpos occidentalis**	3	No	UPL
4. **Grindelia squarrosa**	1	No	UPL
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: _____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☐ No ☒

Remarks:

SOIL Sampling Point: 34141087 up 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2				C	M	Lm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 34141087 wet 2

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 34, 141, 087

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): F Lat: 46.981645 Long: -101.693452 Datum: NAD 83

Soil Map Unit Name: Belfield-Daglum 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 ☐		
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐	**Is the Sampling Area within a Wetland?**	**Yes ☒ No ☐**

Remarks:

riparian wetland

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. **Agropyron repens**	90	YES	FAC
2. **Typha latifolia**	5	NO	OBL
3. **Rumex crispus**	3	NO	FACW
4. **Aster simplex**	2	NO	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	100	= 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: ____ (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	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
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 ≤3.0[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 ☒ No ☐

Remarks:

SOIL

Sampling Point: 34141087 wet 2

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]		
0-6	10 YR 2/1						SiClyLm	
6-28	2.5 Y 4/2						SiClyLm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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):	1
Water Table Present?	Yes	☒	No	☐	Depth (inches):	8
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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 34141087 up 2

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 34141087

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): ____

Subregion (LRR): F Lat: 46.981742 Long: -101.693020 Datum: NAD 83

Soil Map Unit Name: Straw 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 ☐	No ☒		
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒	**Is the Sampling Area within a Wetland?**	**Yes ☐ No ☒**

Remarks:

plowed field

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 **100**

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or 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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☐ No ☒

Remarks:

SOIL

Sampling Point: 34141087 up 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2						SiLm	
10-18	10 YR 4/2						SiLm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 33141087 wet 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 33141087

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): F Lat: 46.981628 Long: -101.706748 Datum: NAD 83

Soil Map Unit Name: Grail 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 ☒	No ☐		
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐	**Is the Sampling Area within a Wetland?**	**Yes ☒ No ☐**

Remarks:

riparian wetland

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. **Spartina pectinata**	60	yes	FACW
2. **Rumex crispus**	5	no	FACW
3. **Carex lanuginosa**	25	no	OBL
4. **Phalaris arundinacea**	10	no	FACW+
5.			
6.			
7.			
8.			
9.			
10.			
	100 = 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: ____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☒ No ☐

Remarks:

SOIL

Sampling Point: 33141087 wet 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR2/1	80	7.5YR 4/6	20			ClyLm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (Inches):

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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):	8
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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11

Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 33141087 up 1

Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 33141087

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): F Lat: 46.981633 Long: -101.706522 Datum: NAD 83

Soil Map Unit Name: Grail 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 ☐	No ☒		
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒	**Is the Sampling 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. **Bromus inermis**	60	yes	UPL
2. **Poa pratensis**	30	no	FACU
3. **Conyza canadensis**	2	no	FACU
4. **Artemisia frigida**	3	no	NL
5. **Aster ericoides**	5	no	FACU
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: _____ (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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
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 ≤3.0[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 ☐ No ☒

Remarks:

SOIL

Sampling Point: 33141087 up 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 3/1						Lm	
10-18	10 YR 4/3						SiLm	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

- ☐ 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 (TF 12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils 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 along Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along 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:

Appendix C
Tree and Shrub Inventory Forms

TREE COUNT: Allete Transmission Line

Sampled by: MM, JS Date: 10/25/11

Location / Site ID:

Woodland Type (circle): Native[1] Planted[2]

SPECIES	Invasive Species?[3]	# (DBH 1-2")	# (DBH >2")	TOTAL NUMBER
34141087-01				
Fra pen		5	37	42
34141087-02				
Fra pen		14	120	134
33141087-01 → Native by Stream				
Pop del			3	3
33141087-02				
Ulm pum		3	6	9
33141087-03				
Ulm pum			22	22
33141087-04				
Ulm pum			19	19
33141087-05				
Ulm pum		3	12	15
32141087-01				
Fra pen			2	2
31141087-01 → native				
She arg (shrub/dot)		23		1265

1265

[1] Criteria for counting in native areas: trees DBH >1" and shrubs total count

[2] Criteria for counting in planted areas: total count

[2] invasive includes species such as caragana, russian olive, buckthorn, siberian elm

TREE COUNT: Allete Transmission Line

Sampled by: MM, JS Date: 10/25/11

Location / Site ID:

Woodland Type (circle): Native[1] (Planted[2])

SPECIES	Invasive Species?[3]	# (DBH 1-2")	# (DBH >2")	TOTAL NUMBER
32141086-01				
Car orb		9		9
Ulm ame			8	8
31141086-01				
Fra pen			34	34
31141086-02				
Ulm pum			32	32
31141086-03				
Ulm ame			13	13
31141086-04				
Ulm pum			12	12
31141086-05				
Fra pen				29
Pop del				3
Lilac				11
Pin sil				70
36141087-01				
Sal amy			6	6

[1] Criteria for counting in native areas: trees DBH >1" and shrubs total count

[2] Criteria for counting in planted areas: total count

[2] invasive includes species such as caragana, russian olive, buckthorn, siberian elm

Appendix D
Project Area Photgraphs

Photograph 1. Photograph of tree and shrub location 33141087-05 taken facing east. Multiple treerows and shelterbelts similar to this one are located within the Project Area.

Photograph 2. Photograph of wetland 33141087-w1 and waterbody 33141087-s1 taken facing north.

Photograph 3. Photograph of wetland 34141087-w2 and waterbody 34141087-s2 taken facing north.

Photograph 4. Photograph of wetland 34141087-w2 and waterbody 34141087-s1 taken facing north.

Photograph 5. Photograph of wetland 36141087-w1 and waterbody 36141087-s1 facing east. Photograph also includes Tree and shrub location 36141087-01.

Photograph 6. Photograph of wetland 31141086-w2 and waterbody 31141086-s1 taken facing north.

Photograph 7. Photograph of wetland 31141086-w and tree and shrub location 31141086-01 taken facing north.

Photograph 8. Photograph of waterbody 32141086-s2 and tree and shrub location 32141086-01 taken facing east.

Photograph 9. Photograph taken while facing east, looking down the east end of the Project Area. Crop fields such as this are common throughout the Project Area.

Photograph 10. Photograph of waterbody 34151086-s1taken facing north on the east end of the Project Area.

Appendix E
Waterbody Data Sheets

Alleete Line Project

Waterbody Data Sheet

FEATURE ID: 34141086e-01	**SURVEY DATE:** 10/25/11
WATERBODY NAME:	**INVESTIGATOR:** MM, JS

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [X] INTERMITTENT
- [ ] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 2 FT

CURRENT WATER DEPTH AT CROSSING: .5 FT

SUBSTRATE

- [ ] BEDROCK
- [ ] GRAVEL
- [ ] SAND
- [X] SILT
- [ ] CLAY
- [ ] OTHER _____

- [X] RUNS
- [ ] POOLS
- [ ] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 5 FT	HEIGHT: 15 FT
SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [ ] 0 - 30° [X] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 150 FT

EVIDENCE OF EROSION: cropped through hill erosion

SCOUR POTENTIAL: high since cropped through

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

RIPARIAN SPECIES PRESENT: thr jnb, Rum cr., Typha, Phal vir

INVASIVES/NOXIOUS VEGETATION [ ] YES [X] NO

IF YES, SPECIES PRESENT:

ADJACENT WETLAND [ ] YES [X] NO

T & E SPECIES [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[X] CLEAR, NATURAL LINE IMPRESSED ON BANK	[ ] CHANGES IN SOIL CHARACTER	[ ] SHELVING
[X] VEGETATION MATTED DOWN, BENT OR ABSENT	[ ] SEDIMENT DEPOSITION	[ ] SCOUR
[ ] LEAF LITTER DISTURBED OR WASHED AWAY	[ ] SEDIMENT SORTING	[ ] WATER STAINING
[X] DESTRUCTION OF TERRESTRIAL VEGETATION	[ ] PRESENCE OF LITTER OR DEBRIS	[ ] OTHER:
[ ] ABRUPT CHANGE IN PLANT COMMUNITY	[ ] PRESENCE OF WRACK LINE	

PHOTOGRAPHS

Allete Line Project

Waterbody Data Sheet

FEATURE ID: 32141086-01	**SURVEY DATE:** 10/25/11
WATERBODY NAME:	**INVESTIGATOR:** MM, JS

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [ ] INTERMITTENT
- [X] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 20 FT 80

CURRENT WATER DEPTH AT CROSSING: 1 FT

SUBSTRATE

- [ ] BEDROCK
- [ ] GRAVEL
- [ ] SAND
- [X] SILT
- [ ] CLAY
- [ ] OTHER _____

- [X] RUNS
- [X] POOLS
- [X] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 10 FT	HEIGHT: 1 FT
SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 20FT

EVIDENCE OF EROSION: cropped through rills

SCOUR POTENTIAL: high cropped up to through in areas

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

RIPARIAN SPECIES PRESENT: Typ Cat Rus Cr, C Ca, Hor Jun

INVASIVES/NOXIOUS VEGETATION [ ] YES [X] NO

IF YES, SPECIES PRESENT:

ADJACENT WETLAND [ ] YES [X] NO

T & E SPECIES [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[X] CLEAR, NATURAL LINE IMPRESSED ON BANK	[ ] CHANGES IN SOIL CHARACTER	[ ] SHELVING
[X] VEGETATION MATTED DOWN, BENT OR ABSENT	[ ] SEDIMENT DEPOSITION	[ ] SCOUR
[ ] LEAF LITTER DISTURBED OR WASHED AWAY	[ ] SEDIMENT SORTING	[ ] WATER STAINING
[X] DESTRUCTION OF TERRESTRIAL VEGETATION	[ ] PRESENCE OF LITTER OR DEBRIS	[ ] OTHER:
[X] ABRUPT CHANGE IN PLANT COMMUNITY	[ ] PRESENCE OF WRACK LINE	

PHOTOGRAPHS

Allete Line Project

Waterbody Data Sheet

FEATURE ID: 3214108W-02	**SURVEY DATE:** 10/25/11
WATERBODY NAME:	**INVESTIGATOR:** MM, JS

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [ ] INTERMITTENT
- [X] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 5 FT

CURRENT WATER DEPTH AT CROSSING: 0.5 FT

SUBSTRATE

- [ ] BEDROCK
- [ ] GRAVEL
- [ ] SAND
- [ ] OTHER _____
- [X] SILT
- [ ] CLAY

- [X] RUNS
- [ ] POOLS
- [ ] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 4 FT	HEIGHT: 6 FT
SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 150 FT

EVIDENCE OF EROSION: [illegible]

SCOUR POTENTIAL: [illegible]

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

RIPARIAN SPECIES PRESENT: [illegible]

INVASIVES/NOXIOUS VEGETATION [ ] YES [X] NO

IF YES, SPECIES PRESENT:

ADJACENT WETLAND [ ] YES [X] NO

T & E SPECIES [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

- [ ] CLEAR, NATURAL LINE IMPRESSED ON BANK
- [X] VEGETATION MATTED DOWN, BENT OR ABSENT
- [ ] LEAF LITTER DISTURBED OR WASHED AWAY
- [X] DESTRUCTION OF TERRESTRIAL VEGETATION
- [X] ABRUPT CHANGE IN PLANT COMMUNITY
- [ ] CHANGES IN SOIL CHARACTER
- [ ] SEDIMENT DEPOSITION
- [ ] SEDIMENT SORTING
- [ ] PRESENCE OF LITTER OR DEBRIS
- [ ] PRESENCE OF WRACK LINE
- [ ] SHELVING
- [ ] SCOUR
- [ ] WATER STAINING
- [ ] OTHER:

PHOTOGRAPHS

Allete Line Project

Waterbody Data Sheet

FEATURE ID: 3141086e-01	**SURVEY DATE:** 10/25/11
WATERBODY NAME:	**INVESTIGATOR:** MM, JS

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [ ] INTERMITTENT
- [X] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 90 FT

CURRENT WATER DEPTH AT CROSSING: 1 FT

SUBSTRATE

- [ ] BEDROCK
- [ ] GRAVEL
- [ ] SAND
- [ ] OTHER _____
- [ ] SILT
- [X] CLAY

- [X] RUNS
- [X] POOLS
- [X] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 25 FT	HEIGHT: 15 FT
SLOPE [ ] 0 - 30° [X] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 300 FT

EVIDENCE OF EROSION: none evident

SCOUR POTENTIAL: low well vegetated

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

RIPARIAN SPECIES PRESENT: Sm pine, Rvom cr, Hor jnib, Alr rug, Elaeodnus

INVASIVES/NOXIOUS VEGETATION [X] YES [ ] NO

IF YES, SPECIES PRESENT: Bro ine, Cir arv

ADJACENT WETLAND [ ] YES [X] NO

T & E SPECIES [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[ ] CLEAR, NATURAL LINE IMPRESSED ON BANK	[ ] CHANGES IN SOIL CHARACTER	[ ] SHELVING
[X] VEGETATION MATTED DOWN, BENT OR ABSENT	[ ] SEDIMENT DEPOSITION	[ ] SCOUR
[ ] LEAF LITTER DISTURBED OR WASHED AWAY	[ ] SEDIMENT SORTING	[X] WATER STAINING
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION	[ ] PRESENCE OF LITTER OR DEBRIS	[ ] OTHER:
[X] ABRUPT CHANGE IN PLANT COMMUNITY	[ ] PRESENCE OF WRACK LINE	

PHOTOGRAPHS

Allete Line Project

Waterbody Data Sheet

FEATURE ID: 30141087 - 01	**SURVEY DATE:** 10/25/11
WATERBODY NAME:	**INVESTIGATOR:**

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [X] INTERMITTENT
- [ ] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 0 FT

CURRENT WATER DEPTH AT CROSSING: 0 FT

SUBSTRATE

- [ ] BEDROCK
- [ ] GRAVEL
- [ ] SAND
- [X] SILT
- [ ] CLAY
- [ ] OTHER _____

- [ ] RUNS
- [X] POOLS
- [X] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 30 FT	HEIGHT: 25 FT
SLOPE [ ] 0 - 30° [ ] 31 - 45° [X] 46 - 60° [ ] 61 - 90°	SLOPE [ ] 0 - 30° [X] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 256 FT

EVIDENCE OF EROSION: None

SCOUR POTENTIAL: low - well vegetated

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

RIPARIAN SPECIES PRESENT: Mix woody

INVASIVES/NOXIOUS VEGETATION [X] YES [ ] NO

IF YES, SPECIES PRESENT: Mix woody, Cirsium

ADJACENT WETLAND [X] YES [ ] NO

T & E SPECIES [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[ ] CLEAR, NATURAL LINE IMPRESSED ON BANK	[ ] CHANGES IN SOIL CHARACTER	[ ] SHELVING
[X] VEGETATION MATTED DOWN, BENT OR ABSENT	[ ] SEDIMENT DEPOSITION	[ ] SCOUR
[ ] LEAF LITTER DISTURBED OR WASHED AWAY	[ ] SEDIMENT SORTING	[ ] WATER STAINING
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION	[ ] PRESENCE OF LITTER OR DEBRIS	[ ] OTHER:
[X] ABRUPT CHANGE IN PLANT COMMUNITY	[ ] PRESENCE OF WRACK LINE	

PHOTOGRAPHS

Allete Line Project

Waterbody Data Sheet

FEATURE ID: 34141087-01

WATERBODY NAME:

SURVEY DATE: 10/25/11

INVESTIGATOR: MM, JS

FLOW CHARACTERISTICS

[ ] EPHEMERAL
[ ] INTERMITTENT
[X] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 8 FT

CURRENT WATER DEPTH AT CROSSING: 2 FT

SUBSTRATE

[ ] BEDROCK
[ ] GRAVEL
[ ] SAND
[ ] OTHER _____
[ ] SILT
[X] CLAY

[X] RUNS
[X] POOLS
[X] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 3 FT	HEIGHT: 6 FT
SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 90 FT

EVIDENCE OF EROSION: None

SCOUR POTENTIAL: ~~NONE~~ LOW - mild vegetation

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

RIPARIAN SPECIES PRESENT: Sp- fir, typ hw sitka, Elderberry

INVASIVES/NOXIOUS VEGETATION [ ] YES [X] NO

IF YES, SPECIES PRESENT:

ADJACENT WETLAND [X] YES [ ] NO

T & E SPECIES [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[ ] CLEAR, NATURAL LINE IMPRESSED ON BANK
[X] VEGETATION MATTED DOWN, BENT OR ABSENT
[ ] LEAF LITTER DISTURBED OR WASHED AWAY
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION
[X] ABRUPT CHANGE IN PLANT COMMUNITY
[ ] CHANGES IN SOIL CHARACTER
[X] SEDIMENT DEPOSITION
[ ] SEDIMENT SORTING
[ ] PRESENCE OF LITTER OR DEBRIS
[ ] PRESENCE OF WRACK LINE
[ ] SHELVING
[ ] SCOUR
[X] WATER STAINING
[ ] OTHER:

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_____ Project

Waterbody Data Sheet

FEATURE ID: 34141087-02

WATERBODY NAME:

SURVEY DATE: 10/25/11

INVESTIGATOR: MM, JS

FLOW CHARACTERISTICS

[ ] EPHEMERAL
[X] INTERMITTENT
[ ] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 10 FT

CURRENT WATER DEPTH AT CROSSING: 1 FT

SUBSTRATE

[ ] BEDROCK
[ ] GRAVEL
[ ] SAND
[ ] OTHER _____
[X] SILT
[ ] CLAY

[X] RUNS
[X] POOLS
[X] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 5 FT	HEIGHT: 5 FT
SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [X] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 400 FT

EVIDENCE OF EROSION: None apparent

SCOUR POTENTIAL: Low, well vegetated

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

RIPARIAN SPECIES PRESENT: Typ Lod, Elaeagnus sp-pca. cal Str, Agr rep, Rum cr, Bet lut, Sol can

INVASIVES/NOXIOUS VEGETATION [X] YES [ ] NO

IF YES, SPECIES PRESENT: Brs ine. Cir vul

ADJACENT WETLAND [ ] YES [X] NO

T & E SPECIES [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[X] CLEAR, NATURAL LINE IMPRESSED ON BANK
[X] VEGETATION MATTED DOWN, BENT OR ABSENT
[ ] LEAF LITTER DISTURBED OR WASHED AWAY
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION
[X] ABRUPT CHANGE IN PLANT COMMUNITY
[ ] CHANGES IN SOIL CHARACTER
[ ] SEDIMENT DEPOSITION
[ ] SEDIMENT SORTING
[ ] PRESENCE OF LITTER OR DEBRIS
[ ] PRESENCE OF WRACK LINE
[ ] SHELVING
[ ] SCOUR
[ ] WATER STAINING
[ ] OTHER:

PHOTOGRAPHS

Allete Line Project

Waterbody Data Sheet

FEATURE ID: 33141087-01	**SURVEY DATE:** 10/25/11
WATERBODY NAME:	**INVESTIGATOR:** MM, JD

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [X] INTERMITTENT
- [ ] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 20 FT

CURRENT WATER DEPTH AT CROSSING: 1 FT

SUBSTRATE

- [ ] BEDROCK
- [ ] GRAVEL
- [ ] SAND
- [X] SILT
- [ ] CLAY
- [ ] OTHER _____

- [X] RUNS
- [X] POOLS
- [X] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 50 FT	HEIGHT: 40 FT
SLOPE [ ] 0 - 30° [ ] 31 - 45° [X] 46 - 60° [ ] 61 - 90°	SLOPE [ ] 0 - 30° [ ] 31 - 45° [X] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 350 FT

EVIDENCE OF EROSION: None

SCOUR POTENTIAL: Low - well vegetated

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

RIPARIAN SPECIES PRESENT: Spr grass, cw low, Rush sp., Timothy, Rasp sed

INVASIVES/NOXIOUS VEGETATION [X] YES [ ] NO

IF YES, SPECIES PRESENT: Phal arun

ADJACENT WETLAND [ ] YES [X] NO

T & E SPECIES [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[ ] CLEAR, NATURAL LINE IMPRESSED ON BANK	[ ] CHANGES IN SOIL CHARACTER	[ ] SHELVING
[X] VEGETATION MATTED DOWN, BENT OR ABSENT	[ ] SEDIMENT DEPOSITION	[ ] SCOUR
[ ] LEAF LITTER DISTURBED OR WASHED AWAY	[ ] SEDIMENT SORTING	[X] WATER STAINING
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION	[ ] PRESENCE OF LITTER OR DEBRIS	[ ] OTHER:
[X] ABRUPT CHANGE IN PLANT COMMUNITY	[ ] PRESENCE OF WRACK LINE	

PHOTOGRAPHS

Allete Line Project

Waterbody Data Sheet

FEATURE ID: ~~3211087~~ 31141087o1	**SURVEY DATE:** 10/25/11
WATERBODY NAME:	**INVESTIGATOR:** MM, JS

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [x] INTERMITTENT
- [ ] PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 2 FT

CURRENT WATER DEPTH AT CROSSING: .5 FT

SUBSTRATE

- [ ] BEDROCK
- [ ] GRAVEL
- [ ] SAND
- [x] SILT
- [ ] CLAY
- [ ] OTHER _____

- [ ] RUNS
- [ ] POOLS ? can't tell
- [ ] RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 25 FT	HEIGHT: 2 FT
SLOPE [ ] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [x] 61 - 90°	SLOPE [x] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

WIDTH (HIGHEST BANK TO HIGHEST BANK): 250 FT

EVIDENCE OF EROSION: planted

SCOUR POTENTIAL: high planted thus é on slope

RIPARIAN HABITAT

RIPARIAN VEGETATION [x] YES [ ] NO

RIPARIAN SPECIES PRESENT: Phal arun, Hor jub Ag sp, Ast lae, Rum cr.

INVASIVES/NOXIOUS VEGETATION [x] YES [ ] NO

IF YES, SPECIES PRESENT: Phal arun, Cirs ar

ADJACENT WETLAND [ ] YES [x] NO

T & E SPECIES [ ] YES [x] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[ ] CLEAR, NATURAL LINE IMPRESSED ON BANK	[ ] CHANGES IN SOIL CHARACTER	[ ] SHELVING
[ ] VEGETATION MATTED DOWN, BENT OR ABSENT	[ ] SEDIMENT DEPOSITION	[ ] SCOUR
[ ] LEAF LITTER DISTURBED OR WASHED AWAY	[ ] SEDIMENT SORTING	[x] WATER STAINING
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION	[ ] PRESENCE OF LITTER OR DEBRIS	[ ] OTHER:
[x] ABRUPT CHANGE IN PLANT COMMUNITY	[ ] PRESENCE OF WRACK LINE	

been plowed recently - difficult to delineate

PHOTOGRAPHS

September 30, 2011

Mr. Jeff Towner
Project Leader
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

RE: Southwest Oliver Transmission Project in Mercer, Morton, and Oliver Counties, North Dakota

Dear Project Leader Towner:

HDR Engineering, Inc. (HDR) is currently gathering environmental information for the Southwest Oliver 230 kV Transmission Line Project proposed by Minnesota Power (MinnPower) in Mercer, Morton and Oliver Counties, North Dakota. The proposed transmission line will be approximately 11 miles in length and connect the existing Bison 1 Project Substation in Morton County to the Tri-County 230/34.5kV Substation in Mercer County, as shown in Figure 1. MinnPower will be submitting a Route Permit Application for the proposed project to the North Dakota Public Services Commission (NDPSC).

Although final pole locations and transmission line routing has not been determined at this time, Table 1 identifies sections potentially affected by the project:

Table 1 – Sections within Project Boundary

County	Township	Range	Sections
Morton	140N	86W	3-6
	140N	87W	1-6
	140N	88W	1-3
Oliver	141N	86W	31-35
	141N	87W	31-36
Mercer	141N	88W	36

HDR Engineering, Inc.
701 Xenia Avenue South, Suite 600
Minneapolis, MN 55416
Phone (763) 591-5400
Fax (763) 591-5413
www.hdrinc.com

We welcome any comments the U.S. Fish and Wildlife Service may have at this time or throughout the permit application process. Your comments will be incorporated into the NDPSC review process for the Southwest Oliver project.

This notification precedes publication of the NDPSC Route Permit Application but does not preclude subsequent review and comment on the documents after publication. Other formal opportunities to comment on the project will follow at a later date when public hearings are held, anticipated to occur in spring or summer 2012.

Enclosed is a map detailing the location and revised project boundary of the Southwest Oliver project area to facilitate your review. If you require further information or have questions regarding this matter, please call me at (763) 278-5453.

Sincerely,

Kelly Garvey

Kelly Garvey
Environmental Scientist

Enclosures:
Figure 1 - Project Location Map

Cc: Dan McCourtney, Minnesota Power

HDR Engineering, Inc.
701 Xenia Avenue South, Suite 600
Minneapolis, MN 55416
Phone (763) 591-5400
Fax (763) 591-5413
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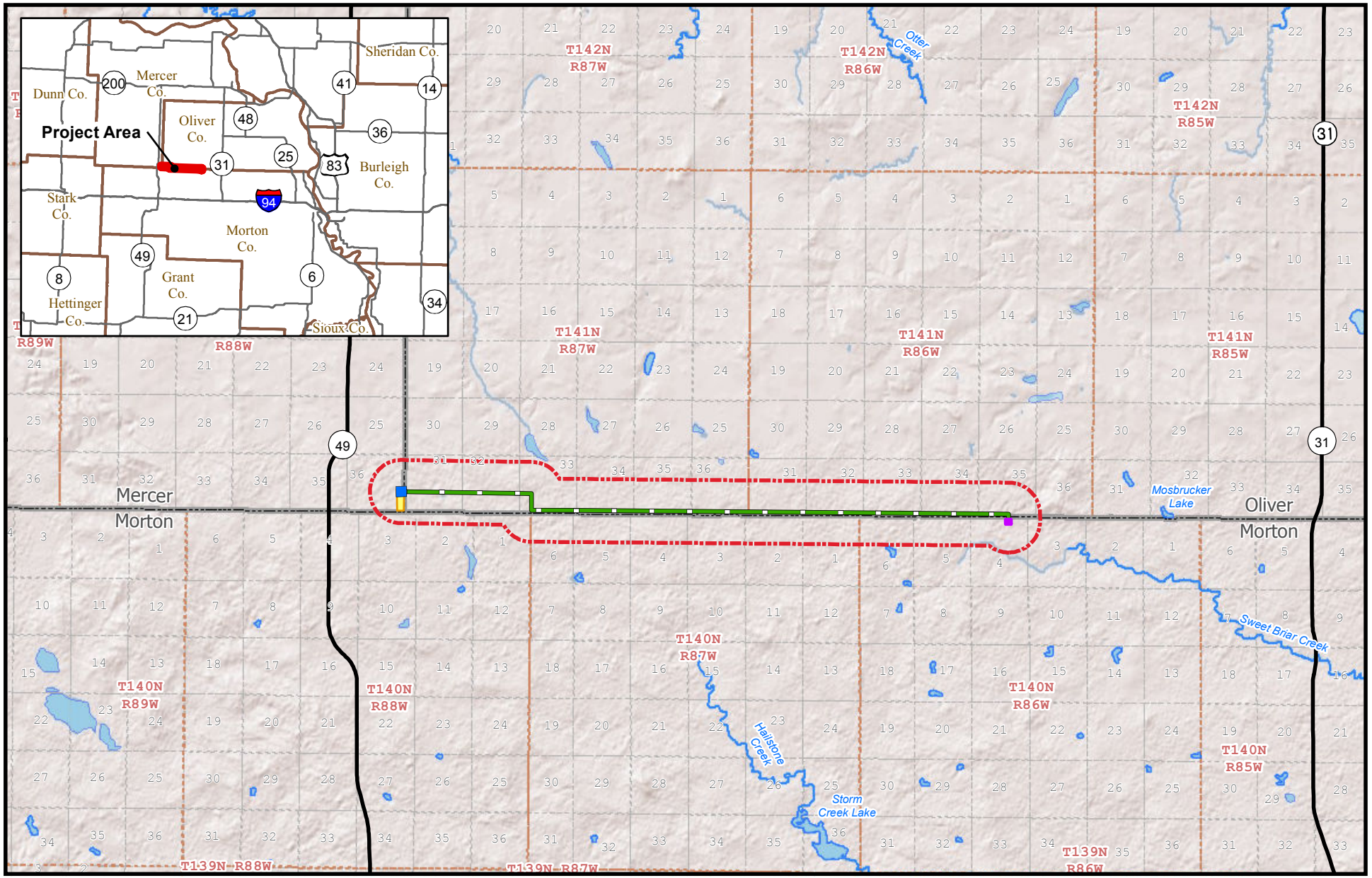


HDR

minnesota power
AN ALLETE COMPANY

Miles
0 0.5 1 2 3

- Proposed ACE 230kV
- Preliminary Substation
- Bison Substation
- West Substation
- Route Corridor (1.1 miles)
- Section Boundary
- Township Boundary
- County Boundary
- Streams
- Lakes
- Highways

Project Area Map
Southwest Oliver 230 kV
Transmission Line Project
Allete Clean Energy
Morton, Mercer & Oliver Counties, ND

Path: \\mspe-gis-file\GISProj\ALLETECleanEnergy\170200\map_docs\AgencyLetterMaps\ACE_8X11L_AgencyMap2.mxd

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

DEC -5 2011

Ms. Kelly Garvey
Environmental Scientist
HDR Engineering, Inc.
701 Xenia Avenue South, Suite 600
Minneapolis, Minnesota 55416

Re: Southwest Oliver Transmission Project in Mercer, Morton, and Oliver Counties, North Dakota

Dear Ms. Garvey:

The U.S. Fish and Wildlife Service (Service) has reviewed Minnesota Power's proposed Southwest Oliver 230kV Transmission Line Project, as described in your September 30, 2011, letter. The proposed project includes construction of approximately 11 miles of 230kV transmission line from the existing Bison I Wind Energy Project Substation in Morton County to the Tri-County 230/34.5kV Substation in Mercer County, North Dakota. We offer the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d, 54 Stat. 250), the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.), and the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

The Service holds certain resources in trust and manages them for the benefit of the American people. These resources include migratory birds, inter-jurisdictional fisheries, federally-listed threatened and endangered species of plants and animals and their habitats, and units of the National Wildlife Refuge system. When planning an activity, project proponents should give careful consideration to potential impacts to these trust resources and compliance with the laws mentioned above. Additional information is provided below.

Migratory Birds

Adequate consideration for avian resources early in the project planning process can help to minimize impacts to migratory birds. The Service has coordinated with the Avian Power Line Interaction Committee (APLIC) to develop guidelines to assist companies in formulating Avian Protection Plans (APP). These plans are utility-specific and designed to provide a structured way for a company to reduce avian mortality resulting from interactions with electric utility facilities (e.g. collisions and electrocutions). The APP can be tailored to each utility's industry-specific and site-specific wildlife needs, while in the process furthering avian conservation and improved

reliability and customer service. A utility that implements the principles contained in these APP guidelines will greatly reduce avian risk as well its own risk of enforcement under the Migratory Bird Treaty Act (MBTA). The guidelines can be accessed from the Service's website at http://www.fws.gov/migratorybirds/.

To minimize the electrocution hazard to birds, the Service, with support from the Rural Utilities Service, recommends that new or updated overhead power lines be constructed in accordance with the current guidelines for preventing raptor electrocutions. The recommended guidelines can be found in "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996". To increase power line visibility and reduce bird fatalities resulting from collisions with power lines, the Service recommends new power lines that cross or run adjacent to rivers or large wetlands be modified according to "Mitigating Bird Collisions with Power Lines: The State of the Art in 1994". Both publications can be obtained by writing or calling the Edison Electric Institute, P.O. Box 266, Waldorf, Maryland 20604-0266, (1-800-334-5453) or visiting their website at www.eei.org.

The MBTA prohibits the taking, killing, possession, and transportation (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for authorizing unintentional take, the Service realizes that some birds may be killed by power lines during project construction and operation even if all known reasonable and effective measures to protect birds are used. The Service Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and agencies that have taken effective steps to avoid take of migratory birds, and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating those who take migratory birds without identifying and implementing all reasonable, prudent, and effective measures to avoid that take. Individuals, companies, and agencies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during construction or similar activities.

Bald and Golden Eagles

The BGEPA prohibits anyone without a permit issued by the Secretary of the Interior from taking bald eagles, including their parts, nests, or eggs. The Act provides criminal and civil penalties for persons who take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. The Act defines take as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. "Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." In addition to immediate impacts, this definition also covers

impacts that result from human-induced alterations initiated around a previously-used nest site during a time when eagles are not present, if, upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

We recommend conducting surveys to identify bald or golden eagle nests within 0.5 mile of the proposed route in winter/early spring before trees have leaves that could screen possible nests. To avoid/minimize impacts to nesting eagles from transmission line construction activities, the Service recommends: (1) keeping a 0.5 mile distance between the activity and the nest, (2) maintaining natural areas between the activity and around nest trees (landscape buffers), and (3) avoiding activities during the breeding season (February 1 – July 15). The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest sites and provide for alternative or replacement nest sites. The Service's May 2007, National Bald Eagle Management Guidelines contains detailed information on protecting bald eagles from disturbance due to human activity. The guidelines can be accessed on the Service's website: (http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf).

Threatened and Endangered Species

A list of federally endangered and threatened species that may be present within the proposed project's area of influence is enclosed (enclosure 1). Section 10(a)(1)(B) of the ESA allows non-Federal parties planning activities that have no Federal nexus, but which could result in the incidental taking of listed animals, to apply for an incidental take permit. (A Federal nexus exists whenever an activity is conducted, funded, licensed, or permitted by a Federal agency). The application must include a habitat conservation plan (HCP) laying out the proposed actions, determining the effects of those actions on federally-listed plant and wildlife species and their habitats (and may include proposed or candidate species), and defining measures to minimize and mitigate adverse effects.

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

Endangered whooping cranes have been documented using roosting/feeding habitat in the vicinity of the proposed transmission line route, which is located within whooping crane migration corridor that includes 95% of all confirmed whooping crane sightings in North Dakota (enclosure 2). The presence of suitable roosting and feeding habitat for whooping cranes within the proposed project area and confirmed whooping crane sightings, document the potential for whooping crane presence in the area. A new transmission line in this area has the potential to adversely affect whooping cranes during their annual spring and fall migration through North Dakota. Currently, collisions with power lines are the greatest known source of mortality for

fledged whooping cranes, and have accounted for the death or serious injury of at least 46 whooping cranes since 1956.

Due to the transmission line route location within the whooping crane migration corridor, the Service recommends incorporating measures to protect whooping cranes into the proposed project. Conservation measures to avoid or reduce potential impacts to whooping cranes include, but are not limited to:

- Burying the new electrical transmission line.

- If burying the new line is not feasible, install and maintain visual marking devices on the new transmission line in the 95% whooping crane migration corridor within 1 mile of suitable whooping crane stopover habitat and an equal length of existing transmission/distribution line within 1 mile of suitable whooping crane stopover habitat in the whooping crane migration corridor (preferably in the 75% migration corridor, but at a minimum within the 95% migration corridor).

The recommendation to mark the line within 1 mile of stopover wetlands is intended to provide protection at a distance (1 mile) between potential stopover habitat and the line(s), which represent the greatest collision risk to whooping cranes. Potentially suitable migratory stopover habitat for whooping cranes includes wetlands with areas of shallow water without visual obstructions (i.e., high or dense vegetation). Whooping cranes have been documented to utilize a wide range of wetland sizes for roosting, from some of the smallest natural palustrine wetlands and manmade stock ponds (≈ 0.1 ha) to large lacustrine lakes and rivers. Feeding and roosting sites are typically less than 1 km apart but can occasionally be separated by more than 8 km. Whooping cranes are most vulnerable to collision during low-level flight as they are taking off from or landing in stopover wetlands or as they are moving between stopover wetlands and nearby foraging areas. For local flights, the proximity of power lines to locations where birds are landing and taking off is critical. Power lines dividing wetlands used for roosting from grain fields used for feeding cause the most collisions for cranes because these circumstances encourage crossing the lines at low altitude. Cranes frequently fly 10-15 m (33-49 ft.) above the ground between fields; as a consequence, a 12-m high (39 ft.) transmission line obstructs their typical flight path. In some power line collision mortality studies, no sandhill crane or waterfowl collisions were observed where distances from power lines to bird use areas exceeded 1.6 km (1 mi).

If the above recommendations are followed, and line markers are maintained, the Service believes that whooping crane collision mortality from the proposed project would be unlikely.

Service Property Interests

The Service administers Waterfowl Production Areas owned in fee title as well as wetland and grassland easements throughout North Dakota. A review of Service realty records indicates no Service property interests are located in the planning area.

General Comments

Our review of the National Wetland Inventory (NWI) maps and photographs indicate the proposed planning area includes numerous wetland basins and stream channels. You may access the NWI data directly through their website (wetlands.fws.gov). Other high-value wildlife habitat types in North Dakota include native prairie, wooded draws, and riparian forests. The Service recommends that construction through or adjacent to these areas be avoided where possible or measures be taken to minimize disturbance to these areas.

To minimize disturbance to existing fish and wildlife resources in the project area, the Service provides the following recommendations:

- Schedule construction for late summer or fall/early winter so as not to disrupt waterfowl or other wildlife during the breeding season (February 1 to July 15). If work is proposed to take place during the breeding season or at any other time which may result in the take of migratory birds or active nests, the Service recommends that the project proponent arrange to have a qualified biologist conduct a field survey of the affected habitats to determine the absence or presence of nesting migratory birds. If nesting migratory birds are found, we request you contact this office, suspend construction, or take other measures, such as maintaining adequate buffers, to protect the birds until the young have fledged. The Service further recommends that field surveys for nesting birds, along with information regarding the qualification of the biologist(s) performing the surveys, and any avoidance measures implemented at the project site, be thoroughly documented and that such documentation be shared with the Service and maintained on file by the project proponent at least until such time as construction on the proposed project has been completed.

- Avoid construction in native prairie, if possible, and reseed disturbed native prairie with a comparable native grass/forb seed mixture. Obtain seed stock from nurseries within 250 miles of the project area to insure the particular cultivars are well adapted to the local climate.

- Make no stream channel alterations or changes in drainage patterns.

- Install and maintain appropriate erosion control measures to reduce sediment transport to adjacent wetlands and stream channels.

If construction routes intersect wetlands, streams, or rivers, the Corps of Engineers (Corps) may require a Department of the Army permit for the placement of dredge or fill material into waters of the U.S., including wetlands, or other impacts to navigable waters. We suggest you contact Mr. Daniel Cimarosti, Regulatory Office, Corps of Engineers, 1513 South 12th Street, Bismarck, North Dakota 58504, (701-255-0015), to determine the Corps' permit requirements.

Thank you for the opportunity to comment on this project. If additional information is required, please have your staff contact Terry Ellsworth of my staff, at (701) 250-4481 or at the letterhead address.

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosures (2)

cc: Regulatory Office, Army Corps of Engineers, Bismarck
(Attn: D. Cimarosti)
Director, ND Game & Fish Department, Bismarck
(Attn: G. Link)
Minnesota Power, Duluth, Minnesota
(Attn: D. McCourney)

FEDERAL THREATENED, ENDANGERED, AND CANDIDATE SPECIES
AND DESIGNATED CRITICAL HABITAT FOUND IN
MERCER, MORTON, AND OLIVER COUNTIES, NORTH DAKOTA

ENDANGERED SPECIES

Birds

Interior least tern (Sterna antillarum): Nests along midstream sandbars of the Missouri and Yellowstone Rivers.

Whooping crane (Grus Americana): Aransas-Wood Buffalo Population (264 birds) occurs in North Dakota counties during spring and fall migration between breeding and wintering areas. Whooping cranes prefer to roost overnight in shallow open water wetland habitat with good visibility during migration stopovers.

Fish

Pallid sturgeon (Scaphirhynchus albus): Known only from the Missouri and Yellowstone Rivers. No reproduction has been documented in 15 years.

Mammals

Black-footed ferret (Mustela nigripes): Exclusively associated with prairie dog towns. No records of occurrence in recent years, although there is potential for reintroduction in the future.

Gray wolf (Canis lupus): Occasional visitor in North Dakota. Most frequently observed in the Turtle Mountains area.

THREATENED SPECIES

Birds

Piping plover (Charadrius melodus): Nests on midstream sandbars of the Missouri and Yellowstone Rivers and along shorelines of saline wetlands. More nest in North Dakota than any other state.

CANDIDATE SPECIES

Birds

Sprague's Pipit (Anthus spragueii): Nests in native and planted grassland. Prefers patches of grassland at least 72 acres (29 hectares).

Invertebrates

Dakota skipper (Hesperia dacotae): Found in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflower.

DESIGNATED CRITICAL HABITAT

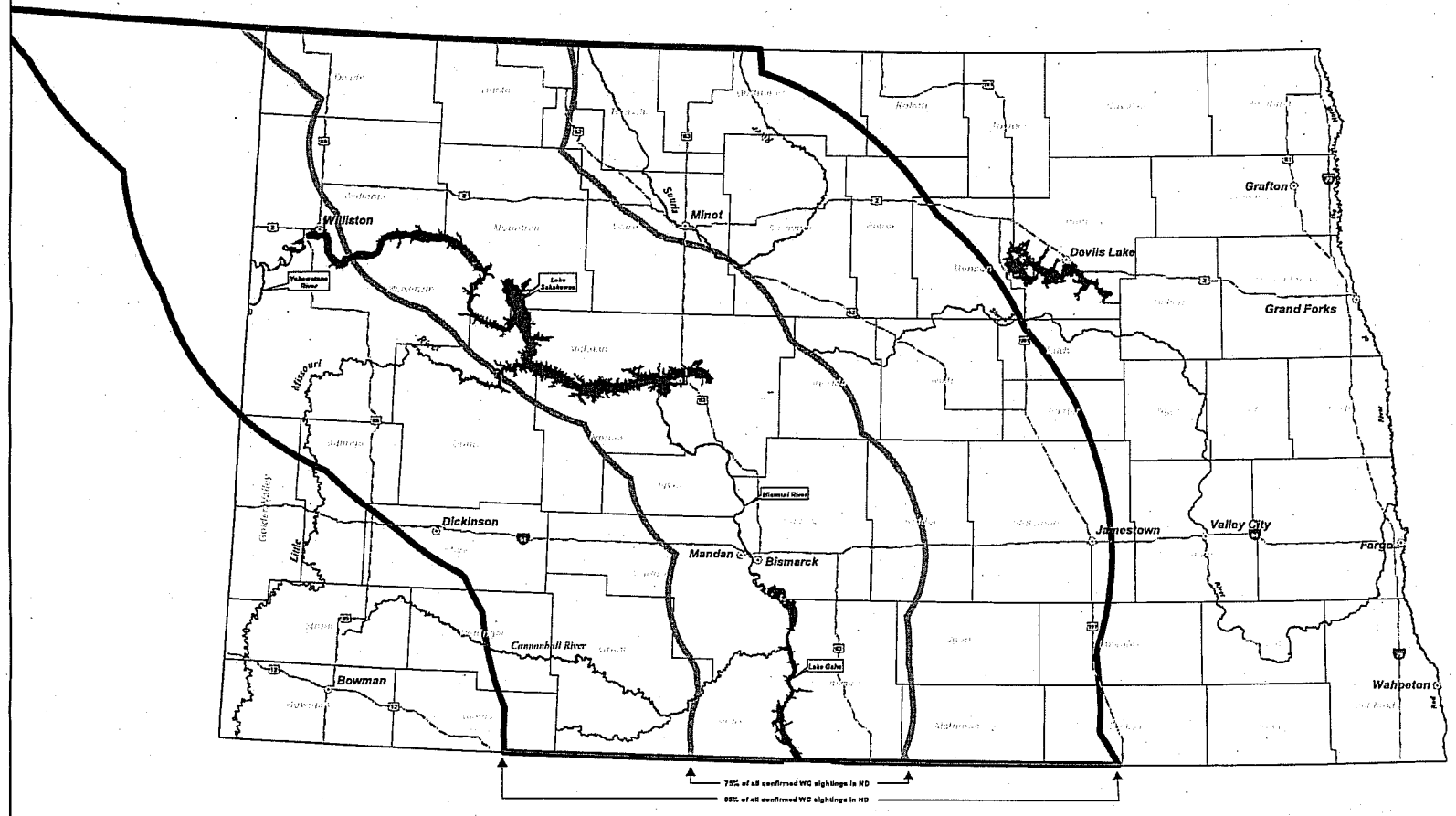
Birds

Piping Plover - Alkali Lakes and Wetlands - Critical habitat includes: (1) shallow, seasonally to permanently flooded, mixosaline to hypersaline wetlands with sandy to gravelly, sparsely vegetated beaches, salt-encrusted mud flats, and/or gravelly salt flats; (2) springs and fens along edges of alkali lakes and wetlands; and (3) adjacent uplands 200 feet (61 meters) above the high water mark of the alkali lake or wetland.

Piping Plover - Missouri River - Critical habitat includes sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and the interface with the river.

Piping Plover - Lake Sakakawea and Oahe - Critical habitat includes sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with the water bodies.

North Dakota
Whooping Crane Migration Corridor



DISCLAIMER:

The USFWS makes no claim as to the accuracy or completeness of the displayed information. Species occurrence and habitat information is provided for illustrative purposes only. Federal action agencies and project proponents should contact the USFWS North Dakota Field Office for more detailed species information and technical assistance in evaluating potential project impacts to fish and wildlife resources.

Map produced 04/21/2010 by USFWS Ecological Services, Bismarck, ND.

75% Whooping Crane Migration Corridor

95% Whooping Crane Migration Corridor

0 12.5 25 50 75 100
Miles

A Class III Cultural Resource Inventory for the Allete Energy 230kV Transmission Line Project in Mercer, Morton and Oliver Counties, North Dakota

Prepared for: HDR, Inc on behalf of Allete Energy, Inc

Prepared by: Christina Burns, M.S., RPA

Beaver Creek Archaeology, Inc.
Mandan, North Dakota

BCA Project #: 2011 - 372

January, 2012

Beaver Creek
ARCHAEOLOGY

WHERE PROGRESS MEETS PRESERVATION

301 1st St NE, Suite 201 | Mandan, ND 58554 | PH (701) 663.5521 | FX (701) 663.5589

www.bcarch.org | e-mail: info@bcarch.org

Abstract

HDR contracted Beaver Creek Archaeology, Inc (BCA) to complete a Class III Cultural Resource Inventory for the proposed Allete Energy 230 kV Transmission Line (Project), in Mercer, Oliver and Morton Counties, North Dakota. During the Project, 11 miles of a transmission line was inventoried to Class III Standards. The inventoried Area of Potential Effect (APE) covers approximately 237 acres. In October 2011, BCA conducted the Class III Inventory in the sections for proposed Project location.

The APE consists of pasture land, native prairie and agricultural fields. The Class III proposed Project locations were identified using topographic and aerial maps as well as Global Positioning System (GPS) hardware. Survey methods included intensive pedestrian survey.

One isolated find (32OLx252), a Knife River Flint flake was identified within the APE. Isolated finds are considered ineligible for the NRHP thus no avoidance is necessary. No additional previously unrecorded cultural resources were identified during the Class III Inventory.

Table of Contents

Tables

Introduction

HDR, Inc. on behalf of Allete Energy, Inc. contracted Beaver Creek Archaeology, Inc. (BCA) to perform a Class III Cultural Resource Inventory of a proposed transmission line project located in central North Dakota. The Area of Potential Effect (APE) covers approximately 237 acres (11 miles) in Mercer, Morton and Oliver Counties North Dakota. The Township, Range, and Sections included are presented below in a tabular format:

Table 1: Allete, Inc. 230 kV Transmission Line Project Location

Township	Range	Sections
140N	86W	4
141N	86W	31-35
141N	87W	31-36
141N	88W	36

On September 23, 2011, Raina Hanley of Beaver Creek Archaeology, Inc. conducted the file search at the State Historical Society of North Dakota (SHSND). A total of two manuscripts, four archaeological sites, no archaeological site leads and seven isolated finds were on record within a one mile radius of the APE.

On October 14-15, 2011, Christina Burns, Mary Mortensen and Christy Mog of Beaver Creek Archaeology, Inc. conducted the Class III Inventory of the APE. This report will detail the results of that inventory.

Project Background and Inventory Methodology

The Project consists of 11 miles of transmission line. The entire Project area, or area of potential effect (APE), was inventoried to a Class III Cultural Inventory standard. The inventoried APE consists of a 11 mile long and 250 foot wide corridor.

BCA cultural resource staff conducted the Class III Cultural Resource Inventory of the proposed Project location in October 2011. The field crew consisted of Christina Burns (P.I.), Mary Mortensen (Archaeological Assistant), and Christy Mog (Archaeological Assistant). Gwen Jakel and Mary Mortensen created the Project map.

The pedestrian survey was performed by lining crew members 10-15 meter apart walking in parallel transects across the APE. In areas with 30 percent or more ground surface visibility, pedestrian survey was deemed sufficient. During the Project, no area fell below 30 percent ground surface visibility. Throughout the survey, field notes and overview pictures of the APE were taken (see photos in Appendix A)

Copies of maps, field notes, and photographs are located at the BCA main office in Mandan, North Dakota.

Environment

The APE is located in the Heart River Archaeological Study Unit and the Knife River Archaeological Study Unit, within the Glaciated Missouri Plateau Subsection of the Missouri Plateau Section of the Great Plains Physiographic Province (SHSND 2008:3.1 & 4.1). The project area is located on a rolling to hilly plains with gentle slopes. A few buttes dot the landscape, with Hailstone Butte being the largest. The rolling terrain of is abundant with potholes, sloughs, and streams. Named streams include Hailstone Creek and Sweet Briar Creek.

This area of North Dakota is situated in a Mixed-grass Prairie (Sedivec and Barker 1998). Western wheatgrass, blue grama, and needle-and-thread grass are found as well as chokecherries, buffaloberry, juneberry, gooseberry, and prairie turnips would have been found seasonally (SHSND 2008).

This is a fit habitat for a number of animals, such as white-tailed deer, mule deer, coyote, muskrat, beaver, fox, and other fur-bearing animals. Bison, elk, antelope, bear, and wolf were once present. There is also an abundance of eagles, hawks, and owls, as well as waterfowl along wetland marshes and prairie potholes. Many of these creatures were resources for food, furs, and feathers for native groups.

Today the area contains an agricultural-based economy. Small grain, corn, grasslands and pasture comprise the Project area. Tree cover in the Project area is limited to wind blocks surrounding farmsteads and along riparian areas.

This biotic diversity along with the availability of water makes this setting favorable for human settlement, both during prehistoric and historic time-periods. One prominent natural resource in this area is Knife River Flint (KRF), which is abundant and has been quarried for centuries by native peoples. Also, good quality Tongue River Silicified sediment, chalcedonies, and silicified wood attracted people to the area. These stones are capable of conchoidal fracturing and are ideal for stone tool production.

Cultural Background

There are several different time periods in which the area has been occupied by people. Evidence of Paleo-Indian hunting and gathering adaptation is very sparse in this area, with only a few Paleo-Indian points found. Other periods include the Plains Archaic Period, where hunting and gathering involved modern flora and fauna; Plains Woodland Period, where routine ceramic processing, burial mound mortuary practices, and possibly some gardening first is evident; Plains Village Period, where the Plains Village life ways with horticulture and subsequent storage of surplus foods is developed, with diagnostic artifacts such as styles and designs of ceramic vessels and the thin, lightweight axe; Equestrian Period, where hunting and foraging modern fauna and flora took place with the introduction of the horse and Euro-American trade goods (SHSND 2008:4.32-4.44).

Most sites in Heart River Study Unit are located on terraces, ridges, and hills/knolls/bluffs. Apart from Cultural Material (CM) Scatter, most of the feature types on terraces are Hearths. On ridges and hills/knolls/bluffs, the most abundant features (apart from CM scatters) are Stone Circles, Other Rock Features, and Quarries/mines (SHSND 2008:4.7).

Research Goals

The goal of the Class III Cultural Resource Inventory is to provide HDR, Inc. and Allete Energy, Inc. with knowledge of the cultural resources within the APE. This knowledge can aid the transmission line project by potentially avoiding such resources and thereby complying with any Federal and State regulations which may be a part of this project.

File Search Results

On September 23, 2011, Raina Hanley of Beaver Creek Archaeology, Inc. conducted the file search at the State Historical Society of North Dakota (SHSND). A total of two manuscripts, four archaeological sites, no archaeological site leads and seven isolated finds were on record within a one mile radius of the APE.

There is a scant amount of cultural resources in the area, but this is possibly due to the lack of Cultural Resource Inventories that have been performed here. According to State Historical Society of North Dakota, the Heart River Study Unit, in which the Project area is located, has a relatively low site density, one site per 6.6 mi² (SHSND 2008:4.6).

Table 2: Manuscripts on File at the Archaeology and Historic Preservation Division, State Historical Society of North Dakota in or near the APE

Year	MS #	Author	Location			Title
			Twp	R	S	
2011	12258	Burns, C.	140	86	4	Bison 2 Wind Energy Center: A Class III Cultural Resource Inventory, Oliver and Morton Counties, ND
1997	7017	Kinney, W.	141	86	35	Class III Cultural Resource Inventory for a proposed Oliver County Borrow Area. NDDOT Project #DPI-SC-0179(001)305

Table 3: Summary Information on Archaeological Sites Recorded near the APE

SITS #	Location			Affiliation	Description	Recorder	NRHP Status
	Twp	R	S				
32MO1385	140	86	3	Period Unknown	CM Scatter/Cairn	Johnson	Ineligible
32OL616	140	86	35	Period Unknown	CM Scatter	Johnson	Unevaluated
32OL617	140	86	35	Period Unknown	Cairn, Stone Circle	Johnson	Unevaluated
32OL627	141	86	35	Period Unknown	Cairn, Stone Circle	Johnson	Unevaluated

Table 4: Summary Information on Archaeological Site Leads/Isolated Finds near the APE

SITS #	Location			Affiliation	Description	Recorder	NRHP Status
	Twp	R	S				
32MOx528	140	86	4	Period Unknown	Isolated Find, Chipped Stone	Johnson	Ineligible
32MOx533	140	86	3	Period Unknown	Isolated Find, Chipped Stone	Johnson	Ineligible
32OLx251	141	86	35	Period Unknown	Isolated Find, Chipped Stone	Johnson	Ineligible
32OLx242	141	86	35	Period Unknown	Isolated Find, Chipped Stone	Johnson	Ineligible
32OLx243	141	86	35	Period Unknown	Isolated Find, Chipped Stone	Johnson	Ineligible
32OLx249	141	86	35	Period Unknown	Isolated Find, Chipped Stone	Johnson	Ineligible
32OLx250	141	86	36	Period Unknown	Isolated Find, Chipped Stone	Johnson	Ineligible

Conclusions and Recommendations

In October 2011, BCA conducted a Class III Cultural Resource Inventory of the proposed transmission line. The Class III Inventory covered approximately 237 acres. Location of the APE can be seen on the map located in Appendix B.

There are four previously recorded cultural resource sites and seven isolated finds recorded within the one mile radius of the APE. None of the previously recorded sites or isolated finds will be impacted by the proposed project (see maps in Appendix B).

During the filed inventory, one isolated find (32OLx252) was identified by BCA archaeologists. This Knife River Flint flake has been recorded as ineligible, therefore no avoidance is required. Consequently, Beaver Creek Archaeology recommends *No Significant Historic Properties Affected* for this project, and that the project can move forward, as long as project construction is limited to the inventoried area within the APE shown in the map in Appendix B.

References Cited

State Historical Society of North Dakota
2008 North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component. Archaeology and Historic Preservation Division, State Historical Society of North Dakota, Bismarck, North Dakota

Appendix A: APE Photographs

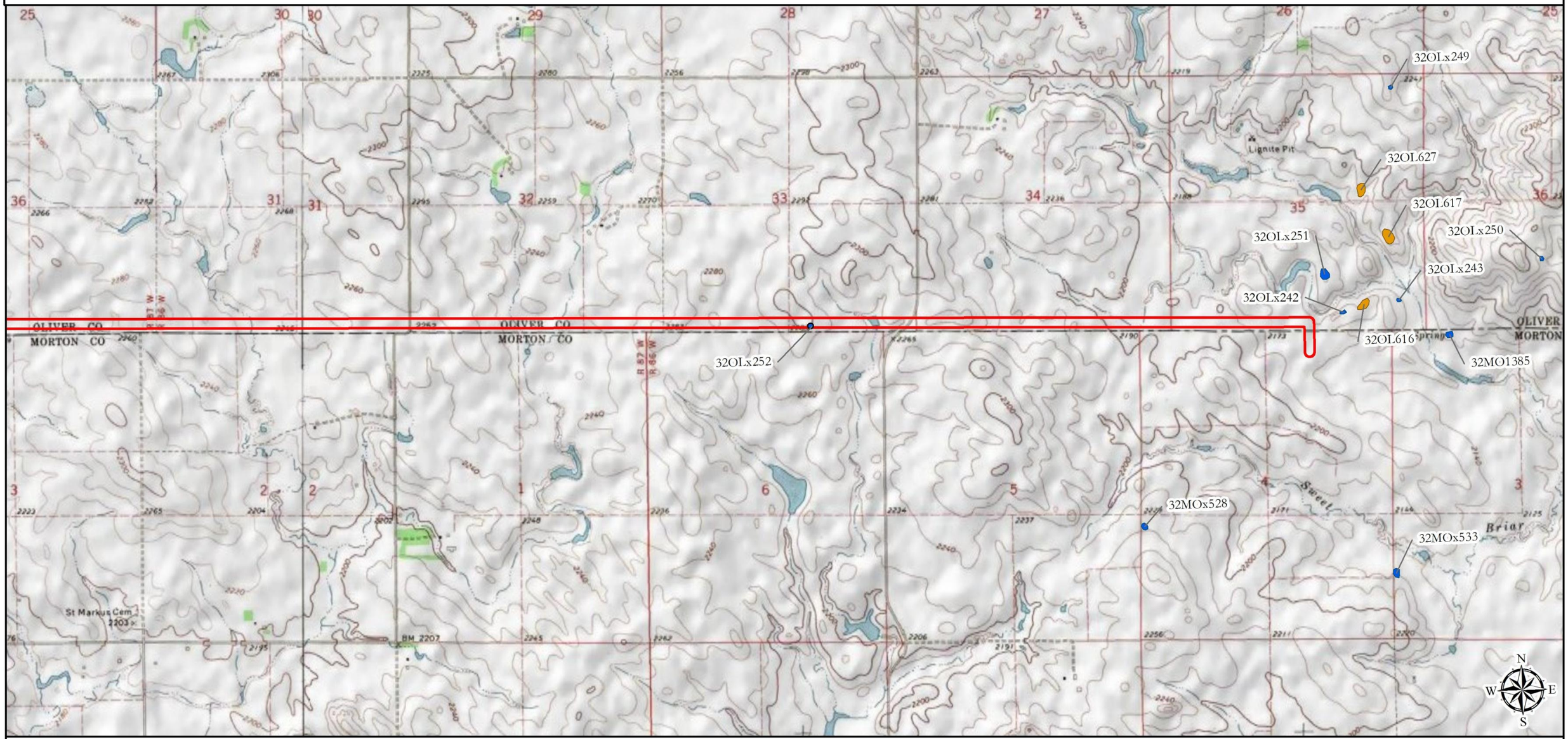
Figure 2: Overview of the APE. View from East

Figure 1: Overview of APE. View from the West.

Appendix B: Maps

Beaver Creek ARCHAEOLOGY

ALLETE - 230kV Transmission Line
Minnesota Power (ALLETE Energy)/HDR
Map 1 of 3
T141N R86W, T141N R87W, T140N R86W &T140N R87W
Bluegrass and Hailstone Butte Quad Maps
Oliver and Morton Counties, North Dakota



Legend

- APE (267 acres)

Cultural Resources

- Eligible/Unevaluated Sites
- Ineligible Sites/Isolated Finds

0 200 400 800 1,200 1,600 Meters

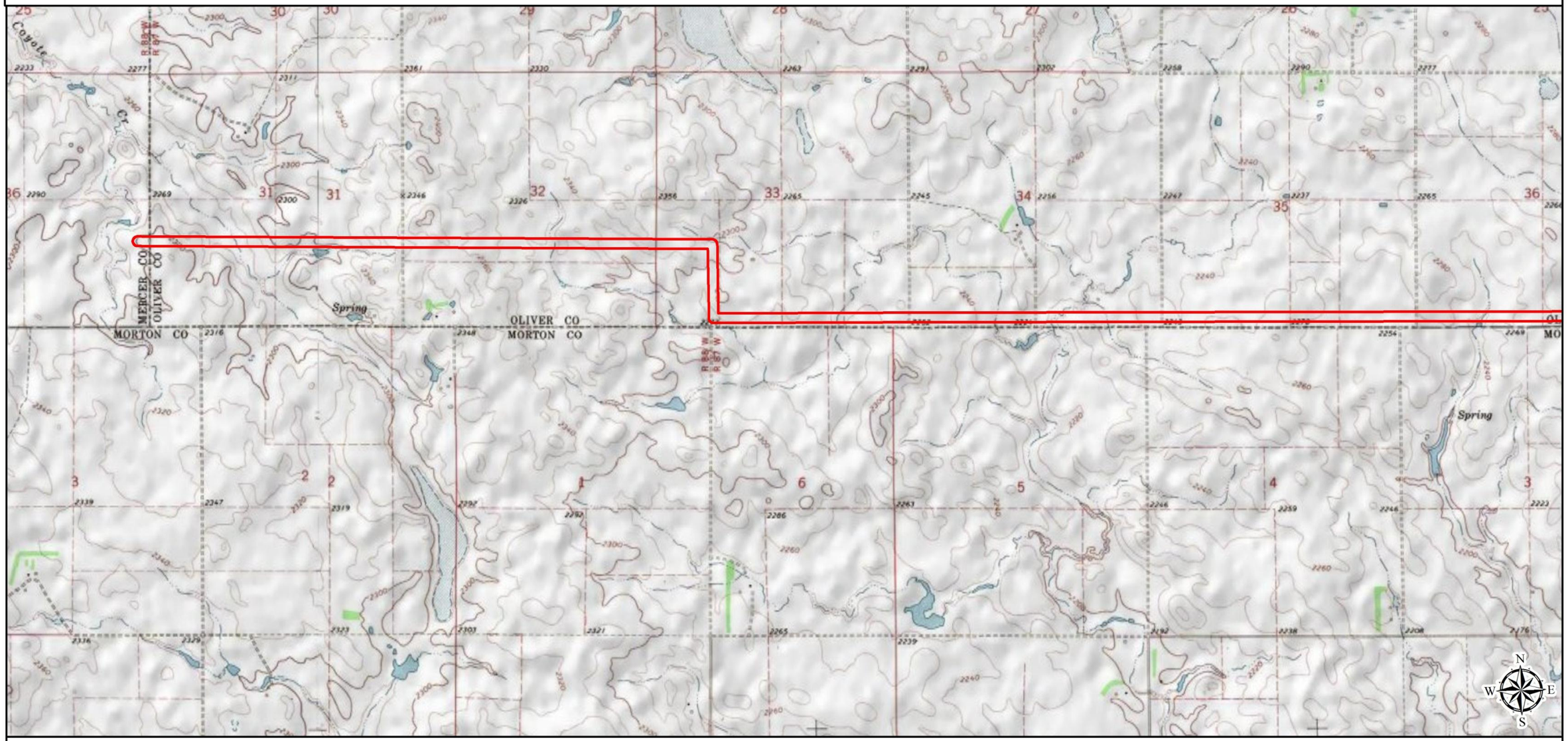
0 0.125 0.25 0.5 0.75 1 Miles

Base map: USGS 7.5'
Scale: 1:24,000
UTM NAD 83 Zone 14

Author: MM

Beaver Creek
ARCHAEOLOGY

ALLETE - 230kV Transmission Line
Minnesota Power (ALLETE Energy)/HDR
Map 2 of 2
T141N R87W, T141N R88W, T140N R87W & T140N R88W
Glen Ullin NE and Hailstone Butte Quad Maps
Oliver, Mercer and Morton Counties, North Dakota



Legend

APE (267 acres)

Cultural Resources

Eligible/Unevaluated Sites

Ineligible Sites/Isolated Finds

0 200 400 800 1,200 1,600 Meters

0 0.125 0.25 0.5 0.75 1 Miles

Base map: USGS 7.5'
Scale: 1:24,000
UTM NAD 83 Zone 14

Author: MM

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

January 17, 2012

Ms. Raina Hanley
Staff Archaeologist
Beaver Creek Archaeology, Inc.
301 1st St NE, Suite 201
Mandan ND 58554

NDSHPO REF.: 12-0424 PSC "Class III Cultural Resource Inventory for the Allete Energy 230kV Transmission Line Project in Mercer, Morton, and Oliver Counties, North Dakota"

Dear Ms. Hanley:

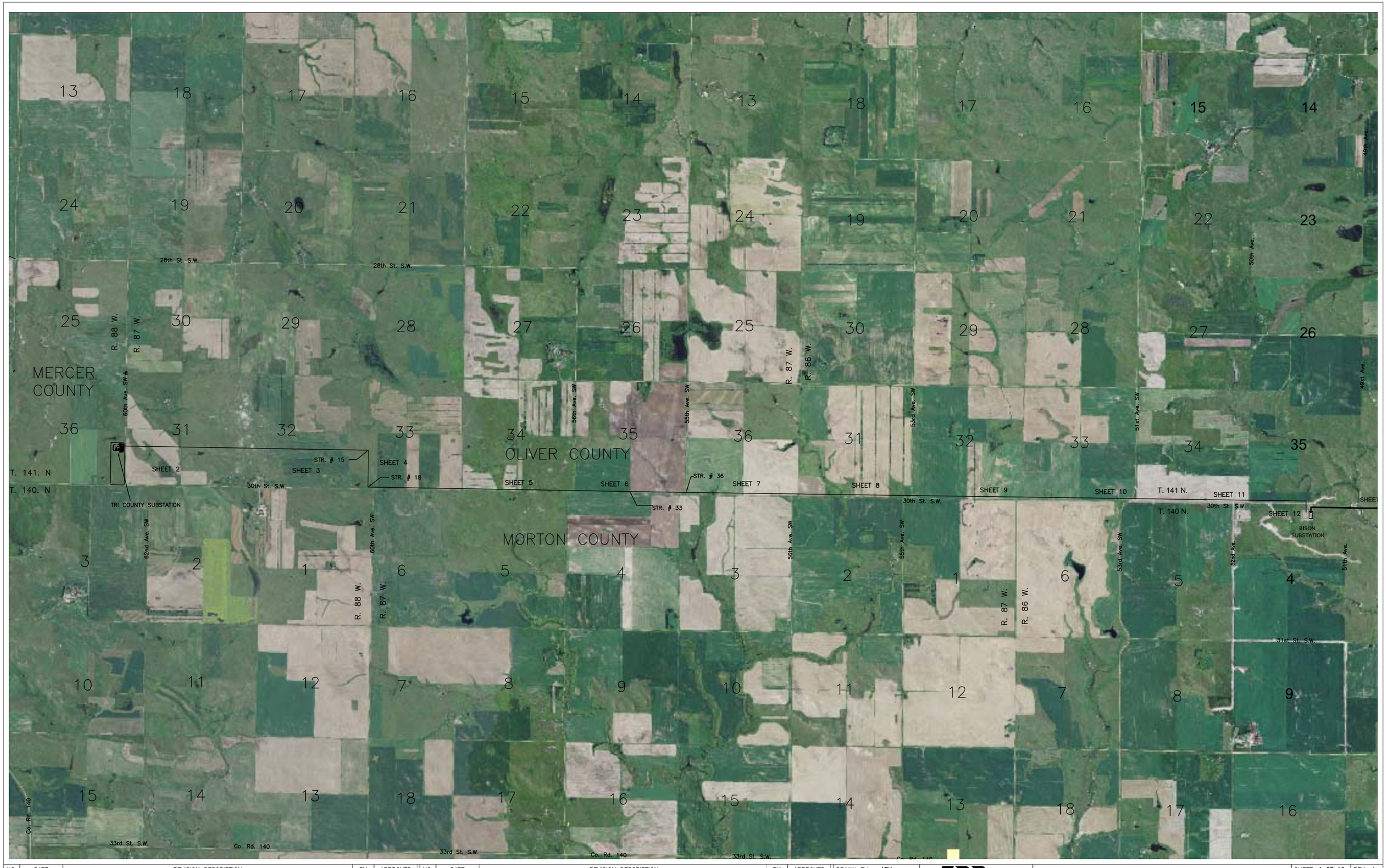
We reviewed NDSHPO REF.: 12-0424 PSC "Class III Cultural Resource Inventory for the Allete Energy 230kV Transmission Line Project in Mercer, Morton, and Oliver Counties, North Dakota" and find the report acceptable.

If consulted by a federal or state agency, we would concur with "No Historic Properties Affected" and "No Significant Sites Affected" determinations provided the project is of the nature stated and it takes place in the plotted location in the above-referenced report.

If you have questions please contact Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and
Director, State Historical Society of North Dakota



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minnesota power
AN ALLETE COMPANY

230kV Tri County - Bison
LINE NO. 103

SHEET 1 OF 12 | REV. A

MD+32899

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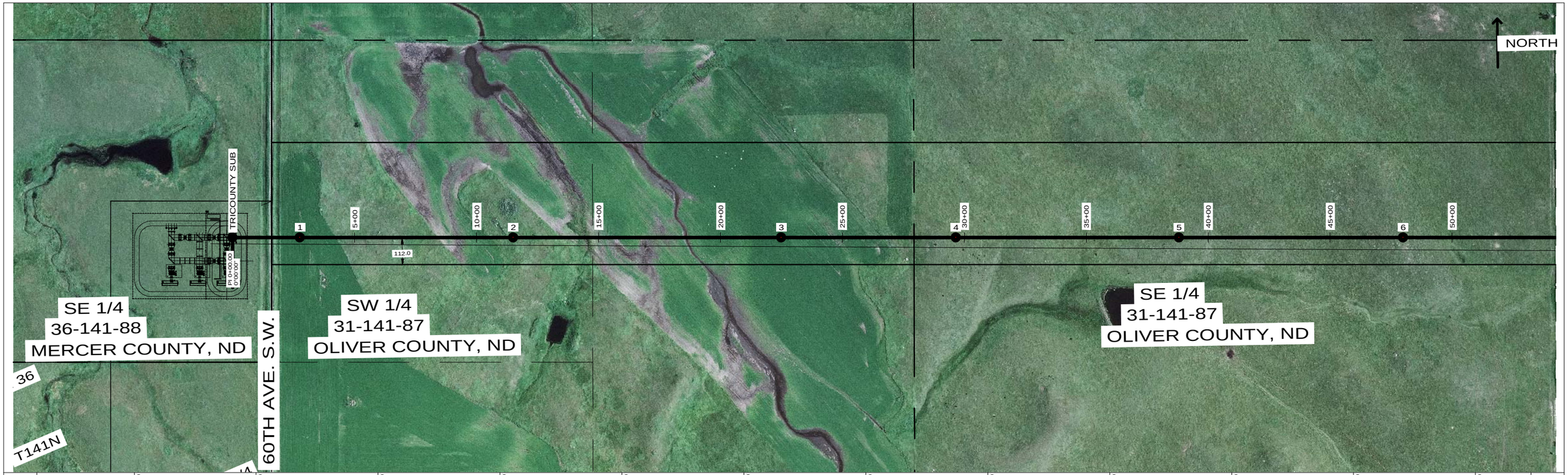

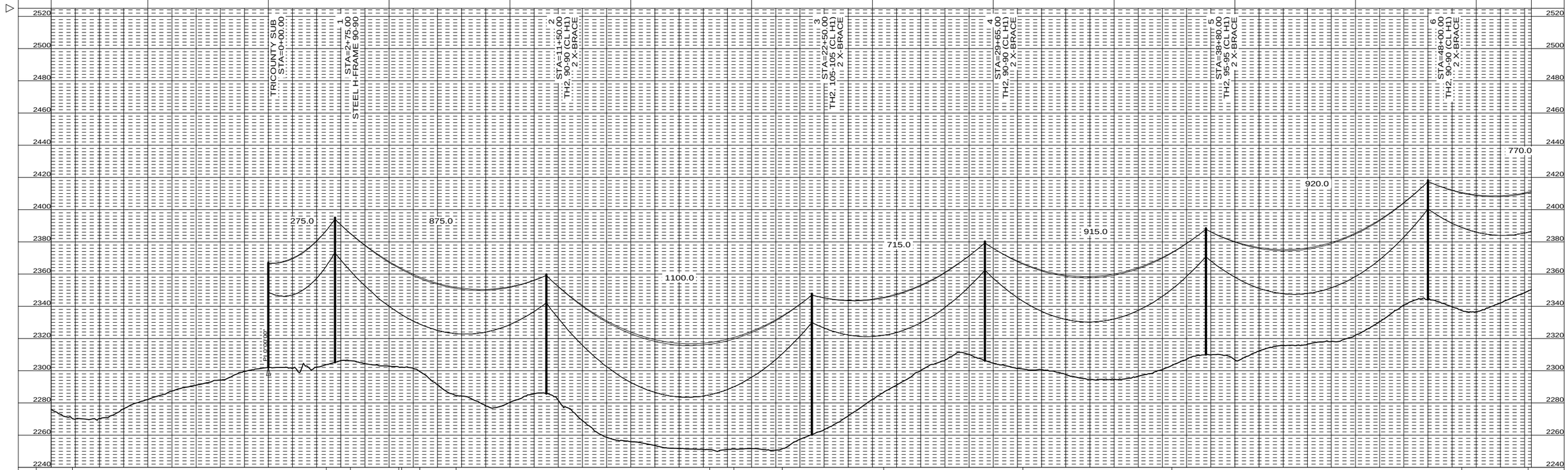

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230 KV TRI-COUNTY - BISON
LINE NO. 103

SHEET 2 OF 12 | REV. A

MD +32899

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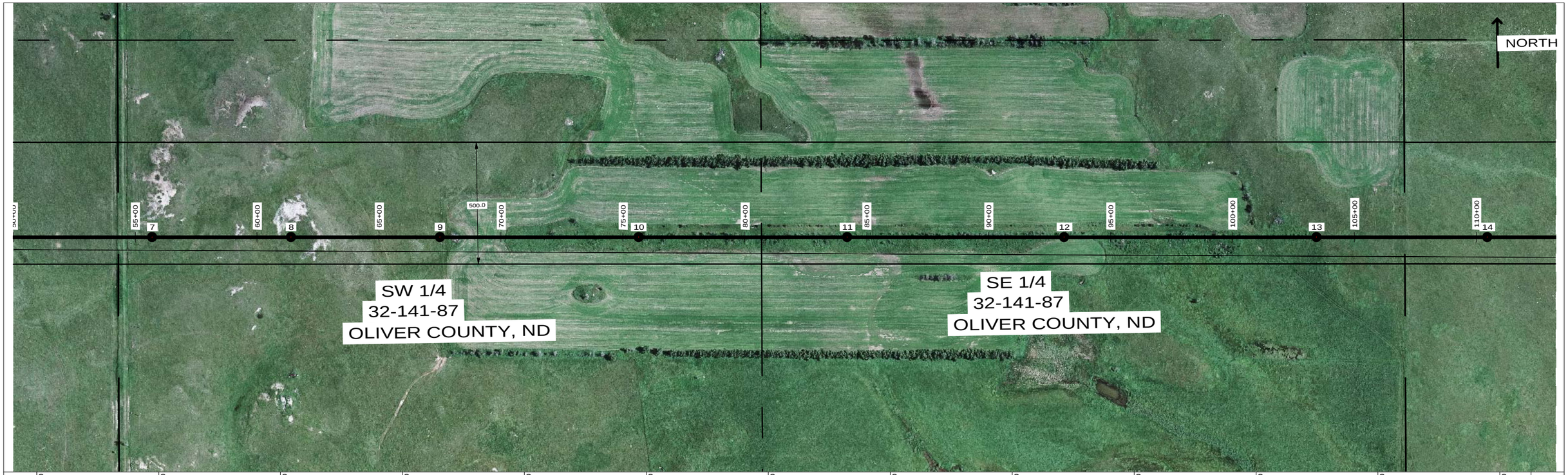

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230 KV TRI-COUNTY - BISON LINE NO. 103

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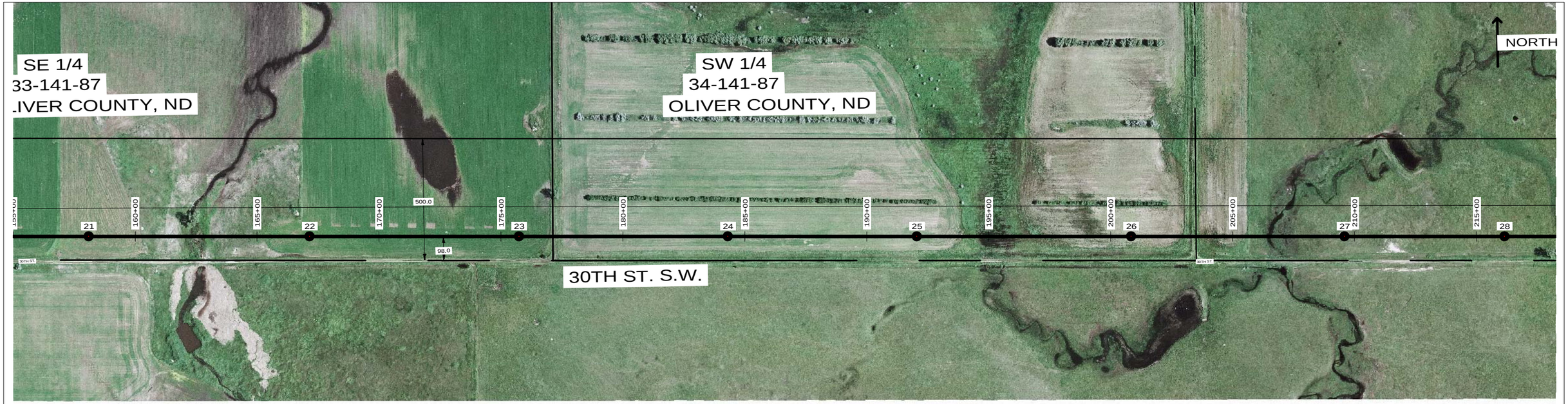

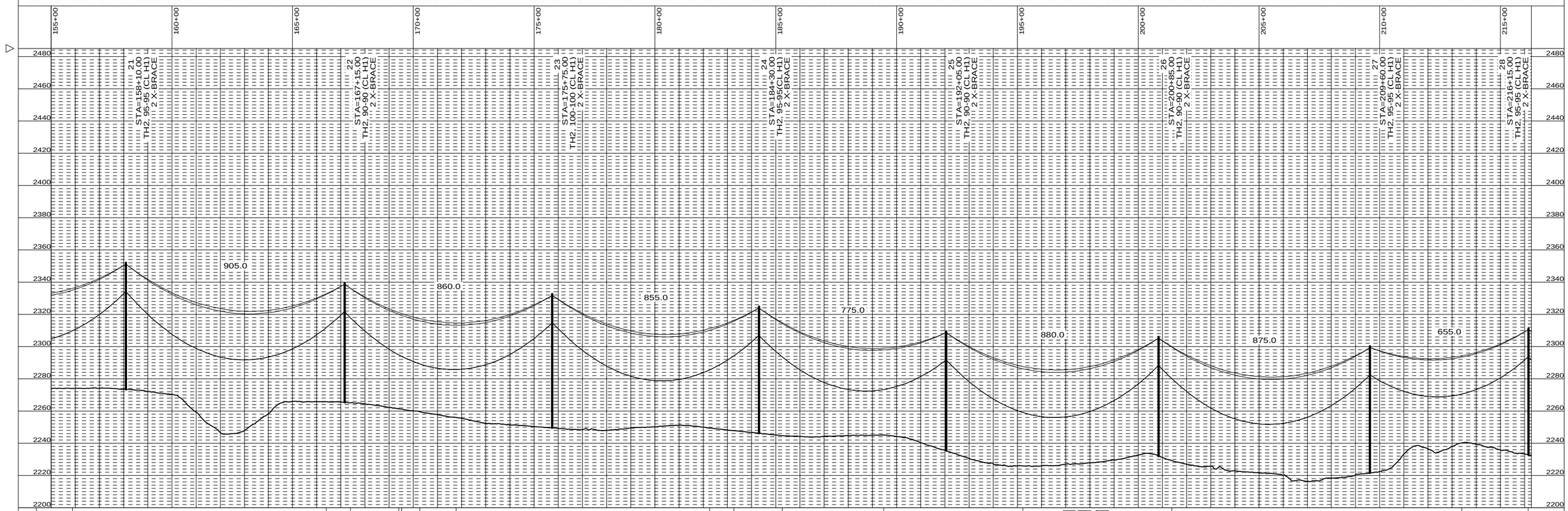

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230 KV TRI-COUNTY - BISON
LINE NO. 103

SHEET 5 OF 12 | REV. A

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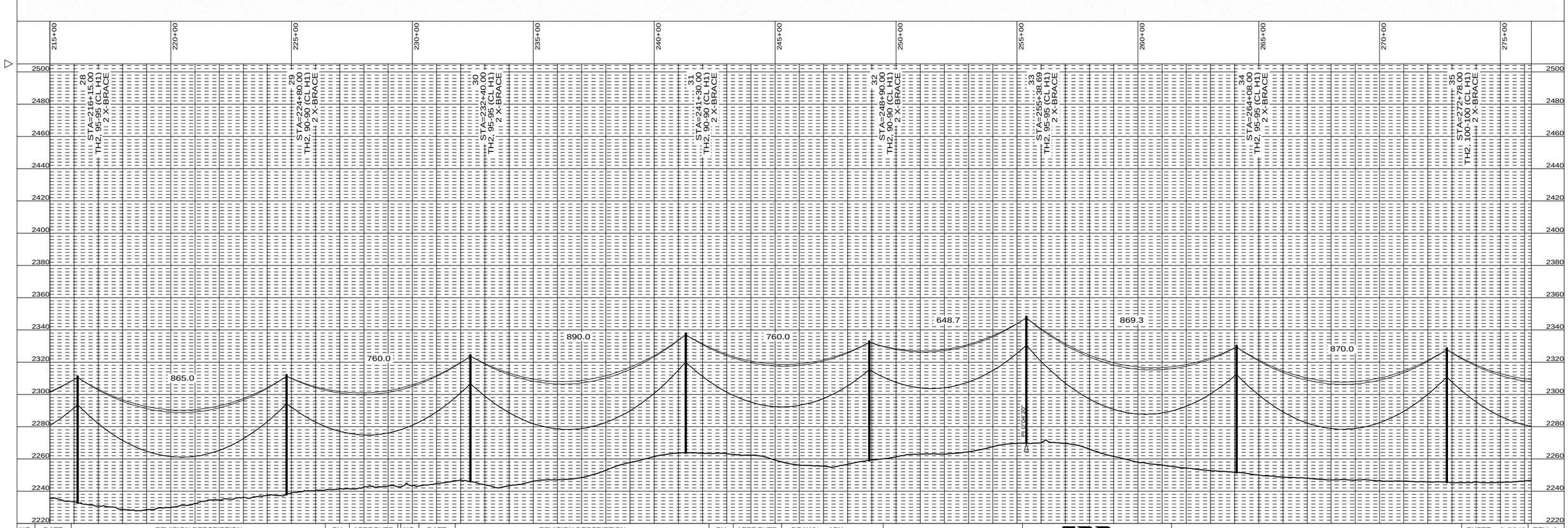

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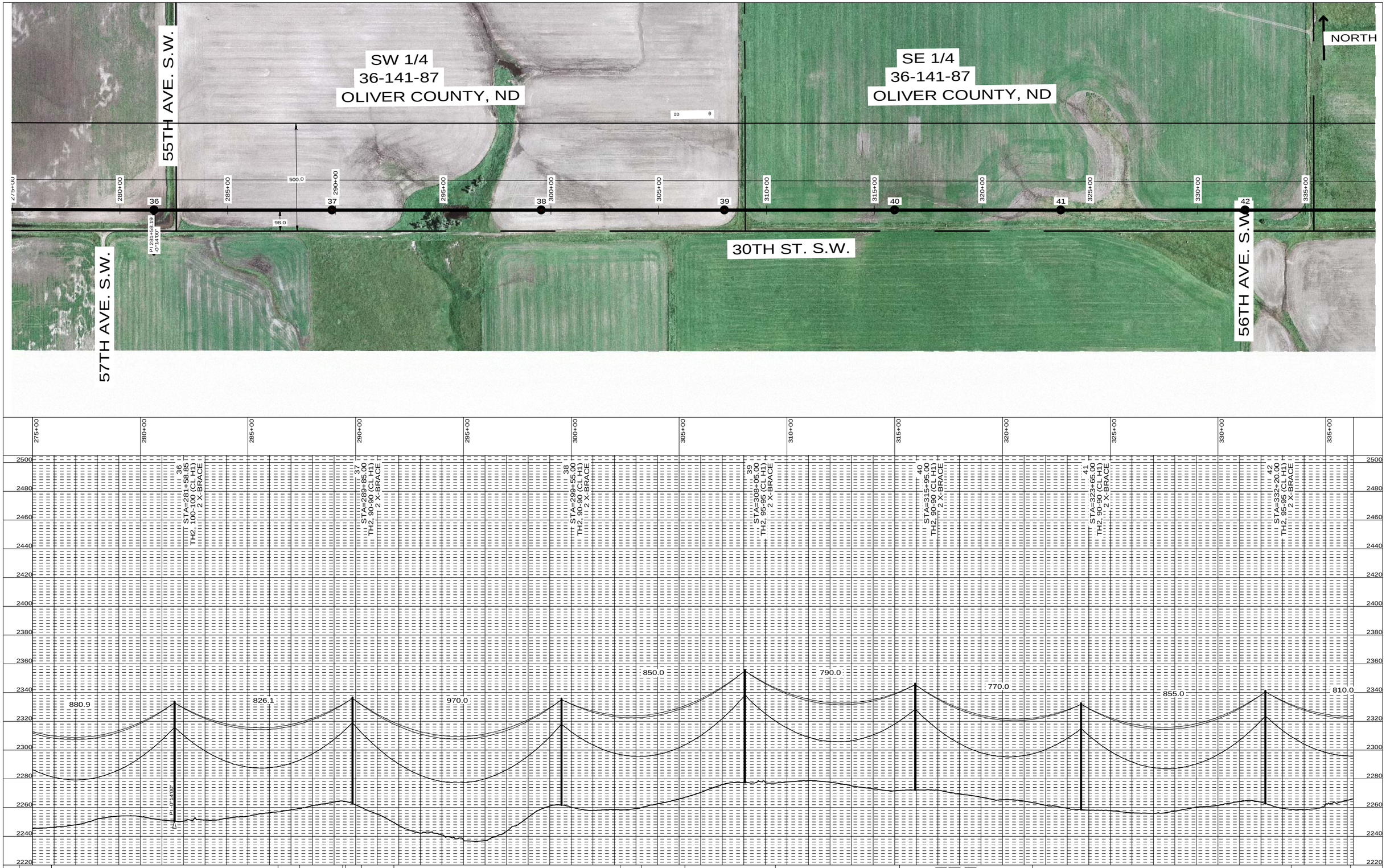

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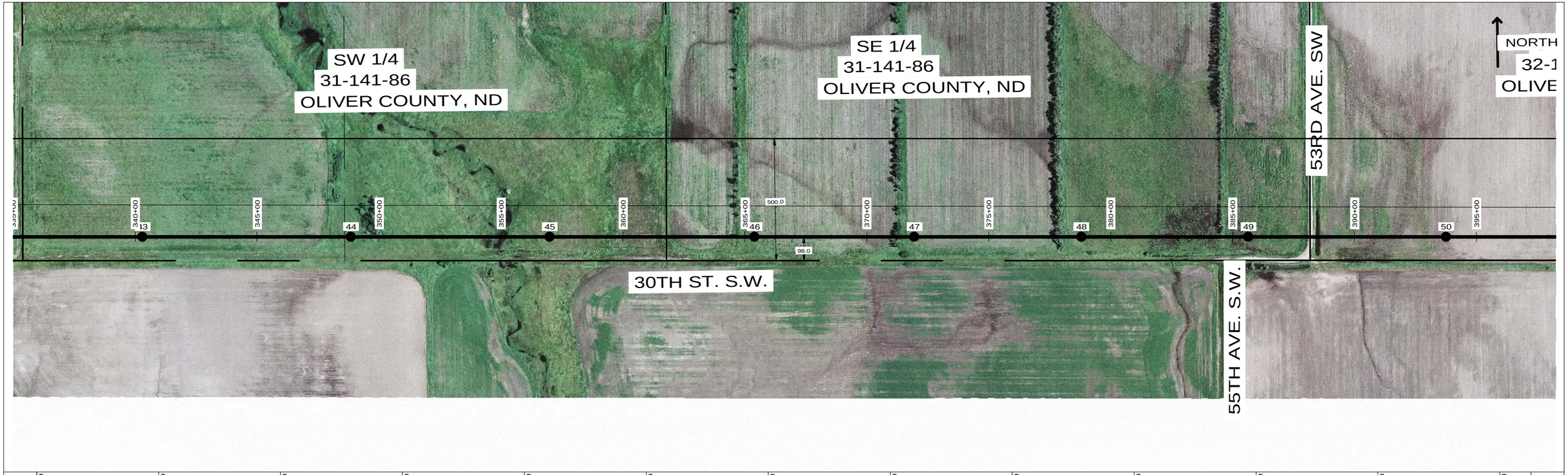

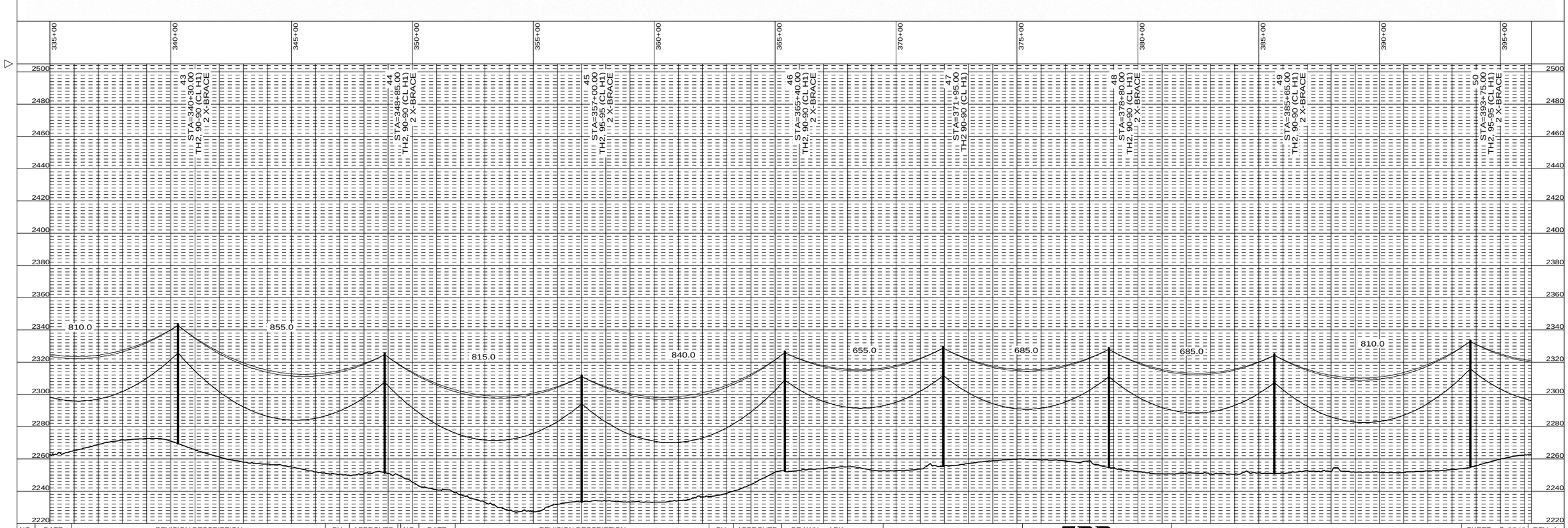

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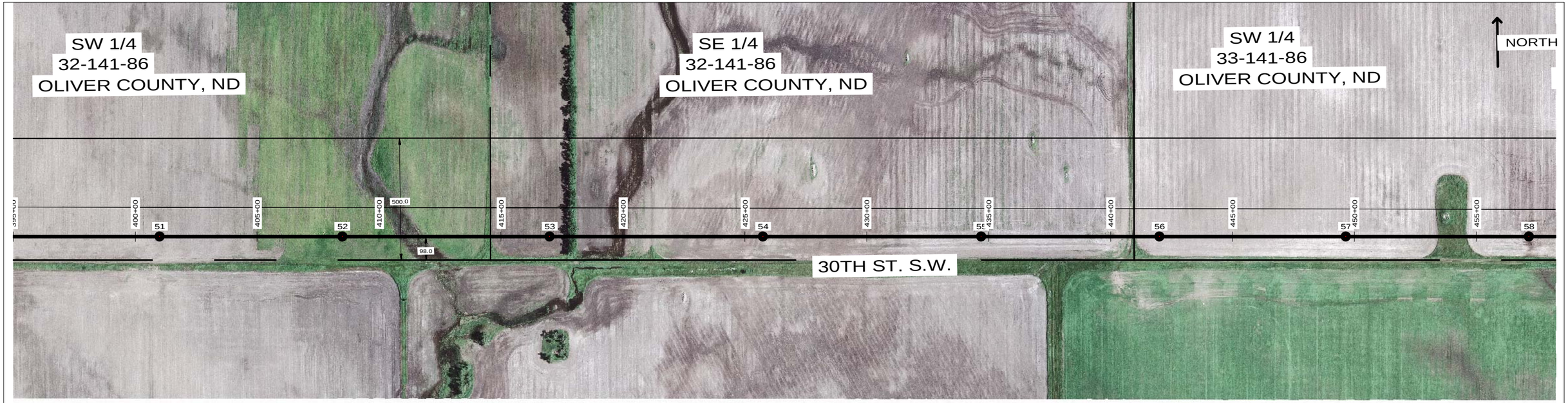

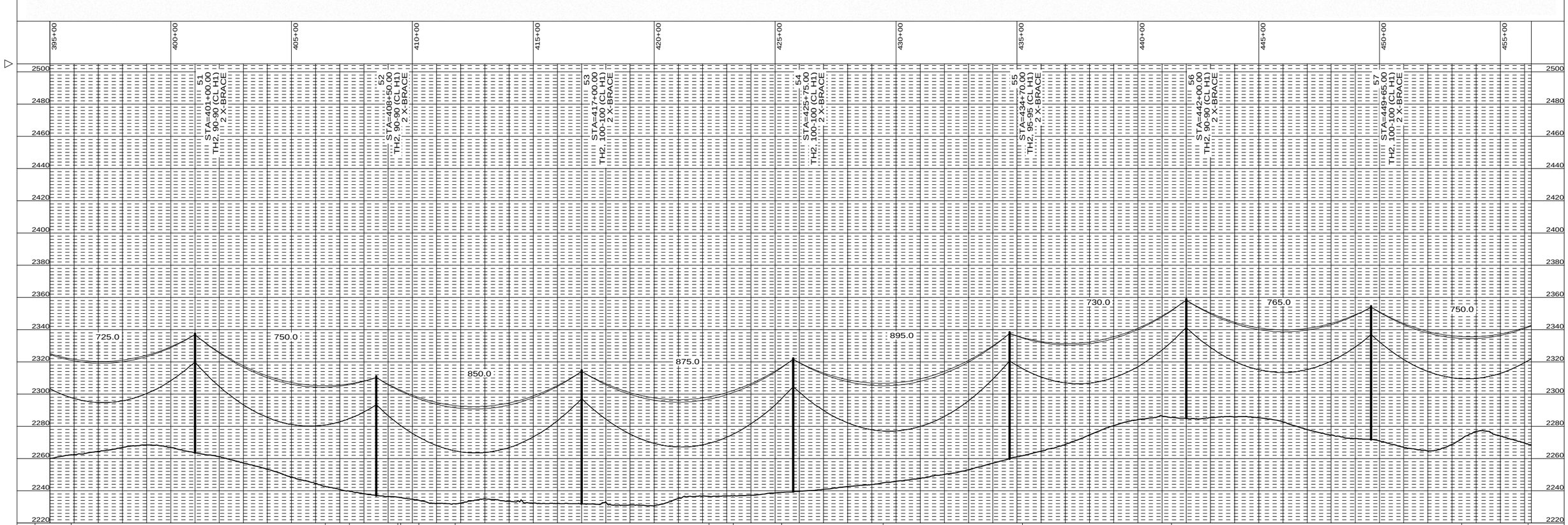

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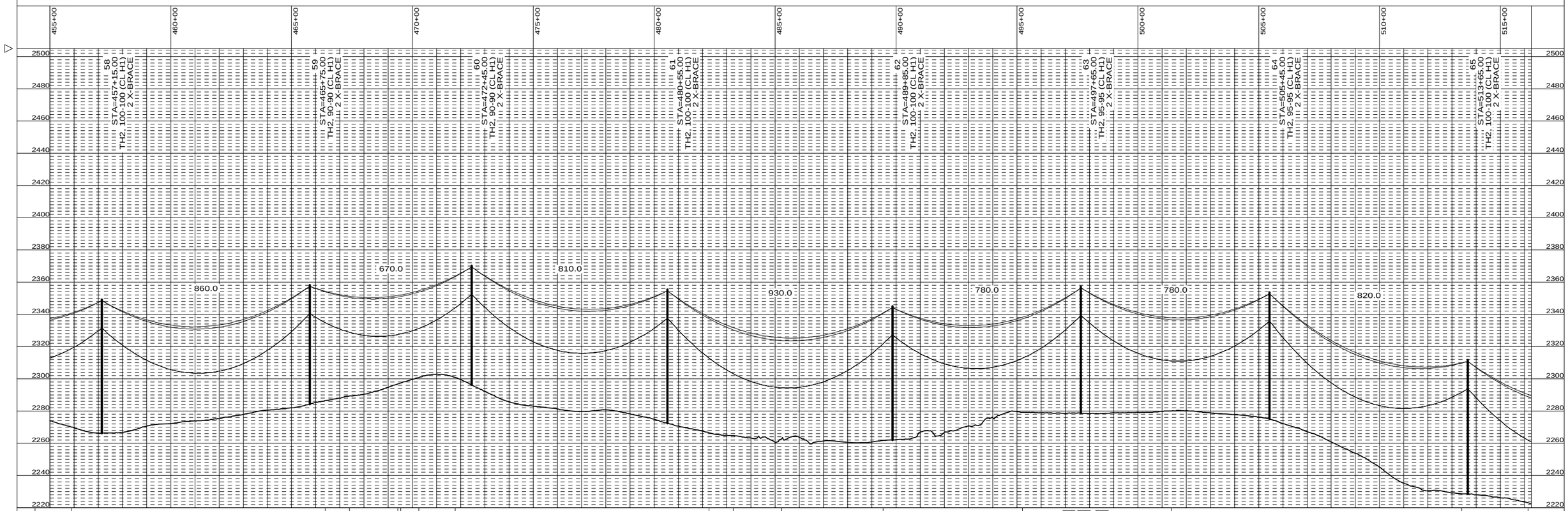

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230 KV TRI-COUNTY - BISON
LINE NO. 103

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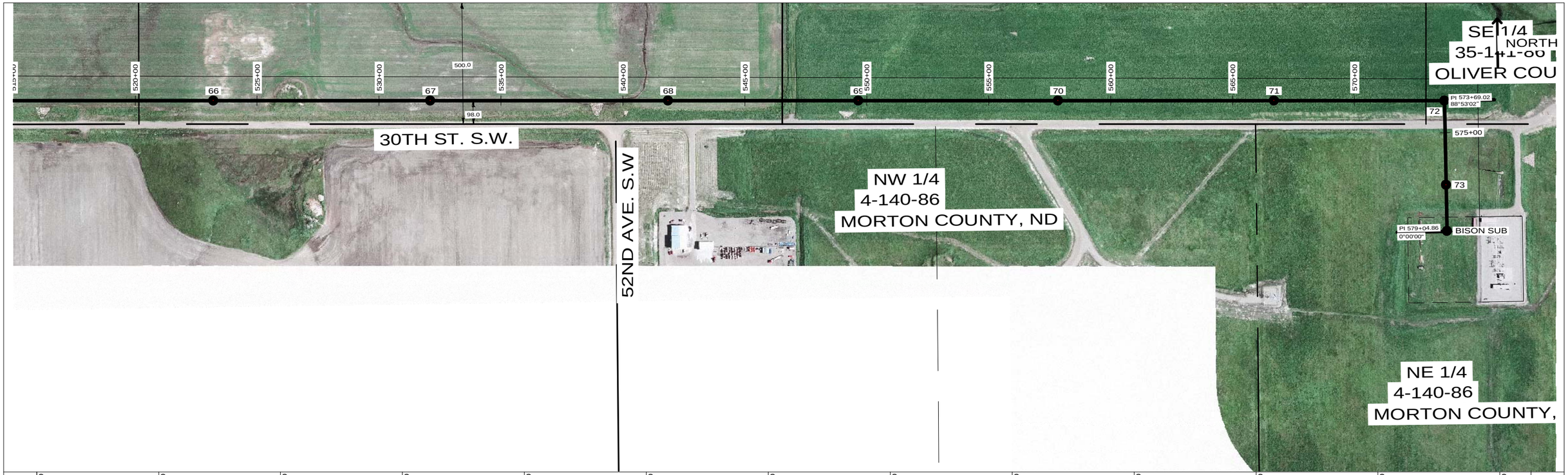

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LINE NO. 103

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