# Appendix 7 - Biological Report

# USFWS Threatened and Endangered Species Assessment Report

# Threatened and Endangered Species Report

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# List of Acronyms and Abbreviations

| | |
|---|---|
| BCC | Birds of Conservation Concern |
| BGEPA | Bald and Golden Eagle Protection Act of 1940 |
| BMC | Birds of Management Concern |
| $CO_2$ | Carbon dioxide |
| ESA | Endangered Species Act of 1973 |
| ESRI | Environmental Systems Research Institute |
| HDD | Horizontal directional drill |
| IPaC | Information and Planning Consultation System |
| MBTA | Migratory Bird Treaty Act of 1918 |
| MCE Project | Midwest Carbon Express Project |
| NDGF | North Dakota Game and Fish Department |
| NGP | Northern Great Plains |
| NLEB | Northern long-eared bat |
| NMFS | National Marine Fisheries Service |
| NRCS | Natural Resources Conservation Service |
| NWI | National Wetlands Inventory |
| PEM | Palustrine emergent |
| Perennial | Perennial Environmental Services, LLC |
| PFO | Palustrine forested |
| Project | SCS MCE Project – North Dakota |
| PSS | Palustrine scrub-shrub |
| SCS | Summit Carbon Solutions, LLC |
| T&E | Threatened and endangered |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| WNS | White-nose syndrome |
| WPFO | Western prairie fringed orchid |

# 1 Introduction

Summit Carbon Solutions, LLC (SCS) is proposing to construct, own, operate, and maintain the SCS Midwest Carbon Express Project (MCE Project). The MCE Project will capture carbon dioxide ($CO_2$) from industrial facilities across five states (i.e., Iowa, Minnesota, Nebraska, South Dakota, and North Dakota). The captured $CO_2$ will be compressed, dehydrated, and cooled to form $CO_2$ in a dense phase for transportation via pipeline to North Dakota to be permanently sequestered within deep underground geologic formations. SCS aims to reduce the carbon intensity of biofuels produced from ethanol facilities and work towards achieving the nation's climate goals while creating jobs and other economic benefits across the Project footprint. The planned pipeline is approximately 2,000 miles long, with diameters ranging from 4 to 24 inches and an operating pressure of approximately 2,183 pounds per square inch. The locations of the Project components are depicted in the attached mapping exhibits (**Appendix A**).

SCS has retained Perennial Environmental Services, LLC (Perennial) to conduct a threatened and endangered (T&E) species habitat assessment for the proposed MCE Project facilities in North Dakota (Project). Perennial's purpose is to identify T&E species, designated critical habitat, or potentially suitable habitat within a defined survey area. This report summarizes the survey methodology, results of the literature review and field surveys, and Perennial's assessment of the Project's potential impacts on T&E species.

# 2 Endangered Species Act of 1973

The Endangered Species Act (ESA) was passed by Congress in 1973 to protect and recover imperiled species and the ecosystems on which they depend. The ESA is administered by the U.S. Fish and Wildlife Service (USFWS), which has primary responsibility for terrestrial and freshwater organisms, and the Commerce Department's National Marine Fisheries Service (NMFS), which has primary responsibility for marine wildlife such as whales and anadromous fish such as salmon (USFWS, 2017).

Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened.

Section 7 of the ESA requires federal agencies to use their legal authorities to promote the conservation purposes of the ESA and to consult with USFWS and NMFS, as appropriate, to ensure that effects of actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of listed species. Agencies must confer with the USFWS per Section 7(a)(4) of the ESA if any federal action is likely to jeopardize a species proposed for listing or to destroy or adversely modify proposed critical habitat (USFWS 1973).

The ESA protects listed species and their habitats by 1) prohibiting the "take" of listed animals and the interstate or international trade in listed plants or animals, including their parts or products, except under federal permit; and 2) prohibiting federal actions that are likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats.

The ESA makes it unlawful to take a listed animal without a permit. "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." Through regulations, "harm" is defined as "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." Listed plants are not protected from take, although it is illegal to collect or maliciously harm them on federal land. Protection from commercial trade and the effects of federal actions do apply for plants (USFWS, 2017).

Take of endangered species may be either "purposeful take" or "incidental take." "Purposeful take" is when the reason for the activity or action is to conduct some form of take. For instance, conducting a research project that includes collecting and tagging a listed species is a form of purposeful take. Intentionally killing or harming a listed species is also purposeful take and is prohibited. "Incidental take" is defined by the ESA as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill endangered bats that are roosting in the trees, but the purpose of that activity is not to kill bats (USFWS, 2016b).

USFWS also maintains a list of "candidate" species. These are species in which USFWS has enough information to warrant proposing them for listing but is precluded from doing so by higher listing priorities (USFWS, 2017). There are generally no Section 7 requirements for candidate species; however, all agencies are encouraged to take advantage of any opportunity they may have to conserve the species. For example, after ground disturbance, reseed the area with a native seed mix that includes milkweed (*Asclepias* spp) pending landowner approval for their intended use (USFWS, 2020b).

# 3 Migratory Birds

Most native migratory birds are protected under the Migratory Bird Treaty Act (MBTA). Originally passed in 1918, the MBTA implements the U.S.' commitment to four bilateral treaties, or conventions, for the protection of a shared migratory bird resource, protecting more than 1,000 species of birds. The MBTA states that it is unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg of any such bird, unless authorized by the Secretary of the Interior. "Take" is defined in the regulations as "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect" (50 Code of Federal Regulations 10) (USFWS, 2010). Executive Order 13186 (January 2001) directs federal agencies to consider the effects of agency actions on migratory birds, with emphasis on bird species of concern.

Birds of Management Concern (BMC) are a subset of all birds protected under the MBTA that pose difficult management challenges such as low population numbers and conflicts with human interests. Birds of Conservation Concern (BCC) are a subset of BMC and include all species, subspecies, and populations of migratory non-game birds that are likely to become candidates for listing under the ESA of 1973 without additional conservation action (USFWS, 2008).

The Project is located within Bird Conservation Regions 11 and 17, which are defined as the Prairie Pothole and Badlands and Prairies of the United States, respectively (USFWS, 2008). **Appendix B** lists all BCC with the potential to occur within the Project area as identified by the USFWS Information and Planning Consultation (IPaC) online system (USFWS, 2022).

# 4 Background and Literature Review

Prior to conducting the field surveys, Perennial reviewed various sources of available data to determine the federally and state listed or protected species that could potentially inhabit or traverse the Project area. Perennial utilized the USFWS IPaC System (USFWS, 2021d) to obtain an official species list to determine the federally listed or protected species that could potentially occur within the Project area *(***Appendix B**). In addition to BCC as previously discussed, only species federally listed via the ESA or candidate species were considered for review, as North Dakota does not have a state endangered or threatened species list.

Perennial performed species-specific background literature reviews to determine habitat requirements for each of the federally listed T&E species that could potentially occur within the Project area. Documents reviewed include the species-specific recovery plans and/or five-year species reviews prepared by USFWS, species habitat information provided by North Dakota Game and Fish (NDGF), and other ecological websites such as Nature Serve Explorer and the Environmental Conservation Online System. Prior to the field survey, Perennial also reviewed U.S.

Geologic Service 7.5-minute quadrangle maps and aerial imagery to identify areas of potential habitat for federally listed T&E species.

The sections below provide general descriptions of the life distribution and habitat requirements for each of the federally listed species that could potentially occur within the Project area.

## 4.1 Birds

### 4.1.1 Bald eagle (*Haliaeetus leucocephalus*)

Though bald eagles were federally delisted in 2007 due to population resurgence, they are still protected from "take" by the MBTA and the Bald and Golden Eagle Protection Act of 1940 (BGEPA). Similar to the ESA, the BGEPA and MBTA define "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb."

Bald eagle habitat ranges throughout North America into northern Mexico, and this species occurs as breeding year-round residents and also as migratory residents in North Dakota (NDGF, 2019). Nesting begins in November with the laying of eggs in January to May, and a bald eagle may have one or more alternate nests within a breeding territory they enlarge and return to each year. Bald eagles are generally found near water sources, such as lakes, reservoirs, marshes, or coasts, and their nests are generally found on large trees near open water. This species is opportunistic, meaning they may hunt live prey, scavenge, or steal food from other animals, and they generally feed on waterfowl, rabbits, turtles, snakes, and other small animals (USFWS, 2007b). Nesting and foraging habitats for bald eagles are present in the Project survey area located near large waterbodies (e. g., Missouri River and Bois de Sioux River).

### 4.1.2 Piping plover (*Charadrius melodus*)

The piping plover, federally listed as threatened by USFWS, is a migratory bird that occurs as three separately located populations in North America. The population located within the Project vicinity in North Dakota is referenced as the Northern Great Plains (NGP) Population, which breeds along the rivers and wetlands of the NGP from Nebraska to the southern Prairie Provinces in Canada. This species primarily utilizes alkaline lakes and wetlands, large inland lakes, reservoirs, and rivers for breeding and foraging. This species arrives in North Dakota in early April, followed by courtship and nesting in mid-to-late April. Hatching begins in late May to early June, with peak hatching season occurring in June and early July. Piping plovers begin to leave the breeding grounds as early as mid-July. The piping plover diet consists of marine worms, beetles, spiders, crustaceans, mollusks, and other small marine organisms (USFWS, 2016a).

USFWS designated critical habitat for the NGP population of the piping plover extends along the Missouri River from Riverdale, North Dakota to Pierre, South Dakota, and in several isolated pockets in northwest and central North Dakota and in eastern Montana. This critical habitat is associated with favored breeding conditions for piping plovers including open sand, gravel, or cobble beaches; islands; lakeshores; coastal shorelines; and river margins (USFWS, 2020c).

### 4.1.3 Red knot (*Caladris canutus rufa*)

The red knot, federally listed as threatened by USFWS, is a migratory bird species that migrates annually between breeding grounds in the central Canadian arctic tundra and four wintering regions throughout South America and the Gulf of Mexico. During spring and fall migrations, red knots rely on key staging areas and other stopover areas to rest and feed. Though North Dakota does not house any of the key staging areas, red knot migration is highly unpredictable and wide ranging. Red knots require a reliable network of coastal and inland staging areas with abundant, high-quality prey timed when birds are present and allowing particularly high rates of weight gain. Additionally, red knots may need to suddenly shift among habitat patches based on food, predator, disturbance, weather, tides, and other conditions. In the NGP, habitat may include alkaline or saline lakes, riverine

wetlands, sandbars, and manmade impoundments. Across all habitat types, red knots require sparse vegetation to aid in predator defense (USFWS, 2021b).

### 4.1.4 Whooping crane (*Grus americana*)

Whooping cranes, federally listed as endangered by USFWS, are a migratory species that exist as a small number of wild populations. The population that migrates through the Project vicinity is the only self-sustaining wild population: the Aransas Wood Buffalo Population. This population nests in the Northwest Territories of Canada, primarily in the Wood Buffalo National Park. This Park is located approximately 900 miles to the northwest in the Alberta Province of Canada. In the spring and fall, this population migrates through the Great Plains states of Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. Winter habitat is located in the Gulf of Mexico coast at Aransas National Wildlife Refuge and adjacent areas. Migration habitat consists of mosaic wetlands, shallow, seasonally and semi-permanently flooded palustrine wetlands, riverine habitats, and various croplands. All habitat types are typically sparsely vegetated (USFWS, 2007a).

## 4.2 Insects

### 4.2.1 Dakota skipper (*Heperia dacotae*)

The Dakota skipper, federally listed as threatened by USFWS, is a small prairie butterfly that inhabits remnants of tallgrass prairie and mixed-grass prairie in the north-central U.S. and into southern Saskatchewan and Manitoba Provinces of Canada. This species' life cycle lasts one year, with the adult stage occurring for only 3 to 4 weeks from the middle of June to the end of July. Mating occurs in this period, and eggs are deposited on broadleaf plants and grasses. After hatching, the larvae crawl to the ground and construct silk shelters. This species overwinters in the larval stage and metamorphosizes as an adult again in late June and early July (USFWS, 2018).

Within the habitat fragments where it persists, this species relies on high-quality, diverse, native prairie habitat conditions and on natural or human disturbances that maintain the integrity of these plant communities while minimizing mortality to vulnerable life stages (USFWS, 2021e). These beneficial disturbances include properly managed grazing, haying, burning, and use of pesticides. Specifically, this species inhabits two distinct habitat types: 'Type A' habitat and 'Type B' habitat. 'Type A' habitat, which occurs primarily in North Dakota, is a low, wet-mesic prairie with little to no topographic relief that occurs on near-shore glacial lake deposits. This habitat type may be flooded in some years but has sufficient relief to provide segments of non-inundated habitat during the spring larval growth period within any single season. 'Type A' habitat is dominated by bluestem grasses (*Andropogon* spp.), with wood lily (*Lilium philadelphicum*), bluebell bellflower (*Campanula rotundifolia*), and mountain death camas (*Zigadenus elegans*) almost always present (USFWS, 2018). 'Type B' habitat is upland prairie that is relatively dry and often found on ridges and hillsides. Bluestem grasses and needlegrasses (*Stipa* spp) dominate these prairies; purple coneflower (*Echinacea angustifolia*) is typical of high-quality sites that support this skipper (USFWS, 2019). Other flowering vegetation likely present in this habitat include bluebell bellflower, wood lily, upright prairie coneflower (*Ratibida columnifera*), and blanketflower (*Gaillardia* spp.) (USFWS, 2018). Both of these habitat types are unlikely to be reestablished on a site that has been plowed. Therefore, activities that maintain the original native grass habitat are fundamental to the species' conservation (USFWS, 2019).

### 4.2.2 Monarch butterfly (*Danaus plexippus*)

The monarch butterfly, a candidate species for listing by USFWS, is an insect with a variable life cycle based on geographic location. Non-migratory populations, such as those in Florida, breed year-round. Monarchs in more temperate climates, such as the Project area, undergo long-distance migration. Adults of migratory populations live for an extended period of time, and the breeding period for these adults is paused for a portion of the year (fall through spring). During breeding and migration, adult monarch butterflies require a diversity of blooming nectar resources. Monarchs also need milkweed (for both oviposition and larval feeding) embedded within this diverse

nectaring habitat. The correct phenology, or timing, of monarchs, nectar plants, and milkweed is important for monarch survival (USFWS, 2020a).

#### 4.2.3 Poweshiek skipperling (*Oarisma poweshiek*)

The Poweshiek skipperling, federally listed as endangered by USFWS, is a prairie butterfly that inhabits remnant prairie areas including prairie fens, grassy lake and stream margins, moist meadows, sedge meadows, and wet-to-dry prairie. This species relies on high-quality habitat conditions and on natural or human disturbances that maintain the integrity of these plant communities, while minimizing mortality to vulnerable life stages. During the short time that adults are alive (2 to 4 weeks in summer), they need sufficient high-quality nectar from flowers for feeding and healthy and abundant suitable grasses (host plants) for egg-laying. Larvae require sufficient host grasses to feed on throughout summer as well as suitable microhabitat (temperature and humidity). The species overwinters as a larva above ground on the blades or stem of the host plant; thus, they also need habitat that provides a suitable microclimate for shelter during the winter (USFWS, 2021a).

### 4.3 Mammals

#### 4.3.1 Northern long-eared bat (*Myotis septentrionalis*)

The northern long-eared bat (NLEB), federally listed as threatened by USFWS, roosts in caves and abandoned mines during the winter months. This species occupies hardwood forests for roosting and foraging during the summer months. NLEBs roost singly or in colonies in cavities, crevices, hollows, or beneath the bark of live and dead trees and/or snags, regardless of tree species. This species prefers trees with a diameter at breast height of greater than or equal to 3 inches. Deviation from this typical habitat has been observed, with some bats roosting in man-made structures (sheds, barns, etc.) and males and non-reproductive females roosting in areas with colder temperatures (caves and mines). The NLEB forages at dusk on insects in forested hillsides and ridges (USFWS, 2021c).

### 4.4 Plants

#### 4.4.1 Western prairie fringed orchid (*Platanthera praeclara*)

The western prairie fringed orchid (WPFO), federally listed as threatened by USFWS, is a perennial orchid of the North American tallgrass prairie. Generally, this species is found in several kinds of fire and grazing adapted communities dominated by species of Poaceae (grass family). It is found most often on unplowed, calcareous prairies and sedge meadows. It may also be found at disturbed sites in successional communities such as borrow pits, old fields, and roadside ditches. The largest-known population of this species is located in the Sheyenne National Grassland in North Dakota, located approximately 5 miles to the west of the Project area. In North Dakota, the WPFO most frequently occurs in the sedge meadow community on the Glacial Sheyenne Delta and also in the tallgrass prairie community classified as Midland Grassland habitat type (USFWS, 1996).

## 5 Field Reconnaissance Methodology

Perennial biologists conducted pedestrian surveys of the 13,782.05-acre Project survey area from August through November 2021 and March through July 2022 to characterize and determine if federally protected species habitat and/or their potential habitat were present within a defined survey area. In general, the Project survey area consisted of a 300-foot-wide corridor located along the proposed pipelines (**Appendix A**). If encountered, federally protected species and/or habitats were documented using Environmental Systems Research Institute's (ESRI's) FieldMaps software on an iPhone XR equipped with a Trimble R1 GPS wireless Bluetooth receiver to geographically reference the location. These units typically have real-time and post-processed sub-meter accuracy. Geographic Information System software was used to analyze collected features and generate the attached mapping.

Other USFWS-approved methodologies were applied during species-specific presence/absence surveys conducted in spring/summer 2022. Documentation of the methods for the presence/absence surveys were submitted to USFWS for review and approval prior to completing presence/absence surveys. These methodologies and results of the species-specific surveys are provided in **Appendices D** and **E**.

## 5.1 Aerial Interpretation

To date, field surveys have been completed for 58 percent of the Project survey area in North Dakota. However, due to ongoing landowner negotiations and engineering design, surveys have not yet been completed. A summary of the areas that have not been surveyed to date is presented in **Table 1** below and the locations are identified within mapping exhibits provided as **Appendix A**. Field surveys for these areas are anticipated to be completed in the fall of 2022 and in 2023, access and weather permitting.

**Table 1**
**Area of Desktop Review within the Project Survey Area – North Dakota**

| County | Total ESA Acreage | Total Acres of Desktop Review | Percentage of Desktop Review |
|---|---|---|---|
| Burleigh | 1,690.93 | 951.53 | 56% |
| Cass | 845.10 | 349.72 | 41% |
| Dickey | 1,440.89 | 751.59 | 52% |
| Emmons | 1,368.98 | 253.39 | 19% |
| Logan | 82.61 | 3.69 | 4% |
| McIntosh | 1,308.99 | 59.59 | 5% |
| Mercer | 203.90 | 16.15 | 8% |
| Morton | 1,413.20 | 906.27 | 64% |
| Oliver | 1,453.61 | 475.00 | 33% |
| Richland | 2,498.08 | 1,470.66 | 59% |
| Sargent | 1,475.76 | 574.93 | 39% |
| **Totals** | **13,782.05** | **5,812.52** | **42%** |

Table contents are as of July 2, 2022.

For areas not yet field surveyed within the Project area, a desktop review was performed utilizing the following data sources:

- U.S. Geological Survey (USGS) 7.5 topographic quadrangle maps (USGS, 1982);
- LiDAR data,
- National Wetlands Inventory (NWI) data;
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) soils maps (USDA, 2018); and
- Google Earth historical aerial photography.

The USGS topographic maps and NWI maps were used to identify any potential habitat that may be present within the Project area. The NRCS soils maps were used to identify soil types that underlie the survey corridor. Aerial photography was used to compare photographic signatures with areas that were pedestrian surveyed and to look for photographic signatures that are consistent with wetlands and other habitat features in the region. In

total, 5,812.52 acres of the Project survey area were reviewed utilizing desktop resources, and these areas are depicted on the attached mapping exhibits (**Appendix A**).

# 6 Results

## 6.1 Habitat within Project Area

Seven general habitat types were identified throughout the Project area, including forested land, active agricultural land, fallow agricultural land, prairie habitat, wetlands (palustrine forested [PFO], palustrine scrub-shrub [PSS], palustrine emergent [PEM] wetlands), tame/planted grasslands, and hayfields. A description of each encountered habitat type is presented below.

### 6.1.1 Forested Land

Forests within the Project area are characterized as hardwood forests. Dominant vegetation consisted of boxelder (*Acer negundo*), common milkweed (*Asclepias syriaca*), smooth brome (*Bromus inermis*), eastern woodland sedge (*Carex blanda*), buffelgrass (*Cenchrus ciliaris*), green ash (*Fraxinus pennsylvanica*), beggarslice (*Hackelia virginiana*), reed canarygrass (*Phalaris arundinacea*), Kentucky bluegrass (*Poa pratensis*), American plum (*Prunus americana*), burr oak (*Quercus macrocarpa*), European buckthorn (*Rhamnus cathartica*), stiff goldenrod (*Solidago rigida*), common snowberry (*Symphoricarpos albus*), western snowberry (*Symphoricarpos occidentalis*), purple meadow-rue (*Thalictrum dasycarpum*), American basswood (*Tilia americana*), American elm (*Ulmus americana*), Siberian elm (*Ulmus pumila*), and stinging nettle (*Urtica dioica*).

### 6.1.2 Active Agricultural Land

Active agricultural land is comprised of areas that exhibit planted crops or actively (recently) plowed fields. Dominant vegetation consisted of common wheat (*Triticum x aestivum*), alfalfa (*Medicago sativa*), corn (*Zea mays*), soybean (*Glycine max*), yellow foxtail (*Setaria pumila*), and rape (*Brassica napus*).

### 6.1.3 Fallow Agricultural Field

Fallow agricultural land is comprised of areas where crop rows are present, but no cultivated vegetation was observed at the time of survey. This method is used to restore the land's fertility as part of a crop rotation or to avoid surplus production. These areas may be heavily vegetated, but without crop production. Dominant vegetation consisted of smooth brome, lambsquarters (*Chenopodium album*), foxtail barley (*Hordeum jubatum*), alfalfa, reed canarygrass, Kentucky bluegrass, prickly Russian-thistle (*Salsola tragus*), cereal rye (*Secale cereale*), yellow foxtail, and green bristlegrass (*Setaria viridis*).

### 6.1.4 Prairie Habitat

Prairie habitat consists of open land with a diverse mix of grass species. These include tall grass, mixed grass, and short grass prairie types. Dominant vegetation consists of crested wheatgrass (*Agropyron cristatum*), perennial ragweed (*Ambrosia psilostachya*), dwarf false indigo (*Amorpha nana*), tarragon (*Artemisia dracunculus*), prairie sagewort (*Artemisia frigida*), white sagebrush (*Artemisia ludoviciana*), common milkweed, mexican fireweed (*Bassia scoparia*), blue grama (*Bouteloua gracilis*), smooth brome, prairie sandreed (*Calamovilfa longifolia*), lambsquarters, Canadian thistle (*Cirsium arvense*), wavyleaf thistle (*Cirsium undulatum*), creeping wildrye, curlytop gumweed (*Grindelia squarrosa*), mountain rush (*Juncus balticus*), western wheatgrass (*Pascopyrum smithii*), Kentucky bluegrass, quaking aspen (*Populus tremuloides*), upright prairie coneflower (*Ratibida columnifera*), little bluestem (*Schizachyrium scoparium*), stiff goldenrod, field sowthistle (*Sonchus arvensis*), prairie dropseed (*Sporobolus heterolepis*), needle and thread (*Stipa comata*), porcupinegrass (*Stipa spartea*), western snowberry, coralberry (*Symphoricarpos rbiculatus*), common dandelion (*Taraxacum officinale*), and Siberian elm.

### 6.1.5 Wetlands

Wetlands are classified as areas that exhibit positive hydrology indicators, hydric soils, and hydrophytic vegetation. Dominant vegetation associated with wetlands is categorized by wetland type, including PEM, PSS, and

PFO. The dominant vegetative species for each wetland type observed within the Project survey area are listed in **Appendix C**.

### 6.1.6 Tame/Planted Grassland

Tame or planted grasslands consist of tame pastures of cultivated fields planted with introduced (non-native) grass and legume species or cultivars with the multiple purposes of providing livestock grazing and foraging. Dominant vegetation consists of sagebrush, fourwing saltbush (*Atriplex canescens*), blue grama, smooth brome, needleleaf sedge (*Carex duriuscula*), creeping wildrye, curlytop gumweed, desert lily (*Hesperocallis undulata*), alfalfa, Kentucky bluegrass, prairie rose (*Rosa arkansana*), Woods' rose (*Rosa woodsii*), sandbar willow (*Salix interior*), marsh bristlegrass (*Setaria parviflora*), yellow foxtail, western snowberry, common wheat, and carpet vervain (*Verbena bracteata*).

### 6.1.7 Hay Field

Hay fields are similar to other grasslands however hay fields showed evidence of improvement and bailing. Dominant vegetation consists of big bluestem (*Andropogon gerardii*), smooth brome, Canada thistle, quackgrass, alfalfa, annual bluegrass (*Poa annua*), Kentucky bluegrass, prickly Russian-thistle, cereal rye, green bristlegrass, Indiangrass (*Sorghastrum nutans*), and western snowberry.

## 6.2 Species Effect Determinations

Based on the literature and background review conducted prior to field survey efforts, Perennial identified protected, threatened, and endangered species with the potential to occur within the Project survey area. The field surveys focused on determining if any of the listed species' habitats were present within the Project area. The common name, scientific name, federal status, listed county, determination of effect, and assessment for each federally listed species are presented in **Table 2** below.

**Table 2**
**Protected, Threatened, and Endangered Species Potentially Occurring within the Project Area – North Dakota**

| Common Name | Scientific Name | Federal Status | County[a] | Habitat Description | Project Impact Assessment | Determination of Effect |
|---|---|---|---|---|---|---|
| **Birds** | | | | | | |
| Bald Eagle | *Haliaeetus leucocephalus* | **MBTA BGEPA** | Burleigh Cass Dickey Richland Sargent | Bald eagles prefer large rivers and lakes or wetlands bordered with mature stands of trees, or a single large tree, such as cottonwood. Breeding habitat often includes some type of edge and relatively open canopy. The large nests are usually built within the top quarter of tall, living trees, with fewer nests in dead trees. Nests are relatively close to water, typically less than 2 kilometers. | Suitable habitat for the bald eagle may be present at various locations within the Project area in North Dakota, especially near large rivers and streams such as the Missouri River and Apple Creek. A total of nine bald eagle nests were observed within 1 mile of the proposed Project. SCS will adhere to the conservation measures established in the USFWS *National Bald Eagle Management Guidelines.* | *N/A* |
| Piping Plover | *Charadrius melodus* | **T** | Burleigh Emmons Logan McIntosh Mercer Morton Oliver | Piping plovers are a migratory bird species that breed along the rivers and wetlands of the northern Great Plains from Nebraska to the southern Prairie Provinces in Canada. The breeding period is from April to August. This species primarily uses alkali lakes and wetlands, large inland lakes, reservoirs, and rivers. | Suitable habitat for the piping plover may be present at various locations within the Project area, especially near the Missouri River. However, this species is only potentially present during the breeding season (April-August) where suitable sandbars or nesting habitat is found along major rivers. All major rivers and adjacent suitable habitat will be crossed via HDD. Additionally, this species is highly mobile and would likely avoid the construction area. Therefore, the Project is *not likely to adversely affect* the piping plover. | *Not Likely to Adversely Affect* |
| Red Knot | *Calidris canutus rufa* | **T** | Burleigh Dickey Emmons Logan McIntosh Mercer Morton Oliver | Red knots are a long-distance migratory bird species that migrate annually between their breeding grounds on the Canadian tundra and various wintering grounds in South America and the Gulf of Mexico. During migration, this species relies on alkaline and saline lakes, riverine wetlands, sandbars, and manmade impoundments. | Suitable habitat for the red knot may be present at various locations within the Project area. However, this species is only present during migration, and North Dakota does not host one of the designated key stopover areas for the red knot. All major rivers and adjacent suitable habitat will be crossed via HDD. Additionally, this species is highly mobile and would likely avoid the construction area. Therefore, the Project is *not likely to adversely affect* the red knot. | *Not Likely to Adversely Affect* |
| Whooping Crane | *Grus americana* | **E** | Burleigh | Whooping cranes utilize shallow, freshwater ponds, tidal flat, herbaceous wetlands, marshes and wet prairies as they migrate from their | Suitable habitat for the whooping crane may be present in the Project area, especially by the Missouri River. However, as this species | *Not Likely to Adversely Affect* |

**Table 2**
**Protected, Threatened, and Endangered Species Potentially Occurring within the Project Area – North Dakota**

| Common Name | Scientific Name | Federal Status | County[a] | Habitat Description | Project Impact Assessment | Determination of Effect |
|---|---|---|---|---|---|---|
| | | | Cass<br>Dickey<br>Emmons<br>Logan<br>McIntosh<br>Mercer<br>Morton<br>Oliver<br>Richland<br>Sargent | breeding grounds in Wood Buffalo National Park in Alberta, Canada to their wintering grounds in Aransas National Wildlife refuge on the Texas coast. Whooping cranes rely on wetland mosaics, riverine habitats (especially along the Missouri River), shallow, seasonally and semi-permanently flooded palustrine wetlands for roosting, and various cropland and emergent wetlands for feeding. Whooping cranes are observed in North Dakota from April to mid-May, and again from September to November. During migration, whooping cranes may be found anywhere in North Dakota, but are most commonly found along and adjacent to the Missouri River. | is migratory, whooping cranes may only occur sporadically within the proposed Project area during the migration timeframe. Additionally, this species is highly mobile and would likely avoid the construction area. During the migration timeframe, SCS will perform daily surveys to ensure absence of whooping cranes prior to construction activities. Therefore, the Project is *not likely to adversely affect* the whooping crane. | |
| **Insects** | | | | | | |
| Dakota Skipper | *Hesperia dacotae* | **T** | Burleigh<br>Dickey<br>Emmons<br>Mercer<br>Morton<br>Oliver<br>Richland<br>Sargent | Dakota skippers inhabit remnants of tallgrass prairie and mixed-grass prairie in the north-central United States. In North Dakota, habitat is usually low wet-mesic prairie dominated by bluestem grasses, with wood lily, bluebell bellflower, and mountain death camas almost always present. | Species-specific surveys for Dakota skipper were conducted during the adult flight period in July 2022 (**Appendix E**). Although suitable habitat was observed at two locations in Burleigh and Mercer counties, the Project has since been rerouted to avoid the Mercer County habitat. Additionally, no individuals of this species were observed during surveys. Therefore, the Project will have *no effect* on Dakota skipper. | *No Effect* [a] |
| Monarch Butterfly | *Danaus plexippus* | **C** | Burleigh<br>Cass<br>Dickey<br>Emmons<br>Logan<br>McIntosh<br>Mercer<br>Morton<br>Oliver<br>Richland<br>Sargent | Adult monarch butterflies require a diversity of blooming nectar resources for feeding during breeding (spring through fall) and migration. Monarchs also need milkweed (*Asclepias spp.*) embedded within this diverse nectaring habitat to use for both oviposition and larval feeding. | Suitable habitat for the monarch butterfly may be present in the Project area. However, there are generally no Section 7 requirements for candidate species, though agencies are encouraged to take advantage of any opportunity to conserve the species. Therefore, determination of effect for this species is not applicable. | *N/A* |

**Table 2**
**Protected, Threatened, and Endangered Species Potentially Occurring within the Project Area – North Dakota**

| Common Name | Scientific Name | Federal Status | County[a] | Habitat Description | Project Impact Assessment | Determination of Effect |
|---|---|---|---|---|---|---|
| Poweshiek Skipperling | *Oarisma poweshiek* | **E** | Richland<br>Sargent | Poweshiek skipperling habitat includes remnant prairie areas including prairie fens, grassy lake and stream margins, moist meadows, sedge meadows, and wet-to-dry prairie. | Suitable habitat for the Poweshiek skipperling may be present in the Project area. However, since the time of listing in 2014, there have been no sightings in North Dakota, and there are no sites where the Poweshiek skipperling is currently considered present in North Dakota. Therefore, the Project will have *no effect* on this species. | *No Effect* |
| **Mammals** | | | | | | |
| Northern Long-eared Bat | *Myotis septentrionalis* | **T** | Burleigh<br>Cass<br>Dickey<br>Emmons<br>Logan<br>McIntosh<br>Mercer<br>Morton<br>Oliver<br>Richland<br>Sargent | NLEB summer roosting habitat includes large trees and snags with shingled bark, crevices, or cavities for roosting. Additionally, this species may roost in human structures, such as sheds or barns. Winter hibernation habitat includes caves and abandoned mines. | Suitable summer roosting habitat may be present within the Project area. However, all tree clearing will occur outside the pup season (June 1 through July 31). Tree clearing is not designated as "take" within the aforementioned timeframe under the 4(d) Rule. Additionally, no suitable winter hibernation habitat occurs within the Project area. Therefore, the Project is *not likely to adversely affect* the NLEB. | *Not Likely to Adversely Affect* |
| **Flowering Plants** | | | | | | |
| Western Prairie Fringed Orchid | *Platanthera praeclara* | **T** | McInstosh<br>Richland | WPFO are found most often on unplowed, calcareous prairies and sedge meadows. Soil moisture is a critical determinant of growth, flowering, and distribution of western prairie fringed orchid. The persistence of WPFO is dependent on periodic disturbance by fire, mowing, or grazing. | Species-specific surveys for WPFO were conducted during the blooming period in July 2022 (**Appendix D**). Neither individuals of this species nor suitable habitat were observed during surveys. Therefore, the Project will have *no effect* on WPFO. | *No Effect* [a] |
| **Critical Habitat** | | | | | | |
| Piping Plover Designated Critical Habitat | -- | -- | Burleigh<br>Morton<br>Oliver | Critical habitat for the Northern Great Plains population of the piping plover extends along the Missouri River from Riverdale, ND to Pierre, SD, and in several isolated pockets in northwest and central North Dakota, and in eastern Montana. This critical habitat is associated with favored breeding conditions for piping plovers: open | The Project crosses the Missouri River unit of designated critical habitat. The Project will not impact any of the physical or biological features of the piping plover critical habitat, as it will be crossed via horizontal directional drill (HDD). Therefore, the Project will result in no *adverse modifications* to designated critical habitat. | *No Adverse Modifications* |

**Table 2**
**Protected, Threatened, and Endangered Species Potentially Occurring within the Project Area – North Dakota**

| Common Name | Scientific Name | Federal Status | County[a] | Habitat Description | Project Impact Assessment | Determination of Effect |
|---|---|---|---|---|---|---|
| | | | | sand, gravel, or cobble beaches; islands, lakeshores, coastal shorelines, and river margins. | | |

BGEPA= Bald and Golden Eagle Protection Act
C = Candidate
E = Endangered
MBTA= Migratory Bird Treaty Act
T = Threatened
[a] Determination based on all surveys completed to date.

# 7 Impacts and Minimization Measures Discussion

Based on field surveys and review of available sources, it has been determined that the Project is *not likely to adversely affect* the piping plover, red knot, whooping crane, and NLEB. Although the bald eagle and other BCC are not state or federally listed, and are therefore ineligible for a determination of effect, minimization measures are included in this section. A discussion of impacts and minimization measures for these species is provided below.

## 7.1 Bald eagle

Bald eagle nests were observed along the proposed Project route. Where a bald eagle nest was observed, SCS will minimize impacts by adhering to USFWS bald eagle management guidelines: if nest is active and within 660 feet of the centerline, no construction will occur within 660 feet of the nest from December 1 to July 31.

## 7.2 Piping plover and red knot

Potentially suitable habitat for the piping plover and red knot may be present along the proposed Project route; however, these species are only present during the migration and breeding seasons (comprehensively March through September). SCS will minimize impacts on suitable stopover, foraging and nesting habitat located within the Project area by implementing the following measures:

- All major rivers and waterbodies will be crossed via HDD. No dredging or other impacts will occur in these areas.
- All temporarily impacted wetlands will be returned to pre-construction contours and allowed to revegetate naturally upon completion of construction. SCS has also designed the Project to avoid the placement of permanent fill in wetlands to the greatest extent practicable; thereby, minimizing the permanent loss of wetlands which could provide suitable habitat for the piping plover or red knot.
- In the event that any of these species are observed in the Project area prior to or during construction, SCS will consult with USFWS to identify recommended measures to avoid and/or minimize impacts.

Based on the mitigation measures listed above, the Project is *not likely to adversely affect* the piping plover or red knot.

## 7.3 Whooping crane

Potentially suitable habitat for the whooping crane may be present along the Project route; however, this species is only present during the spring and fall migration (April through mid-May, September through November). SCS will minimize impacts on suitable stopover and foraging habitat located within the Project area by implementing the following measures:

- Construction activities will begin prior to and continue through the migratory period for the whooping crane. Therefore, it is anticipated that individuals would utilize suitable habitat located outside of the Project area where disturbance is not actively occurring.
- All major rivers and waterbodies will be crossed via HDD. No dredging or other impacts will occur in these areas.
- Contractors performing work will be educated to identify a whooping crane and be advised that if a crane appears within 1,000 feet of construction activities, all work will cease until the crane(s) move outside that 1,000-foot buffer area or if USFWS provides relief based upon site-specific circumstances.
- If equipment over 15 feet high is to be used for project work, the equipment will be flagged or marked to increase visibility to whooping cranes and lessen the risk of collisions.

- During nighttime hours and periods of low visibility all construction equipment containing components that could reach 15 feet (i.e., track hoe boom) would be lowered to prevent any potential interference with whooping crane individuals, should they be traveling at lower altitudes in the vicinity of the Project area.
- All temporarily impacted wetlands will be returned to pre-construction contours and allowed to revegetate naturally upon completion of construction. SCS has also designed the Project to avoid the placement of permanent fill in wetlands to the greatest extent practicable; thereby, minimizing the permanent loss of wetlands which could provide suitable stopover habitat for the whooping crane.
- In the event that any of these species are observed in the Project area during construction, SCS will consult with USFWS to identify recommended measures to avoid and/or minimize impacts.

Based on the mitigation measures listed above, the Project is *not likely to adversely affect* the whooping crane.

## 7.4 Northern long-eared bat

Potentially suitable summer roosting habitat for NLEB may be present along the proposed Project route. NLEB is protected by the 4(d) rule of the ESA. The 4(d) rule targets take prohibitions to only those providing conservation benefits for the species. This targeted approach can reduce ESA conflicts by allowing some activities that do not harm the species to continue, while focusing efforts on the threats that make a difference to the species' recovery.

For NLEB, the 4(d) rule tailors protections to areas affected by White-Nose Syndrome (WNS) during the bat's most sensitive life stages, such as the breeding season. The rule is designed to protect the bat while minimizing regulatory requirements for landowners, land managers, government agencies and others within the species' range. For NLEB, the 4(d) rule prohibits "purposeful take" of the species (with some exceptions such as removal of hazardous trees or in defense of human life). The 4(d) rule also prohibits "incidental take" of species in the WNS zone. "Incidental take" is prohibited under the following circumstances:

- If it occurs within a hibernaculum.
- If it results from tree removal activities and
  - the activity occurs within 0.25 mile (0.4 kilometer) of a known hibernaculum; or
  - the activity cuts or destroys a known, occupied maternity roost tree or other trees within a 150-foot radius from the maternity roost tree during the pup season from June 1 through July 31 (USFWS, 2016b).

However, in accordance with the 4(d) rule, SCS will minimize impacts on suitable summer roosting habitat located within the Project area by implementing the following measures:

- Construction activities will begin prior to and continue through the breeding period for NLEB. Therefore, individuals would be anticipated to utilize suitable habitat located outside of the Project area where disturbance would not be actively occurring.
- All tree clearing will occur outside of the pup season (June 1 through July 31). Tree clearing is not designated as "take" within the aforementioned timeframe under the 4(d) rule.
- Tree clearing will not occur within 0.25 mile of a known hibernaculum (USFWS, 2016b).
- SCS has designed the Project area to limit the amount of workspace through forested areas to only that which is necessary to safely construct the proposed Project. Additionally, all temporarily impacted areas will be allowed to revegetate naturally upon completion of construction.

Based on the mitigation measures listed above, the Project is *not likely to adversely affect* NLEB.

### 7.5 Birds of Conservation Concern

Of the BCC species identified as having the potential to occur within the Project area, 19 potentially occur in the Project area during the breeding season and five species potentially occur during migration. Project activities with the potential to result in adverse impacts on these 23 BCC species include the clearing of vegetation and increased noise during Project construction and operation.

Although the Project will result in the clearing of potential habitat for several of the BCC species, there is a significant amount of similar habitat surrounding the Project, and individuals potentially present during construction would likely avoid the area or displace to similar adjacent habitats. While this could result in increased competition in nearby habitats, the population-level effects of this potential displacement are not anticipated to be significant due to the abundant amount of similar habitat in the area. Pre-construction habitat degradation (mowing and/or tree-clearing) could occur in prime habitat for BCC species prior to the onset of the nesting season. Project clearing activities are anticipated to begin August 2023. The nesting period for BCC in the Project area varies by nesting habitat. The nesting period for BCCs that construct ground nests is from April 20 to July 15. The nesting period for BCCs that construct tree nests is from March 15 to September 10 (USFWS 2022a, USFWS 2022b). Further, all temporarily disturbed areas will be allowed to revegetate upon completion of construction. Therefore, significant impacts on migratory birds resulting from the clearing of vegetation during the Project are not anticipated to occur.

Migratory birds present within the Project area may be adversely affected by noise associated with construction and operation of the Project facilities. Noise impacts associated with construction activities will be temporary and of short duration as the noise levels within a majority of the Project area will return to pre-construction levels immediately following completion of construction activities. Noise associated with the aboveground facilities will be permanent; however, the noise generating aboveground facilities associated with the Project are either located adjacent to existing industrial facilities or within an area with an abundance of similar, adjacent habitats that would support any migratory birds displaced by noise emanating from the aboveground facilities. Therefore, noise associated with construction and operation of the Project is not anticipated to significantly impact the BCC species that could potentially occur in the Project area.

## 8 Summary

A total of seven federally listed species and one federally designated critical habitat were identified as potentially occurring within the Project area. Based on field surveys and review of available sources, it has been determined that the Project will either have *No Effect* or is *Not Likely to Adversely Affect* seven of the federally listed species: the piping plover, red knot, whooping crane, Poweshiek skipperling, WPFO, Dakota skipper and NLEB. Additionally, the Project will result in *No Adverse Modifications* to piping plover designated critical habitat. The species effect determination is not applicable for the monarch butterfly, which is currently listed as a candidate species. Nor is the species effect determination applicable for the bald eagle, which is protected under the MBTA and BGEPA.

# 9 References

North Dakota Game and Fish. 2019. Bald Eagle. Retrieved from North Dakota Game and Fish: https://gf.nd.gov/wildlife/id/raptors/bald-eagle

USFWS. 1996. Western Prairie Fringed Orchid Recovery Plan (*Platanthera praeclara*). Ft Snelling, Minnesota: US Fish and Wildlife Service.

USFWS. 1973. Endangered Species Act of 1973. Department of the Interior: United States Fish and Wildlife Service.

USFWS. 2007a. International recovery plan for the whooping crane. Albuquerque, New Mexico: United States Fish and Wildlife Service.

USFWS. 2007b. National Bald Eagle Management Guidelines. United States Fish and Wildlife Service.

USFWS. 2008. Birds of Conservation Concern 2008. https://www.fws.gov/migratorybirds/pdf/management/BCC2008.pdf.

USFWS. 2010. 50 CFR Parts 10 and 21 General Provisions; Migratory Birds Revised List and Permits; Final Rules. https://www.fws.gov/migratorybirds/pdf/policies-and-regulations/MBTAListofBirdsFinalRule.pdf.

USFWS. 2016a. Draft Revised Recovery Plan for the Northern Great Plains Piping Plover. Denver, Colorado: United States Fish and Wildlife Service.

USFWS. 2016b, January. Northern Long-Eared Bat. Retrieved from Midwest Region Endangered Species: https://www.fws.gov/midwest/endangered/mammals/nleb/FAQsFinal4dRuleNLEB.html

USFWS. 2017. ESA Basics. Falls Church, VA: United States Fish and Wildlife Service, Ecological Services.

USFWS. 2018. Dakota Skipper (*Hesperia dacotae*) Report on the Species Status Assessment V2. United States Fish and Wildlife Service.

USFWS. 2019, May 29). Midwest Region Endangered Species Dakota Skipper (*Hesperia dacotae*). Retrieved from U.S. Fish and Wildlife Services: https://www.fws.gov/midwest/endangered/insects/dask/daskFactsheet.html

USFWS. 2020a. Monarch (*Danaus plexippus*) Species Status Assessment Report, V2.1. United States Fish and Wildlife Service.

USFWS. 2020b. Monarch Butterfly (*Danaus plexippus*). Retrieved from ECOS: Environmental Conservation Online System: https://ecos.fws.gov/ecp/species/9743

USFWS. 2020c. Piping Plover (*Charadrius melodus*) 5-Year Review: Summary and Evaluation. East Lansing, Michigan: US Fish and Wildlife Office, Michigan Field Office.

USFWS. 2021a. Draft Recovery Plan for Poweshiek Skipperling (*Oarisma poweshiek*). Bloomington, MN: United States Fish and Wildlife Service. Midwest Regional Office.

USFWS. 2021b. Draft Recovery Plan for the Rufa Red Knot (*Calidris canutus rufa*). Galloway, New Jersey: North Atlantic-Appalachian Region (Interior Region I) Fish and Wildlife Service.

USFWS. 2021c, August. ECOS: Environmental Conservation Online System. Retrieved from Species Profile: Northern Long-Eared Bat (*Myotis septentrionalis*): https://ecos.fws.gov/ecp/species/9045

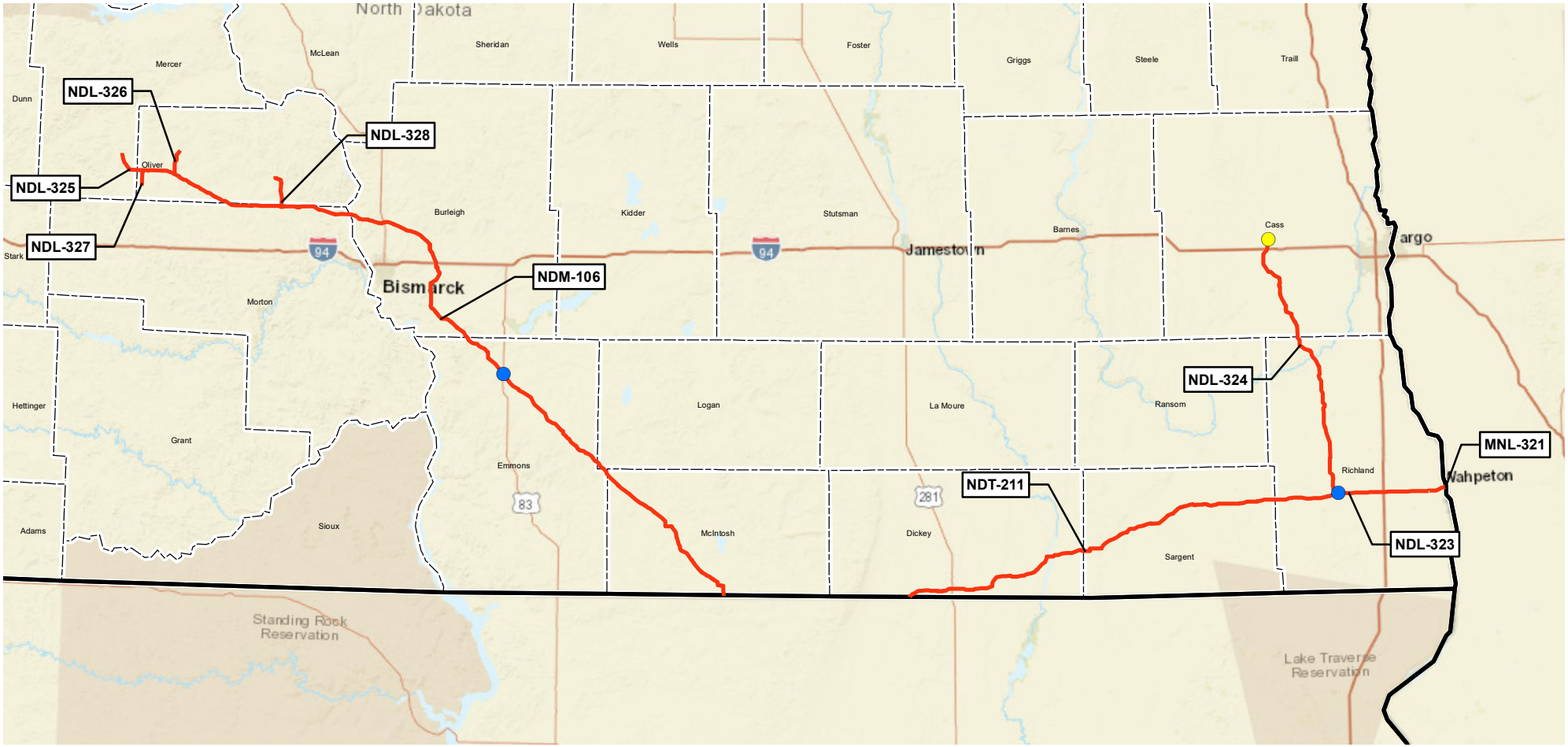
USFWS. 2021d. IPaC Resource List. US Fish and Wildlife Service.

USFWS. 2021e. Recovery Plan for Dakota Skipper (*Hesperia dacotae*). Midwest Region 3: United States Fish and Wildlife Services.

USFWS. 2022a. Environmental Conservation Online System. United States Fish and Wildlife Services. https://ecos.fws.gov/ecp/

# Appendix A –
# Project Mapping

# FIGURE TITLE

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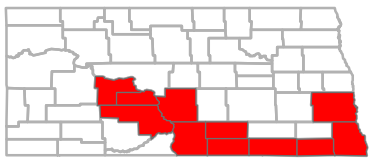

## LEGEND

- Capture Facility
- Pump Station
- Project Centerline
- State Boundary

## PREPARED BY


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## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision | | |
| Revision description | | |
| | | |
| | | |

## MIDWEST CARBON EXPRESS PROJECT

Figure Title: Vicinity Map

Figure Number: Appendix A-1

Scale: 1:1,800,000

Projection: Transverse Mercator
NAD 1983 UTM Zone 14N

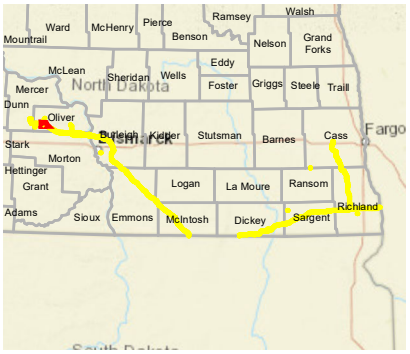
Sheet: 1 of 1

Drawing Number: 2001-22-001
Current Revision

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 1 of 392 | 2001-22-002<br>Current Revision |

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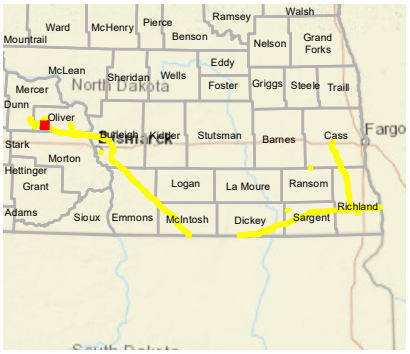
## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
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- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 2 of 392 | 2001-22-002<br>Current Revision |

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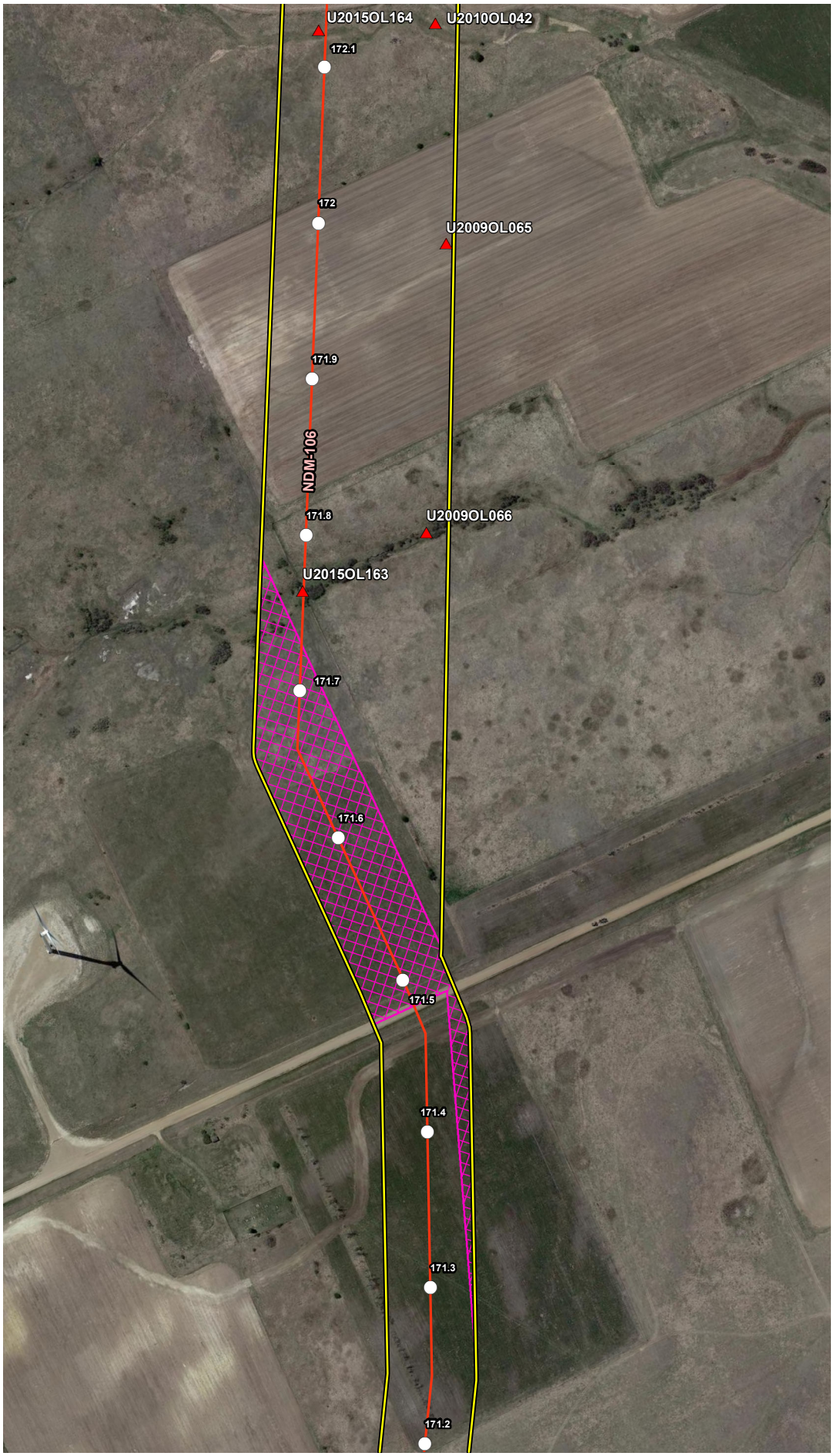


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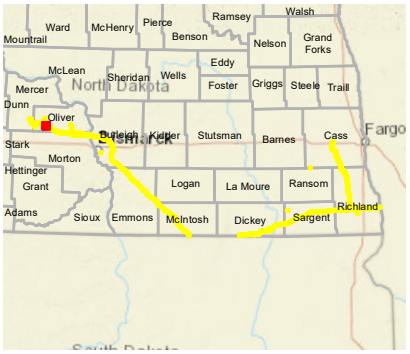


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
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| 3 of 392 | 2001-22-002<br>Current Revision |

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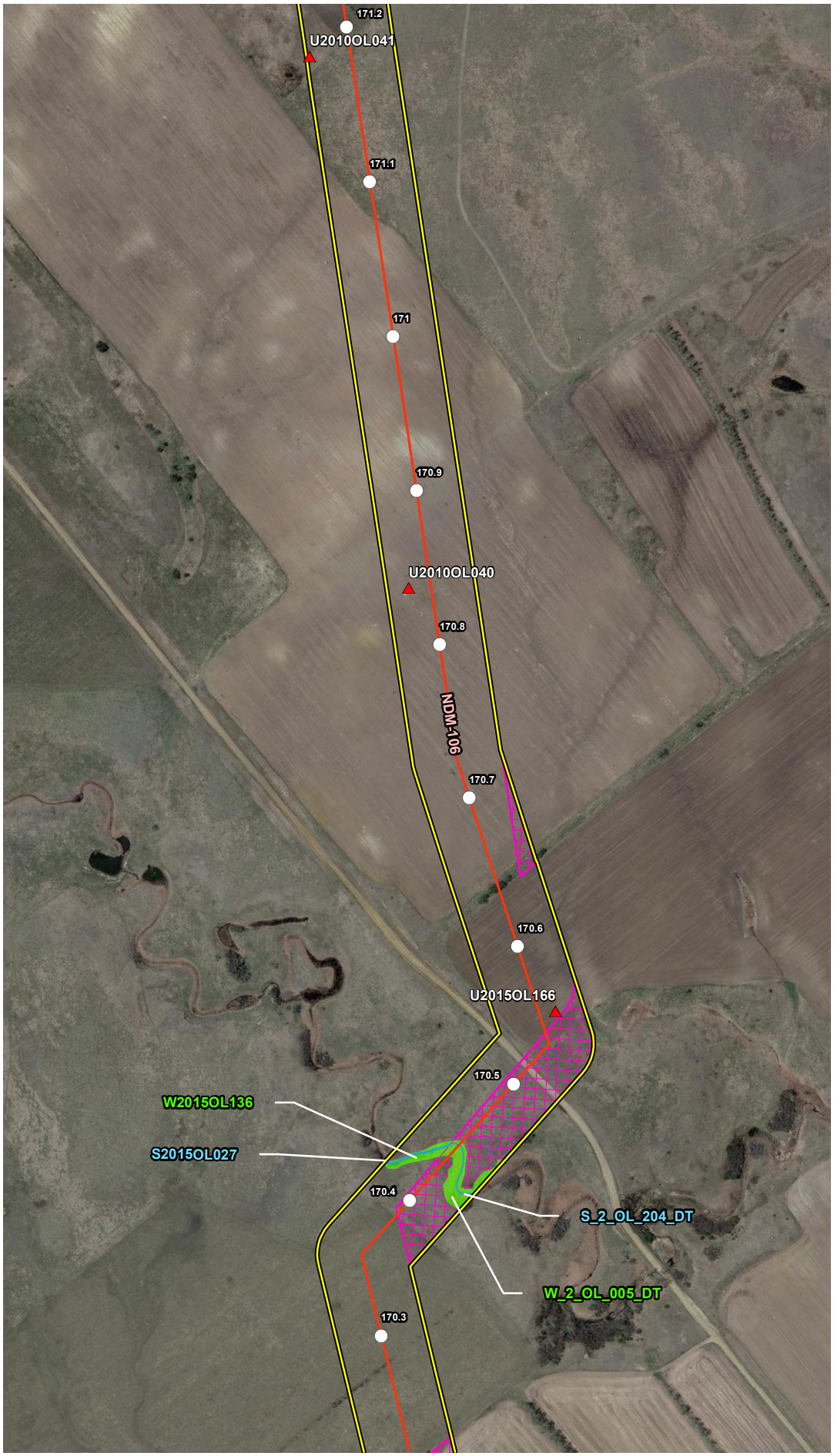
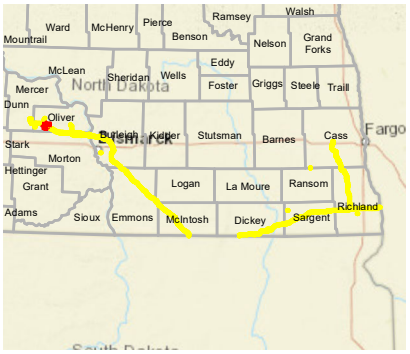



## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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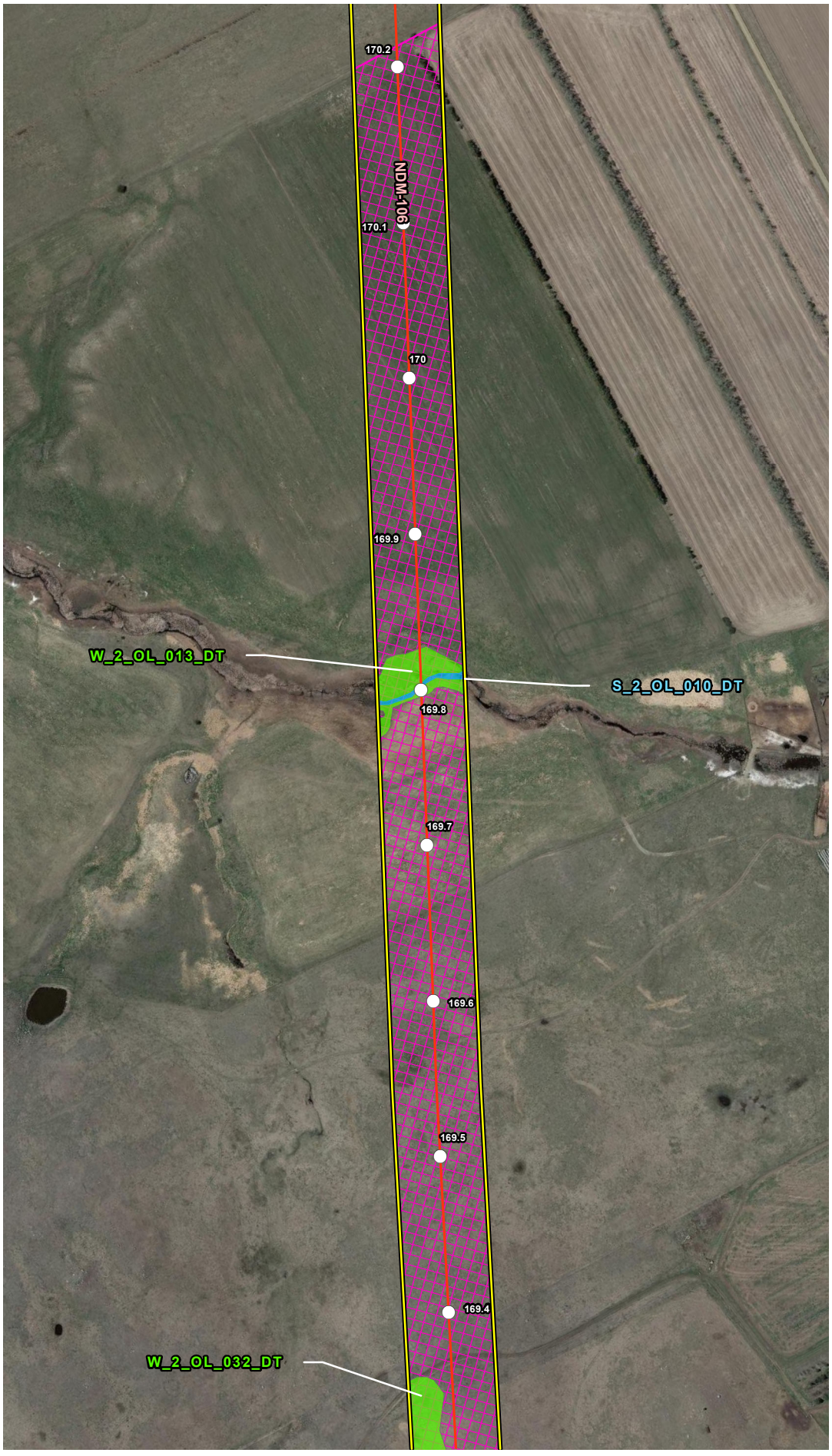
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>4 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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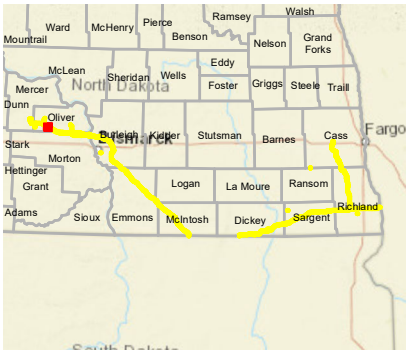


## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>5 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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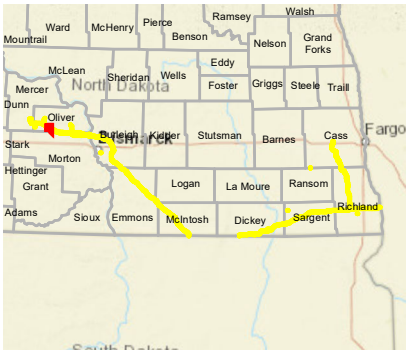
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>6 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

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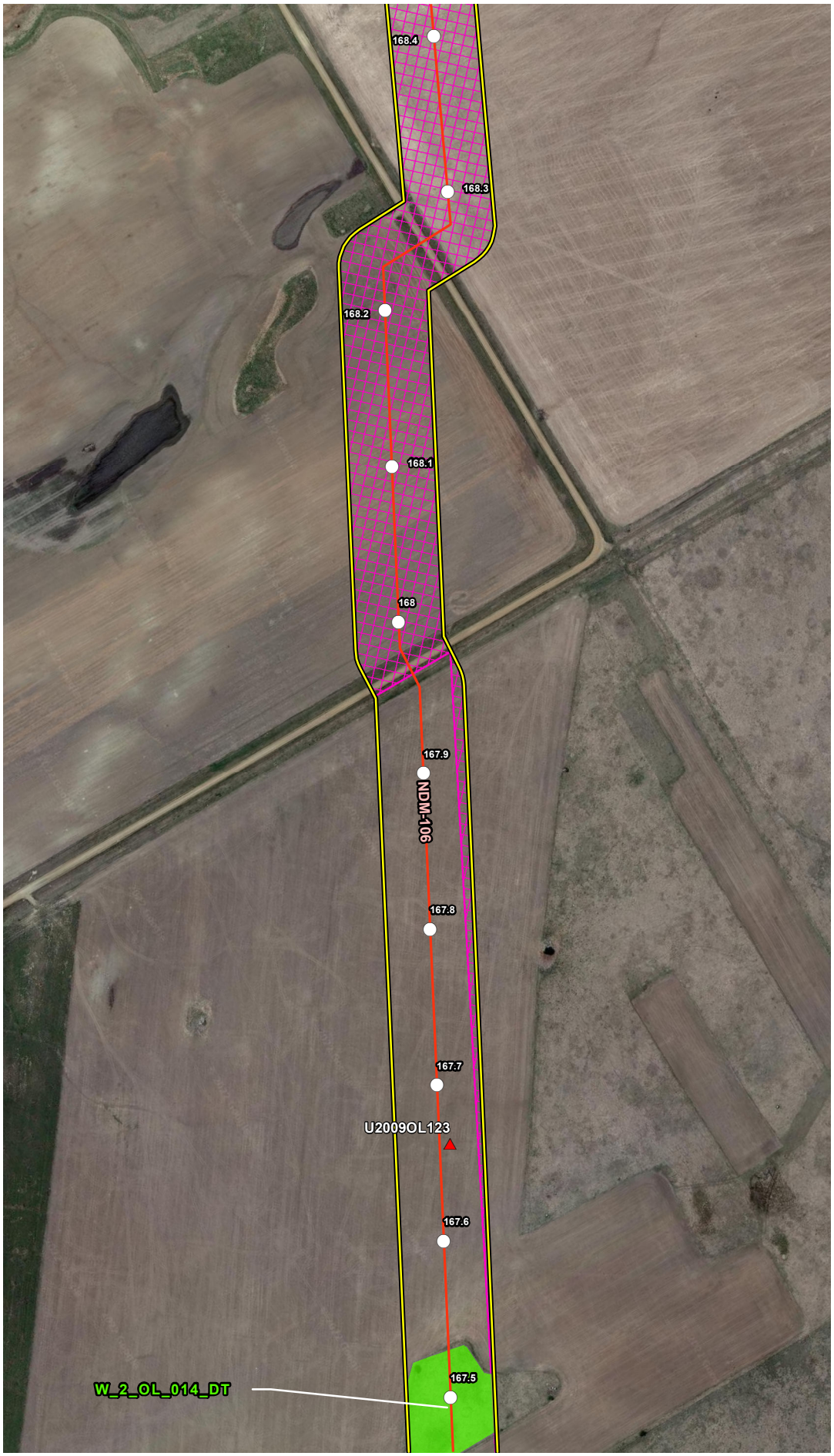


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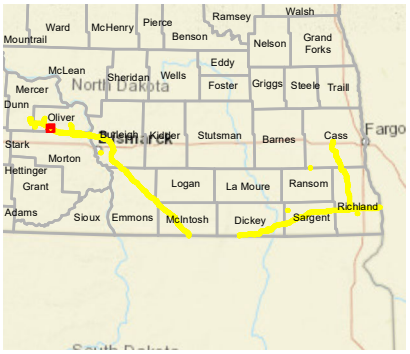


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>7 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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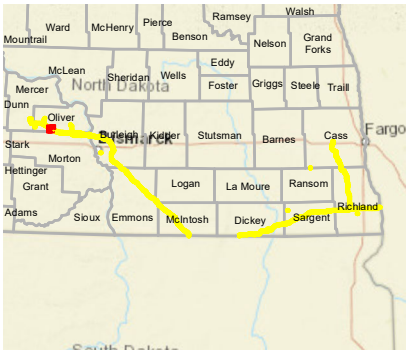
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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| | | |

| Date | Revised by | Checked by |
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Aerial Map

**Figure Number:**

Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 8 of 392 | 2001-22-002<br>Current Revision |

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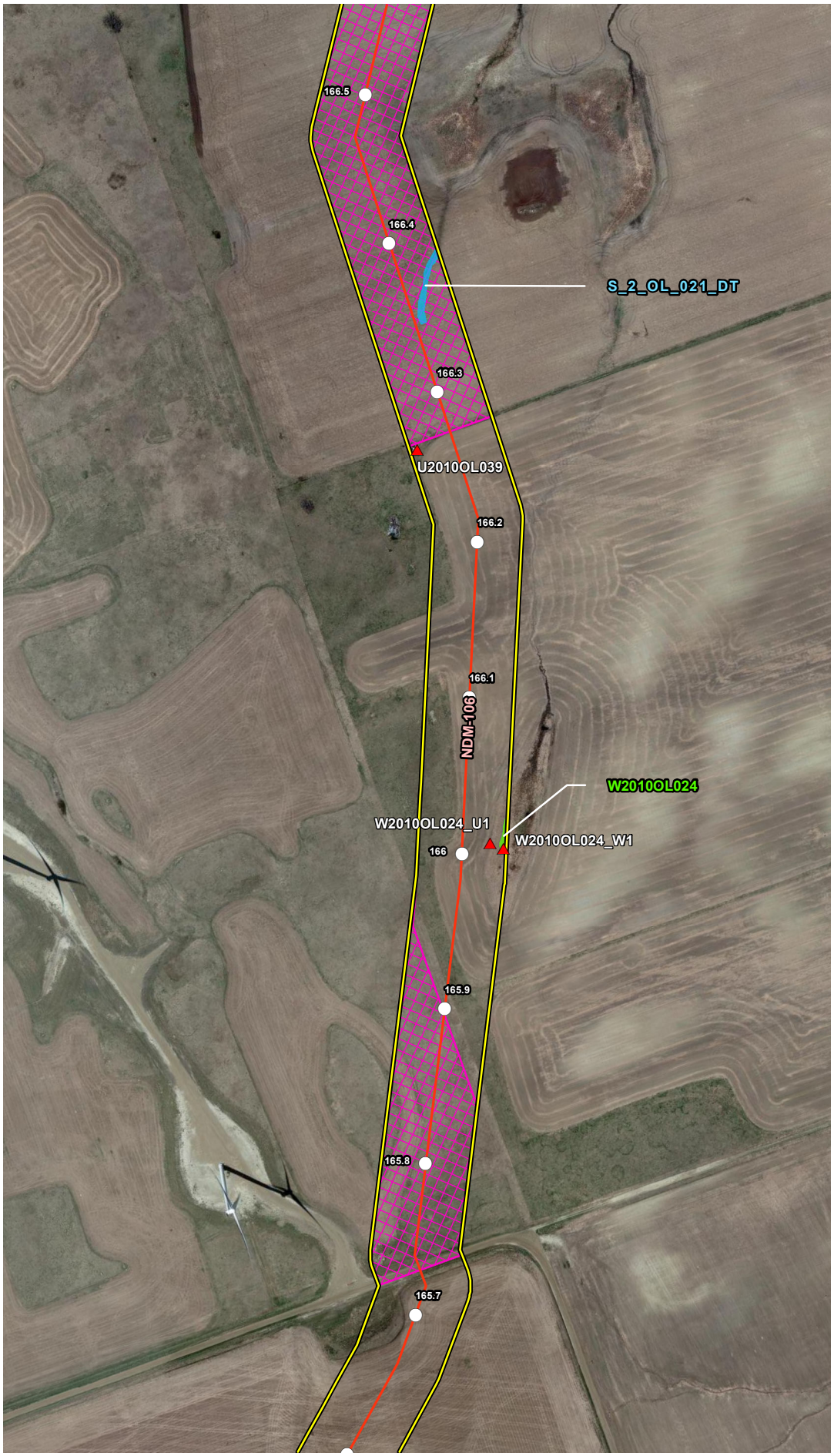
## AERIAL MAP

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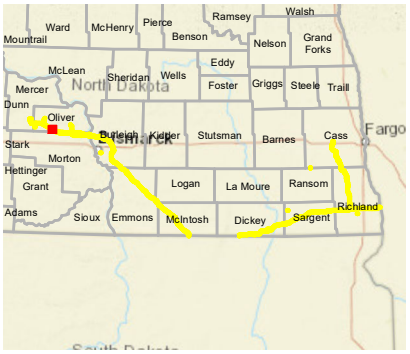


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 9 of 392 | 2001-22-002<br>Current Revision |

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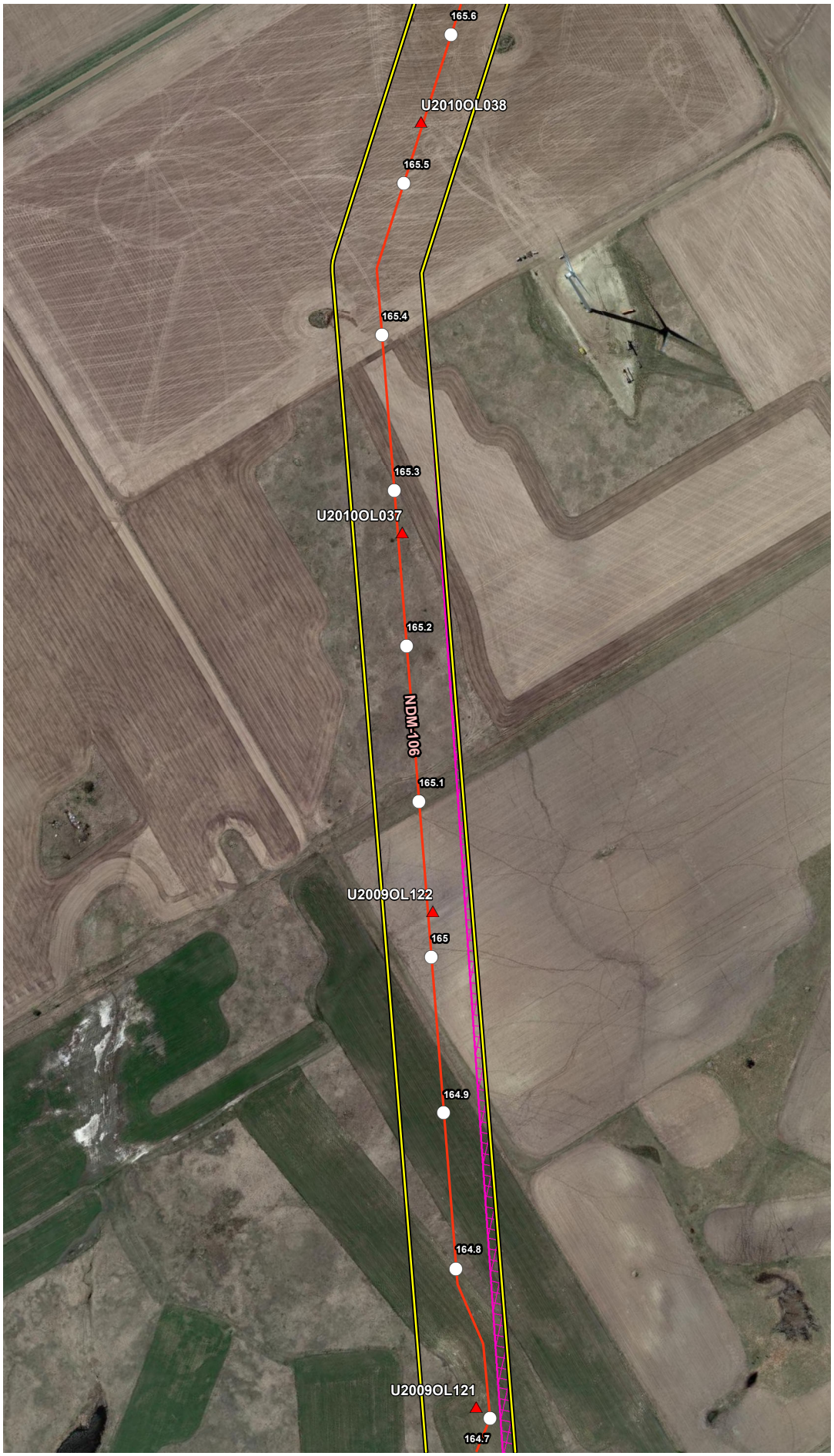
## AERIAL MAP

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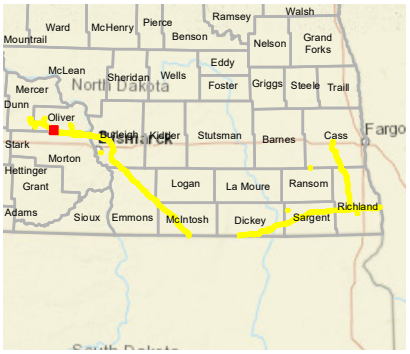


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>10 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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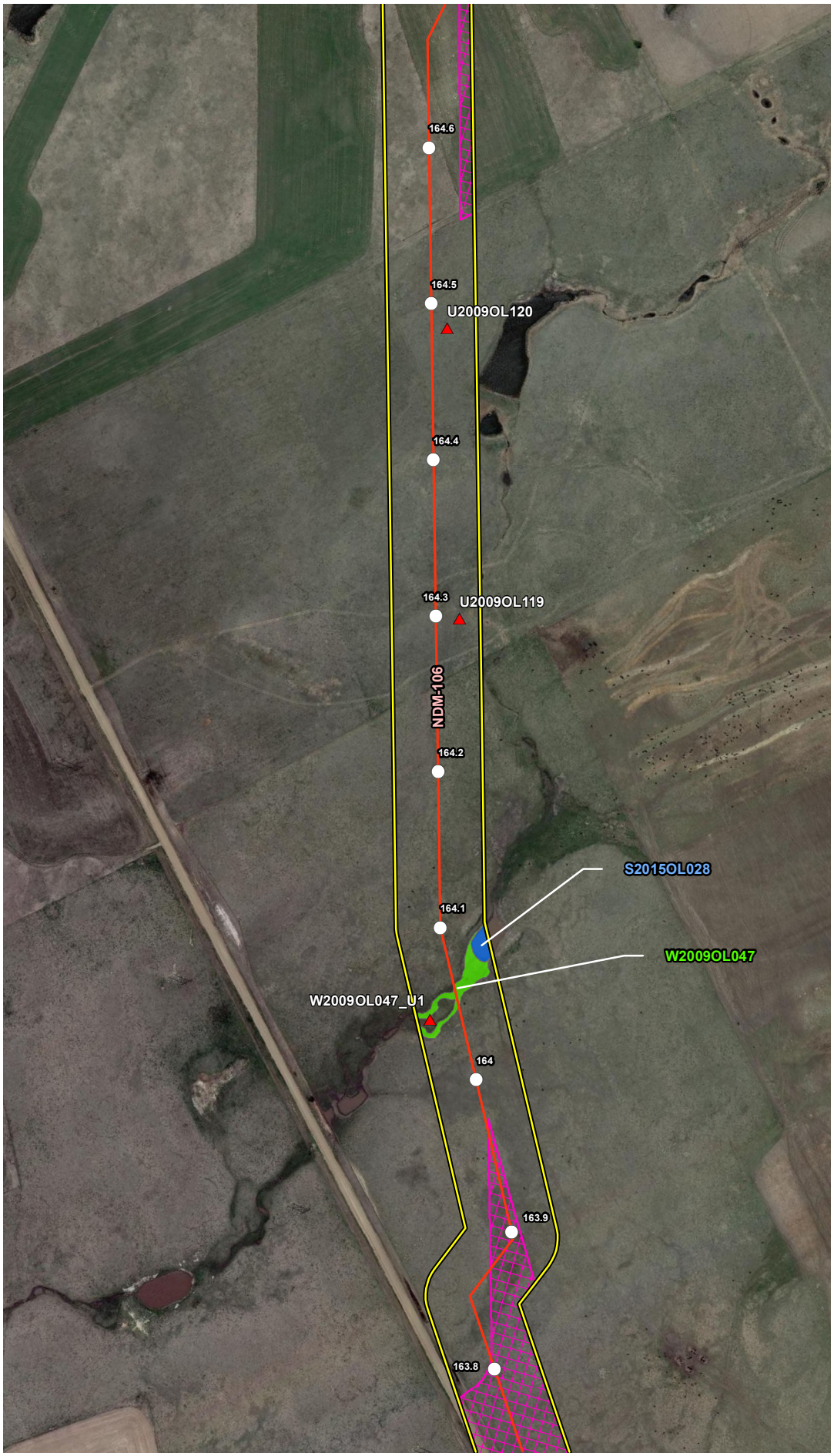
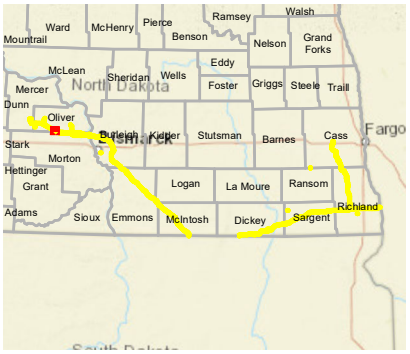
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 11 of 392 | 2001-22-002<br>Current Revision |

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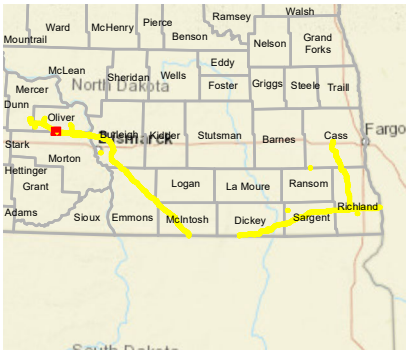
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 12 of 392 | 2001-22-002<br>Current Revision |

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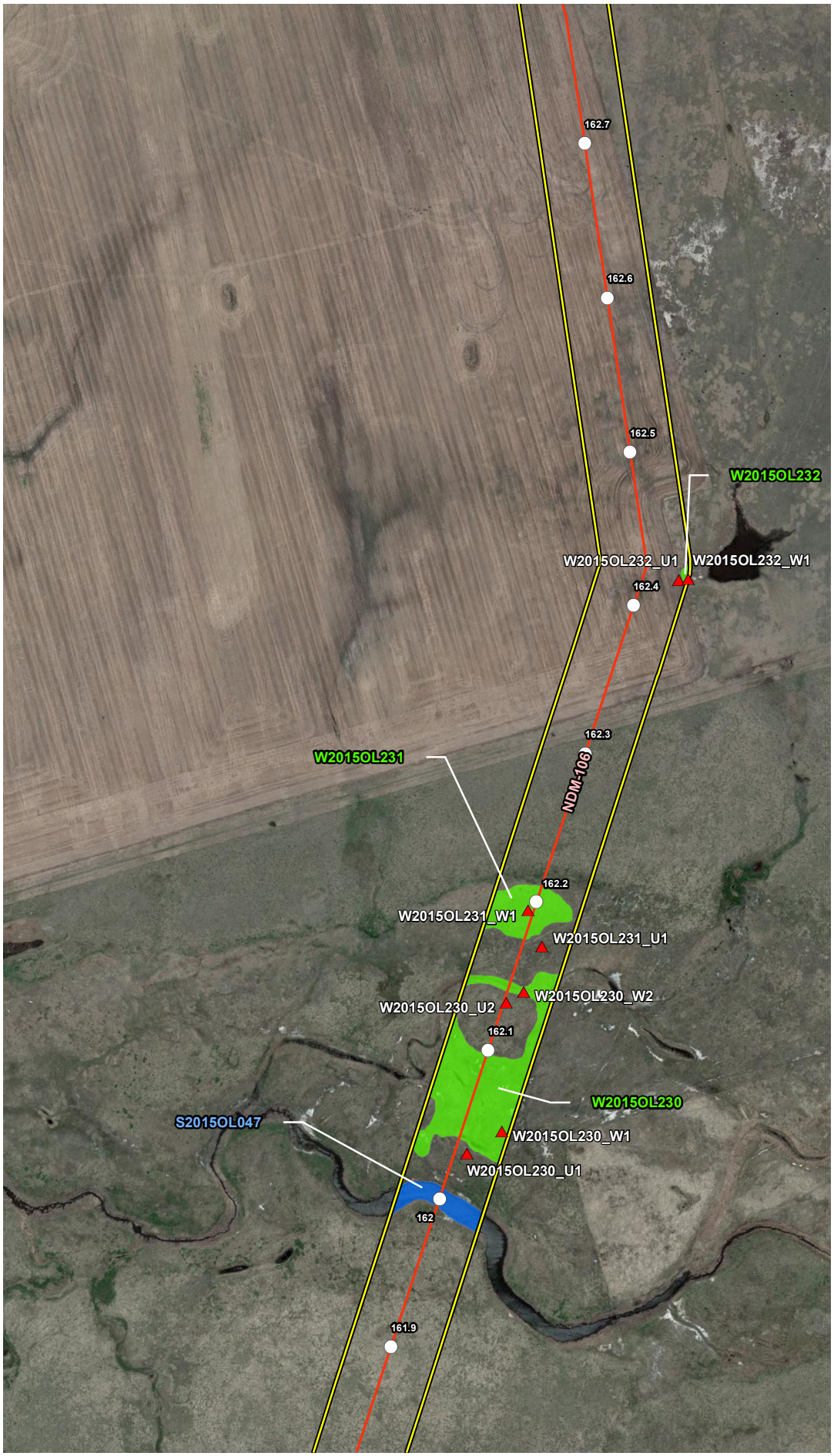
## AERIAL MAP

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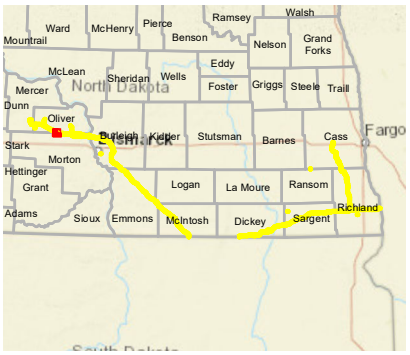


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 13 of 392 | 2001-22-002<br>Current Revision |

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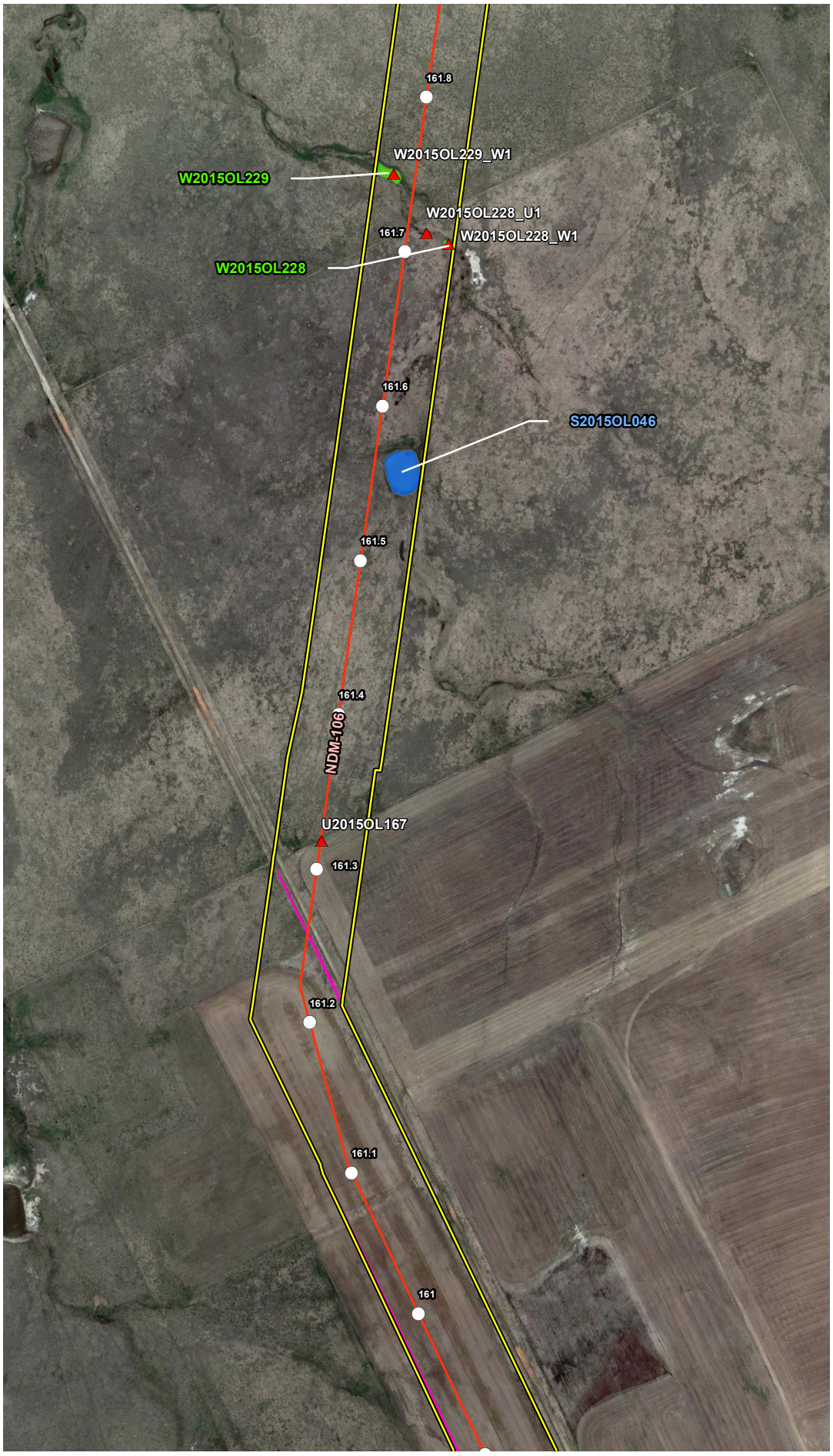
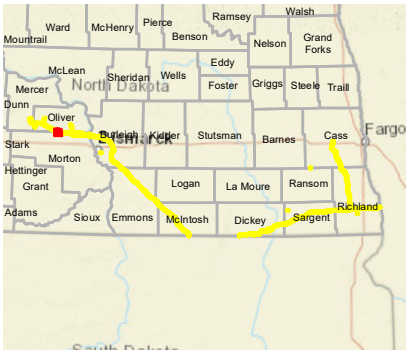
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 14 of 392 | 2001-22-002<br>Current Revision |

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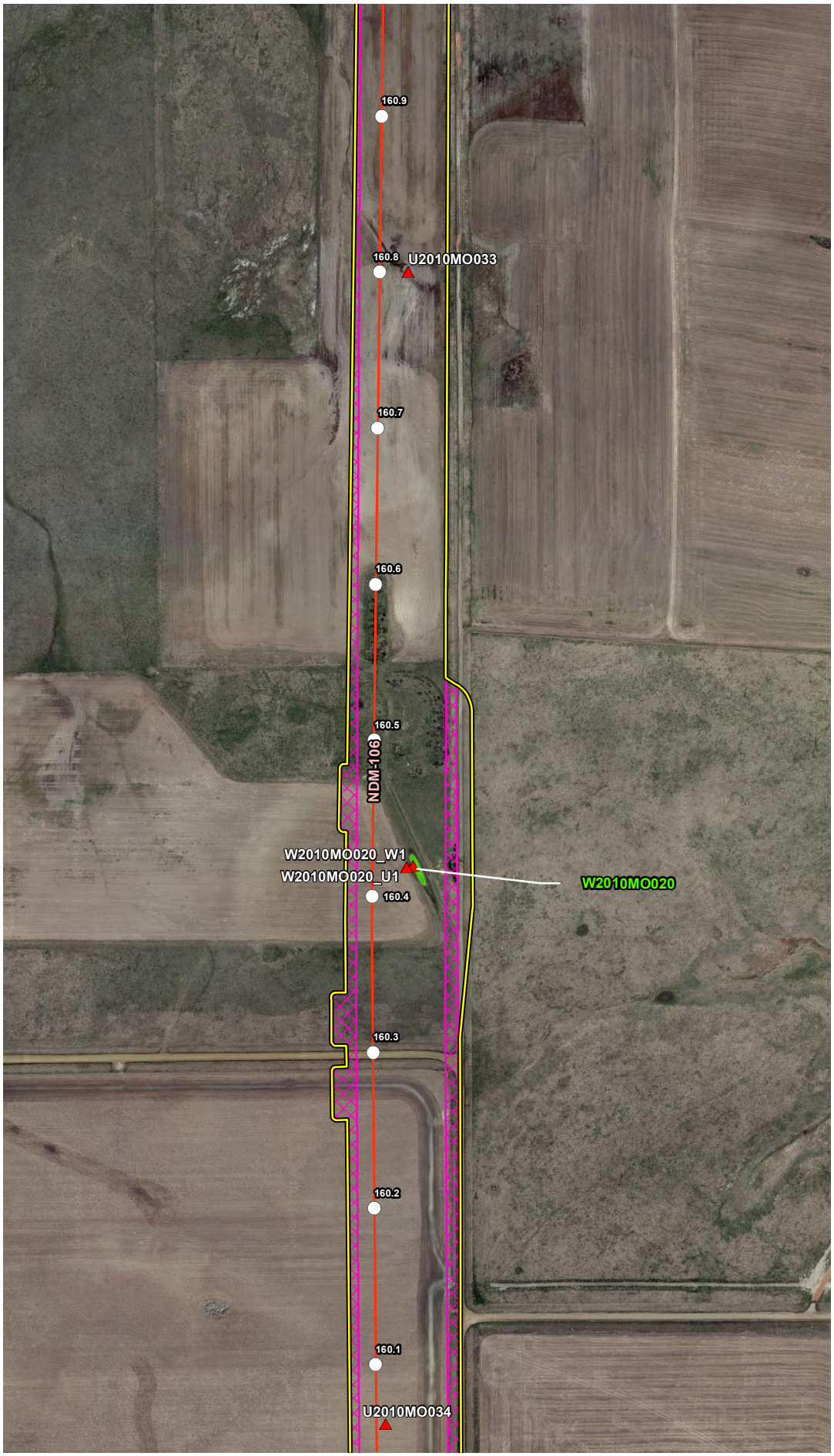
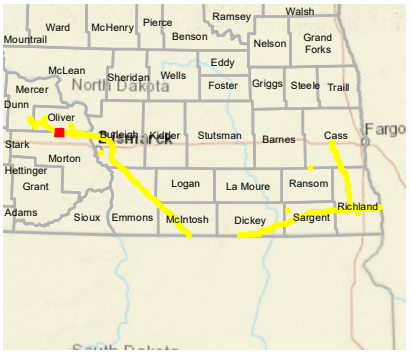
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
|---|---|---|
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Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 15 of 392 | 2001-22-002<br>Current Revision |

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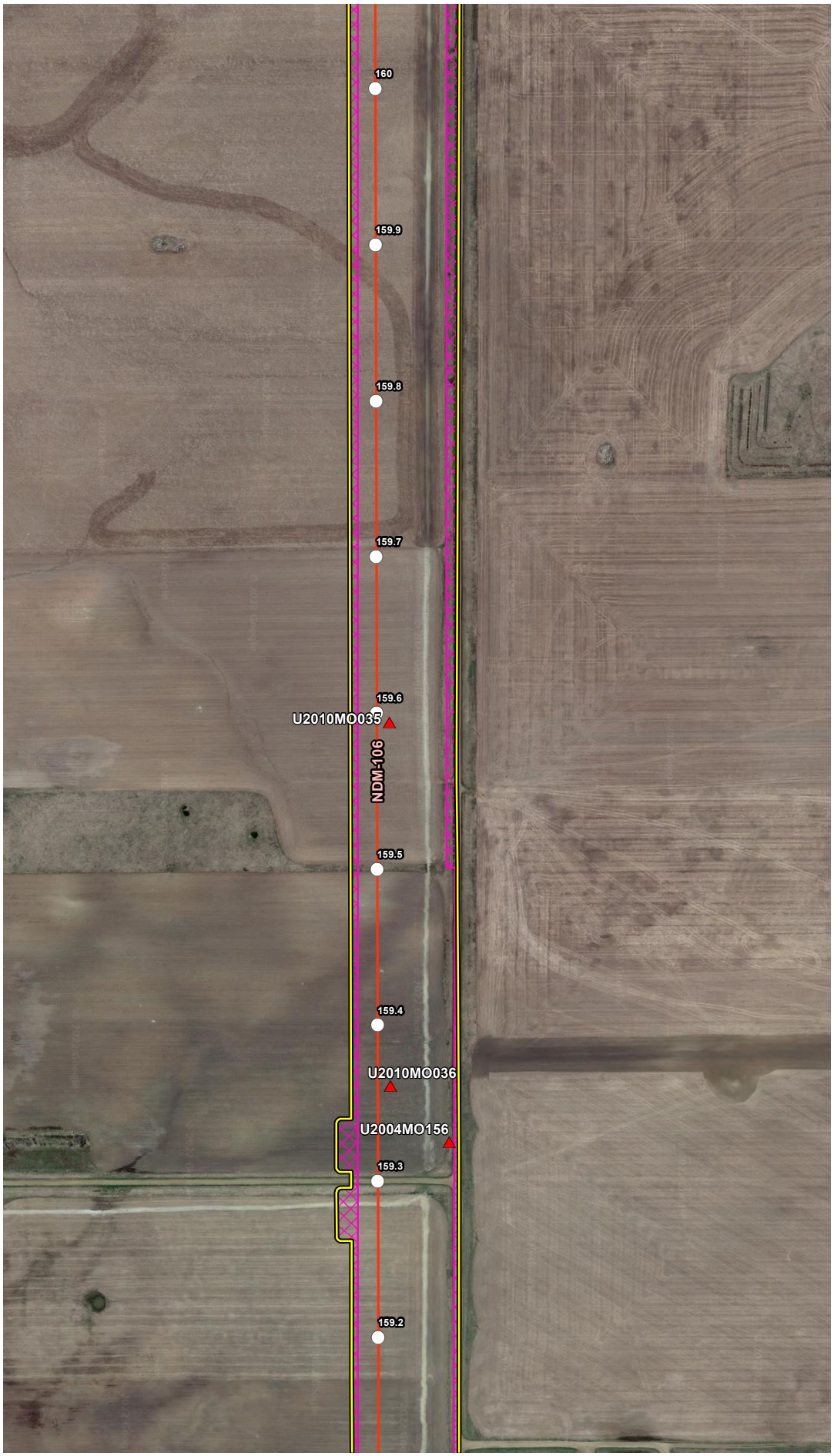
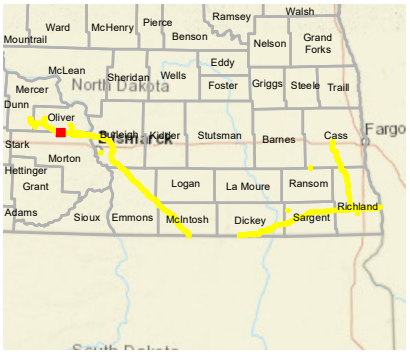
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

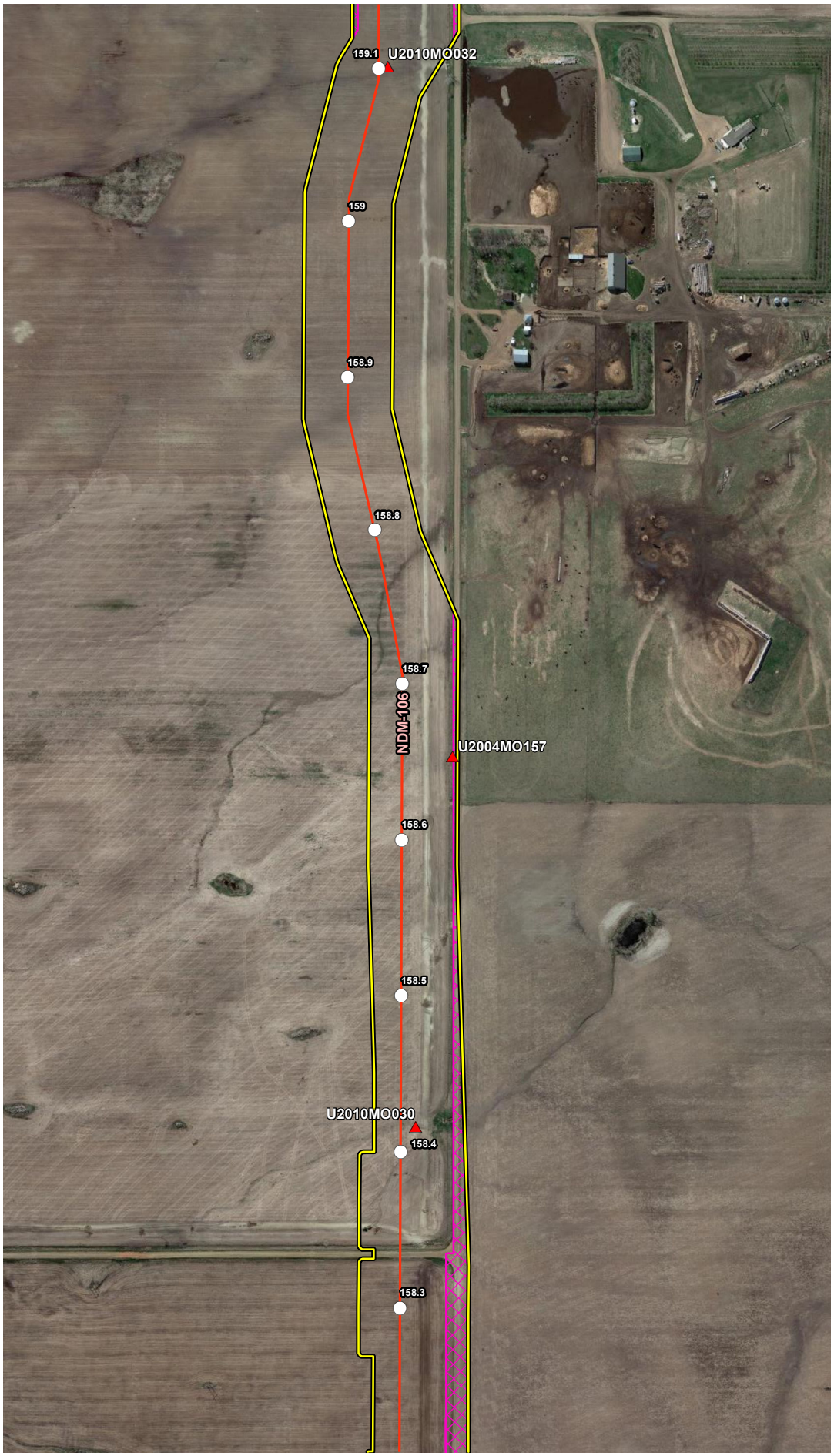
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
16 of 392

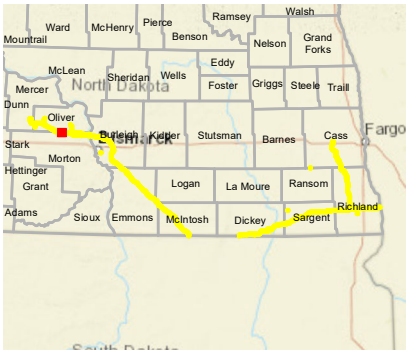
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**
Aerial Map

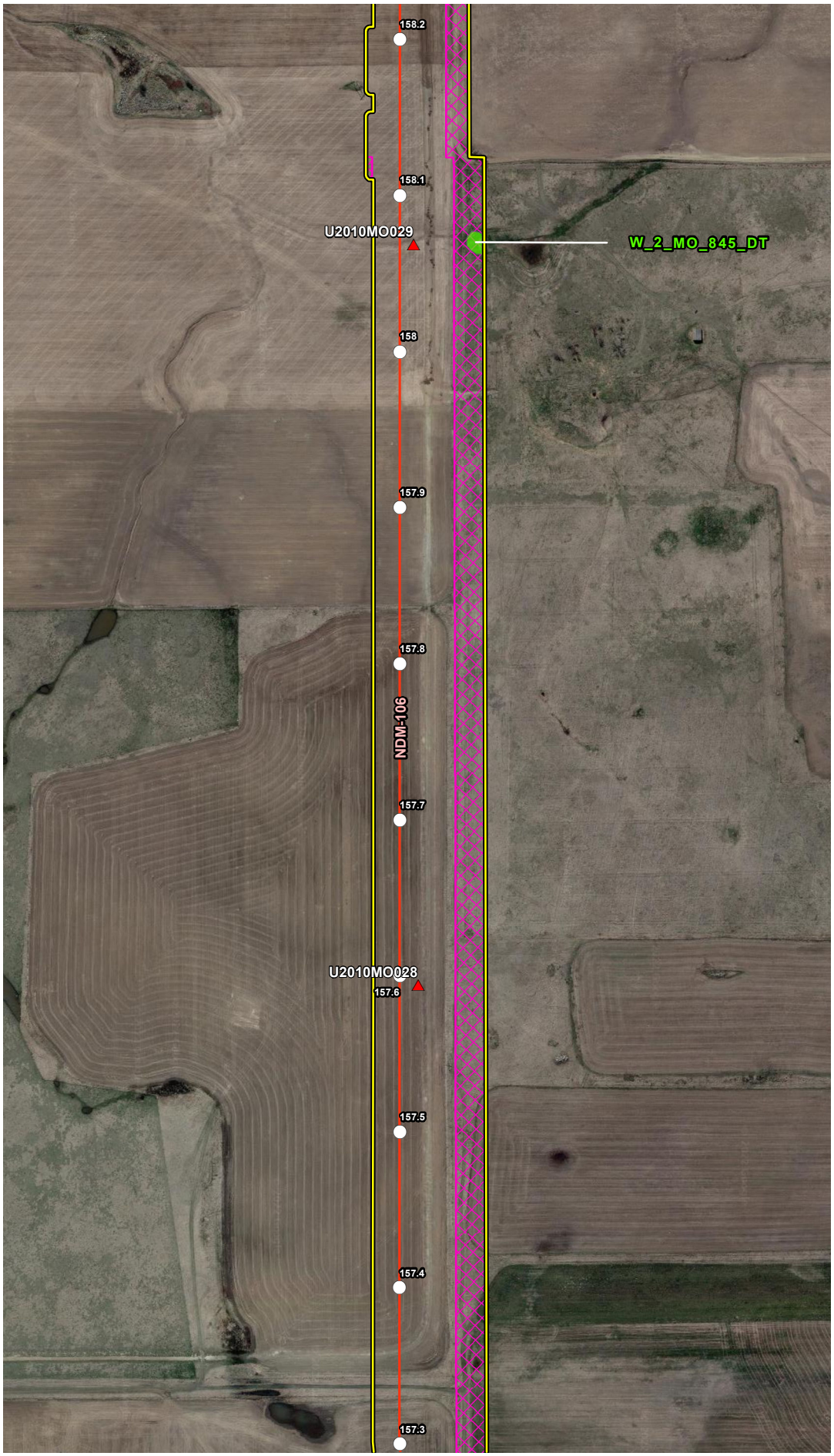
**Figure Number:**
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

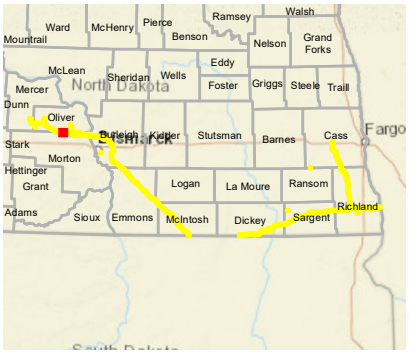
| Sheet: | Drawing Number: |
|---|---|
| 17 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 18 of 392 | 2001-22-002<br>Current Revision |

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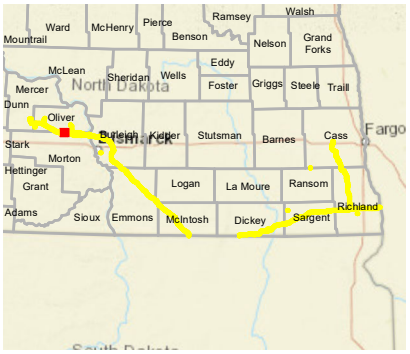
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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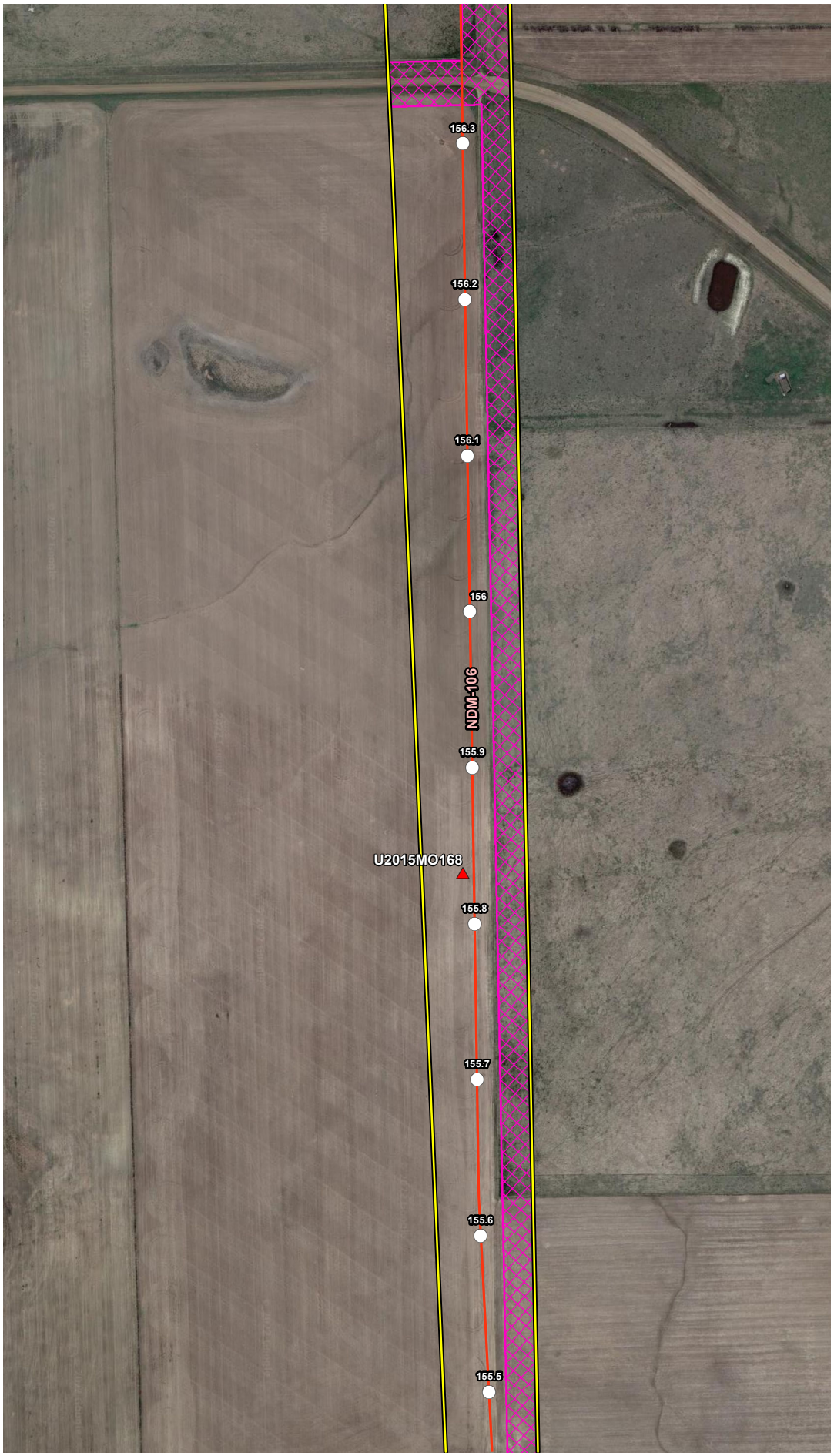
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>19 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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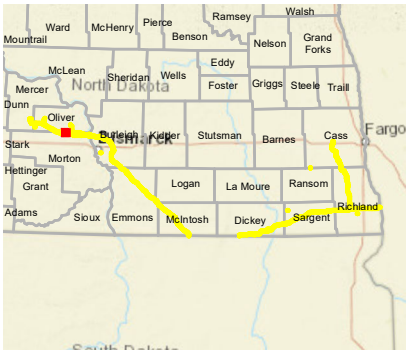


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 20 of 392 | 2001-22-002<br>Current Revision |

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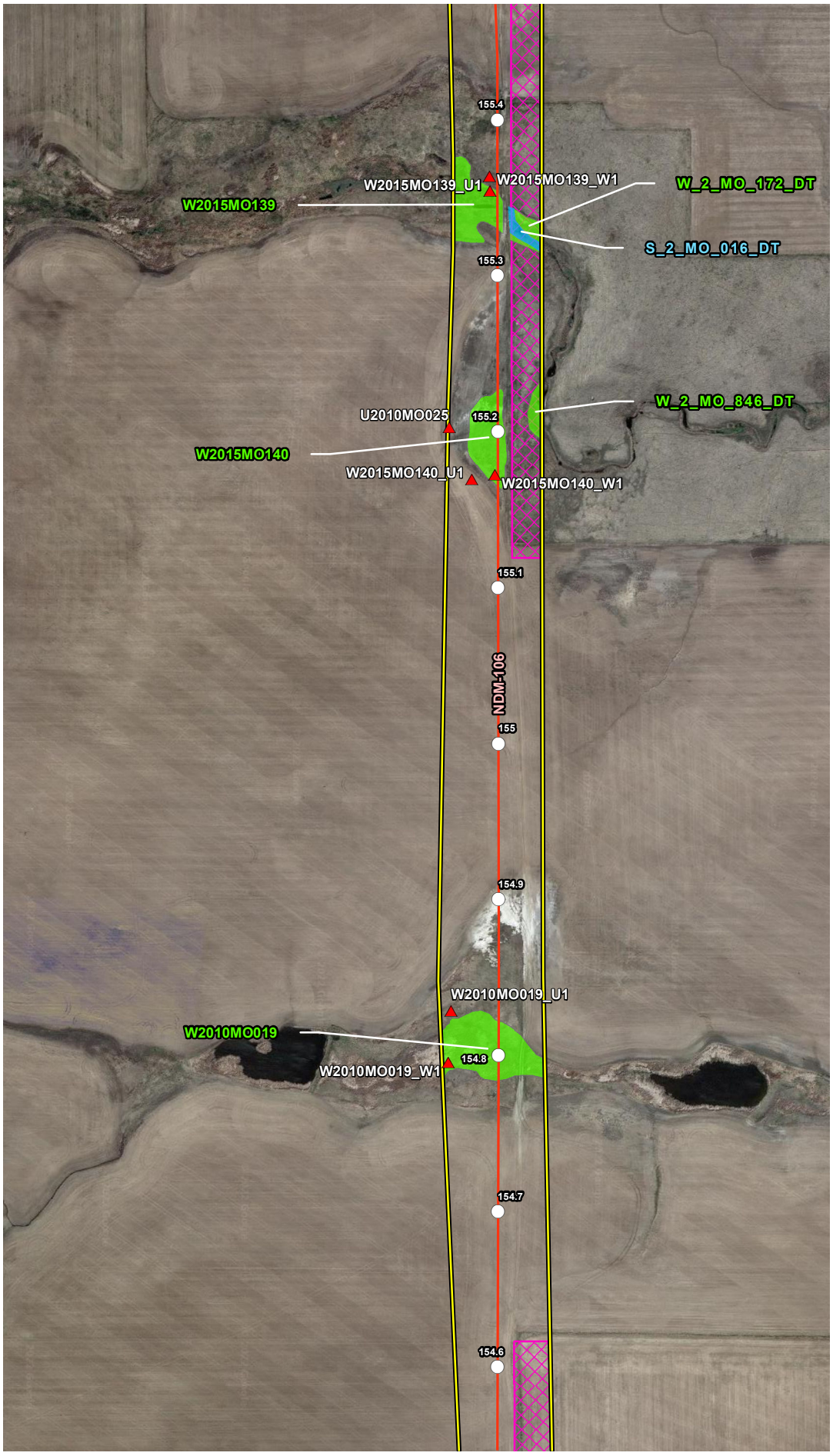
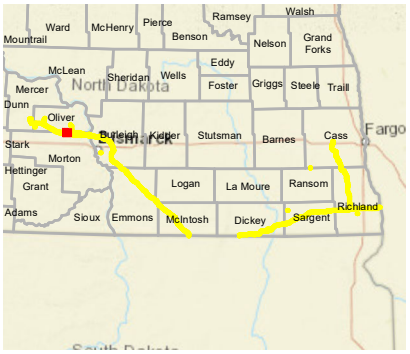
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
| | | |

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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 21 of 392 | 2001-22-002<br>Current Revision |

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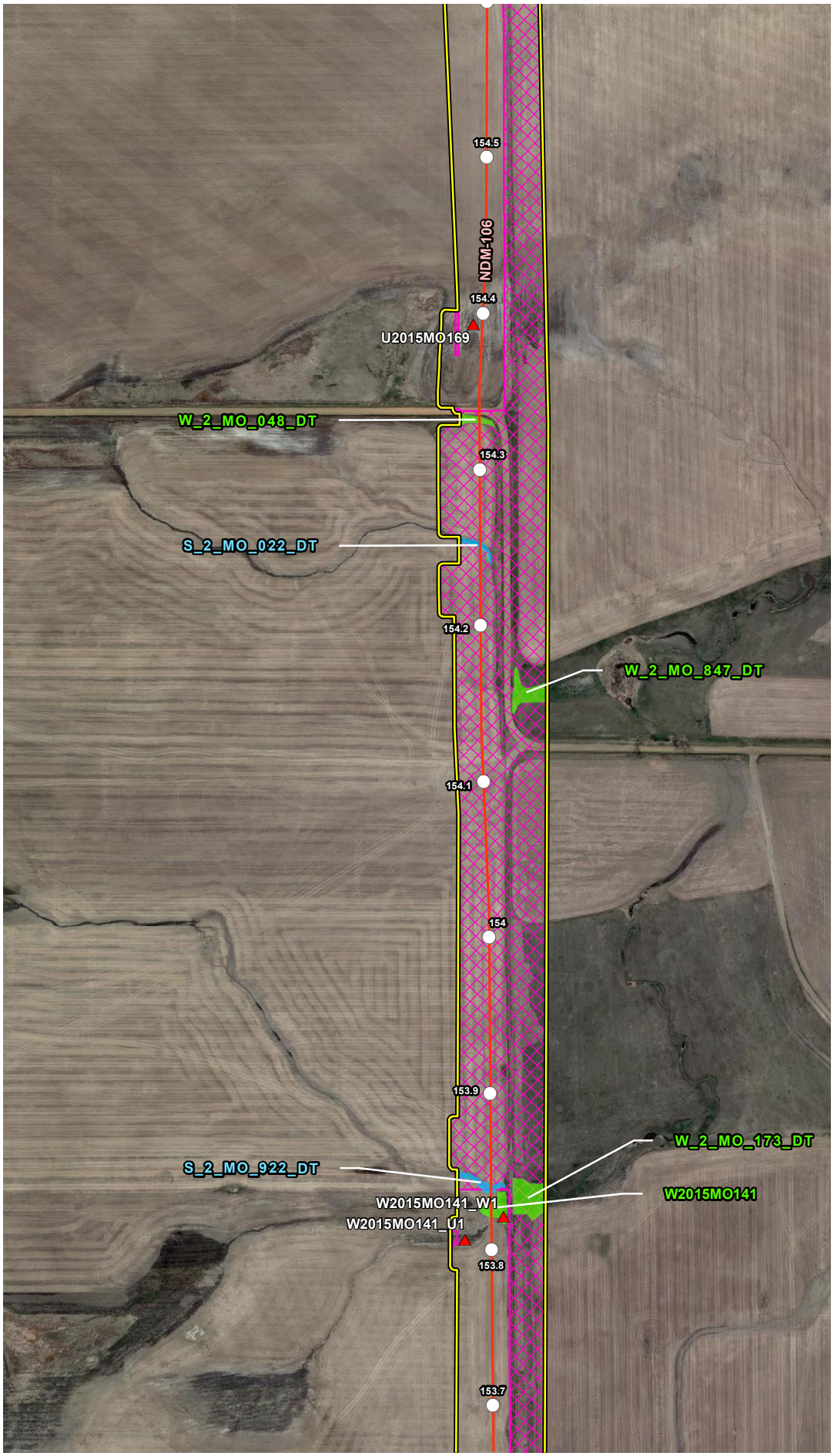
## AERIAL MAP

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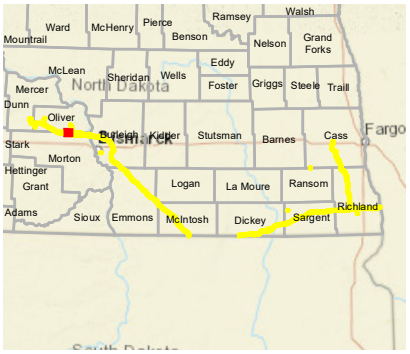


## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

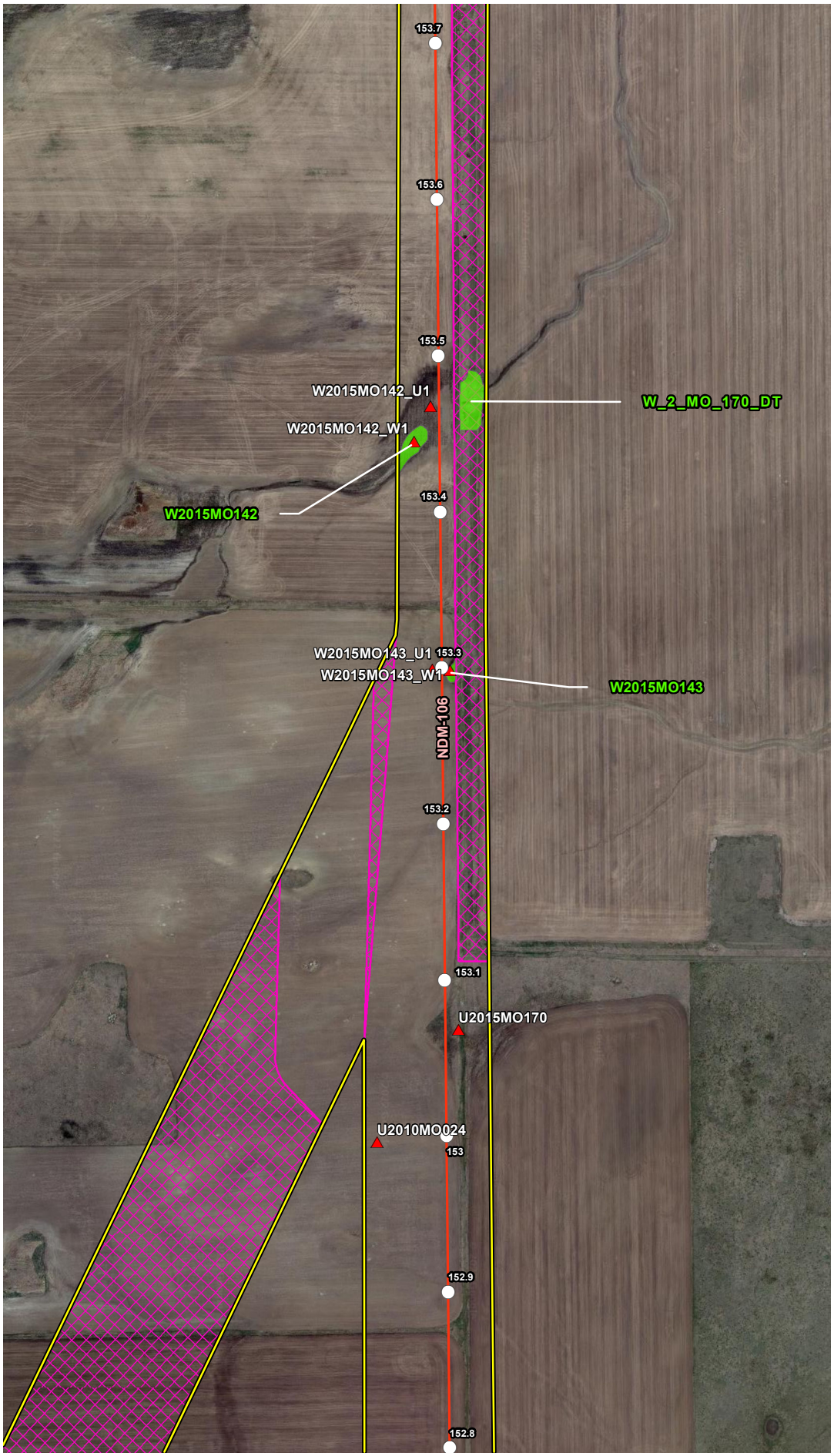
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
22 of 392

Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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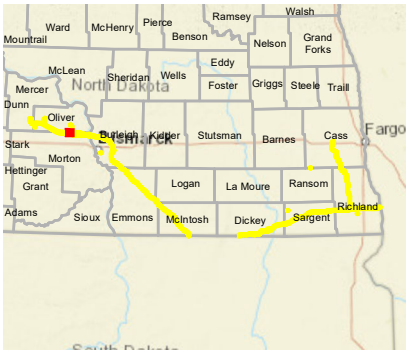


## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Aerial Map**

Figure Number:

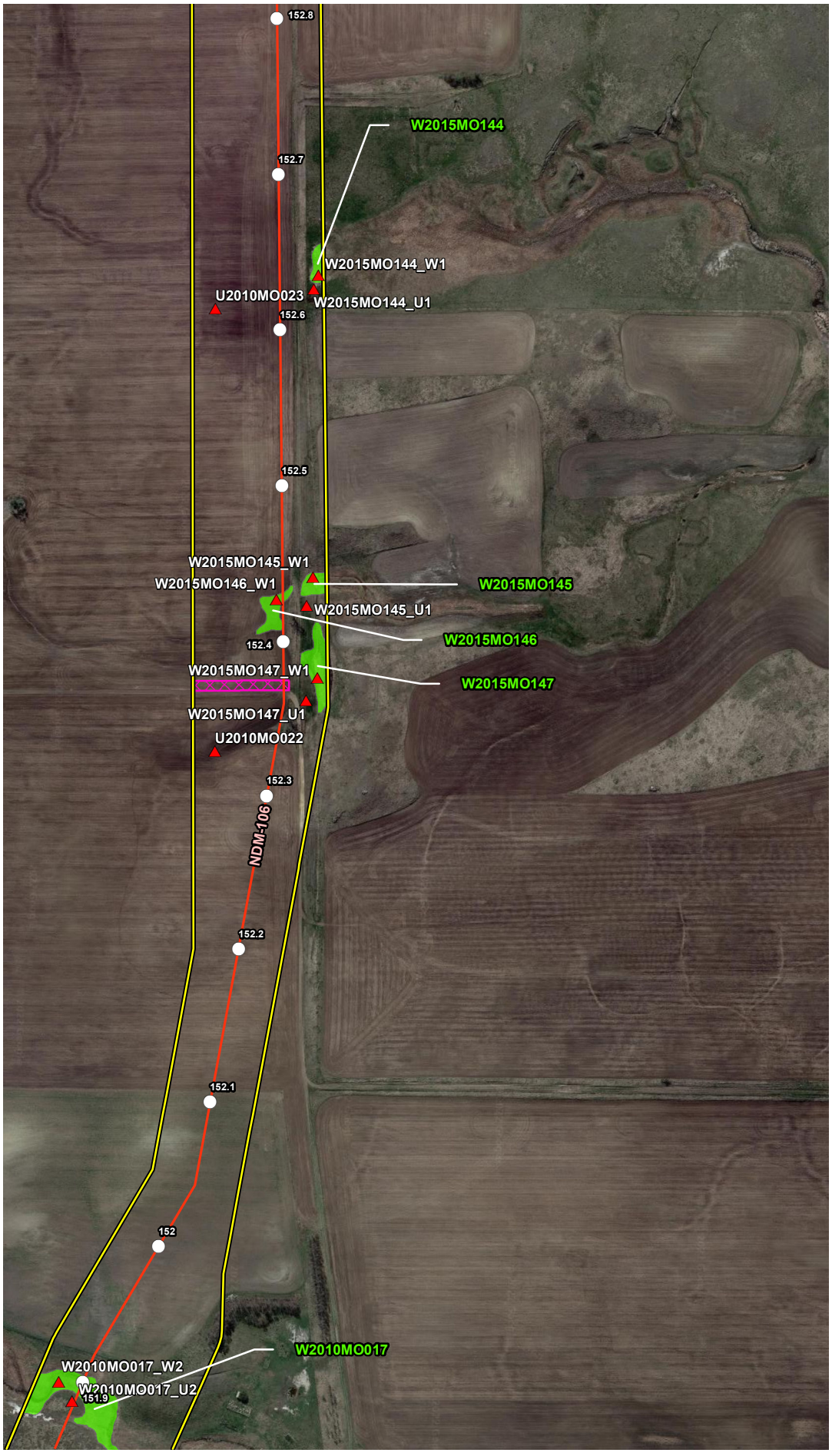
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 23 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\2_Aerial.mxd

## AERIAL MAP

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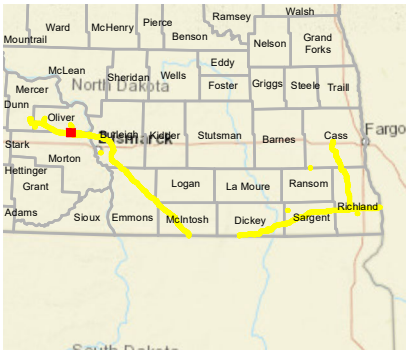


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>24 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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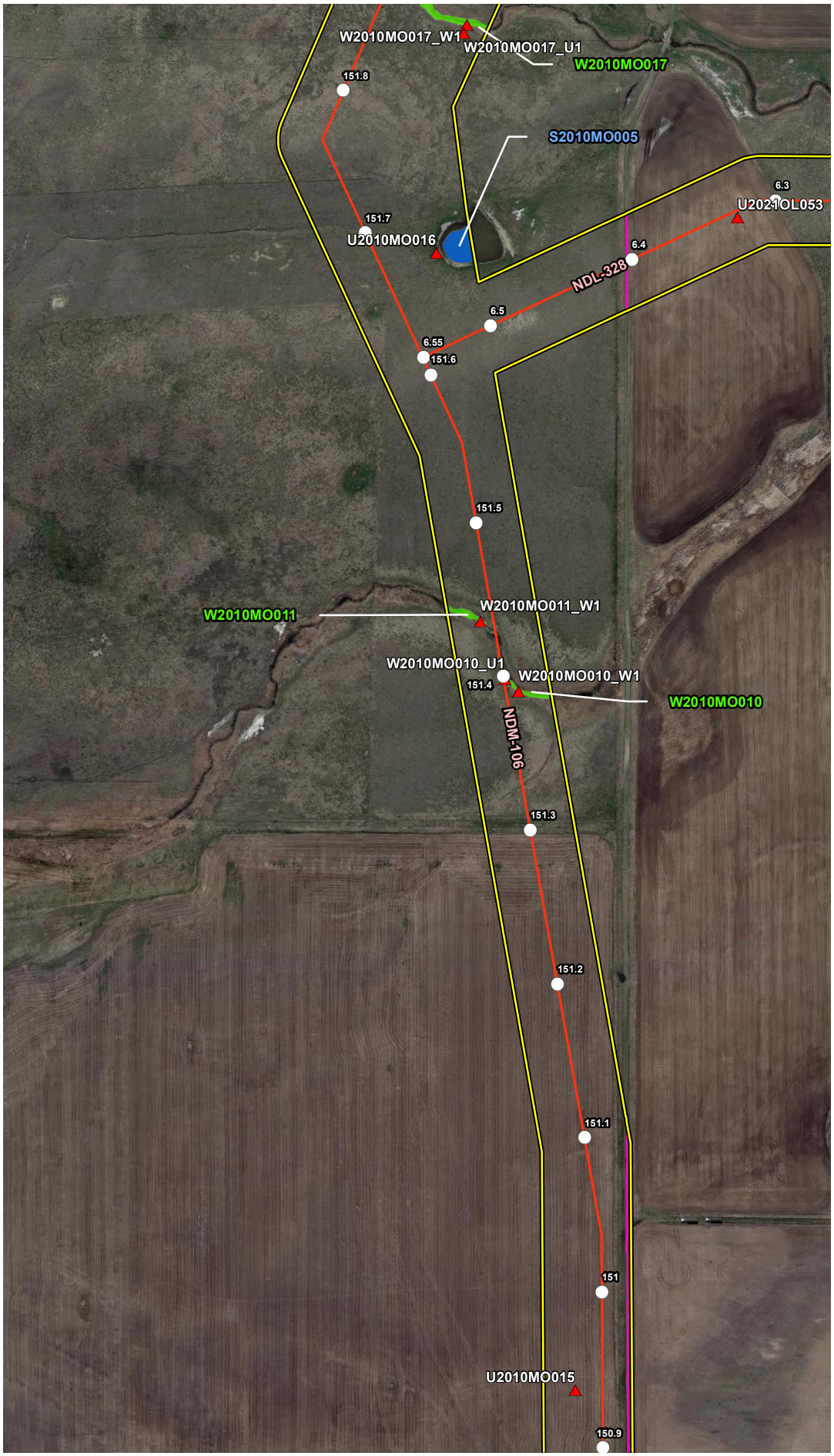
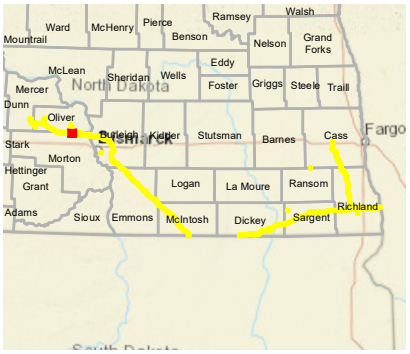
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**Aerial Map**

Figure Number:

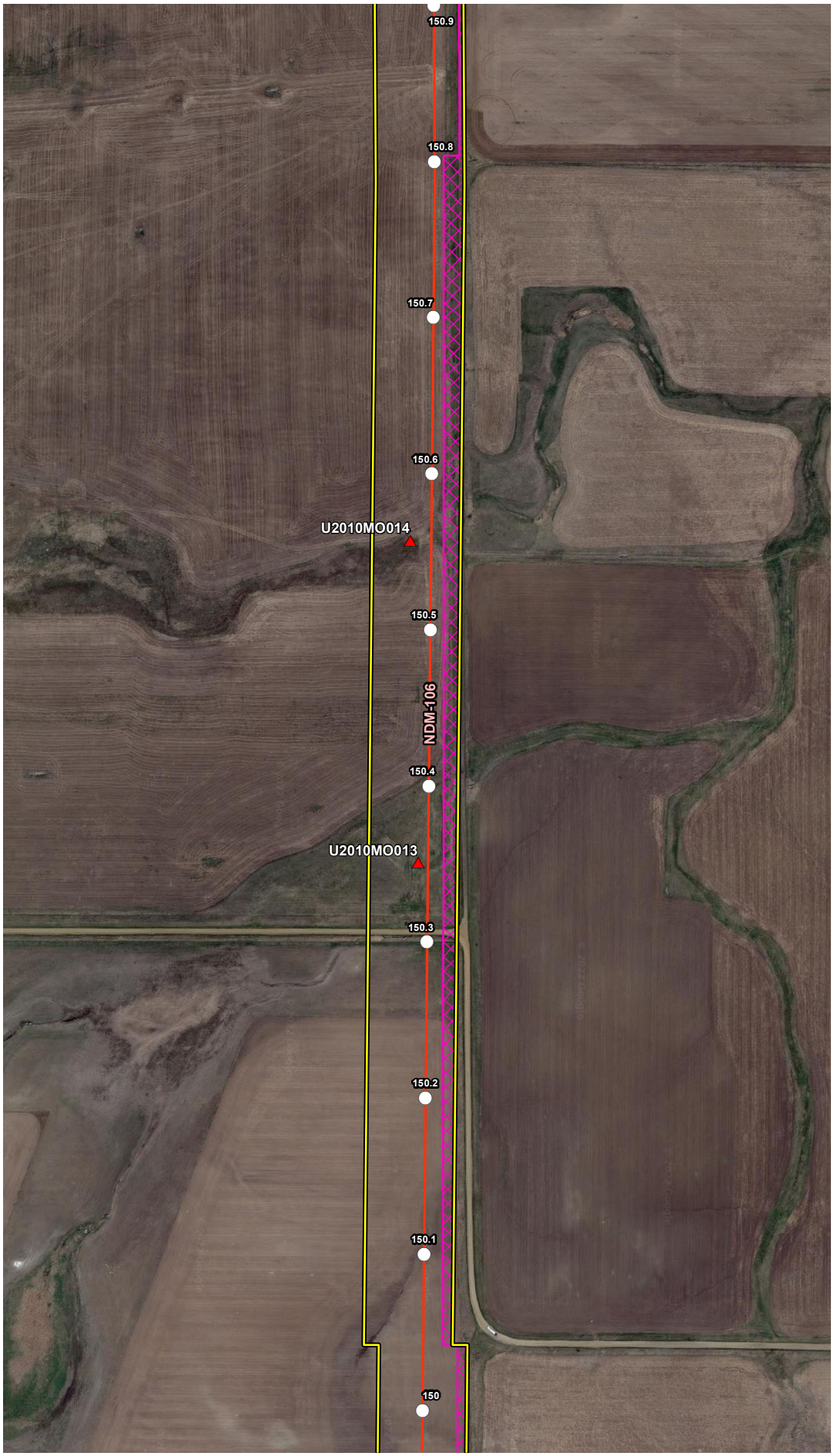
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

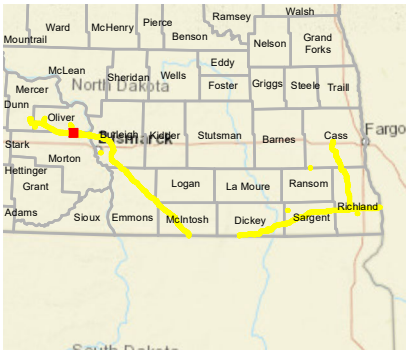
| Sheet: | Drawing Number: |
|---|---|
| 25 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 26 of 392 | 2001-22-002<br>Current Revision |

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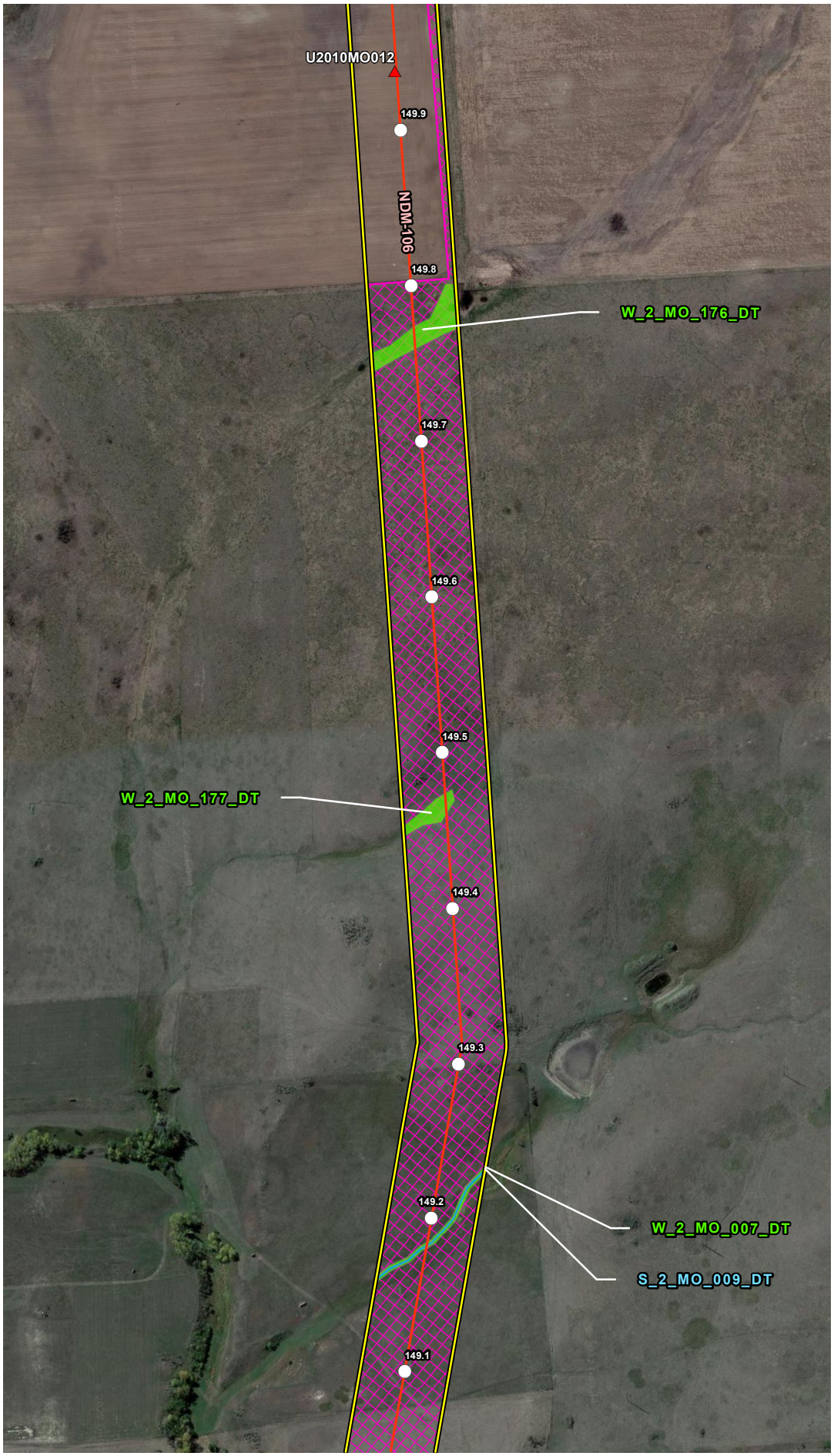
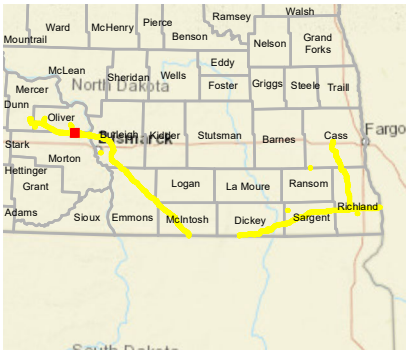
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
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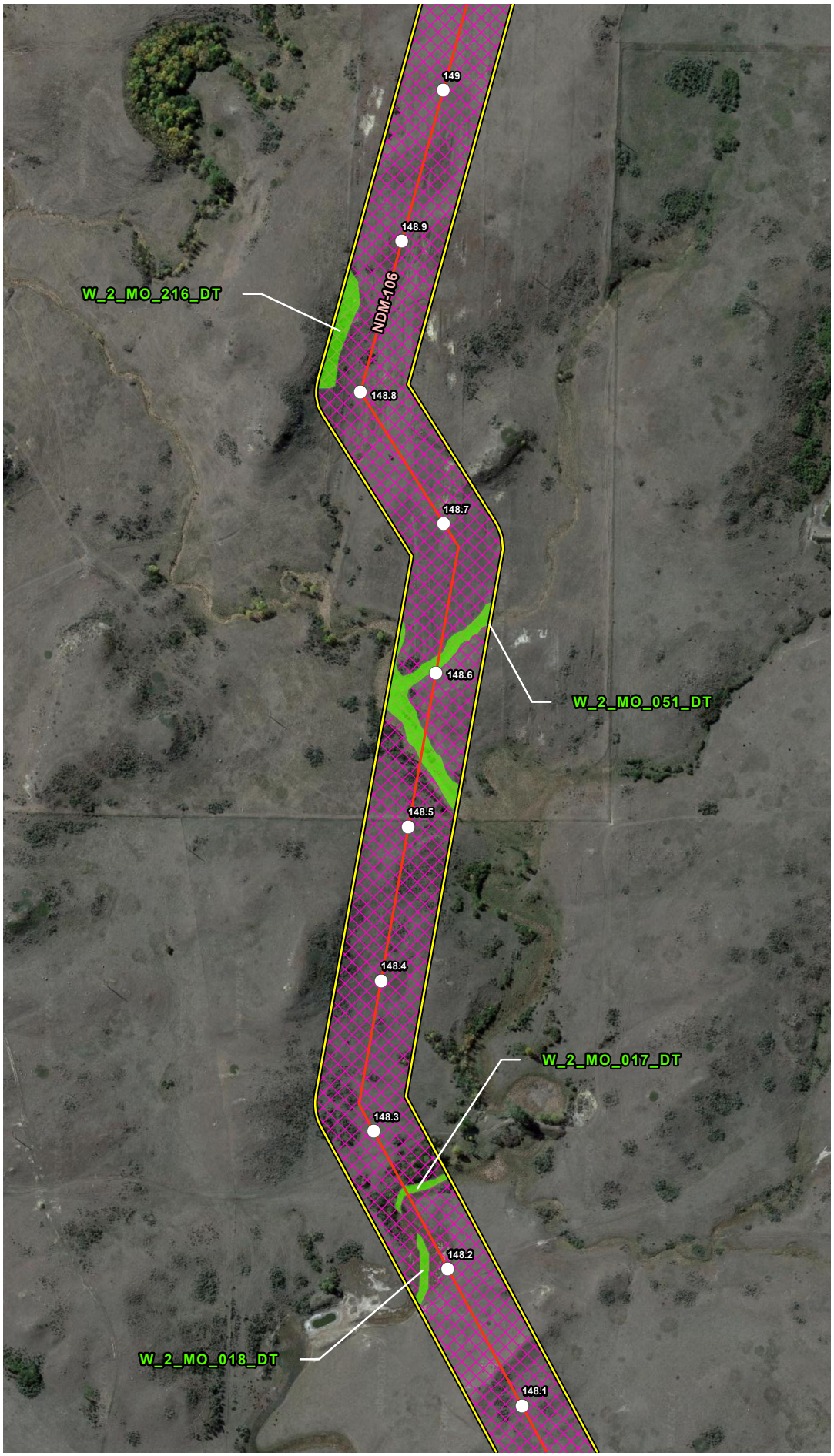
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

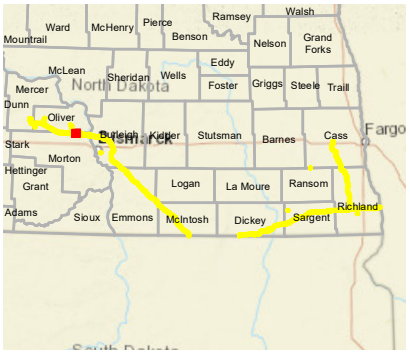
| Sheet: | Drawing Number: |
|---|---|
| 27 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDI\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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**Figure Title:**

Aerial Map

**Figure Number:**

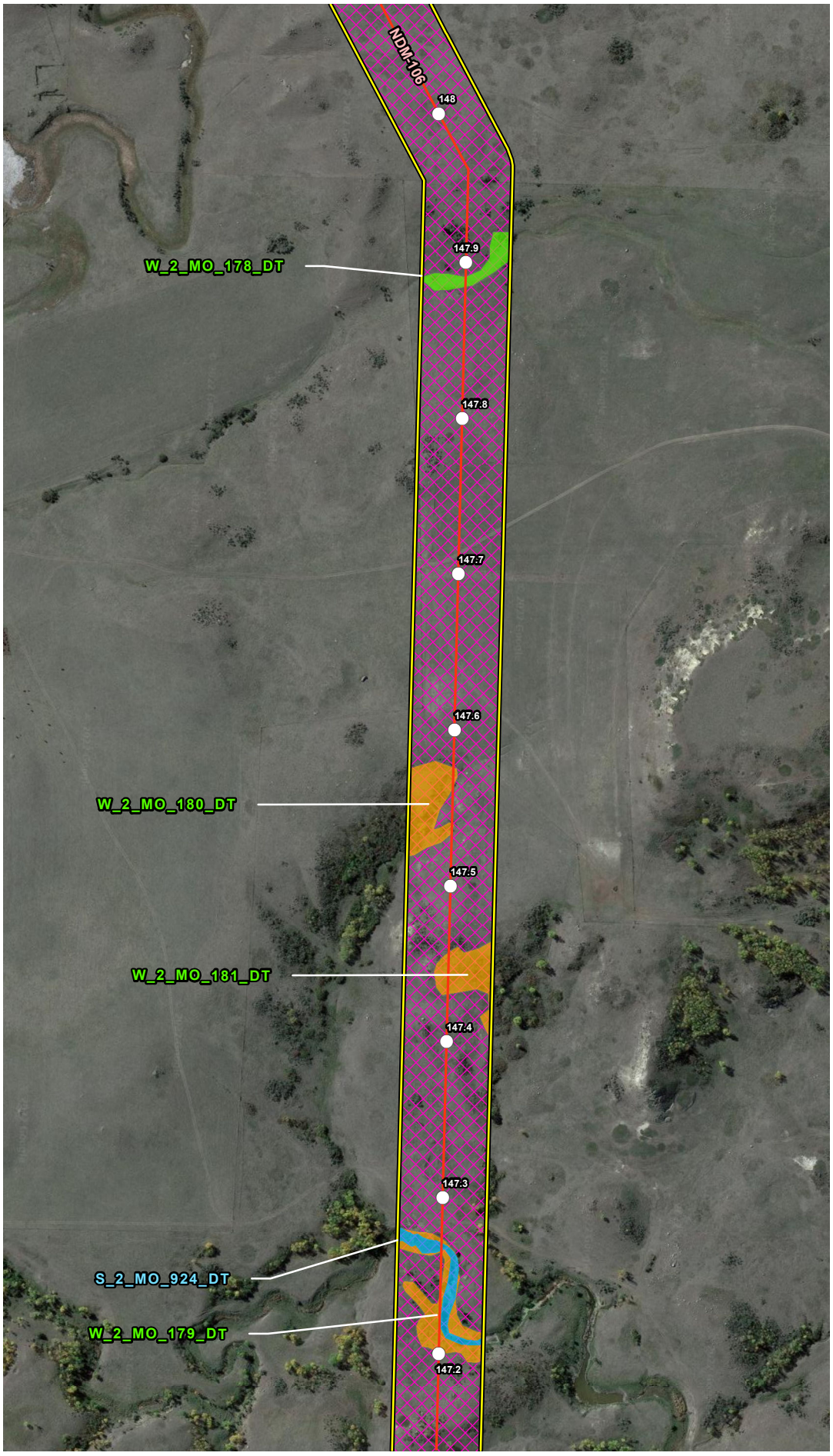
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

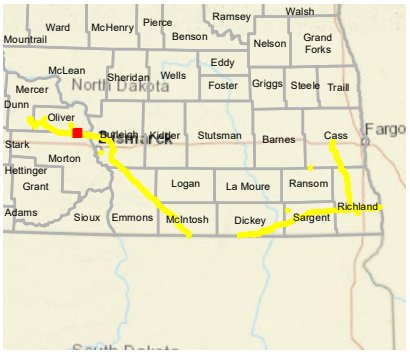
| Sheet: | Drawing Number: |
|---|---|
| 28 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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| | | |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 29 of 392 | 2001-22-002<br>Current Revision |

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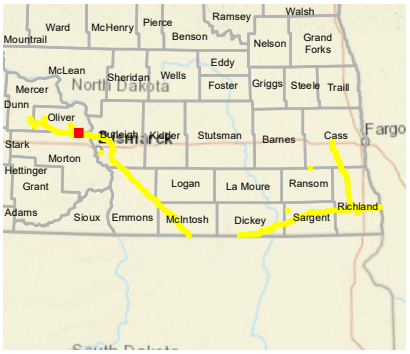
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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**Figure Title:**
Aerial Map

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Appendix A-2

| Scale: | Projection: |
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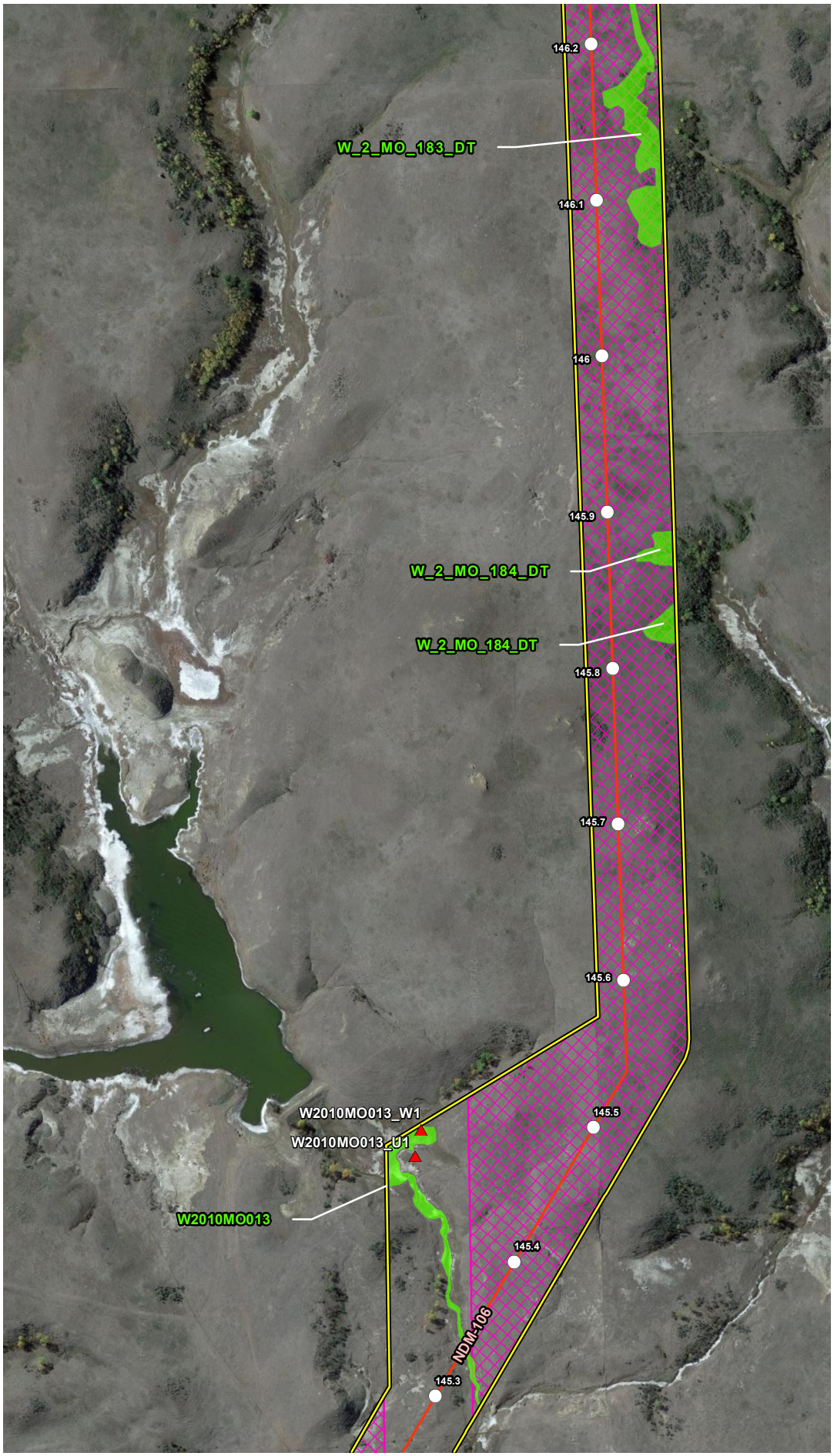
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

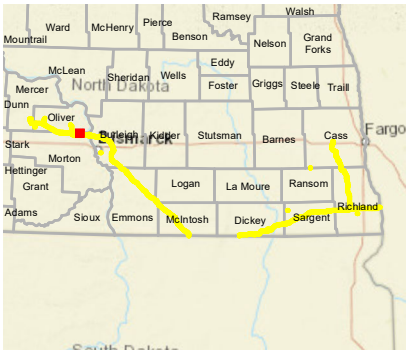
| Sheet: | Drawing Number: |
|---|---|
| 30 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:
**Aerial Map**

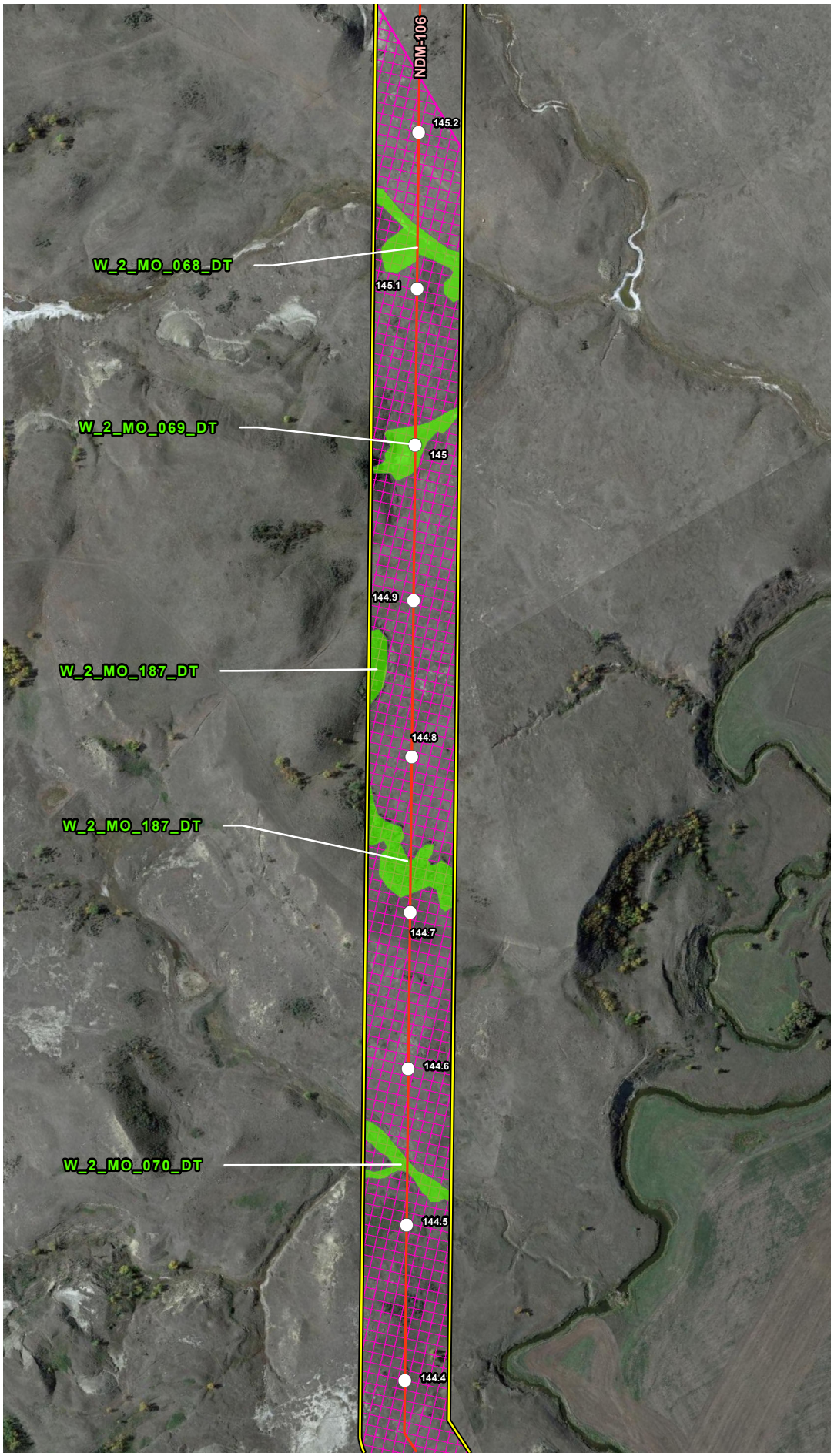
Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

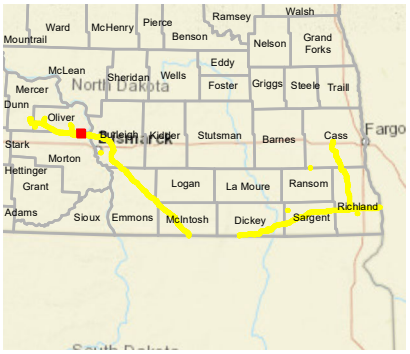
| Sheet: | Drawing Number: |
|---|---|
| 31 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

Aerial Map

**Figure Number:**

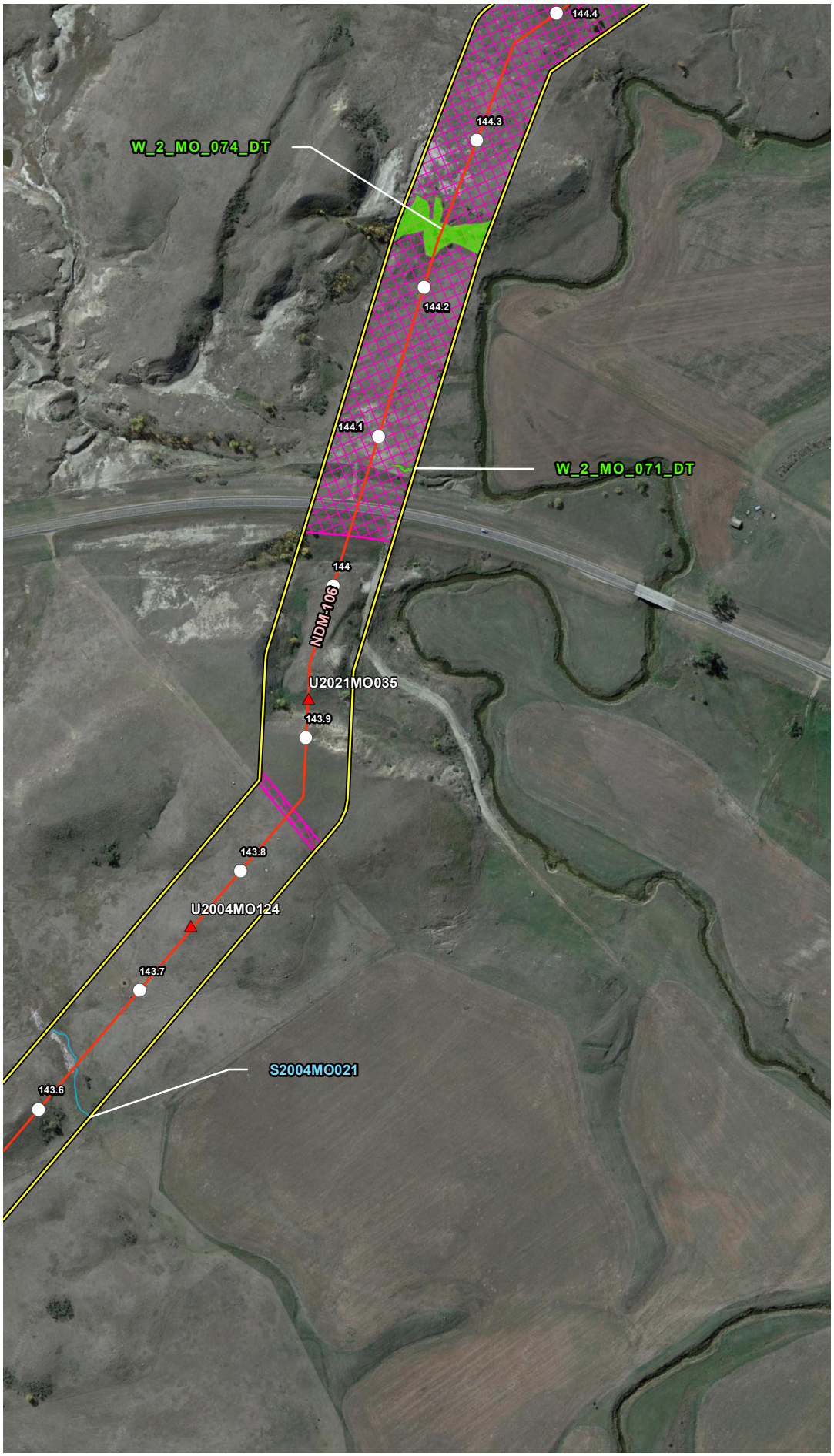
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 32 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImods\2_Aerial.mxd

## AERIAL MAP

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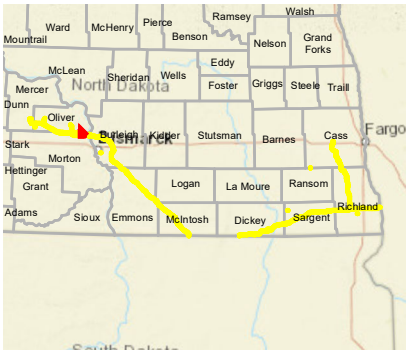


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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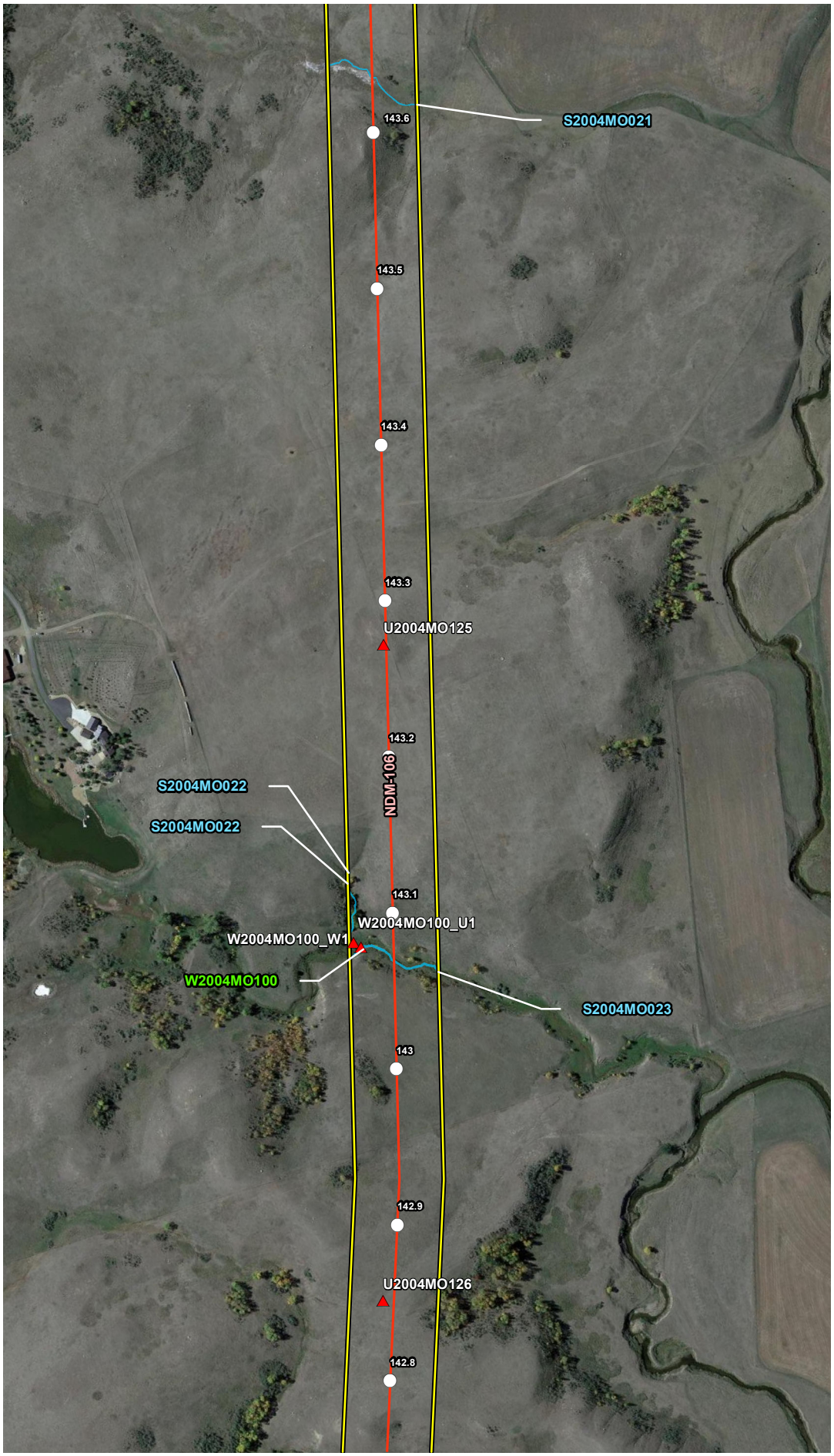
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

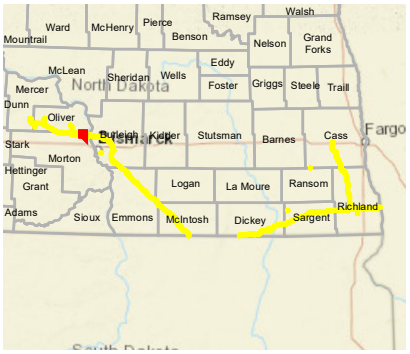
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>33 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 34 of 392 | 2001-22-002<br>Current Revision |

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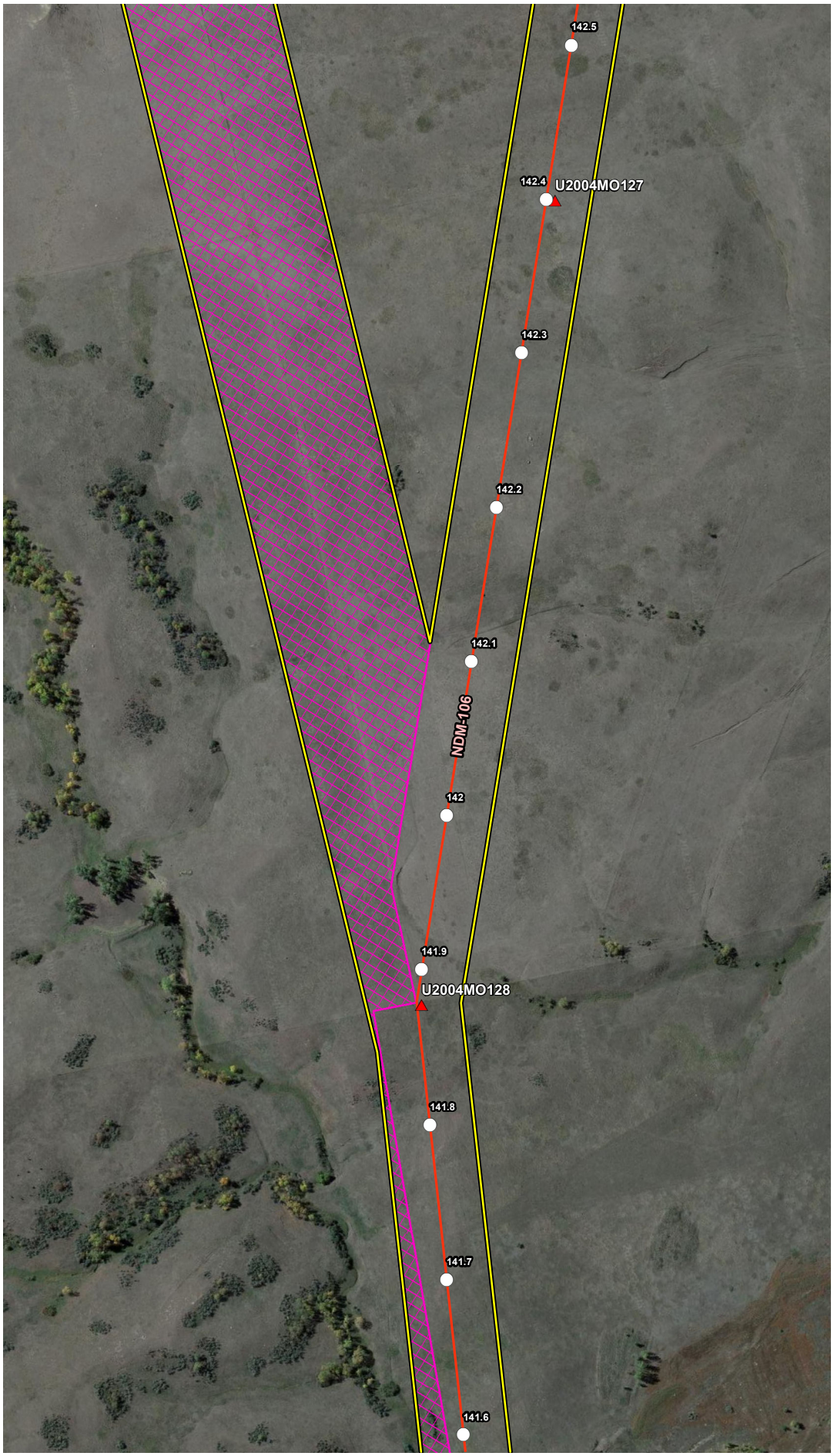
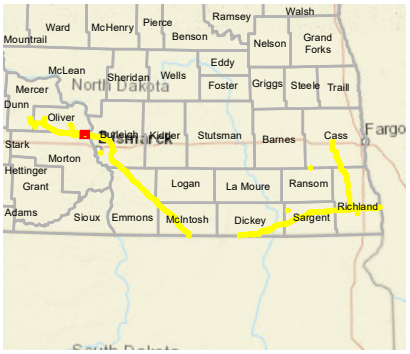
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 35 of 392 | 2001-22-002<br>Current Revision |

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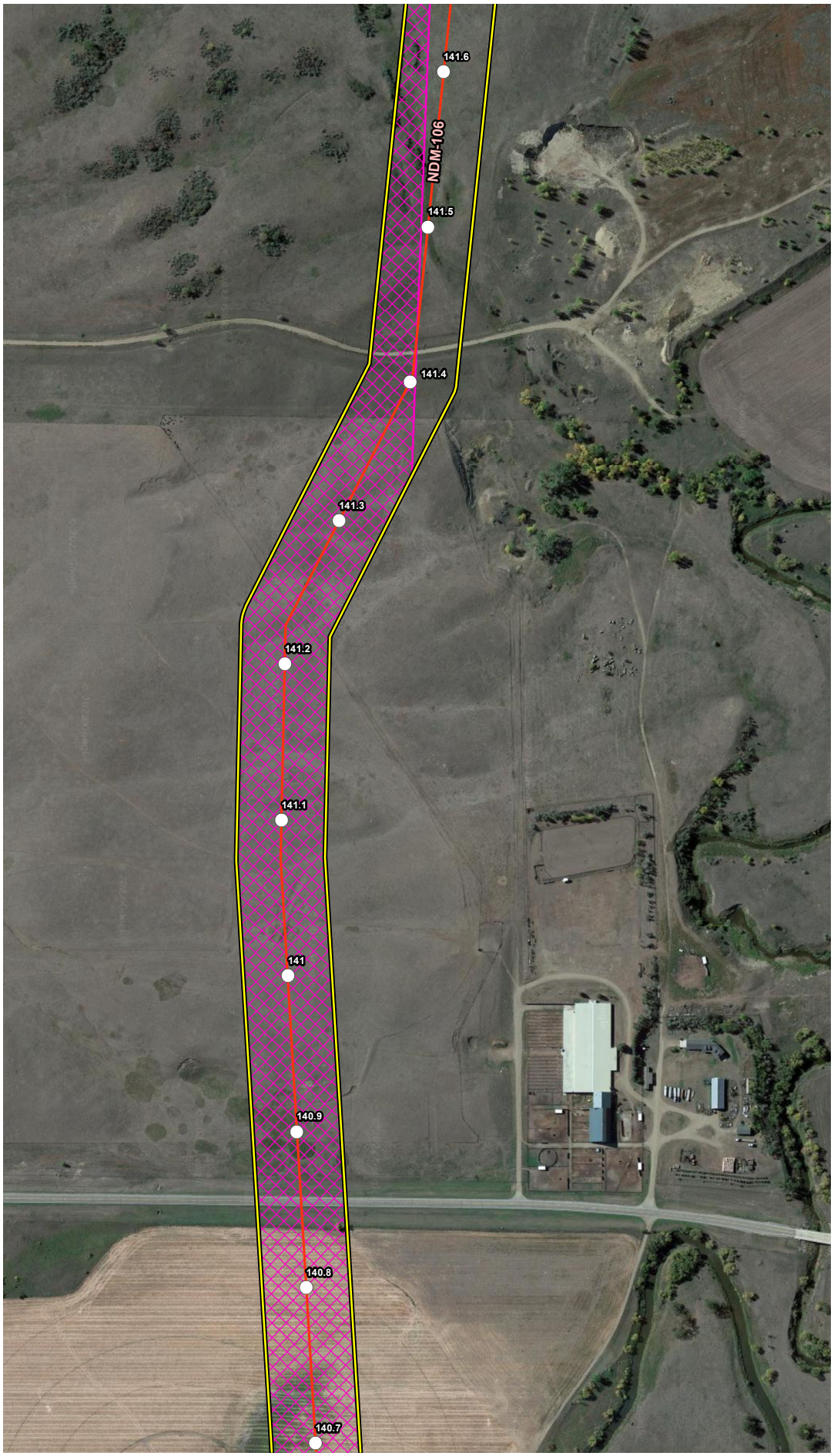
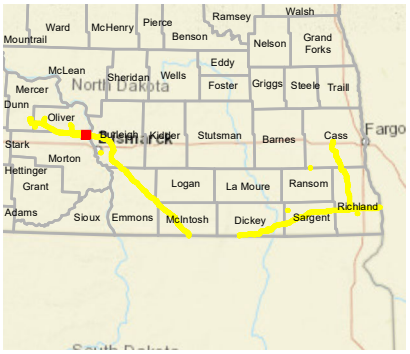
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

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Figure Number:

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| Scale: | Projection: |
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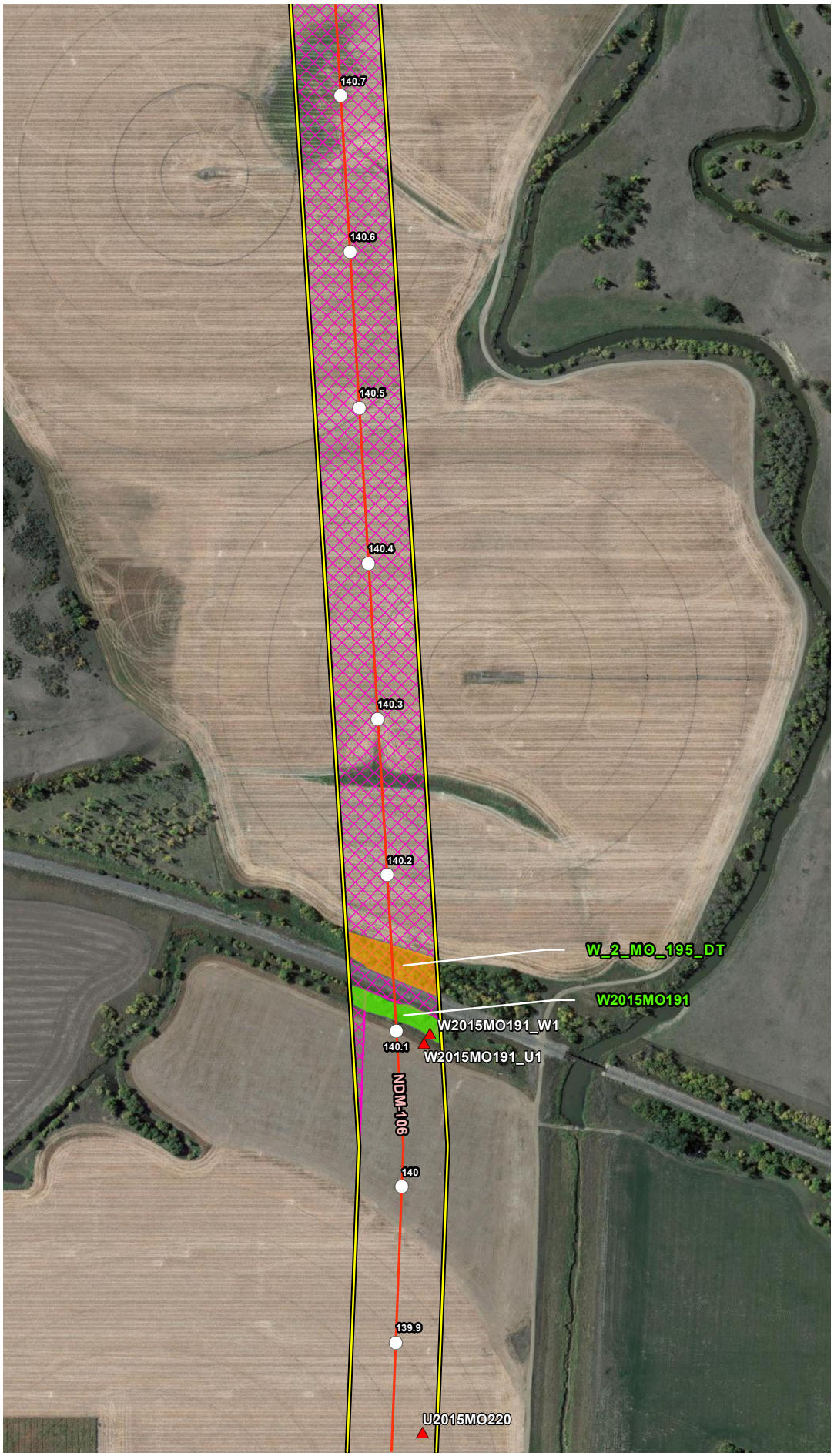
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

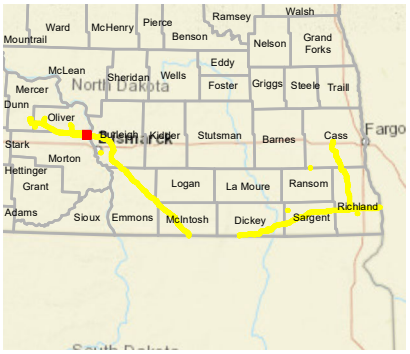
| Sheet: | Drawing Number: |
|---|---|
| 36 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:
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Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 37 of 392 | 2001-22-002<br>Current Revision |

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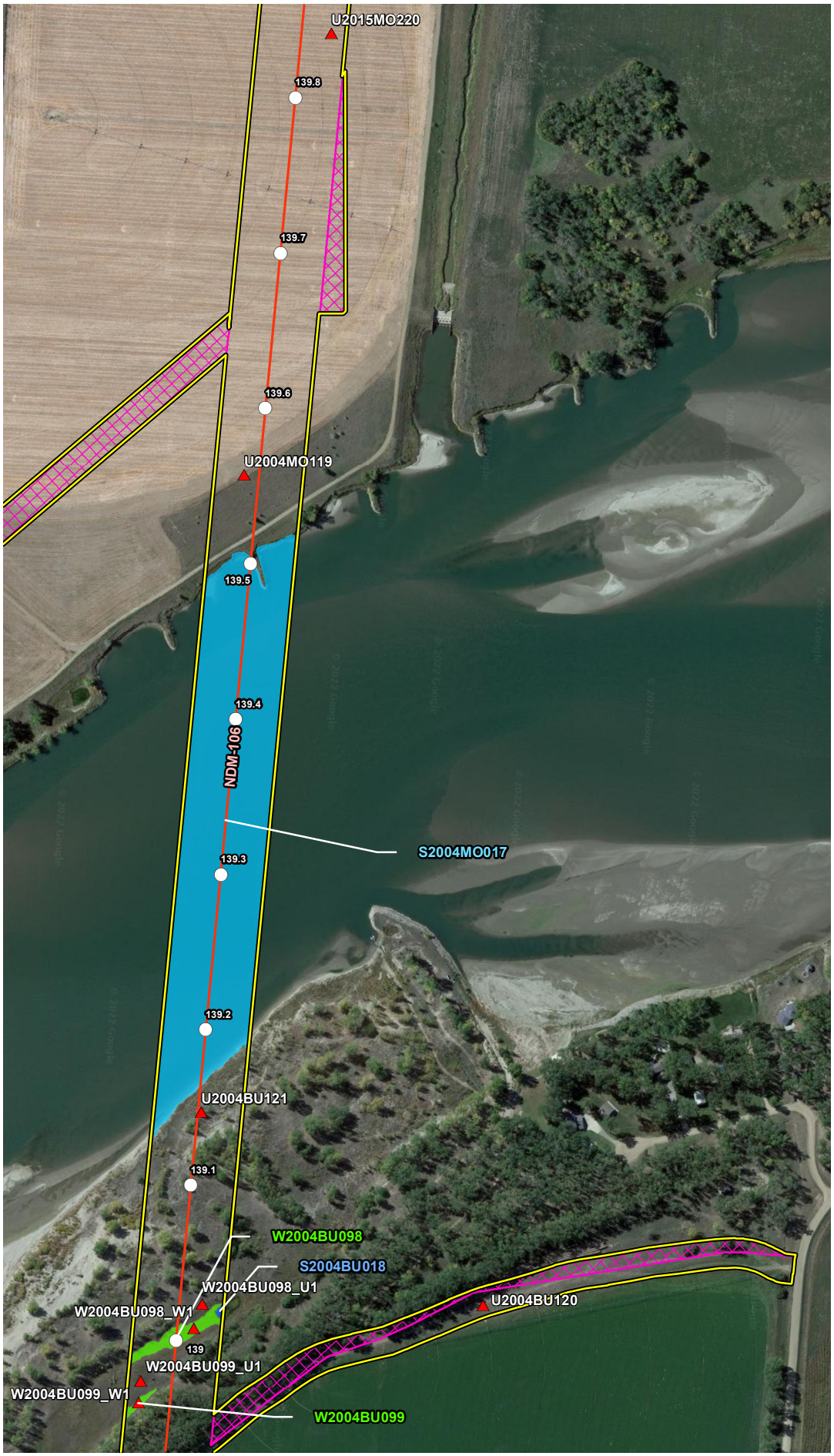
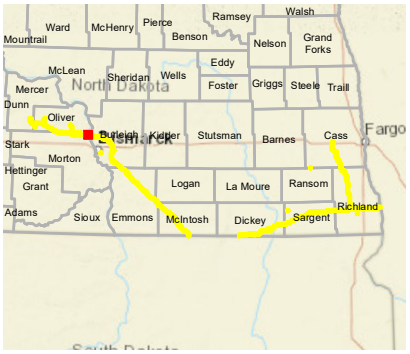
## AERIAL MAP




## VICINITY MAP

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| Date: | Revised by: | Checked by: |
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Figure Title:

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 38 of 392 | 2001-22-002<br>Current Revision |

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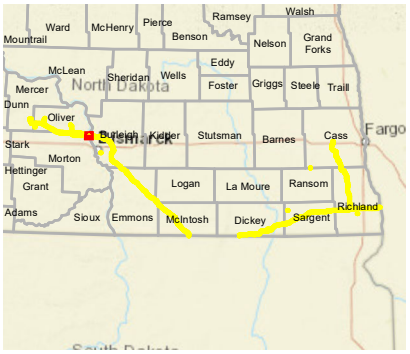
## AERIAL MAP




## VICINITY MAP

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**1A - Revision**
Revision description

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Figure Title:
**Aerial Map**

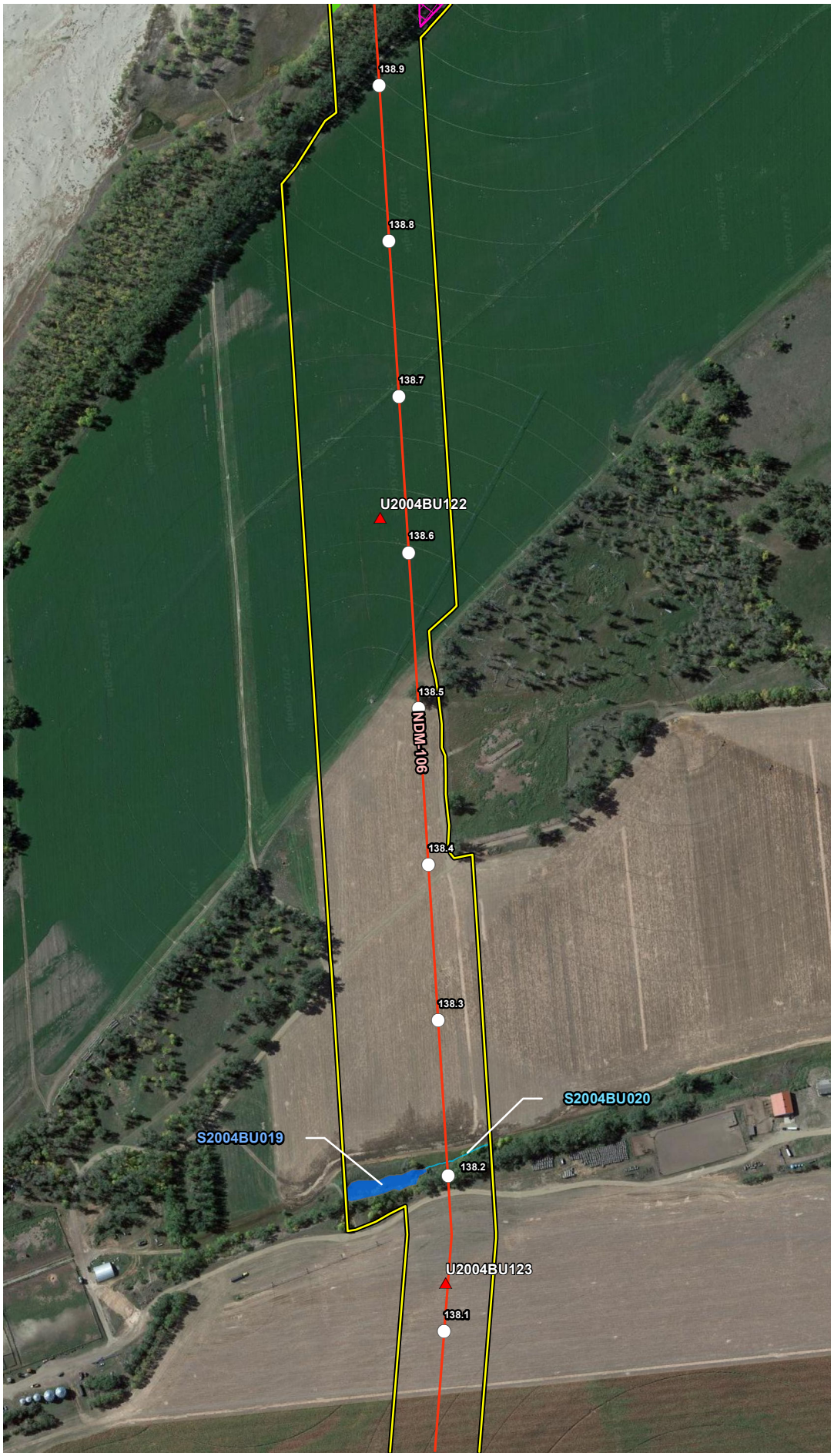
Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

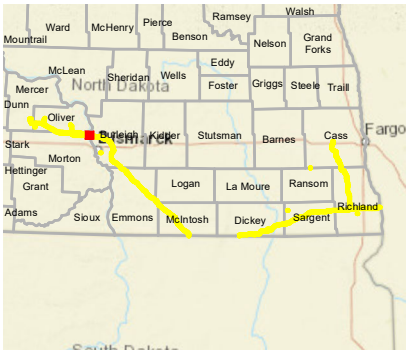
| Sheet: | Drawing Number: |
|---|---|
| 39 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ID\VWR\2022\901_VWR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 40 of 392 | 2001-22-002<br>Current Revision |

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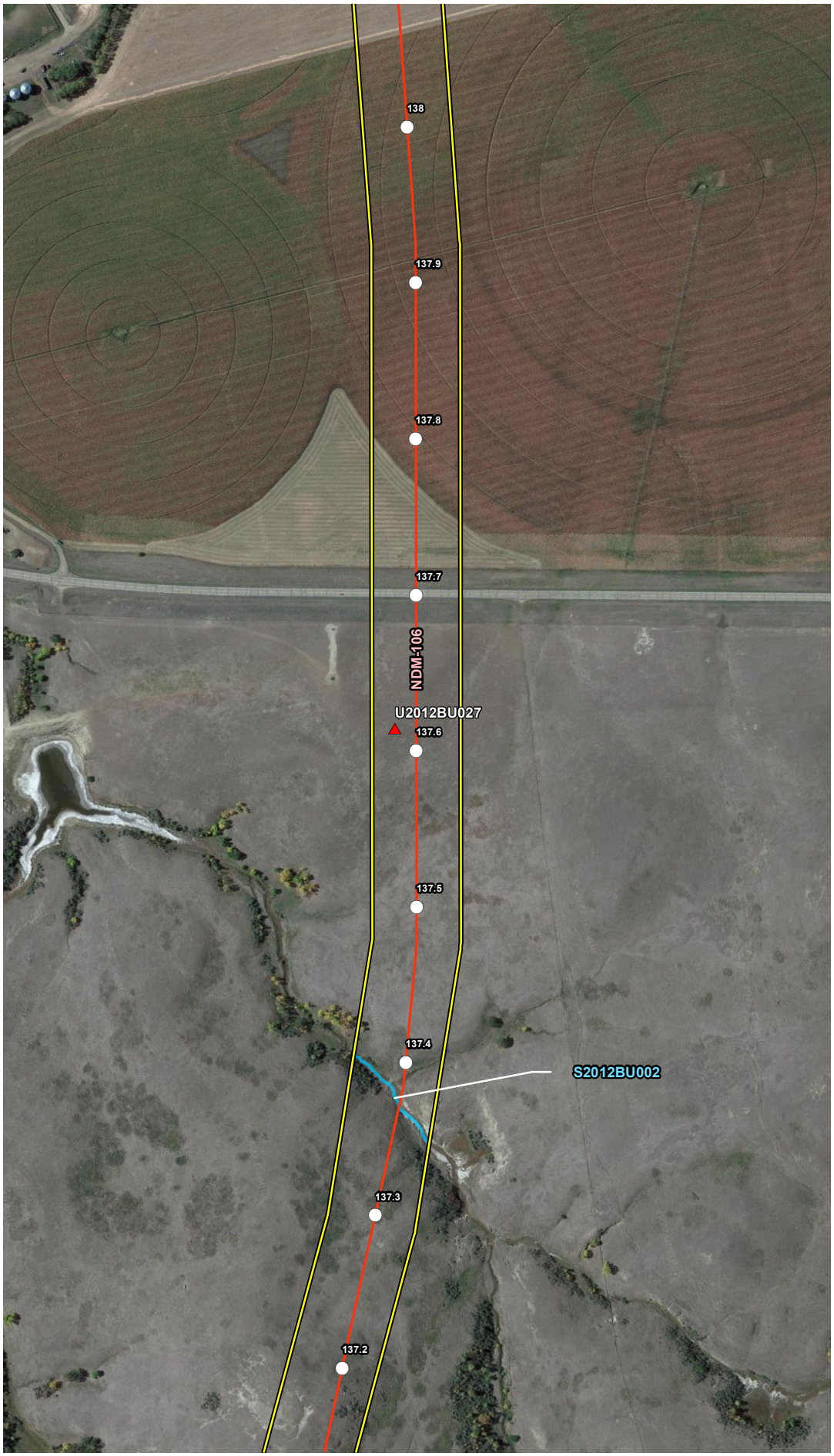
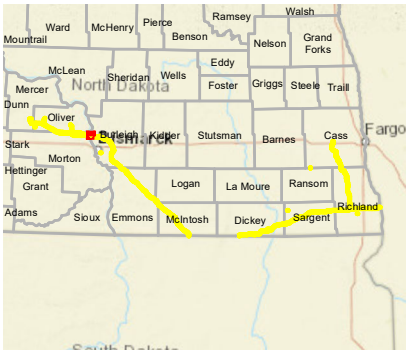
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**

Aerial Map

**Figure Number:**

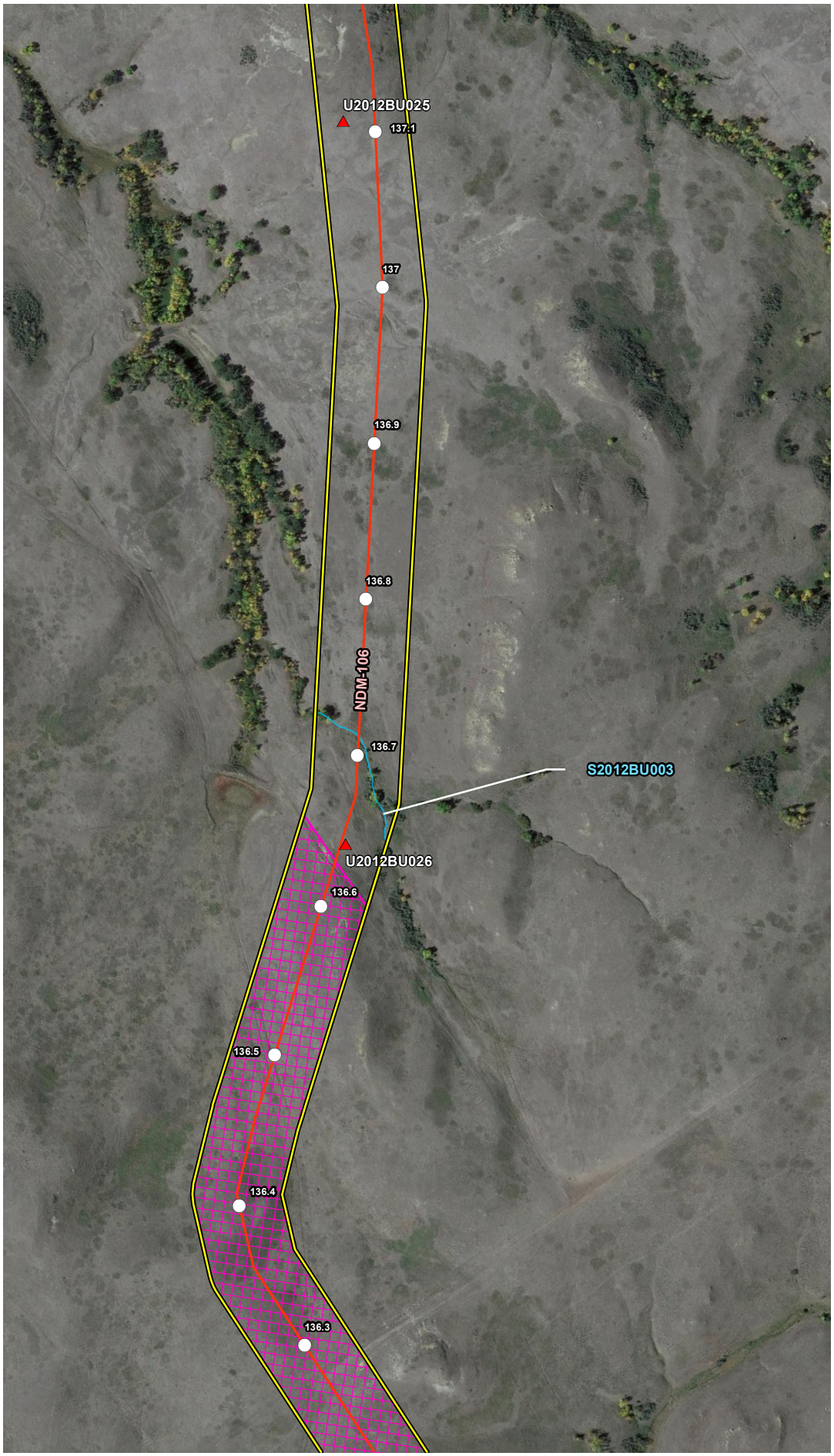
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

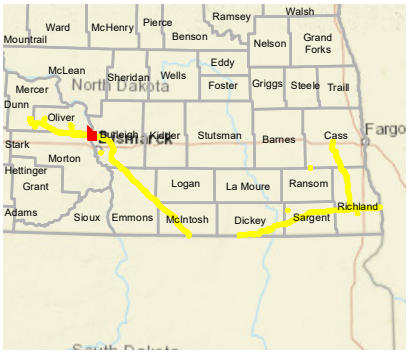
| Sheet: | Drawing Number: |
|---|---|
| 41 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\801_VWR_NDI\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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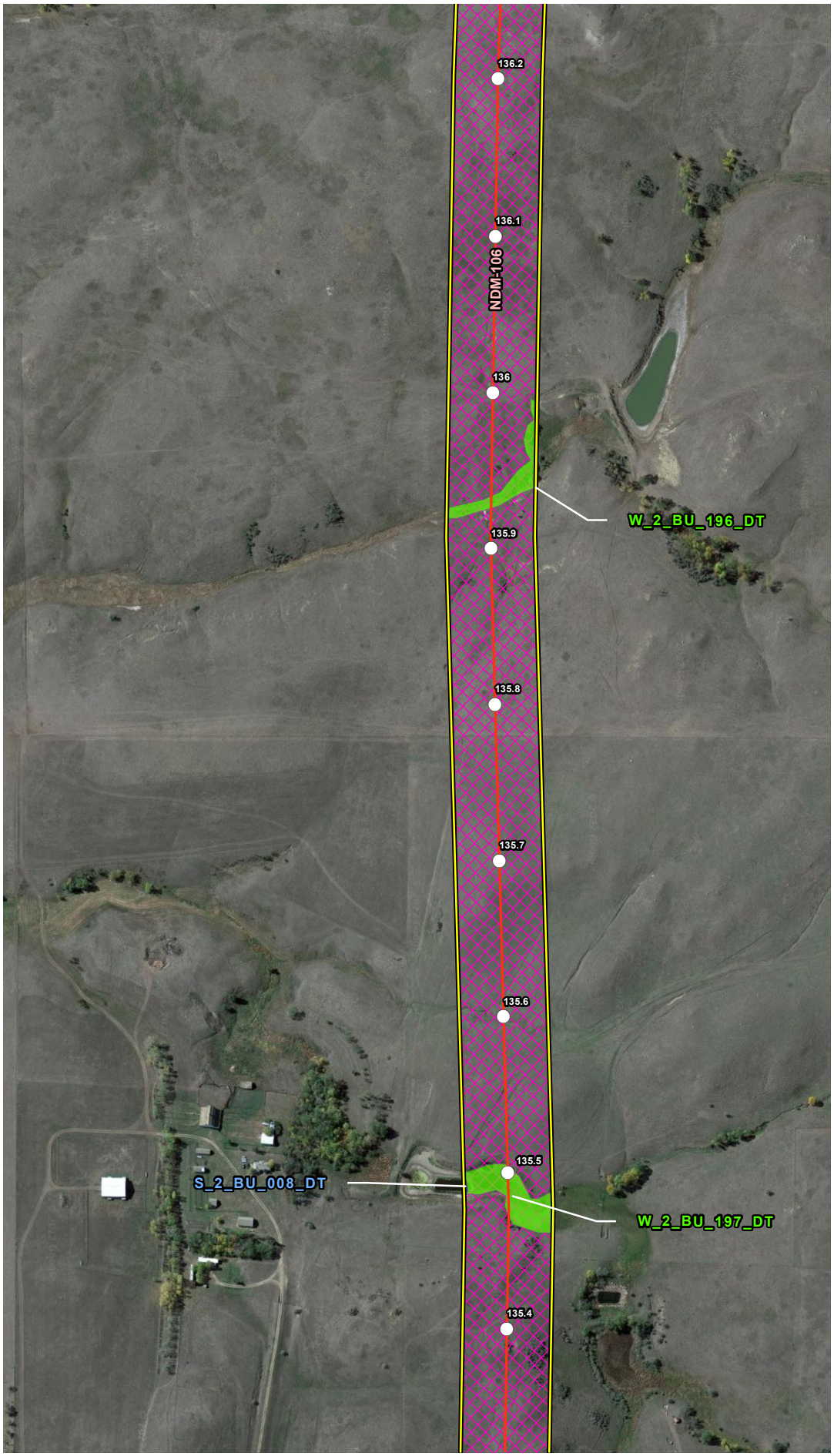
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

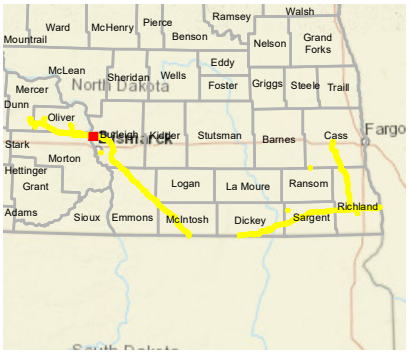
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 42 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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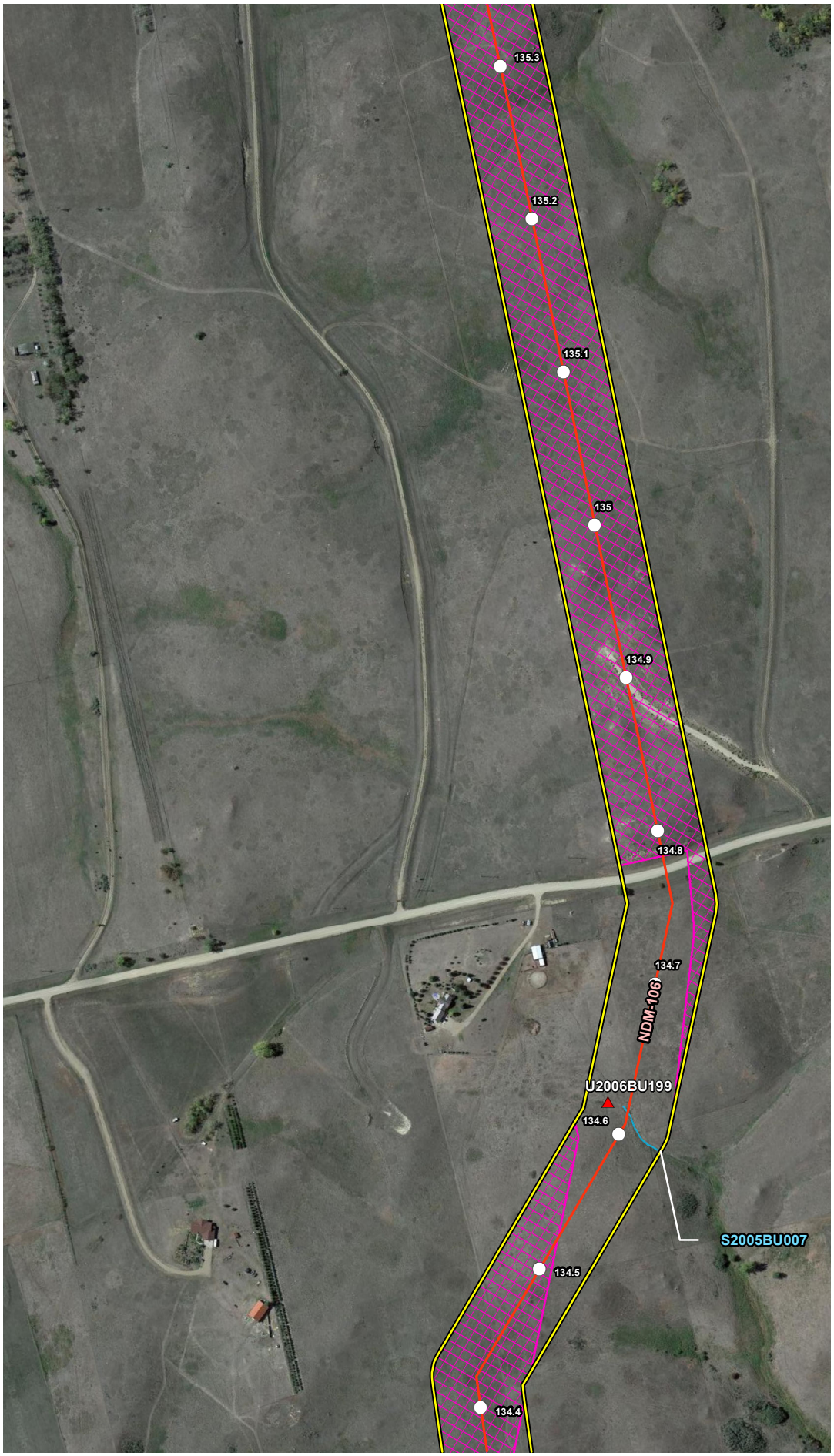
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

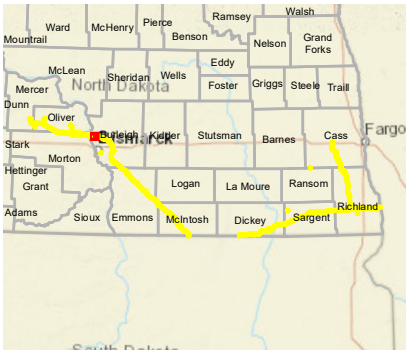
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>43 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 44 of 392 | 2001-22-002<br>Current Revision |

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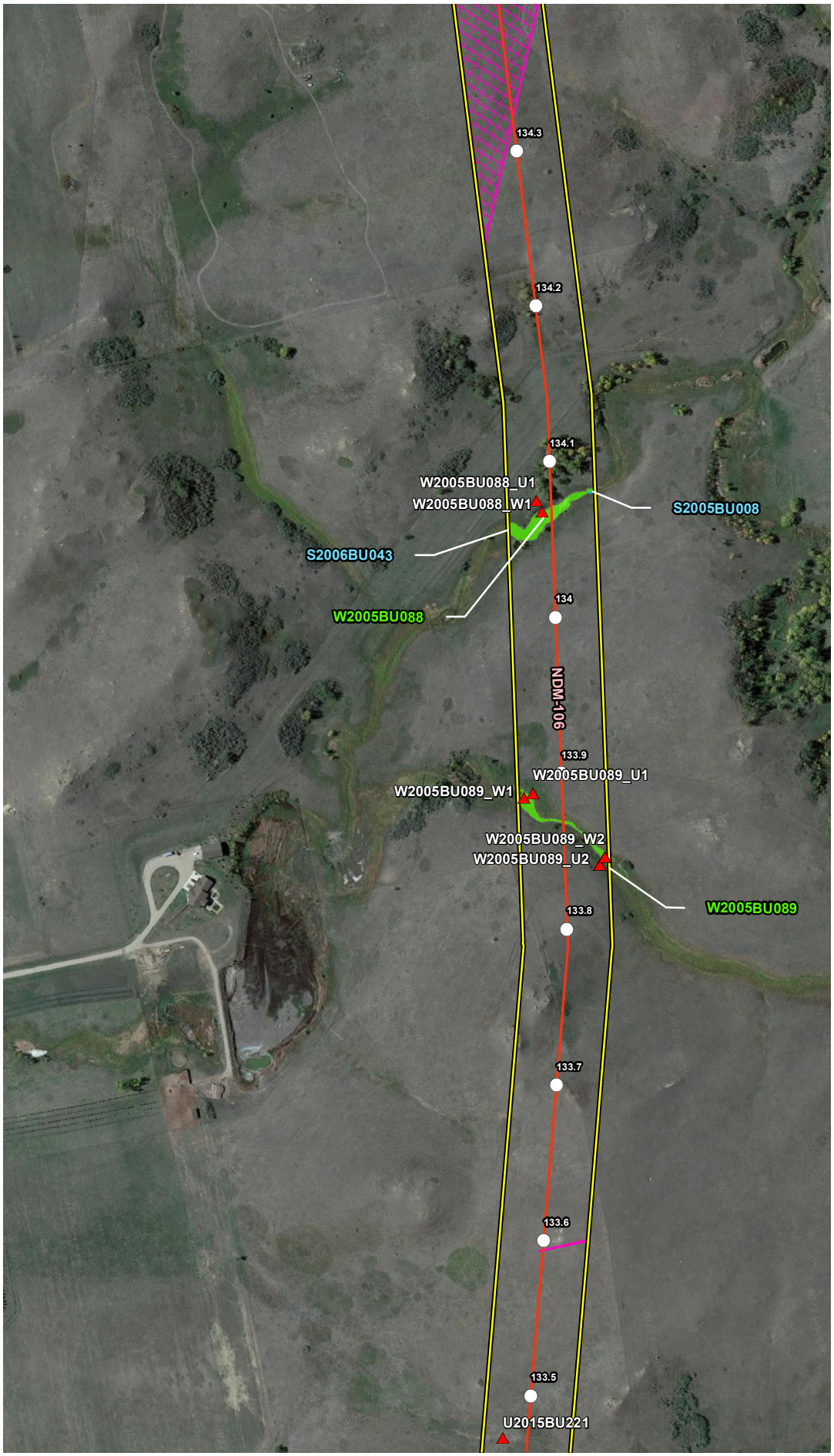
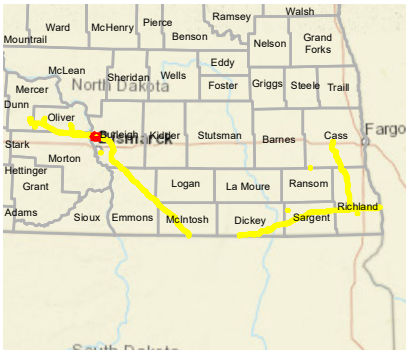
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 45 of 392 | 2001-22-002<br>Current Revision |

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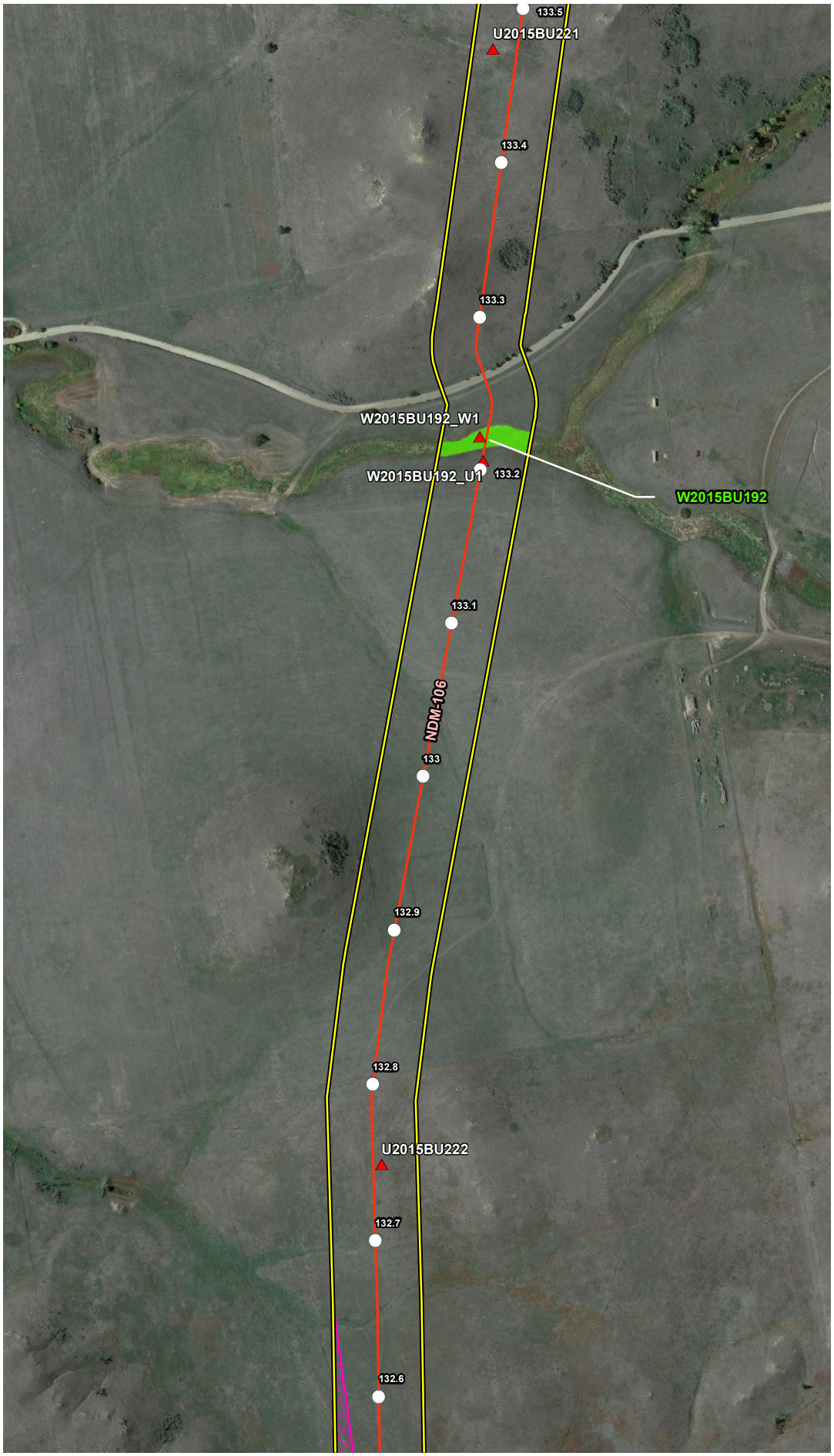
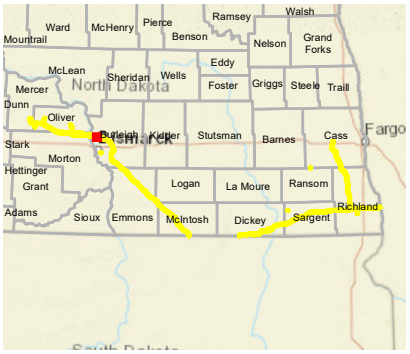
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 46 of 392 | 2001-22-002<br>Current Revision |

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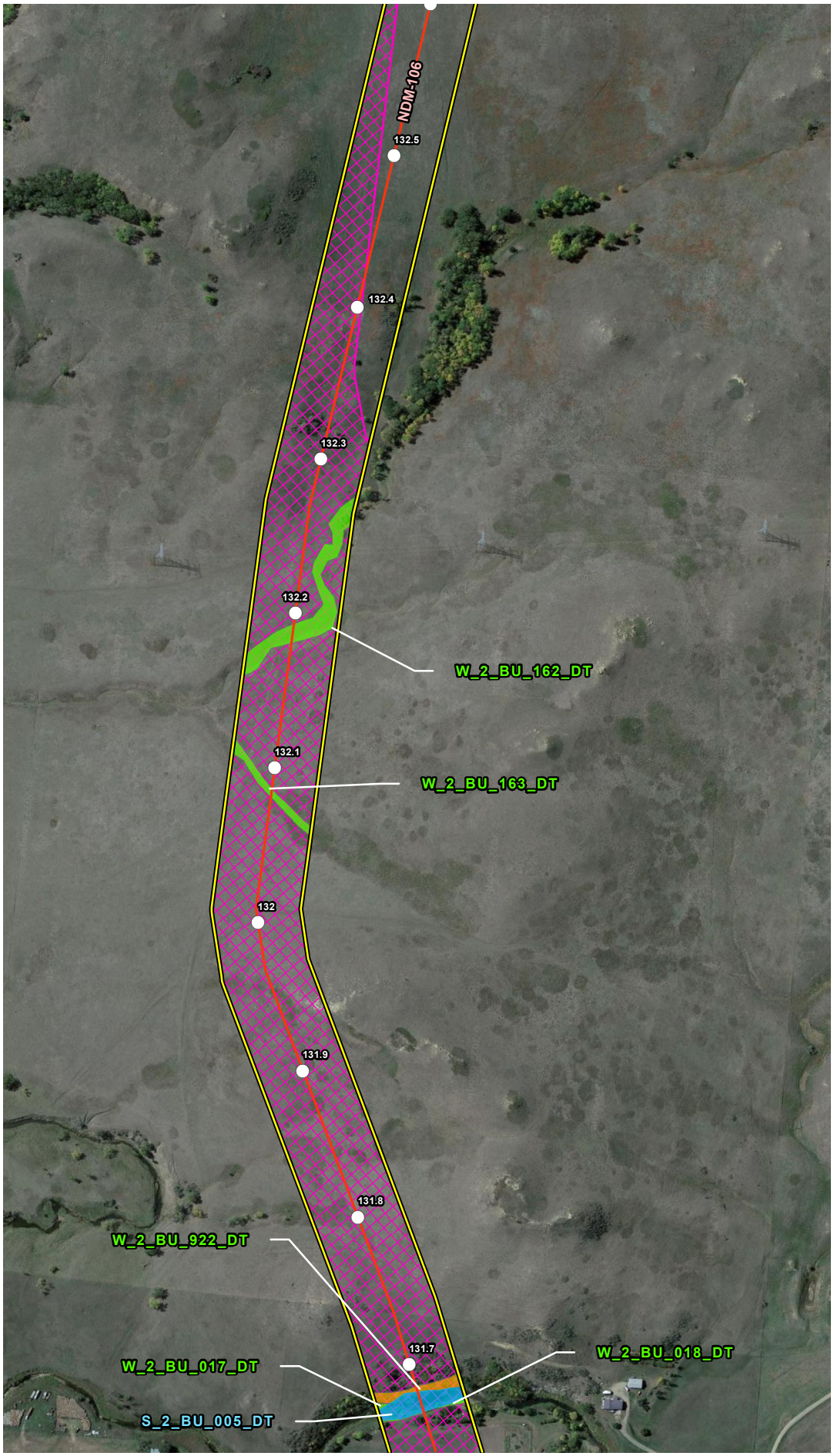
## AERIAL MAP

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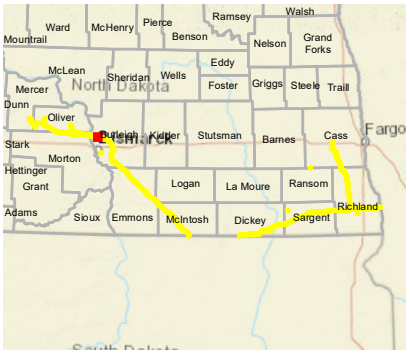


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>47 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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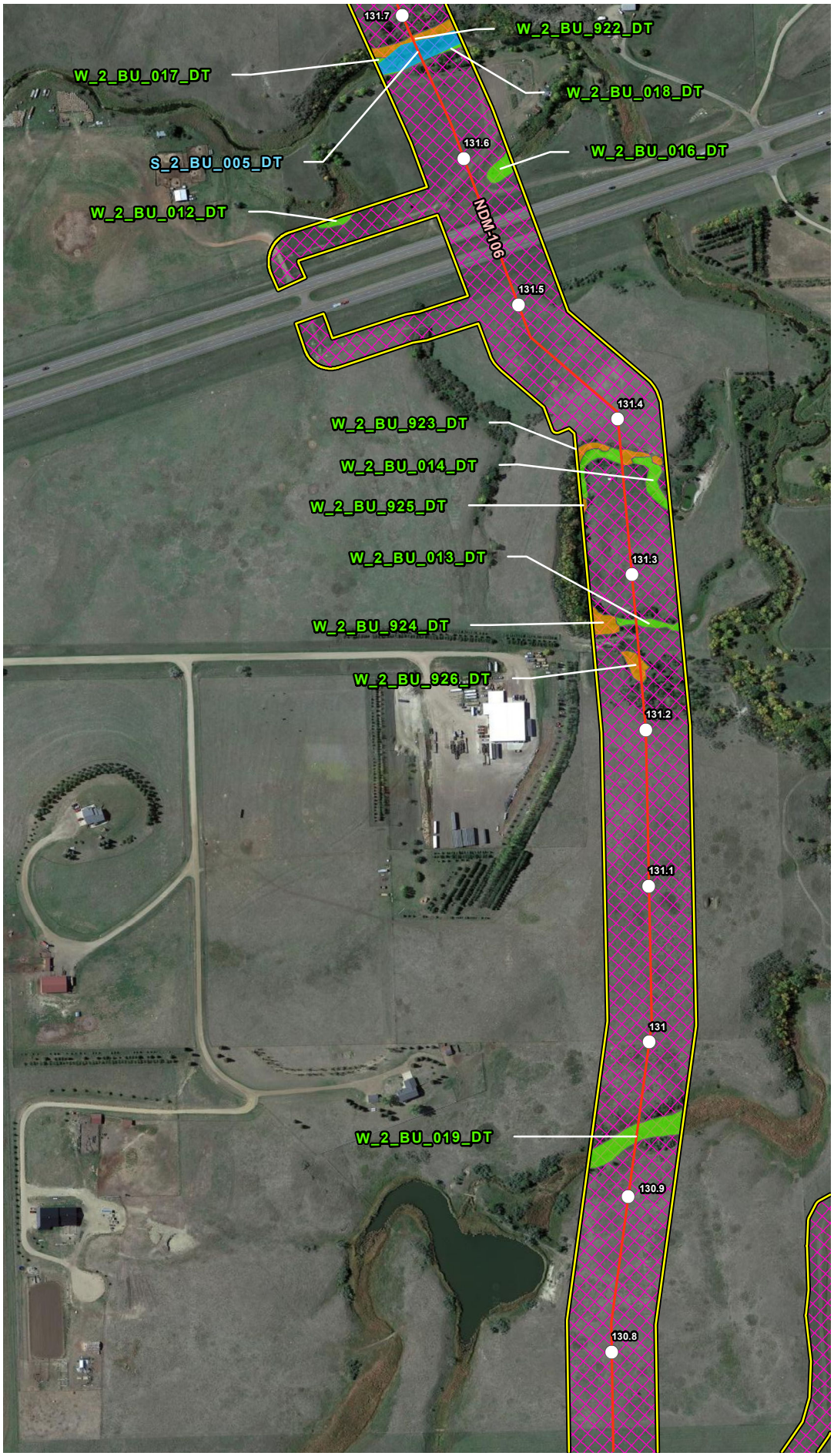
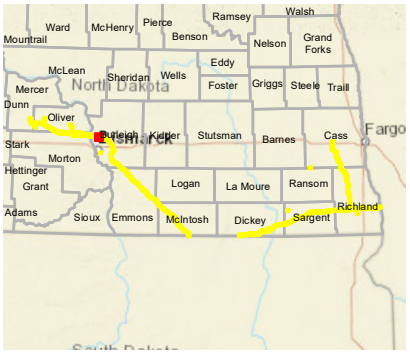
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 48 of 392 | 2001-22-002<br>Current Revision |

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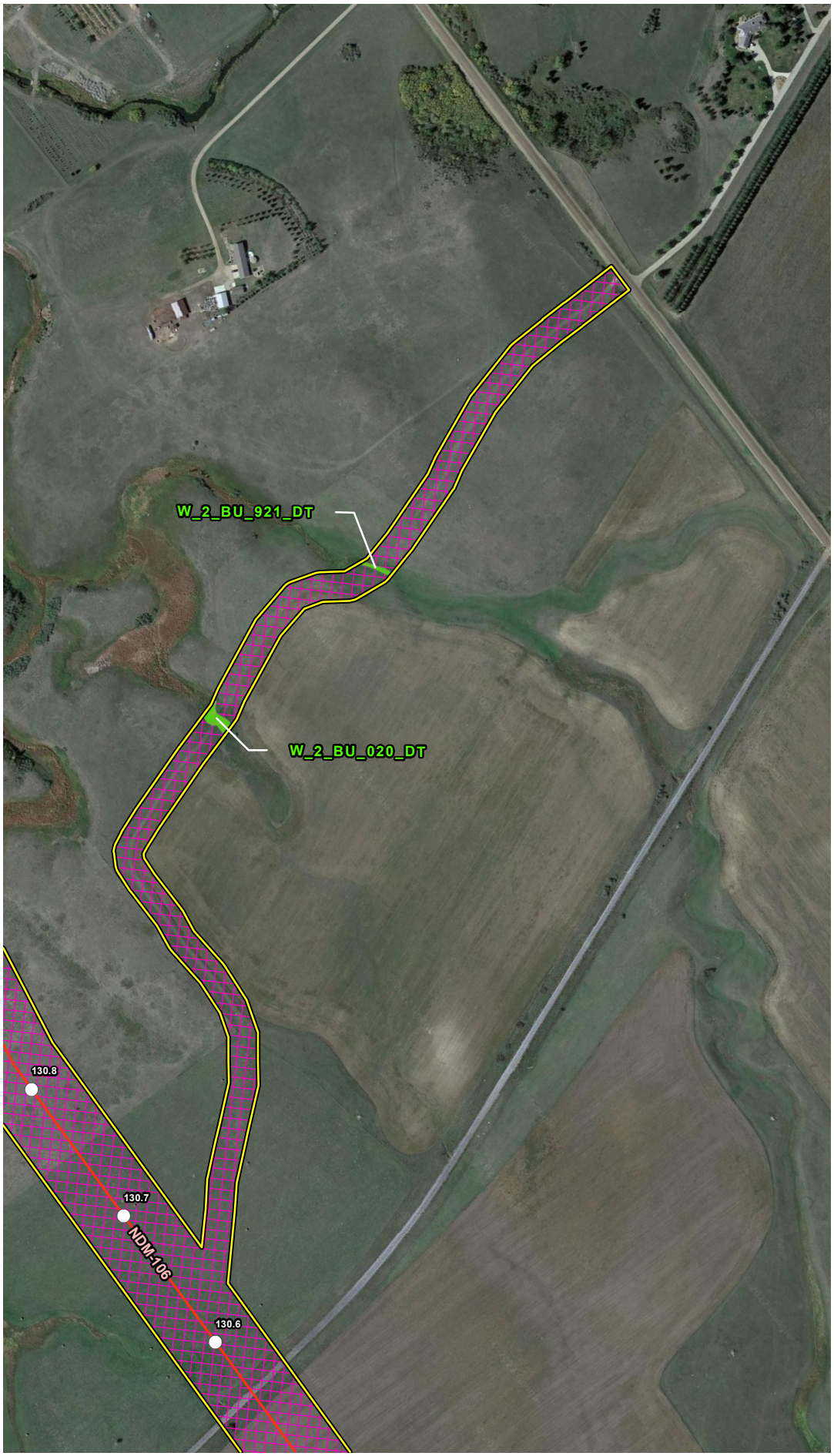
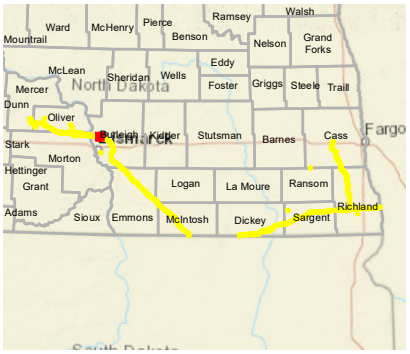
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**

Aerial Map

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Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 49 of 392 | 2001-22-002<br>Current Revision |

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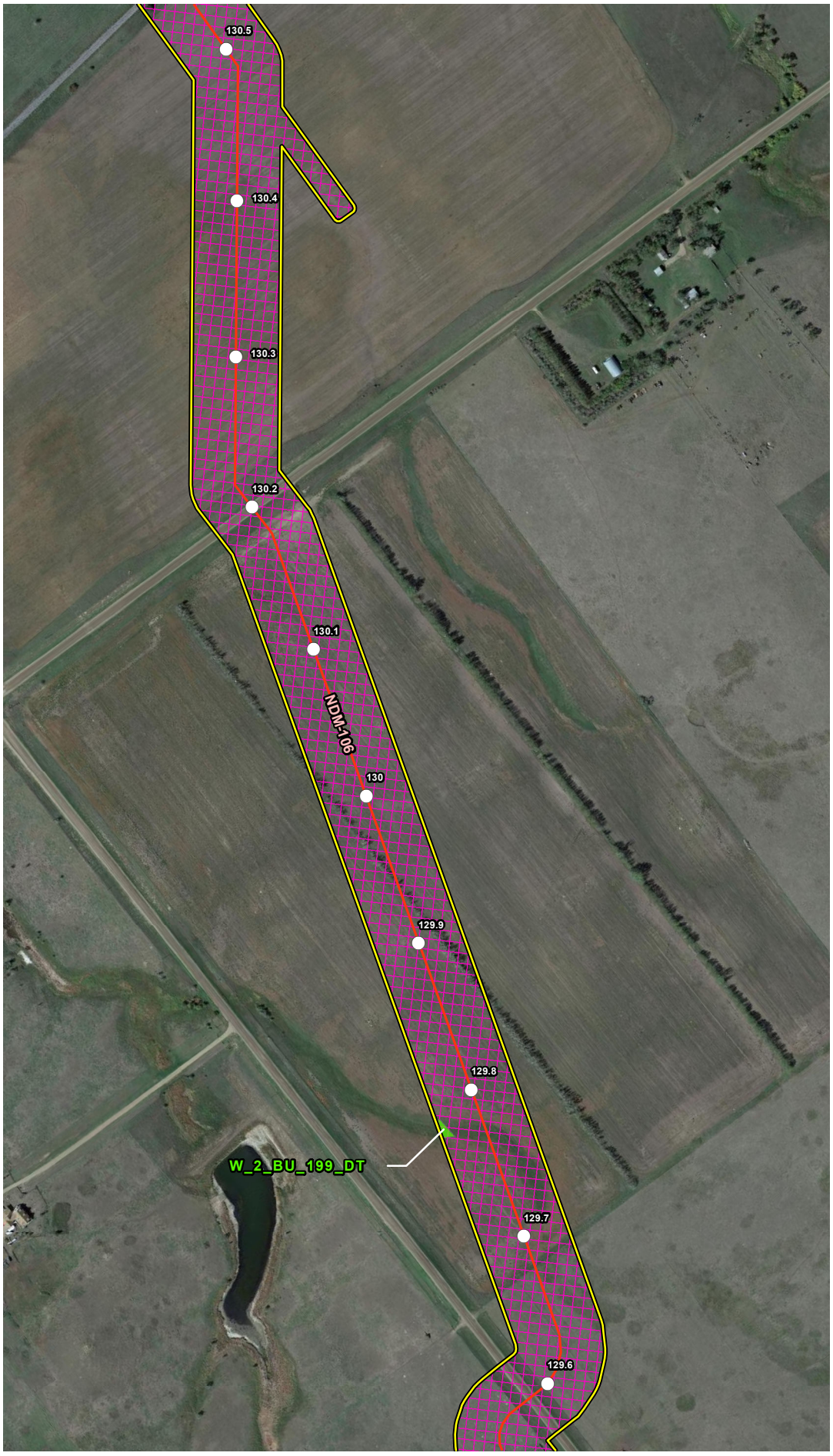
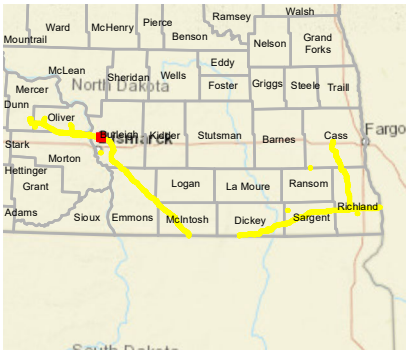
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

| Date: | Revised by: | Checked by: |
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**1A - Revision**

Revision description

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Figure Title:

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Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 50 of 392 | 2001-22-002<br>Current Revision |

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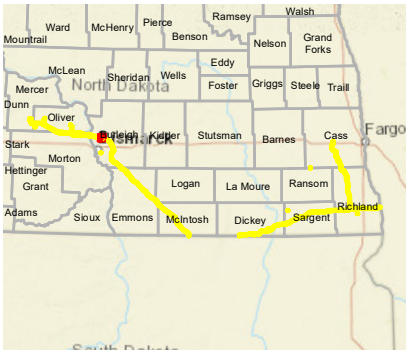
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 51 of 392 | 2001-22-002<br>Current Revision |

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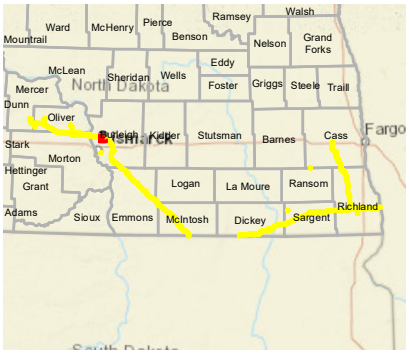
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>52 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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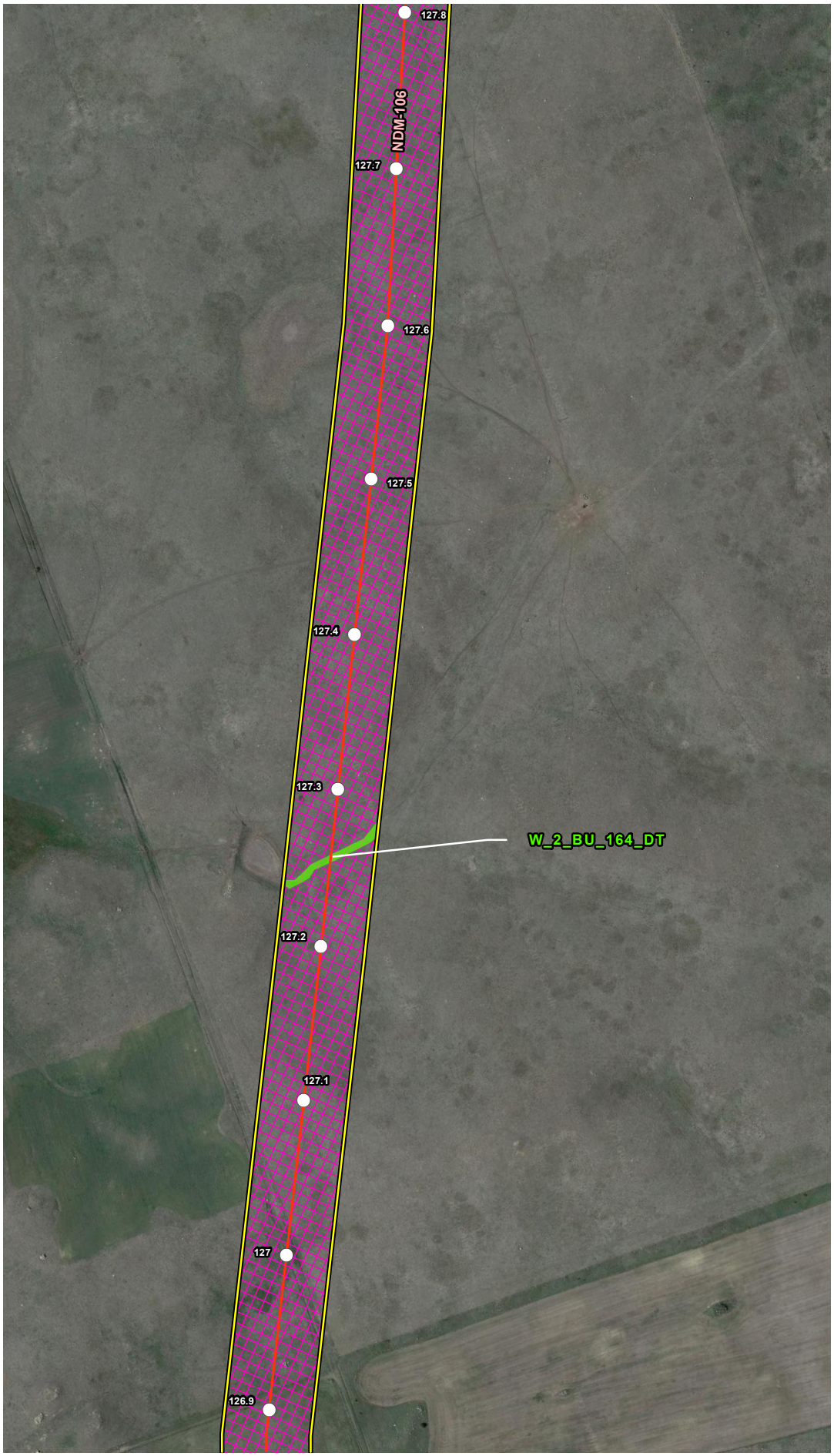
## AERIAL MAP

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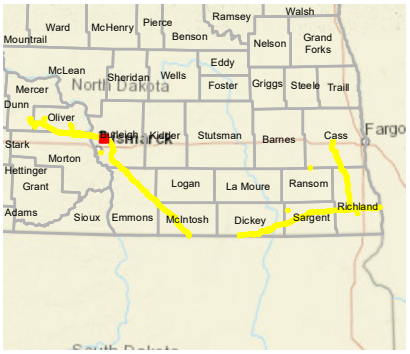


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>53 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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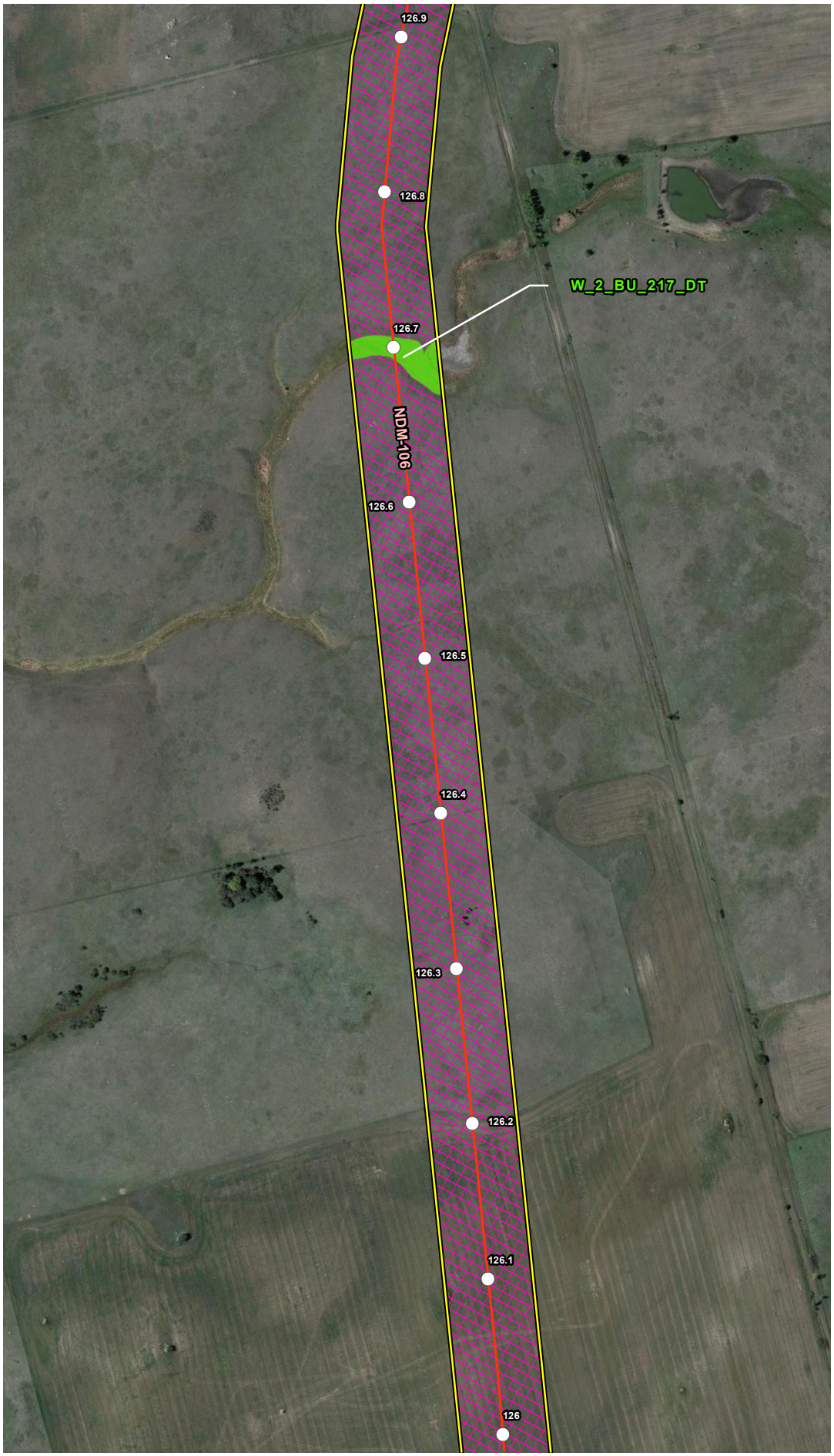
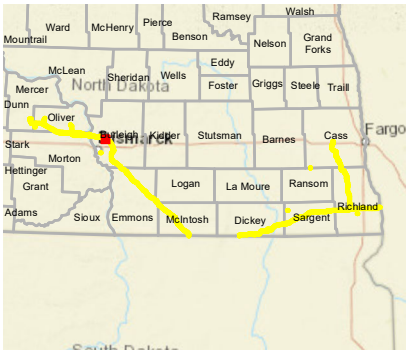
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 54 of 392 | 2001-22-002<br>Current Revision |

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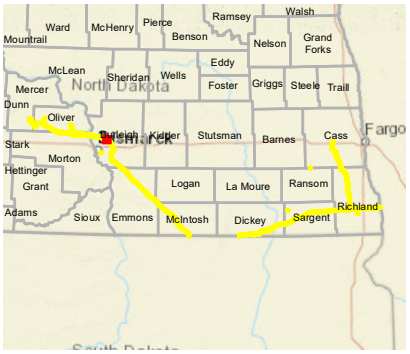
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 55 of 392 | 2001-22-002<br>Current Revision |

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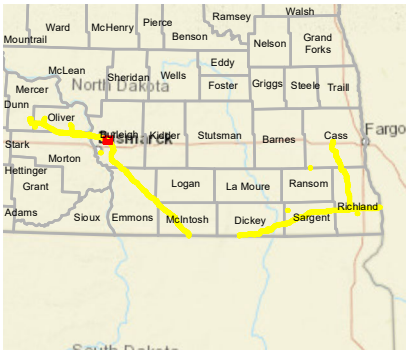
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 56 of 392 | 2001-22-002<br>Current Revision |

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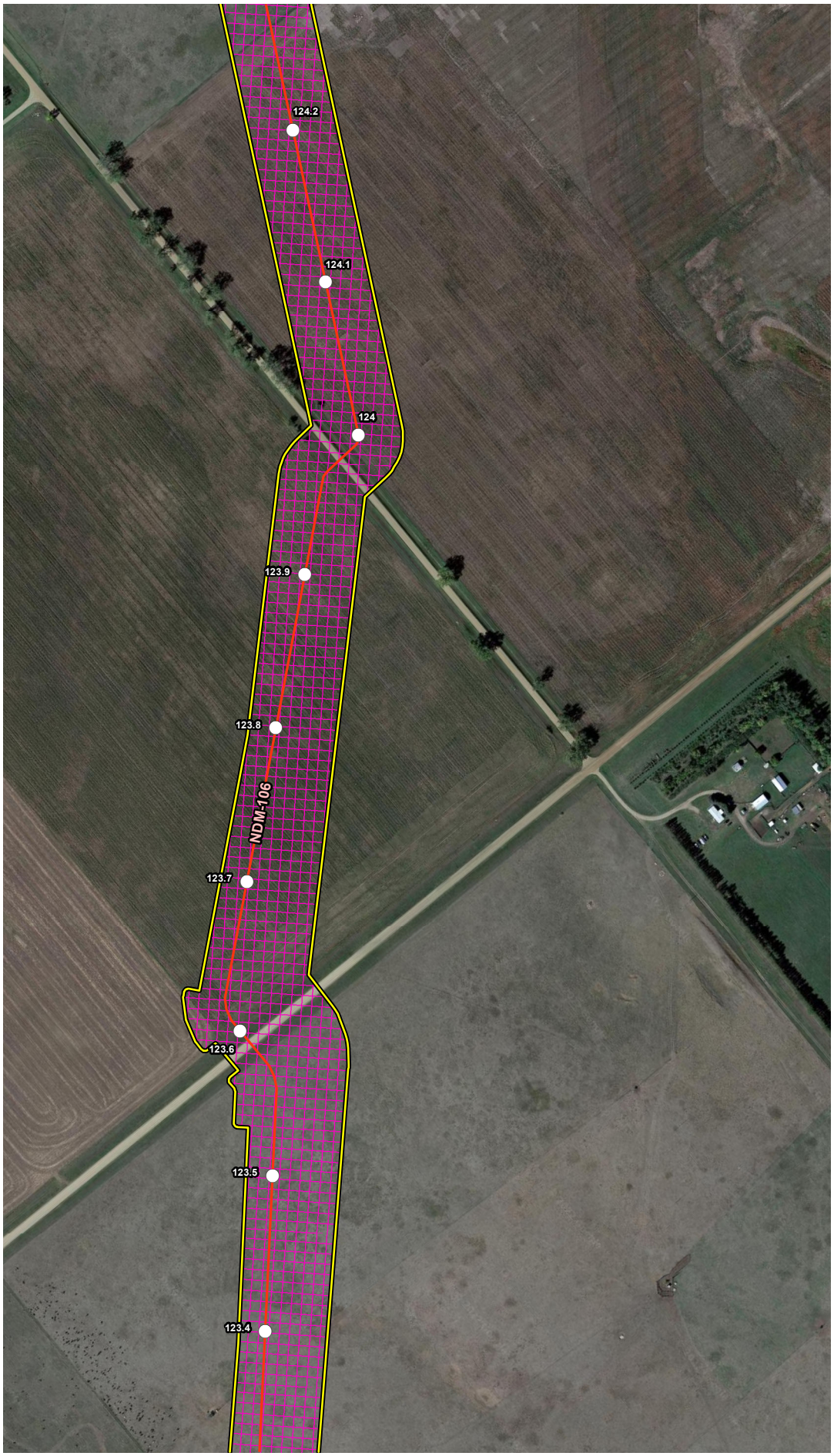
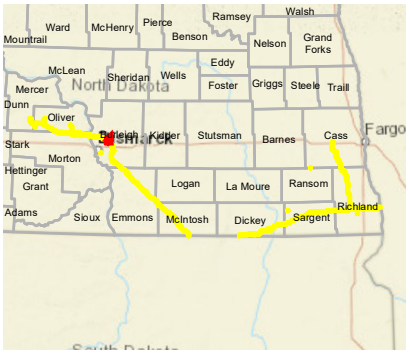
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 57 of 392 | 2001-22-002<br>Current Revision |

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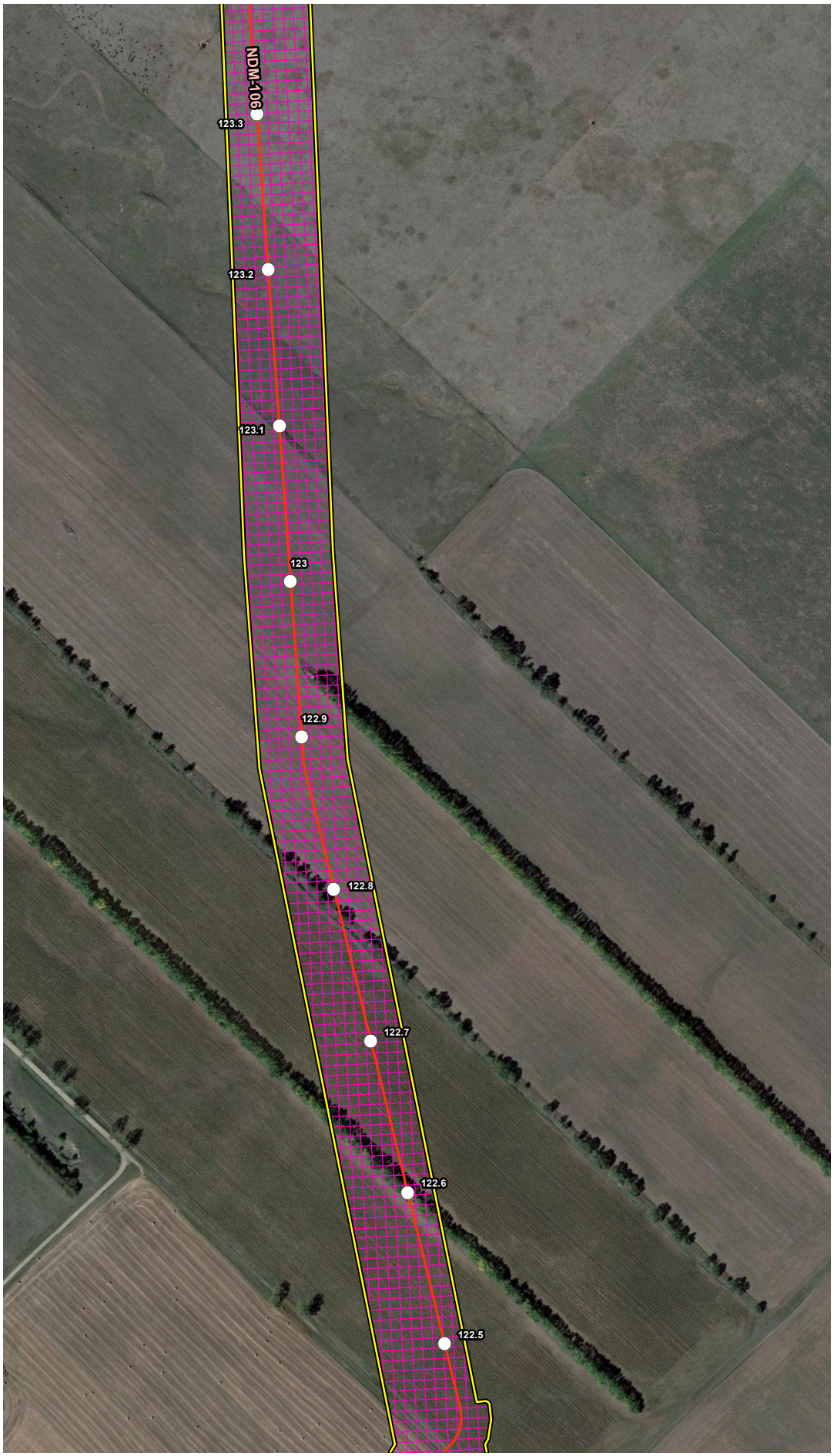
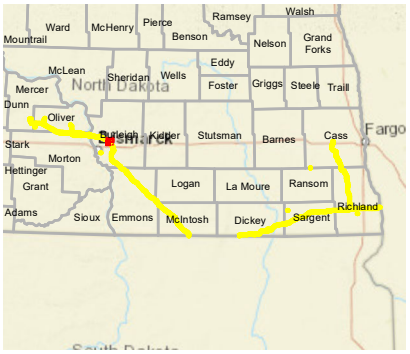
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 58 of 392 | 2001-22-002<br>Current Revision |

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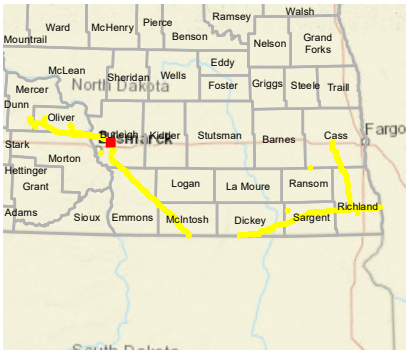
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 59 of 392 | 2001-22-002<br>Current Revision |

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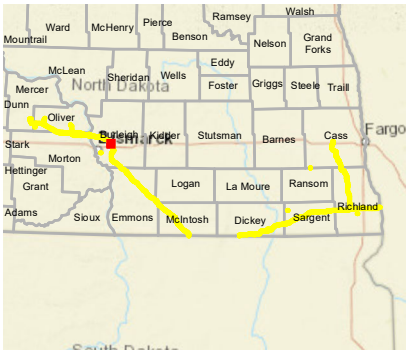
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 60 of 392 | 2001-22-002<br>Current Revision |

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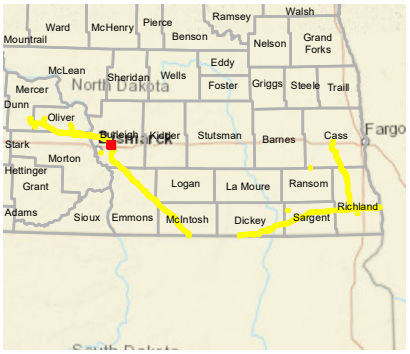
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**Aerial Map**

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**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 61 of 392 | 2001-22-002<br>Current Revision |

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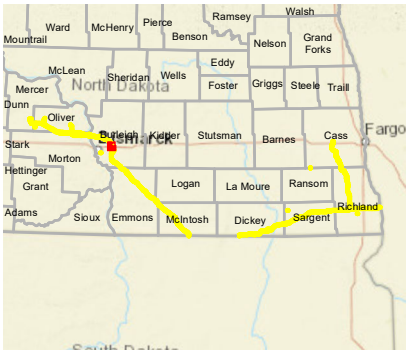
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

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Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>62 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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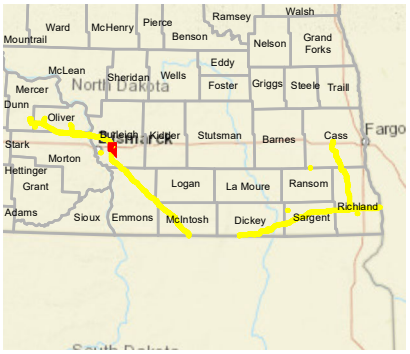
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>63 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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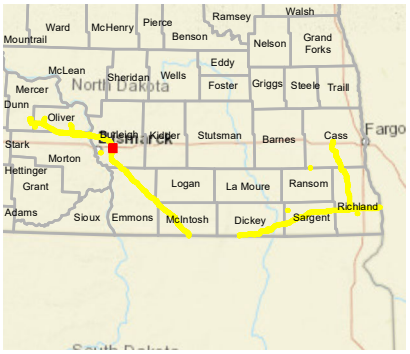
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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| Scale: | Projection: |
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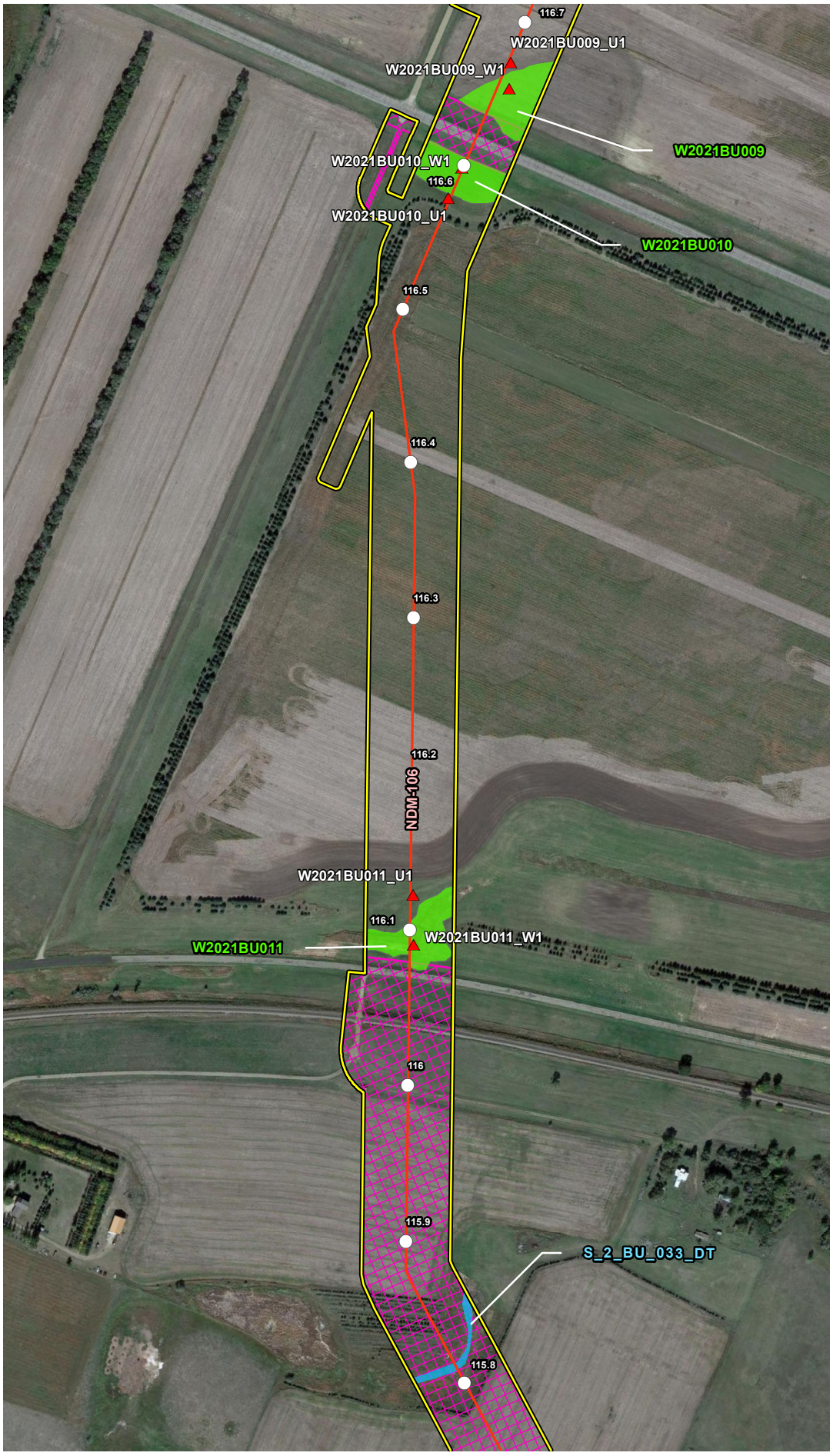
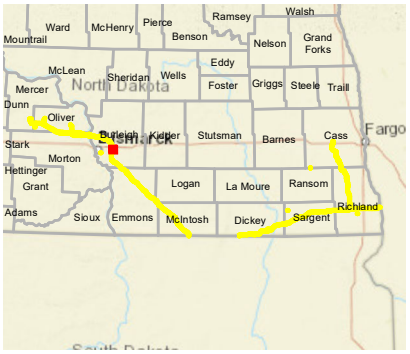
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 64 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

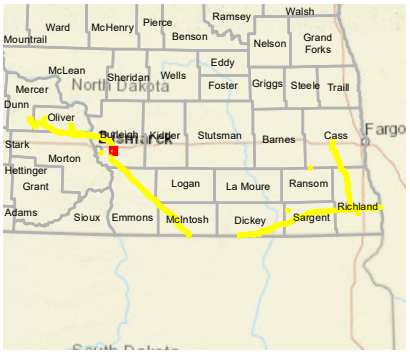
| Sheet: | Drawing Number: |
|---|---|
| 65 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDImods\s2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

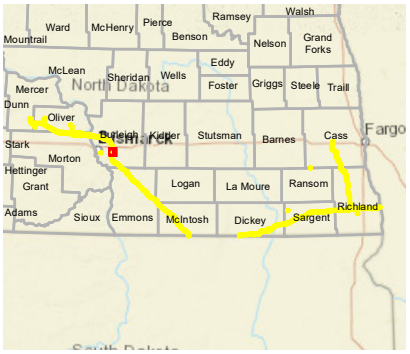
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>66 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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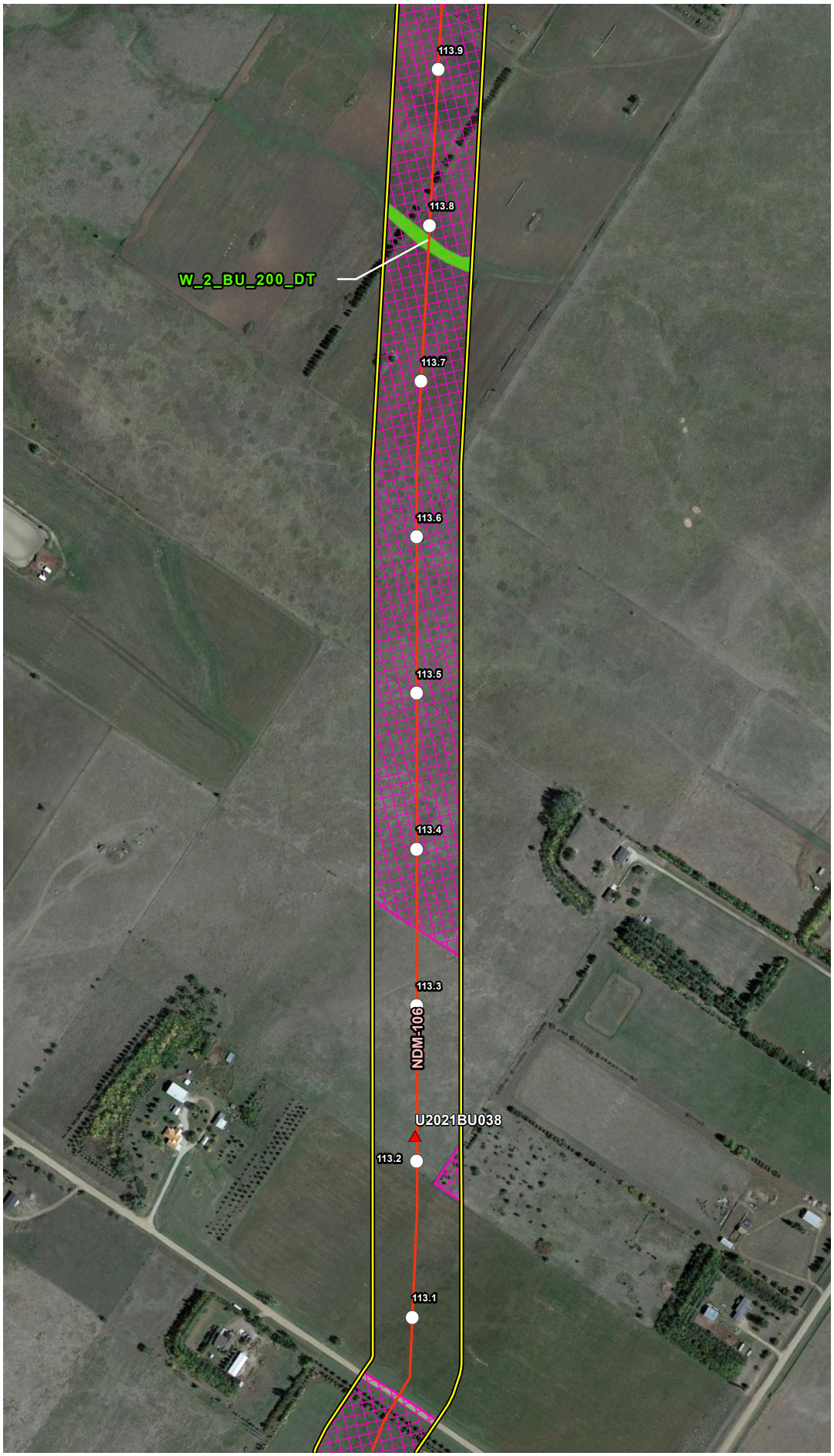
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>67 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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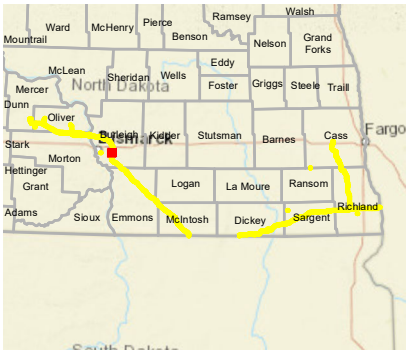


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 68 of 392 | 2001-22-002<br>Current Revision |

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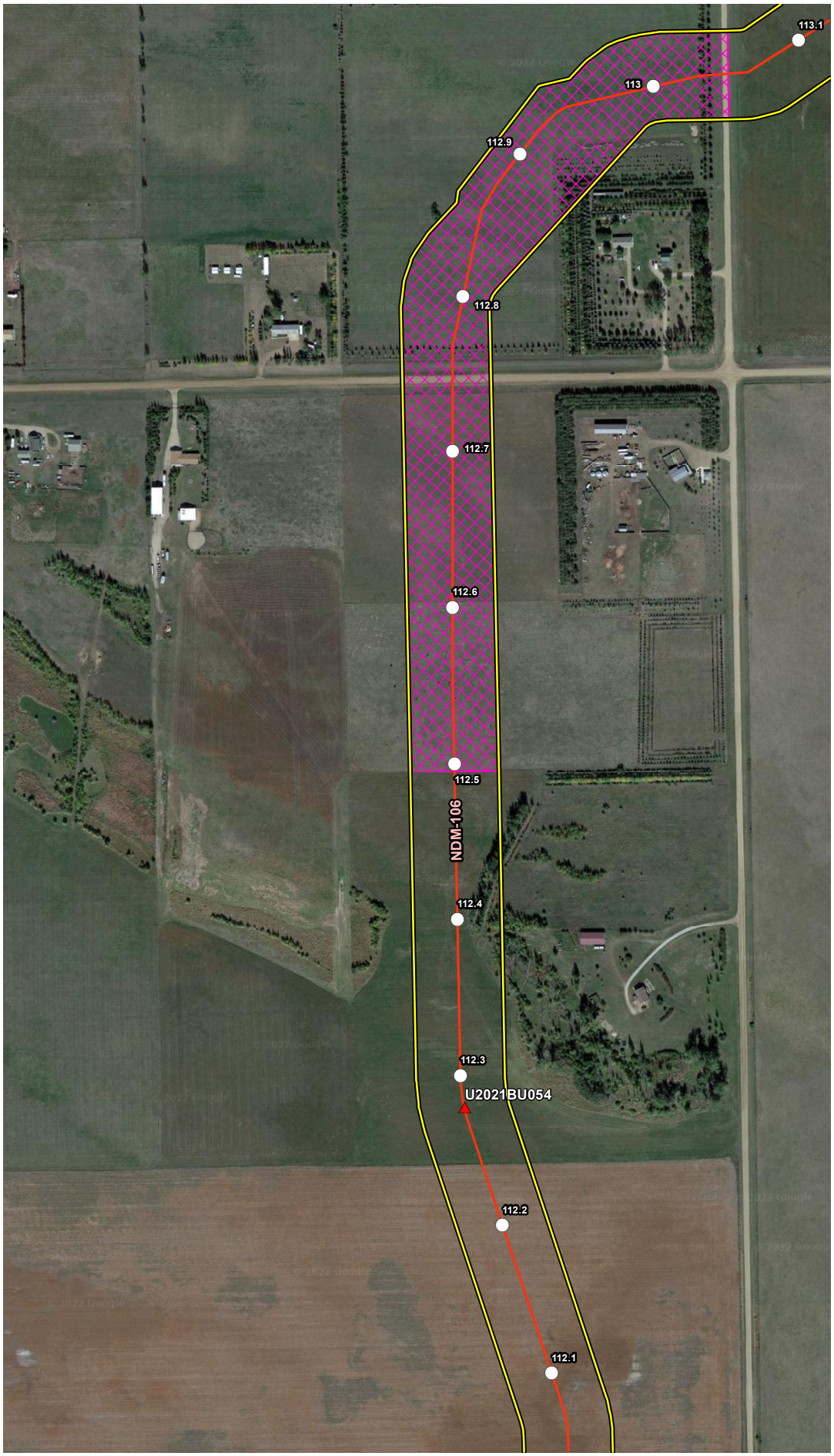
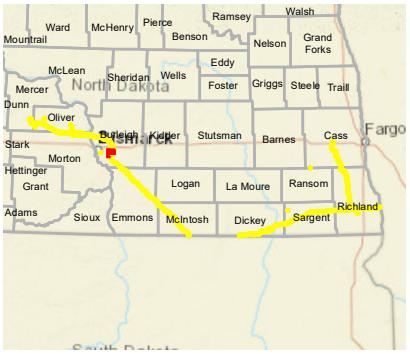
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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| Date: | Revised by: | Checked by: |
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Figure Title:

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Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 69 of 392 | 2001-22-002<br>Current Revision |

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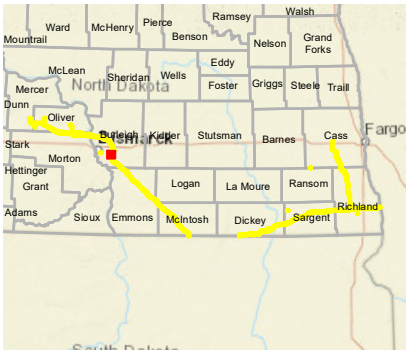
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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| Date: | Revised by: | Checked by: |
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**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 70 of 392 | 2001-22-002<br>Current Revision |

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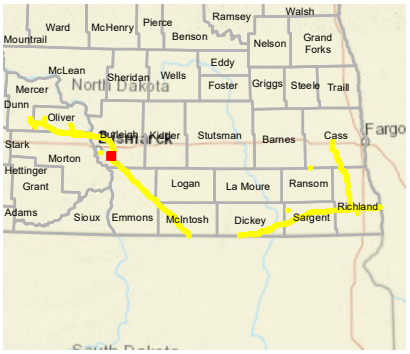
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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Figure Title:

**Aerial Map**

Figure Number:

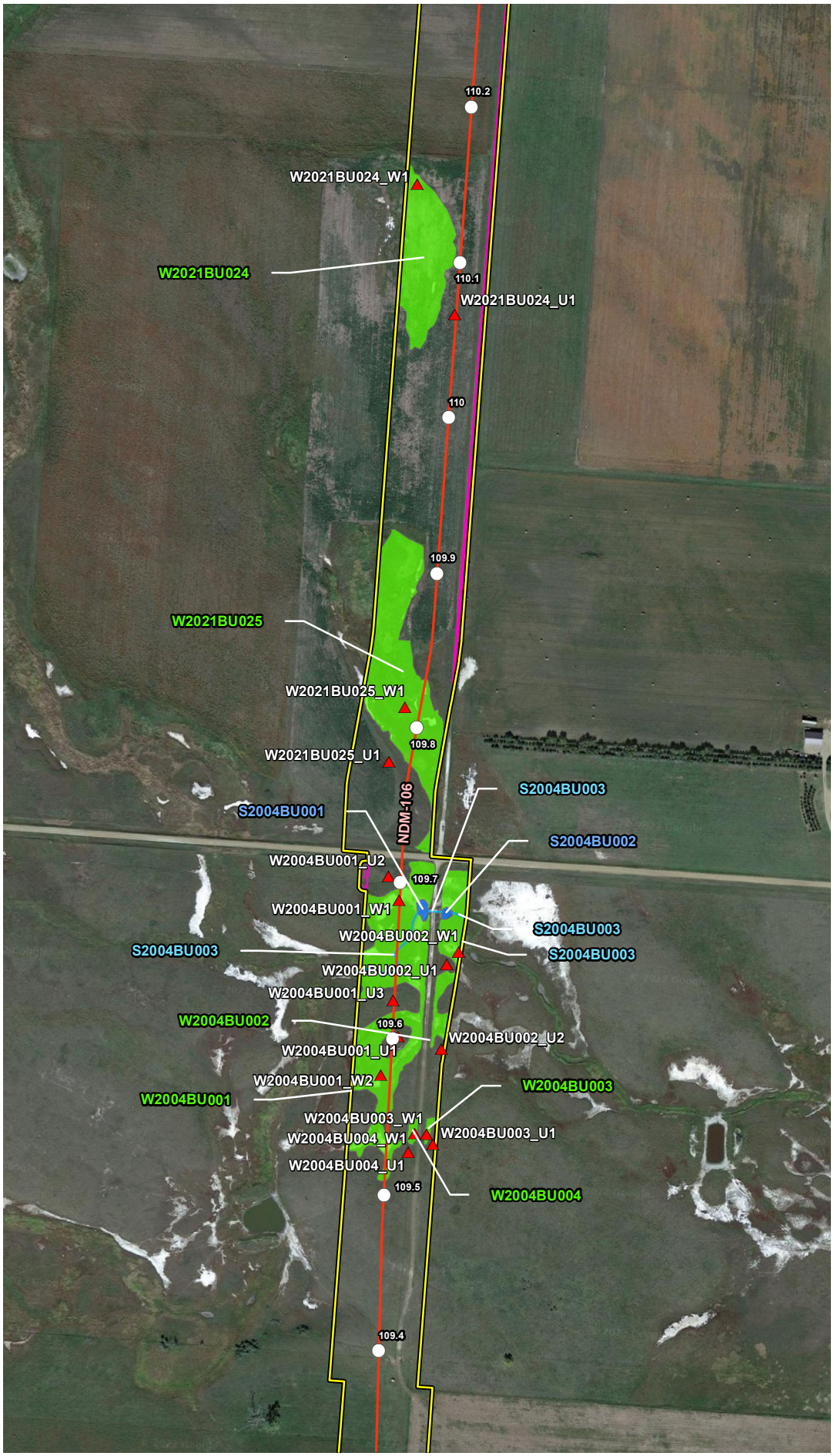
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 71 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\20222801_VWR_NDImxds\2_Aerial.mxd

## AERIAL MAP

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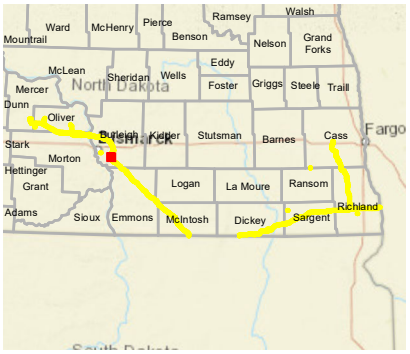


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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| Date | Revised by | Checked by |
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Figure Title:

Aerial Map

Figure Number:

Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 72 of 392 | 2001-22-002<br>Current Revision |

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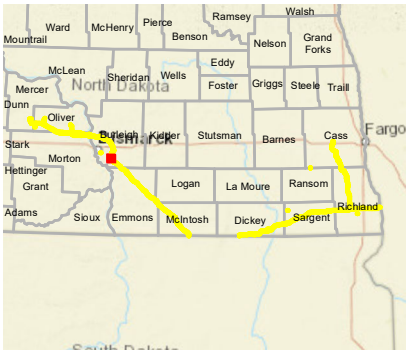
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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**Figure Title:**

Aerial Map

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Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 73 of 392 | 2001-22-002<br>Current Revision |

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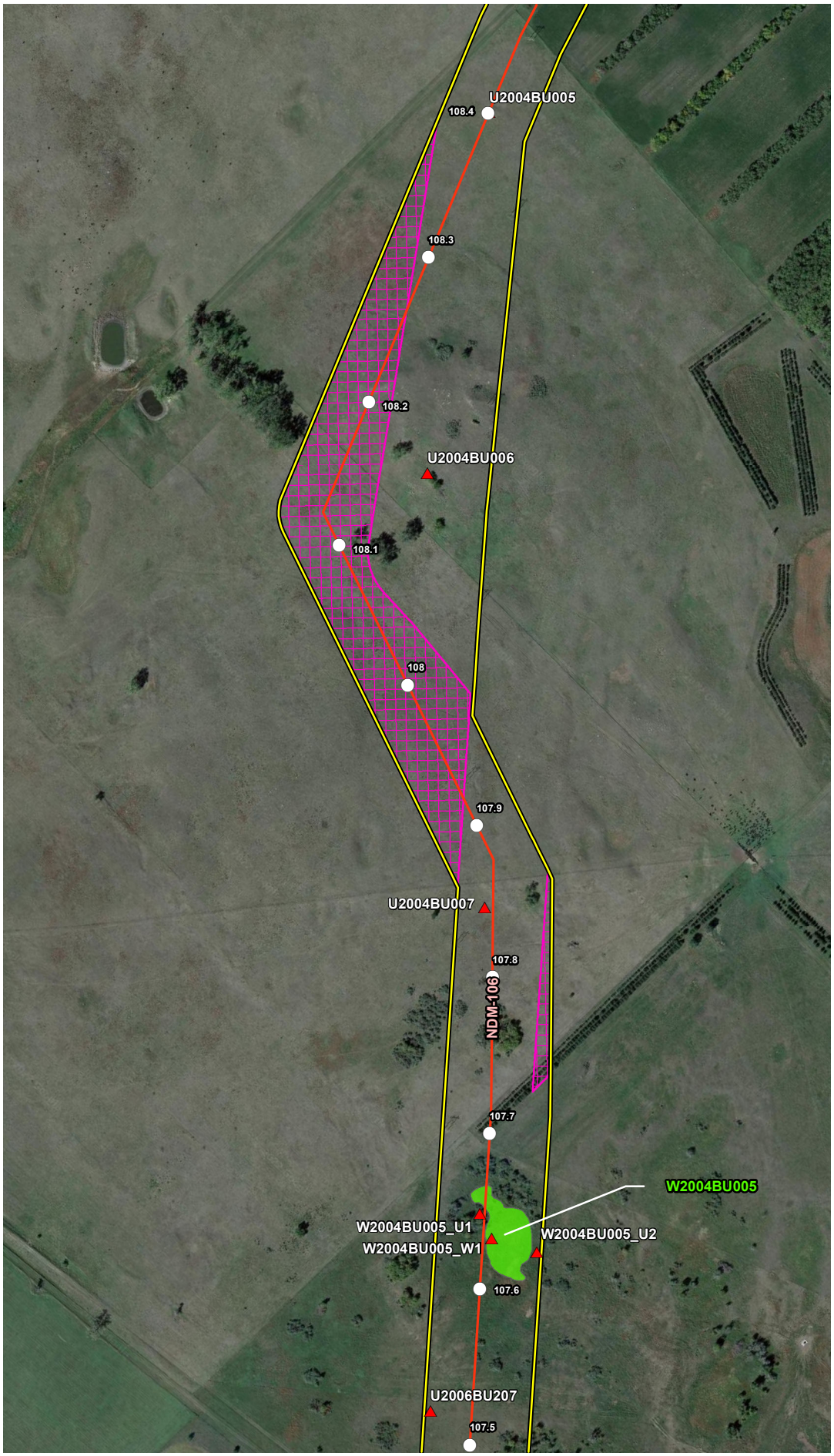
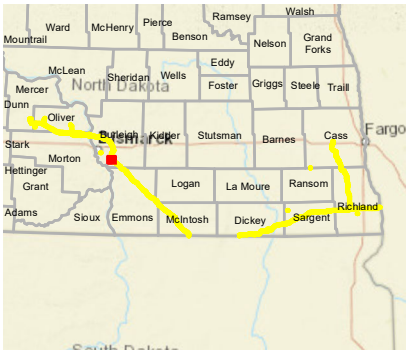
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**

Aerial Map

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Appendix A-2

| Scale: | Projection: |
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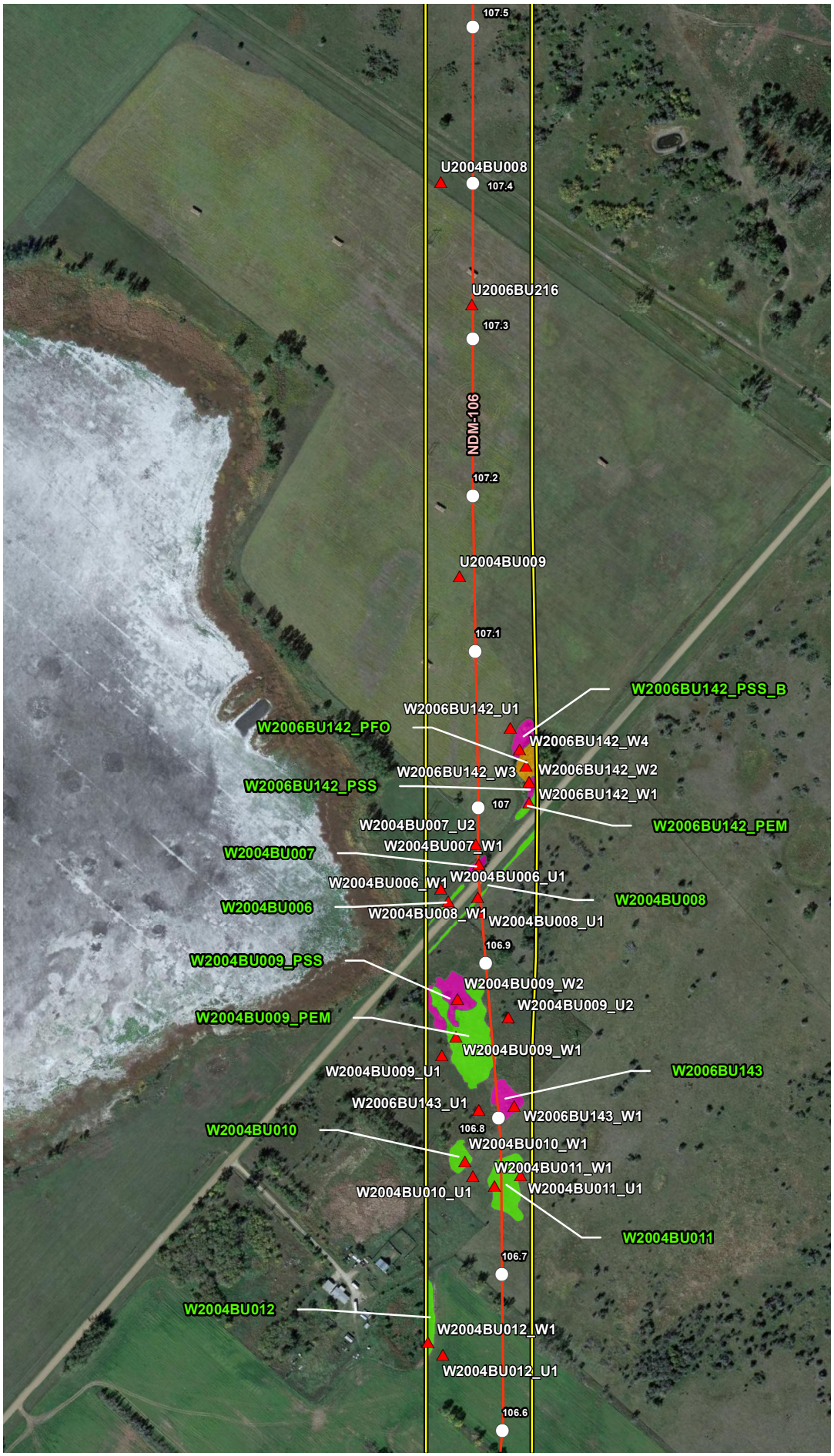
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

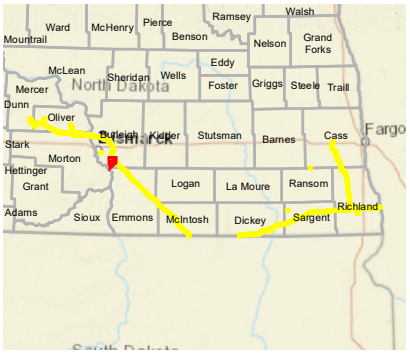
| Sheet: | Drawing Number: |
|---|---|
| 74 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImods\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:

Aerial Map

Figure Number:

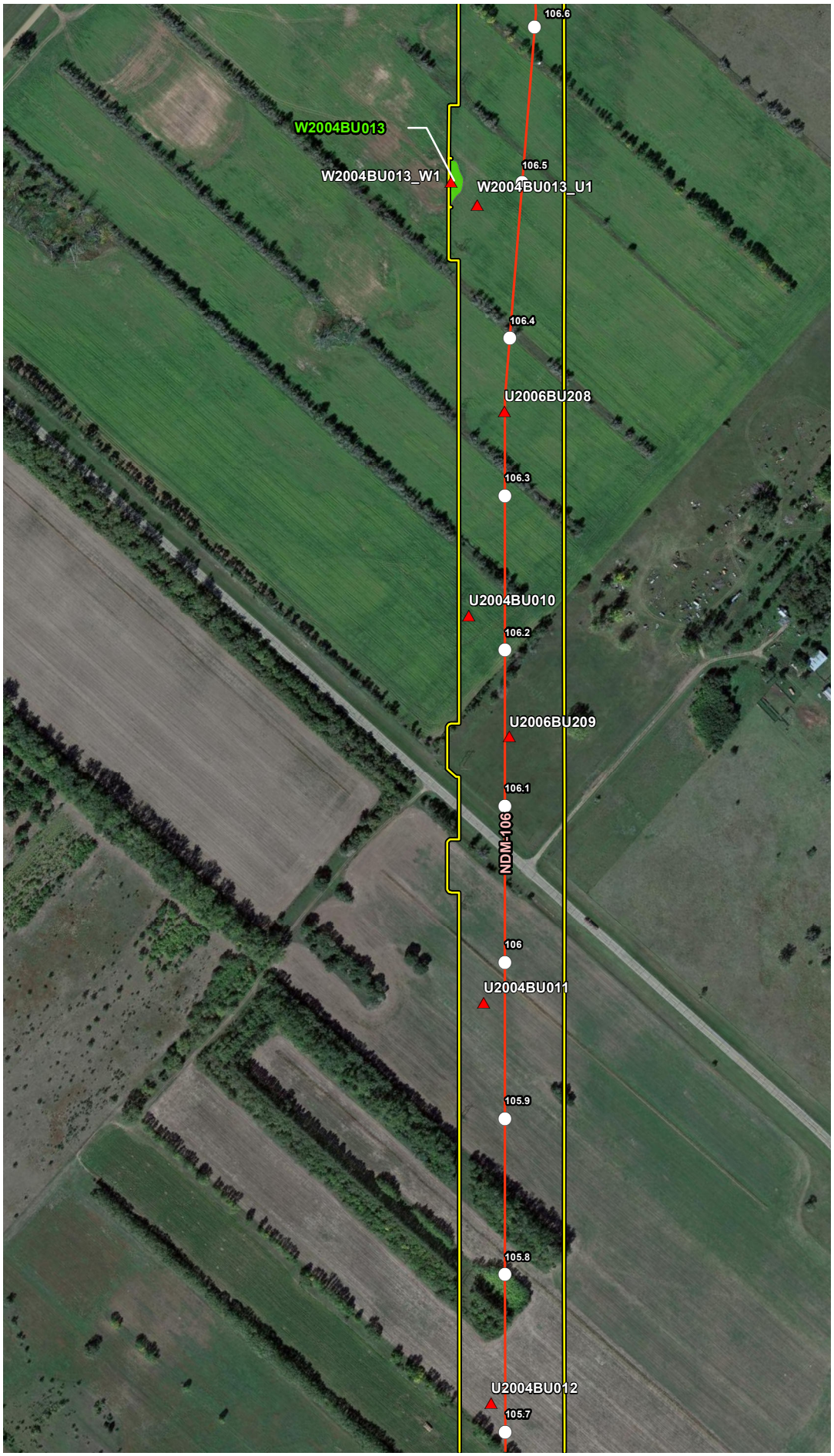
Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

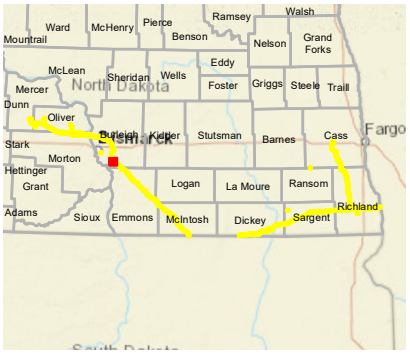
| Sheet | Drawing Number |
|---|---|
| 75 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImods\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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|---|---|---|
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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 76 of 392 | 2001-22-002<br>Current Revision |

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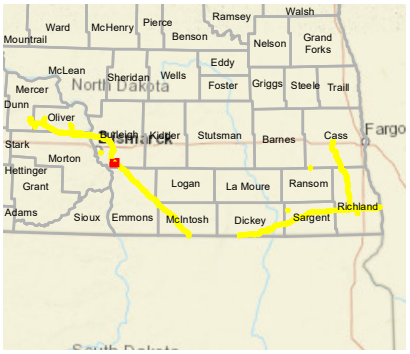
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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SUMMIT CARBON SOLUTIONS

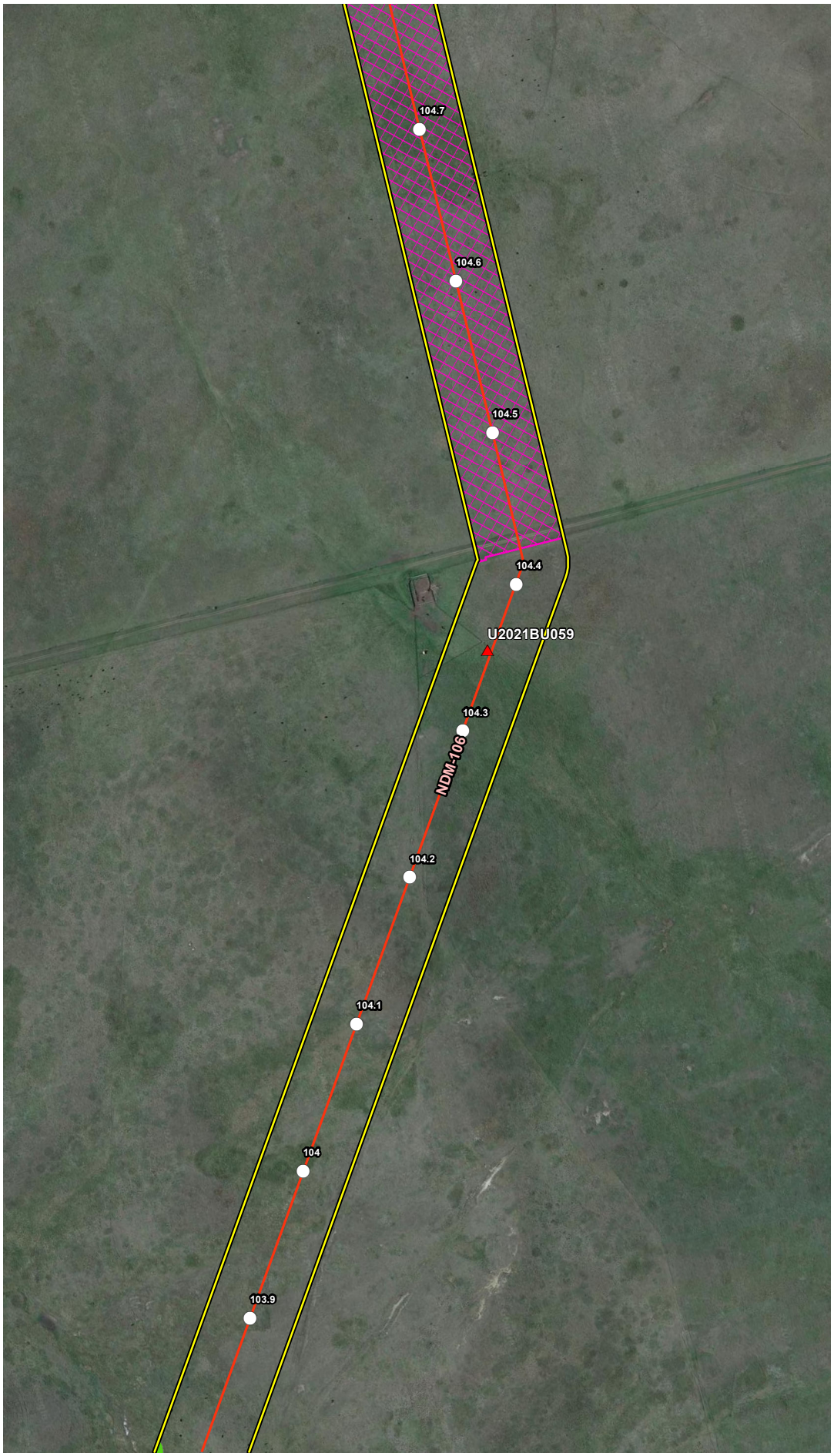
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

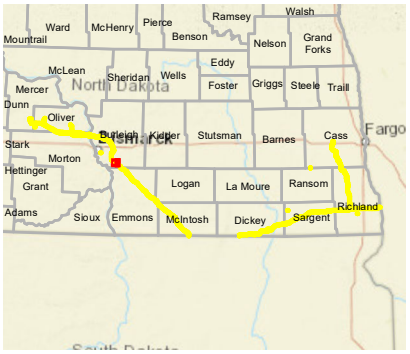
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>77 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 78 of 392 | 2001-22-002<br>Current Revision |

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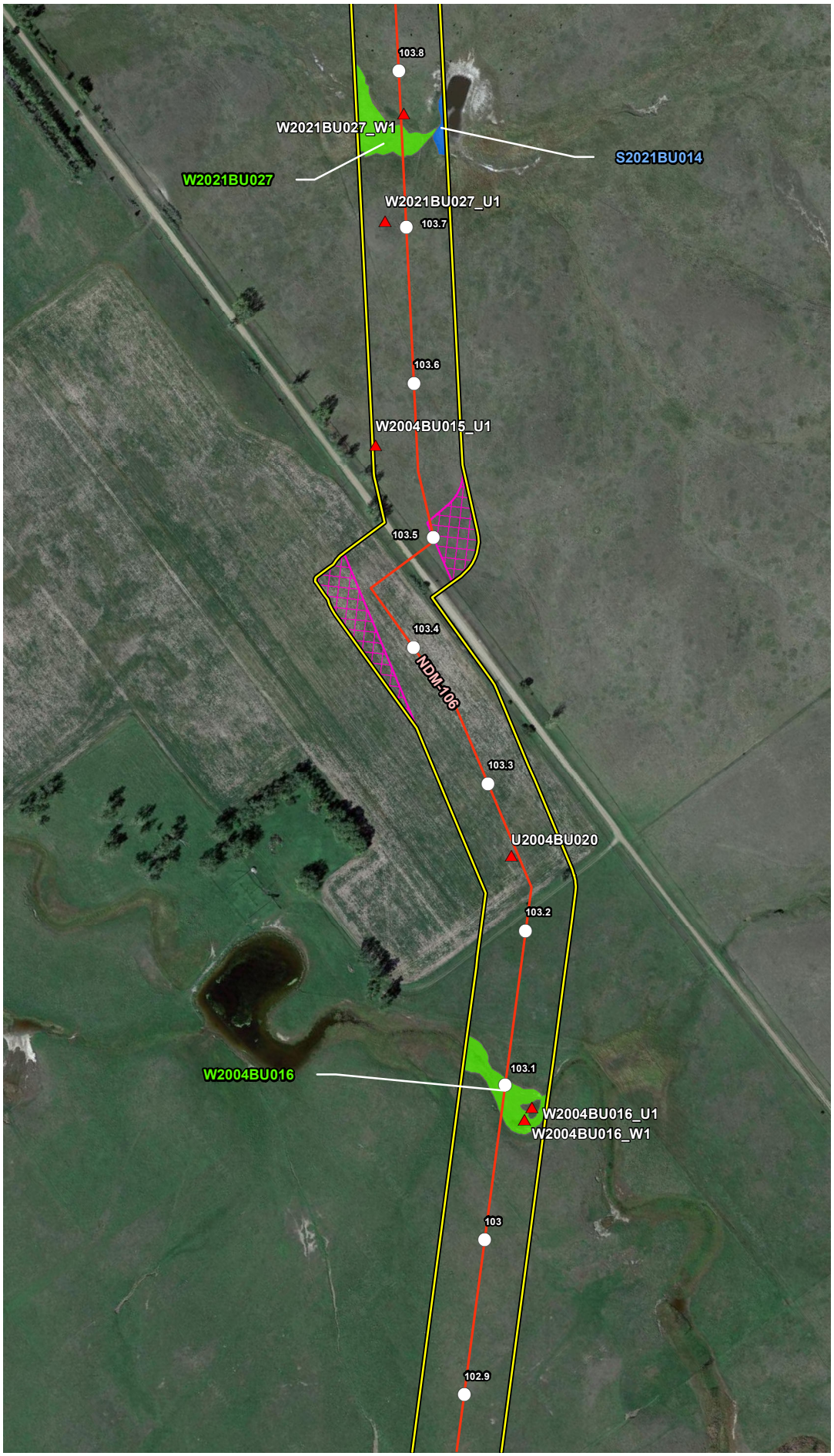
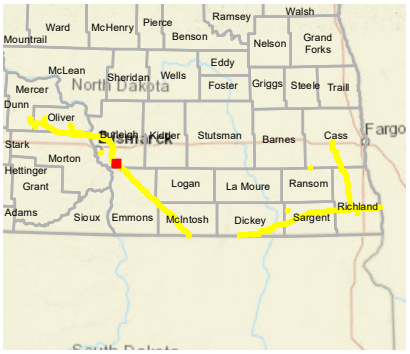
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 79 of 392 | 2001-22-002<br>Current Revision |

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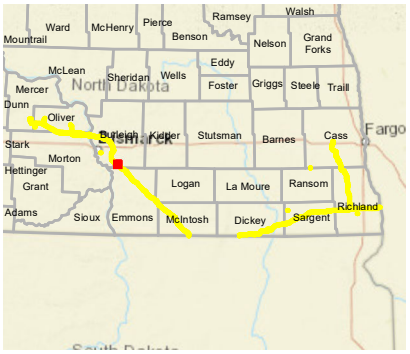
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
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| Sheet: | Drawing Number: |
| 80 of 392 | 2001-22-002<br>Current Revision |

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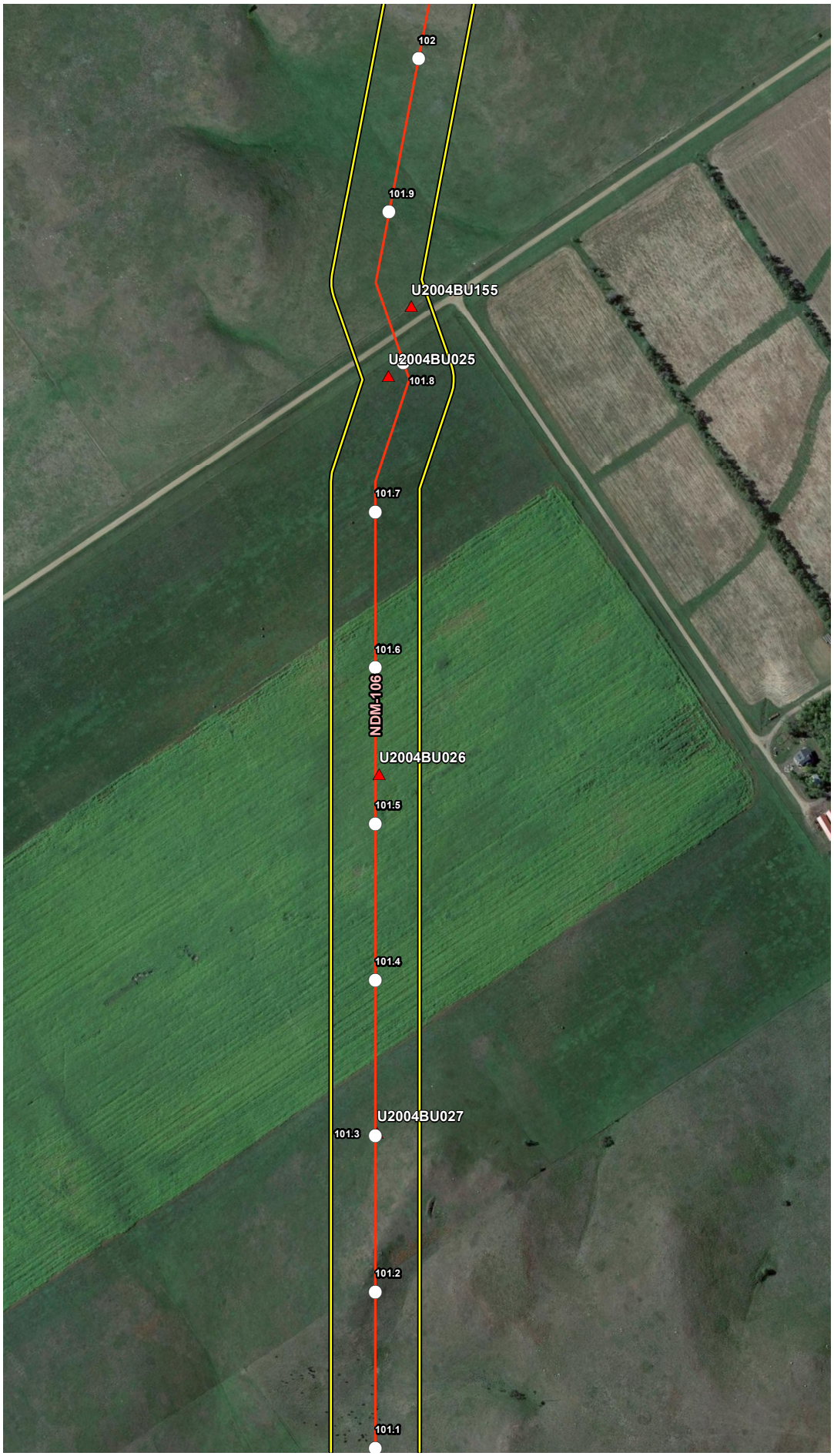
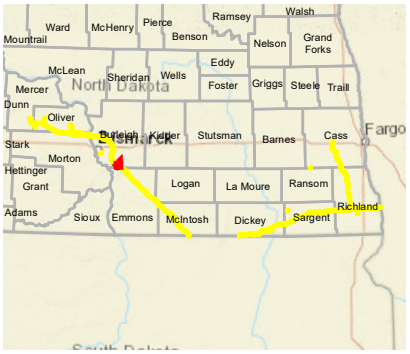
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
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| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 81 of 392 | 2001-22-002<br>Current Revision |

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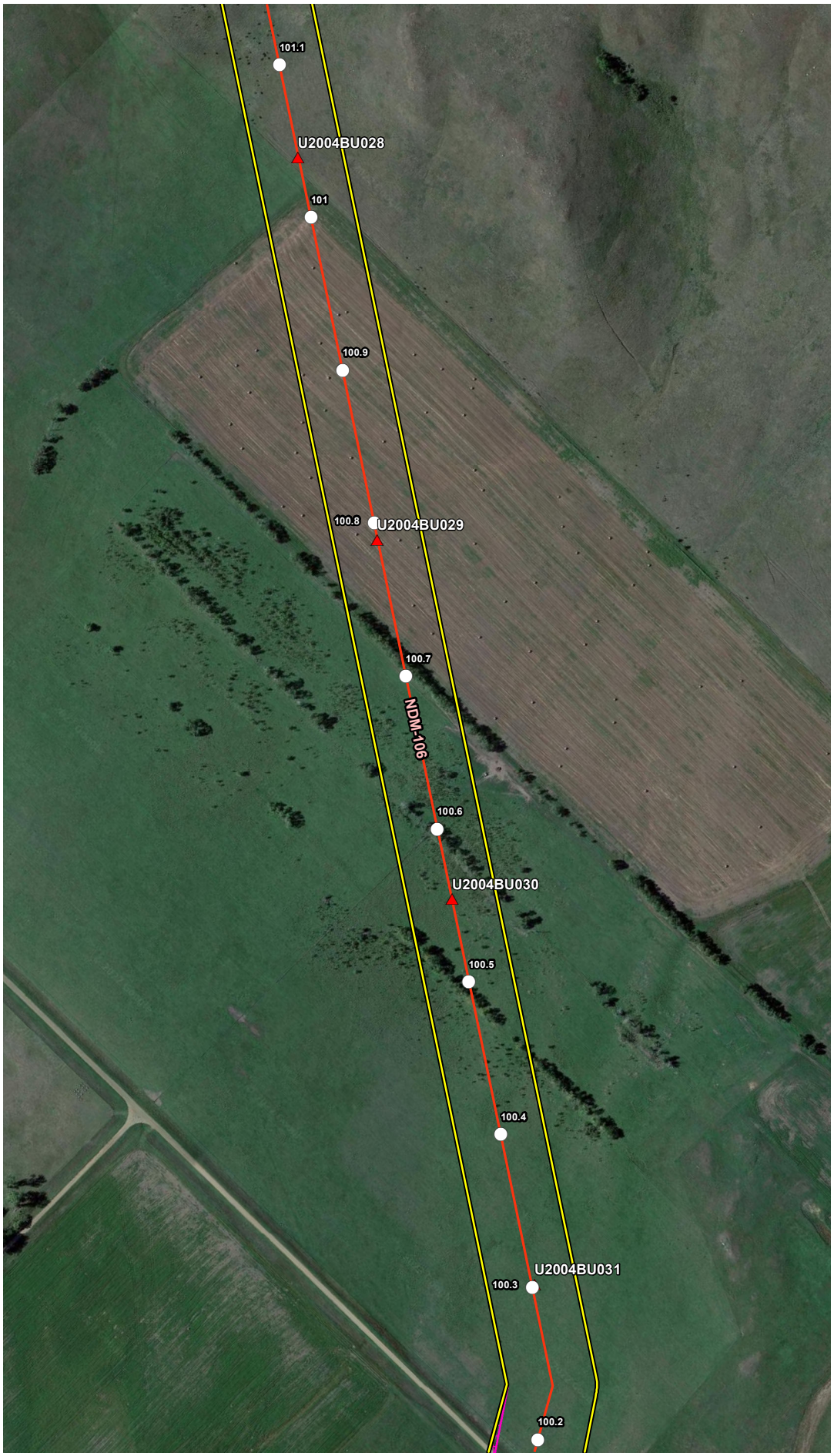
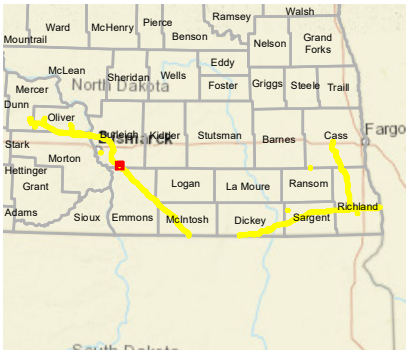
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>82 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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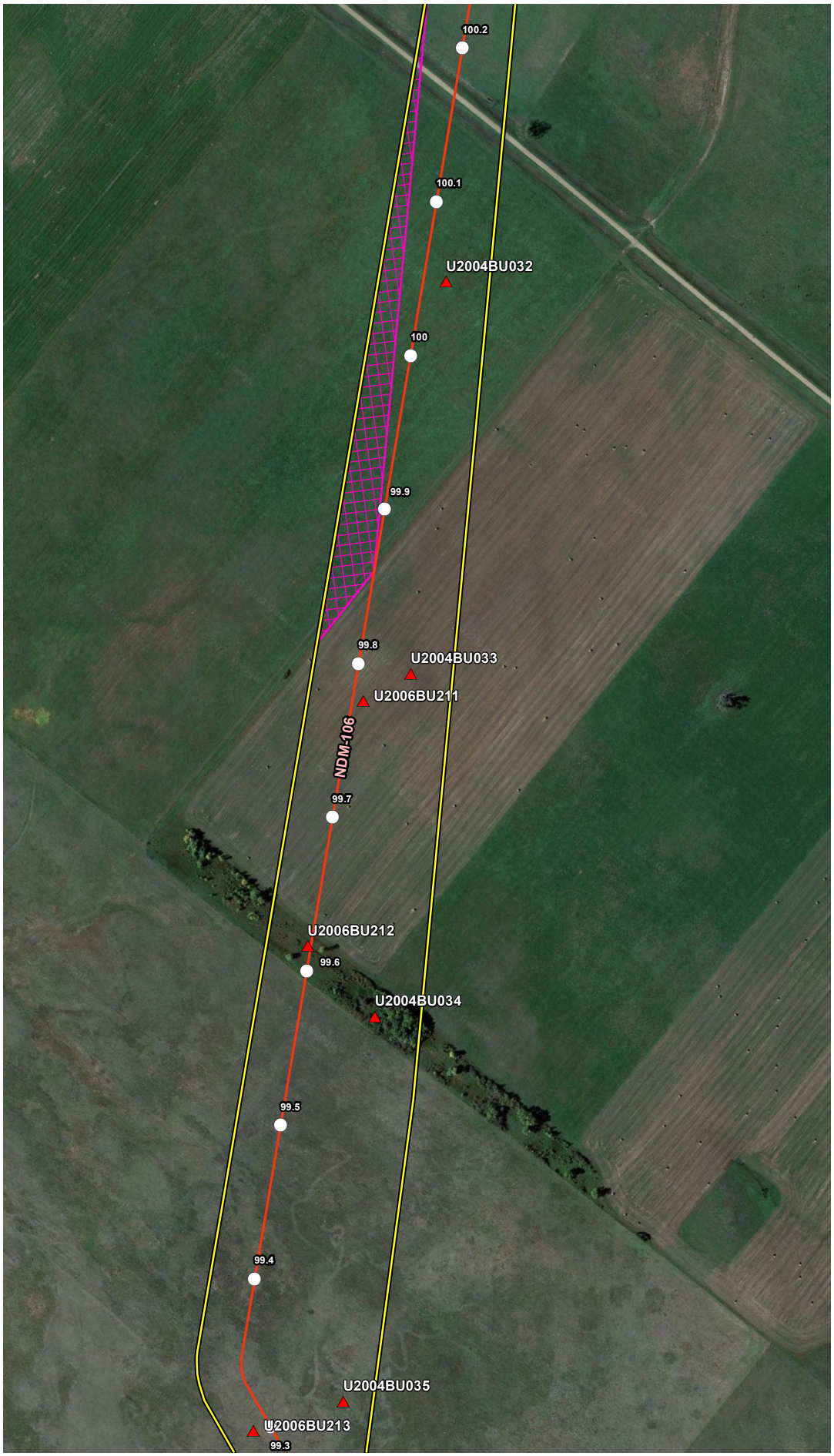
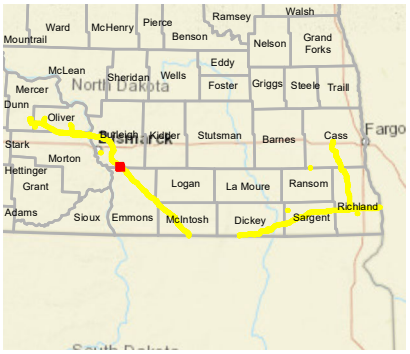
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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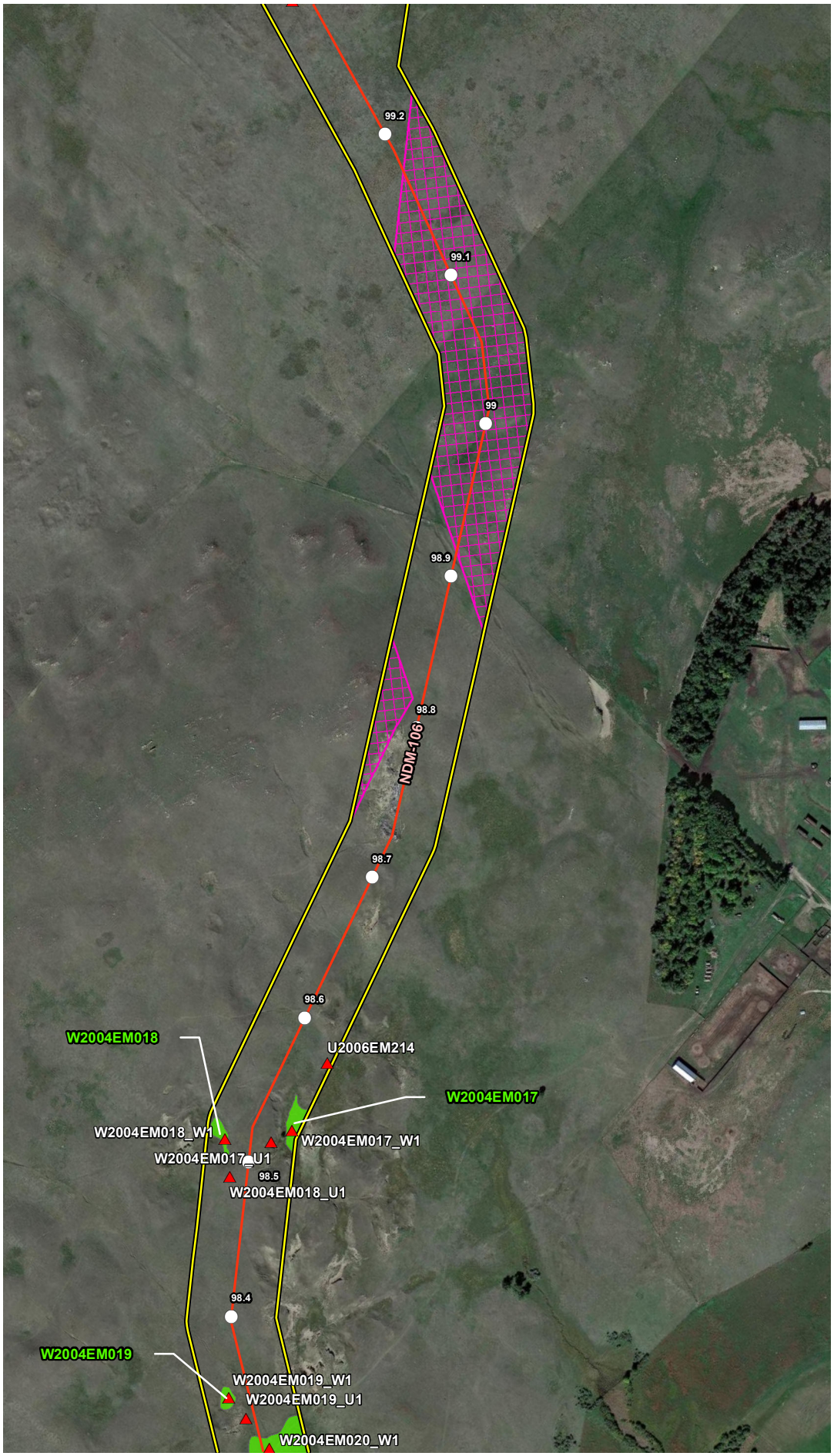
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

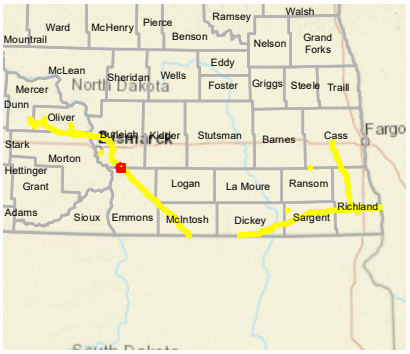
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>83 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 84 of 392 | 2001-22-002<br>Current Revision |

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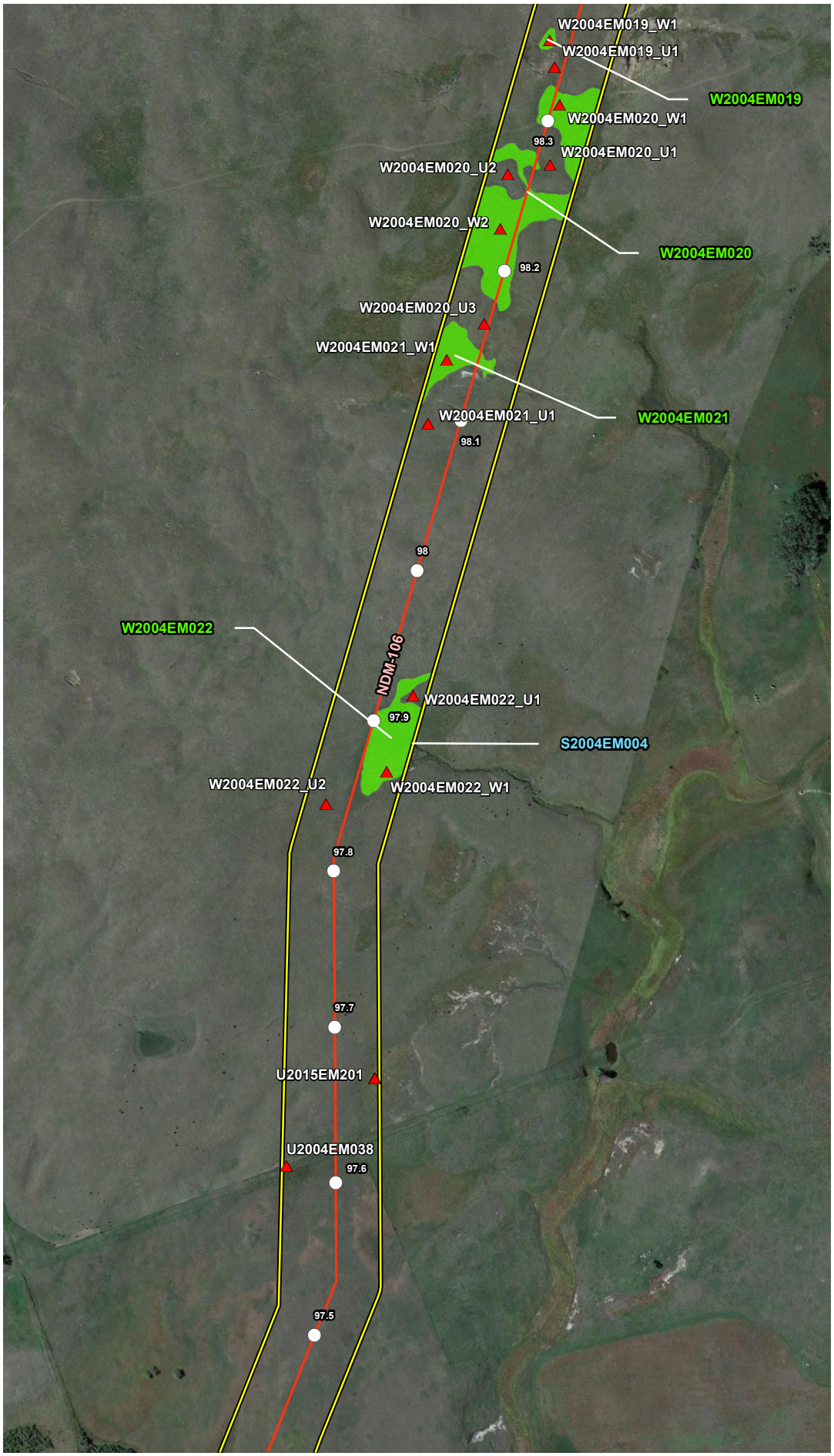
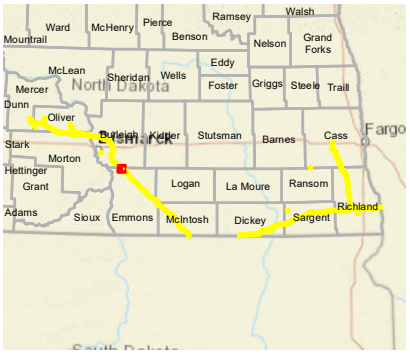
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

Aerial Map

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Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 85 of 392 | 2001-22-002<br>Current Revision |

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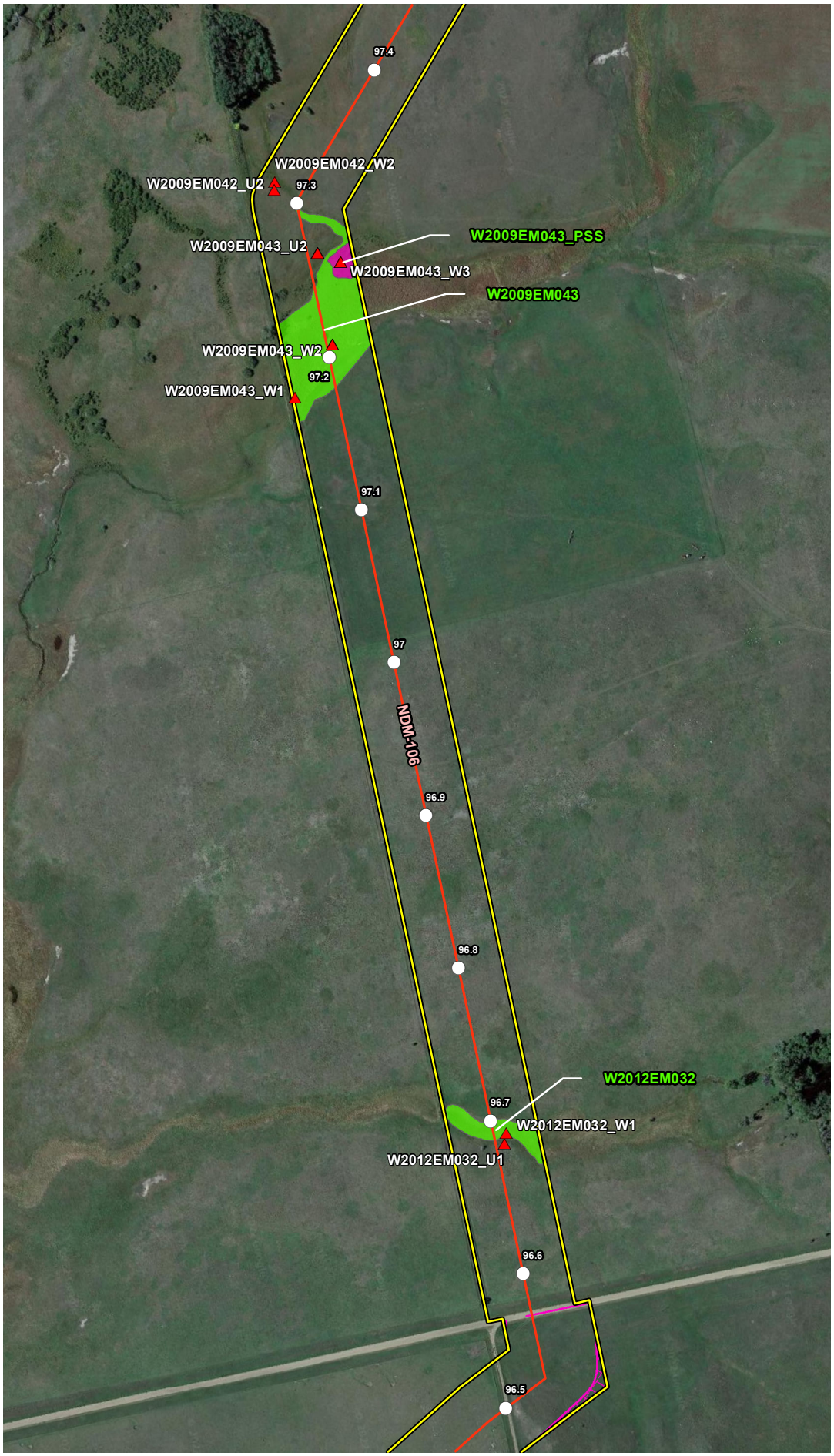
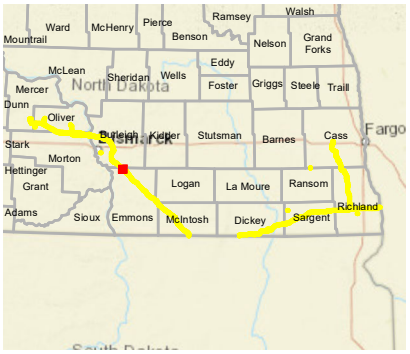
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>86 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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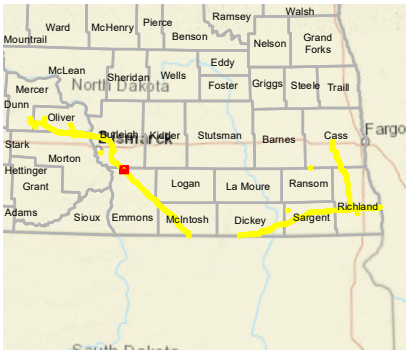
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 87 of 392 | 2001-22-002<br>Current Revision |

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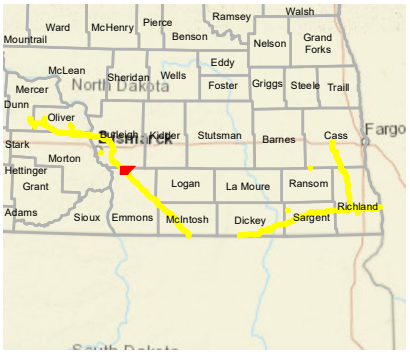
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 88 of 392 | 2001-22-002<br>Current Revision |

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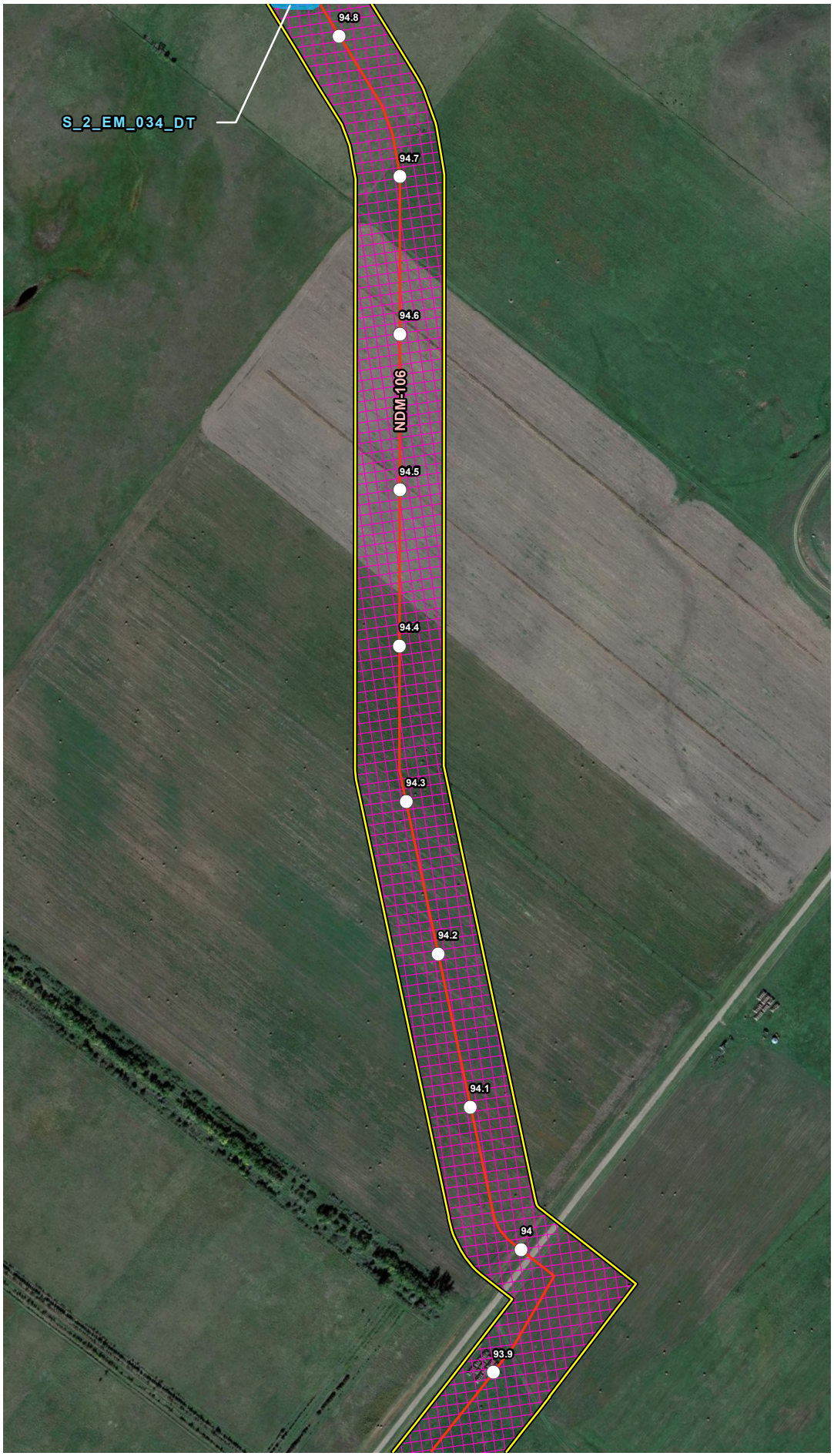
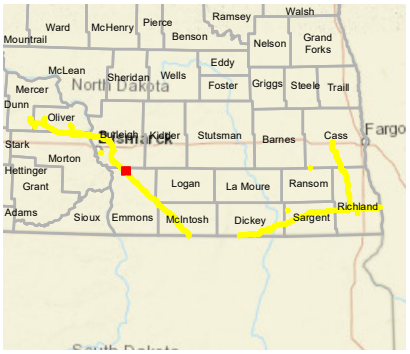
## AERIAL MAP




## VICINITY MAP




## LEGEND

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## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**
Aerial Map

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Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 89 of 392 | 2001-22-002<br>Current Revision |

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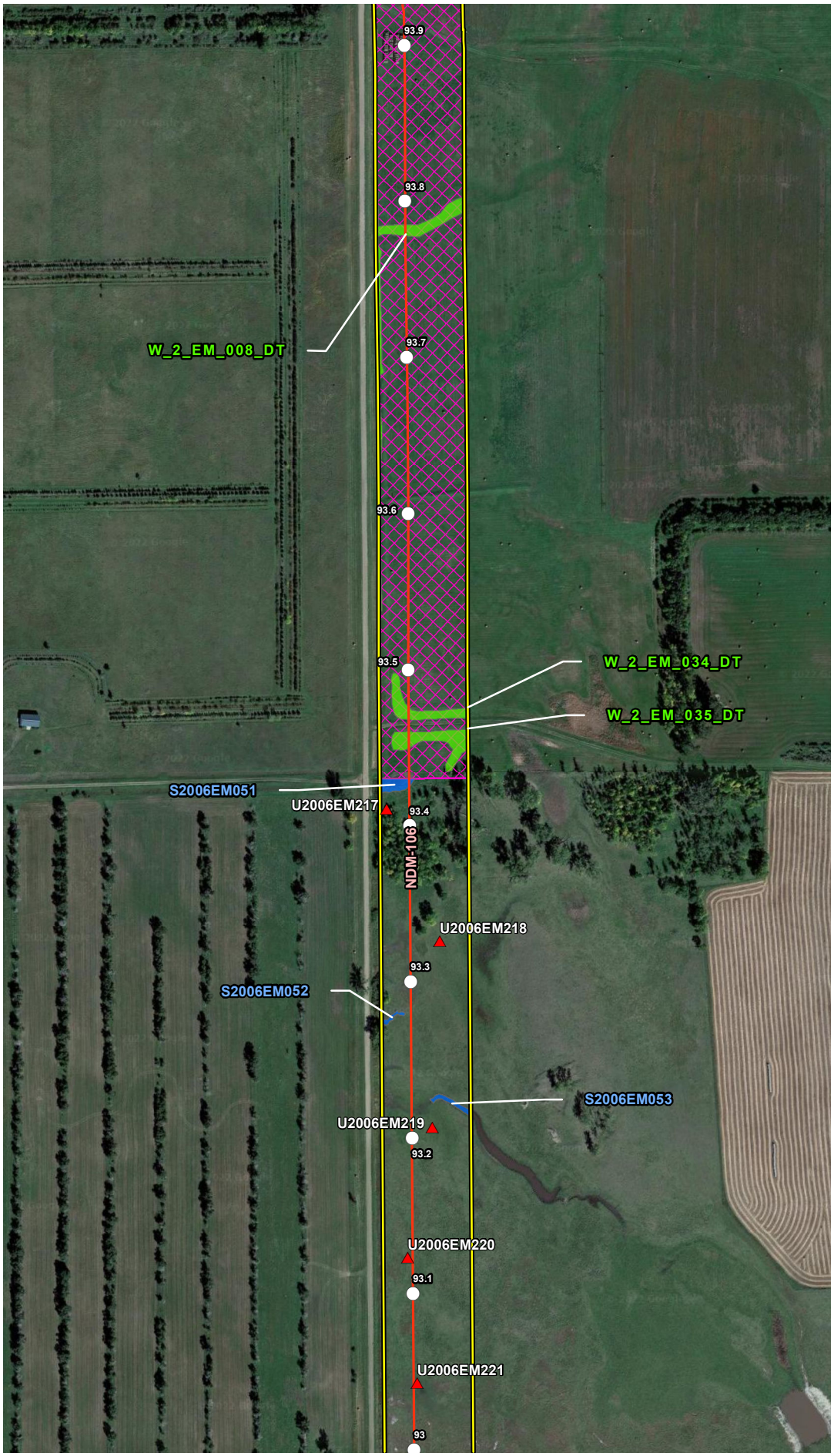
## AERIAL MAP

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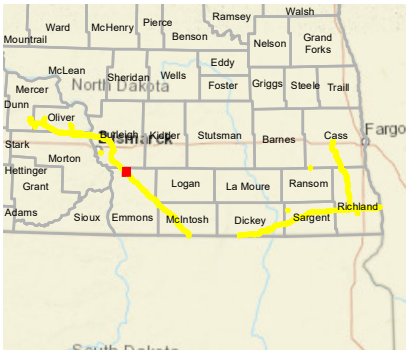


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
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- Palustrine Scrub-Shrub Wetland
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>90 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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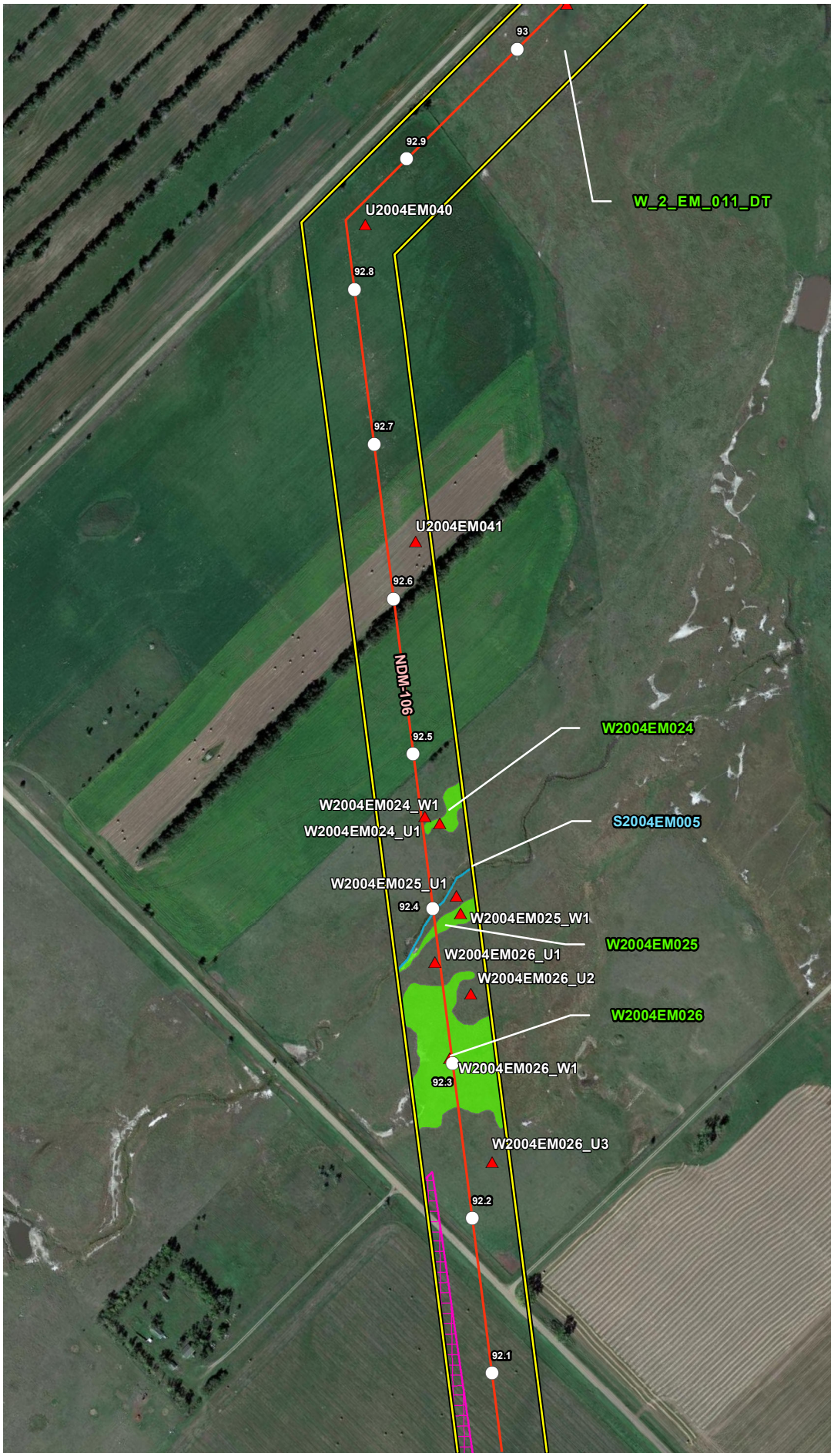
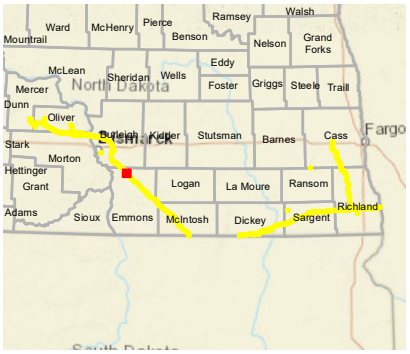
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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| Sheet:<br>91 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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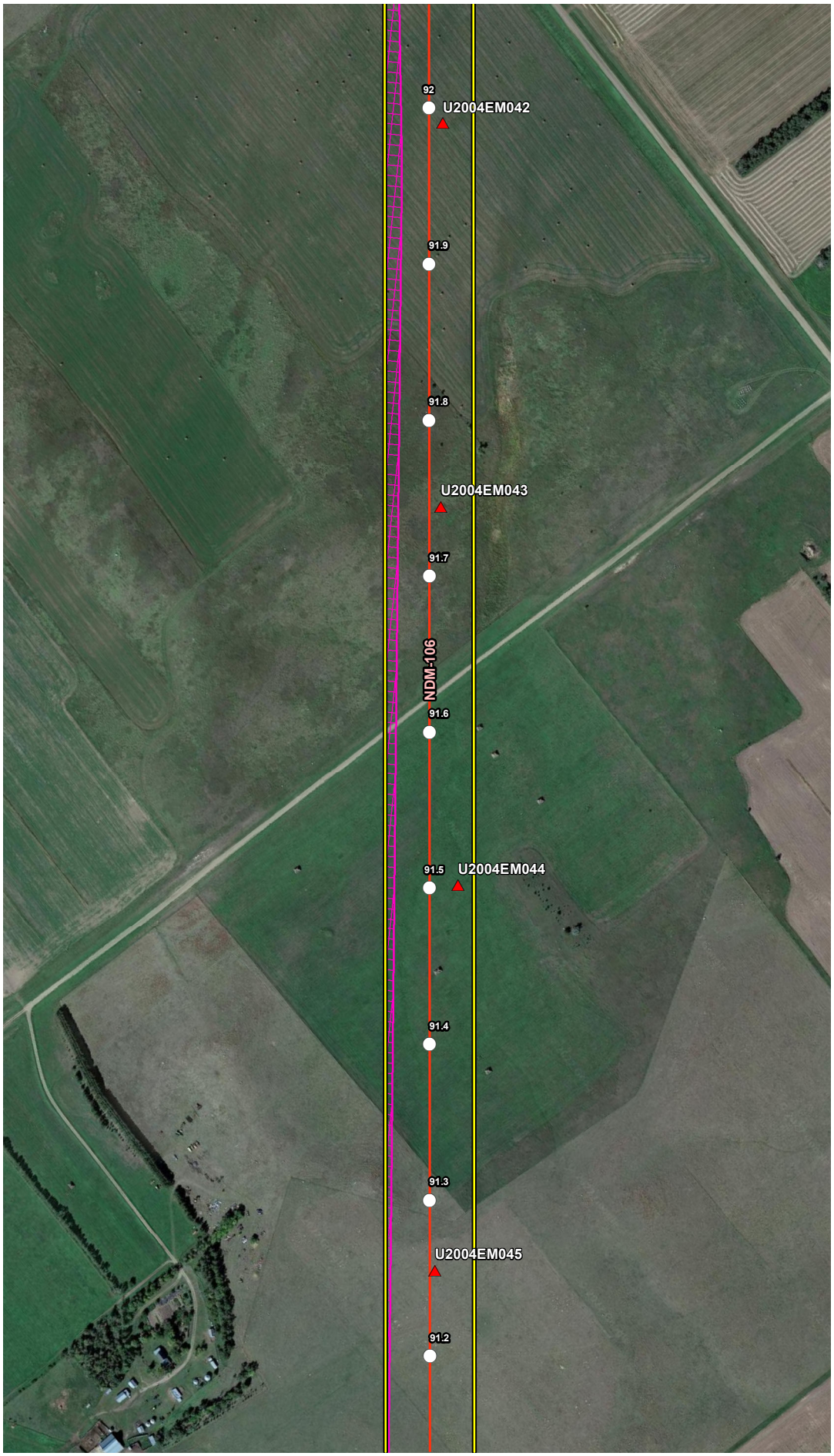
## AERIAL MAP

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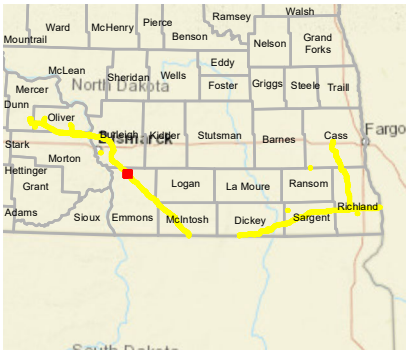


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Feet

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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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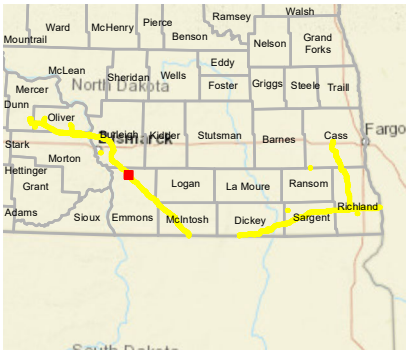
## AERIAL MAP




## VICINITY MAP

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**1A - Revision**

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| Sheet: | Drawing Number: |
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| 93 of 392 | 2001-22-002<br>Current Revision |

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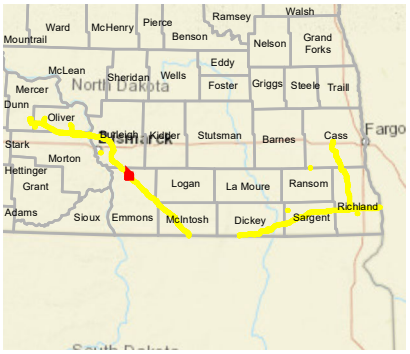
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| Date | Revised by | Checked by |
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| Sheet | Drawing Number |
|---|---|
| 94 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP




## VICINITY MAP

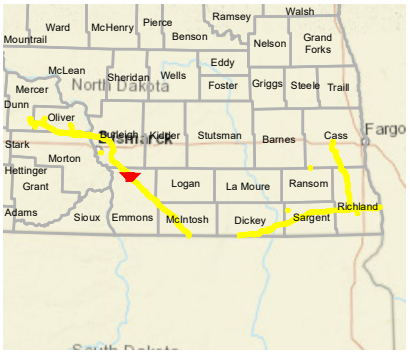


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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
95 of 392

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Current Revision

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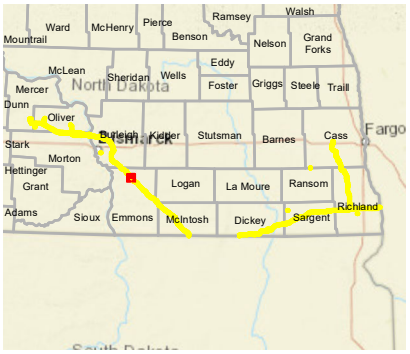
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

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|---|---|
| 96 of 392 | 2001-22-002<br>Current Revision |

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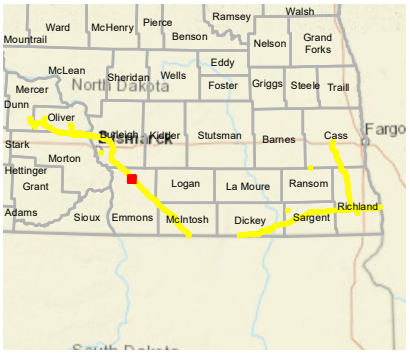
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| Sheet: | Drawing Number: |
|---|---|
| 97 of 392 | 2001-22-002<br>Current Revision |

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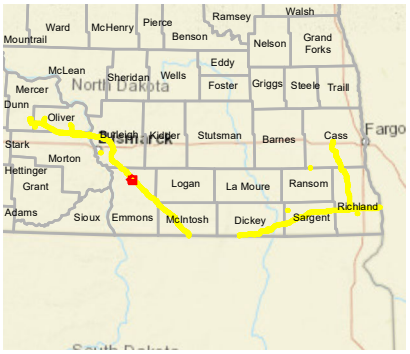
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| 98 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP




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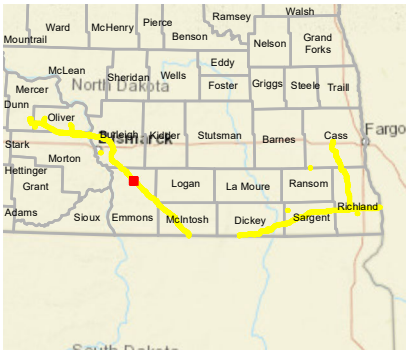


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**1A - Revision**
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| 99 of 392 | 2001-22-002<br>Current Revision |

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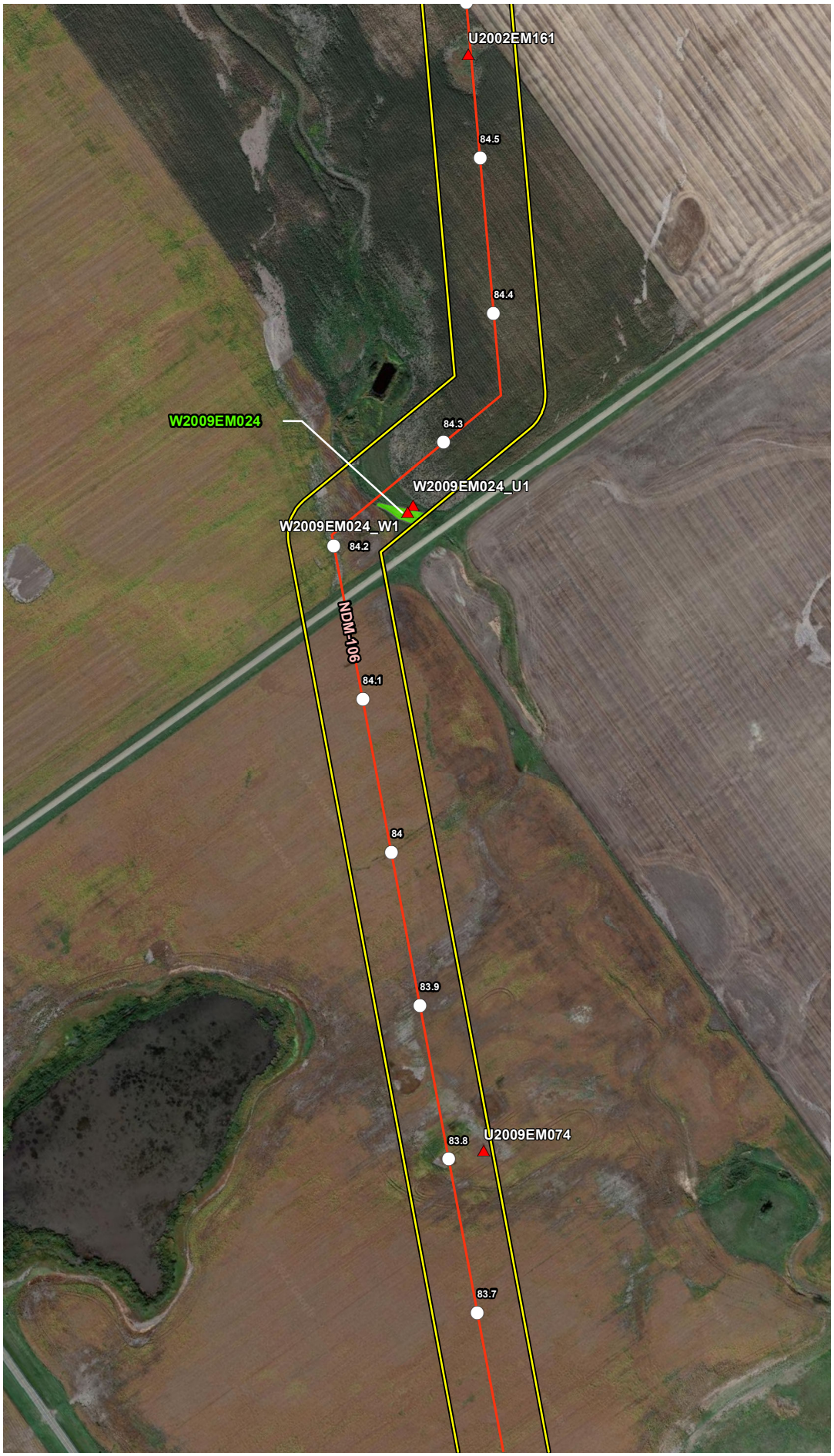
## AERIAL MAP

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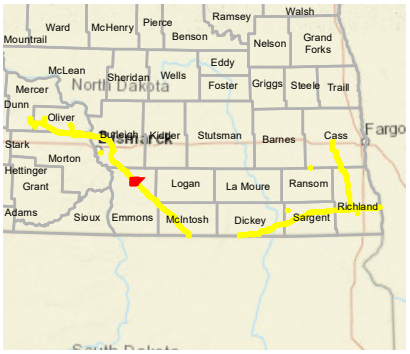


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Revision description

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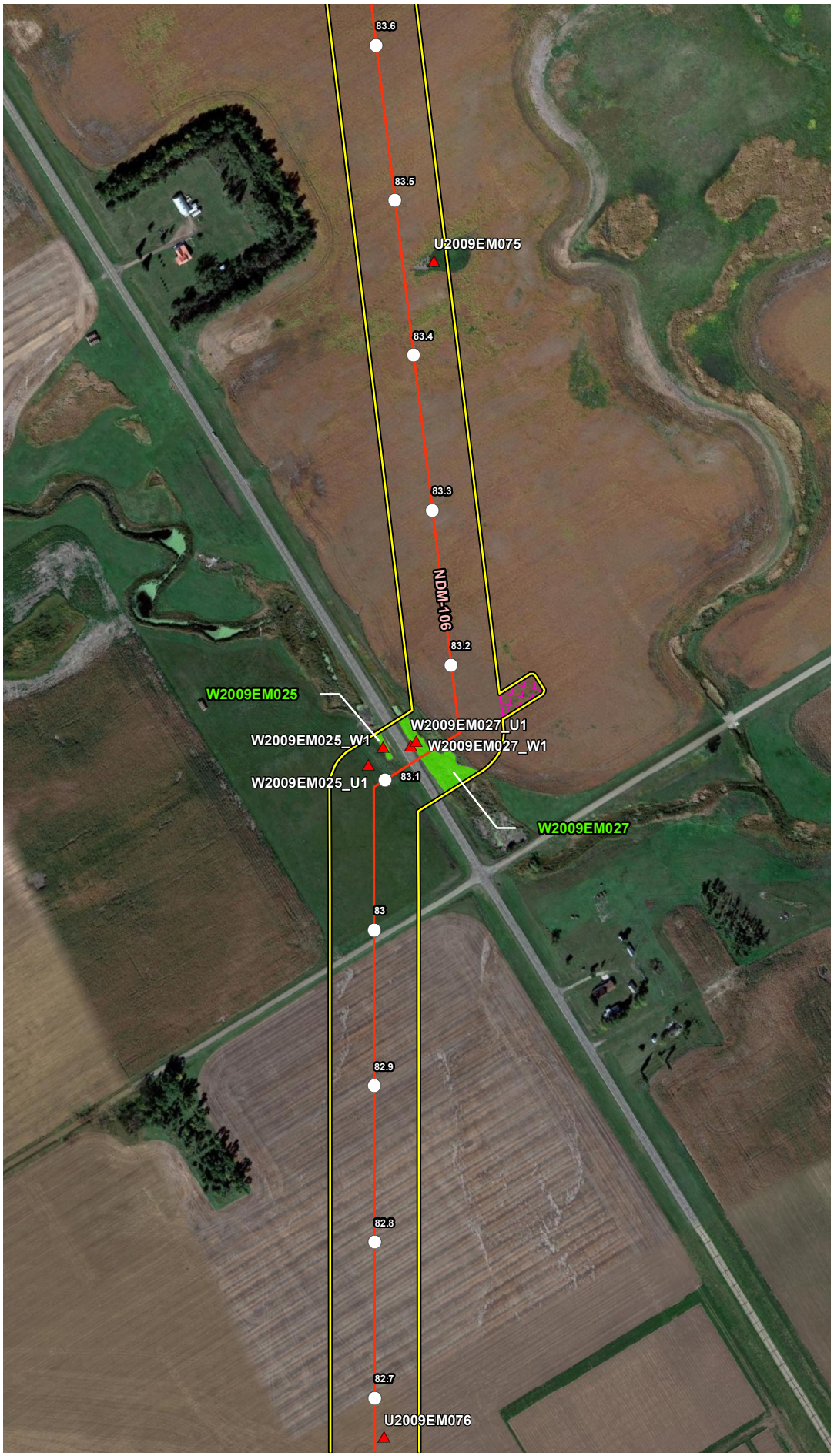
## AERIAL MAP

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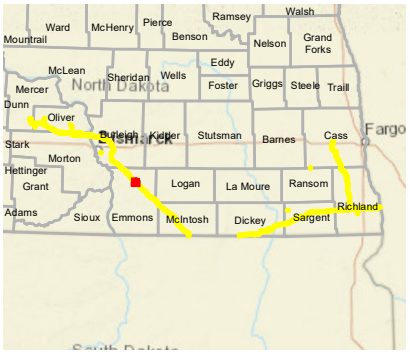


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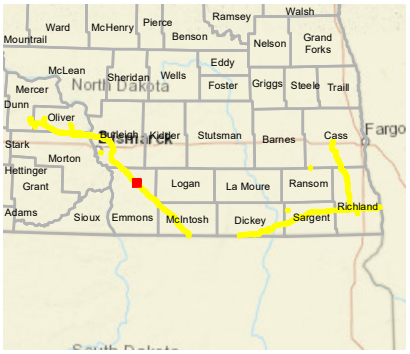
## AERIAL MAP




## VICINITY MAP

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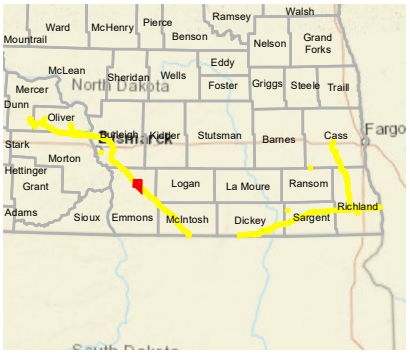
File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\801_WR_NDI\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

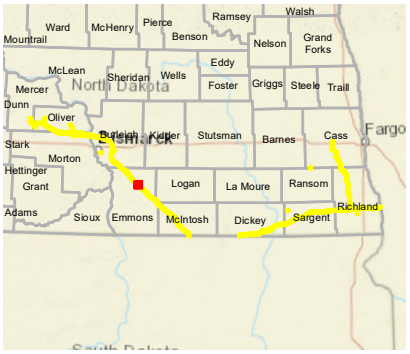
| Sheet | Drawing Number |
|---|---|
| 103 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\0801_WR_NDI\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 104 of 392 | 2001-22-002<br>Current Revision |

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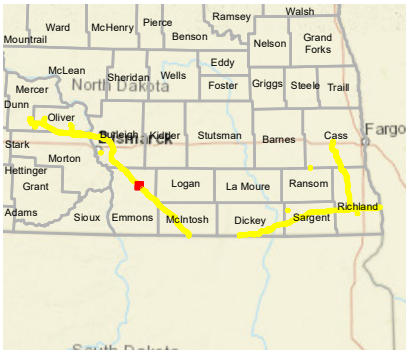
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 105 of 392 | 2001-22-002<br>Current Revision |

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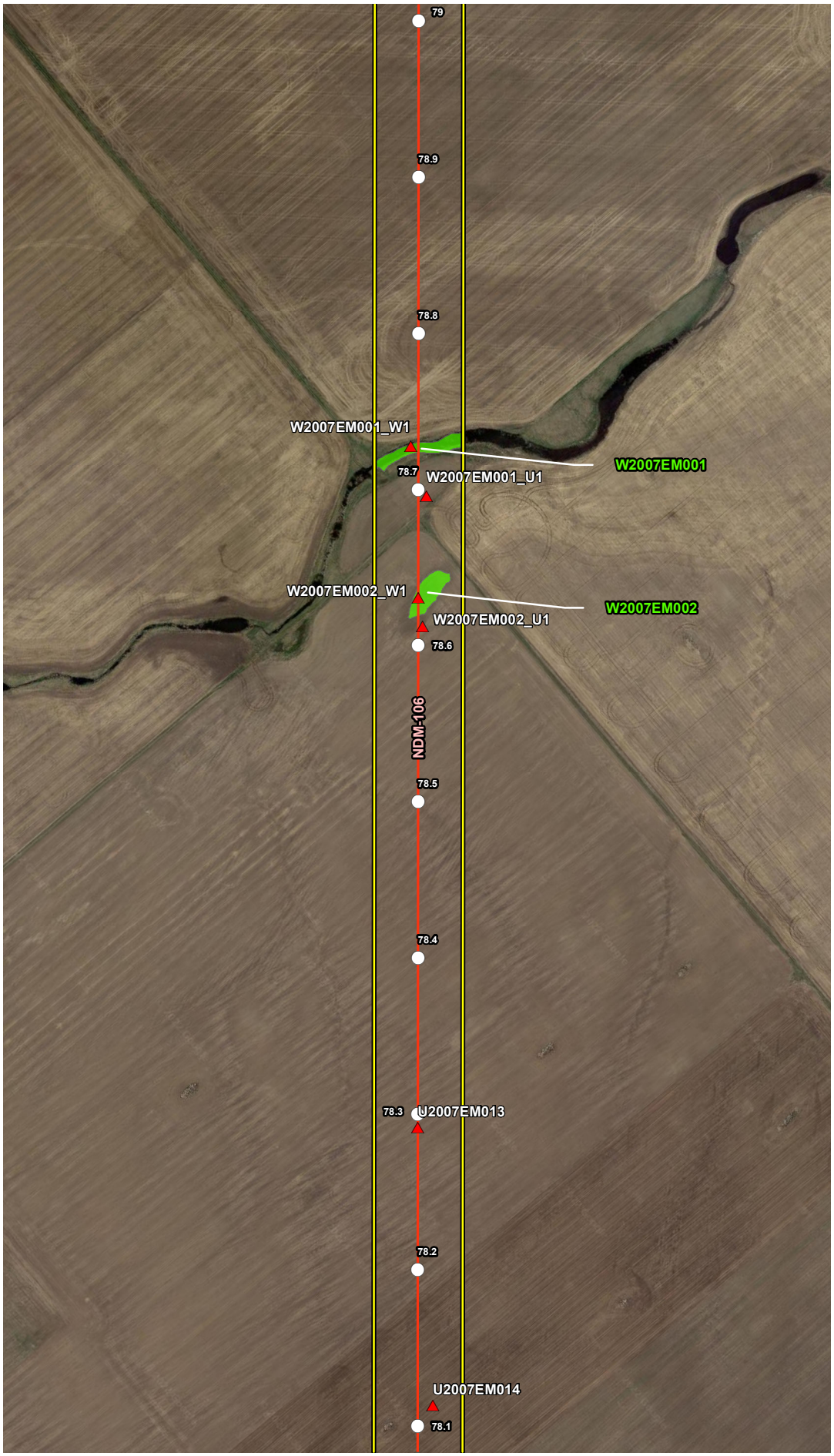
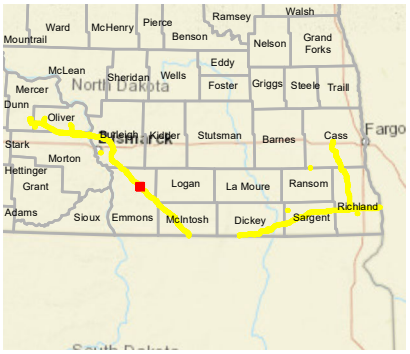
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
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**Figure Title:**

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Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 106 of 392 | 2001-22-002<br>Current Revision |

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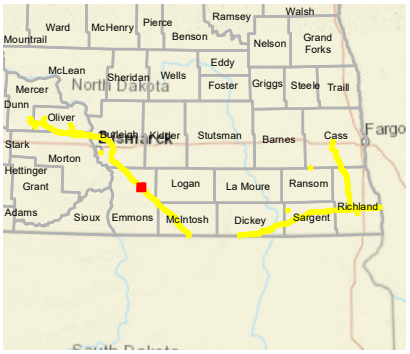
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 107 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\901_WR_ND\mxds\2_Aerial.mxd

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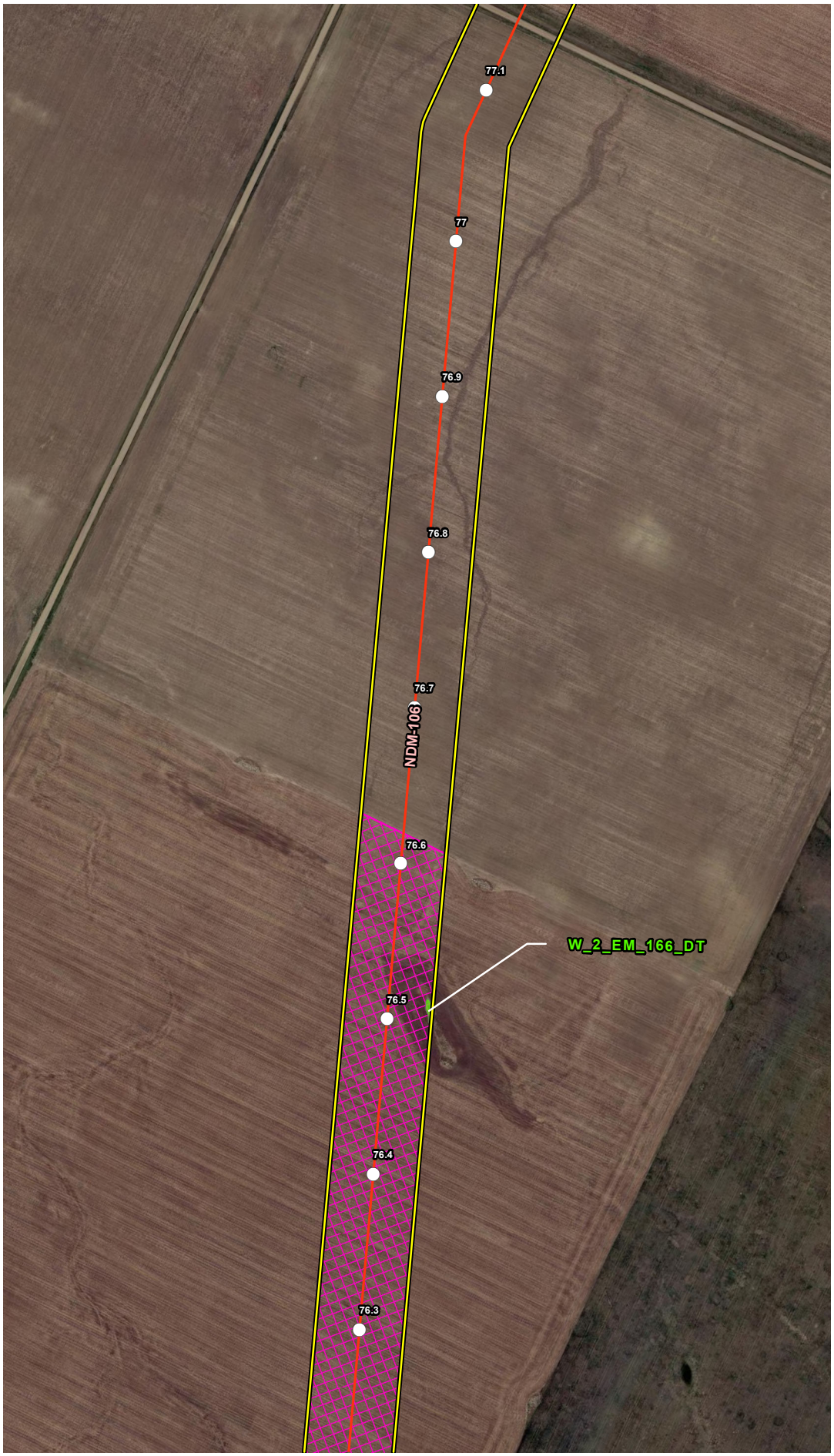


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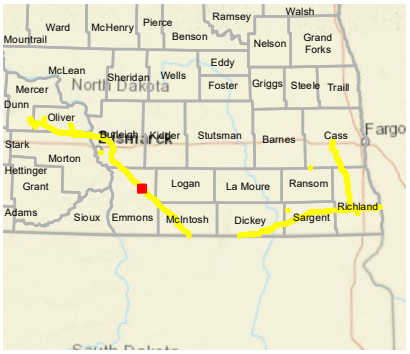


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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 108 of 392 | 2001-22-002<br>Current Revision |

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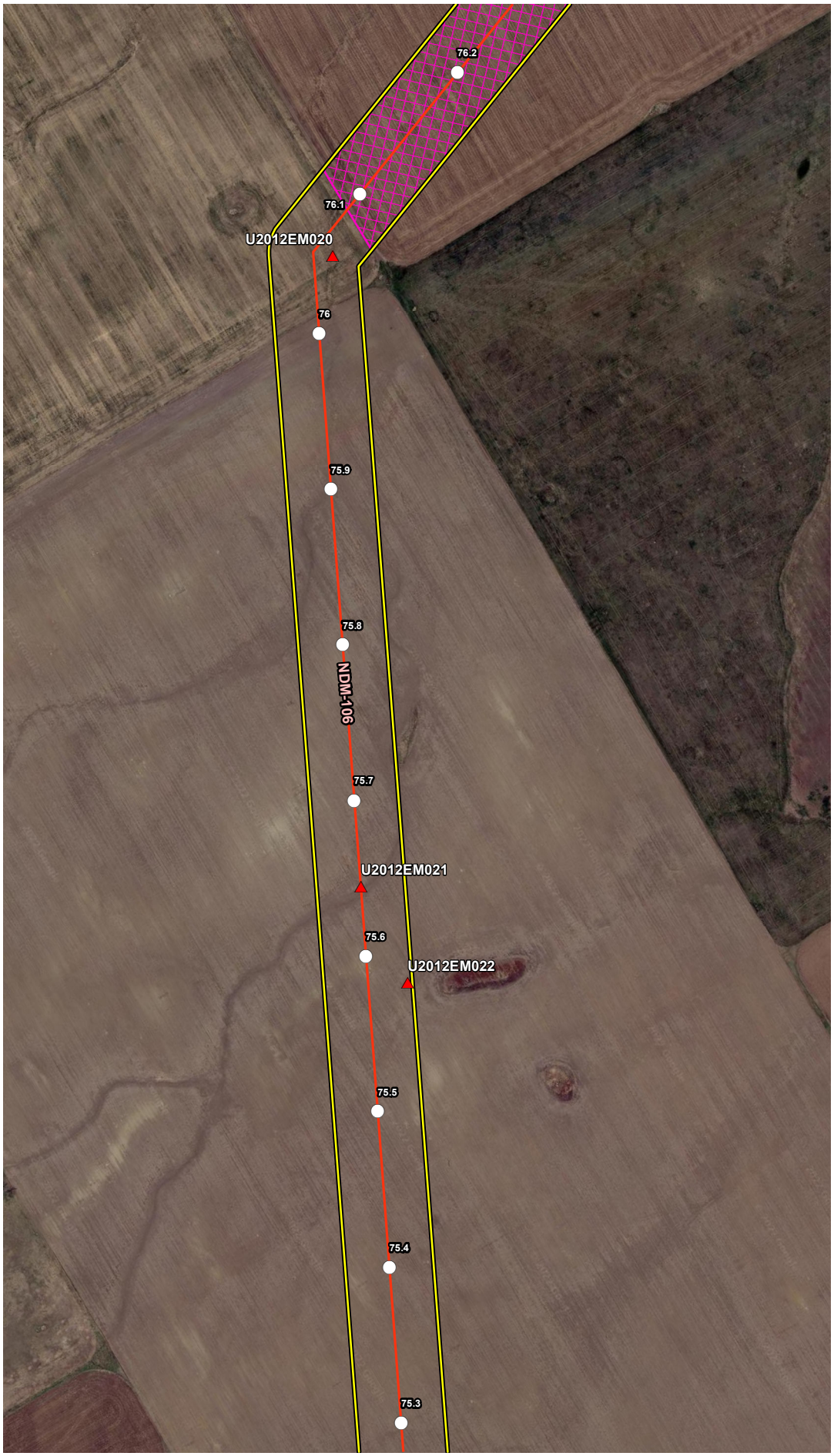
## AERIAL MAP

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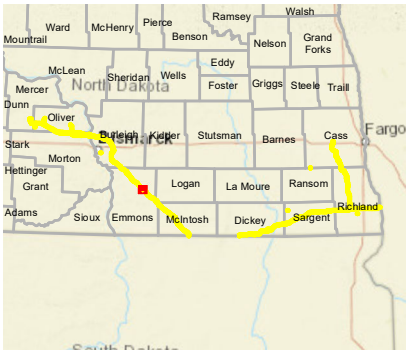


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0 250 500 Feet

## REVISIONS

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

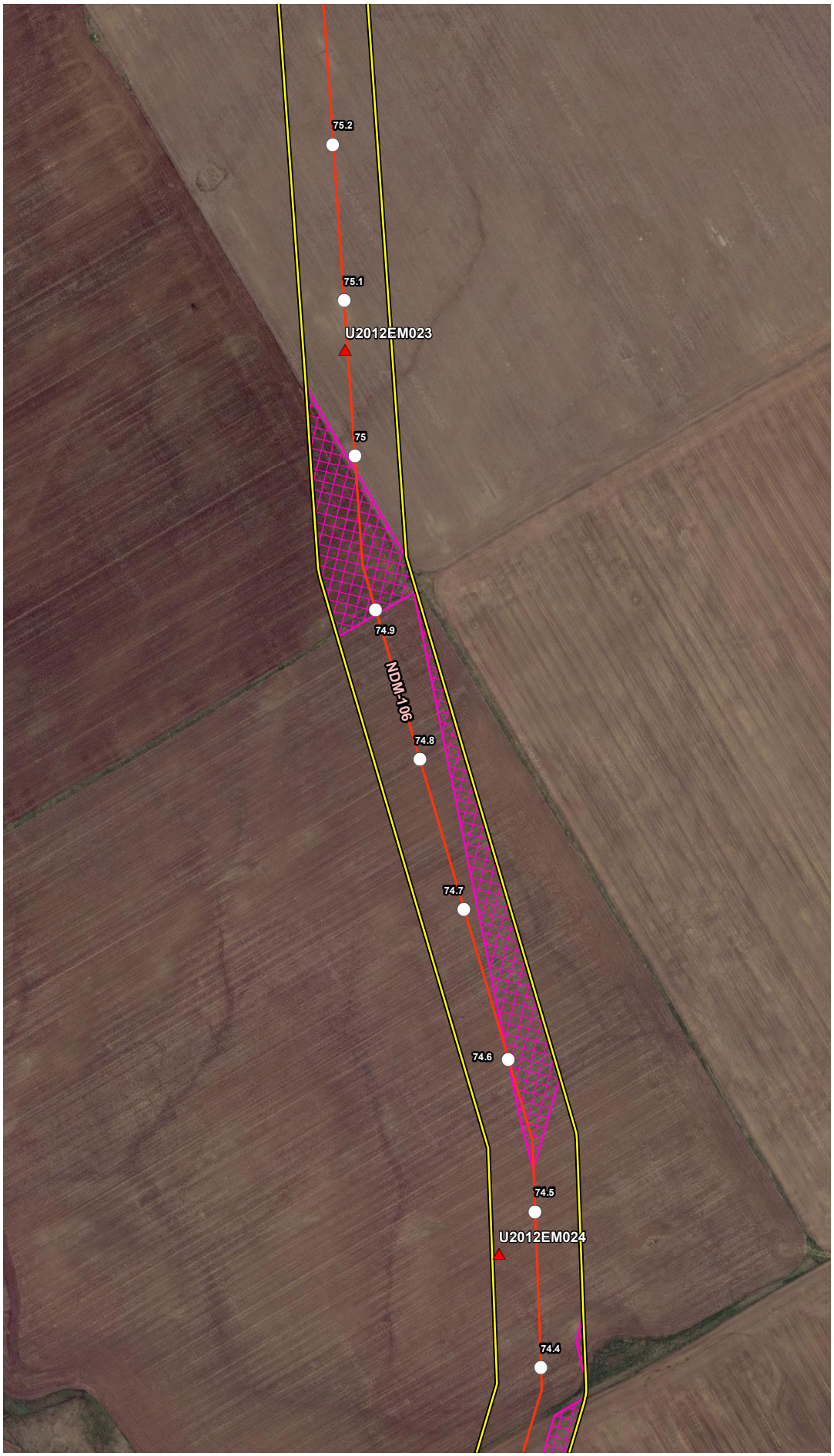
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
109 of 392

Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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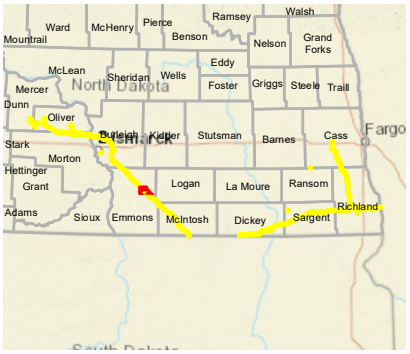


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 110 of 392 | 2001-22-002<br>Current Revision |

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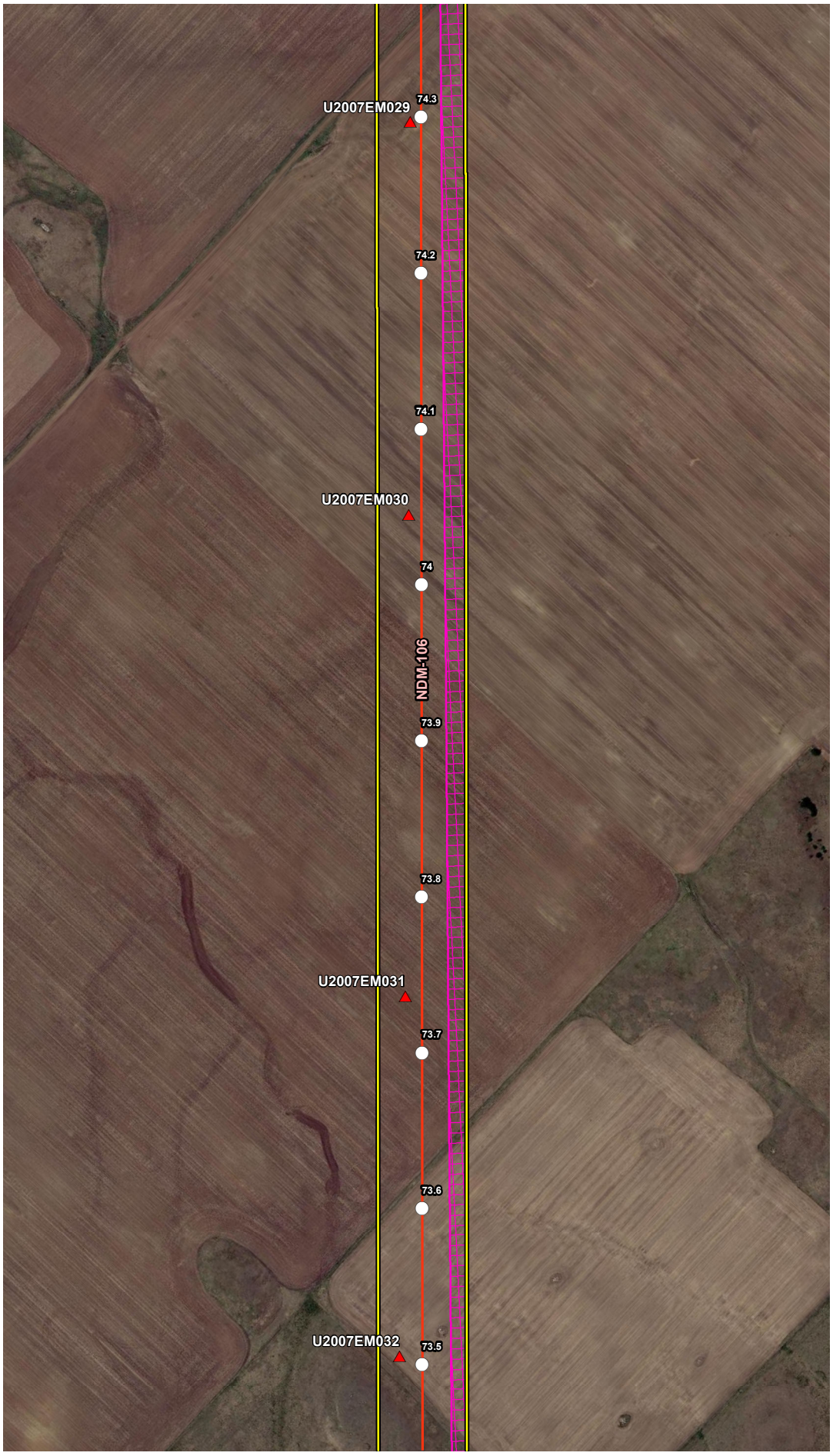
## AERIAL MAP

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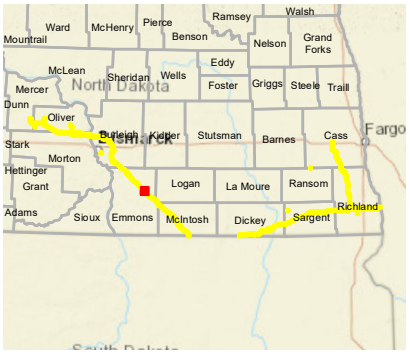


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0 250 500
Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

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Revision description

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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|---|---|
| 111 of 392 | 2001-22-002<br>Current Revision |

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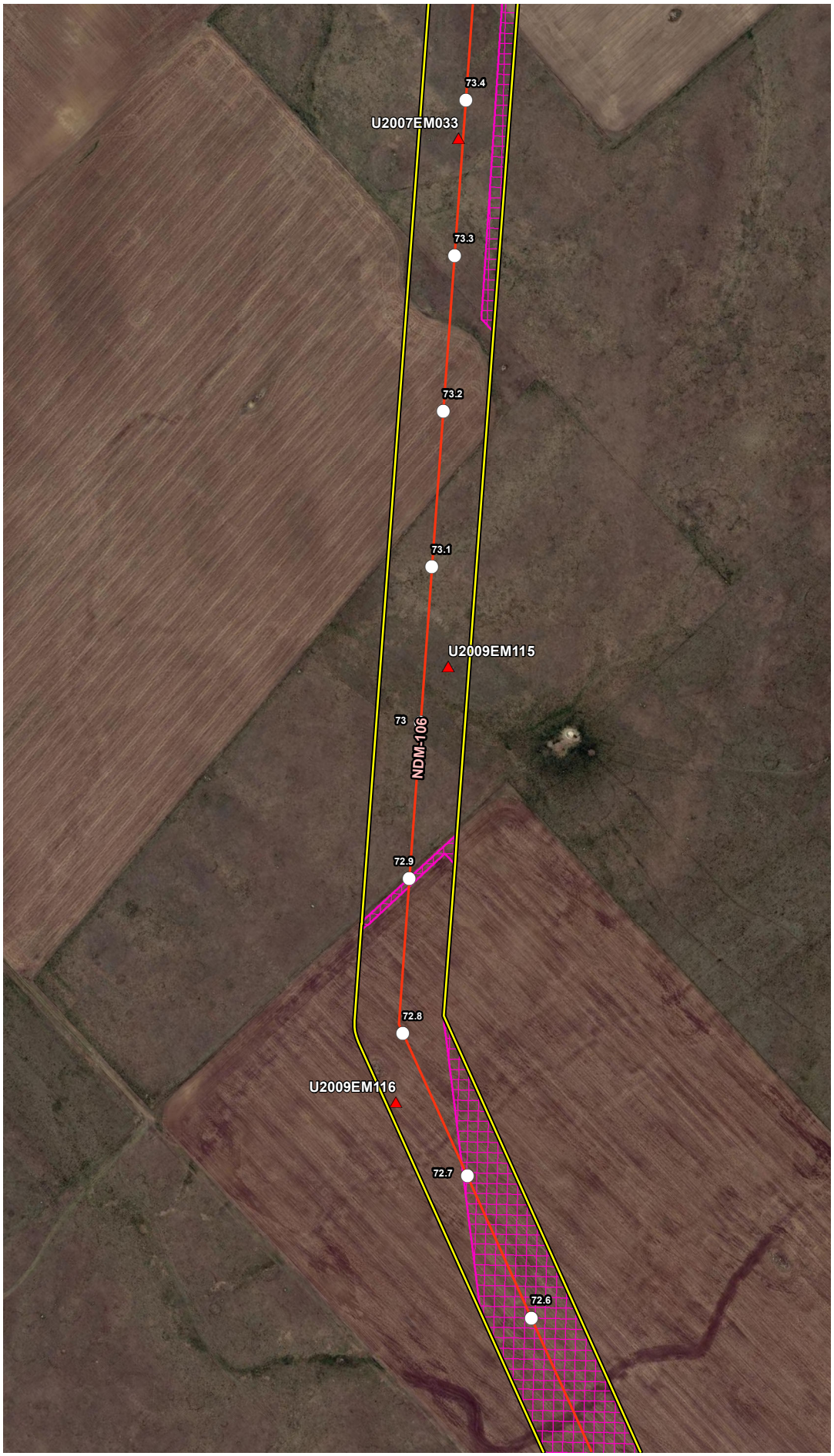
## AERIAL MAP

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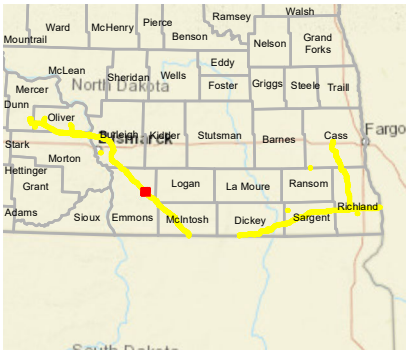


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Revision description

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 112 of 392 | 2001-22-002<br>Current Revision |

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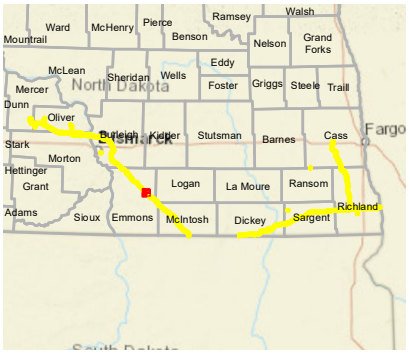
## AERIAL MAP




## VICINITY MAP

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| Sheet:<br>113 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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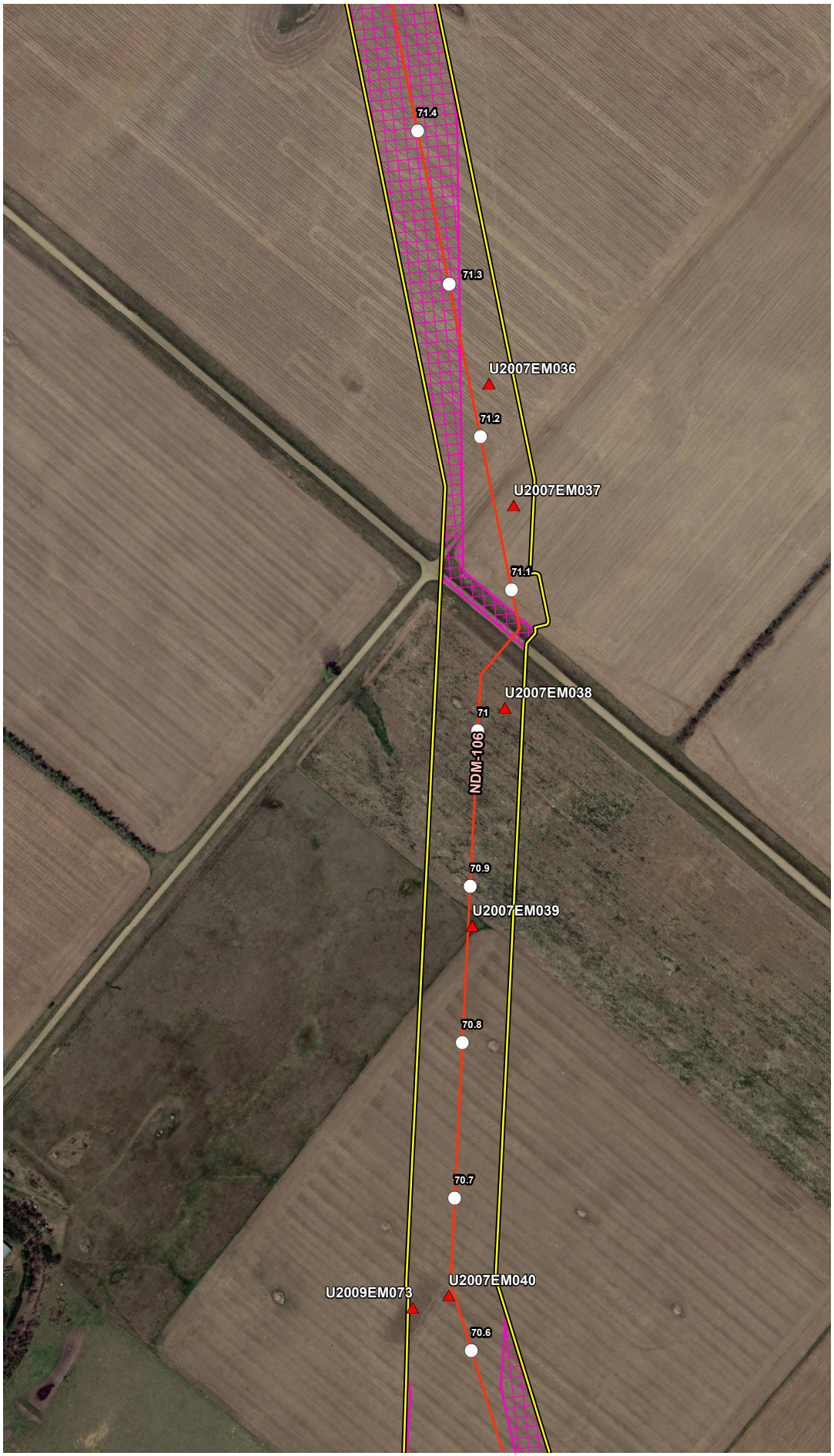
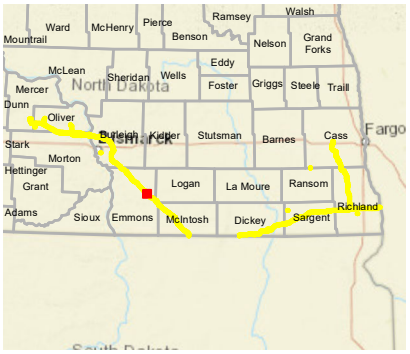



## VICINITY MAP

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| Sheet: | Drawing Number: |
| 114 of 392 | 2001-22-002<br>Current Revision |

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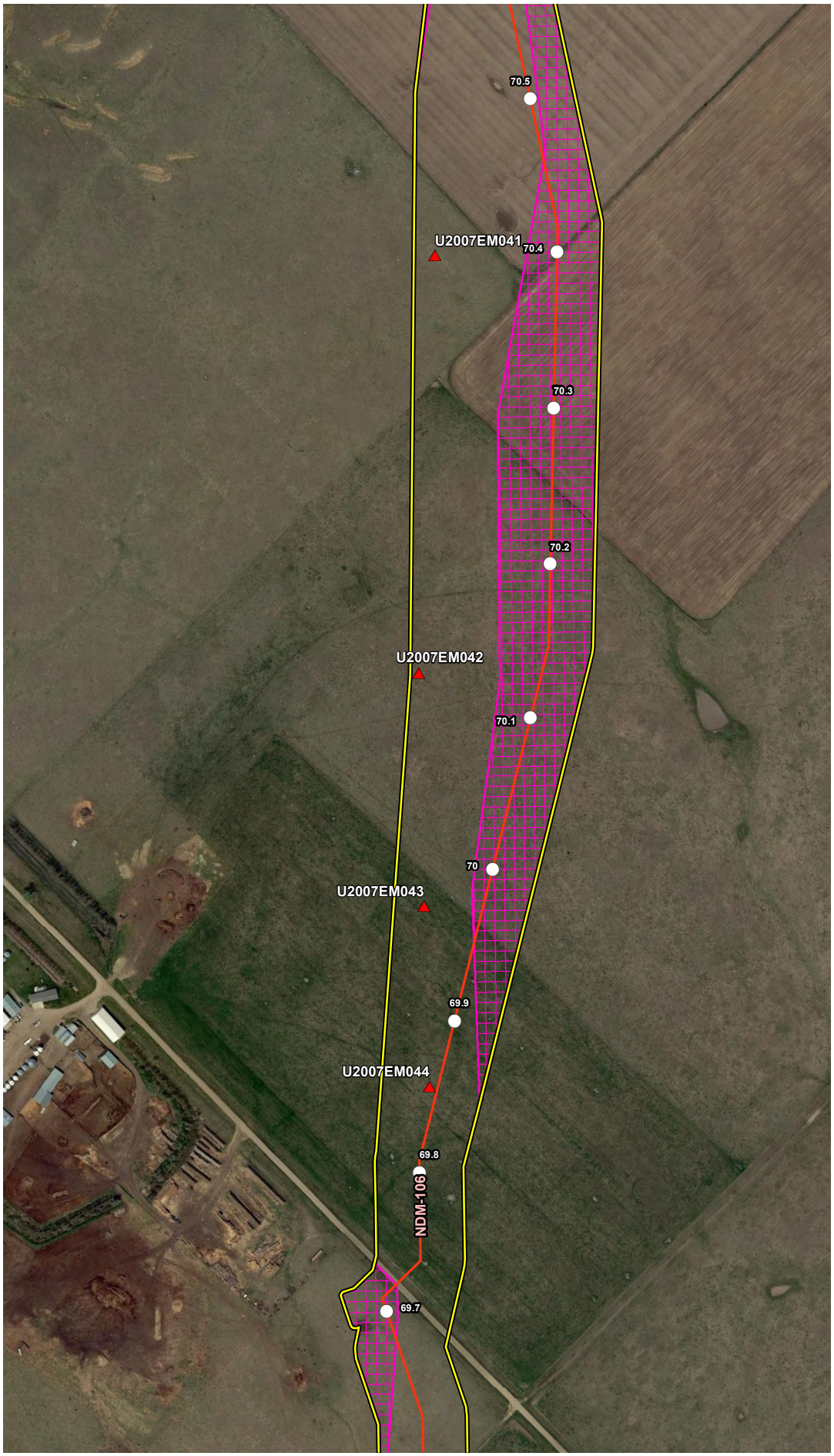
## AERIAL MAP

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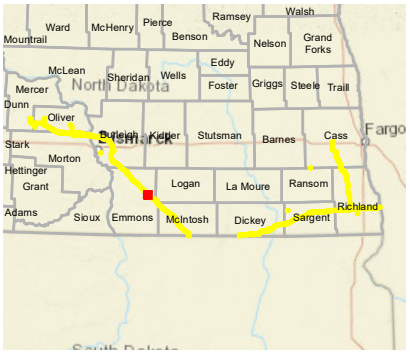


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| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

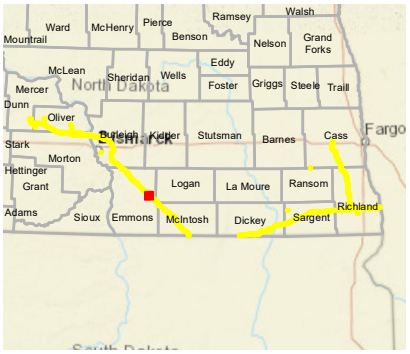
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>115 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
116 of 392

Drawing Number:
2001-22-002
Current Revision

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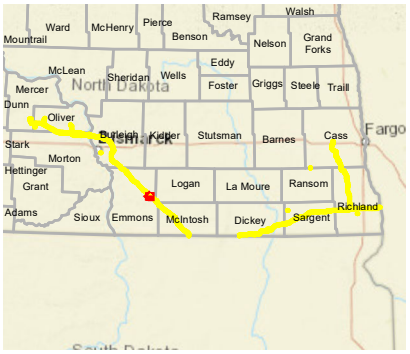
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

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| Sheet:<br>117 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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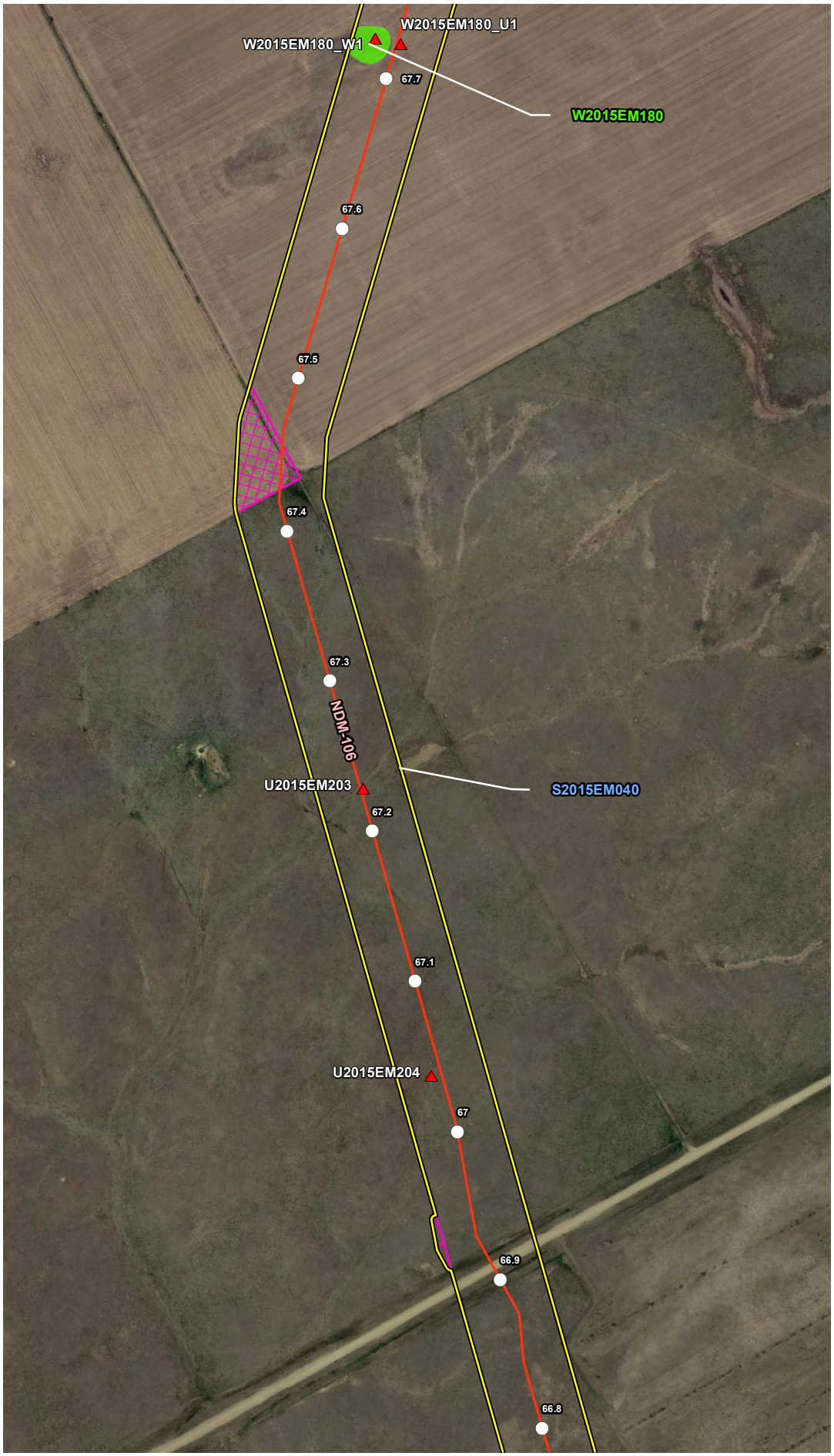
## AERIAL MAP

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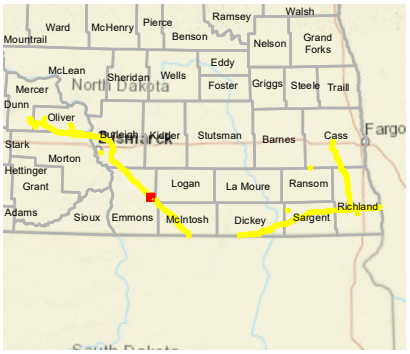


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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**Figure Title:**
Aerial Map

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Appendix A-2

| Scale | Projection |
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| Sheet | Drawing Number |
|---|---|
| 118 of 392 | 2001-22-002<br>Current Revision |

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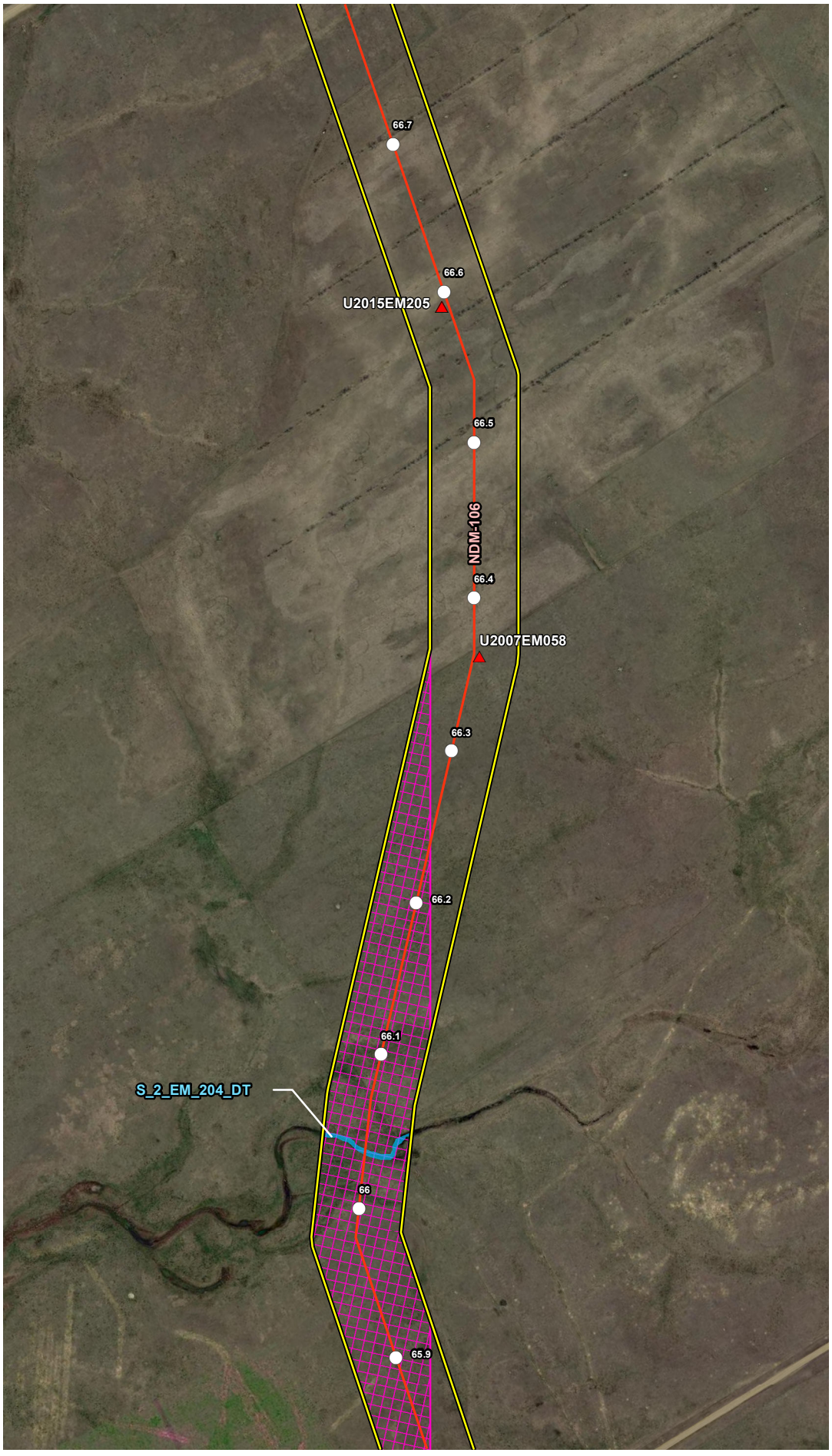
## AERIAL MAP

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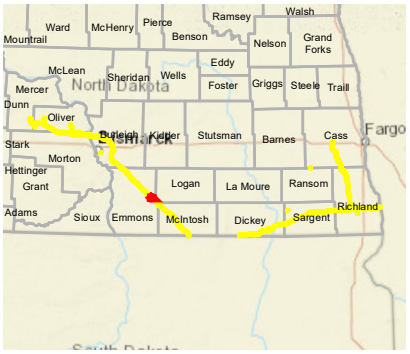


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |
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| Sheet: | Drawing Number: |
| 119 of 392 | 2001-22-002<br>Current Revision |

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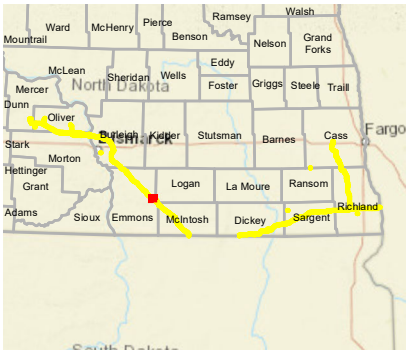
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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Figure Title:
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Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>120 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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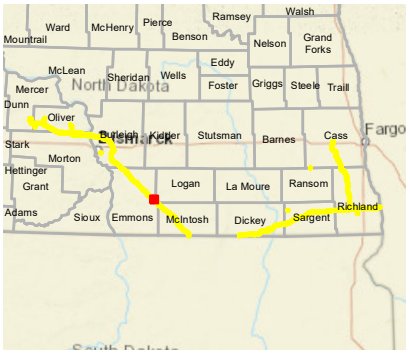
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

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| Sheet:<br>121 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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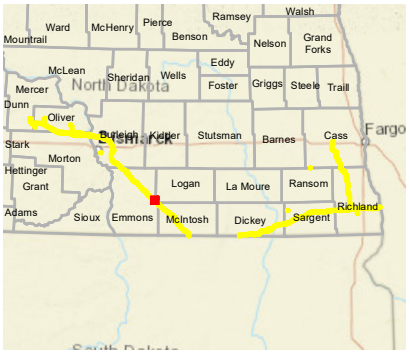
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:

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Figure Number:

**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 122 of 392 | 2001-22-002<br>Current Revision |

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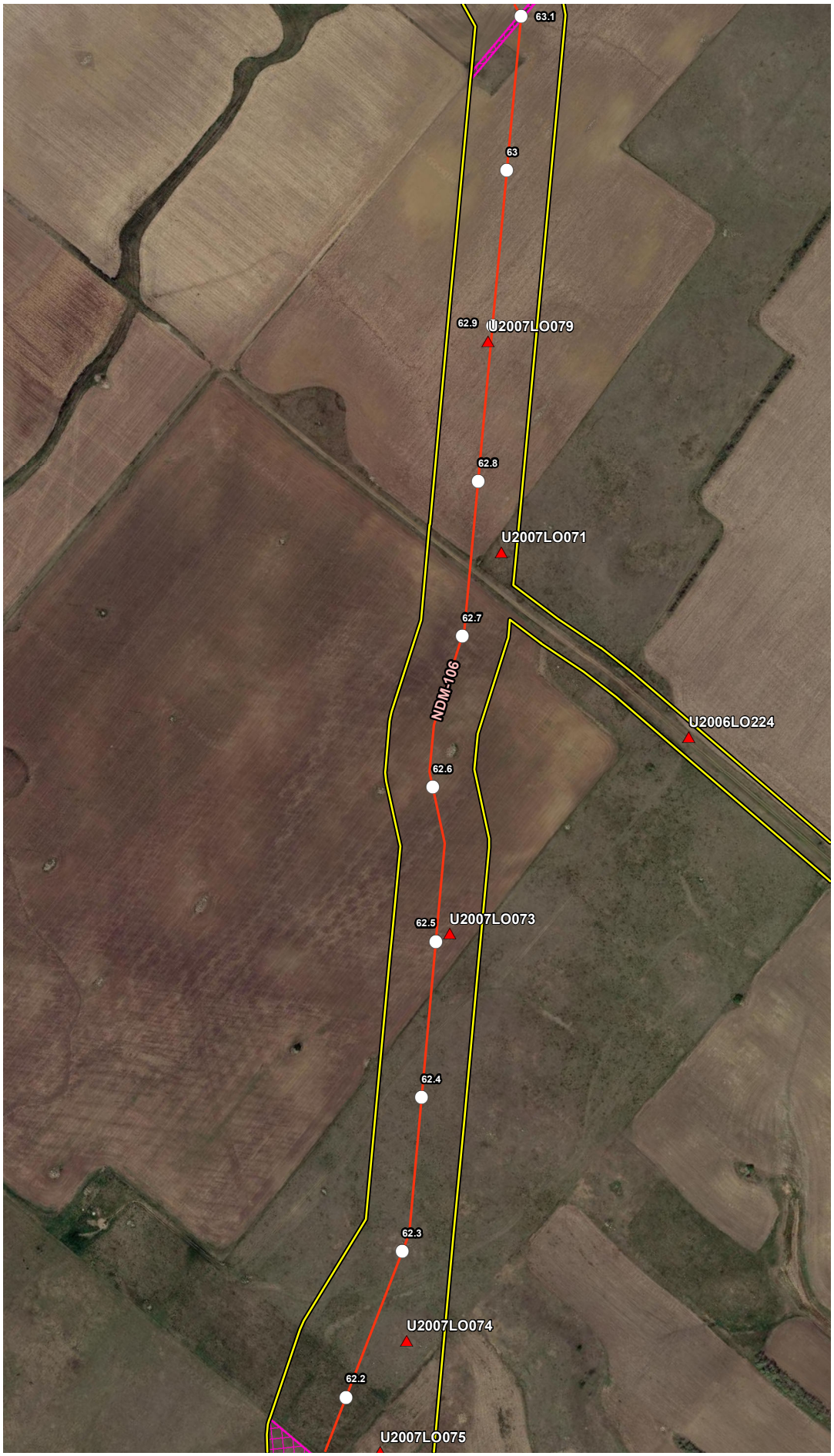
## AERIAL MAP

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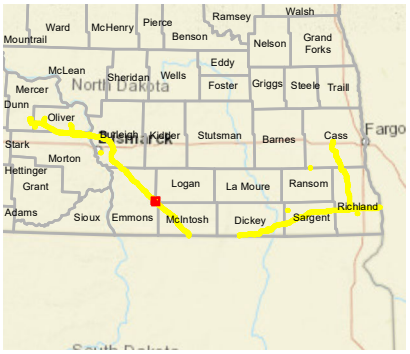


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 123 of 392 | 2001-22-002<br>Current Revision |

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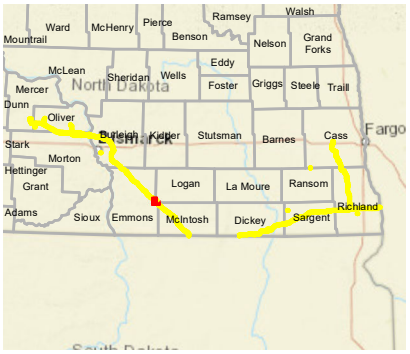
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>124 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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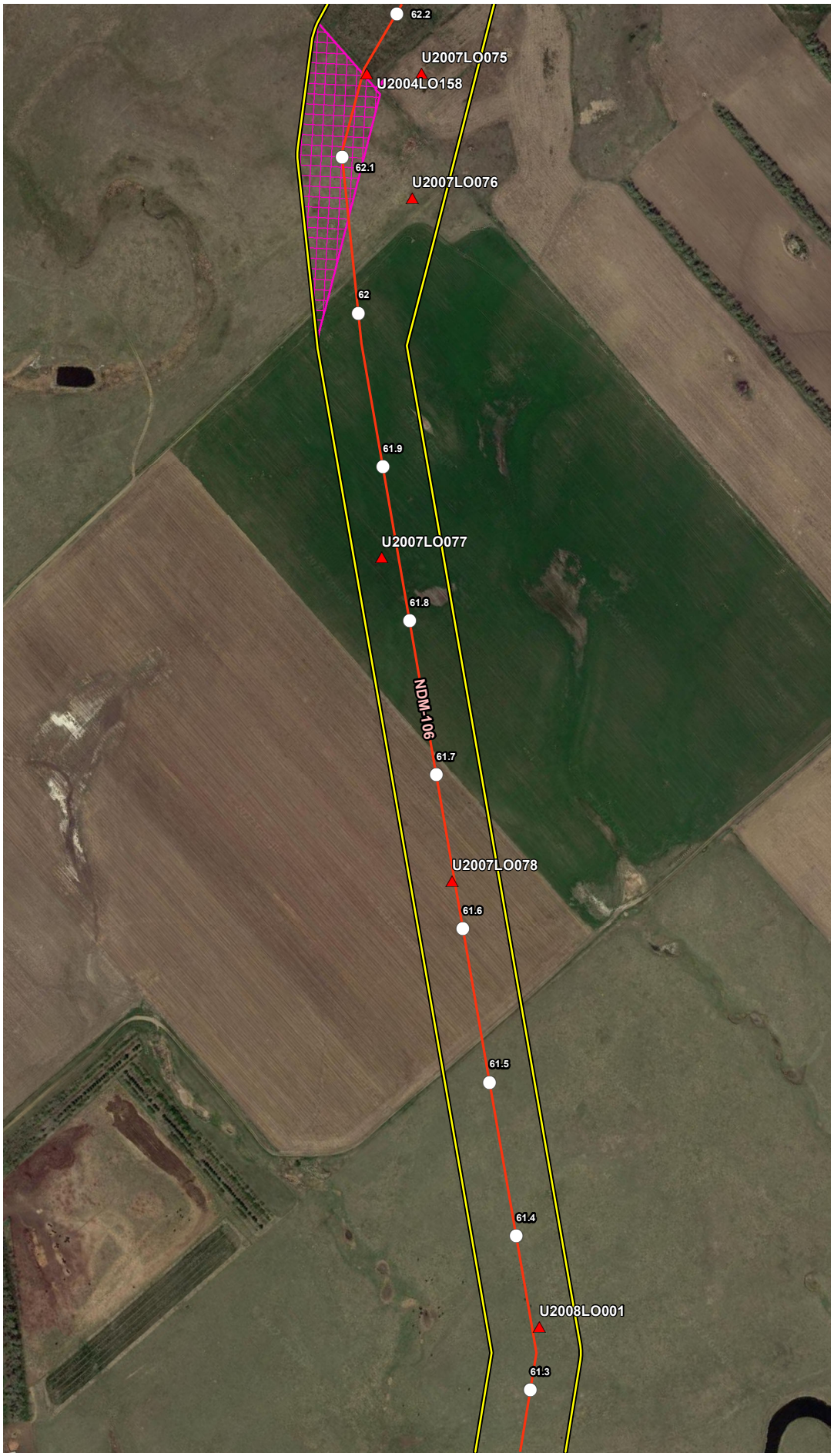
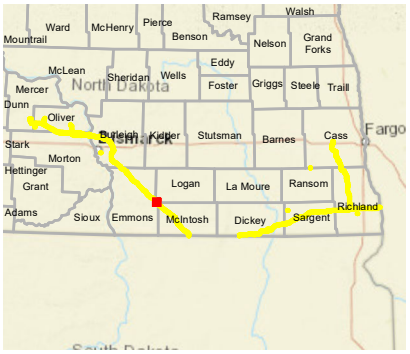
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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Figure Title:
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Figure Number:
Appendix A-2

Scale:
1:6,000
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Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
125 of 392

Drawing Number:
2001-22-002
Current Revision

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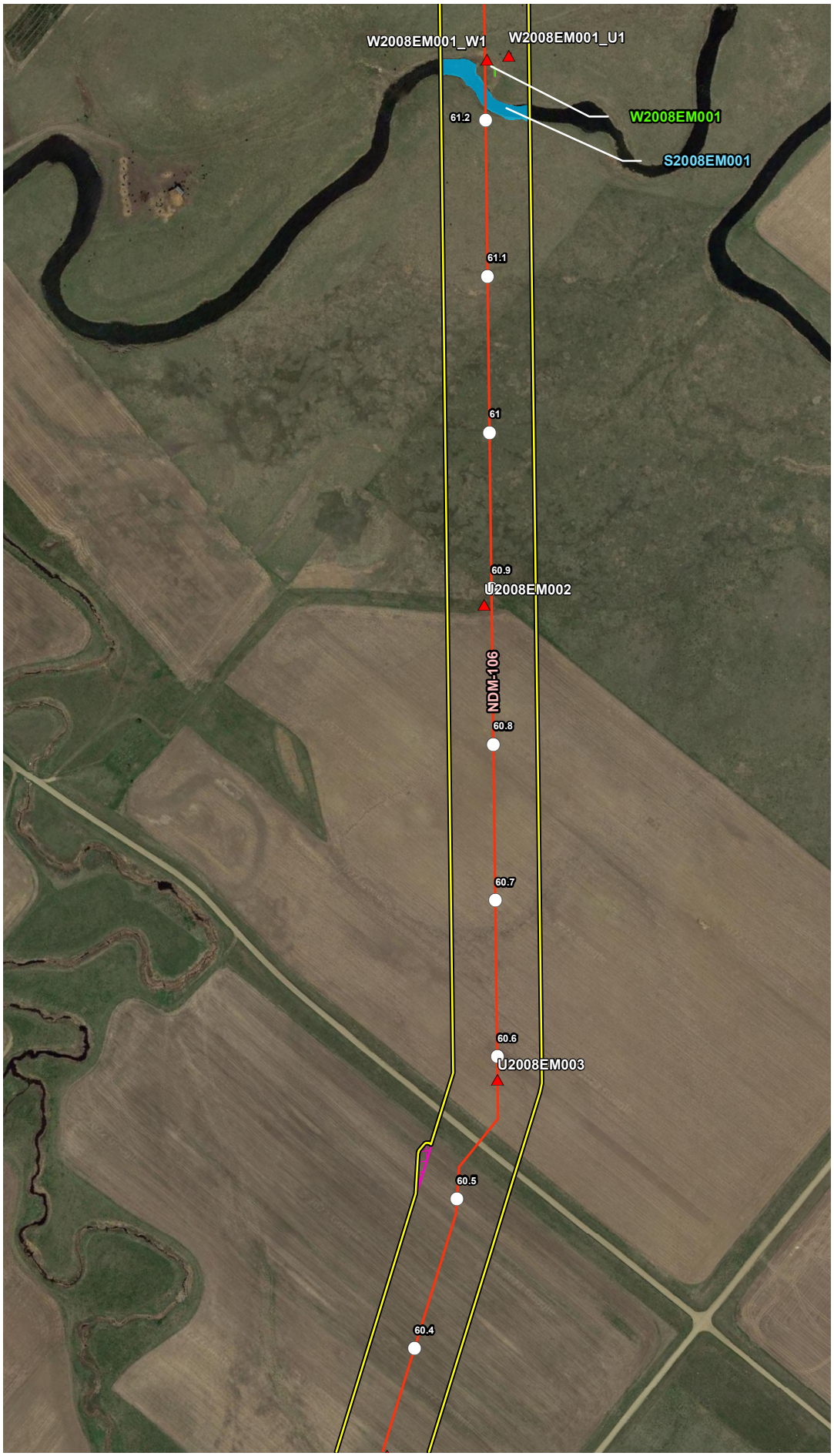
## AERIAL MAP

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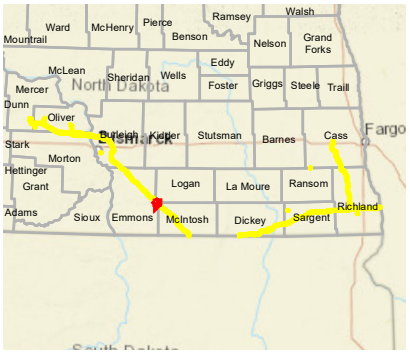


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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 126 of 392 | 2001-22-002<br>Current Revision |

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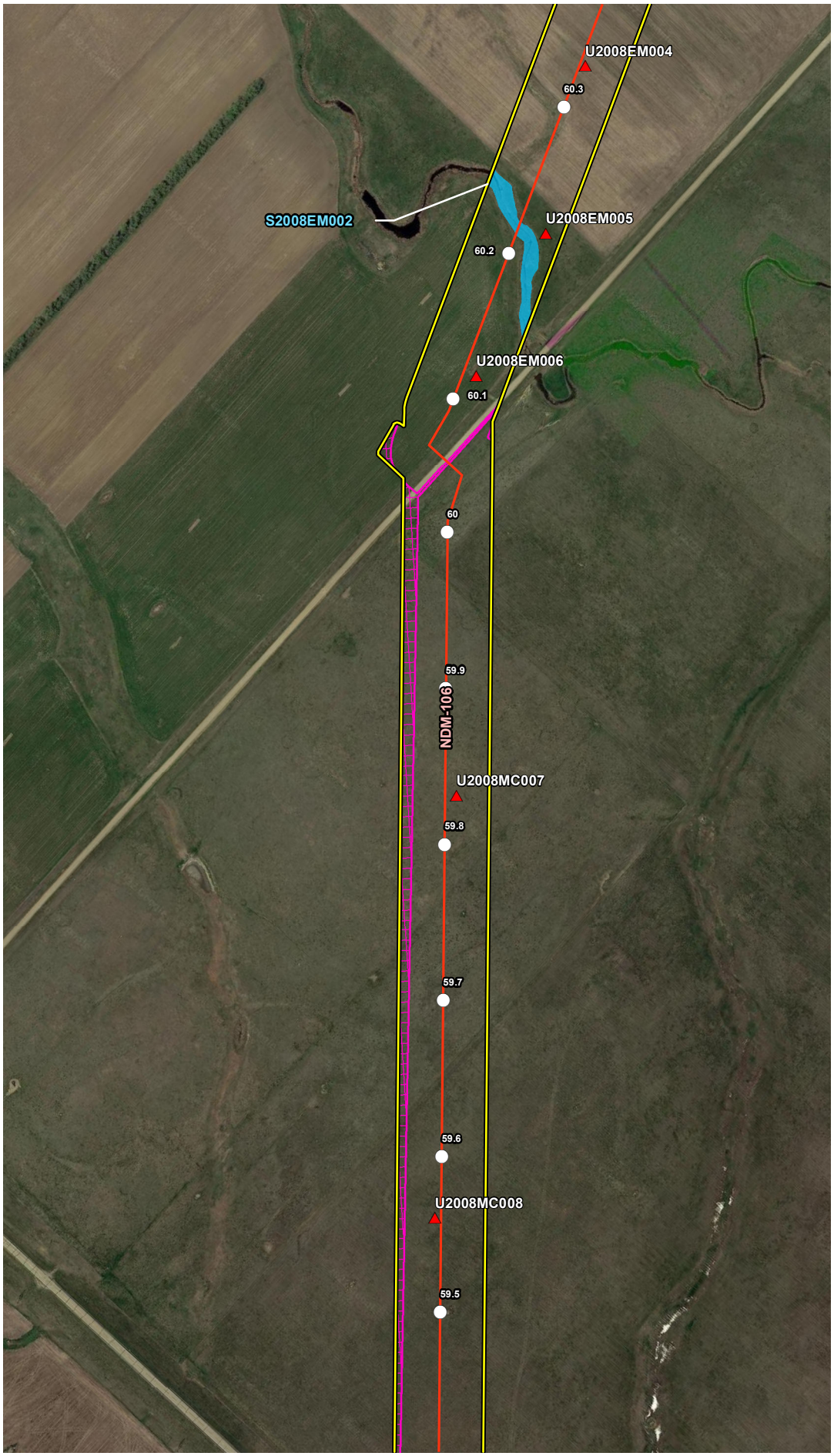
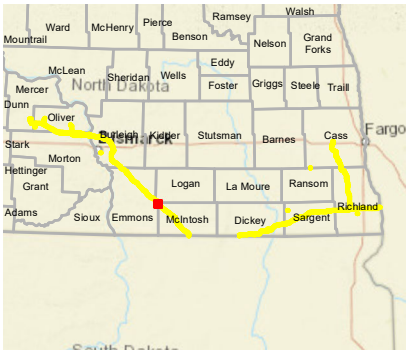
## AERIAL MAP




## VICINITY MAP

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| Sheet: | Drawing Number: |
| 127 of 392 | 2001-22-002<br>Current Revision |

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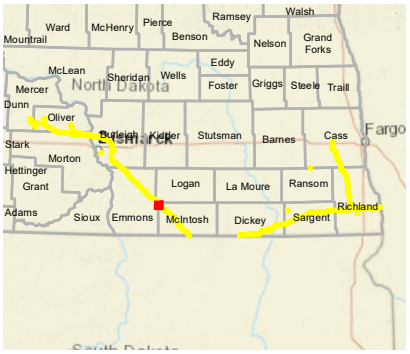
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

| Date: | Revised by: | Checked by: |
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**1A - Revision**

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| Date: | Revised by: | Checked by: |
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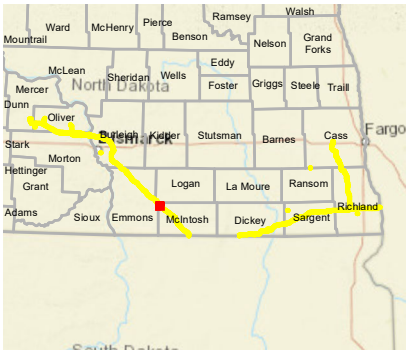
|---|---|
| 128 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\801_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 129 of 392 | 2001-22-002<br>Current Revision |

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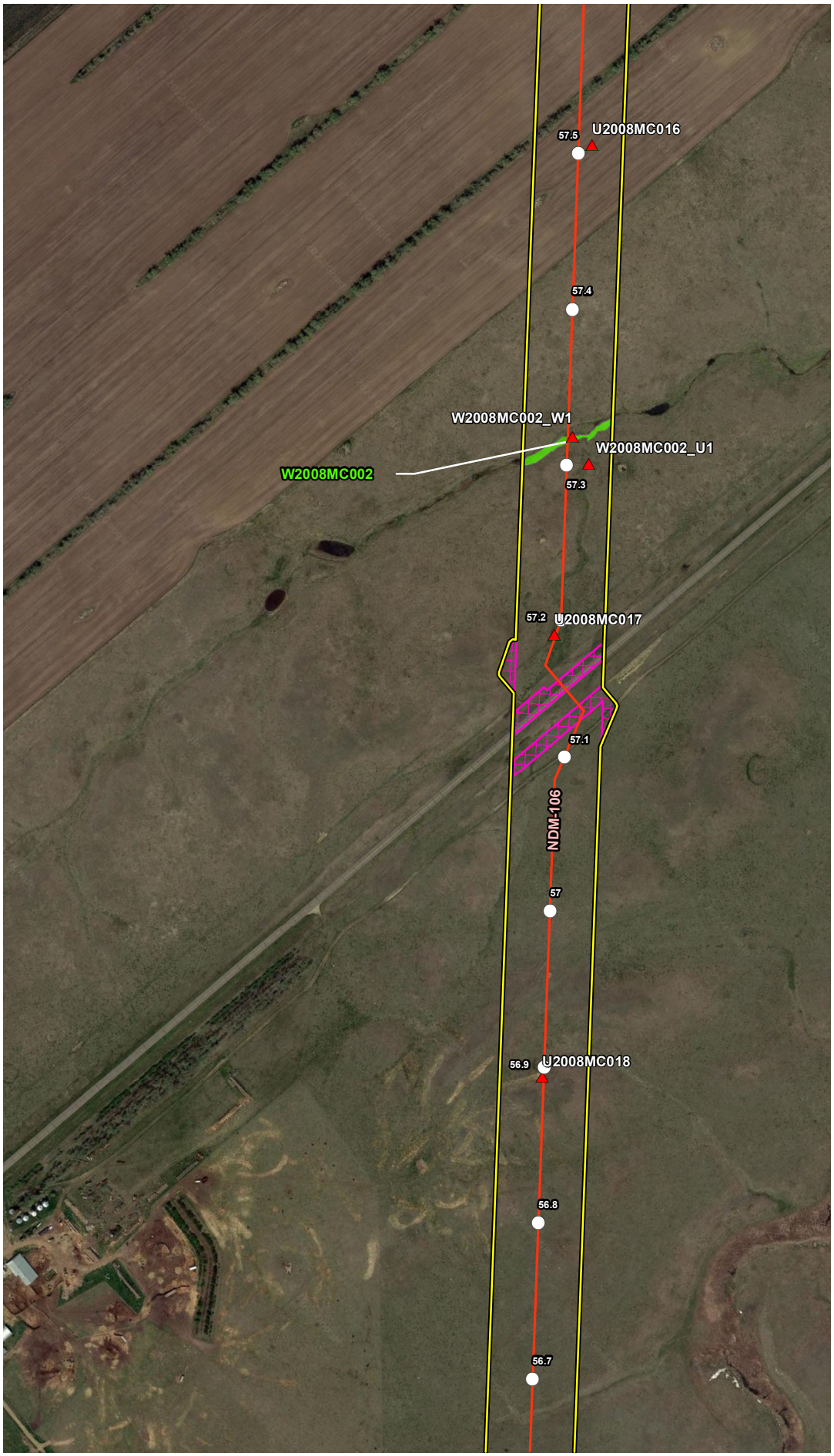
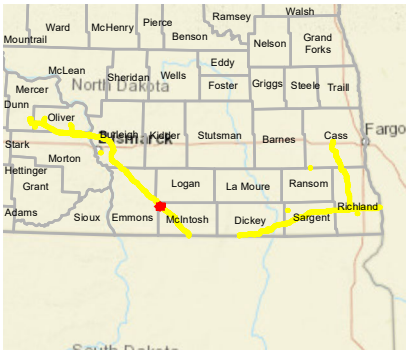
## AERIAL MAP




## VICINITY MAP




## LEGEND

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| 2022-08-04 | MM | AB |
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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
130 of 392

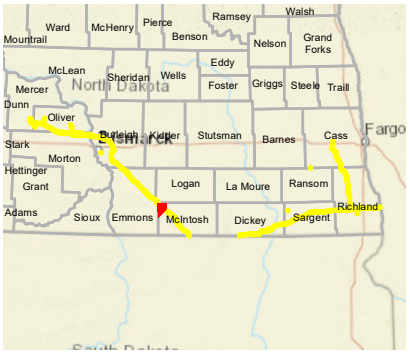
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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Scale:
1:6,000
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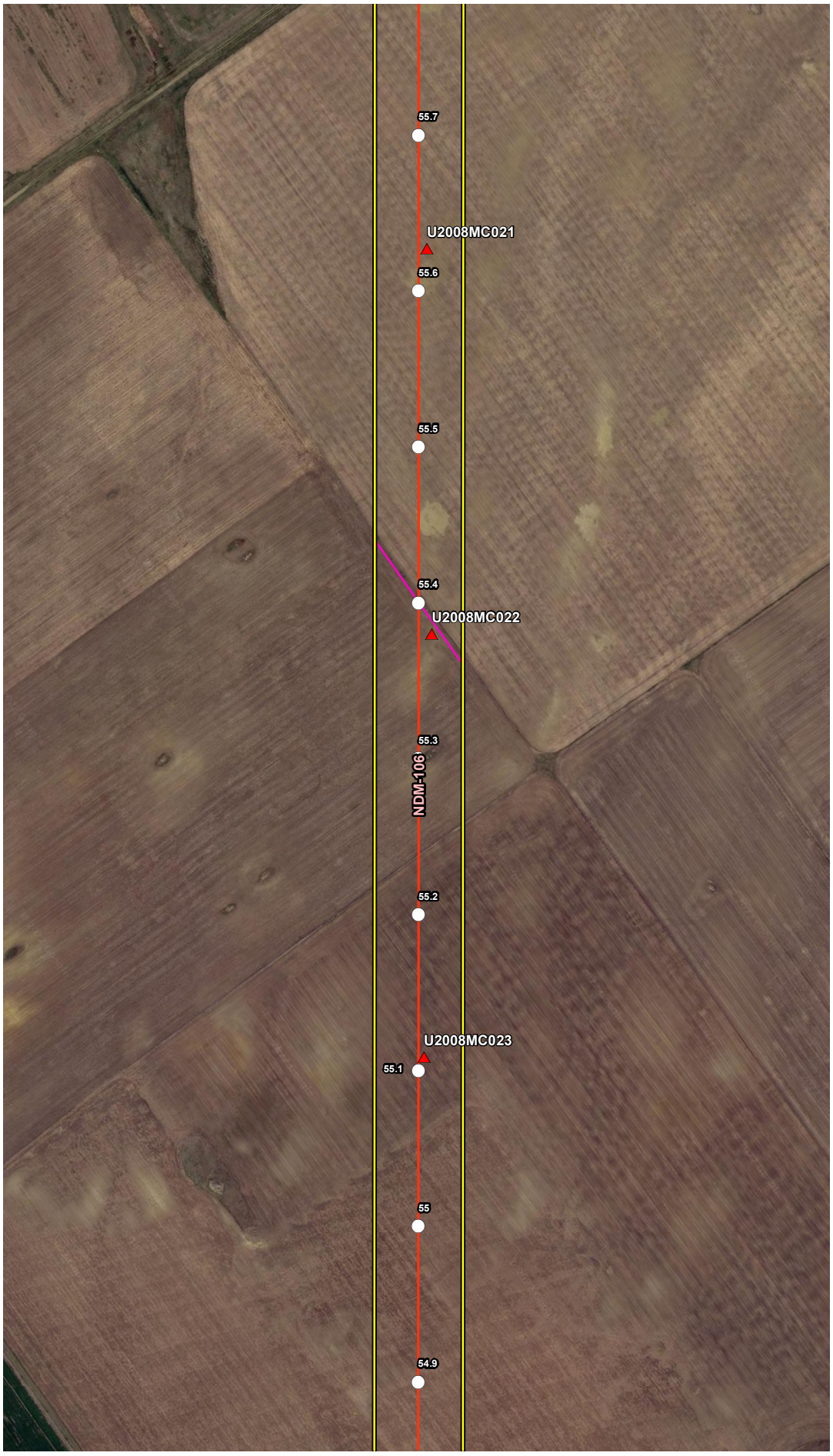
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
131 of 392

Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

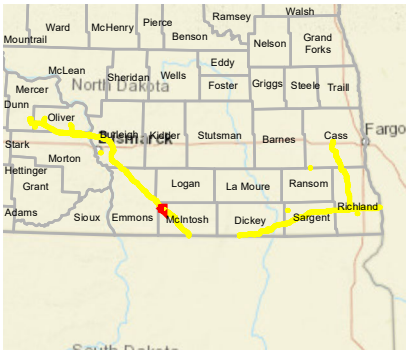



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Figure Title:
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Appendix A-2

Scale:
1:6,000
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Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

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132 of 392

Drawing Number:
2001-22-002
Current Revision

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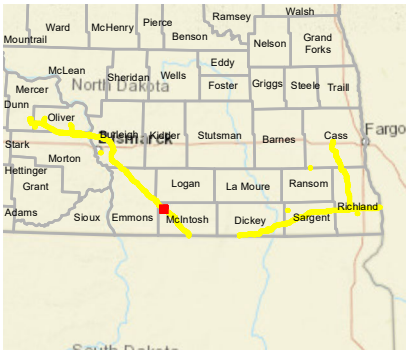
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 133 of 392 | 2001-22-002<br>Current Revision |

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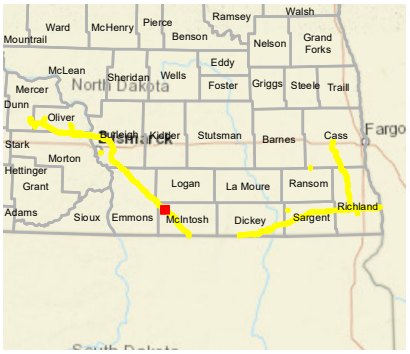
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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Figure Number:
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>134 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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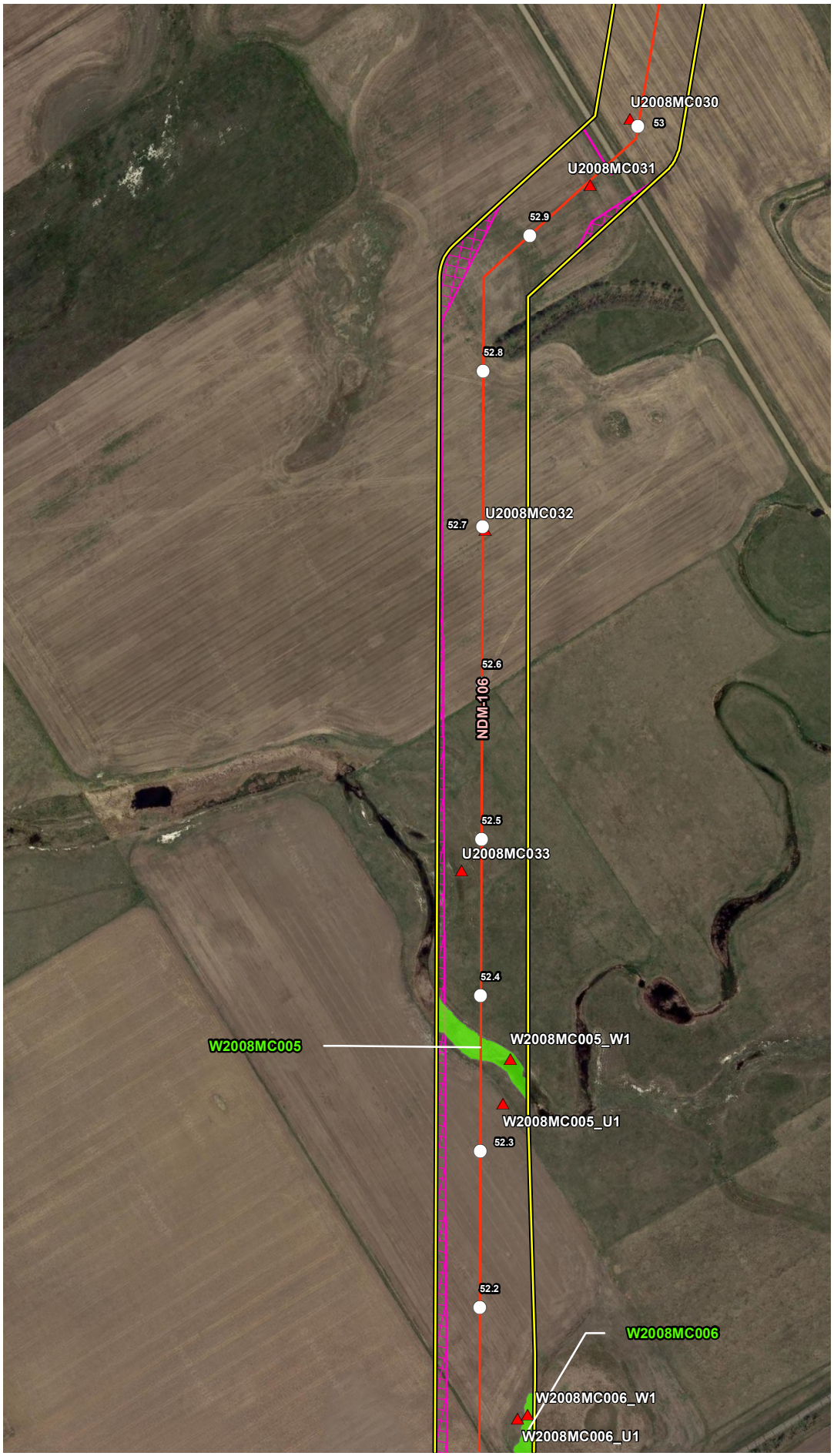
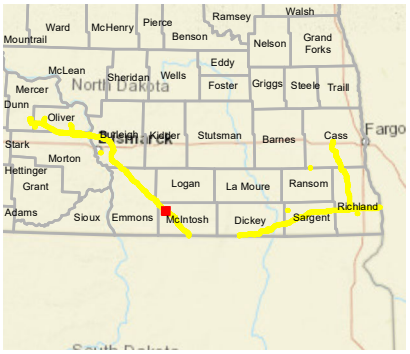
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 135 of 392 | 2001-22-002<br>Current Revision |

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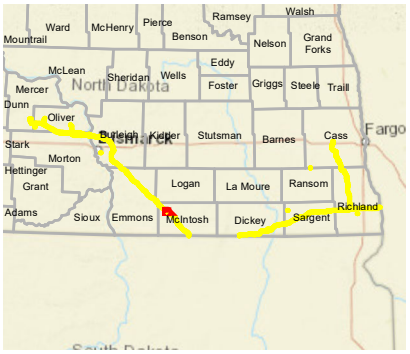
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
136 of 392

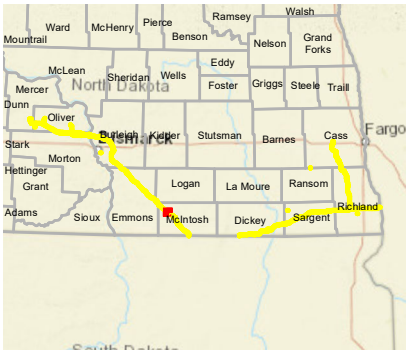
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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Aerial Map

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Appendix A-2

| Scale: | Projection: |
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| Sheet:<br>137 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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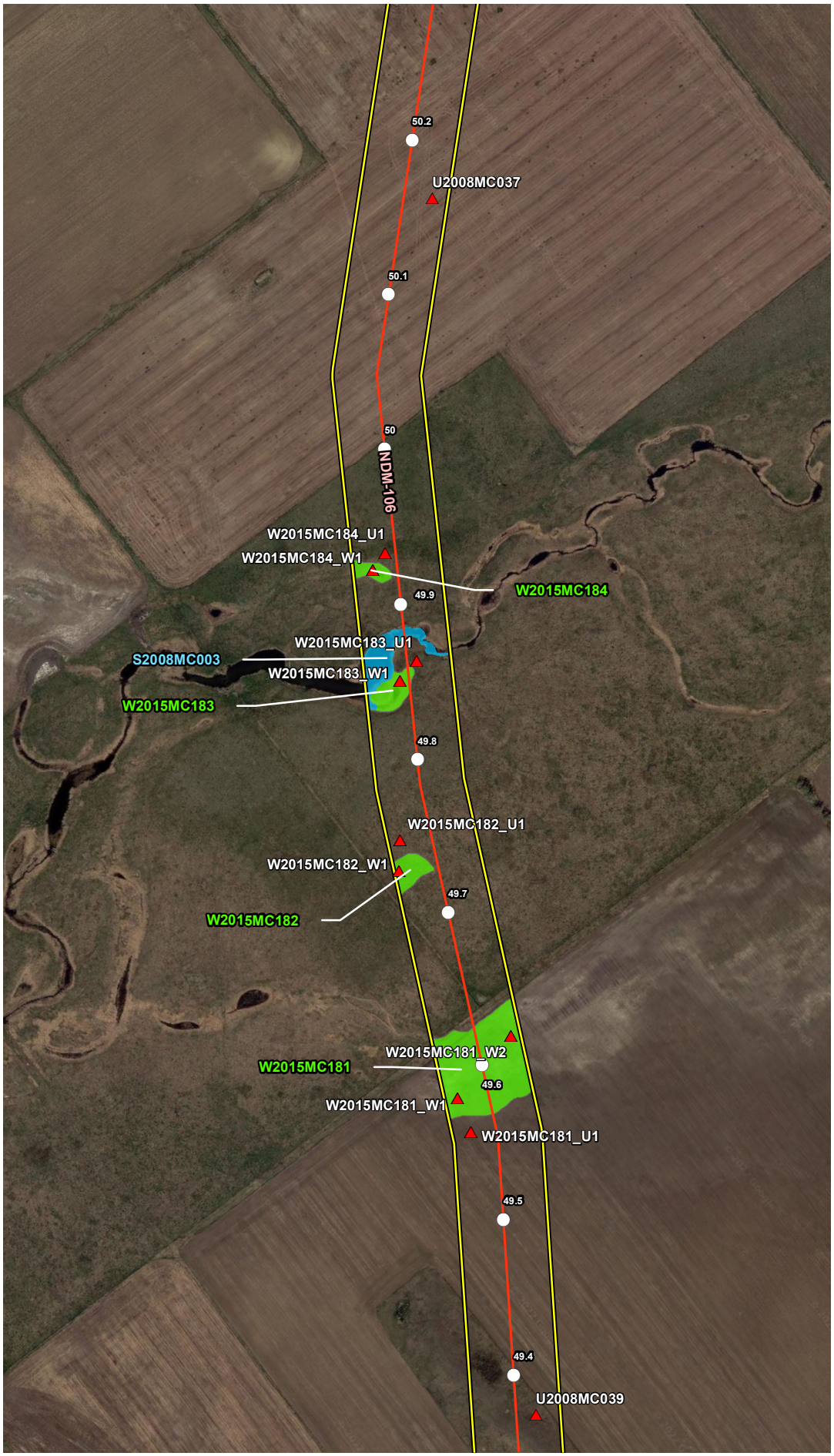
## AERIAL MAP

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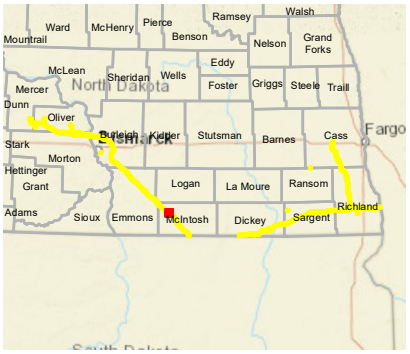


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0 250 500
Feet

## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
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| Sheet: | Drawing Number: |
|---|---|
| 138 of 392 | 2001-22-002<br>Current Revision |

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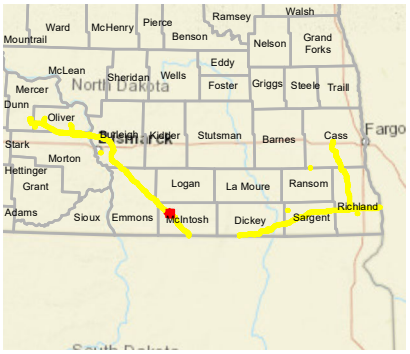
## AERIAL MAP




## VICINITY MAP

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Revision description

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|---|---|
| 139 of 392 | 2001-22-002<br>Current Revision |

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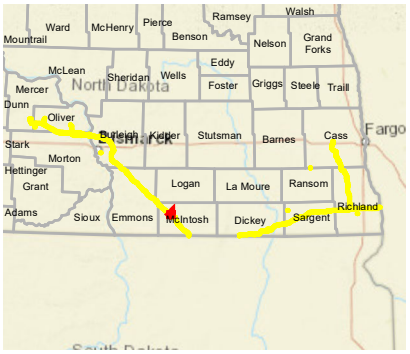
## AERIAL MAP




## VICINITY MAP

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**1A - Revision**

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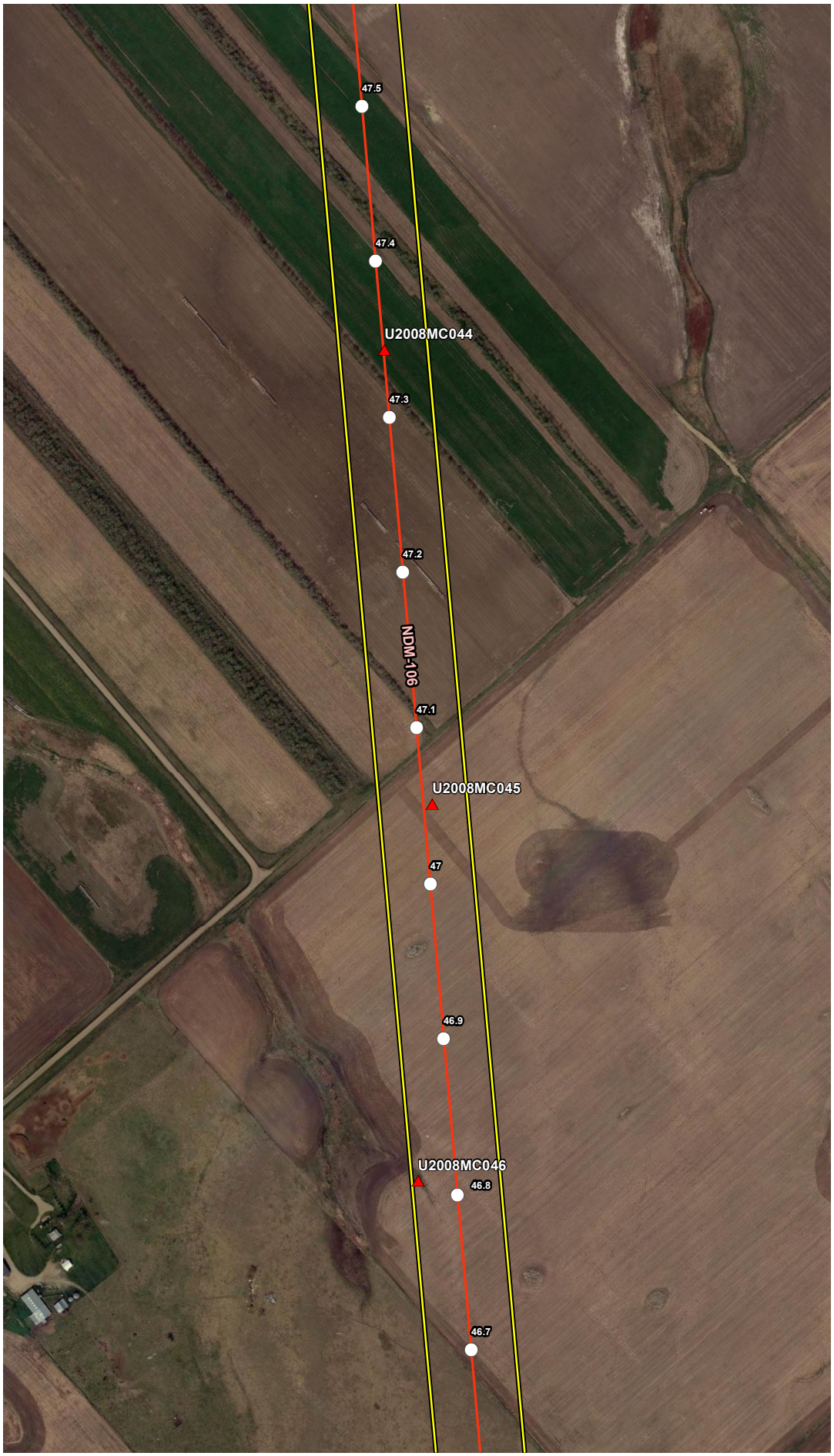
## AERIAL MAP

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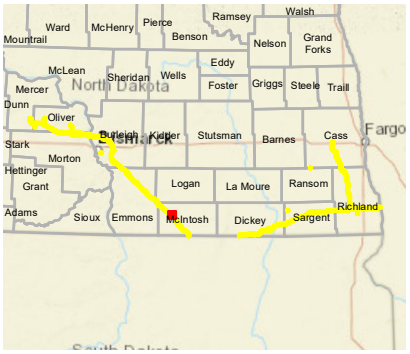


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| Sheet:<br>141 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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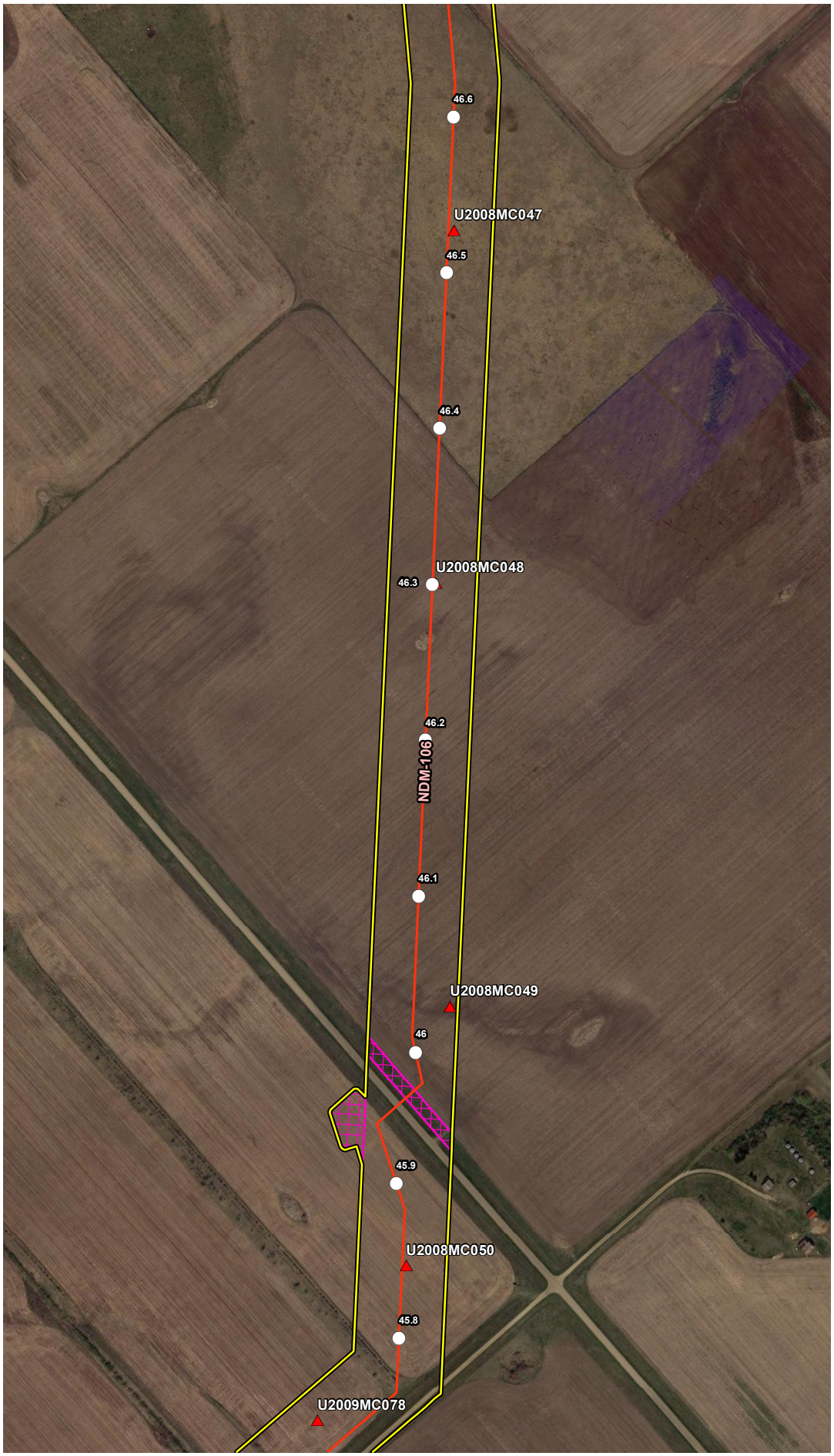
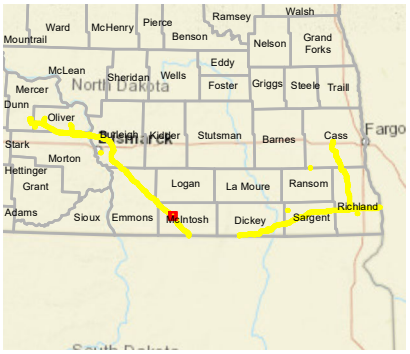



## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
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- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>142 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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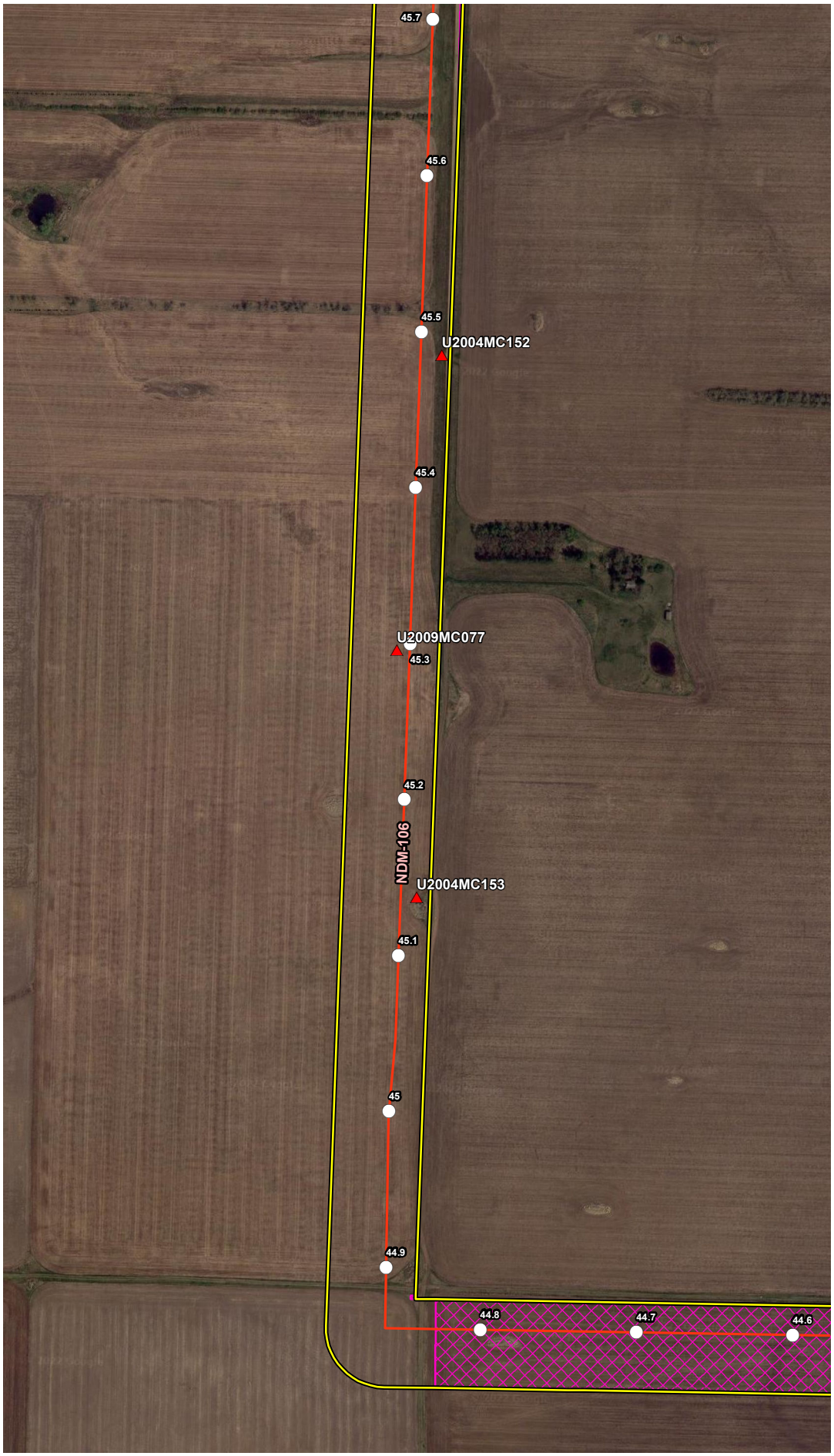
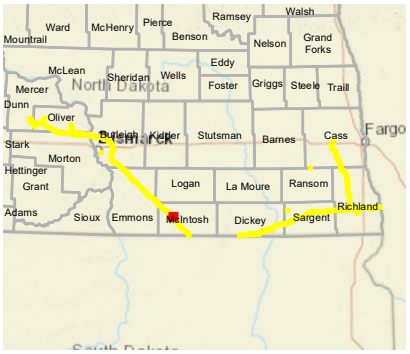
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

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| 1A - Revision<br>Revision description | | |
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| Sheet:<br>143 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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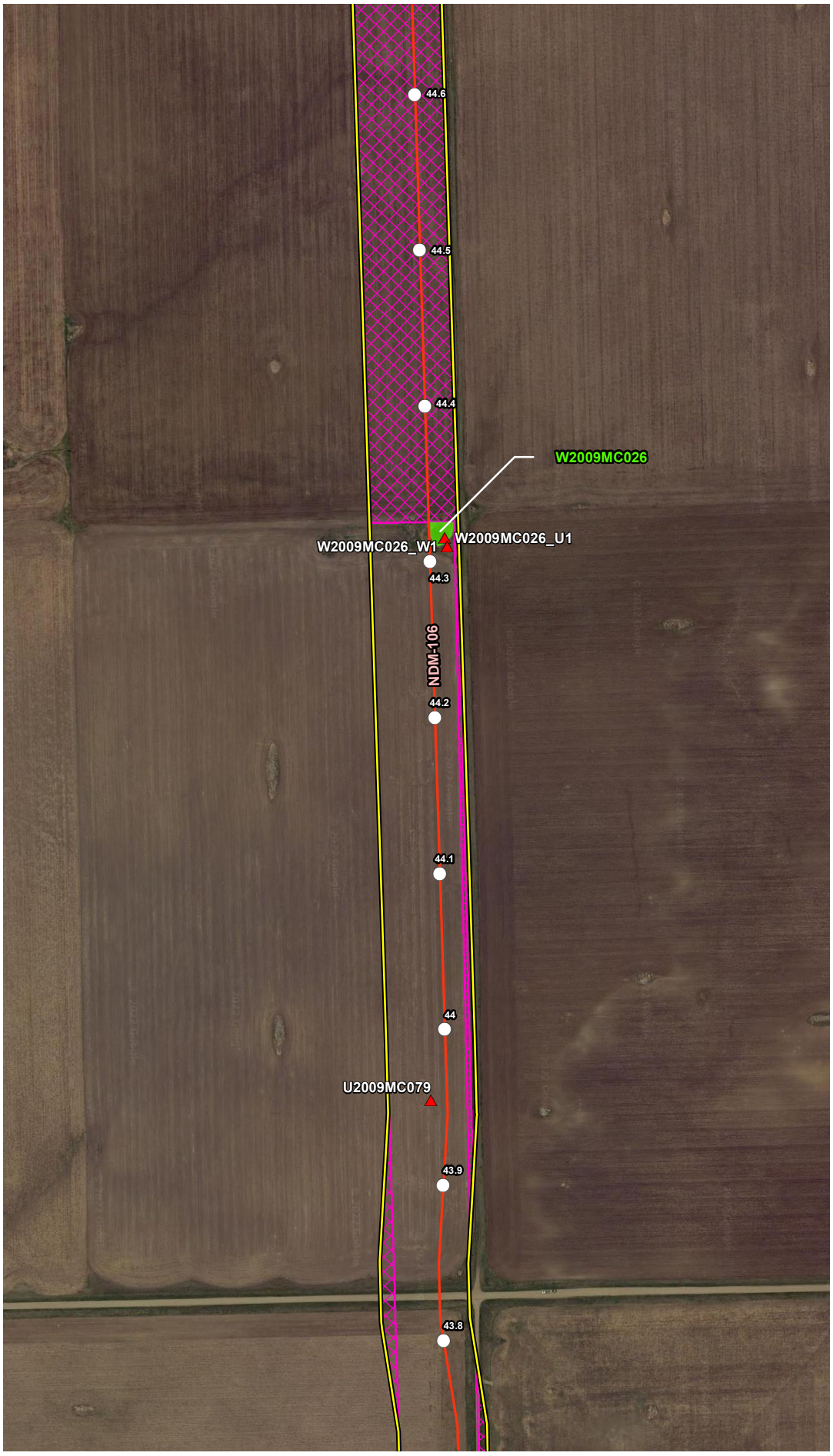
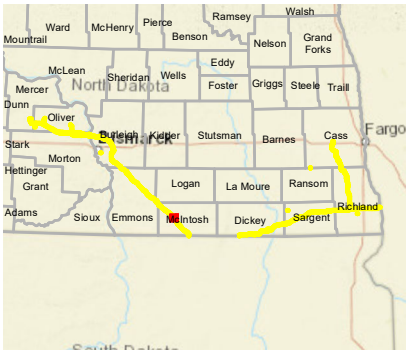
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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| 144 of 392 | 2001-22-002<br>Current Revision |

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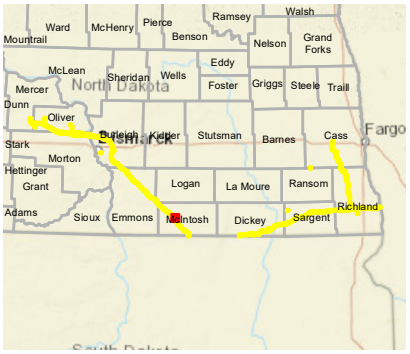
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| 145 of 392 | 2001-22-002<br>Current Revision |

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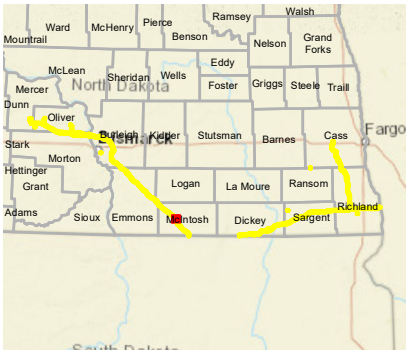
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
146 of 392

Drawing Number:
2001-22-002
Current Revision

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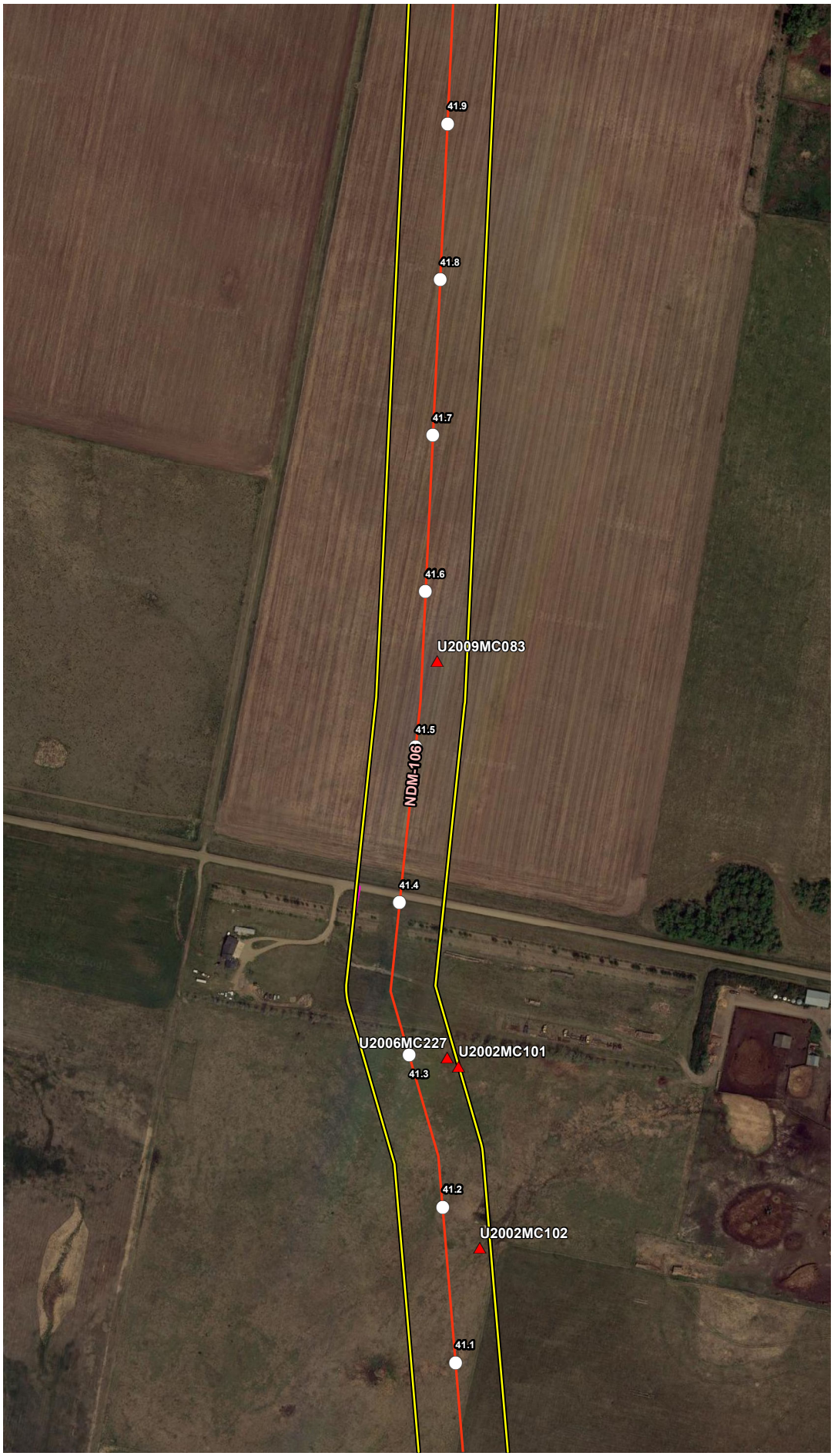
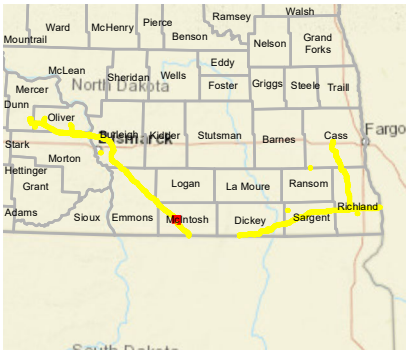
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 147 of 392 | 2001-22-002<br>Current Revision |

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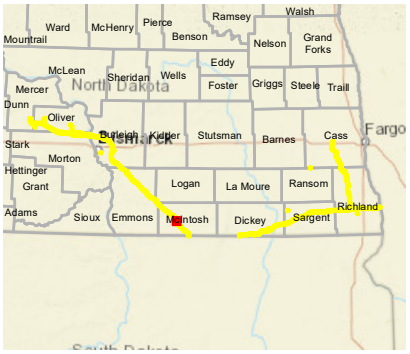
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |
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Appendix A-2

| Scale: | Projection: |
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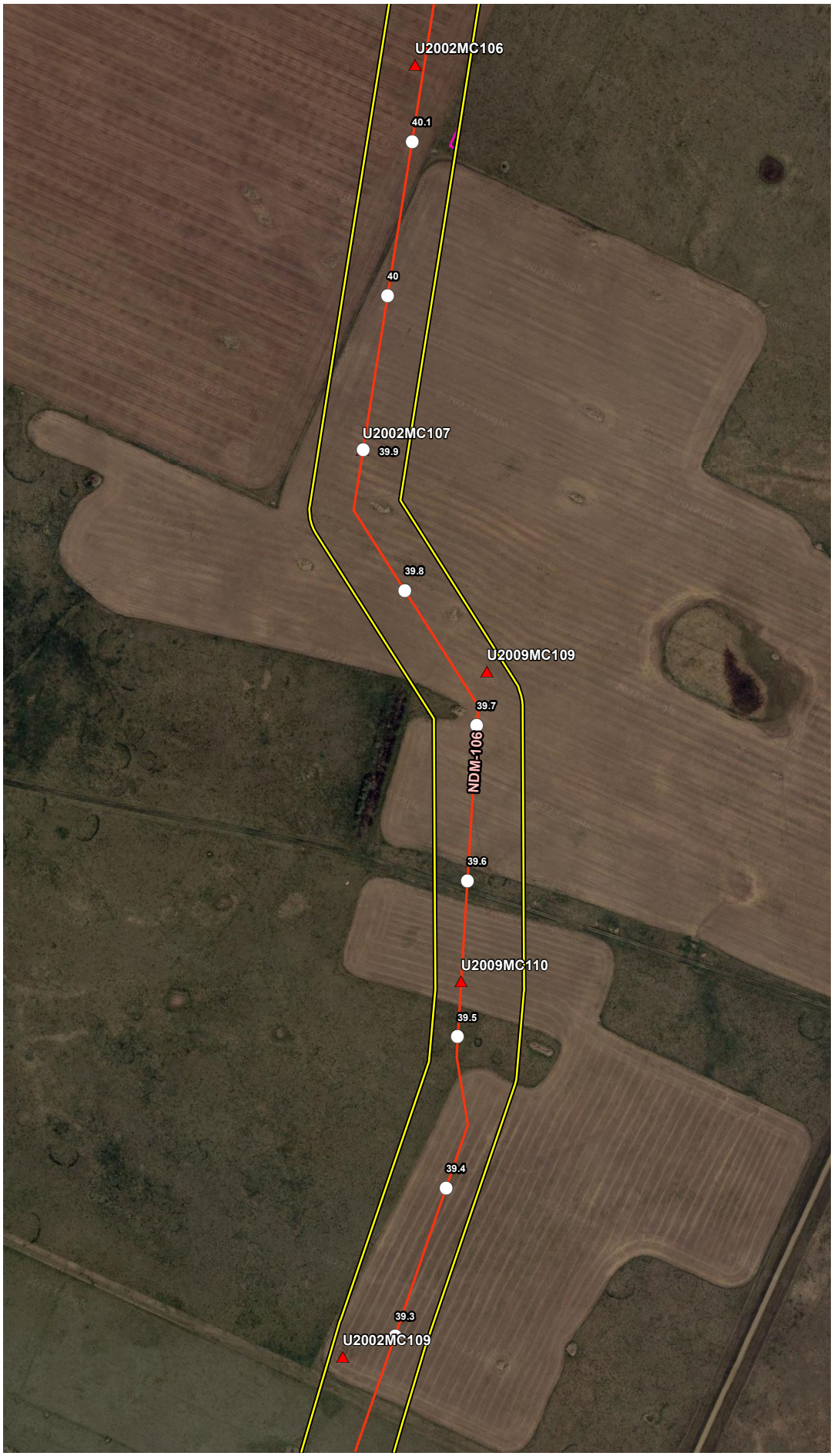
| Sheet:<br>148 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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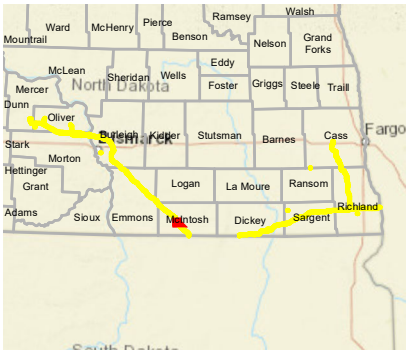


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
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Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>149 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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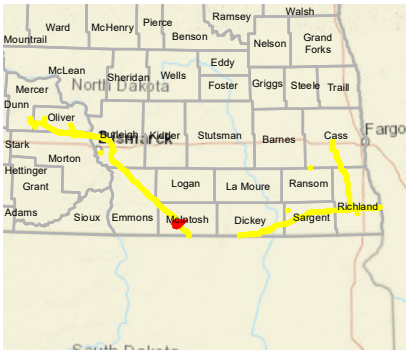
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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|---|---|
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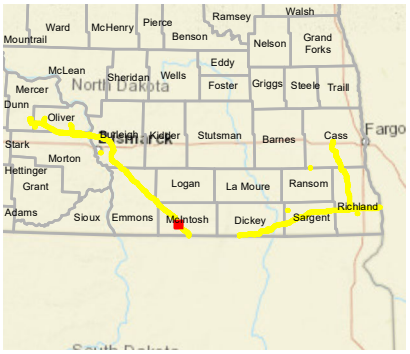
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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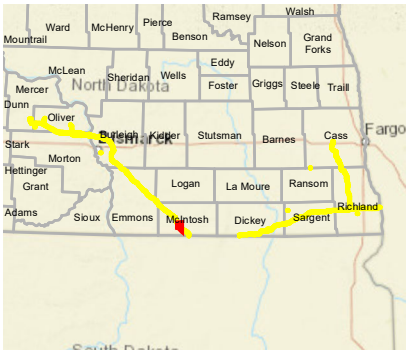
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

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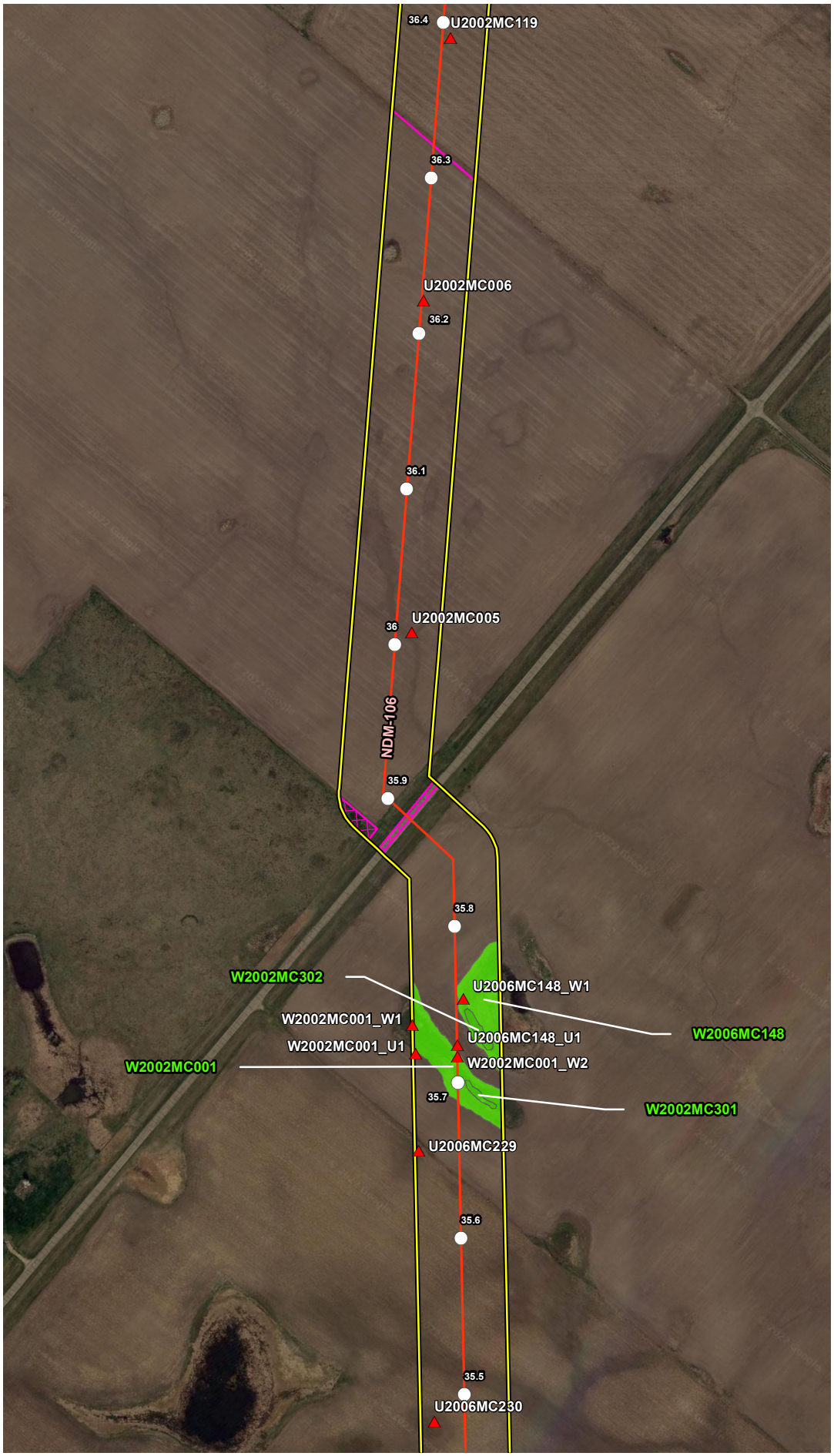
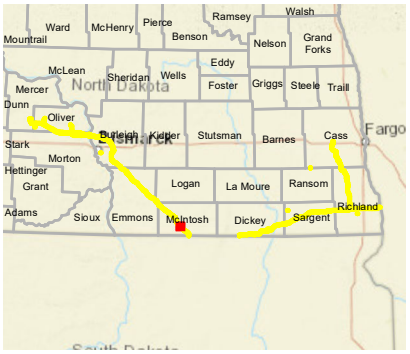
## AERIAL MAP




## VICINITY MAP

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1A - Revision

Revision description

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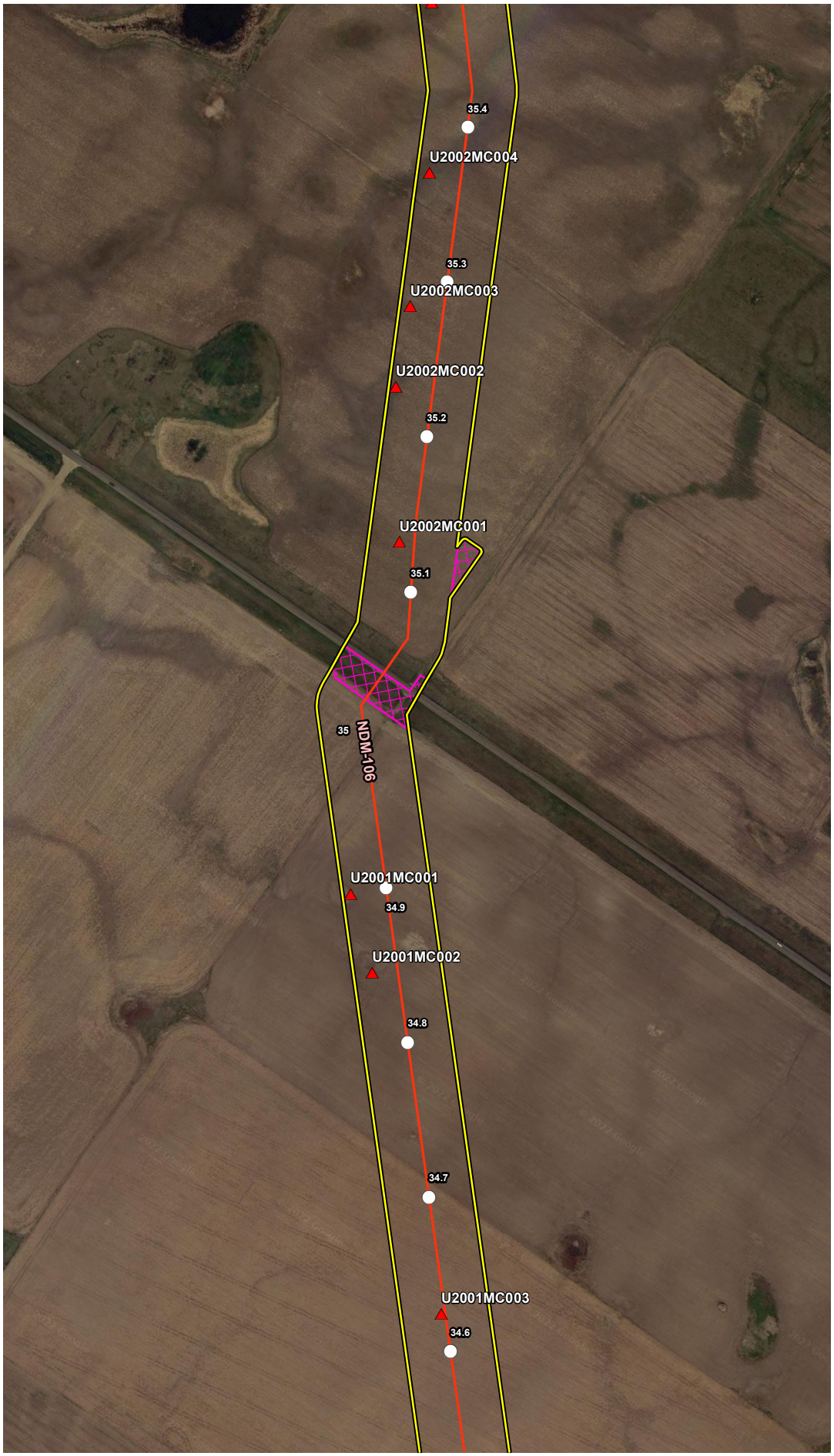
## AERIAL MAP

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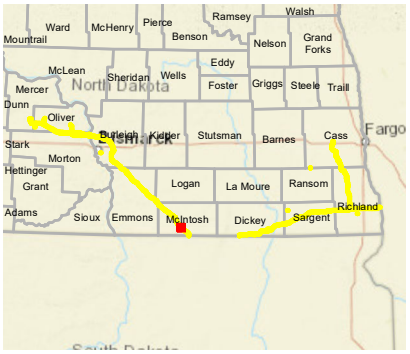


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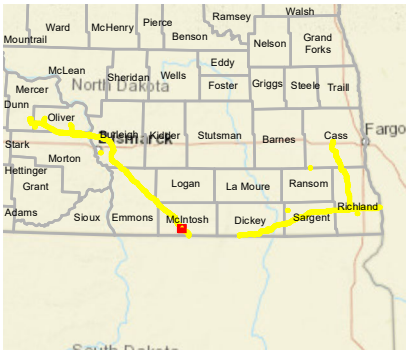
| Sheet: | Drawing Number: |
|---|---|
| 154 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\901_VWR_NDImods\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
| | | |

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**Figure Title:**
Aerial Map

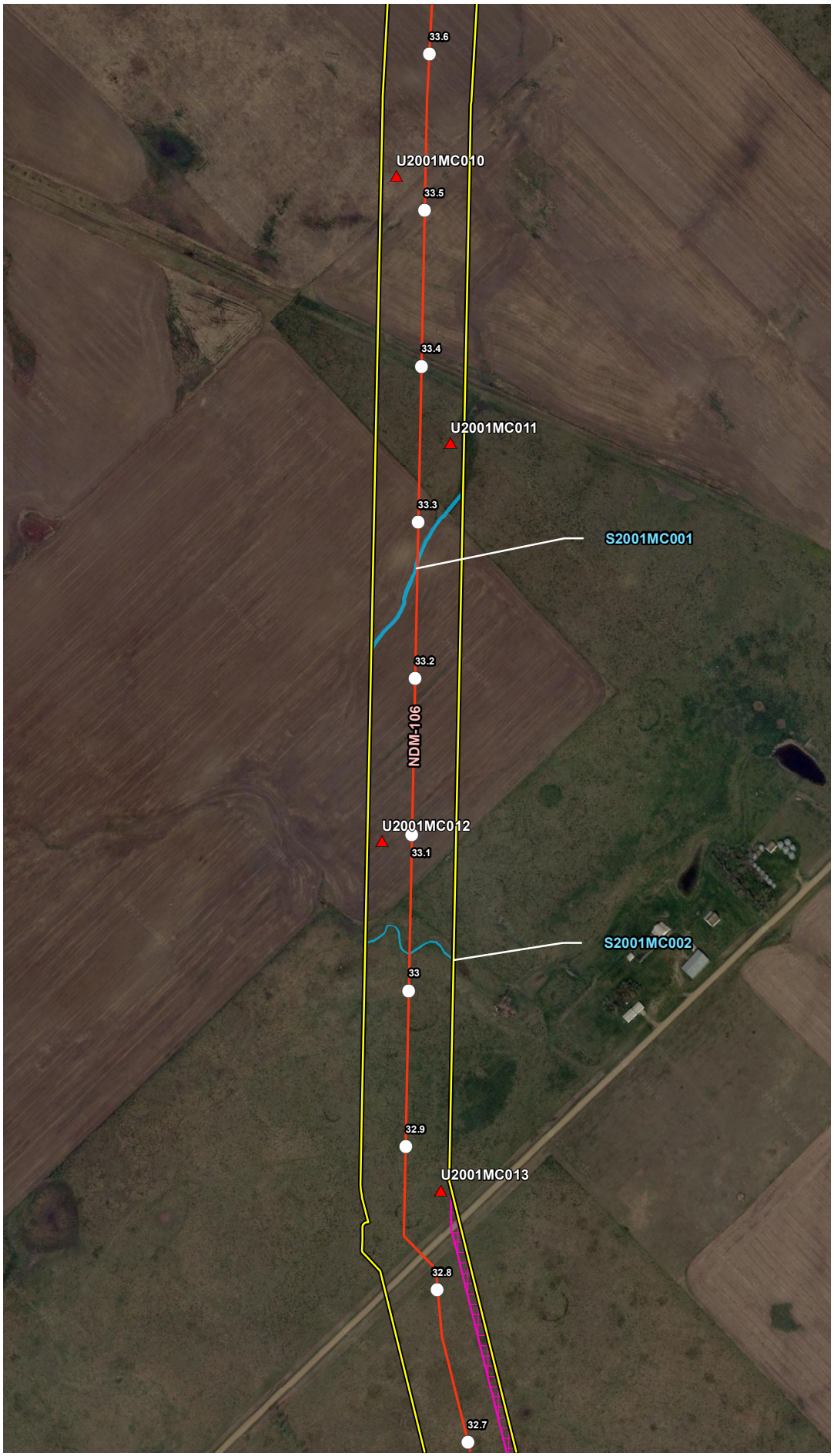
**Figure Number:**
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

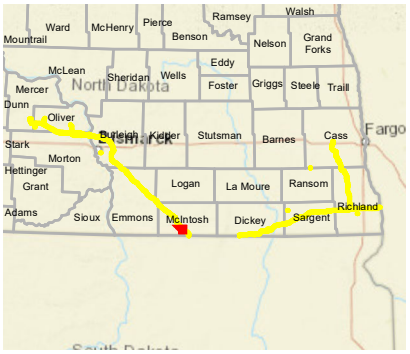
| Sheet: | Drawing Number: |
|---|---|
| 155 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 156 of 392 | 2001-22-002<br>Current Revision |

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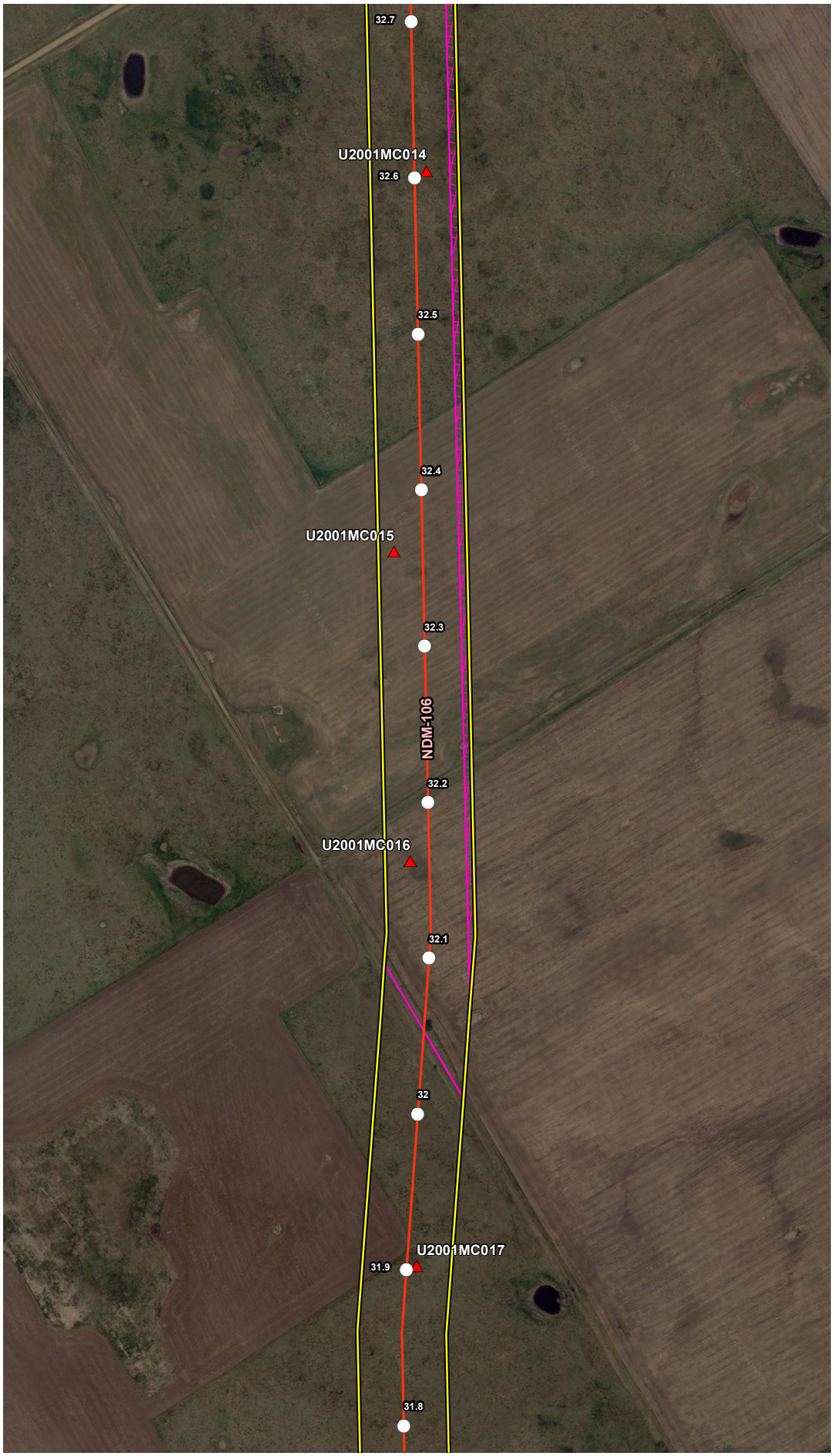
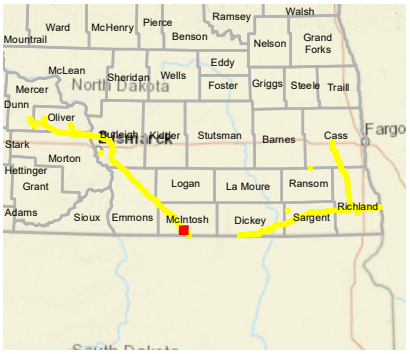
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>157 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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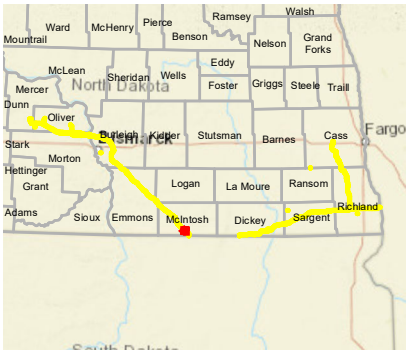
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 158 of 392 | 2001-22-002<br>Current Revision |

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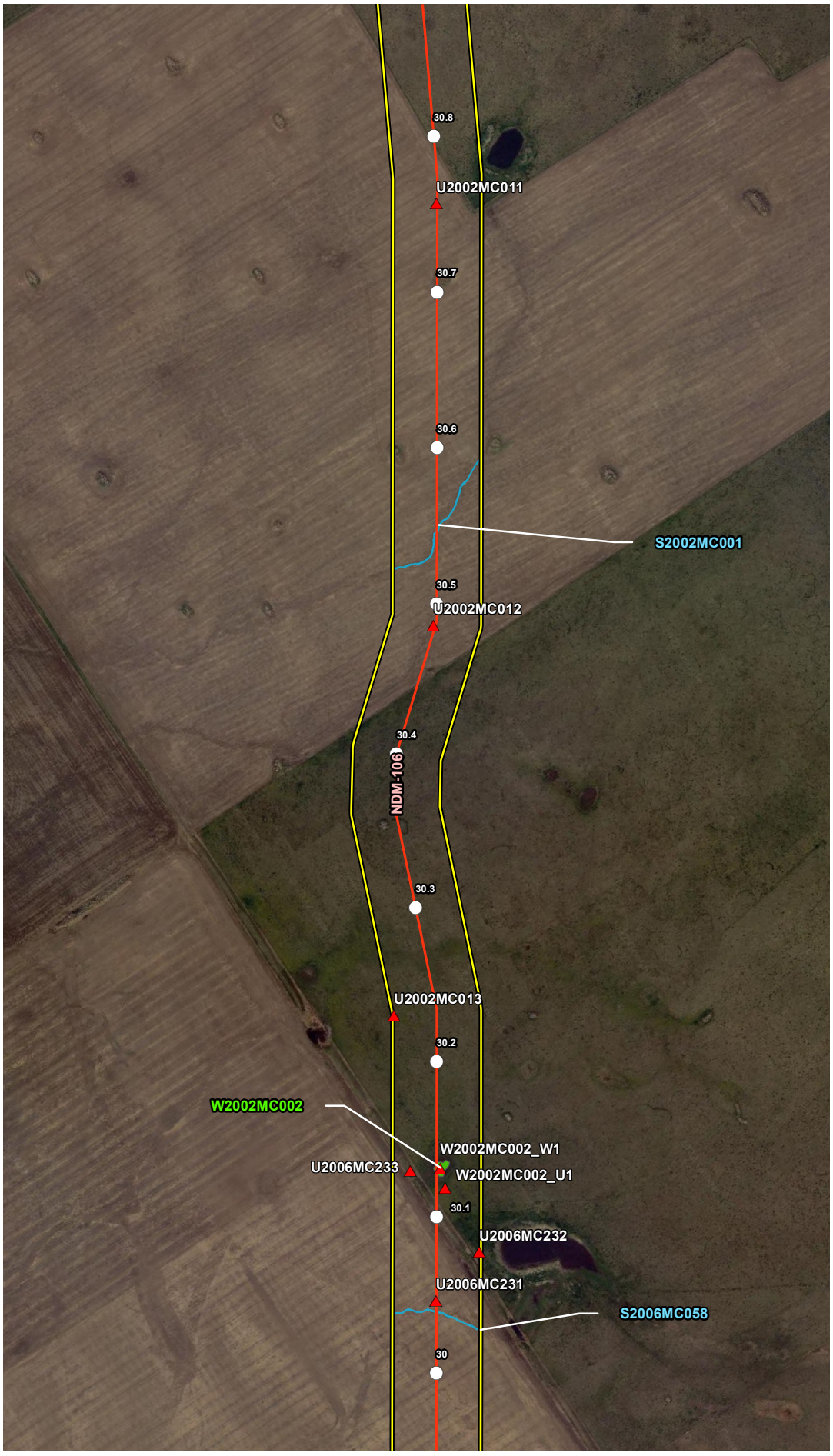
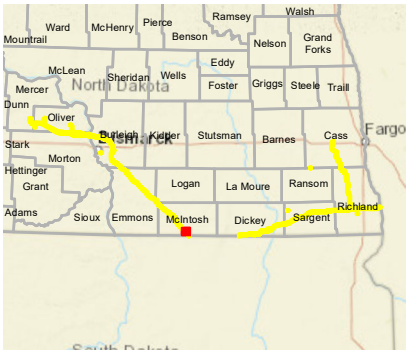
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 159 of 392 | 2001-22-002<br>Current Revision |

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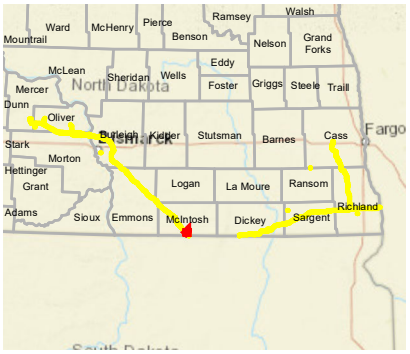
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

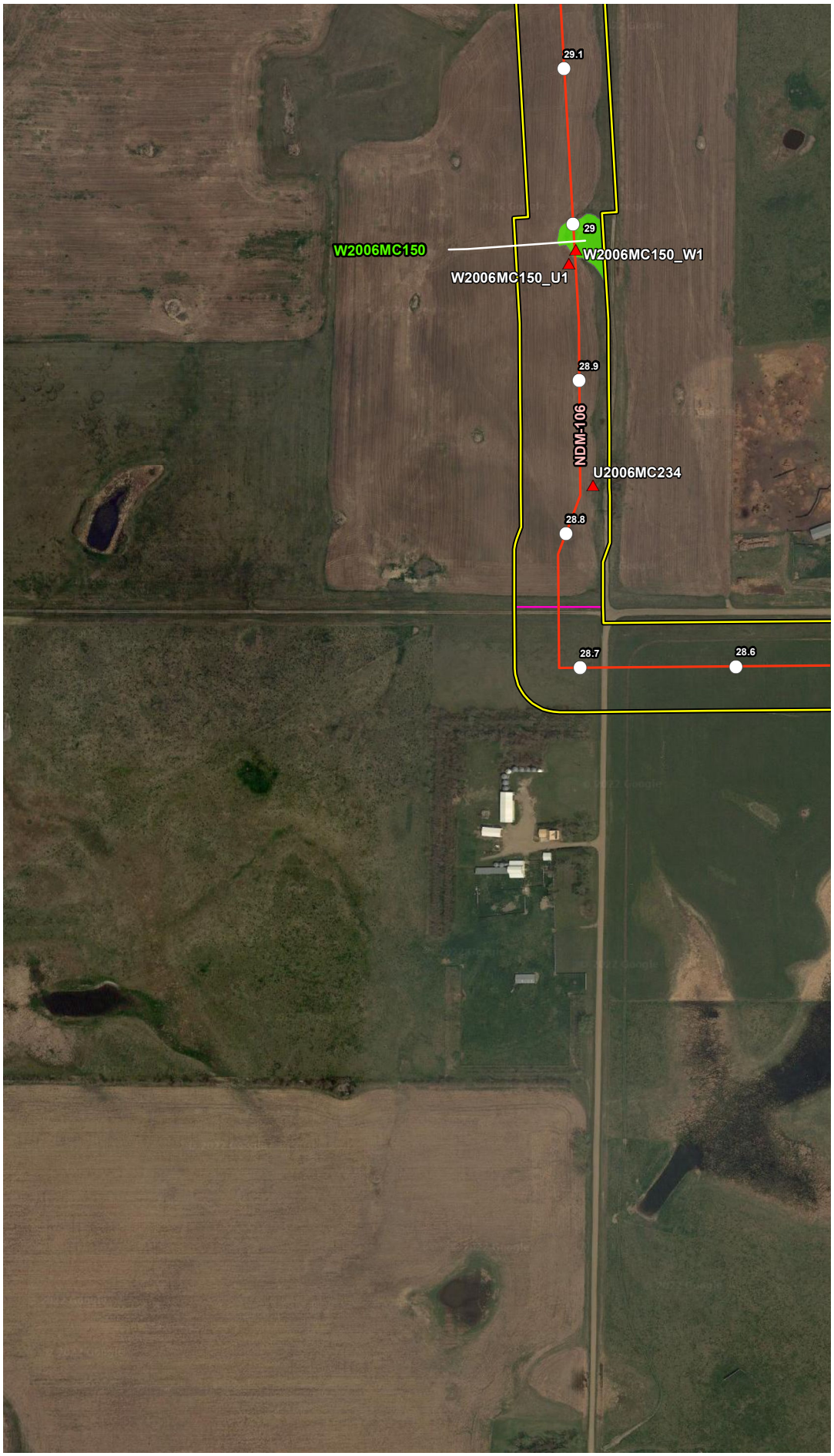
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
160 of 392

Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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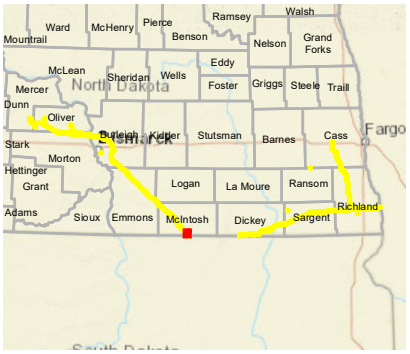


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

Aerial Map

**Figure Number:**

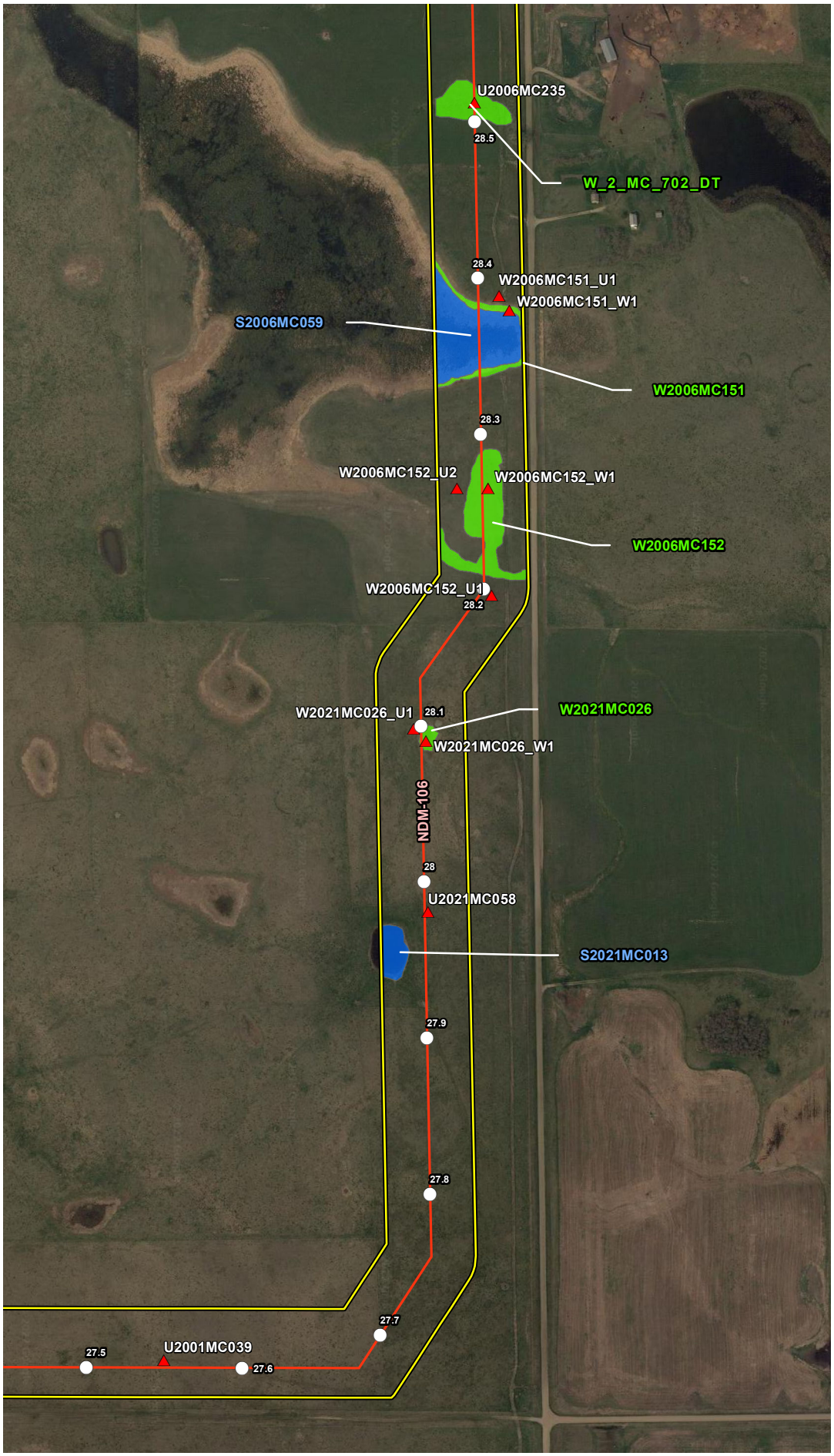
Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 161 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\0801_VWR_NDI\mxds\2_Aerial.mxd

## AERIAL MAP

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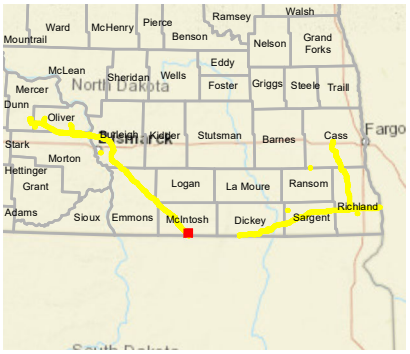


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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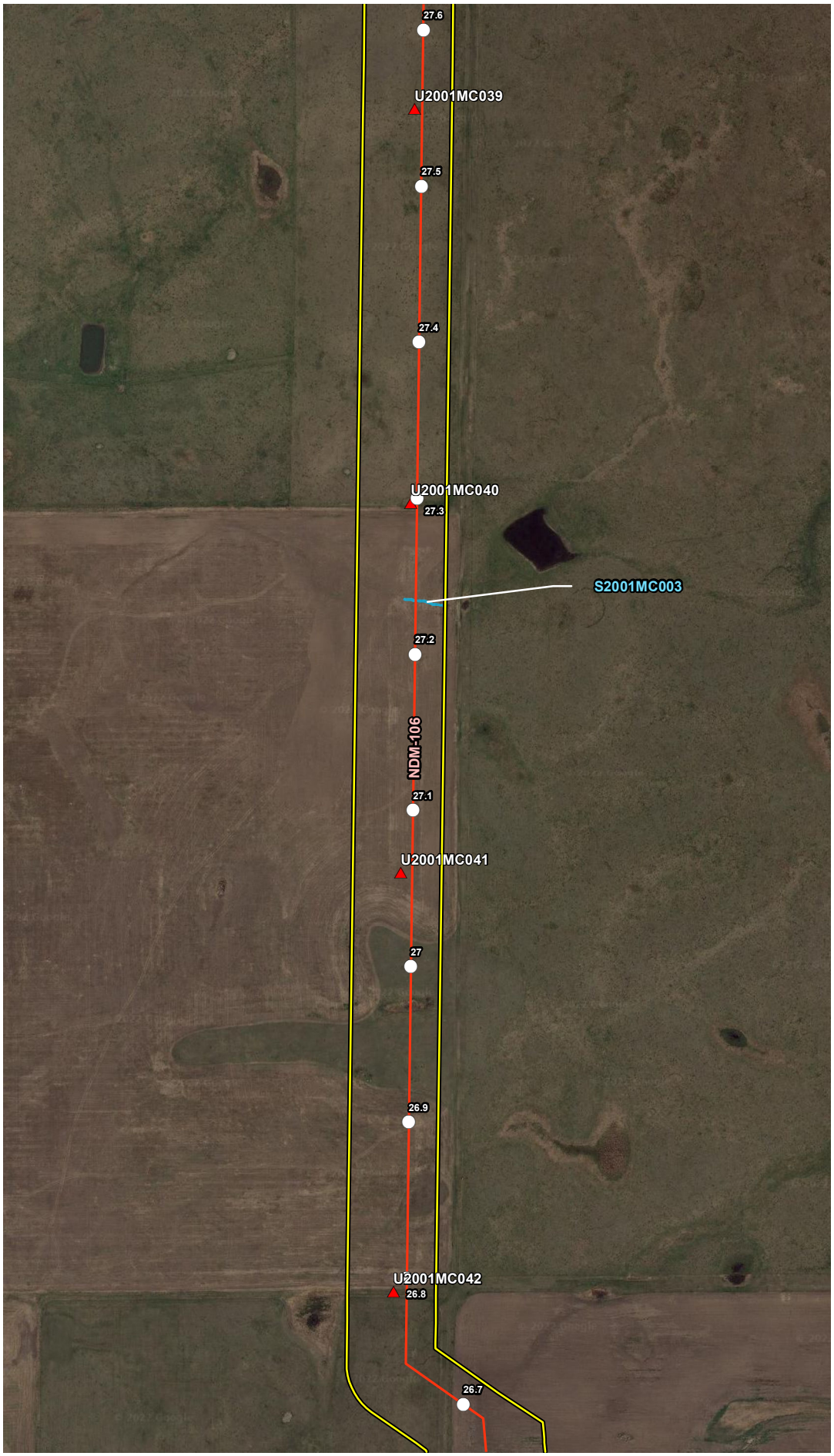
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

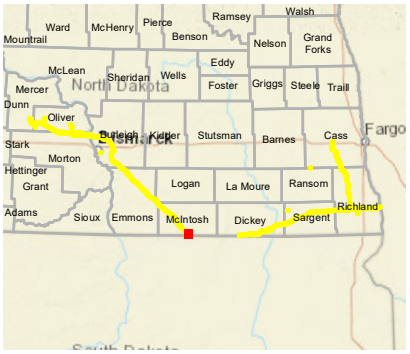
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>162 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

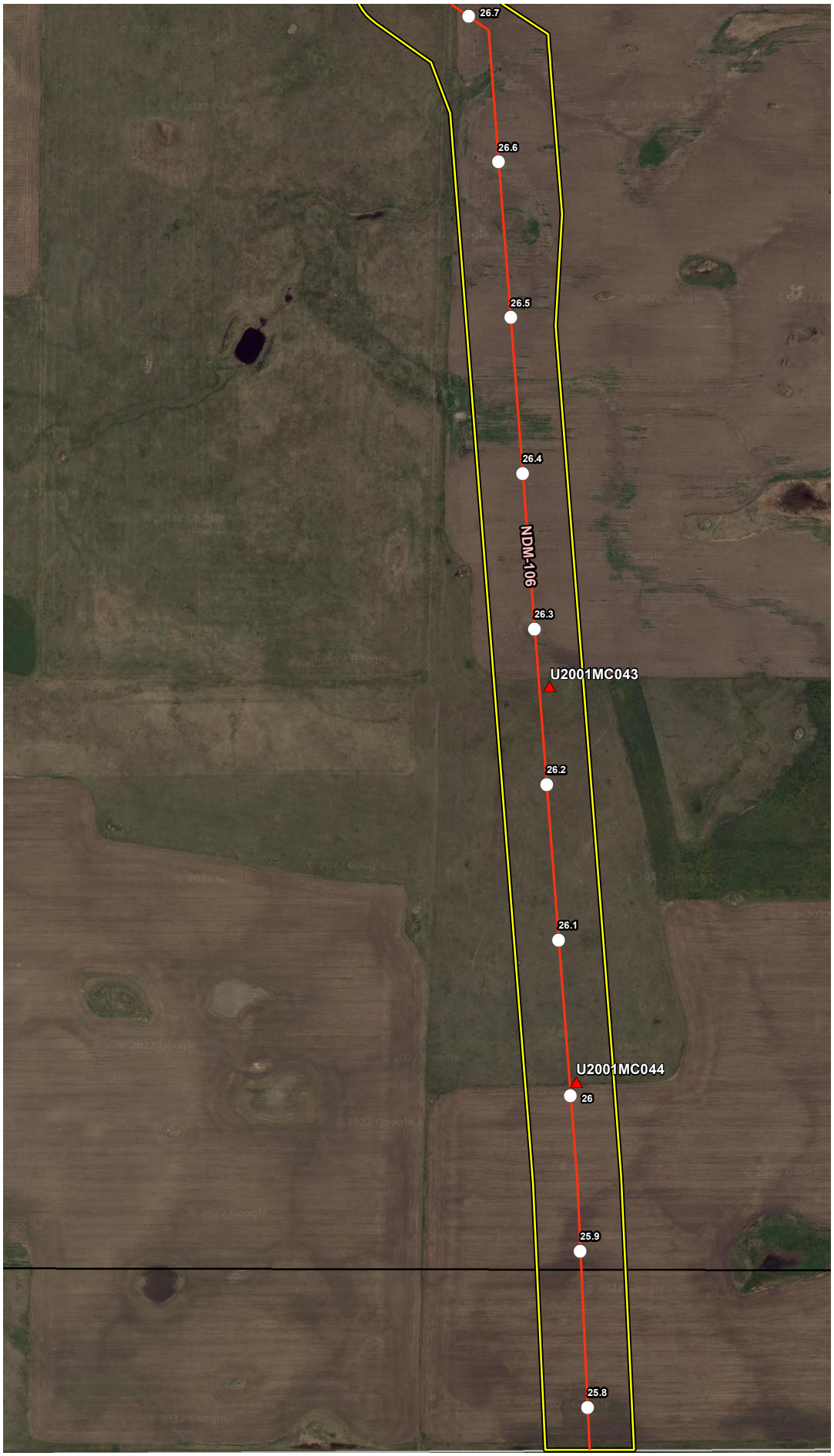
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
163 of 392

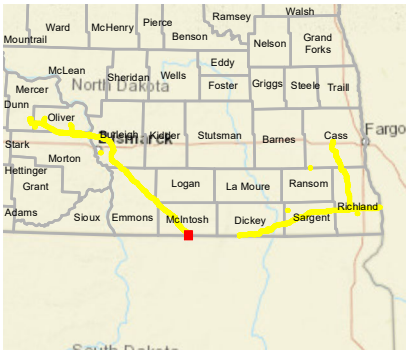
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 164 of 392 | 2001-22-002<br>Current Revision |

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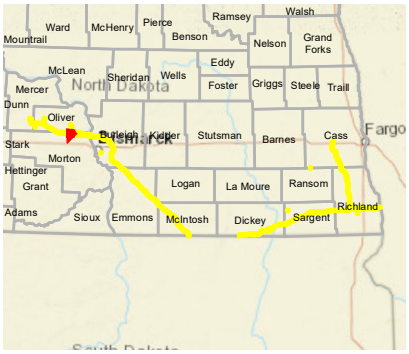
## AERIAL MAP




## VICINITY MAP

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**1A - Revision**
Revision description

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| Sheet: | Drawing Number: |
|---|---|
| 165 of 392 | 2001-22-002<br>Current Revision |

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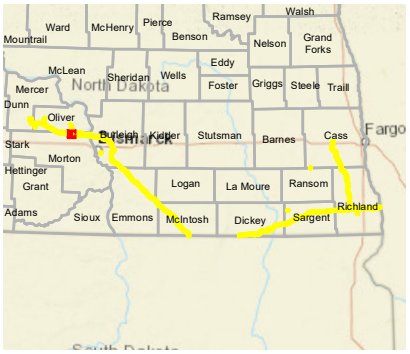
## AERIAL MAP




## VICINITY MAP

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 166 of 392 | 2001-22-002<br>Current Revision |

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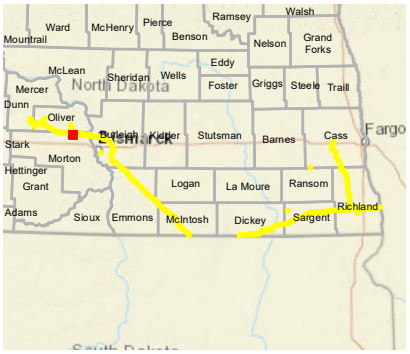
## AERIAL MAP



## VICINITY MAP

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SUMMIT CARBON SOLUTIONS

**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

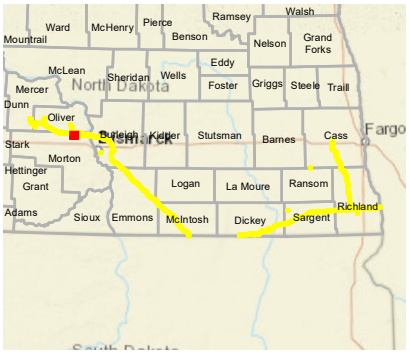
| Sheet: | Drawing Number: |
|---|---|
| 167 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ID\VWR\2022\801_VWR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| 168 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP



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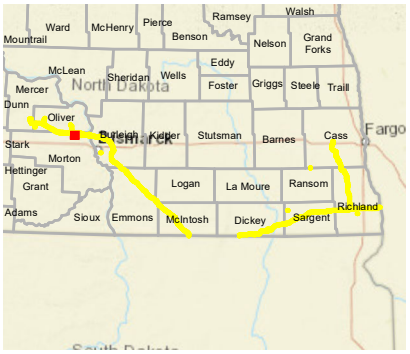


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Feet

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## AERIAL MAP



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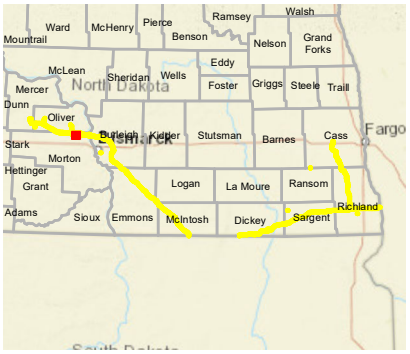


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## AERIAL MAP




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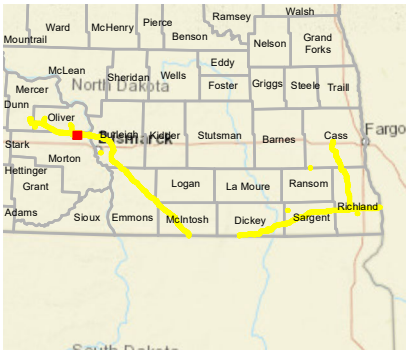


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## AERIAL MAP




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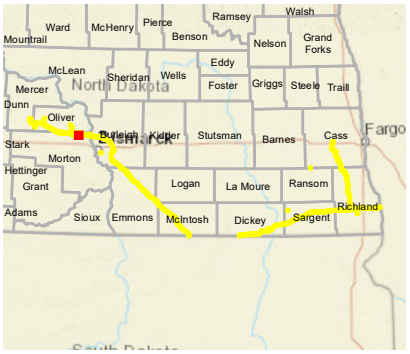


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| 172 of 392 | 2001-22-002<br>Current Revision |

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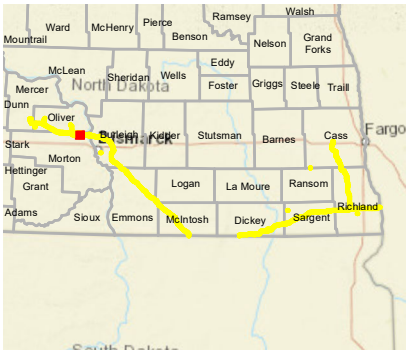
## AERIAL MAP




## VICINITY MAP

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| 173 of 392 | 2001-22-002<br>Current Revision |

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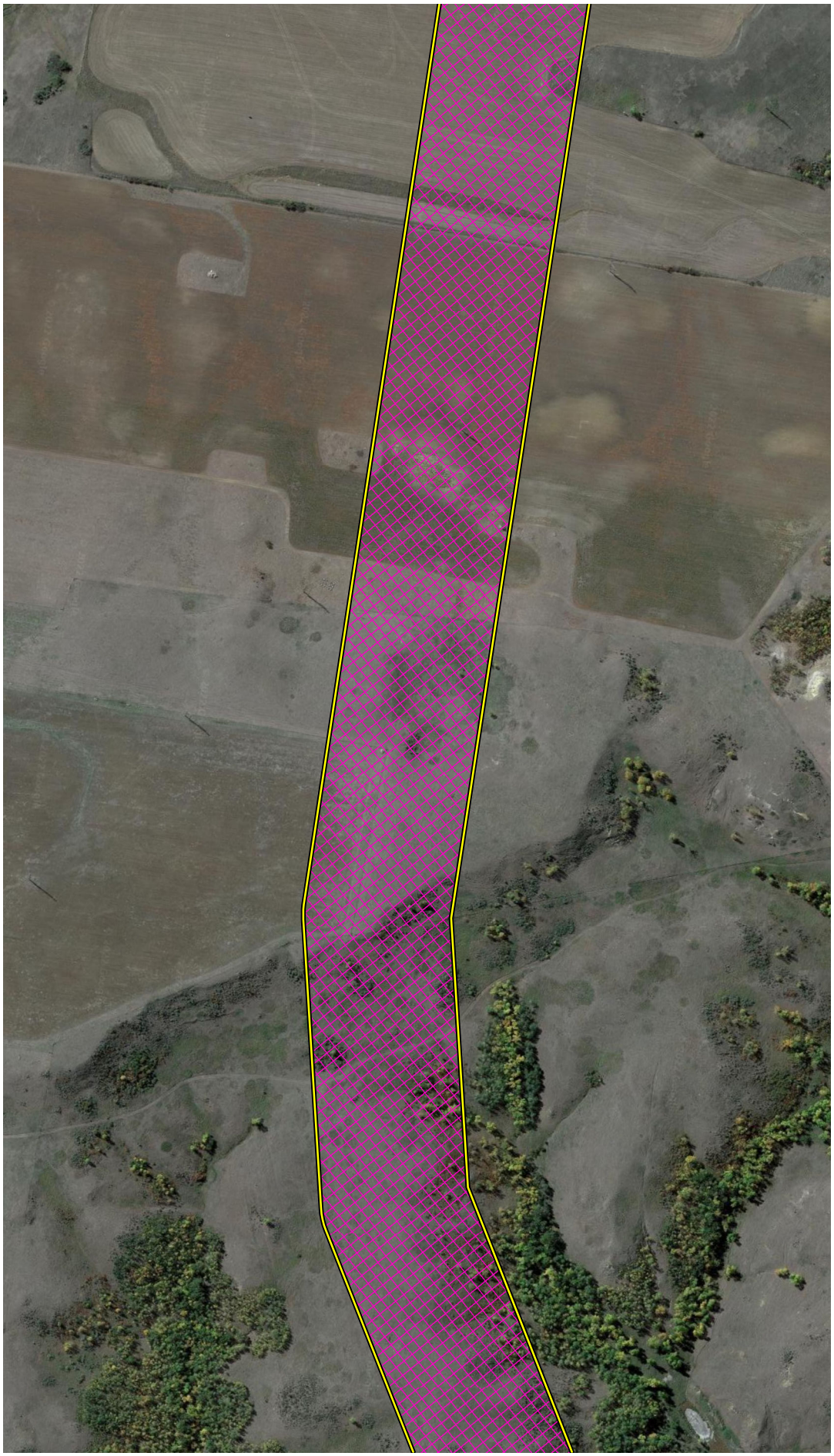
## AERIAL MAP



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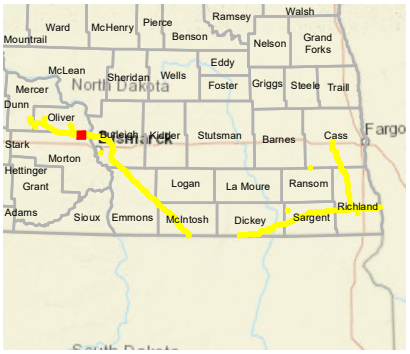


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0 250 500 Feet

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| 1A - Revision<br>Revision description | | |
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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
174 of 392

Drawing Number:
2001-22-002
Current Revision

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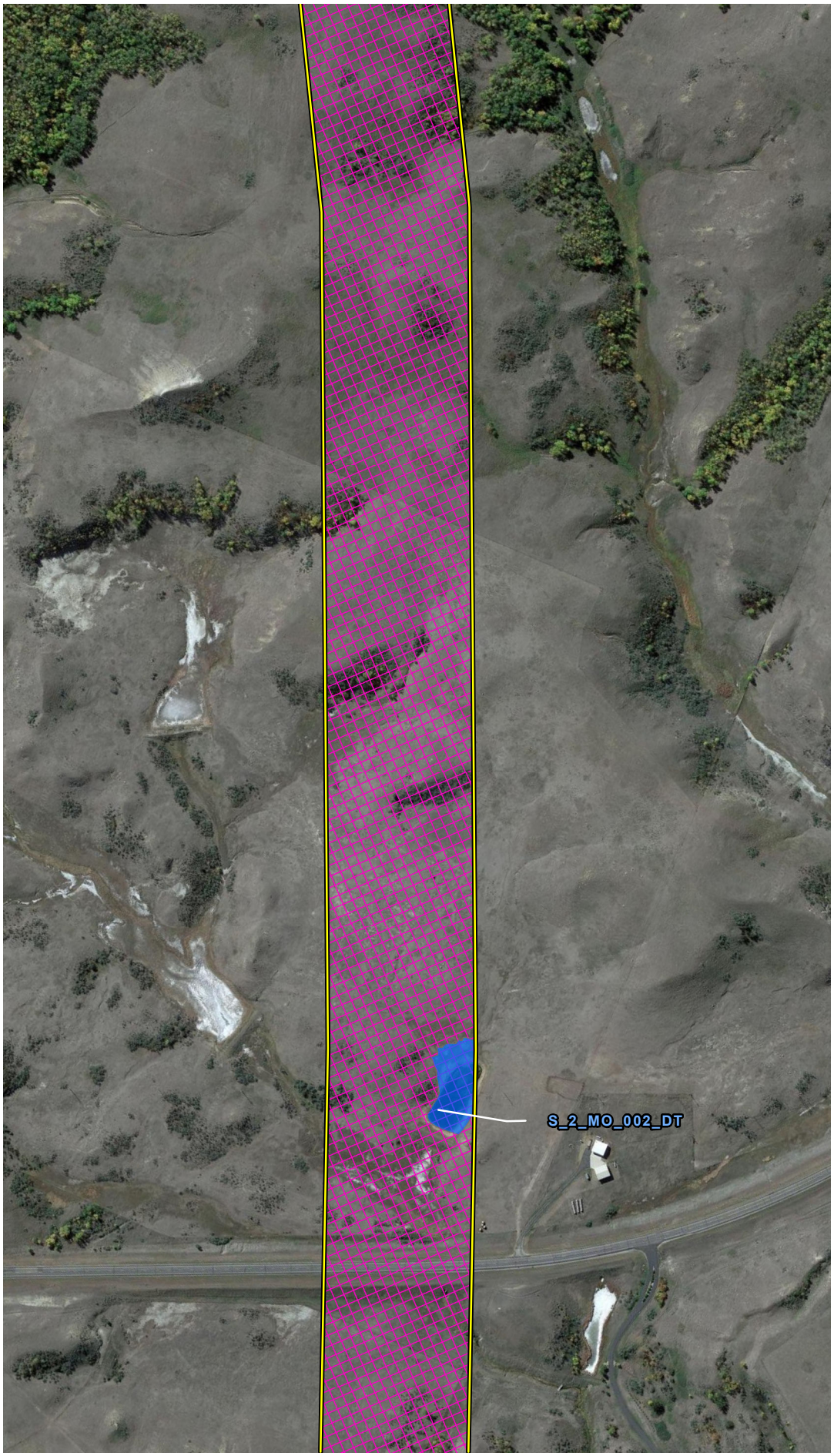
## AERIAL MAP

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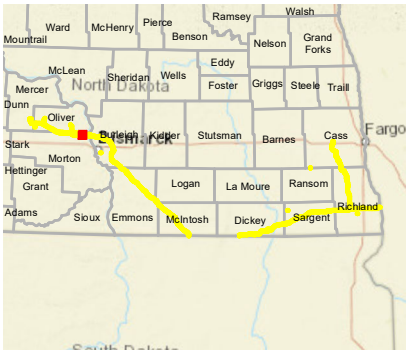


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## REVISIONS

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| 2022-08-04 | MM | AB |

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| Sheet: | Drawing Number: |
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| 175 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP




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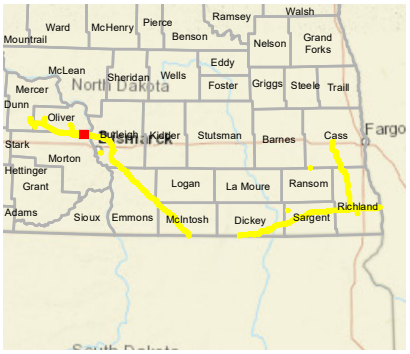


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## AERIAL MAP




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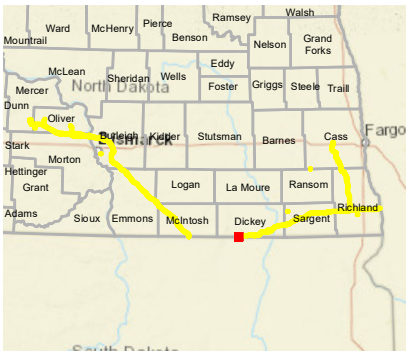


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0 250 500 Feet

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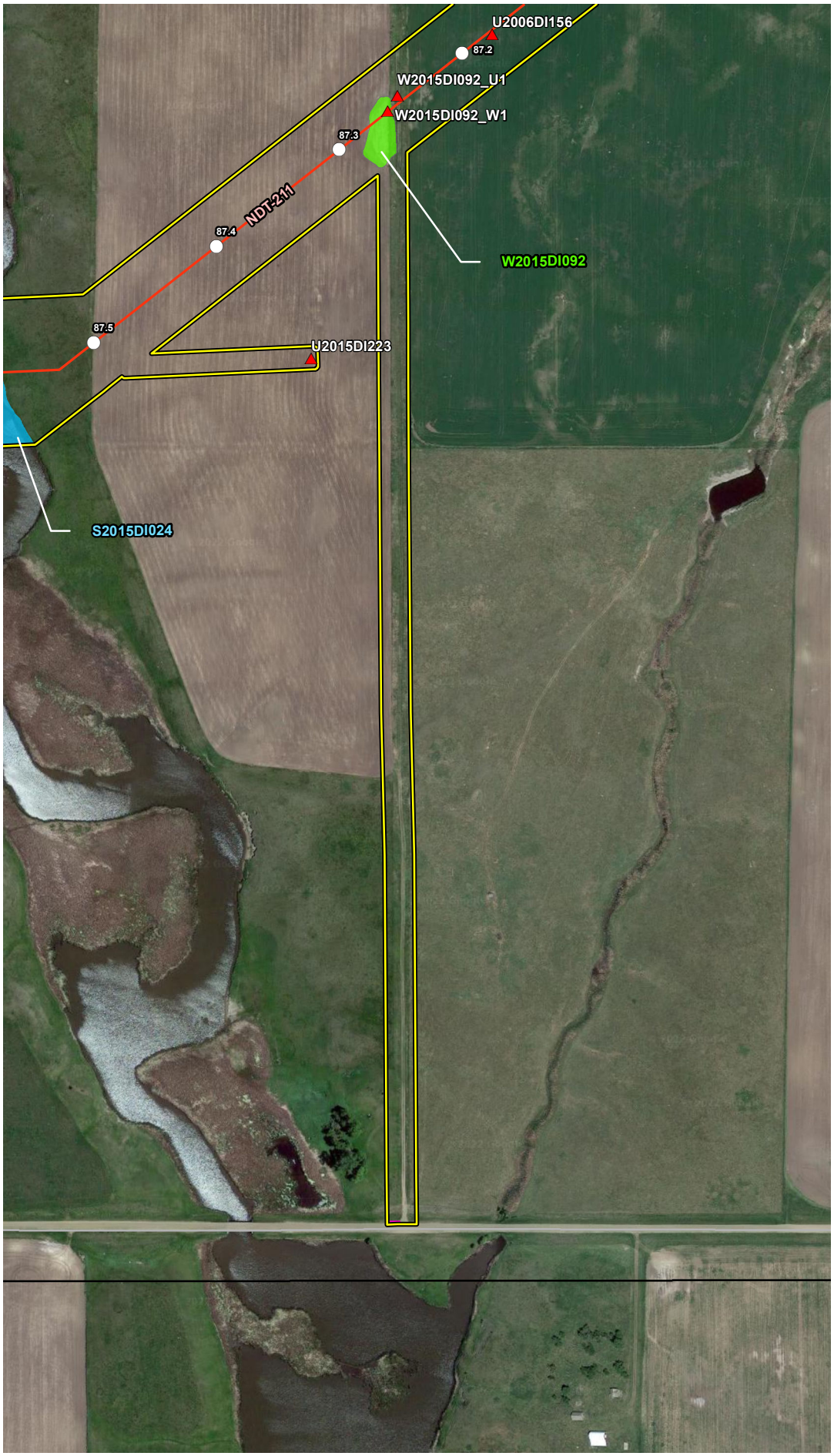


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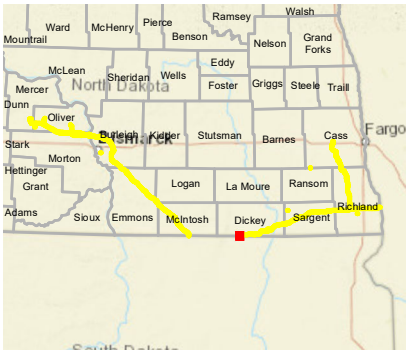


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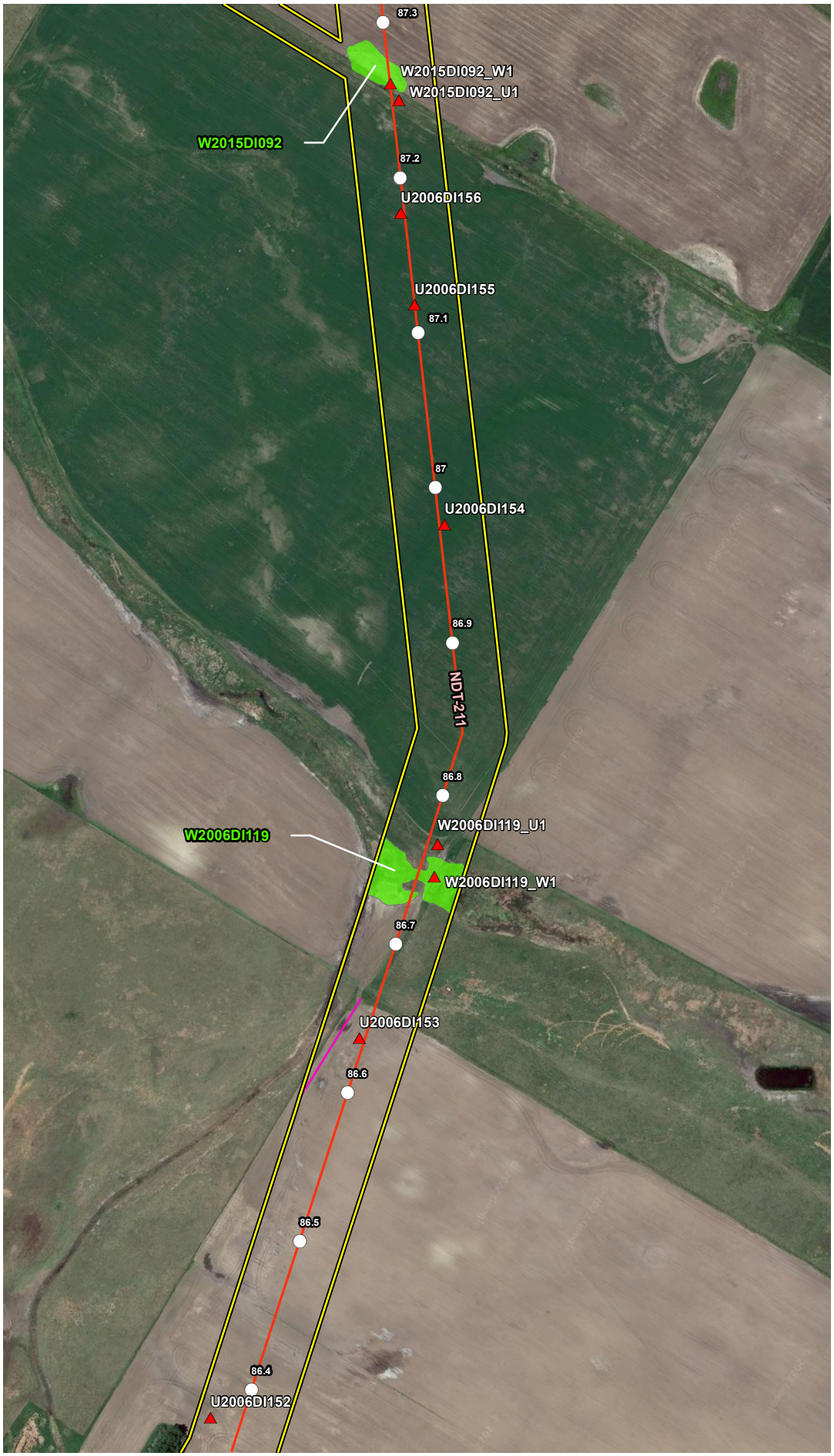


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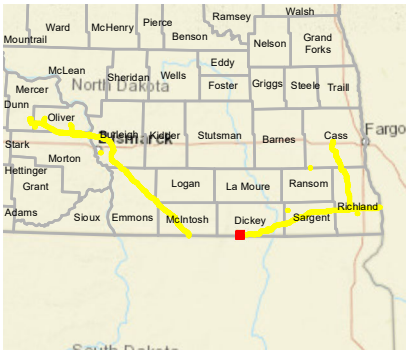


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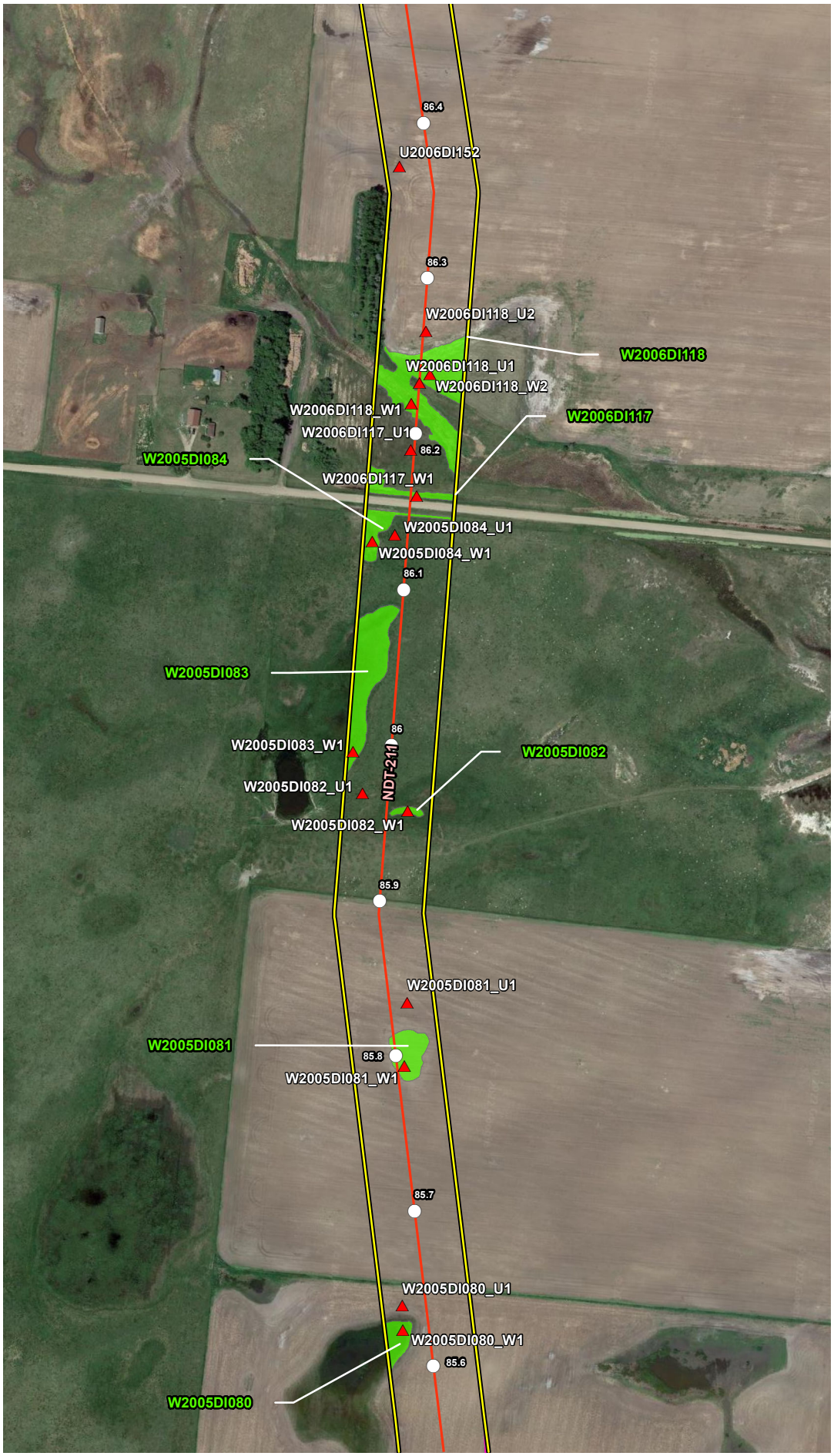


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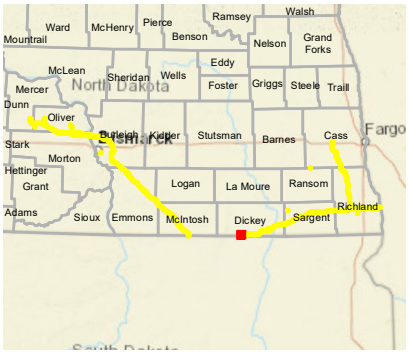


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Scale:
1:6,000
1 inch = 500 feet

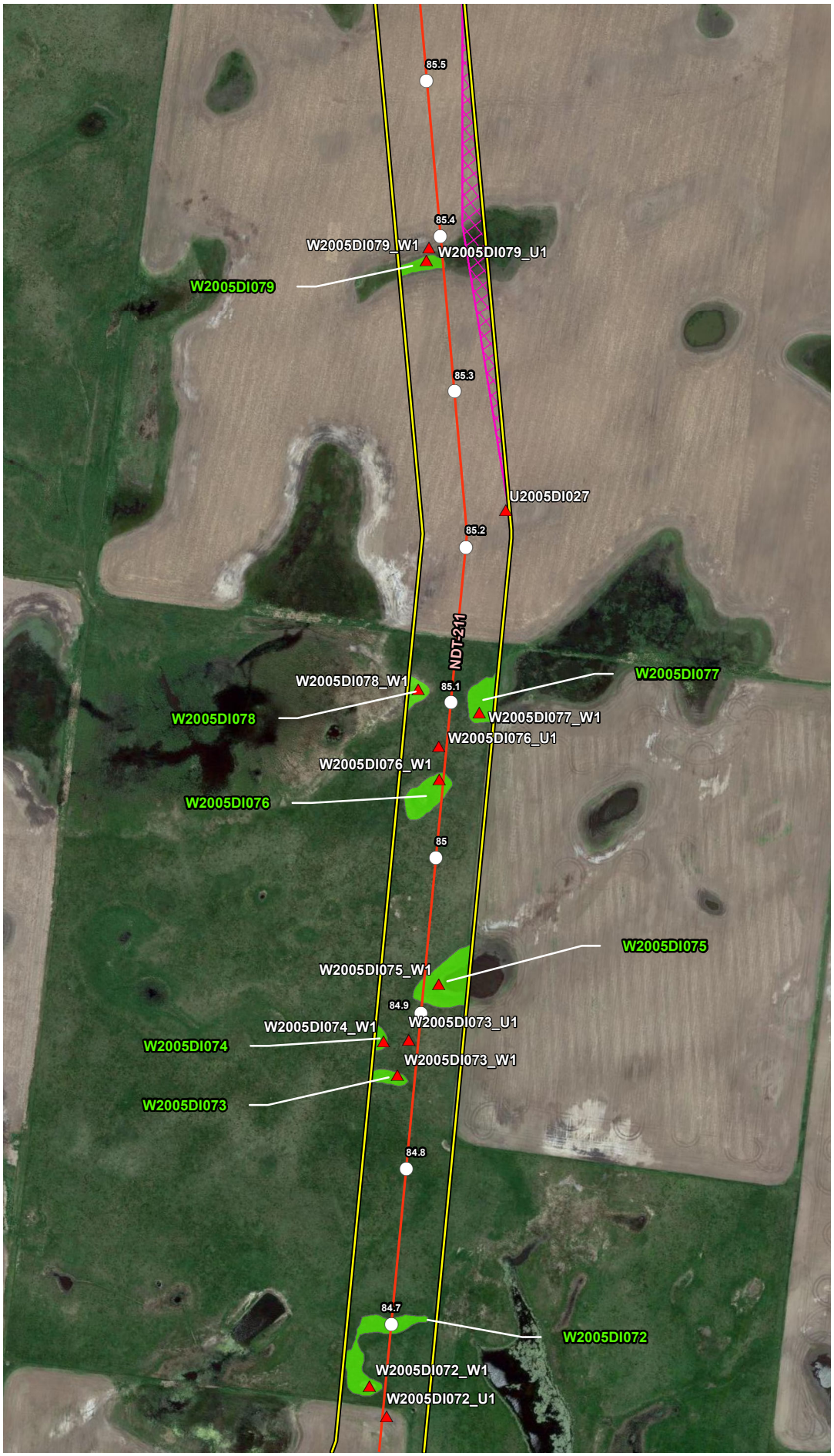
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
180 of 392

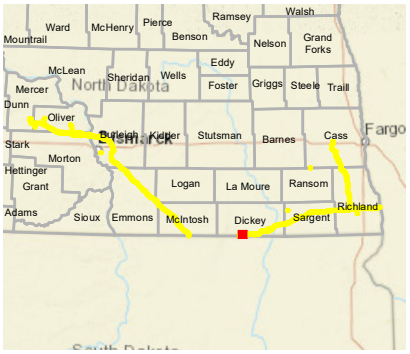
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
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- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

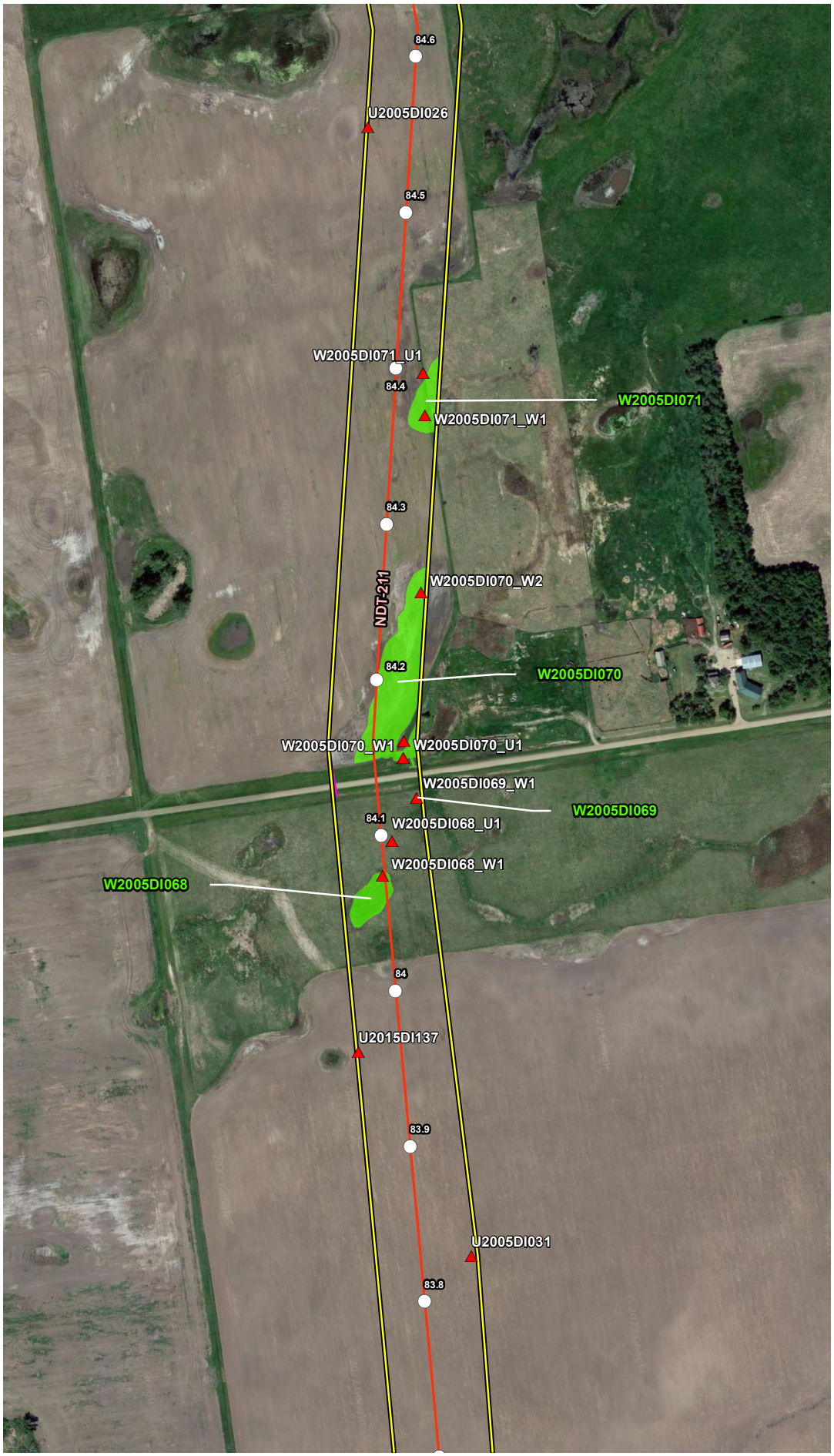
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
181 of 392

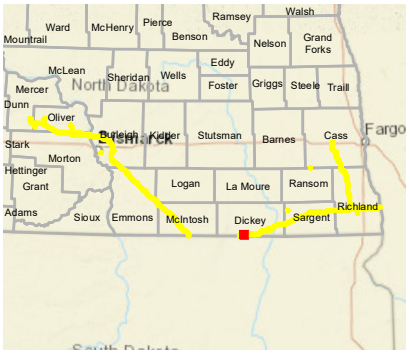
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

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| Date: | Revised by: | Checked by: |
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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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| 182 of 392 | 2001-22-002<br>Current Revision |

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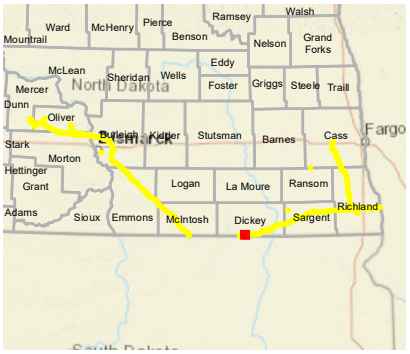
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

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**Figure Title:**

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**Figure Number:**

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 183 of 392 | 2001-22-002<br>Current Revision |

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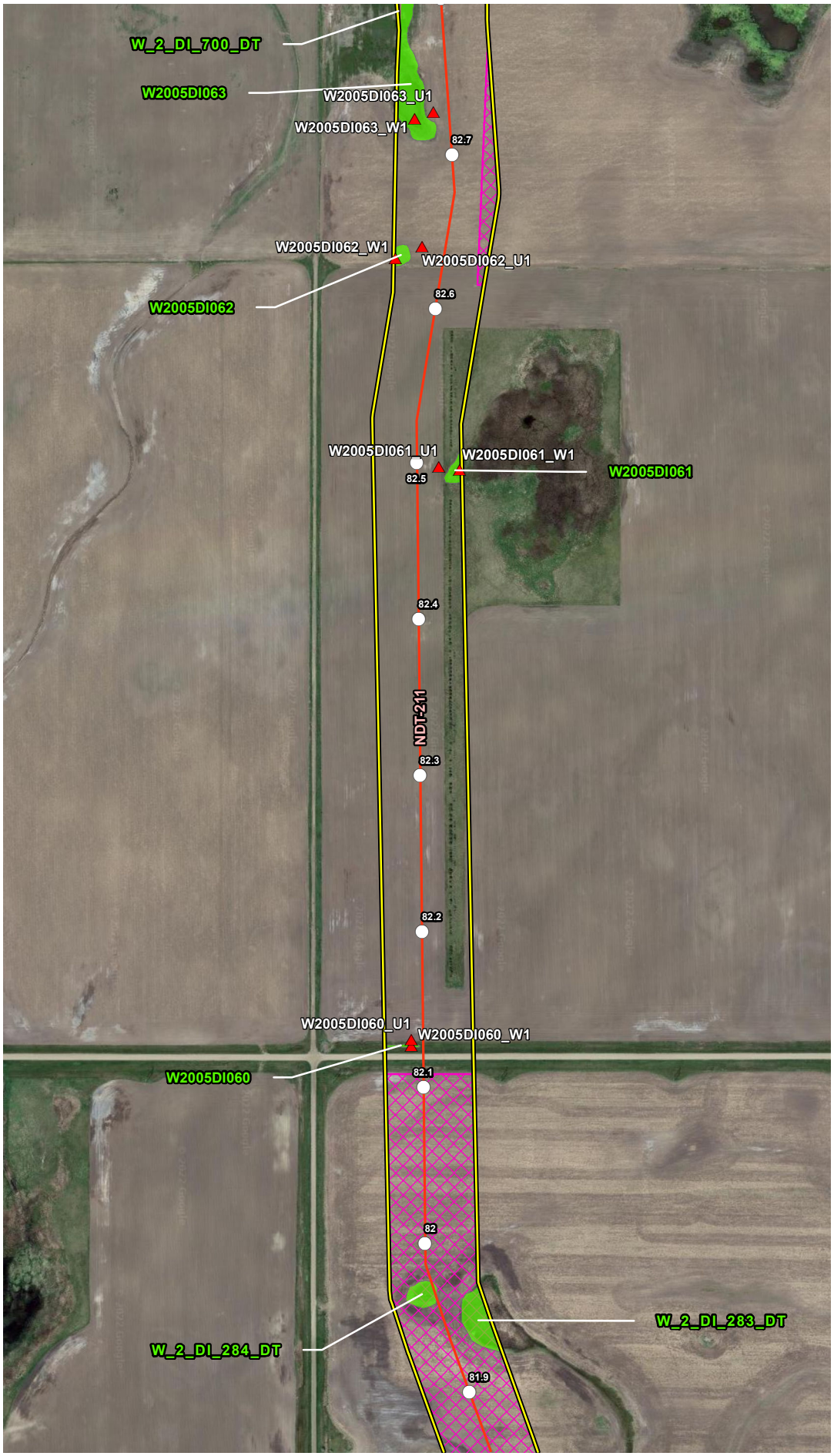
## AERIAL MAP

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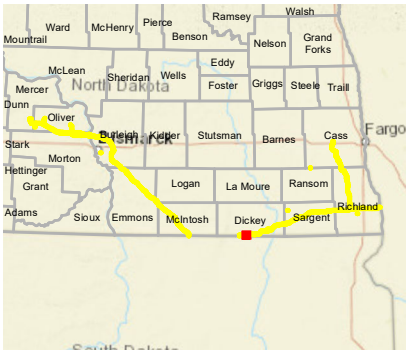


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0 250 500 Feet

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Appendix A-2

Scale:
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Projection:
Transverse Mercator
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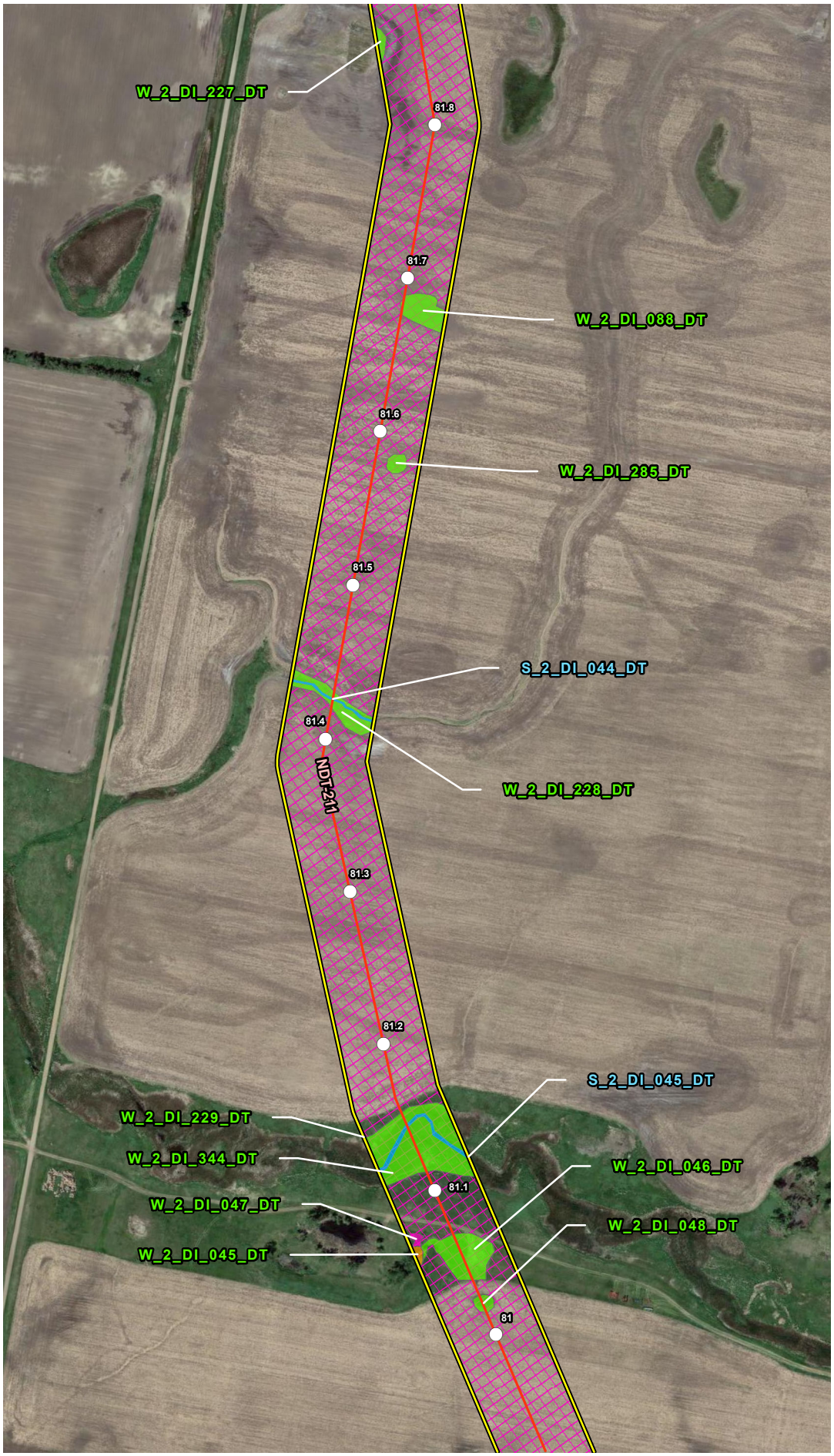


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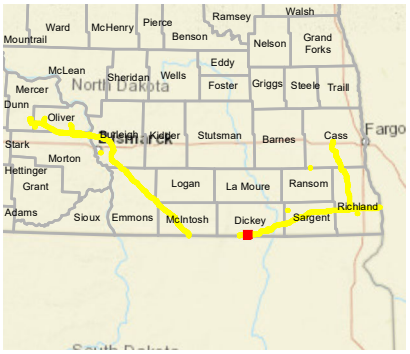


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Appendix A-2

Scale:
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Projection:
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Sheet:
185 of 392

Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

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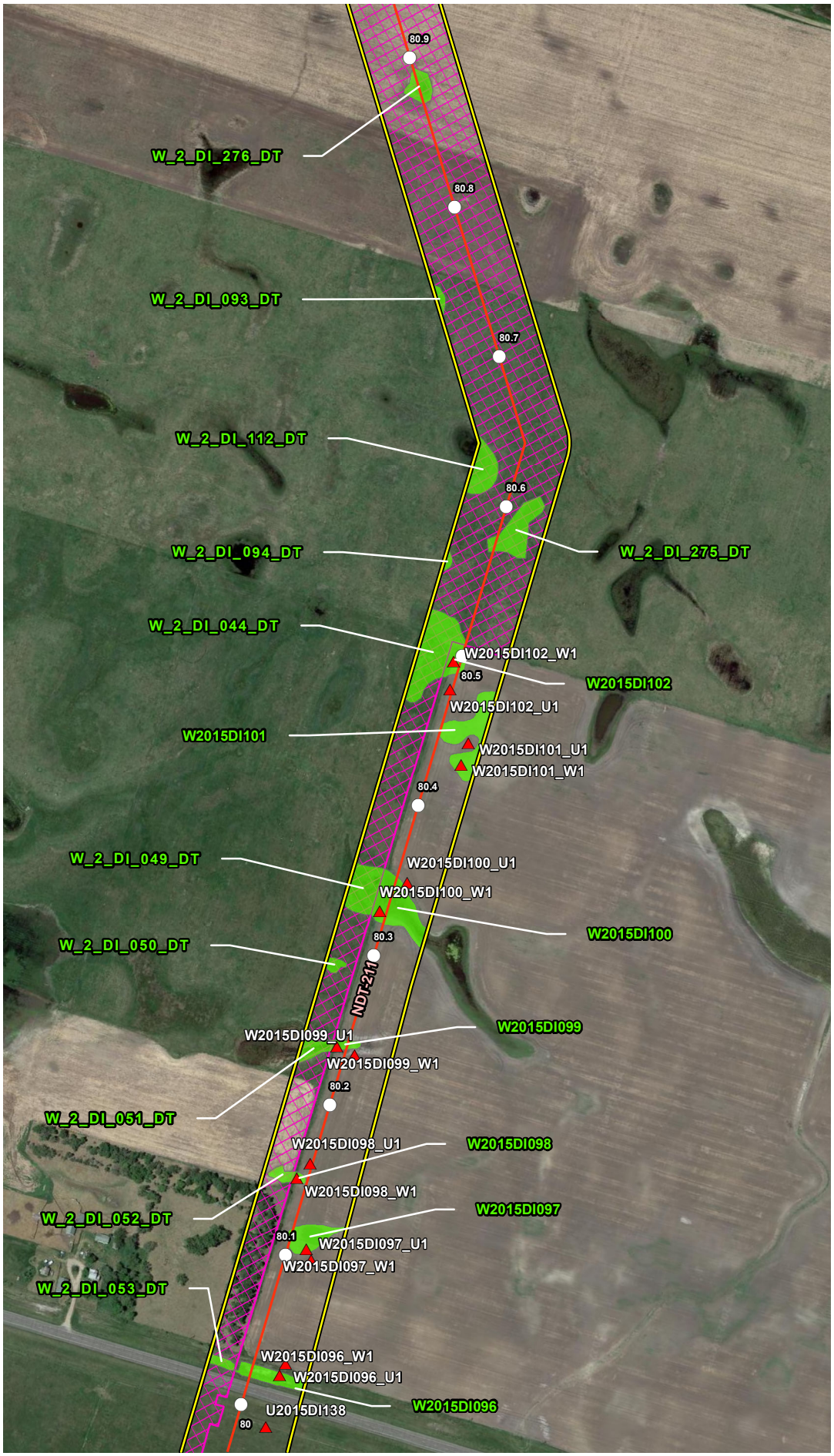


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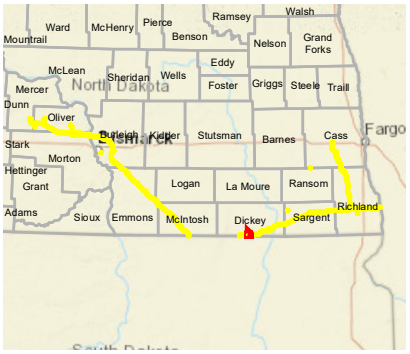


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>186 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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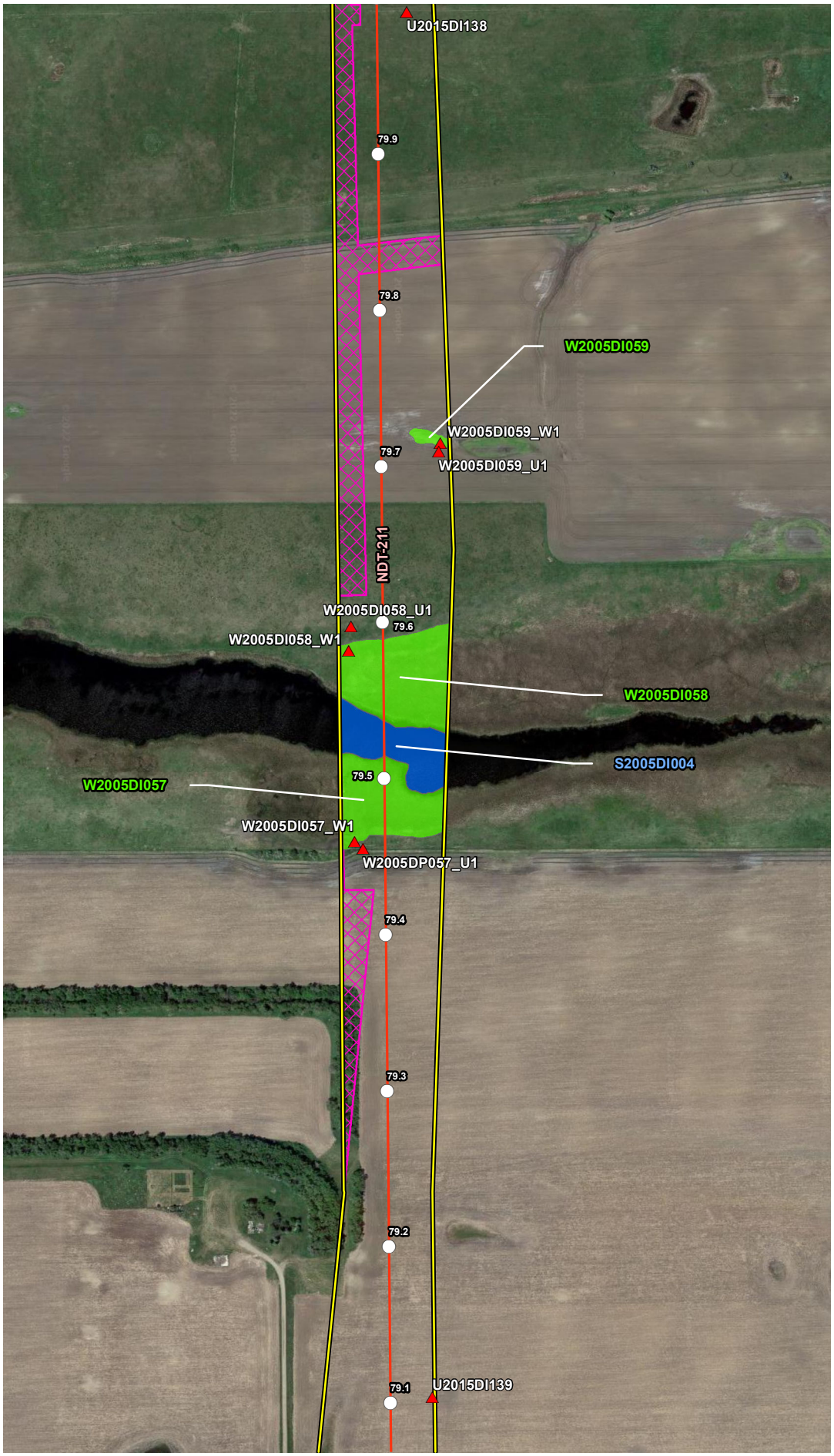


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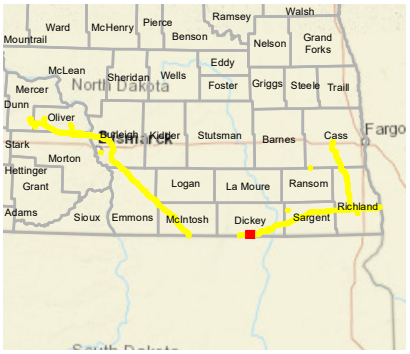


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>187 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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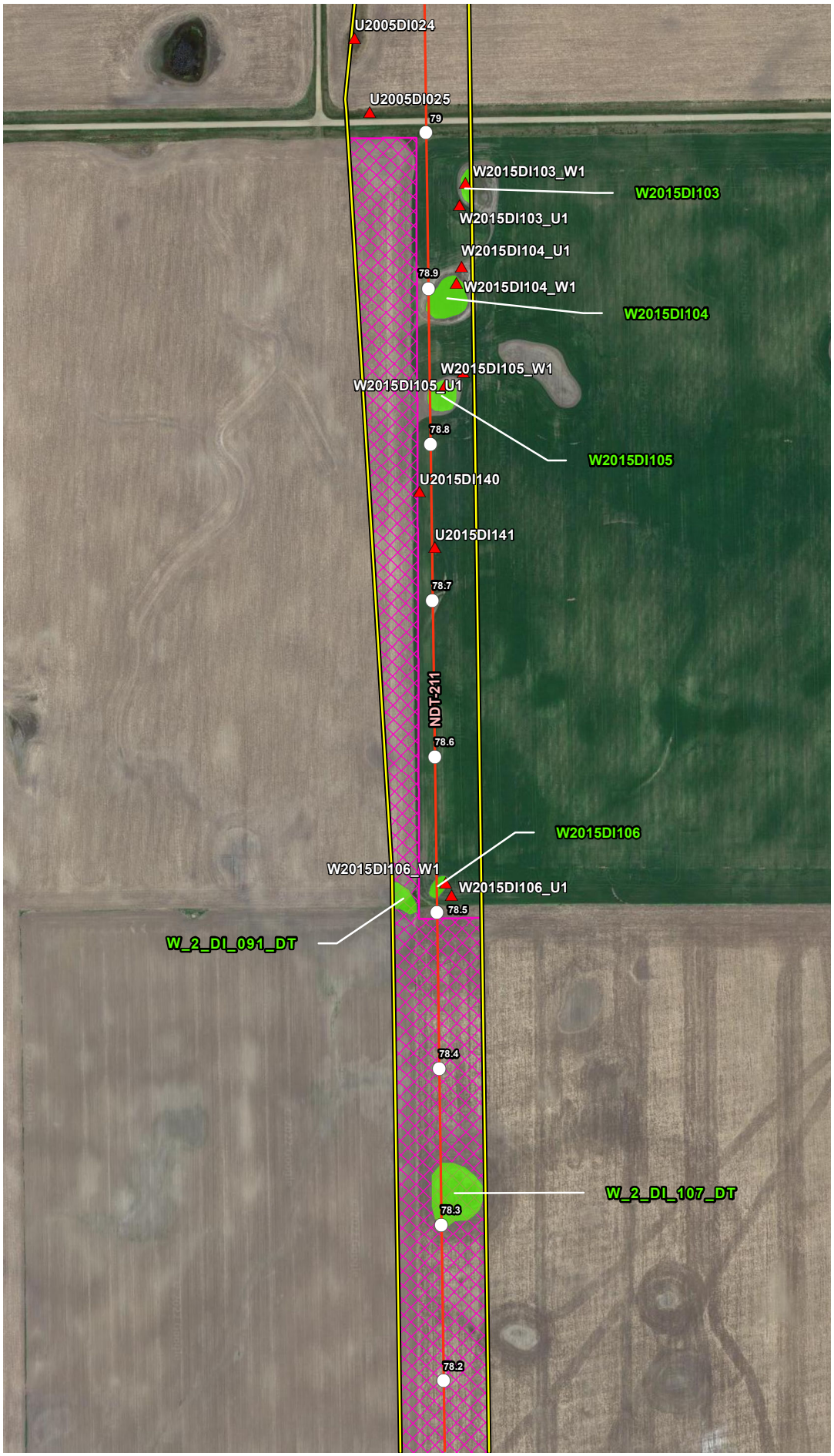
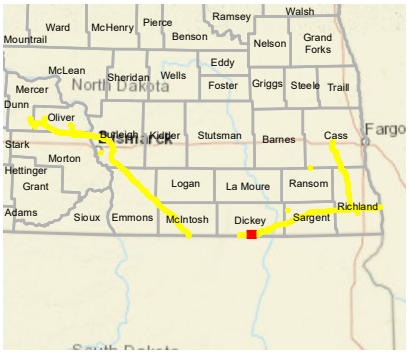



## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
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Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

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188 of 392

Drawing Number:
2001-22-002
Current Revision

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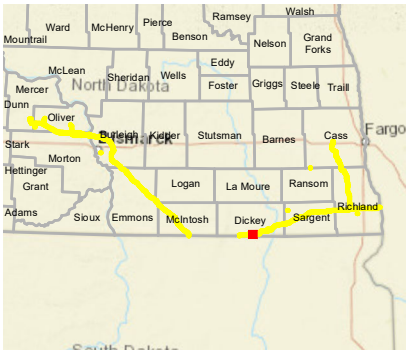
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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| 189 of 392 | 2001-22-002<br>Current Revision |

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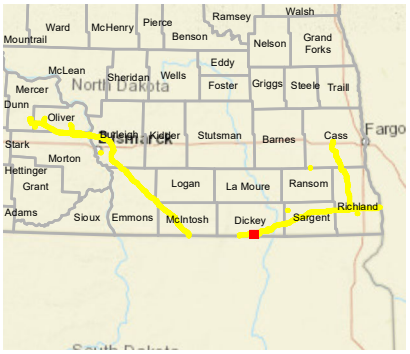
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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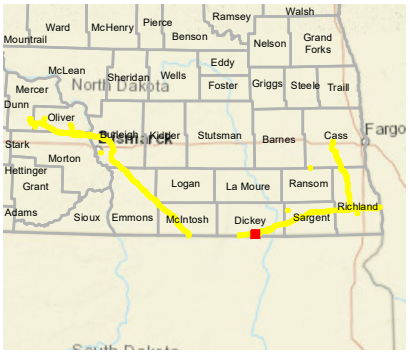
| Sheet:<br>190 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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Feet

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Revision description

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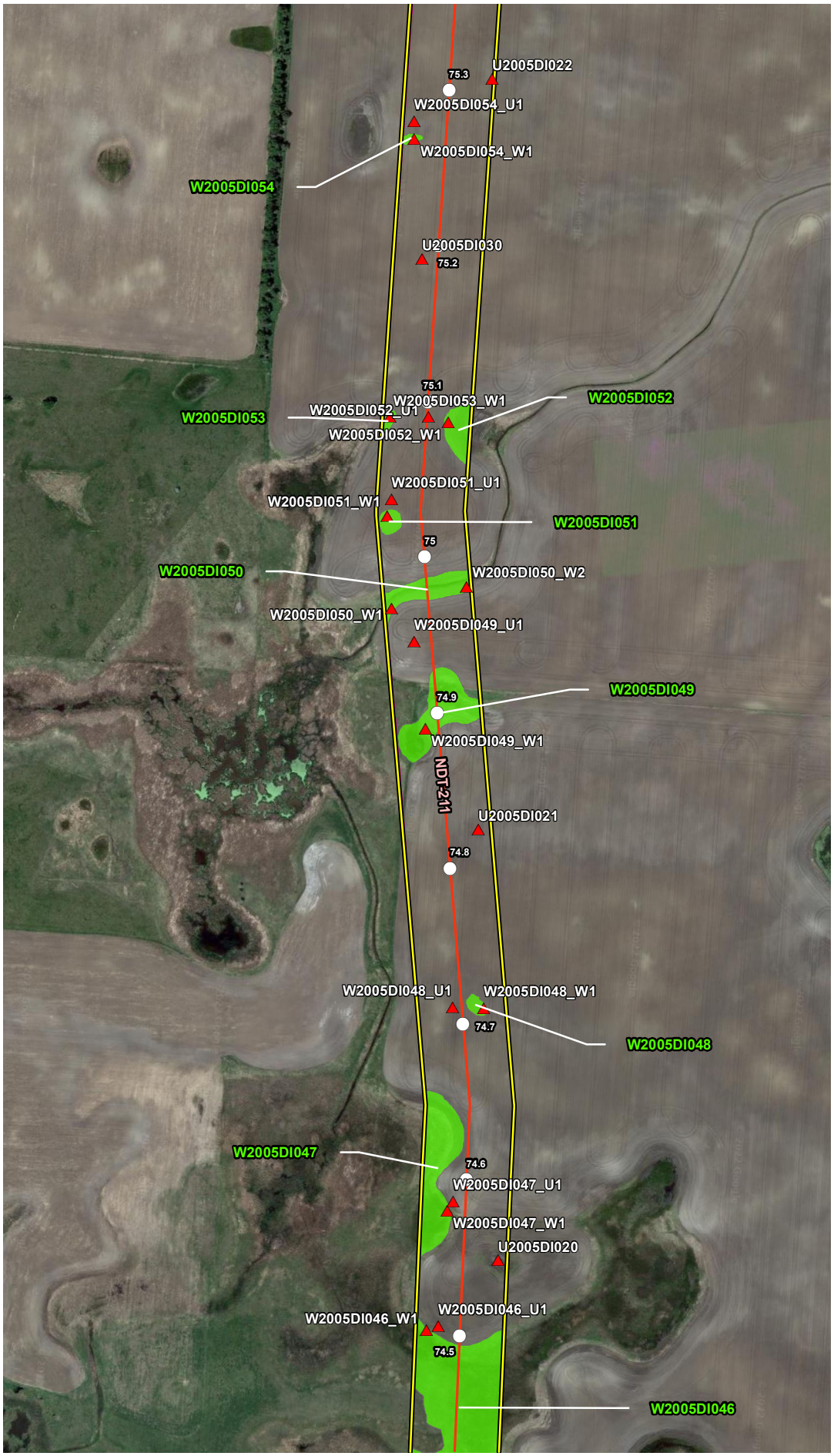
## AERIAL MAP

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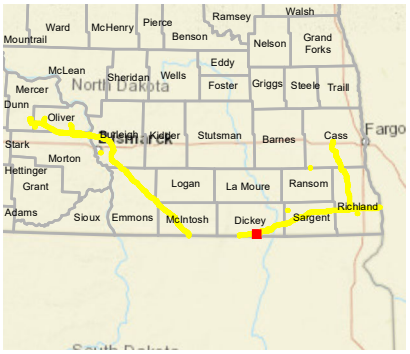


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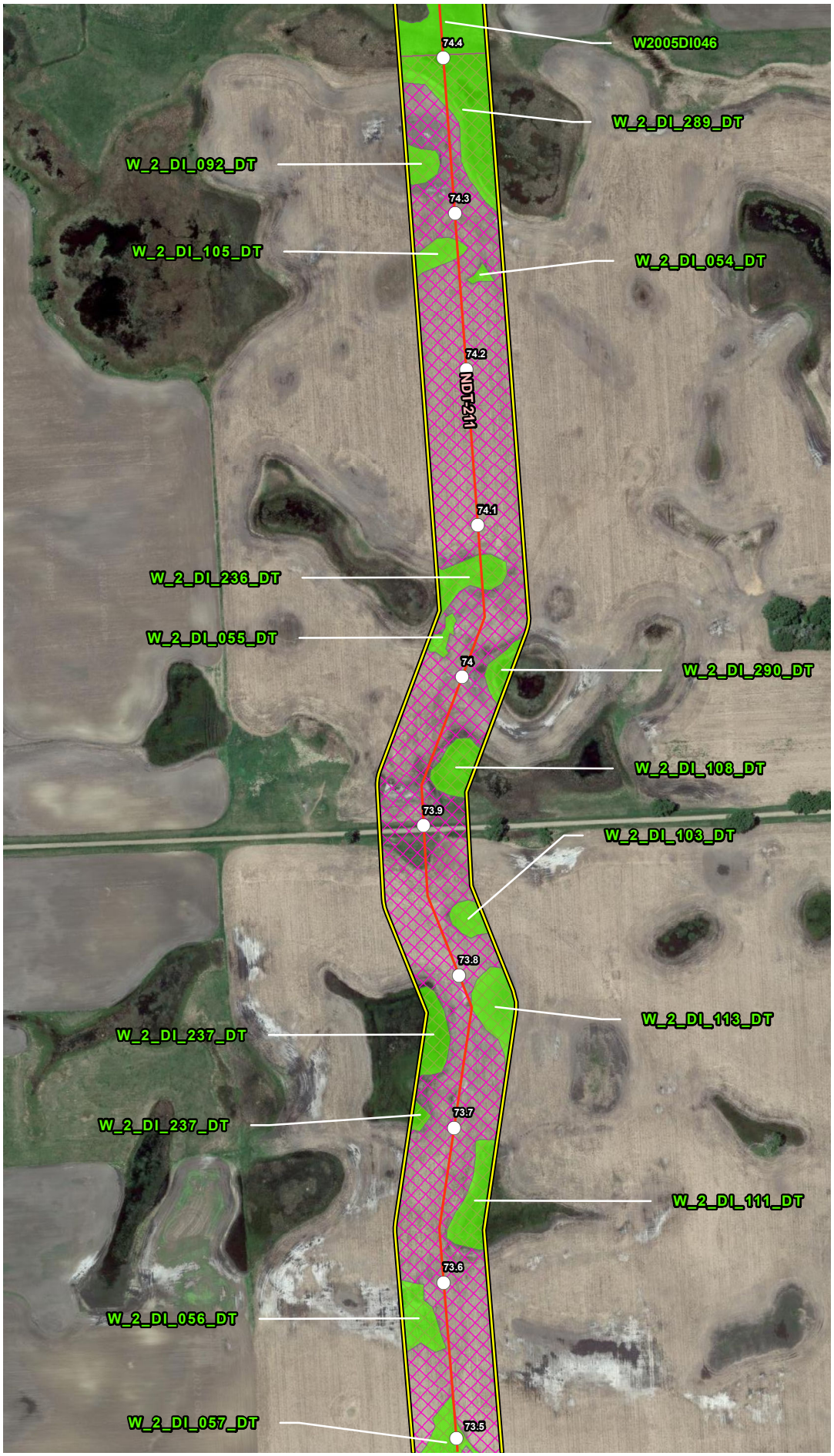


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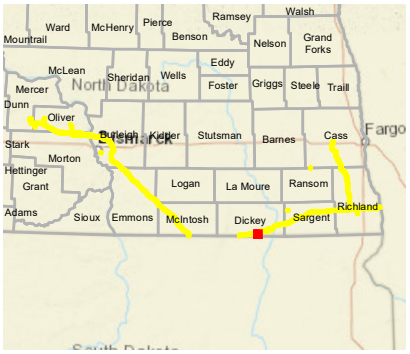


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| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
193 of 392

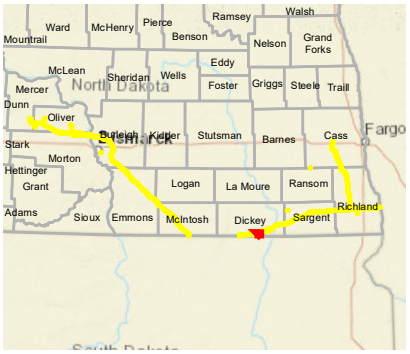
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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| Scale: | Projection: |
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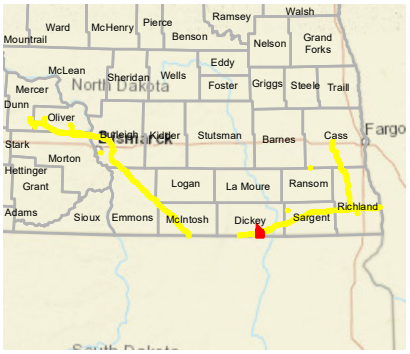
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>194 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Scale: | Projection: |
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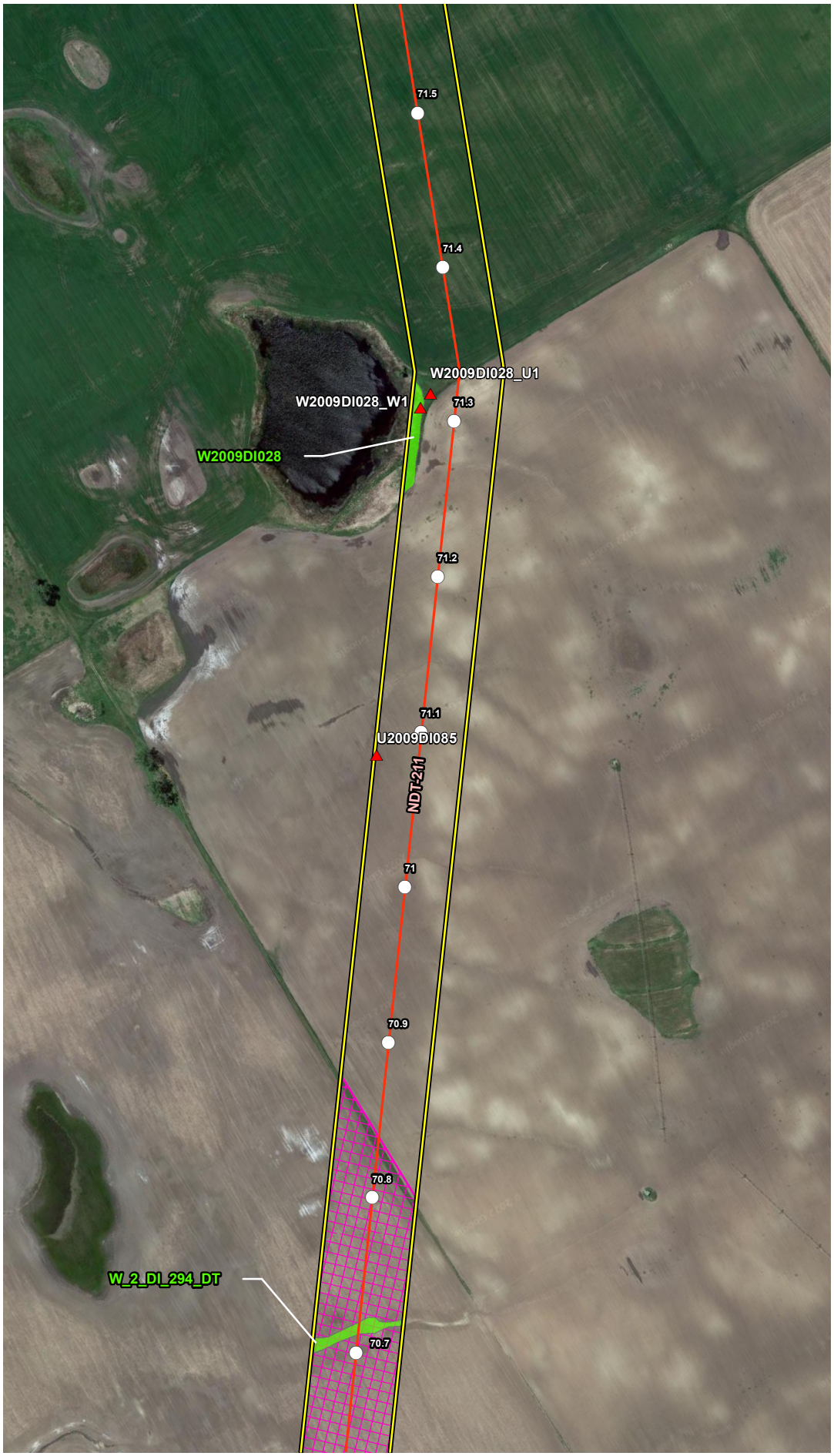
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

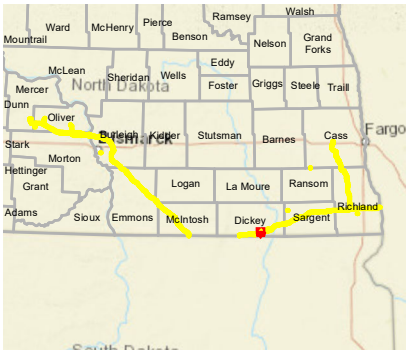
| Sheet: | Drawing Number: |
|---|---|
| 195 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 196 of 392 | 2001-22-002<br>Current Revision |

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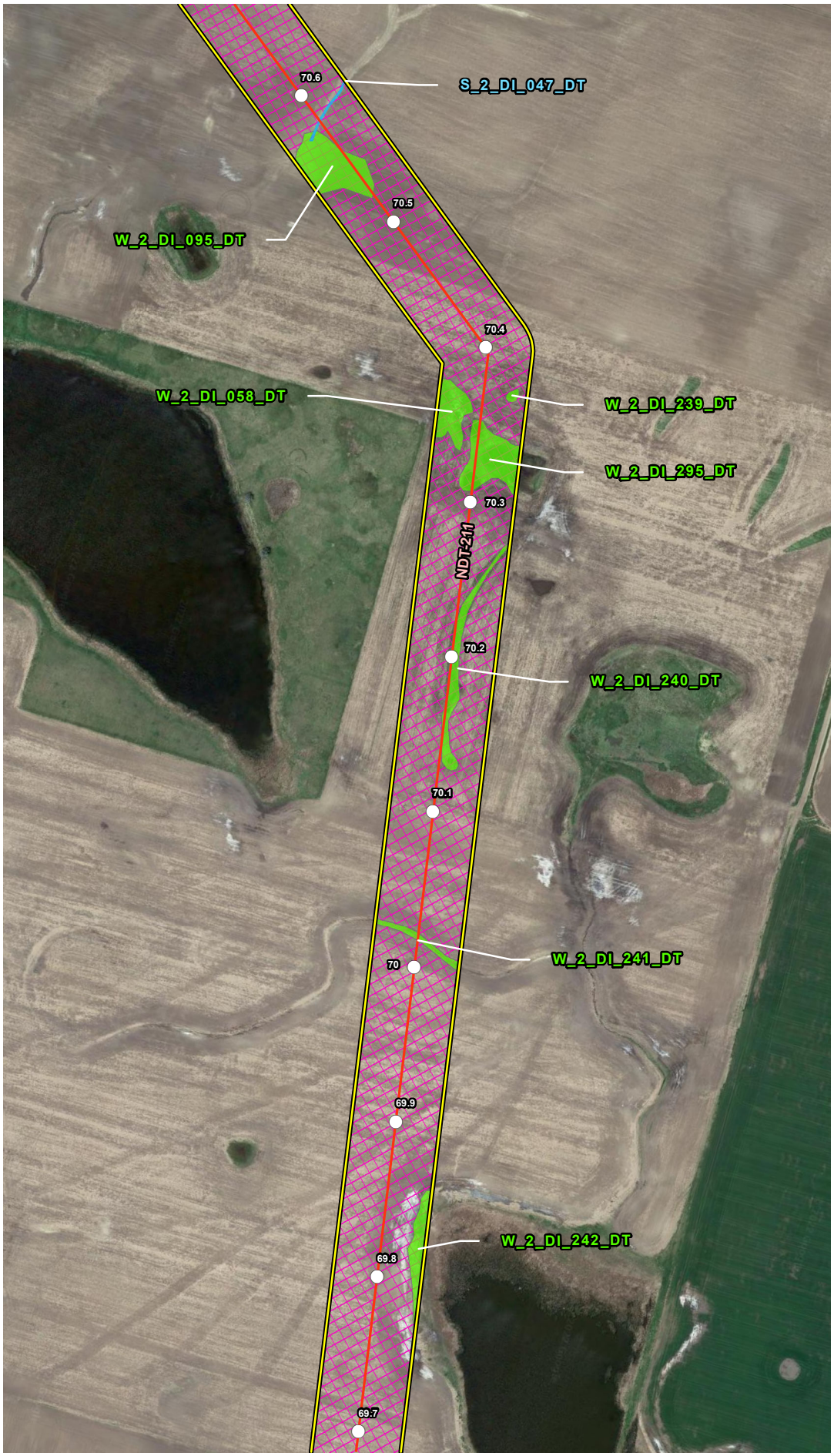
## AERIAL MAP

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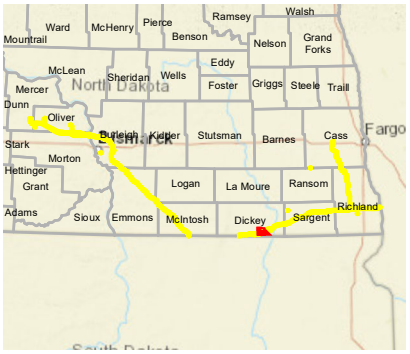


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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 197 of 392 | 2001-22-002<br>Current Revision |

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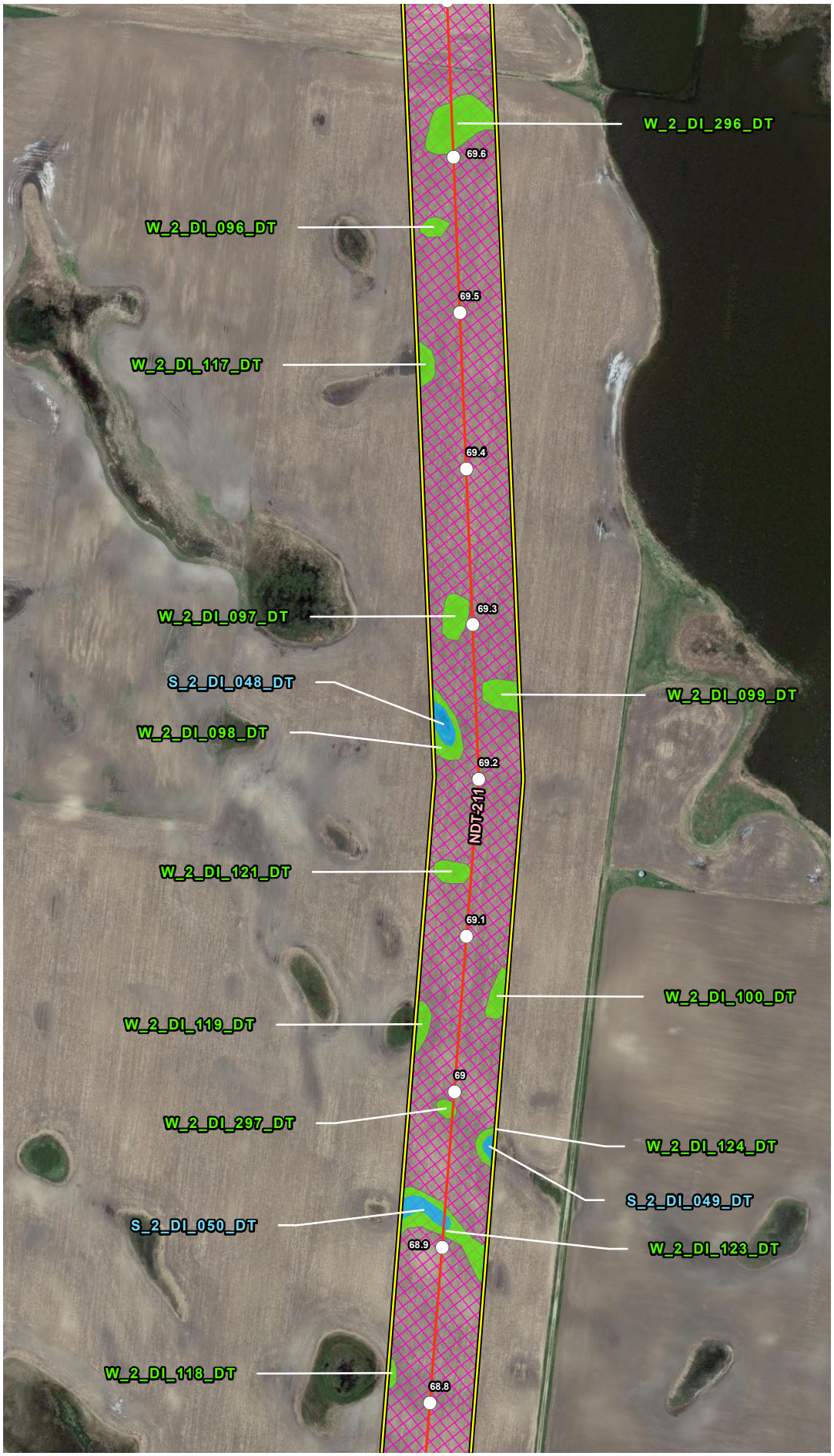
## AERIAL MAP

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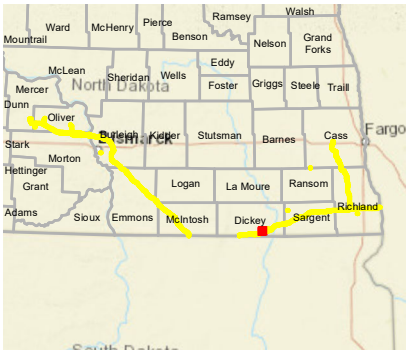


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |
| 1A - Revision | | |
| Revision description | | |
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Figure Title:
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Figure Number:
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Scale:
1:6,000
1 inch = 500 feet

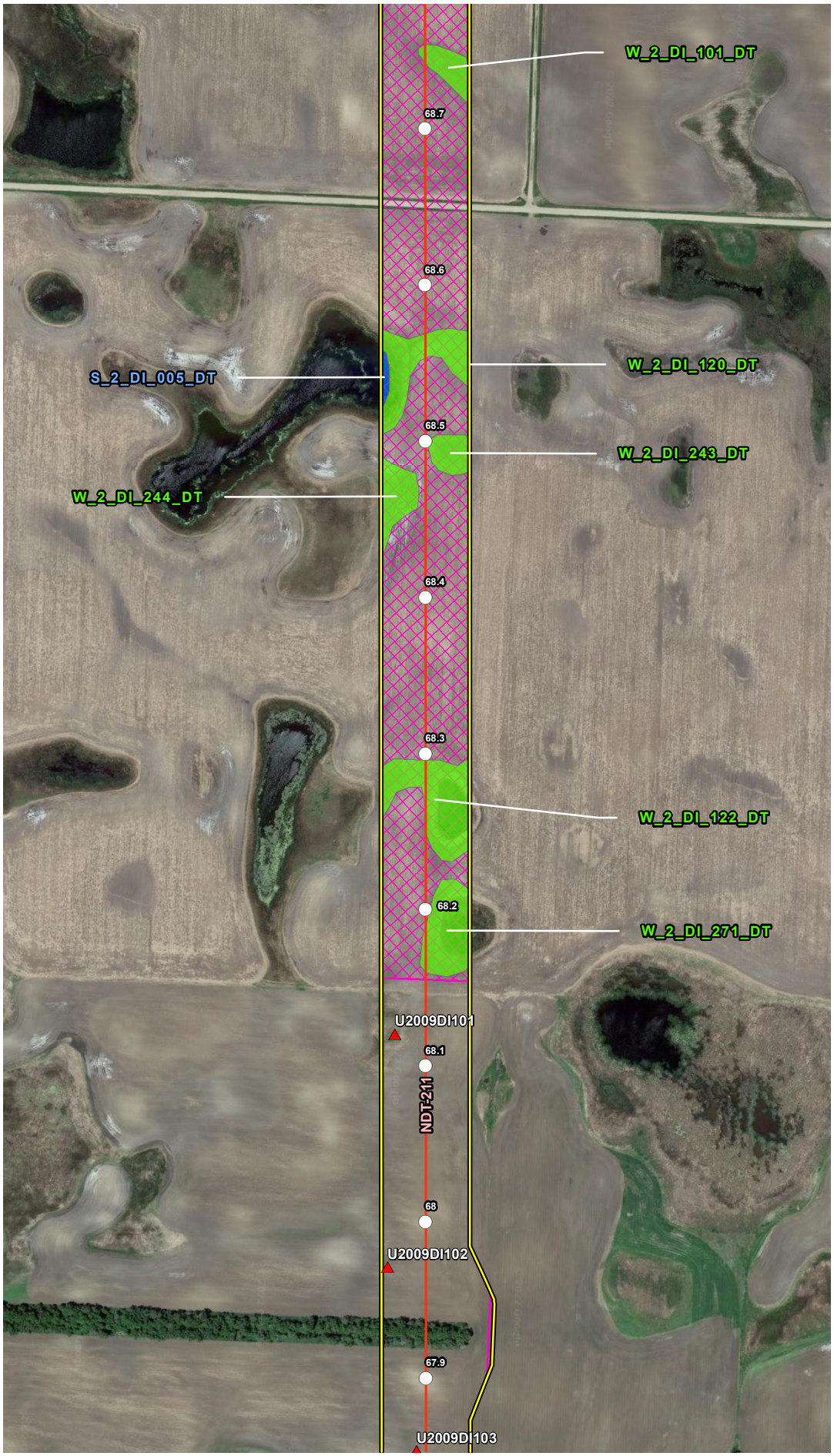
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
198 of 392

Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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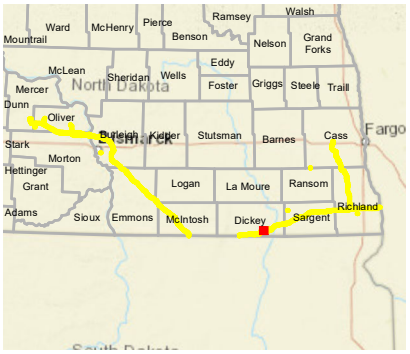


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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Figure Title:

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 199 of 392 | 2001-22-002<br>Current Revision |

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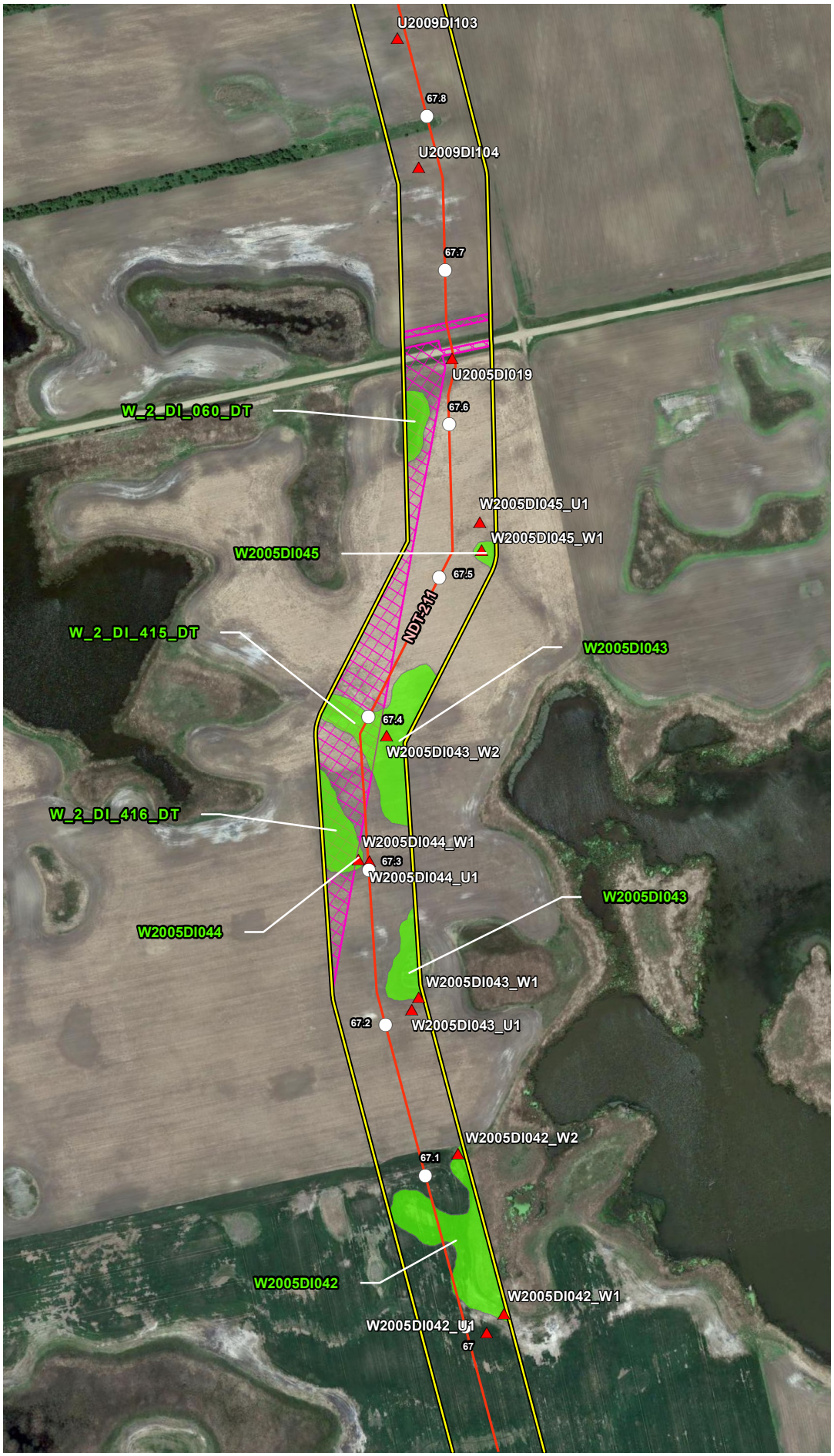
## AERIAL MAP

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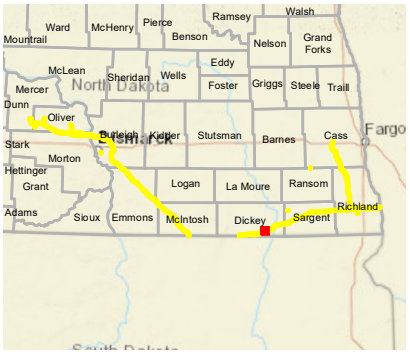


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:
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Appendix A-2

| Scale: | Projection: |
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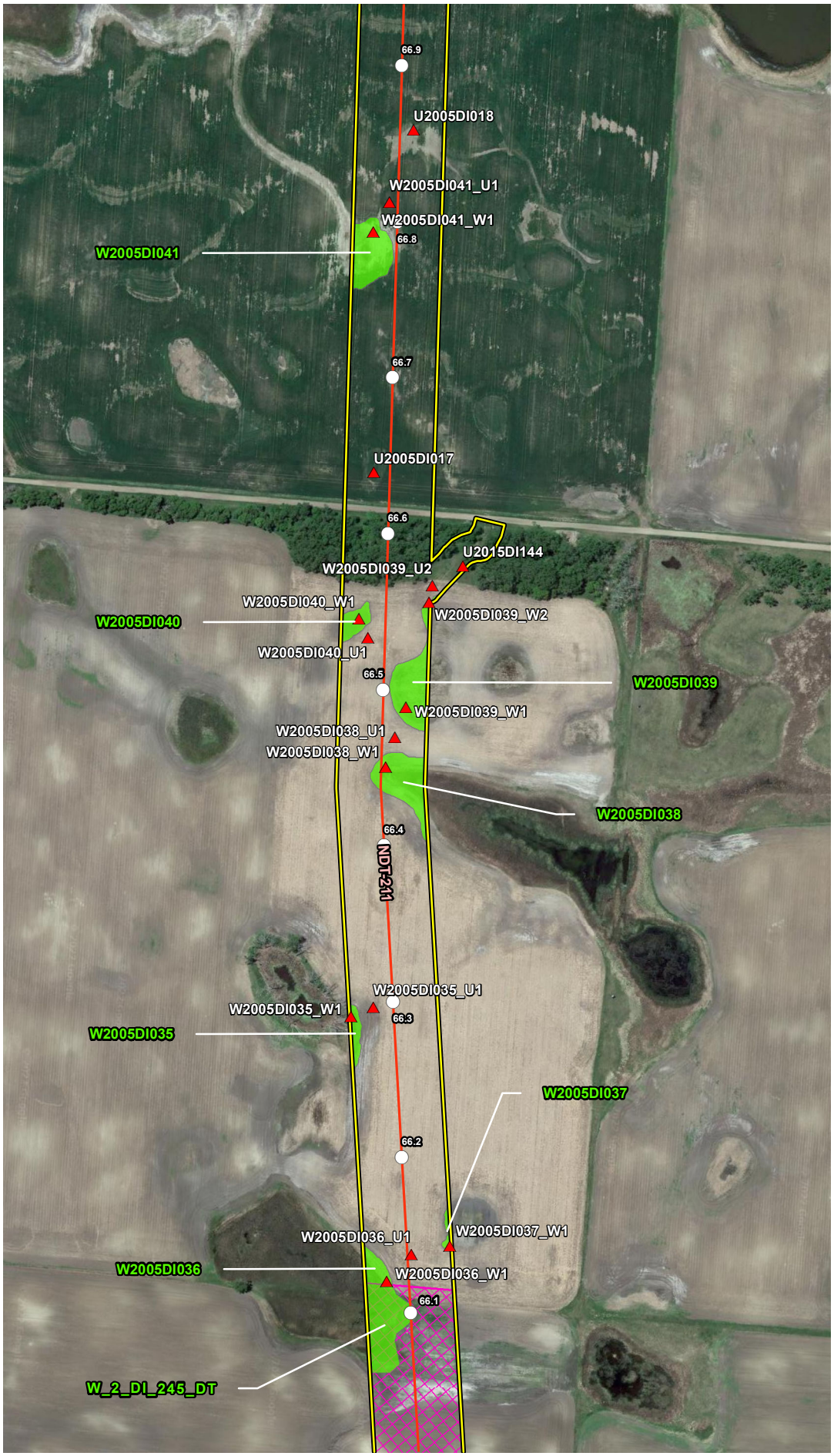
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>200 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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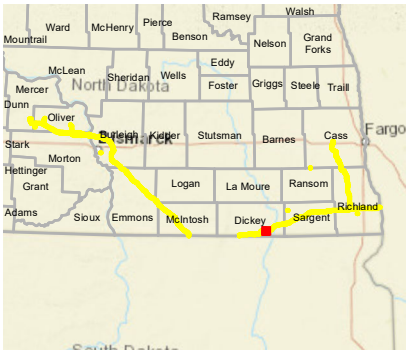


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0 250 500 Feet

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| 2022-08-04 | MM | AB |

1A - Revision

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| Sheet | Drawing Number |
|---|---|
| 201 of 392 | 2001-22-002<br>Current Revision |

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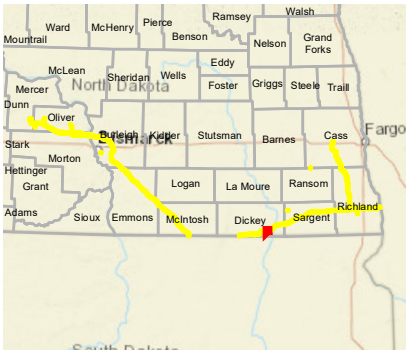
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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**1A - Revision**

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| 202 of 392 | 2001-22-002<br>Current Revision |

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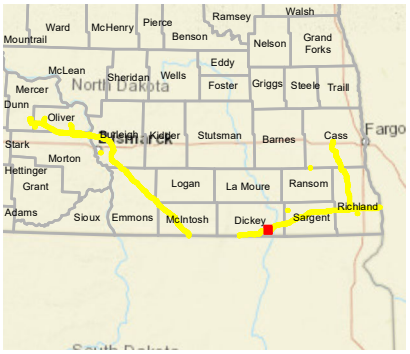
## AERIAL MAP




## VICINITY MAP

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| 203 of 392 | 2001-22-002<br>Current Revision |

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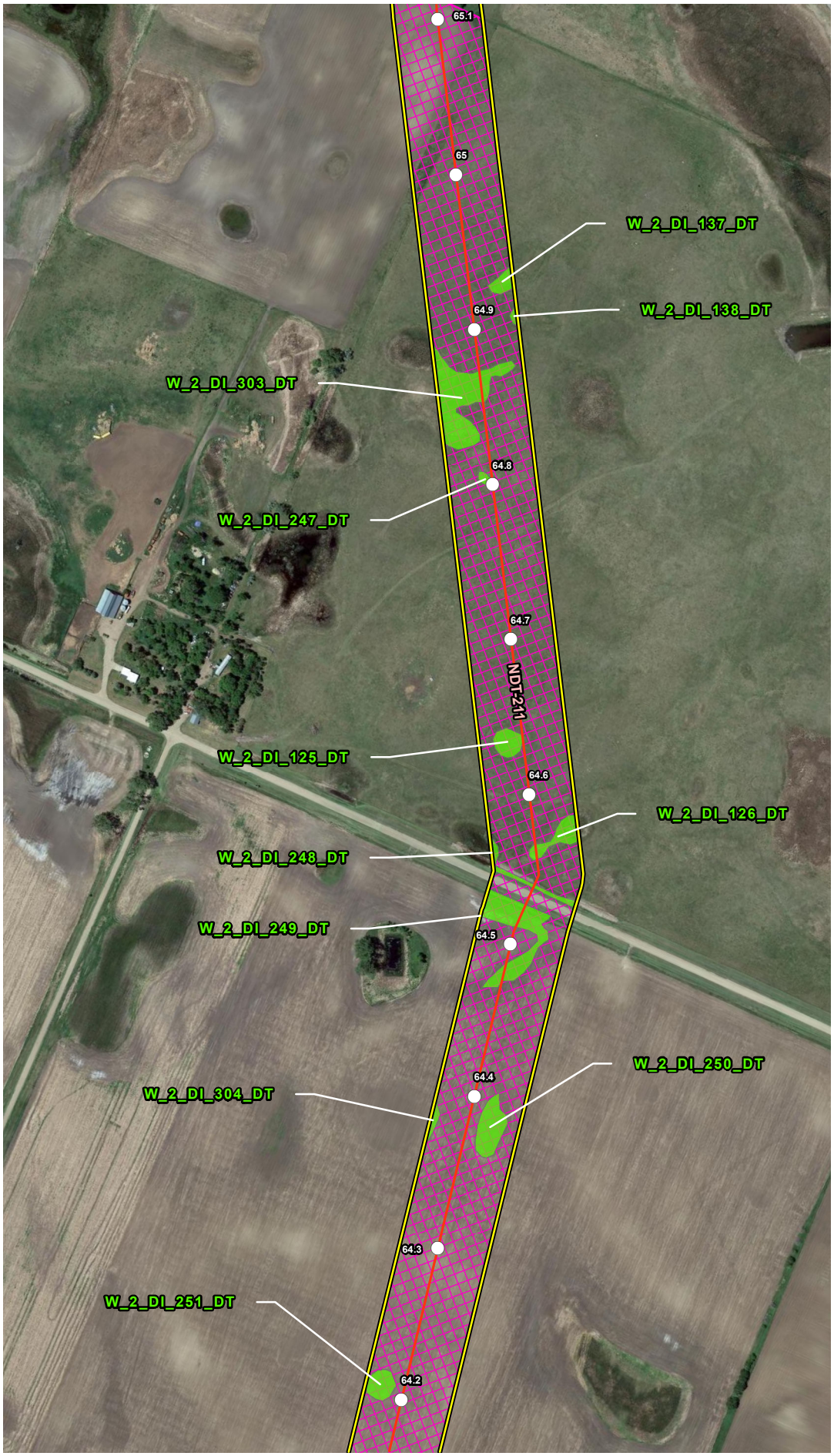
## AERIAL MAP

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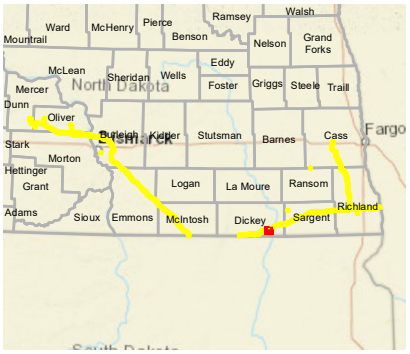


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| Sheet:<br>204 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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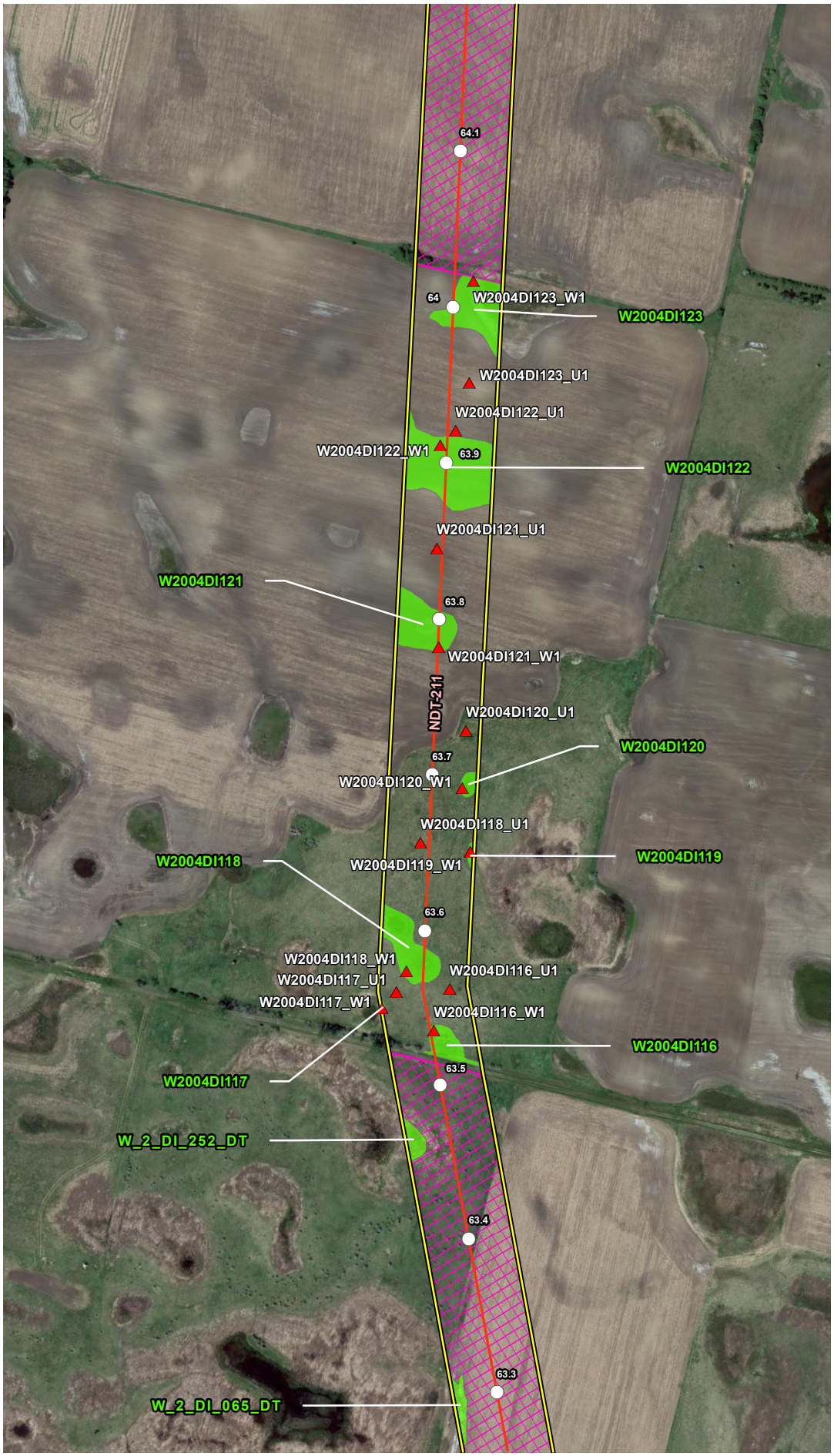
## AERIAL MAP

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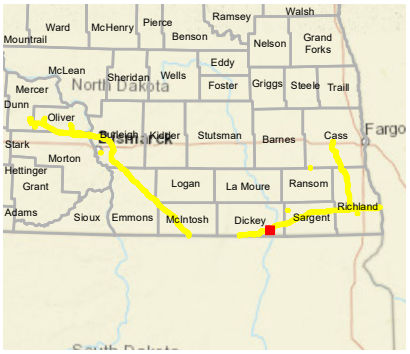


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**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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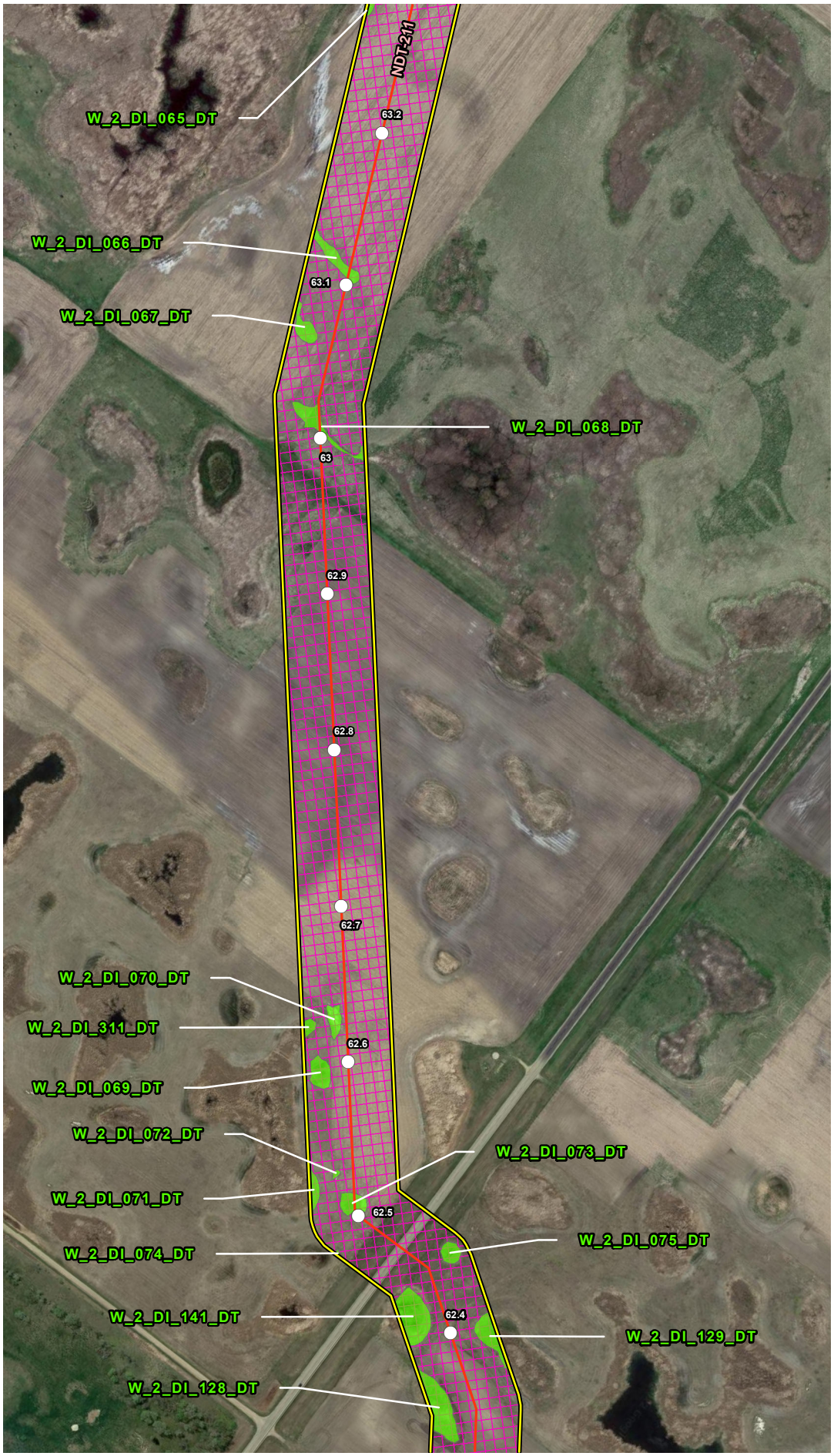
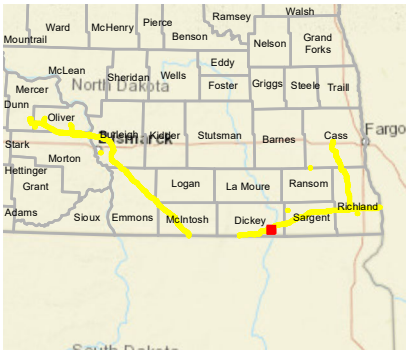
File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

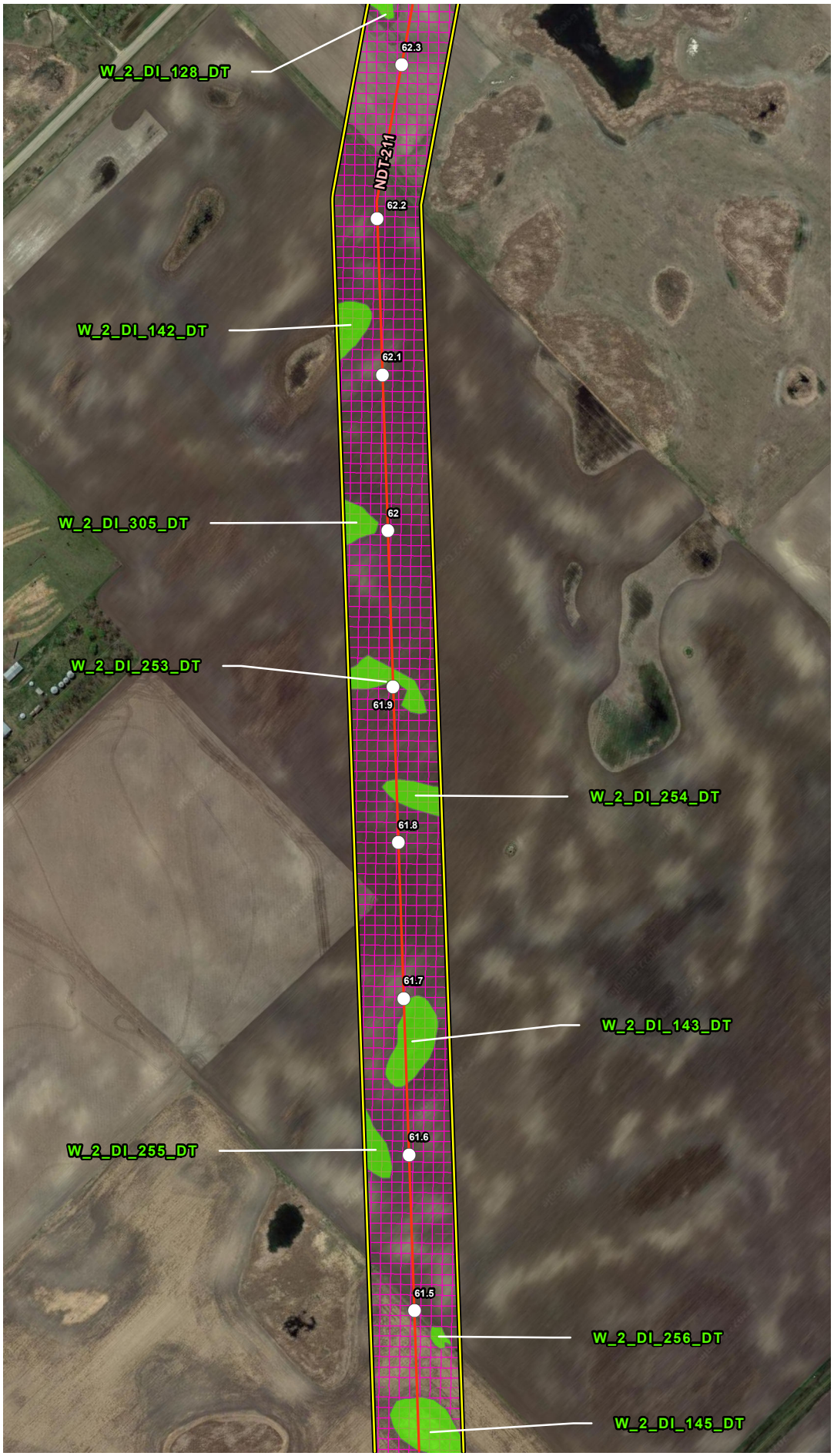
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
206 of 392

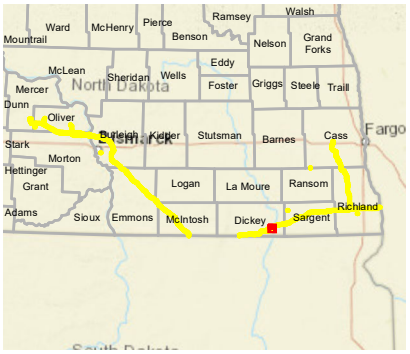
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**Aerial Map**

Figure Number:

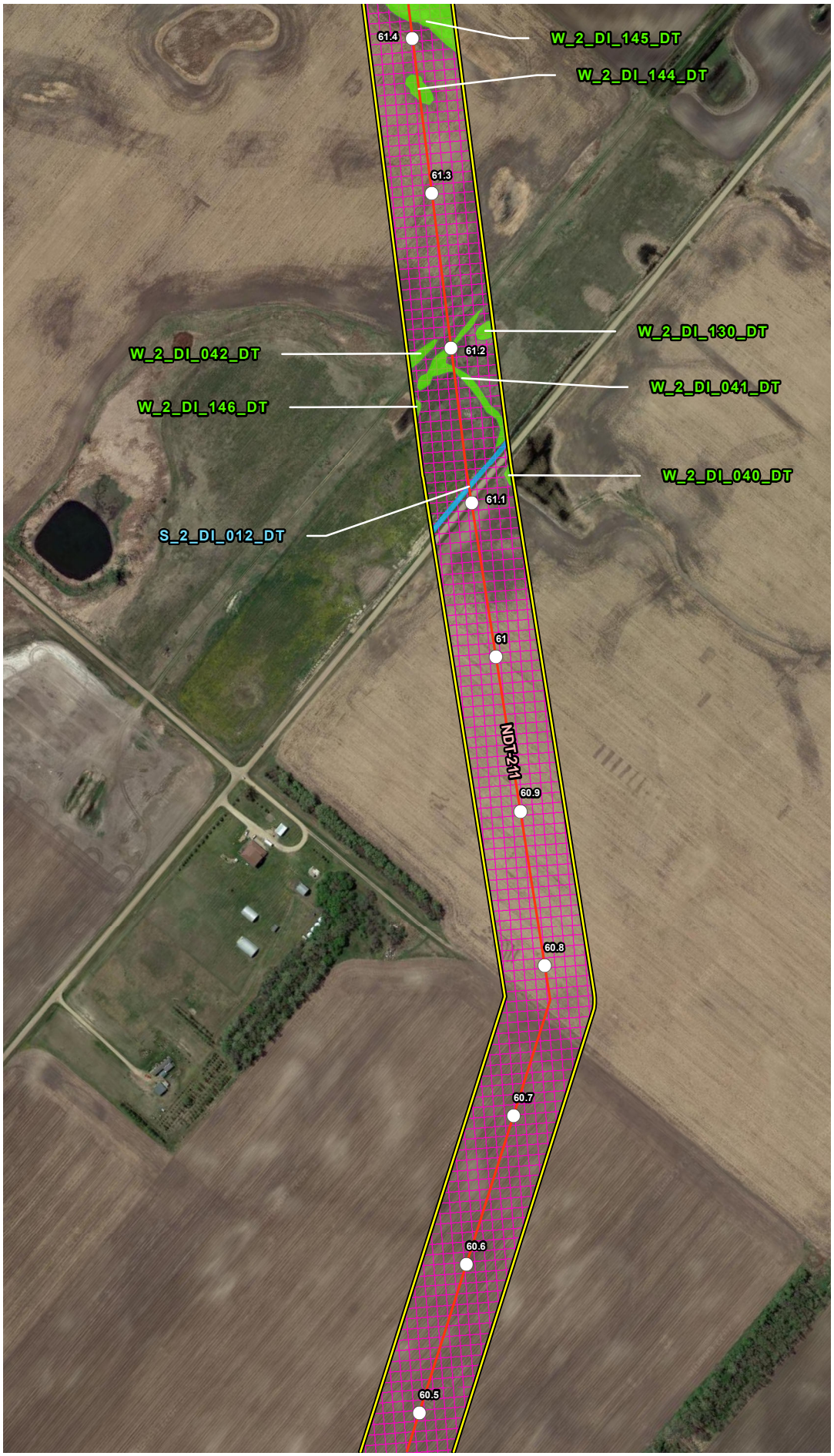
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

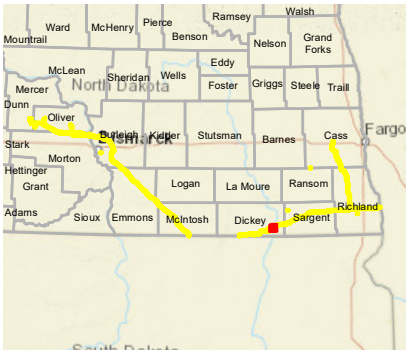
| Sheet: | Drawing Number: |
|---|---|
| 207 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

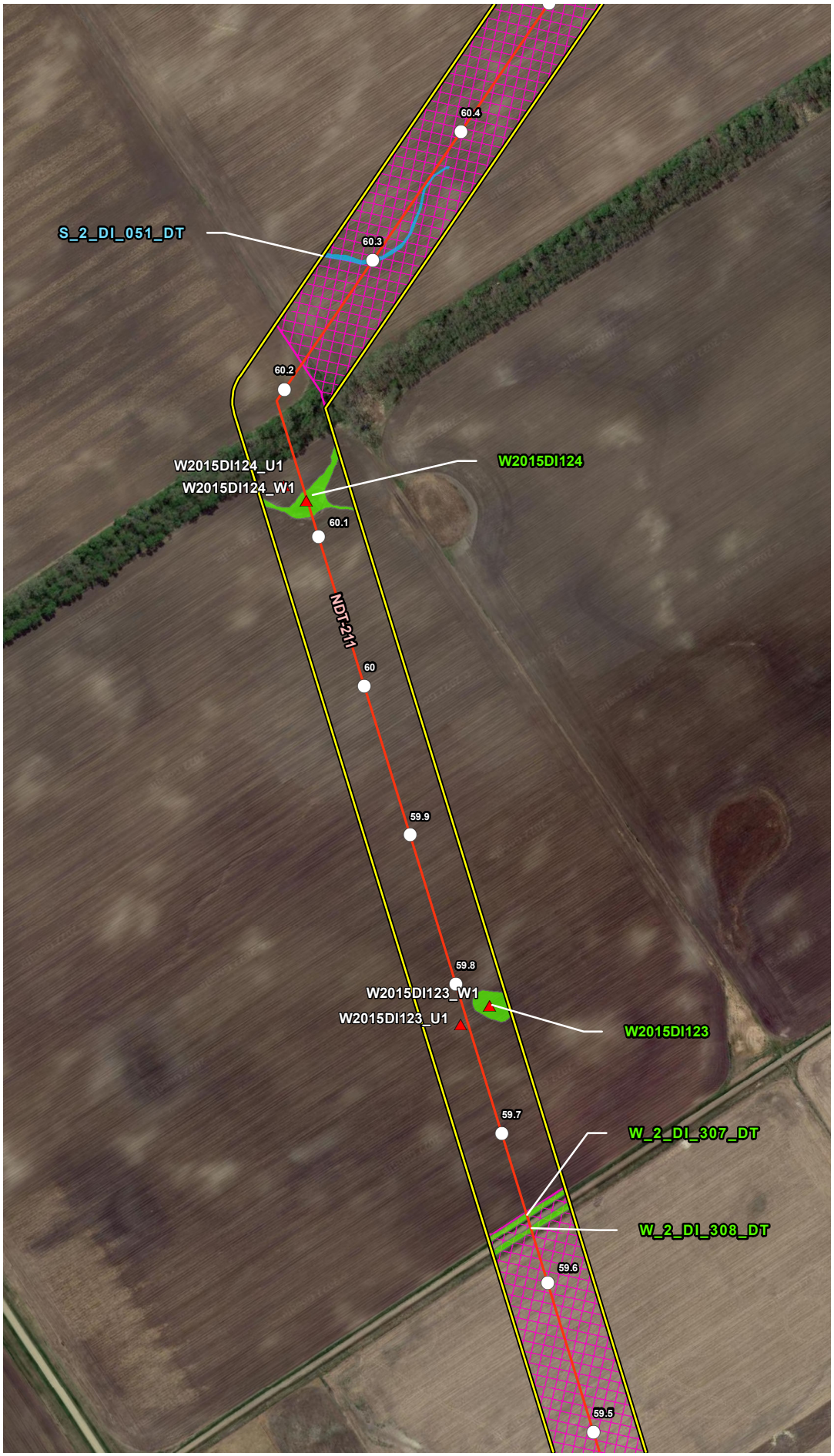
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
208 of 392

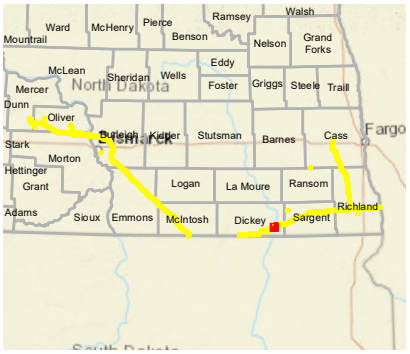
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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**Figure Title:**

Aerial Map

**Figure Number:**

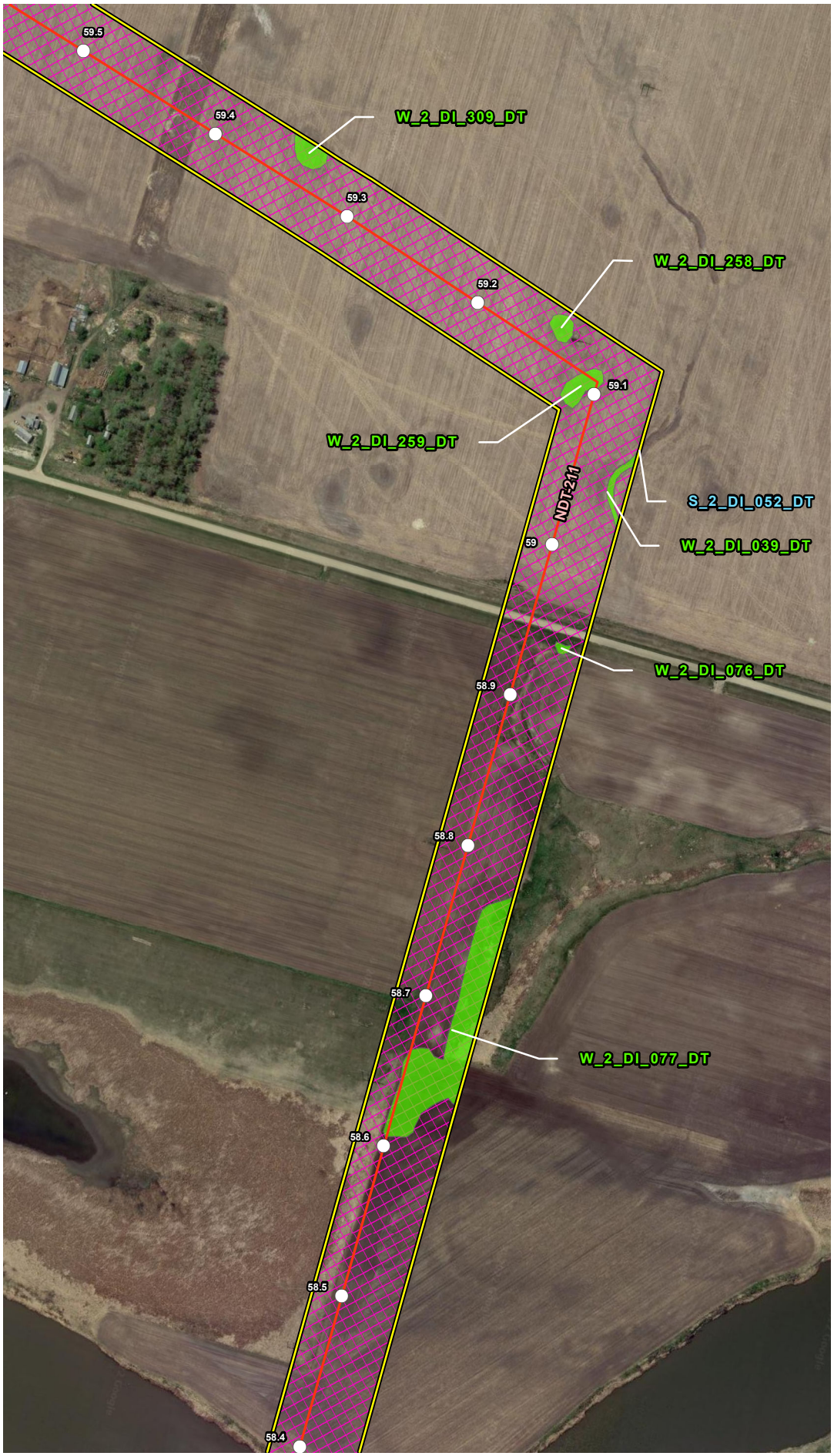
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

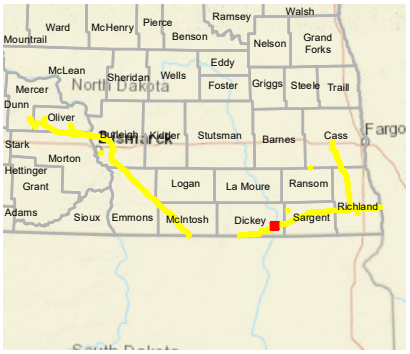
| Sheet: | Drawing Number: |
|---|---|
| 209 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

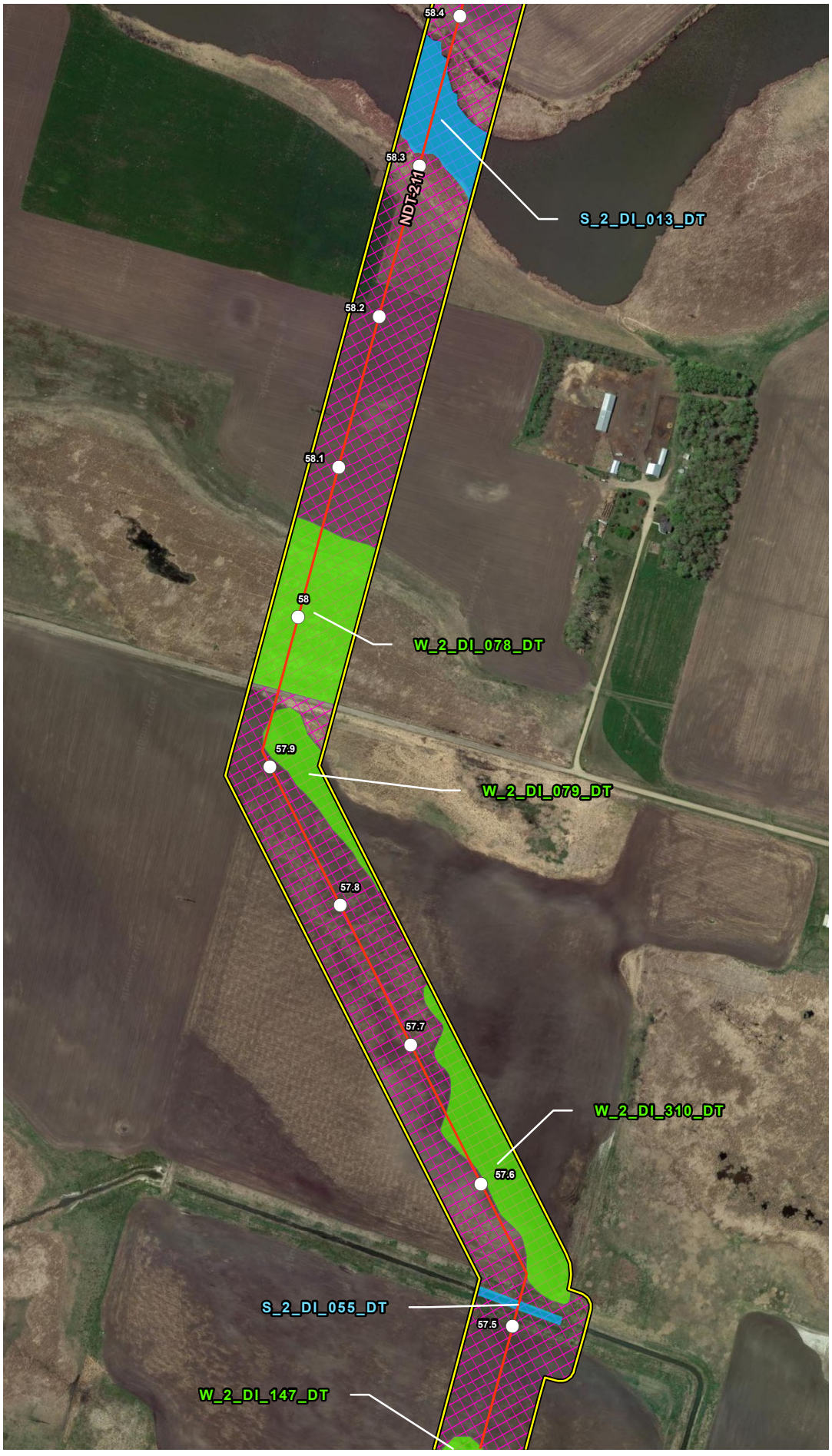
Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

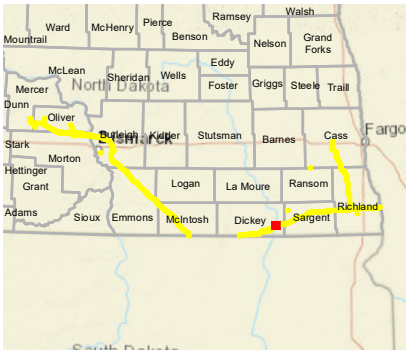
| Sheet: | Drawing Number: |
|---|---|
| 210 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDTmxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:
**Aerial Map**

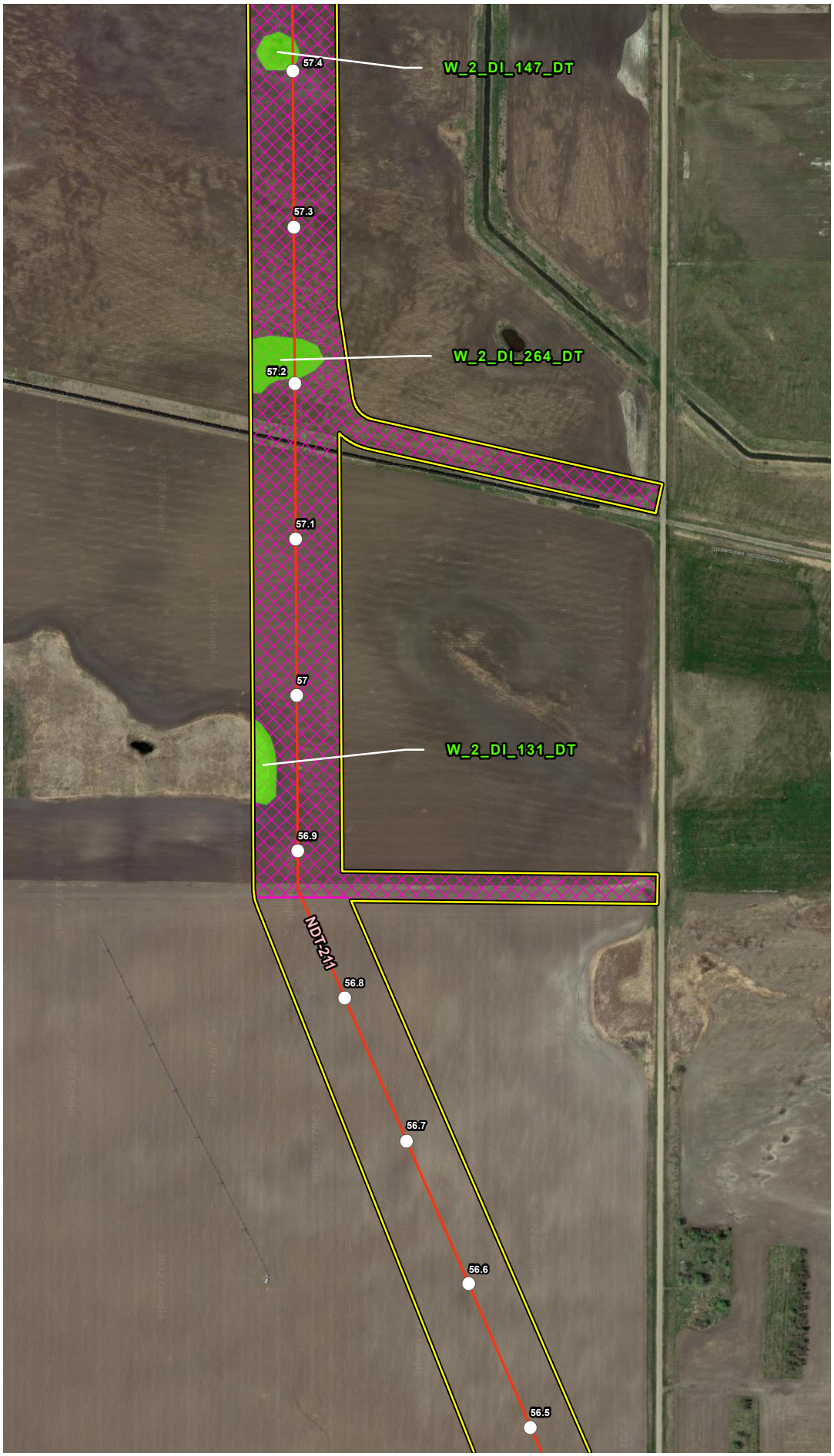
Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

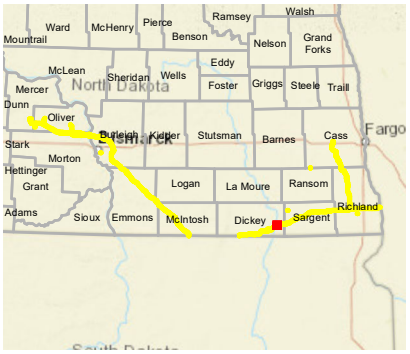
| Sheet: | Drawing Number: |
|---|---|
| 211 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**

Aerial Map

**Figure Number:**

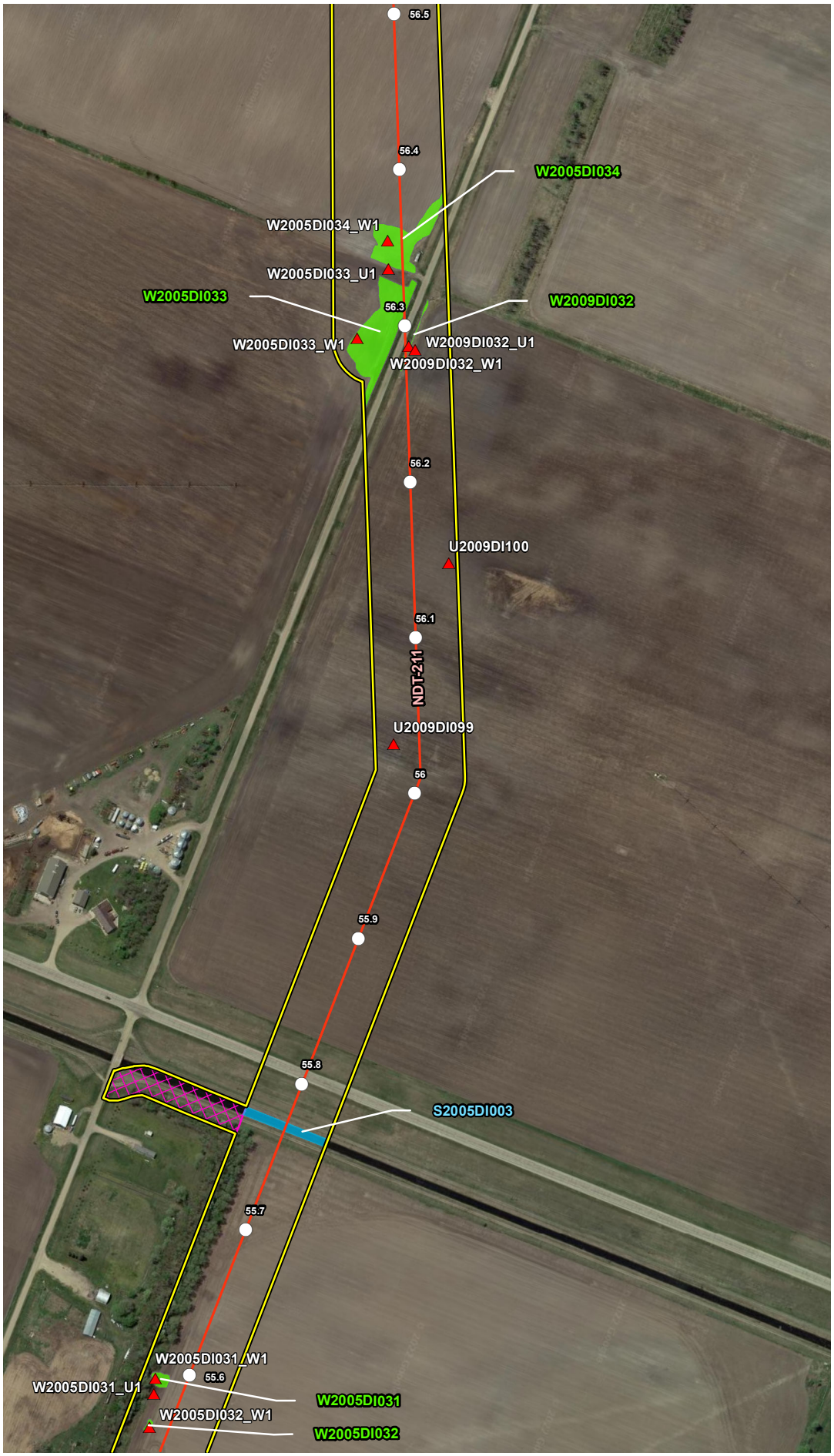
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 212 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDI\mxds\2_Aerial.mxd

## AERIAL MAP

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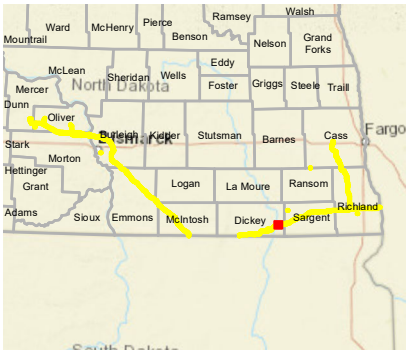


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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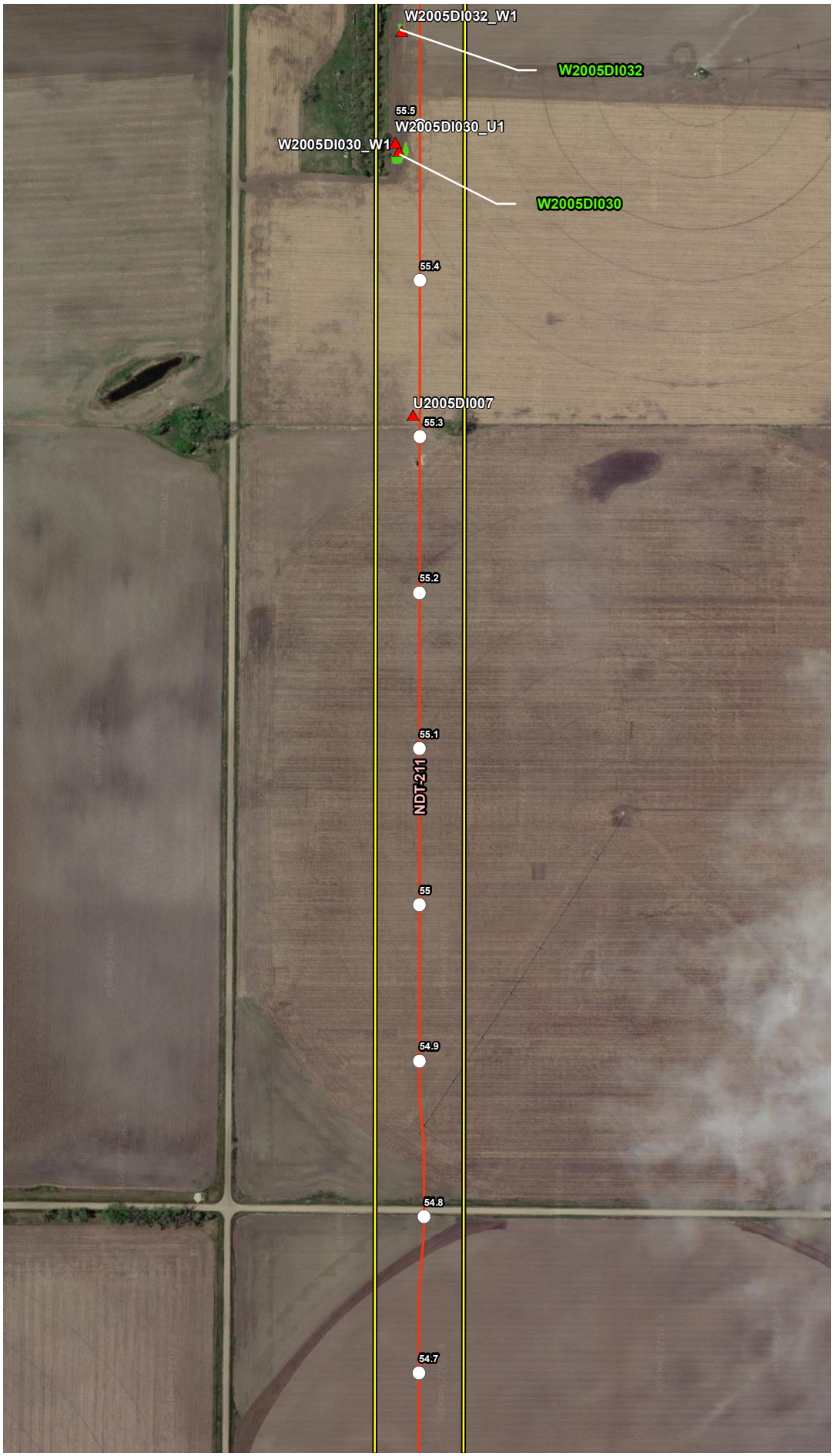
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

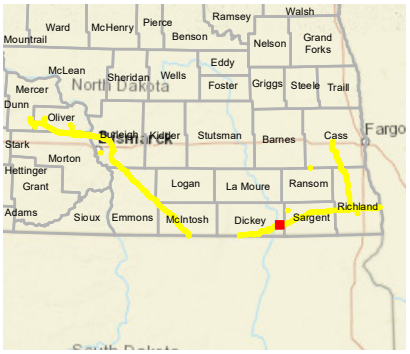
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>213 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

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| Scale: | Projection: |
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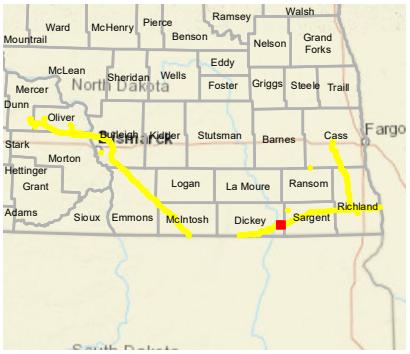
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 214 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**
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Appendix A-2

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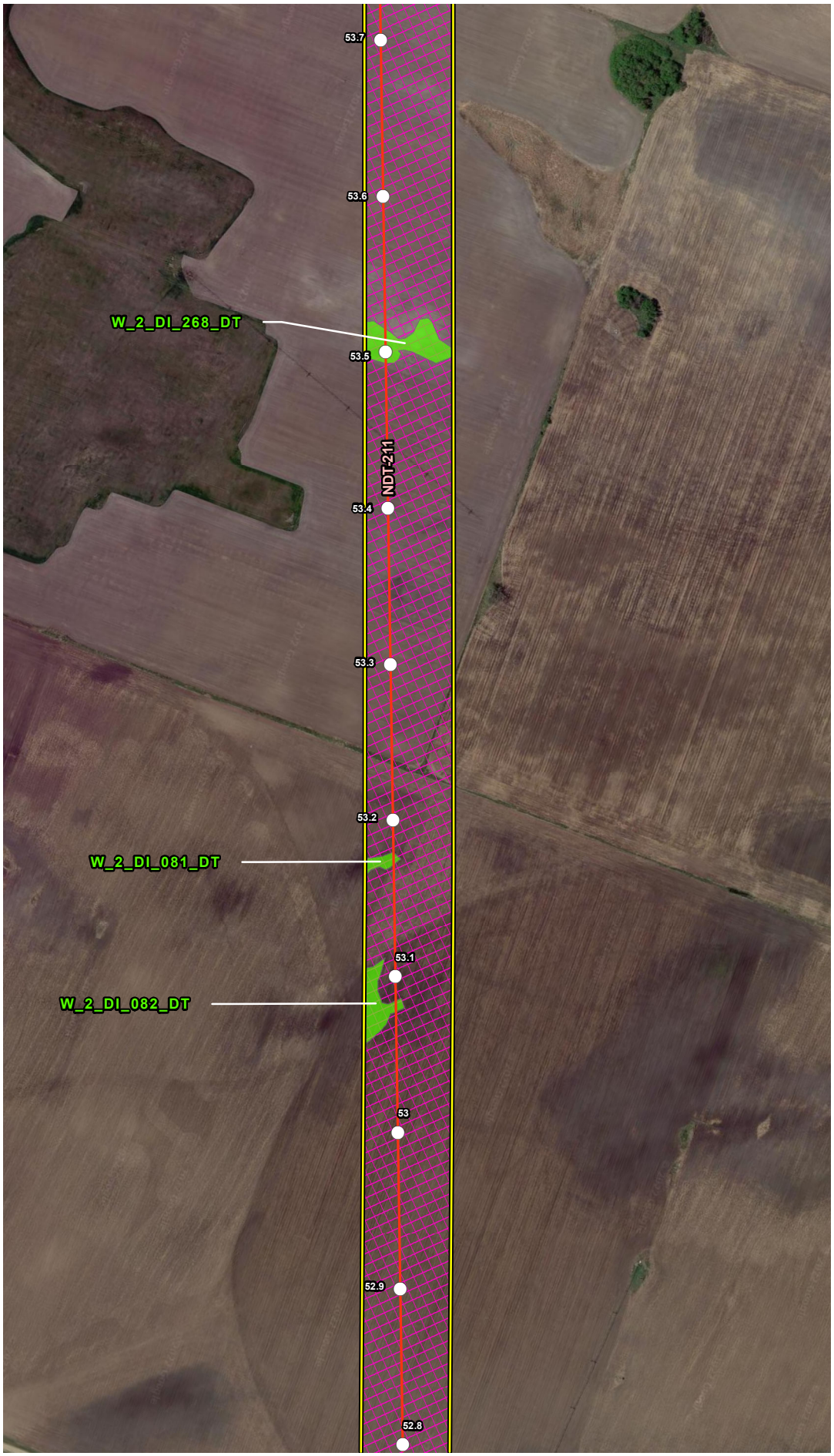
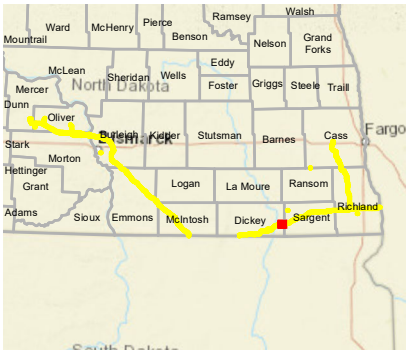
| Sheet: | Drawing Number: |
|---|---|
| 215 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\WR\2022\901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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|---|---|---|
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**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:
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**Appendix A-2**

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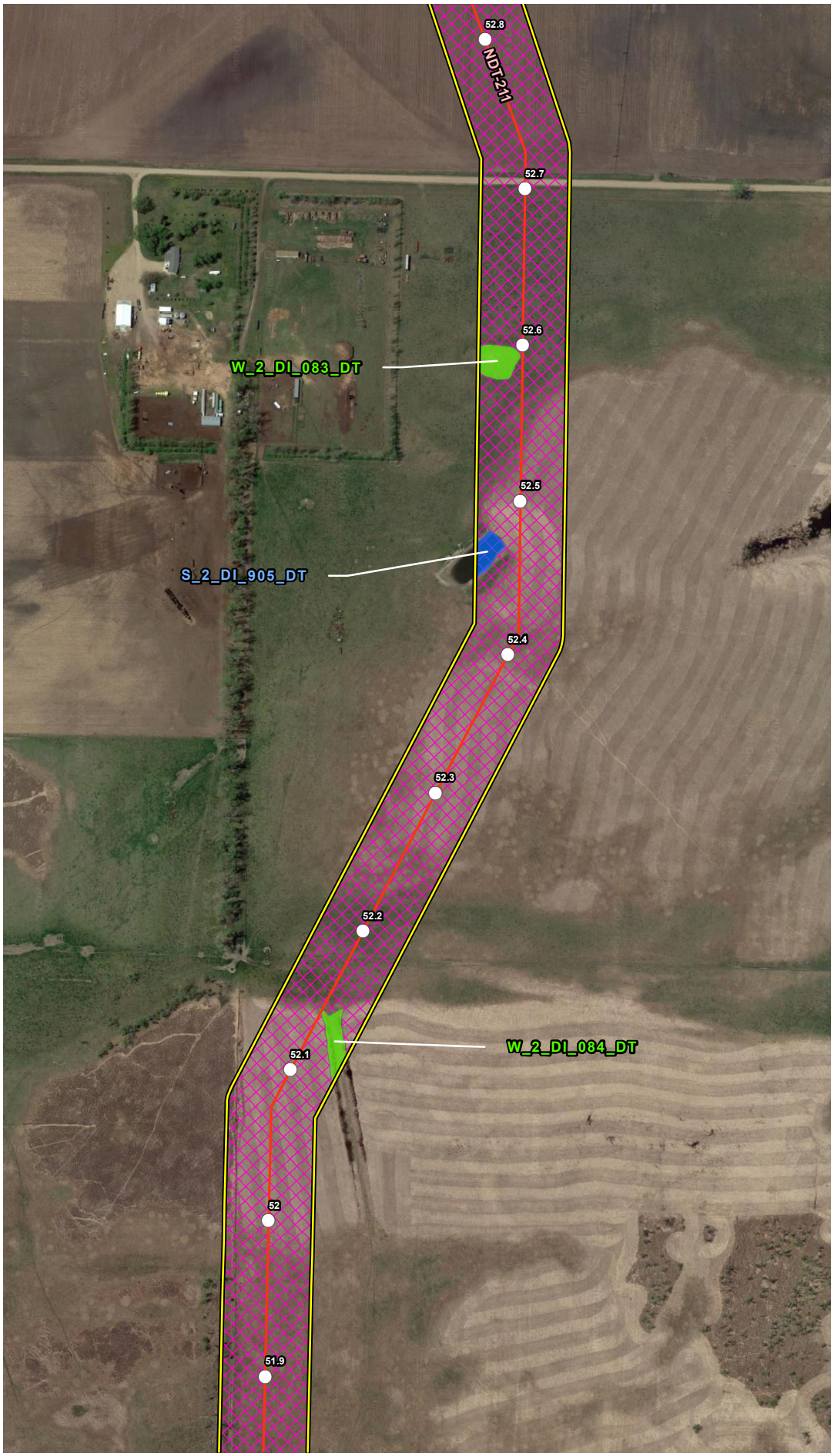
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 216 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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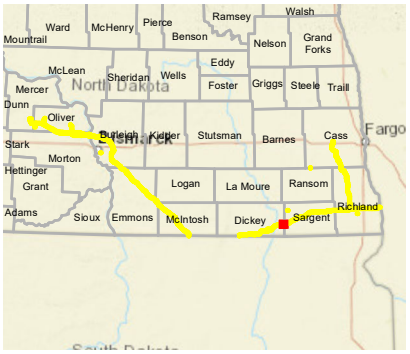


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## REVISIONS

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**1A - Revision**

Revision description

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Figure Title:

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Figure Number:

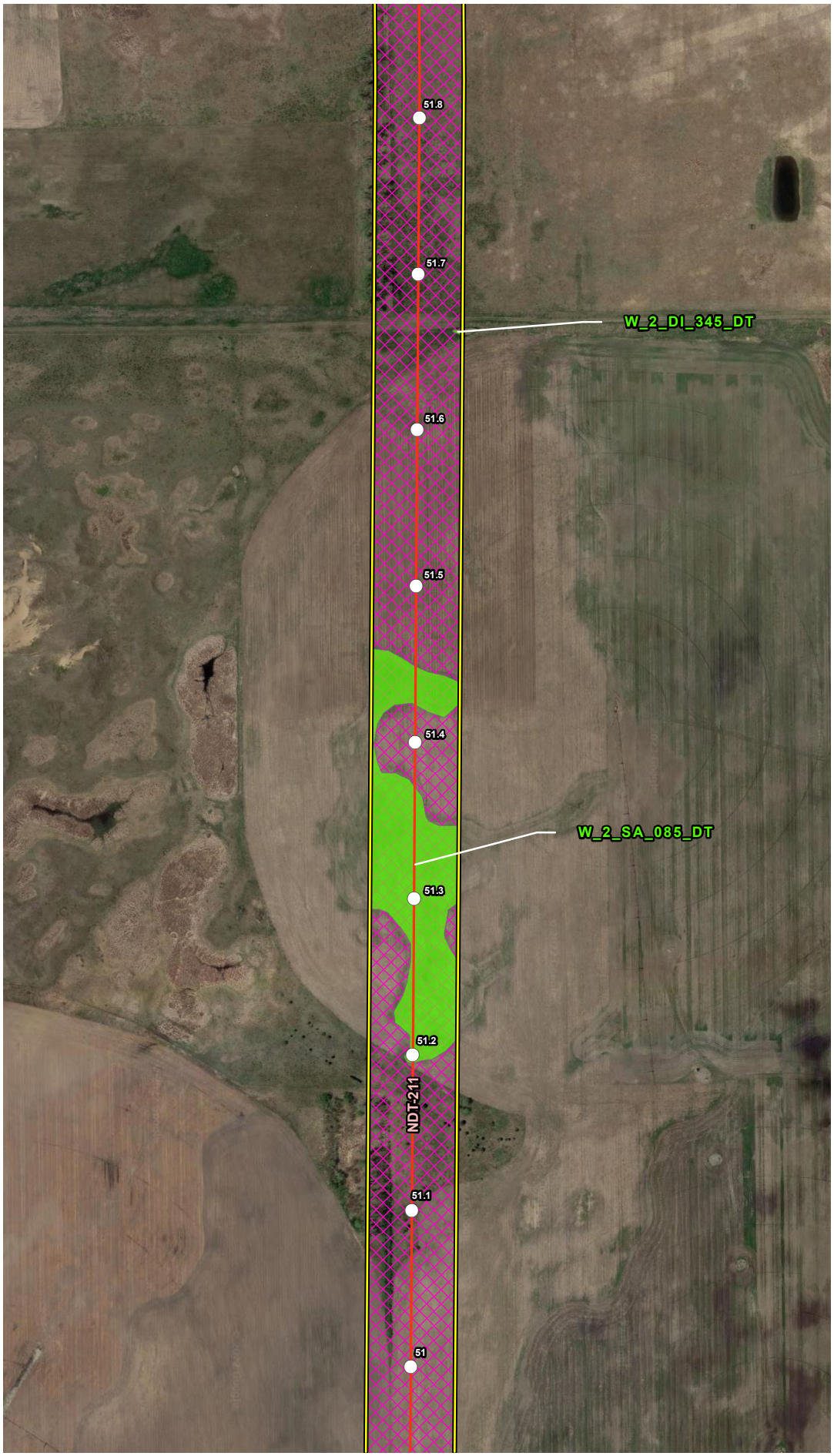
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 217 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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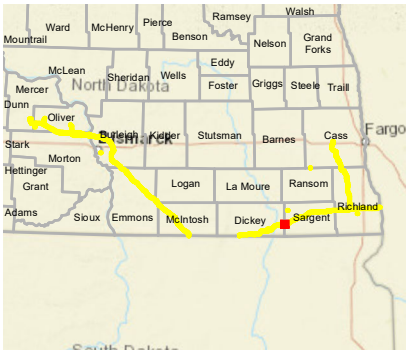


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 218 of 392 | 2001-22-002<br>Current Revision |

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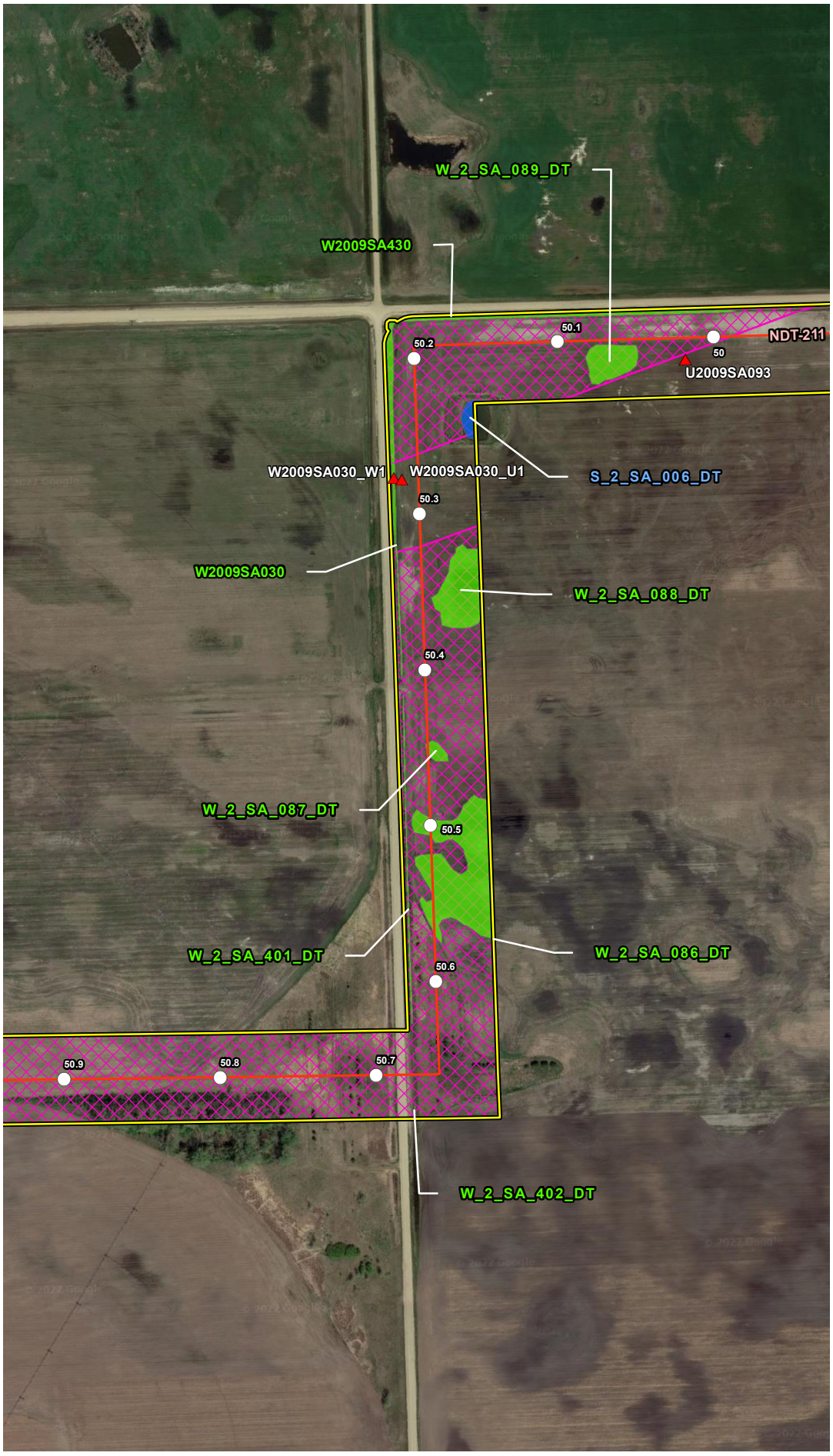
## AERIAL MAP

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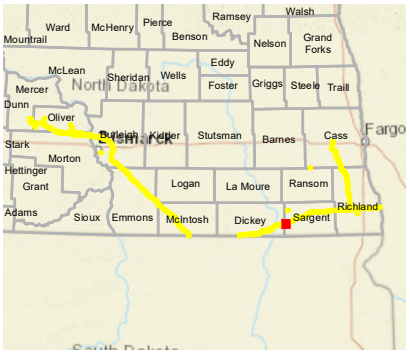


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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Figure Title:

Aerial Map

Figure Number:

Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 219 of 392 | 2001-22-002<br>Current Revision |

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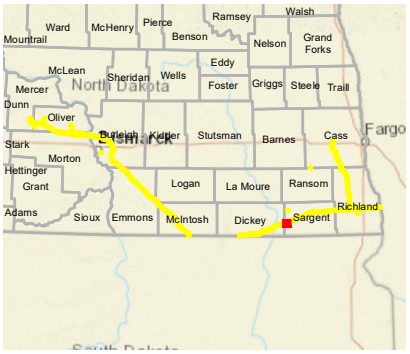
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 220 of 392 | 2001-22-002<br>Current Revision |

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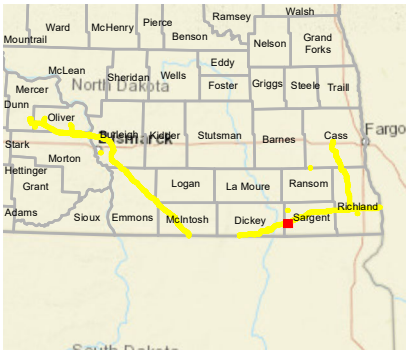
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
221 of 392

Drawing Number:
2001-22-002
Current Revision

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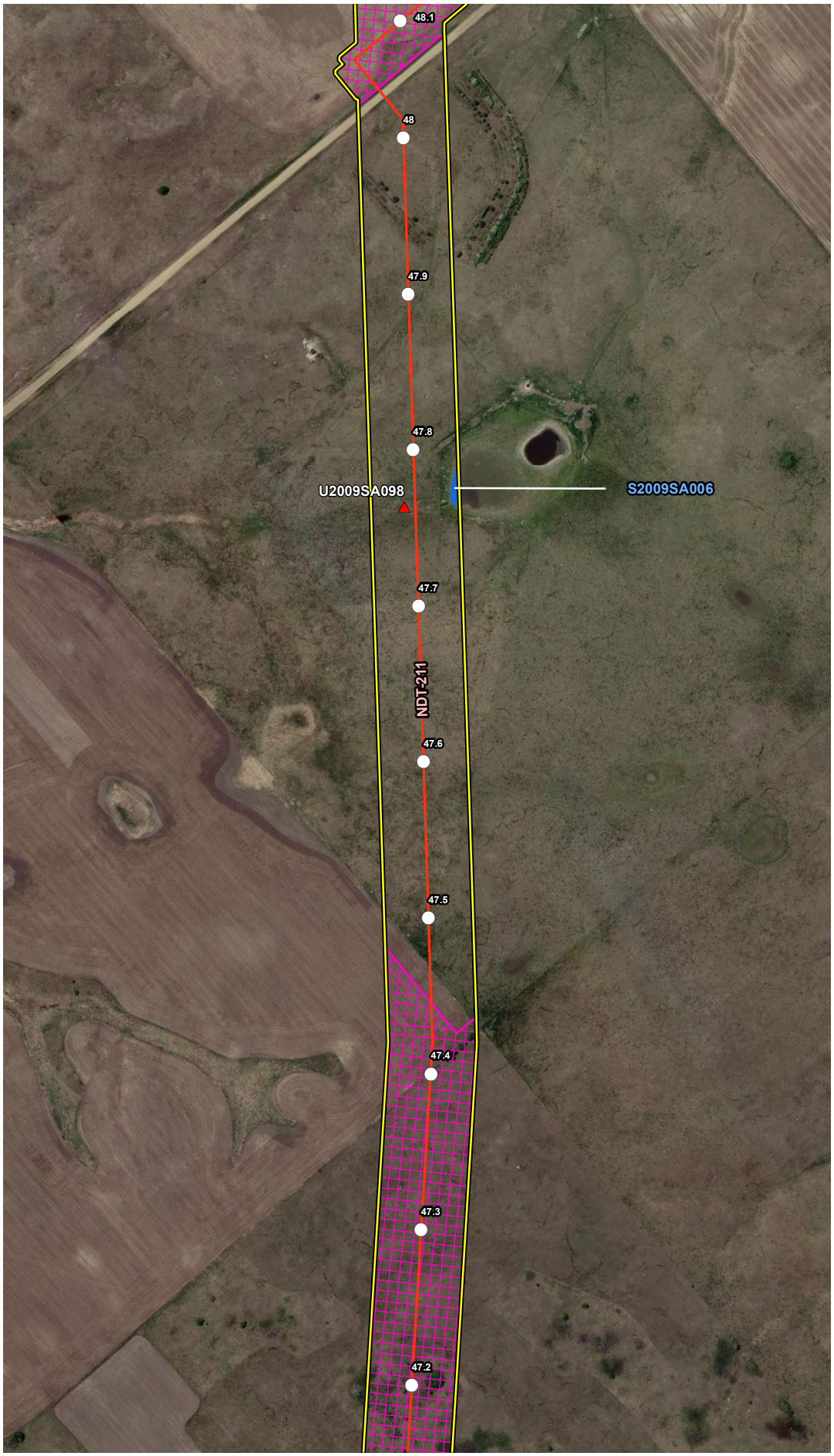
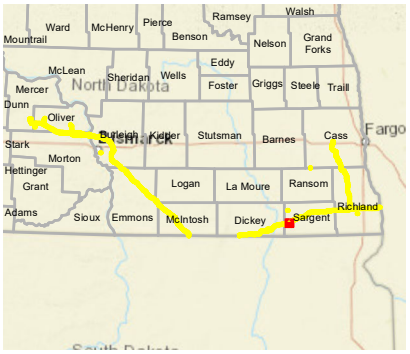
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

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Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 222 of 392 | 2001-22-002<br>Current Revision |

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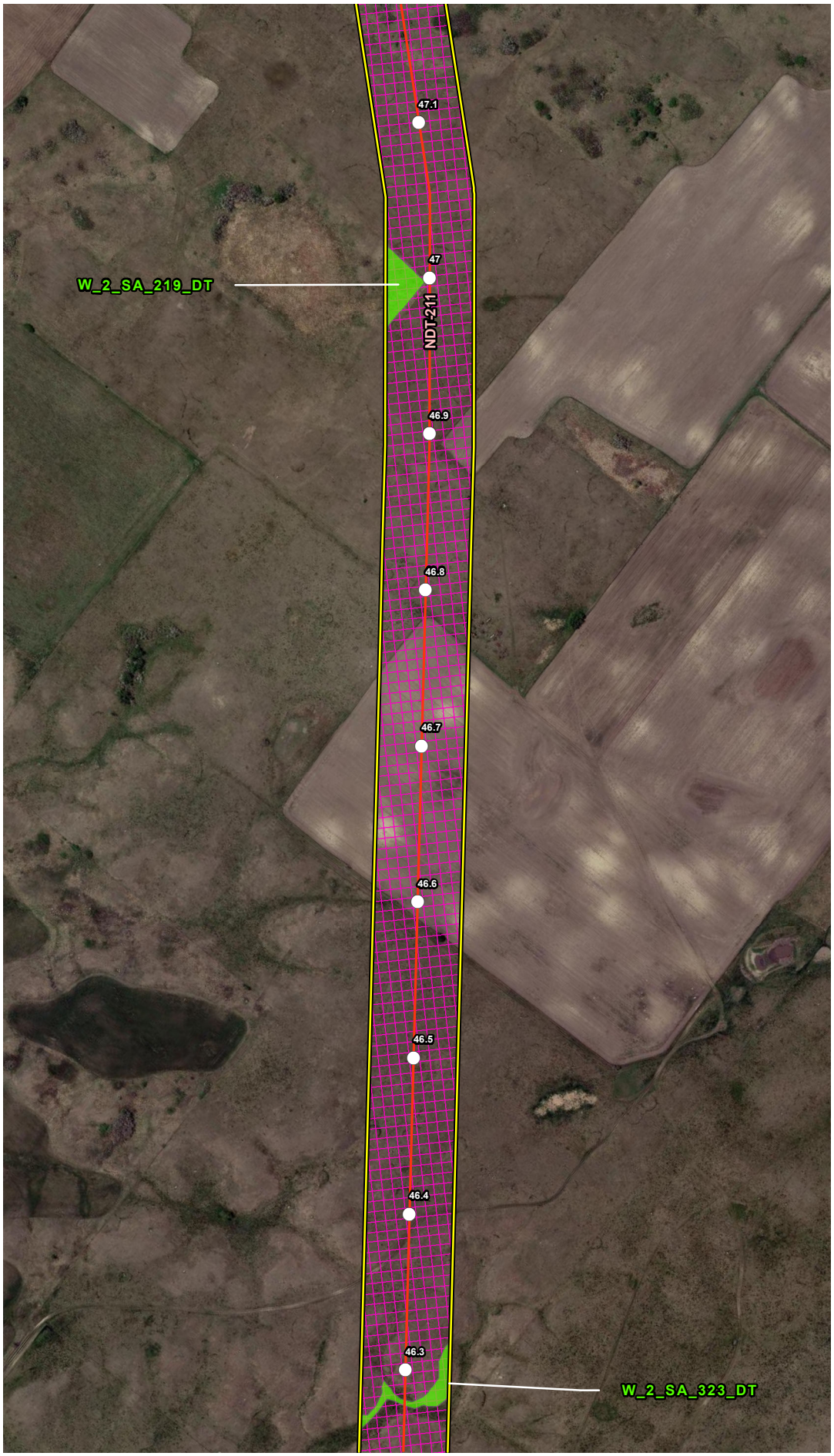
## AERIAL MAP

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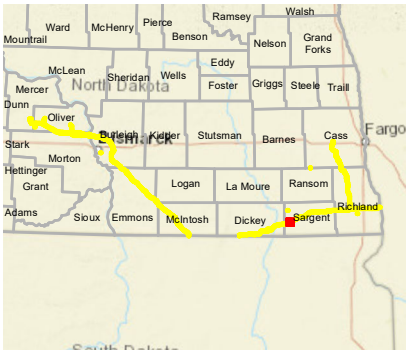


## LEGEND

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0 250 500 Feet

## REVISIONS

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Figure Title:
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Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 223 of 392 | 2001-22-002<br>Current Revision |

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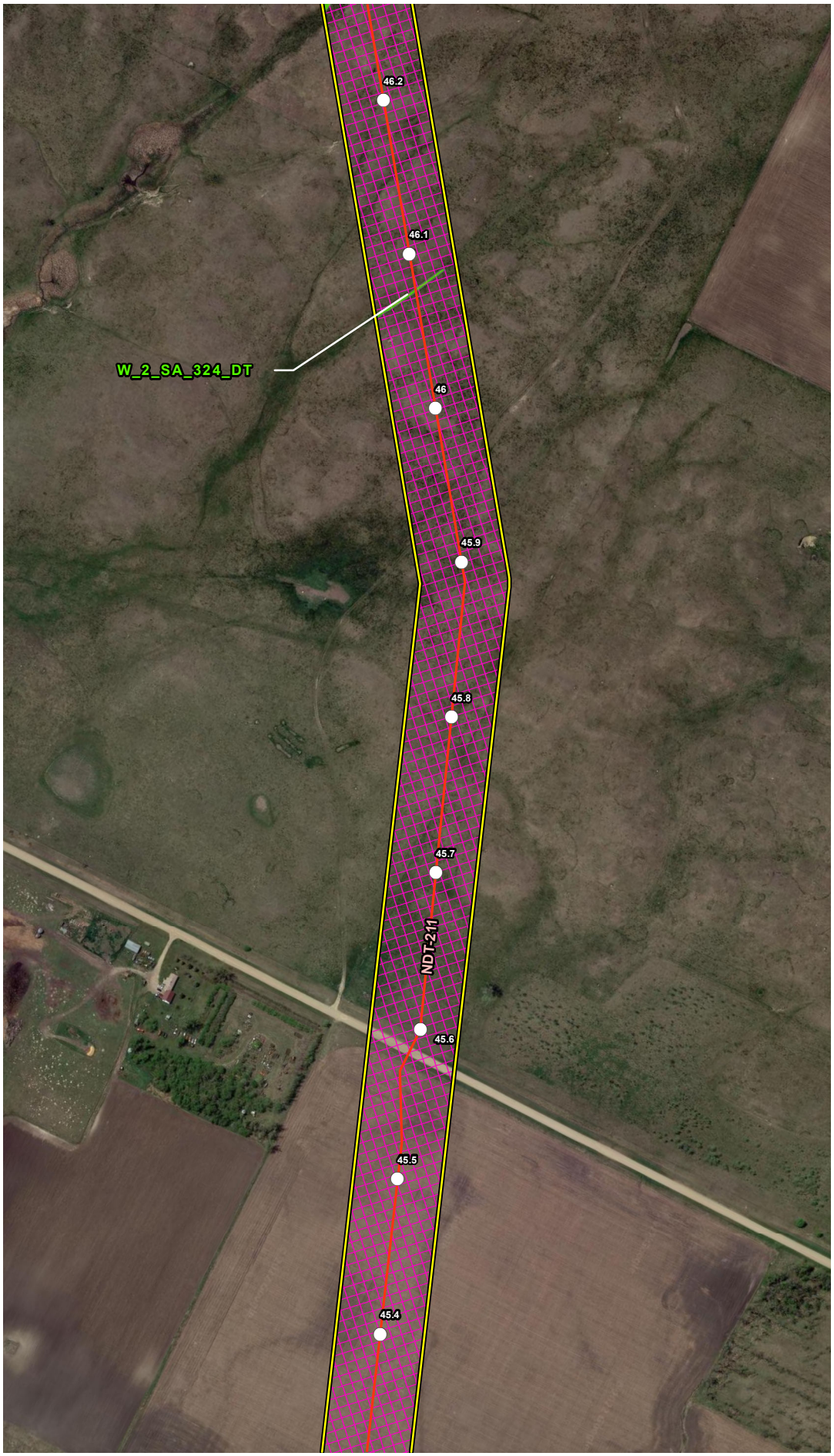


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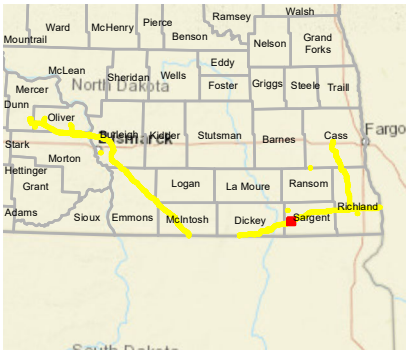


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
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Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 224 of 392 | 2001-22-002<br>Current Revision |

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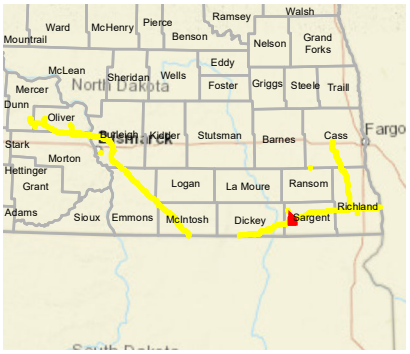
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
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| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
225 of 392

Drawing Number:
2001-22-002
Current Revision

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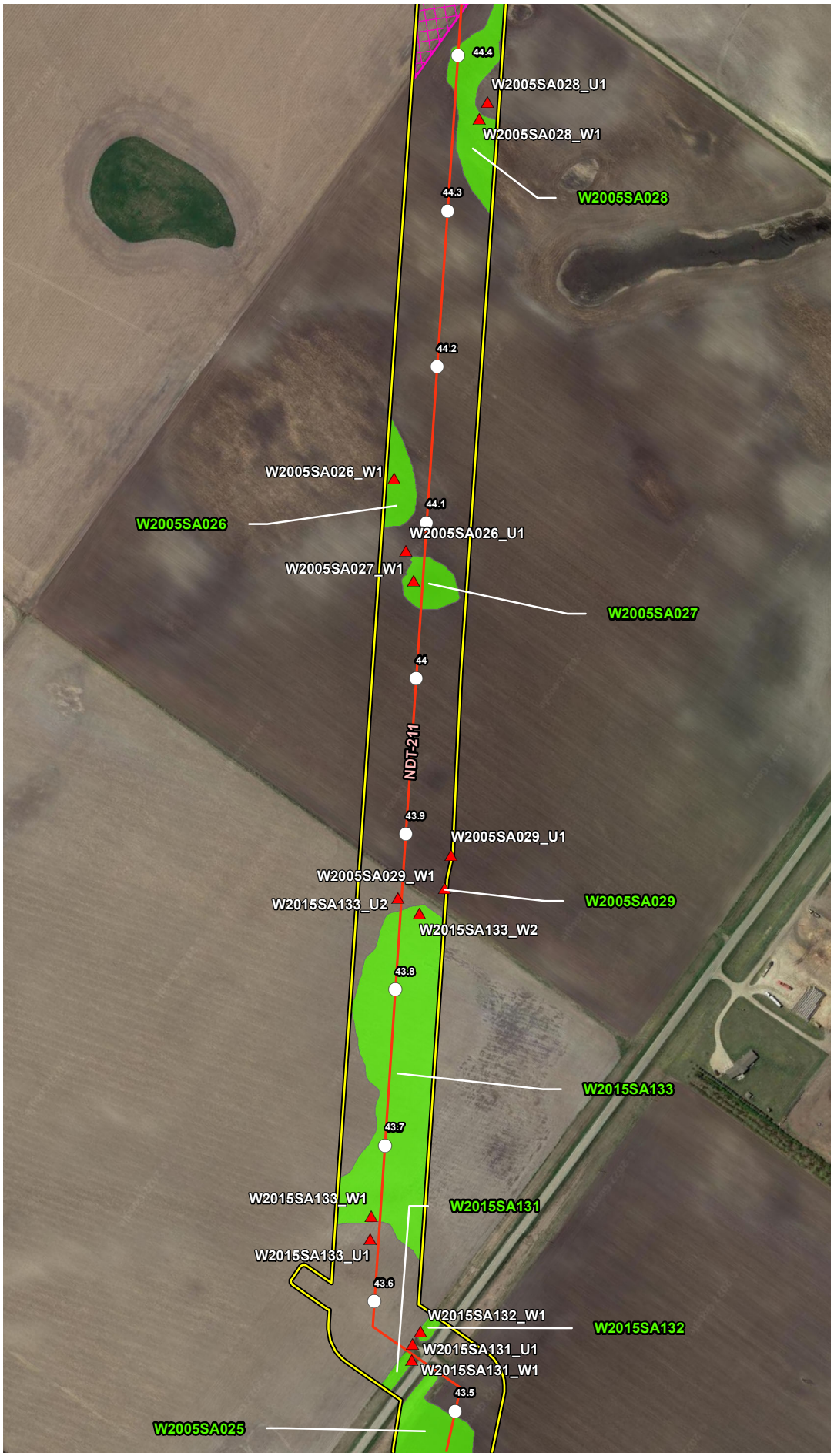
## AERIAL MAP

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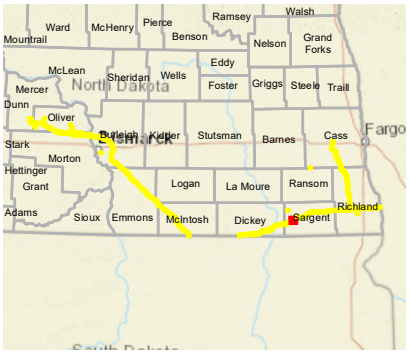


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## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

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Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 226 of 392 | 2001-22-002<br>Current Revision |

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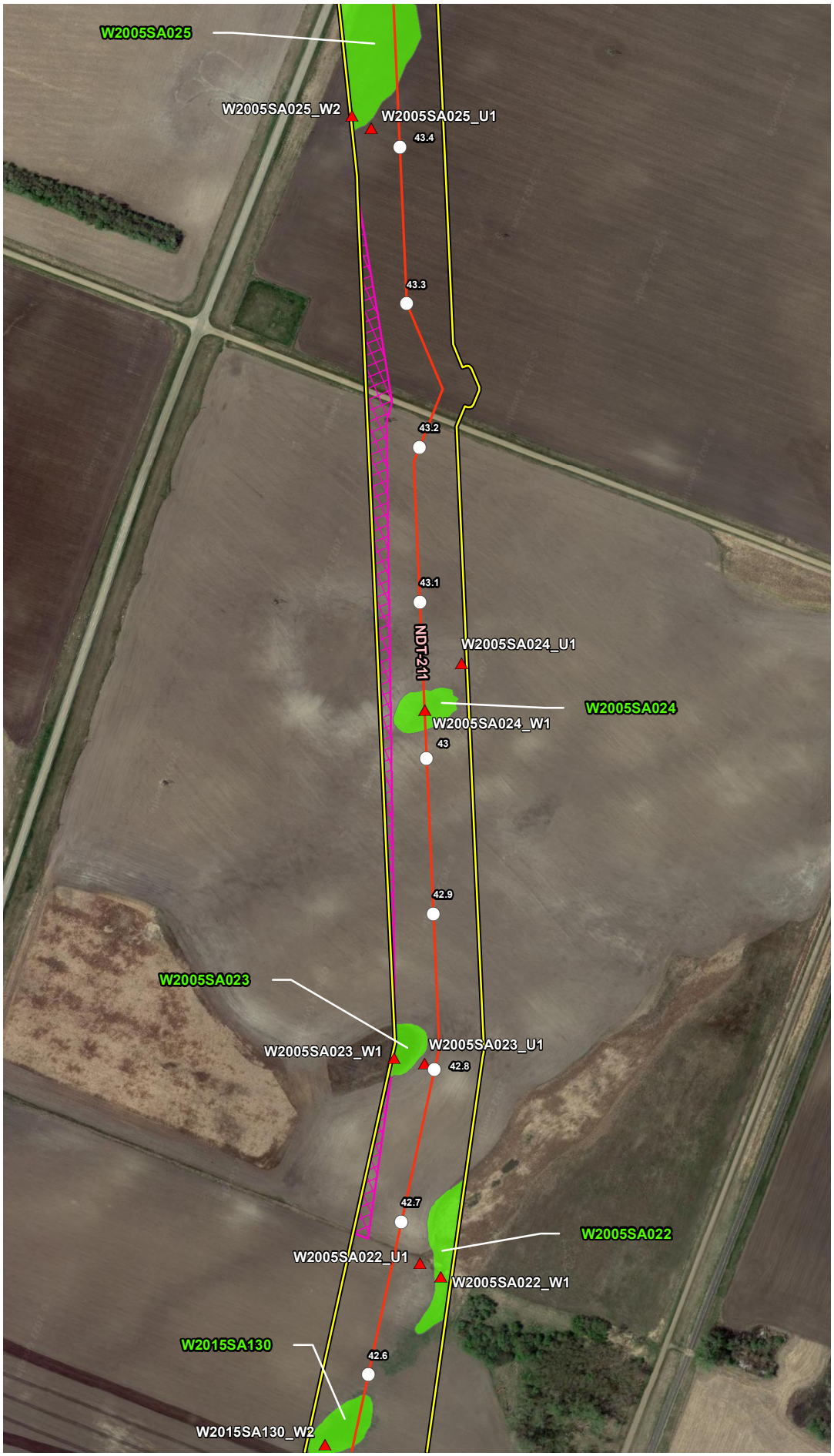
## AERIAL MAP

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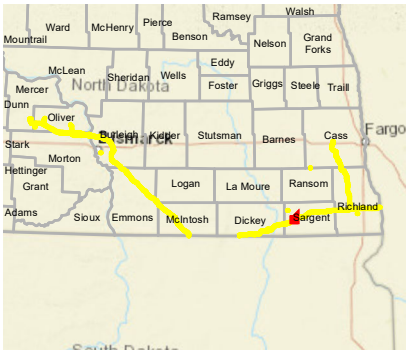


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
227 of 392

Drawing Number:
2001-22-002
Current Revision

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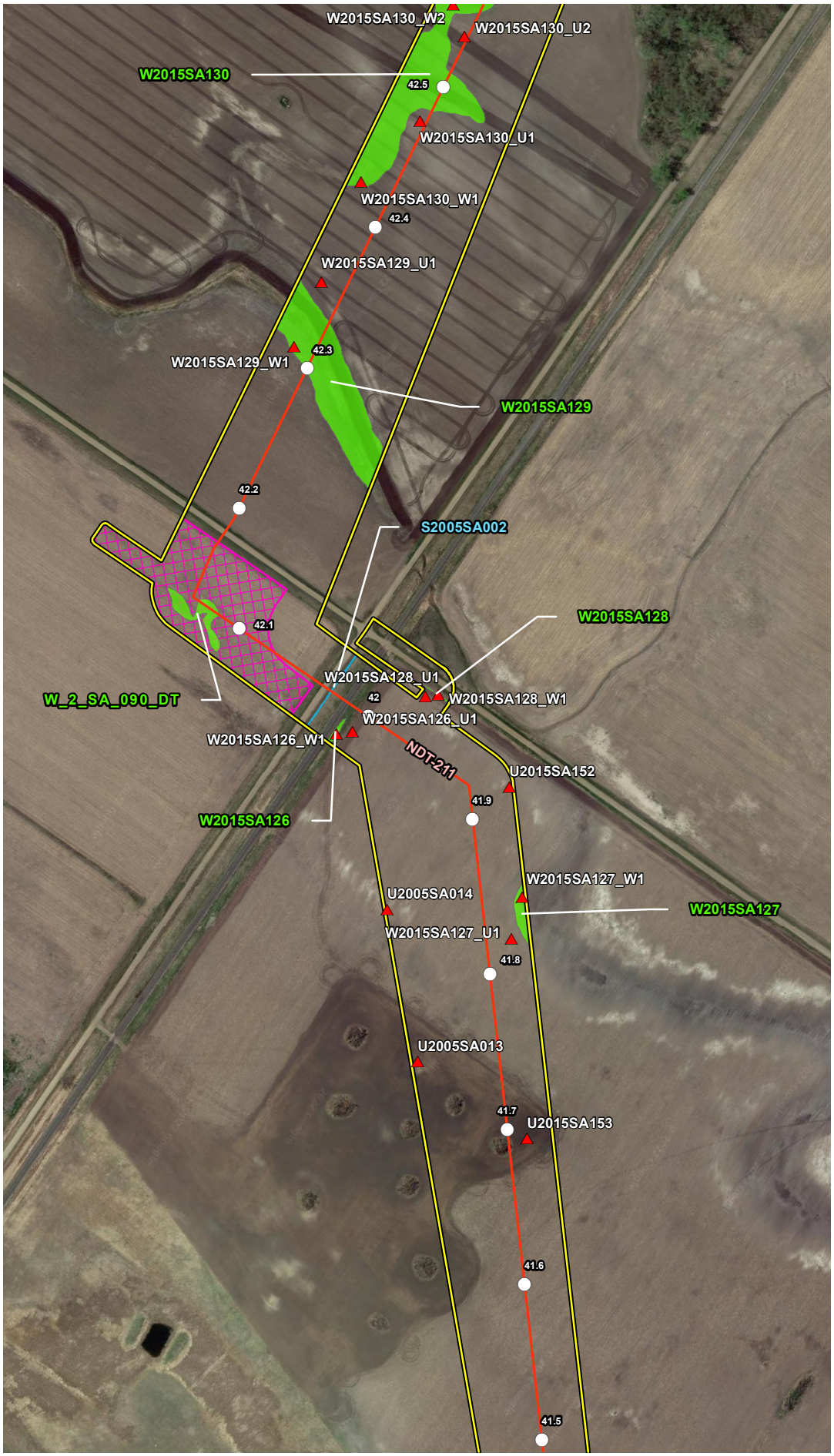
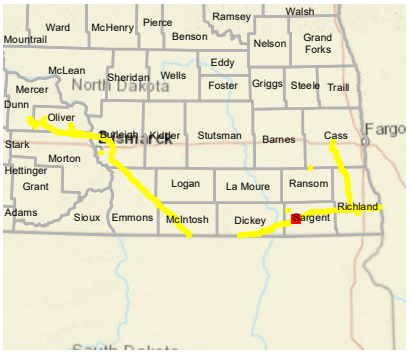
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>228 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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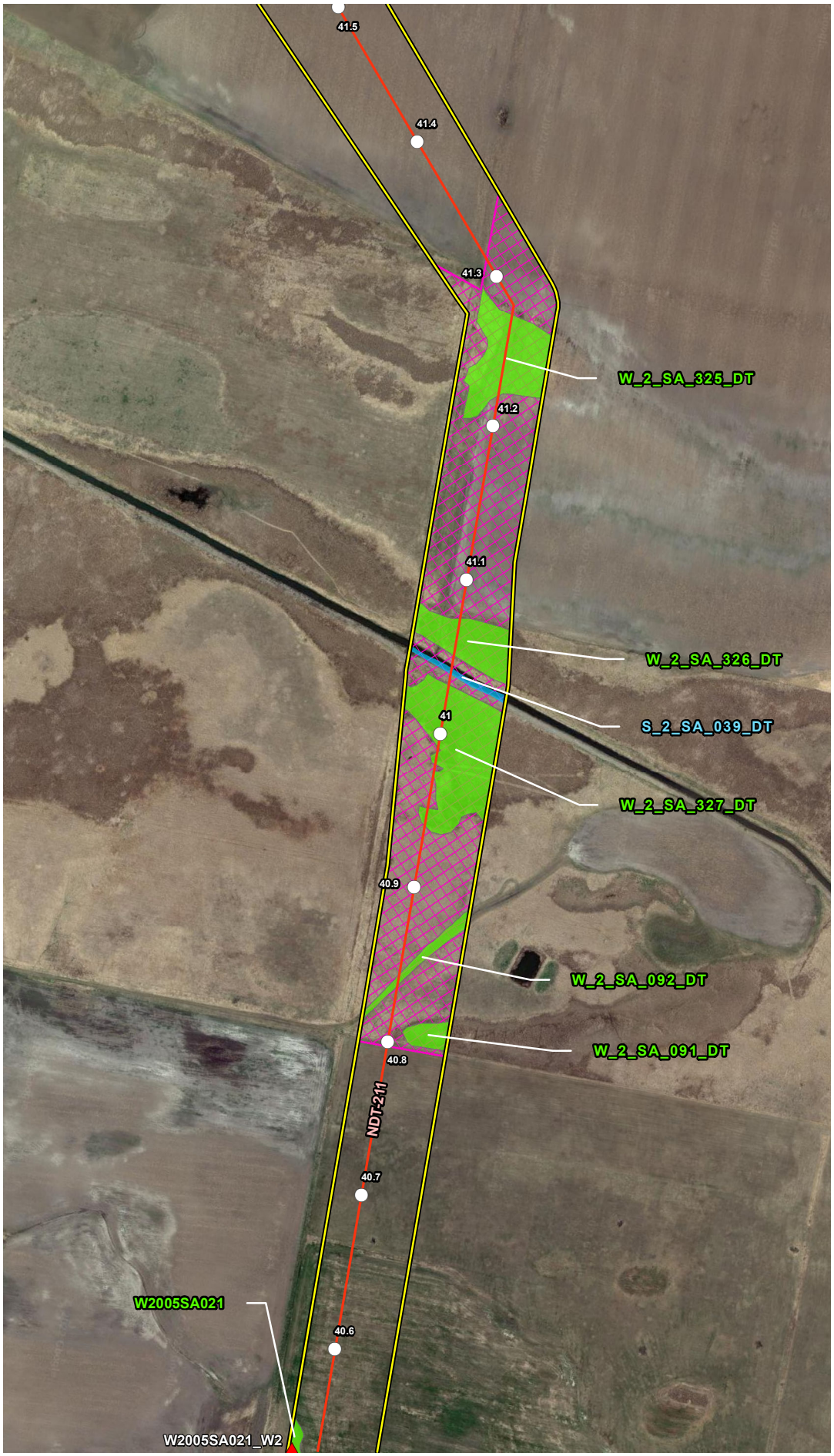
## AERIAL MAP

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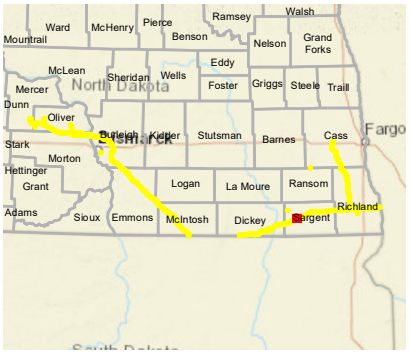


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## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 229 of 392 | 2001-22-002<br>Current Revision |

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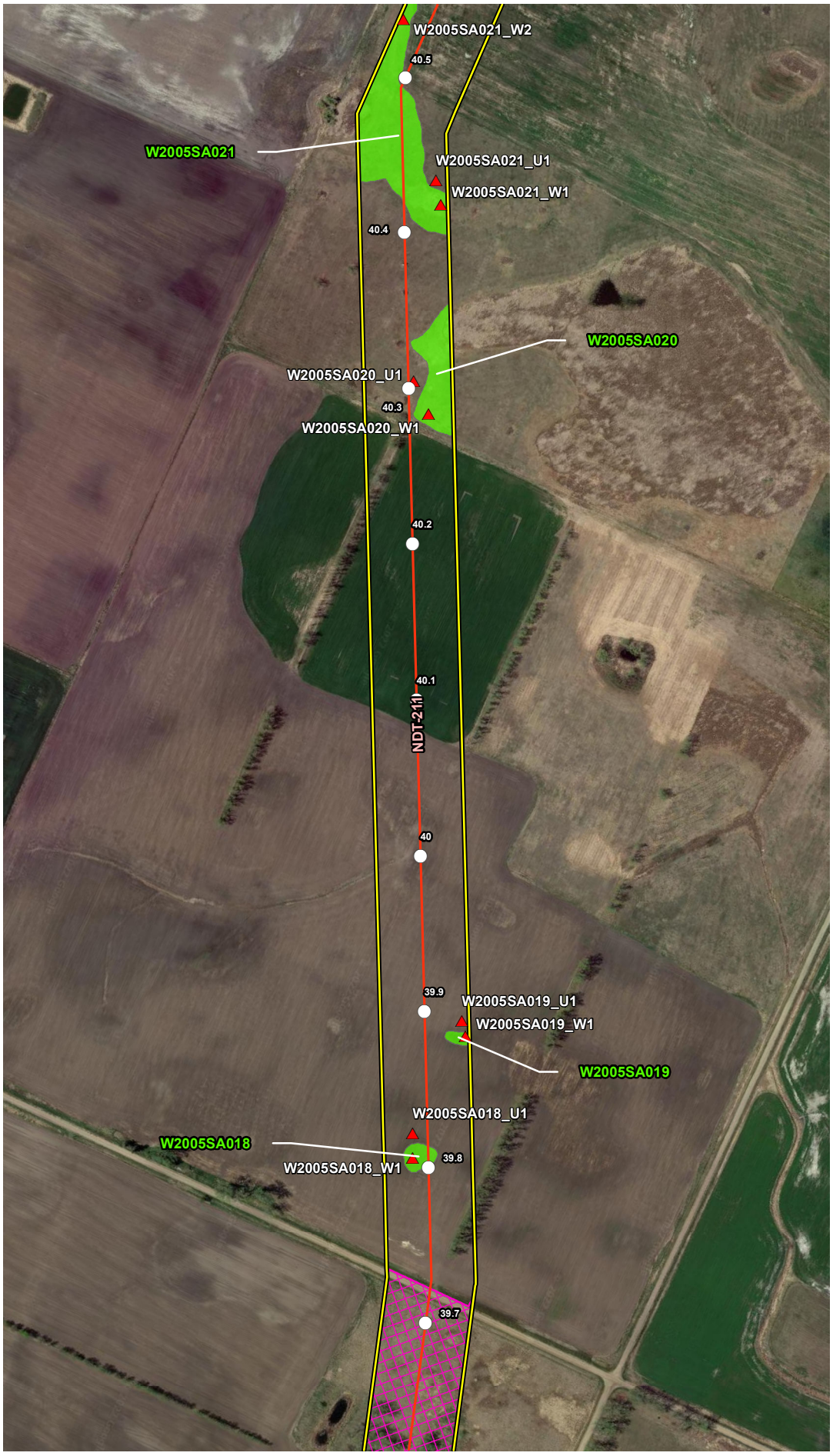
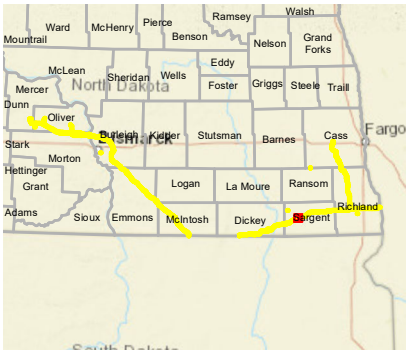
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
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- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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**Figure Title:**

Aerial Map

**Figure Number:**

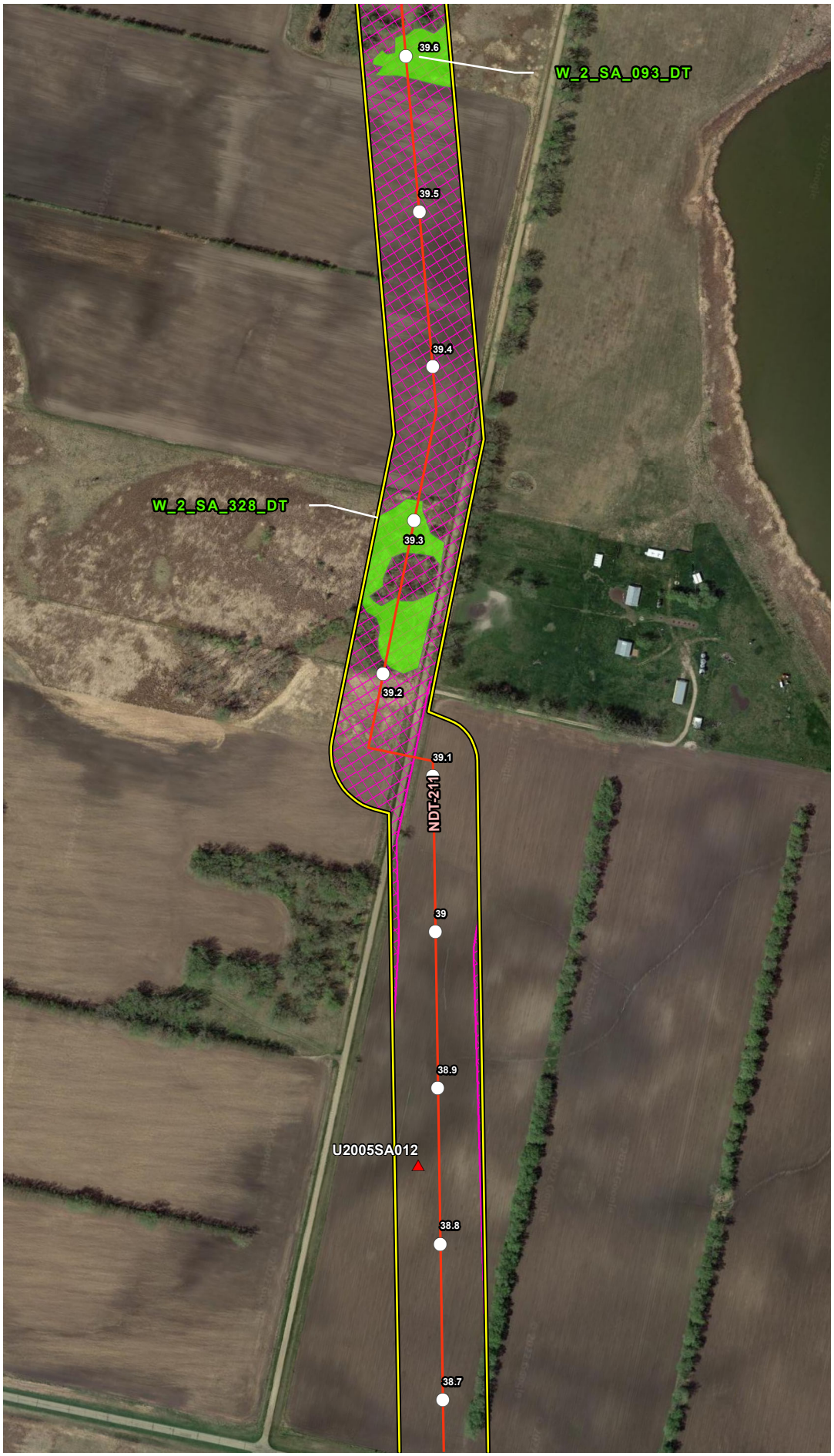
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 230 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\0801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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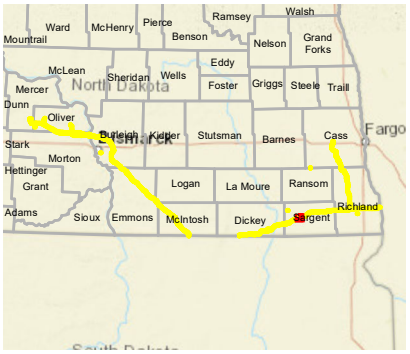


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:
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Figure Number:
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

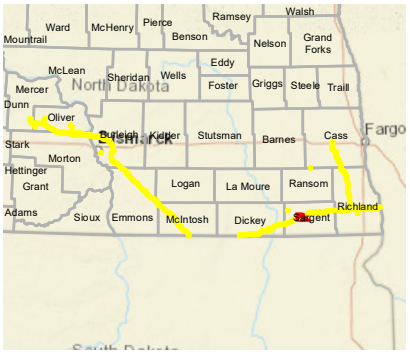
| Sheet: | Drawing Number: |
|---|---|
| 231 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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| Sheet: | Drawing Number: |
|---|---|
| 232 of 392 | 2001-22-002<br>Current Revision |

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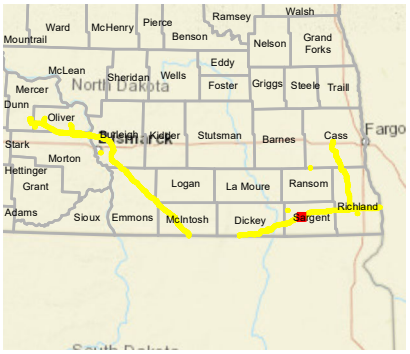
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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| Scale: | Projection: |
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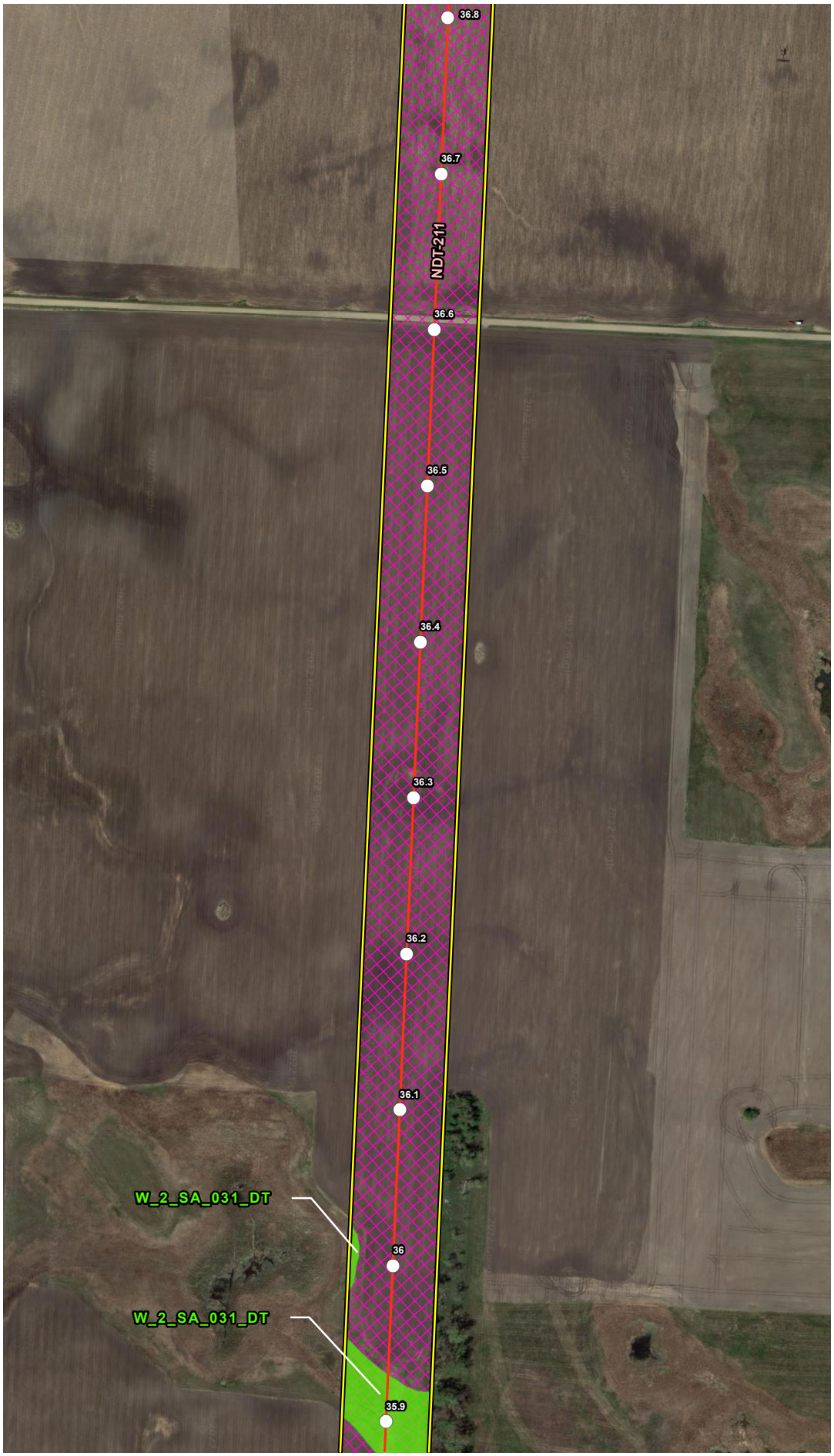
| Sheet: | Drawing Number: |
| 233 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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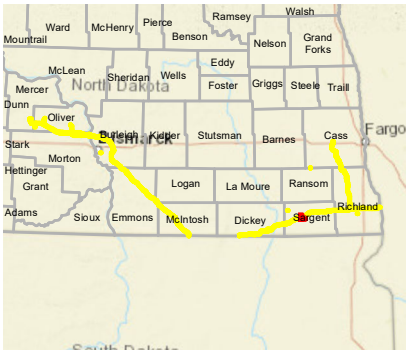


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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 234 of 392 | 2001-22-002<br>Current Revision |

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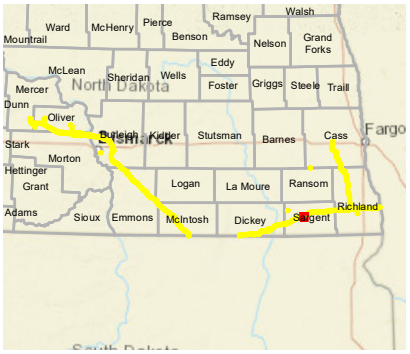
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 235 of 392 | 2001-22-002<br>Current Revision |

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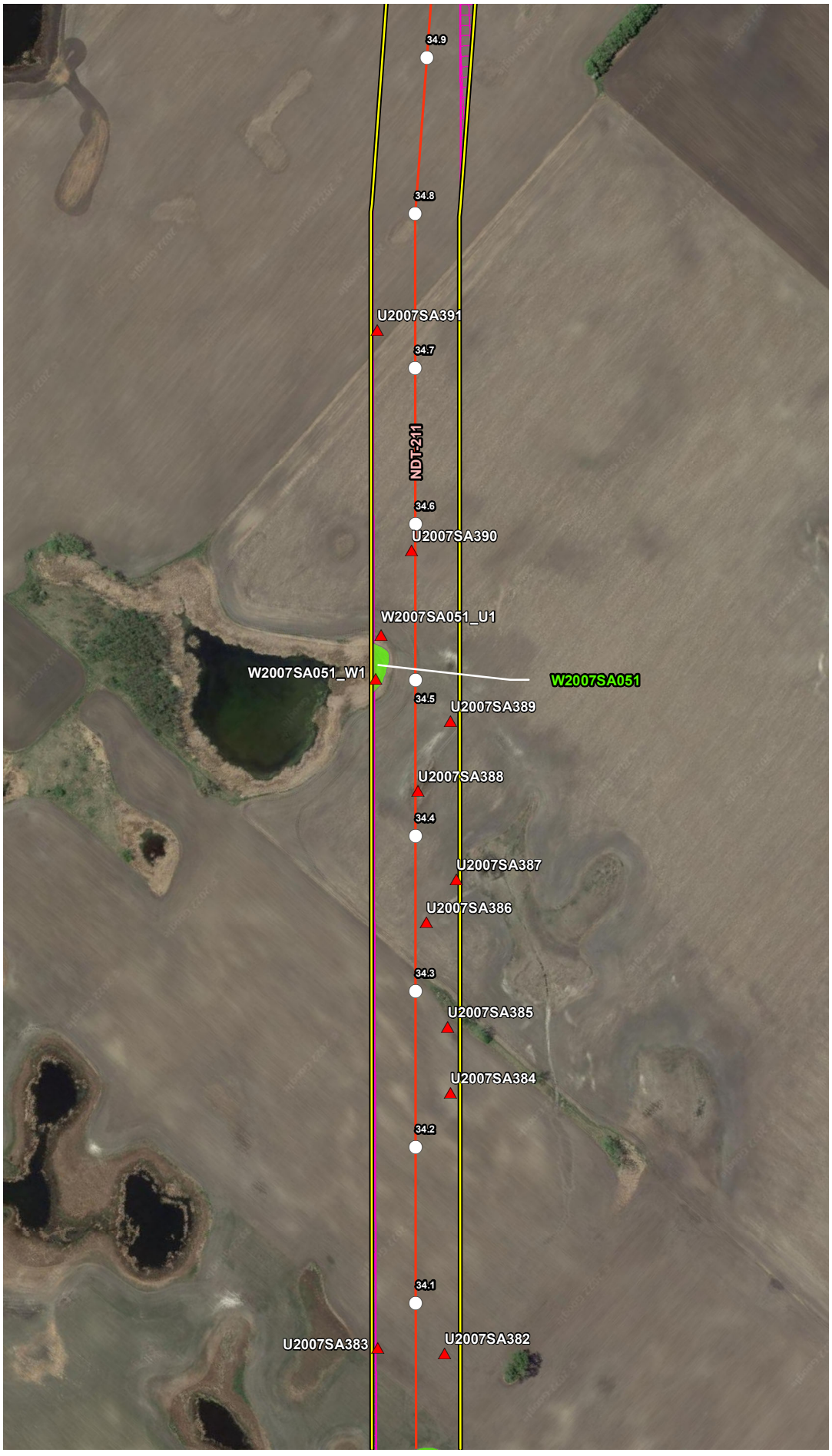
## AERIAL MAP

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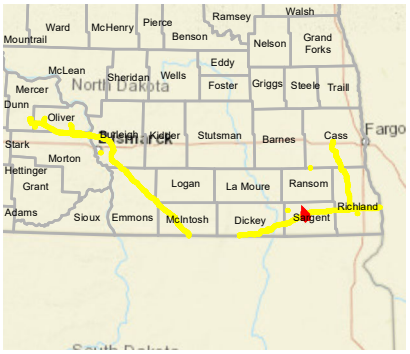


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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 236 of 392 | 2001-22-002<br>Current Revision |

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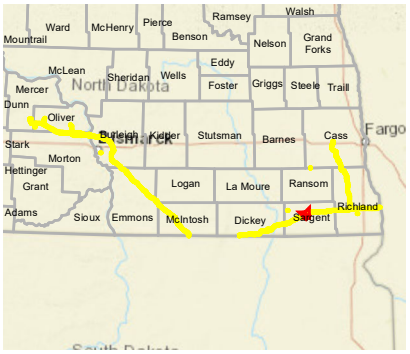
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

Aerial Map

Figure Number:

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 237 of 392 | 2001-22-002<br>Current Revision |

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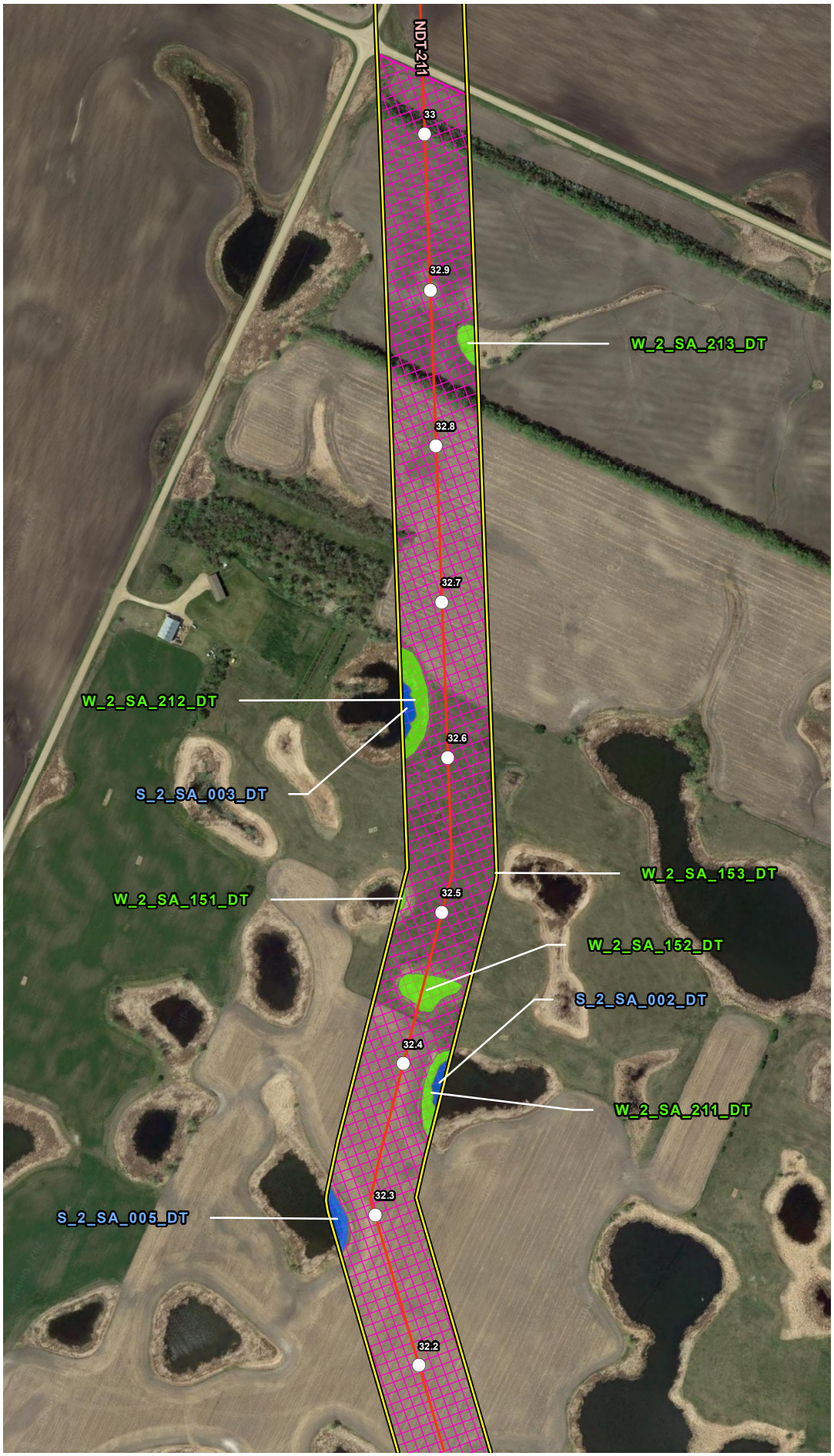
## AERIAL MAP

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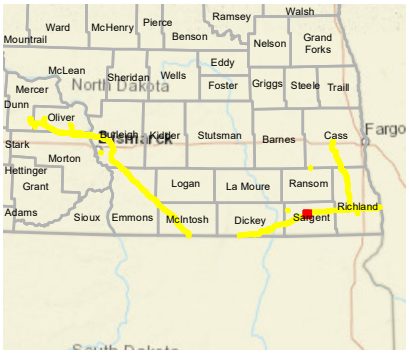


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 238 of 392 | 2001-22-002<br>Current Revision |

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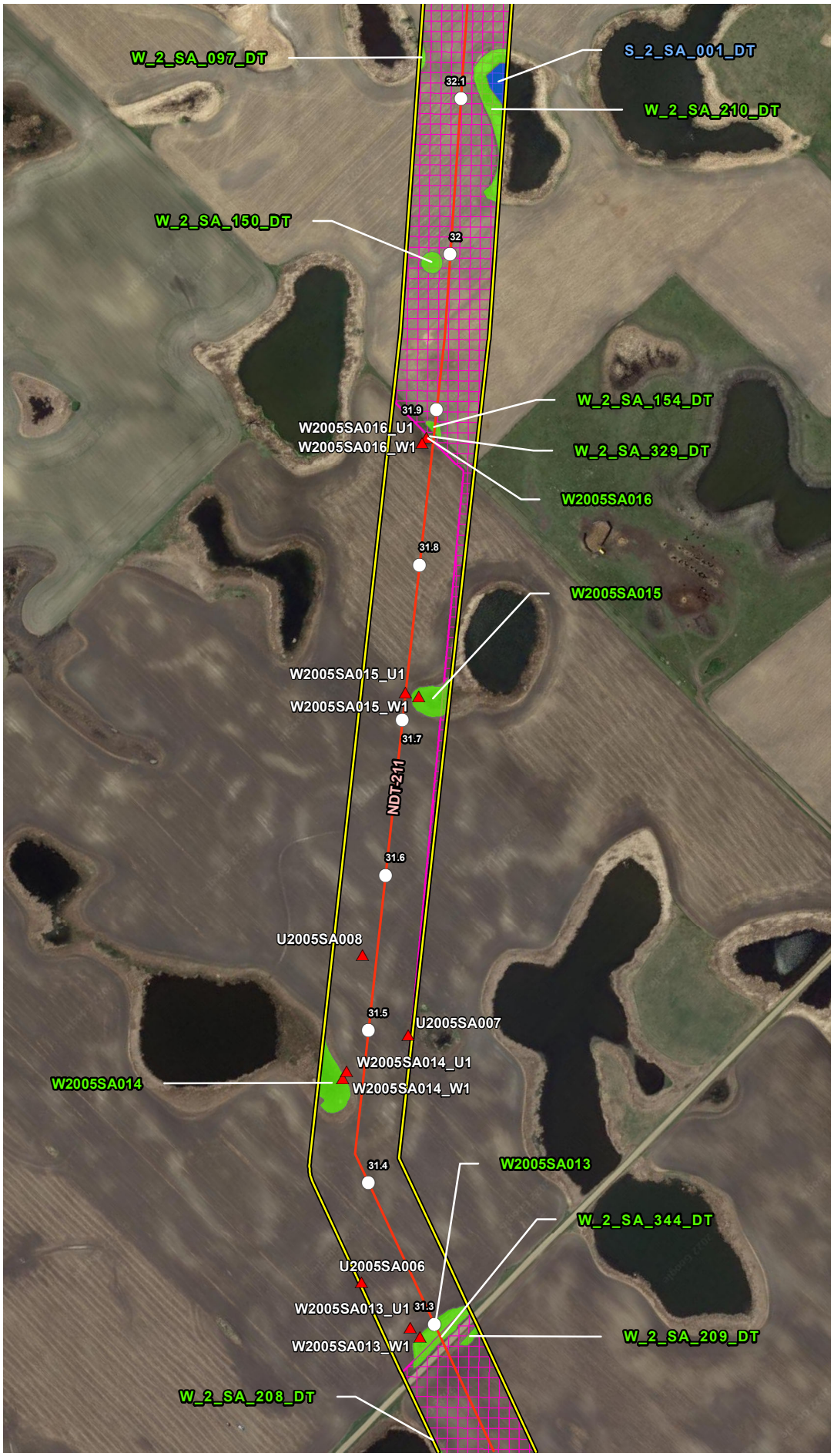
## AERIAL MAP

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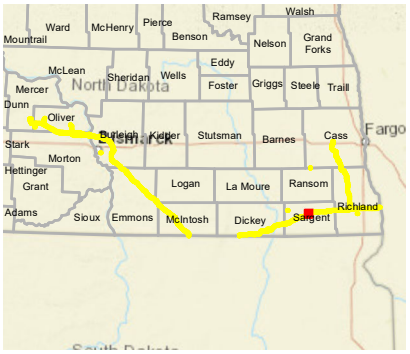


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0 250 500 Feet

## REVISIONS

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| Sheet: | Drawing Number: |
|---|---|
| 239 of 392 | 2001-22-002<br>Current Revision |

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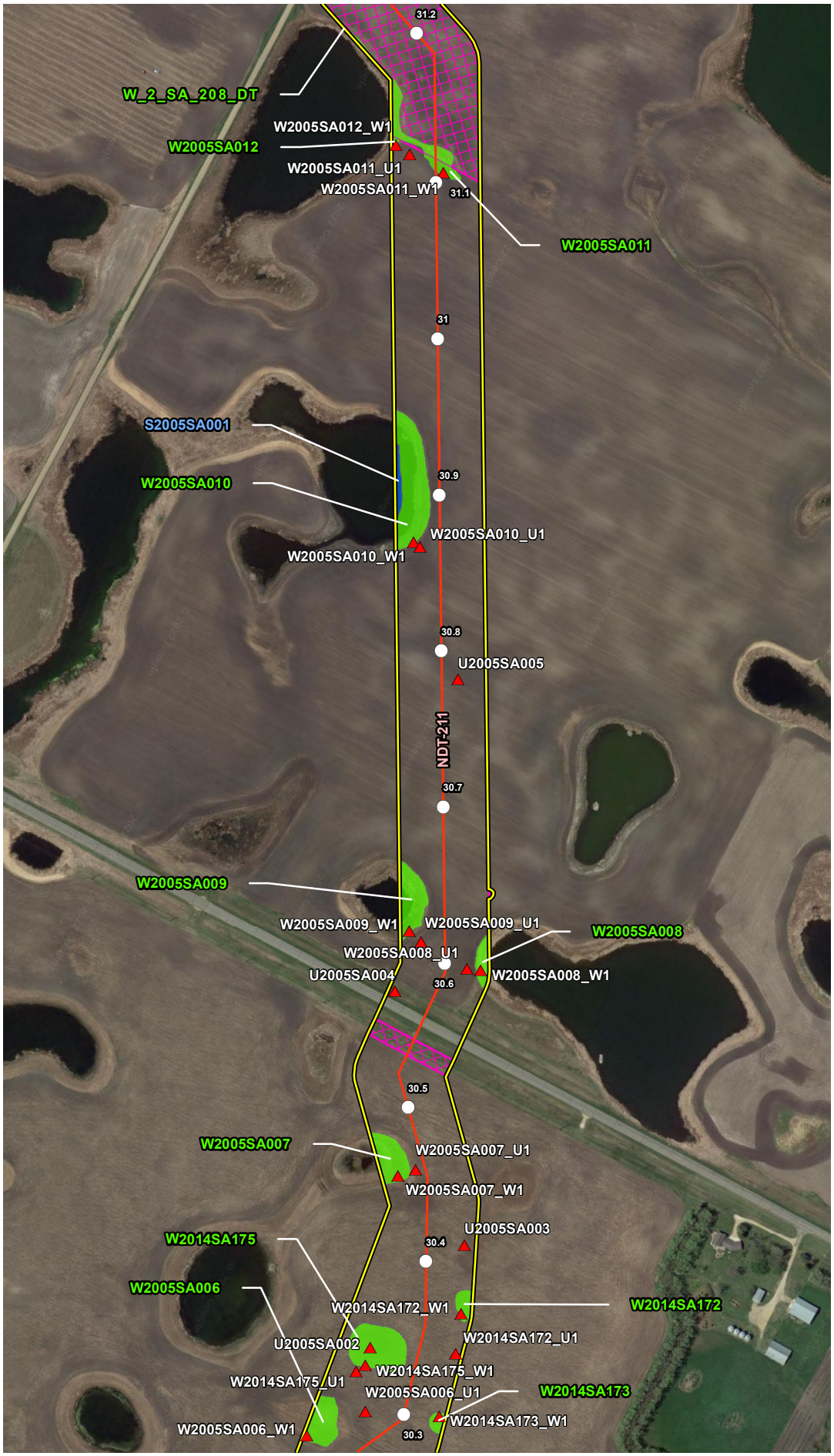
## AERIAL MAP

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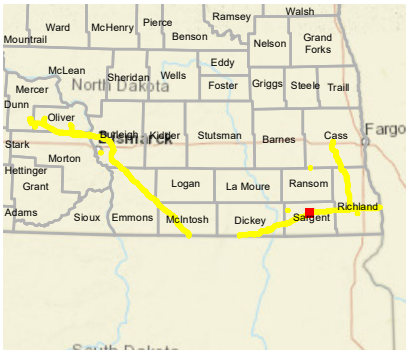


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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| Scale: | Projection: |
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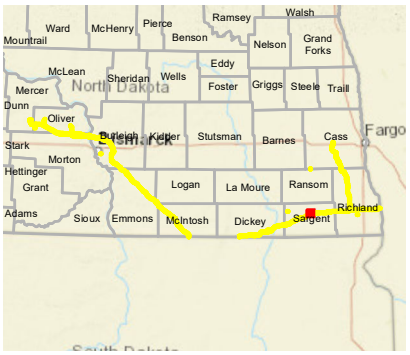
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>240 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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| Sheet: | Drawing Number: |
|---|---|
| 241 of 392 | 2001-22-002<br>Current Revision |

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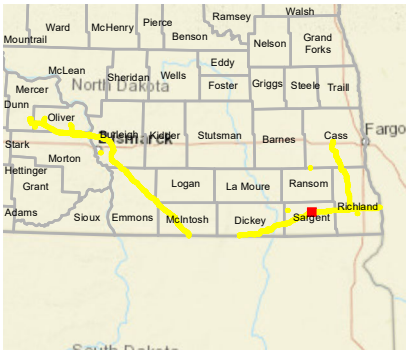
## AERIAL MAP




## VICINITY MAP

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SUMMIT CARBON SOLUTIONS

Figure Title:

**Aerial Map**

Figure Number:

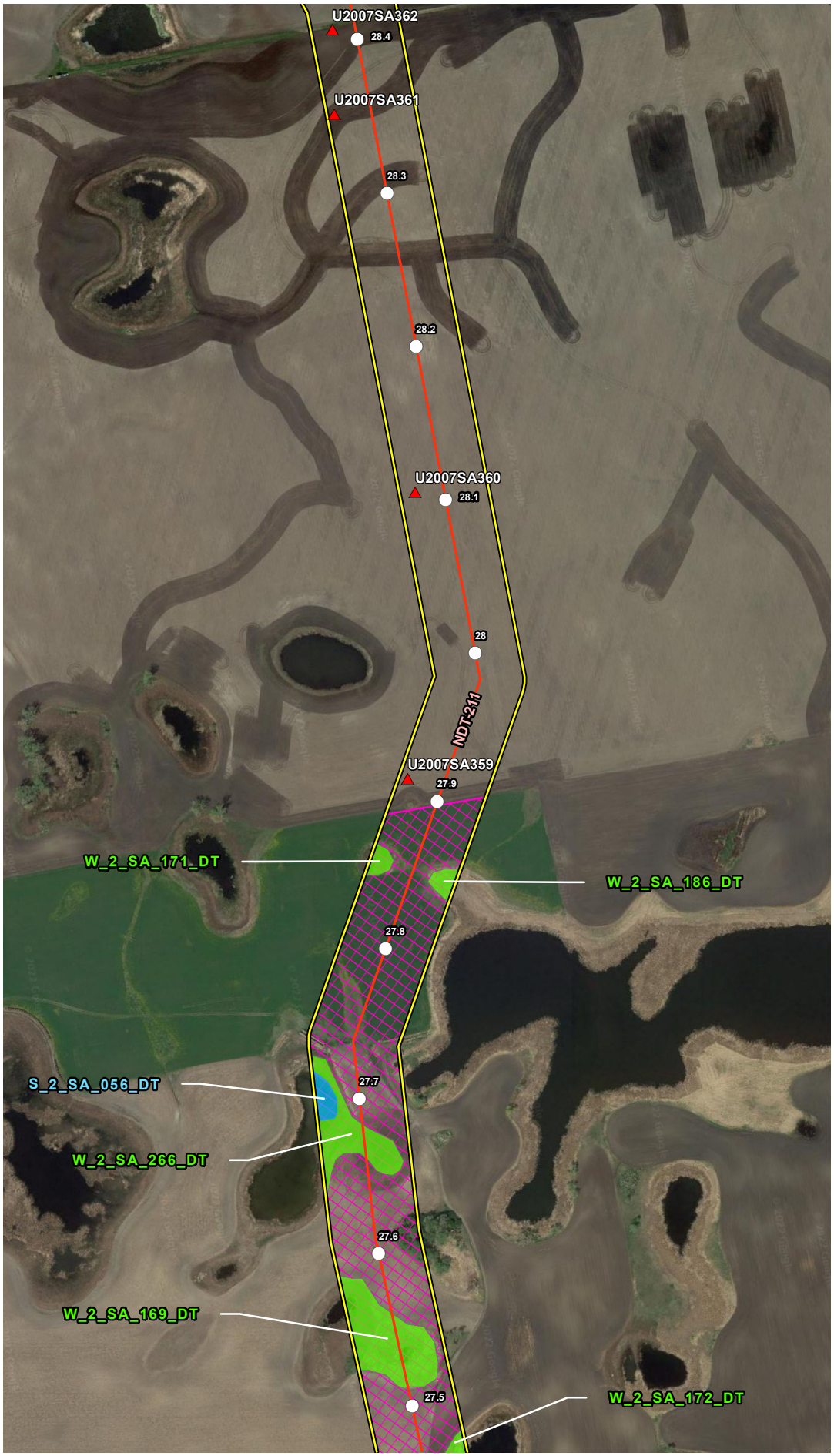
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 242 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ID\VWR\2022\801_VWR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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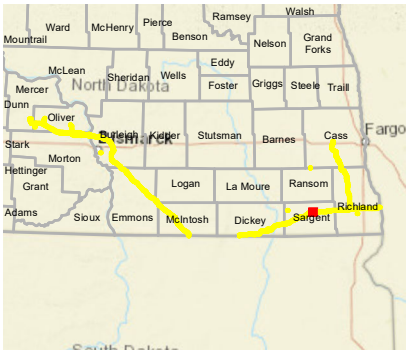


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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Figure Title:

Aerial Map

Figure Number:

Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

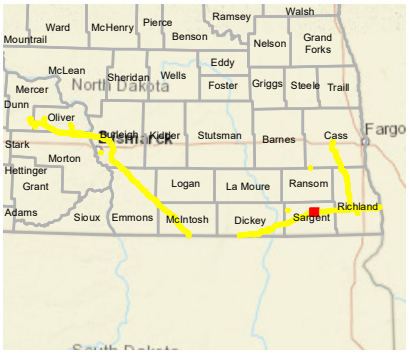
| Sheet: | Drawing Number: |
|---|---|
| 243 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220901_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale | Projection |
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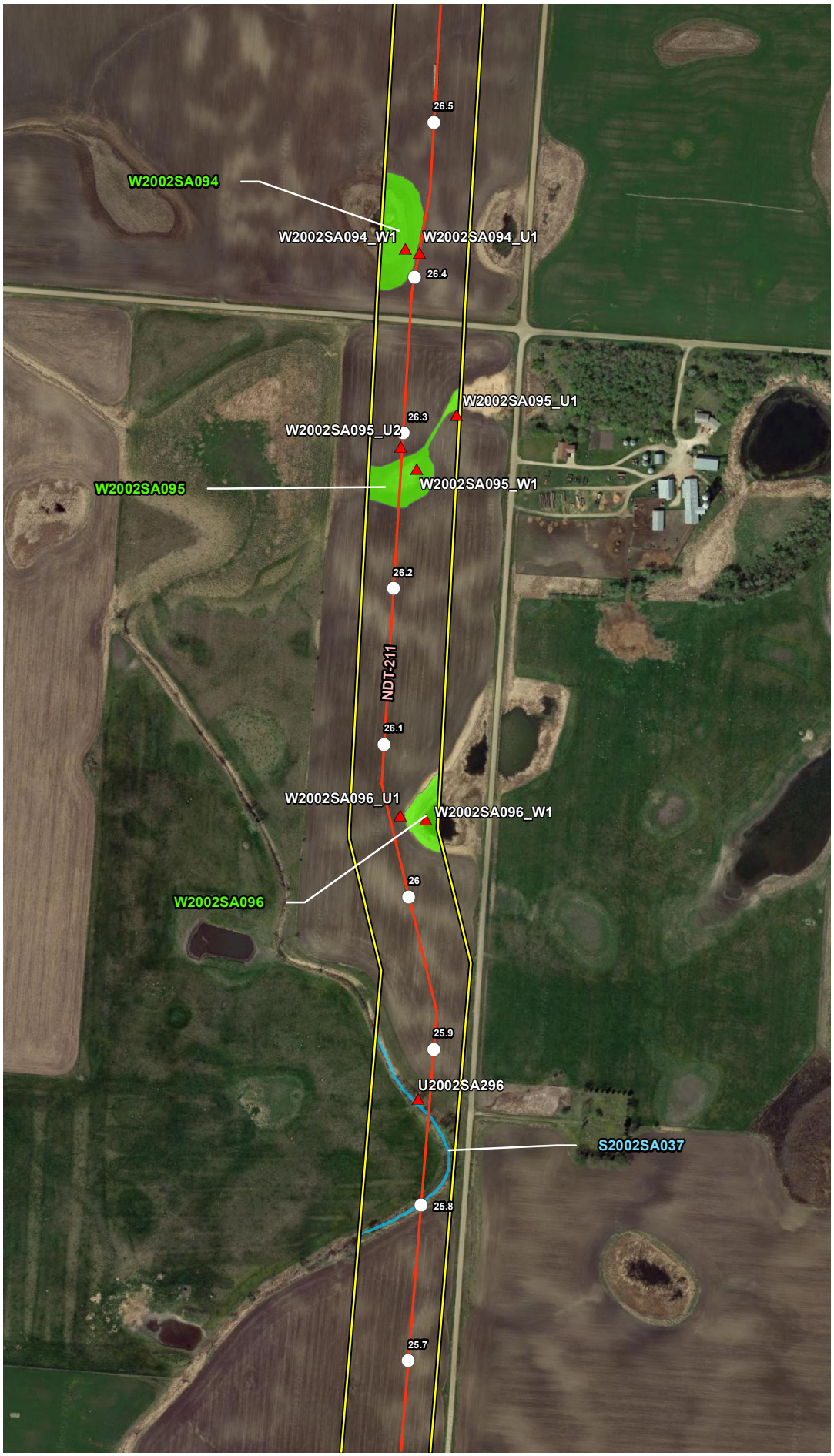
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 244 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\801_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP

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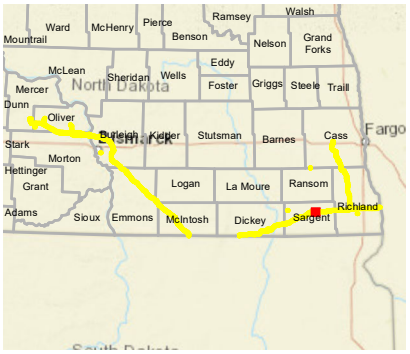


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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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**Figure Title:**

Aerial Map

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Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 245 of 392 | 2001-22-002<br>Current Revision |

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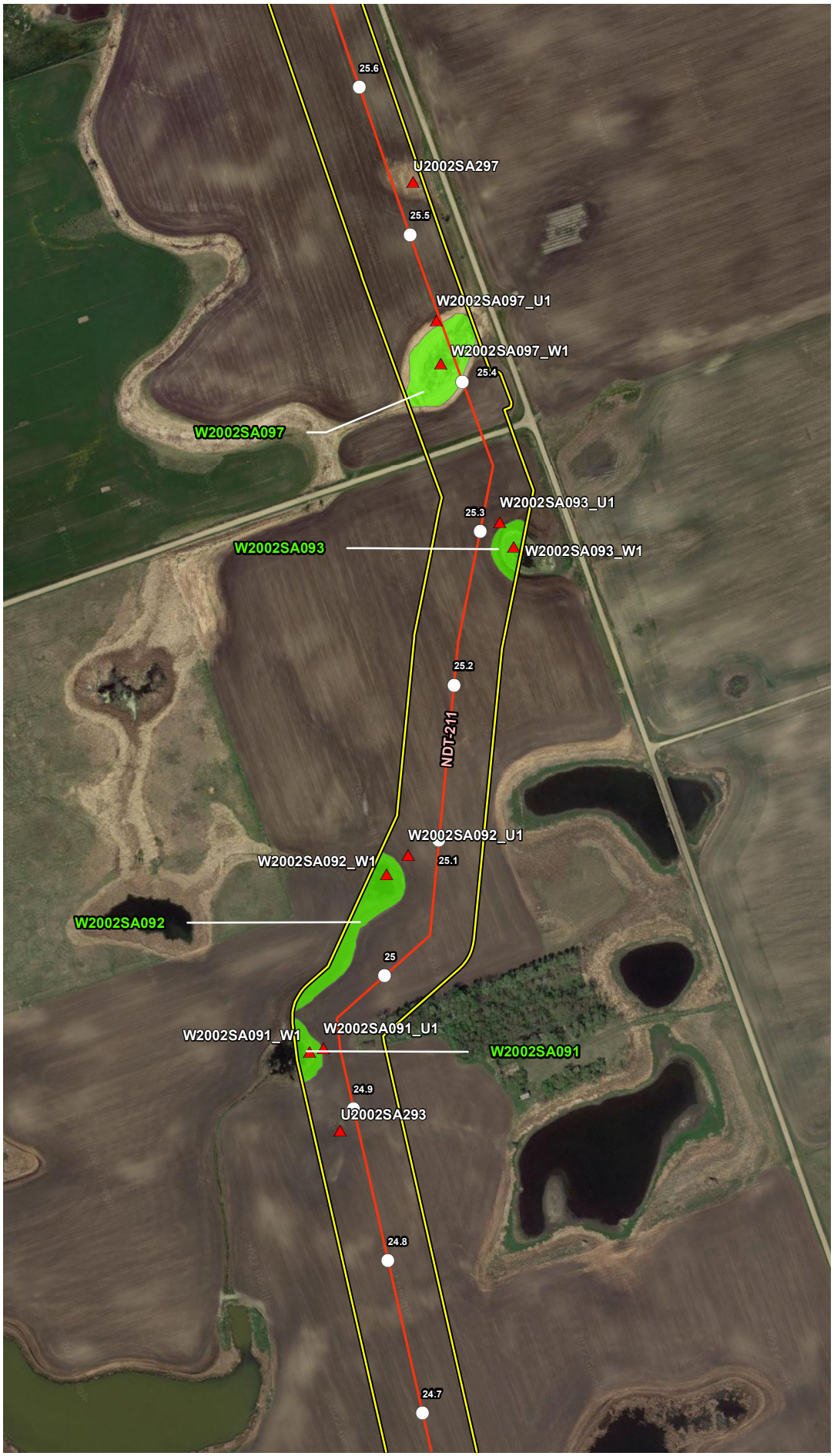
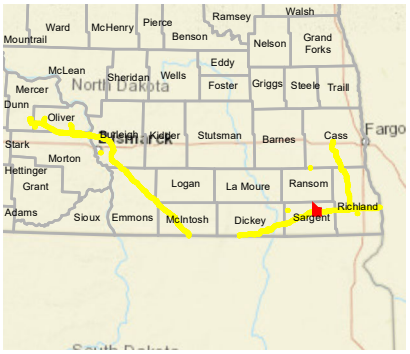
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

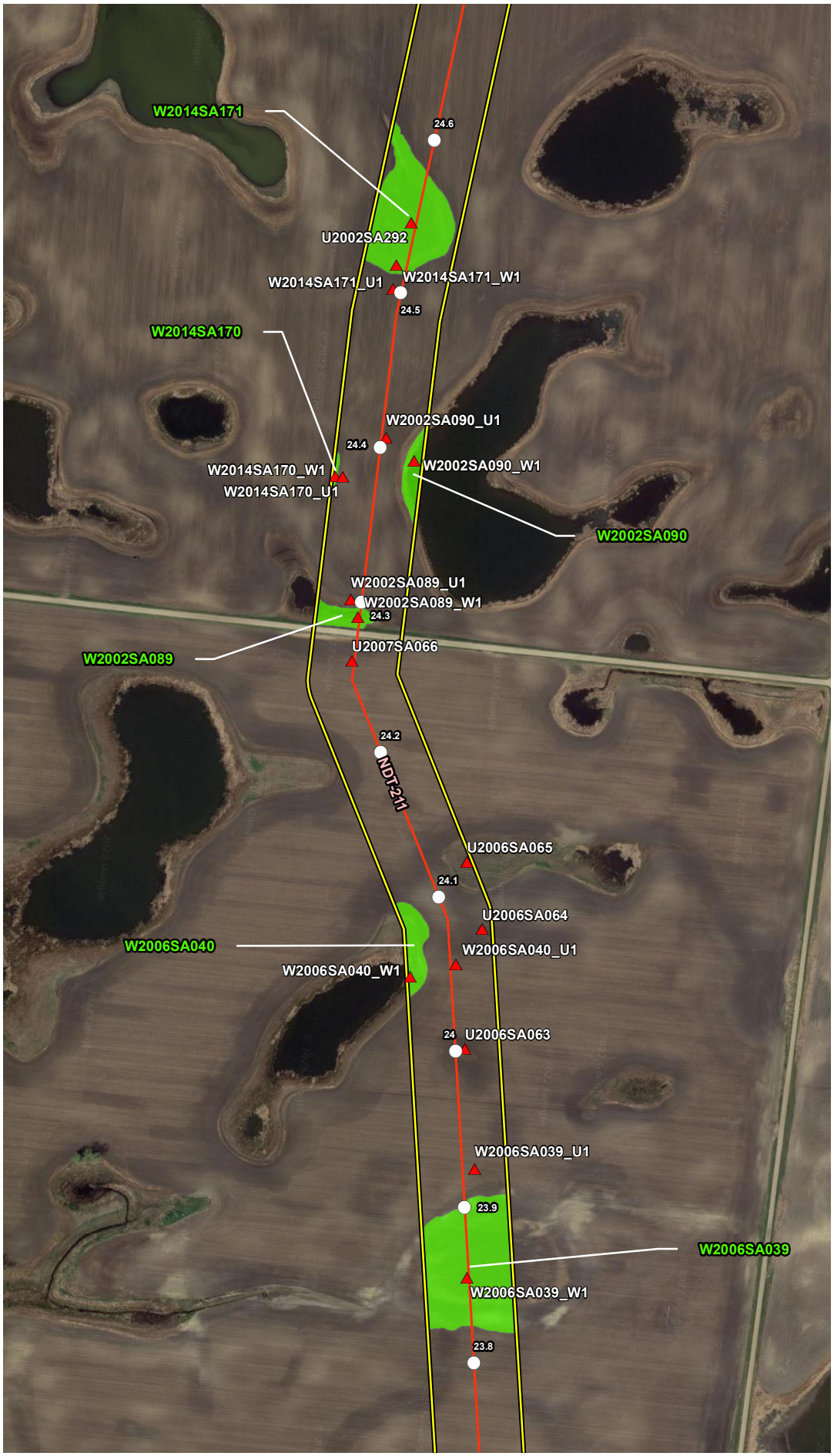
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
246 of 392

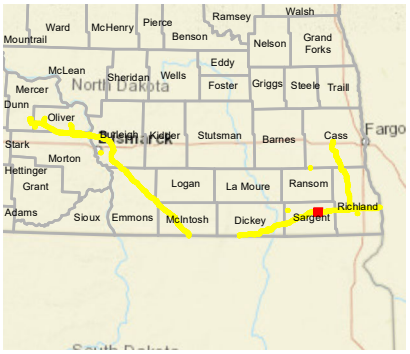
Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

1A - Revision

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Figure Title:

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 247 of 392 | 2001-22-002<br>Current Revision |

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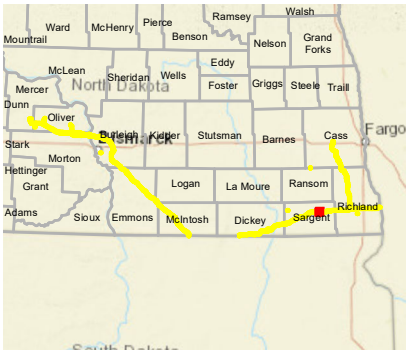
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**
Aerial Map

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Appendix A-2

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 248 of 392 | 2001-22-002<br>Current Revision |

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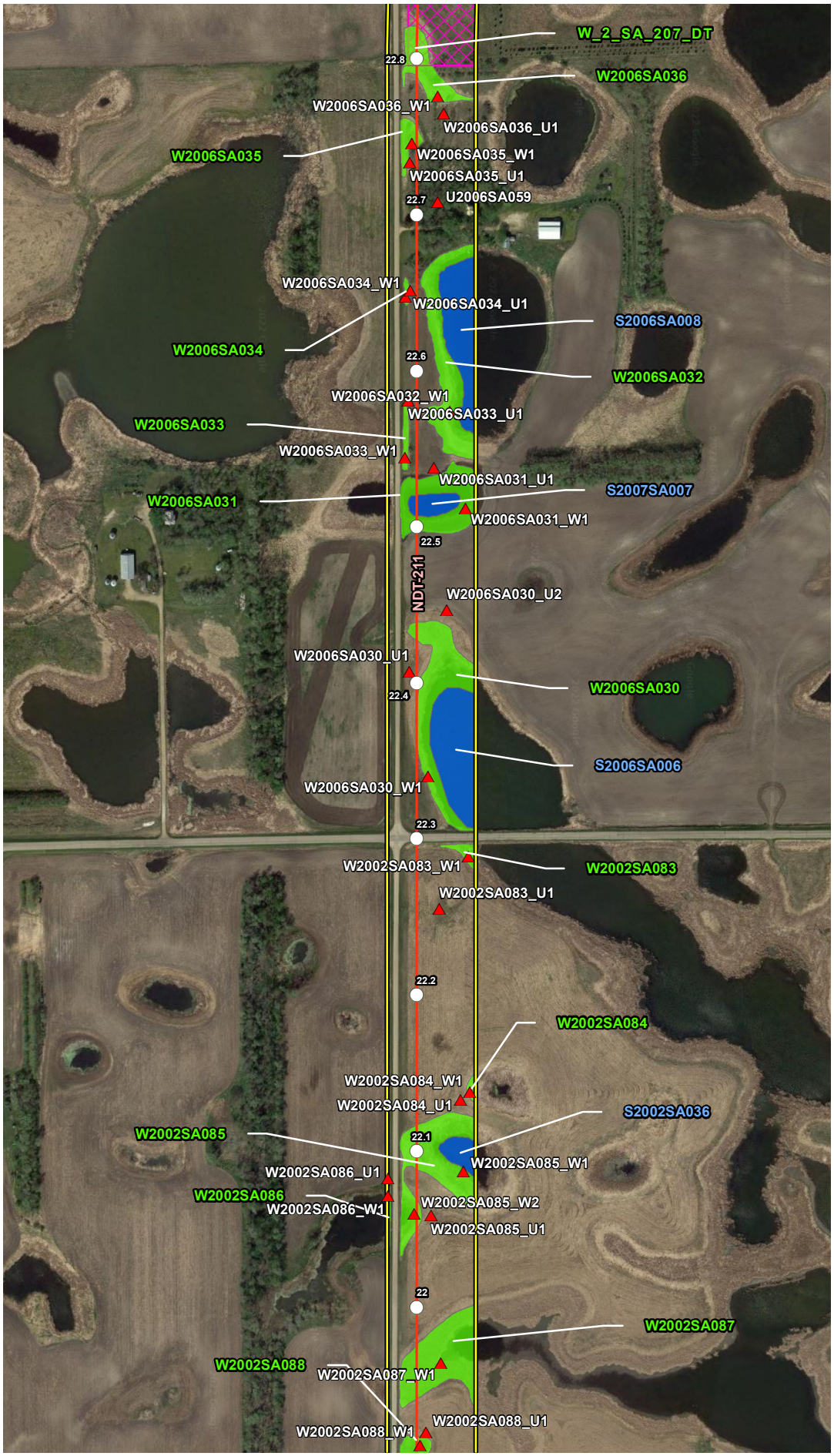
## AERIAL MAP

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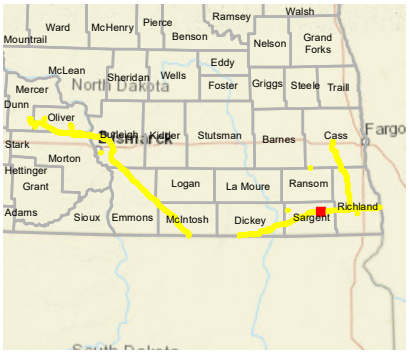


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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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Figure Title:

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| Scale | Projection |
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| Sheet | Drawing Number |
|---|---|
| 249 of 392 | 2001-22-002<br>Current Revision |

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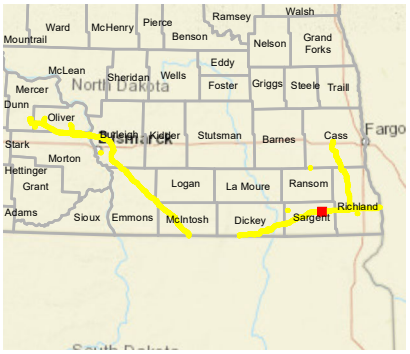
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision
Revision description

| Date: | Revised by: | Checked by: |
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Aerial Map

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
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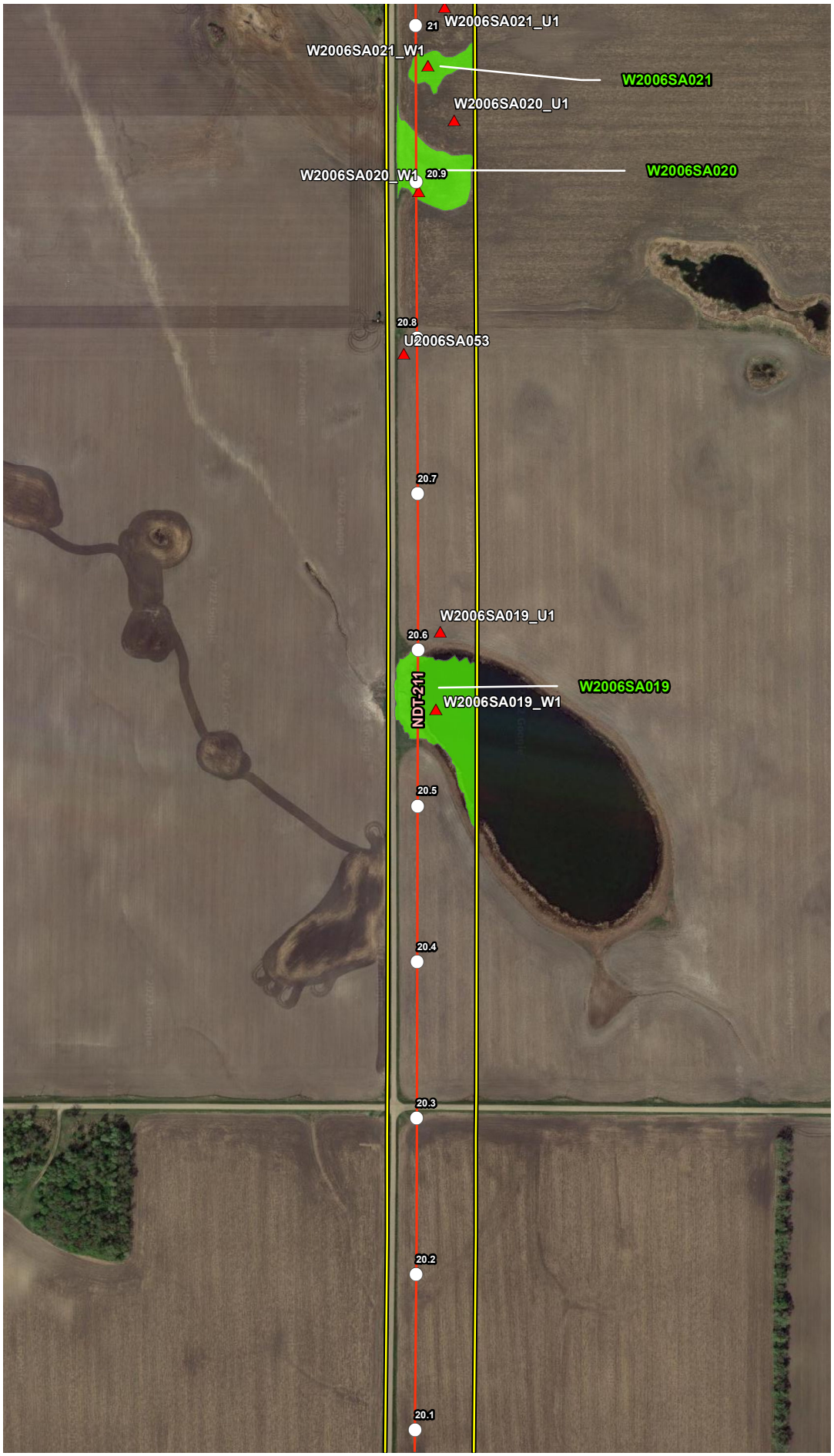
| 250 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ND\VWR\2022\901_VWR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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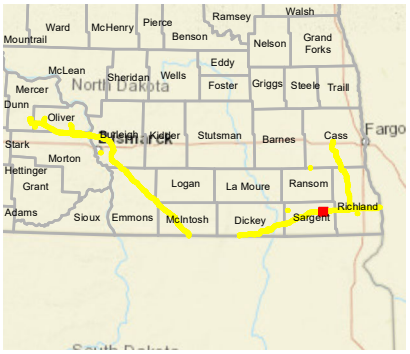


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## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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| 251 of 392 | 2001-22-002<br>Current Revision |

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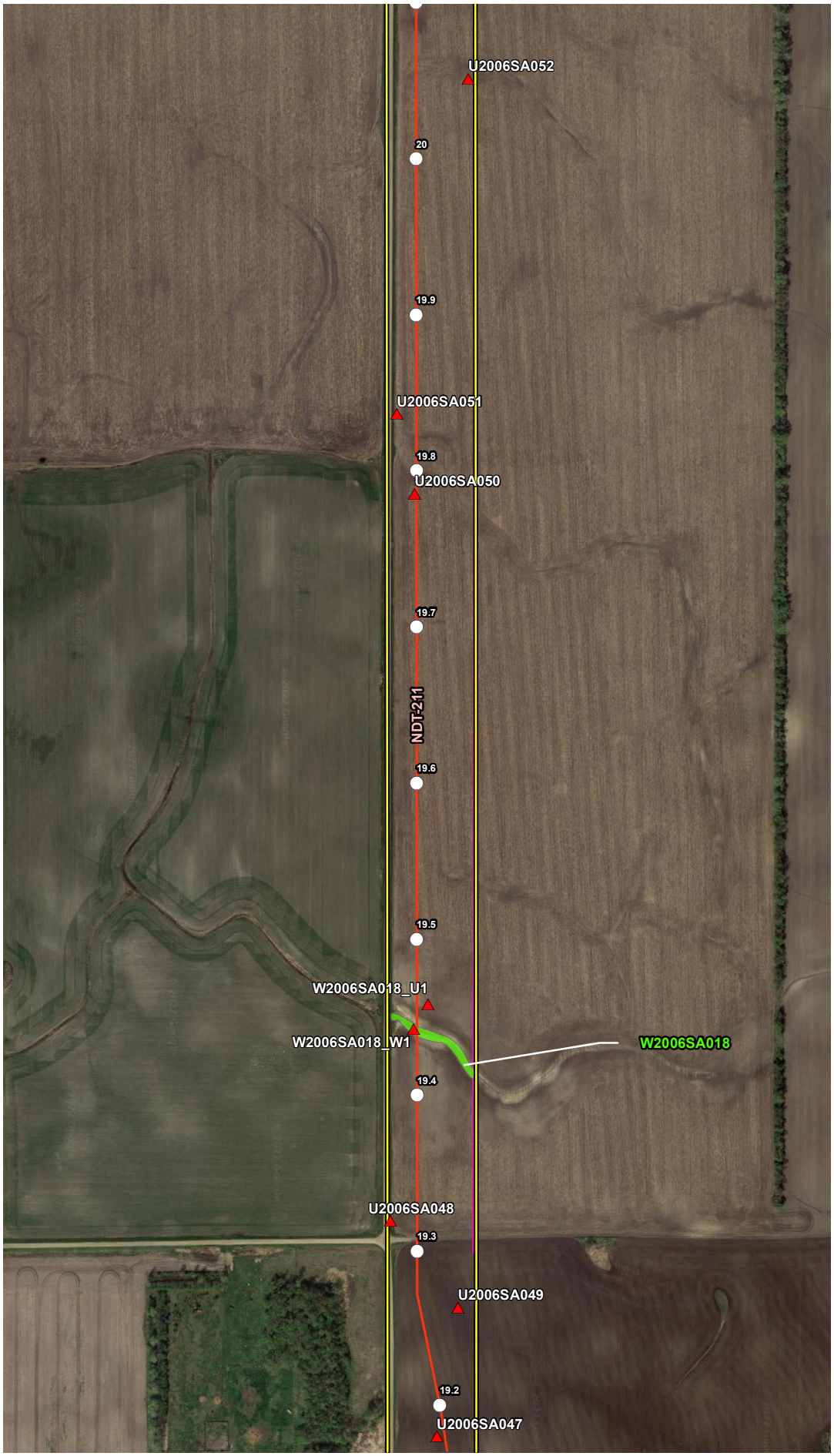
## AERIAL MAP

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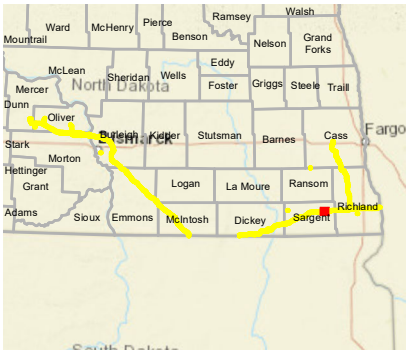


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Appendix A-2

Scale:
1:6,000
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Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
252 of 392

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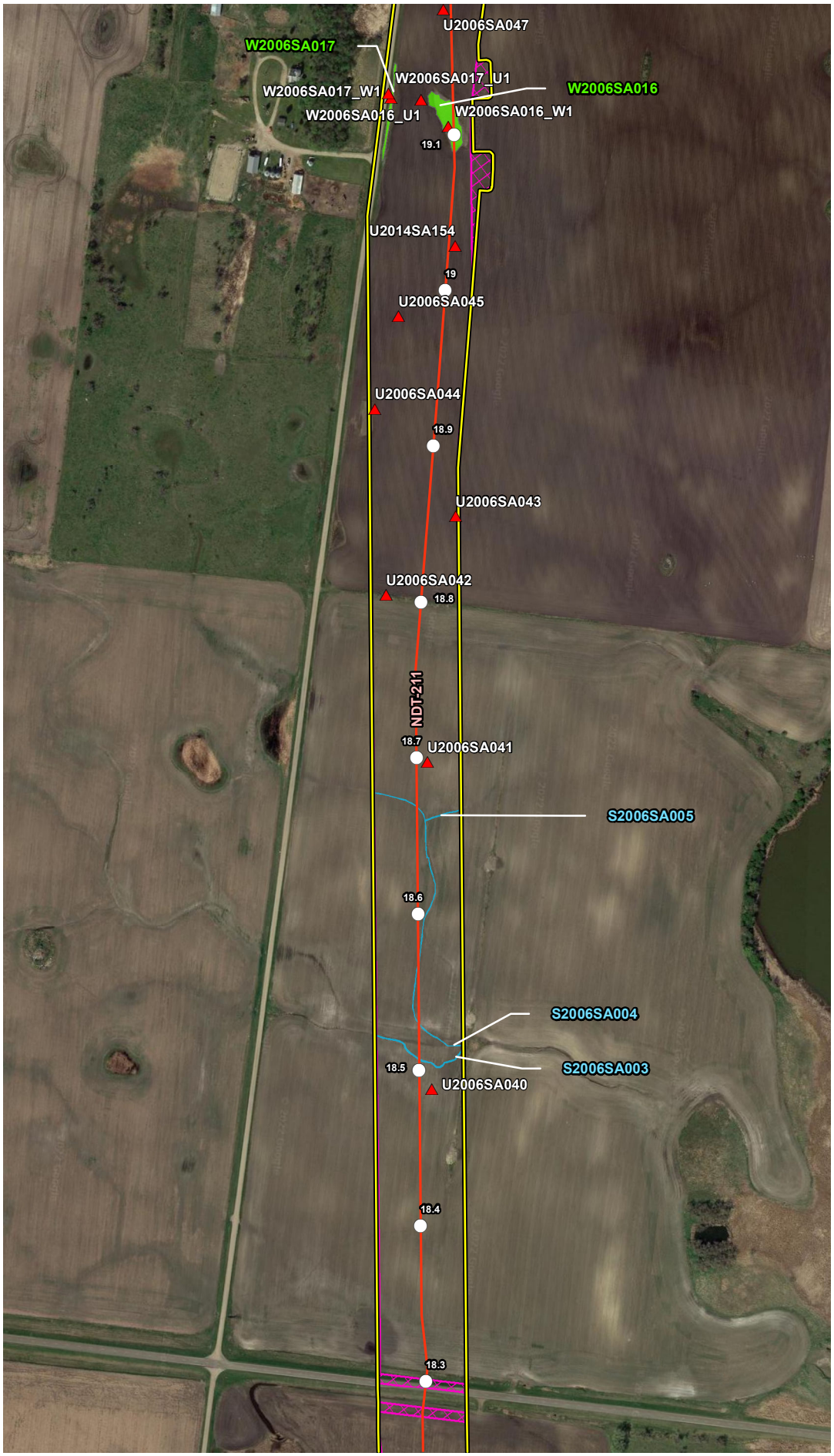
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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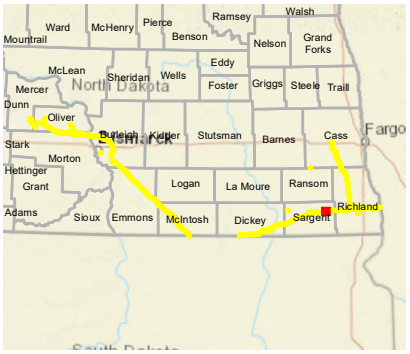


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Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

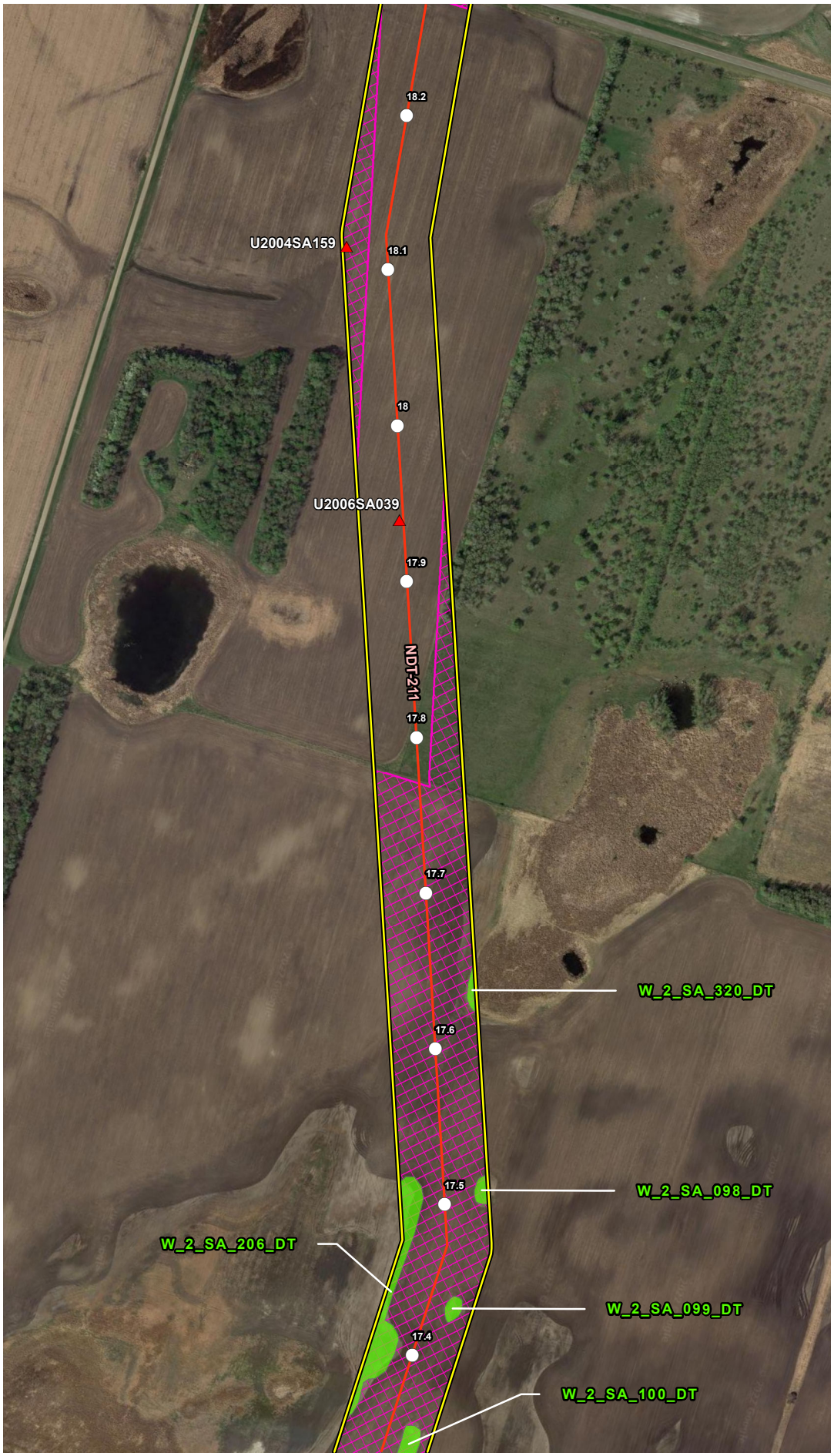
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
253 of 392

Drawing Number:
2001-22-002
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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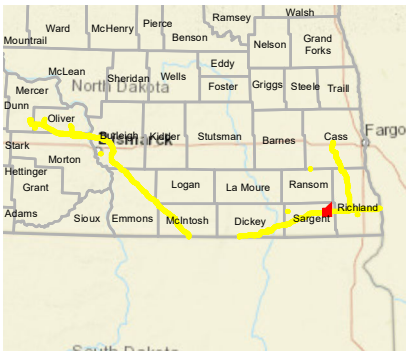


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**1A - Revision**
Revision description

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Figure Title:
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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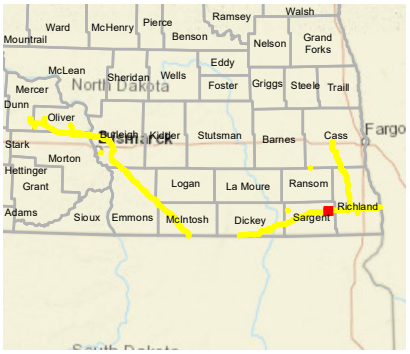
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 255 of 392 | 2001-22-002<br>Current Revision |

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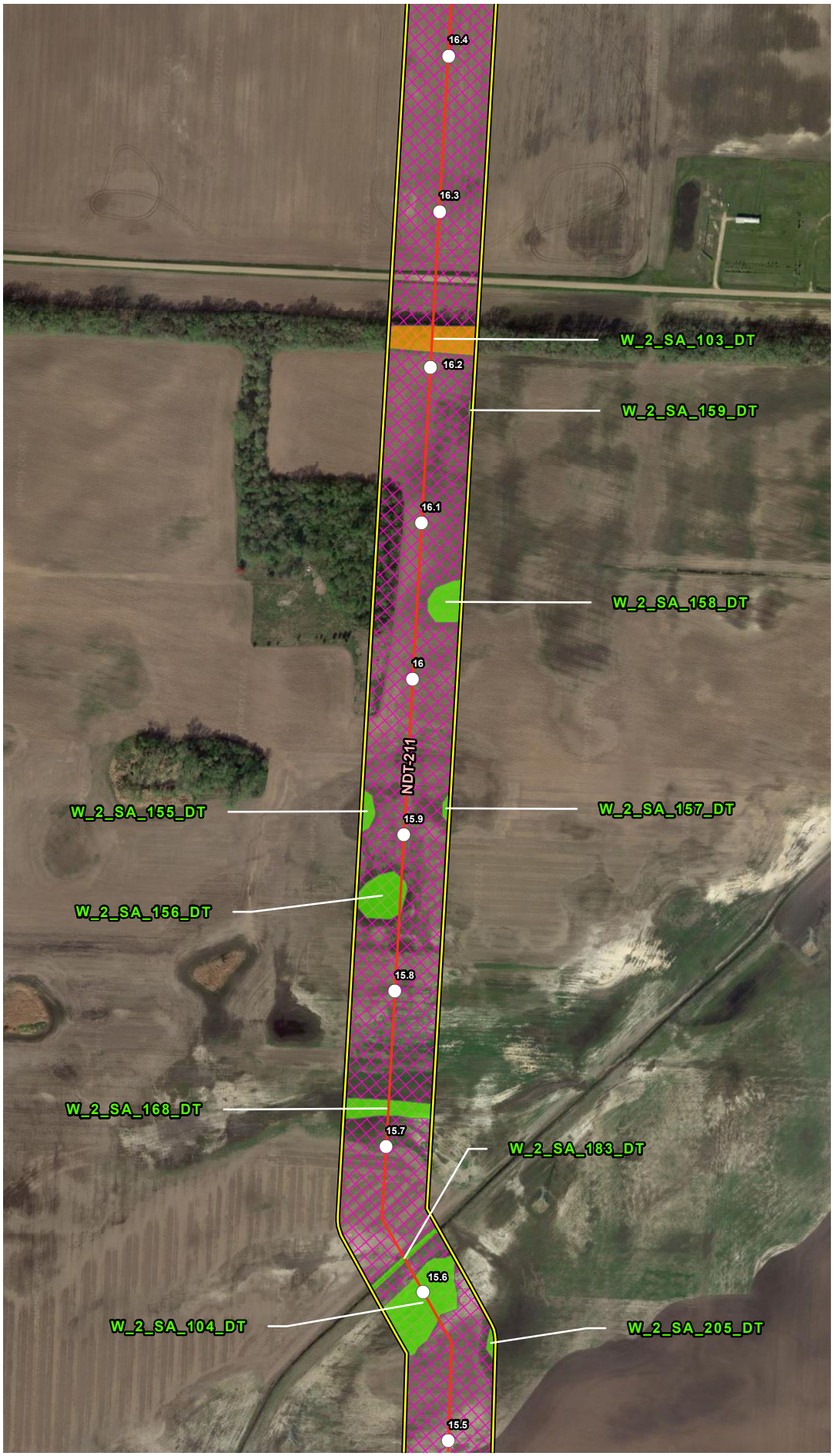
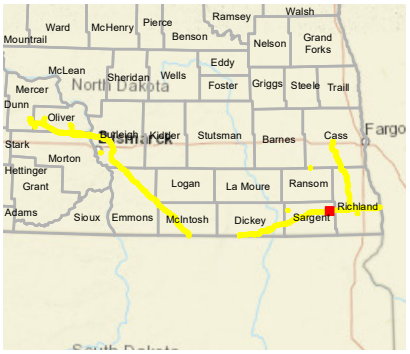
## AERIAL MAP




## VICINITY MAP

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Feet

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|---|---|
| 256 of 392 | 2001-22-002<br>Current Revision |

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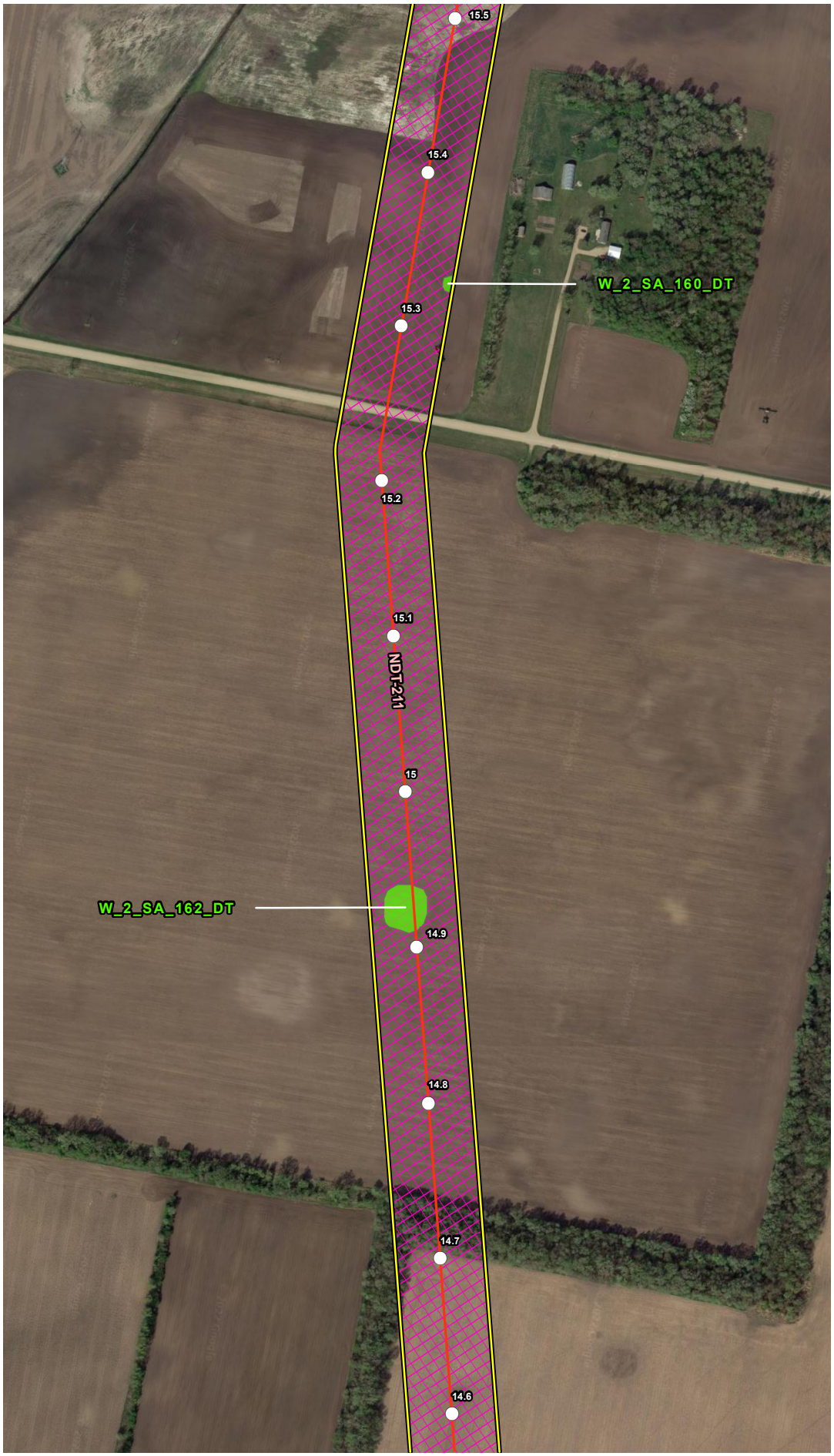


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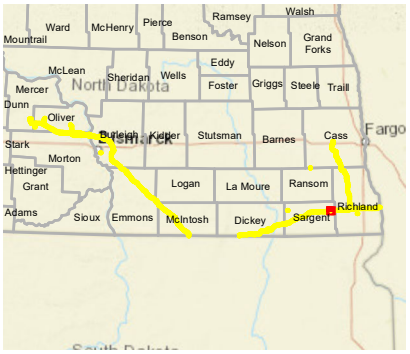


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Feet

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| 257 of 392 | 2001-22-002<br>Current Revision |

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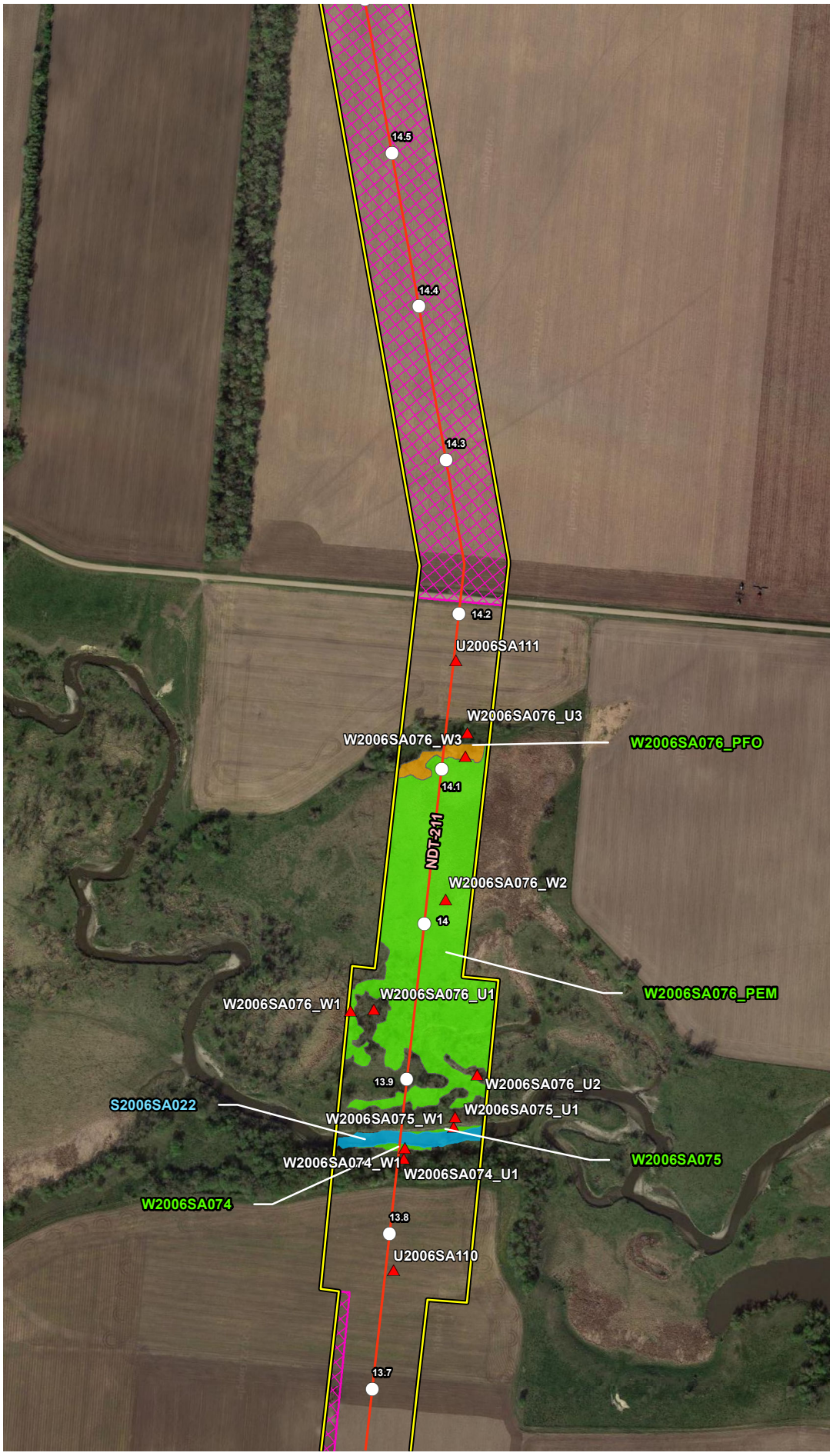
## AERIAL MAP

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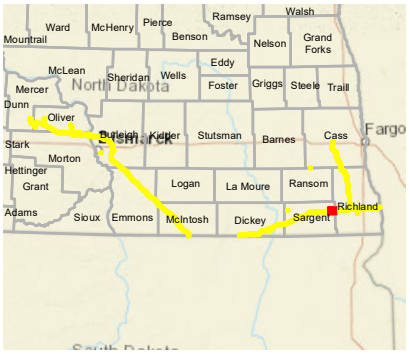


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0 250 500 Feet

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**1A - Revision**

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| 258 of 392 | 2001-22-002<br>Current Revision |

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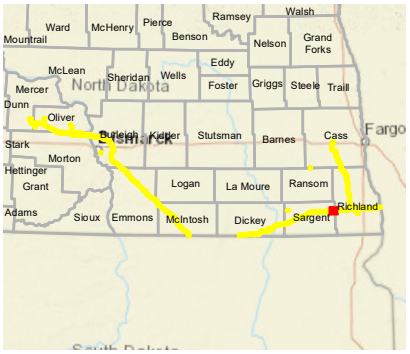
## AERIAL MAP




## VICINITY MAP

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| 259 of 392 | 2001-22-002<br>Current Revision |

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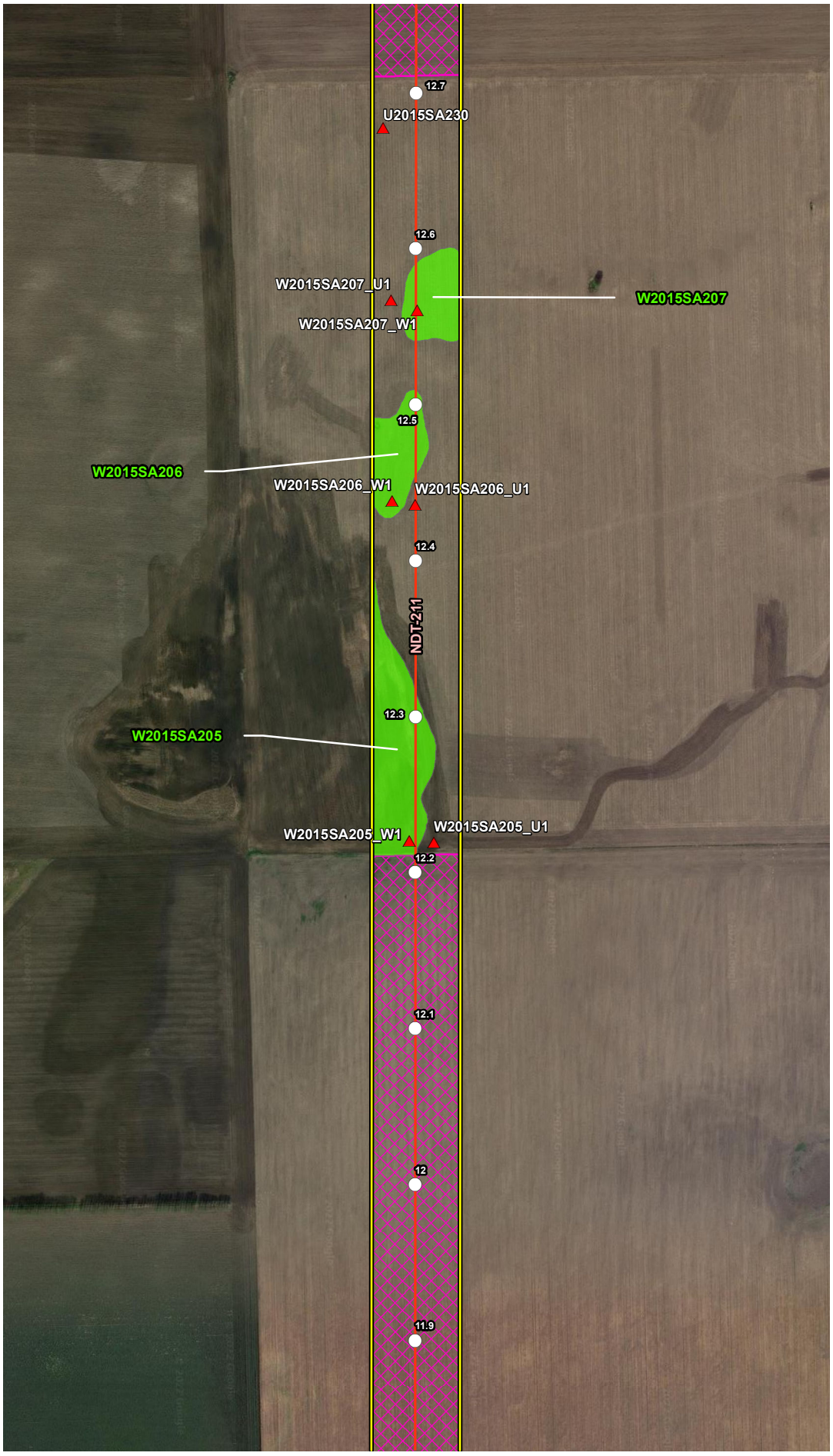
## AERIAL MAP

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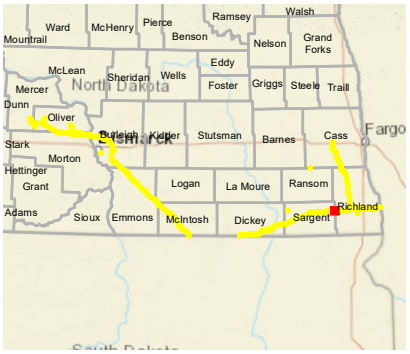


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| Sheet:<br>260 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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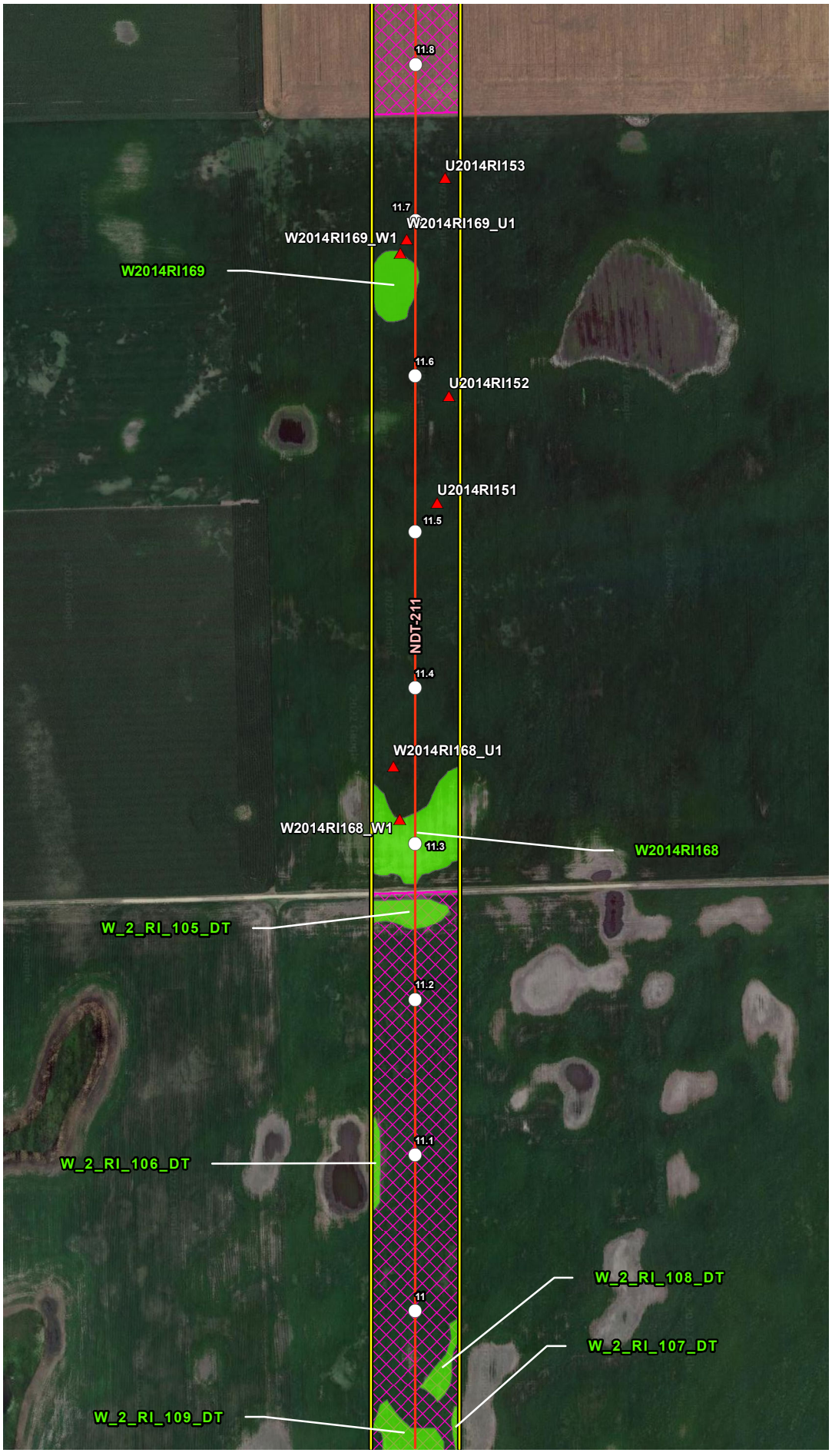


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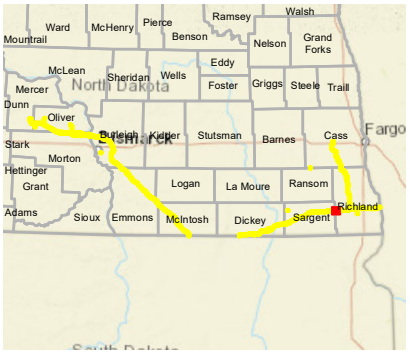


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0 250 500 Feet

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| Date: | Revised by: | Checked by: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>261 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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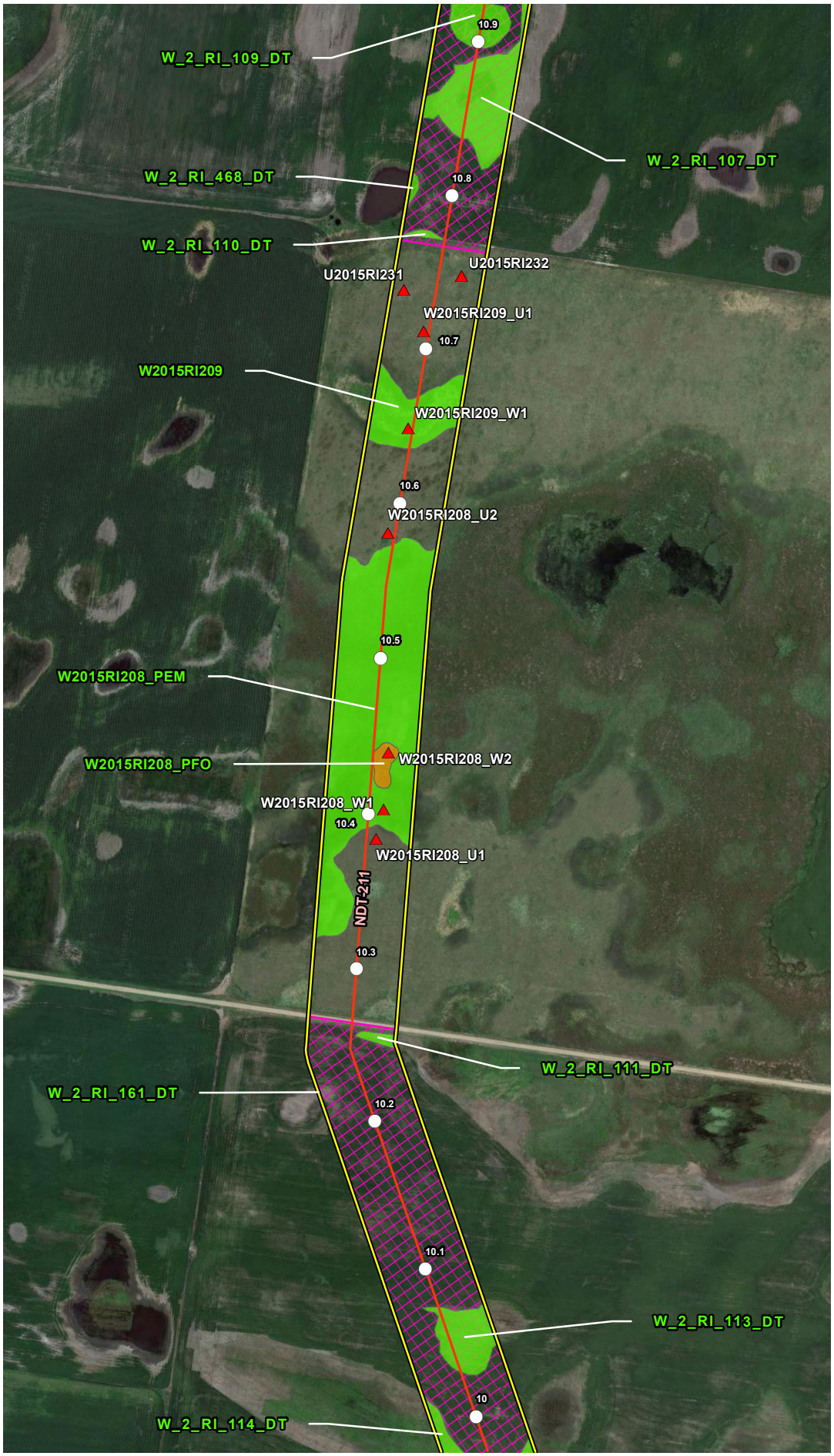
## AERIAL MAP

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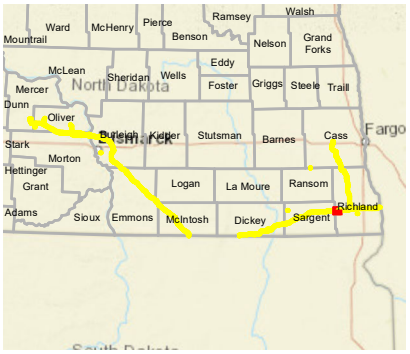


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0 250 500 Feet

## REVISIONS

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| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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| Sheet:<br>262 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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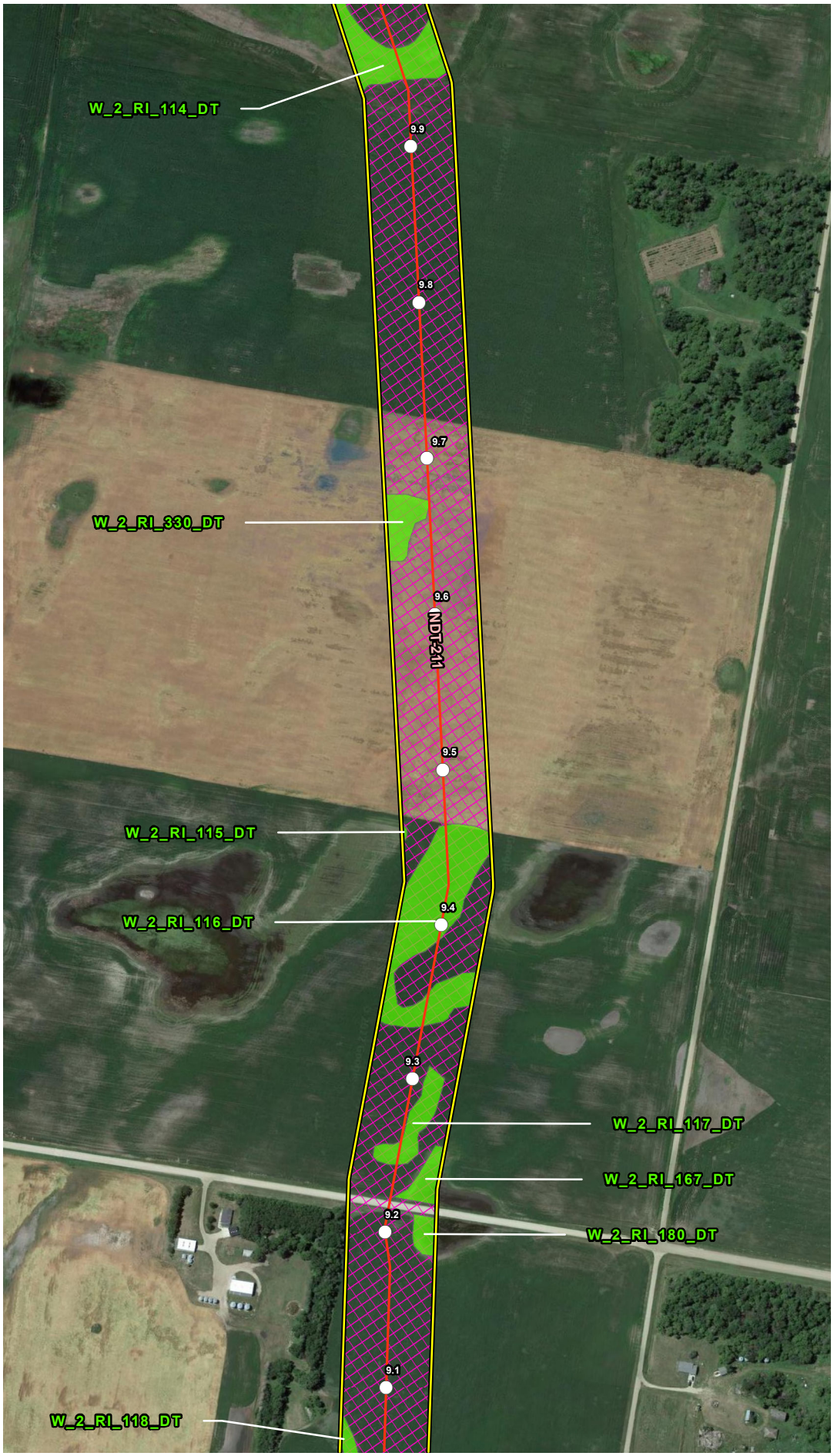


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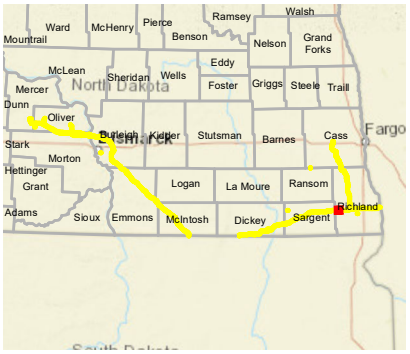


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| 263 of 392 | 2001-22-002<br>Current Revision |

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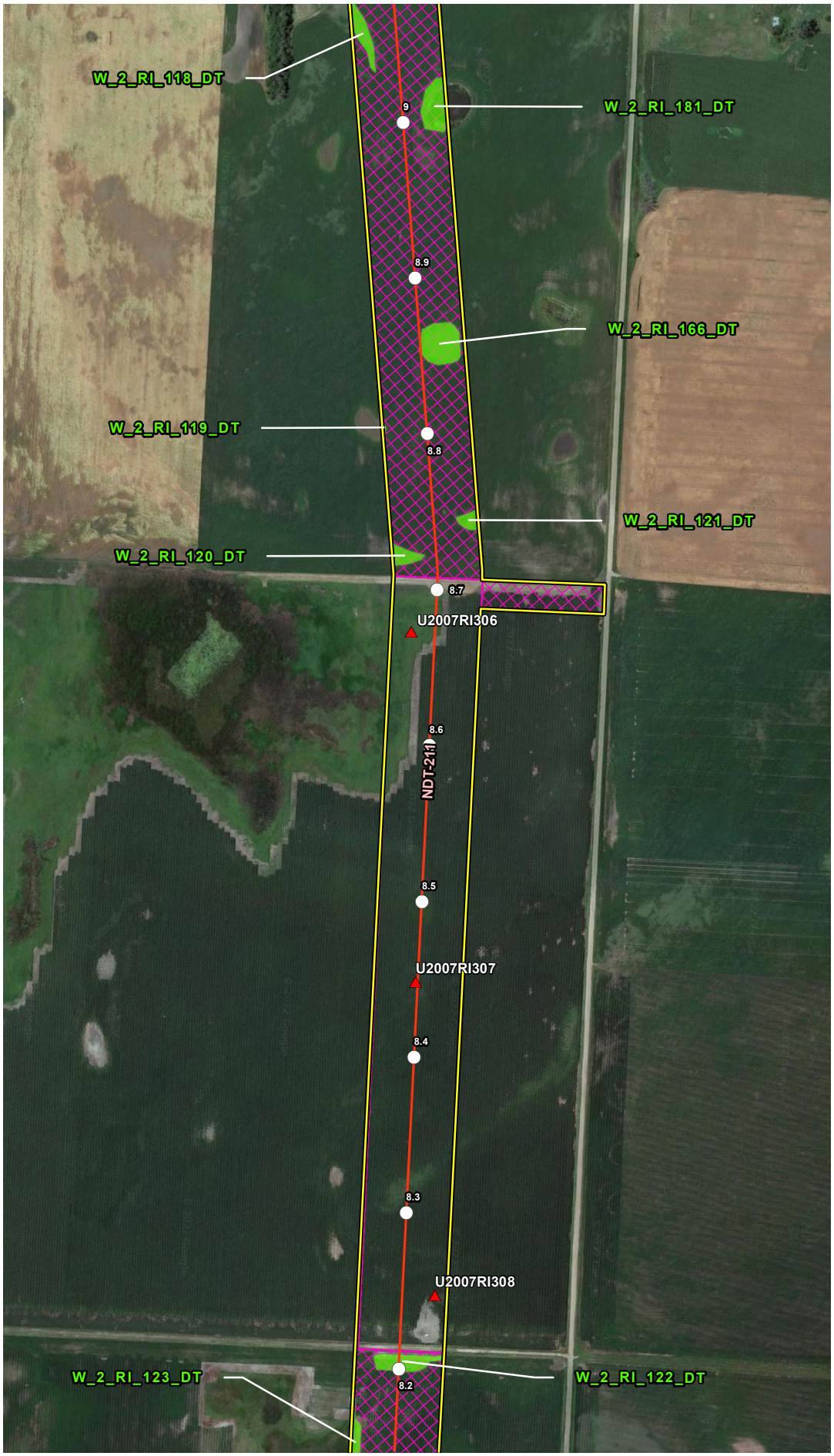


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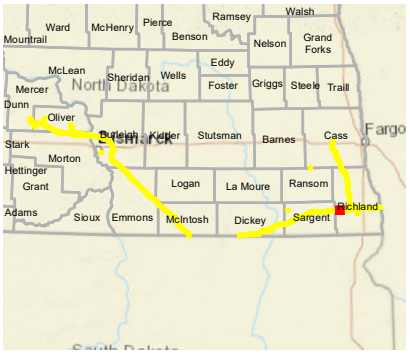


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| 264 of 392 | 2001-22-002<br>Current Revision |

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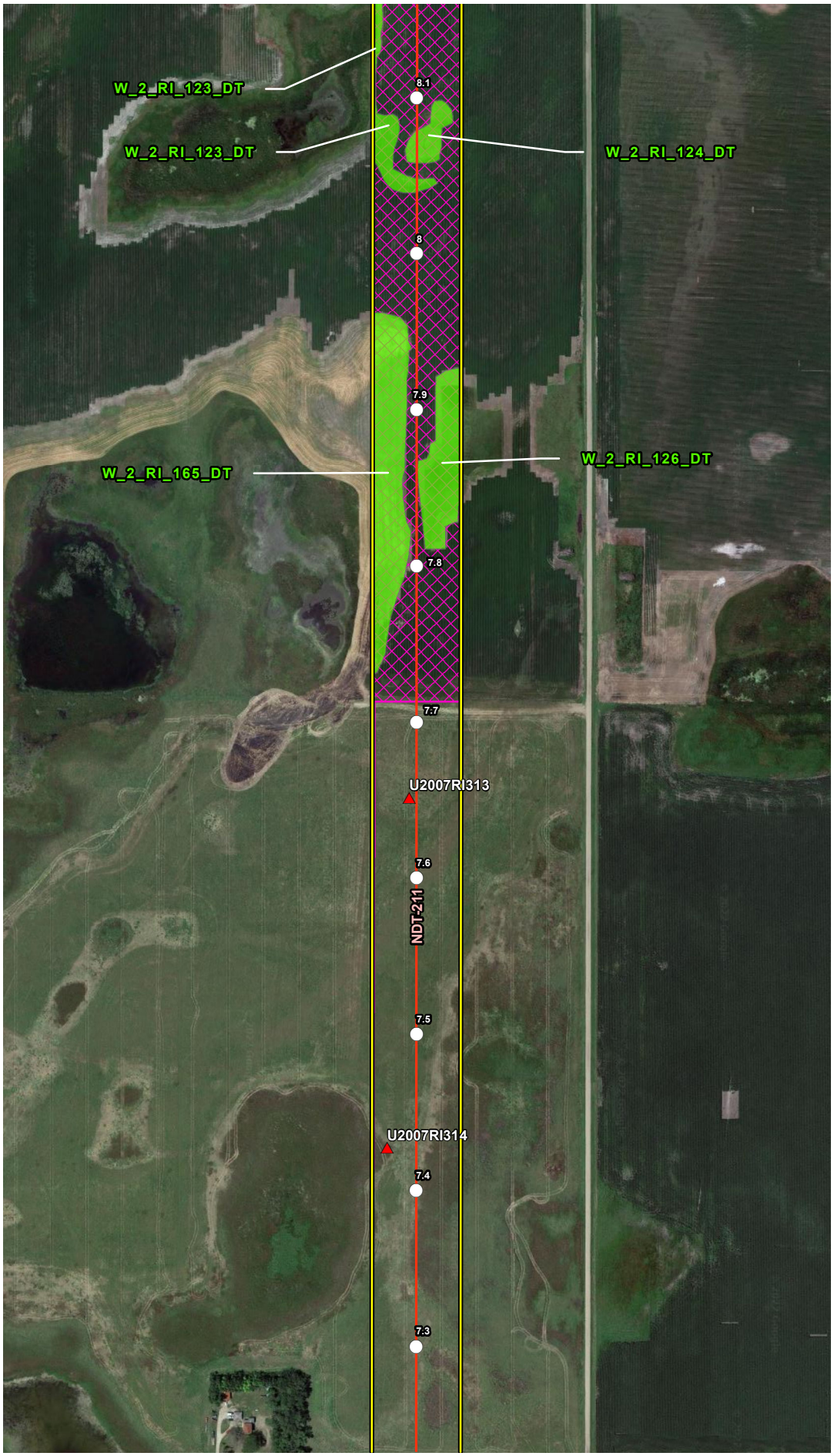


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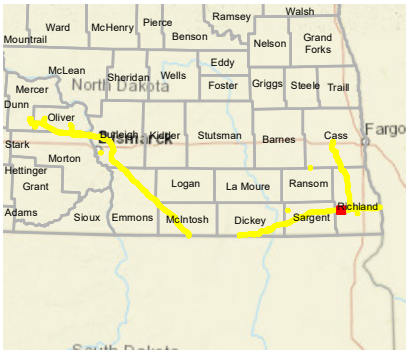


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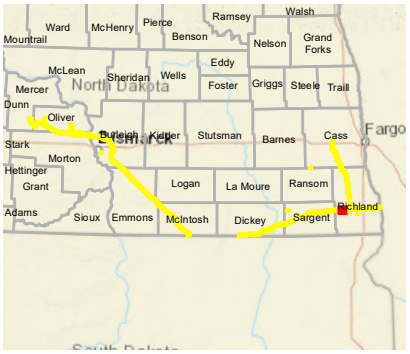
## AERIAL MAP




## VICINITY MAP

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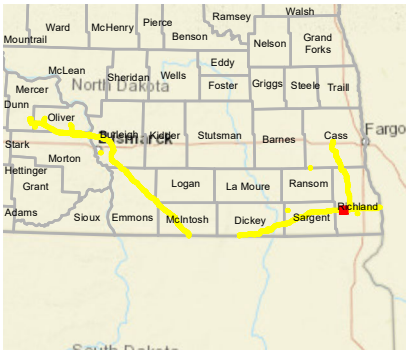
## AERIAL MAP




## VICINITY MAP

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- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

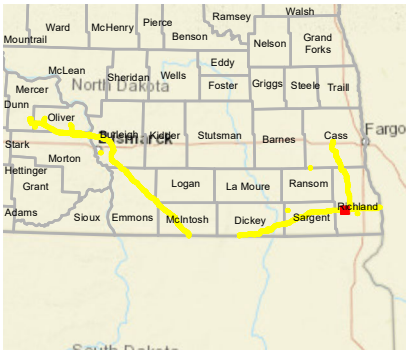
| Sheet: | Drawing Number: |
|---|---|
| 267 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

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|---|---|
| 268 of 392 | 2001-22-002<br>Current Revision |

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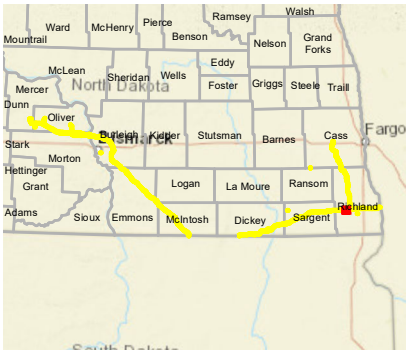
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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| Sheet: | Drawing Number: |
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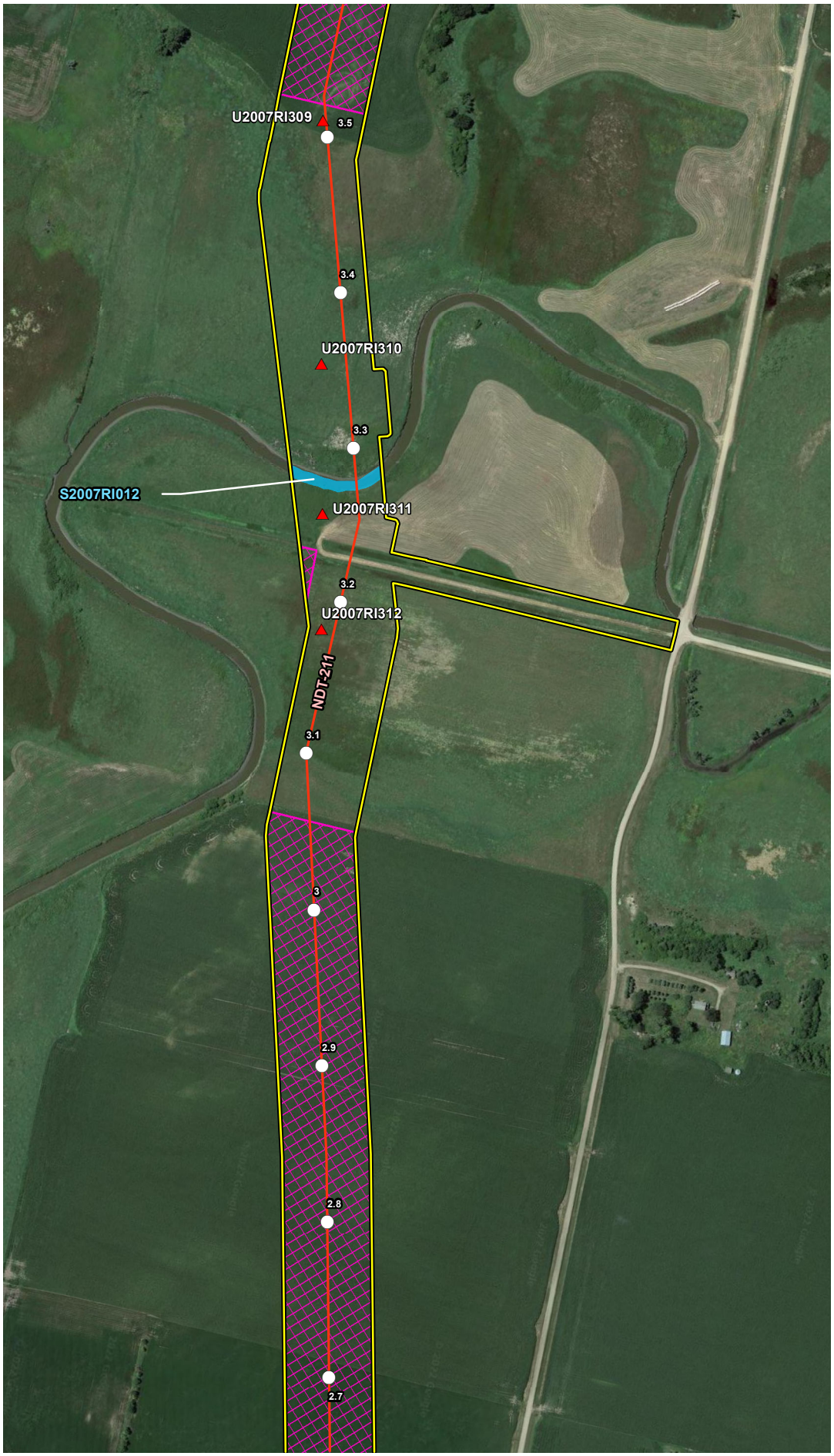
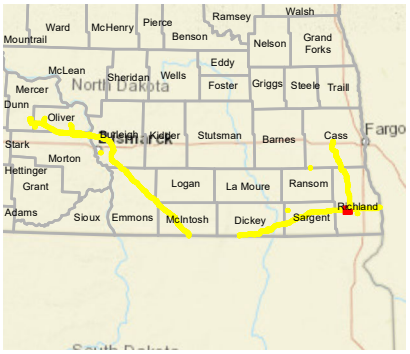
| 269 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDTmxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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|---|---|
| 270 of 392 | 2001-22-002<br>Current Revision |

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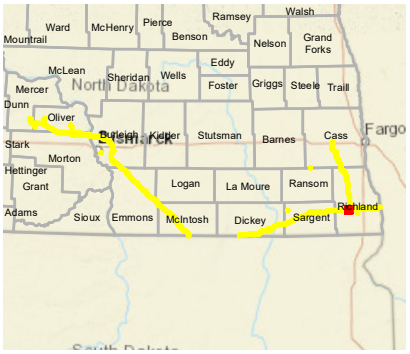
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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1A - Revision

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 271 of 392 | 2001-22-002<br>Current Revision |

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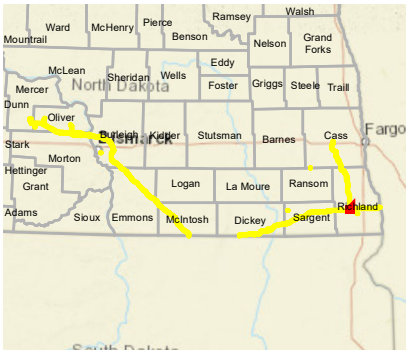
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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**1A - Revision**

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 272 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP




## VICINITY MAP

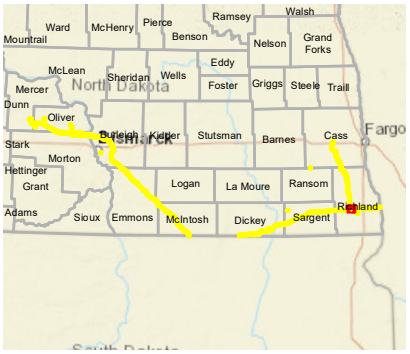


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Figure Title:

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Appendix A-2

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| Sheet: | Drawing Number: |
|---|---|
| 273 of 392 | 2001-22-002<br>Current Revision |

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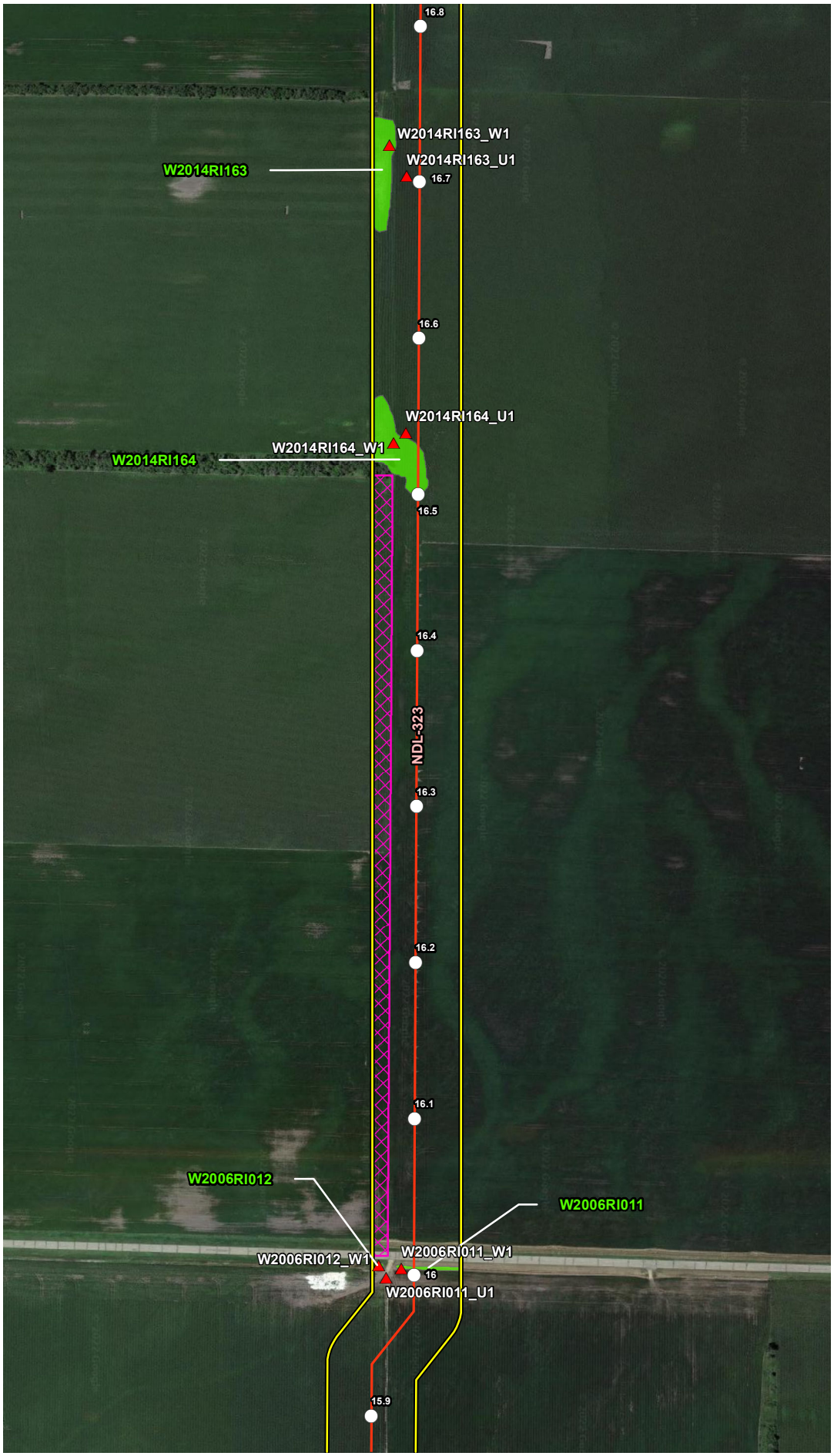
## AERIAL MAP

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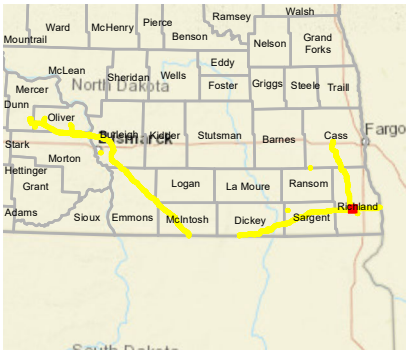


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 274 of 392 | 2001-22-002<br>Current Revision |

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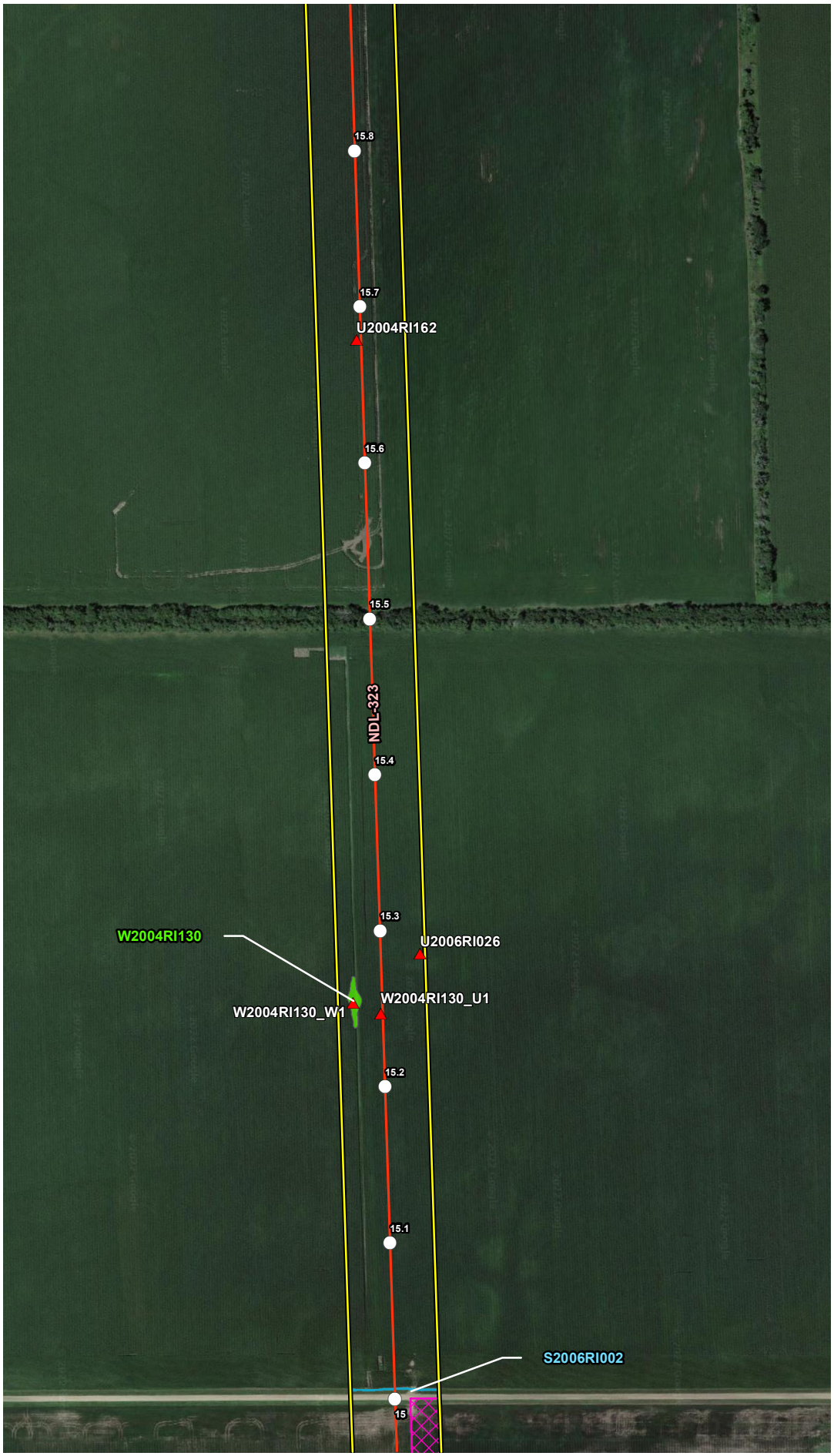
## AERIAL MAP

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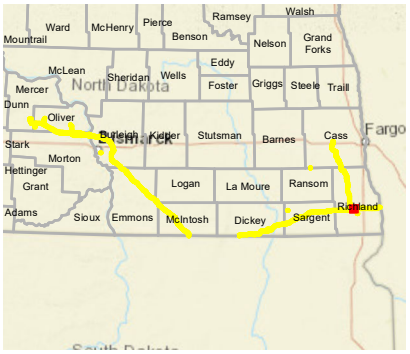


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
275 of 392

Drawing Number:
2001-22-002
Current Revision

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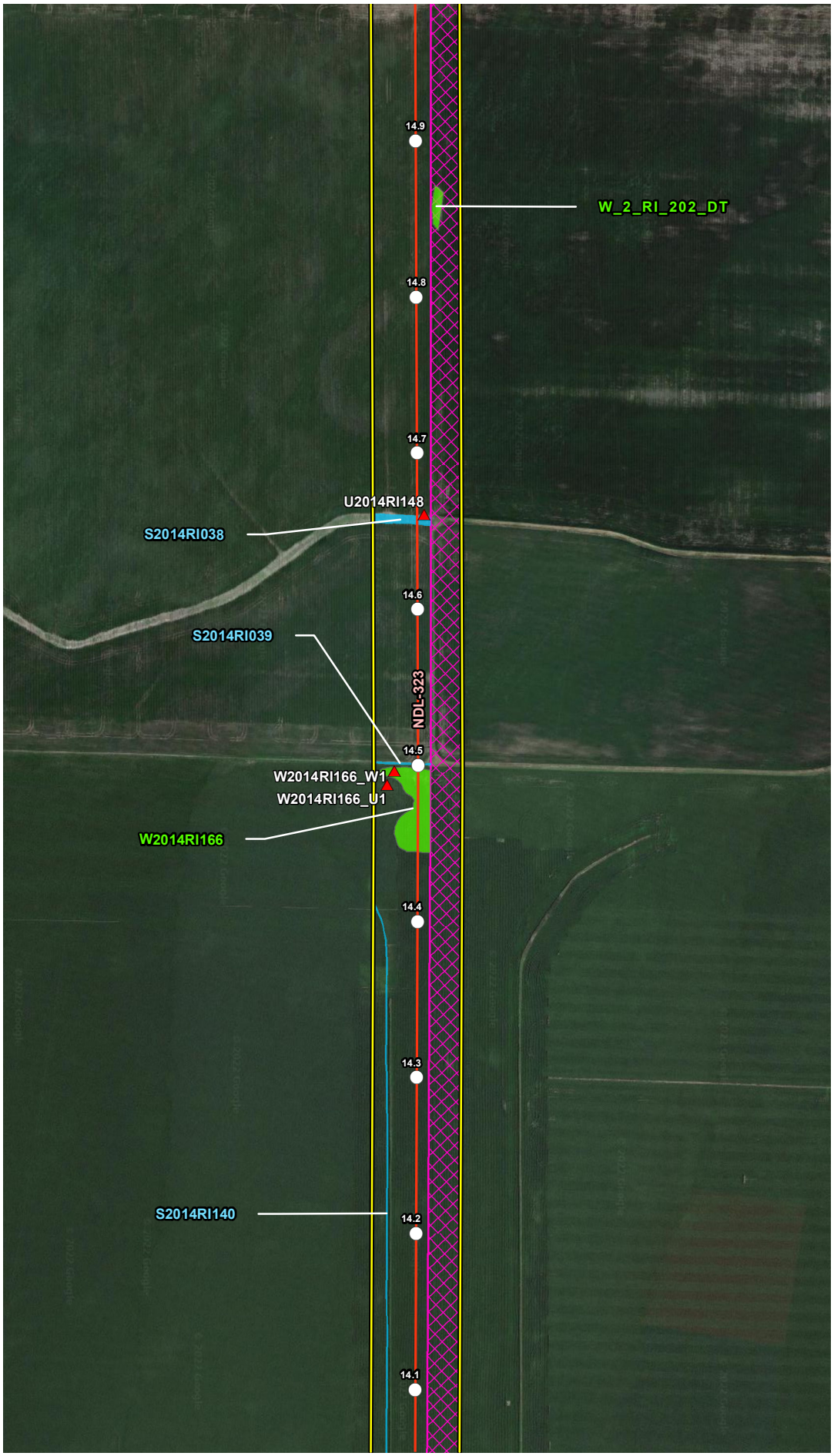
## AERIAL MAP

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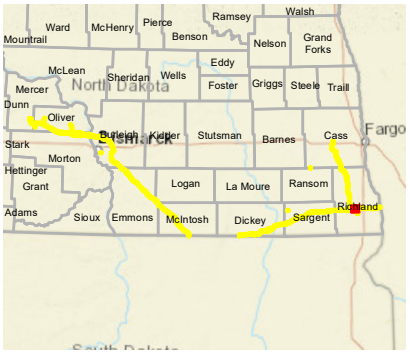


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0 250 500 Feet

## REVISIONS

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**1A - Revision**

Revision description

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Figure Title:

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 276 of 392 | 2001-22-002<br>Current Revision |

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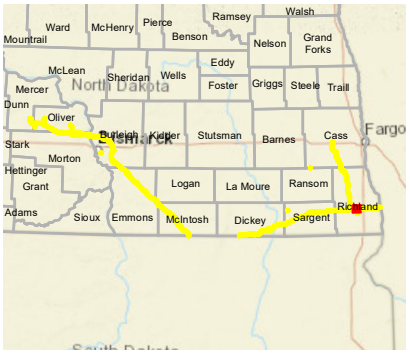
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| 277 of 392 | 2001-22-002<br>Current Revision |

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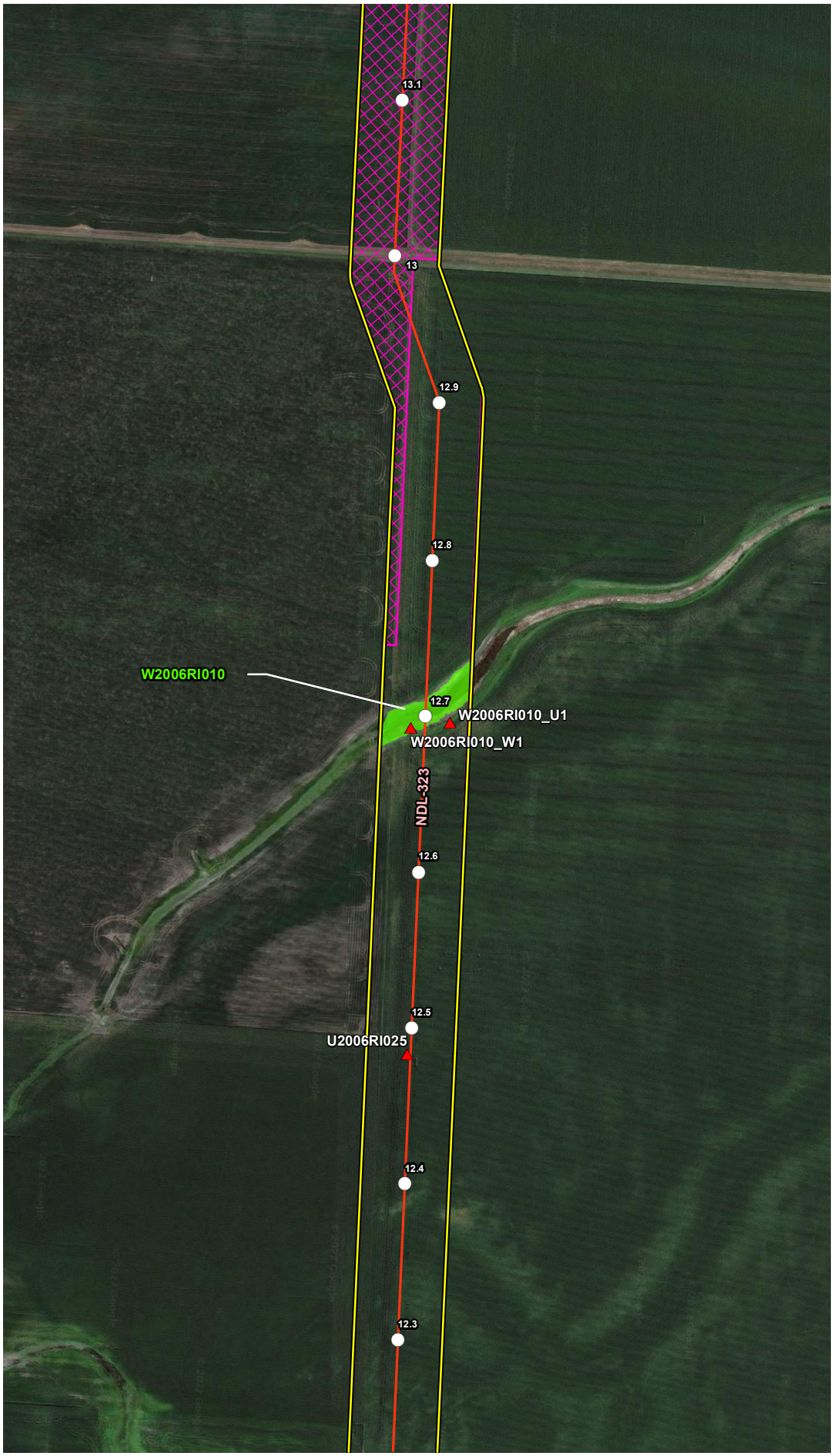
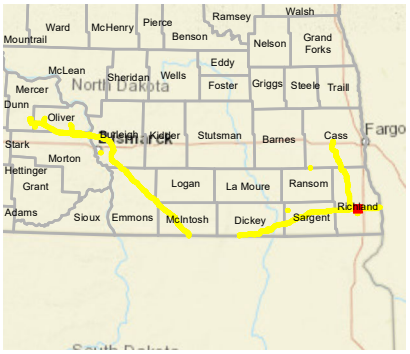
## AERIAL MAP




## VICINITY MAP

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| Date: | Revised by: | Checked by: |
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Figure Title:
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Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
278 of 392

Drawing Number:
2001-22-002
Current Revision

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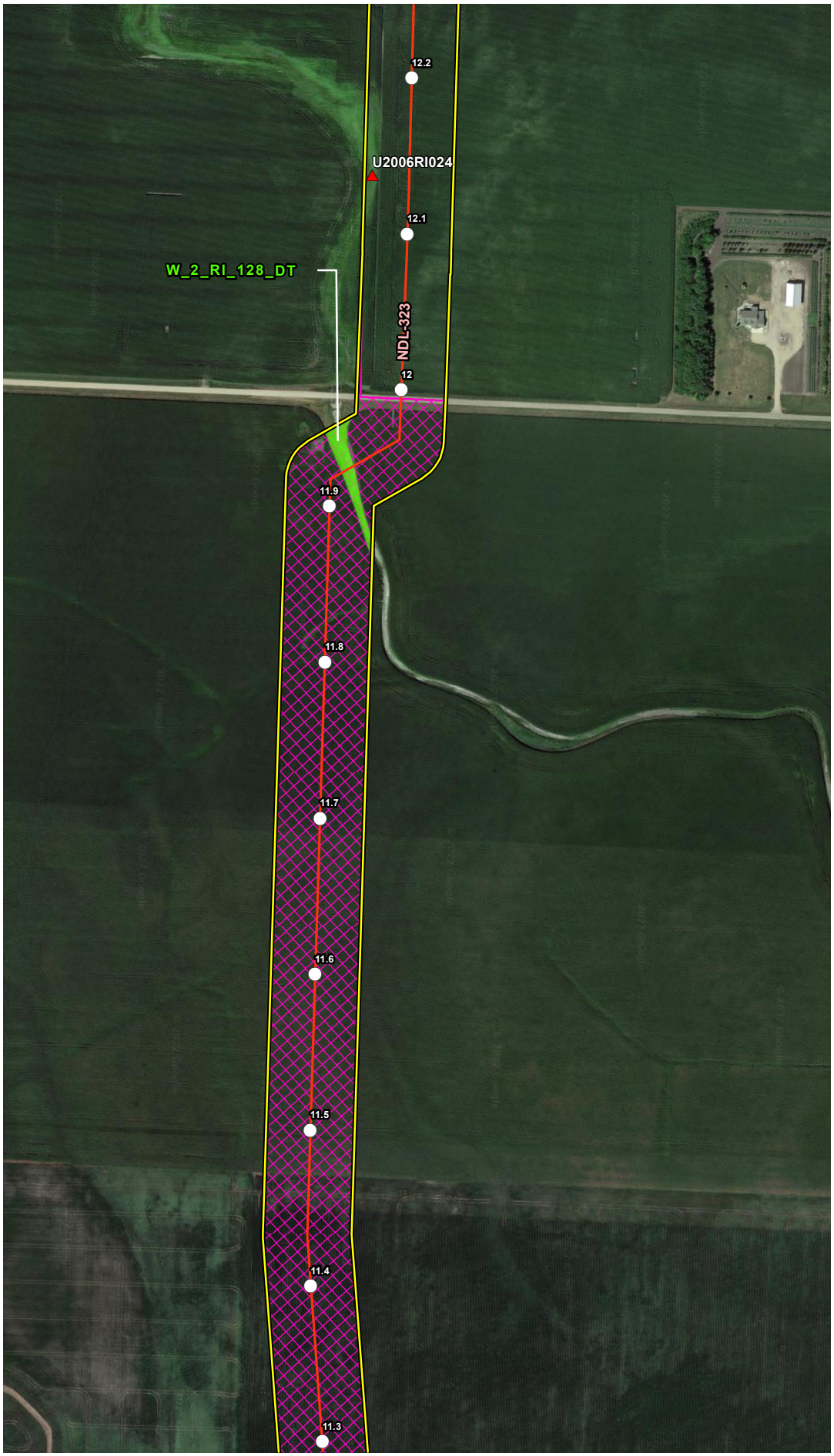
## AERIAL MAP

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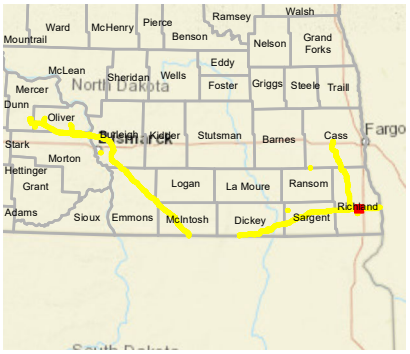


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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
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| | | |

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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 279 of 392 | 2001-22-002<br>Current Revision |

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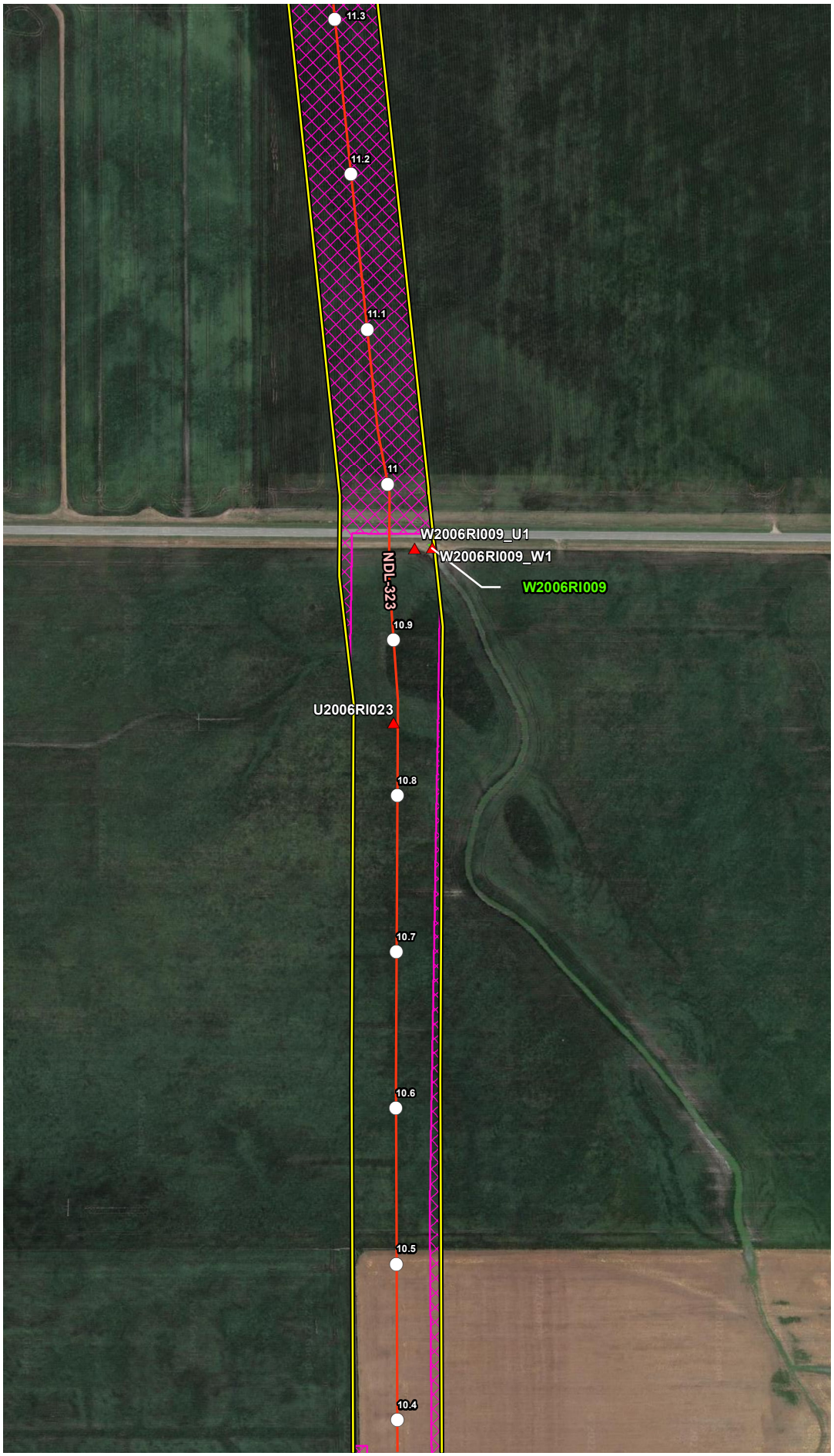
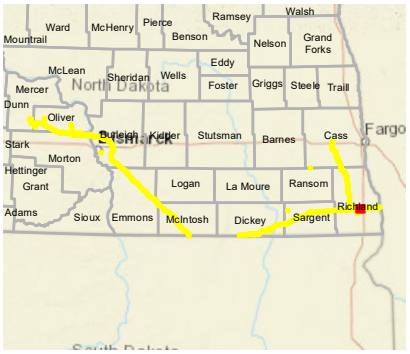
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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| Date: | Revised by: | Checked by: |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 280 of 392 | 2001-22-002<br>Current Revision |

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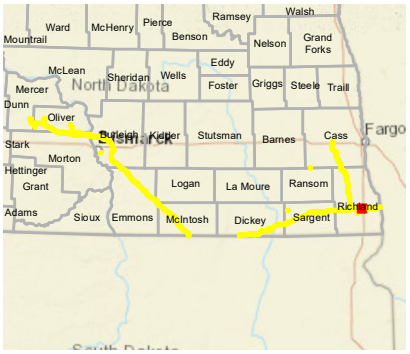
## AERIAL MAP




## VICINITY MAP

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| 281 of 392 | 2001-22-002<br>Current Revision |

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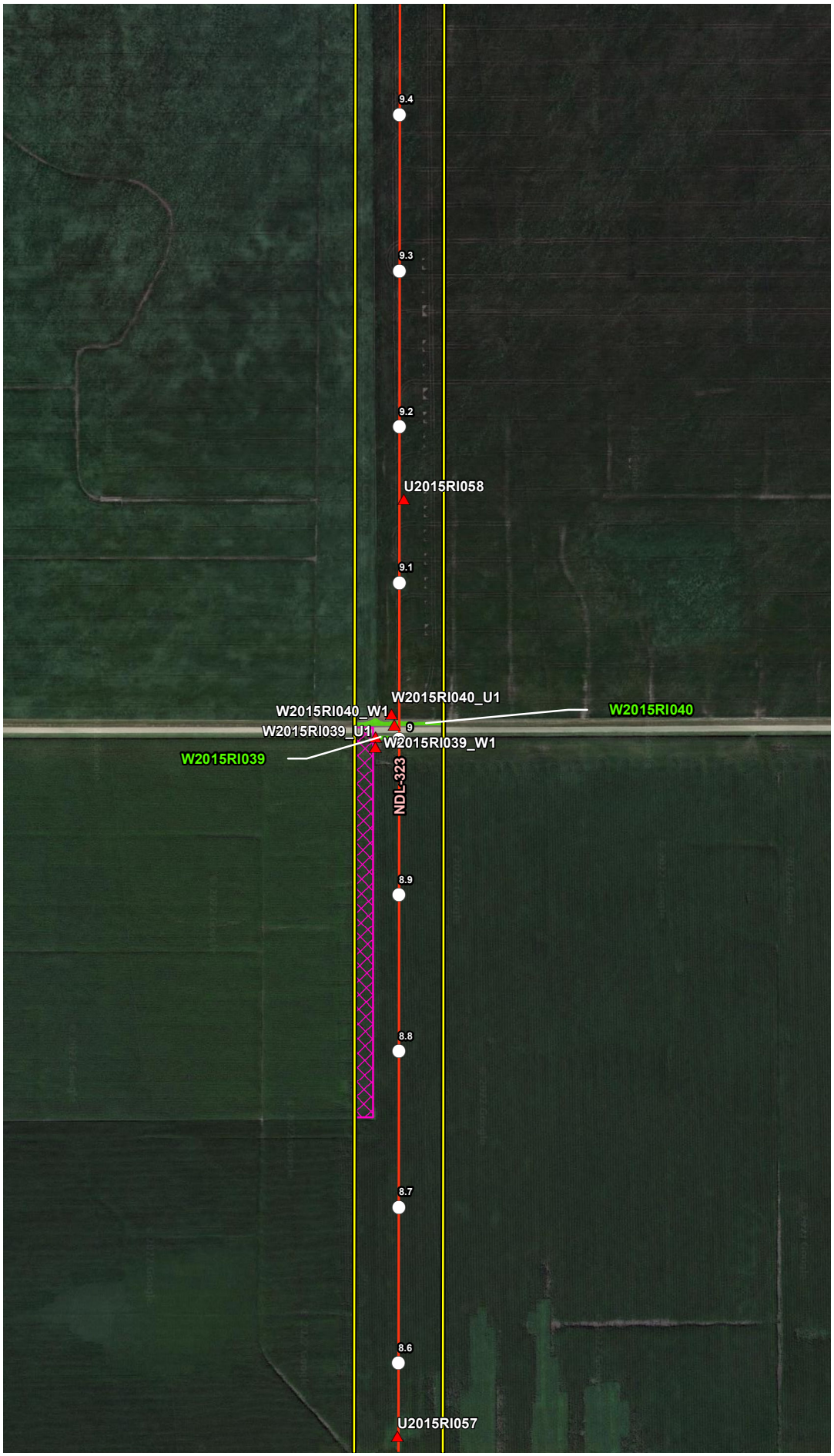
## AERIAL MAP

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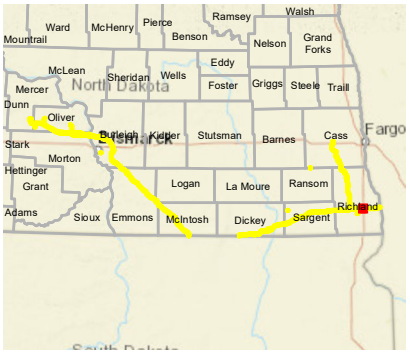


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0 250 500 Feet

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| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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| 282 of 392 | 2001-22-002<br>Current Revision |

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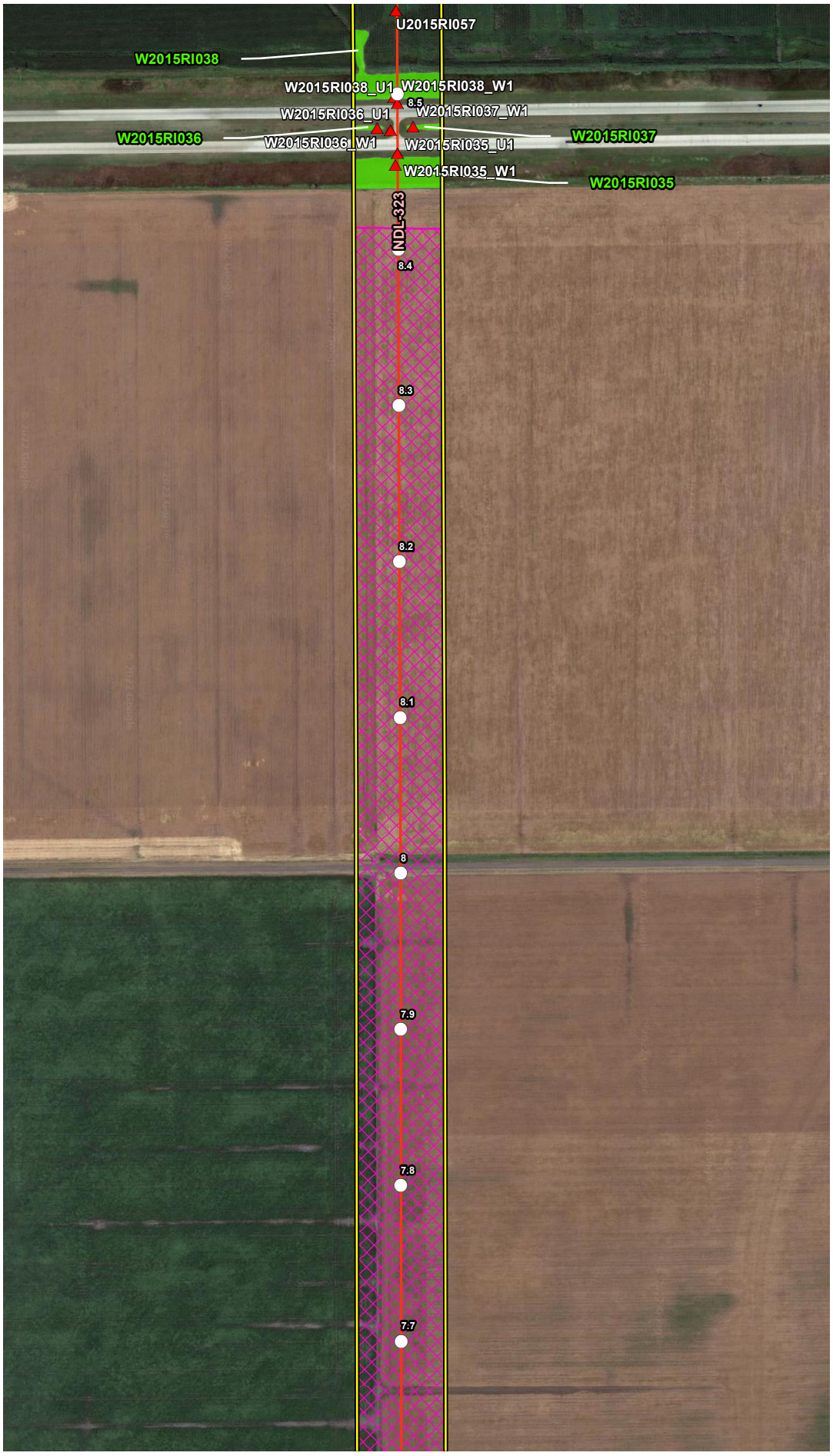
## AERIAL MAP

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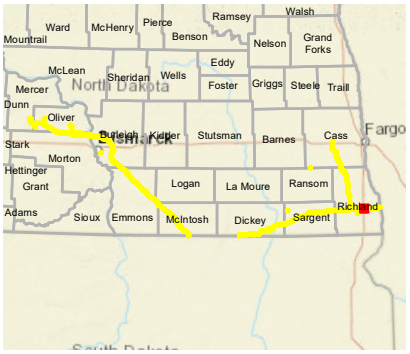


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0 250 500 Feet

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| 2022-08-04 | MM | AB |
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| Date: | Revised by: | Checked by: |

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>283 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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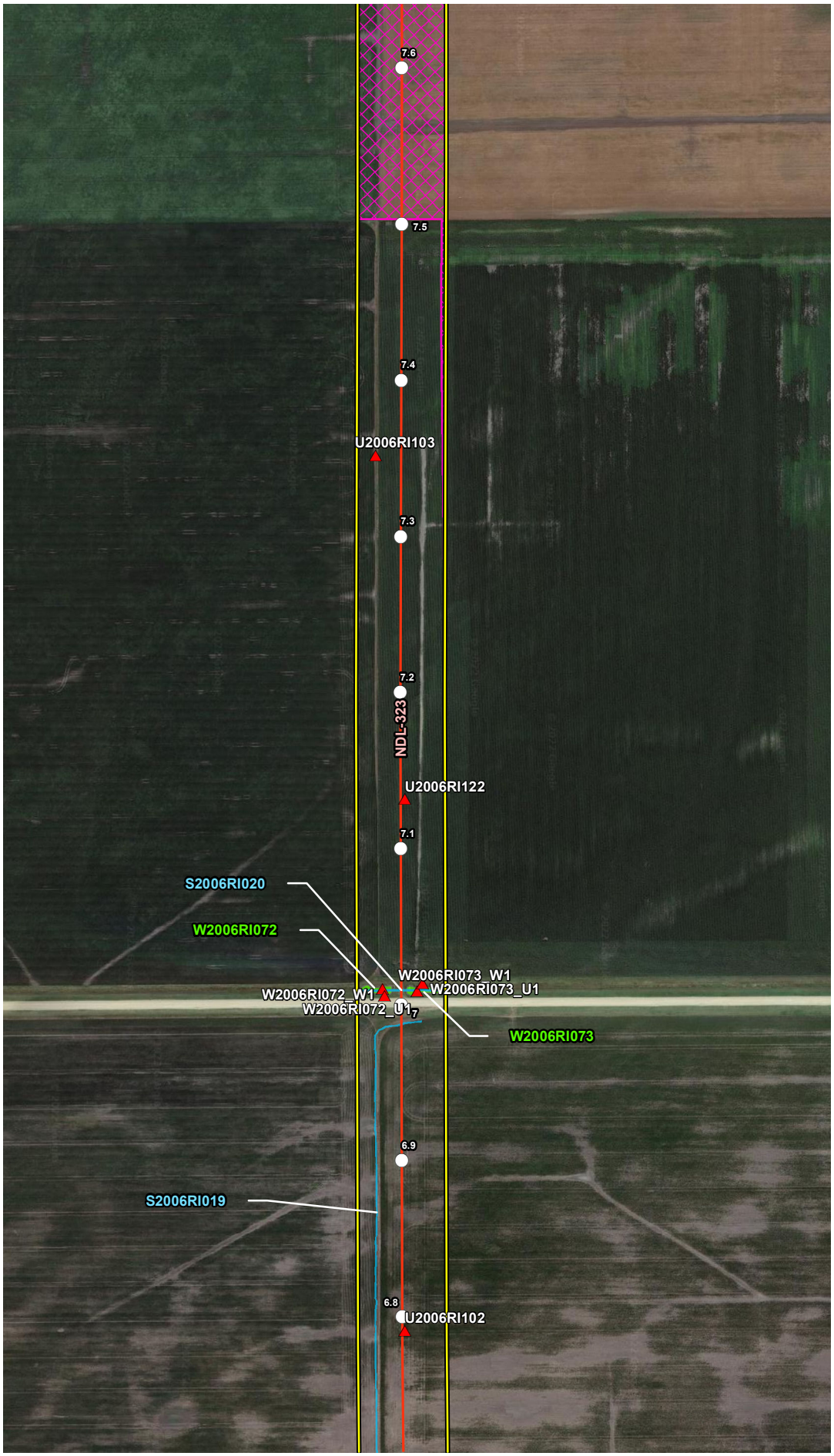
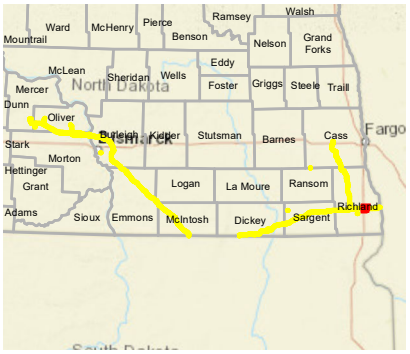
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

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Figure Number:
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| Sheet: | Drawing Number: |
|---|---|
| 284 of 392 | 2001-22-002<br>Current Revision |

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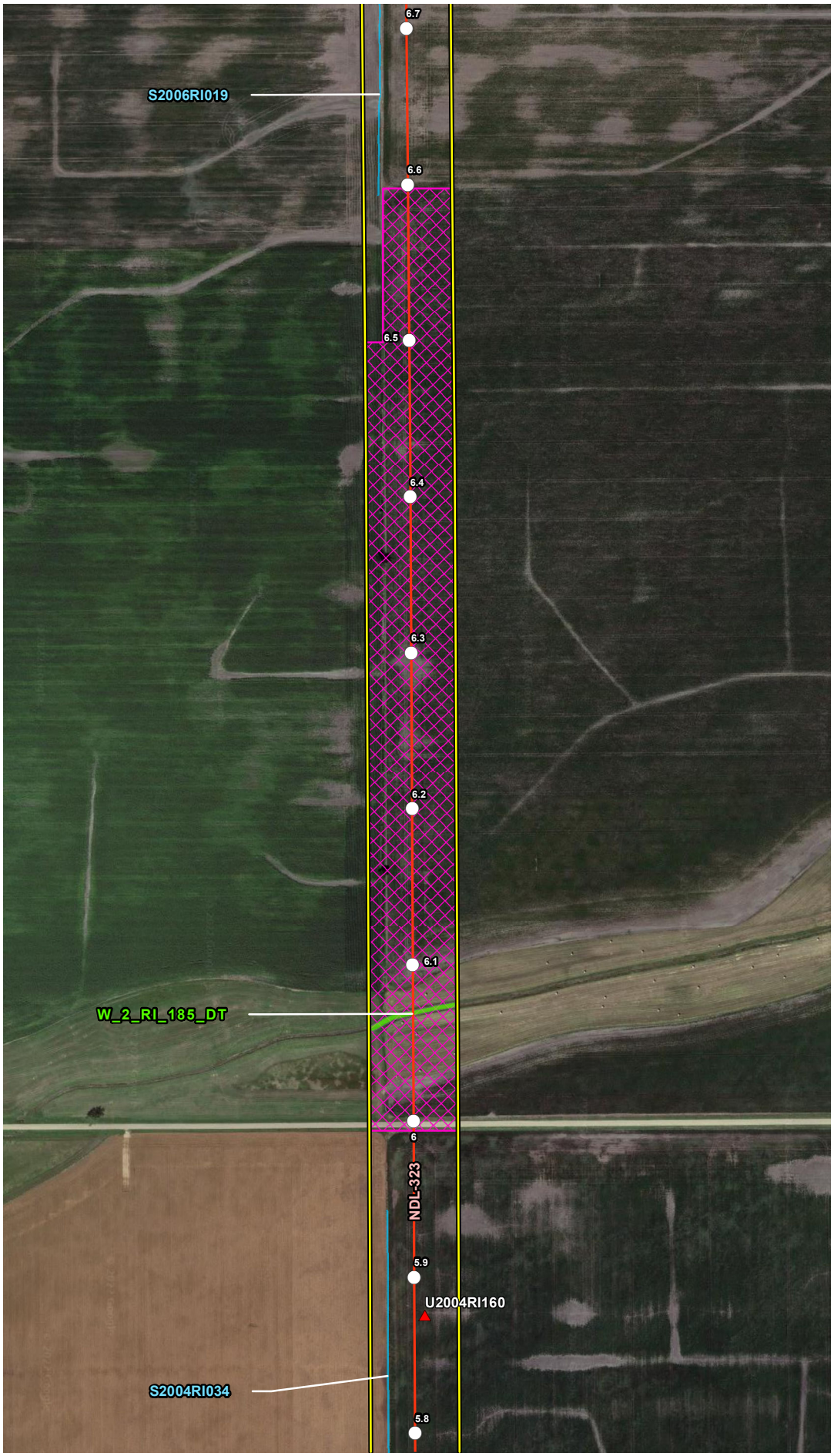
## AERIAL MAP

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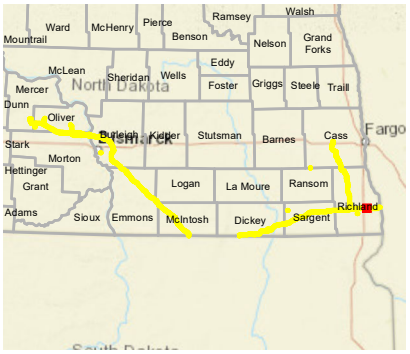


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## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
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Revision description

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 285 of 392 | 2001-22-002<br>Current Revision |

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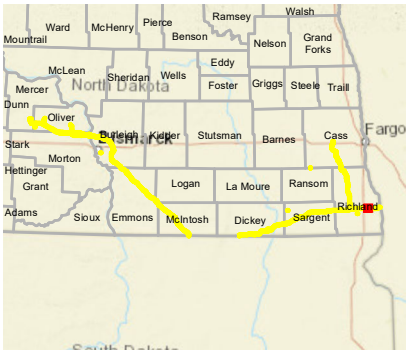
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| Sheet | Drawing Number |
|---|---|
| 286 of 392 | 2001-22-002<br>Current Revision |

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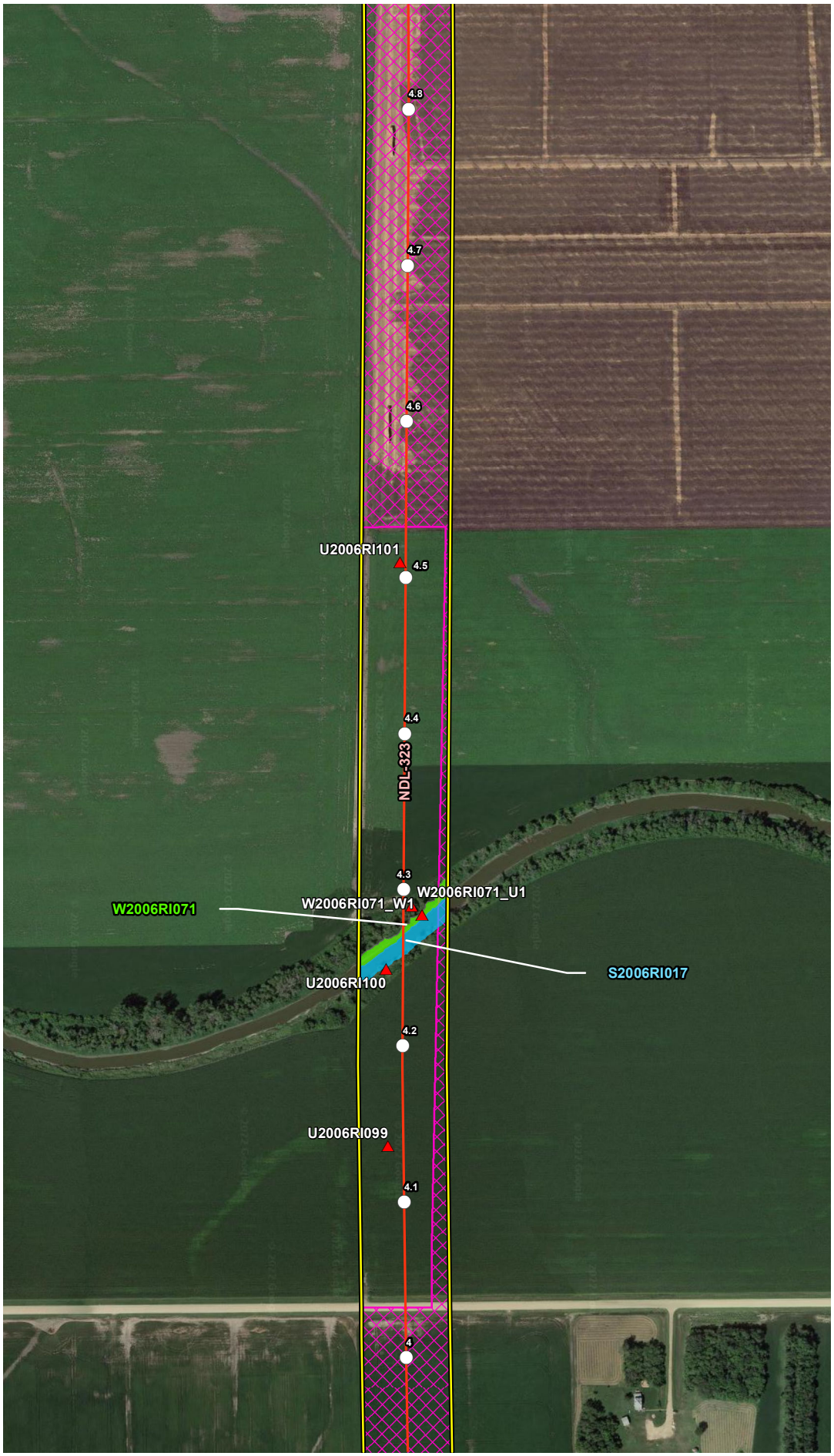
## AERIAL MAP

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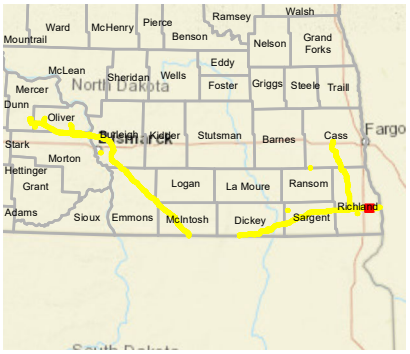


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Number:
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>287 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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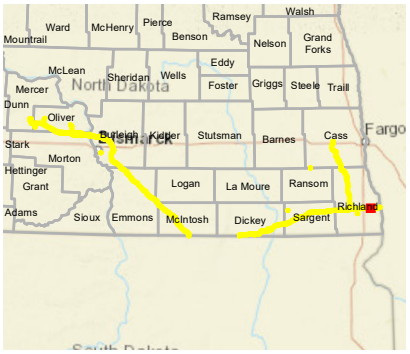
## AERIAL MAP




## VICINITY MAP

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| 288 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP




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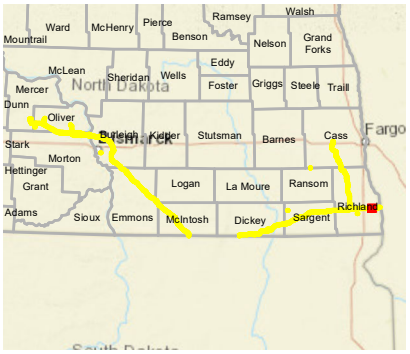


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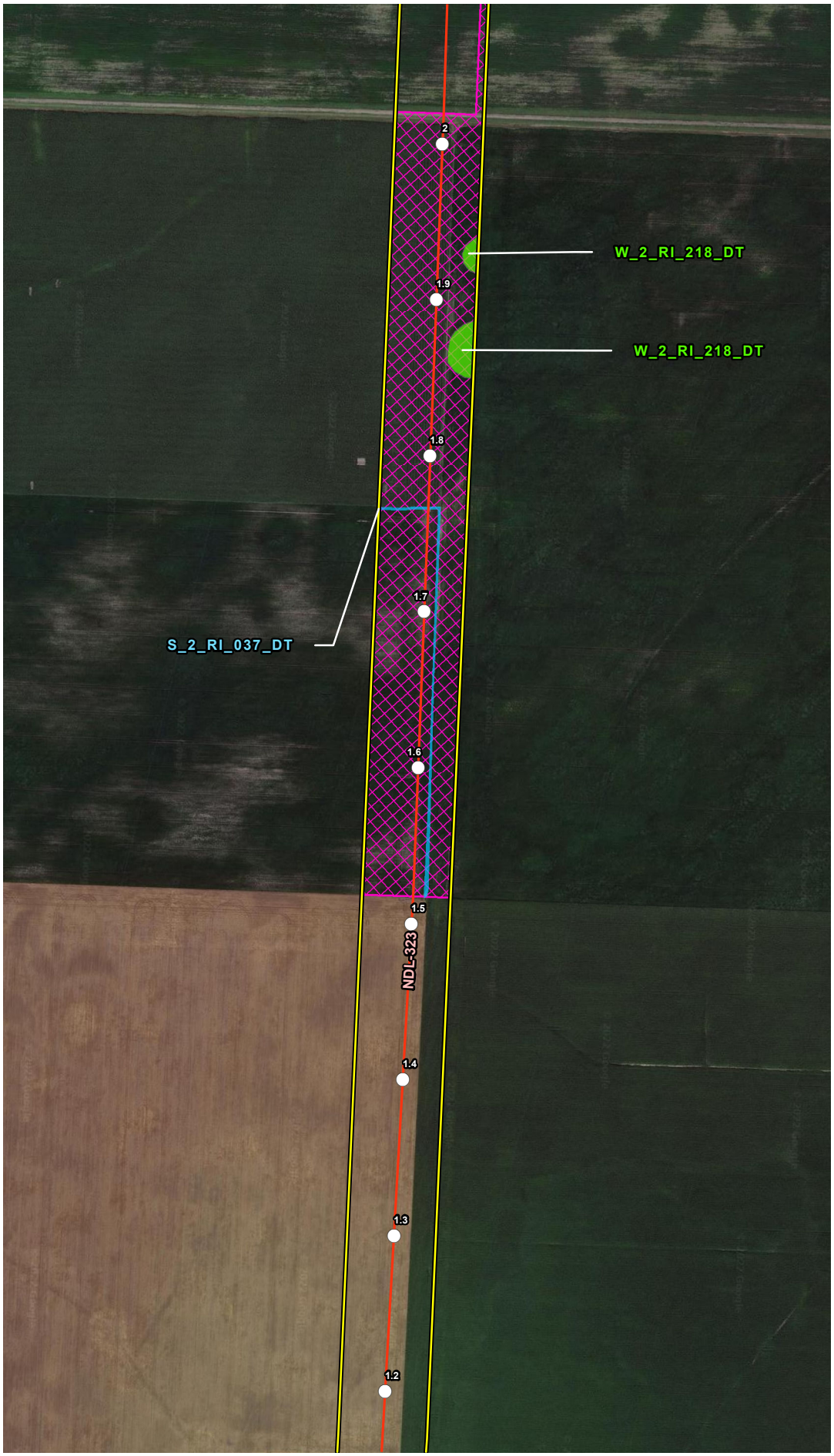
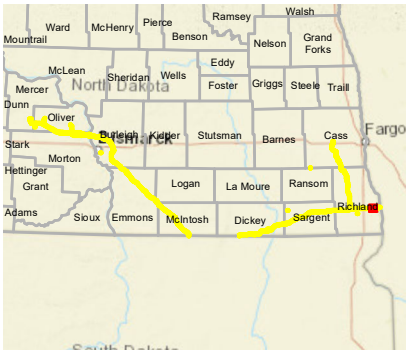



## VICINITY MAP

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| 290 of 392 | 2001-22-002<br>Current Revision |

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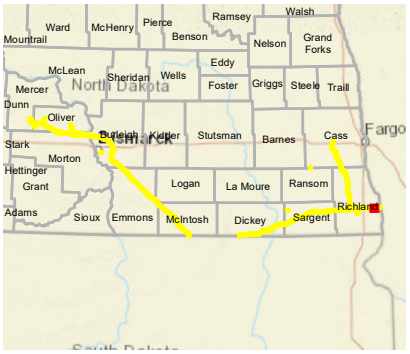
## AERIAL MAP




## VICINITY MAP

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| 291 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP




## VICINITY MAP

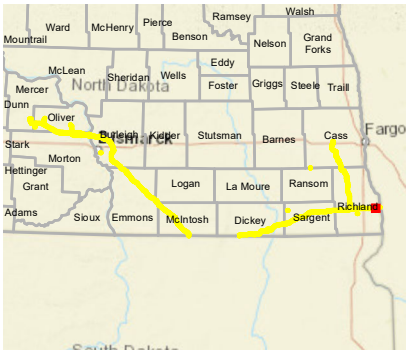


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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

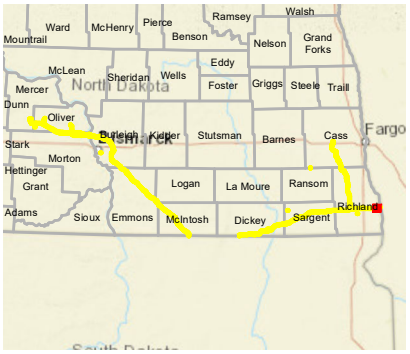
| Sheet: | Drawing Number: |
|---|---|
| 292 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\901_VWR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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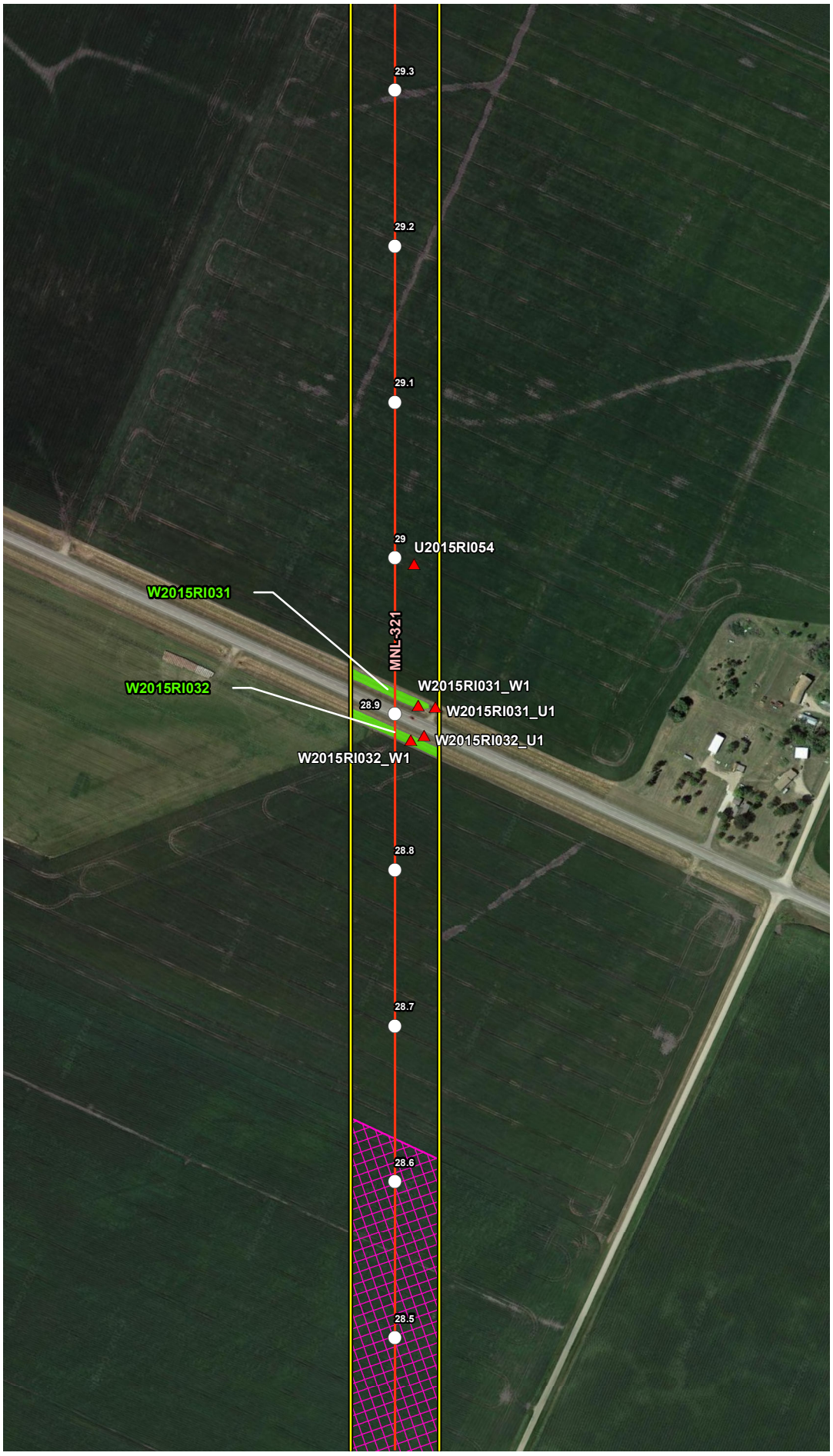
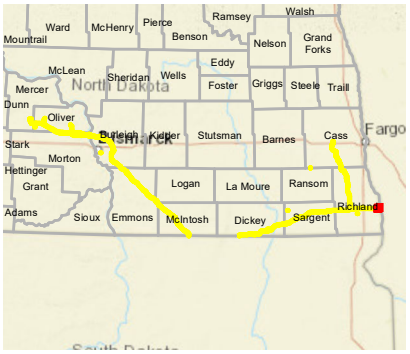
| Sheet: | Drawing Number: |
|---|---|
| 293 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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Appendix A-2

| Scale | Projection |
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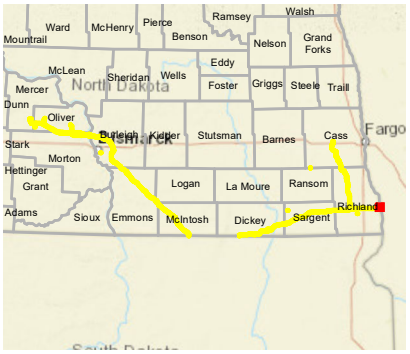
|---|---|
| 294 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\901_VWR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

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| 295 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP



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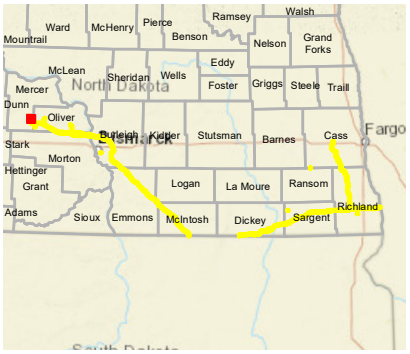


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| 2022-08-04 | MM | AB |

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| 296 of 392 | 2001-22-002<br>Current Revision |

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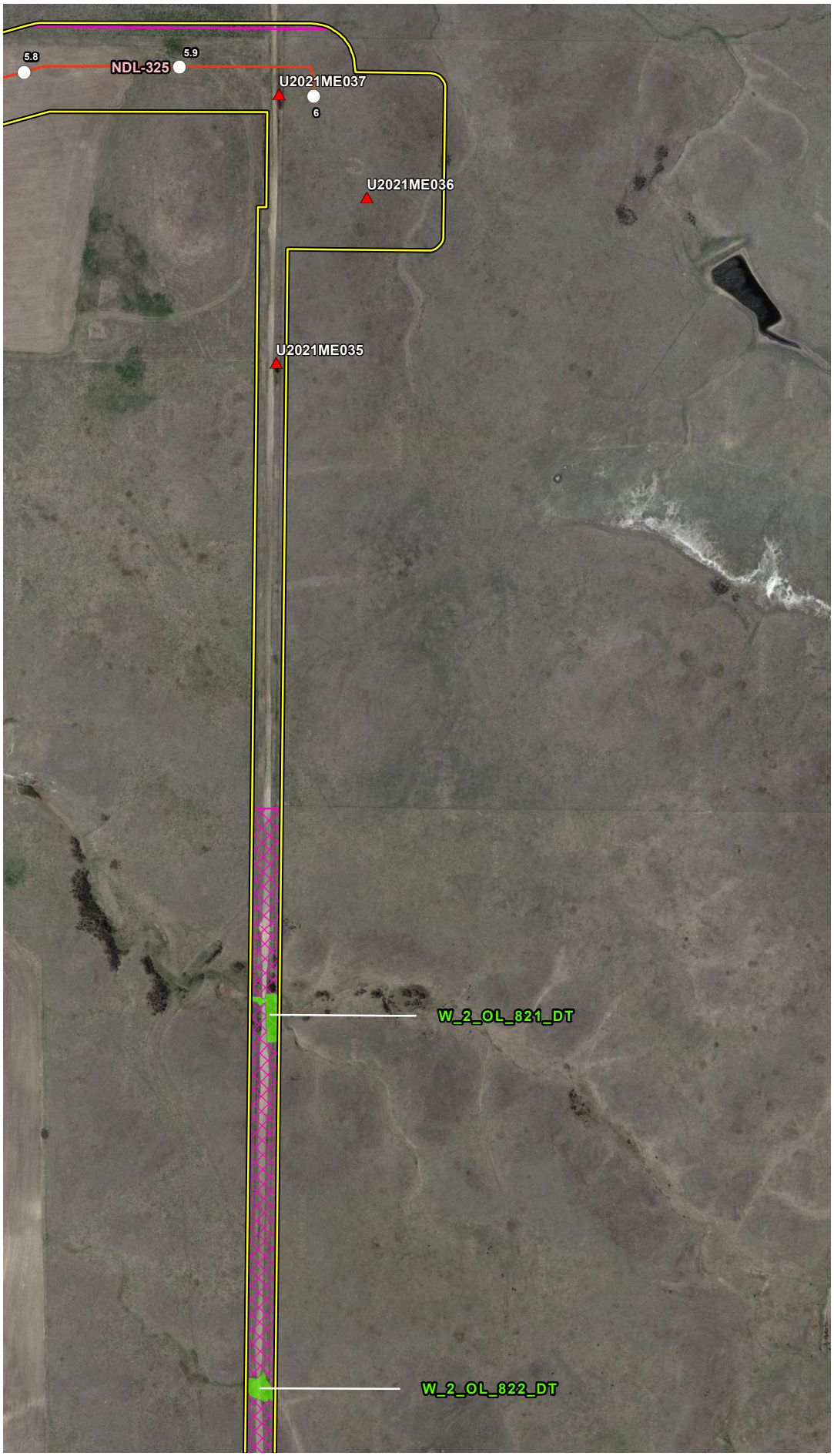
## AERIAL MAP

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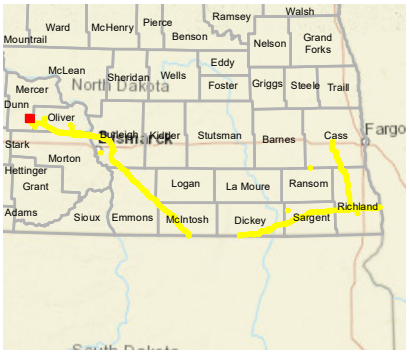


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| 297 of 392 | 2001-22-002<br>Current Revision |

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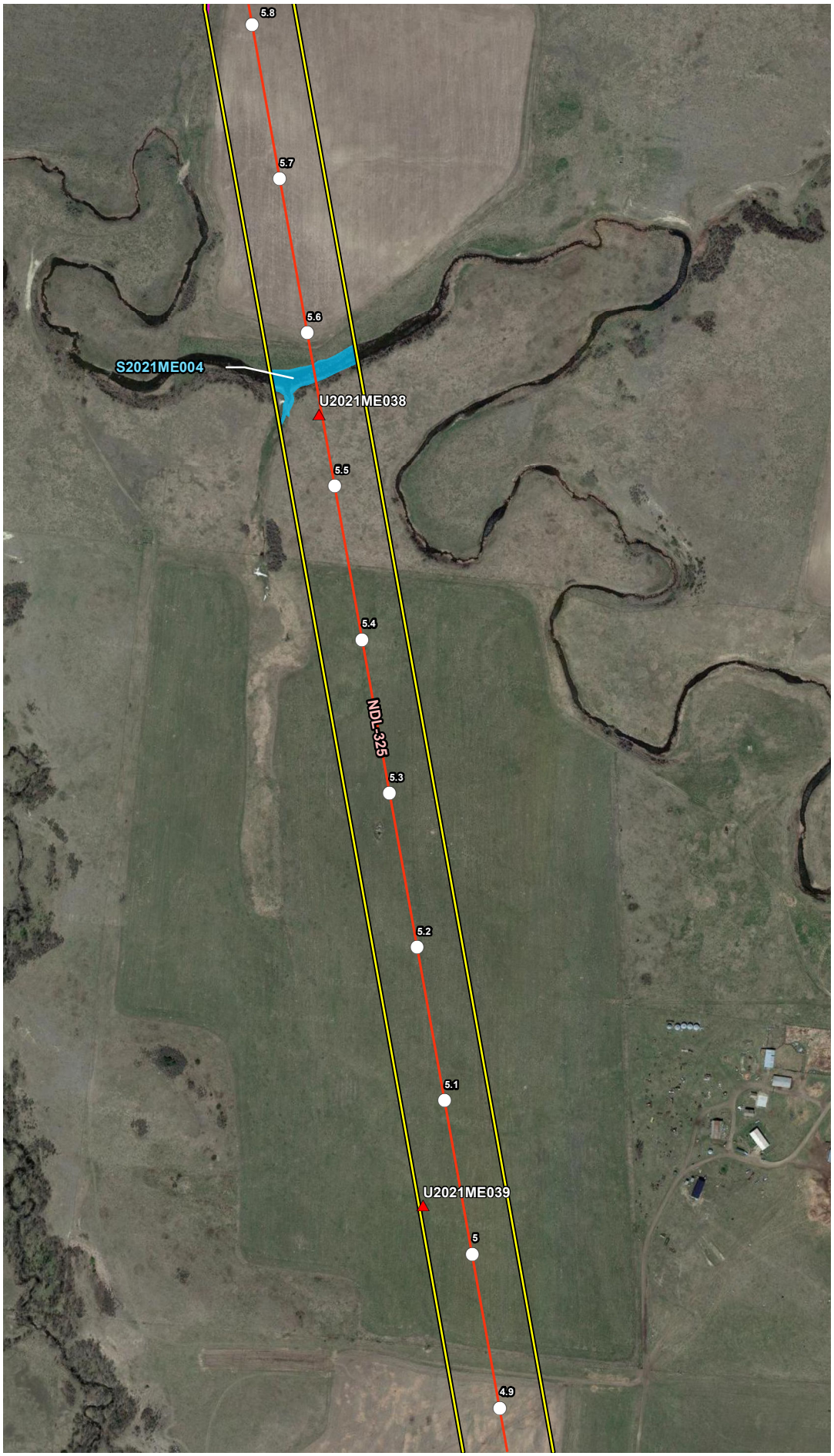
## AERIAL MAP

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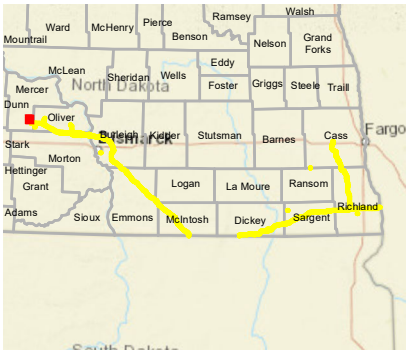


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0 250 500 Feet

## REVISIONS

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
298 of 392

Drawing Number:
2001-22-002
Current Revision

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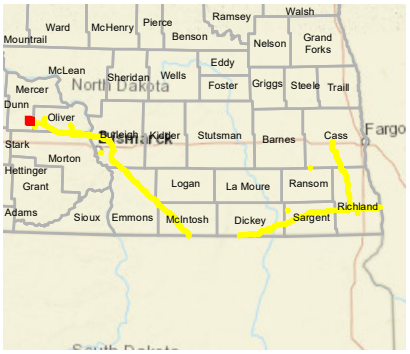
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

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**Figure Title:**

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| **Sheet:** | **Drawing Number:** |
| 299 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




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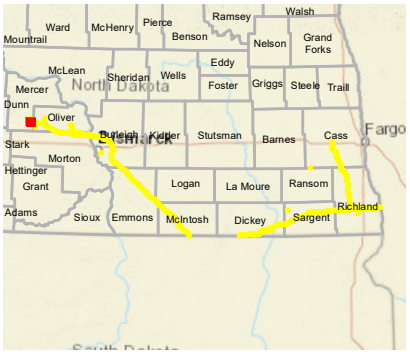


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0 250 500 Feet

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**1A - Revision**

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| Sheet: | Drawing Number: |
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| 300 of 392 | 2001-22-002<br>Current Revision |

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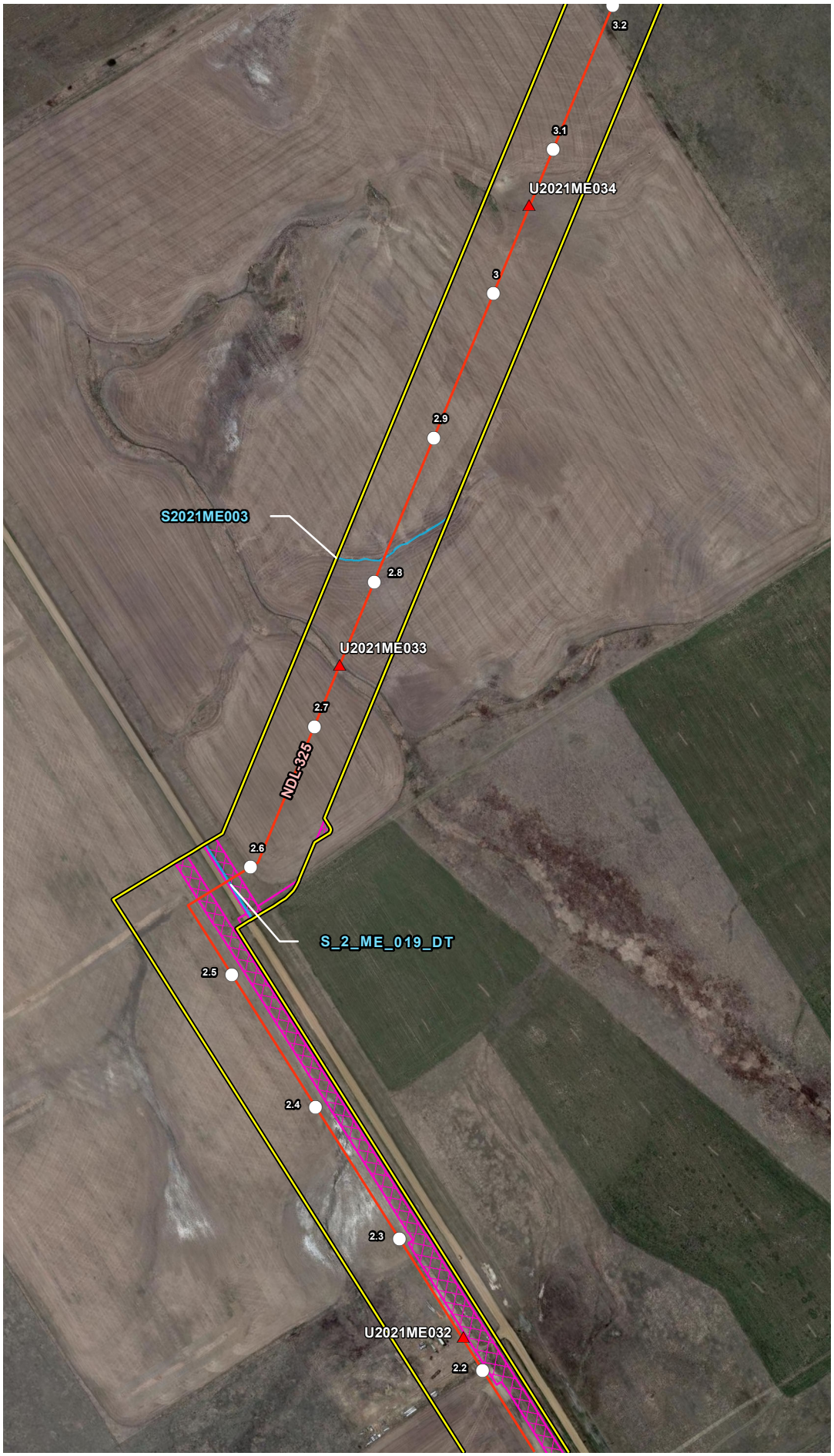
## AERIAL MAP

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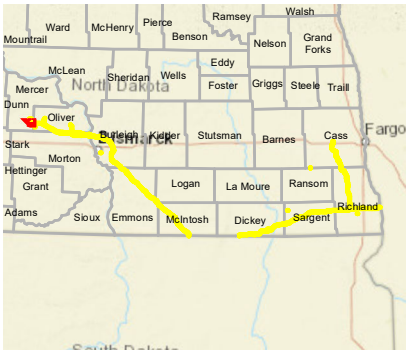


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0 250 500
Feet

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| 301 of 392 | 2001-22-002<br>Current Revision |

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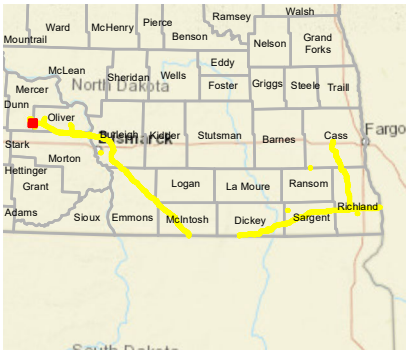
## AERIAL MAP




## VICINITY MAP

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| 302 of 392 | 2001-22-002<br>Current Revision |

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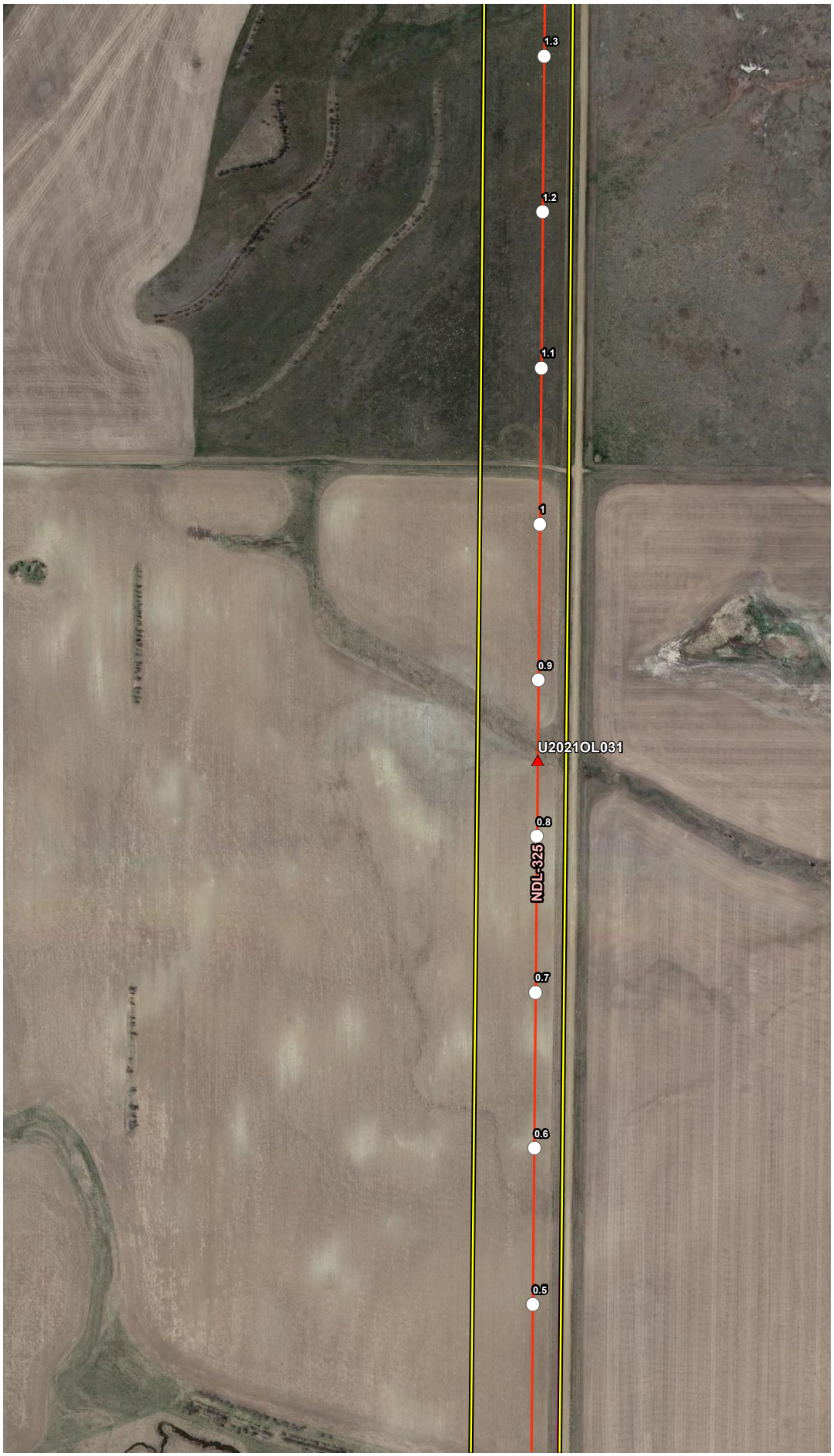
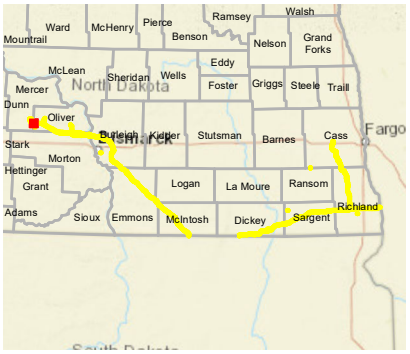
## AERIAL MAP




## VICINITY MAP

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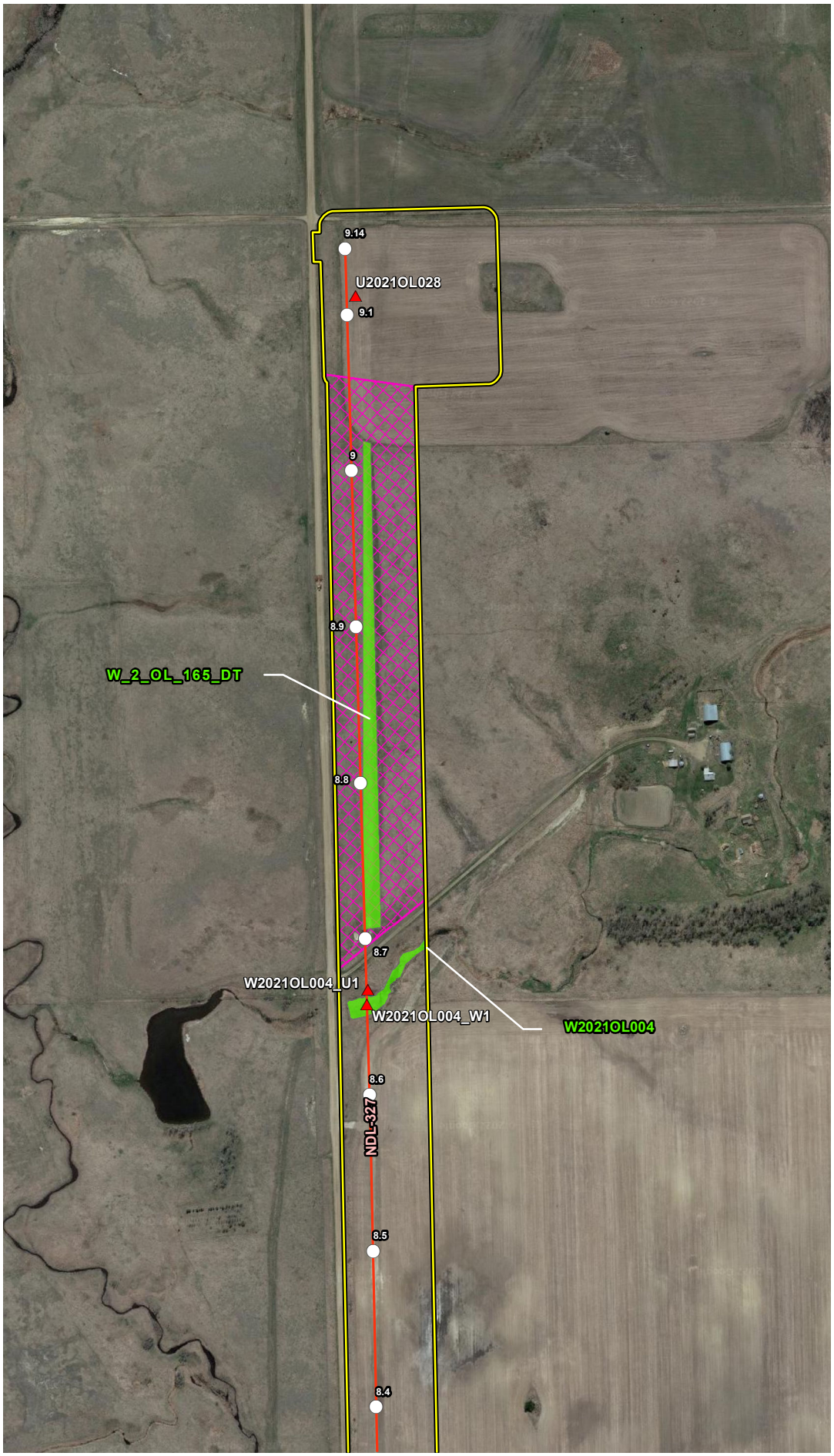
## AERIAL MAP

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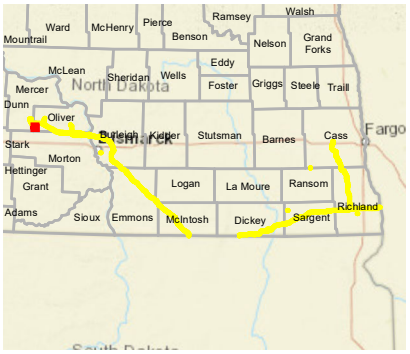


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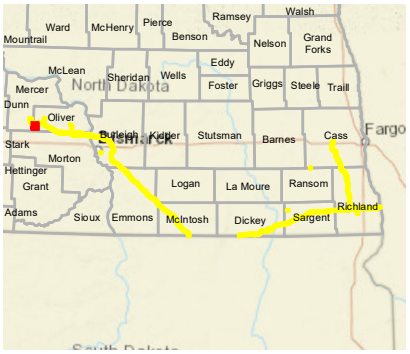
## AERIAL MAP




## VICINITY MAP

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SUMMIT CARBON SOLUTIONS

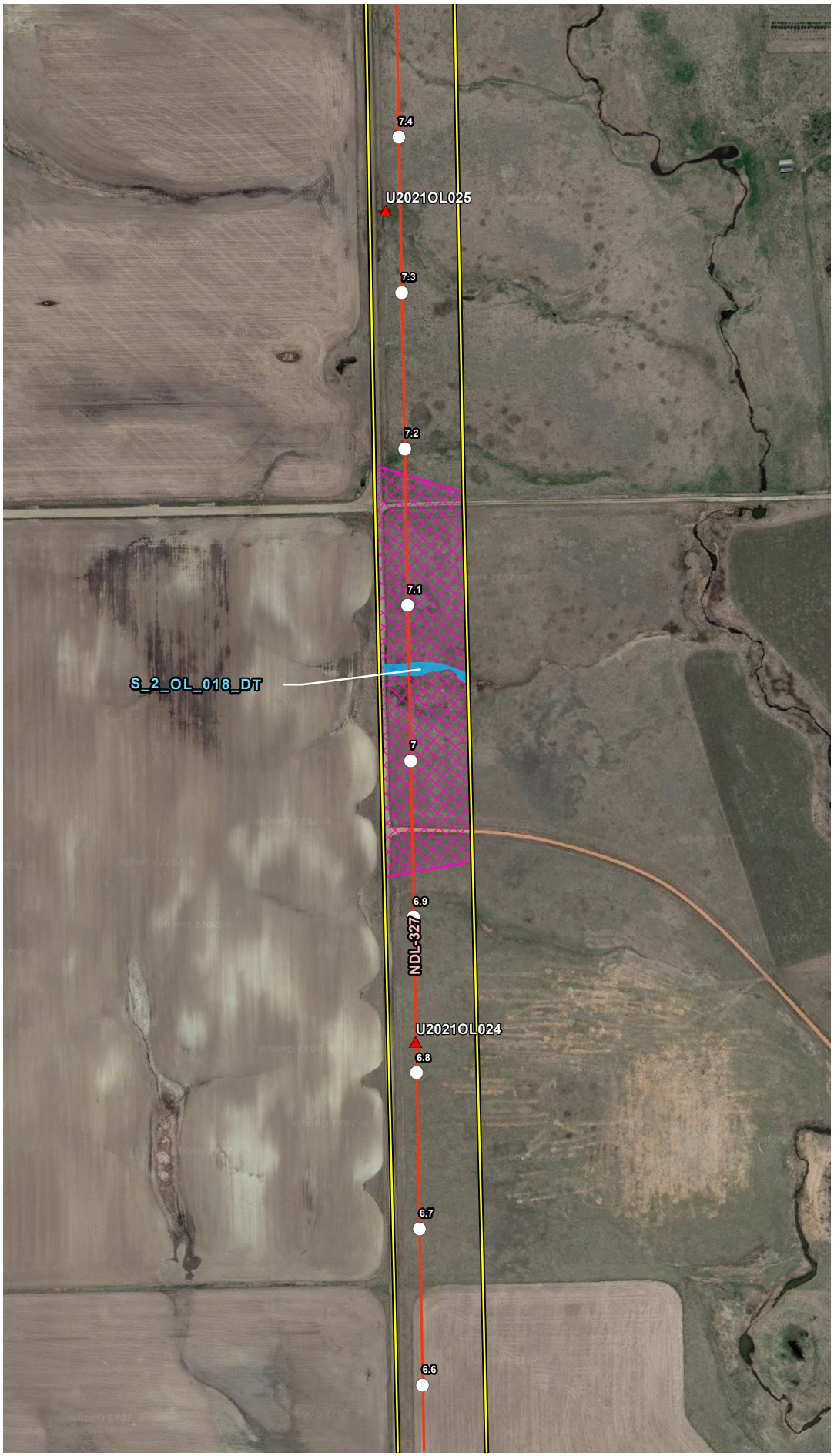
Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 305 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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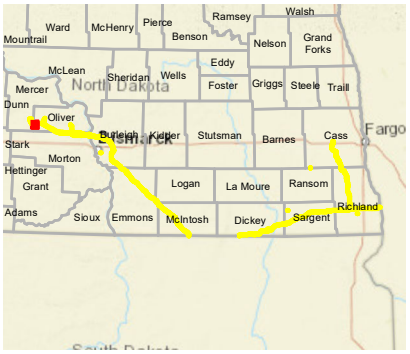


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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|---|---|
| 306 of 392 | 2001-22-002<br>Current Revision |

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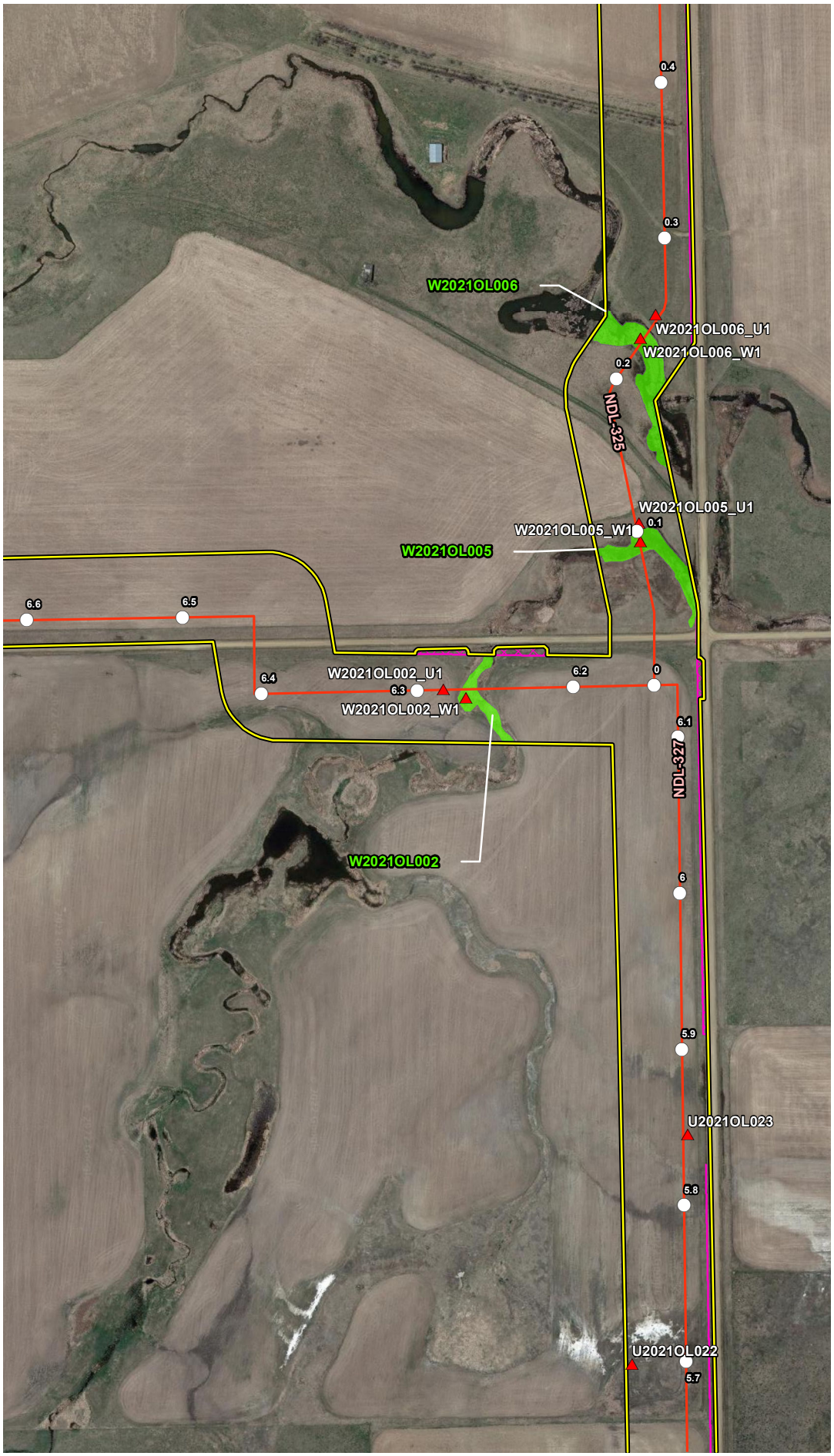
## AERIAL MAP

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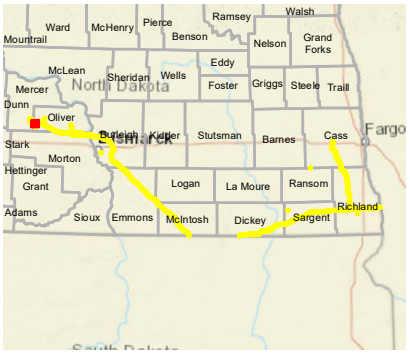


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0 250 500 Feet

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

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| 307 of 392 | 2001-22-002<br>Current Revision |

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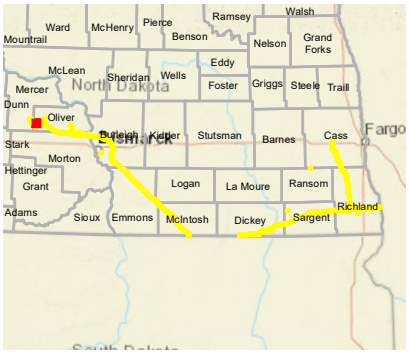
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

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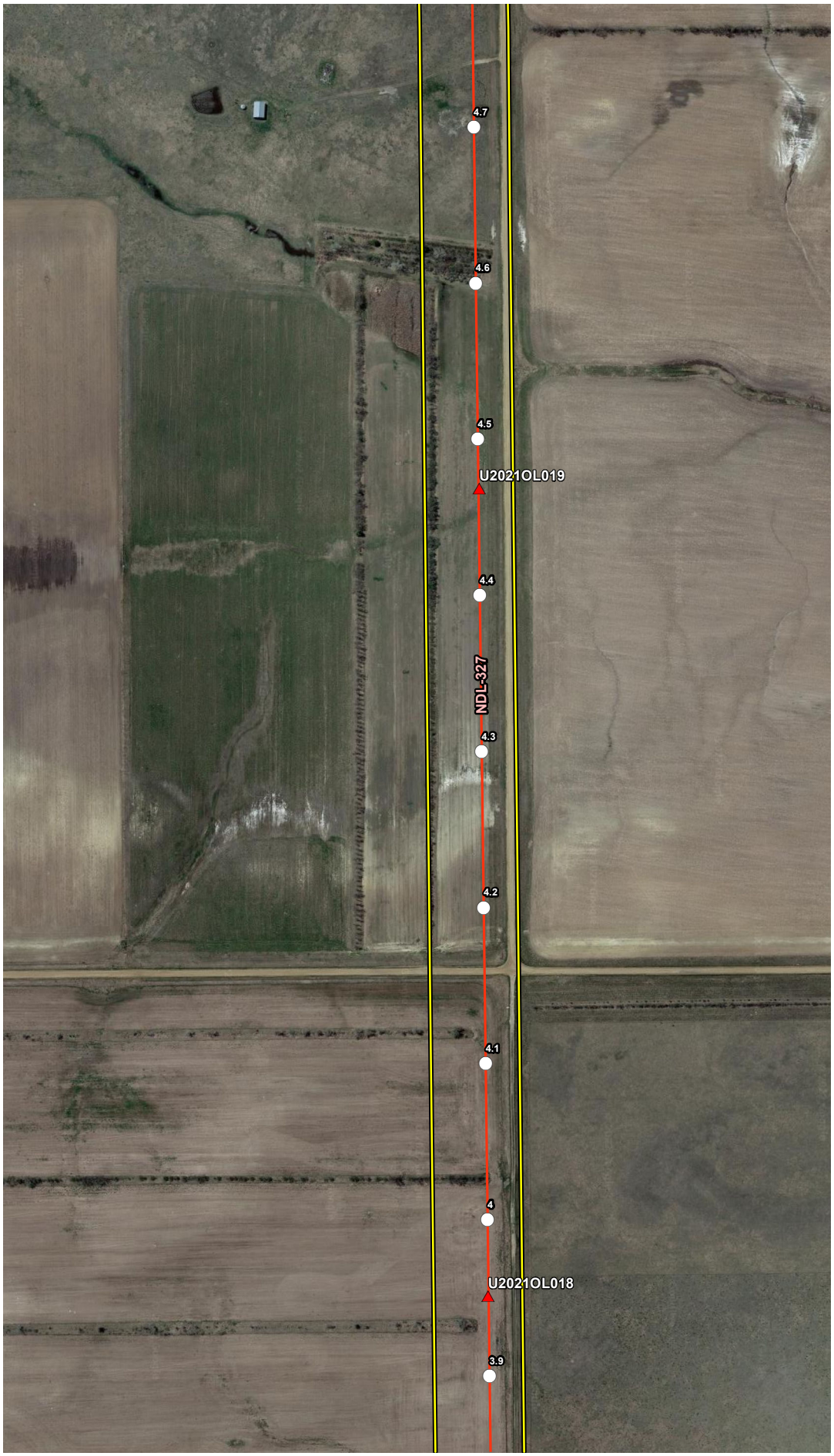


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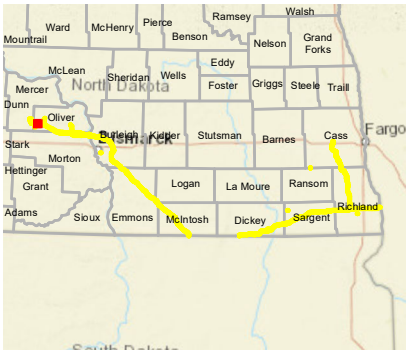


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0 250 500
Feet

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| 309 of 392 | 2001-22-002<br>Current Revision |

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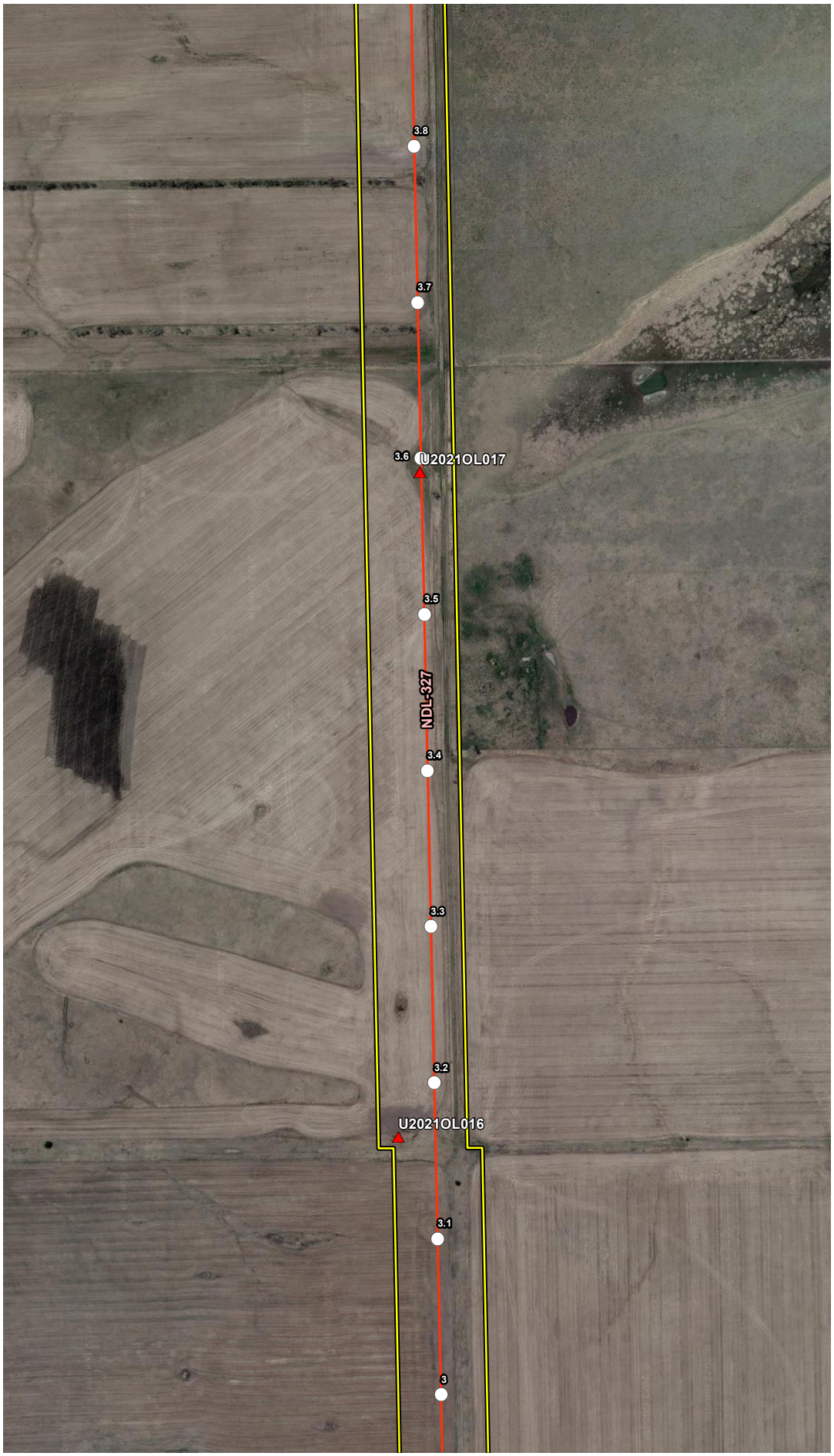
## AERIAL MAP

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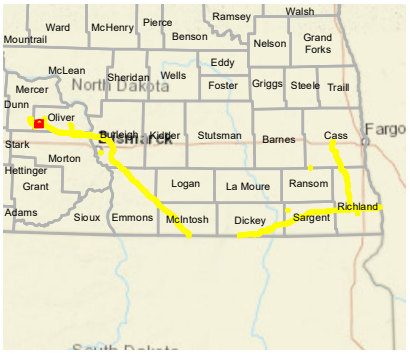


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| 310 of 392 | 2001-22-002<br>Current Revision |

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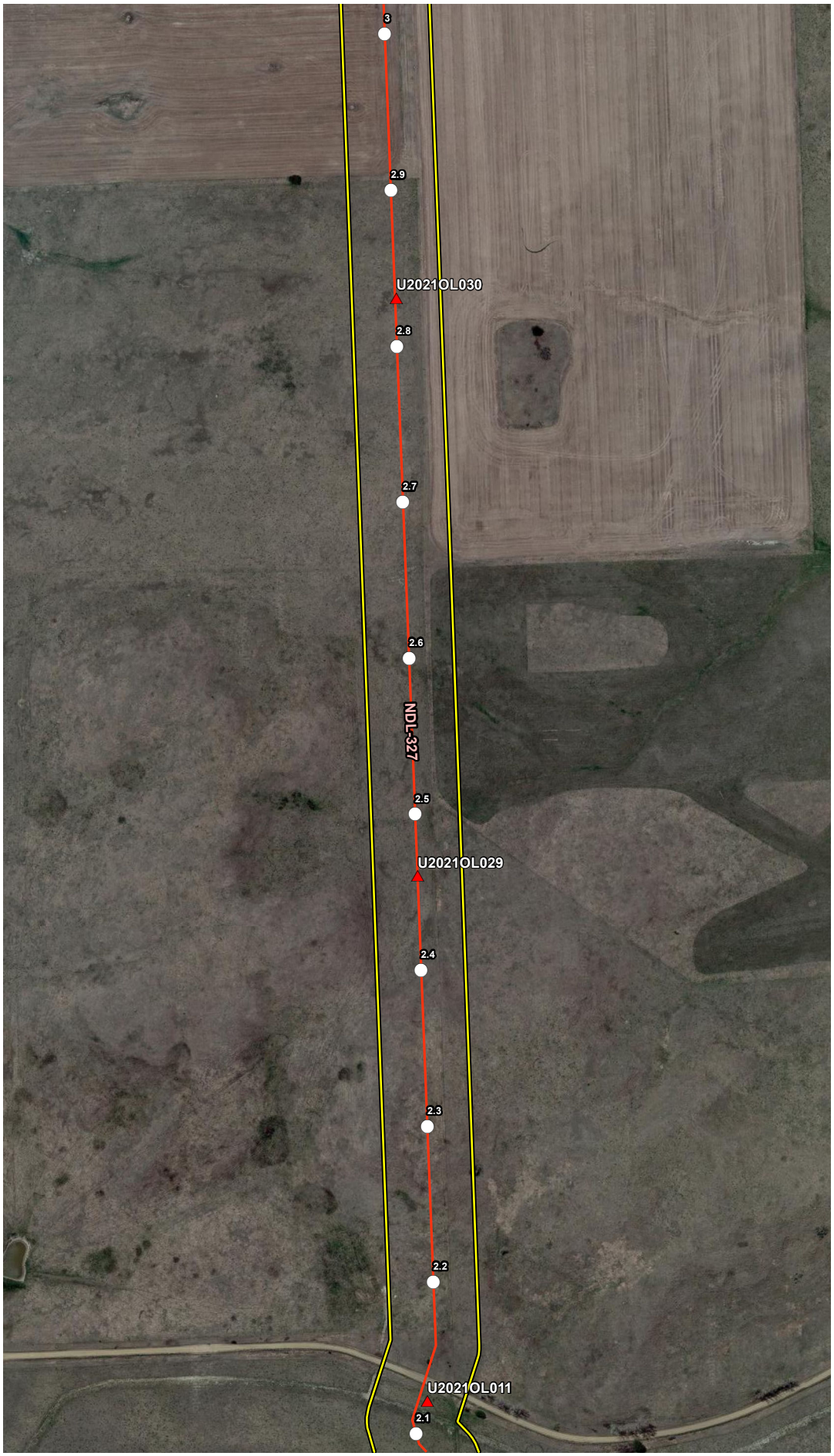
## AERIAL MAP

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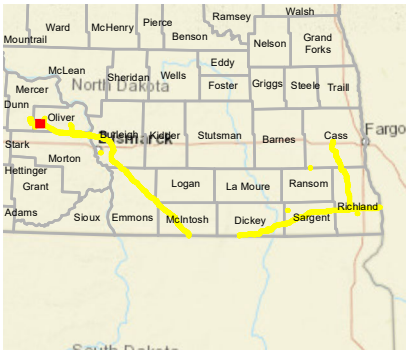


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## REVISIONS

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| 2022-08-04 | MM | AB |

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| 311 of 392 | 2001-22-002<br>Current Revision |

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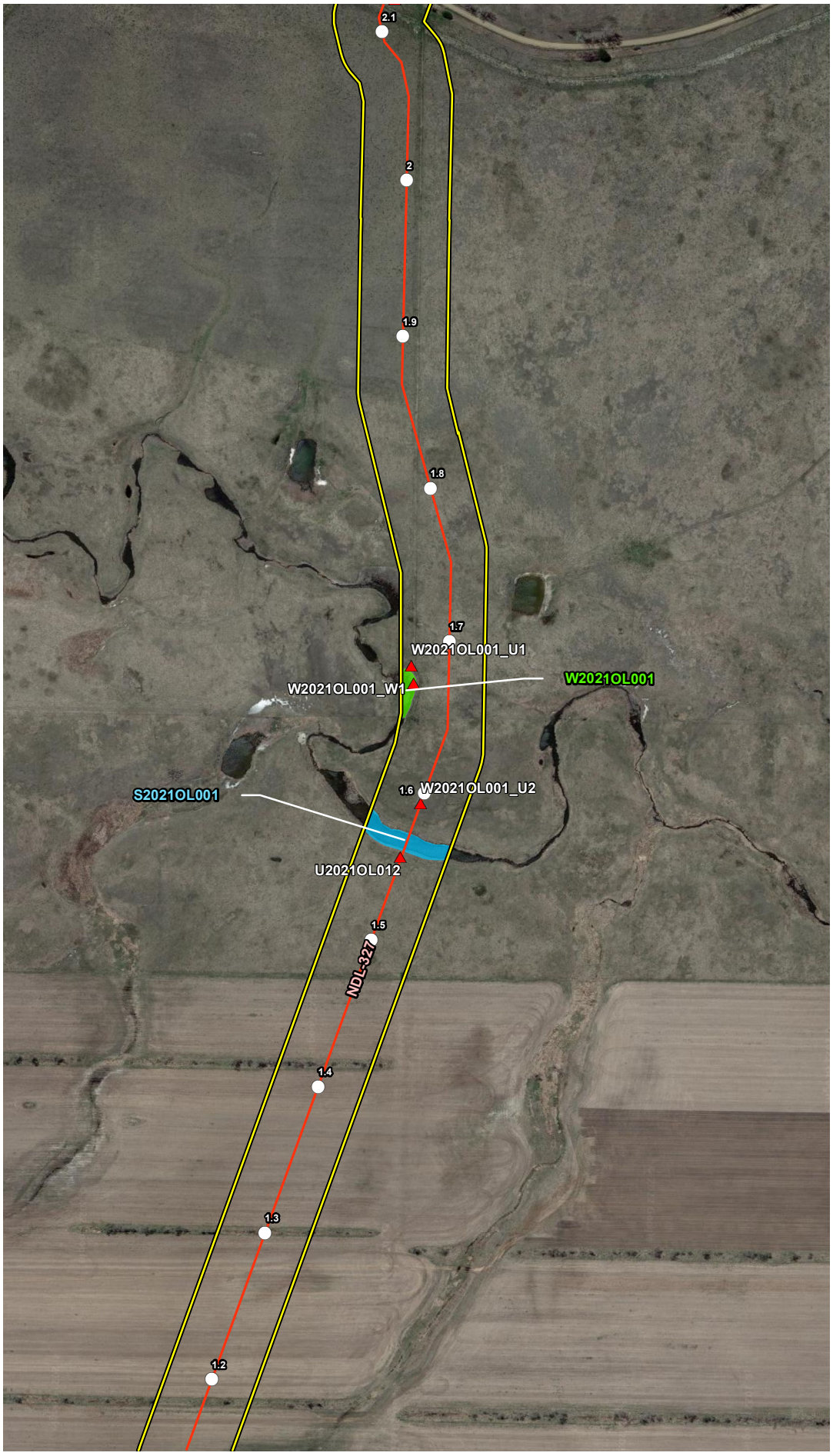
## AERIAL MAP

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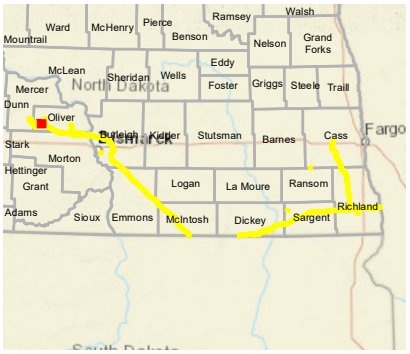


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## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**
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| 312 of 392 | 2001-22-002<br>Current Revision |

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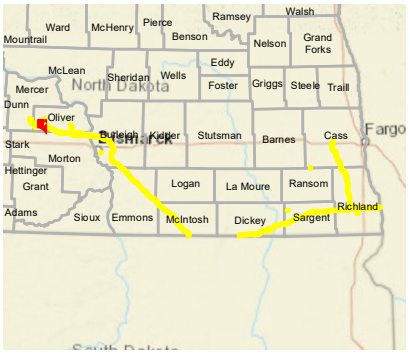
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| 1A - Revision<br>Revision description | | |
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## AERIAL MAP




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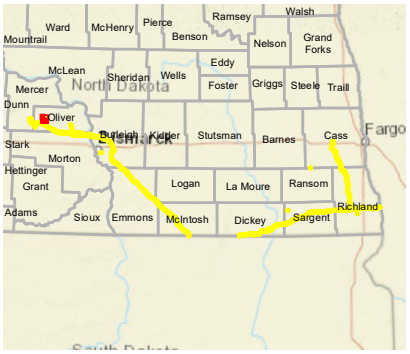


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| 314 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP




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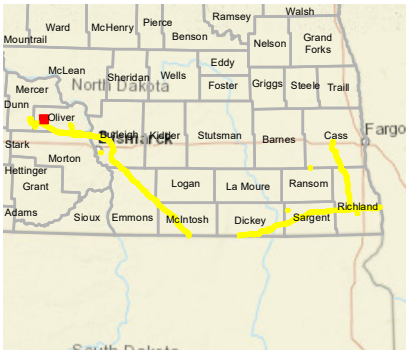


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## AERIAL MAP




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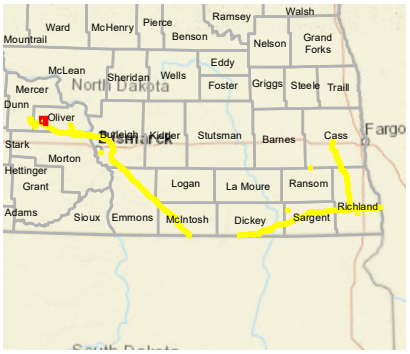


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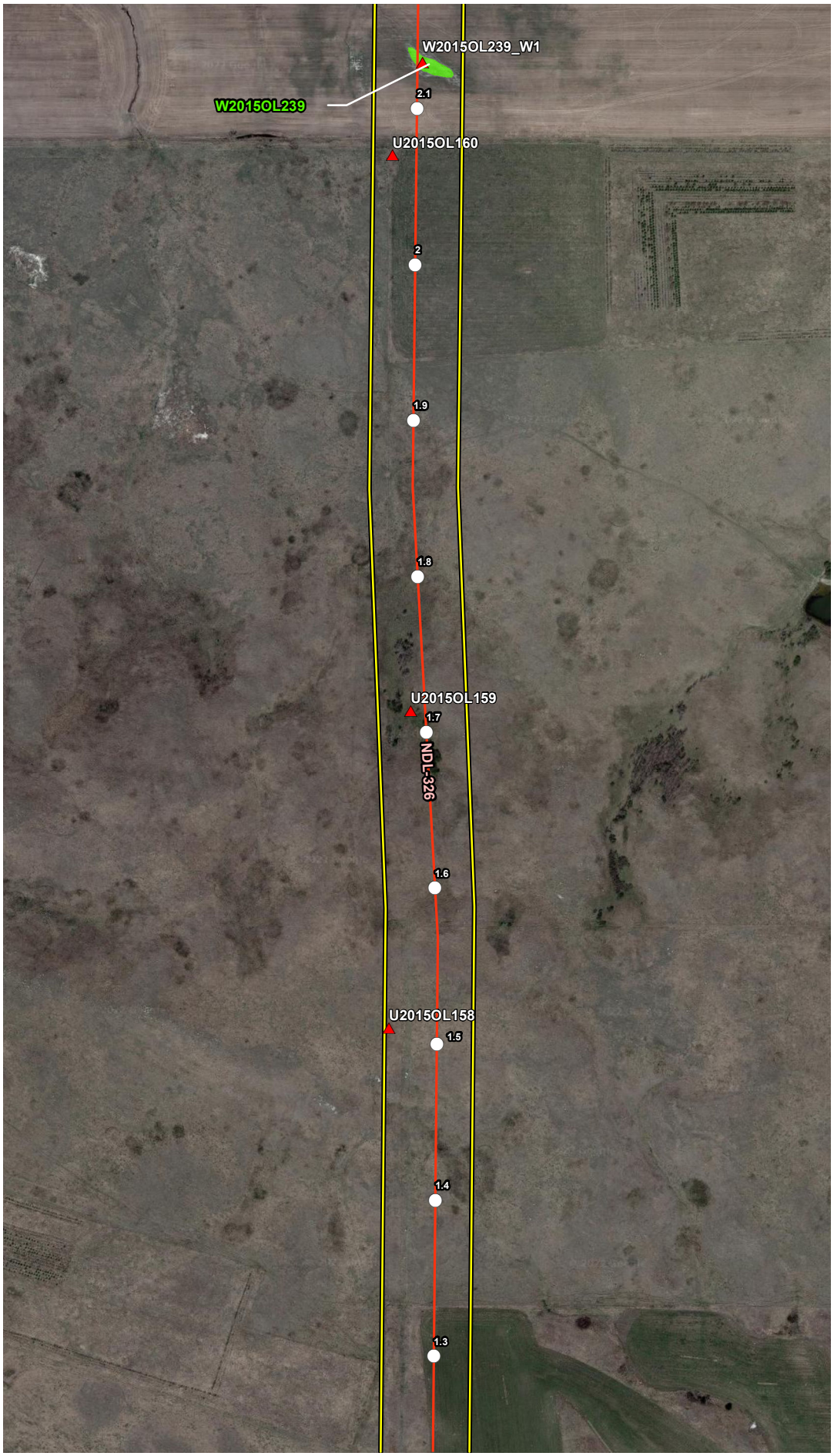


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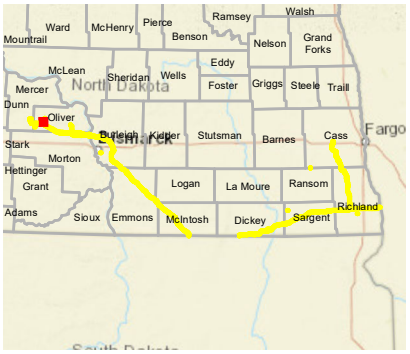


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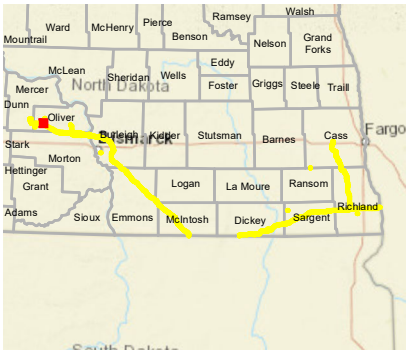
## AERIAL MAP




## VICINITY MAP

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- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

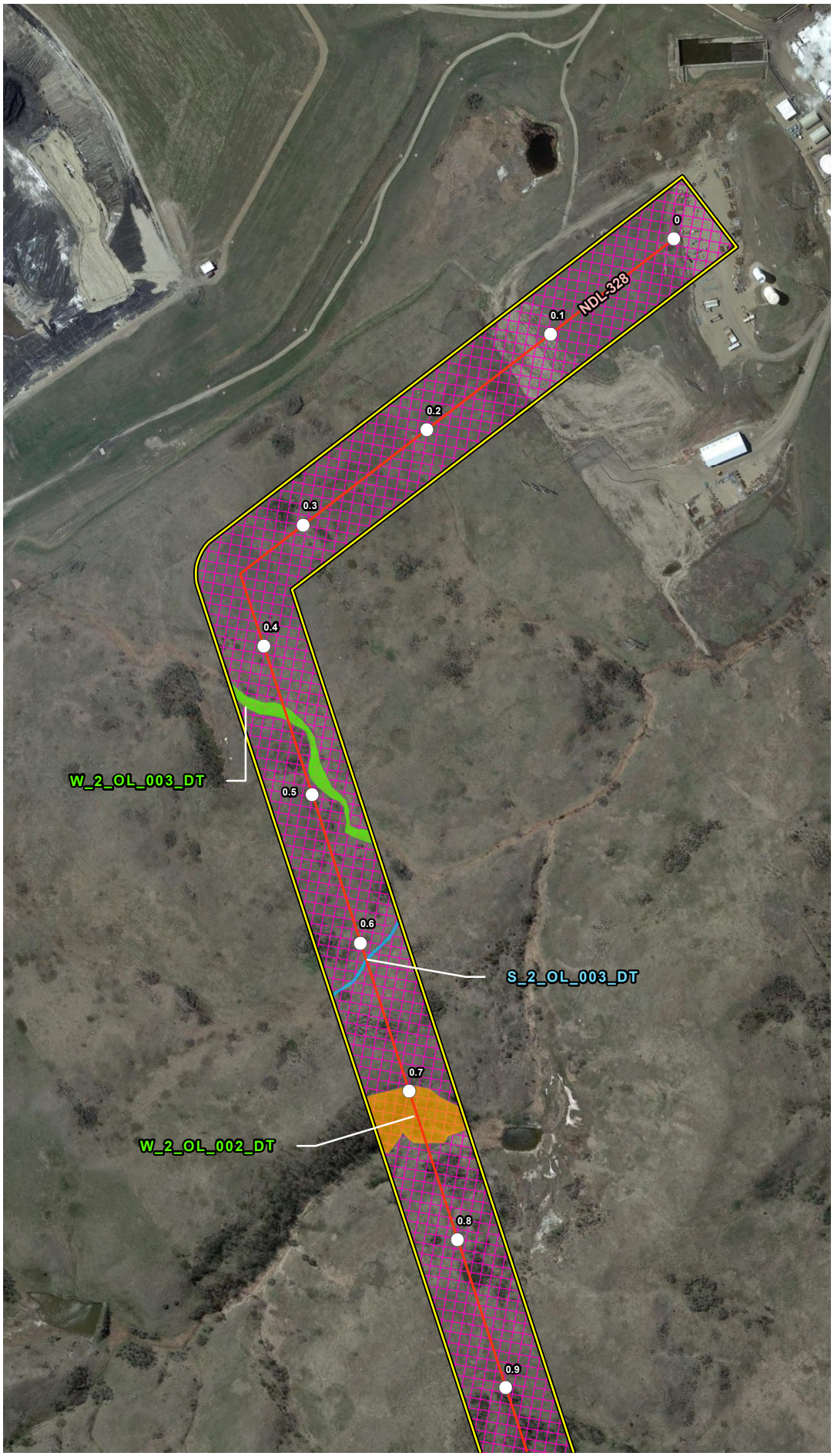
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 318 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20221901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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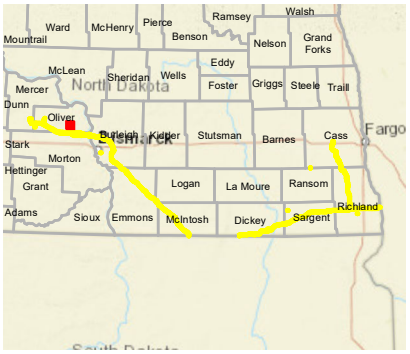


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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| Sheet | Drawing Number |
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| 319 of 392 | 2001-22-002<br>Current Revision |

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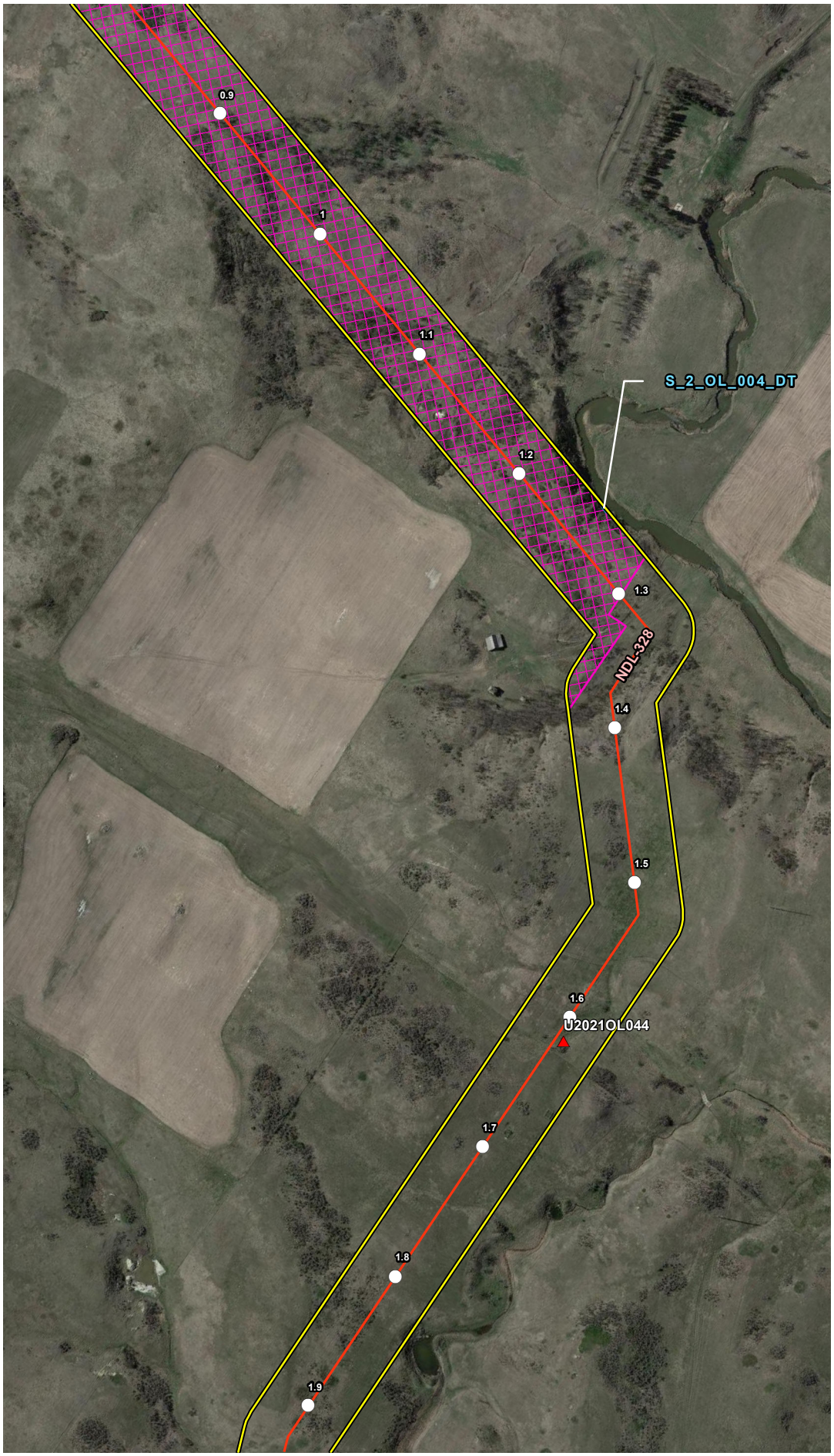
## AERIAL MAP

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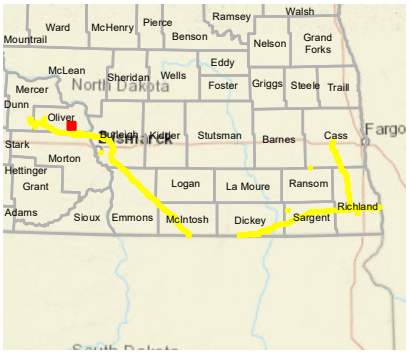


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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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| Sheet | Drawing Number |
|---|---|
| 320 of 392 | 2001-22-002<br>Current Revision |

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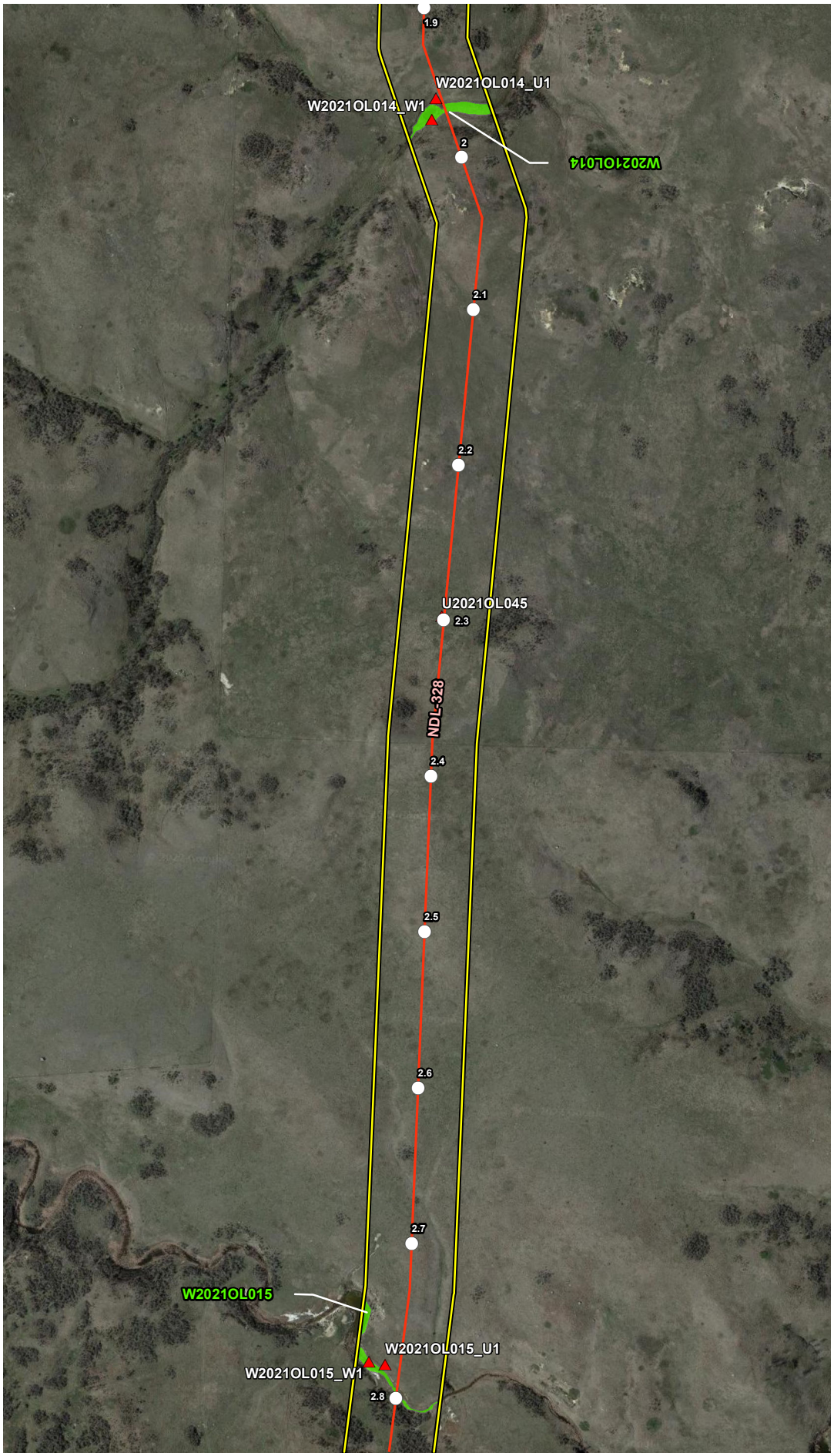
## AERIAL MAP

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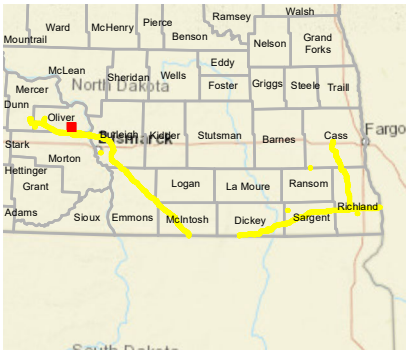


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Sheet: | Drawing Number: |
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| 321 of 392 | 2001-22-002<br>Current Revision |

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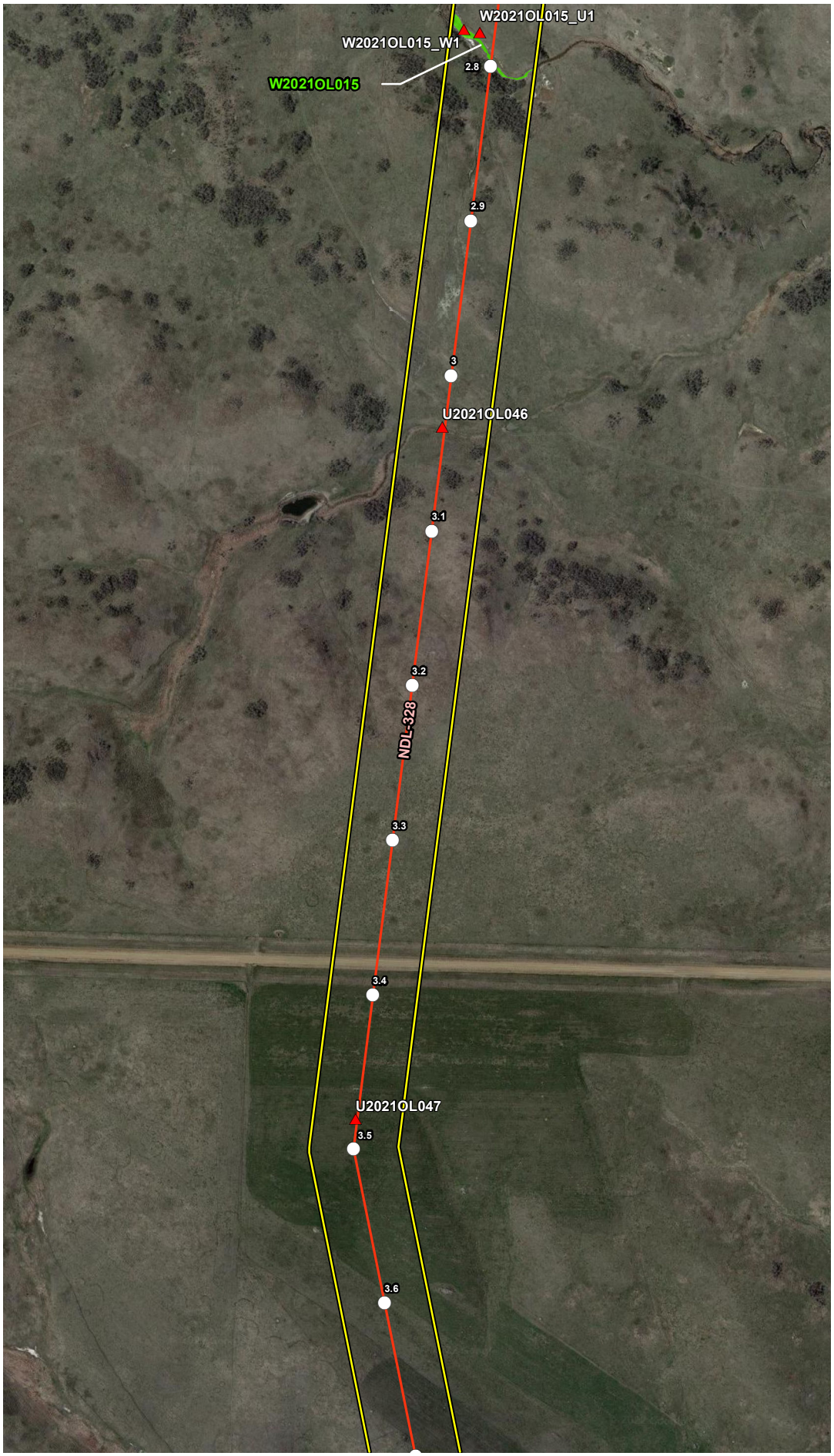
## AERIAL MAP

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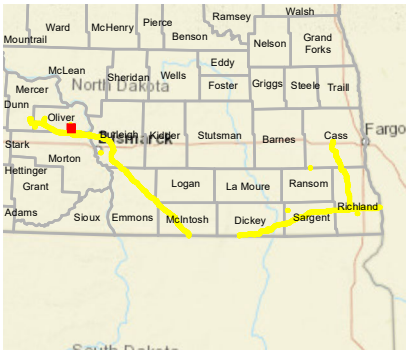


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0 250 500 Feet

## REVISIONS

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Figure Number:
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>322 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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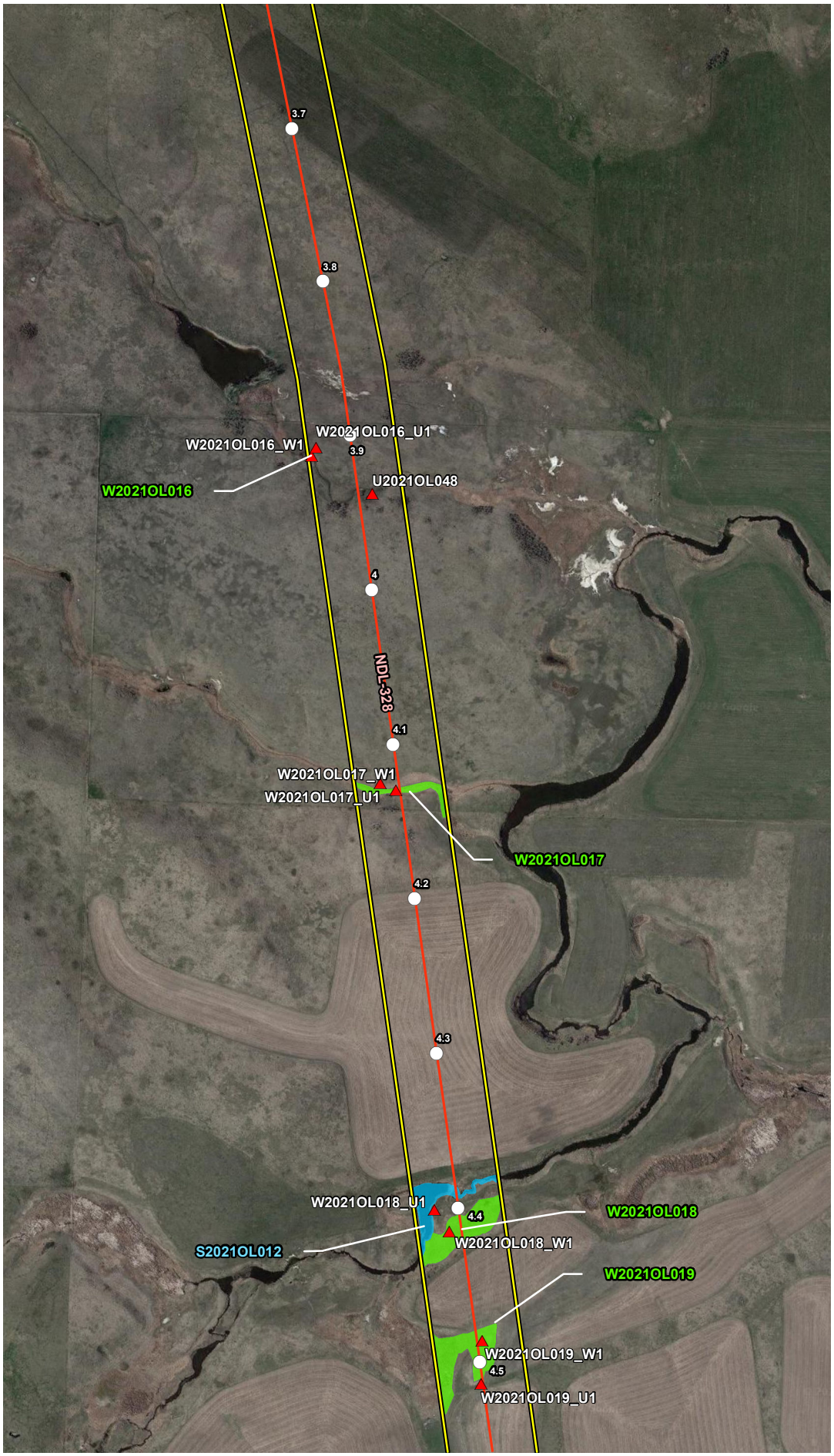
## AERIAL MAP

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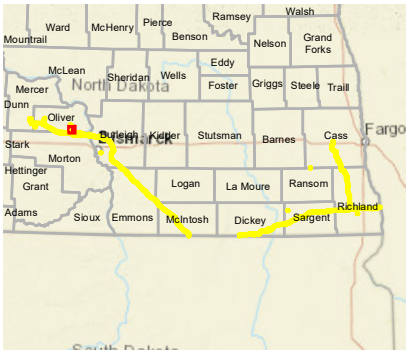


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 323 of 392 | Drawing Number: 2001-22-002<br>Current Revision |

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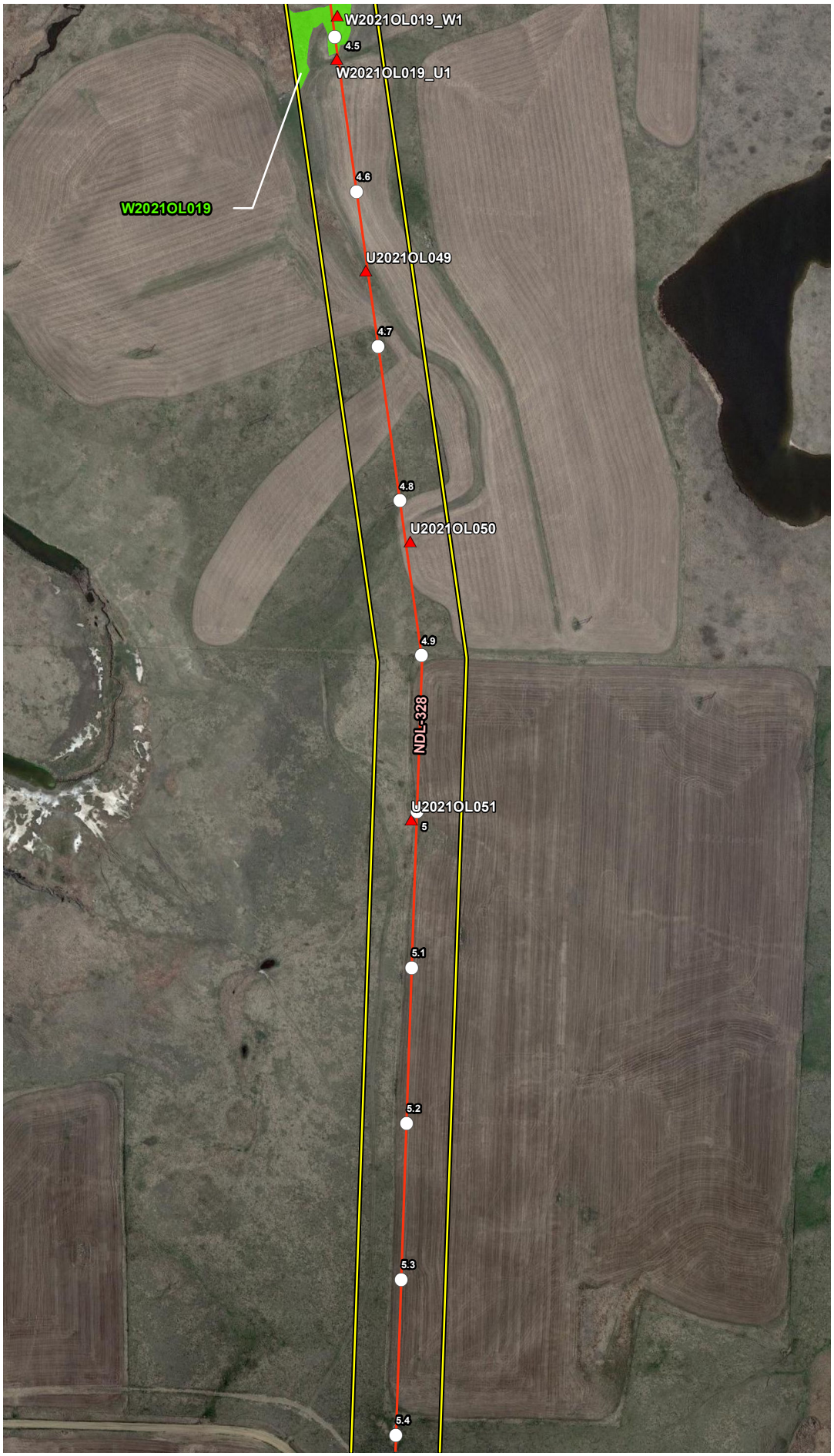
## AERIAL MAP

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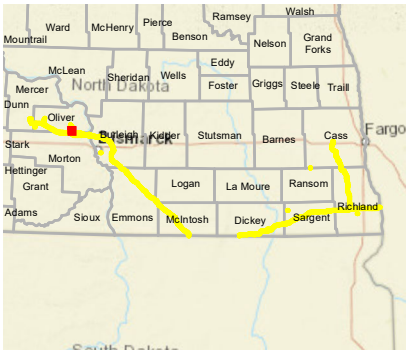


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale: | Projection: |
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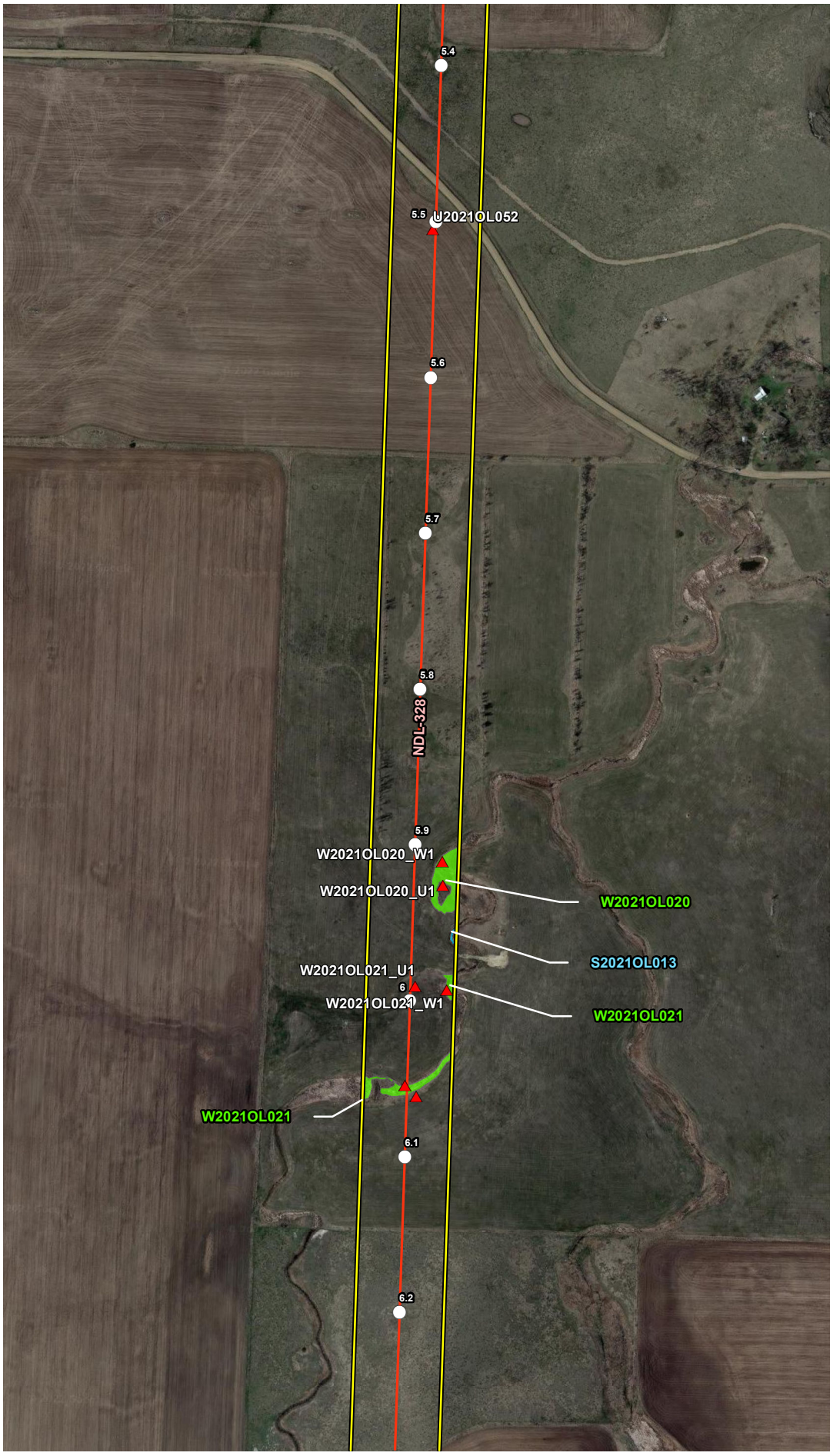
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 324 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP

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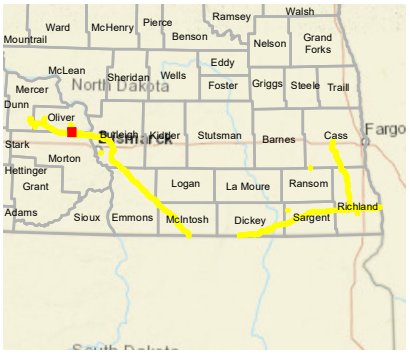


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

1A - Revision
Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:
Aerial Map

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Appendix A-2

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 325 of 392 | 2001-22-002<br>Current Revision |

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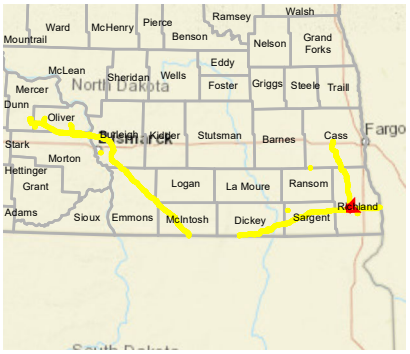
## AERIAL MAP




## VICINITY MAP

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| 326 of 392 | 2001-22-002<br>Current Revision |

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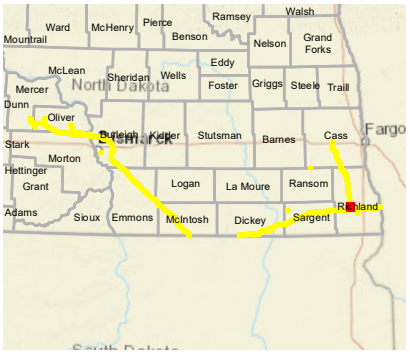
## AERIAL MAP




## VICINITY MAP

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| 327 of 392 | 2001-22-002<br>Current Revision |

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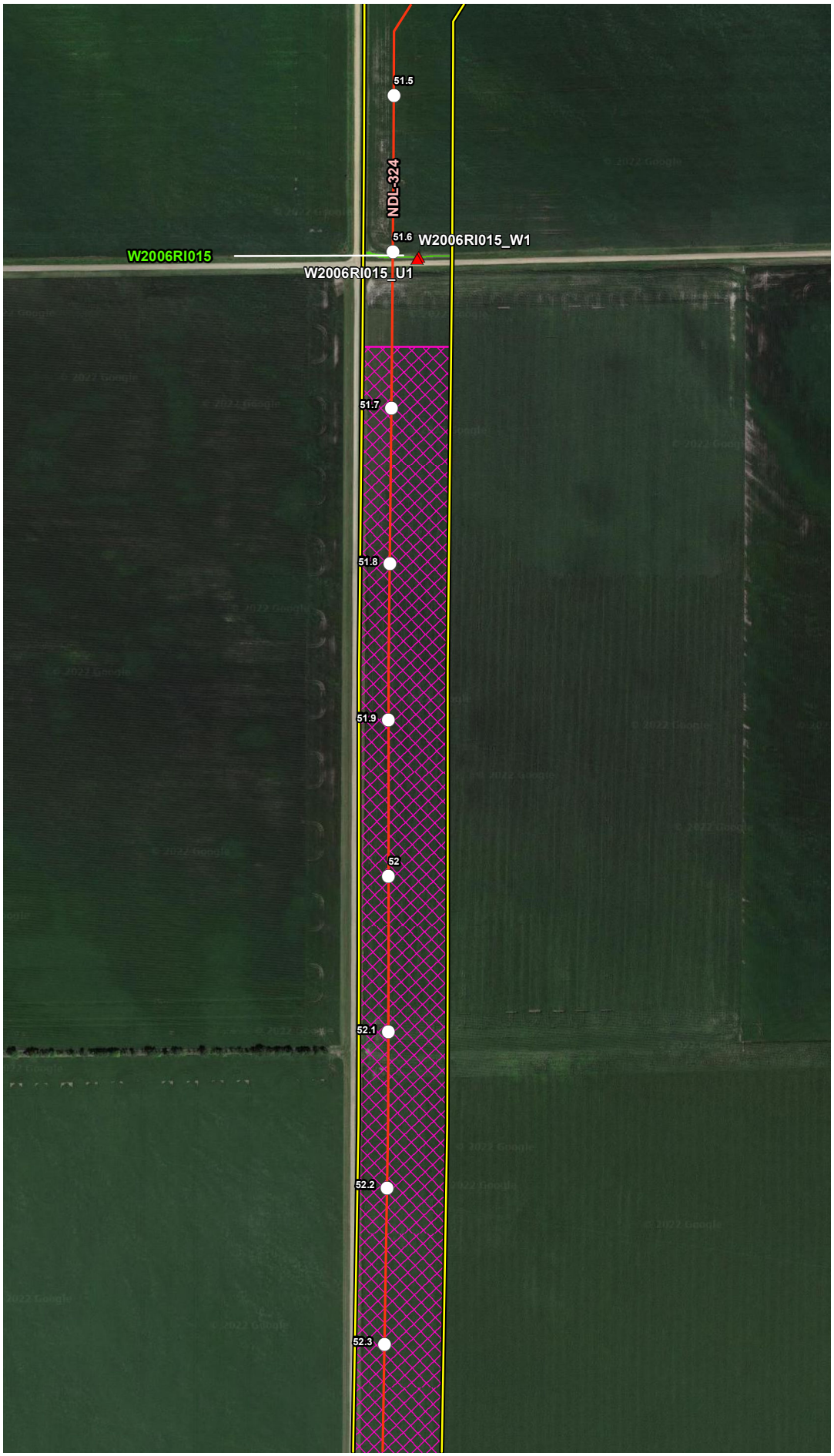
## AERIAL MAP

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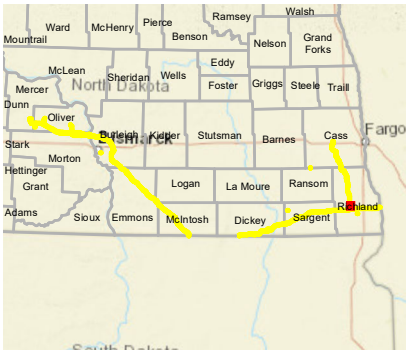


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| 328 of 392 | 2001-22-002<br>Current Revision |

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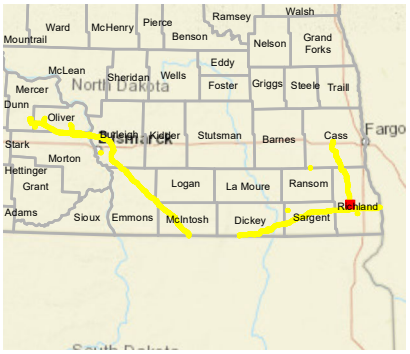
## AERIAL MAP




## VICINITY MAP

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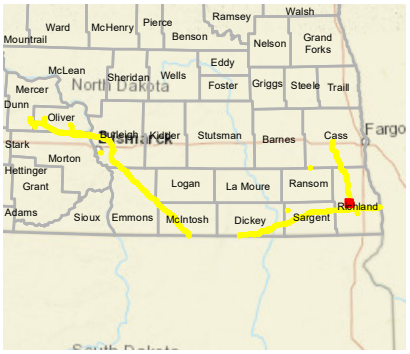
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| Date: | Revised by: | Checked by: |

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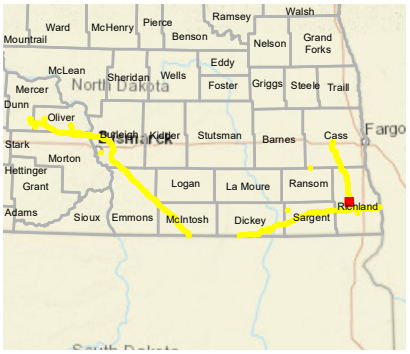
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>330 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 331 of 392 | 2001-22-002<br>Current Revision |

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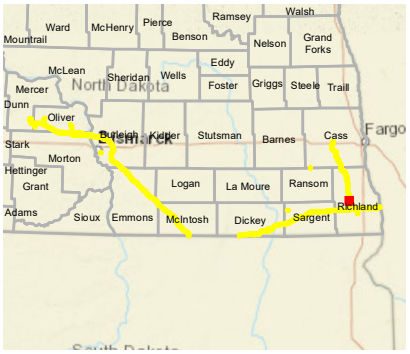
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 332 of 392 | 2001-22-002<br>Current Revision |

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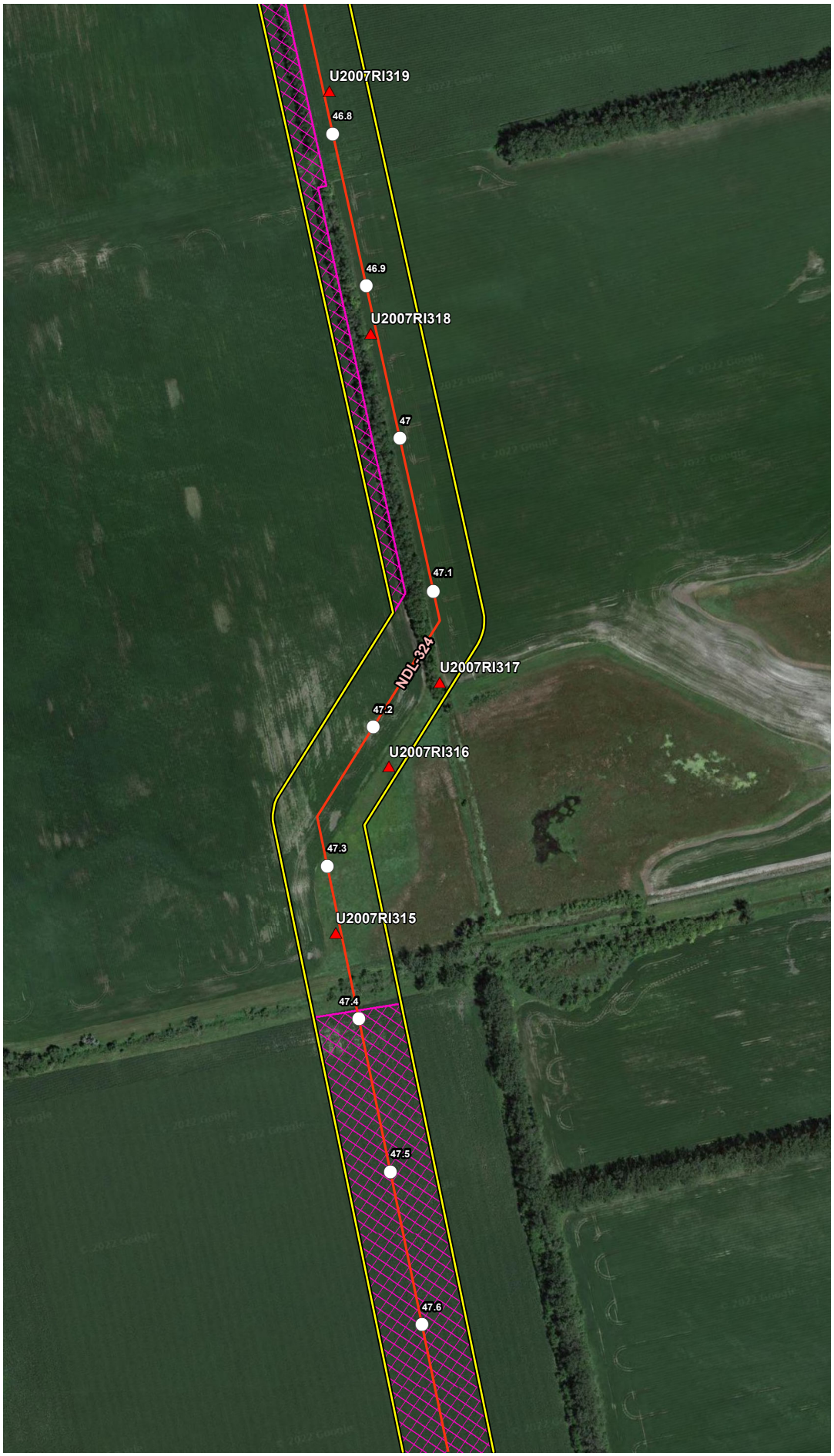
## AERIAL MAP

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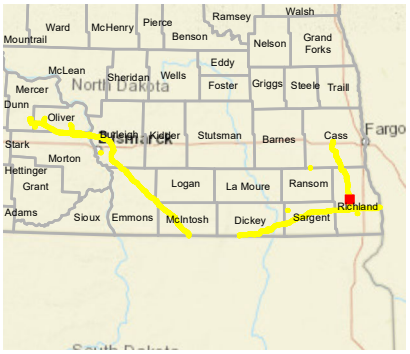


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale | Projection |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 333 of 392 | 2001-22-002<br>Current Revision |

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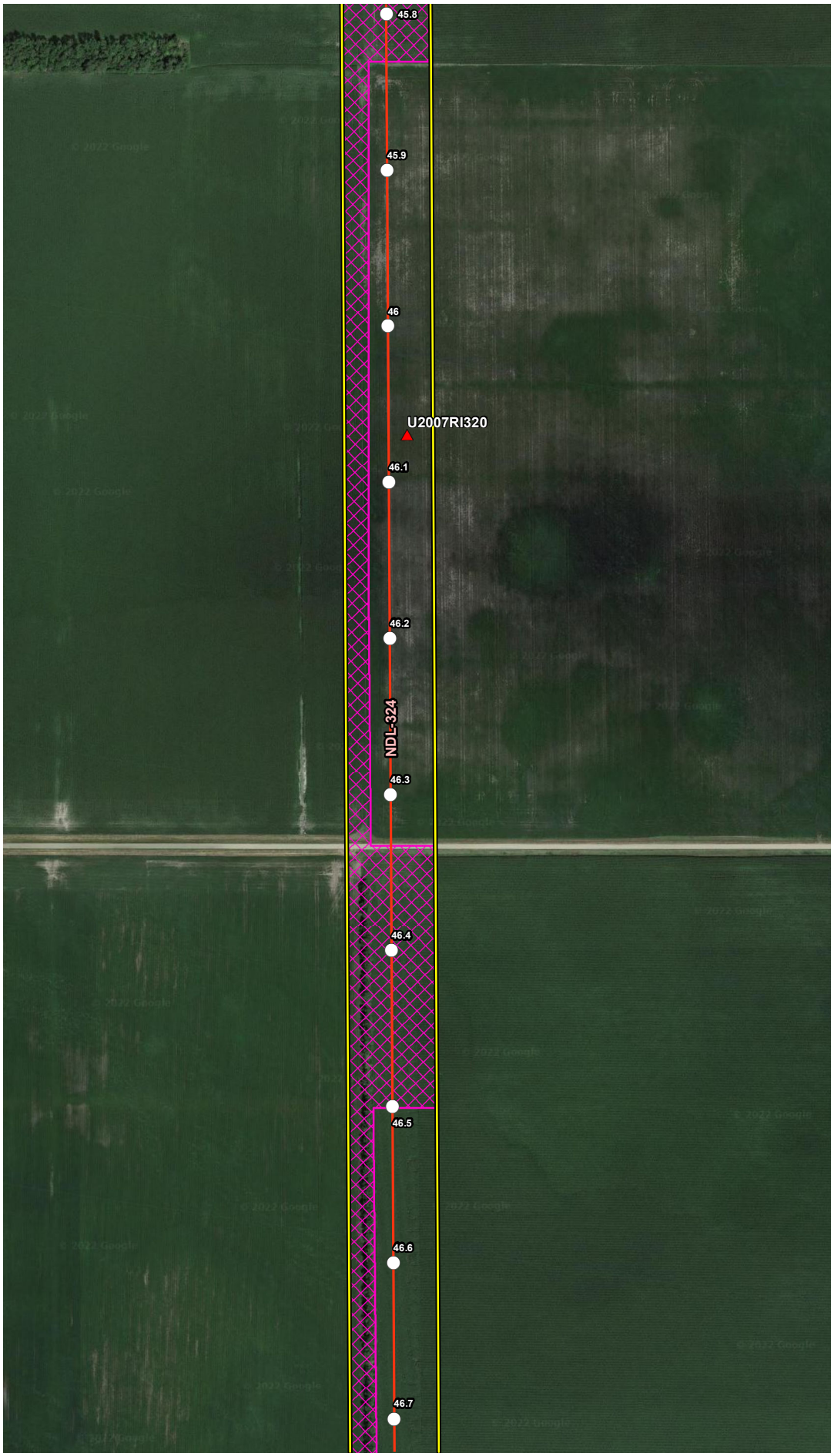
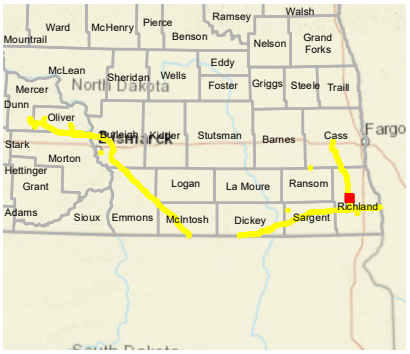
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>334 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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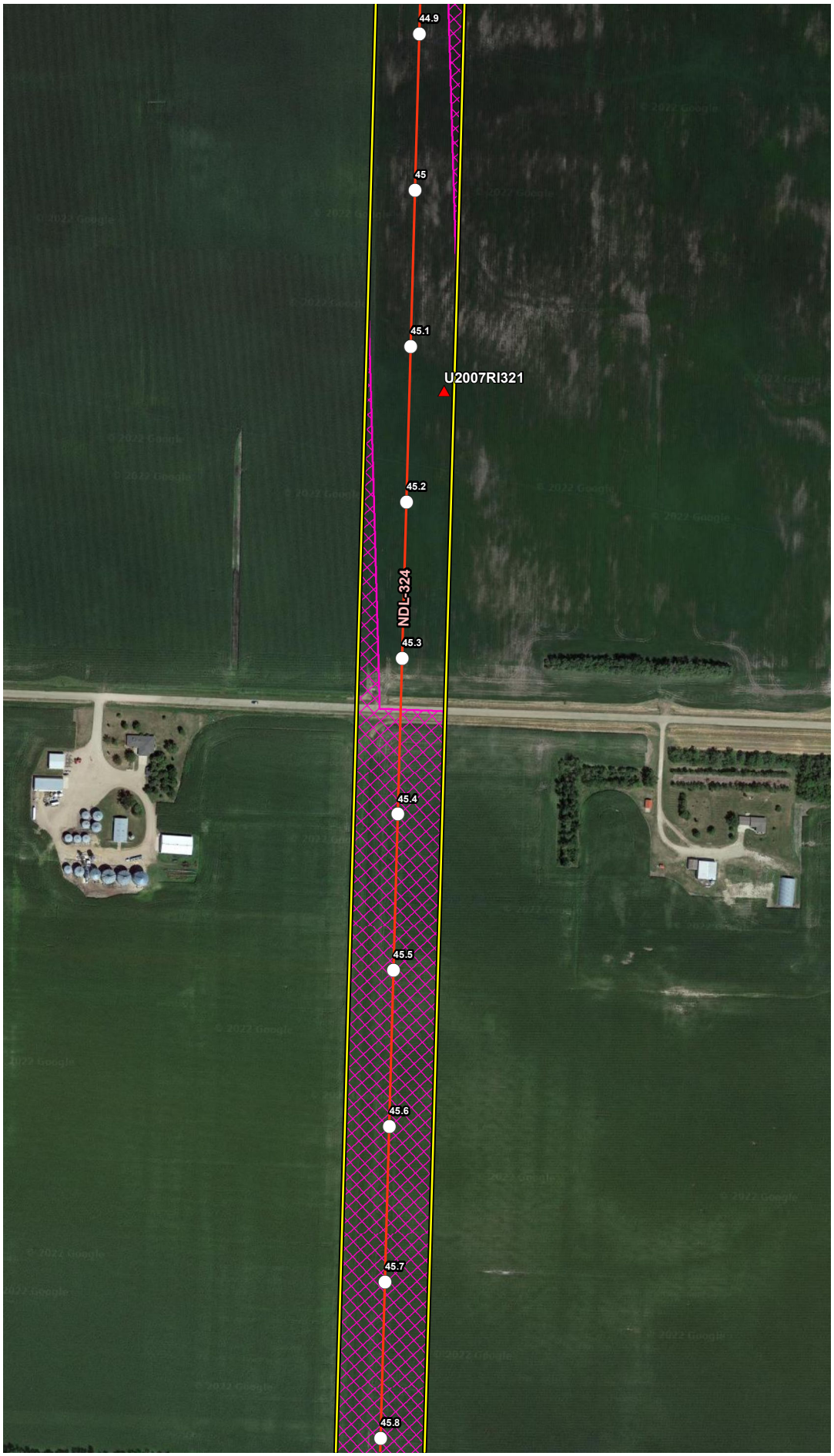
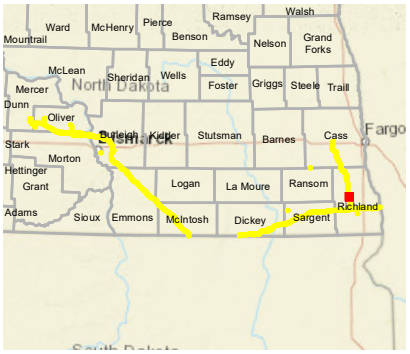
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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| Date | Revised by | Checked by |
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**Figure Title:**
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**Figure Number:**
Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 335 of 392 | 2001-22-002<br>Current Revision |

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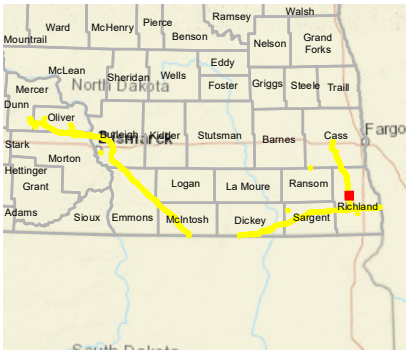
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

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Figure Title:

**Aerial Map**

Figure Number:

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 336 of 392 | 2001-22-002<br>Current Revision |

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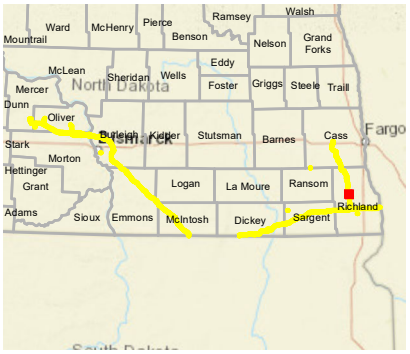
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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Figure Number:
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| Scale | Projection |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

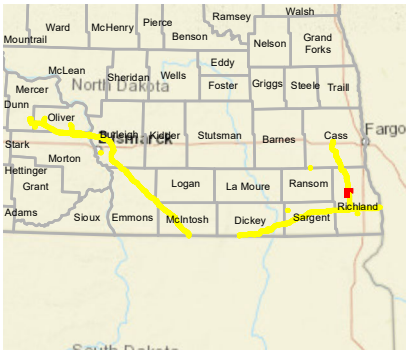
| Sheet | Drawing Number |
|---|---|
| 337 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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| | | |

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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 338 of 392 | 2001-22-002<br>Current Revision |

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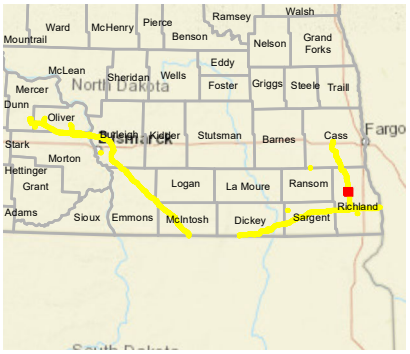
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
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## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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| Scale: | Projection: |
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| Sheet: | Drawing Number: |
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| 339 of 392 | 2001-22-002<br>Current Revision |

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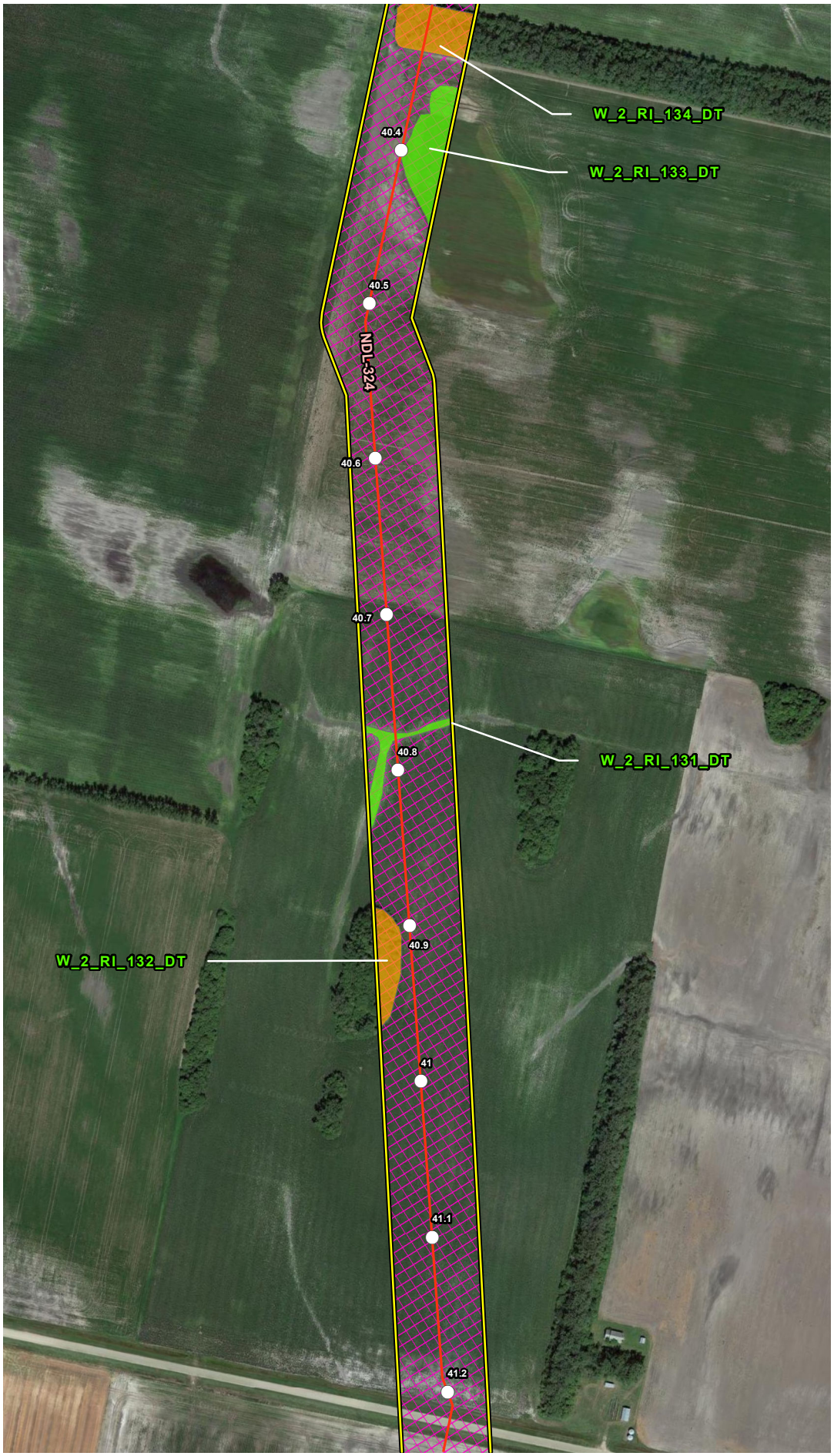
## AERIAL MAP

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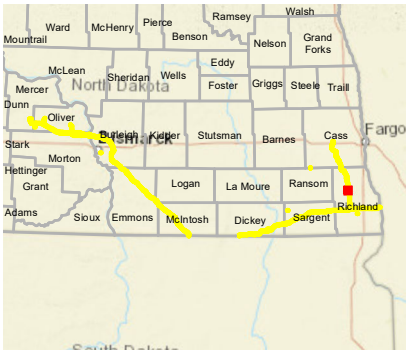


## LEGEND

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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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Figure Title:

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 340 of 392 | 2001-22-002<br>Current Revision |

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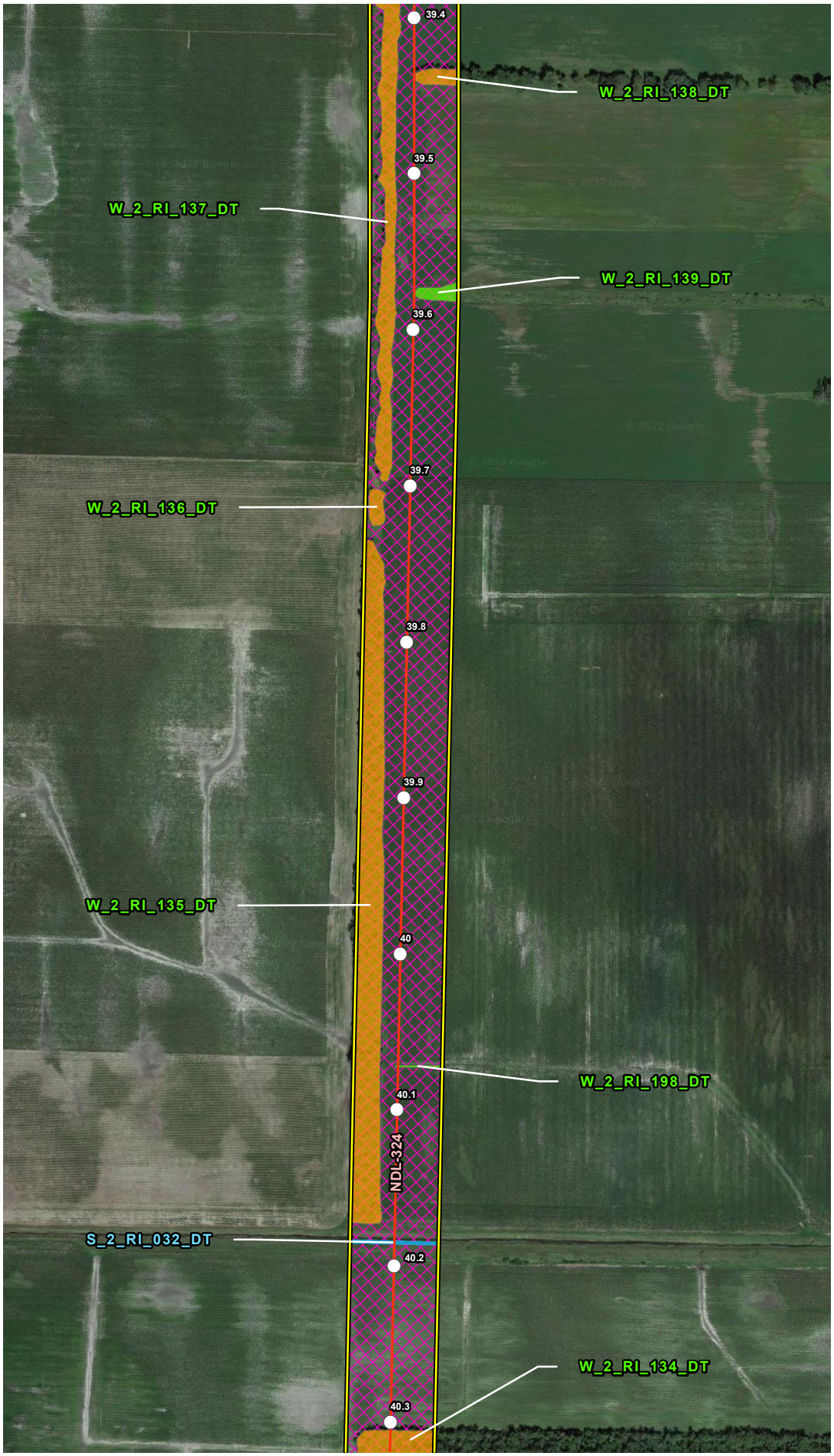
## AERIAL MAP

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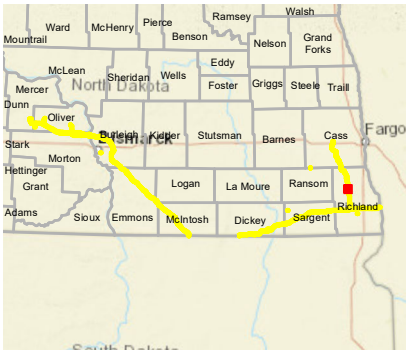


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 341 of 392 | Drawing Number: 2001-22-002<br>Current Revision |

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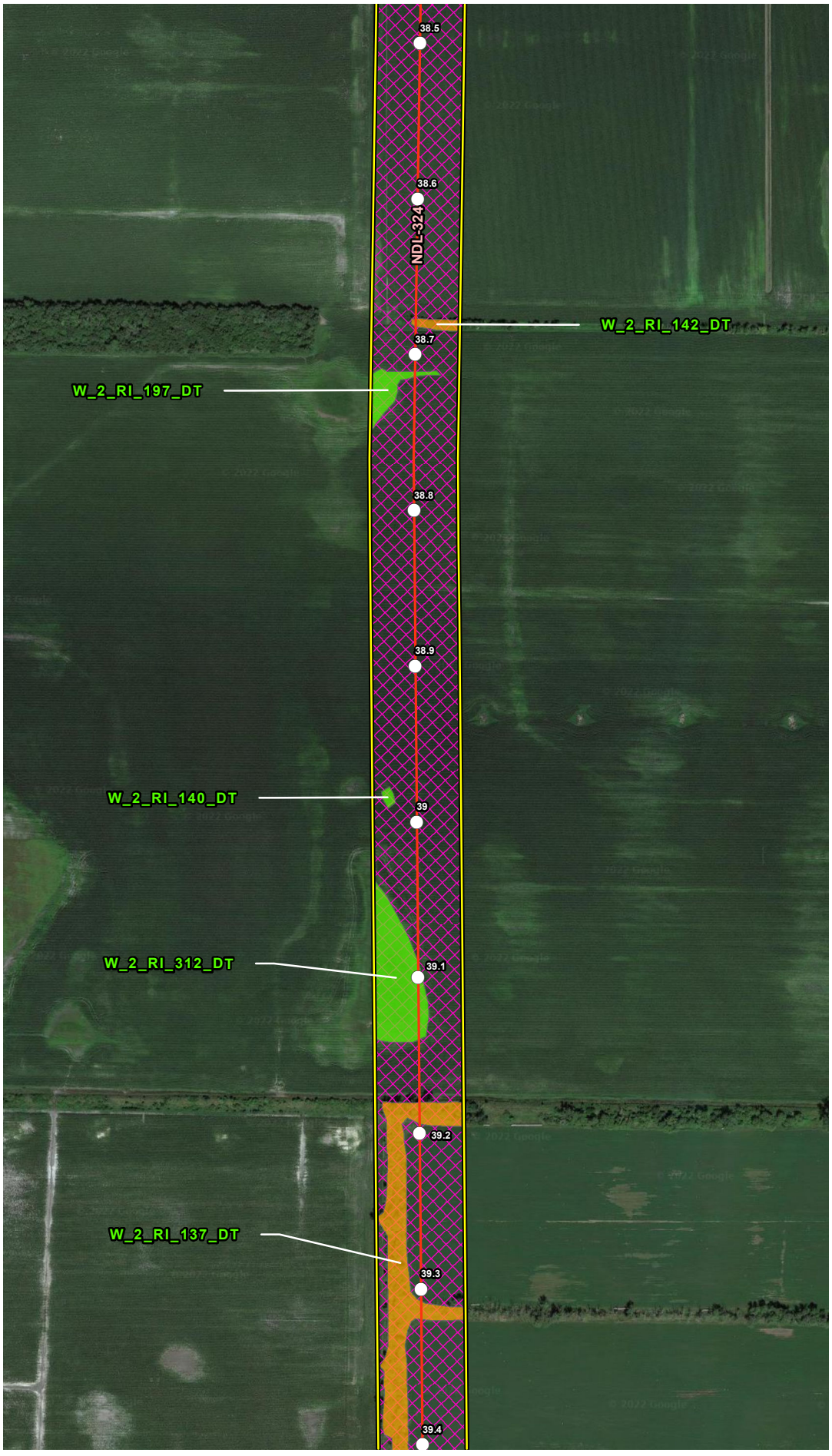
## AERIAL MAP

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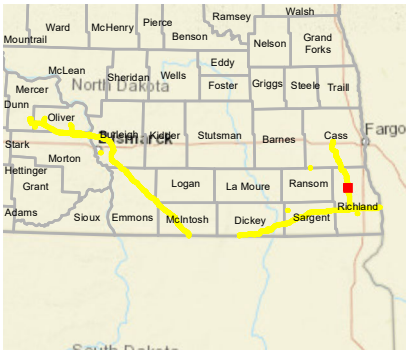


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 342 of 392 | 2001-22-002<br>Current Revision |

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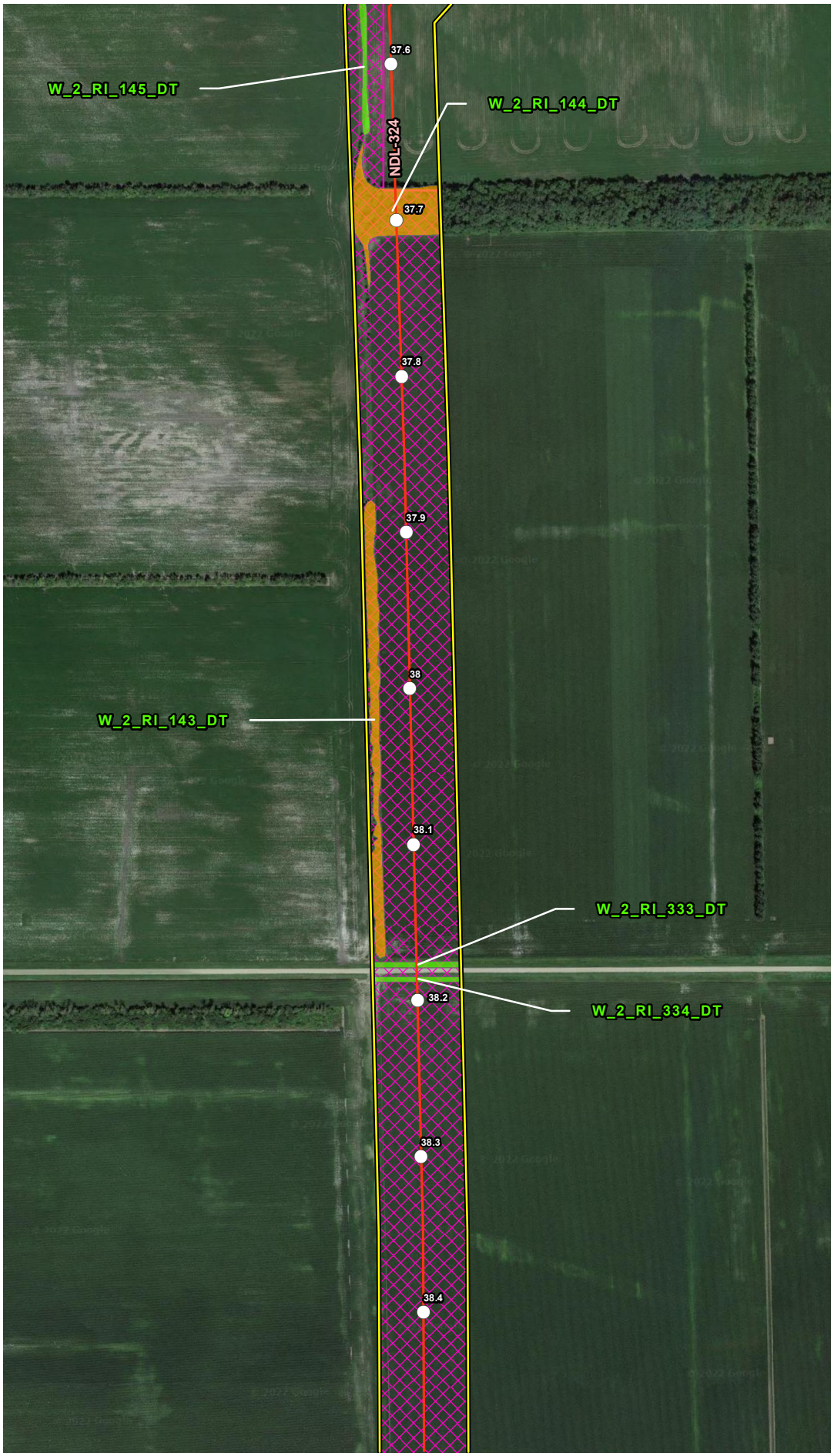
## AERIAL MAP

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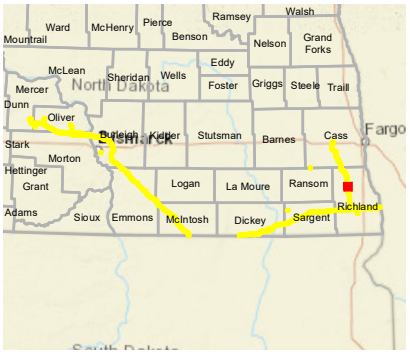


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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 343 of 392 | 2001-22-002<br>Current Revision |

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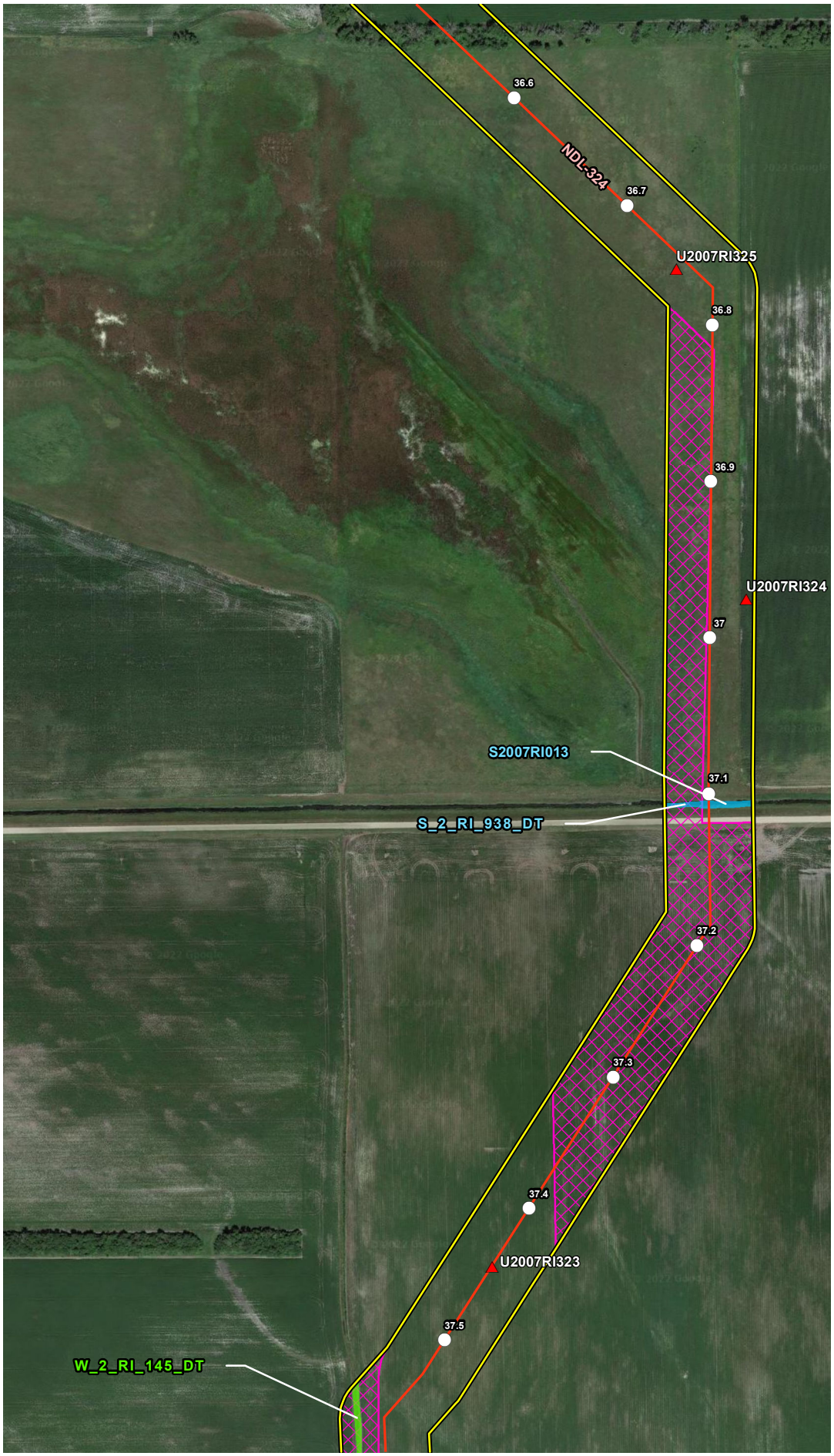
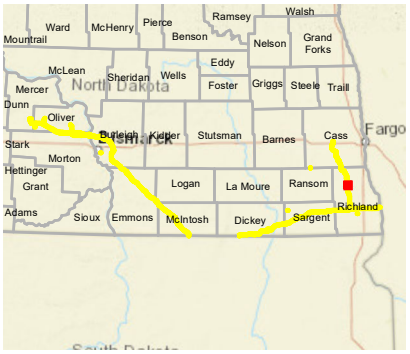
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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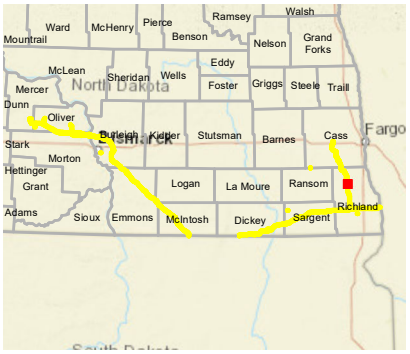
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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| Sheet:<br>345 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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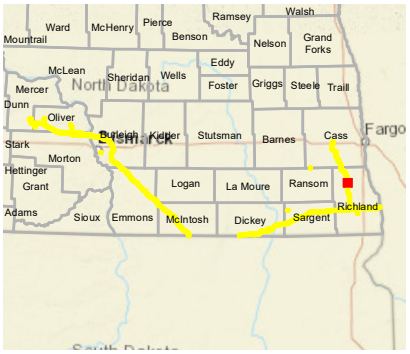
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

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| Sheet | Drawing Number |
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| 346 of 392 | 2001-22-002<br>Current Revision |

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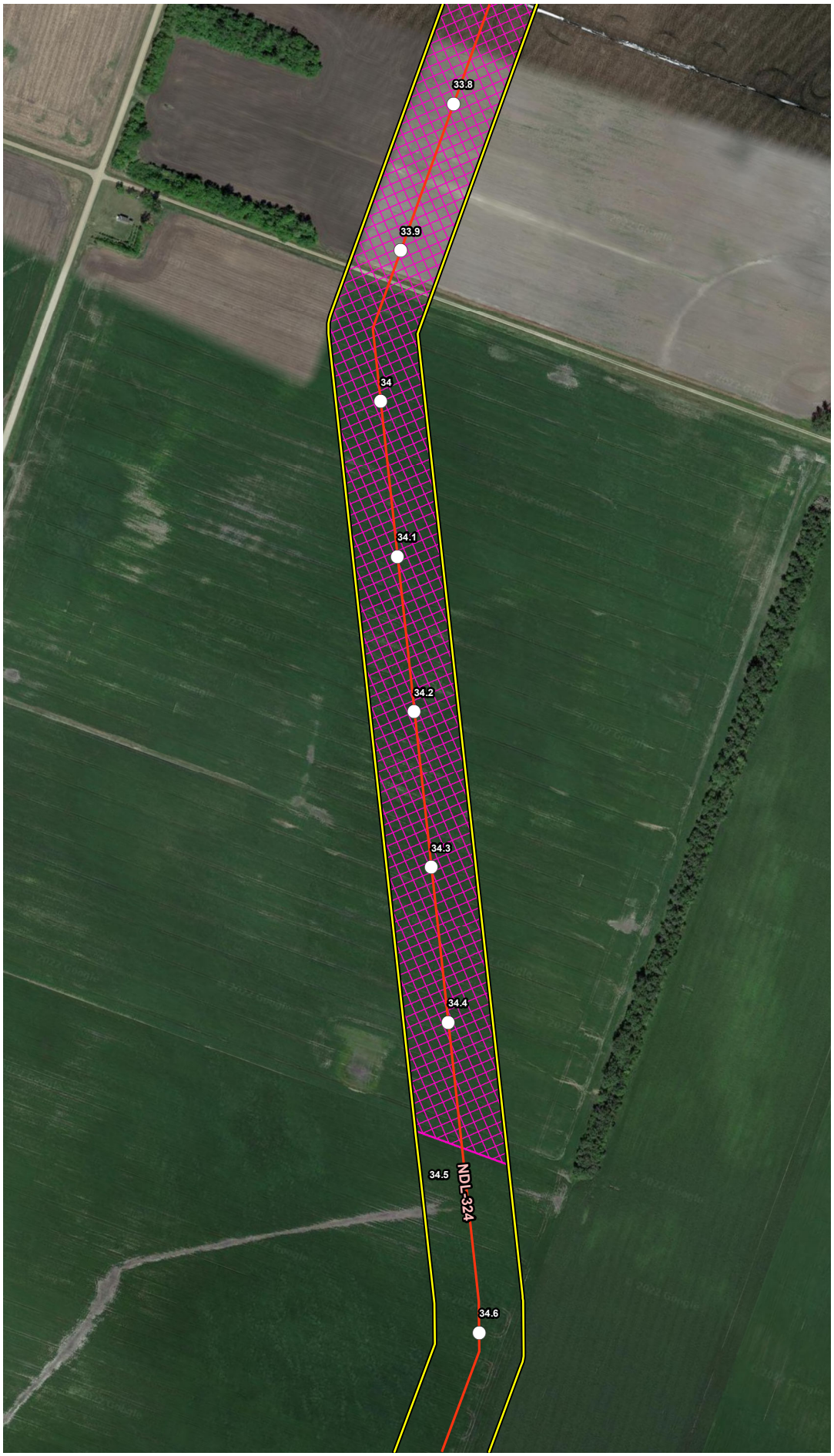
## AERIAL MAP

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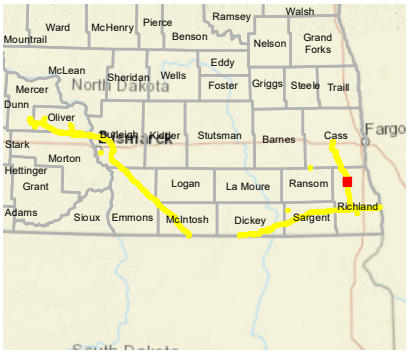


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0 250 500 Feet

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| 2022-08-04 | MM | AB |

**1A - Revision**

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| 347 of 392 | 2001-22-002<br>Current Revision |

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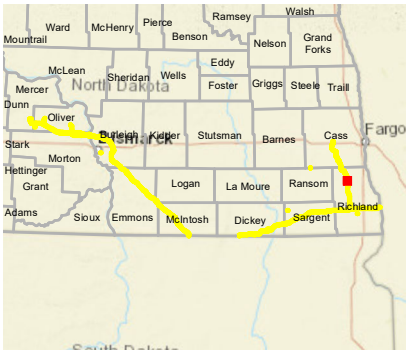
## AERIAL MAP




## VICINITY MAP

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| Sheet: | Drawing Number: |
|---|---|
| 348 of 392 | 2001-22-002<br>Current Revision |

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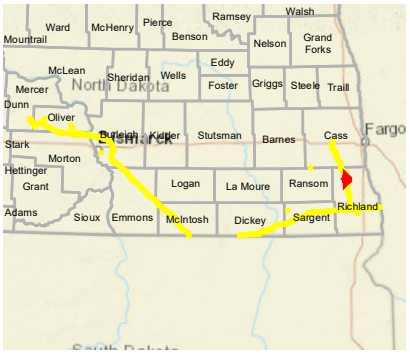
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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|---|---|
| 349 of 392 | 2001-22-002<br>Current Revision |

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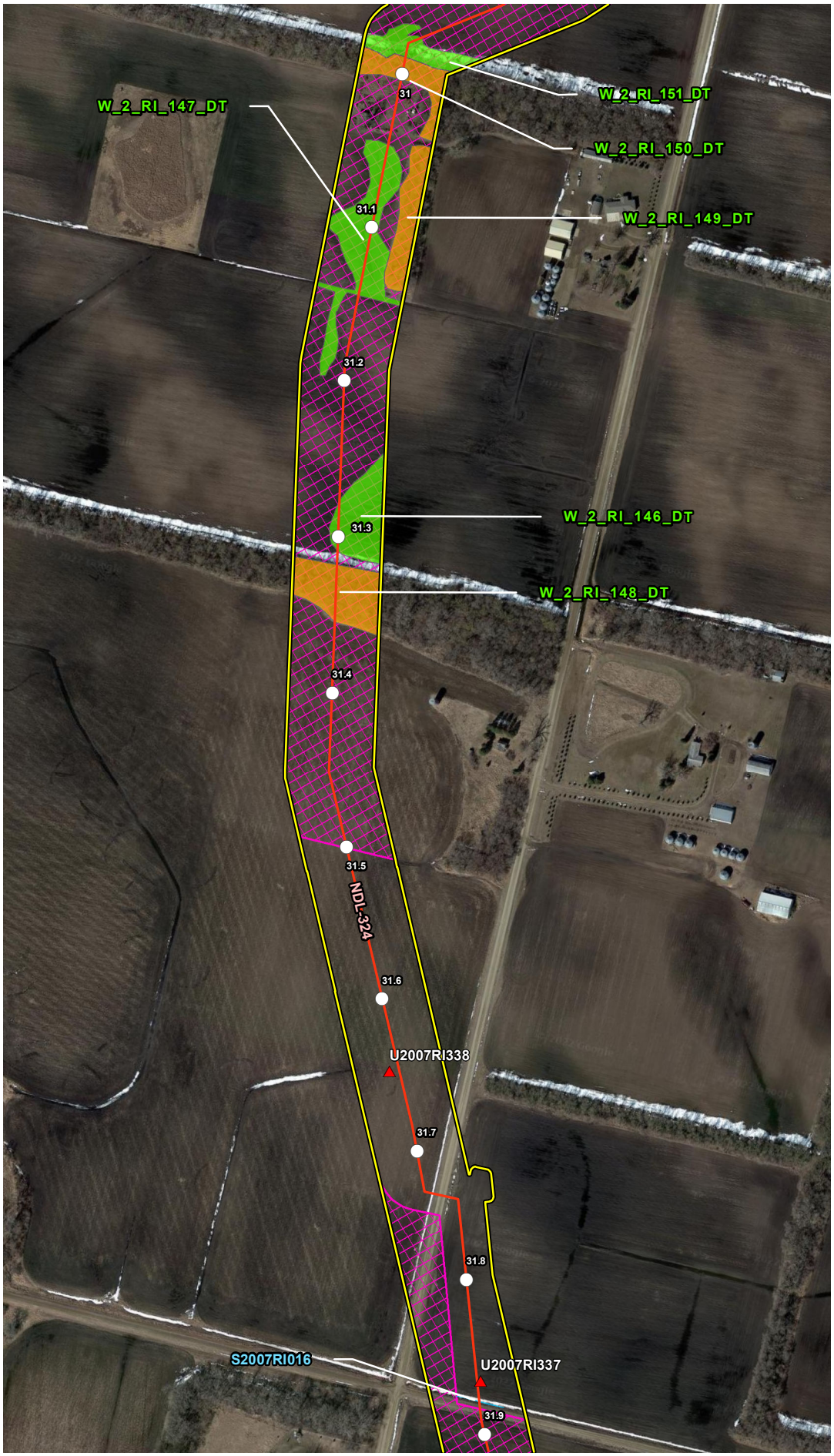
## AERIAL MAP

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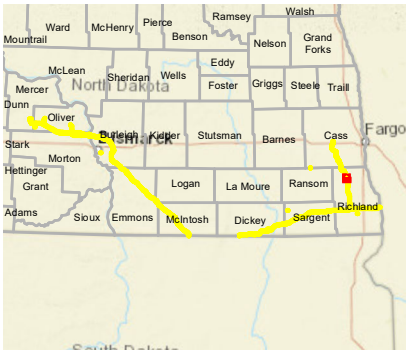


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## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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| Sheet: | Drawing Number: |
|---|---|
| 350 of 392 | 2001-22-002<br>Current Revision |

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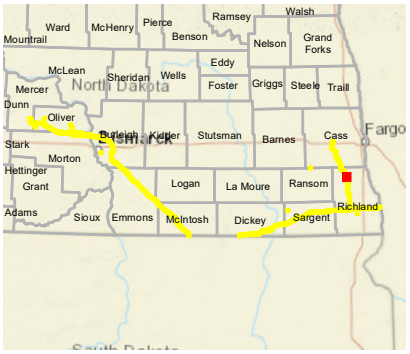
## AERIAL MAP




## VICINITY MAP

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Feet

## REVISIONS

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1A - Revision
Revision description

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Appendix A-2

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| Sheet | Drawing Number |
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| 351 of 392 | 2001-22-002<br>Current Revision |

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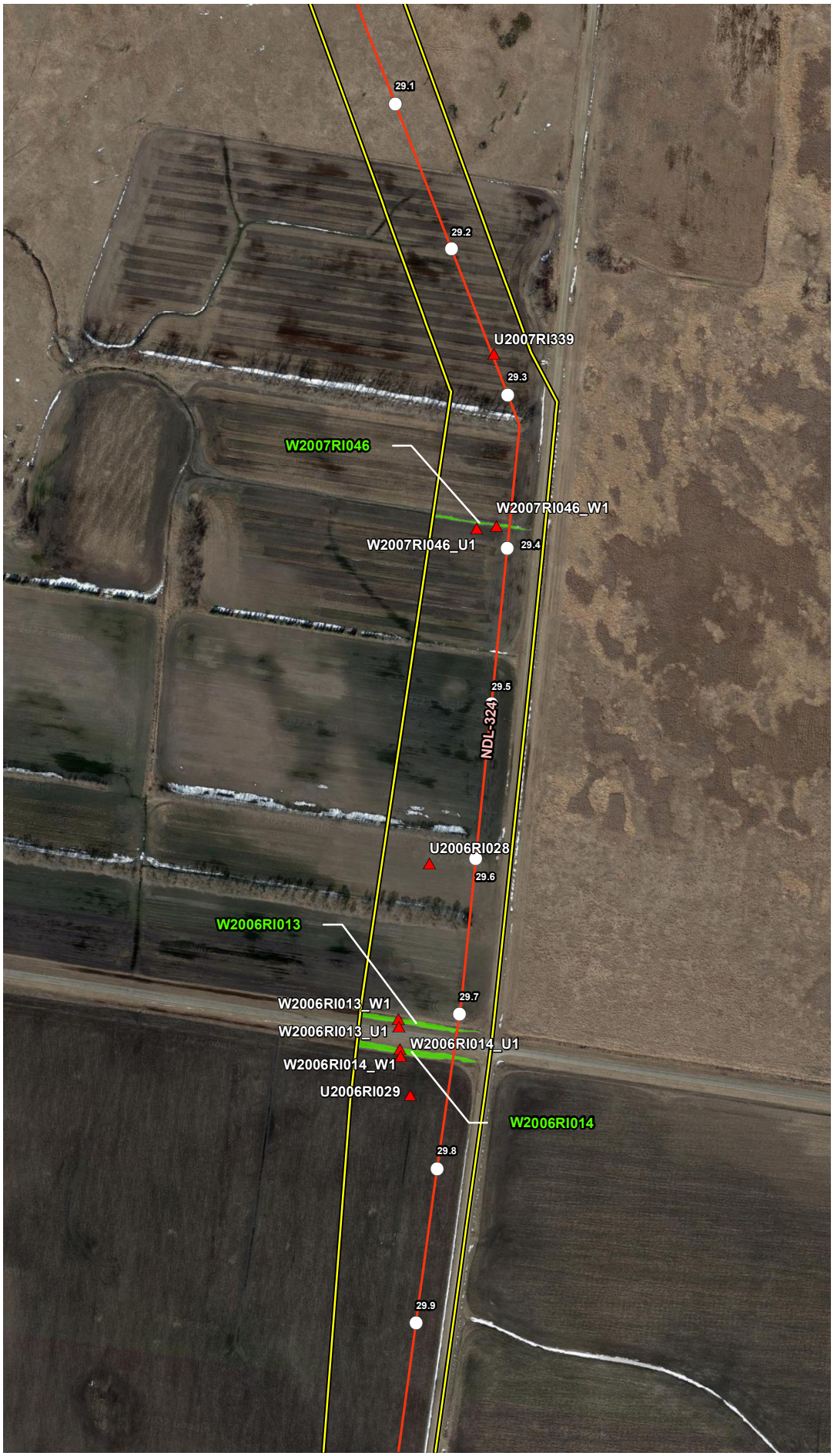
## AERIAL MAP

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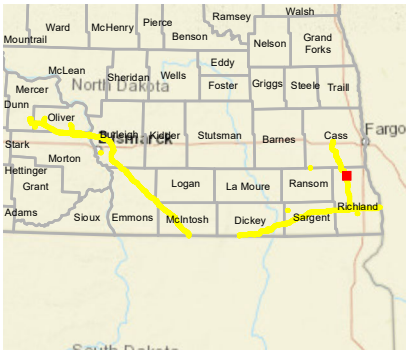


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0 250 500 Feet

## REVISIONS

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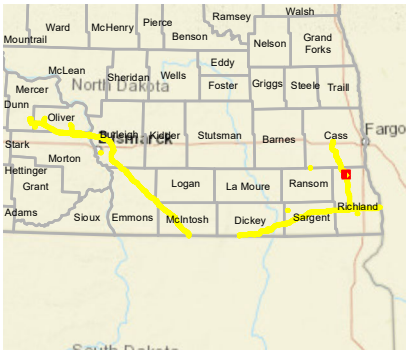
## AERIAL MAP




## VICINITY MAP

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| 353 of 392 | 2001-22-002<br>Current Revision |

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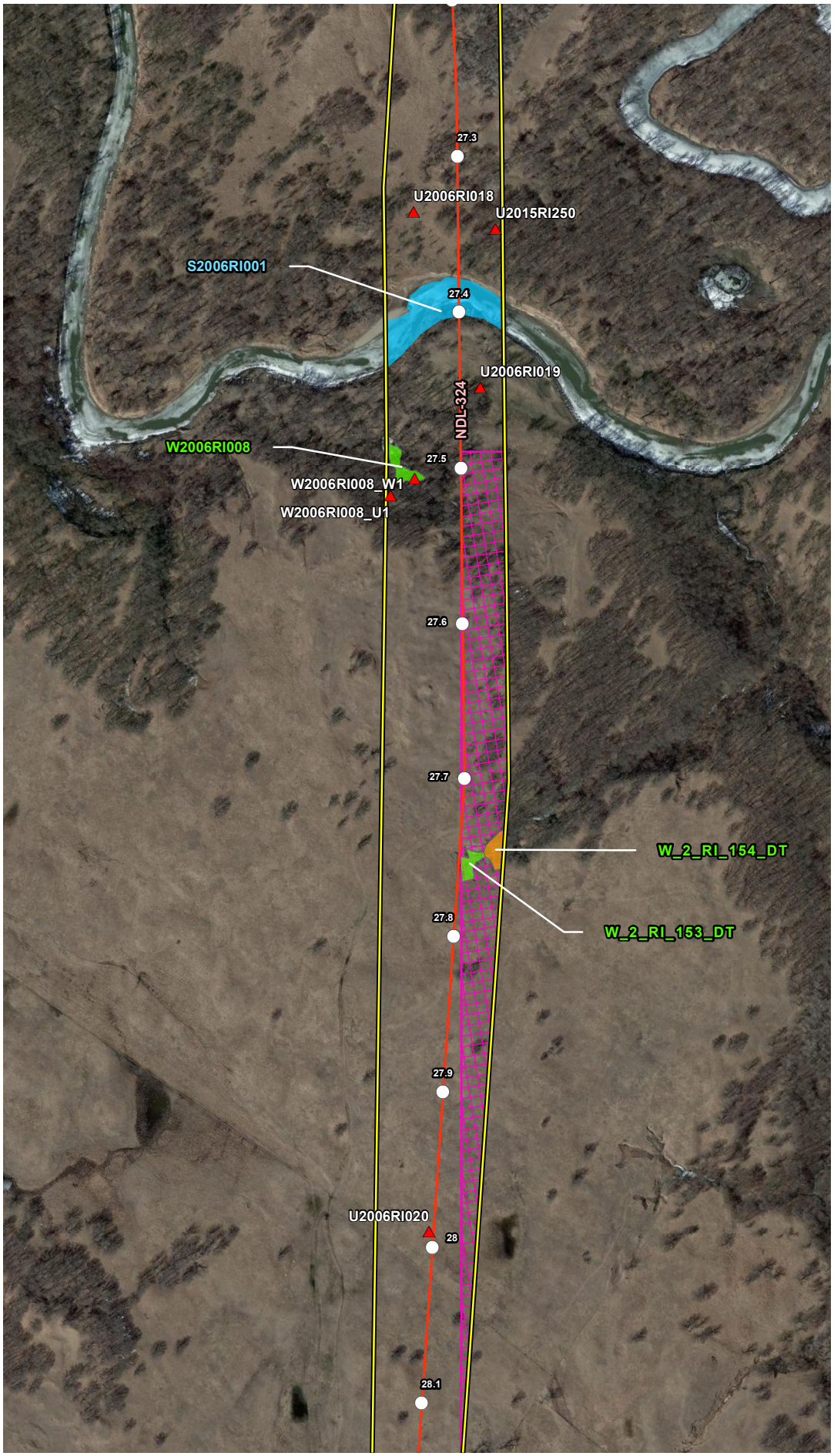
## AERIAL MAP

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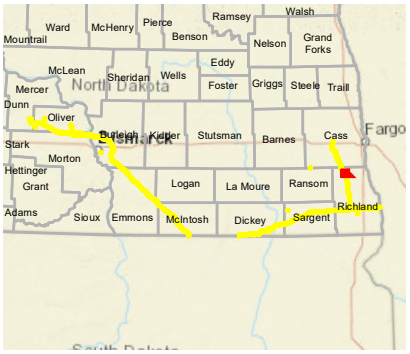


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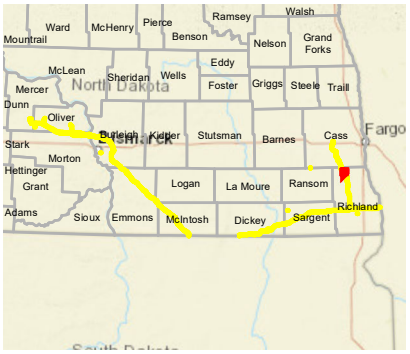
## AERIAL MAP




## VICINITY MAP

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| 355 of 392 | 2001-22-002<br>Current Revision |

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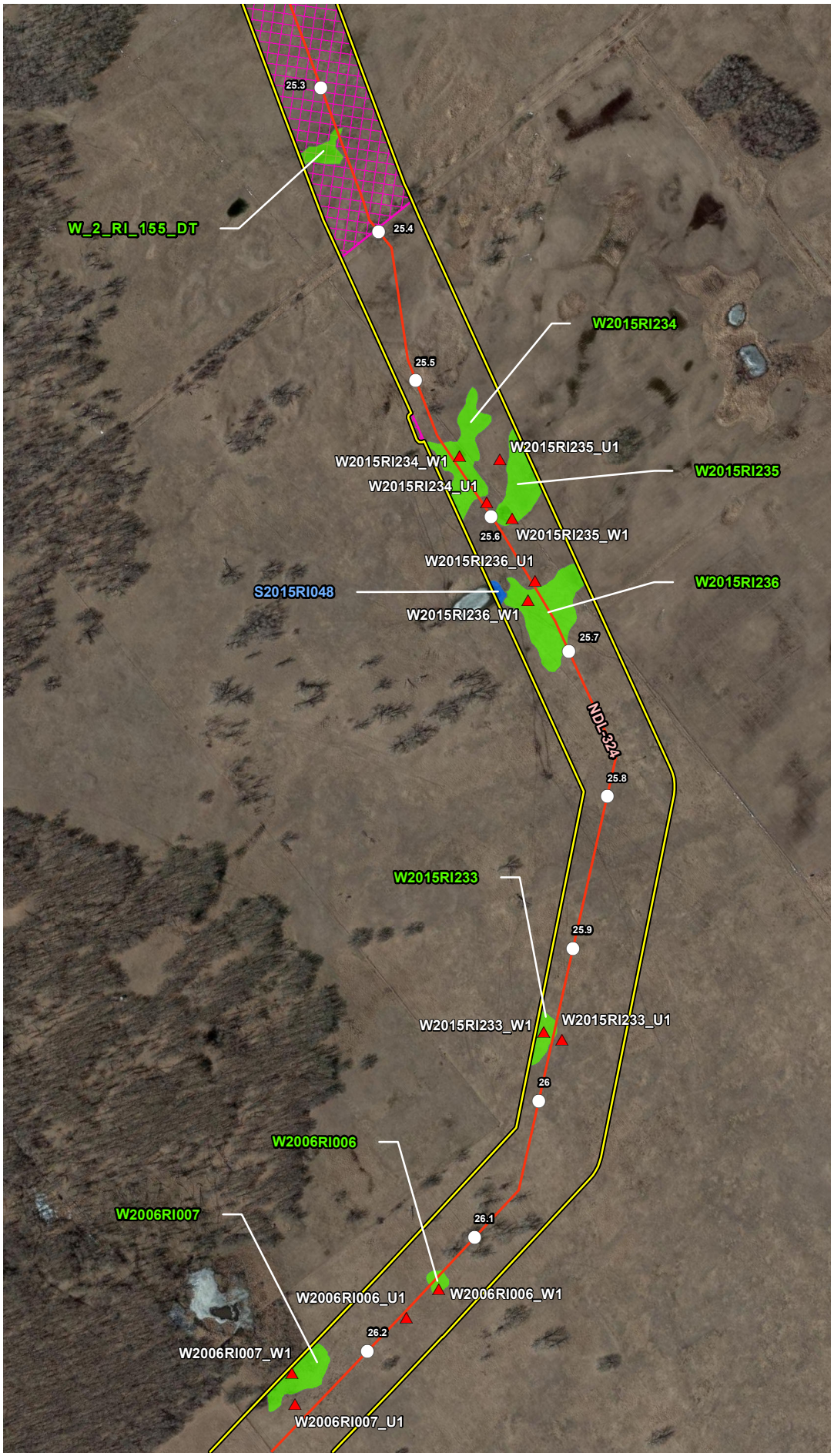
## AERIAL MAP

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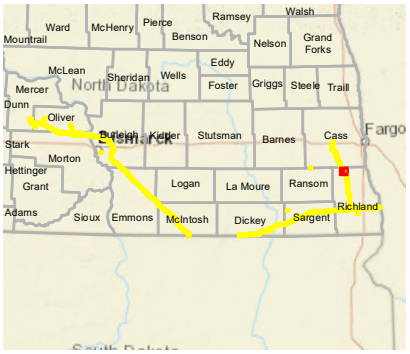


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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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| | | |

| Date | Revised by | Checked by |
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Figure Title:

Aerial Map

Figure Number:

Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 356 of 392 | 2001-22-002<br>Current Revision |

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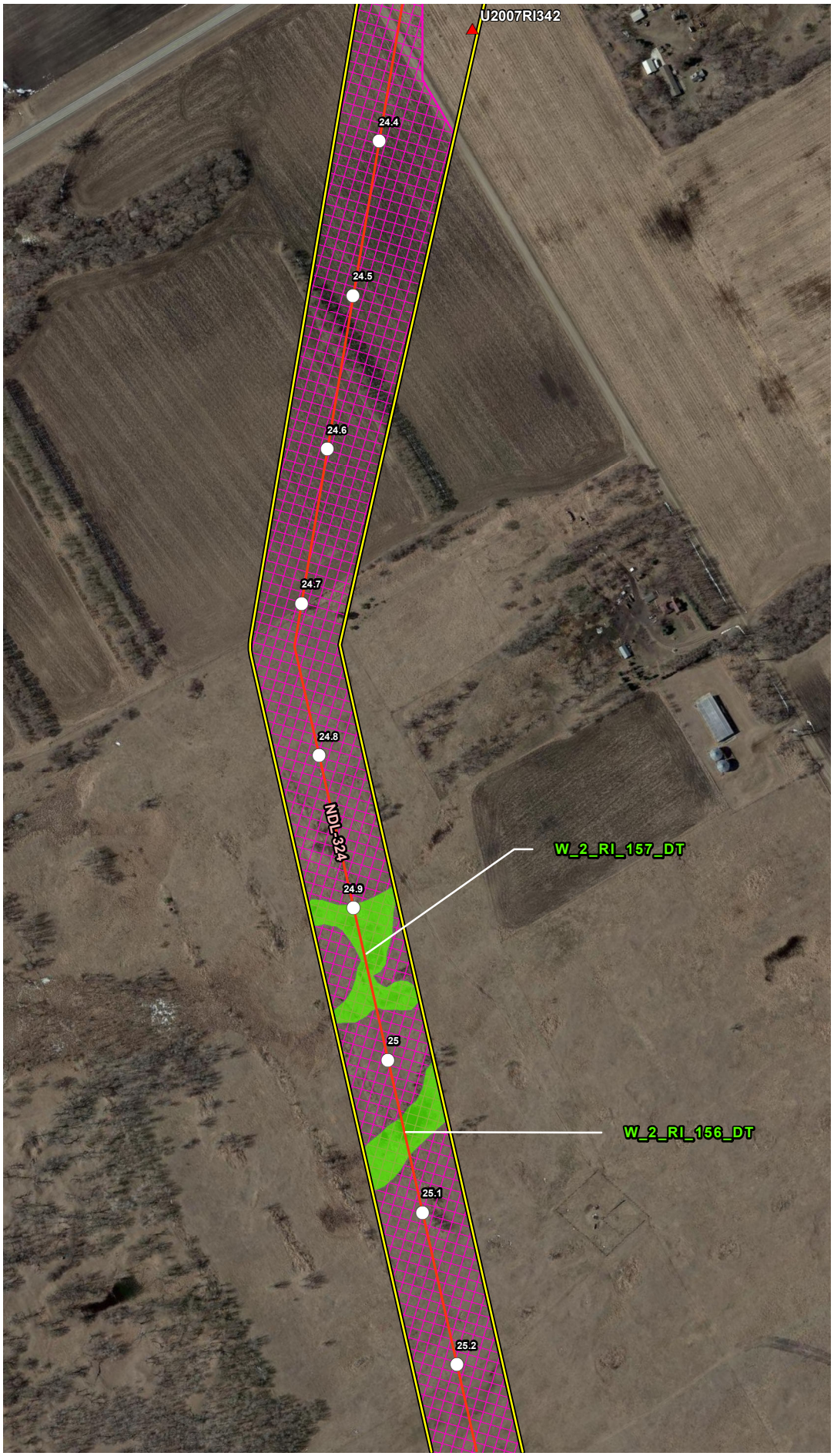
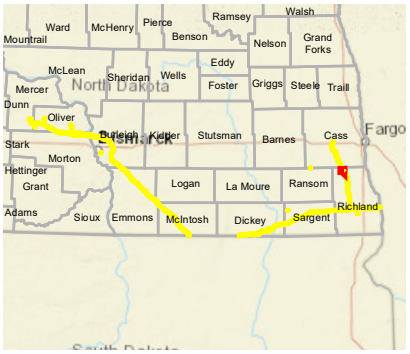
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
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- Stream
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- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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| 357 of 392 | 2001-22-002<br>Current Revision |

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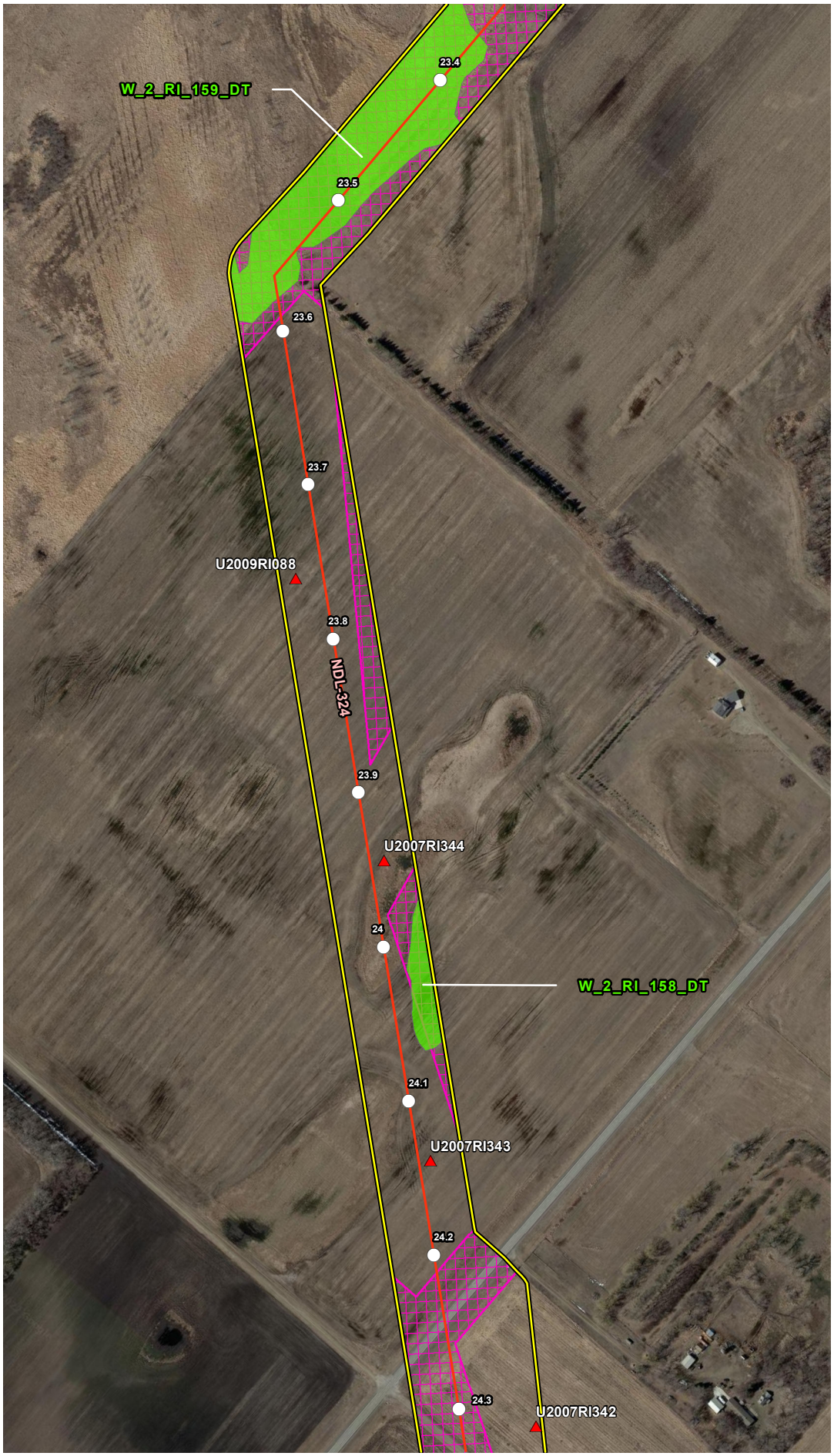
## AERIAL MAP

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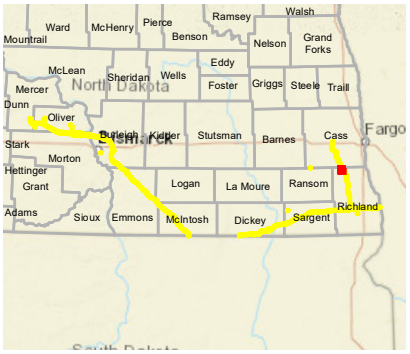


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0 250 500
Feet

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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

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| 358 of 392 | 2001-22-002<br>Current Revision |

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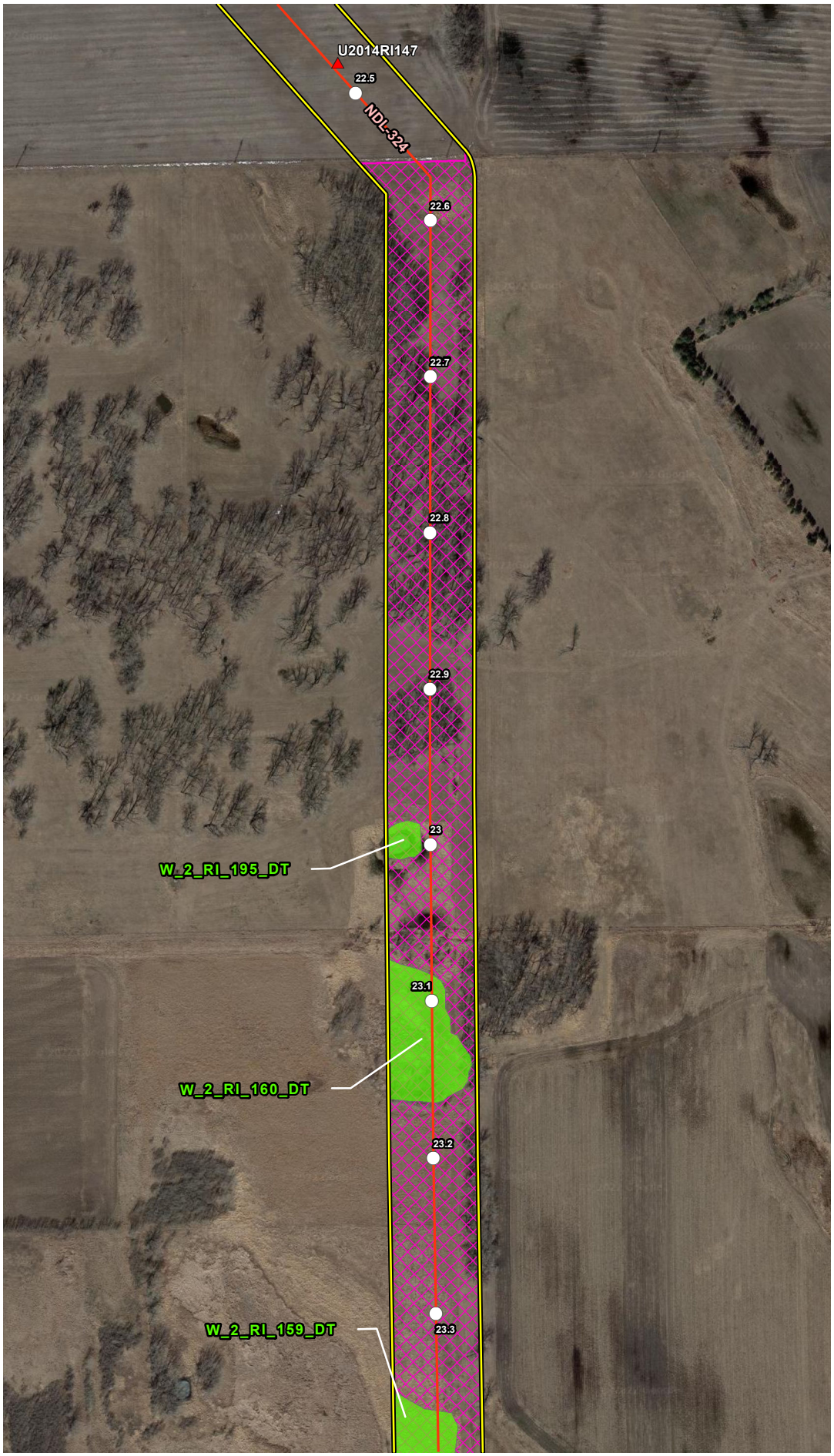
## AERIAL MAP

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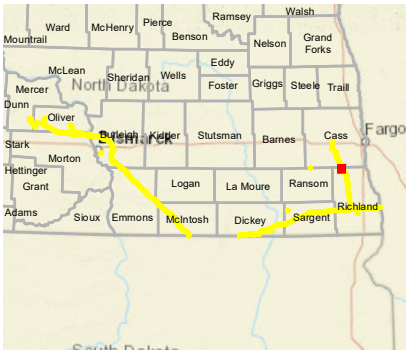


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0 250 500 Feet

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| 359 of 392 | 2001-22-002<br>Current Revision |

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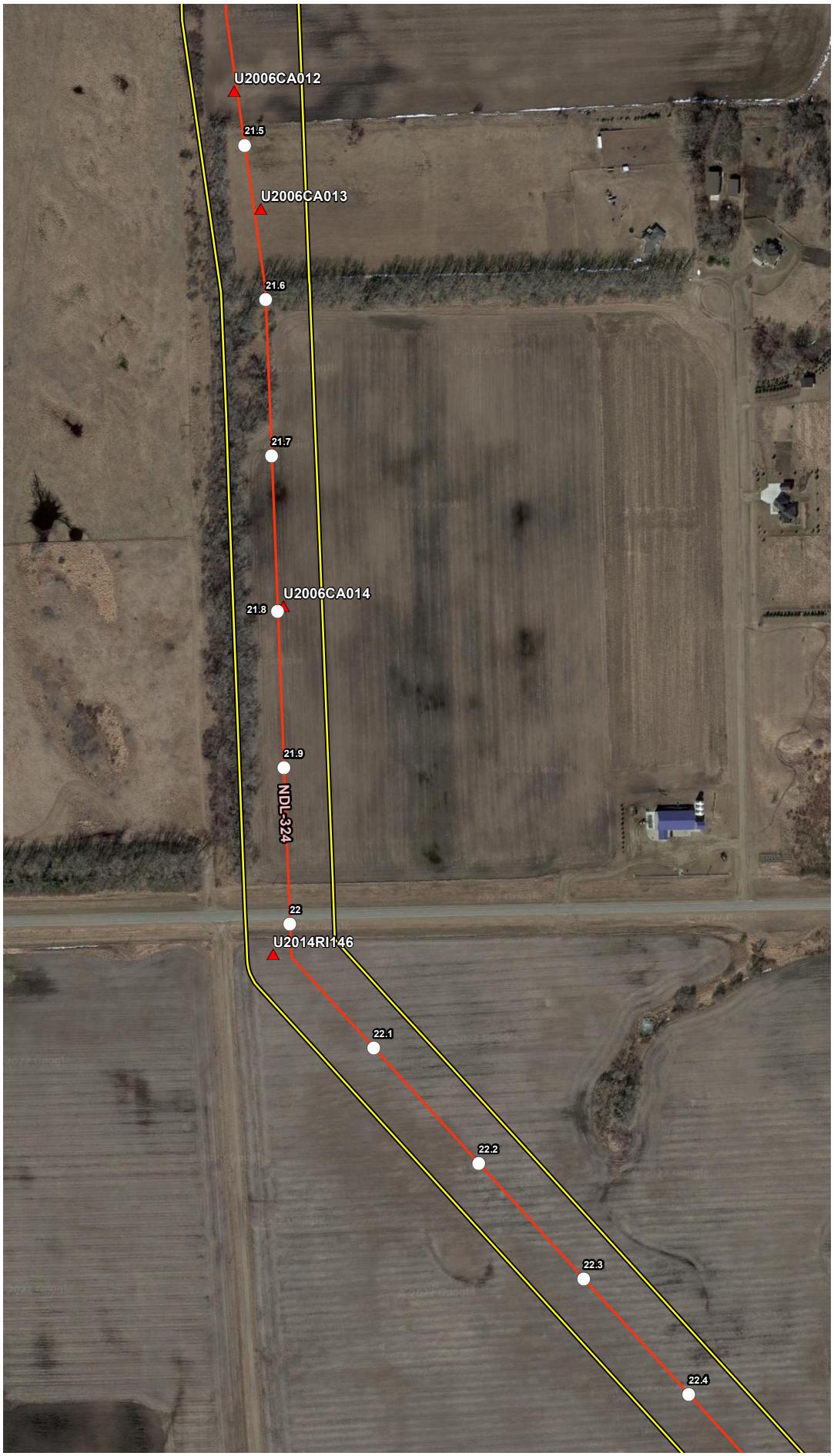
## AERIAL MAP

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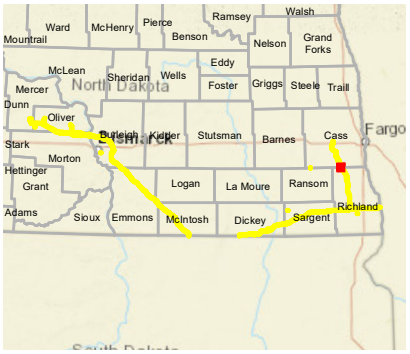


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0 250 500 Feet

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| Scale | Projection |
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| Sheet | Drawing Number |
|---|---|
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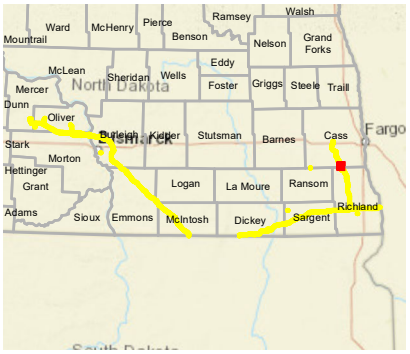
## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

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**1A - Revision**
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| 361 of 392 | 2001-22-002<br>Current Revision |

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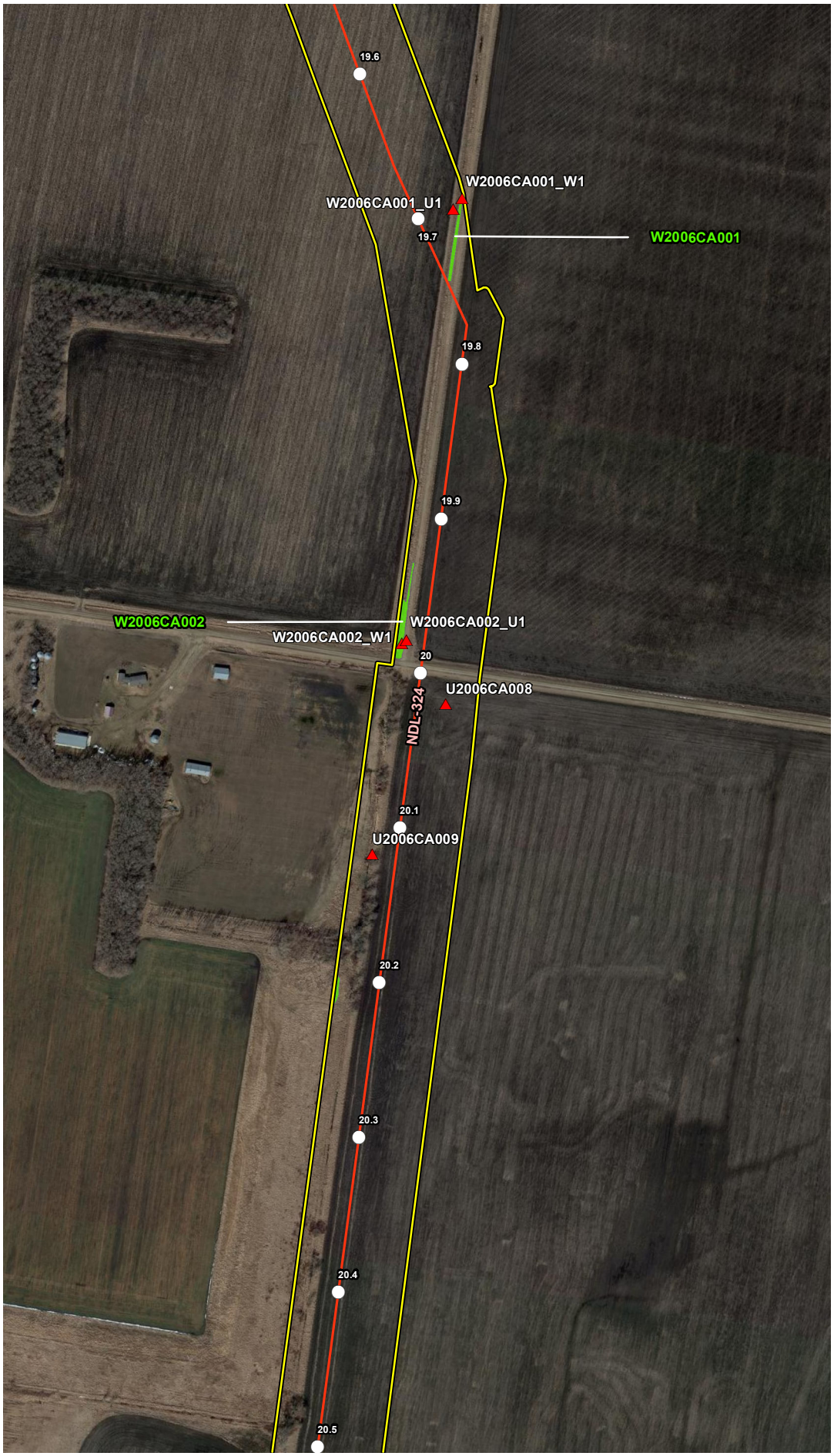


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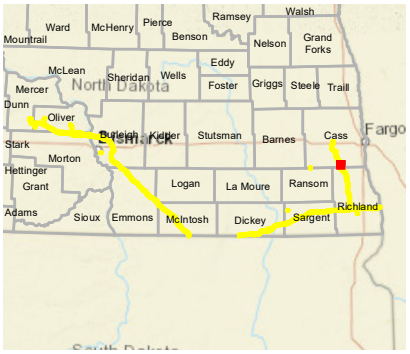


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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

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Figure Title:

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| Sheet: | Drawing Number: |
|---|---|
| 362 of 392 | 2001-22-002<br>Current Revision |

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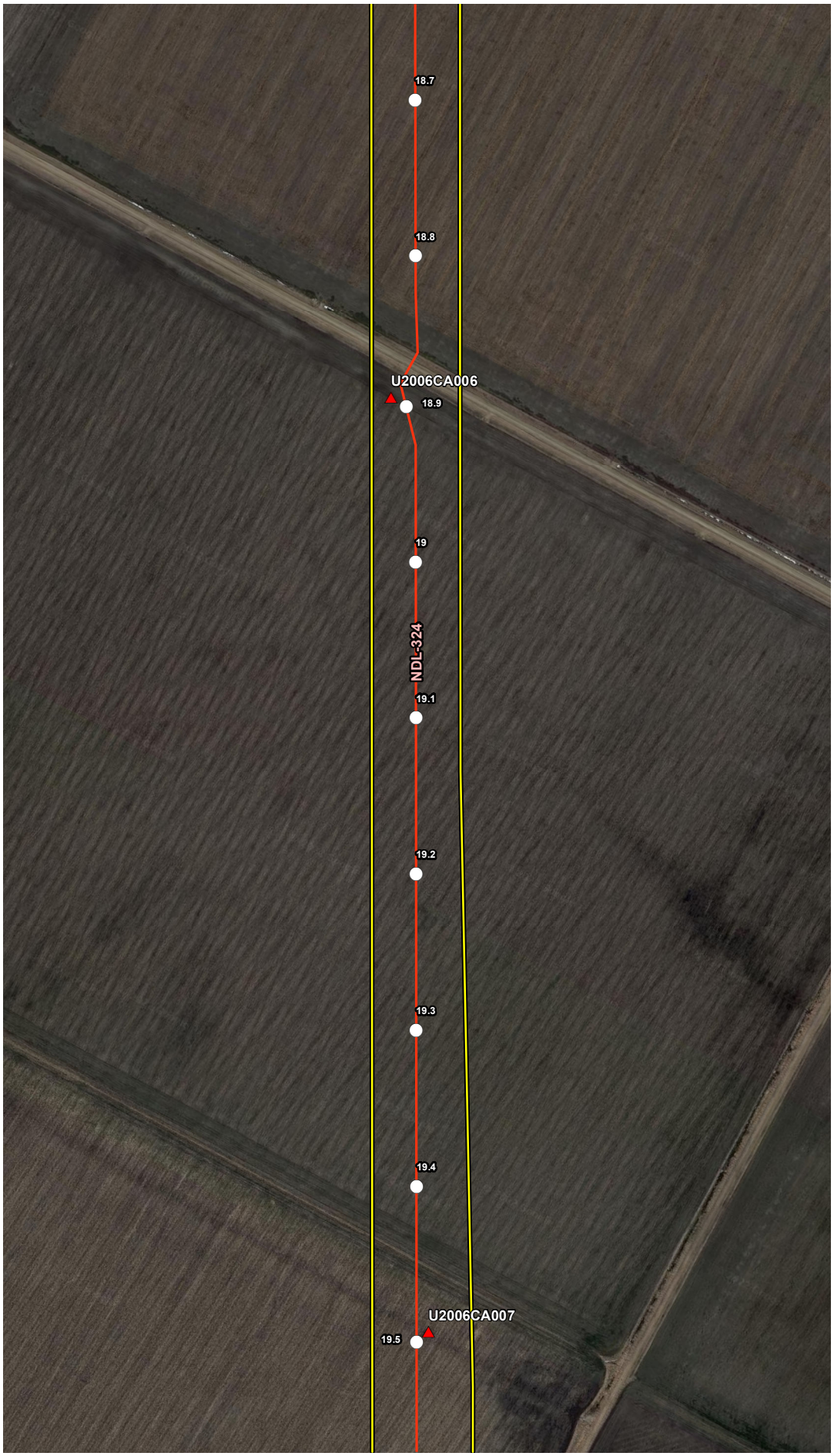
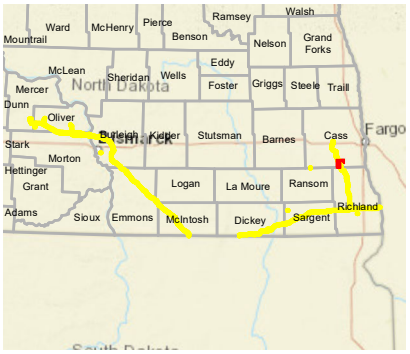
## AERIAL MAP




## VICINITY MAP

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| 2022-08-04 | MM | AB |

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| 363 of 392 | 2001-22-002<br>Current Revision |

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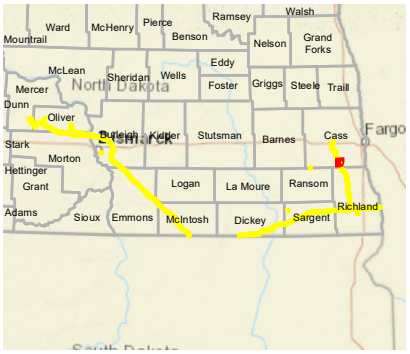
## AERIAL MAP




## VICINITY MAP

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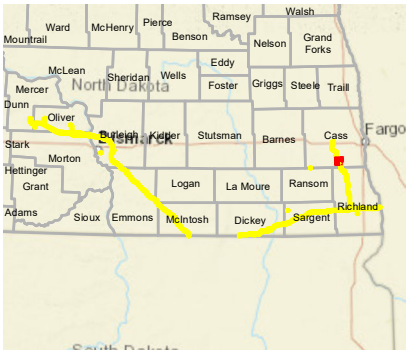
## AERIAL MAP




## VICINITY MAP

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| 365 of 392 | 2001-22-002<br>Current Revision |

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## AERIAL MAP




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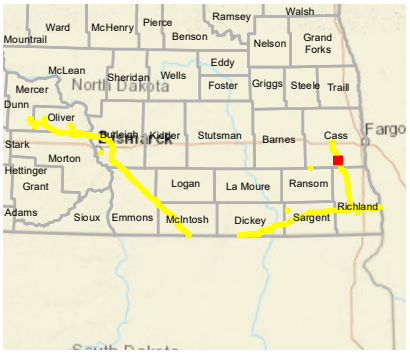


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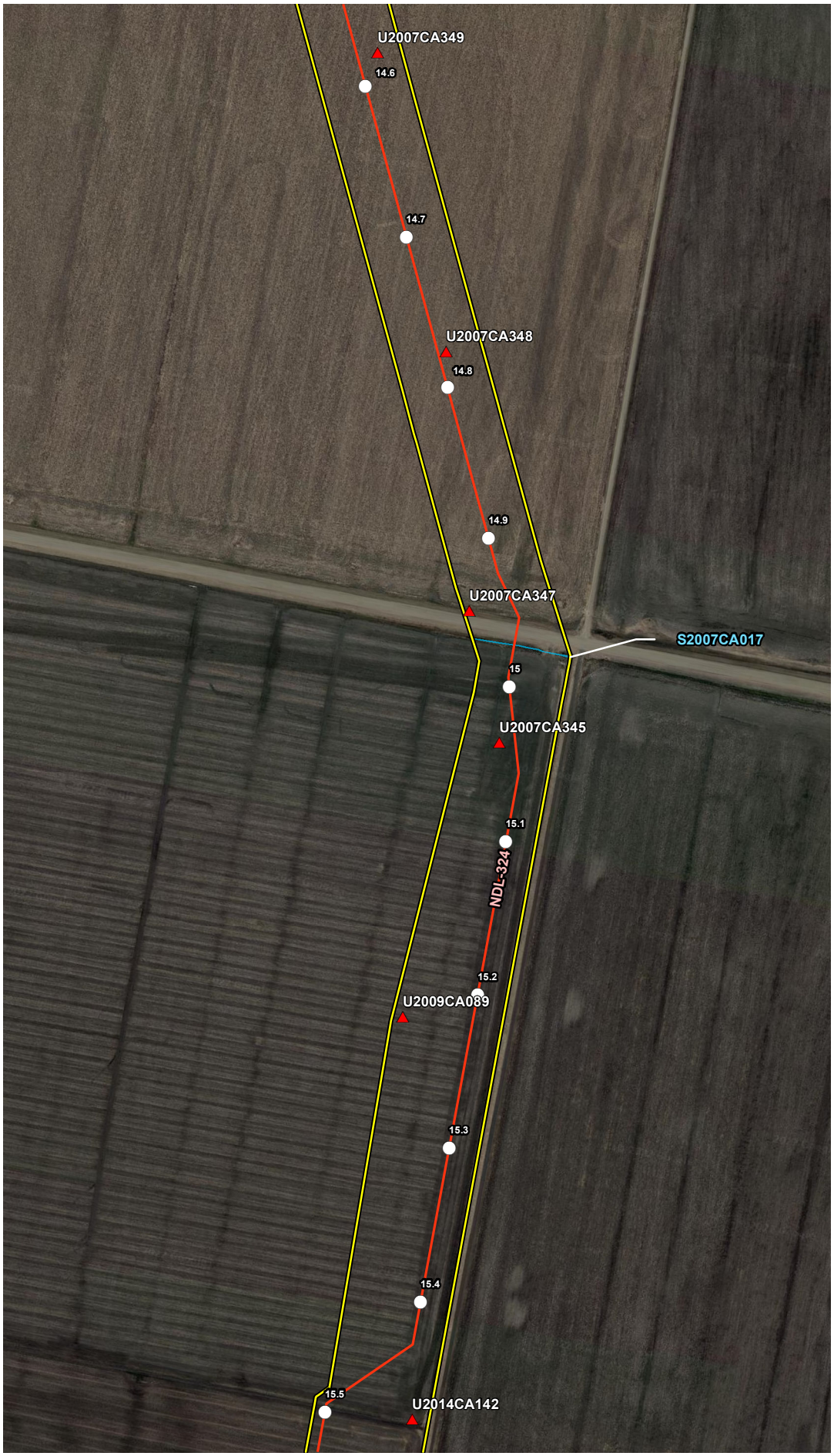


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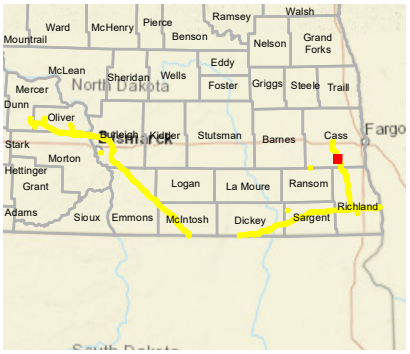


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## AERIAL MAP




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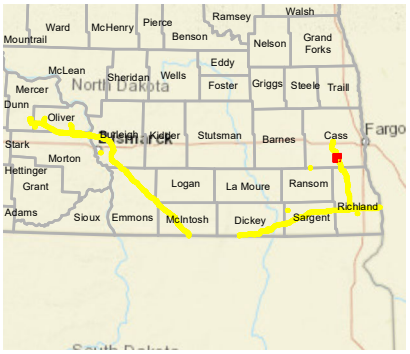


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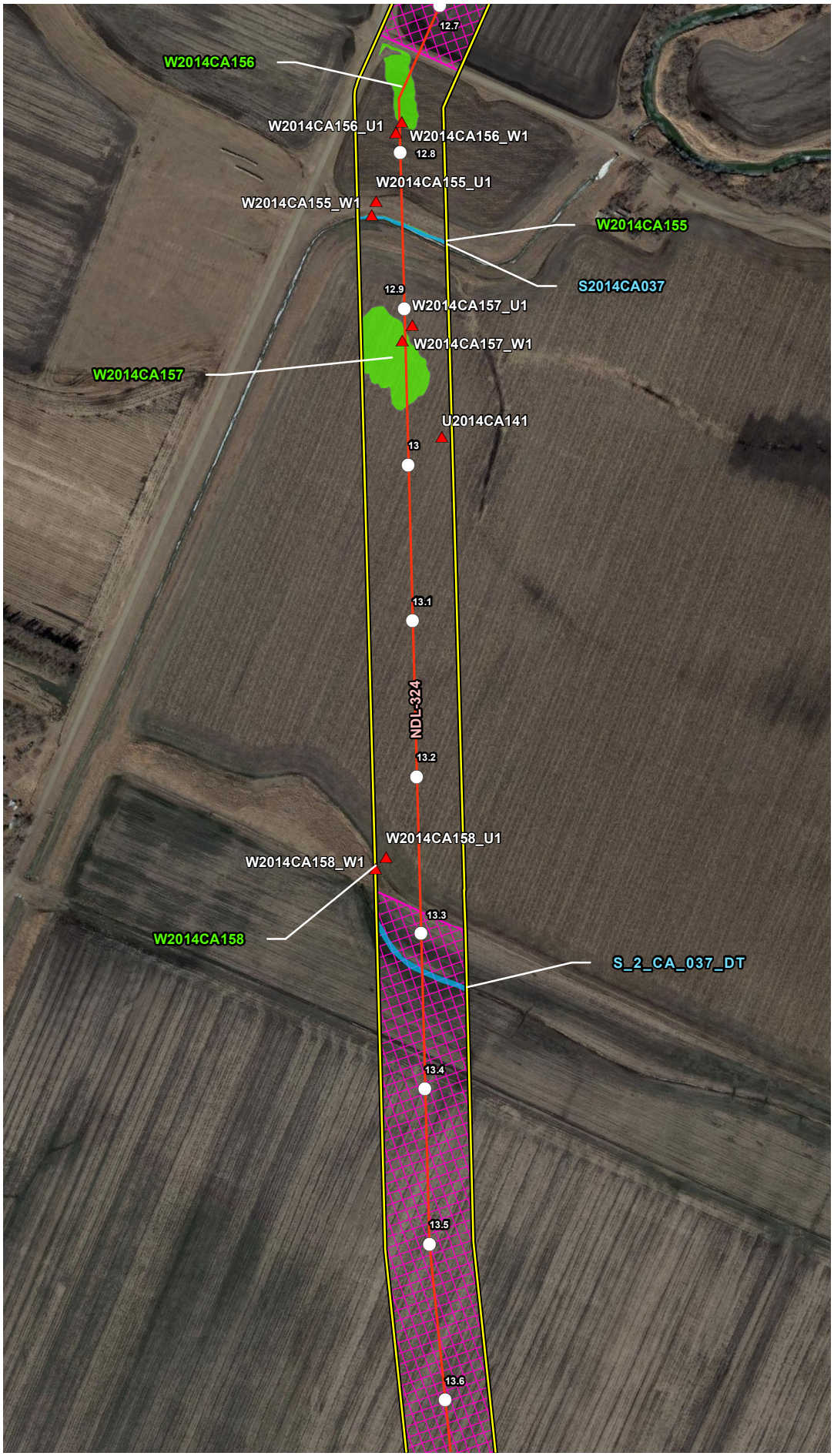
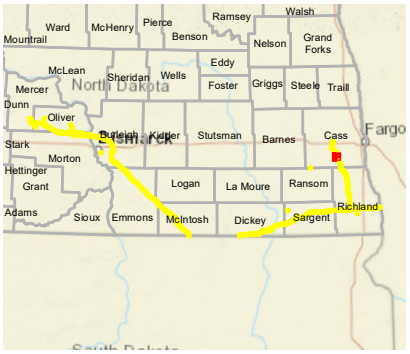
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
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- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:

Aerial Map

Figure Number:

Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 369 of 392 | 2001-22-002<br>Current Revision |

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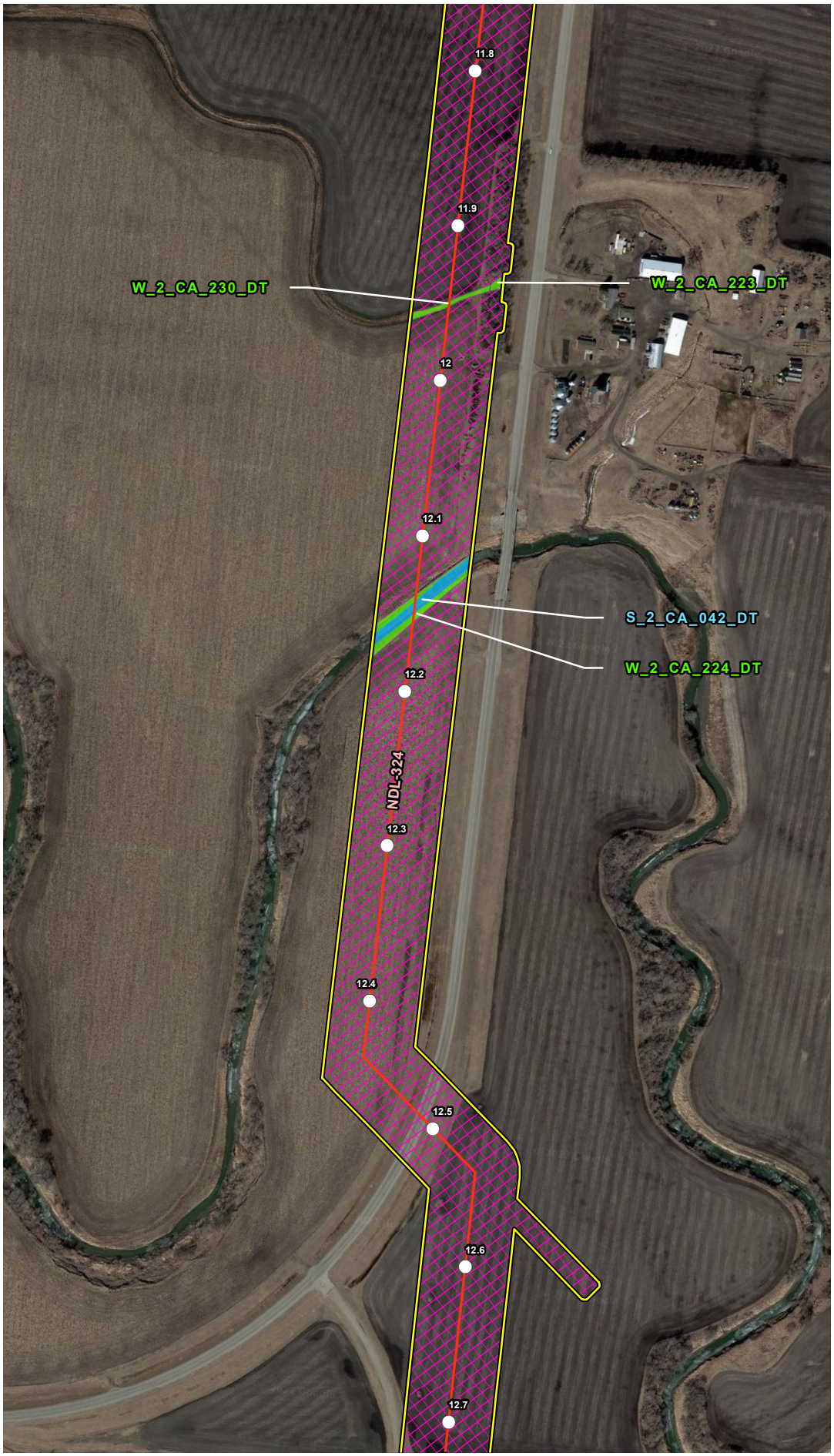
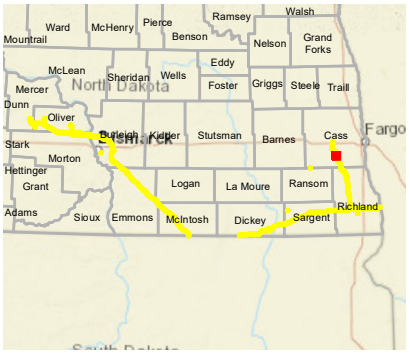
## AERIAL MAP




## VICINITY MAP

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Feet

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| 2022-08-04 | MM | AB |

1A - Revision
Revision description

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|---|---|
| 370 of 392 | 2001-22-002<br>Current Revision |

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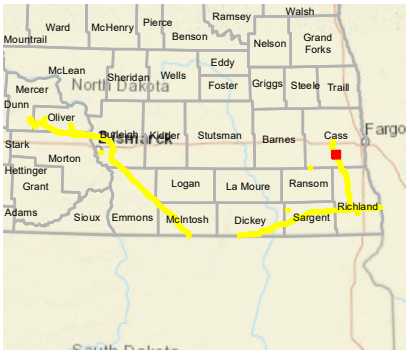
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

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| 371 of 392 | 2001-22-002<br>Current Revision |

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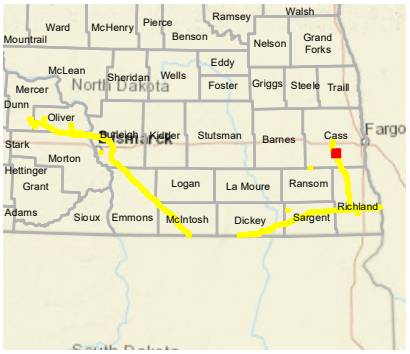
## AERIAL MAP




## VICINITY MAP

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| 2022-08-04 | MM | AB |

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| 372 of 392 | 2001-22-002<br>Current Revision |

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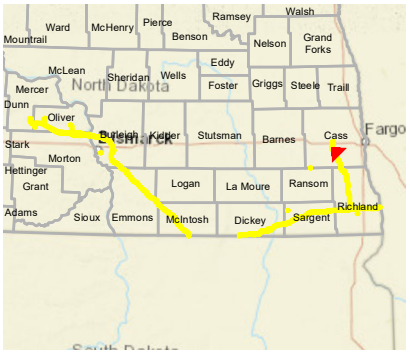
## AERIAL MAP




## VICINITY MAP

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| Sheet: | Drawing Number: |
|---|---|
| 373 of 392 | 2001-22-002<br>Current Revision |

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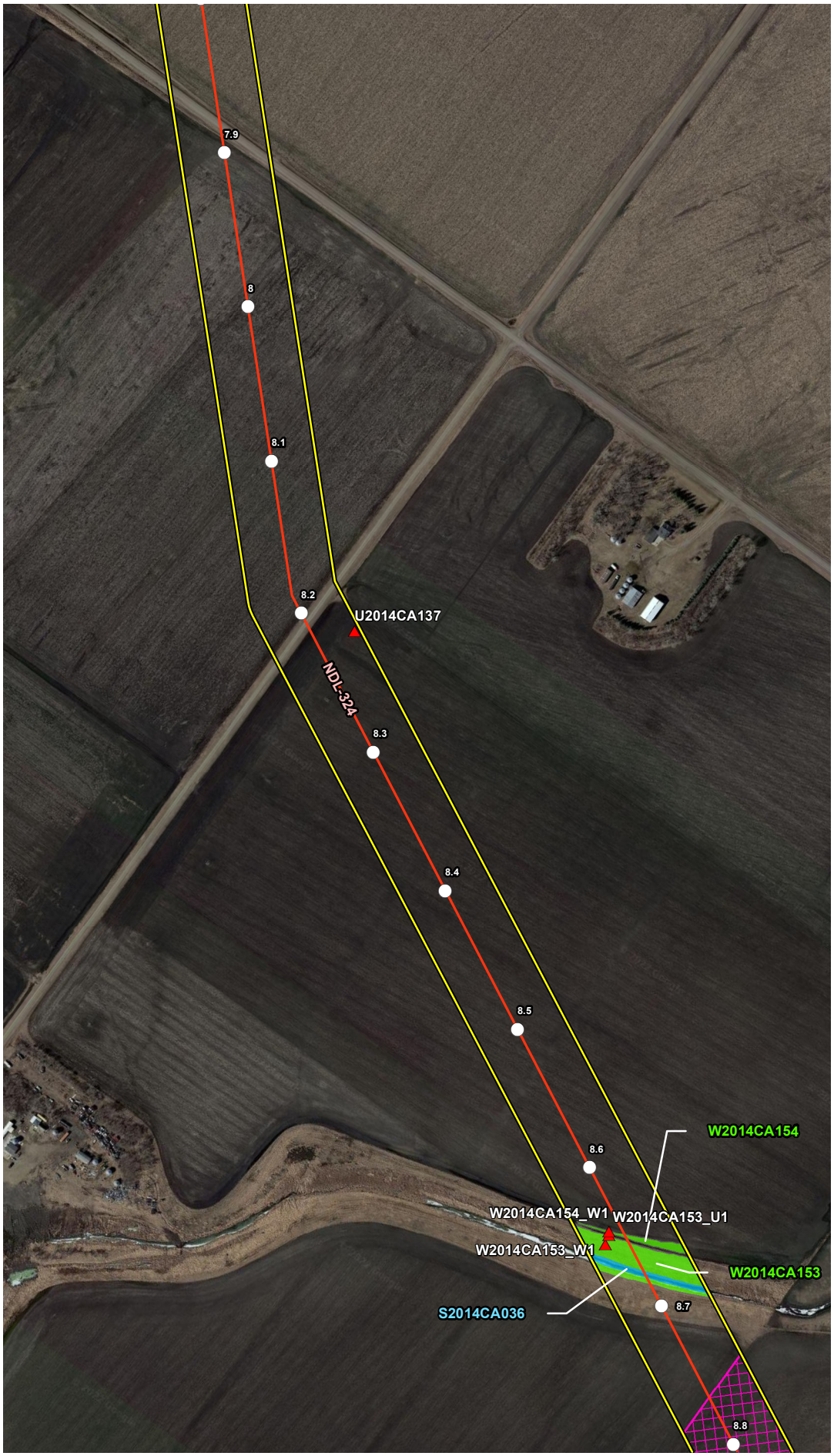
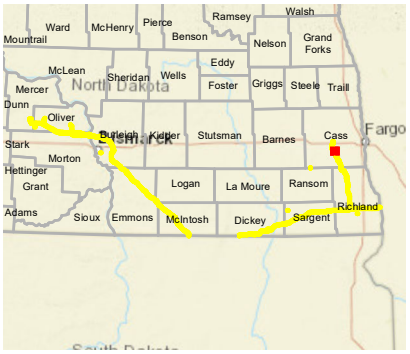
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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| Scale | Projection |
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| Sheet | Drawing Number |
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| 374 of 392 | 2001-22-002<br>Current Revision |

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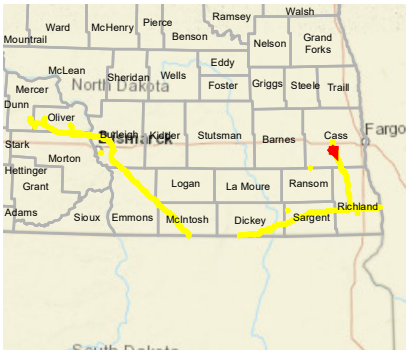
## AERIAL MAP




## VICINITY MAP

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Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

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| Sheet: | Drawing Number: |
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| 375 of 392 | 2001-22-002<br>Current Revision |

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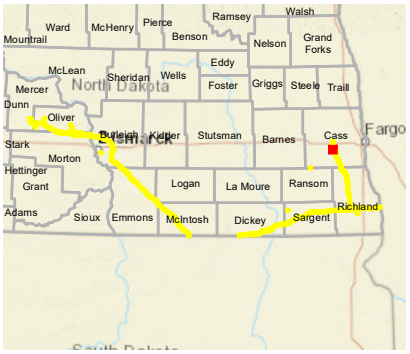
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**
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Figure Title:
**Aerial Map**

Figure Number:
**Appendix A-2**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 376 of 392 | 2001-22-002<br>Current Revision |

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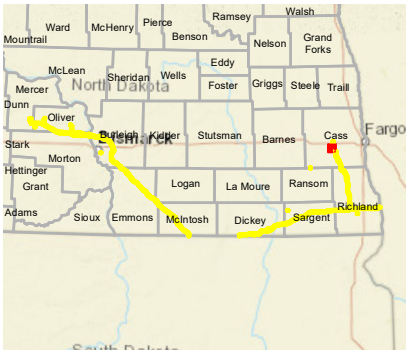
## AERIAL MAP




## VICINITY MAP

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## REVISIONS

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| 2022-08-04 | MM | AB |

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Revision description

| Date: | Revised by: | Checked by: |
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## AERIAL MAP




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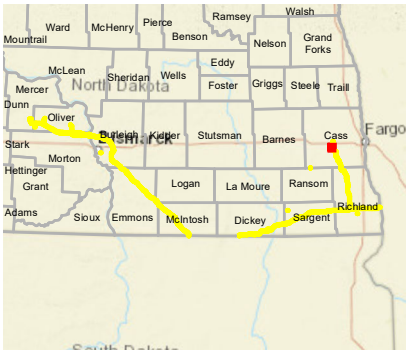


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Figure Title:
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Figure Number:
Appendix A-2

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

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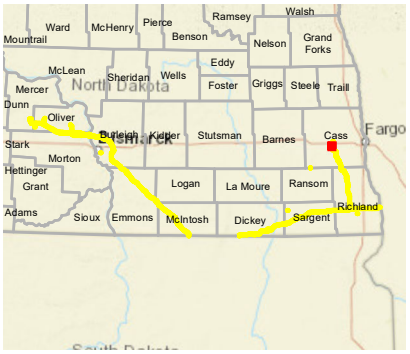
## AERIAL MAP




## VICINITY MAP

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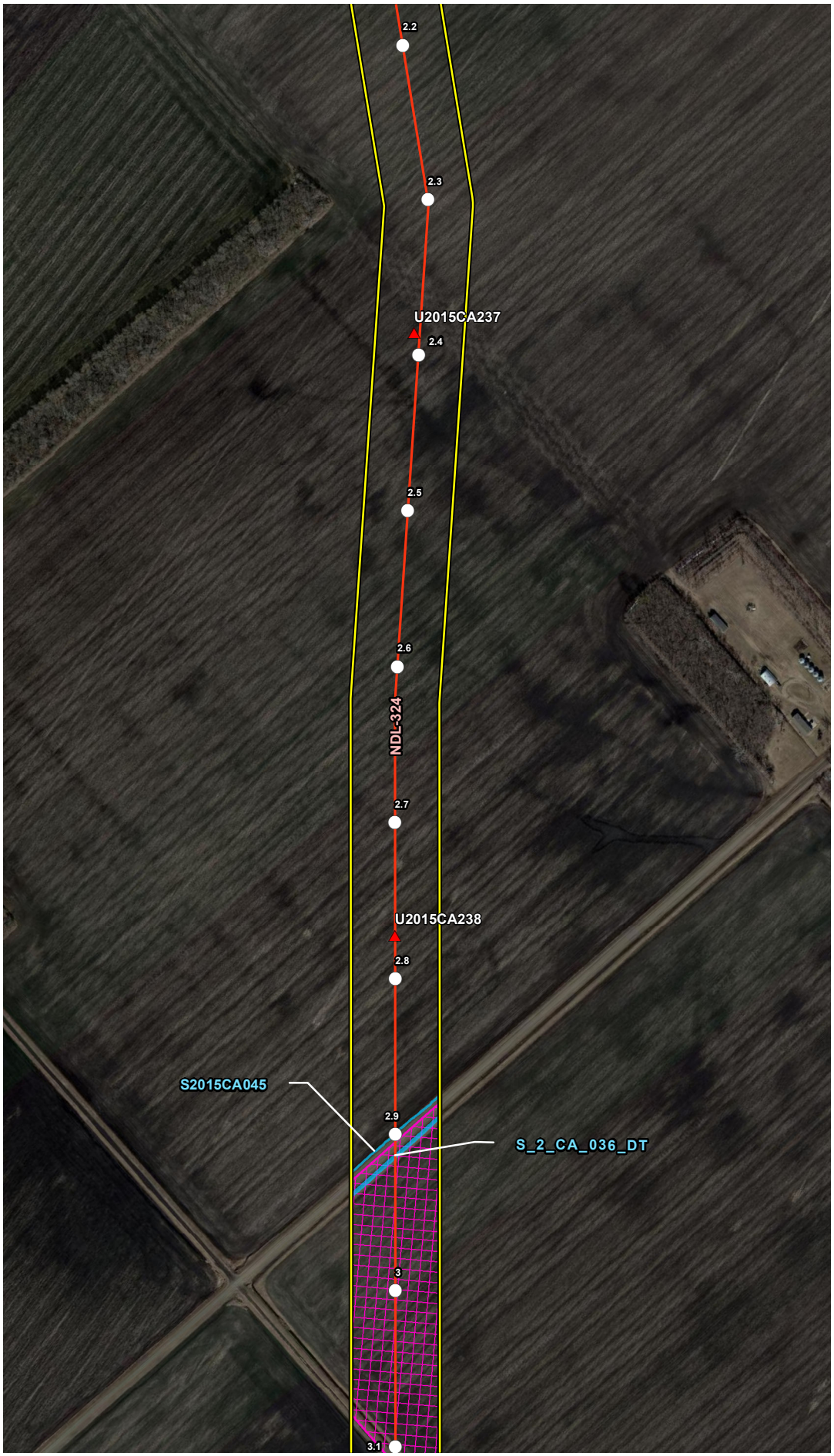
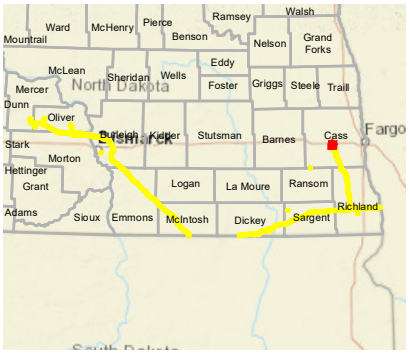
## AERIAL MAP




## VICINITY MAP

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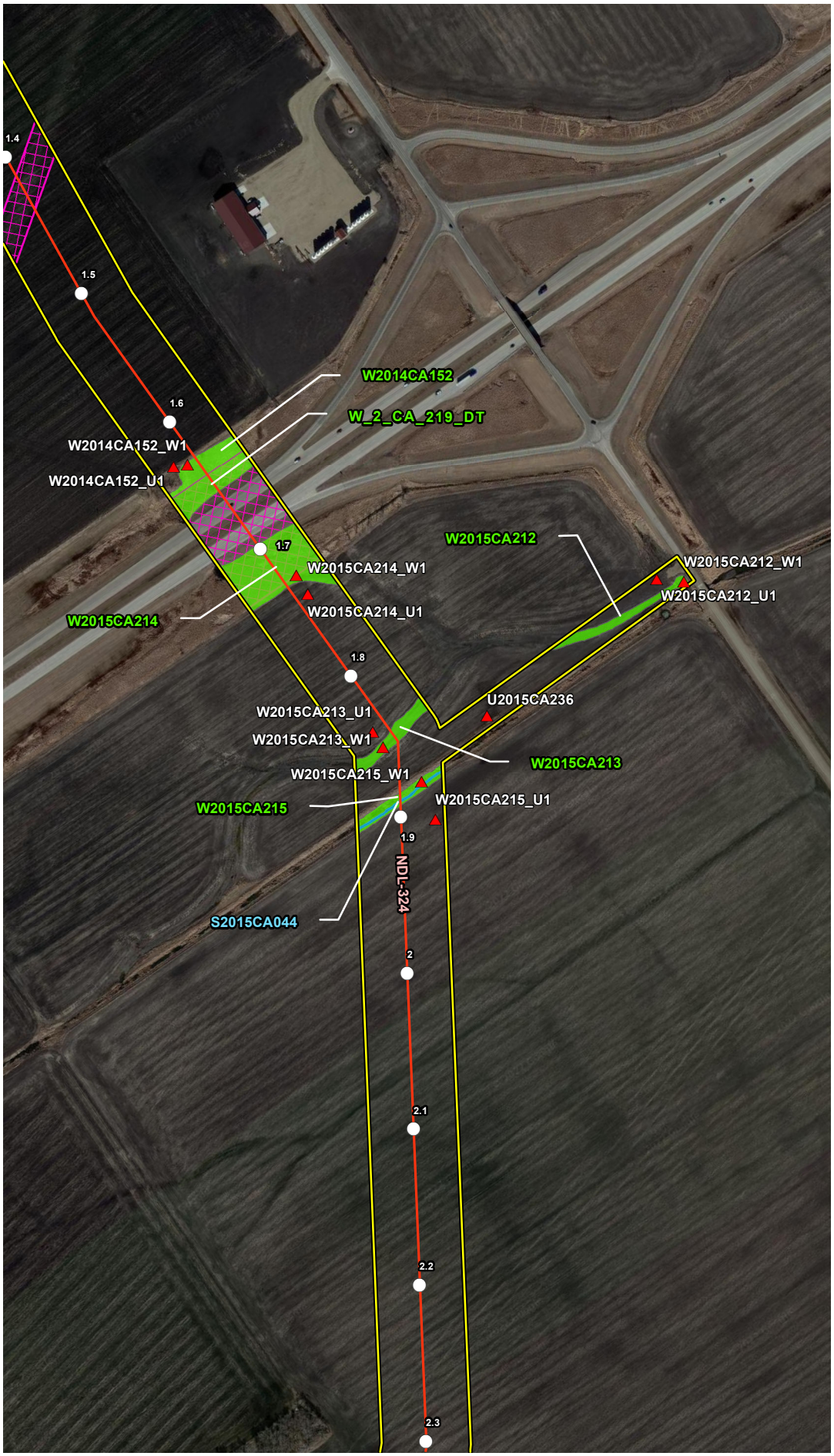
## AERIAL MAP

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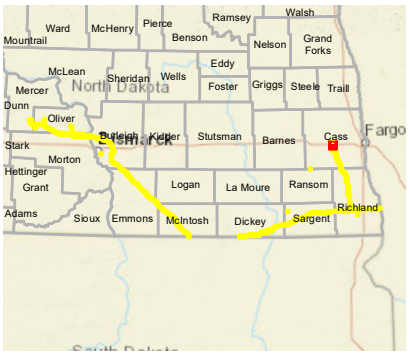


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## REVISIONS

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| Sheet:<br>381 of 392 | Drawing Number:<br>2001-22-002<br>Current Revision |

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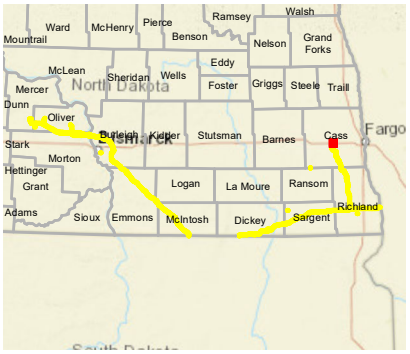
## AERIAL MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

Aerial Map

**Figure Number:**

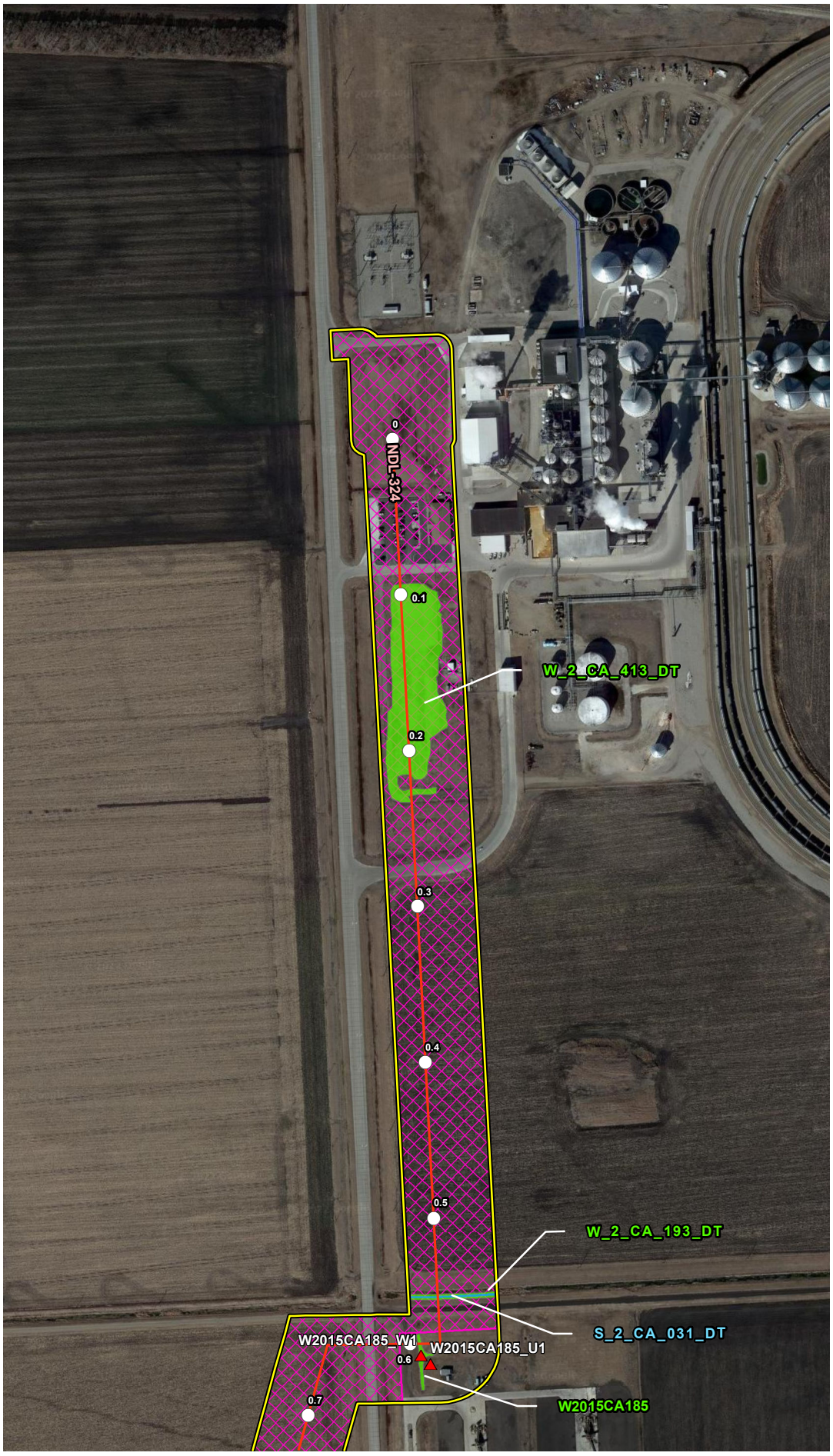
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

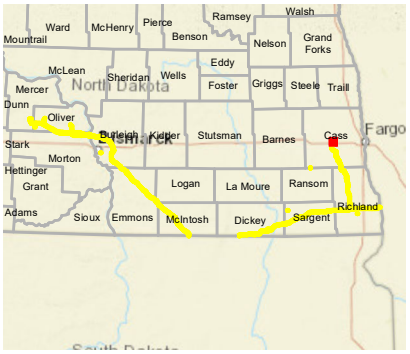
| Sheet: | Drawing Number: |
|---|---|
| 382 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

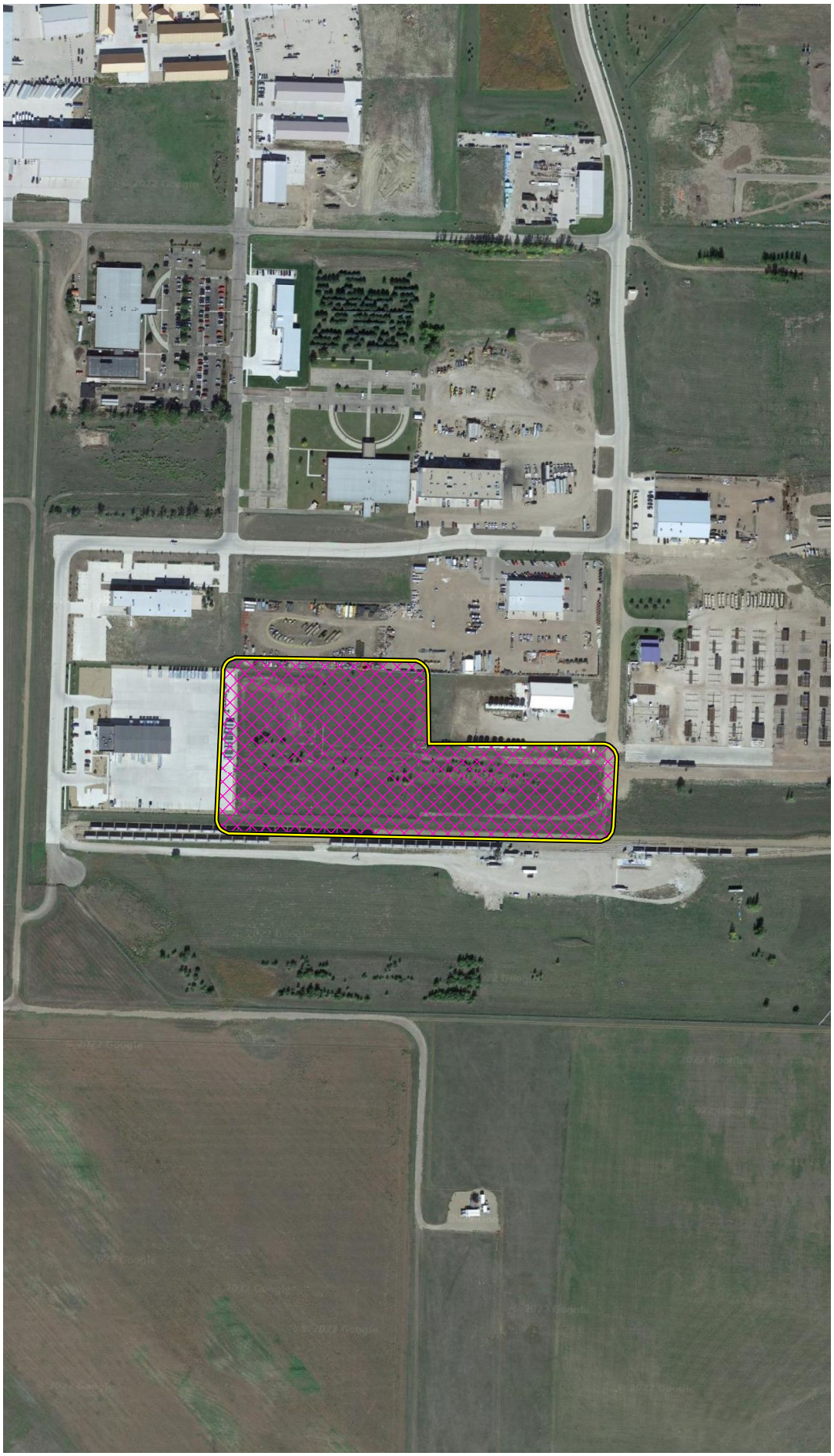
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

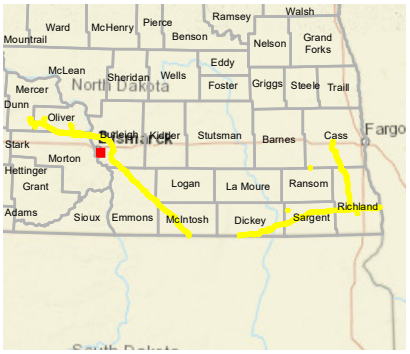
| Sheet: | Drawing Number: |
|---|---|
| 383 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP



## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**

Aerial Map

**Figure Number:**

Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 384 of 392 | 2001-22-002<br>Current Revision |

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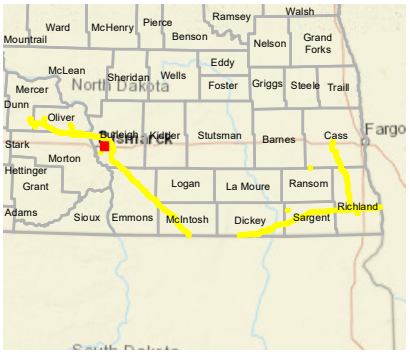
## AERIAL MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

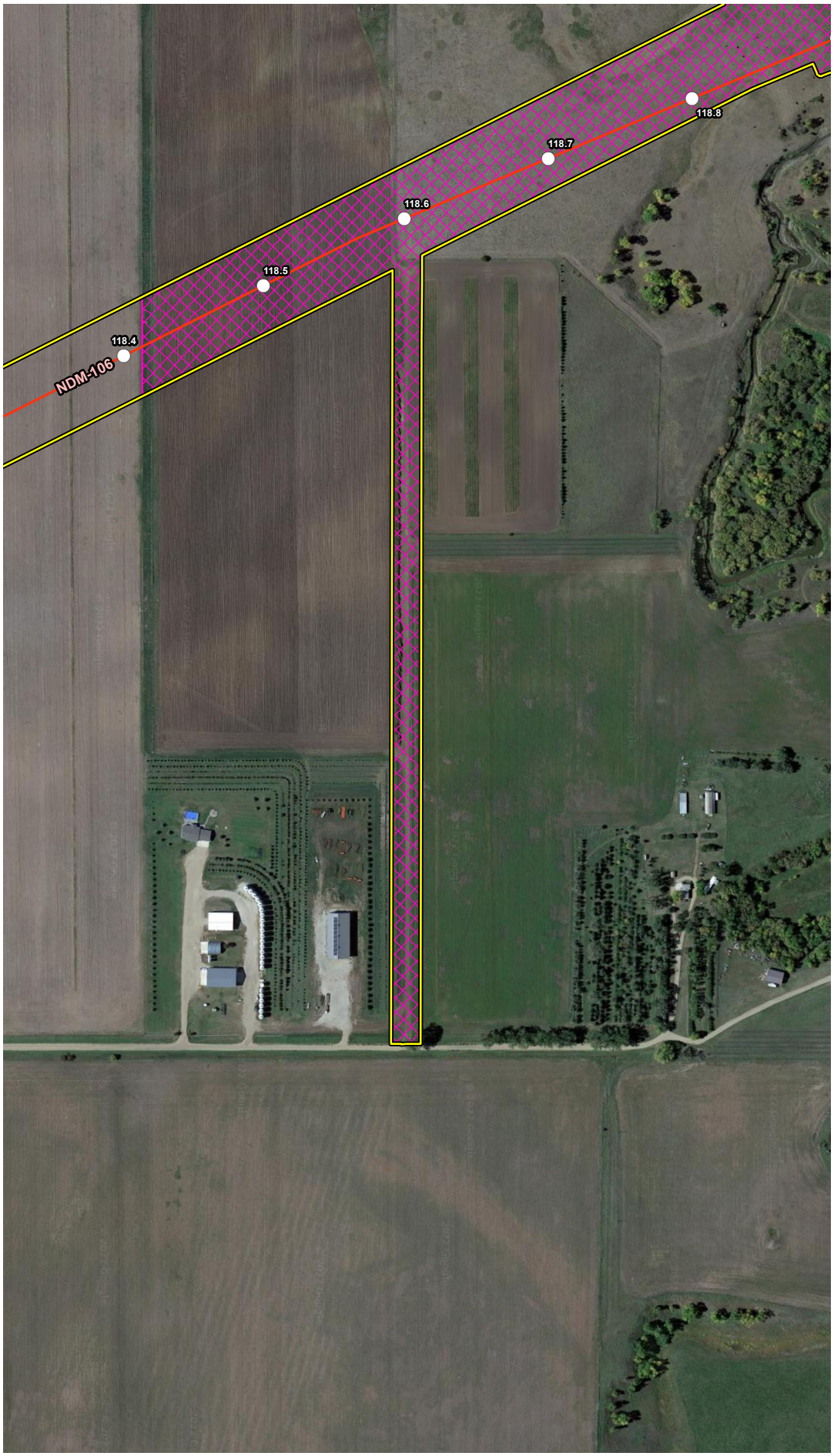
Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

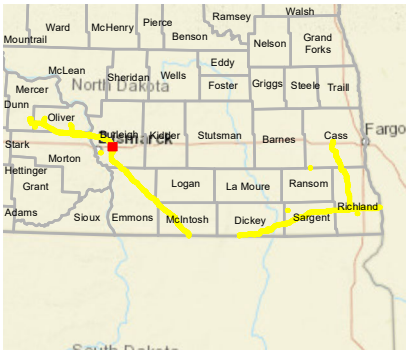
| Sheet: | Drawing Number: |
|---|---|
| 385 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ISV\WR\2022\901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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**Figure Title:**
Aerial Map

**Figure Number:**
Appendix A-2

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

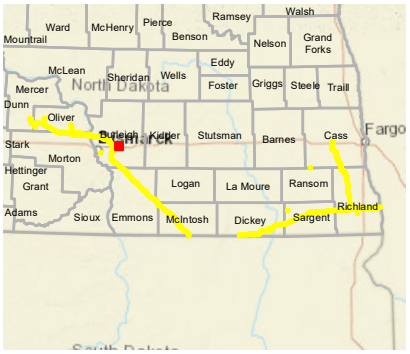
| Sheet: | Drawing Number: |
|---|---|
| 386 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\2_Aerial.mxd

## AERIAL MAP



## VICINITY MAP

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

Aerial Map

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Appendix A-2

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 387 of 392 | 2001-22-002<br>Current Revision |

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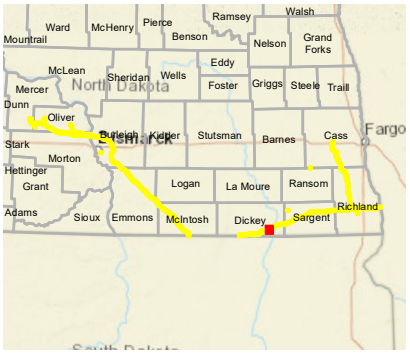
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Aerial Map**

Figure Number:

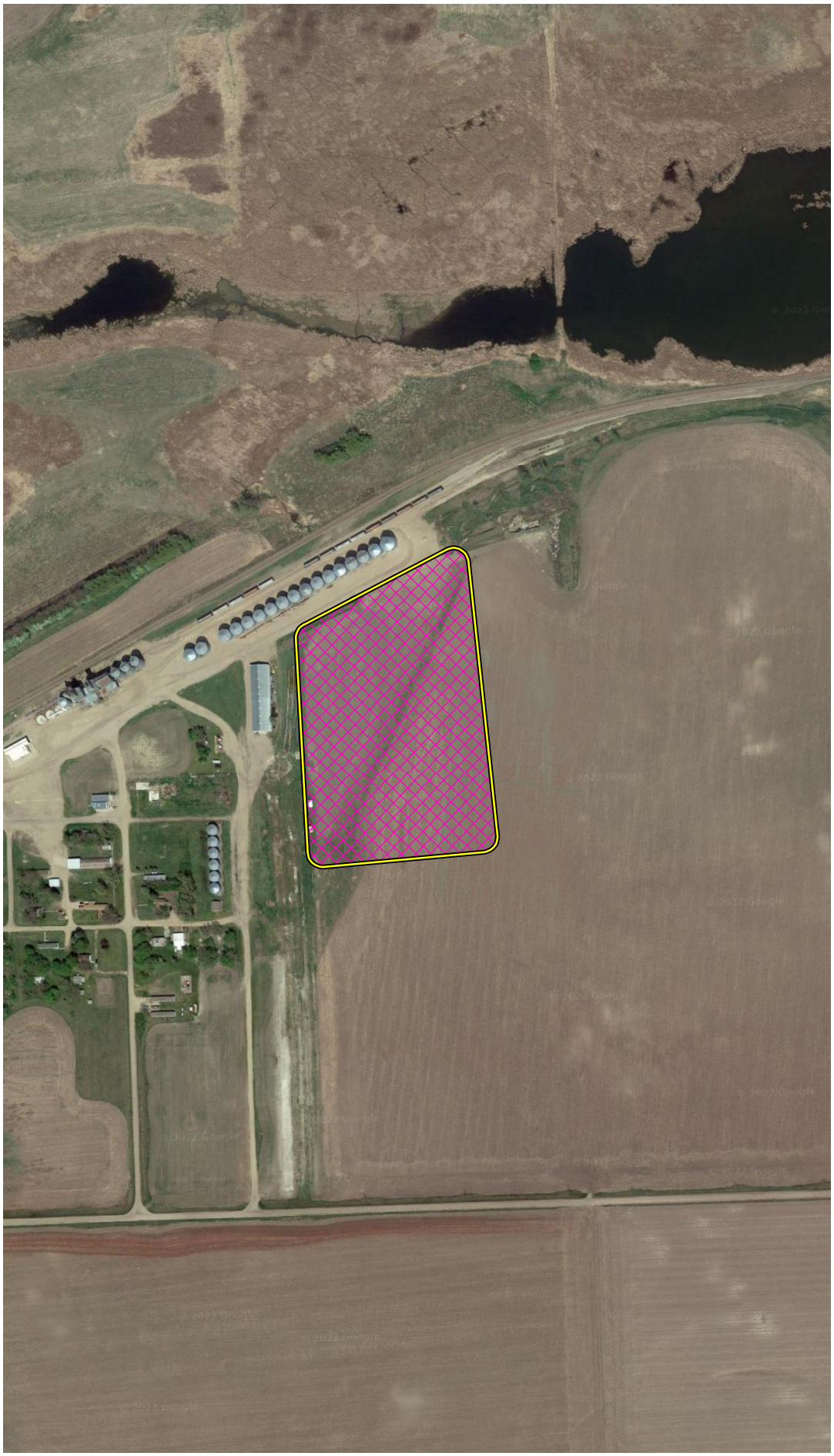
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

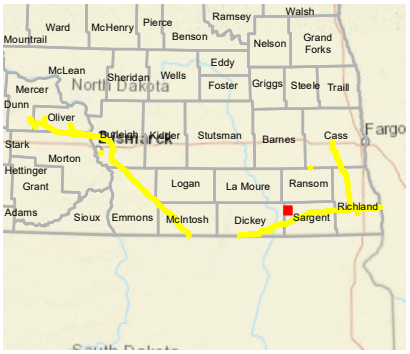
| Sheet: | Drawing Number: |
|---|---|
| 388 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENVIWR\2022\901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP



## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Aerial Map

Figure Number:
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 389 of 392 | 2001-22-002<br>Current Revision |

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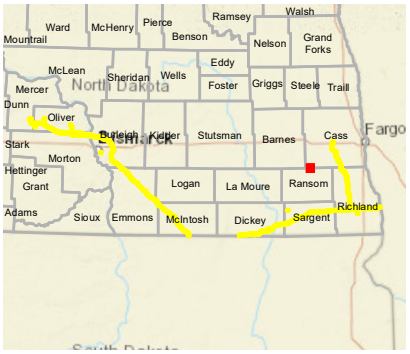
## AERIAL MAP




## VICINITY MAP

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0 250 500 Feet

## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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Appendix A-2

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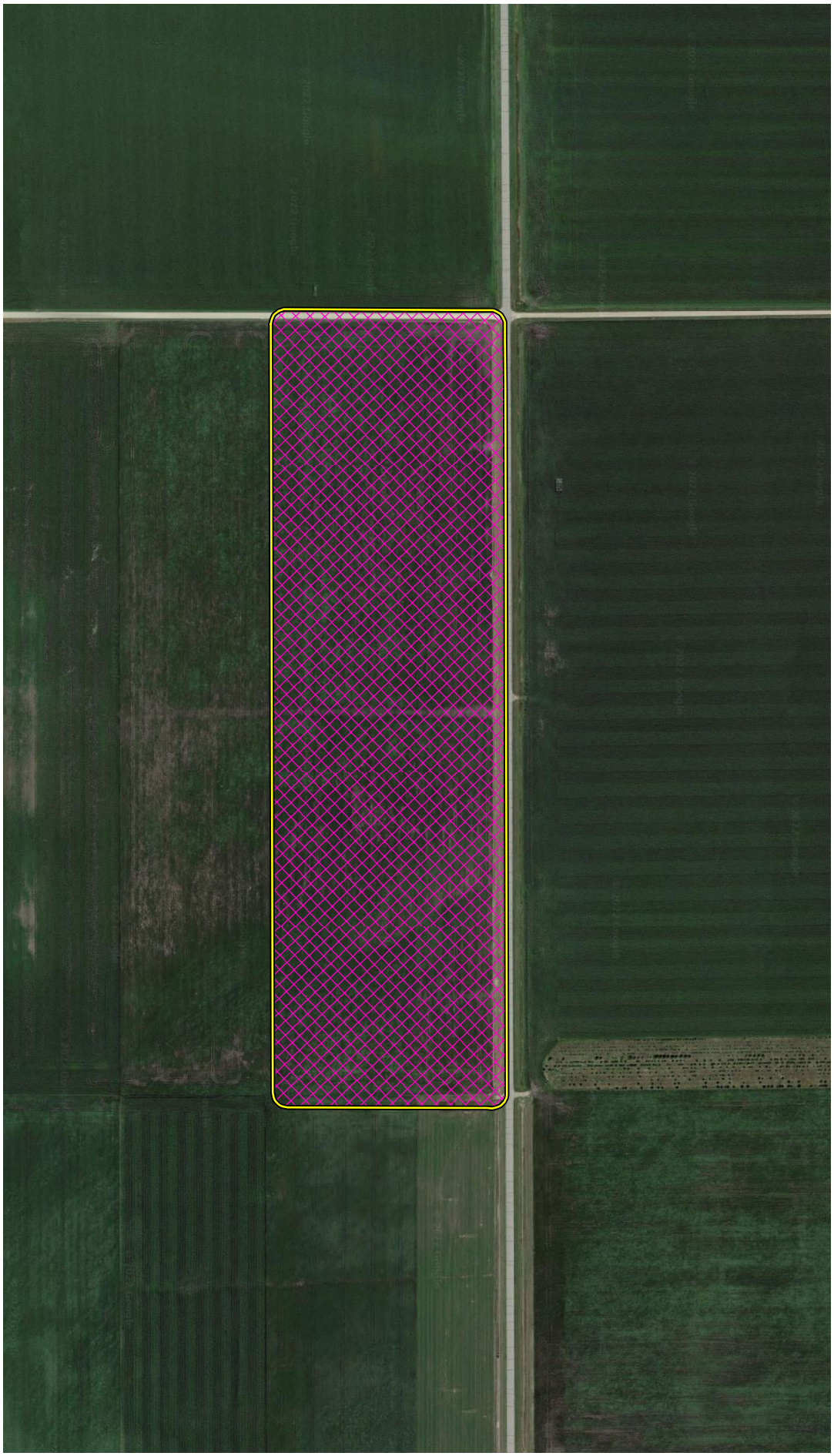
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 390 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_ND\mxds\2_Aerial.mxd

## AERIAL MAP



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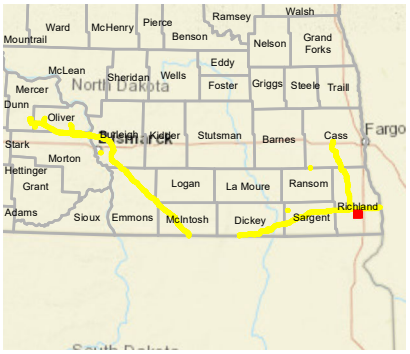


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0 250 500
Feet

## REVISIONS

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**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**Aerial Map**

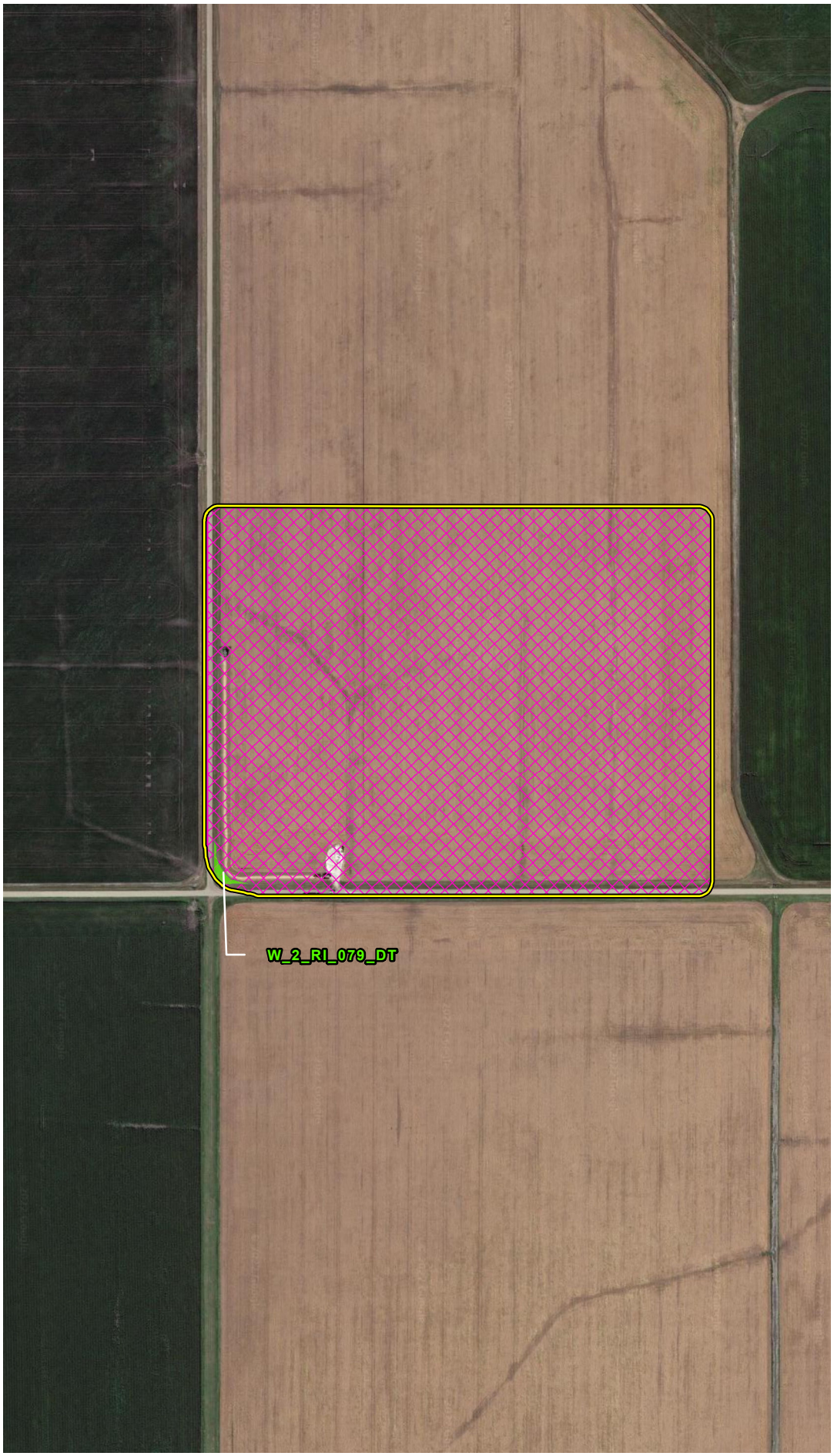
Figure Number:
**Appendix A-2**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

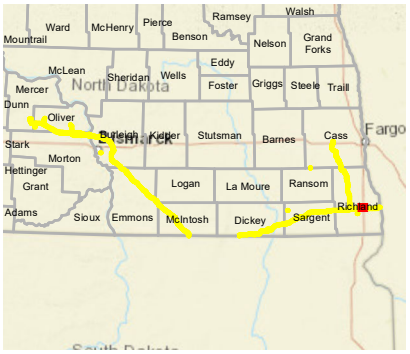
| Sheet: | Drawing Number: |
|---|---|
| 391 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\2_Aerial.mxd

## AERIAL MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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|---|---|---|
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**Figure Title:**
Aerial Map

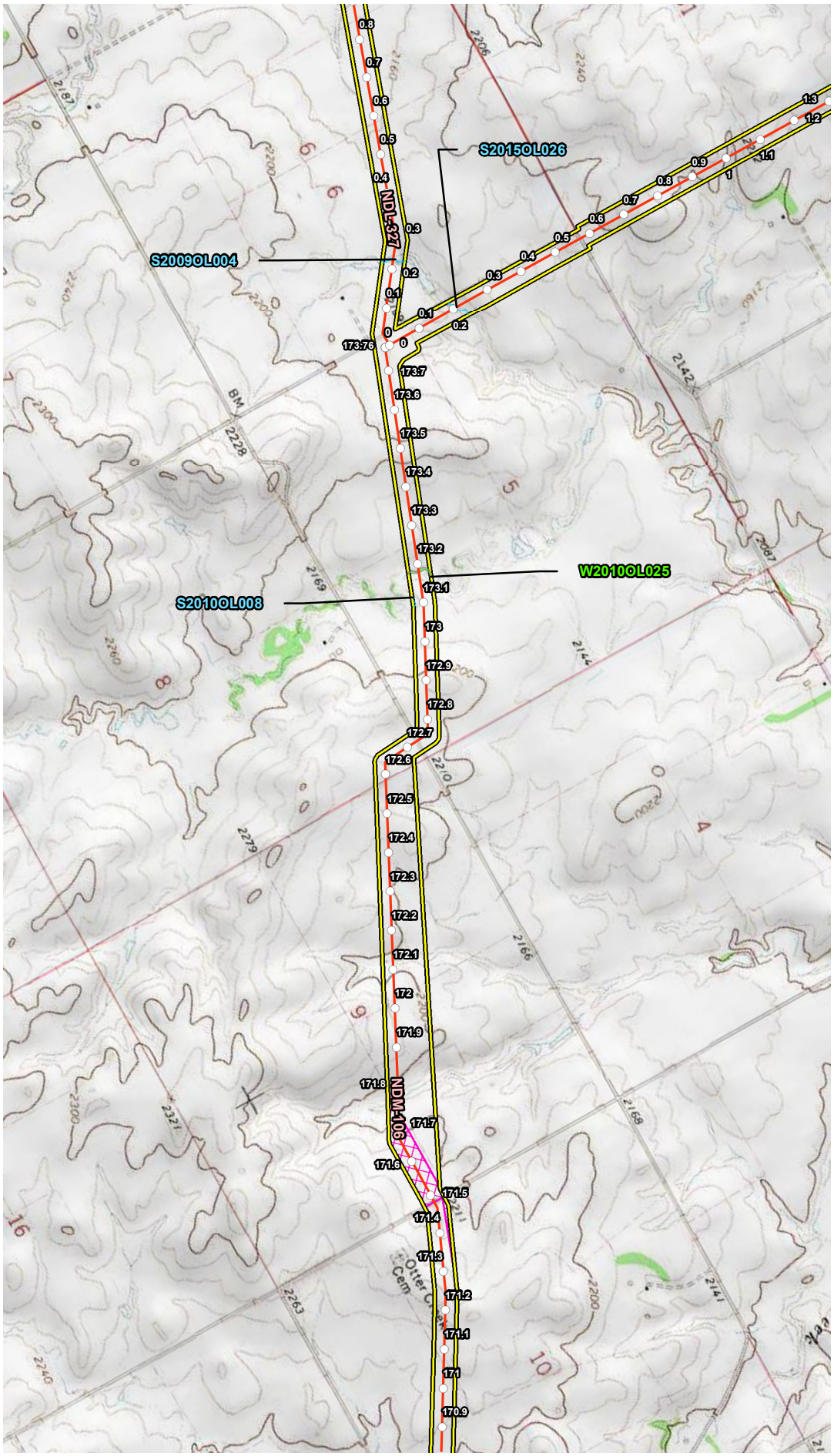
**Figure Number:**
Appendix A-2

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

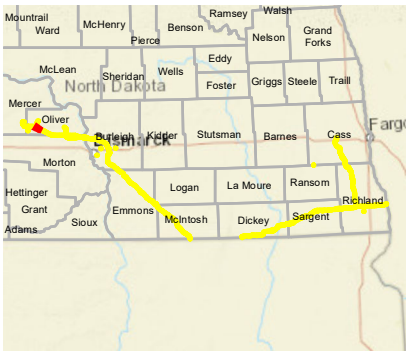
| Sheet: | Drawing Number: |
|---|---|
| 392 of 392 | 2001-22-002<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_ND\mxds\2_Aerial.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 1 of 96 | 2001-22-003<br>Current Revision |

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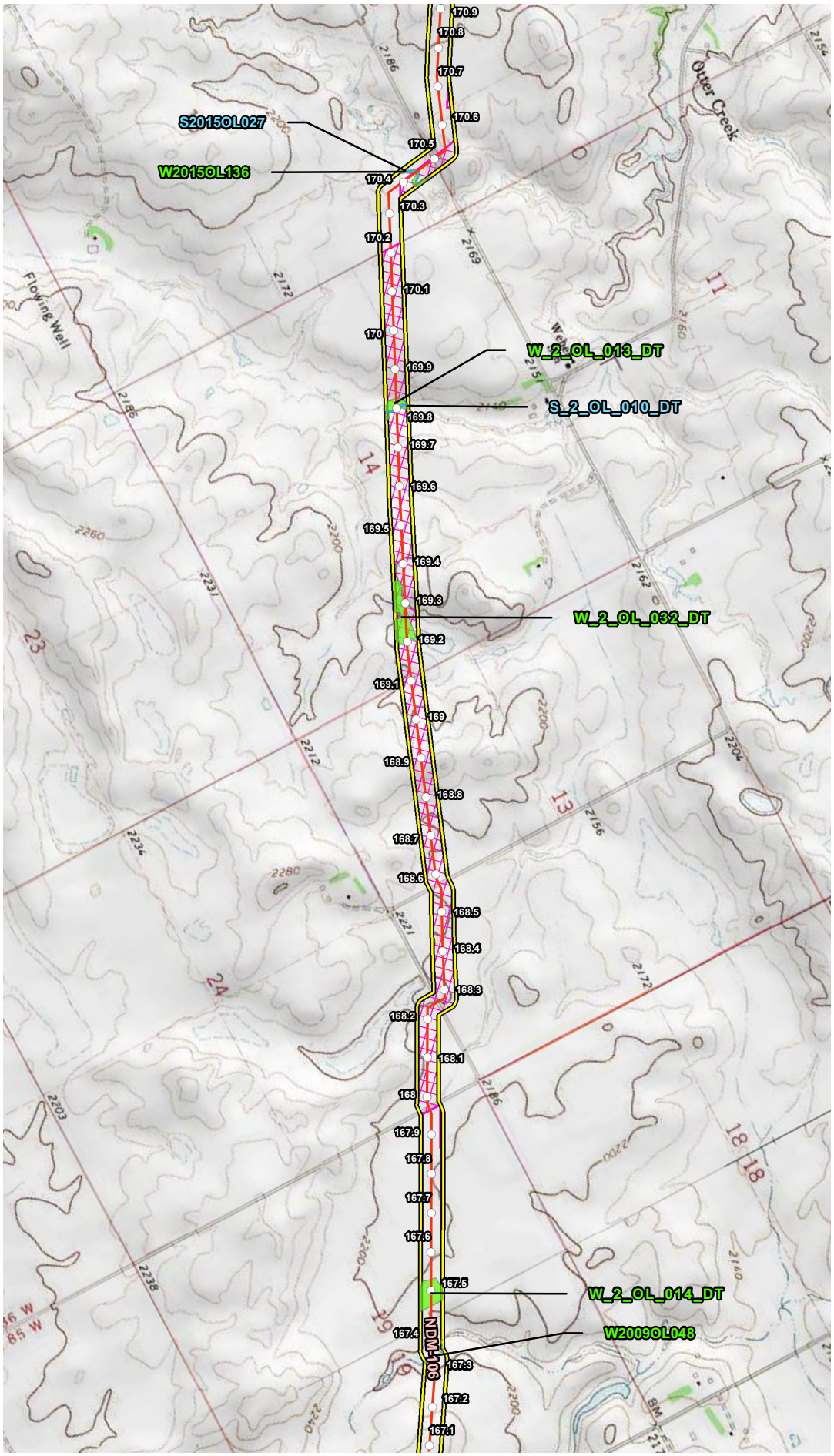
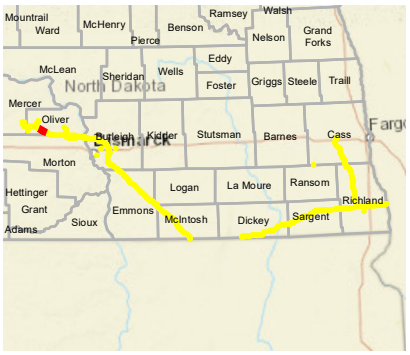
## TOPOGRAPHIC MAP




## VICINITY MAP

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- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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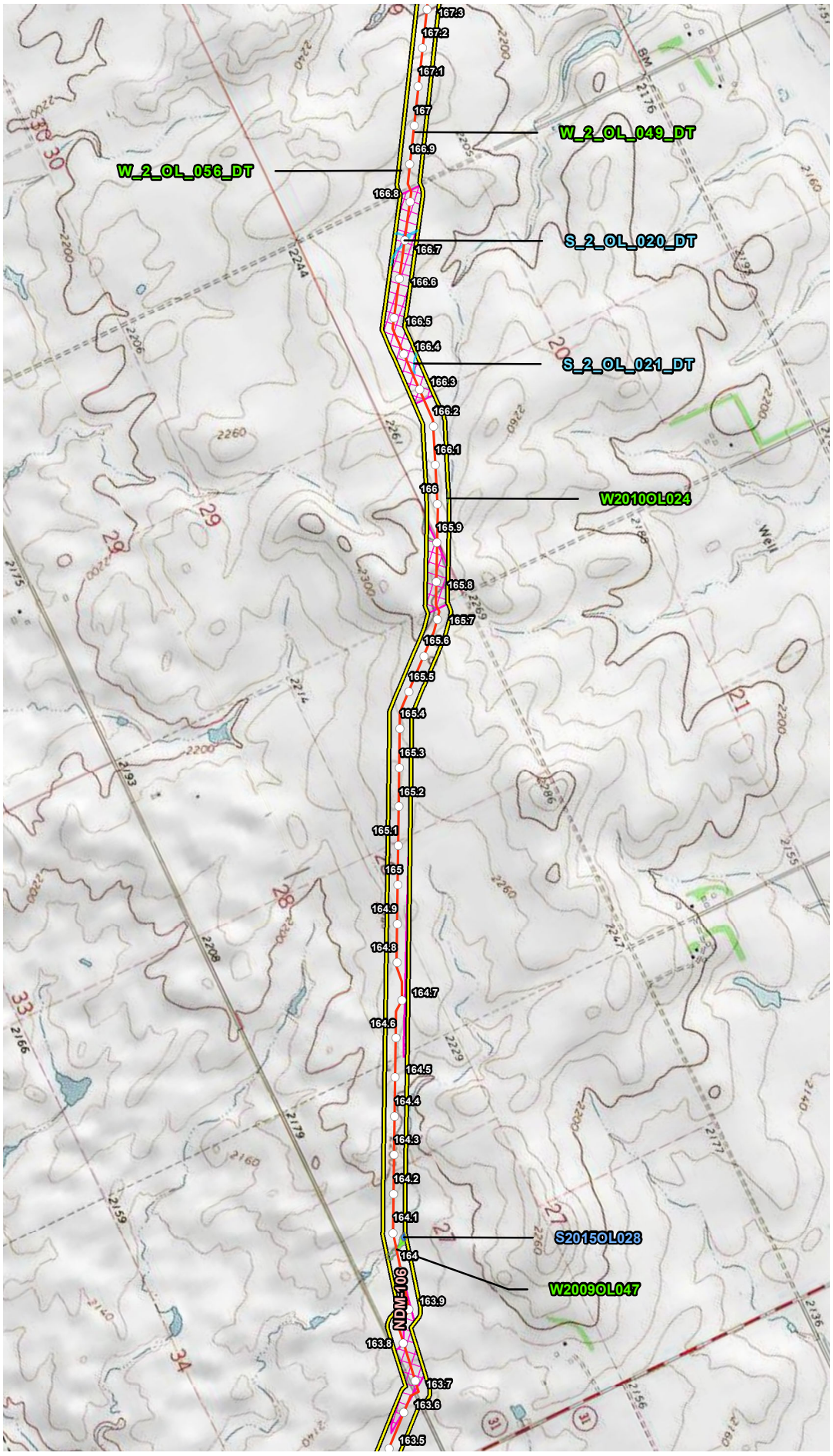
Figure Title:
Topographic Map

Figure Number:
Appendix A-3

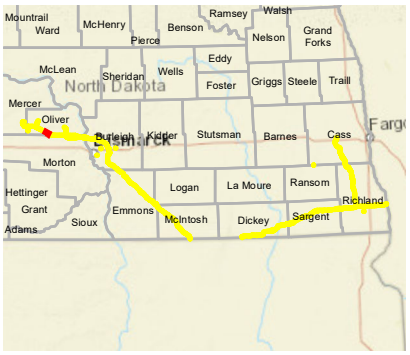
| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 2 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
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- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
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- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 3 of 96 | 2001-22-003<br>Current Revision |

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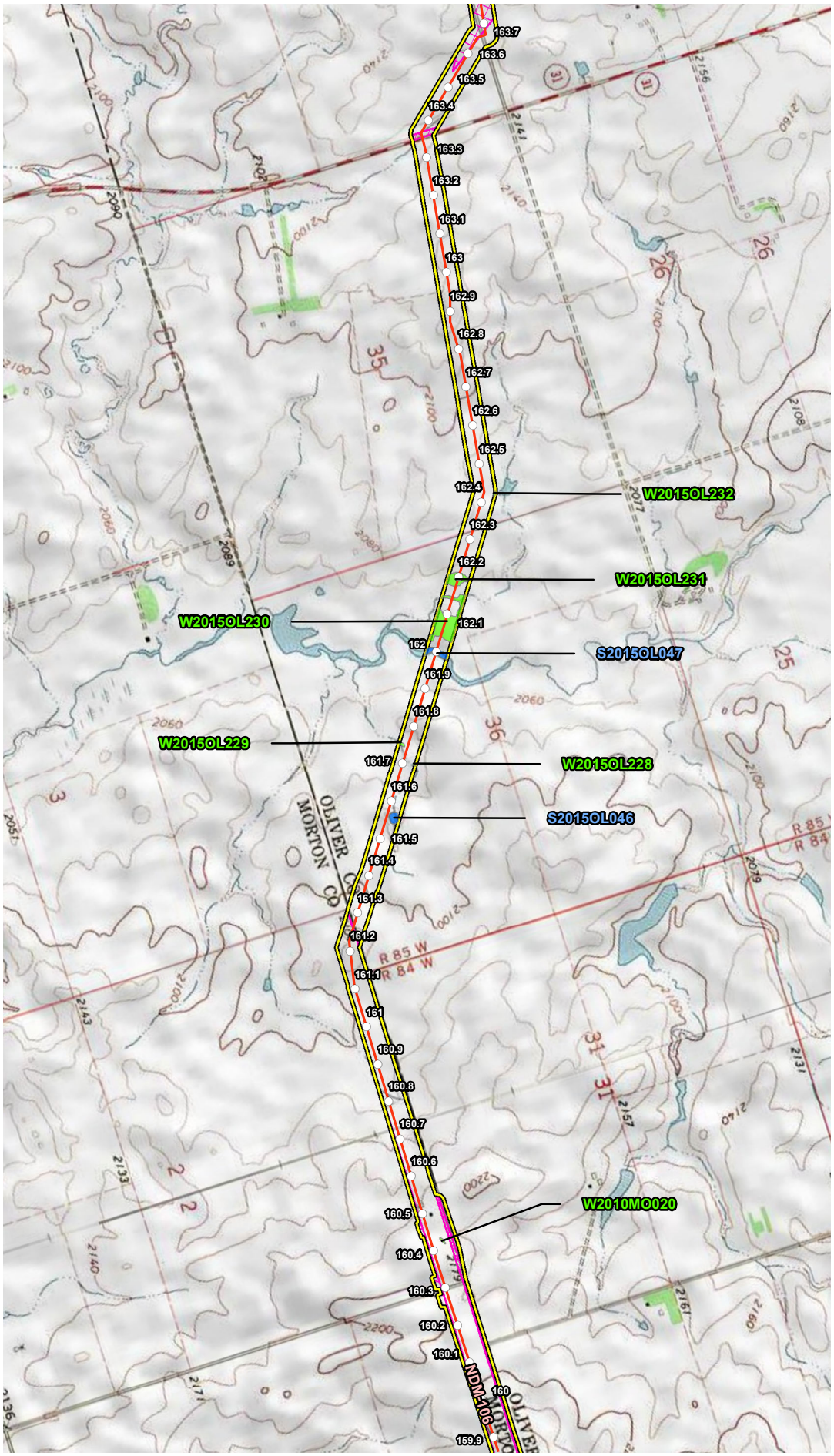
## TOPOGRAPHIC MAP

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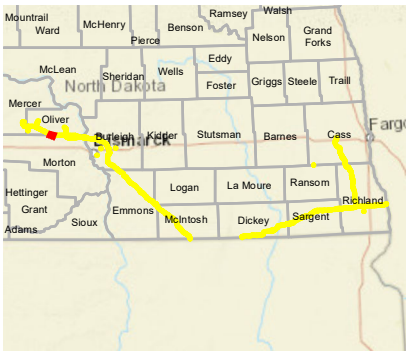


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>4 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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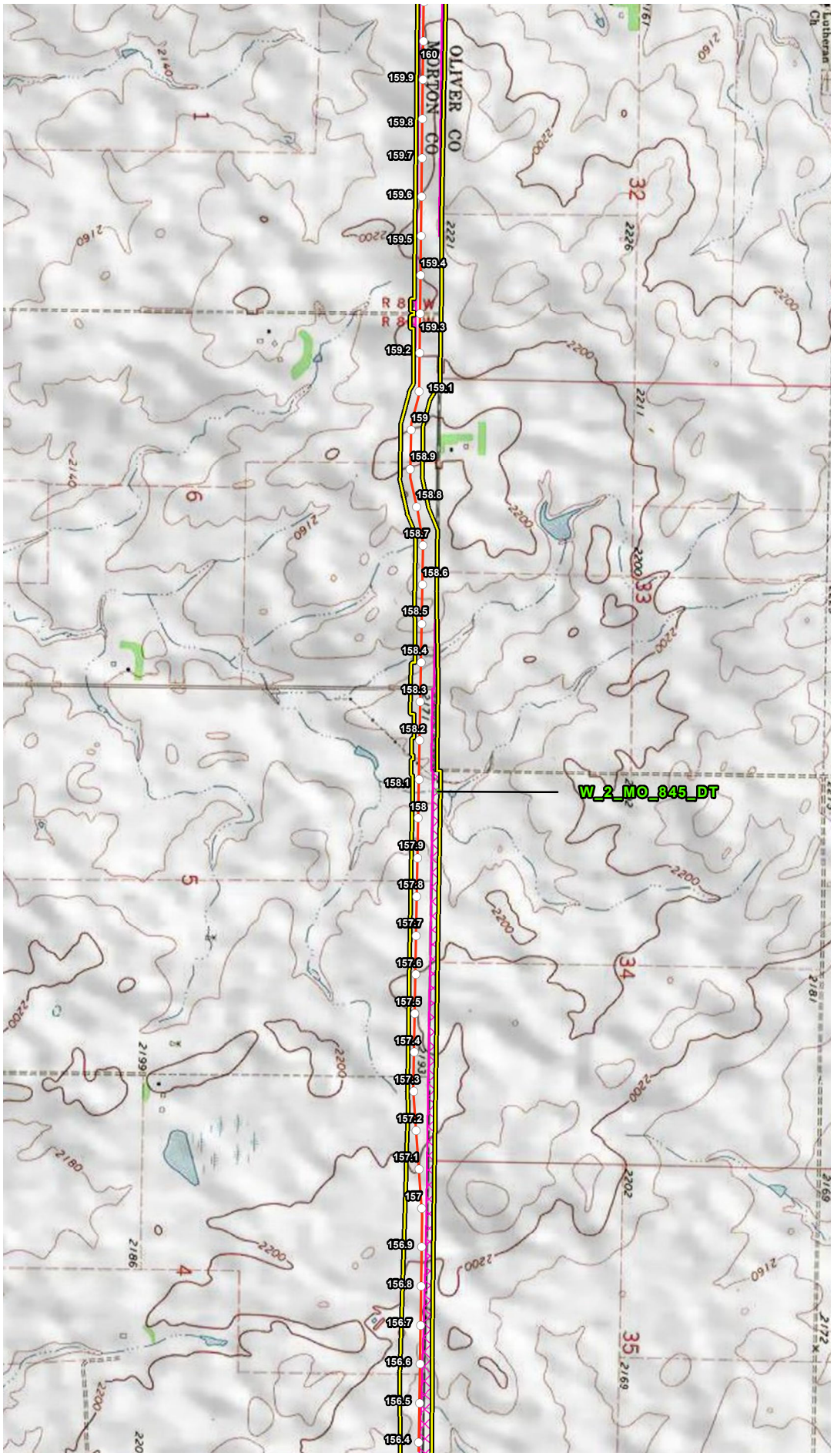


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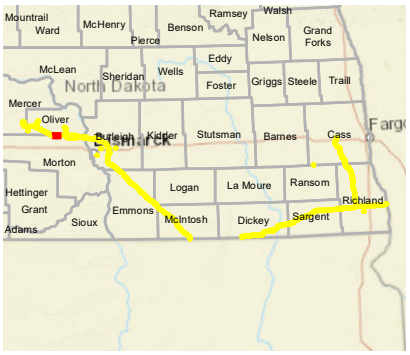


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 5 of 96 | 2001-22-003<br>Current Revision |

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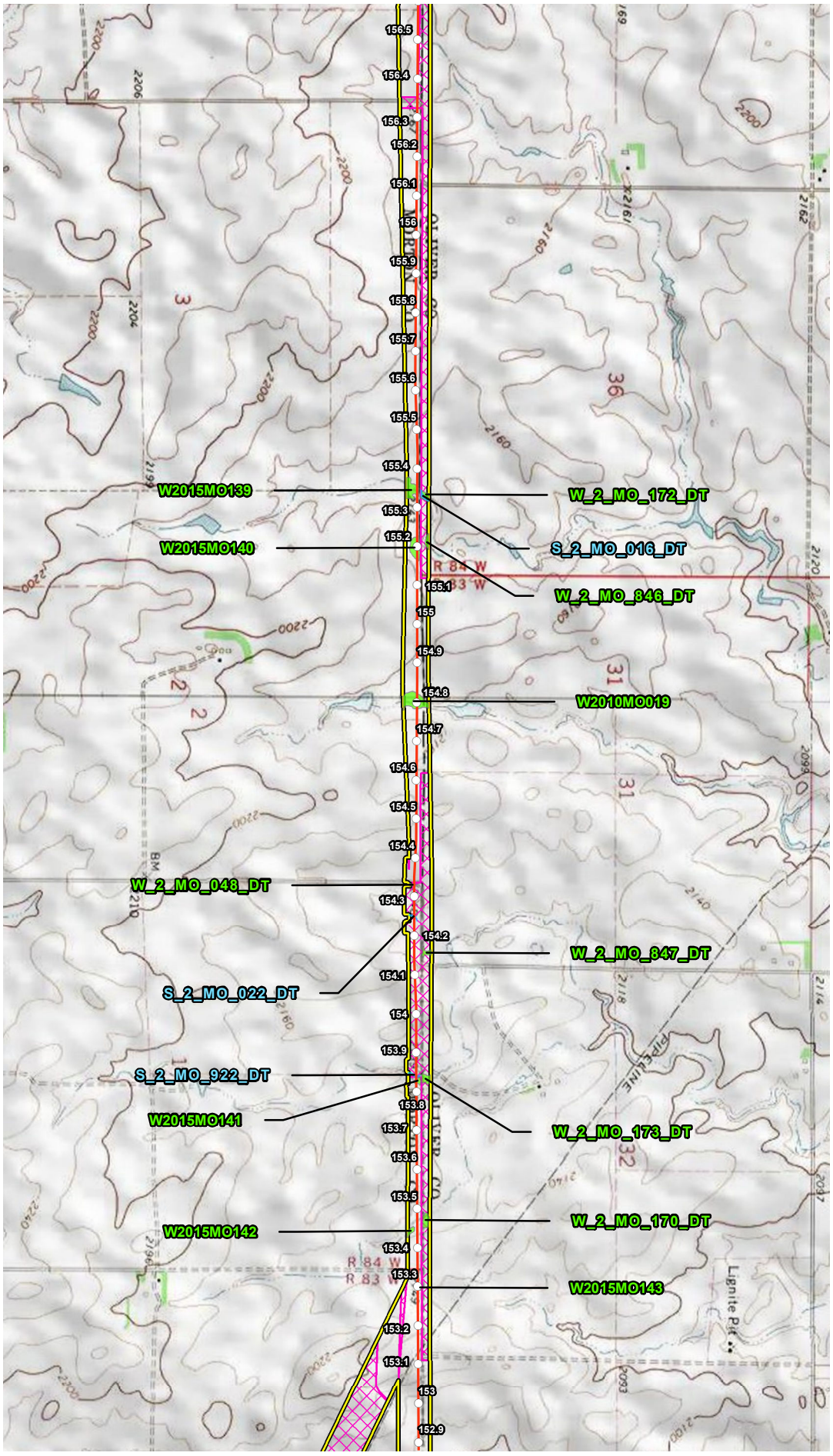


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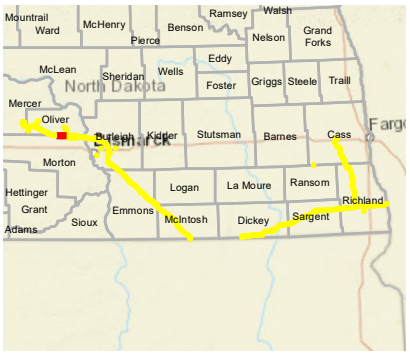


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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
6 of 96

Drawing Number:
2001-22-003
Current Revision

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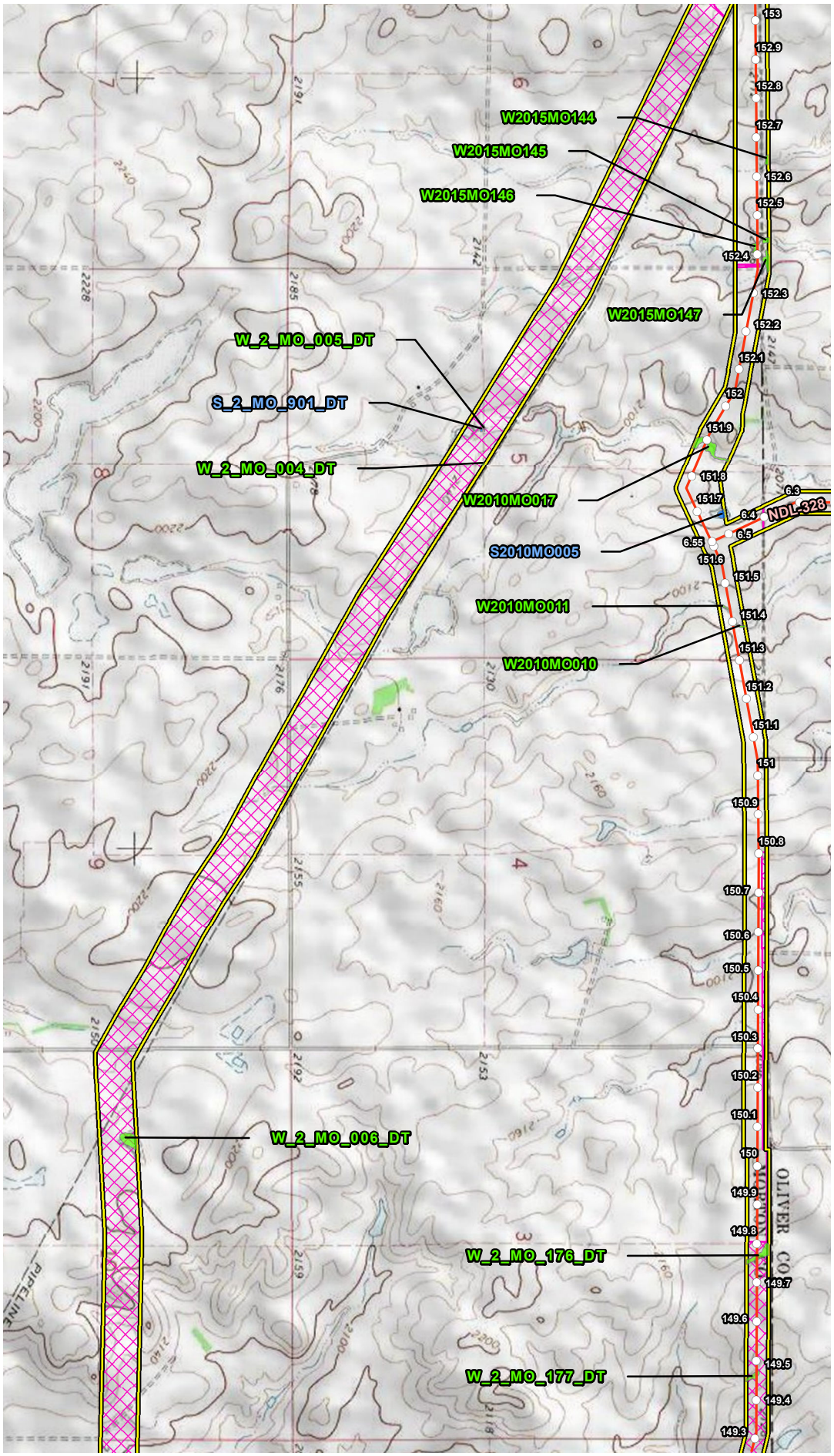


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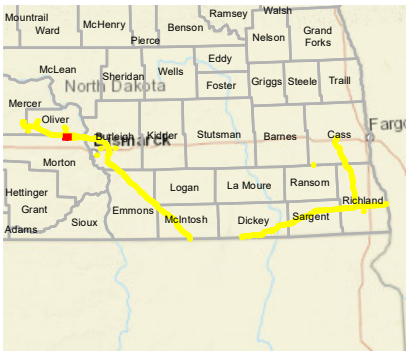


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
7 of 96

Drawing Number:
2001-22-003
Current Revision

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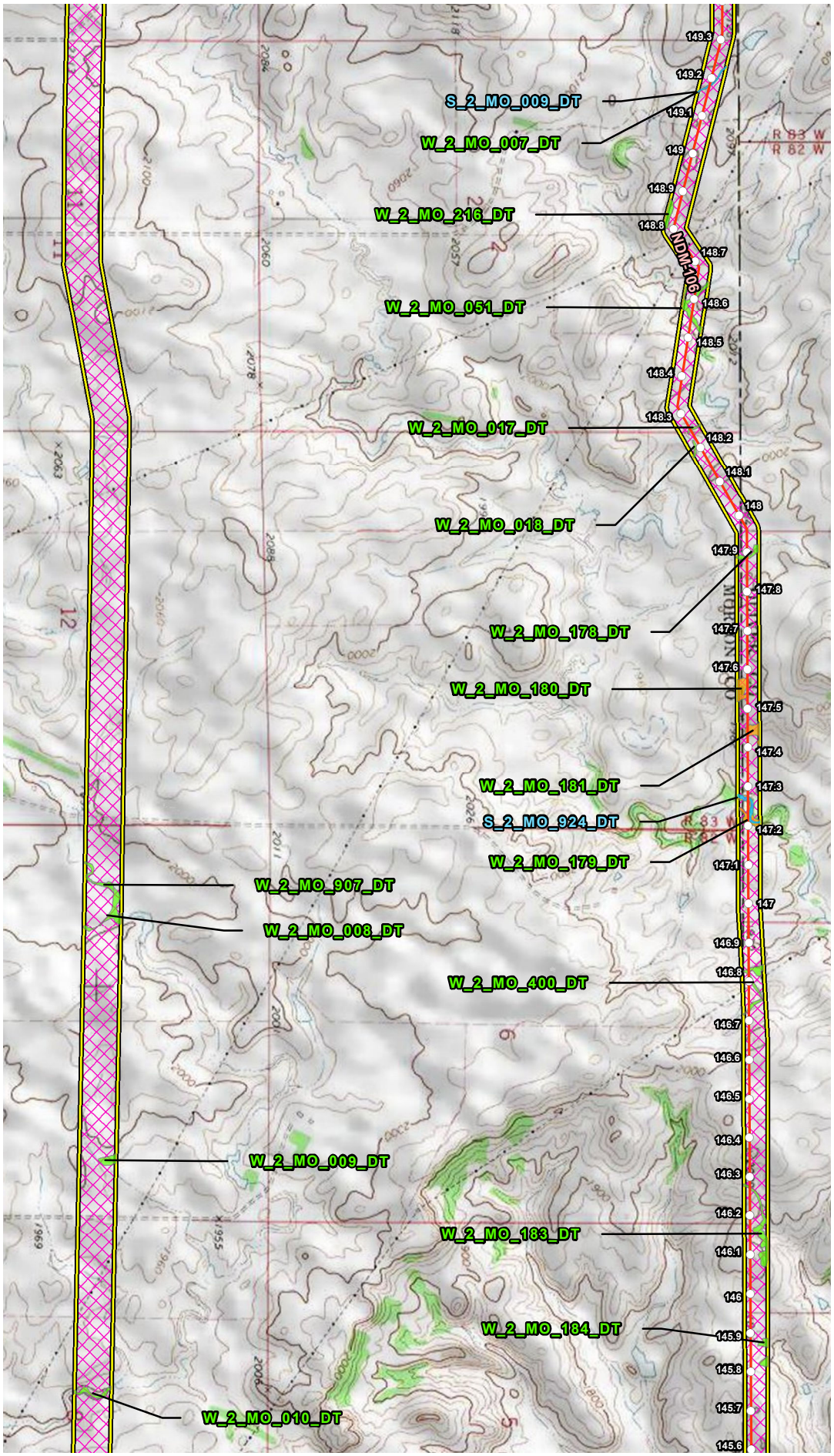


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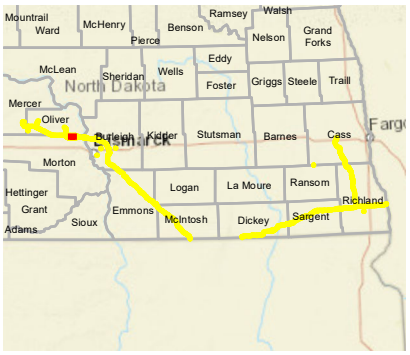


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
8 of 96

Drawing Number:
2001-22-003
Current Revision

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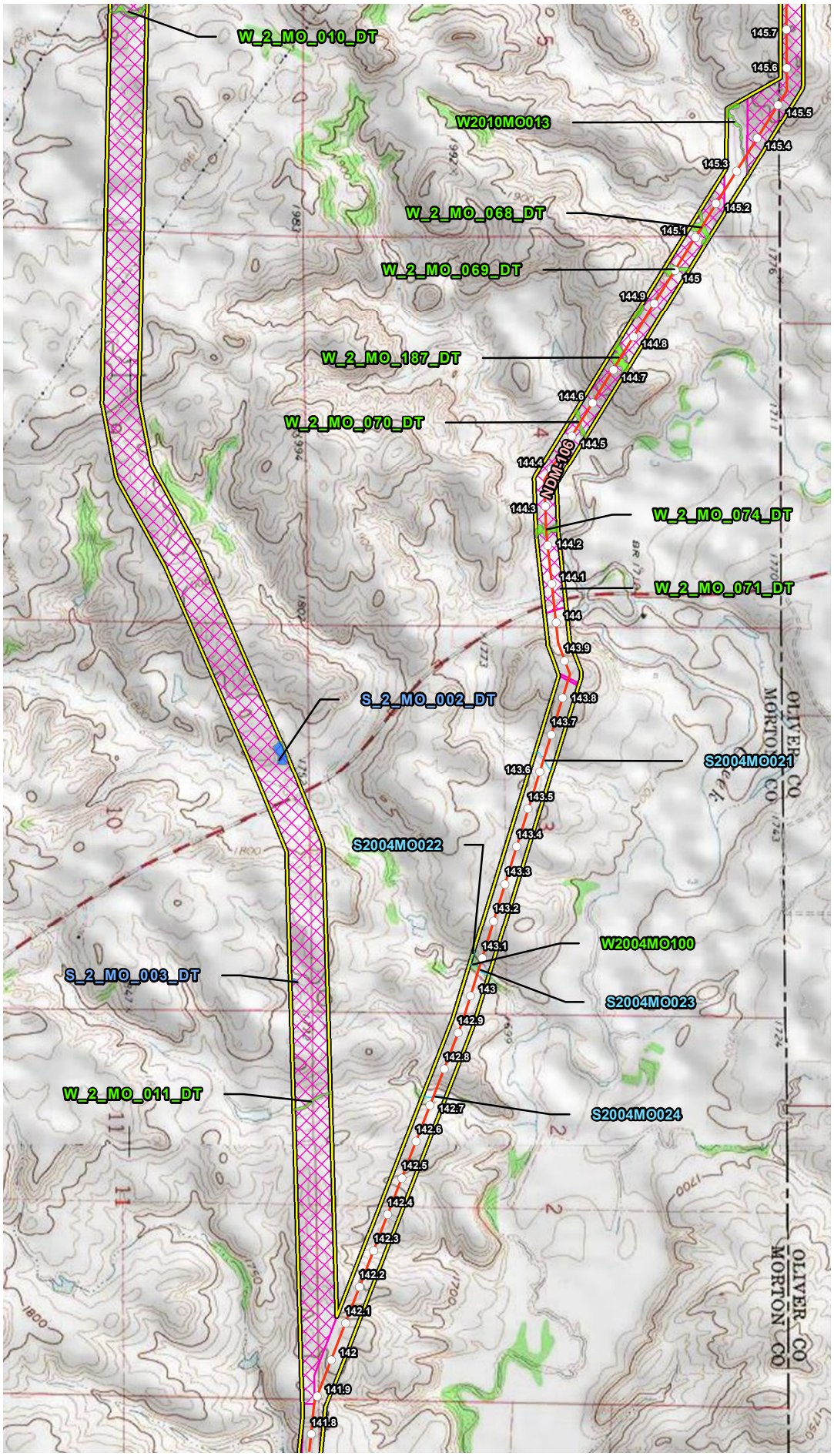


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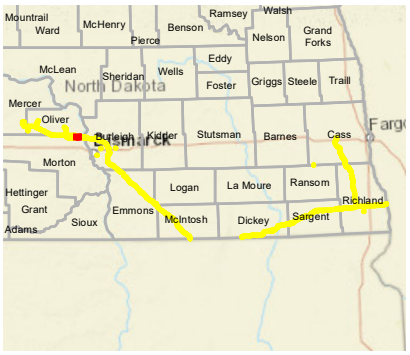


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| **1A - Revision** | | |
| Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
**Topographic Map**

Figure Number:
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 9 of 96 | 2001-22-003<br>Current Revision |

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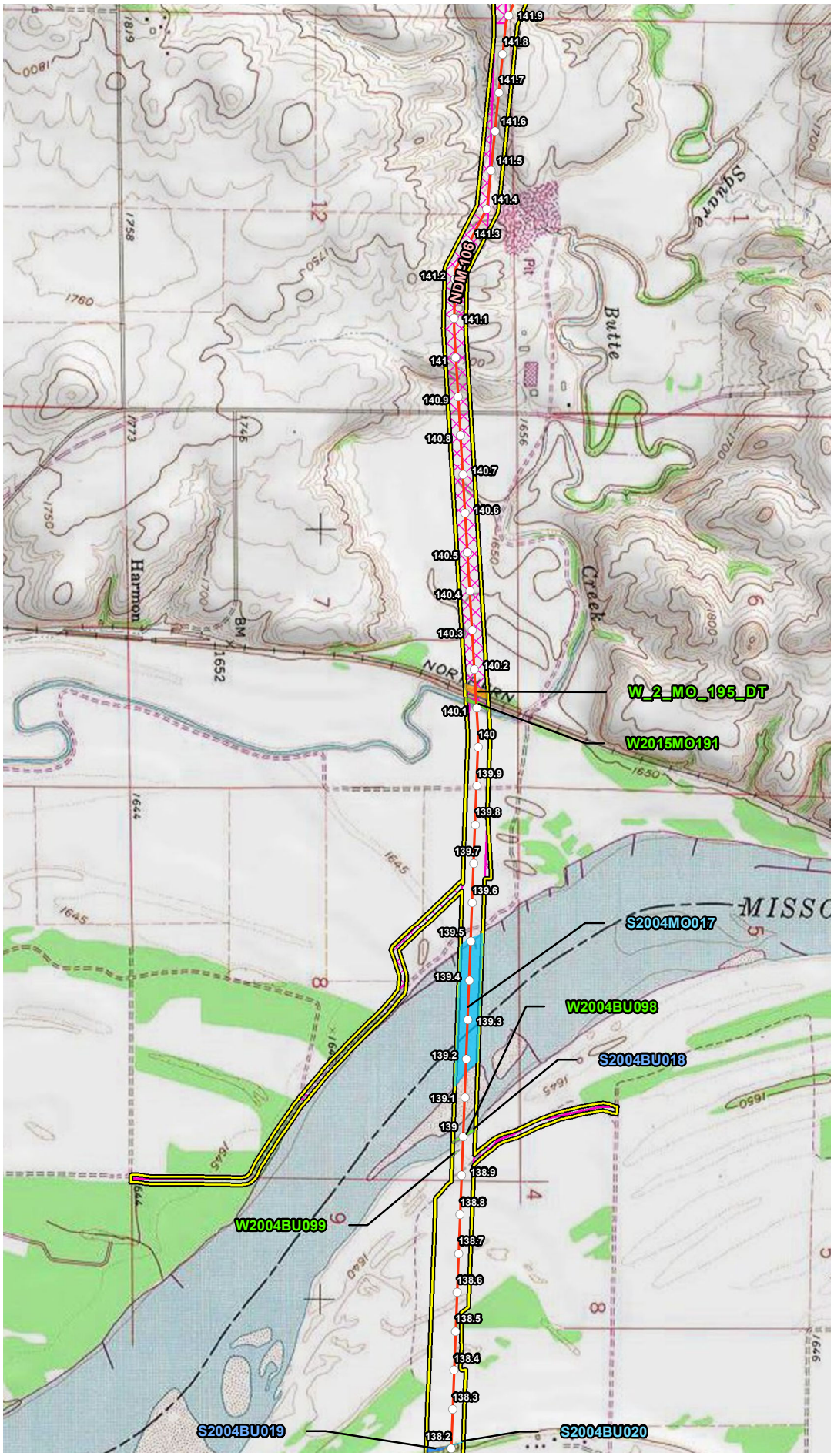


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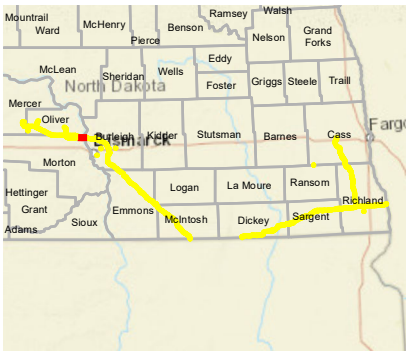


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**
Topographic Map

**Figure Number:**
Appendix A-3

**Scale:**
Scale: 1:24,000
1 inch = 2,000 feet

**Projection:**
Transverse Mercator
NAD 1983 UTM Zone 14N

**Sheet:**
10 of 96

**Drawing Number:**
2001-22-003
Current Revision

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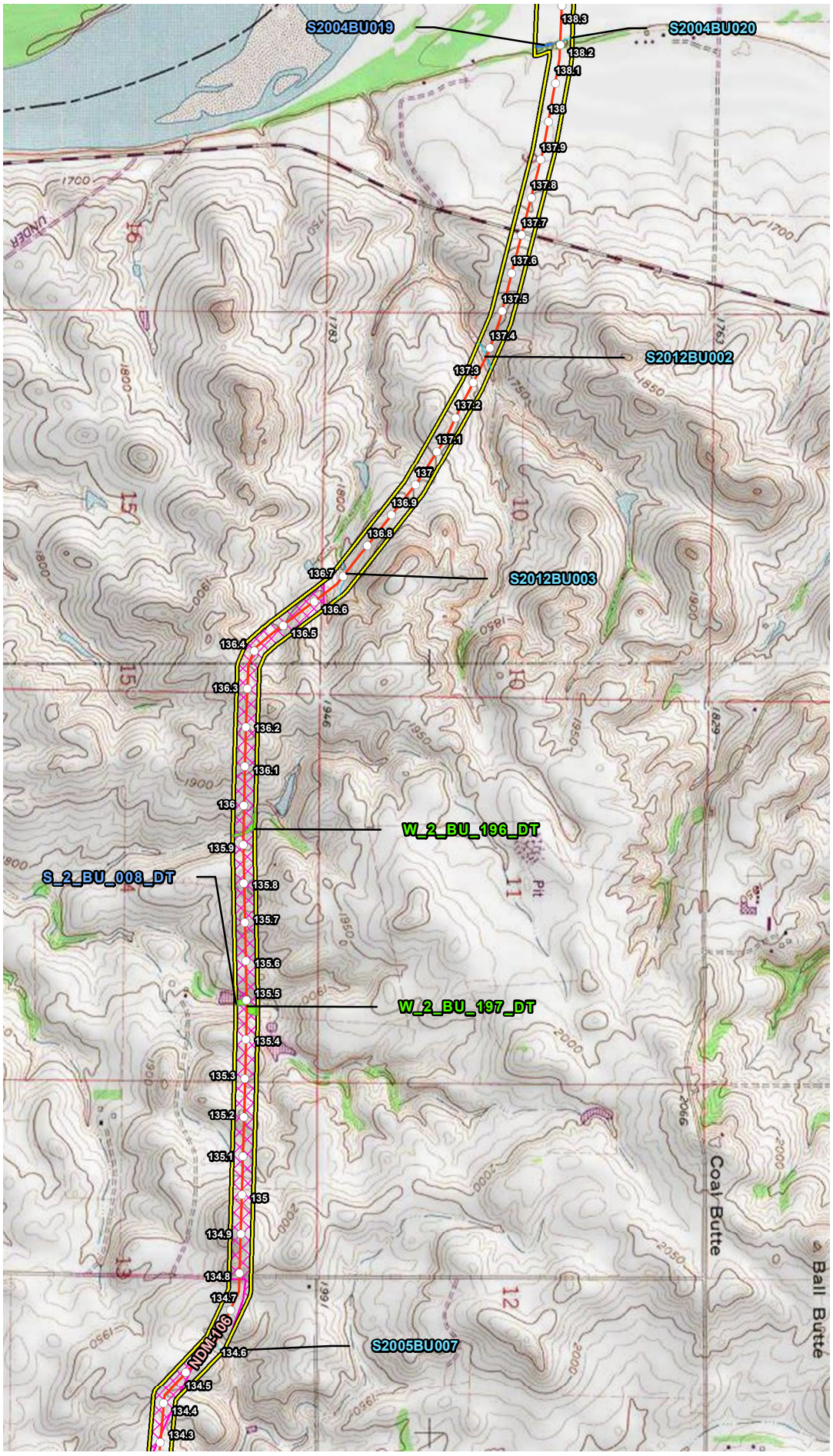
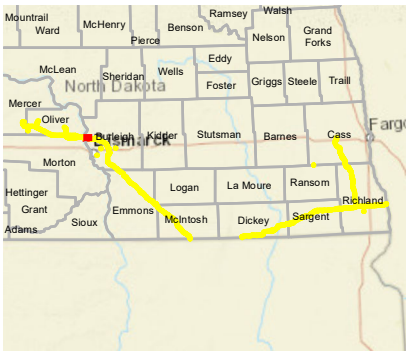
## TOPOGRAPHIC MAP




## VICINITY MAP

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## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
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| Scale: | Projection: |
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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 11 of 96 | 2001-22-003<br>Current Revision |

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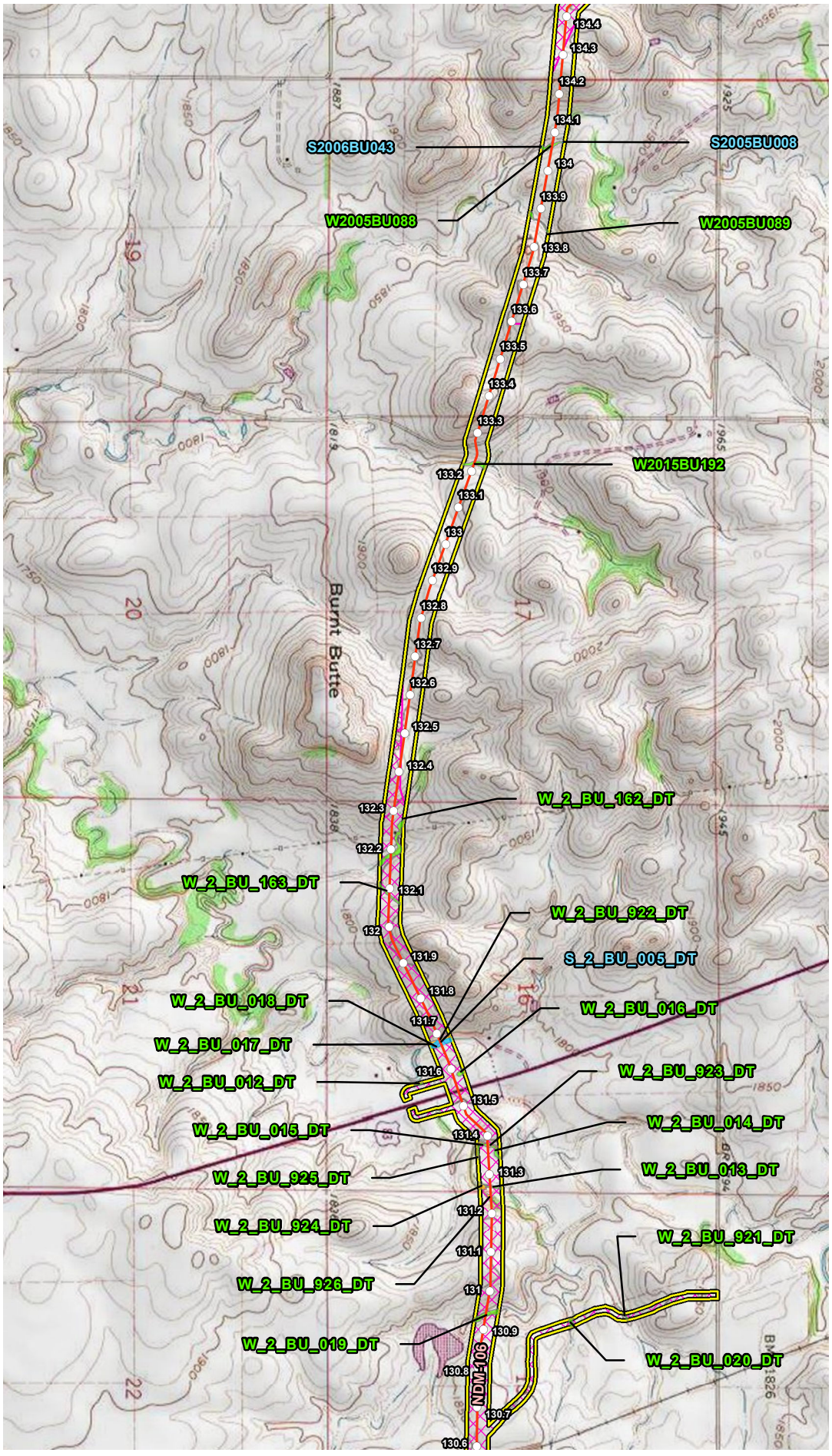
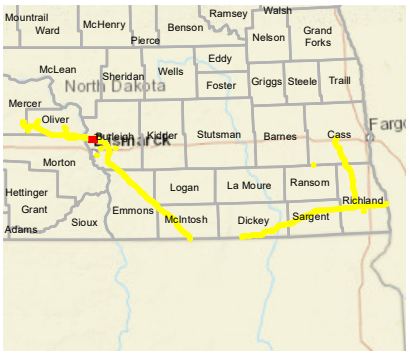
## TOPOGRAPHIC MAP




## VICINITY MAP

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## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Scale: | Projection: |
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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 12 of 96 | 2001-22-003<br>Current Revision |

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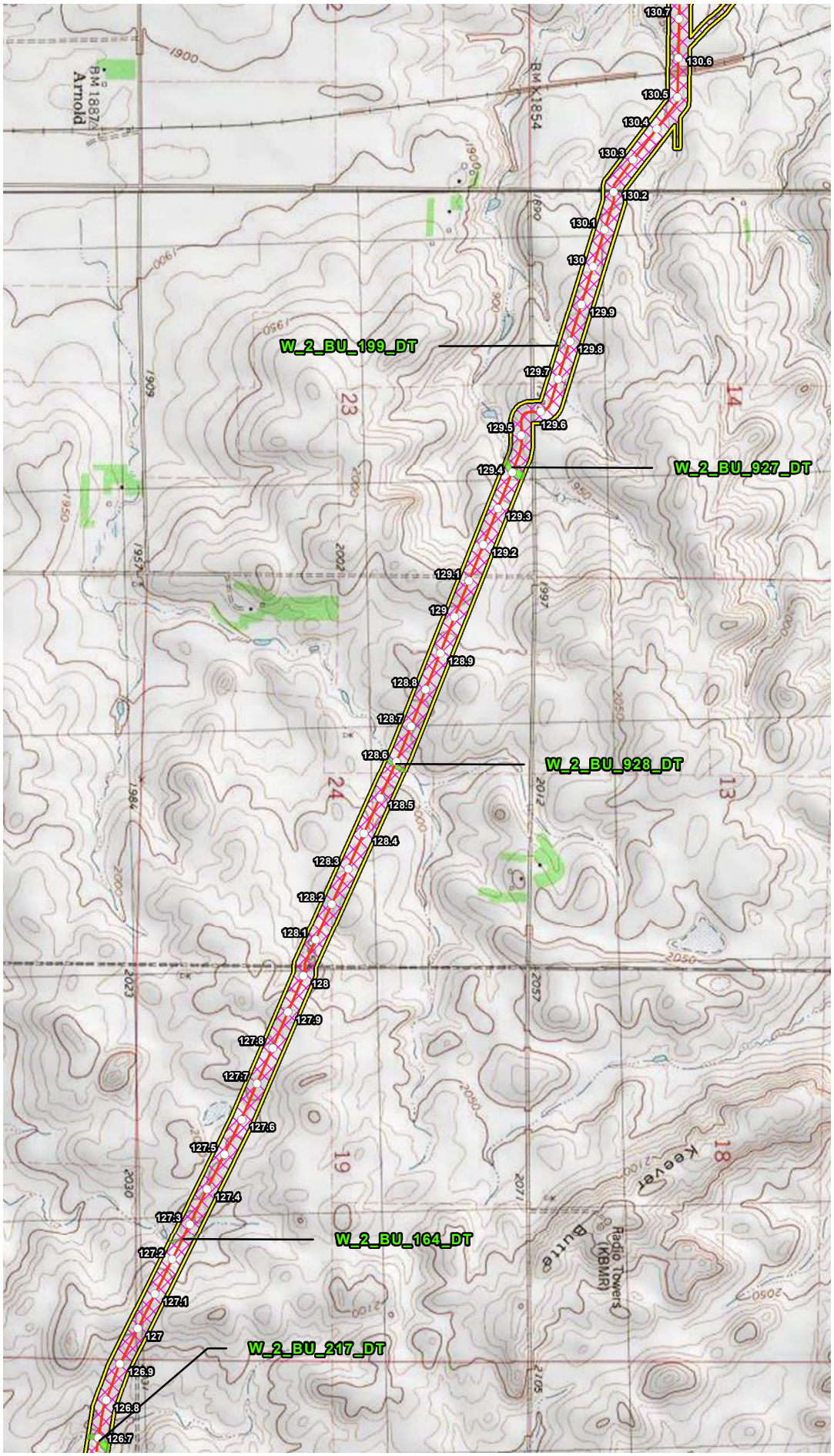
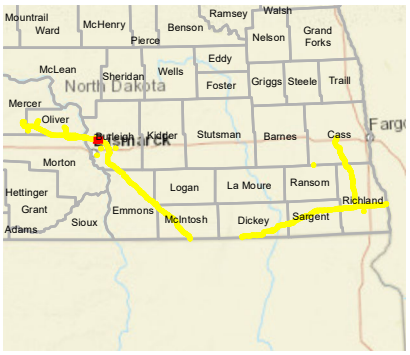
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:
Topographic Map

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Appendix A-3

| Scale: | Projection: |
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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 13 of 96 | 2001-22-003<br>Current Revision |

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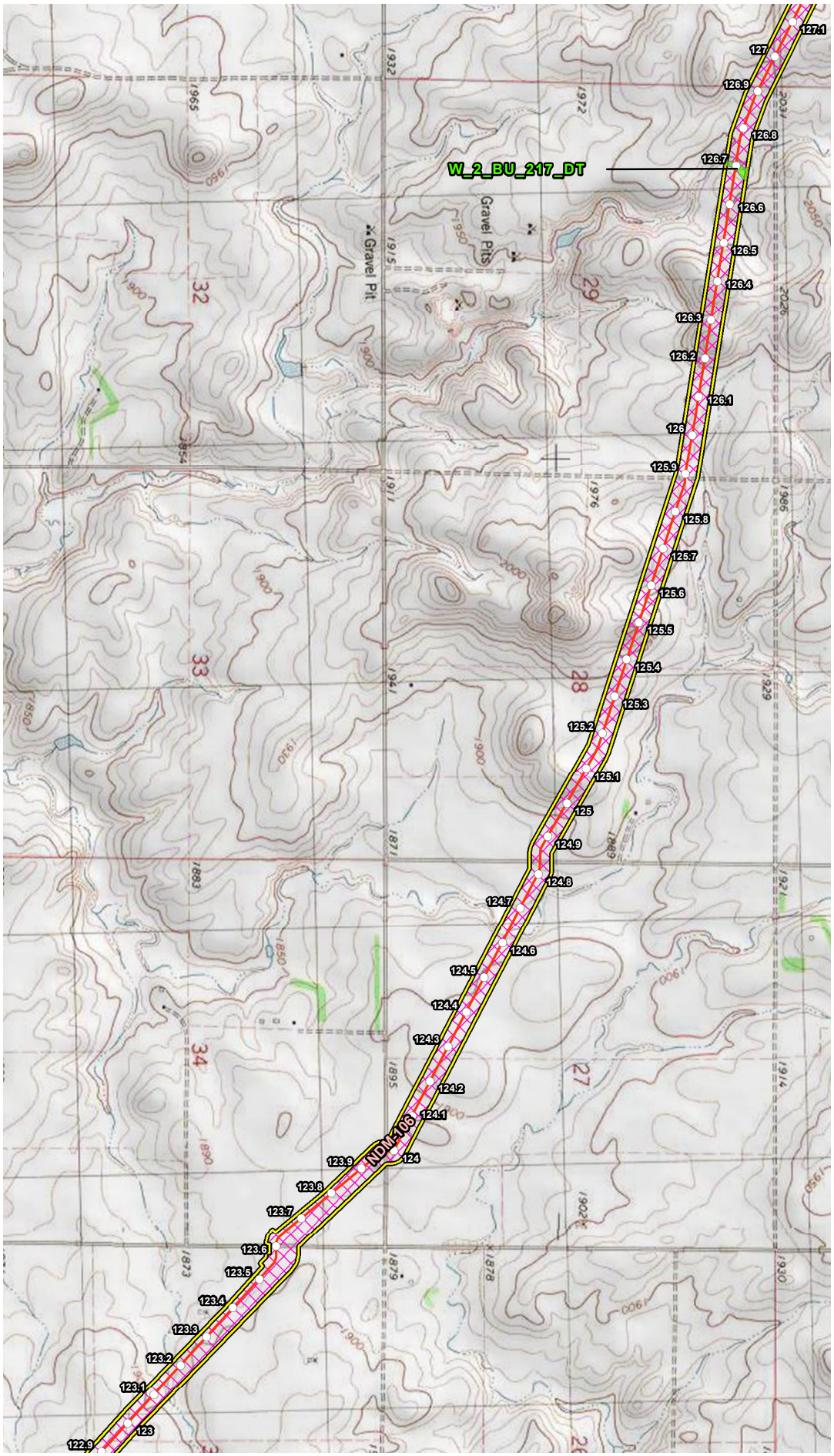
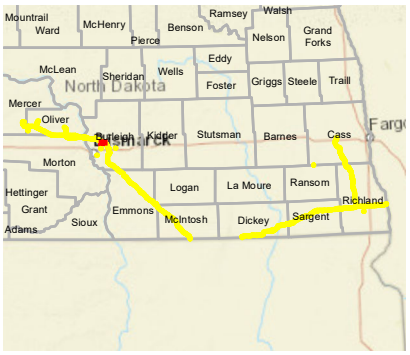
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Topographic Map**

Figure Number:

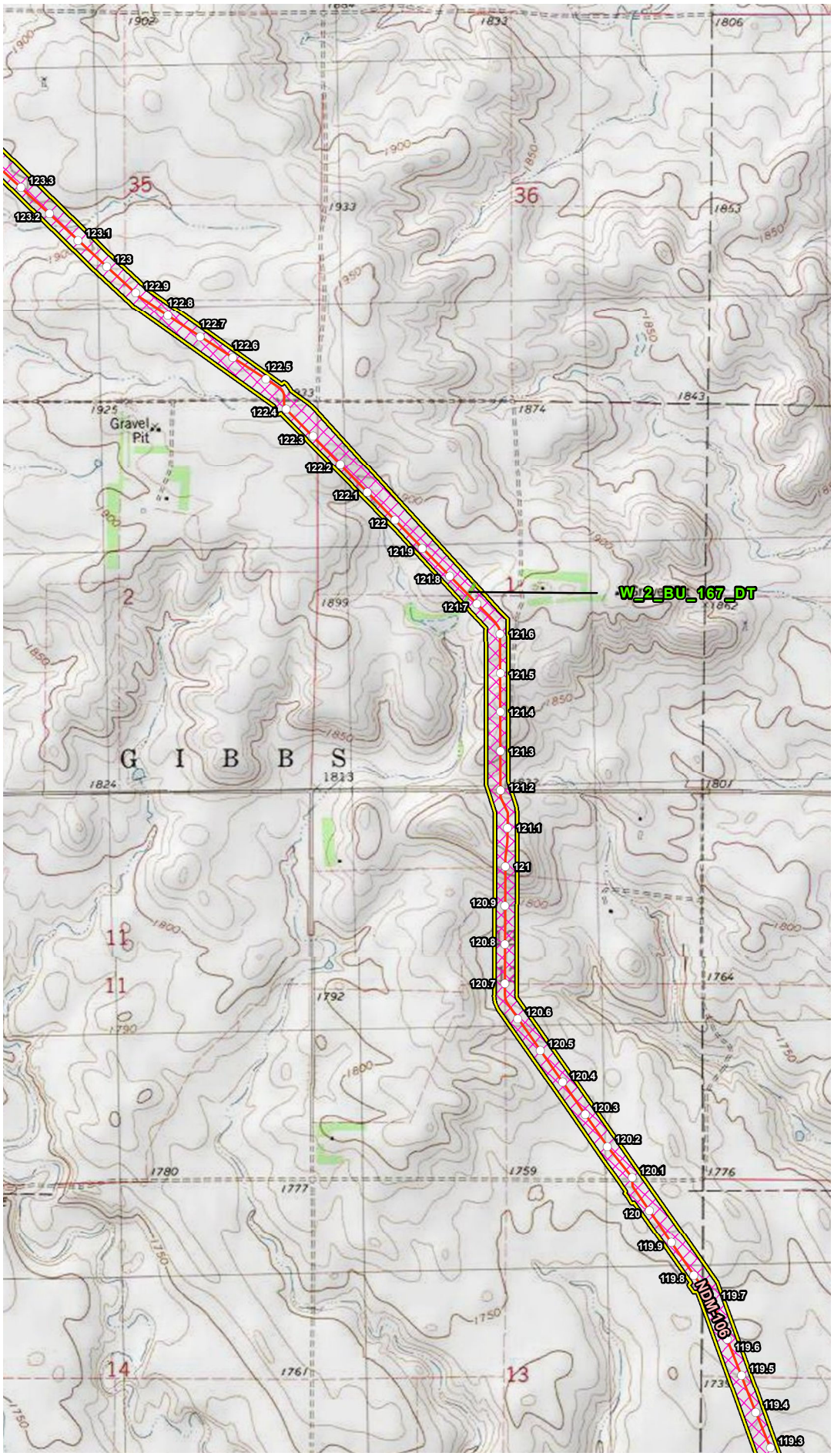
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 14 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\801_WR_NDImxds\3_Topo.mxd

## TOPOGRAPHIC MAP

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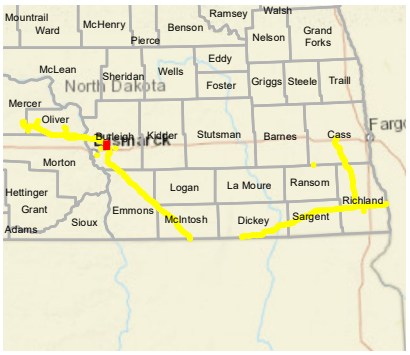


## LEGEND

- Milepost
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- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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**Figure Title:**
Topographic Map

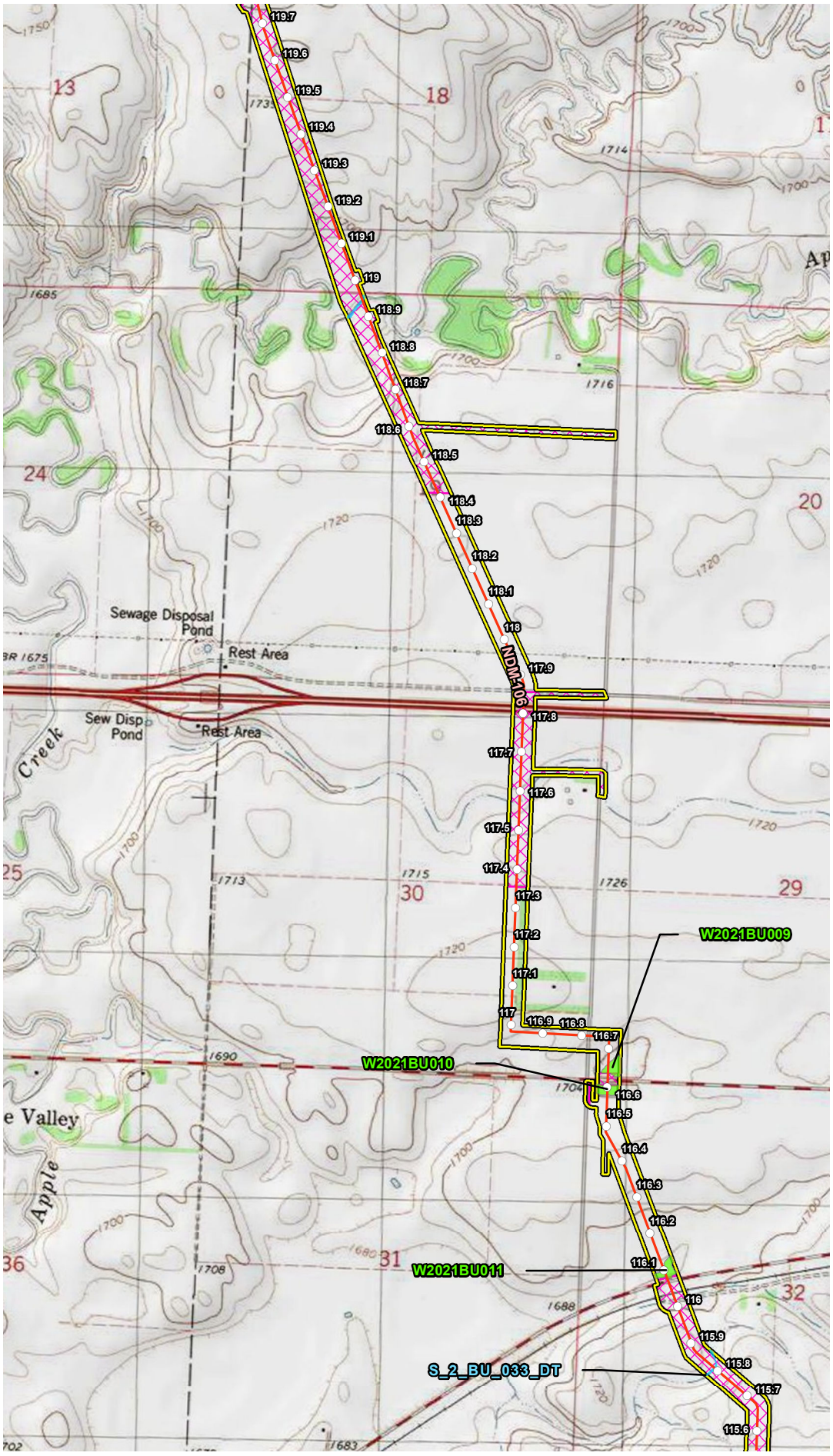
**Figure Number:**
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 15 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImxds\3_Topo.mxd

## TOPOGRAPHIC MAP

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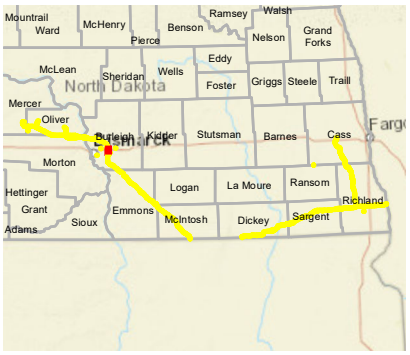


## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

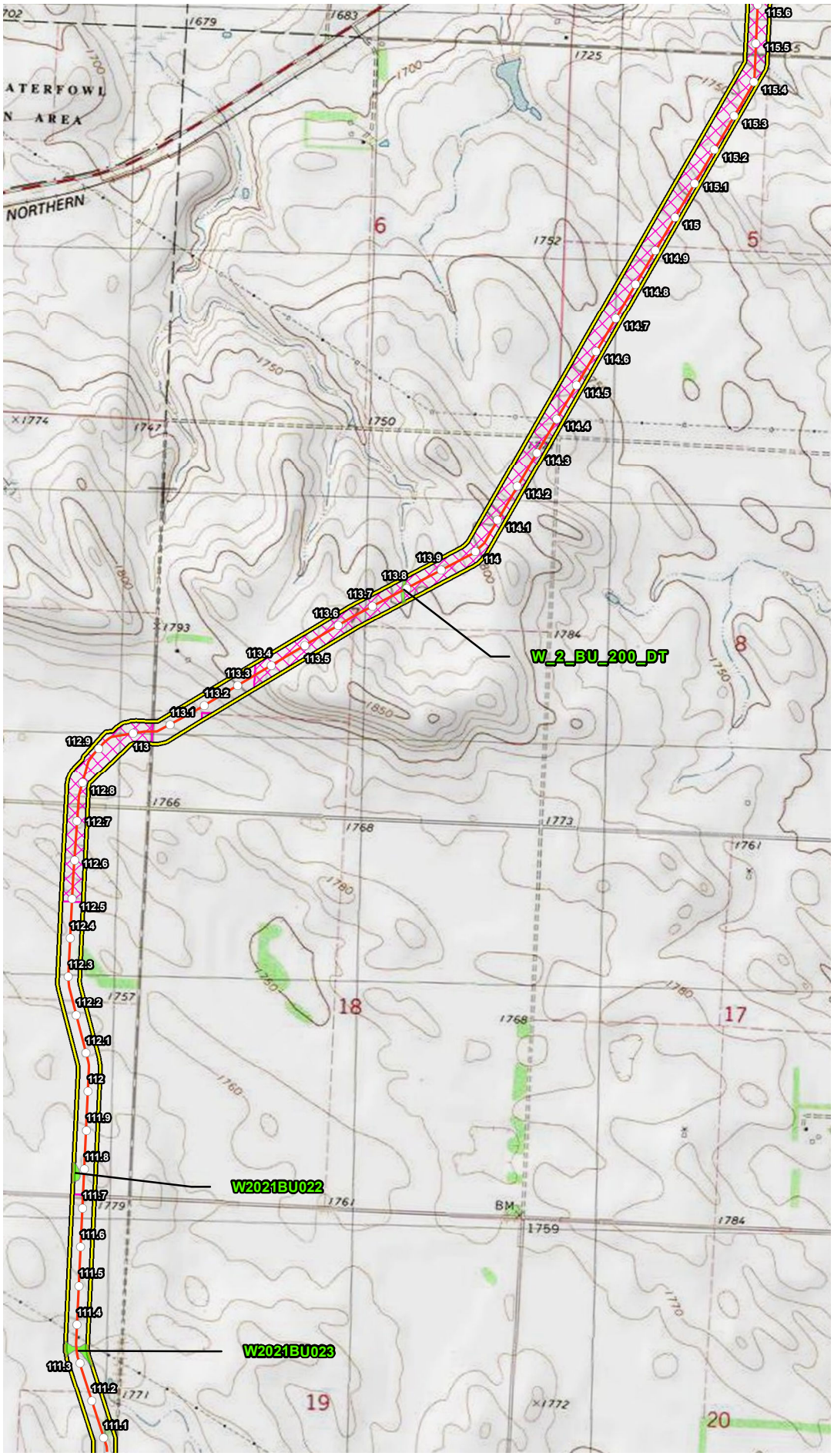
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 16 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\901_WR_NDImxds\3_Topo.mxd

## TOPOGRAPHIC MAP

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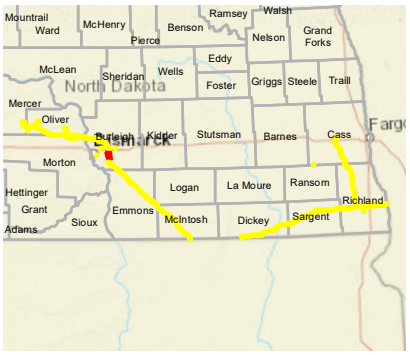


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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| | | |

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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

| Scale | Projection |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 17 of 96 | 2001-22-003<br>Current Revision |

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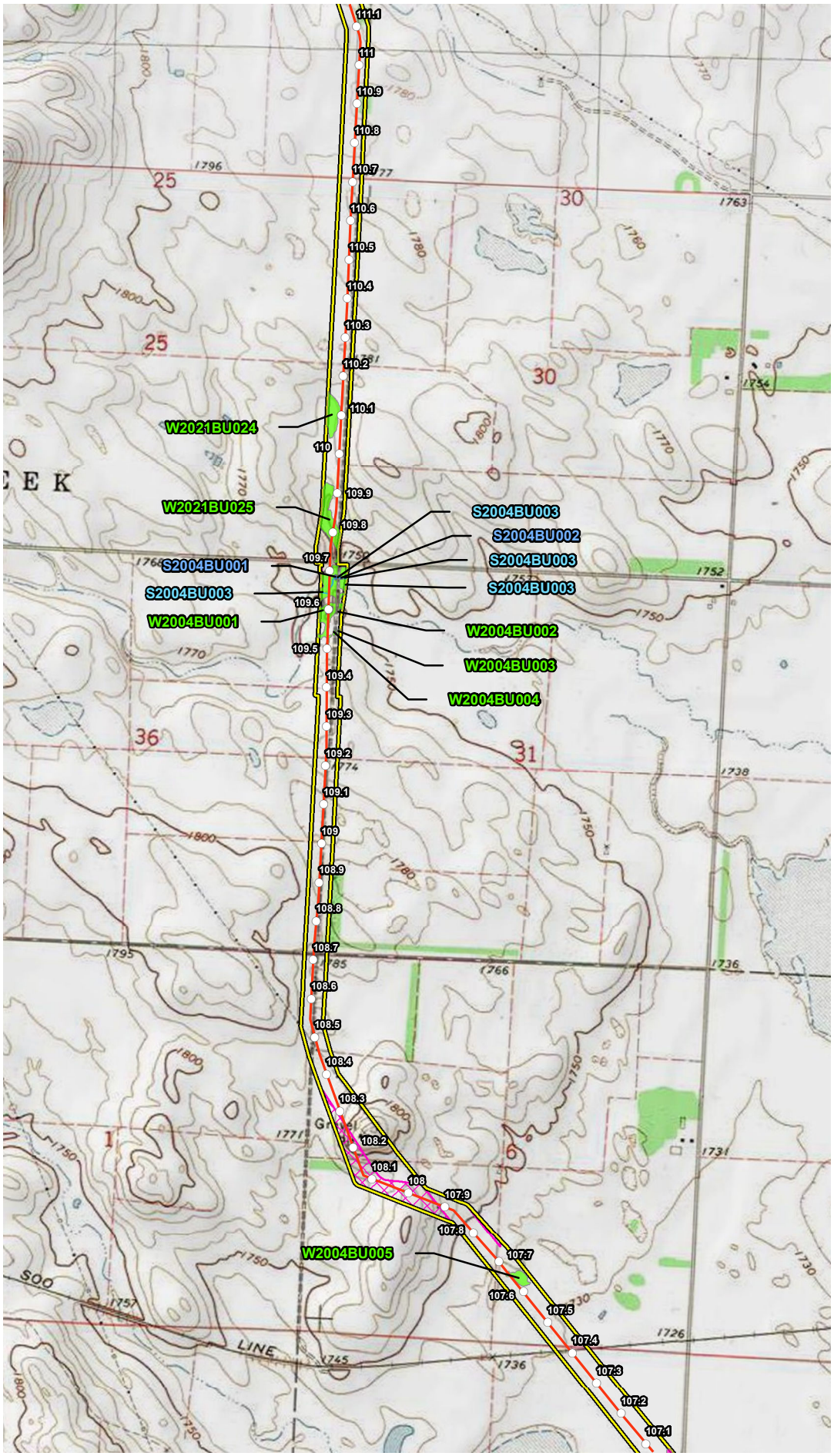
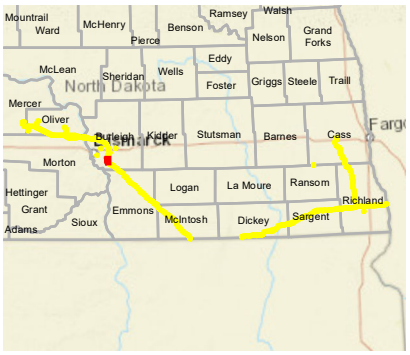
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 18 of 96 | 2001-22-003<br>Current Revision |

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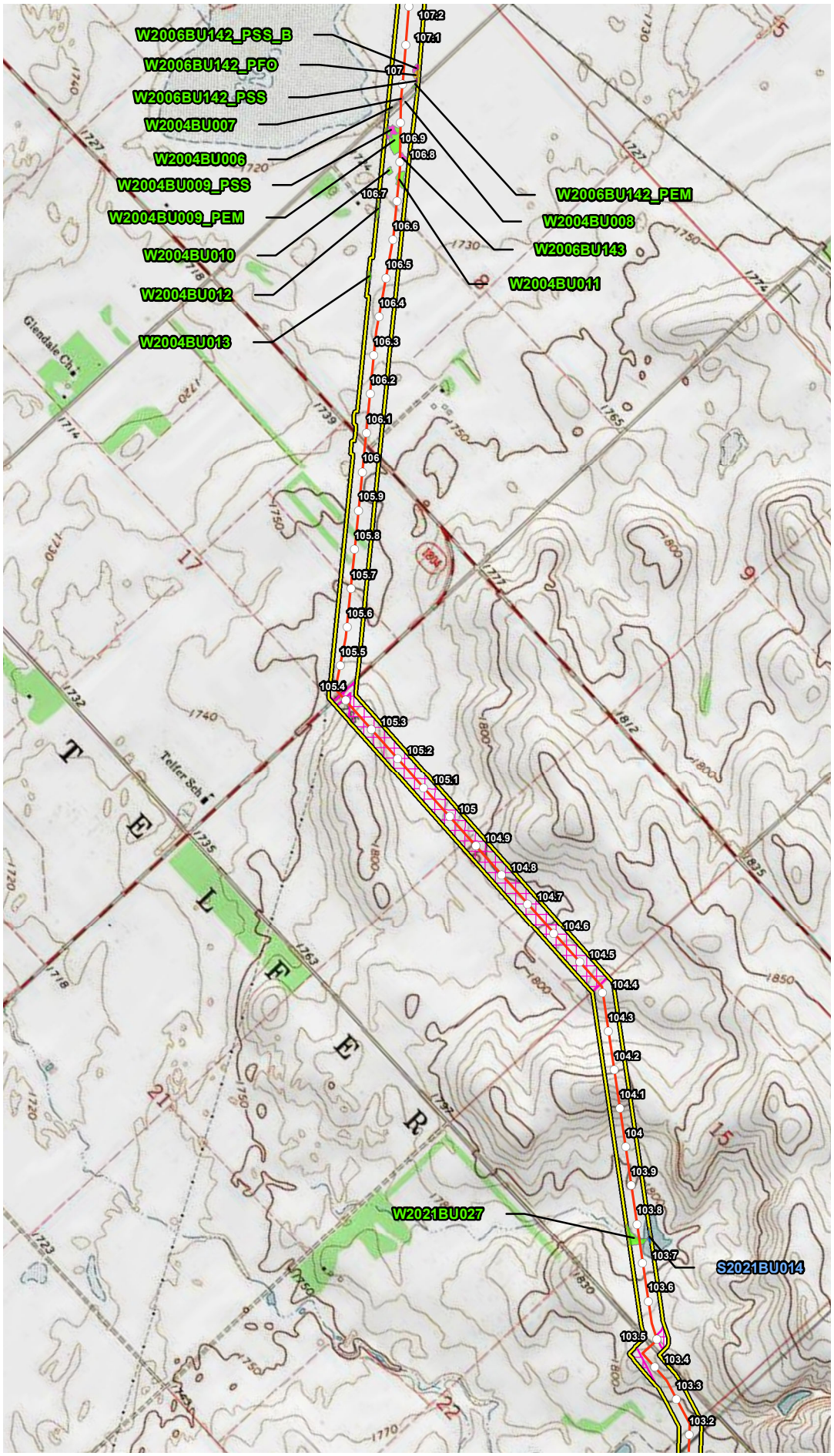
## TOPOGRAPHIC MAP

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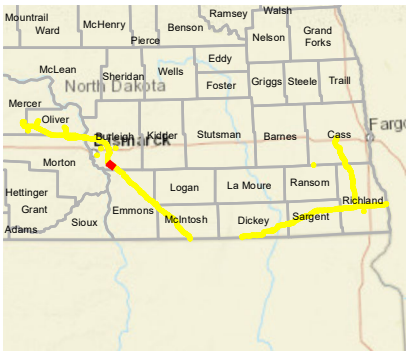


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**
Topographic Map

**Figure Number:**
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 19 of 96 | 2001-22-003<br>Current Revision |

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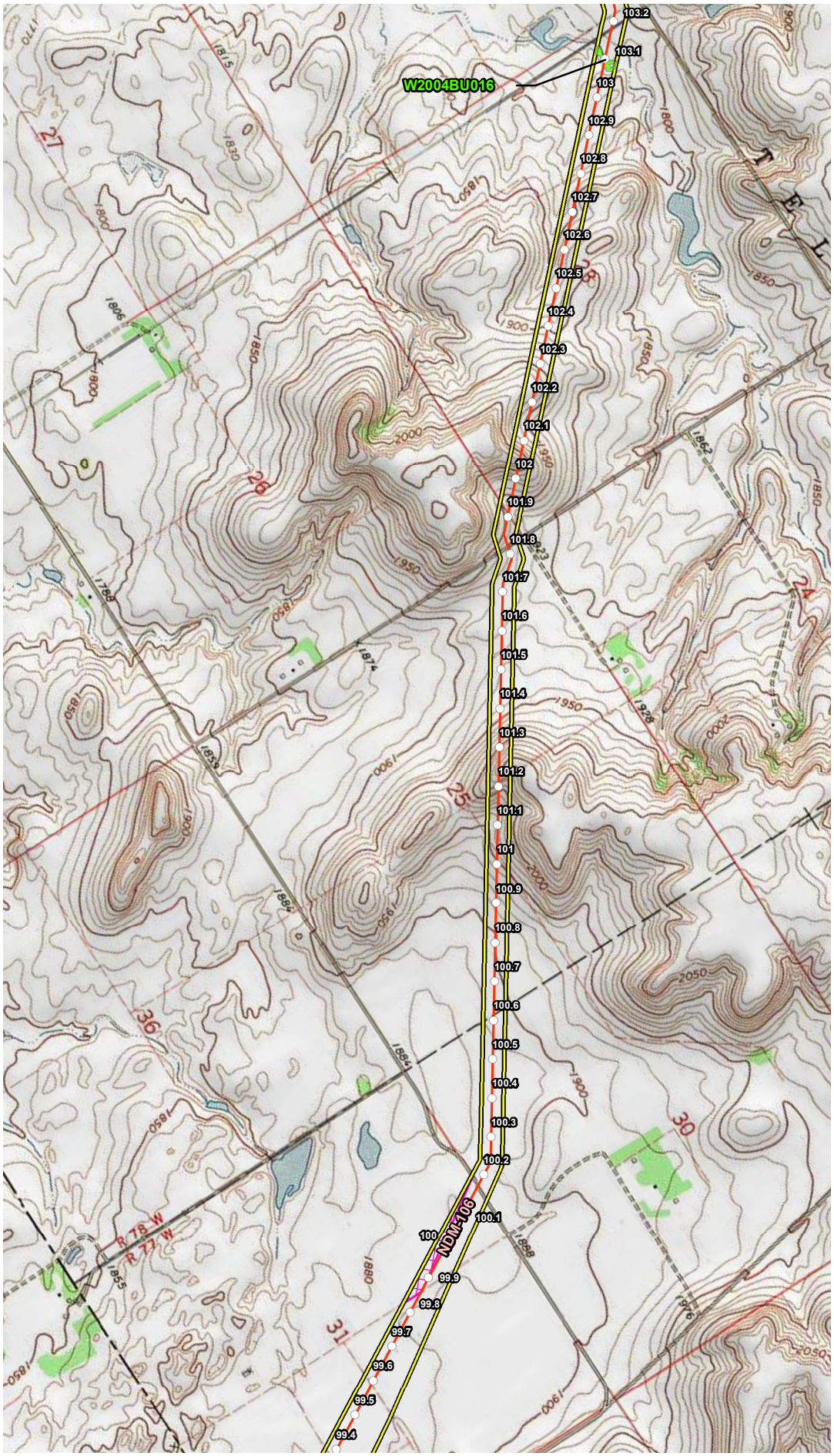
## TOPOGRAPHIC MAP

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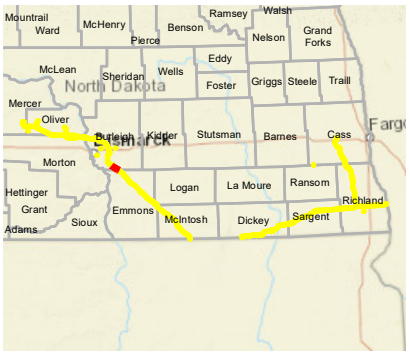


## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 20 of 96 | 2001-22-003<br>Current Revision |

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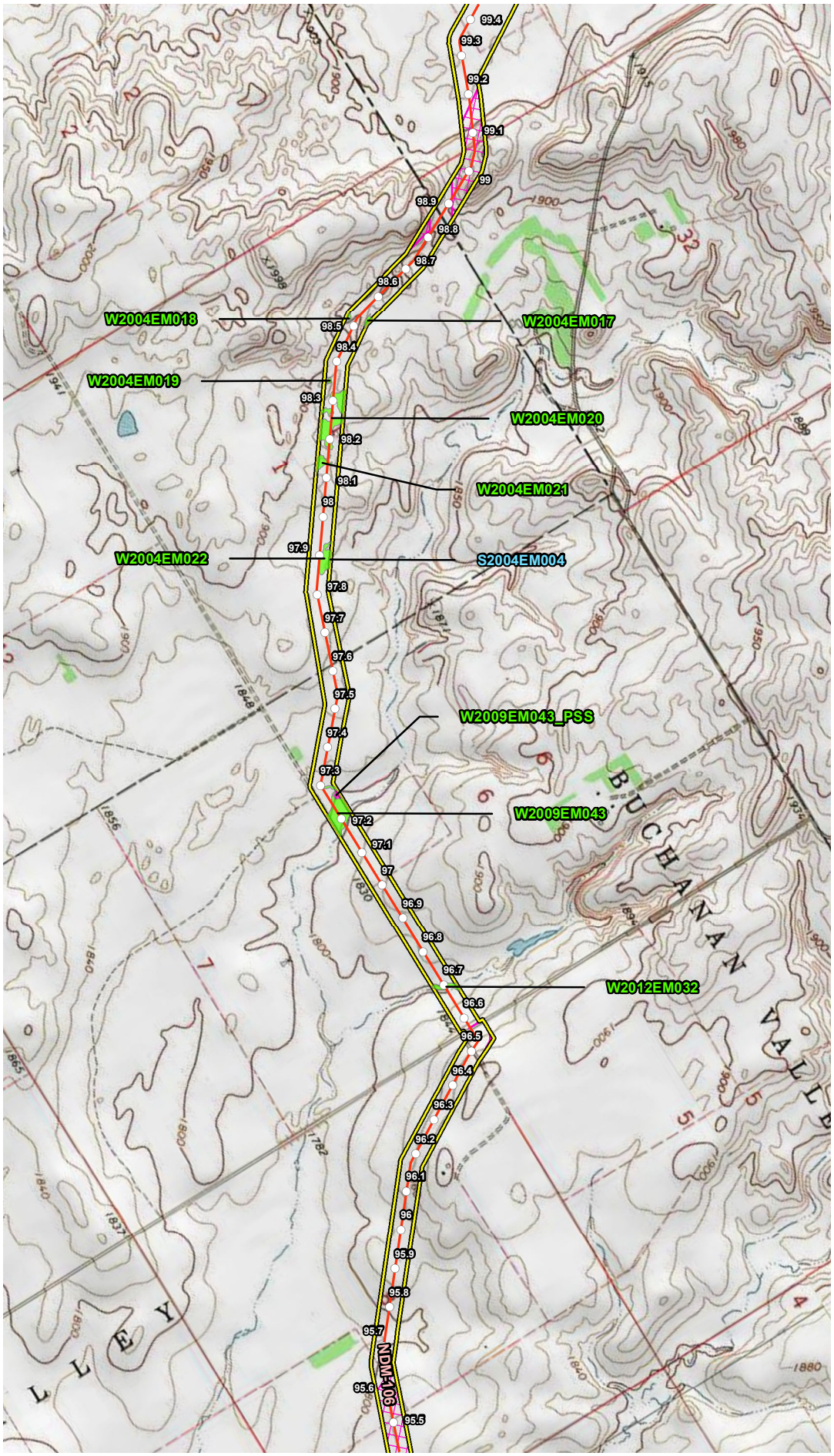
## TOPOGRAPHIC MAP

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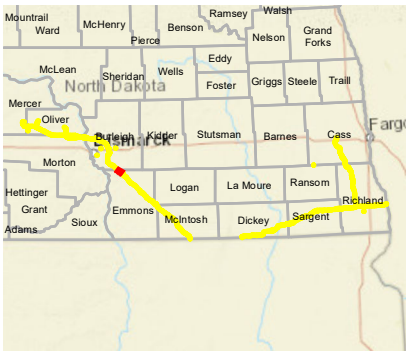


## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**Topographic Map**

Figure Number:
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 21 of 96 | 2001-22-003<br>Current Revision |

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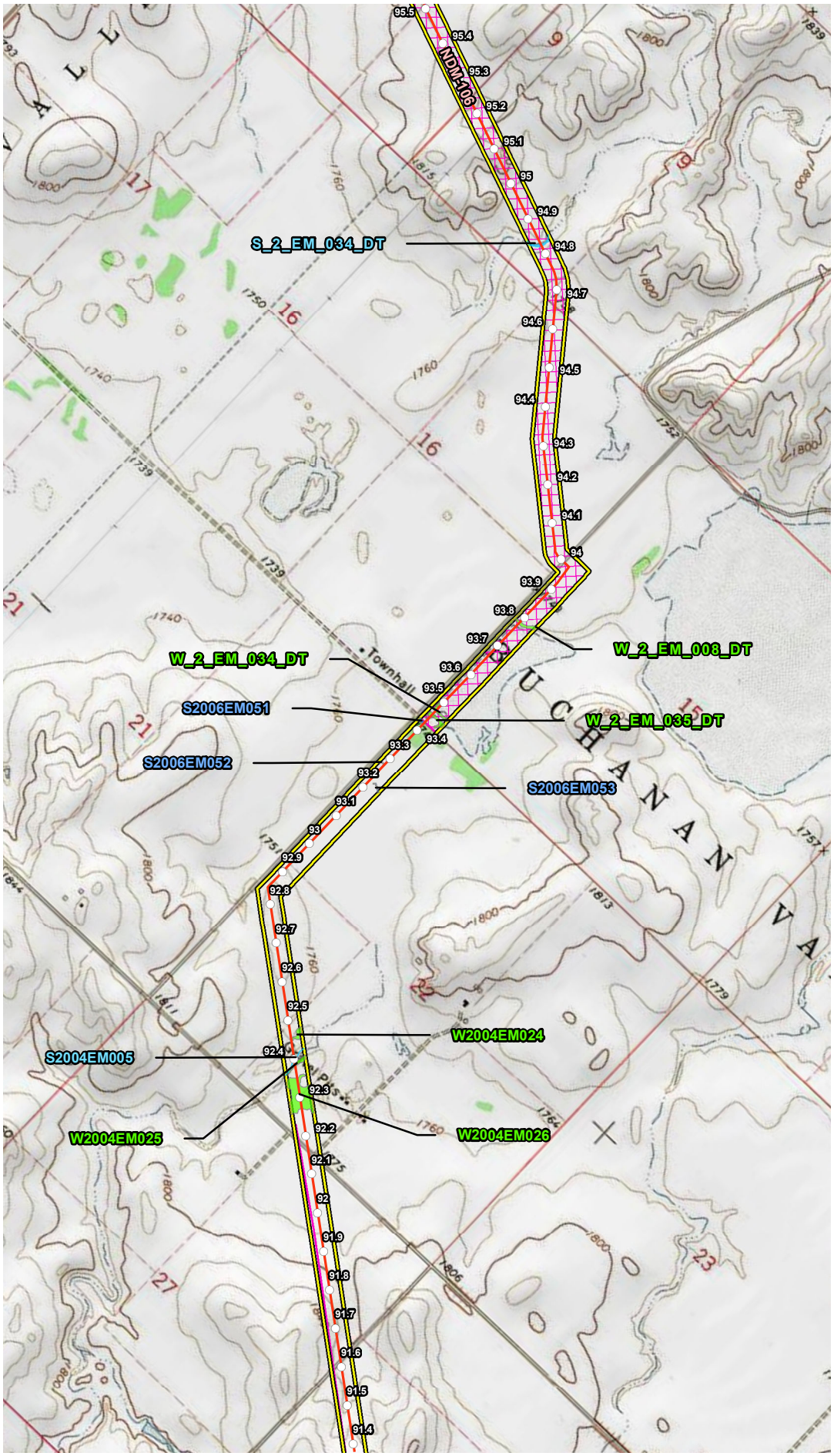
## TOPOGRAPHIC MAP

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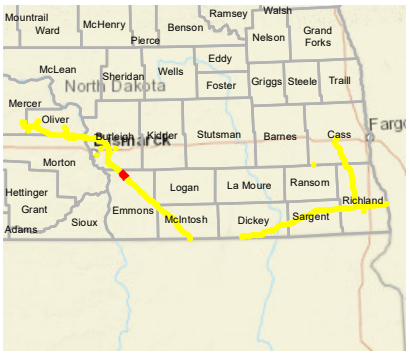


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 22 of 96 | 2001-22-003<br>Current Revision |

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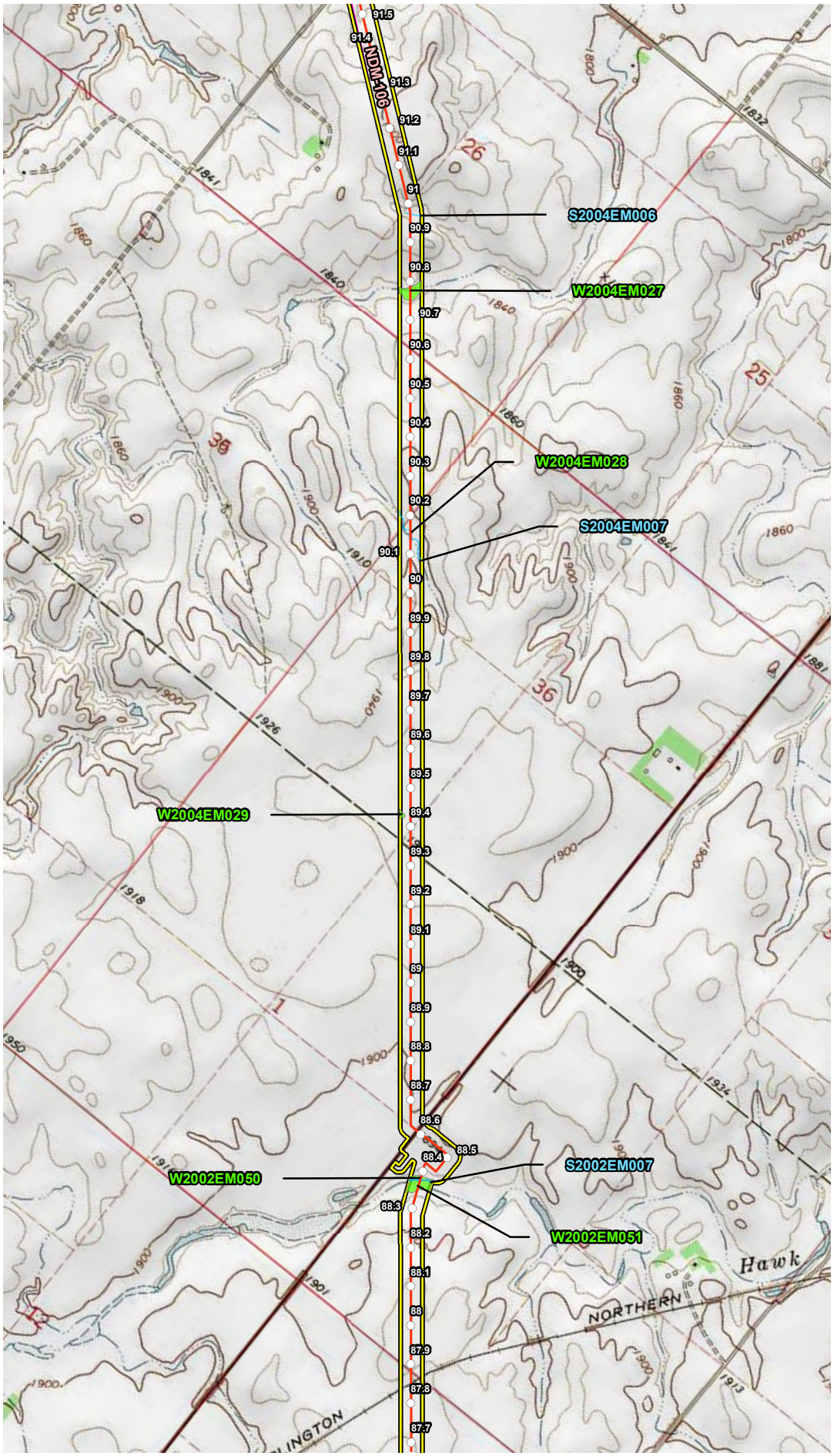


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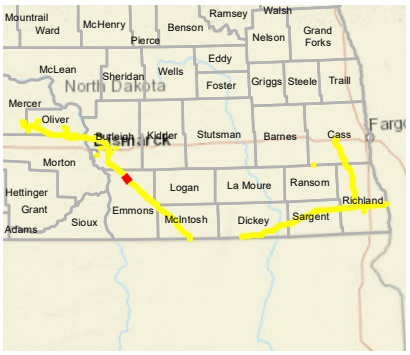


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 23 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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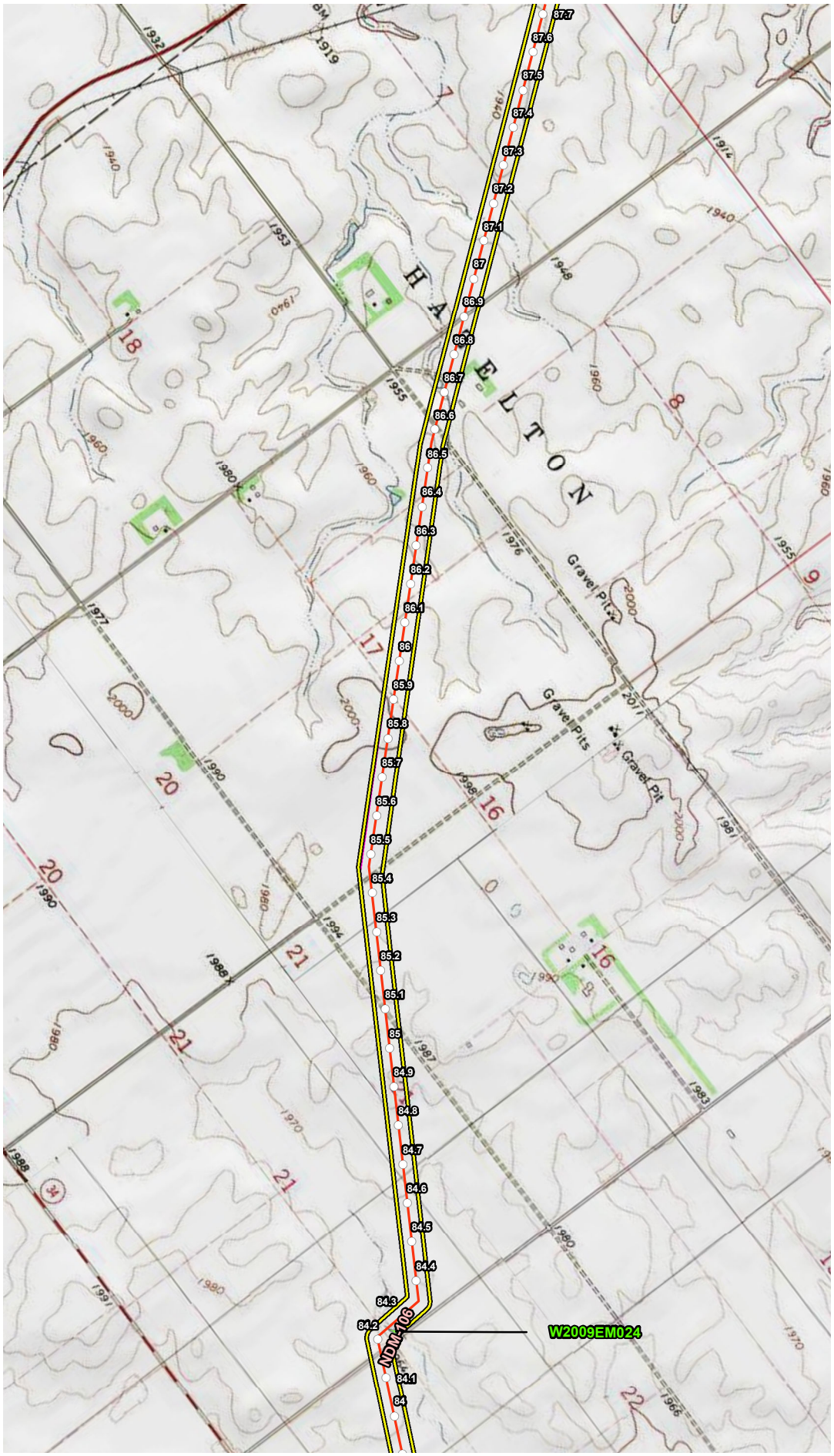
## TOPOGRAPHIC MAP

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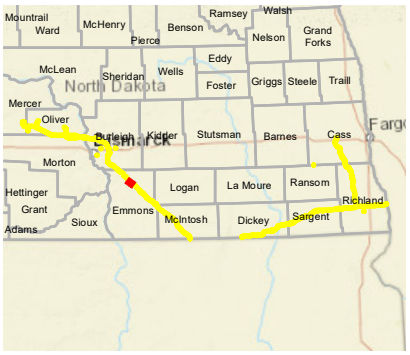


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>24 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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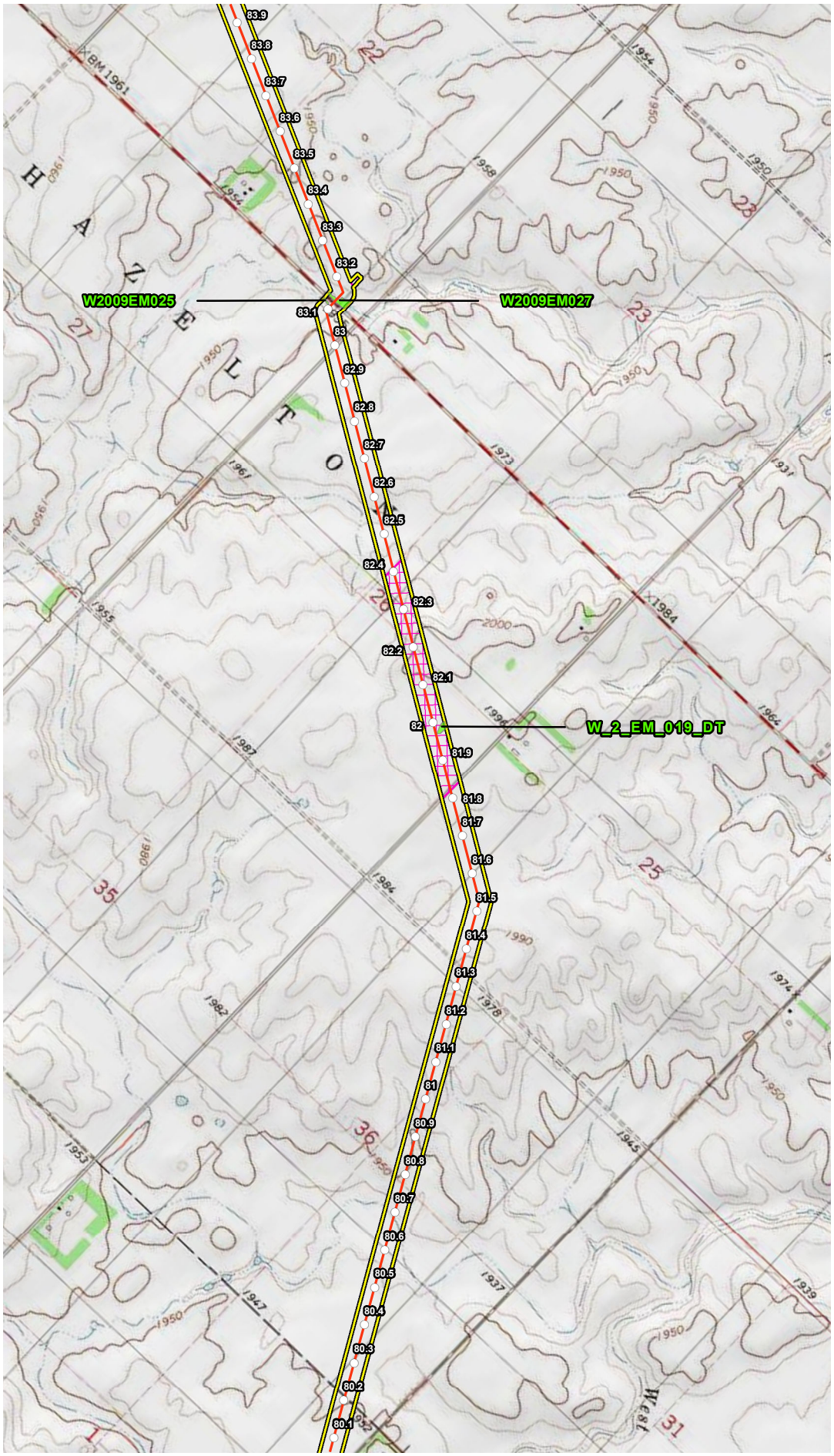
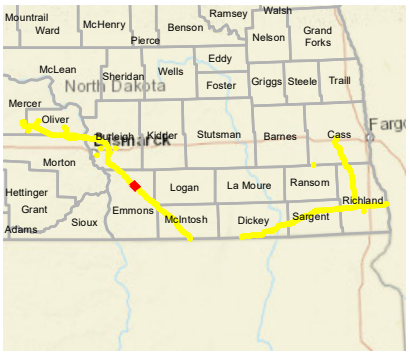
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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| | | |

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Figure Title:

**Topographic Map**

Figure Number:

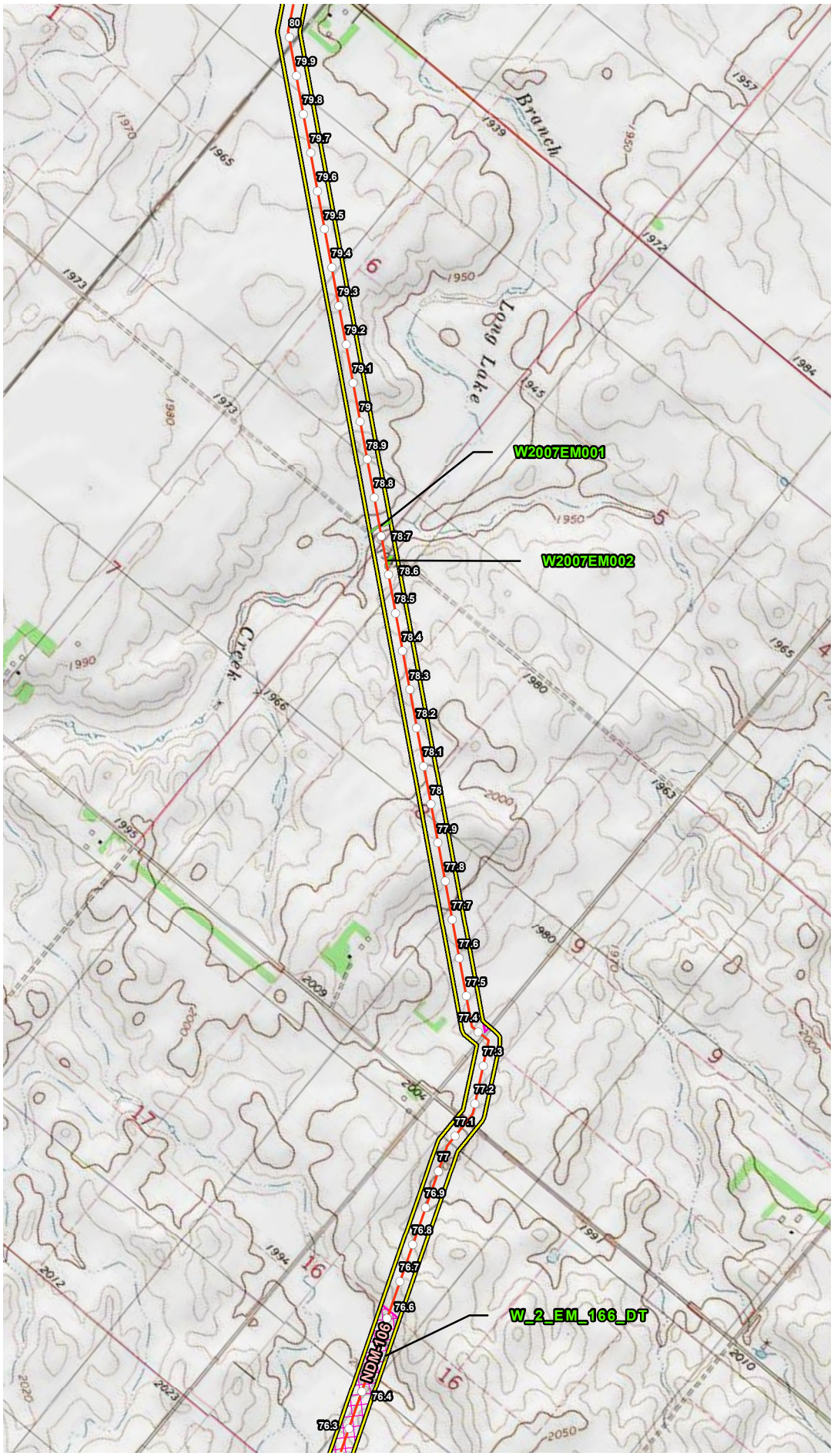
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| **Scale: 1:24,000**<br>1 inch = 2,000 feet | **Transverse Mercator**<br>NAD 1983 UTM Zone 14N |

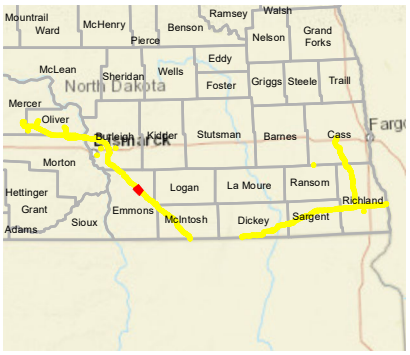
| Sheet: | Drawing Number: |
|---|---|
| **25 of 96** | **2001-22-003**<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\EIV\WR\2022\801_WR_NDImxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 26 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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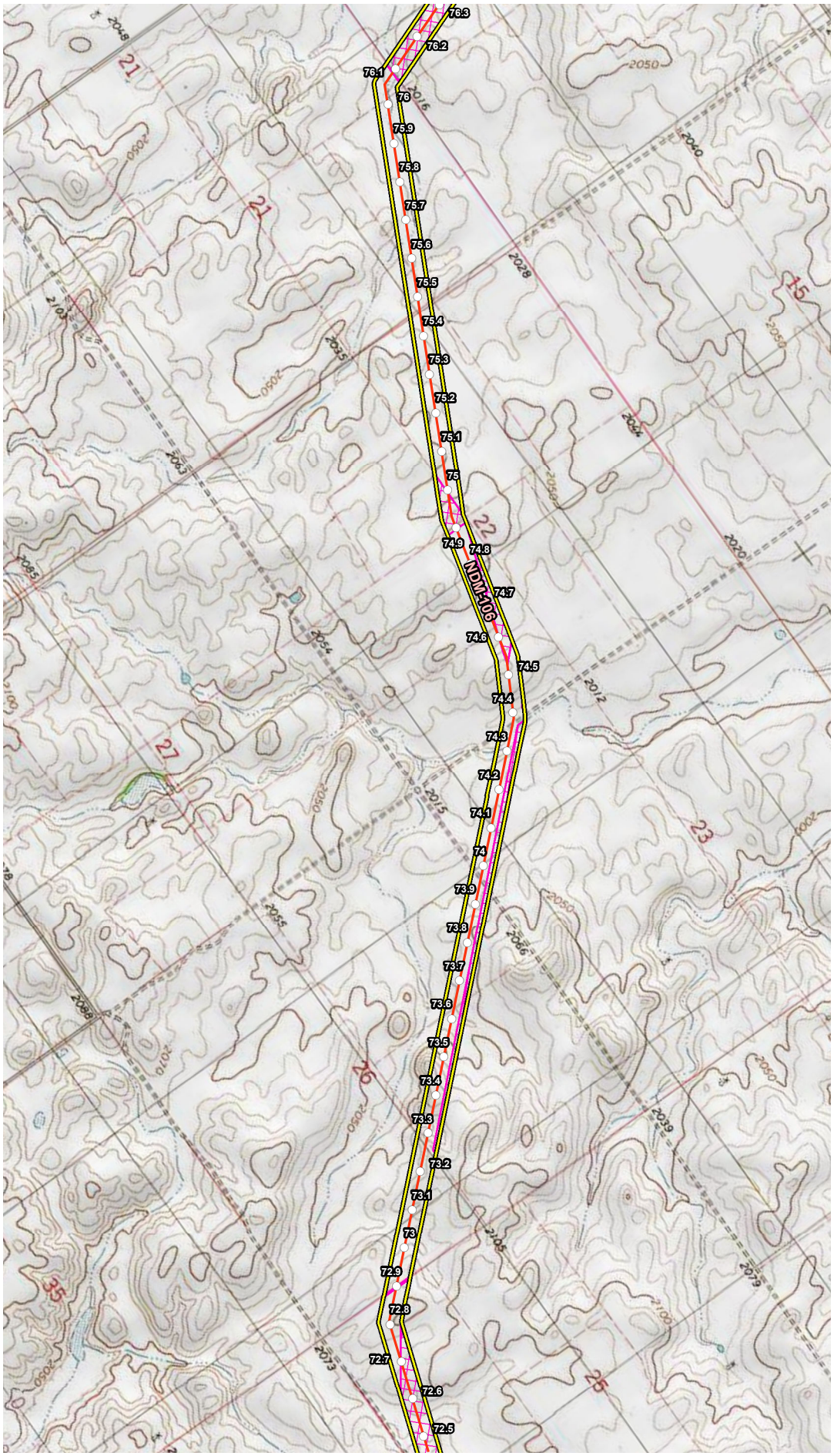
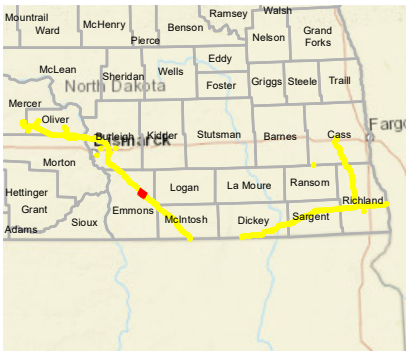
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
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- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 27 of 96 | 2001-22-003<br>Current Revision |

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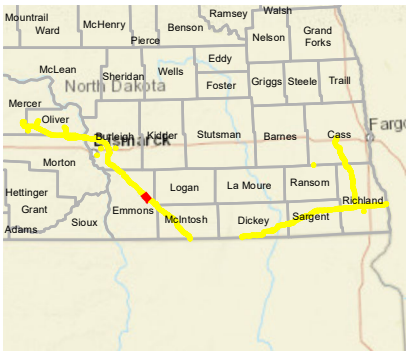
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| **Scale: 1:24,000**<br>1 inch = 2,000 feet | **Transverse Mercator**<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| **28 of 96** | **2001-22-003**<br>Current Revision |

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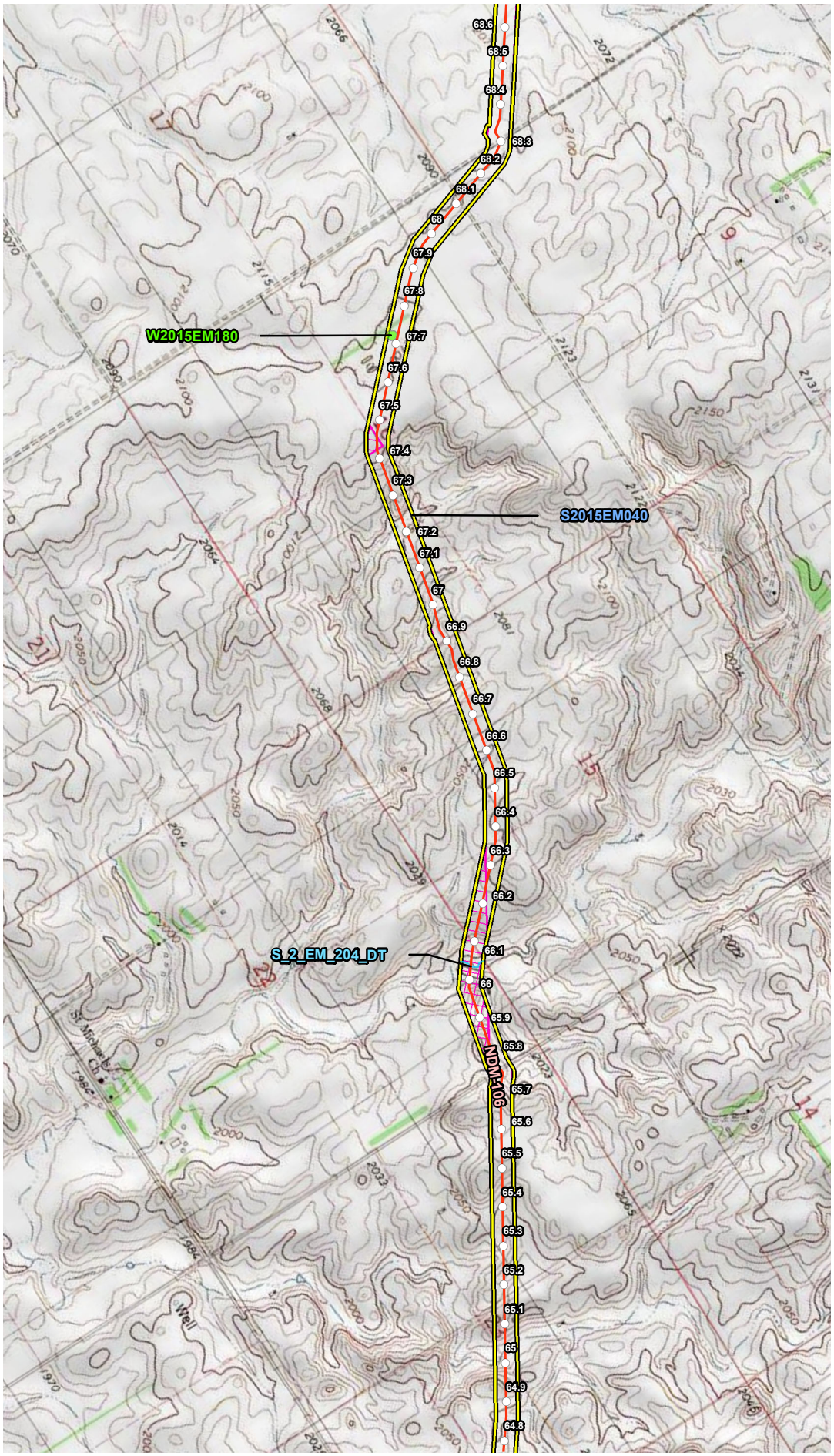
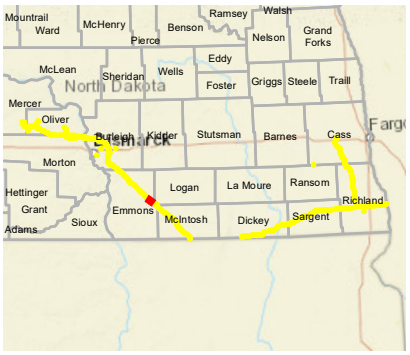
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 29 of 96 | 2001-22-003<br>Current Revision |

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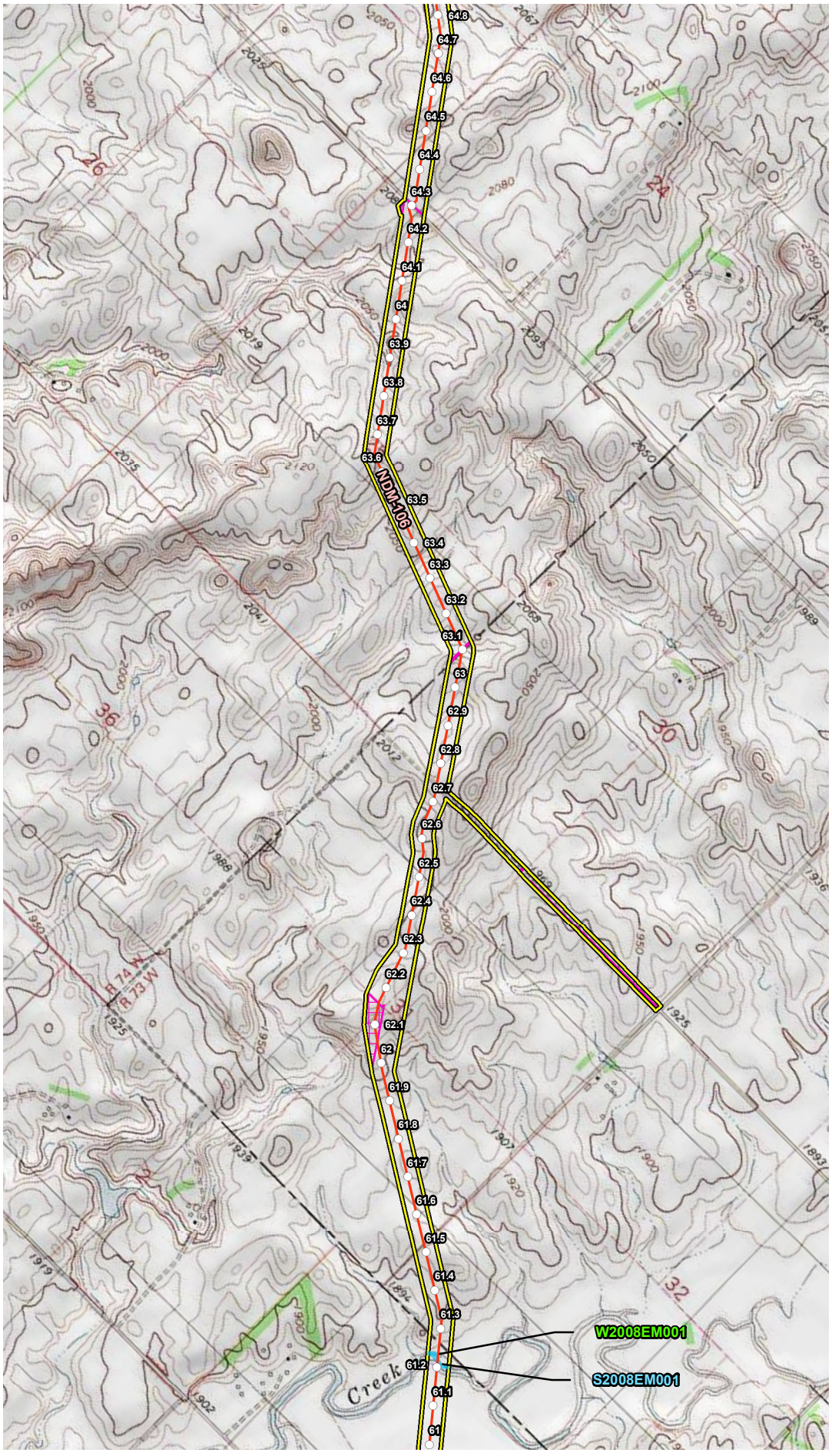


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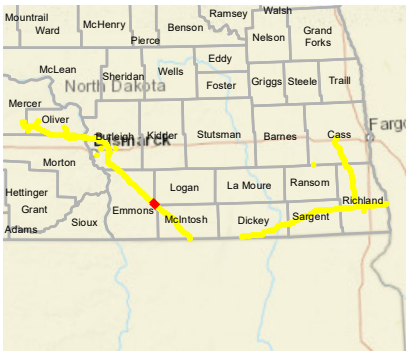


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 30 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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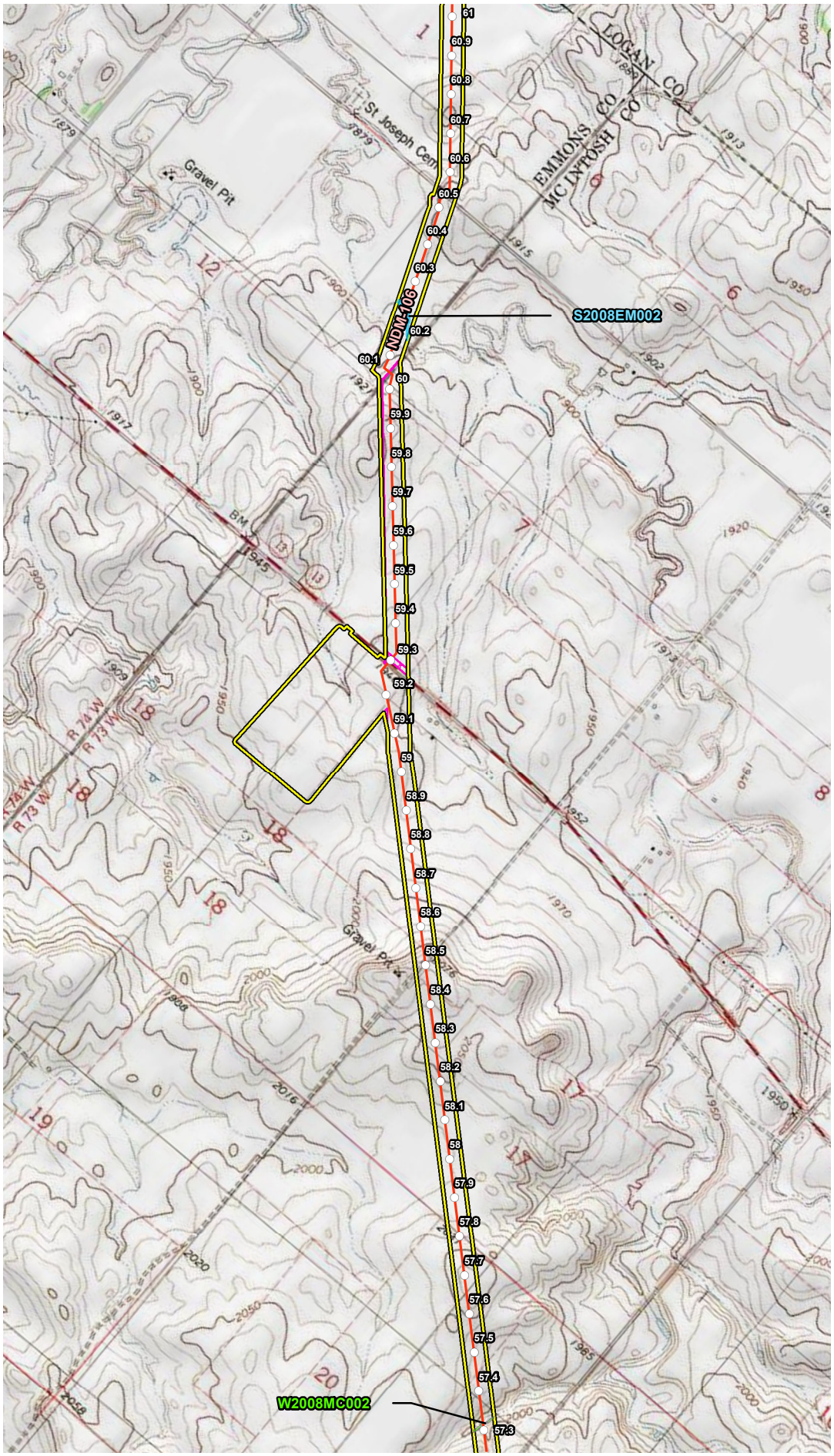


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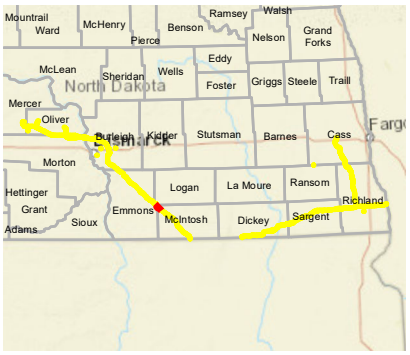


## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 31 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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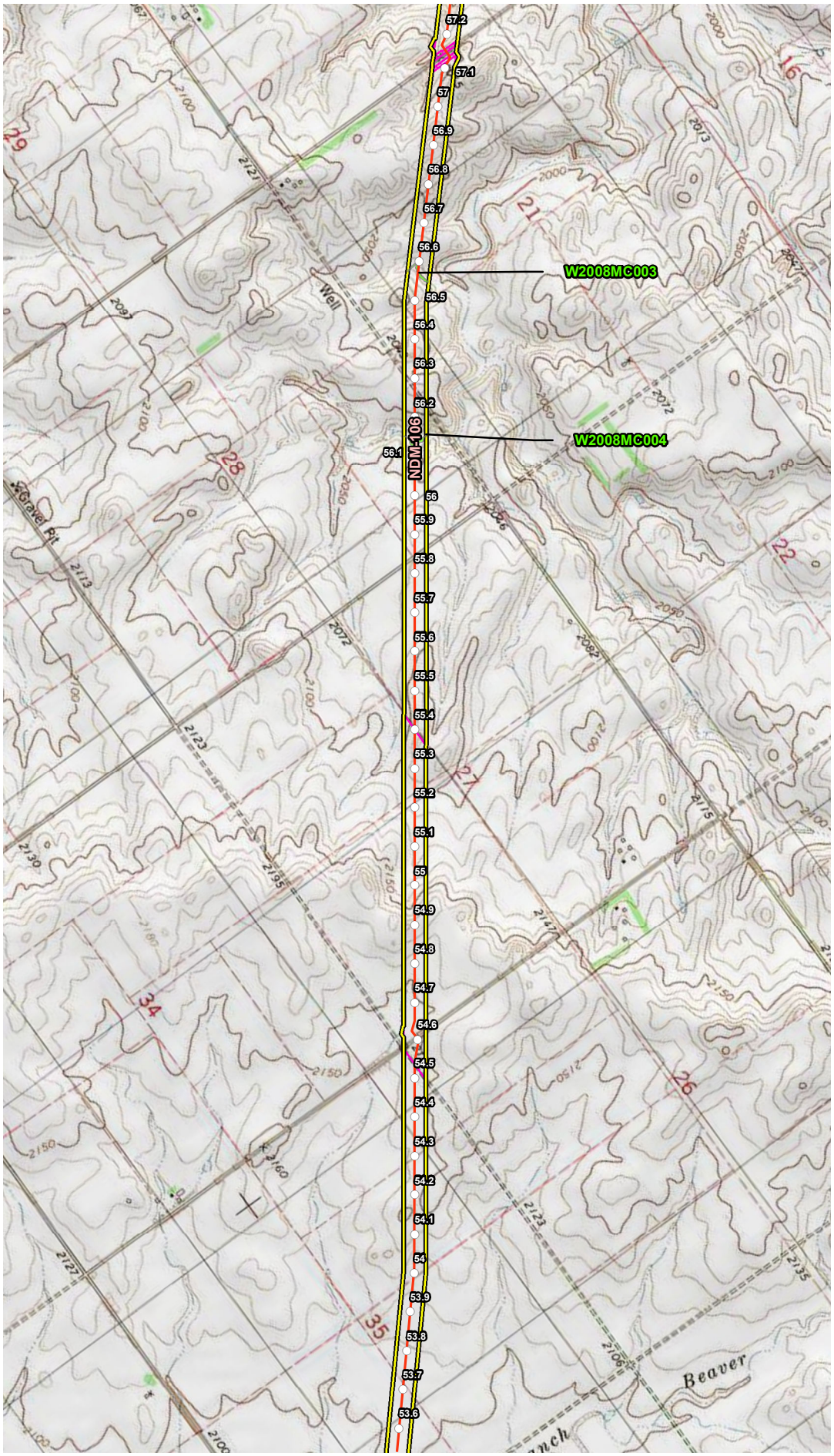
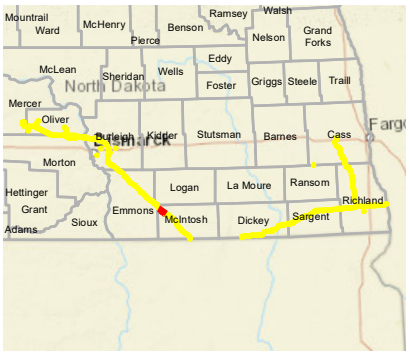
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 32 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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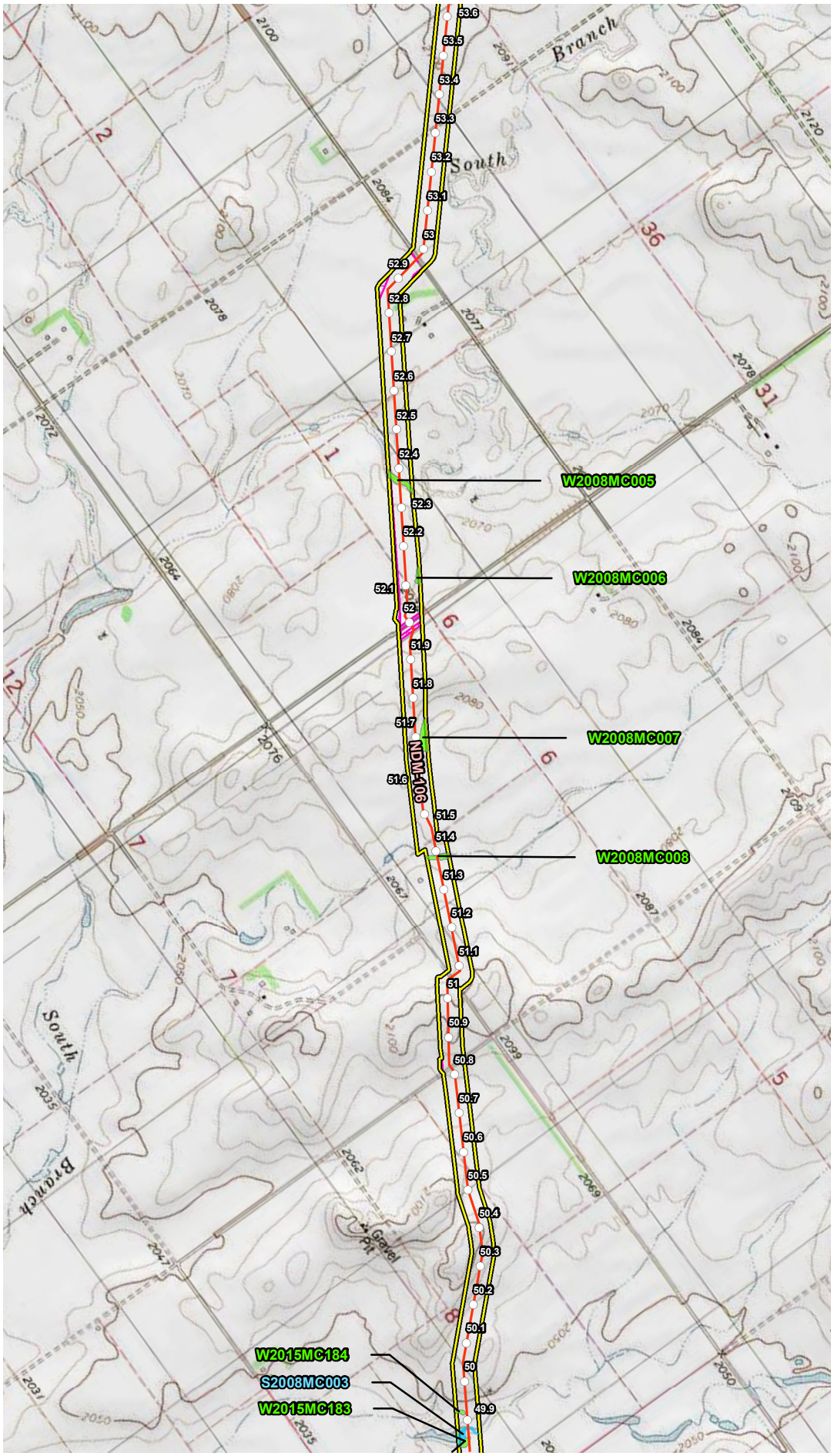
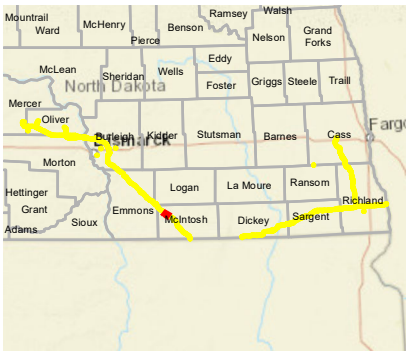



## VICINITY MAP




## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>33 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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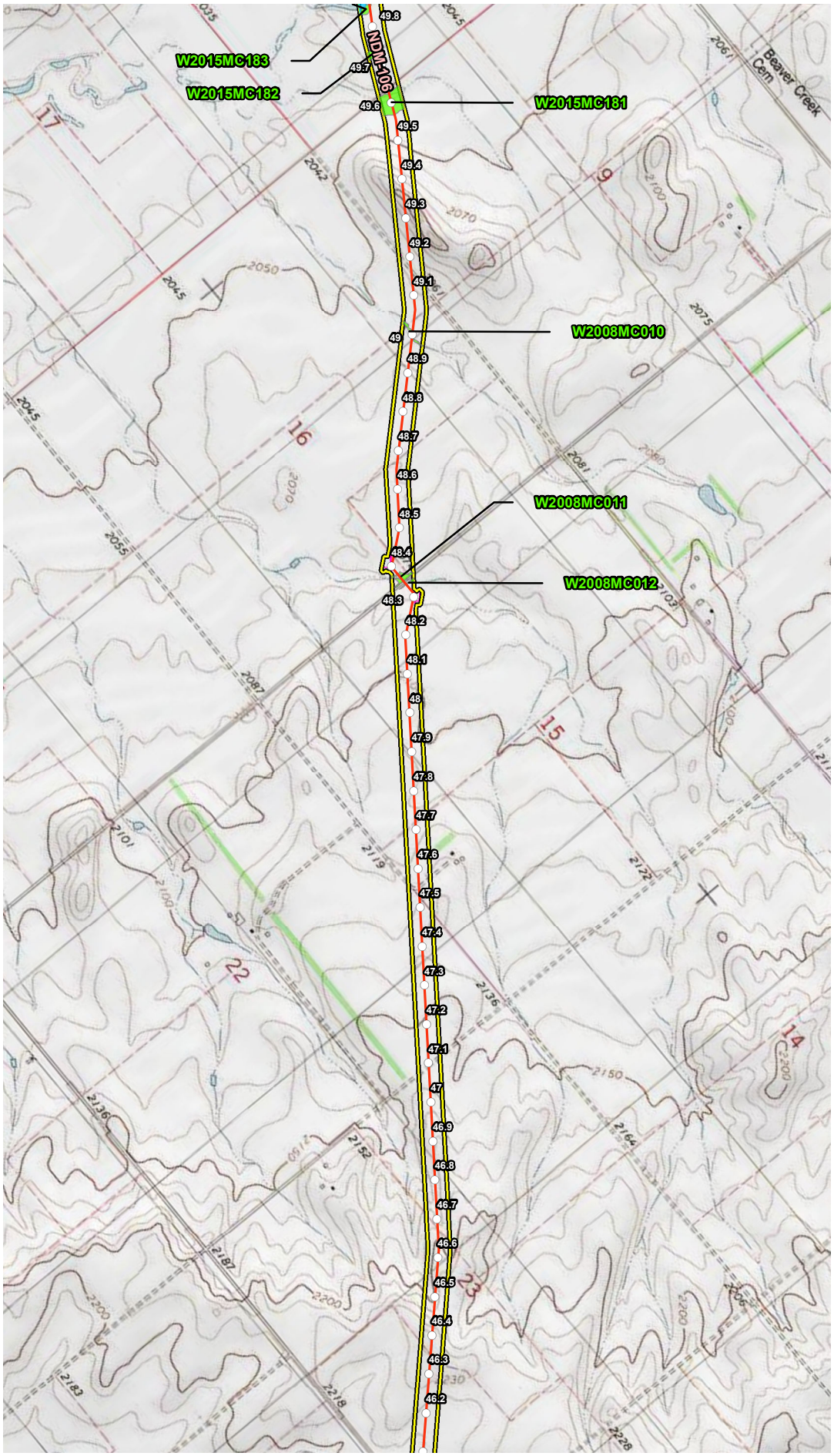
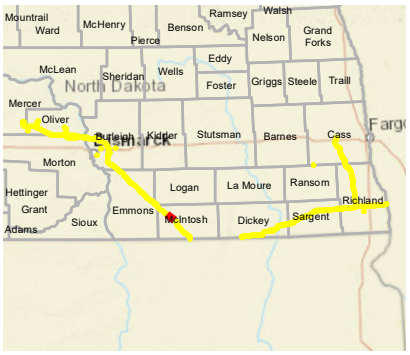
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 34 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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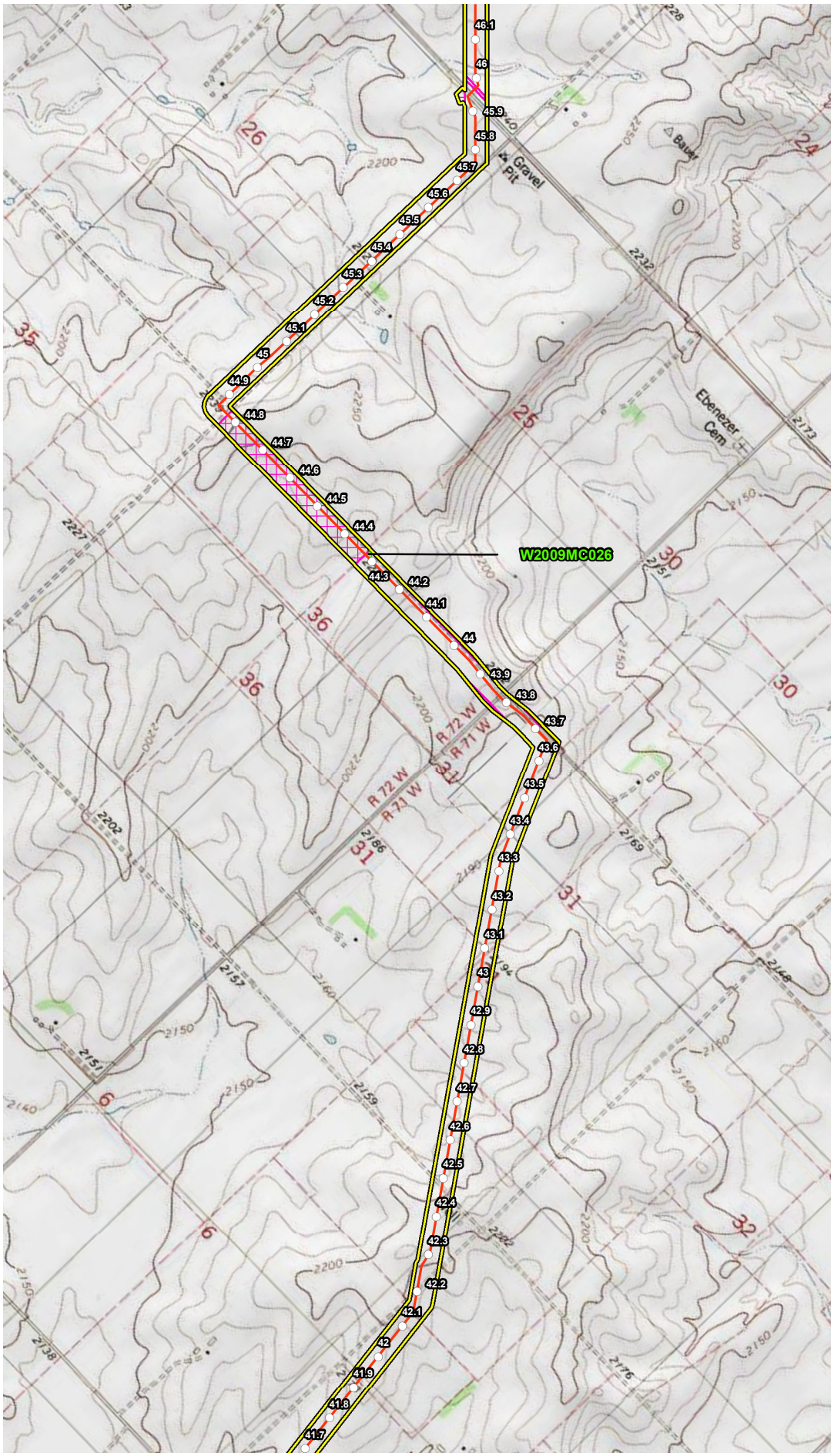
## TOPOGRAPHIC MAP

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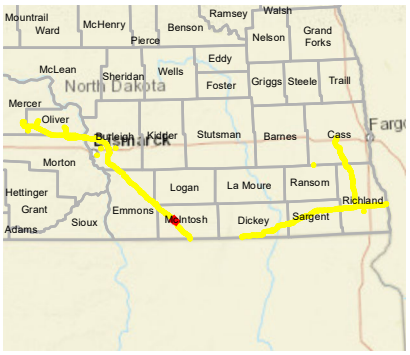


## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 35 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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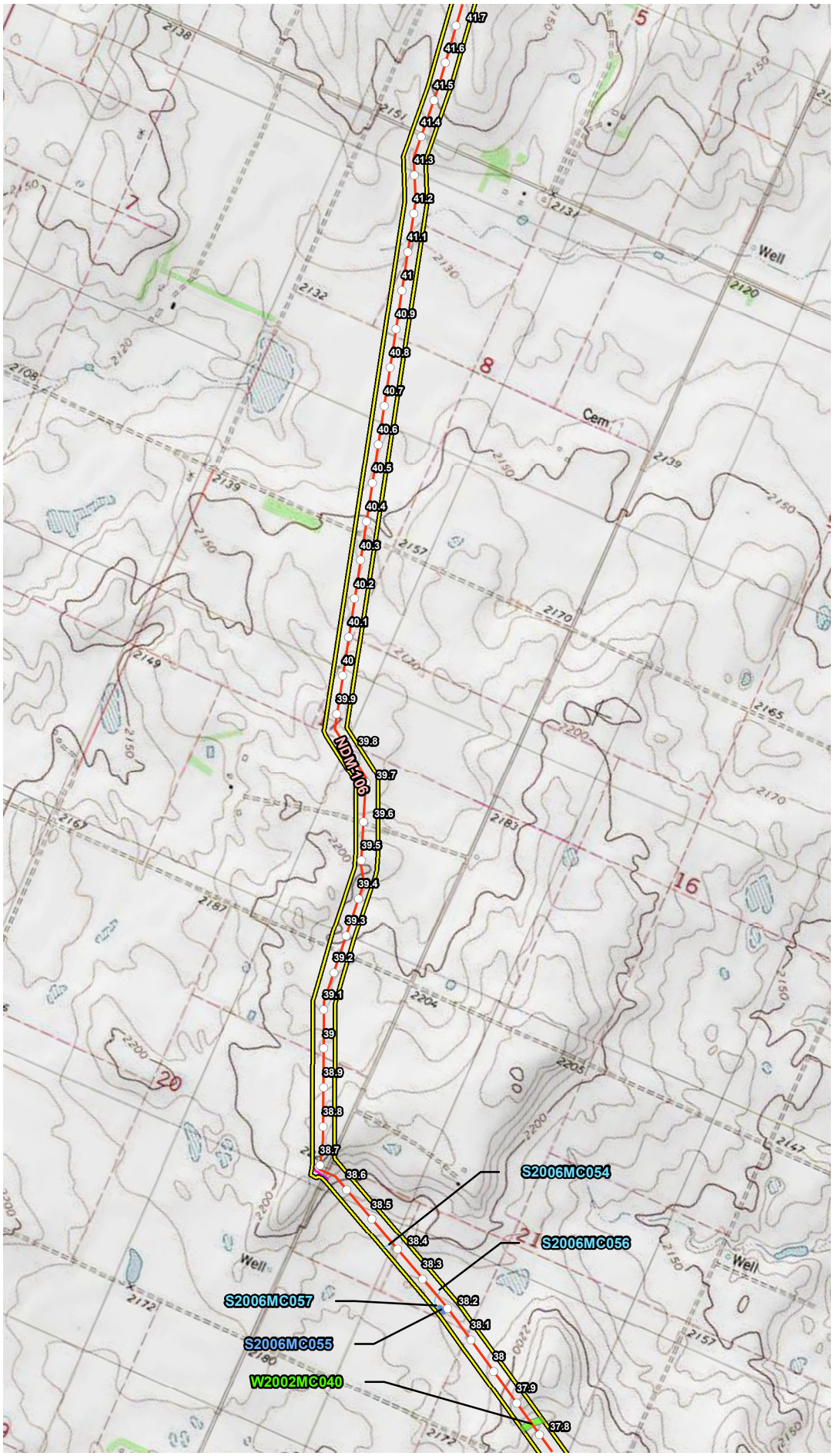
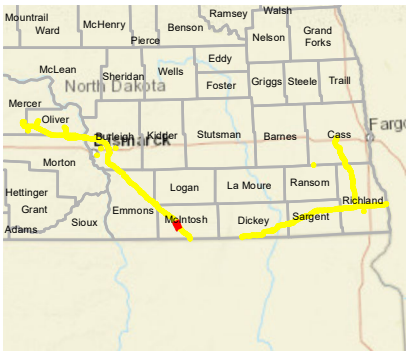
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 36 of 96 | 2001-22-003<br>Current Revision |

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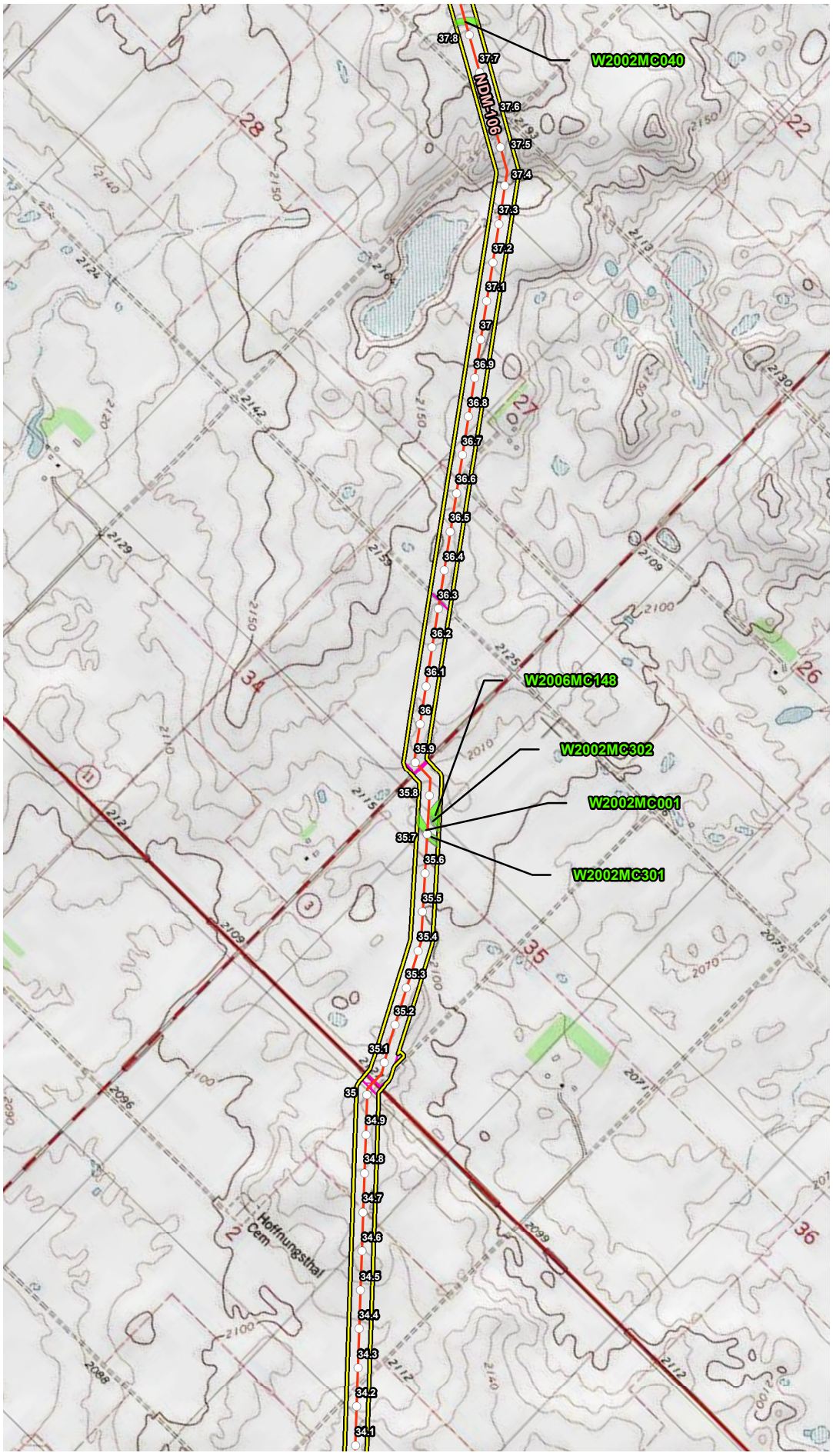
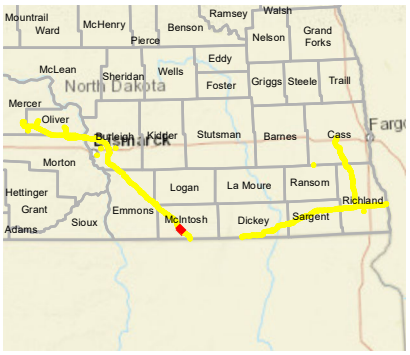
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

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- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Topographic Map**

Figure Number:

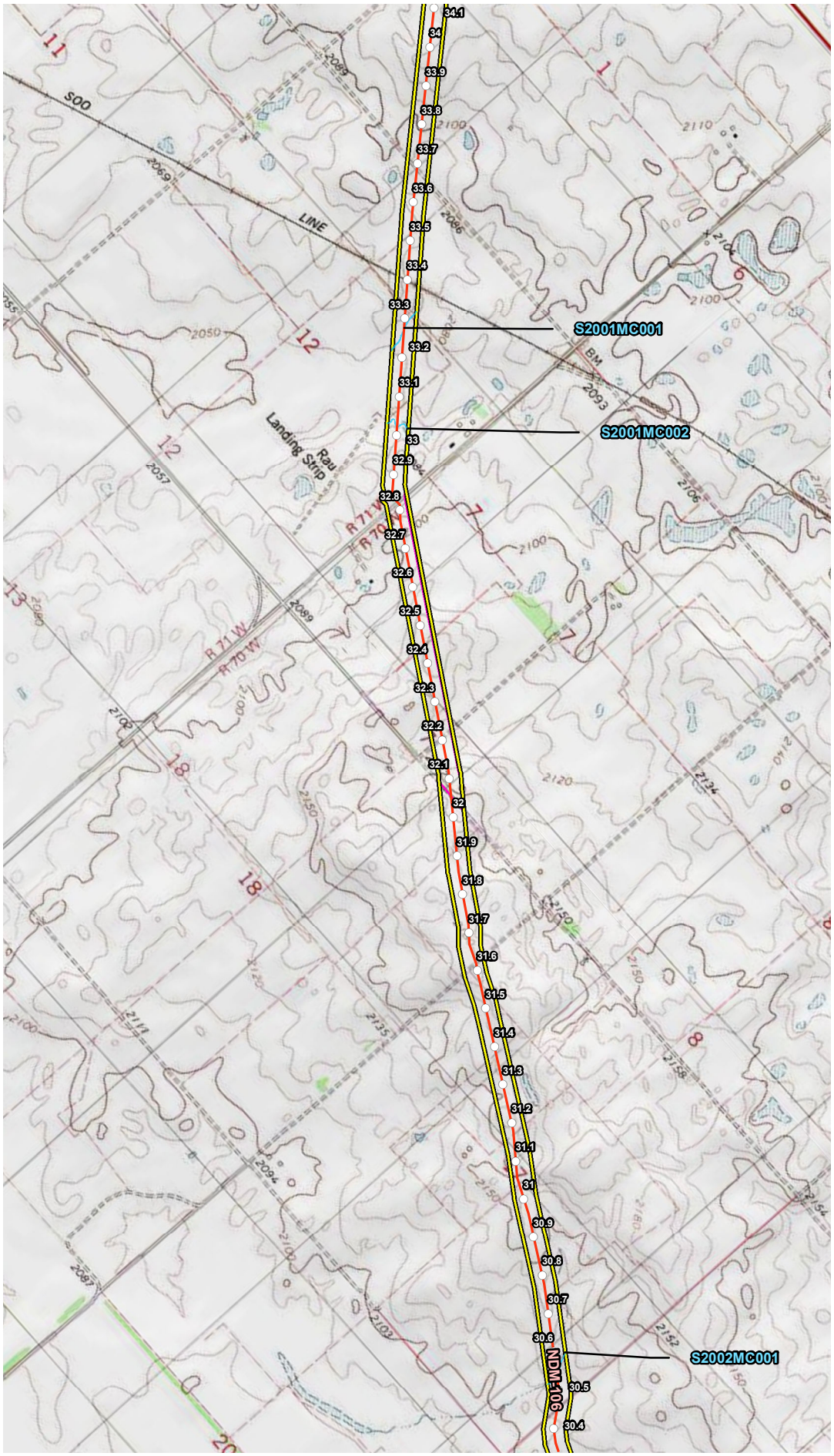
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

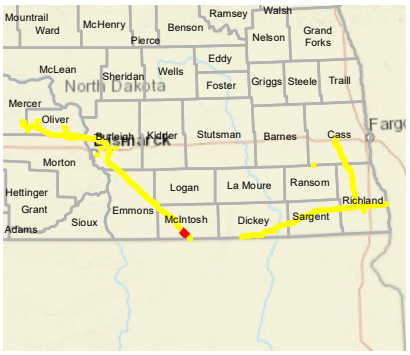
| Sheet: | Drawing Number: |
|---|---|
| 37 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 38 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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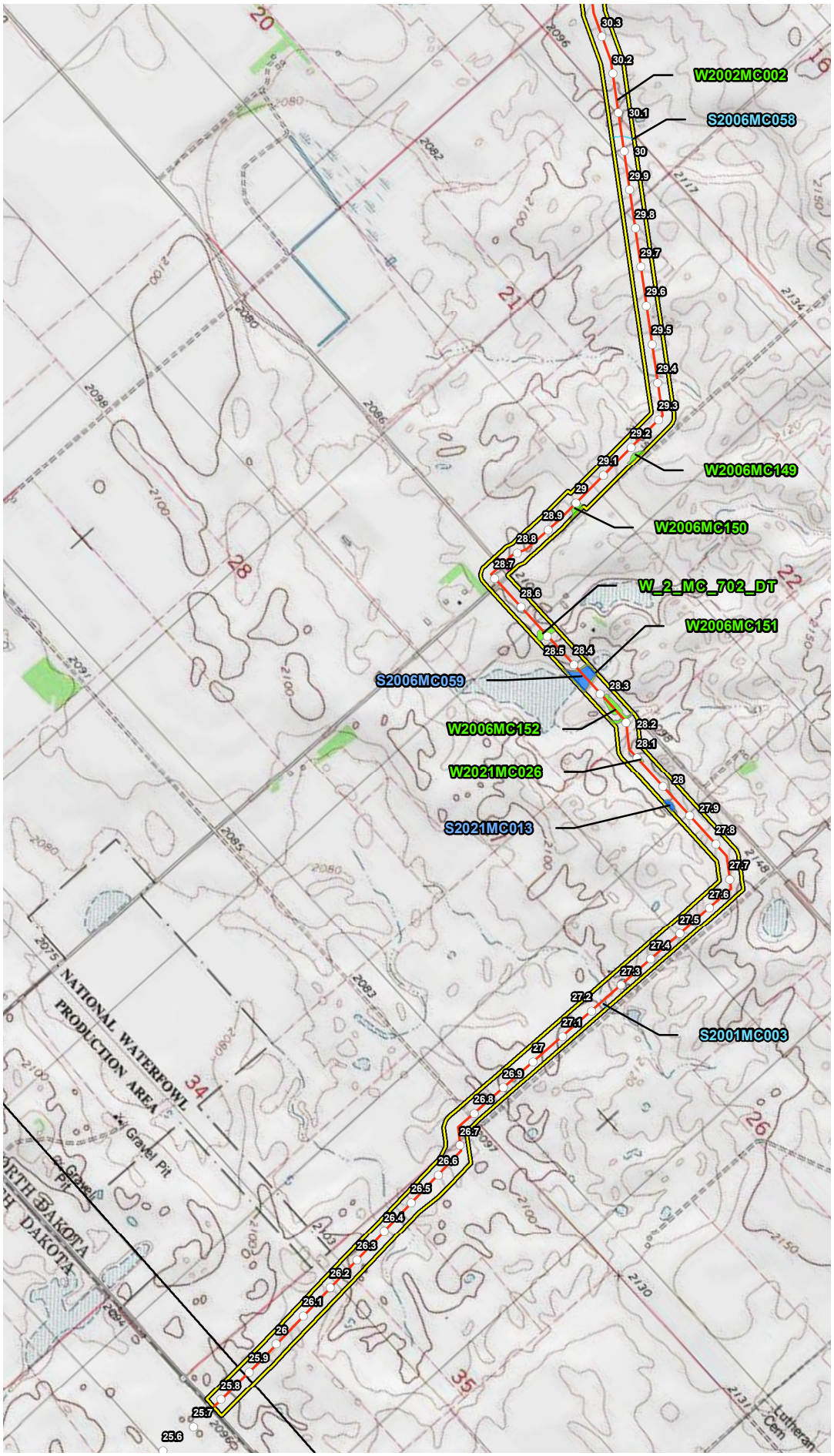
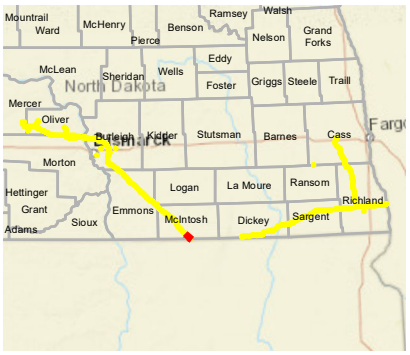
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
39 of 96

Drawing Number:
2001-22-003
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\3_Topo.mxd

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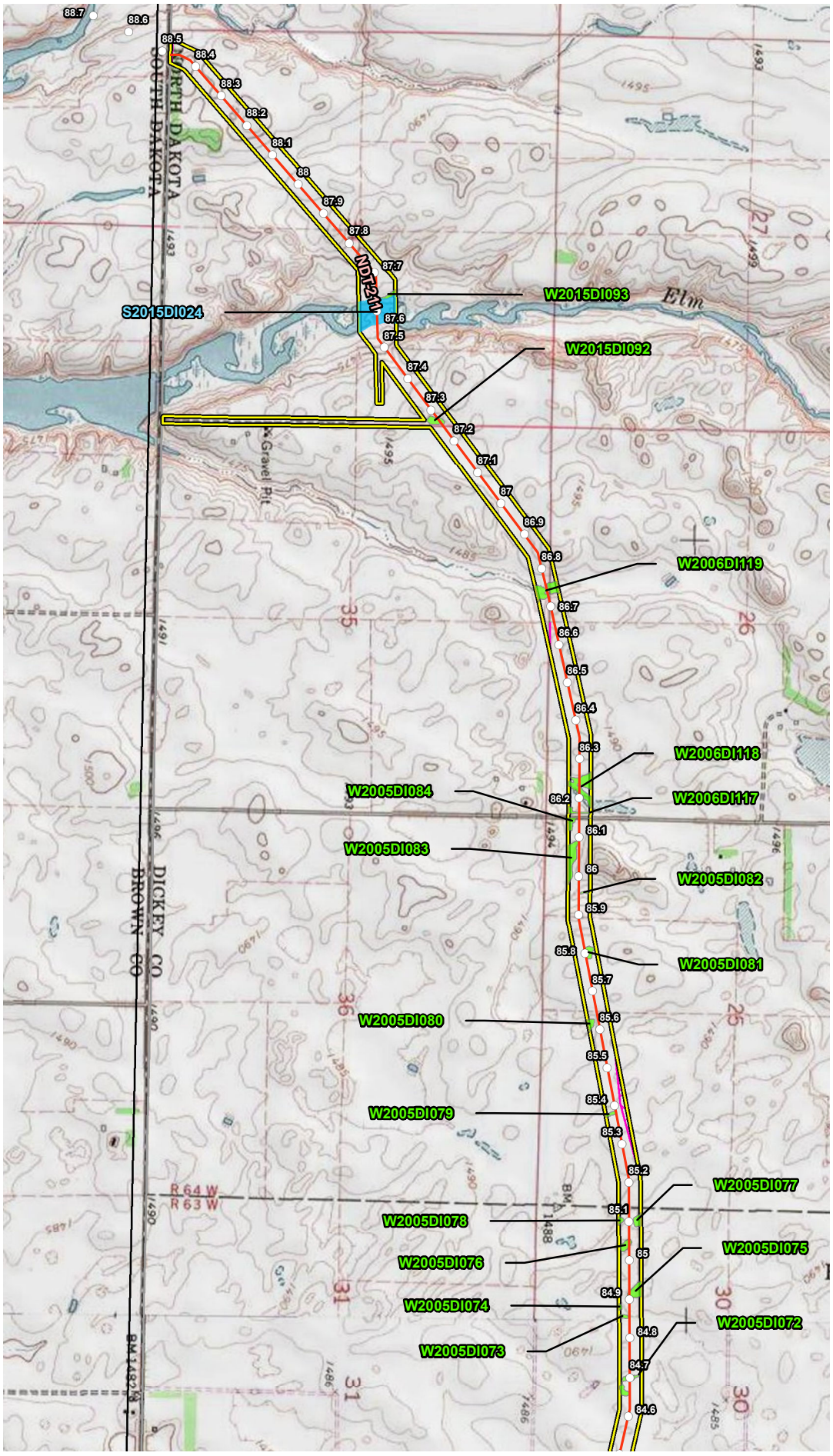


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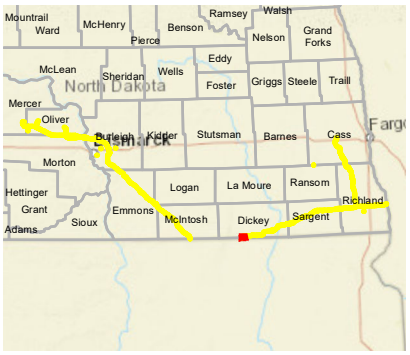


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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
40 of 96

Drawing Number:
2001-22-003
Current Revision

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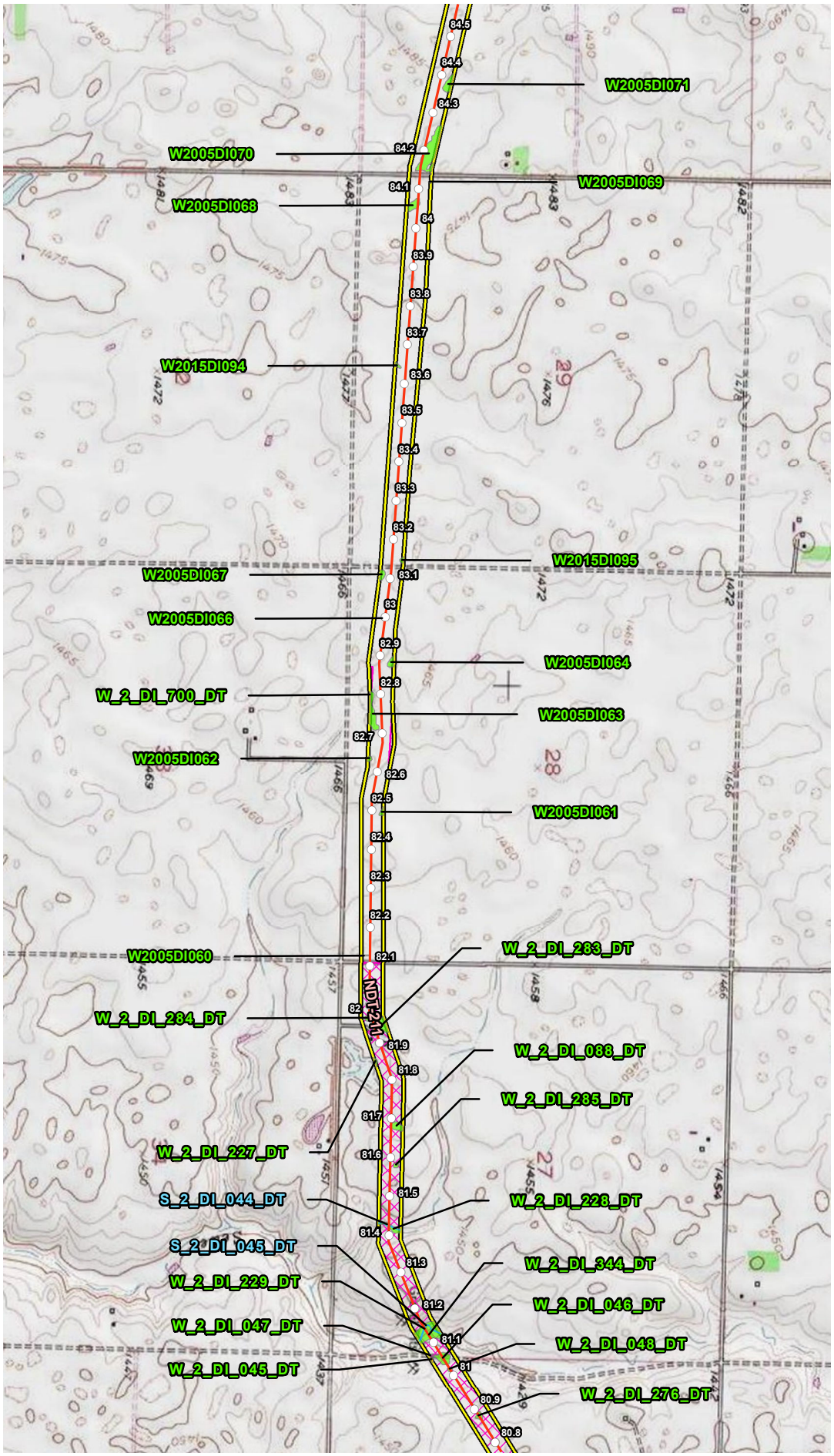
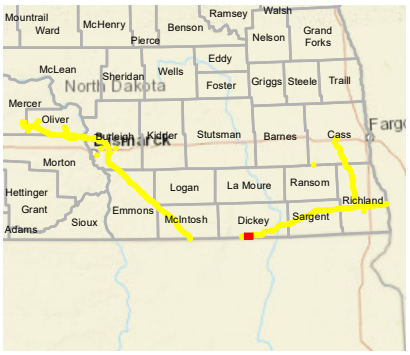
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 41 of 96 | 2001-22-003<br>Current Revision |

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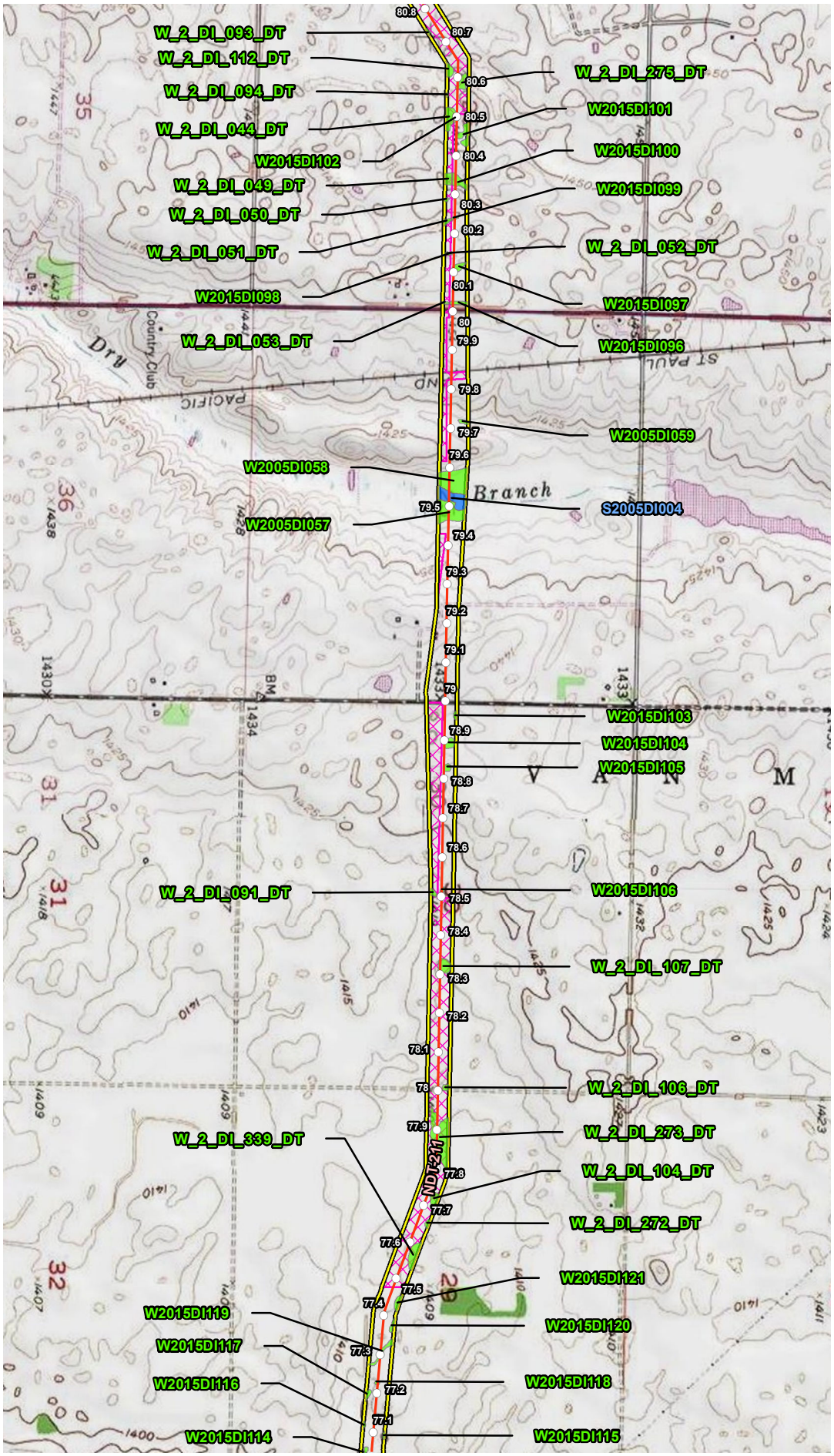
## TOPOGRAPHIC MAP

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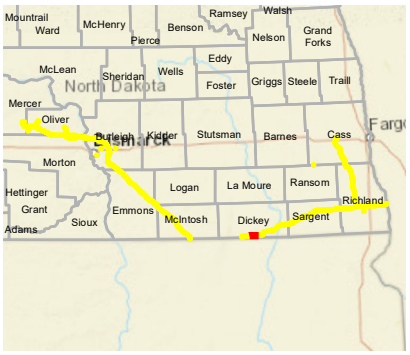


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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**
Topographic Map

**Figure Number:**
Appendix A-3

| Scale | Projection |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 42 of 96 | 2001-22-003<br>Current Revision |

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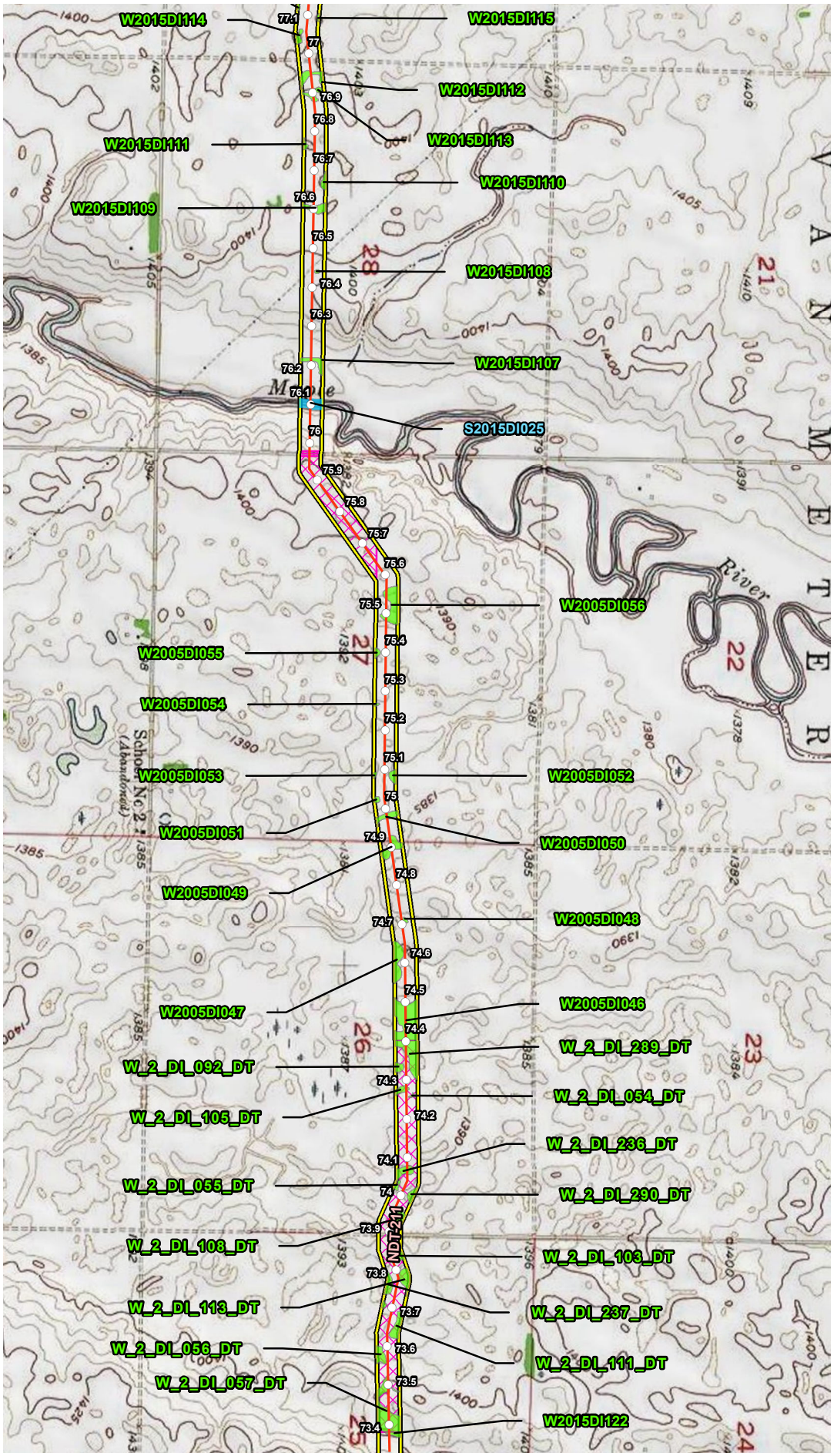
## TOPOGRAPHIC MAP

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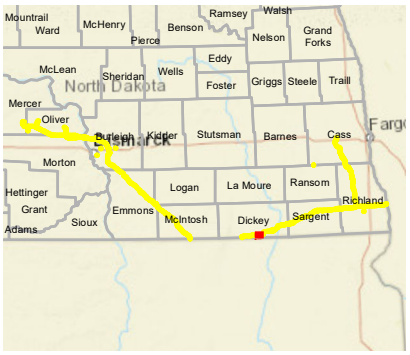


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 43 of 96 | 2001-22-003<br>Current Revision |

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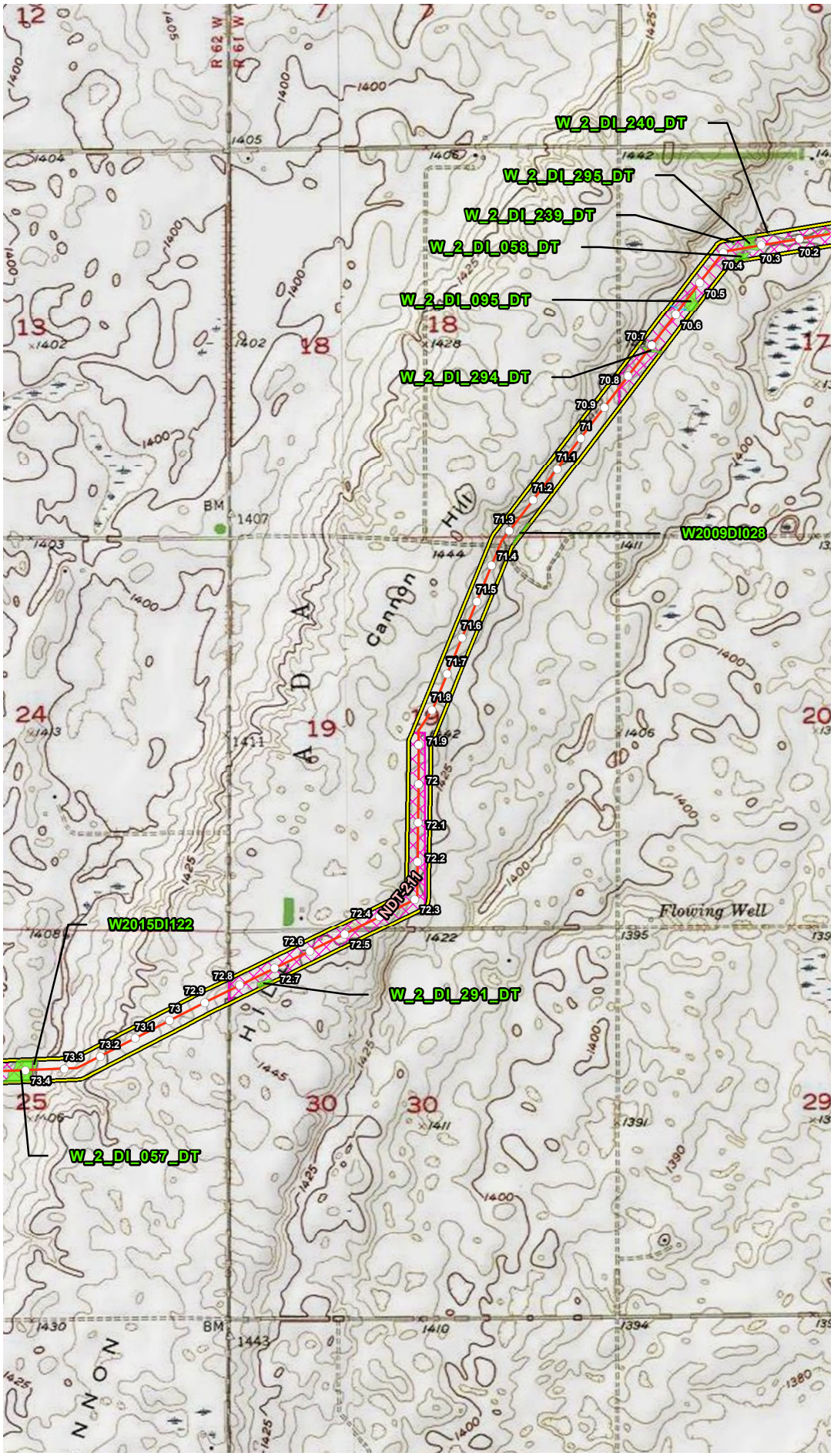
## TOPOGRAPHIC MAP

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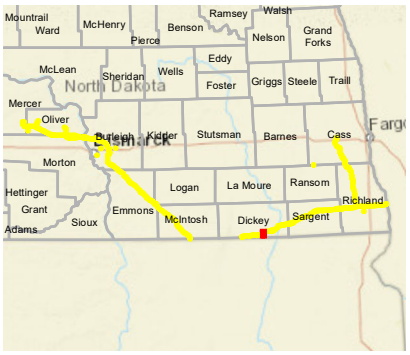


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 44 of 96 | 2001-22-003<br>Current Revision |

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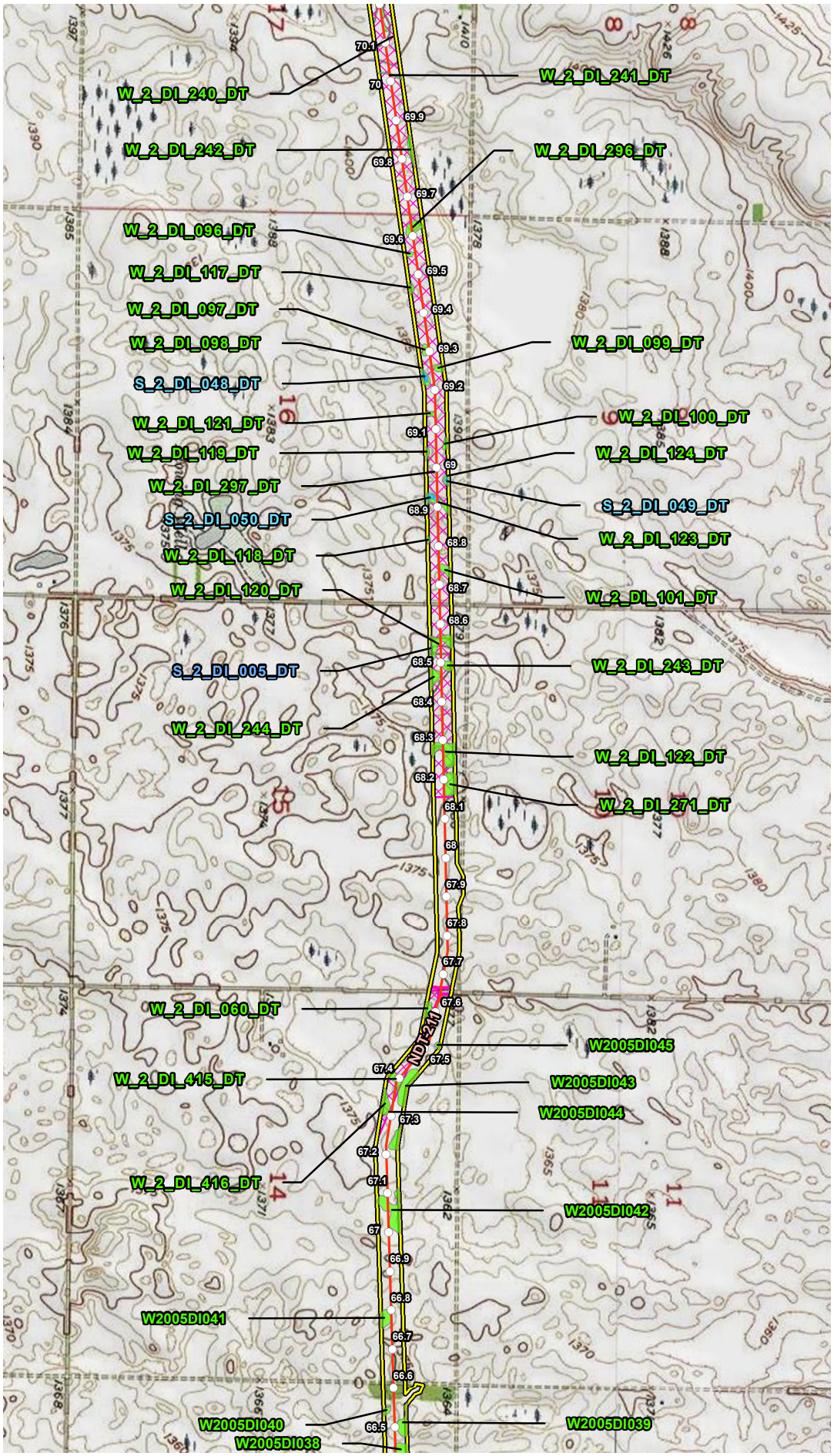
## TOPOGRAPHIC MAP

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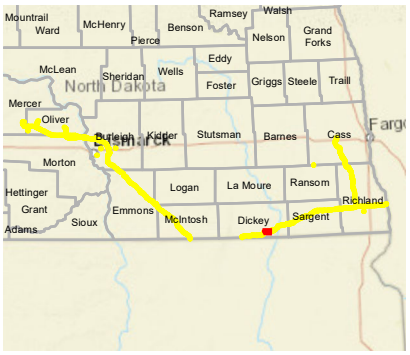


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:
**Topographic Map**

Figure Number:
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 45 of 96 | 2001-22-003<br>Current Revision |

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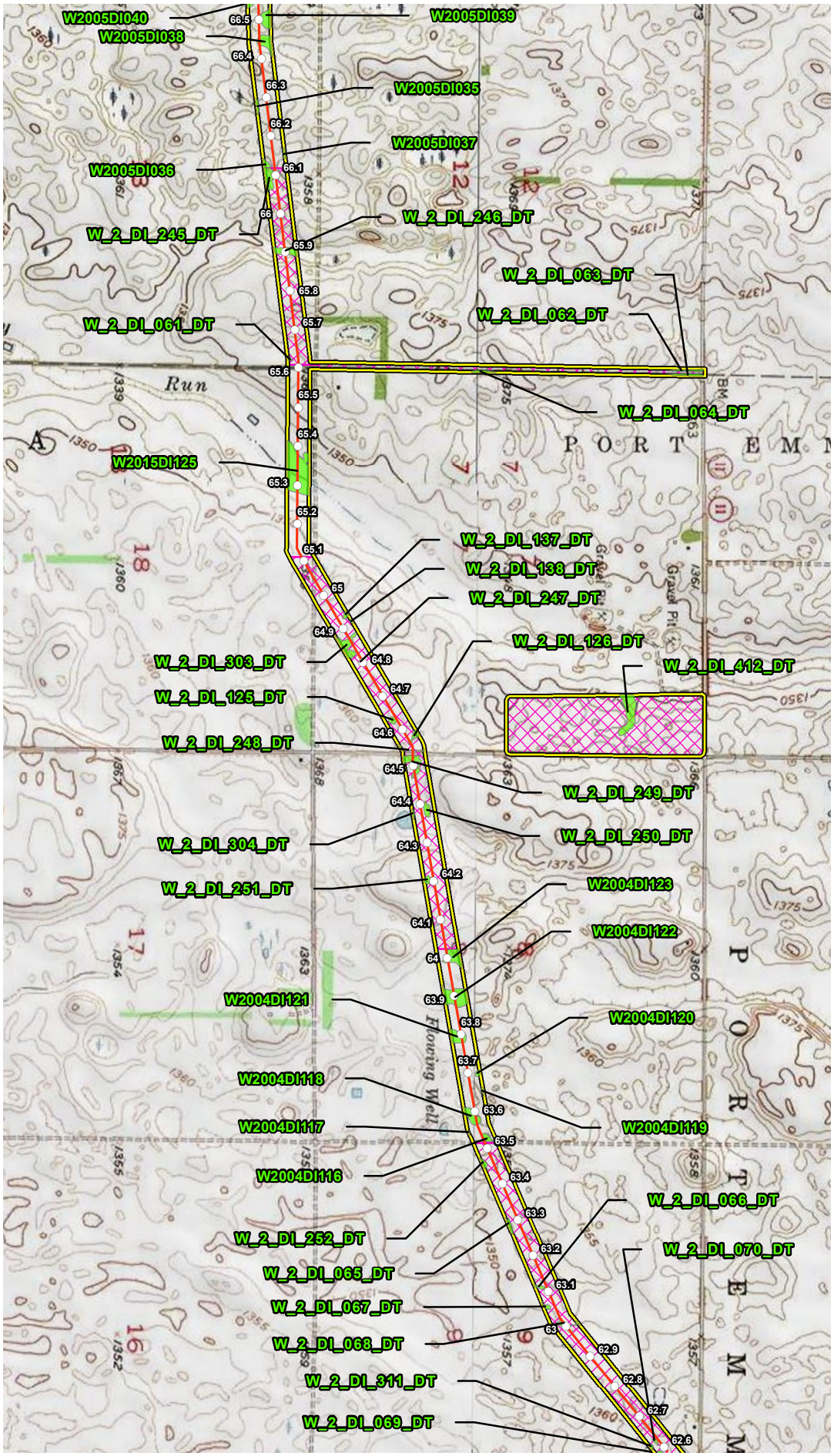
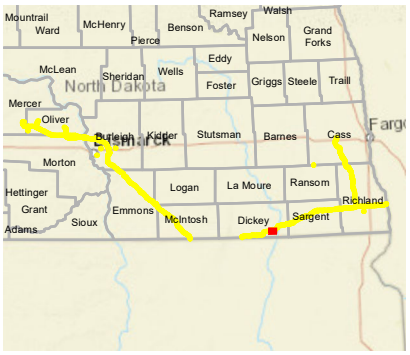
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| **1A - Revision** | | |
| Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

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Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>46 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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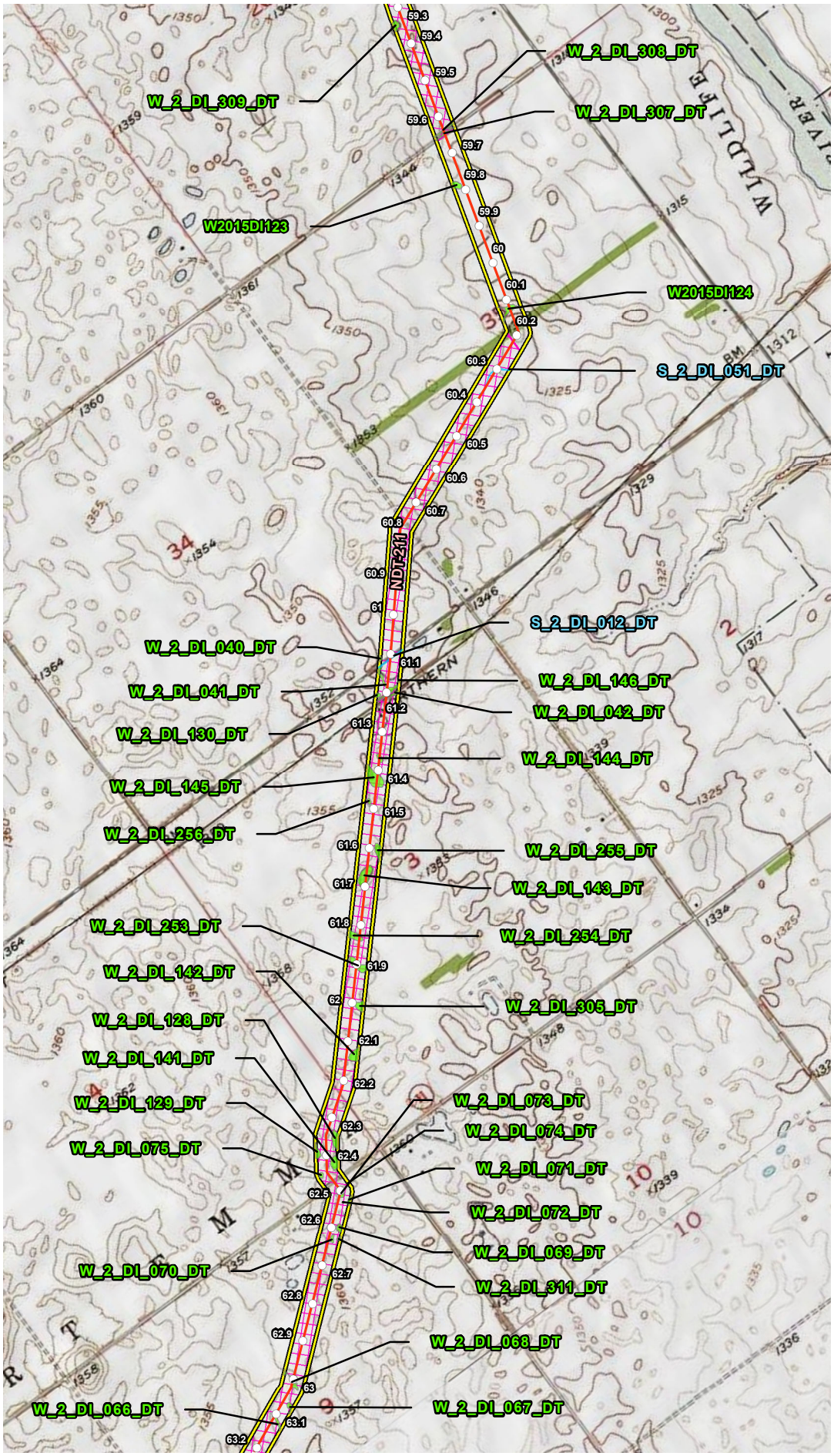
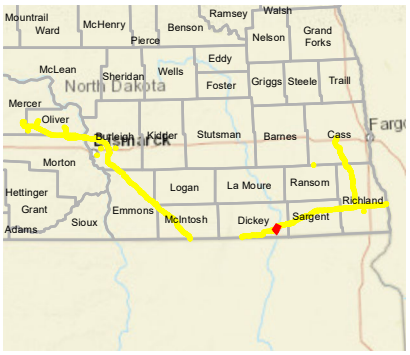
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

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| Scale: | Projection: |
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| Sheet: | Drawing Number: |
|---|---|
| 47 of 96 | 2001-22-003<br>Current Revision |

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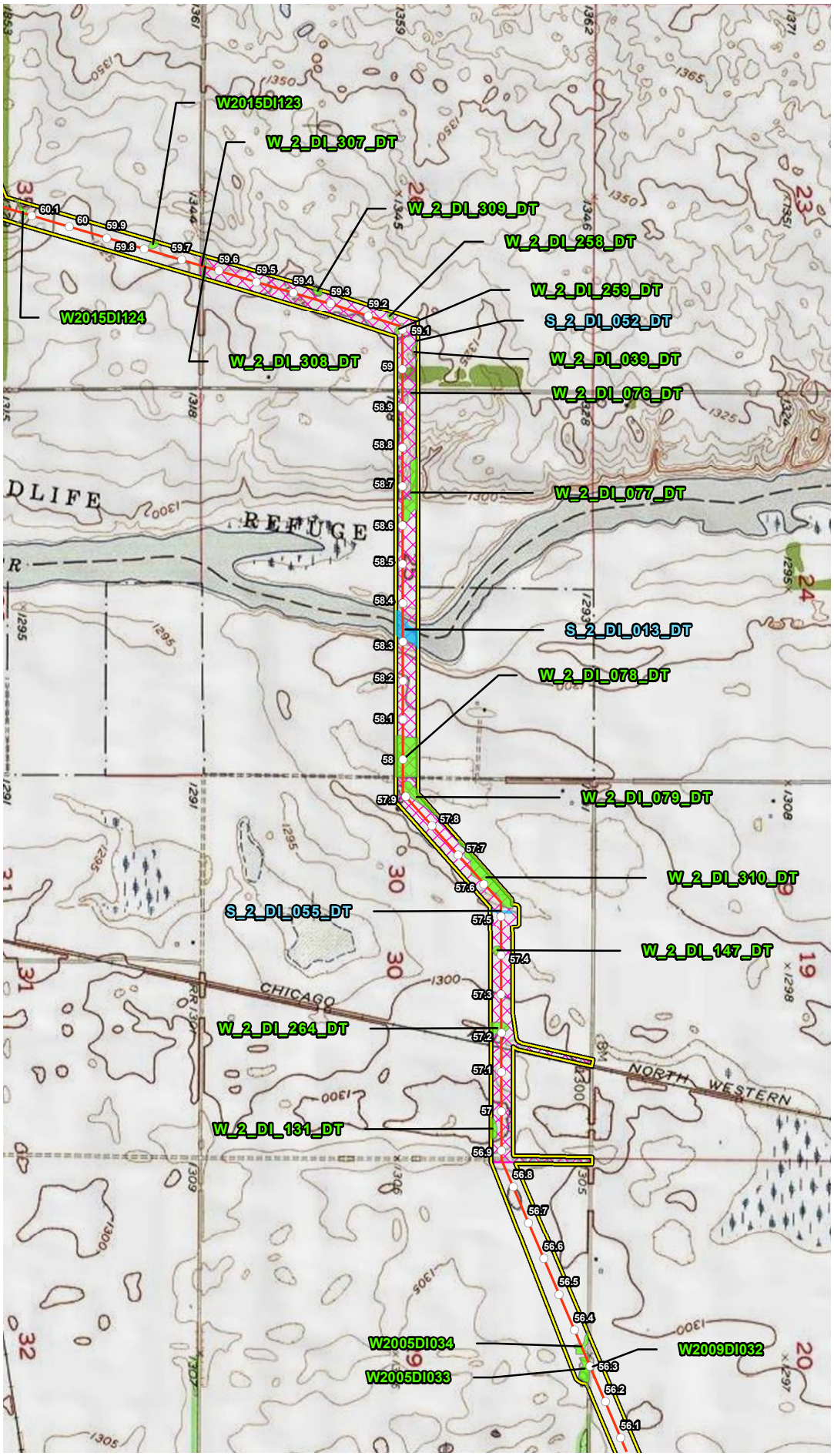
## TOPOGRAPHIC MAP

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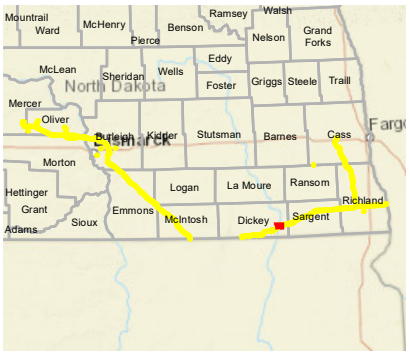


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| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

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| Sheet: | Drawing Number: |
|---|---|
| 48 of 96 | 2001-22-003<br>Current Revision |

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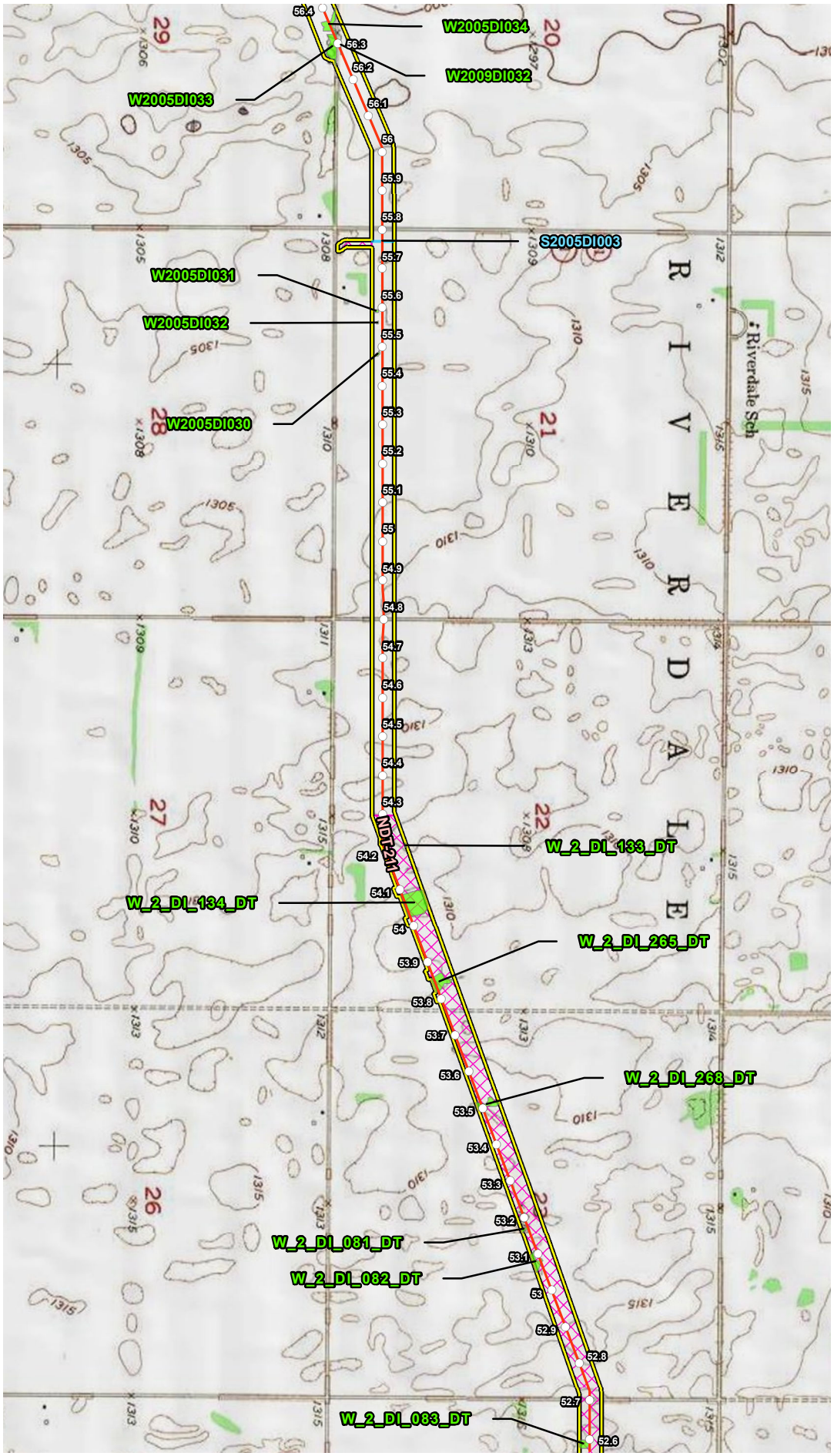
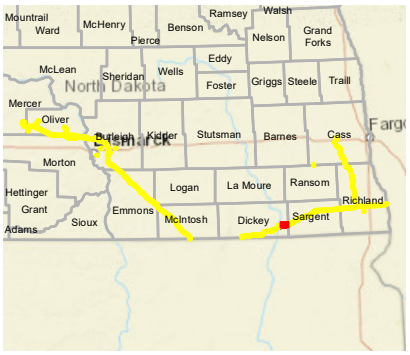
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
| | | |

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**Figure Title:**
Topographic Map

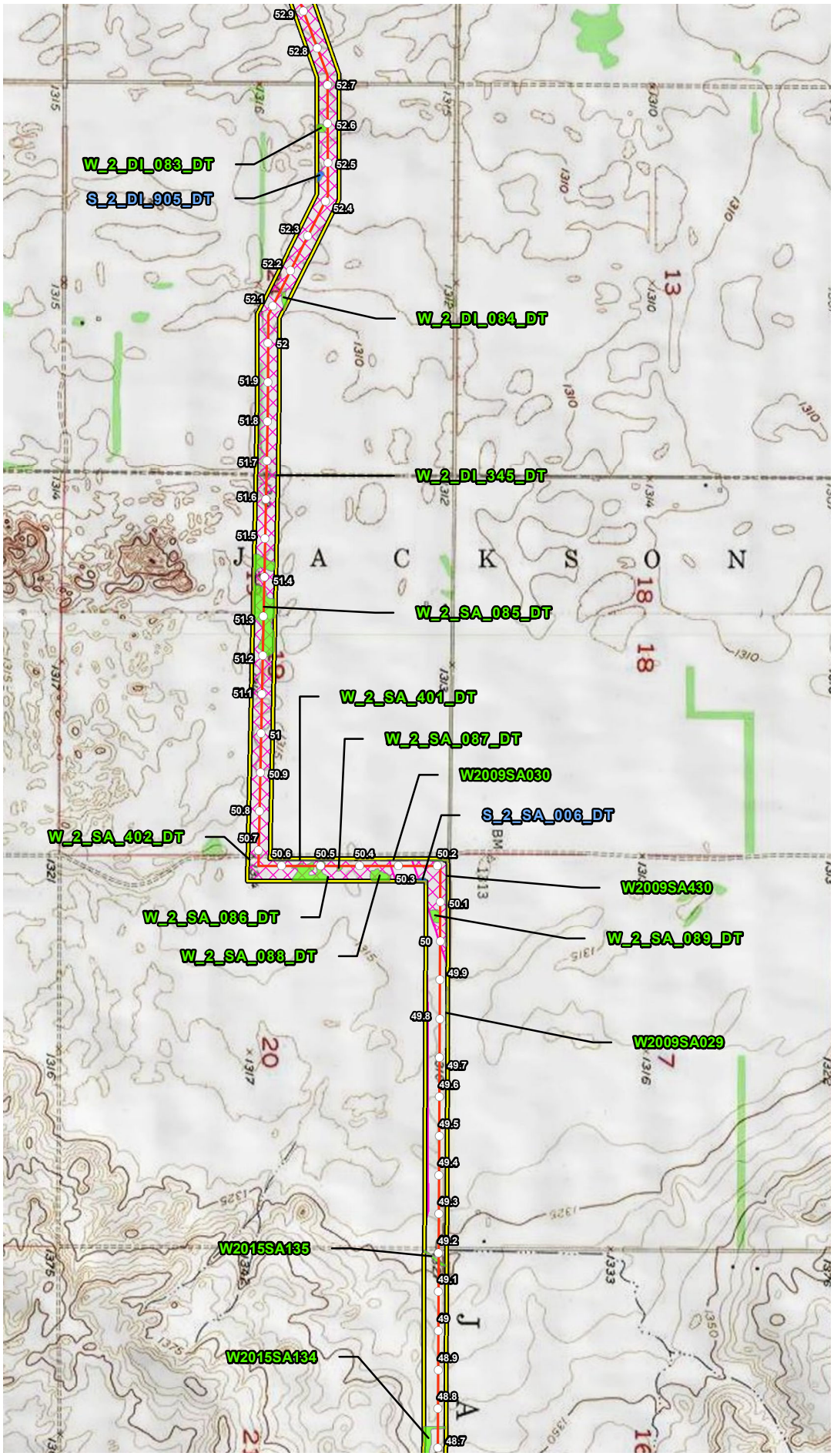
**Figure Number:**
Appendix A-3

| Scale | Projection |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

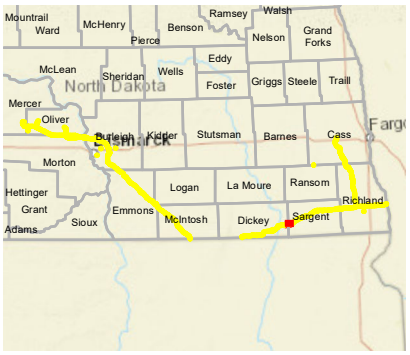
| Sheet | Drawing Number |
|---|---|
| 49 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 50 of 96 | 2001-22-003<br>Current Revision |

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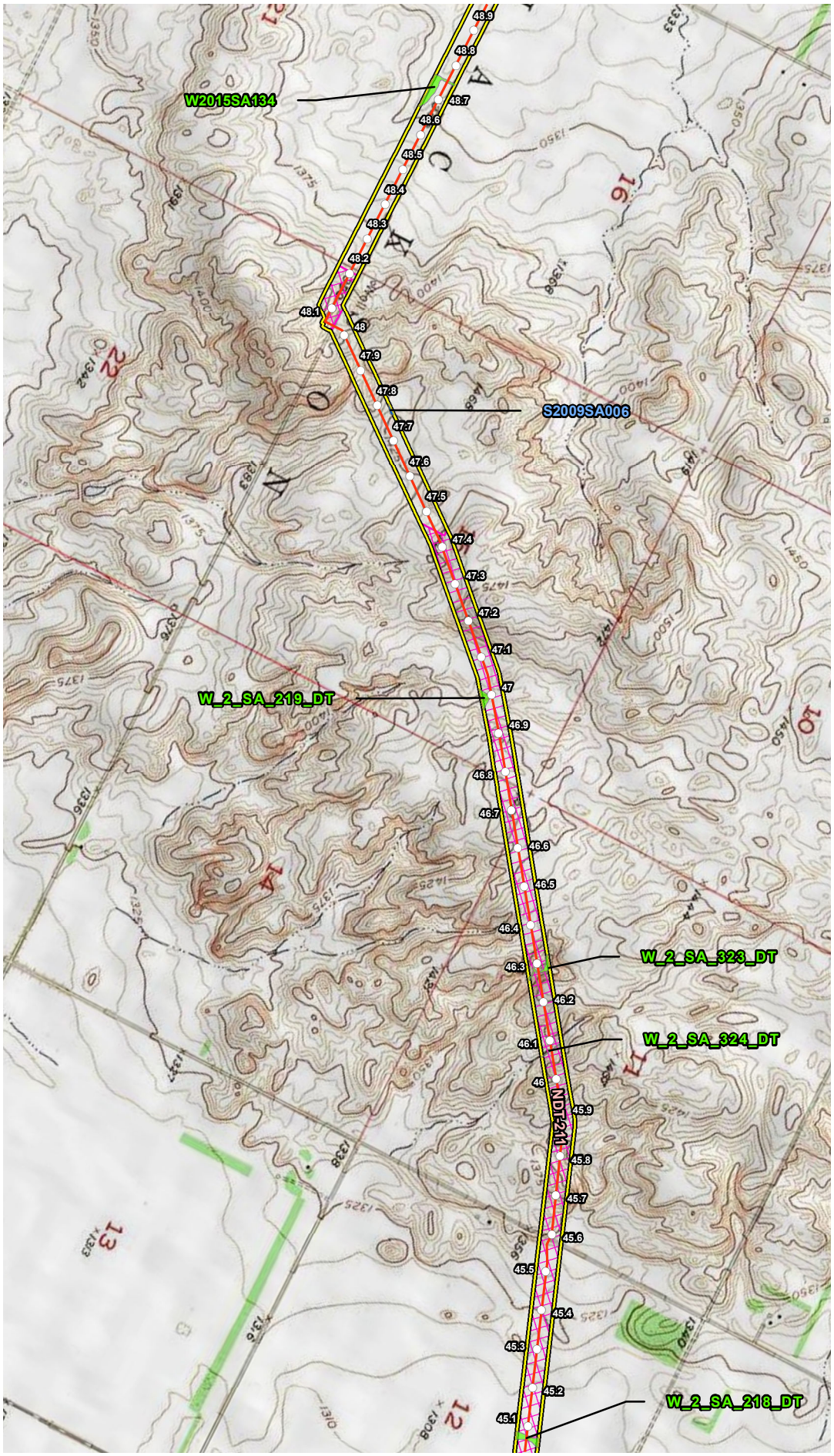
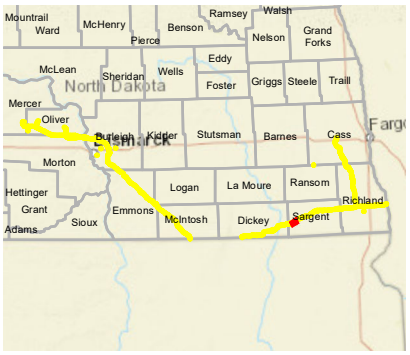
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

| Scale: | Projection: |
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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 51 of 96 | 2001-22-003<br>Current Revision |

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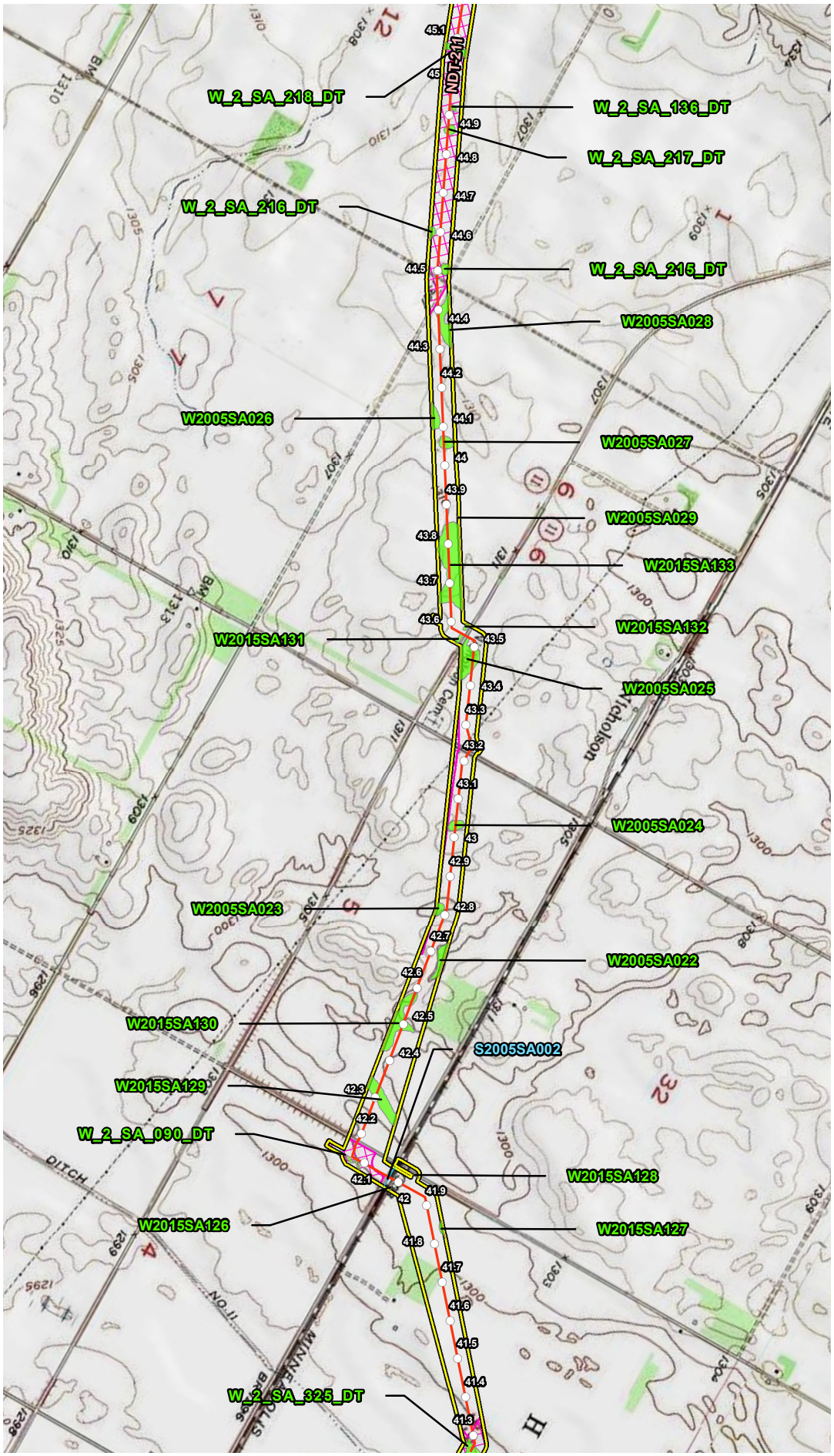
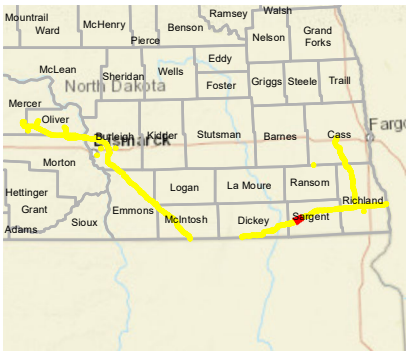
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 52 of 96 | 2001-22-003<br>Current Revision |

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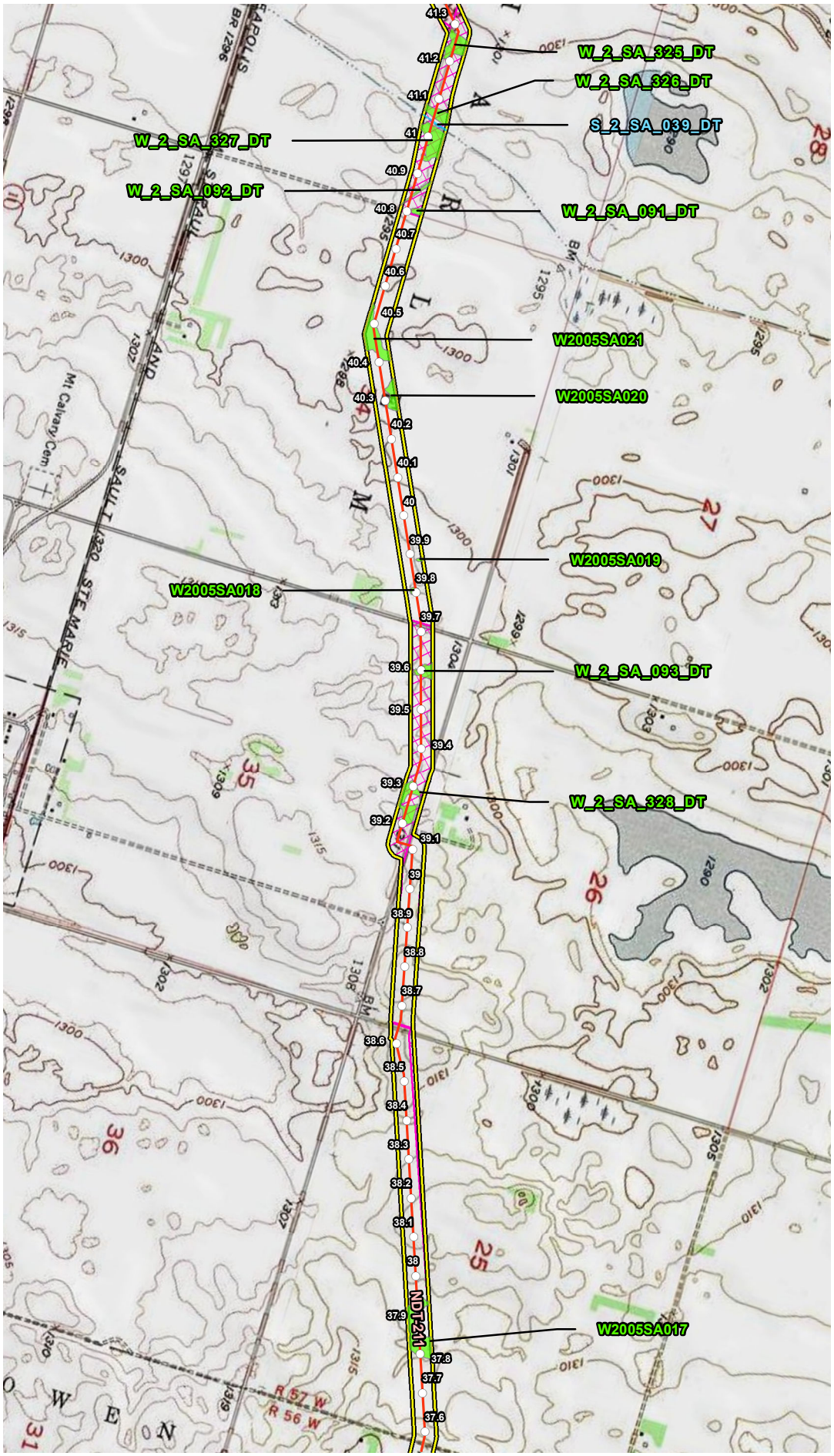
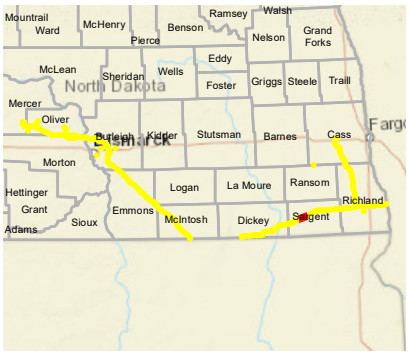
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 53 of 96 | 2001-22-003<br>Current Revision |

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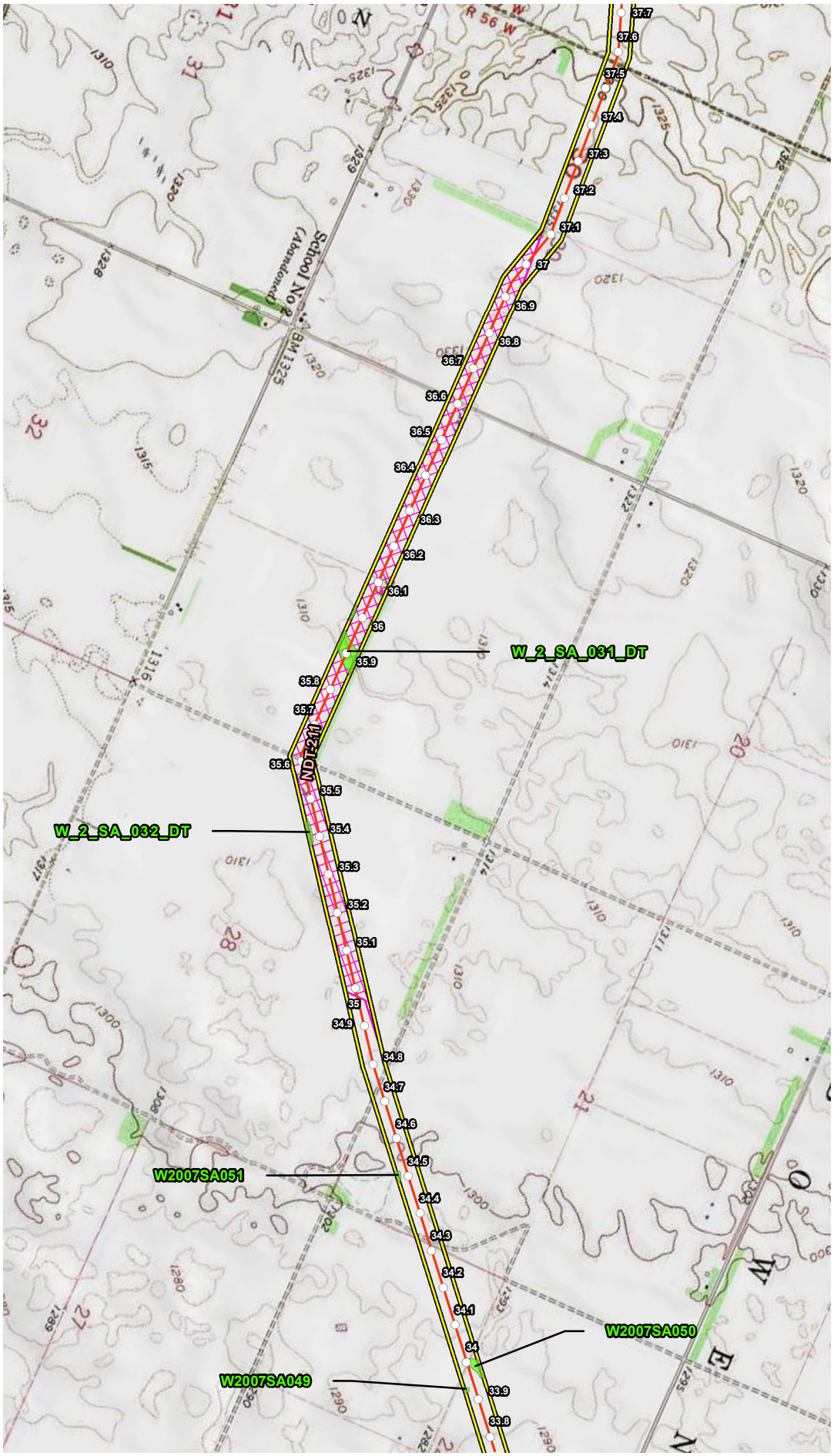
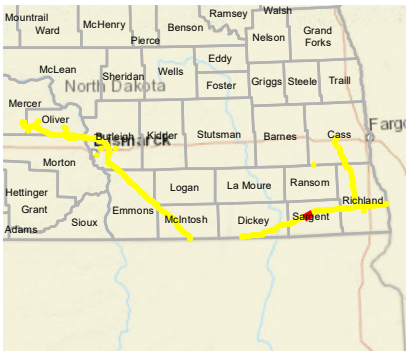
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 54 of 96 | 2001-22-003<br>Current Revision |

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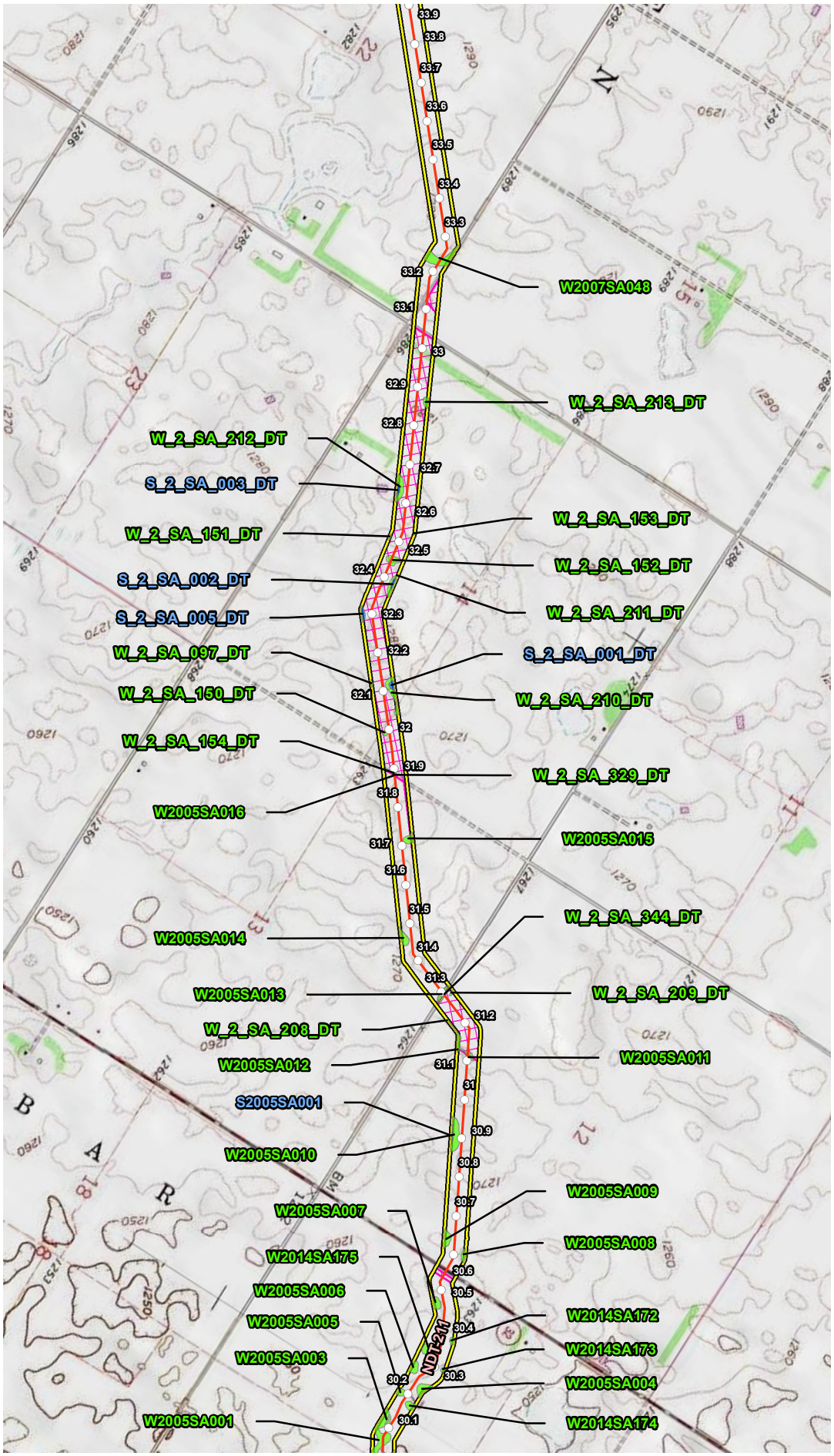
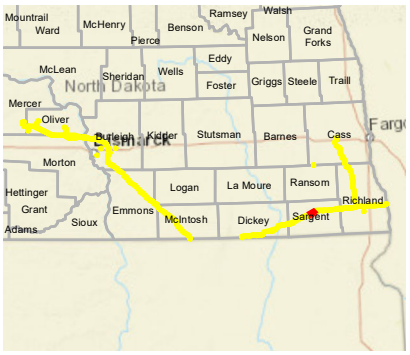
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:
**Topographic Map**

Figure Number:
**Appendix A-3**

| Scale | Projection |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 55 of 96 | 2001-22-003<br>Current Revision |

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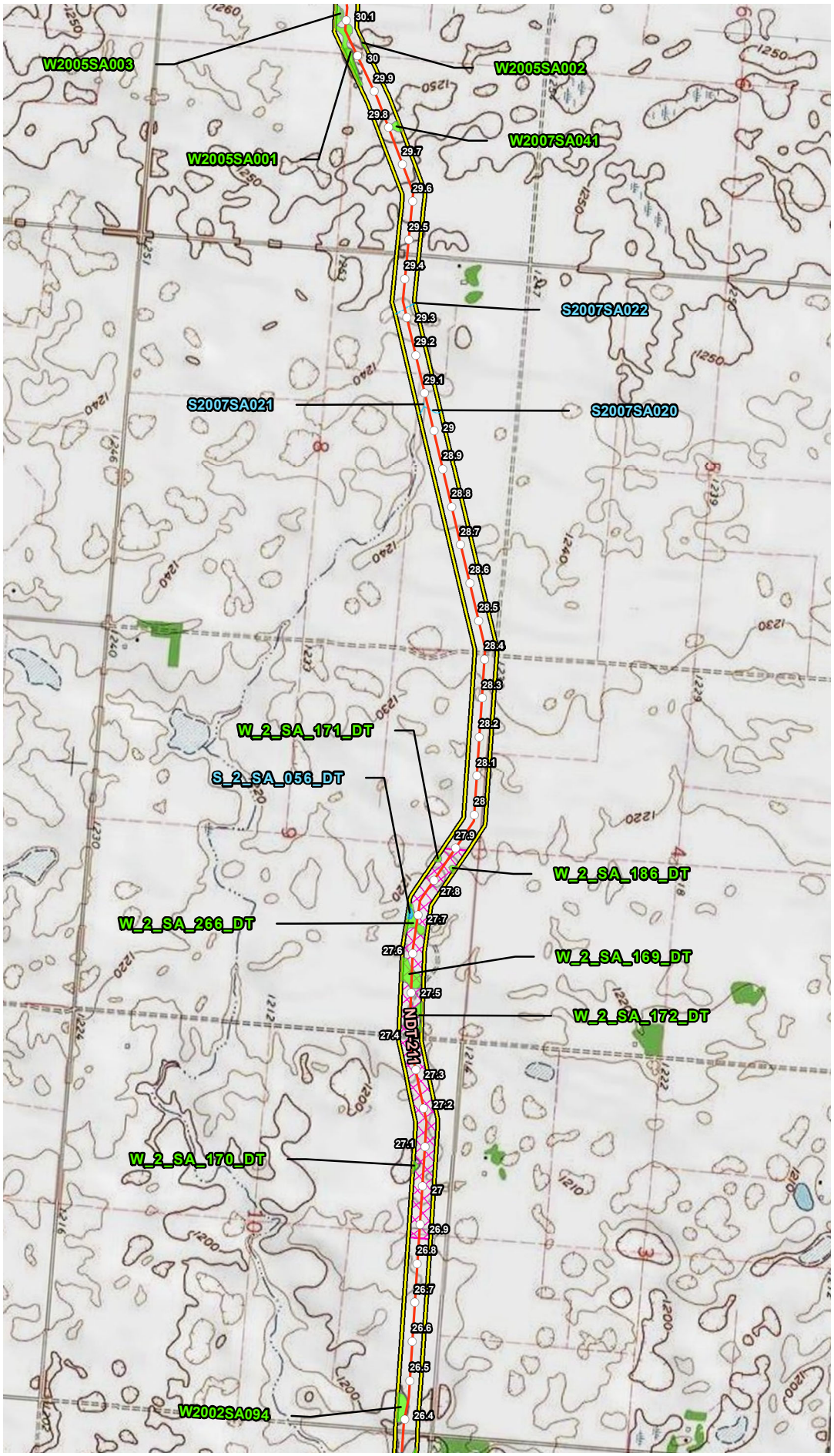
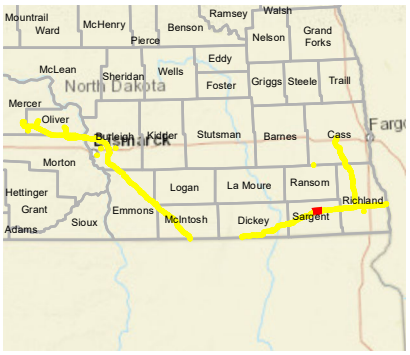
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 56 of 96 | 2001-22-003<br>Current Revision |

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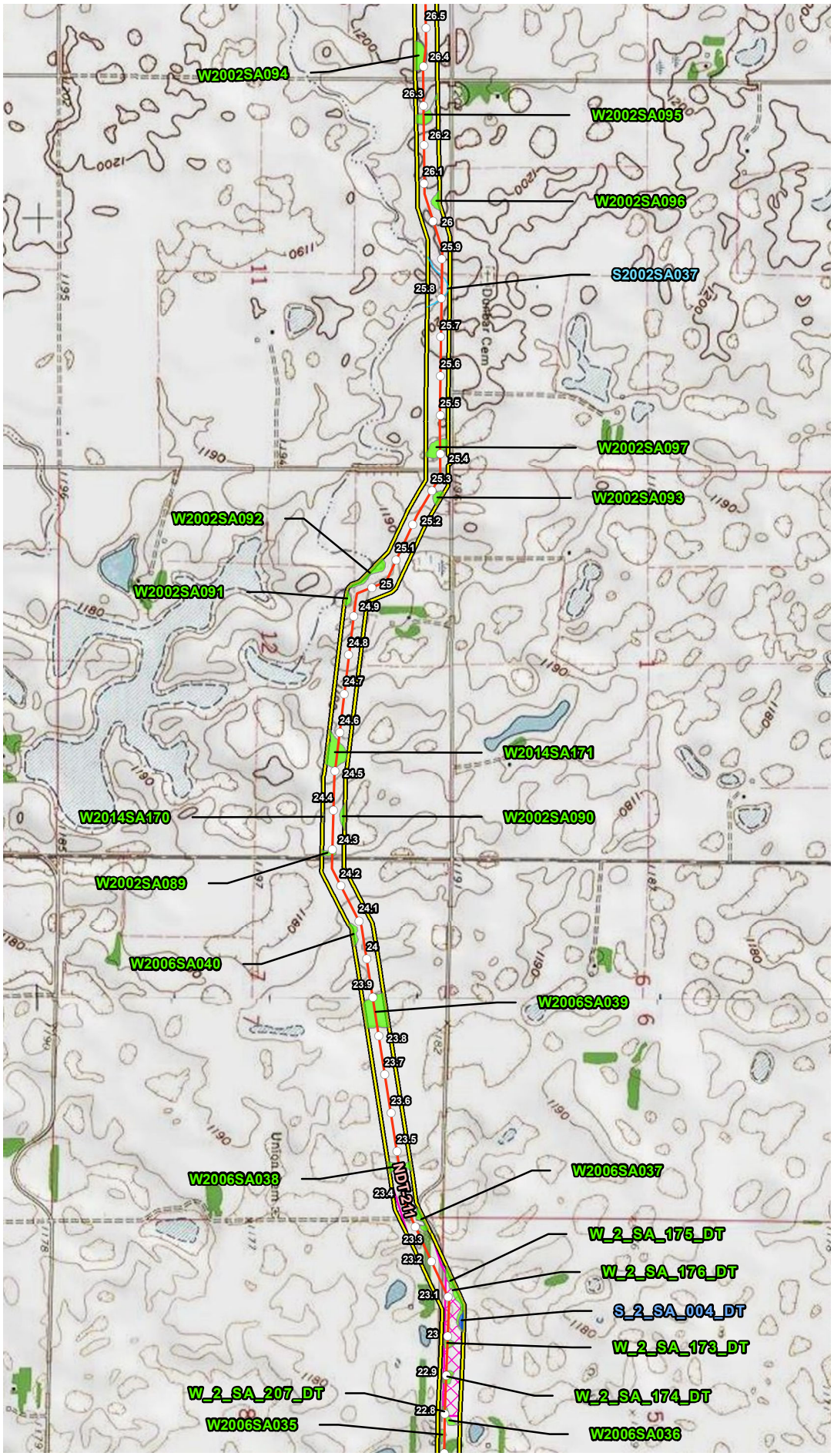
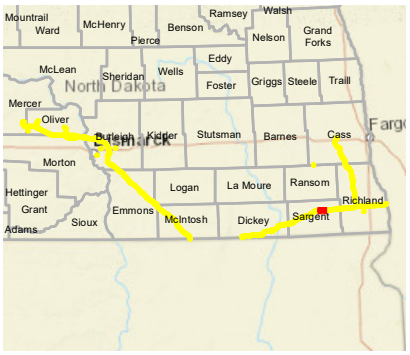
## TOPOGRAPHIC MAP




## VICINITY MAP

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## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Topographic Map

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Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>57 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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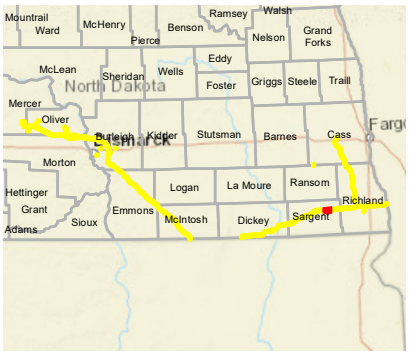
## TOPOGRAPHIC MAP




## VICINITY MAP

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| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Sheet: | Drawing Number: |
|---|---|
| 58 of 96 | 2001-22-003<br>Current Revision |

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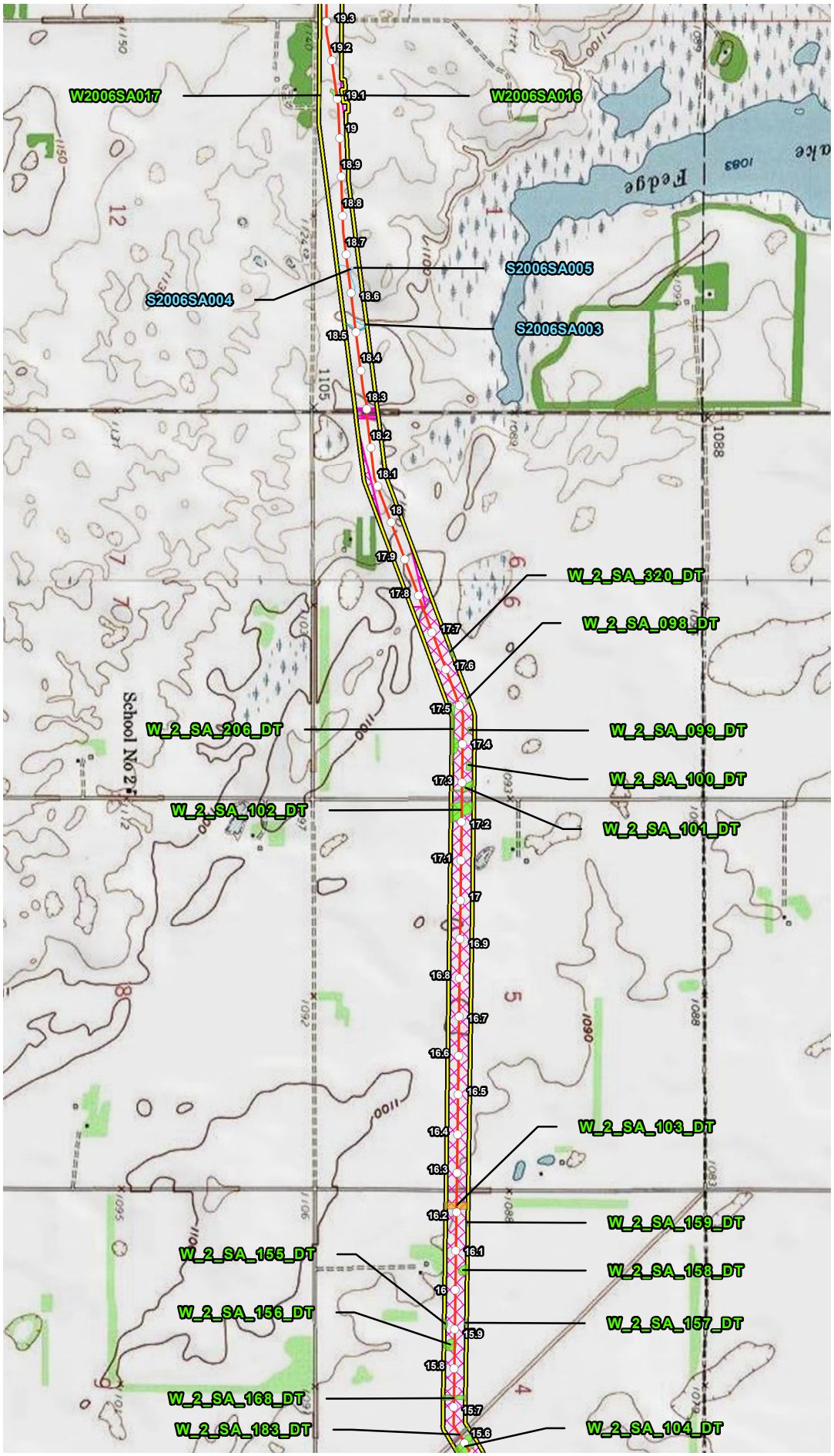
## TOPOGRAPHIC MAP

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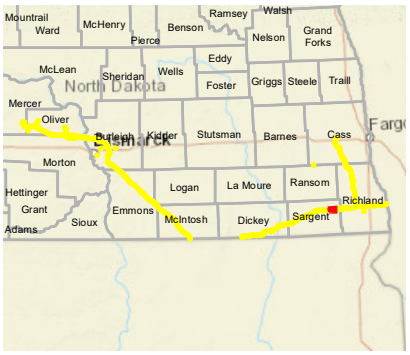


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## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Figure Title:

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| Scale: | Projection: |
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| Sheet: | Drawing Number: |
|---|---|
| 59 of 96 | 2001-22-003<br>Current Revision |

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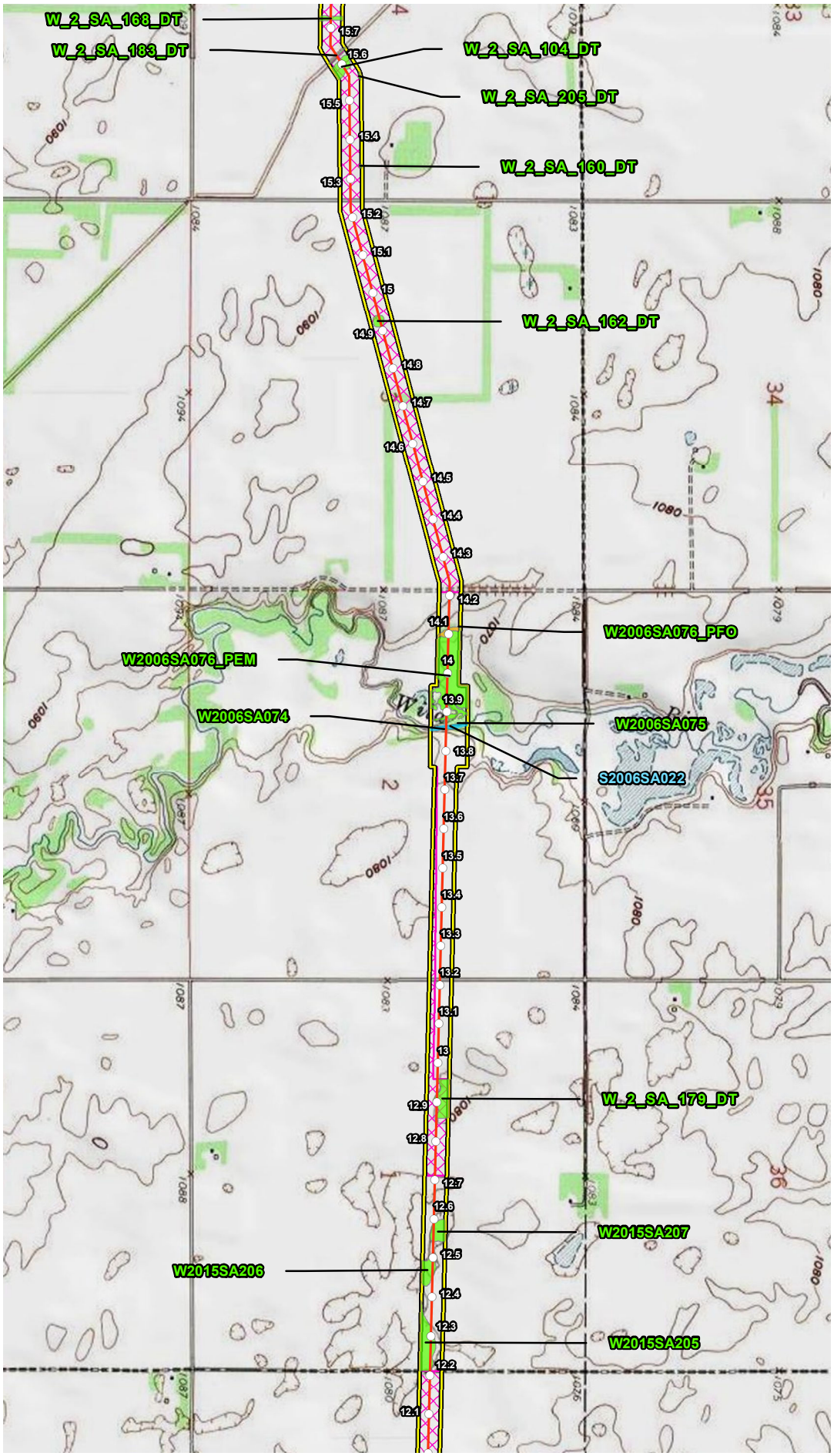
## TOPOGRAPHIC MAP

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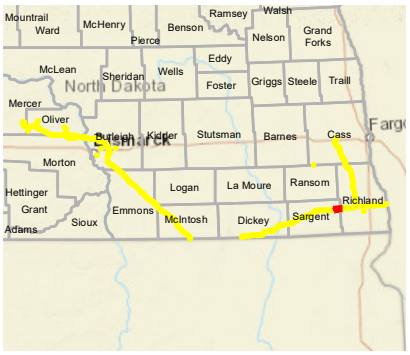


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## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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United States of America
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SUMMIT CARBON SOLUTIONS

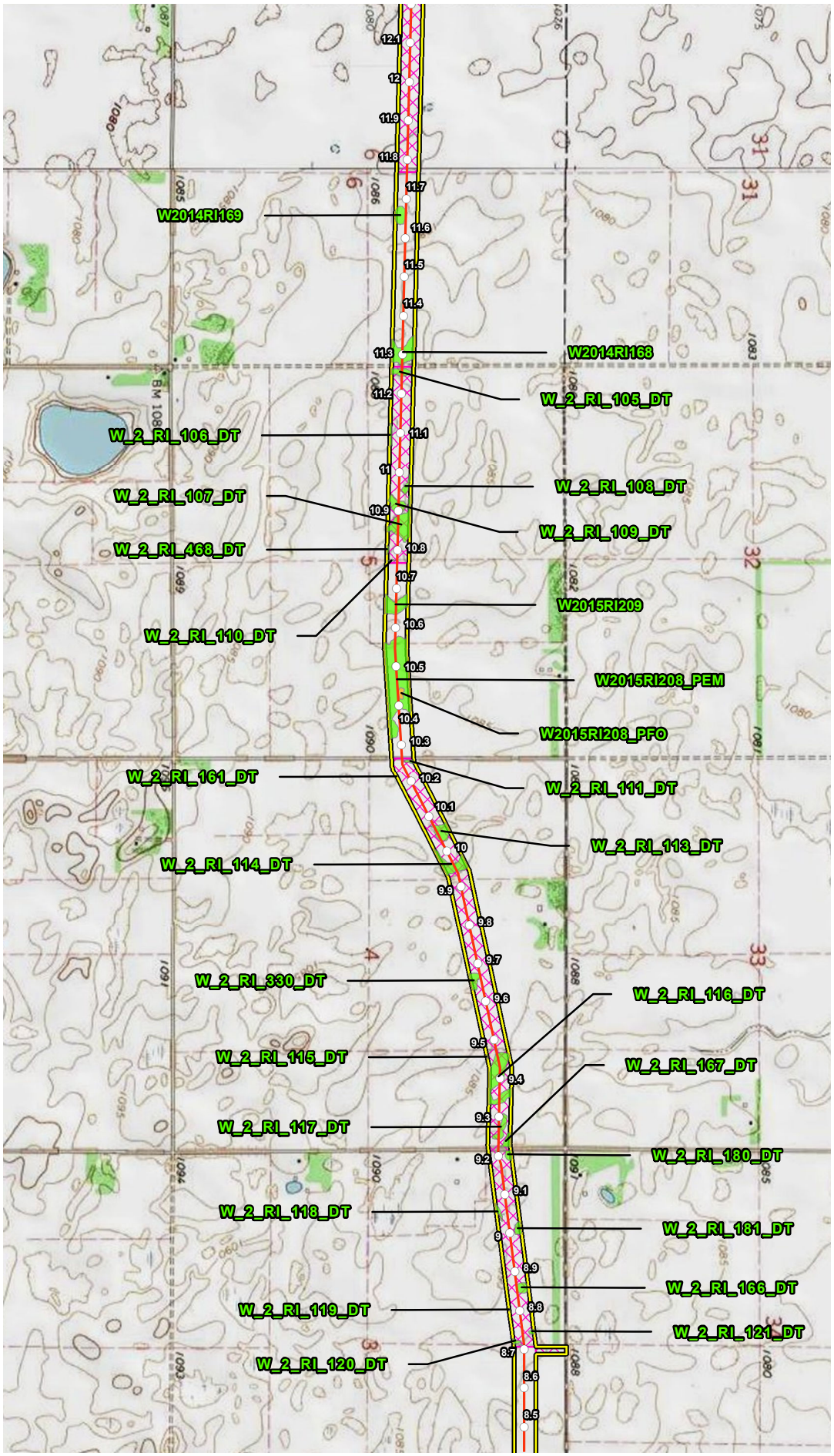
Figure Title:
Topographic Map

Figure Number:
Appendix A-3

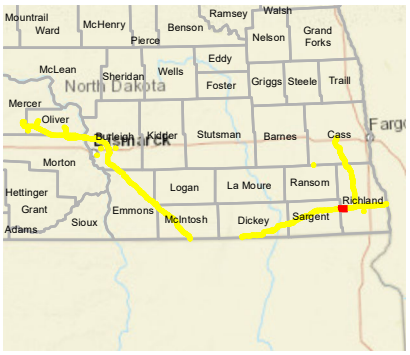
| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 60 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:
**Topographic Map**

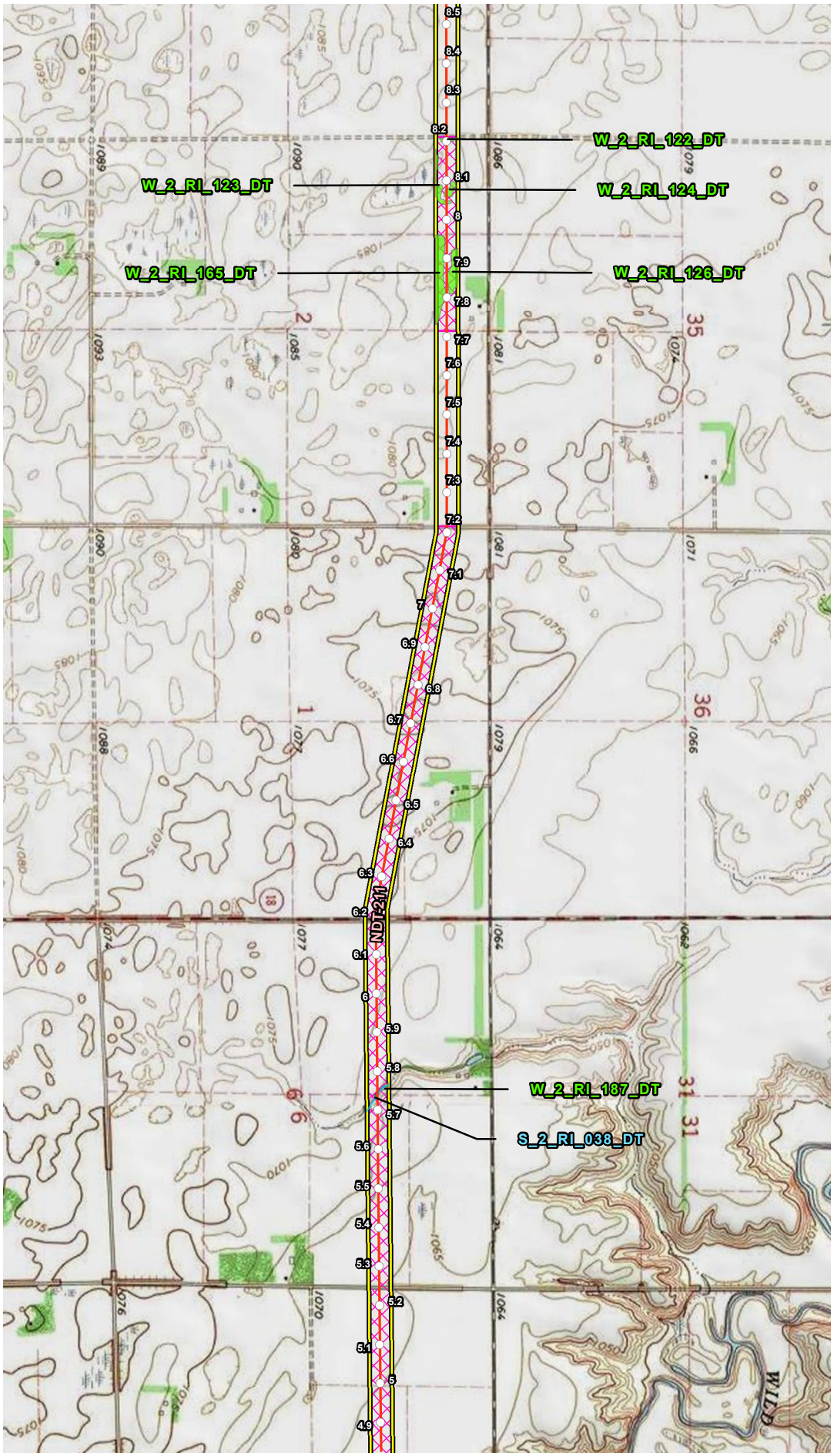
Figure Number:
**Appendix A-3**

| Scale | Projection |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

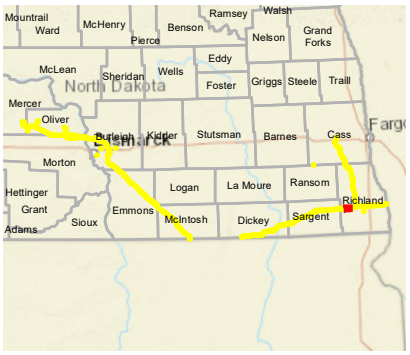
| Sheet | Drawing Number |
|---|---|
| 61 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_ND\mxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**
Topographic Map

**Figure Number:**
Appendix A-3

**Scale:**
Scale: 1:24,000
1 inch = 2,000 feet

**Projection:**
Transverse Mercator
NAD 1983 UTM Zone 14N

**Sheet:**
62 of 96

**Drawing Number:**
2001-22-003
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_NDImxds\3_Topo.mxd

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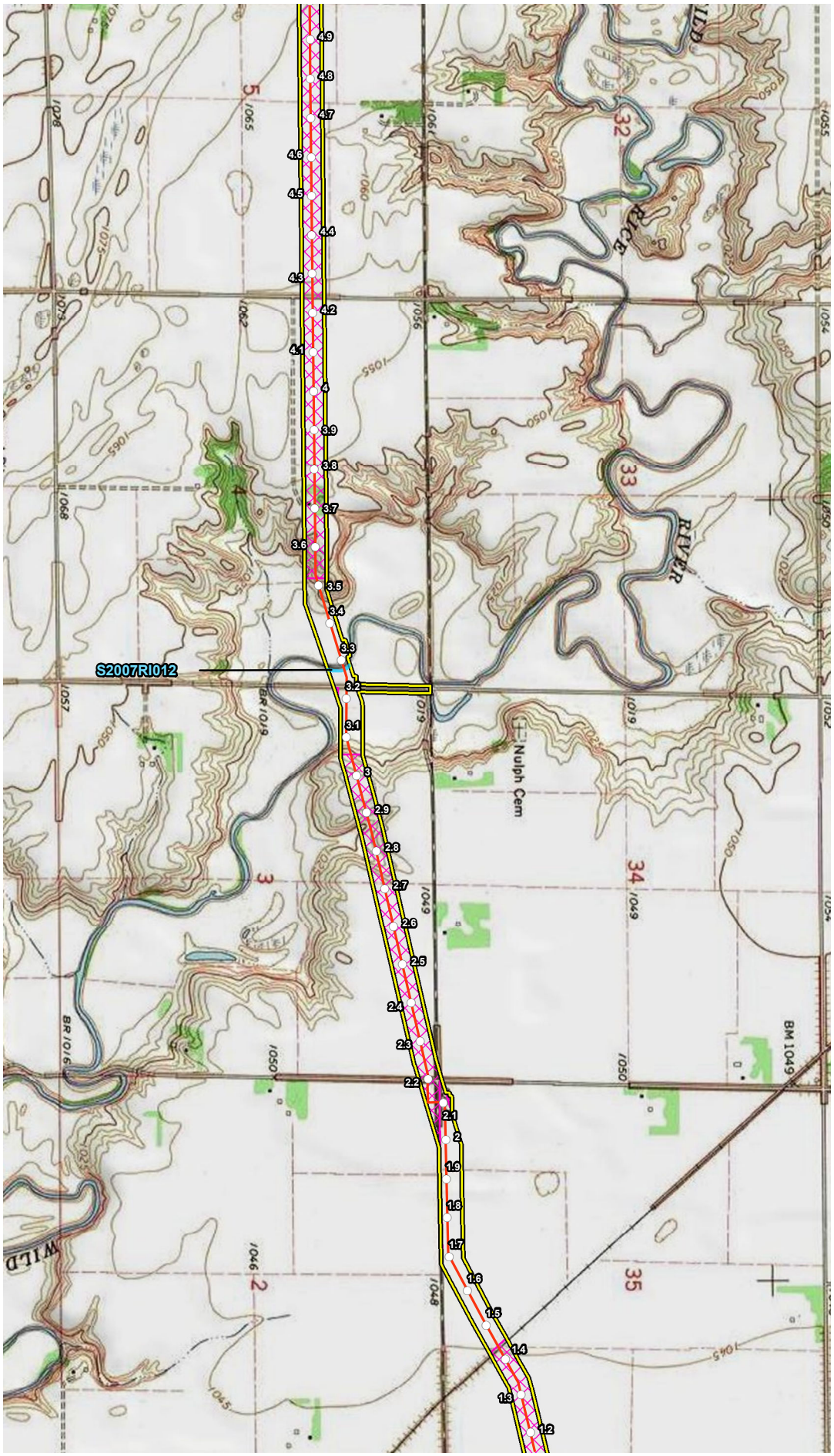


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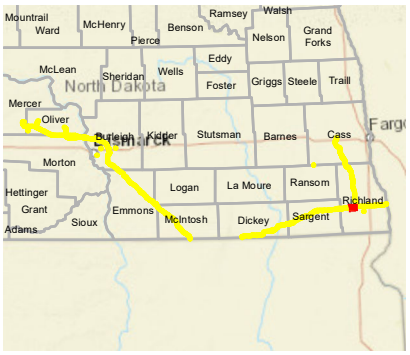


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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

| Scale: | Projection: |
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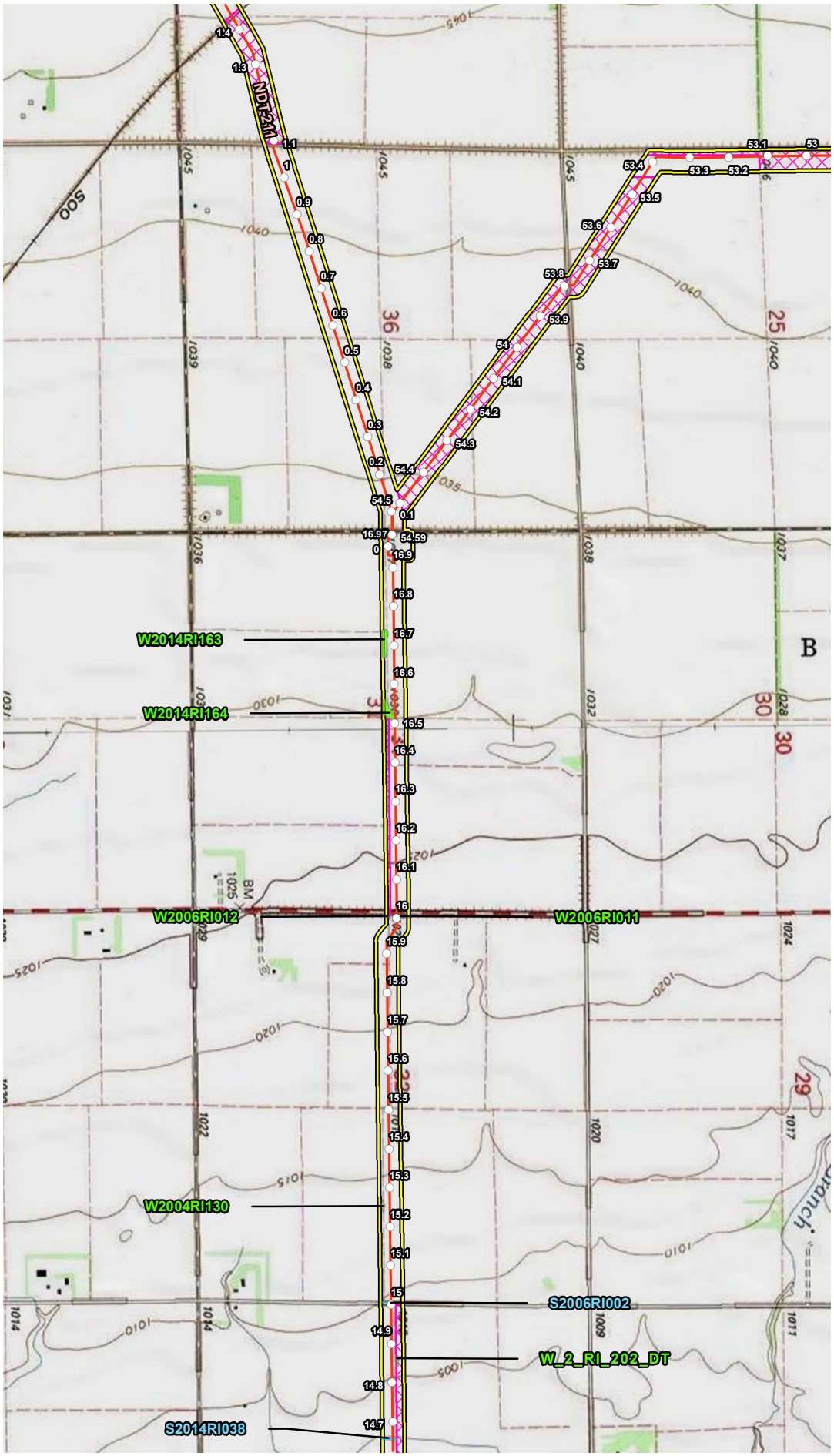
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 63 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\801_VWR_ND\mxds\3_Topo.mxd

## TOPOGRAPHIC MAP

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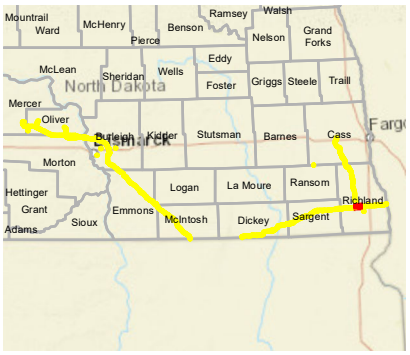


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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 64 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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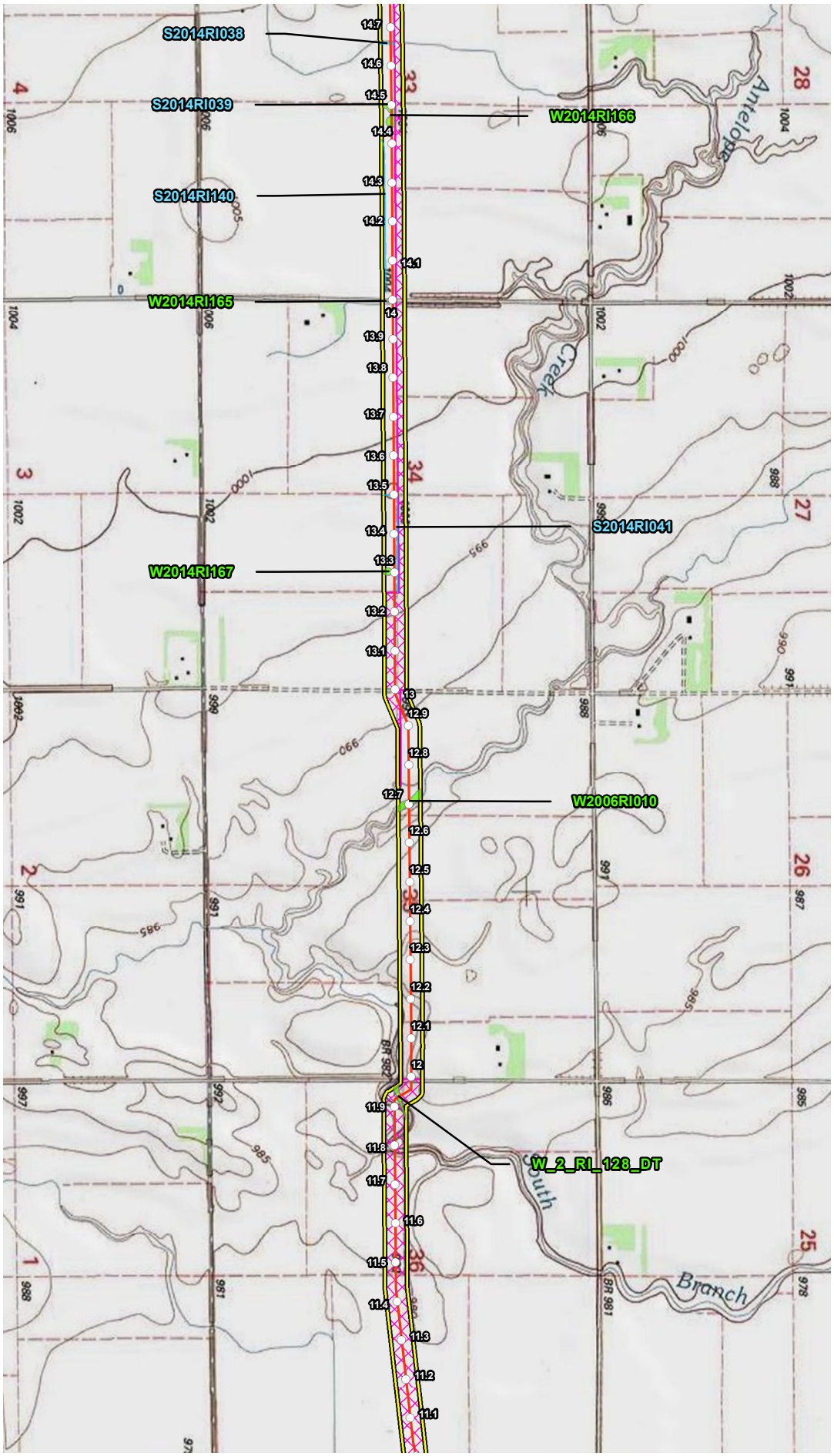


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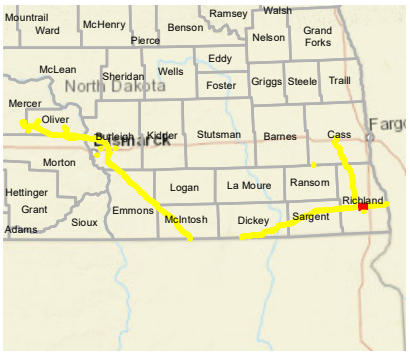


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 65 of 96 | 2001-22-003<br>Current Revision |

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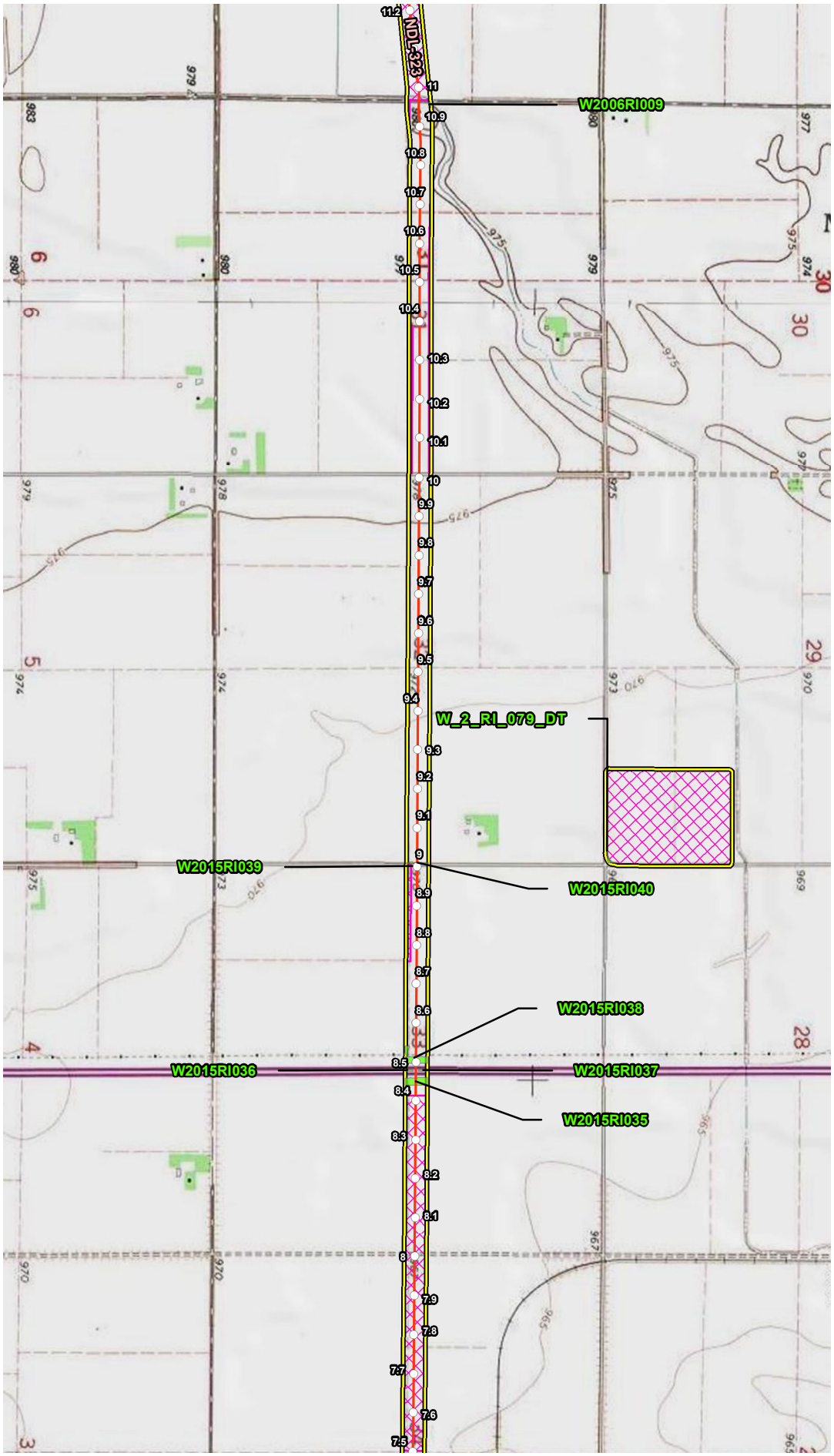
## TOPOGRAPHIC MAP

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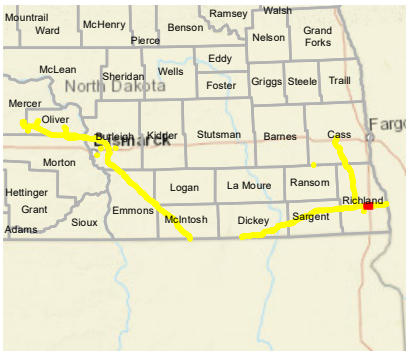


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**Topographic Map**

Figure Number:
**Appendix A-3**

| Scale: | Projection: |
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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 66 of 96 | 2001-22-003<br>Current Revision |

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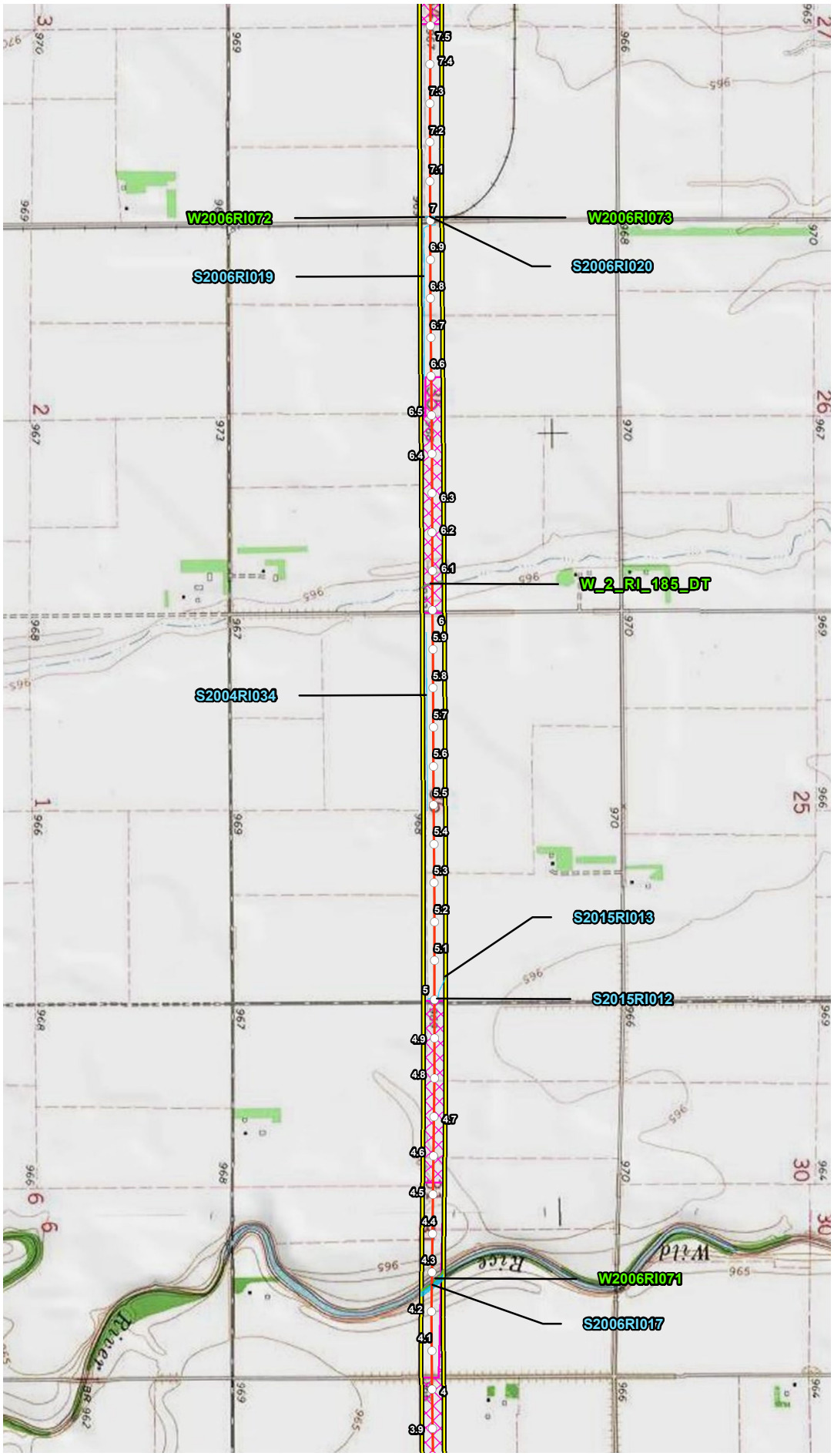


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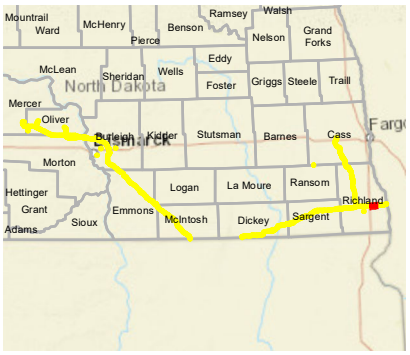


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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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| Scale: | Projection: |
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| Sheet:<br>67 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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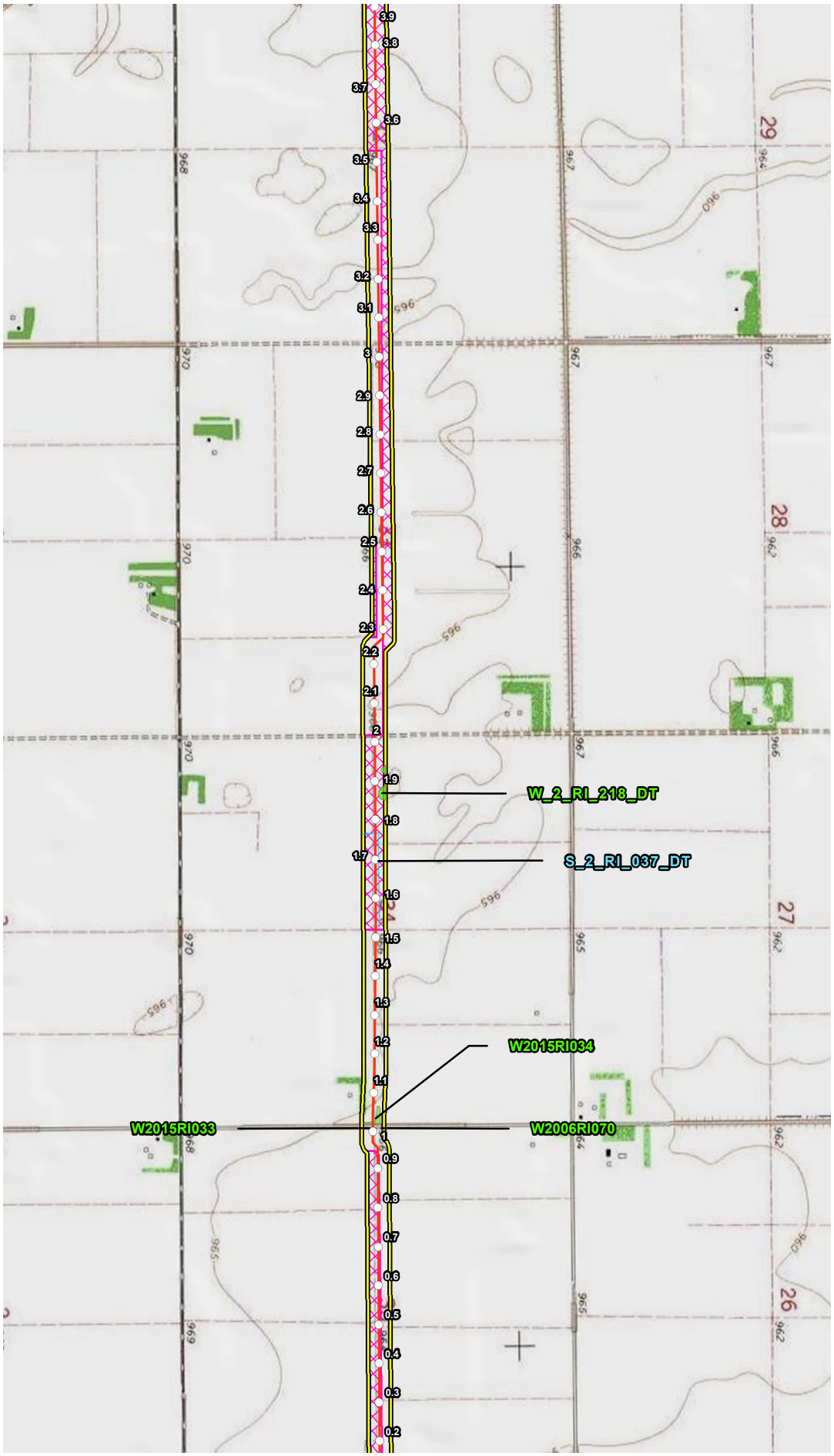


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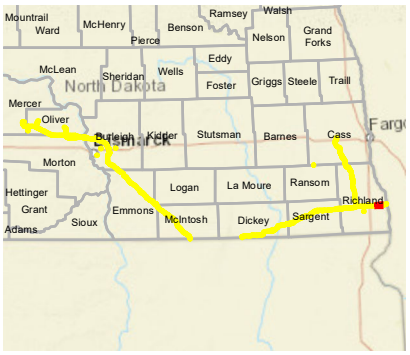


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0 1,000 2,000 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
68 of 96

Drawing Number:
2001-22-003
Current Revision

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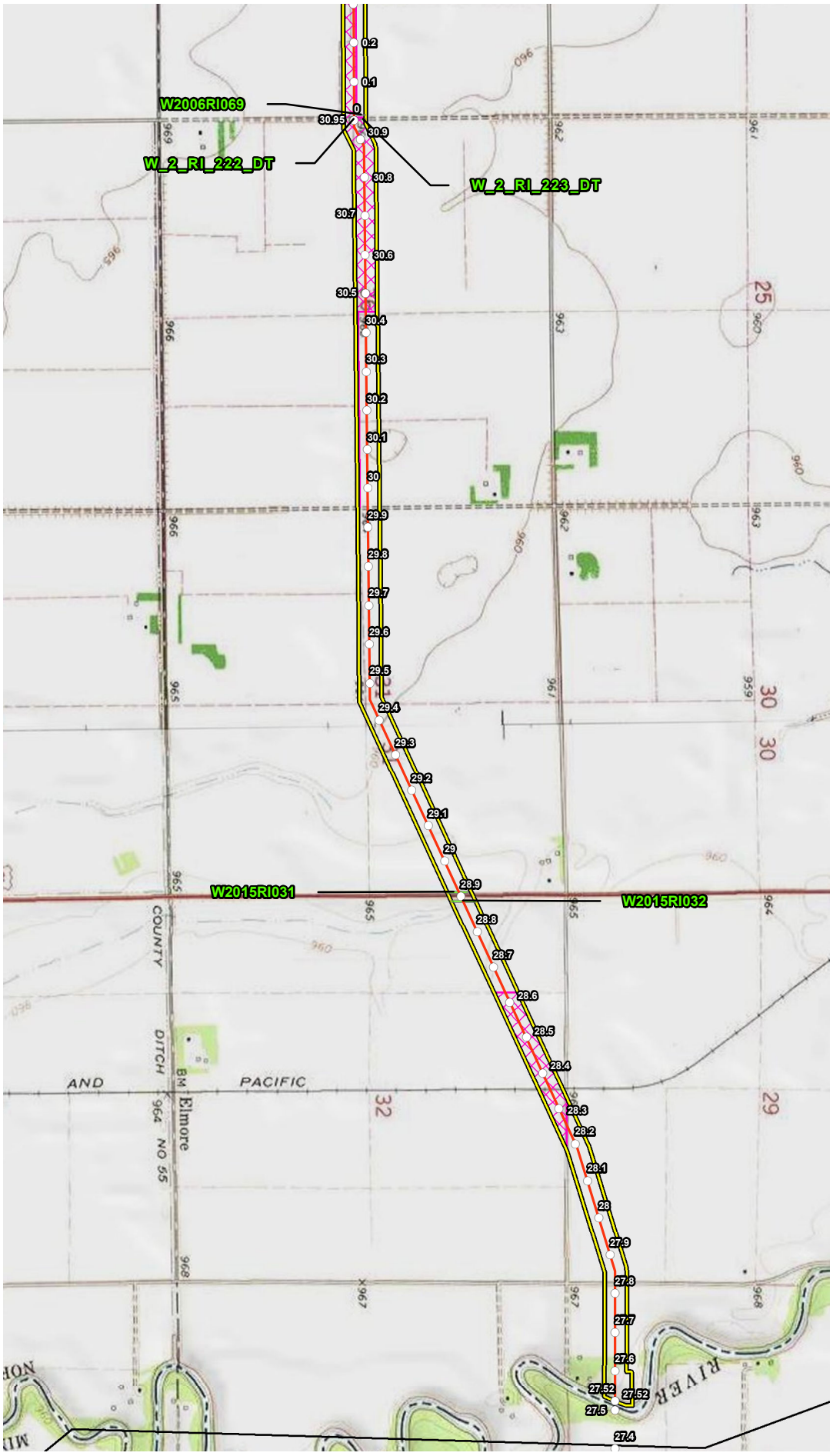
## TOPOGRAPHIC MAP

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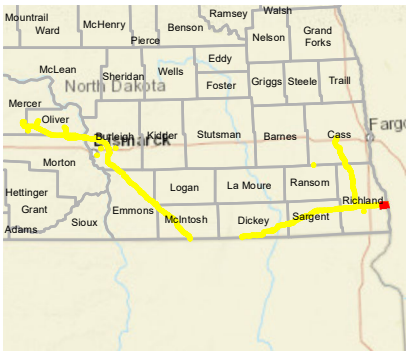


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## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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| Sheet:<br>69 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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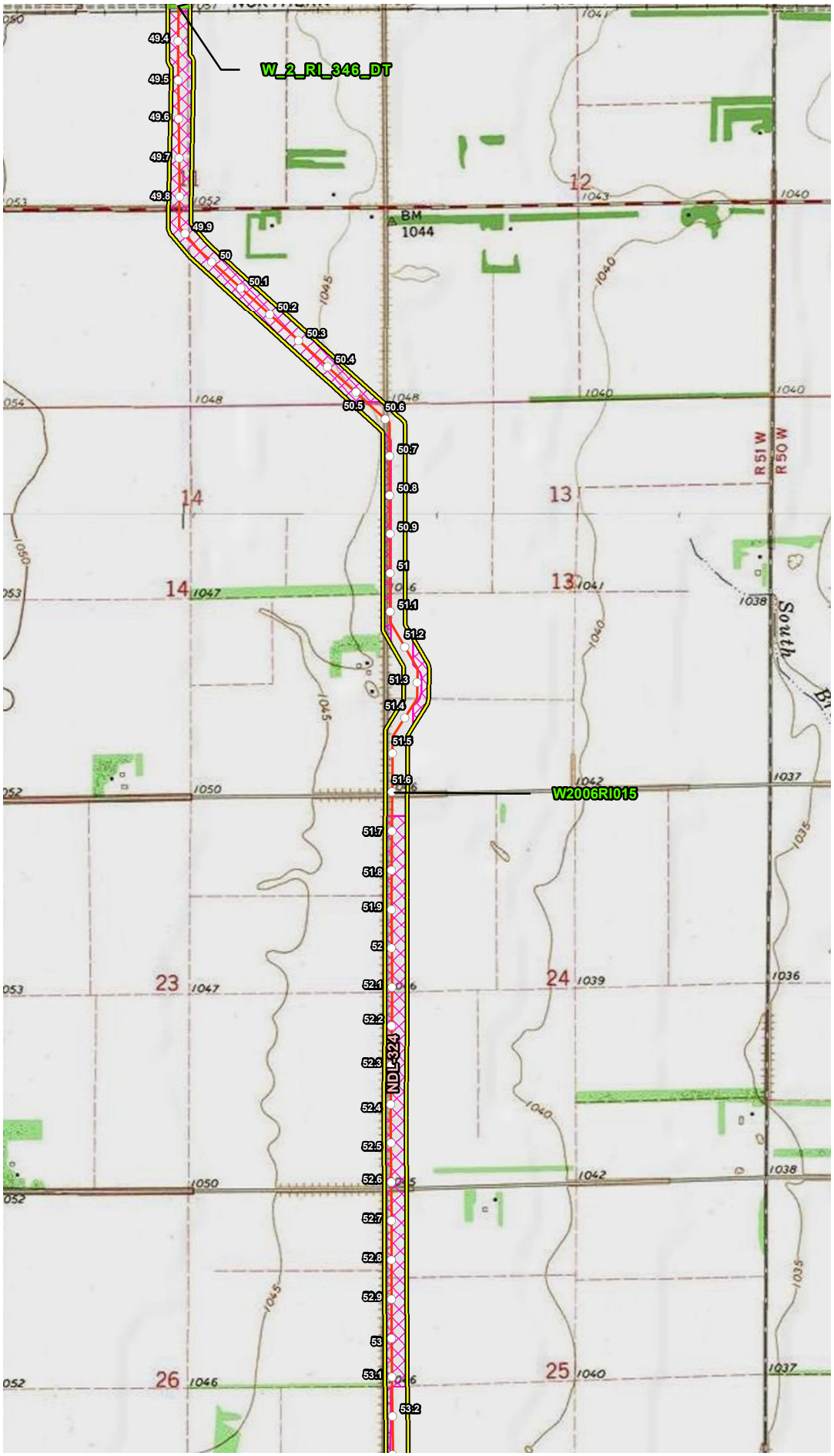
## TOPOGRAPHIC MAP

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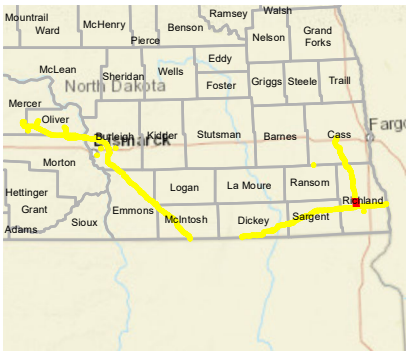


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**1A - Revision**

Revision description

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| Sheet: | Drawing Number: |
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| 70 of 96 | 2001-22-003<br>Current Revision |

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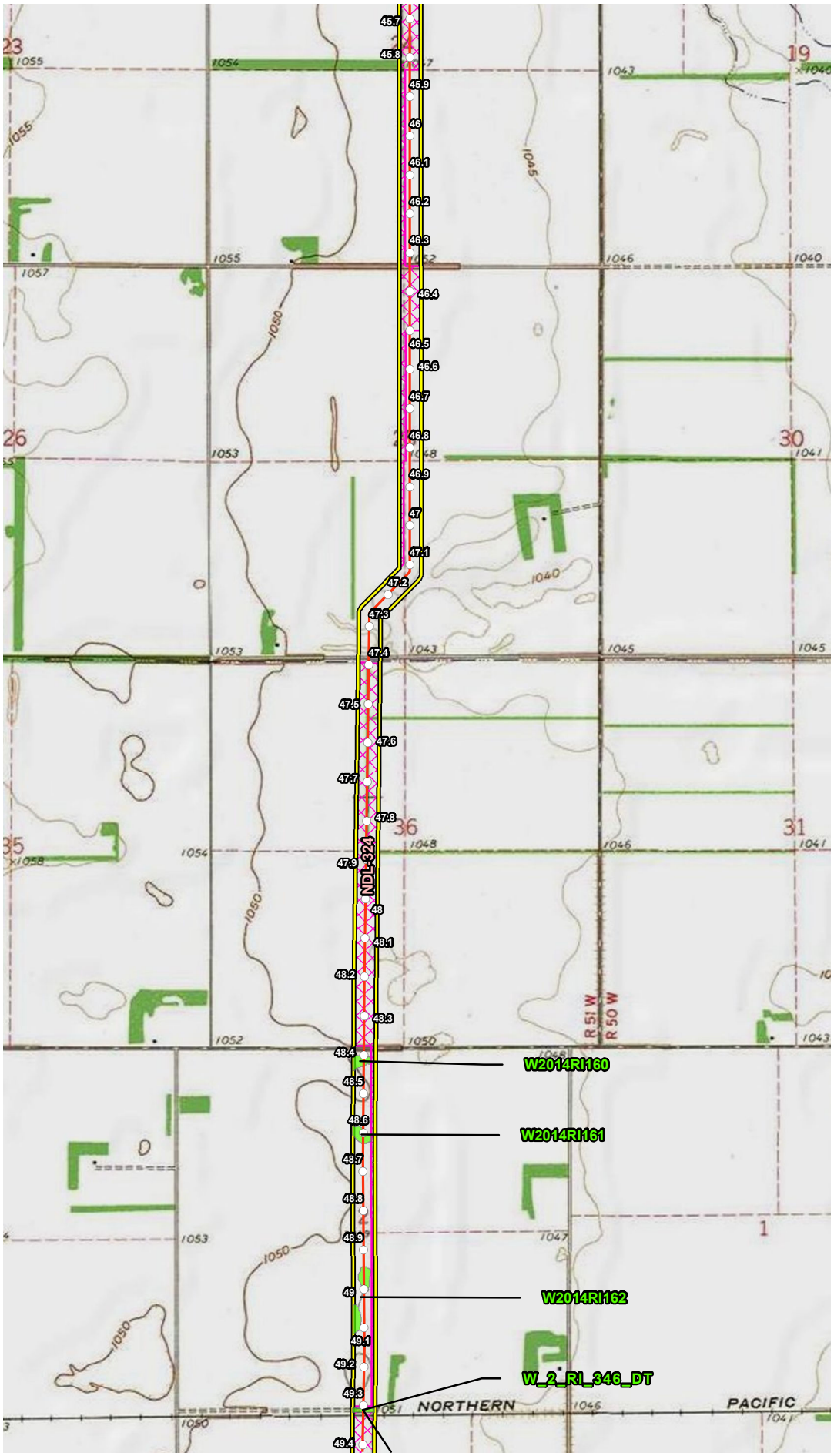
## TOPOGRAPHIC MAP

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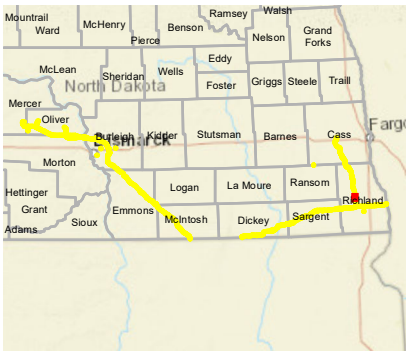


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Revision description

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|---|---|---|
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**Figure Title:**
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Appendix A-3

**Scale:**
Scale: 1:24,000
1 inch = 2,000 feet

**Projection:**
Transverse Mercator
NAD 1983 UTM Zone 14N

**Sheet:**
71 of 96

**Drawing Number:**
2001-22-003
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\20221901_WR_NDImxds\3_Topo.mxd

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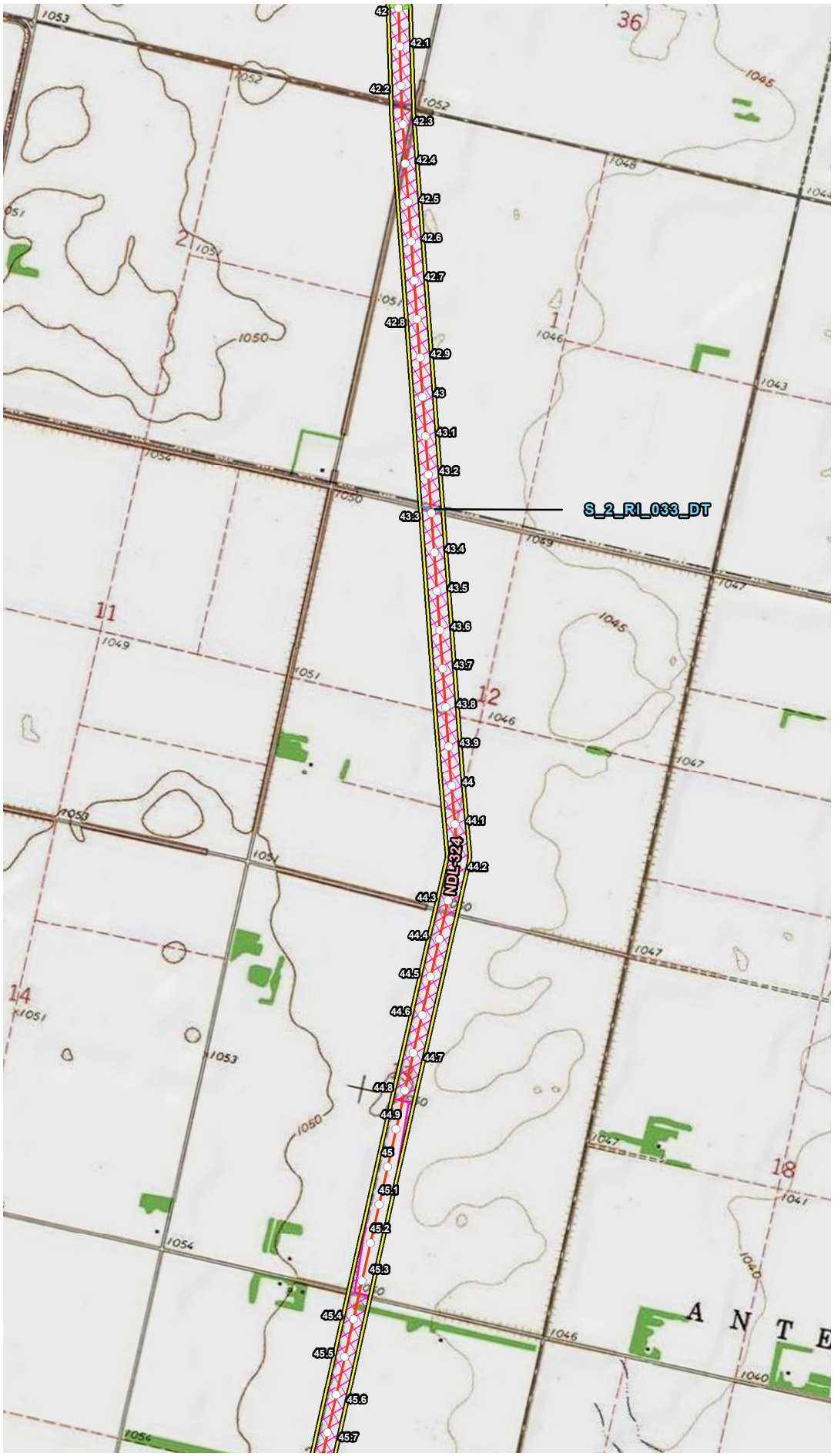


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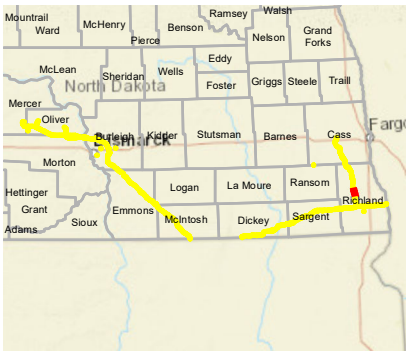


## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**

Topographic Map

**Figure Number:**

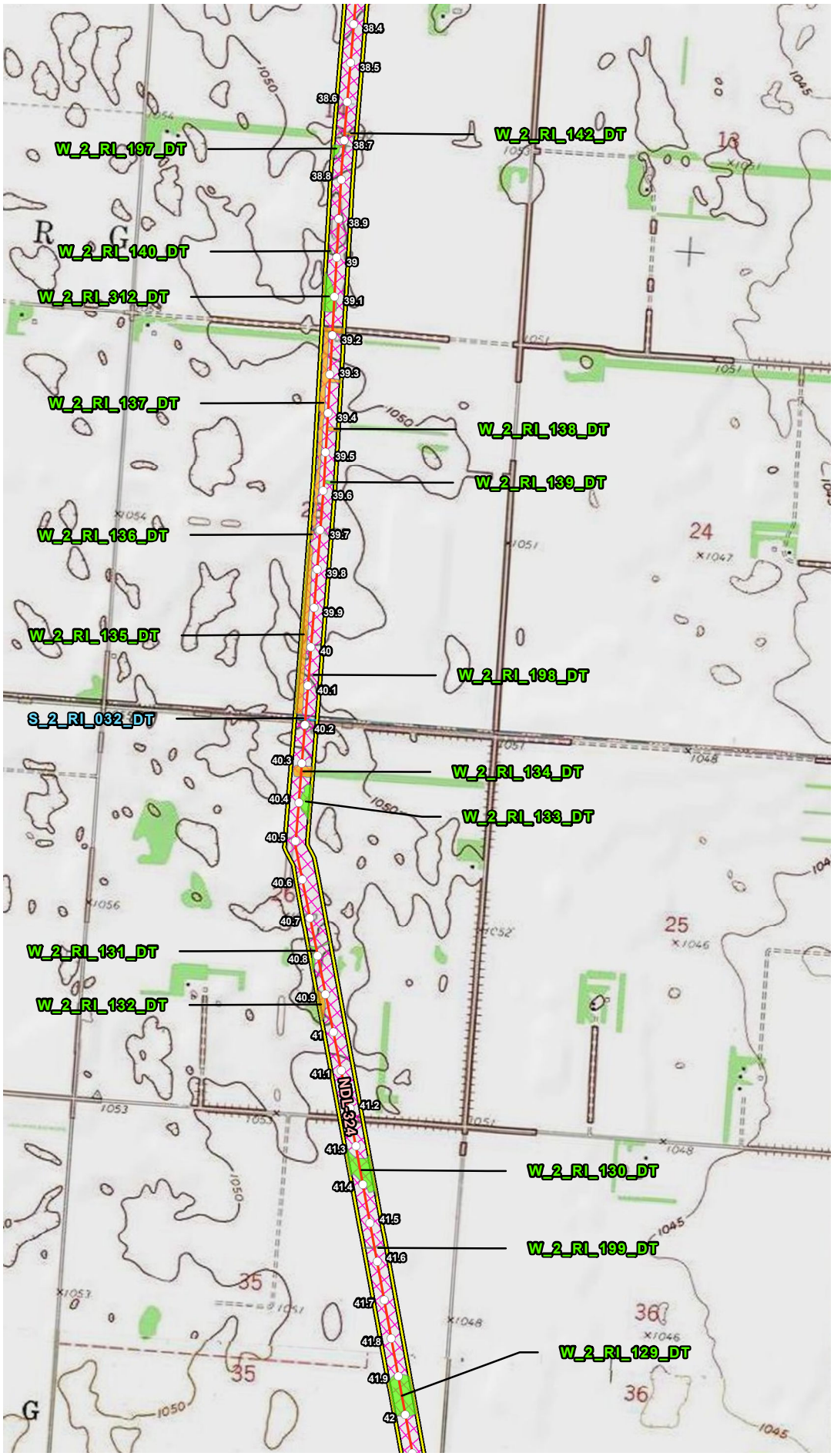
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 72 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\3_Topo.mxd

## TOPOGRAPHIC MAP

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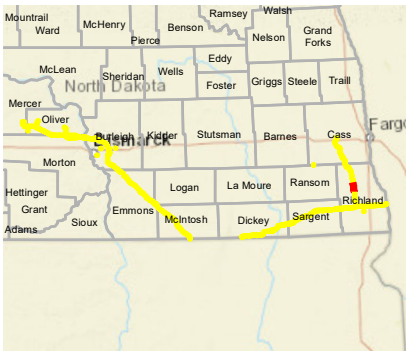


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 73 of 96 | 2001-22-003<br>Current Revision |

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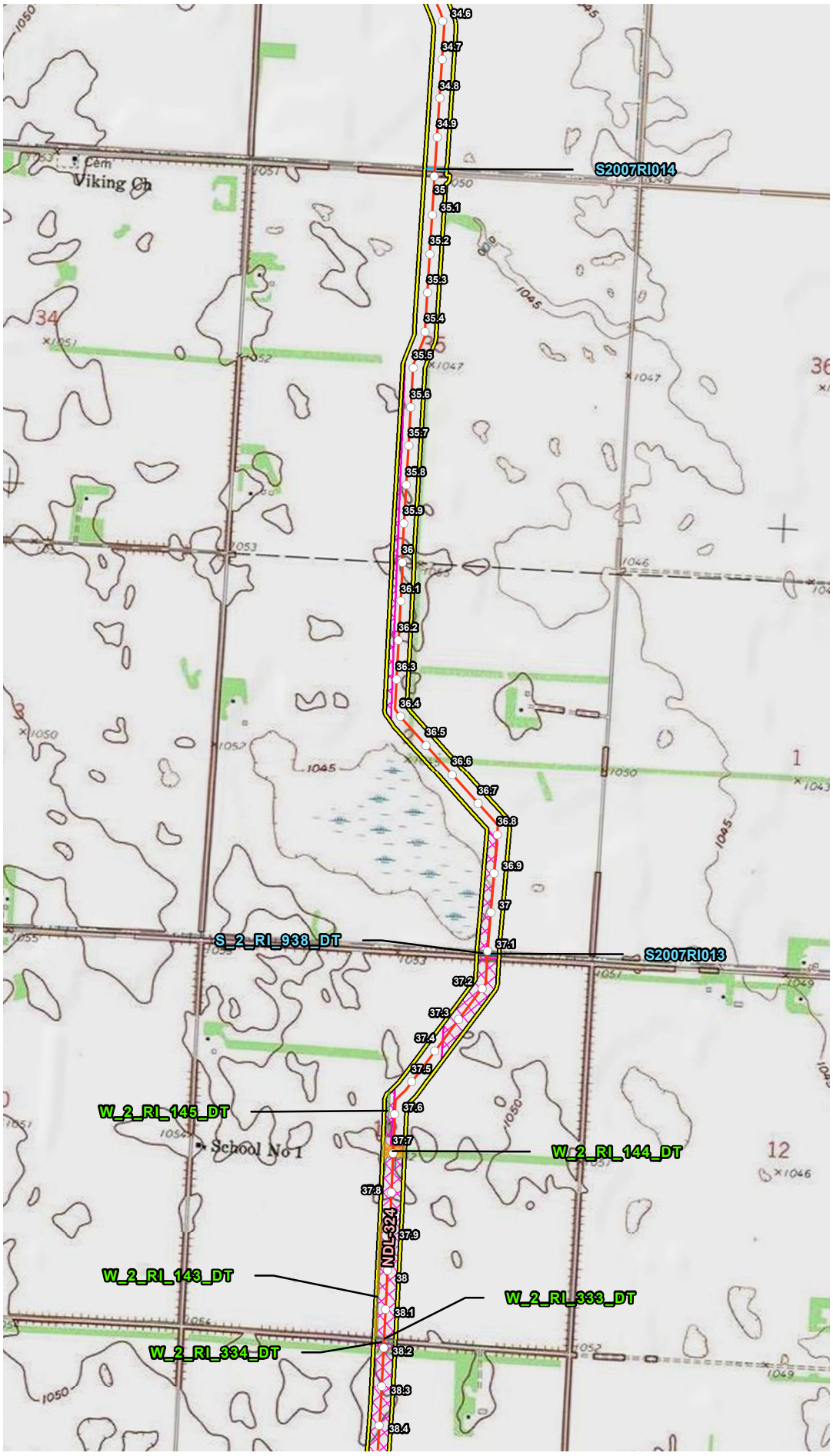


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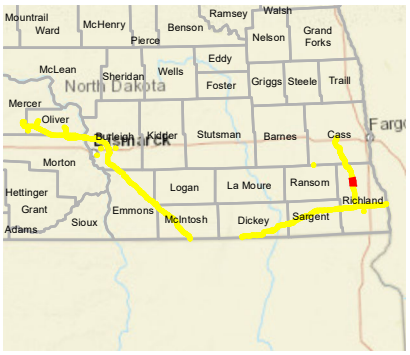


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 74 of 96 | 2001-22-003<br>Current Revision |

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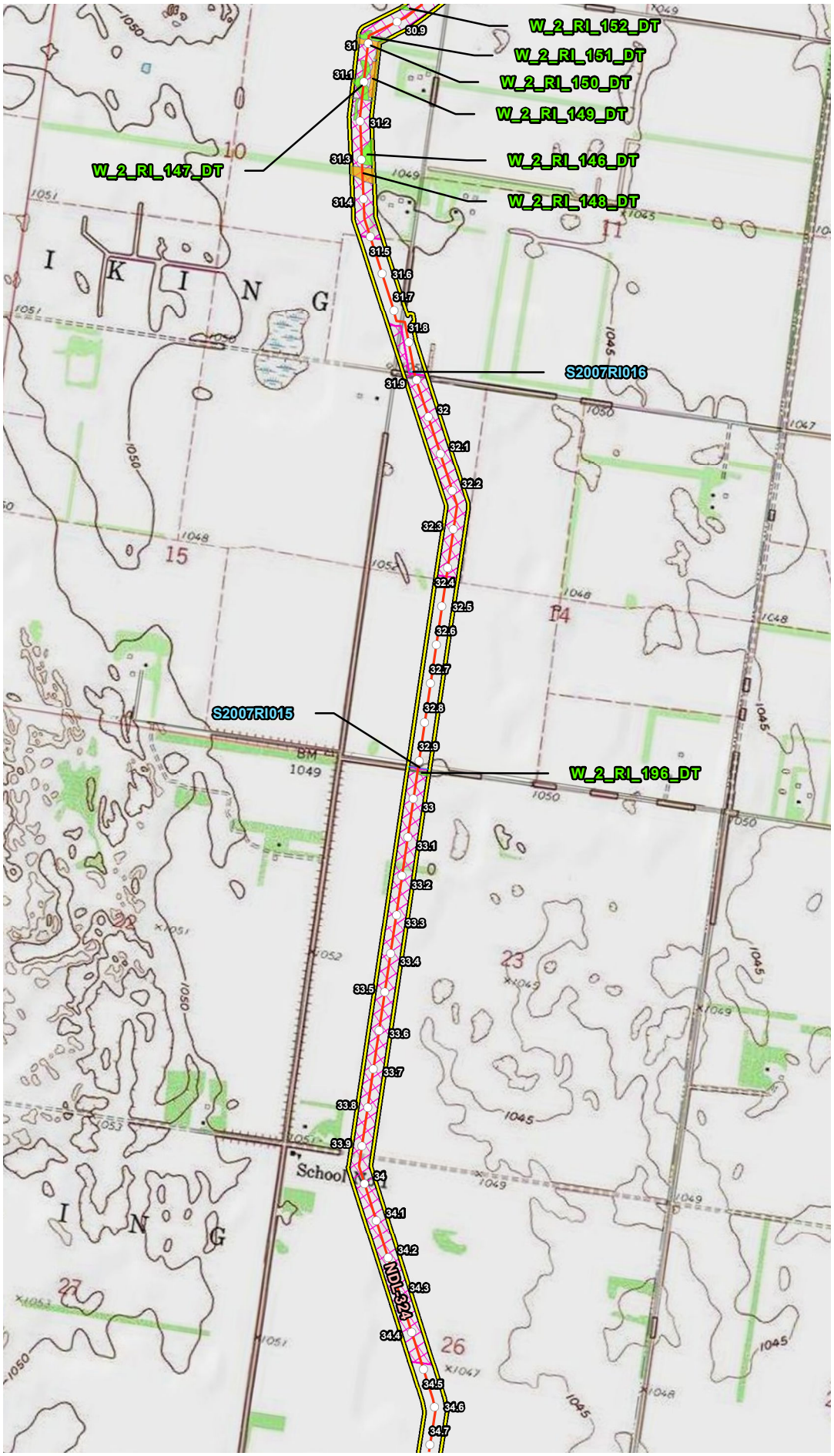


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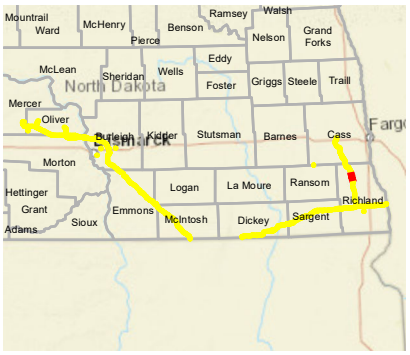


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:
Topographic Map

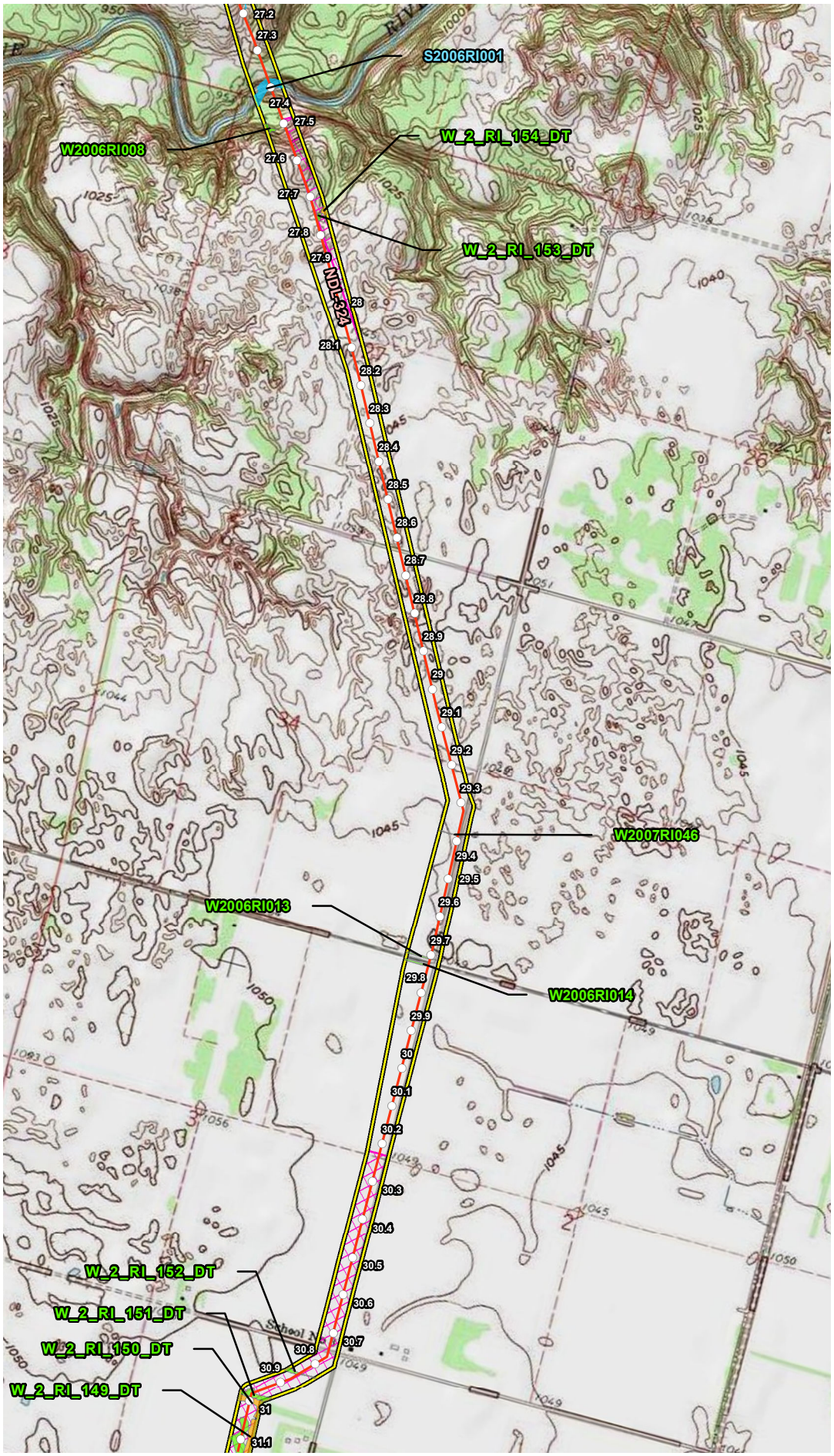
Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

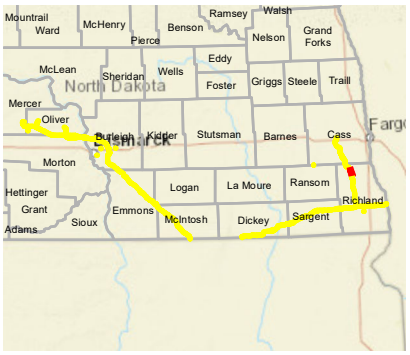
| Sheet: | Drawing Number: |
|---|---|
| 75 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_ND\mxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 76 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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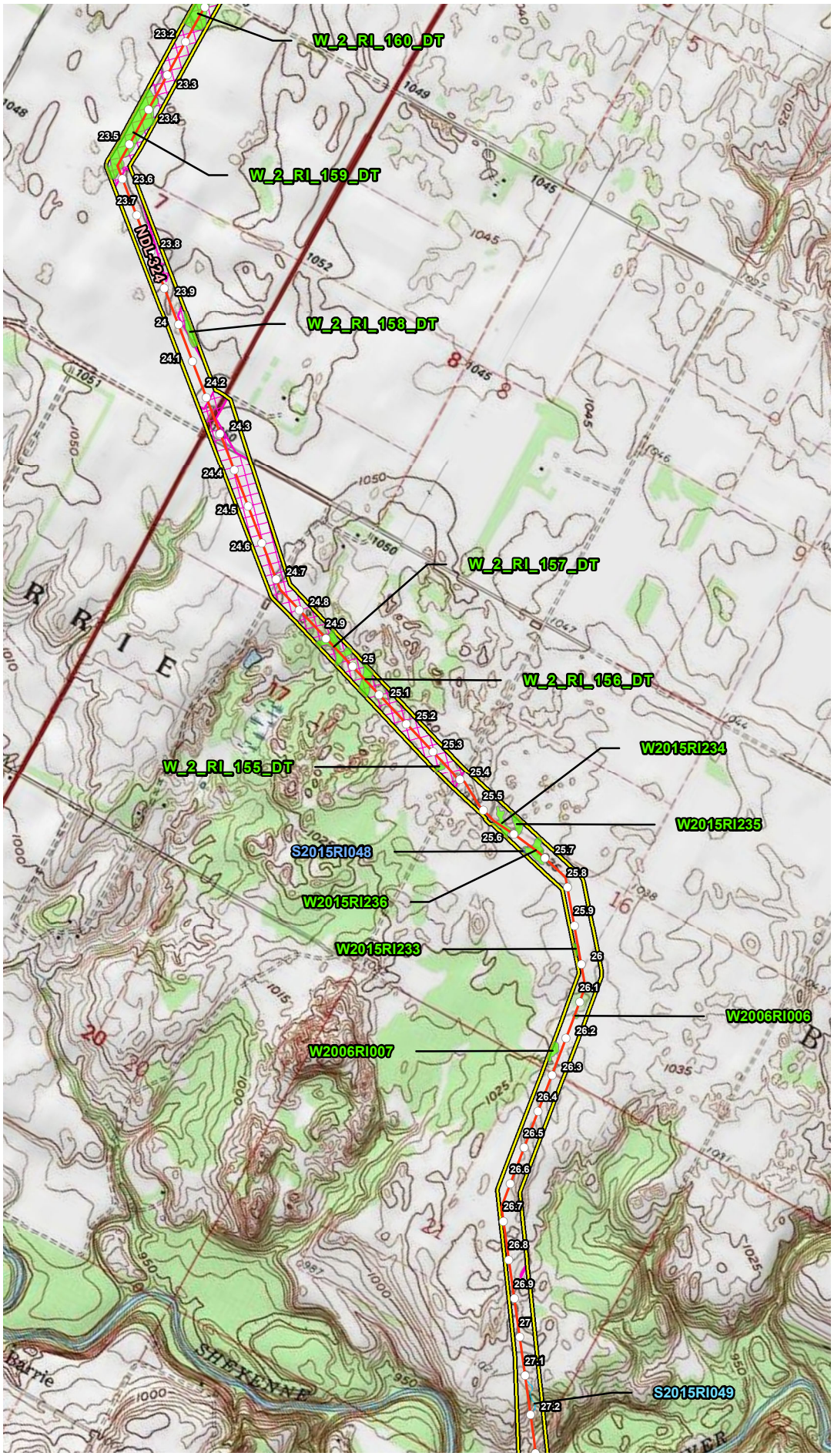


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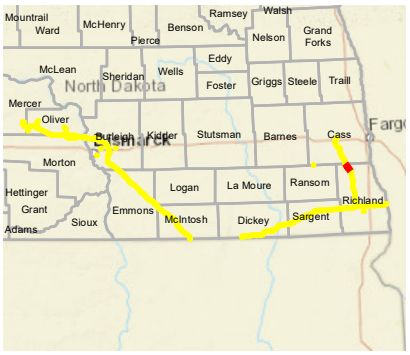


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| **1A - Revision** | | |
| Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
**Topographic Map**

Figure Number:
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000 | Transverse Mercator |
| 1 inch = 2,000 feet | NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 77 of 96 | 2001-22-003 |
| | Current Revision |

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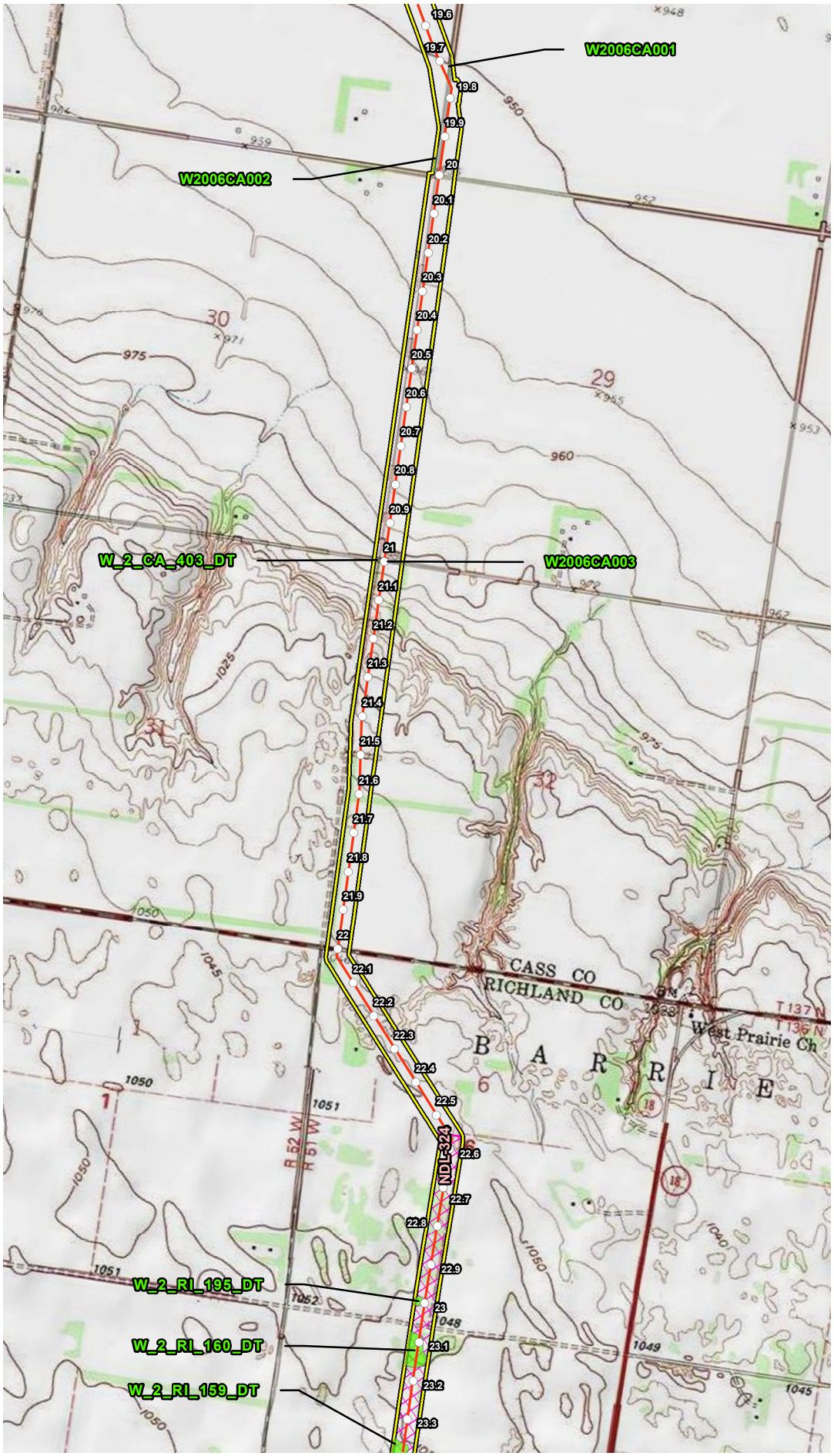


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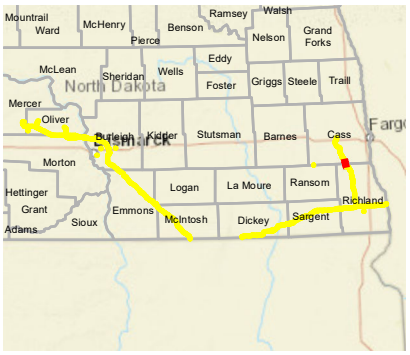


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

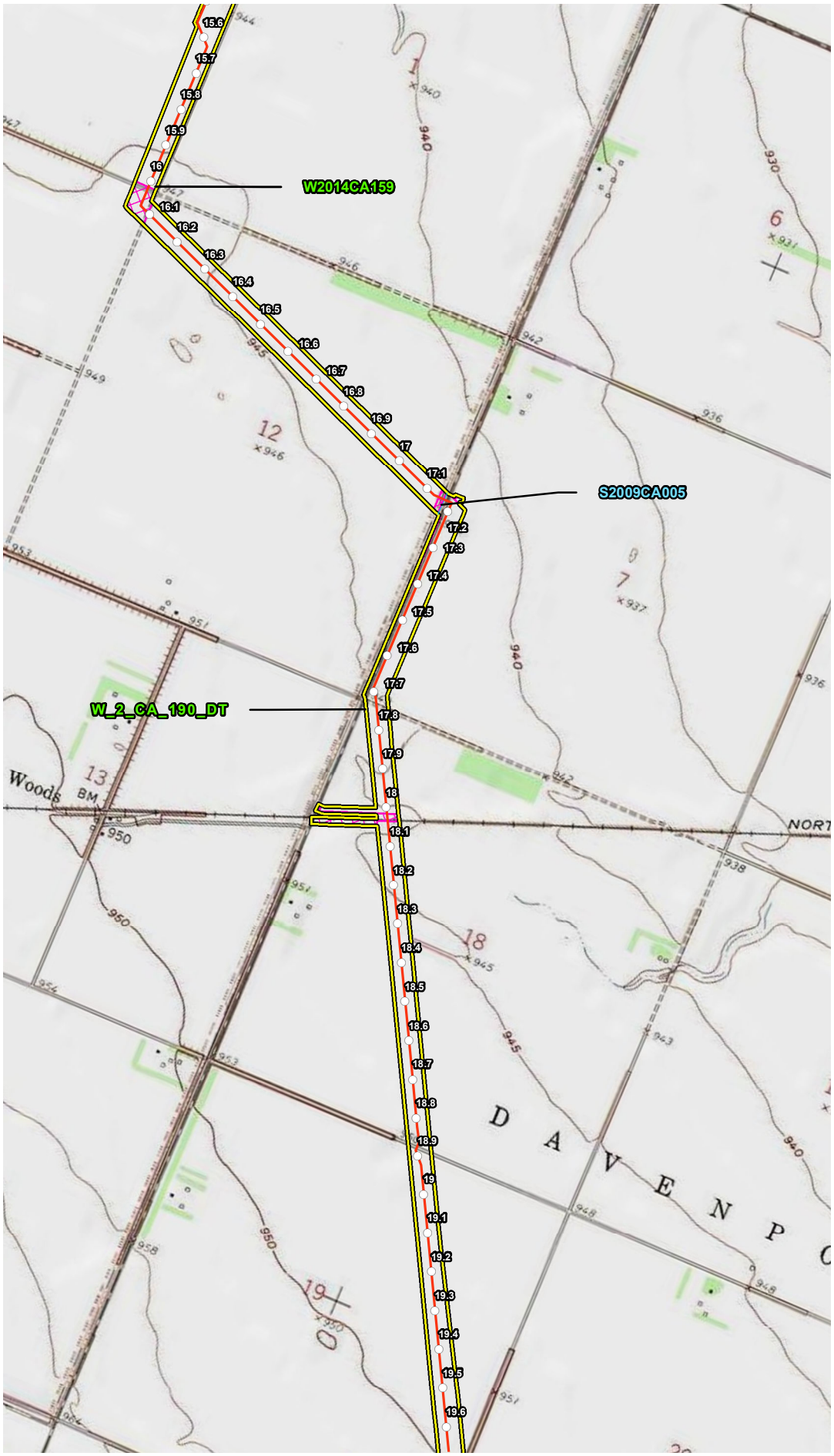
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
78 of 96

Drawing Number:
2001-22-003
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\3_Topo.mxd

## TOPOGRAPHIC MAP

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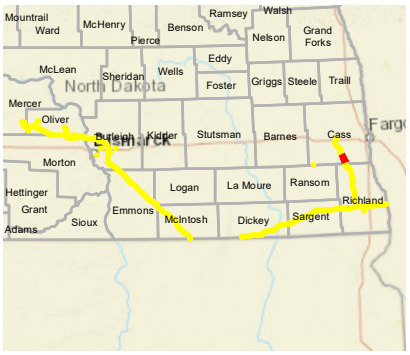


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

Topographic Map

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Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 79 of 96 | 2001-22-003<br>Current Revision |

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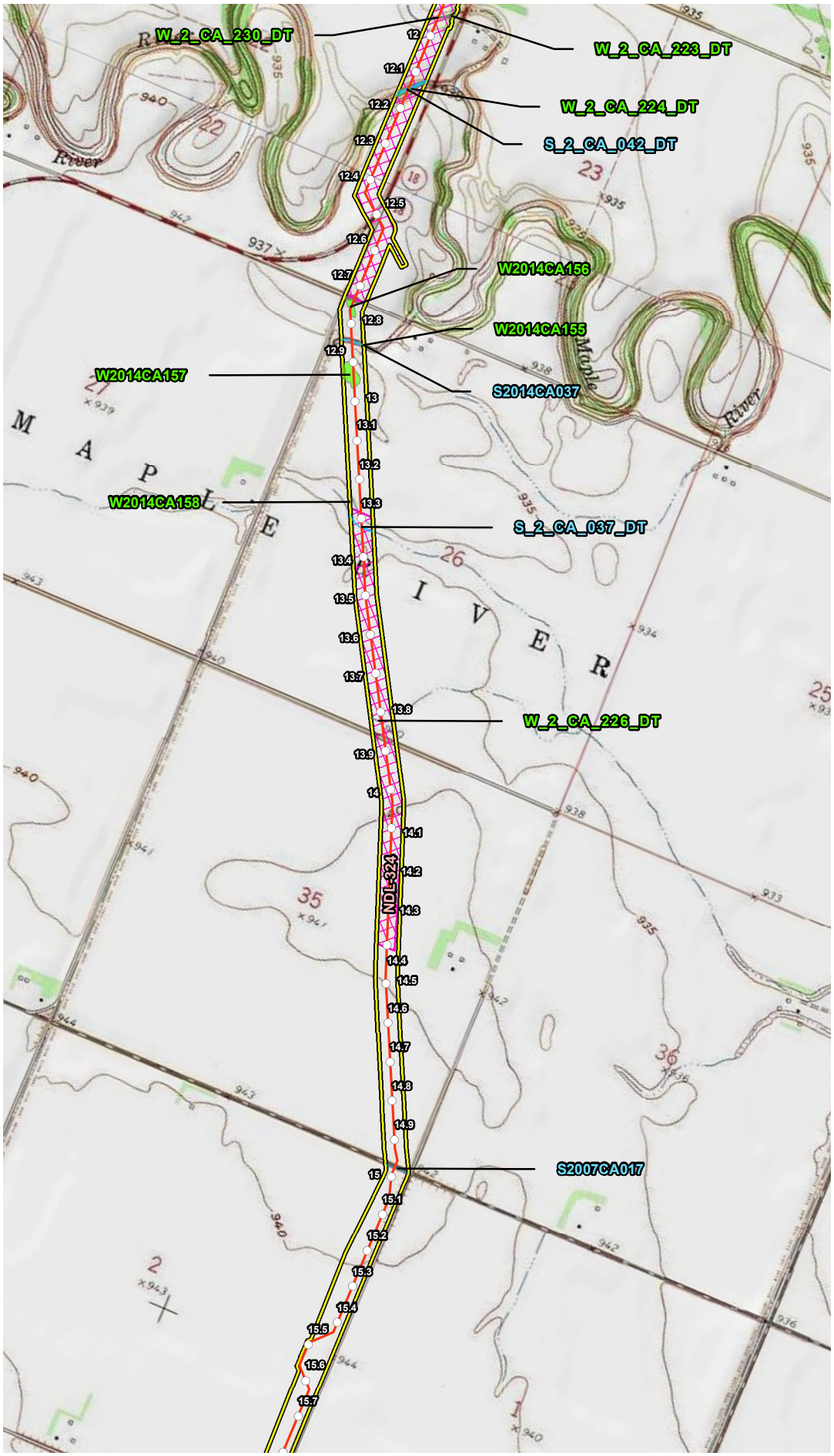
## TOPOGRAPHIC MAP

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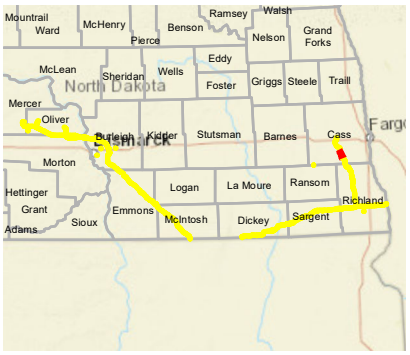


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

**Scale:**

Scale: 1:24,000

1 inch = 2,000 feet

**Projection:**

Transverse Mercator

NAD 1983 UTM Zone 14N

**Sheet:**

80 of 96

**Drawing Number:**

2001-22-003

Current Revision

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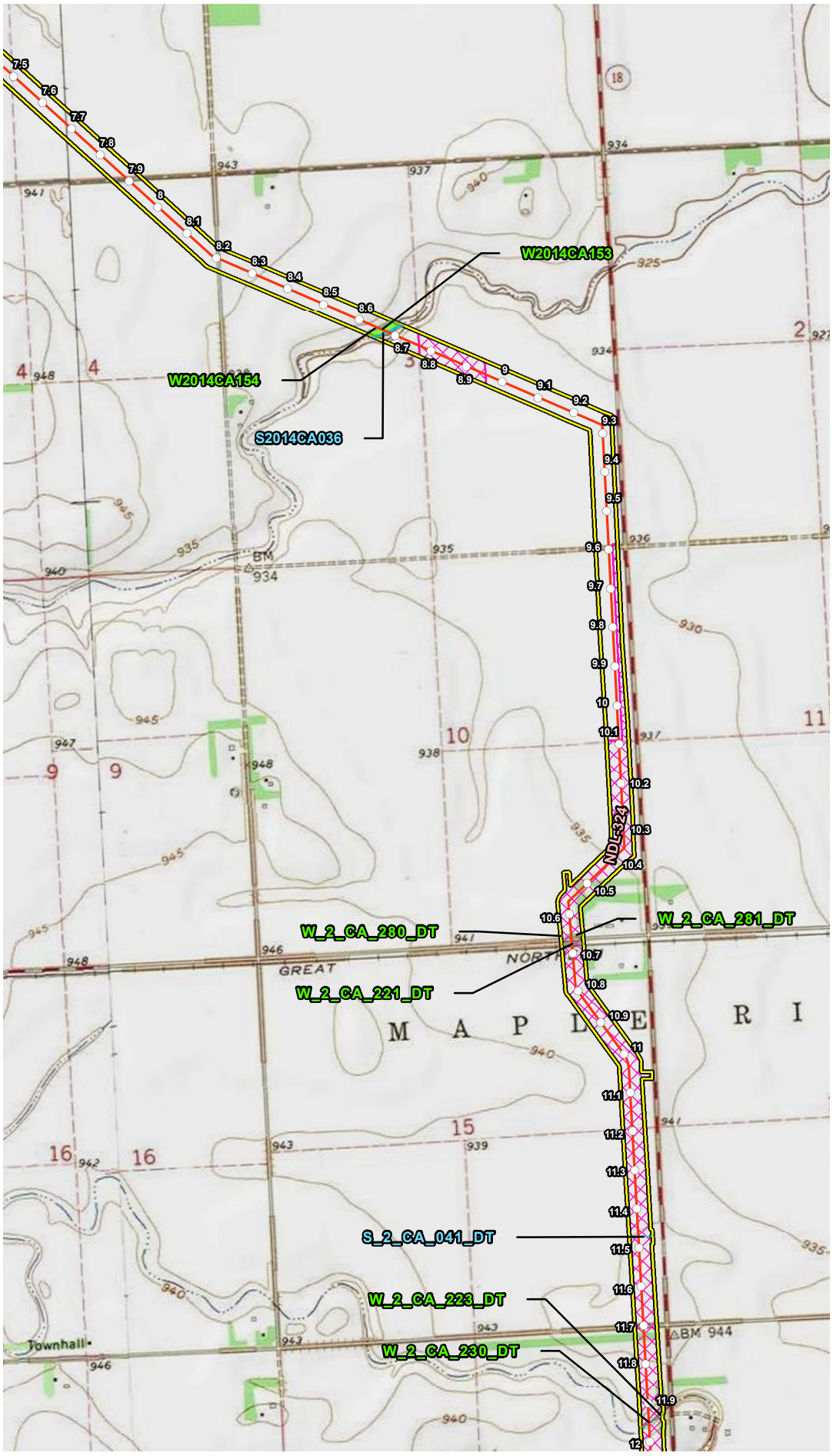
## TOPOGRAPHIC MAP

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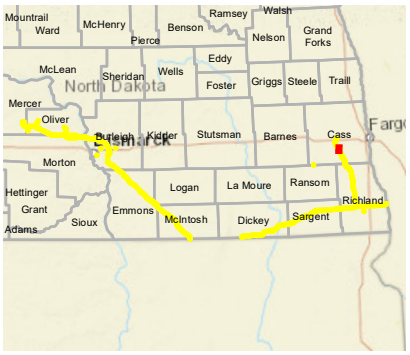


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## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 81 of 96 | 2001-22-003<br>Current Revision |

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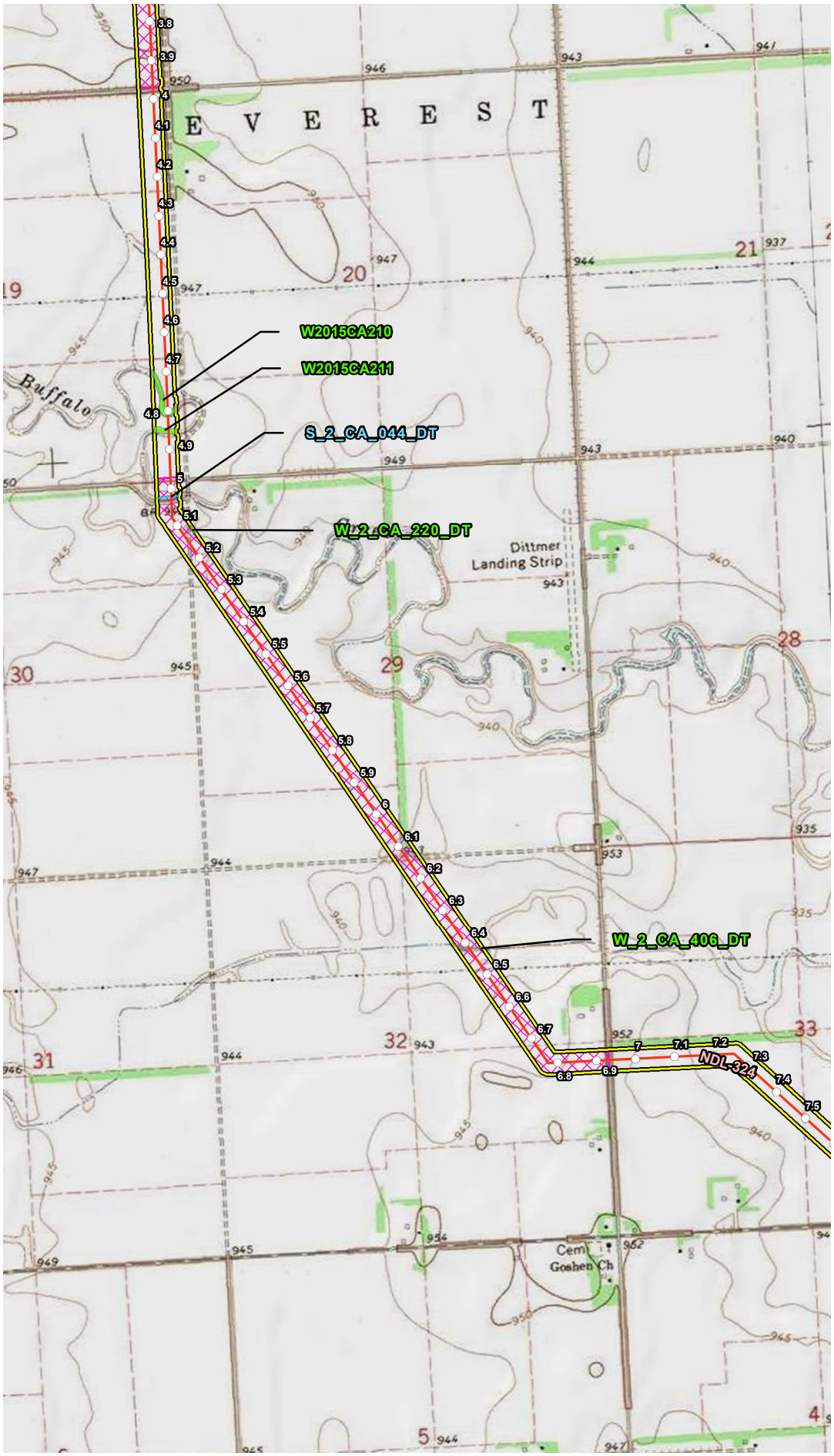
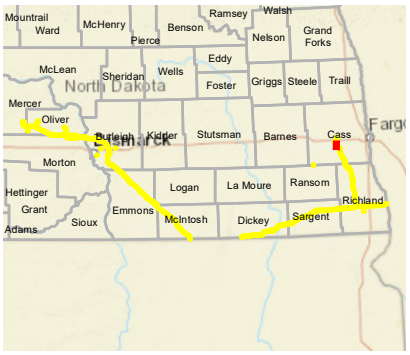
## TOPOGRAPHIC MAP




## VICINITY MAP

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## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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Figure Title:
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Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>82 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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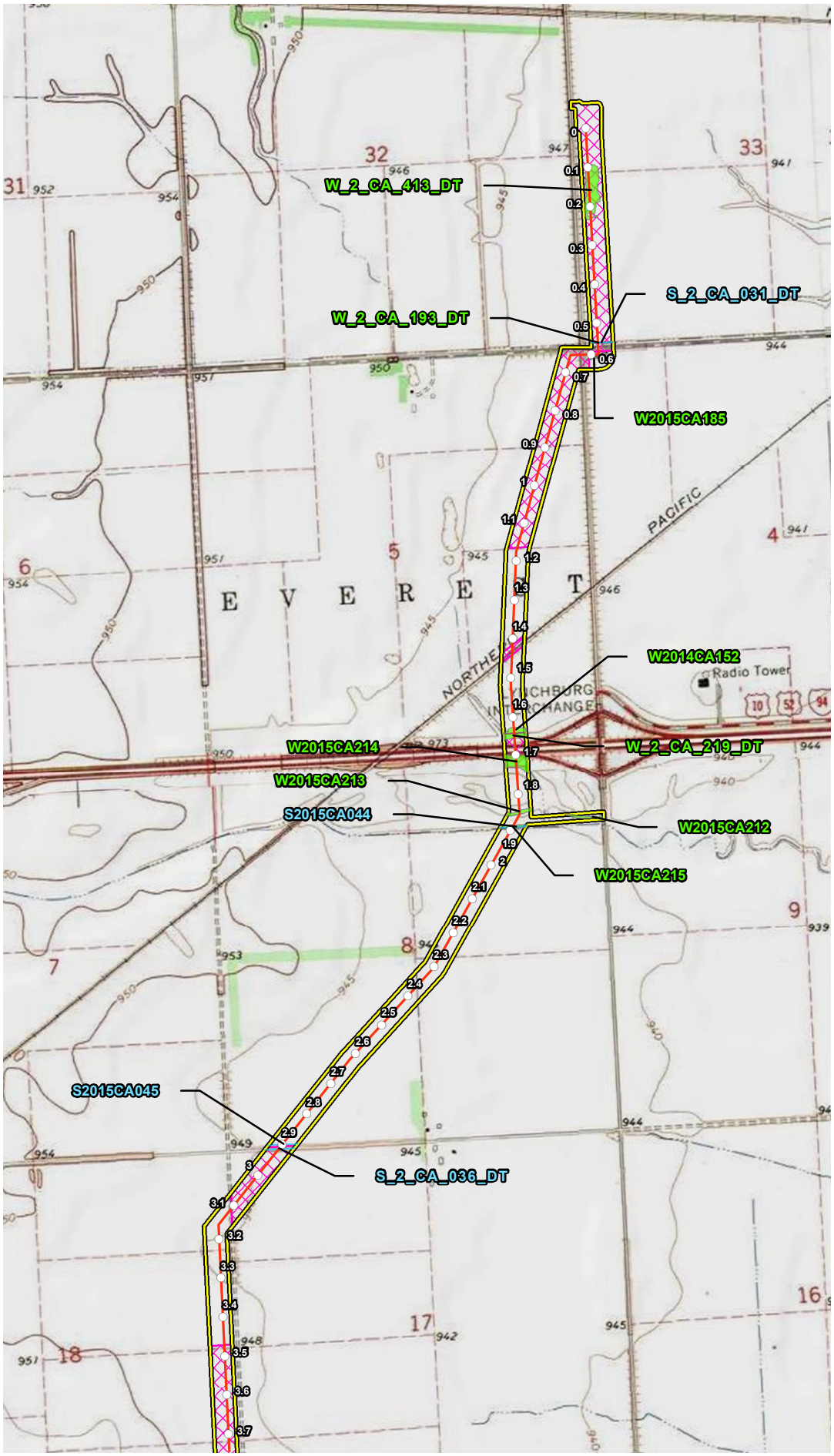
## TOPOGRAPHIC MAP

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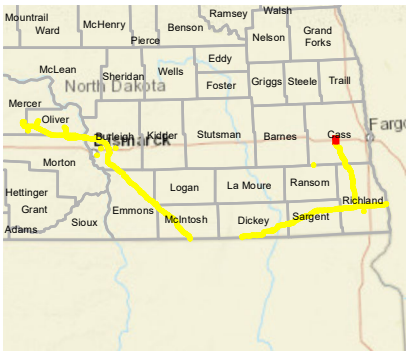


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| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

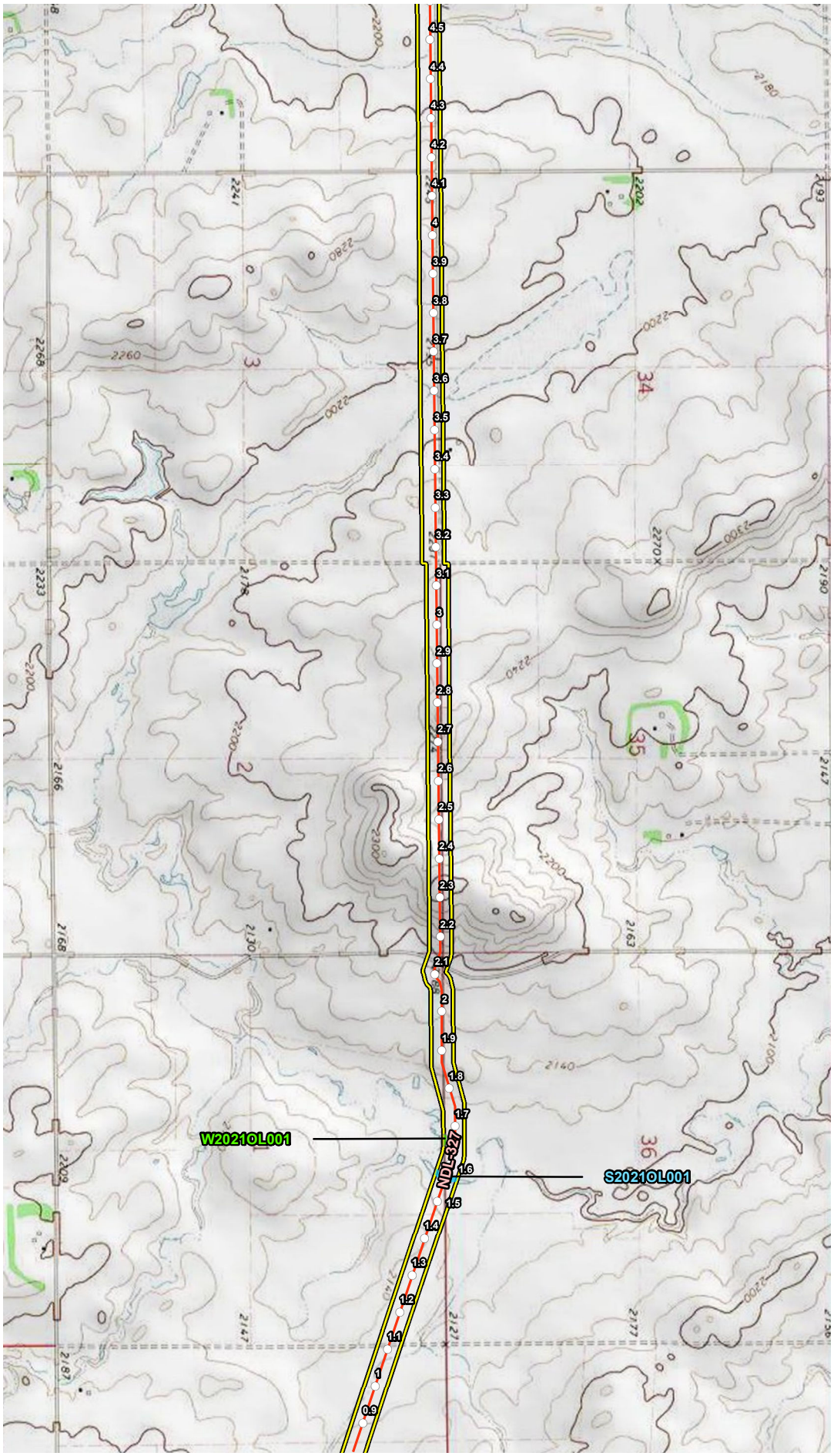
**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

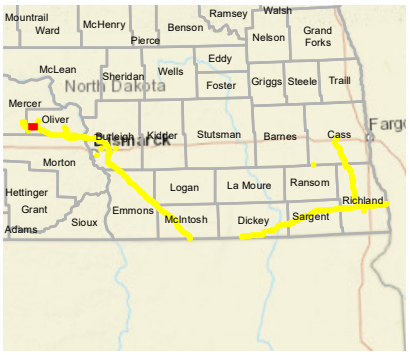
| Sheet: | Drawing Number: |
|---|---|
| 83 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\0801_VWR_NDImxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
84 of 96

Drawing Number:
2001-22-003
Current Revision

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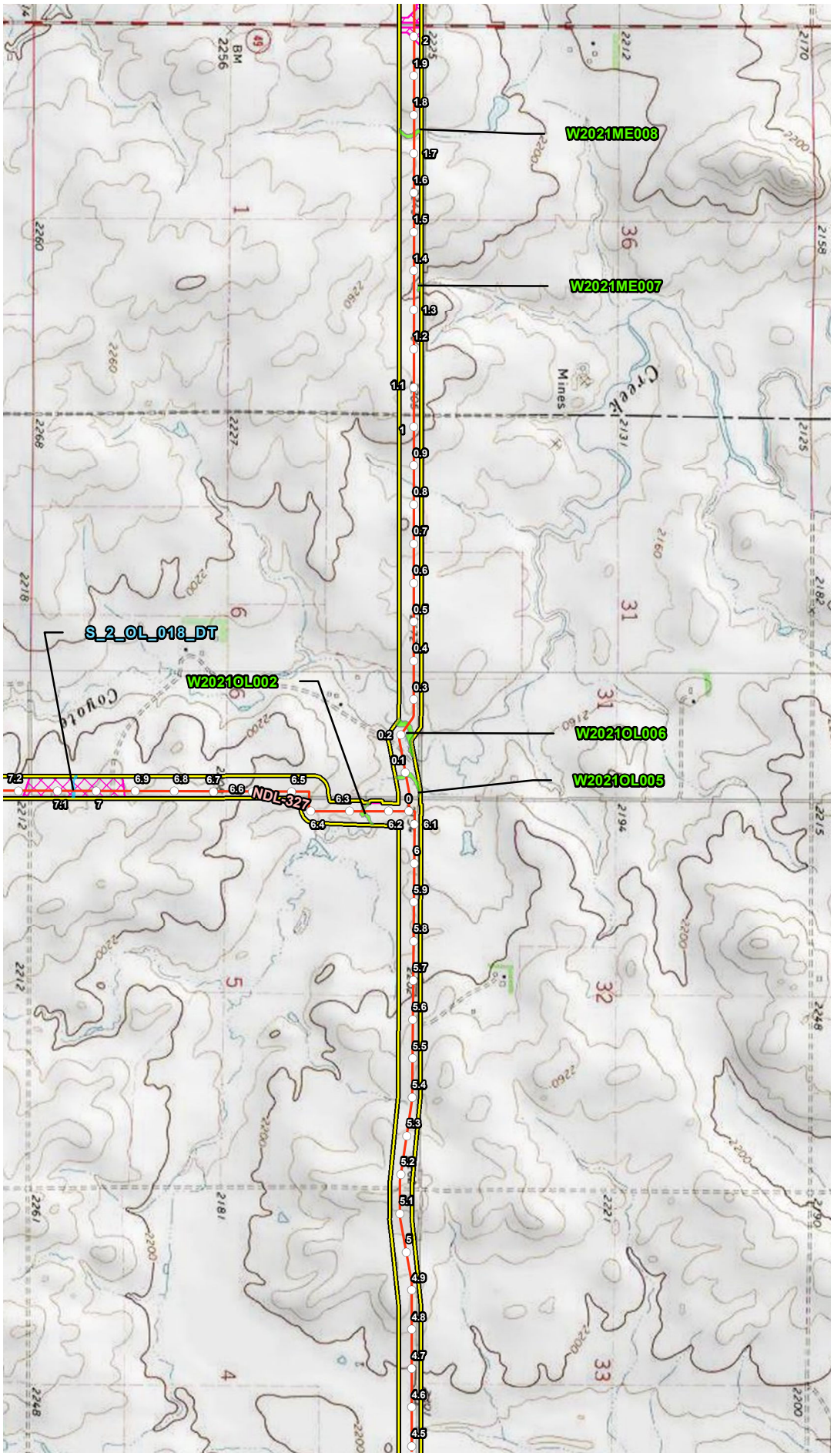
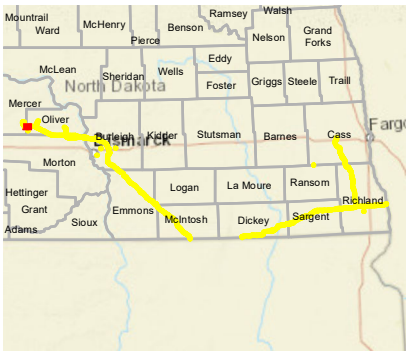
## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 85 of 96 | 2001-22-003<br>Current Revision |

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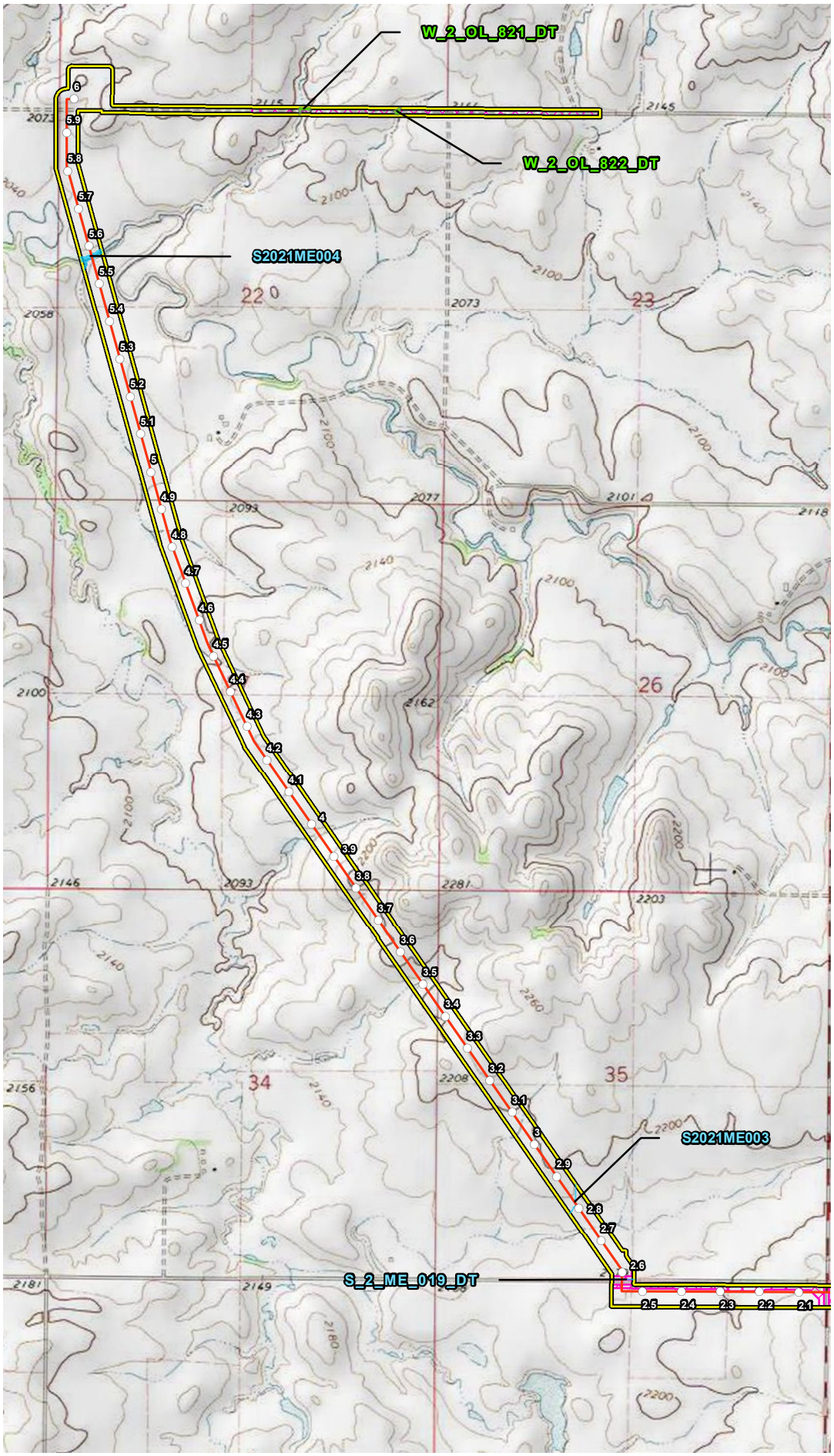
## TOPOGRAPHIC MAP

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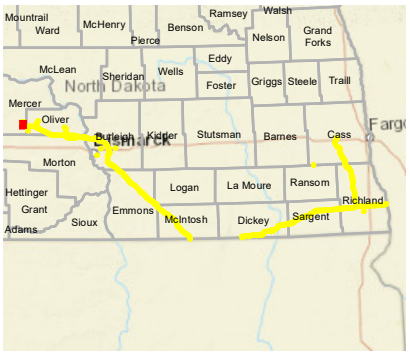


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 86 of 96 | 2001-22-003<br>Current Revision |

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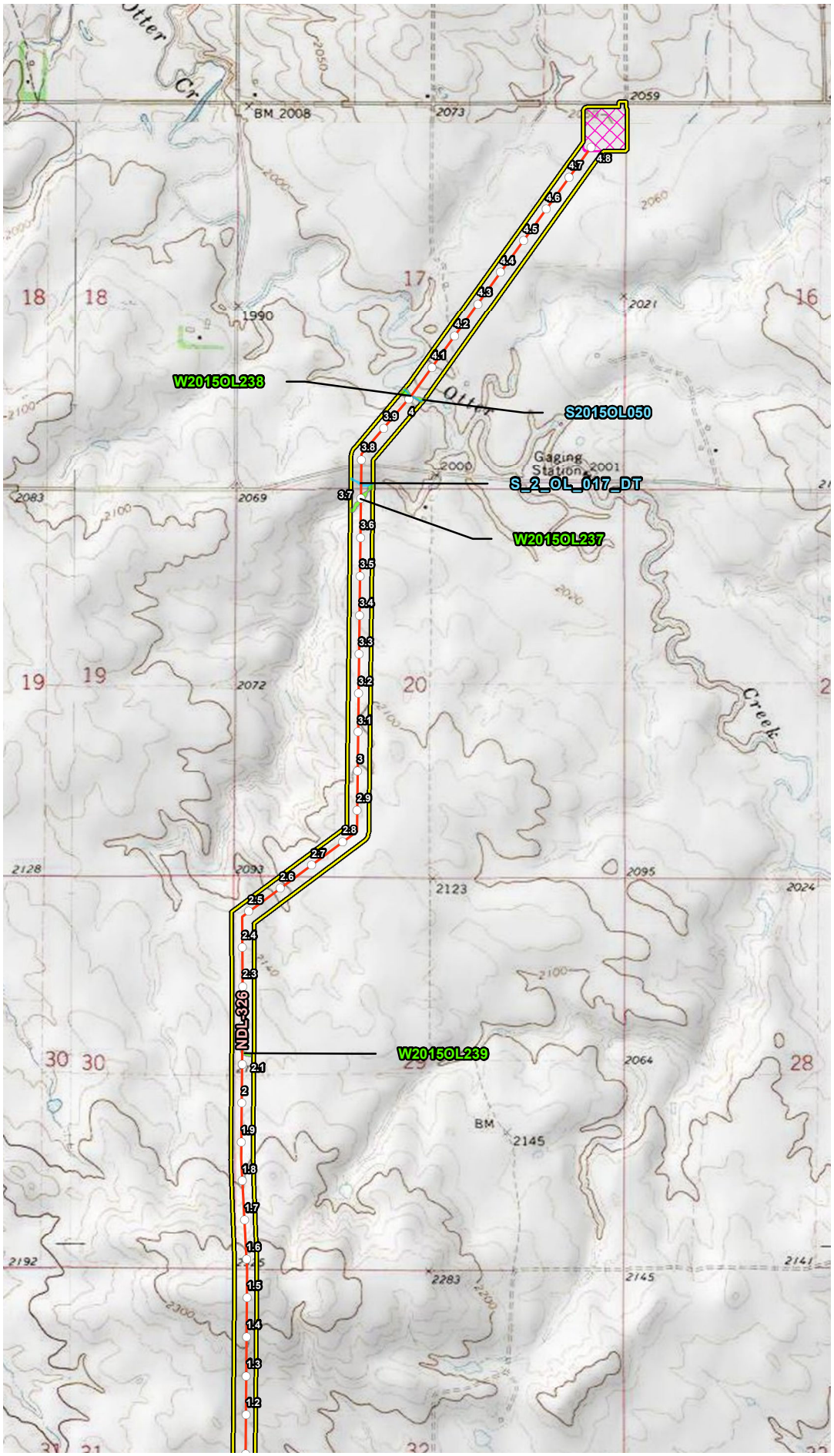


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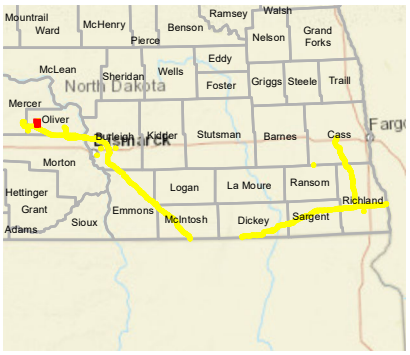


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 87 of 96 | 2001-22-003<br>Current Revision |

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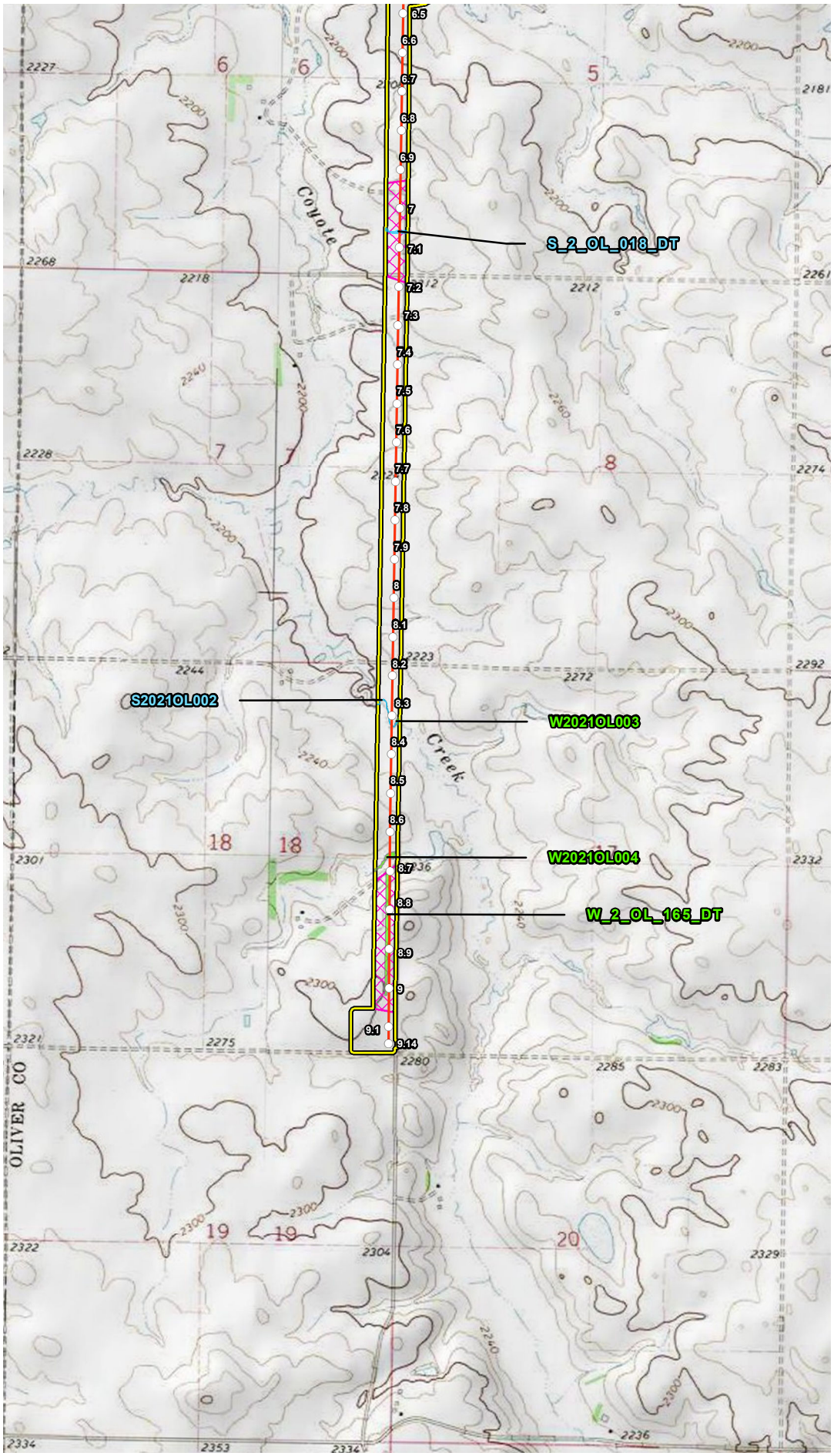
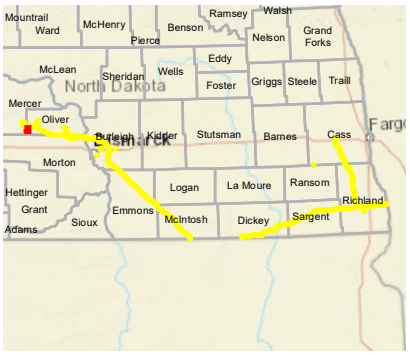
## TOPOGRAPHIC MAP




## VICINITY MAP

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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>88 of 96 | Drawing Number:<br>2001-22-003<br>Current Revision |

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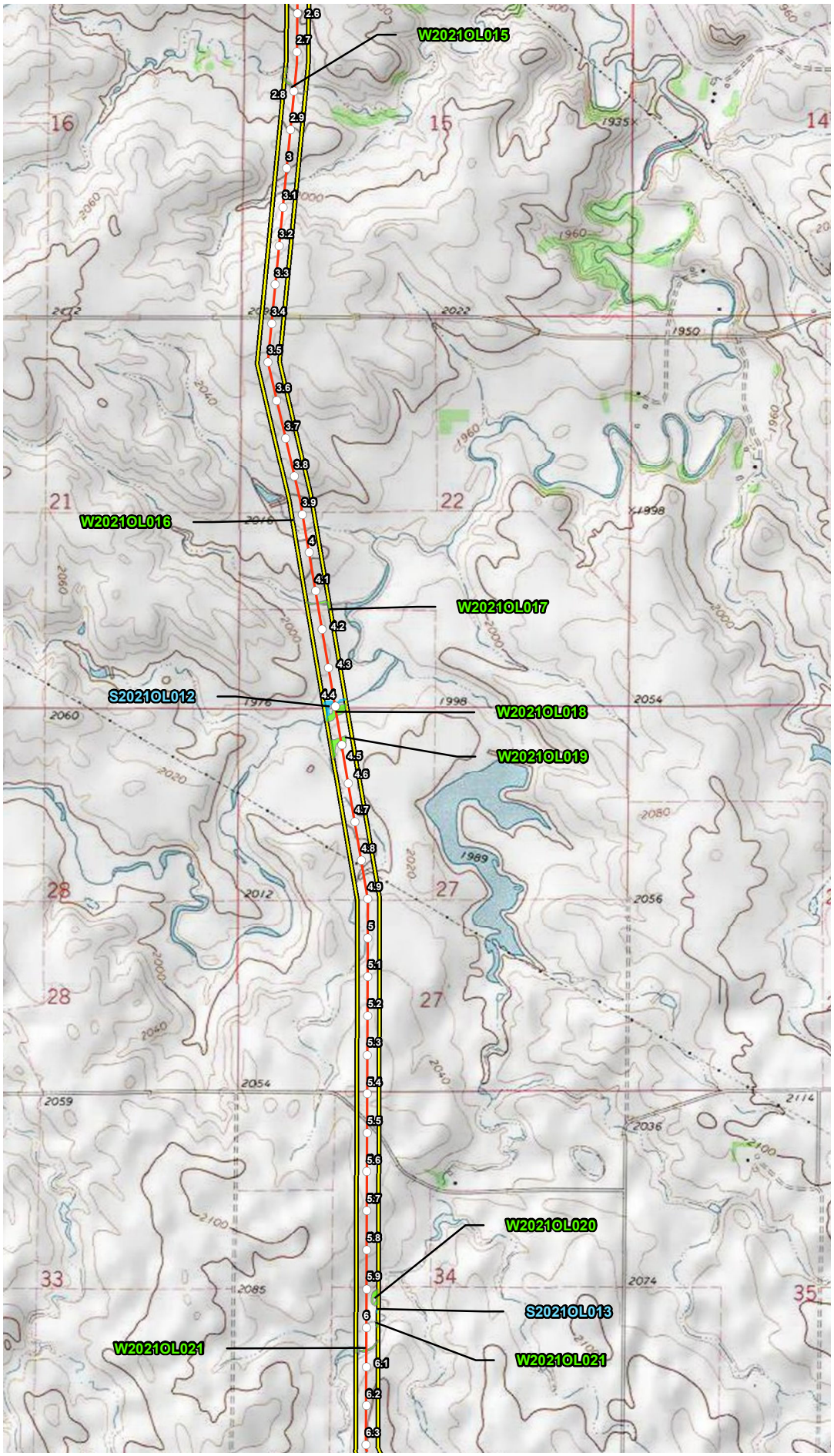
## TOPOGRAPHIC MAP

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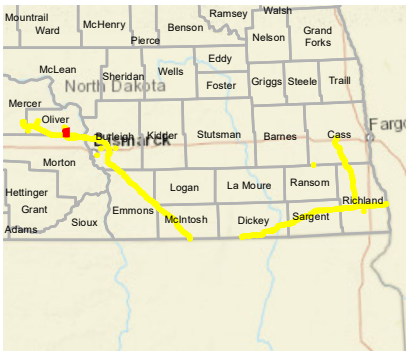


## LEGEND

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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**Topographic Map**

Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 89 of 96 | 2001-22-003<br>Current Revision |

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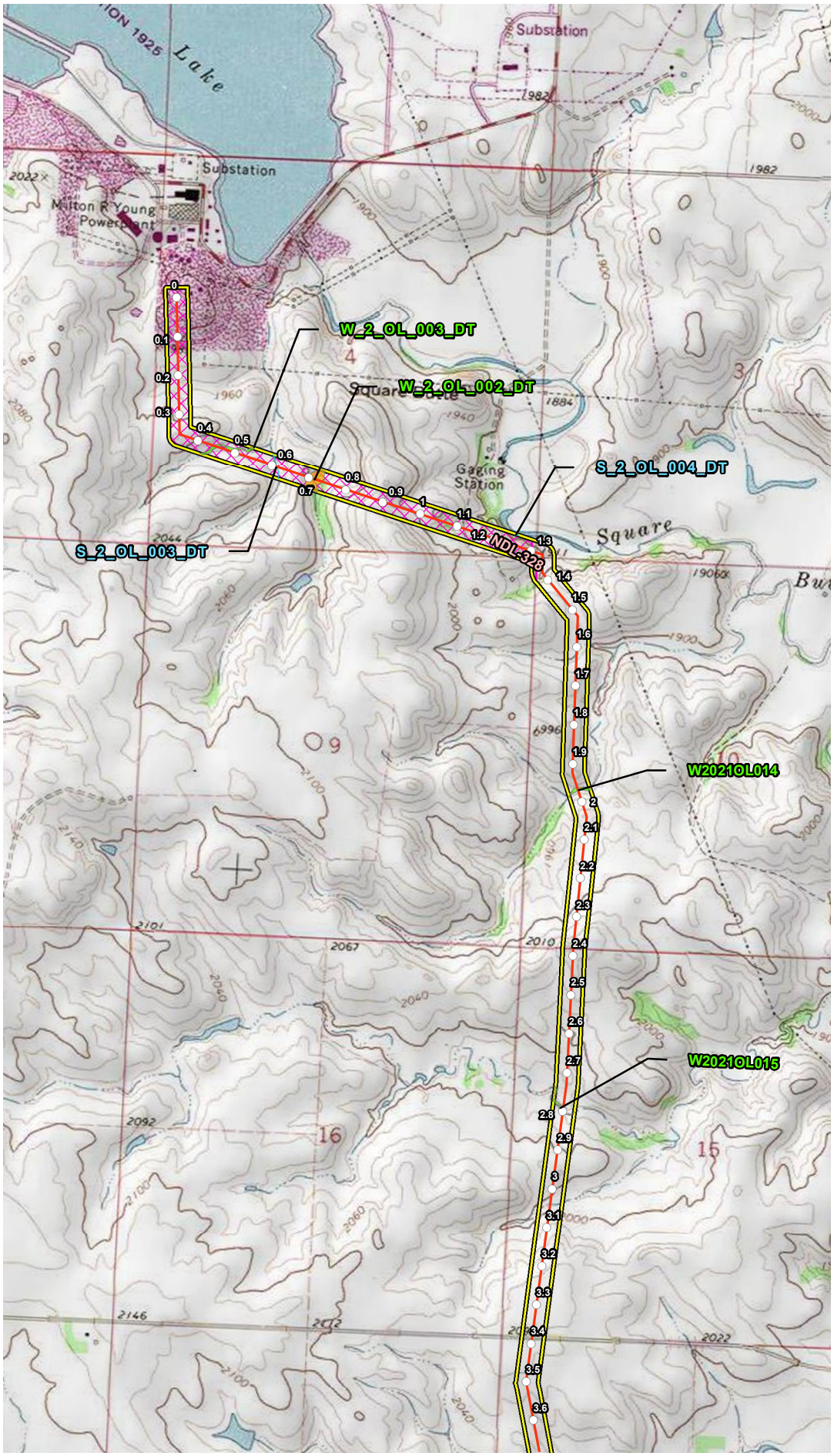


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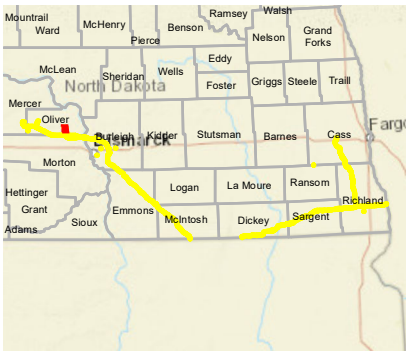


## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

Topographic Map

**Figure Number:**

Appendix A-3

| Scale | Projection |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 90 of 96 | 2001-22-003<br>Current Revision |

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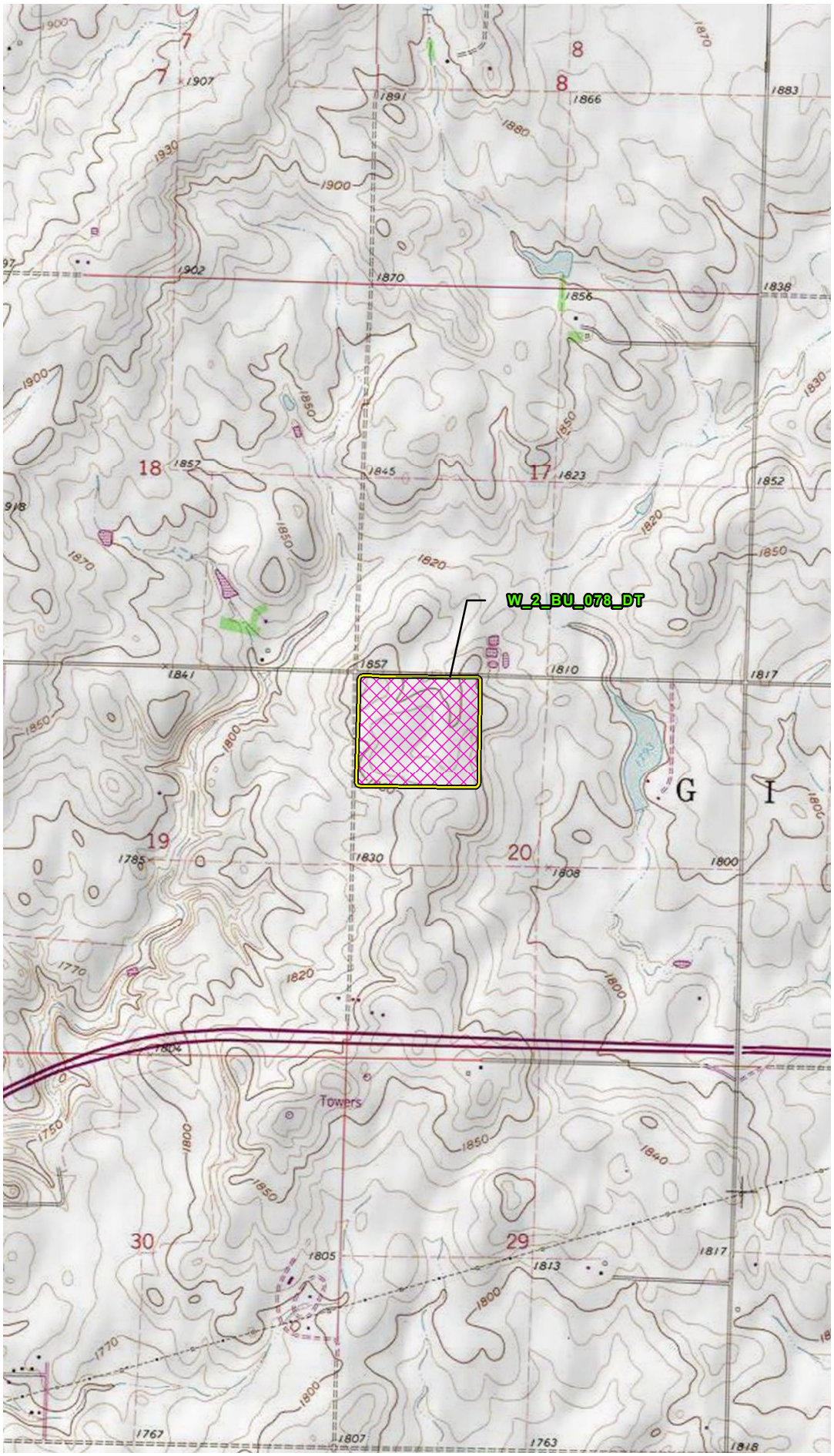


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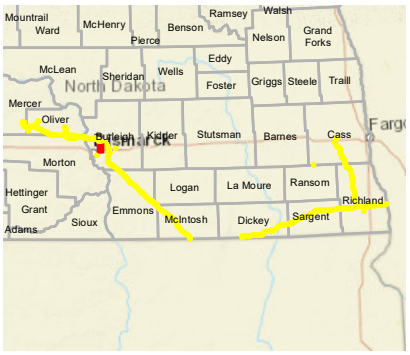


## LEGEND

- Milepost
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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 91 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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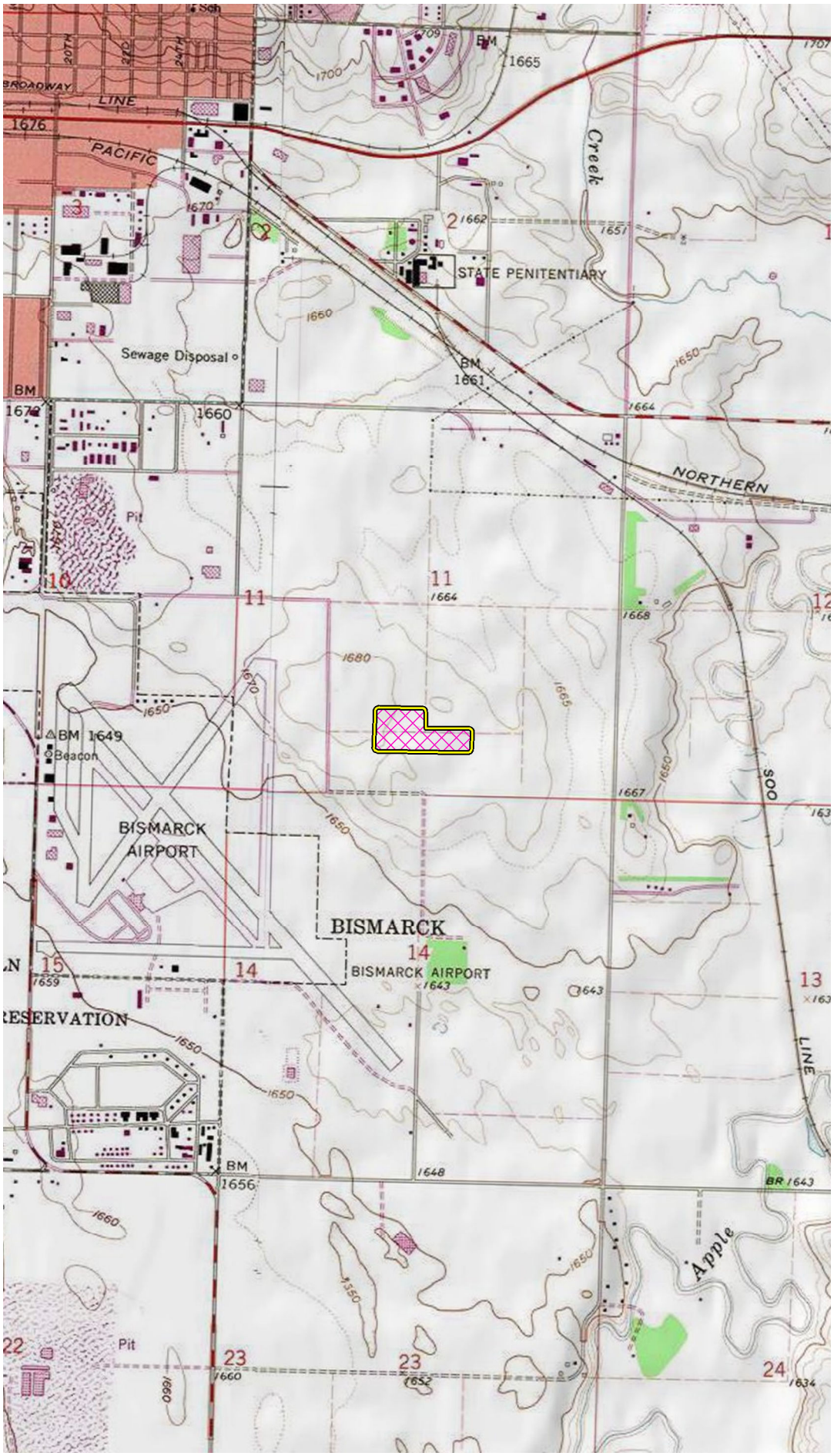
## TOPOGRAPHIC MAP

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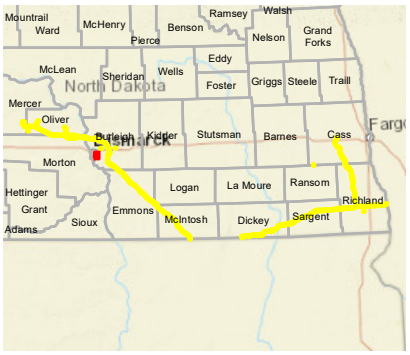


## LEGEND

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0 1,050 2,100 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
Topographic Map

Figure Number:
Appendix A-3

Scale:
Scale: 1:24,000
1 inch = 2,000 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
92 of 96

Drawing Number:
2001-22-003
Current Revision

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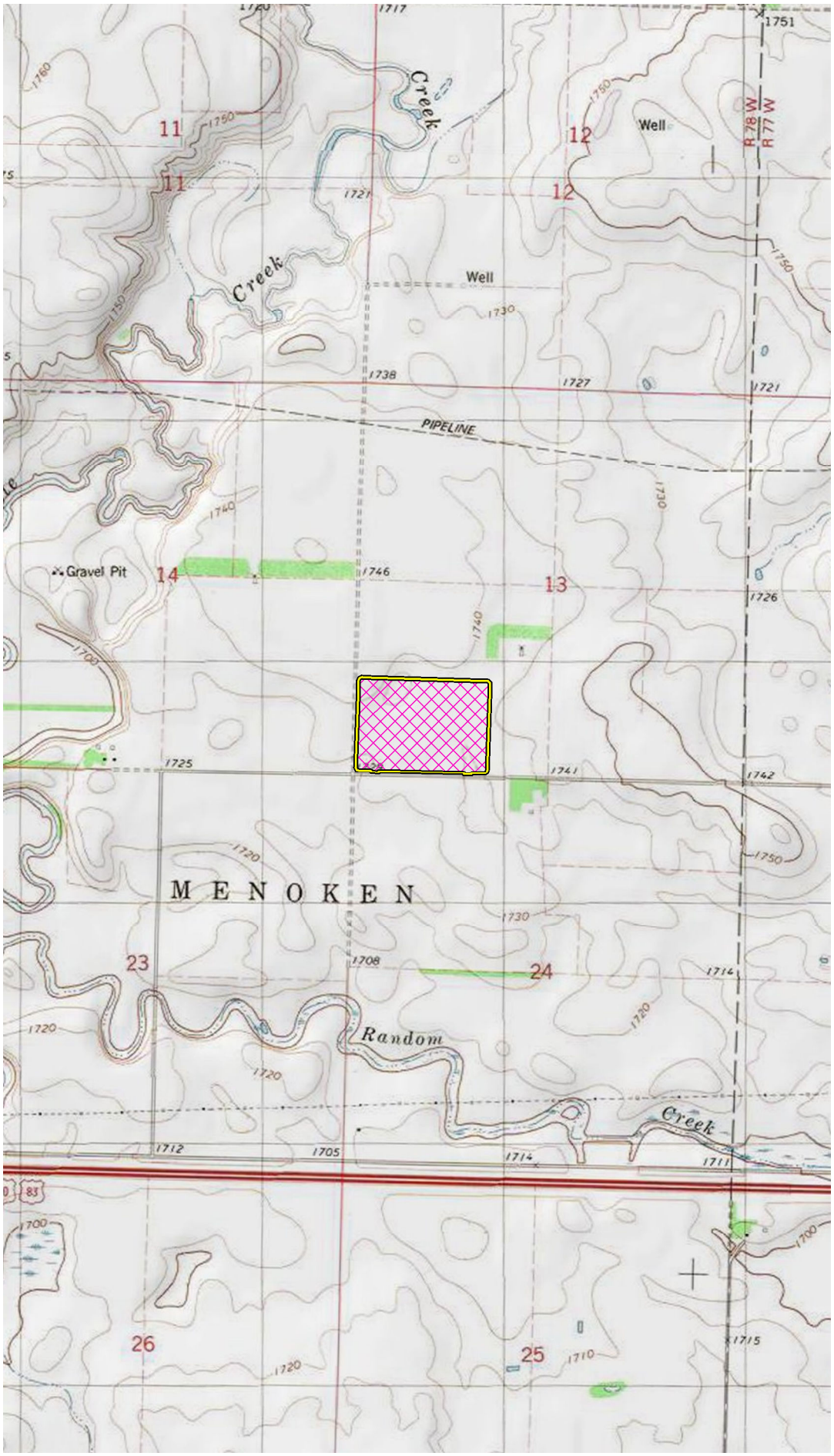
## TOPOGRAPHIC MAP

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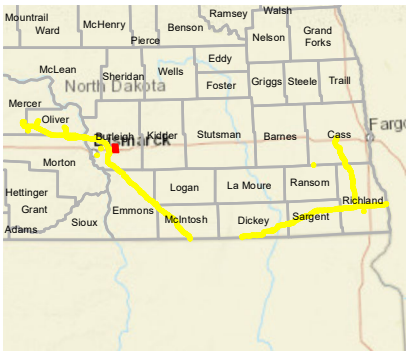


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0 1,000 2,000 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

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Figure Number:

**Appendix A-3**

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 93 of 96 | 2001-22-003<br>Current Revision |

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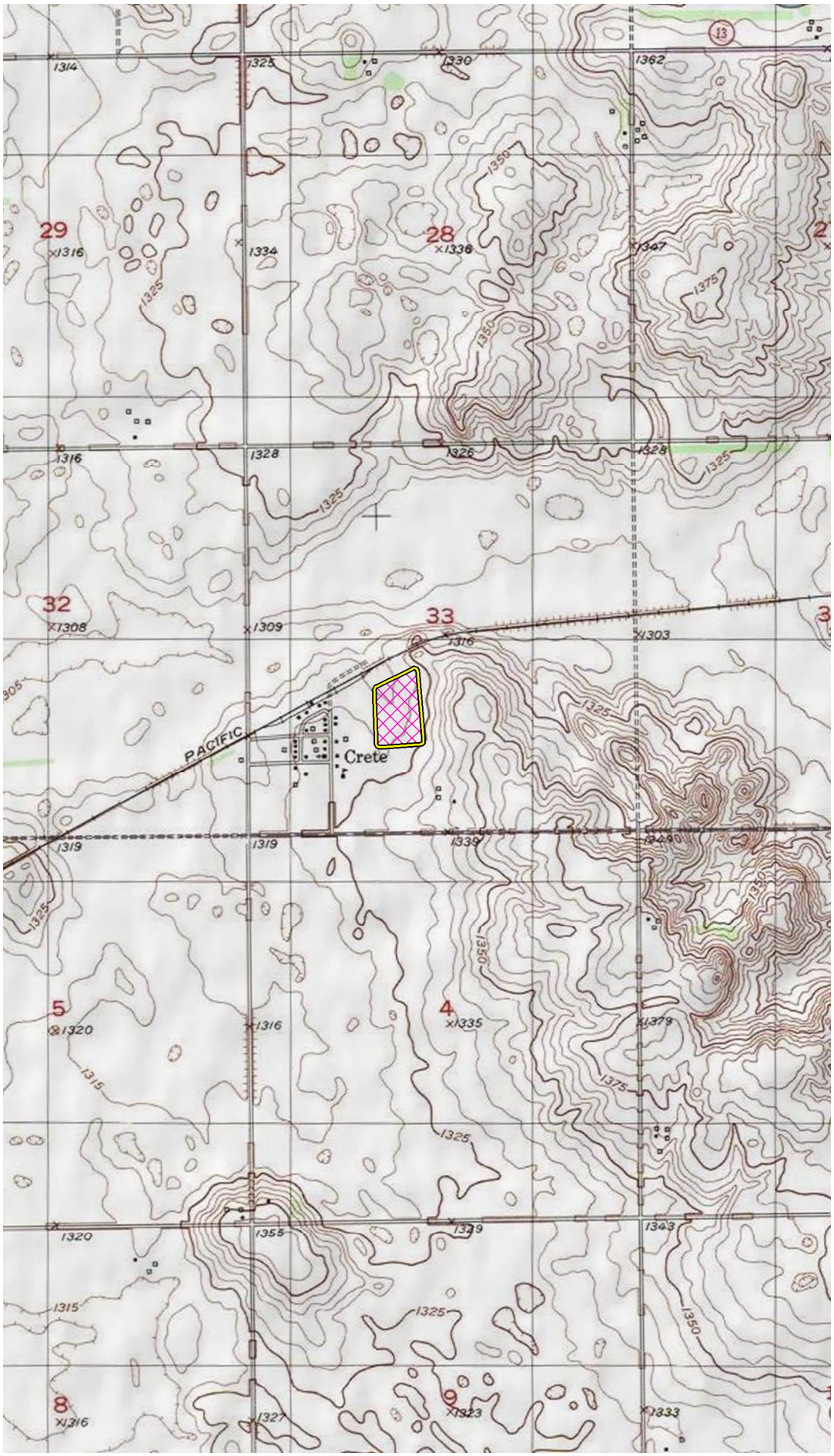
## TOPOGRAPHIC MAP

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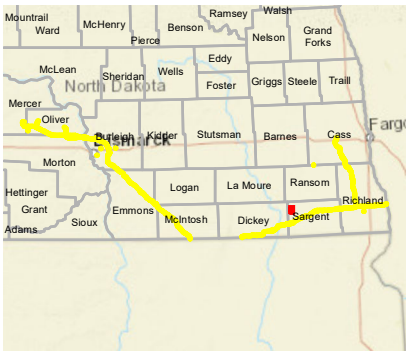


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0 1,000 2,000 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| **1A - Revision** Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Appendix A-3

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| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 94 of 96 | Drawing Number: 2001-22-003<br>Current Revision |

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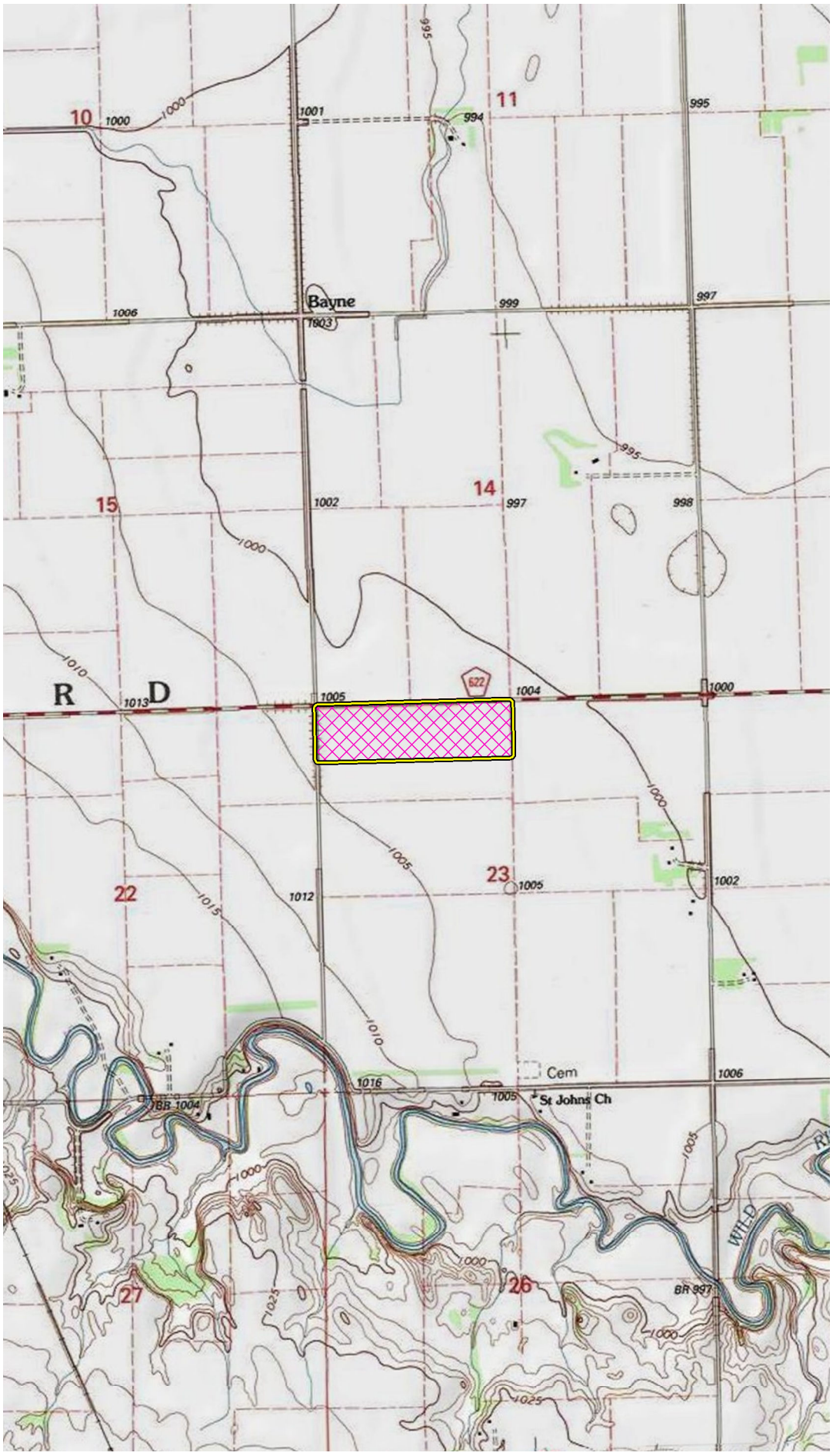
## TOPOGRAPHIC MAP

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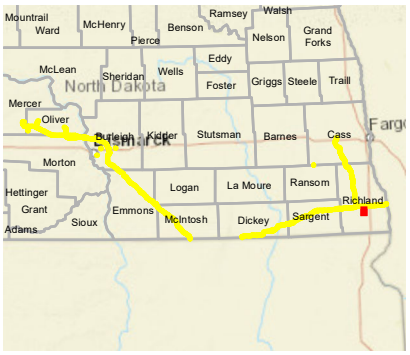


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- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,000 2,000 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**
Topographic Map

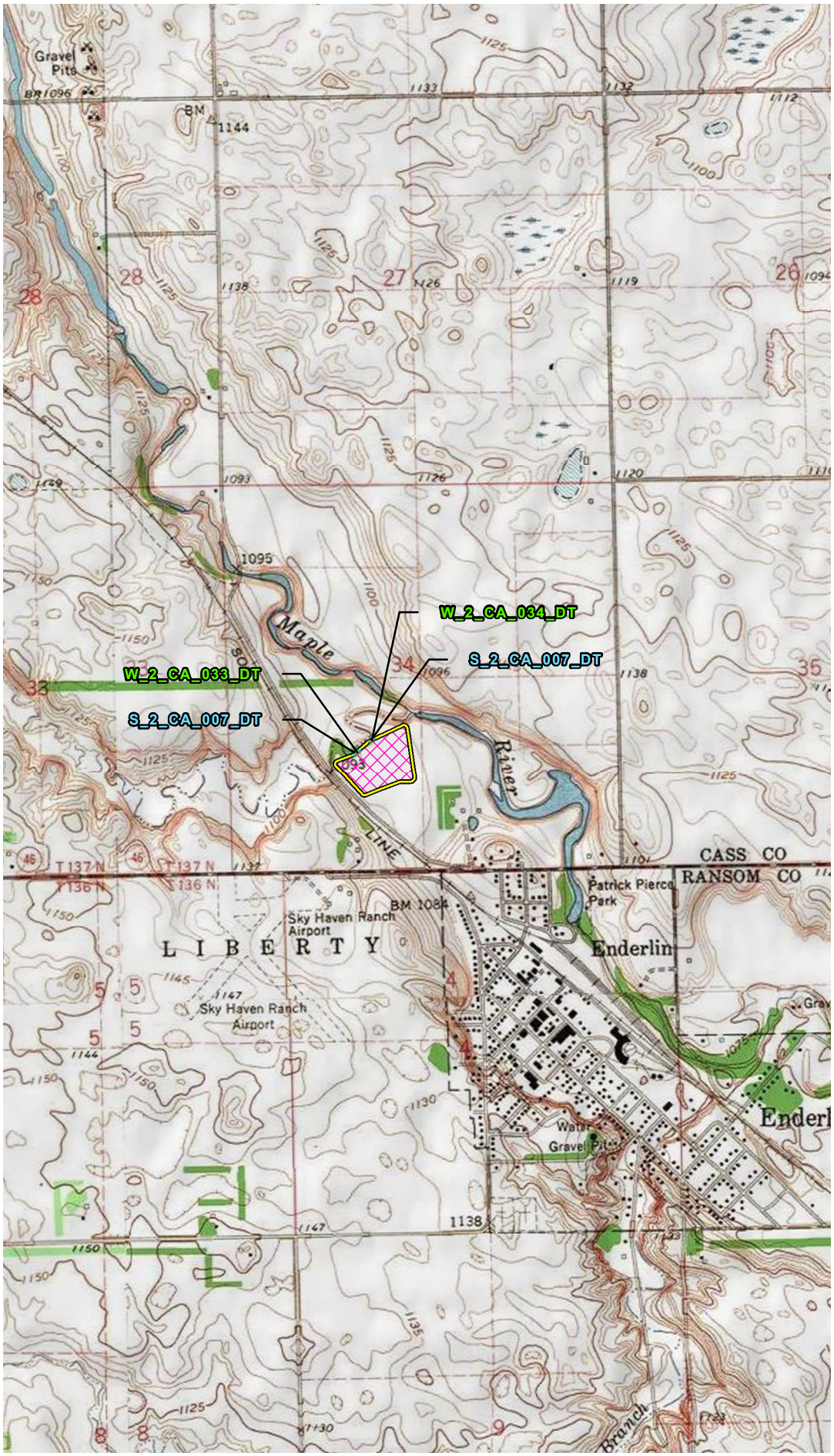
**Figure Number:**
Appendix A-3

| Scale | Projection |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

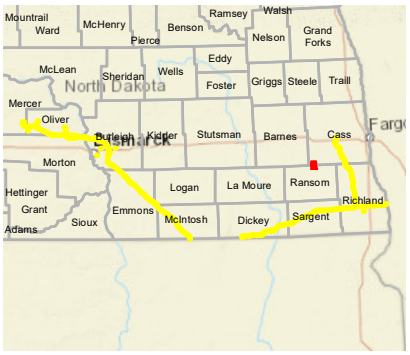
| Sheet | Drawing Number |
|---|---|
| 95 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_ND\mxds\3_Topo.mxd

## TOPOGRAPHIC MAP




## VICINITY MAP




## LEGEND

- Milepost
- Proposed Route (07/19/22)
- Stream
- Open Water
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub Shrub Wetland
- Desktop Review Area
- Environmental Survey Area
- County Boundary
- State Boundary

0 1,050 2,100 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:
Topographic Map

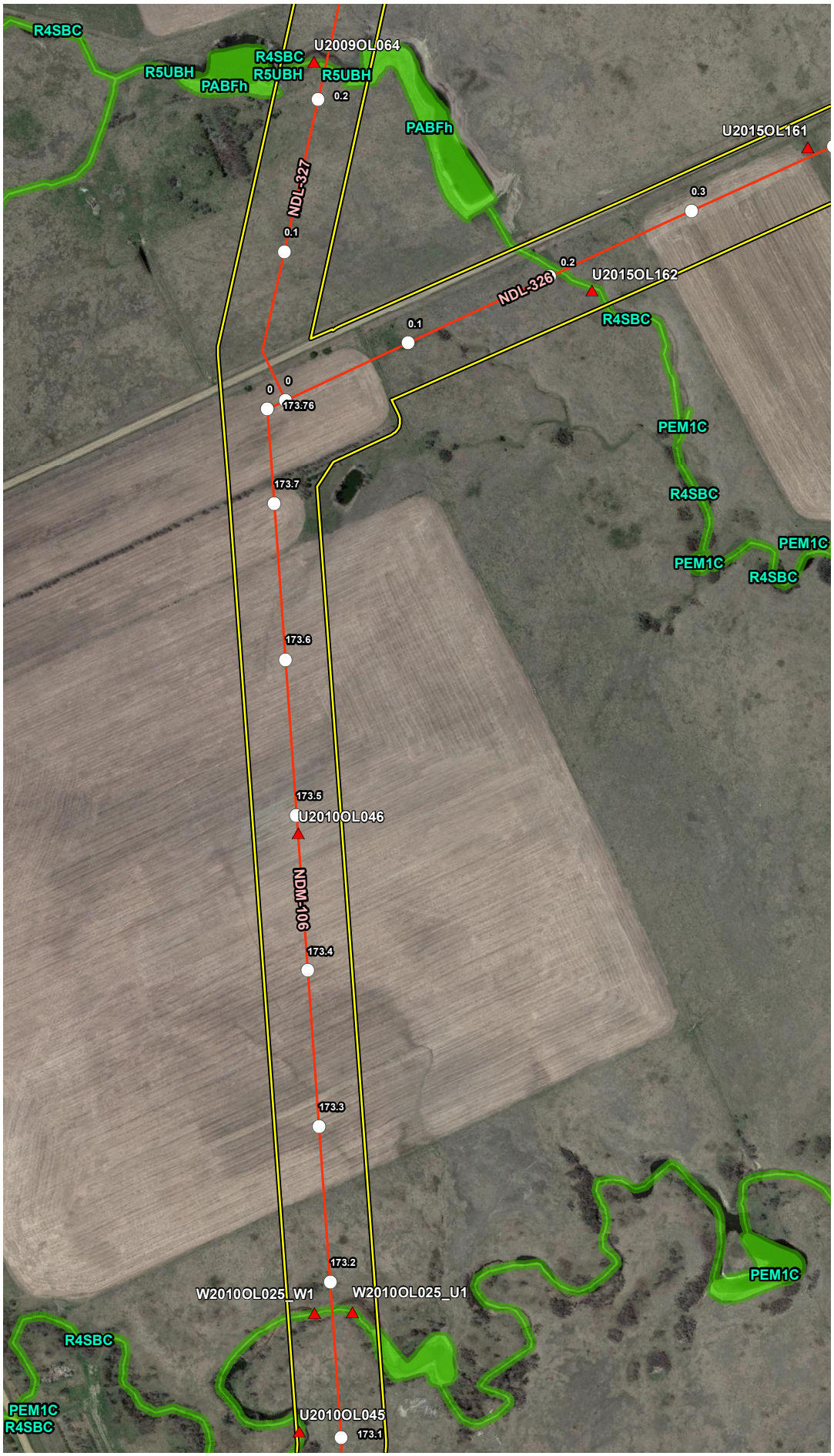
Figure Number:
Appendix A-3

| Scale: | Projection: |
|---|---|
| Scale: 1:24,000<br>1 inch = 2,000 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 96 of 96 | 2001-22-003<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\901_VWR_NDImxds\3_Topo.mxd

## NWI MAP

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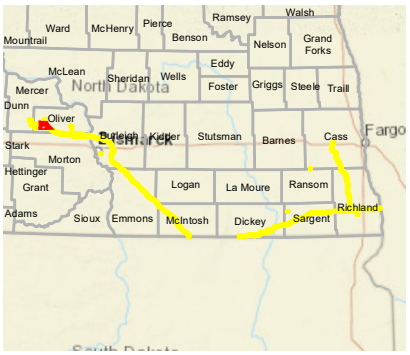


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

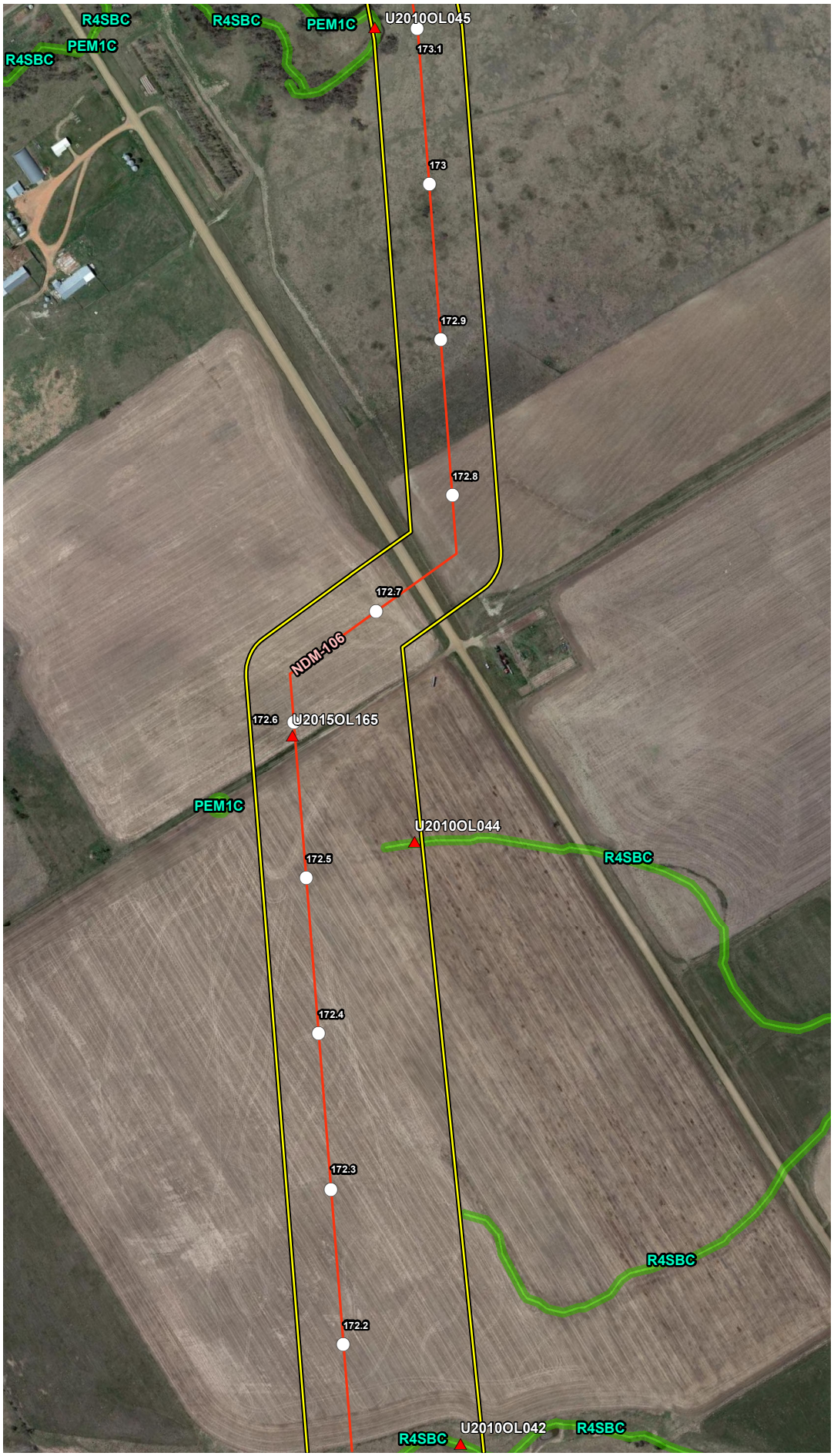
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

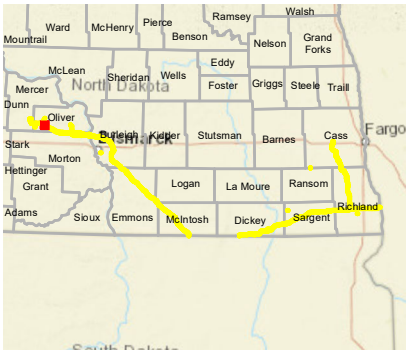
| Sheet: | Drawing Number: |
|---|---|
| 1 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\20220801_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 2 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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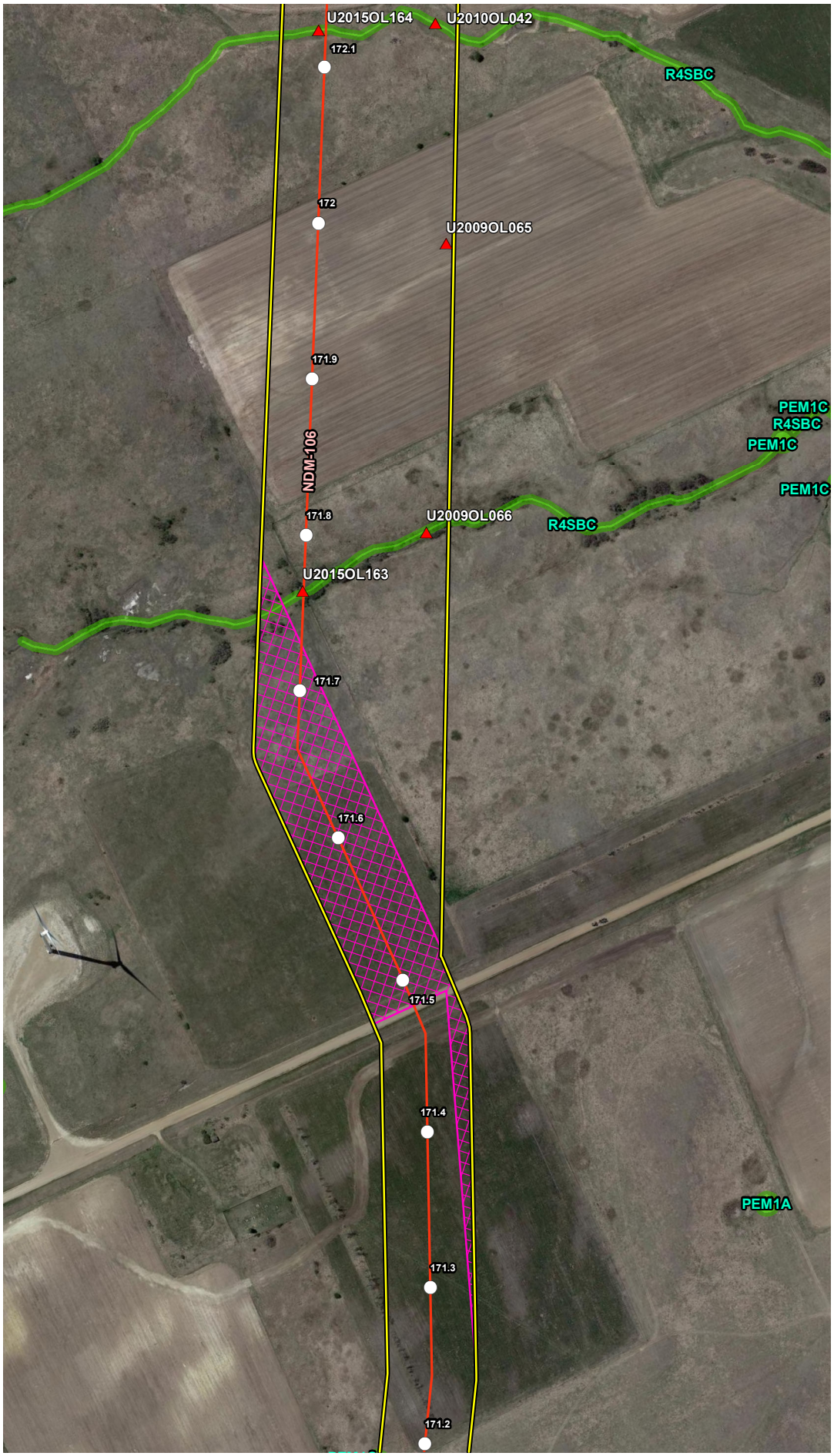
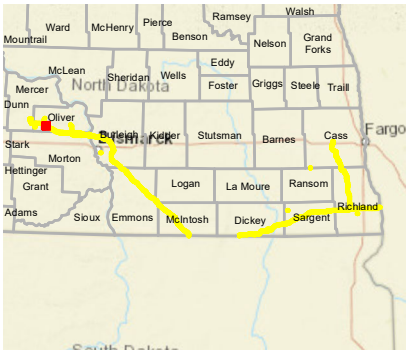
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:

NWI Map

Figure Number:

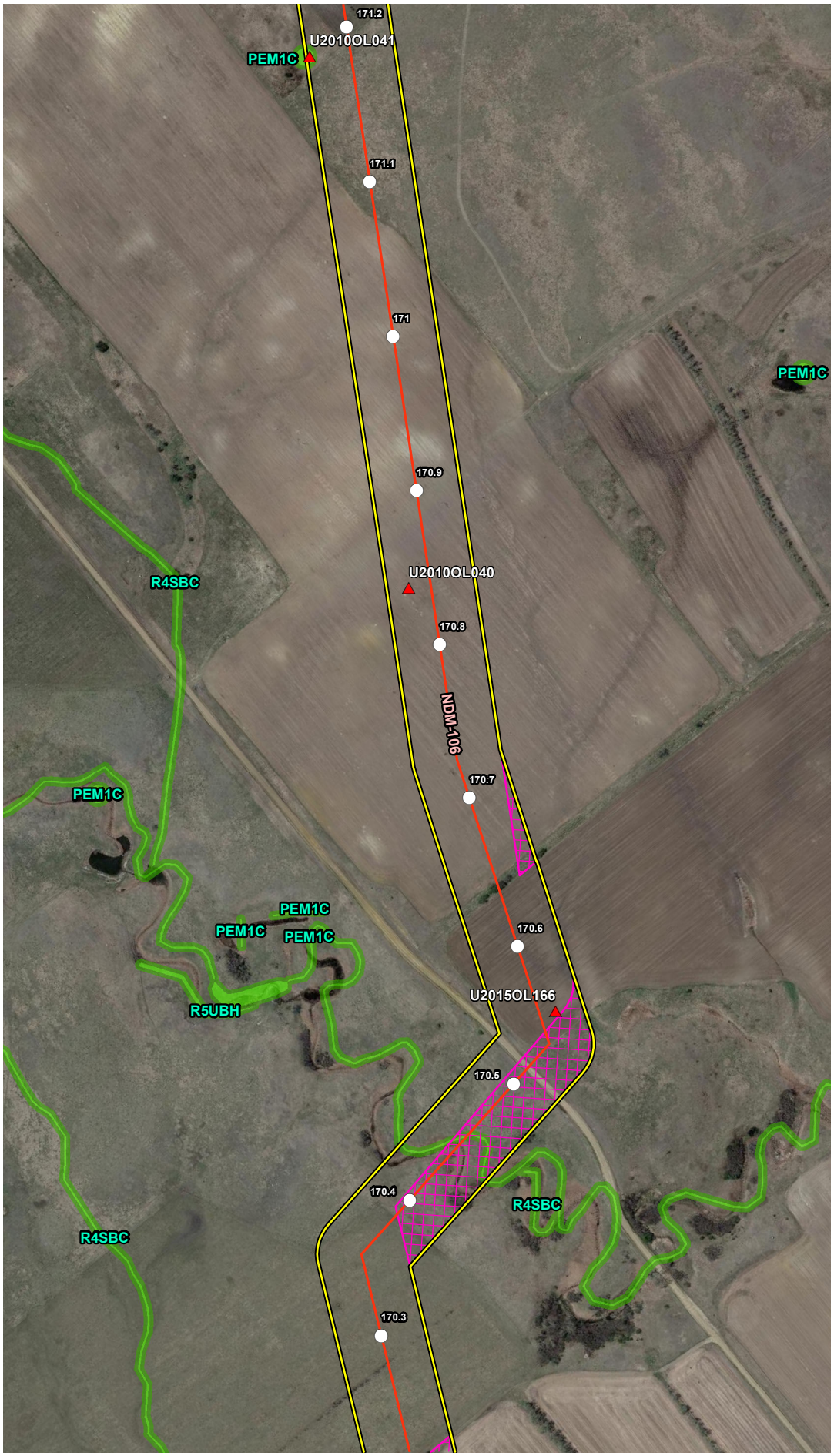
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

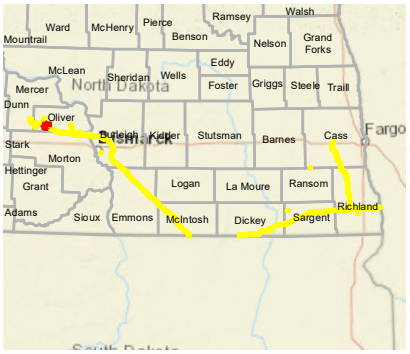
| Sheet: | Drawing Number: |
|---|---|
| 3 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

N

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

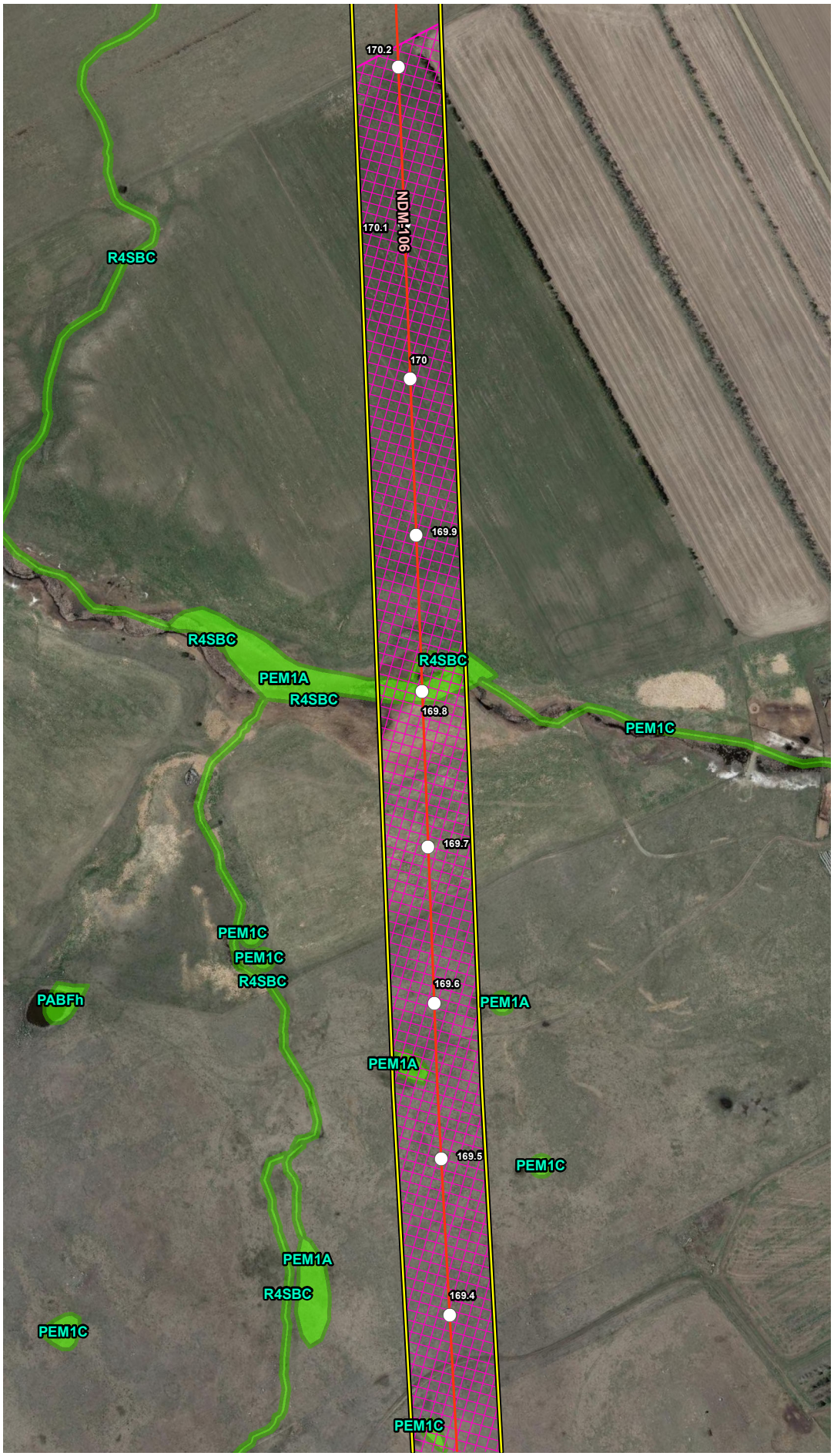
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

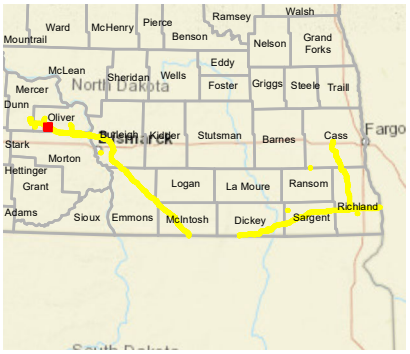
| Sheet: | Drawing Number: |
|---|---|
| 4 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ID\VWR\2022\801_VWR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

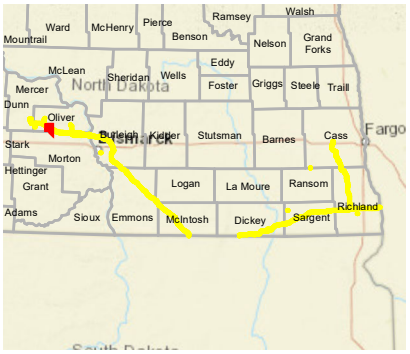
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>5 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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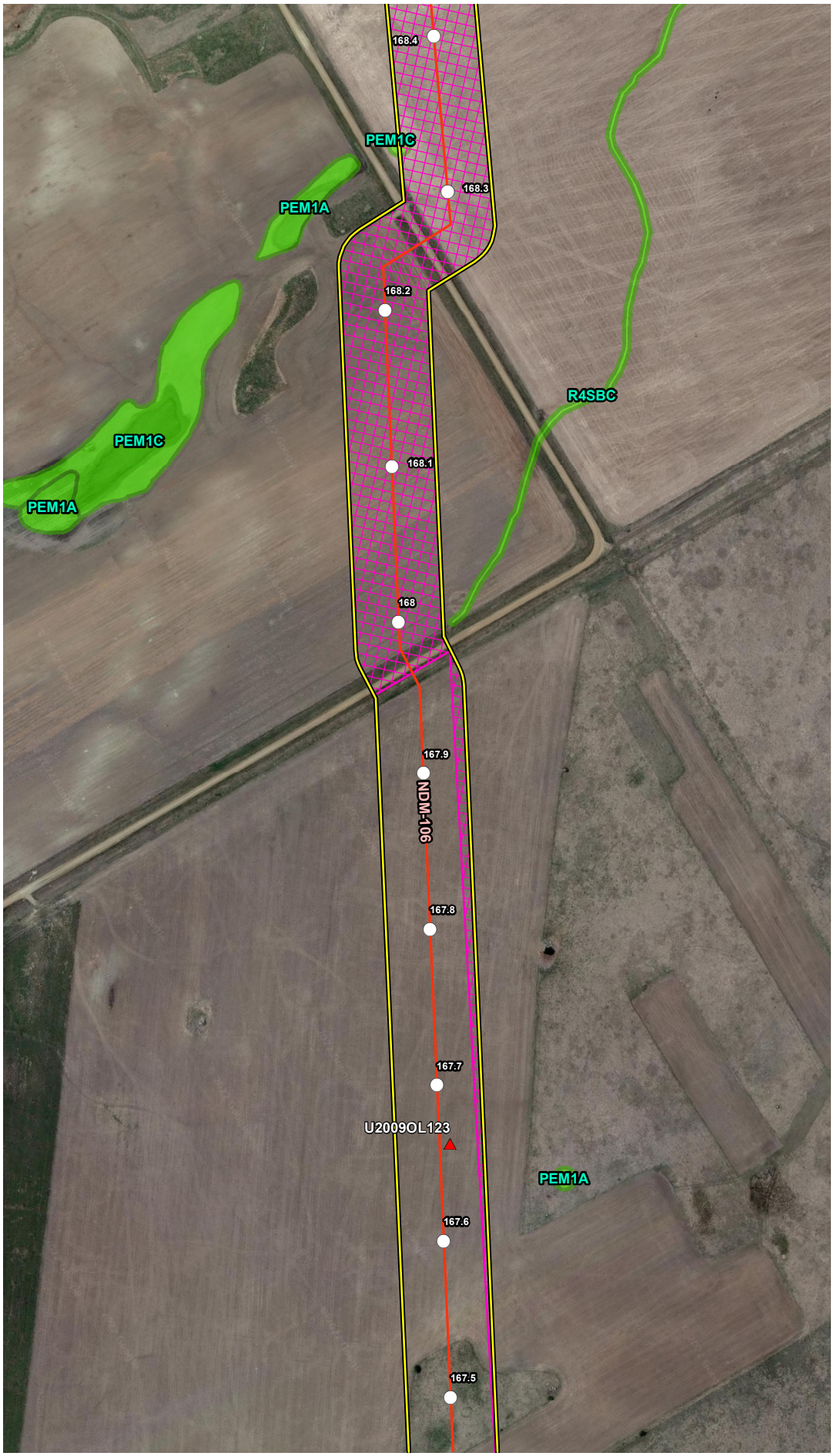
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>6 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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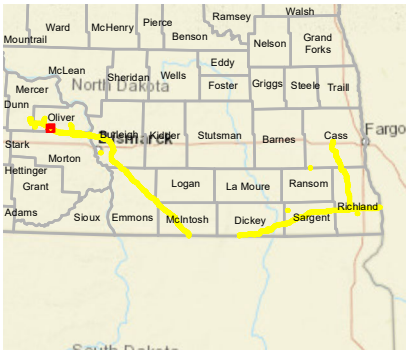


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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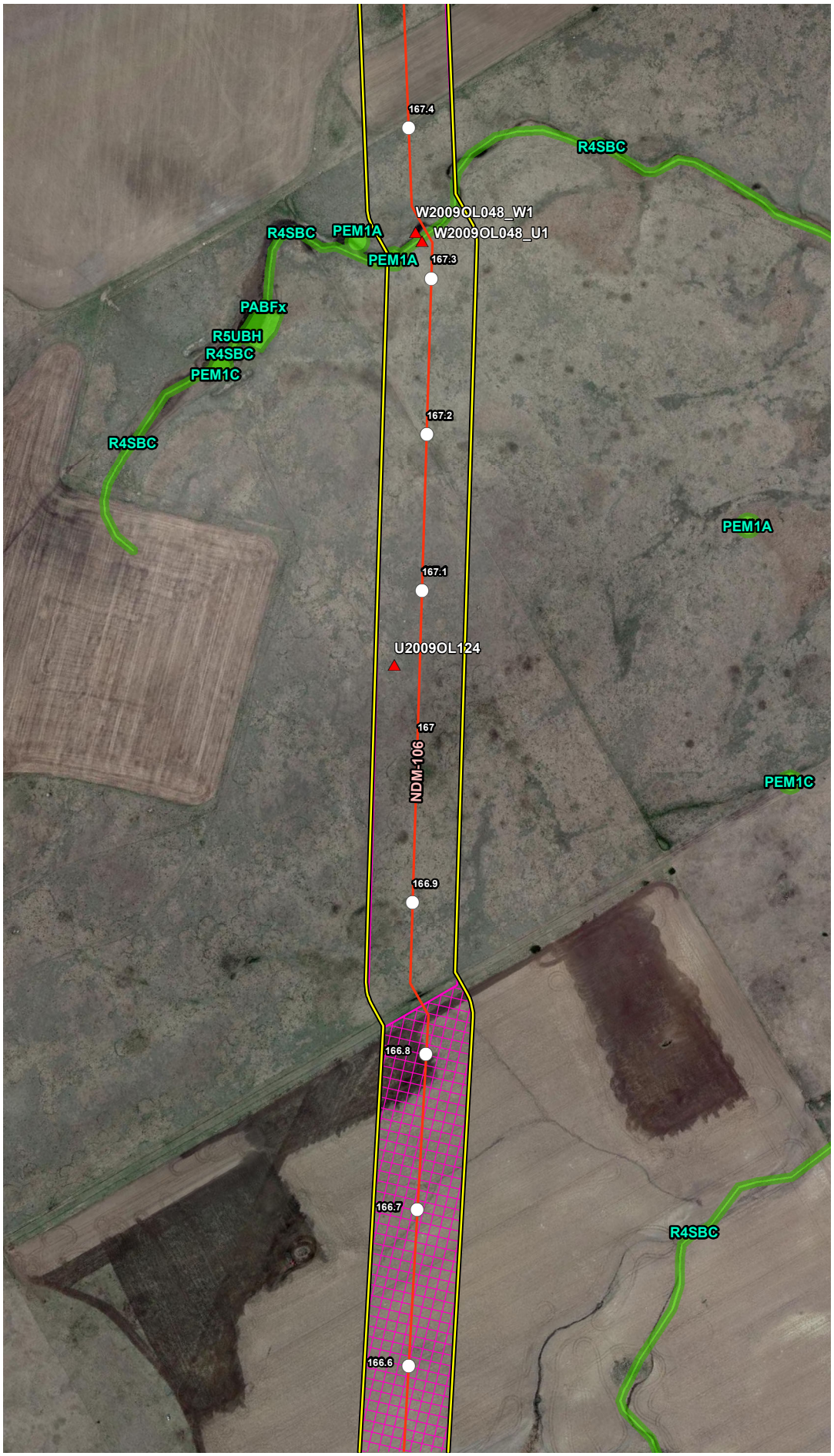
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>7 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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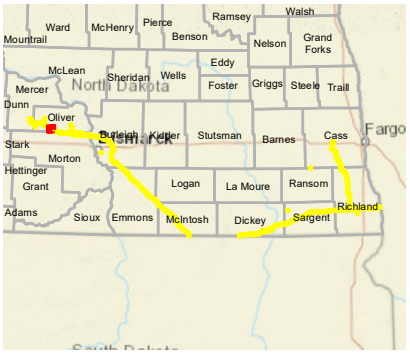


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

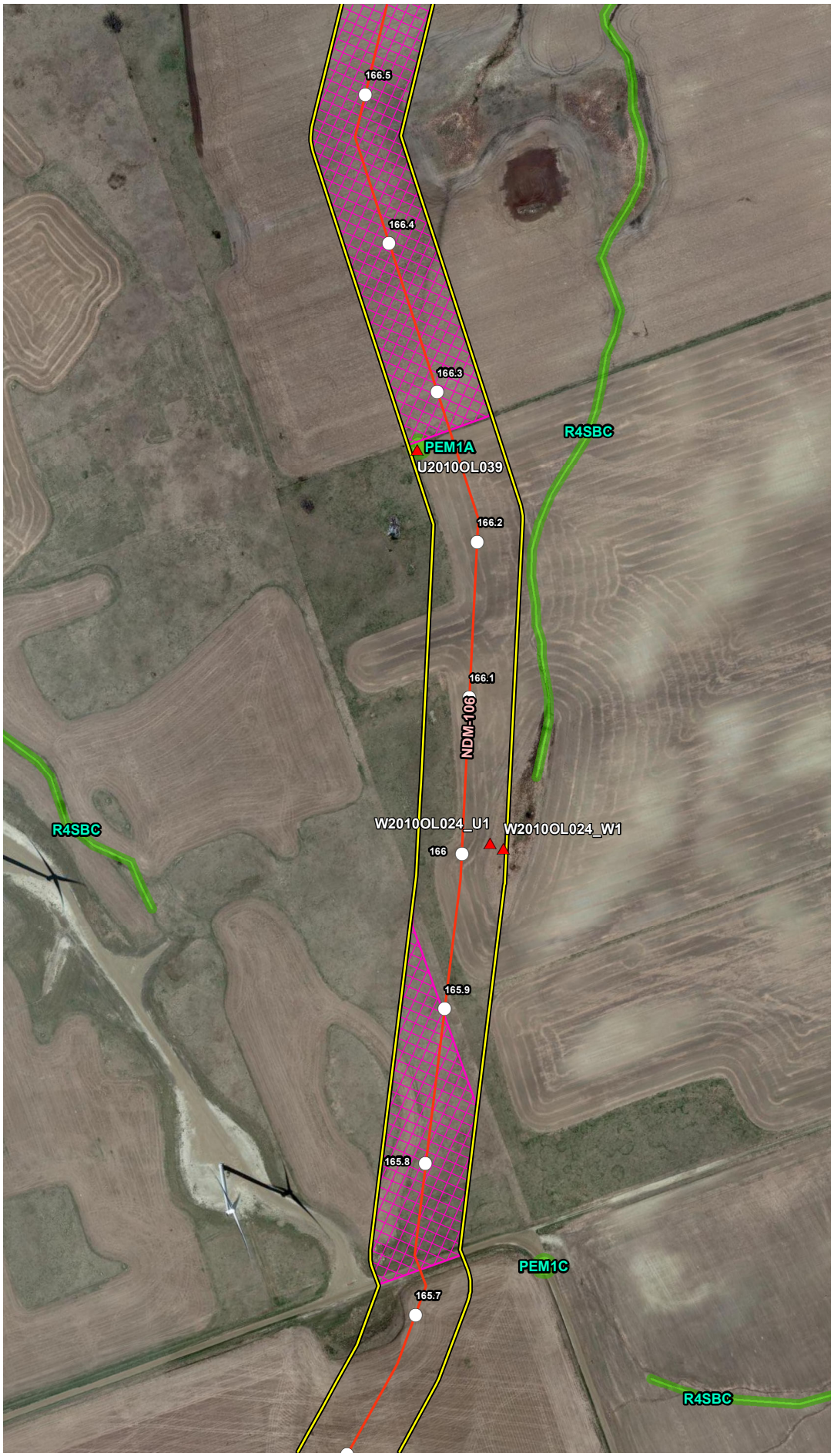
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

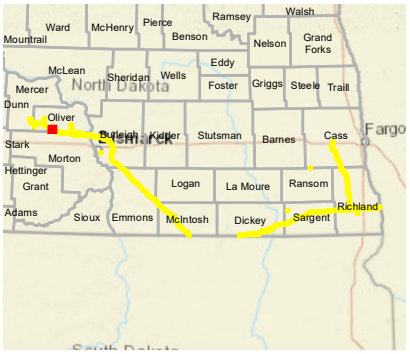
| Sheet: | Drawing Number: |
|---|---|
| 8 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\WR\2022\0801_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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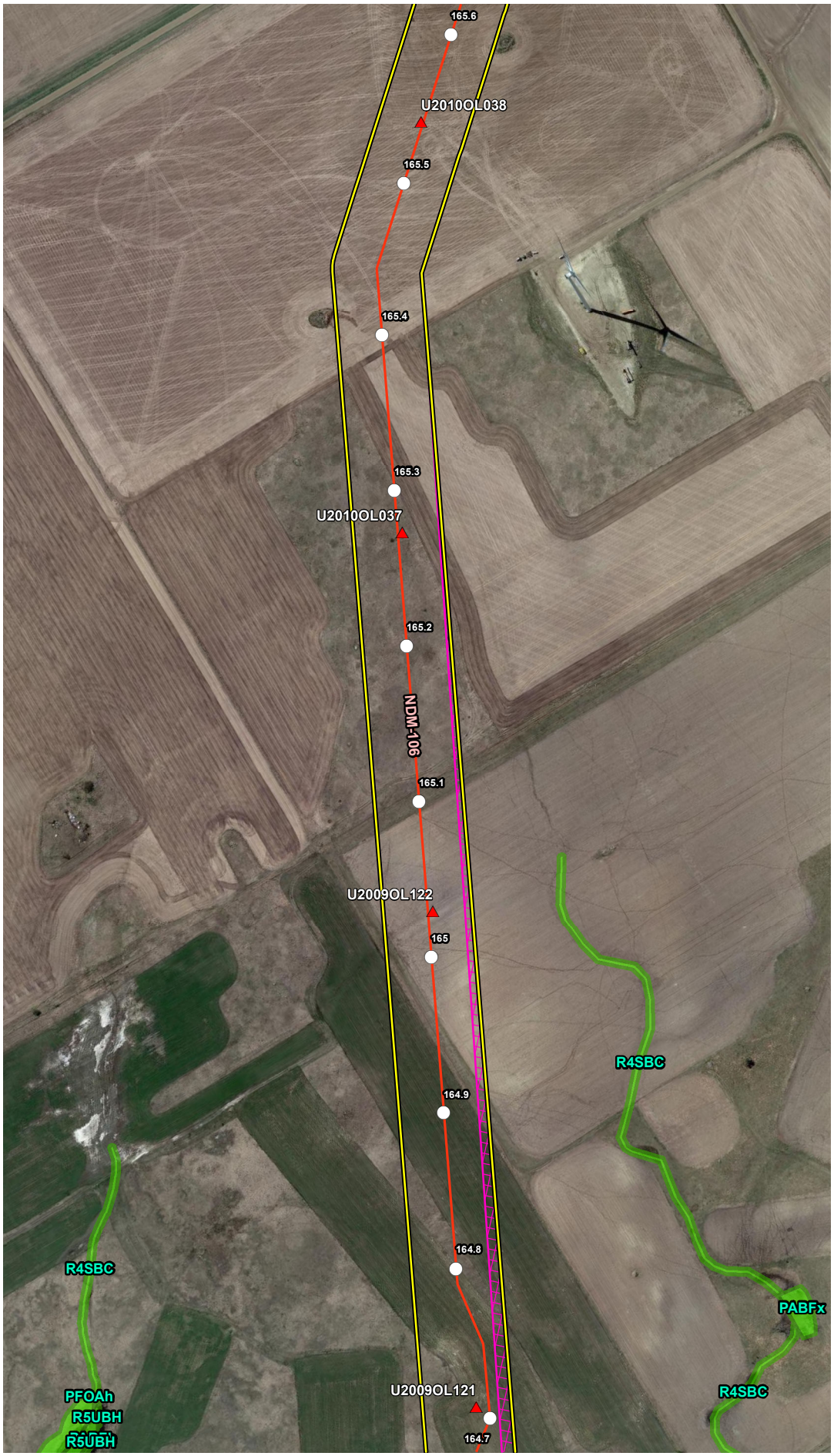
Figure Title:
NWI Map

Figure Number:
Appendix A-4

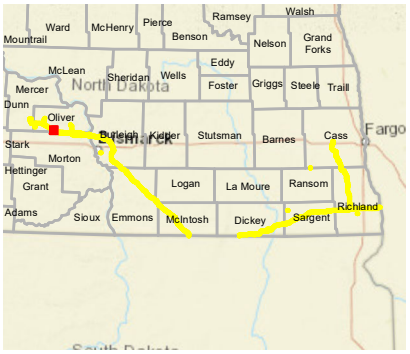
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 9 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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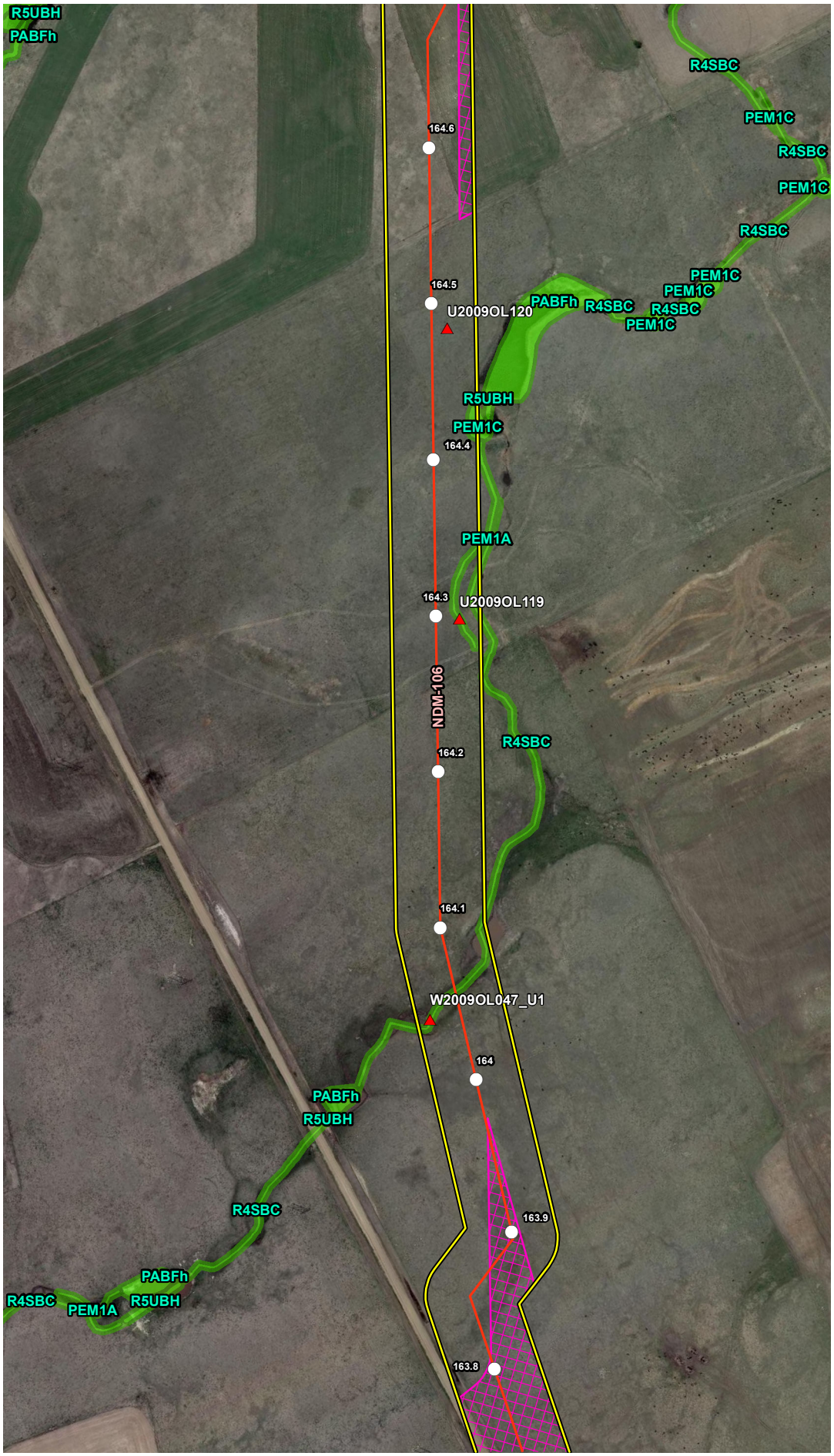
Figure Title:
NWI Map

Figure Number:
Appendix A-4

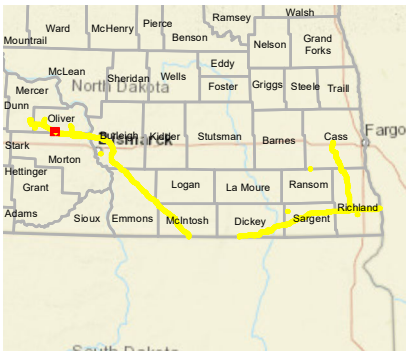
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>10 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:

NWI Map

Figure Number:

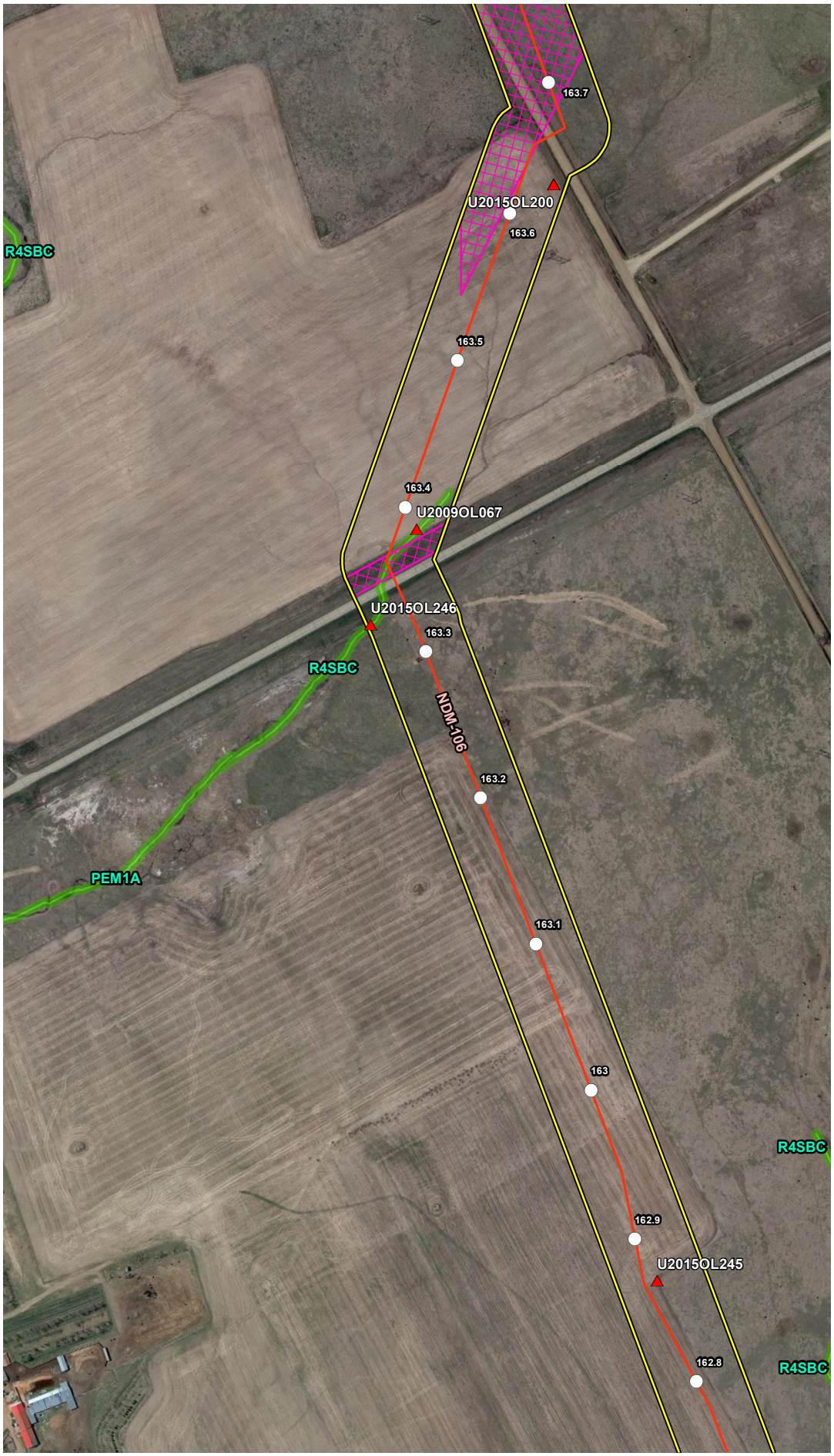
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

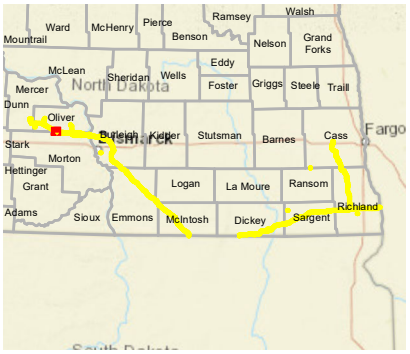
| Sheet: | Drawing Number: |
|---|---|
| 11 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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**Figure Title:**

NWI Map

**Figure Number:**

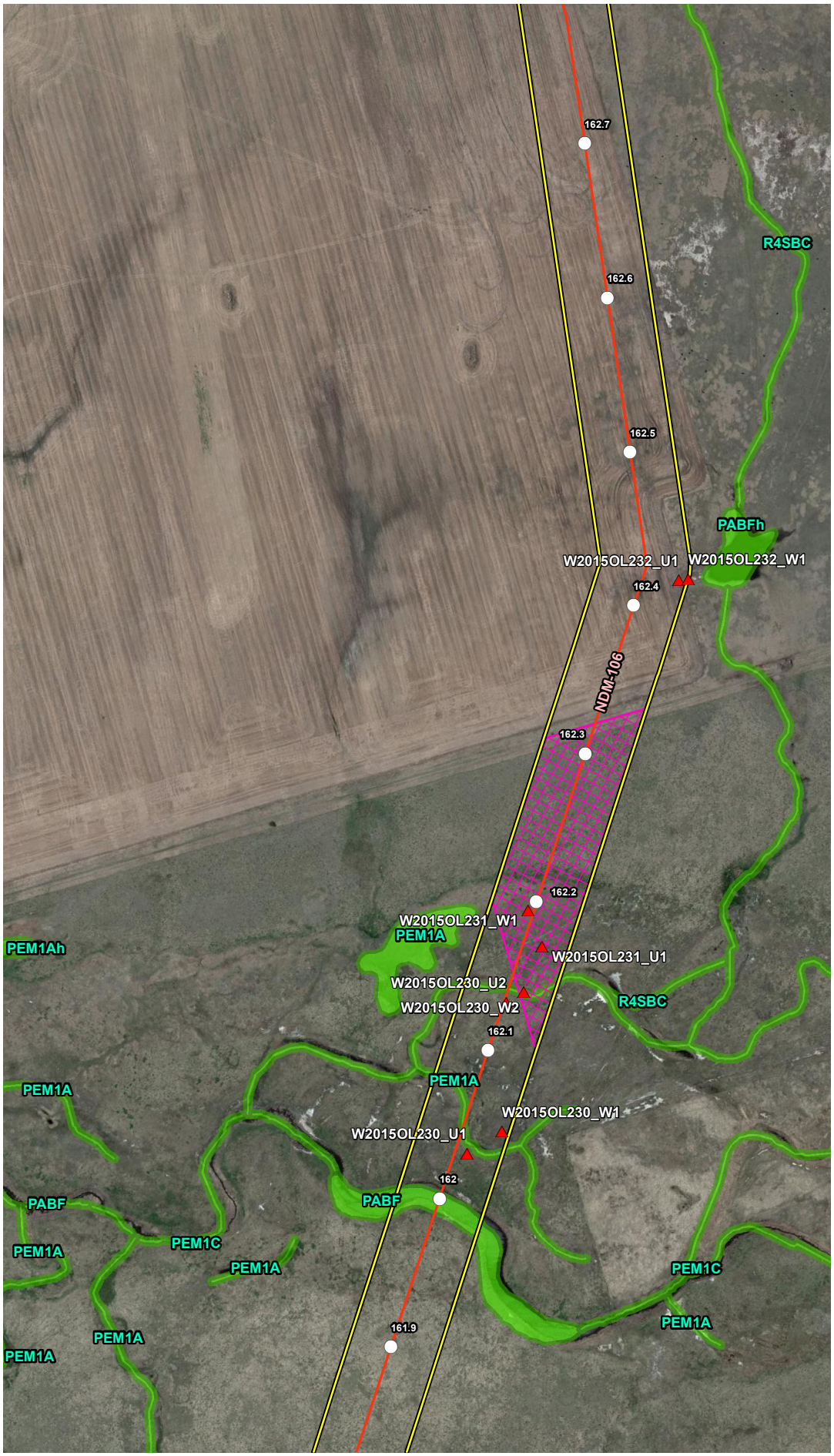
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 12 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\0801_WR_NDImxds\4_NWI.mxd

## NWI MAP

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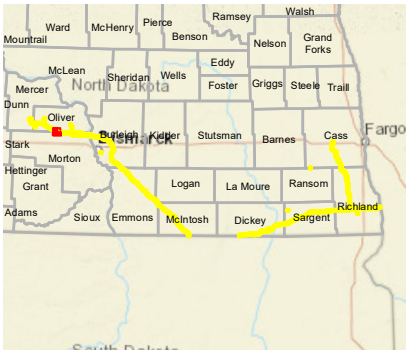


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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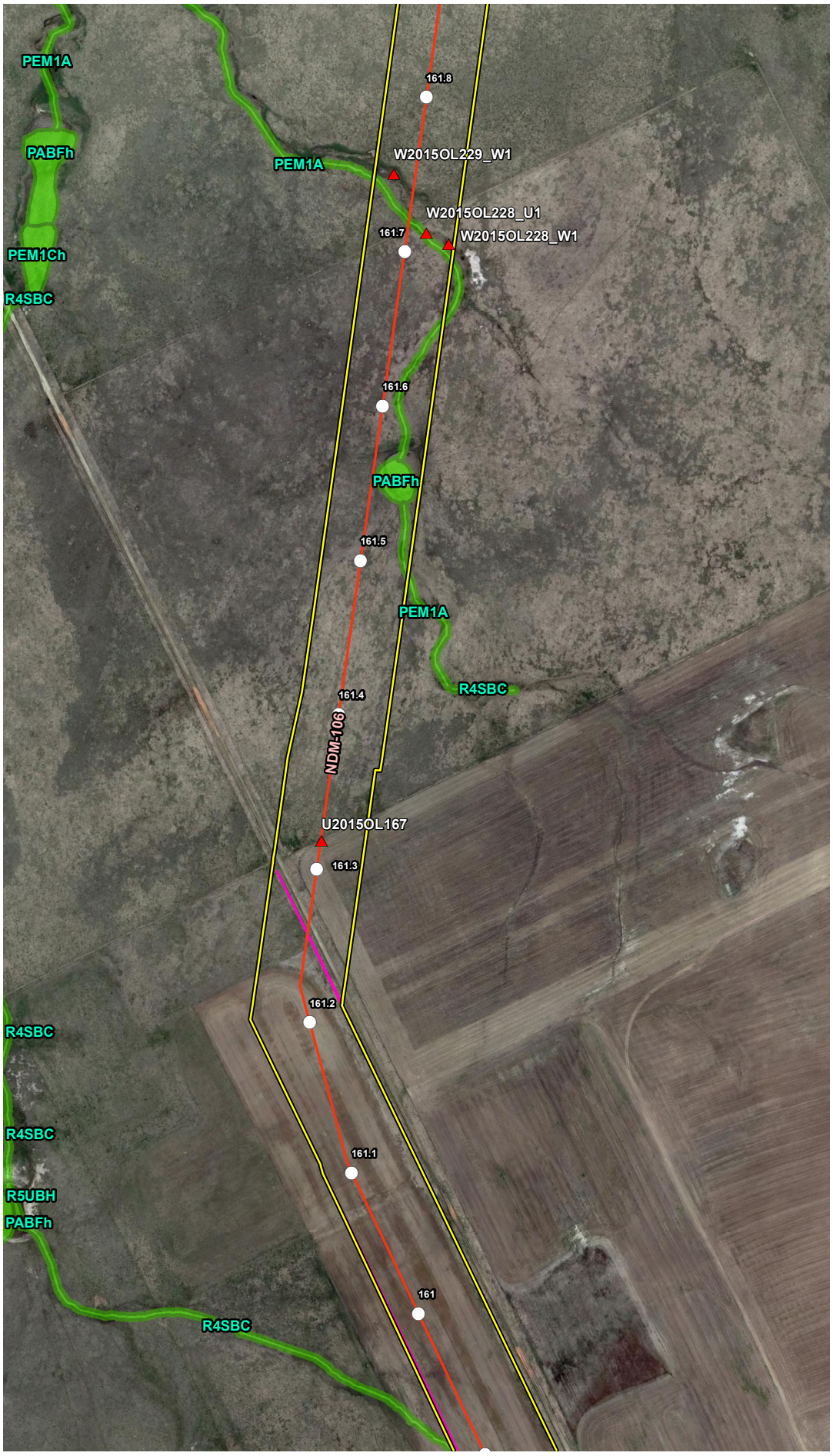
Figure Title:
NWI Map

Figure Number:
Appendix A-4

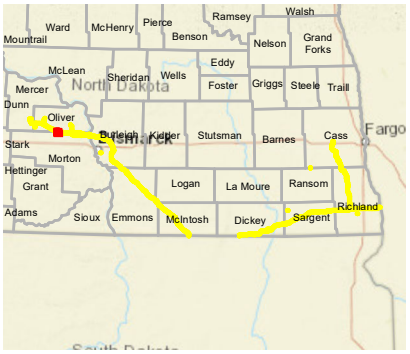
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>13 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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Figure Title:

**NWI Map**

Figure Number:

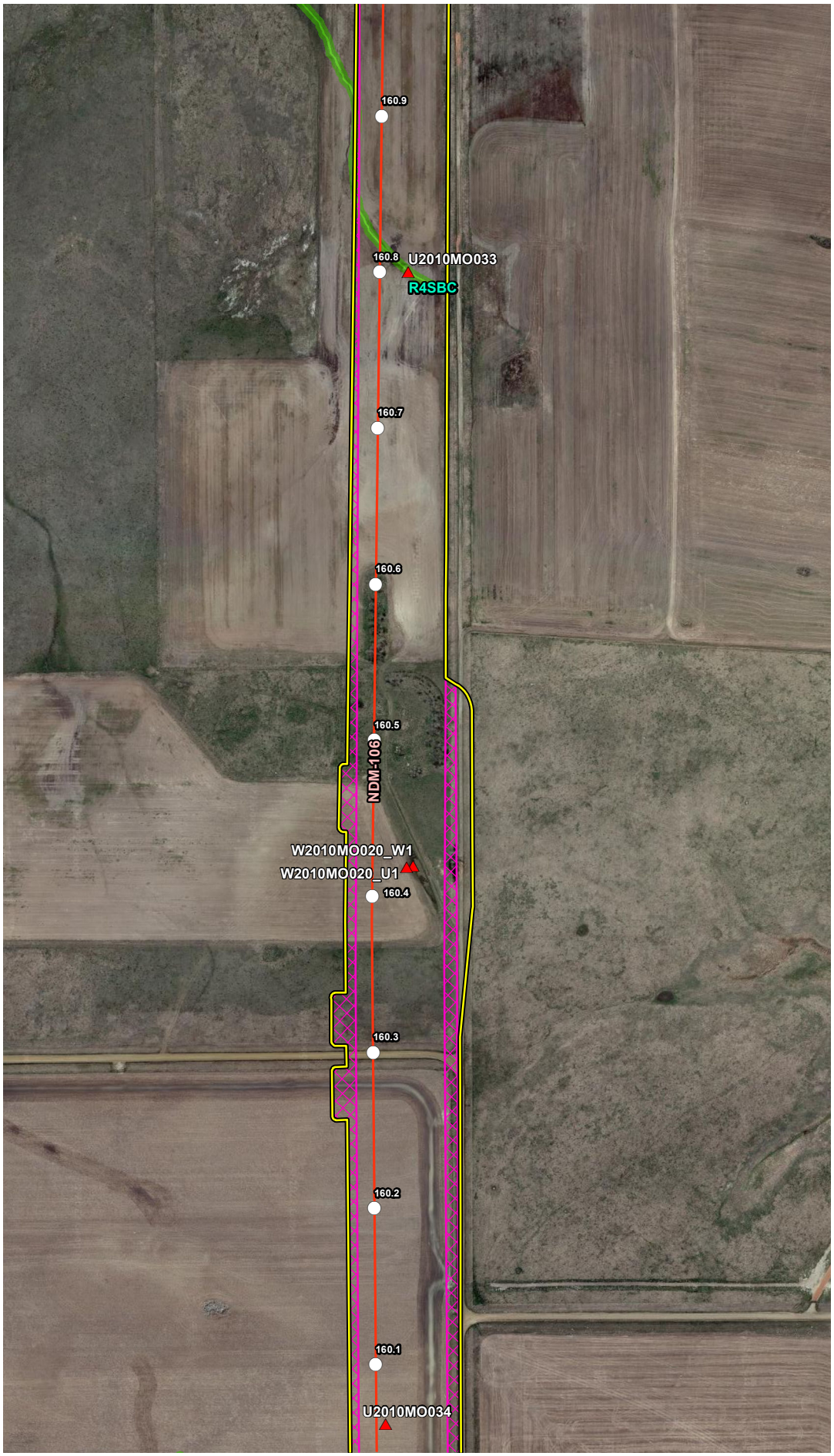
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

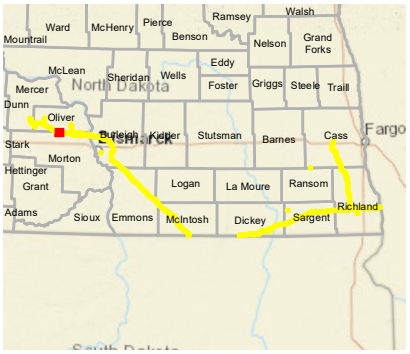
| Sheet: | Drawing Number: |
|---|---|
| 14 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

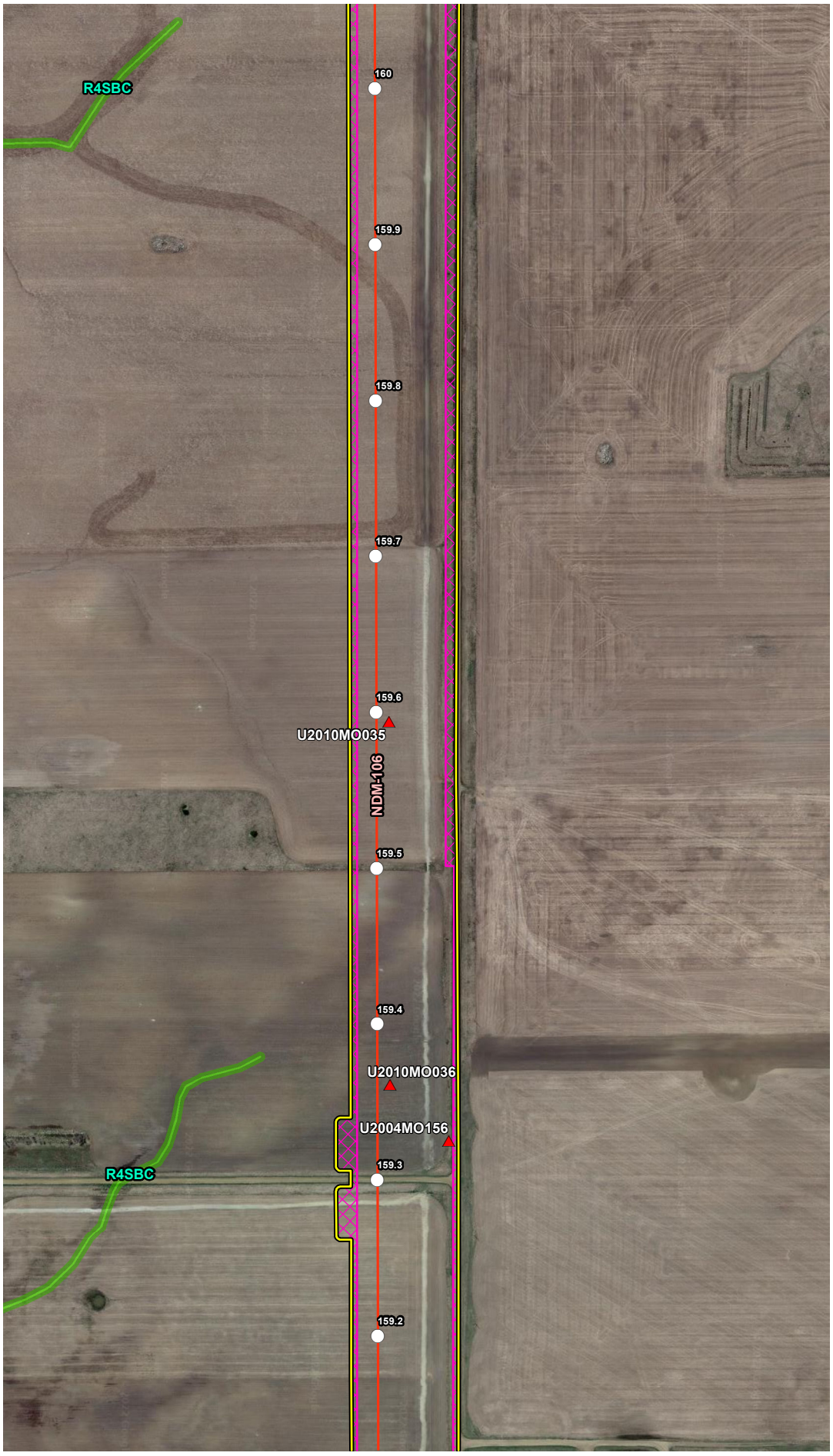
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

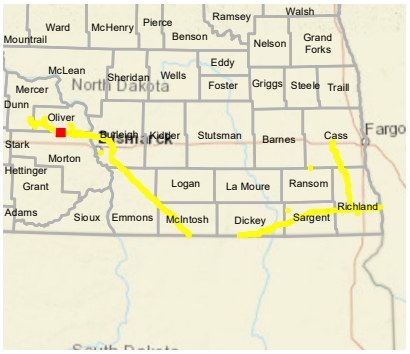
| Sheet: | Drawing Number: |
|---|---|
| 15 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

**Figure Number:**

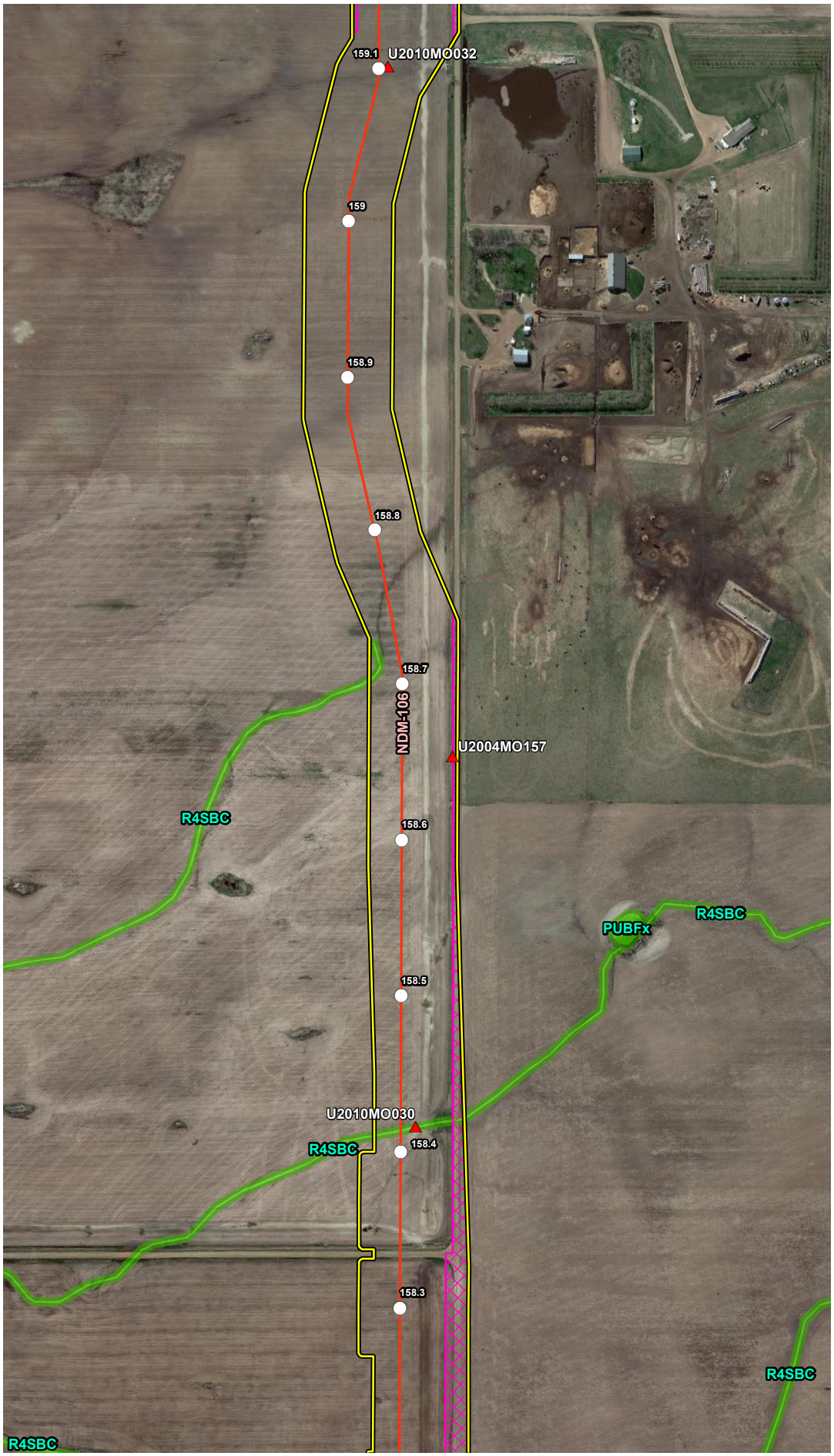
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 16 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDI\mxds\4_NWI.mxd

## NWI MAP

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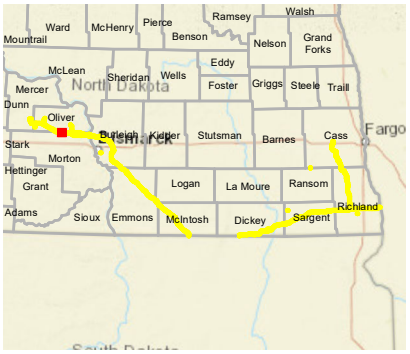


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

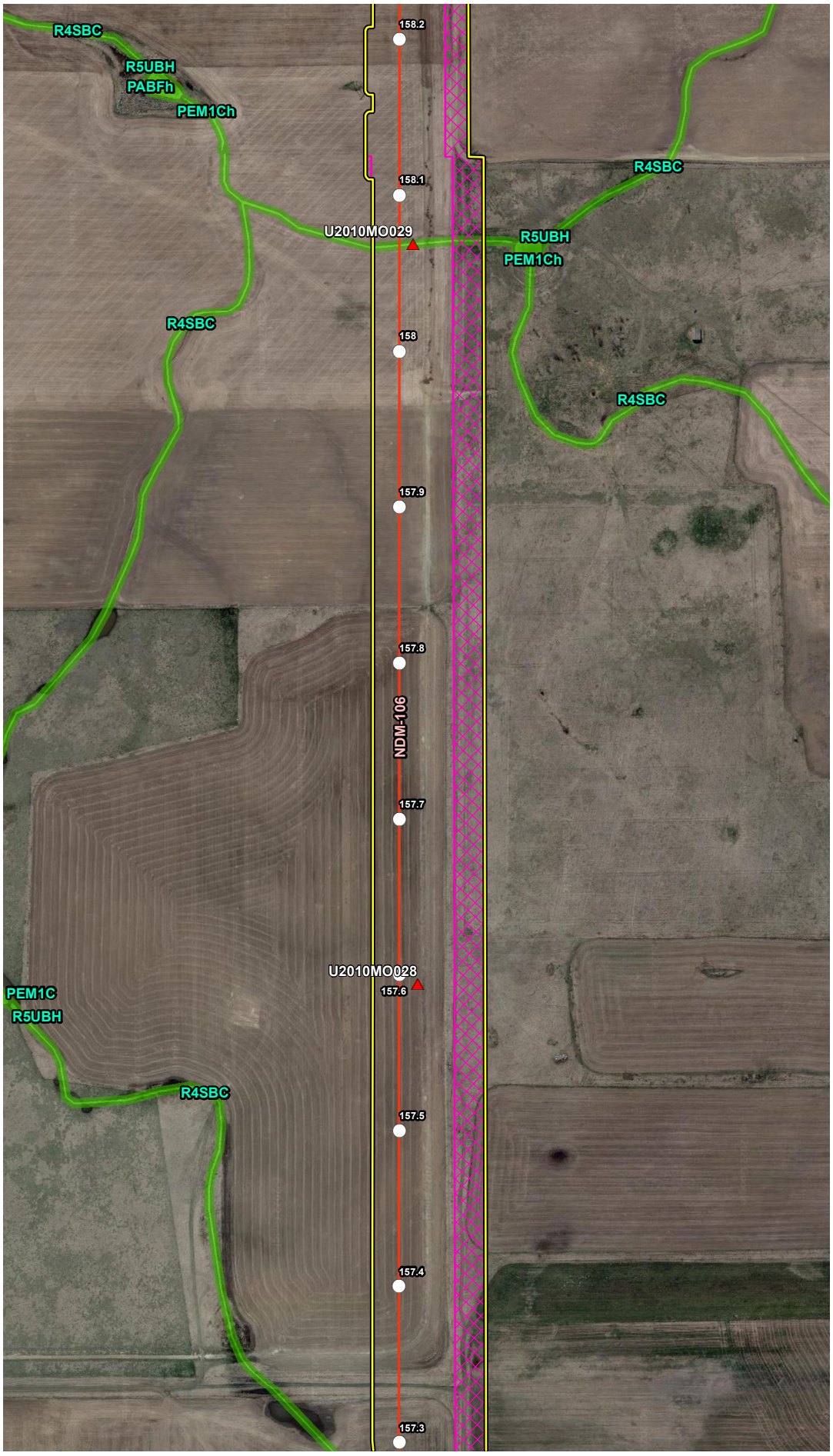
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 17 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\0801_VWR_NDImxds14_NWI.mxd

## NWI MAP

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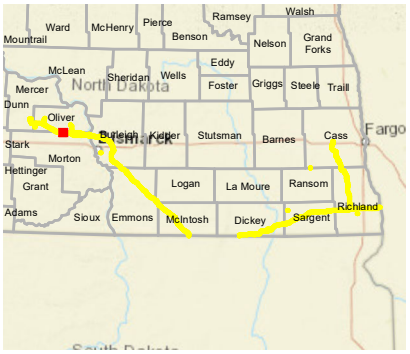


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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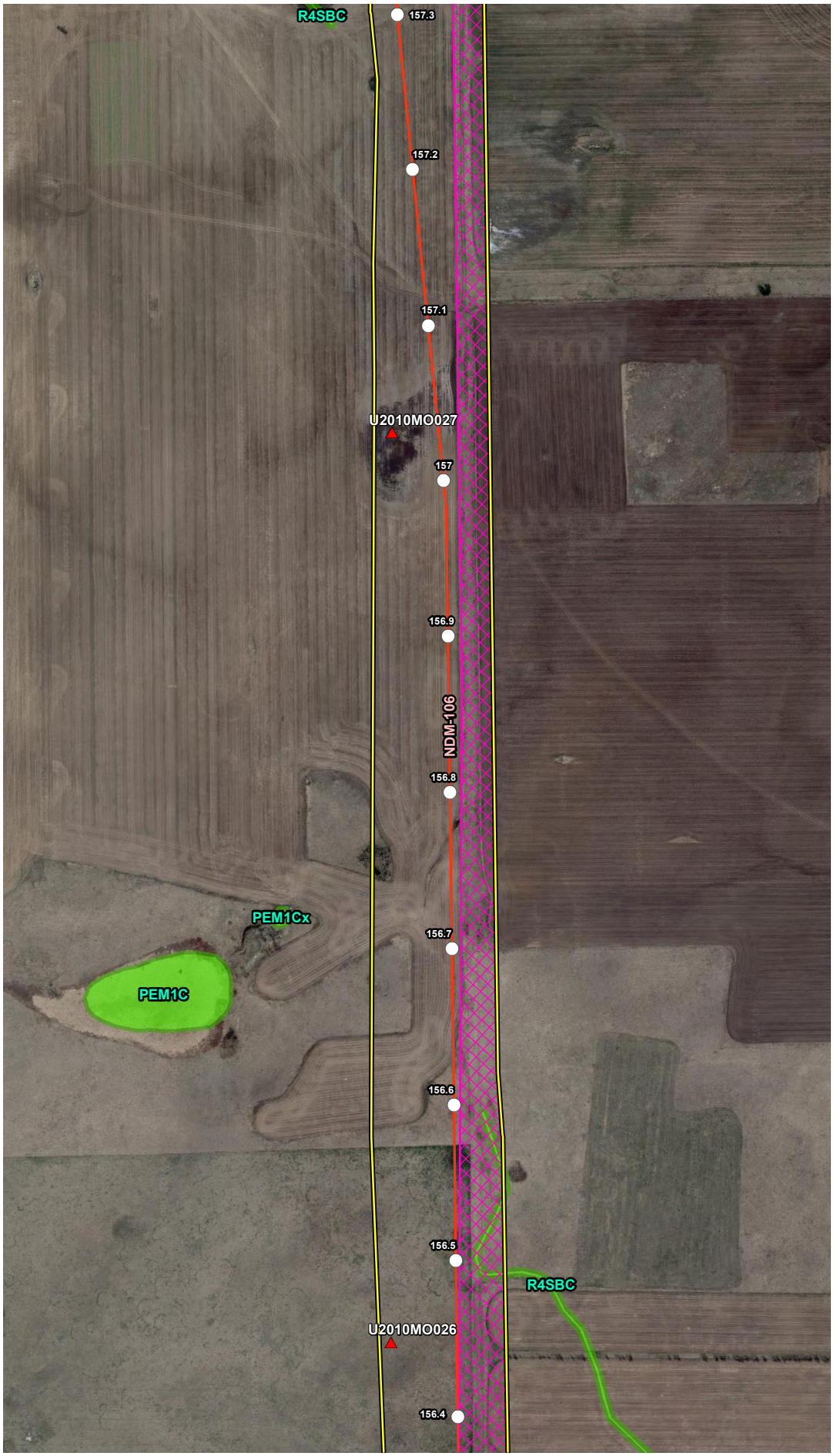
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>18 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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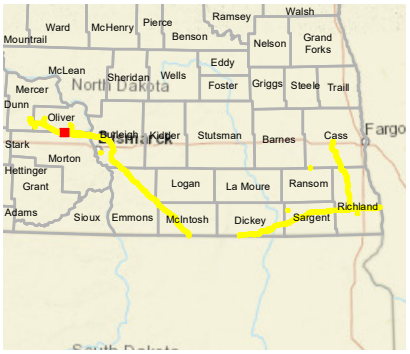


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

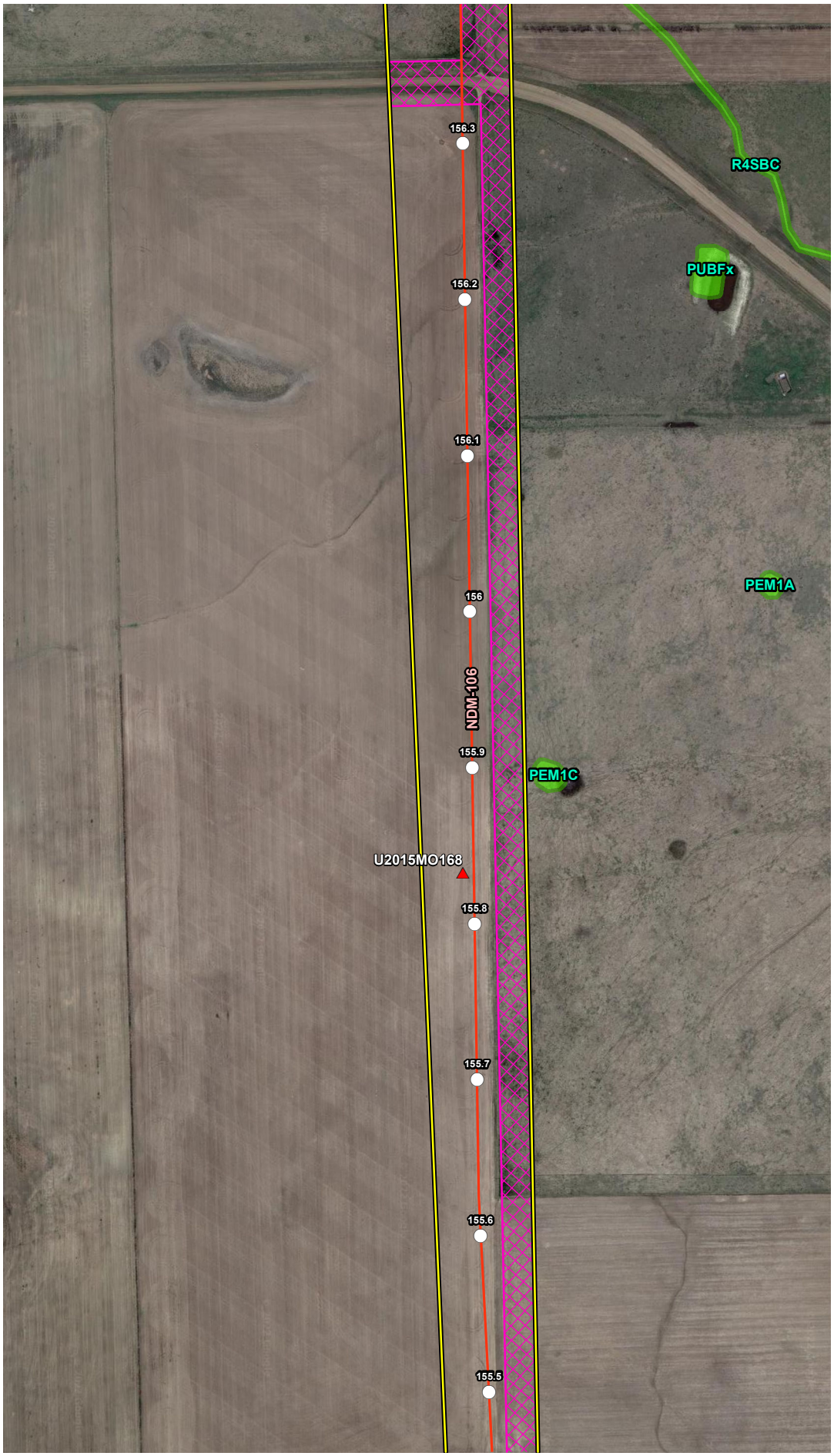
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 19 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\WR\2022\901_WR_NDmxds\4_NWI.mxd

## NWI MAP

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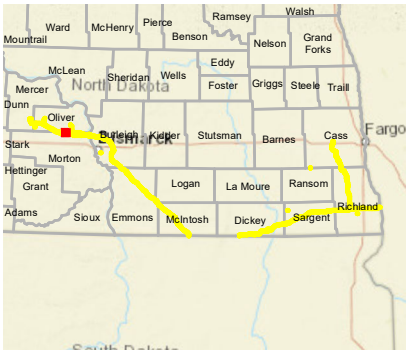


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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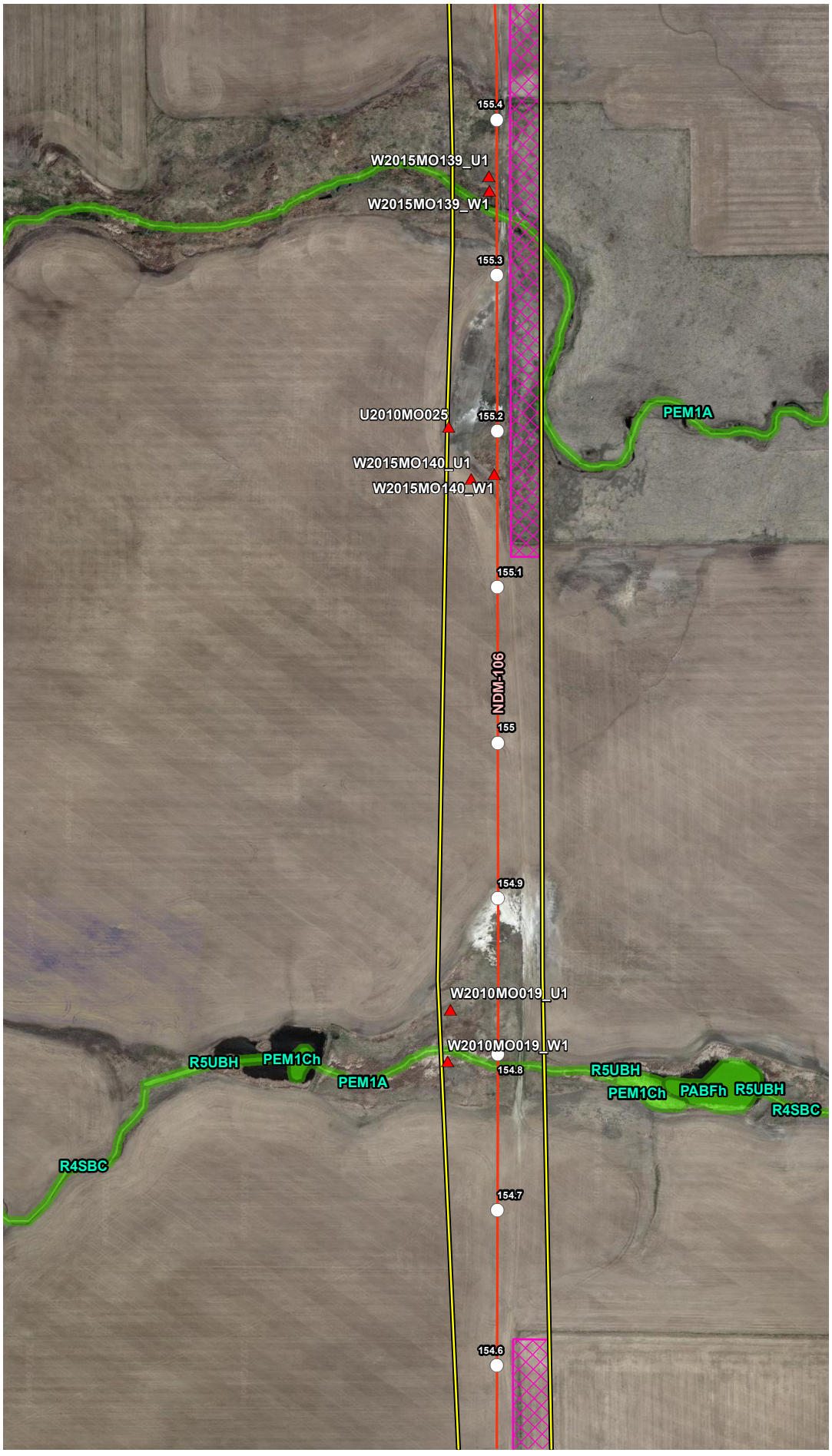
Figure Title:
NWI Map

Figure Number:
Appendix A-4

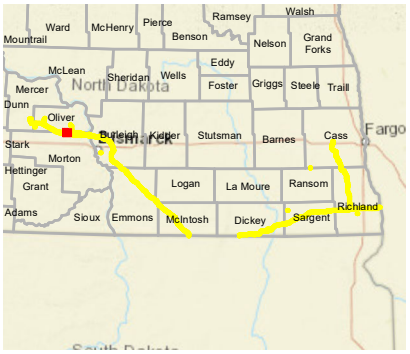
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>20 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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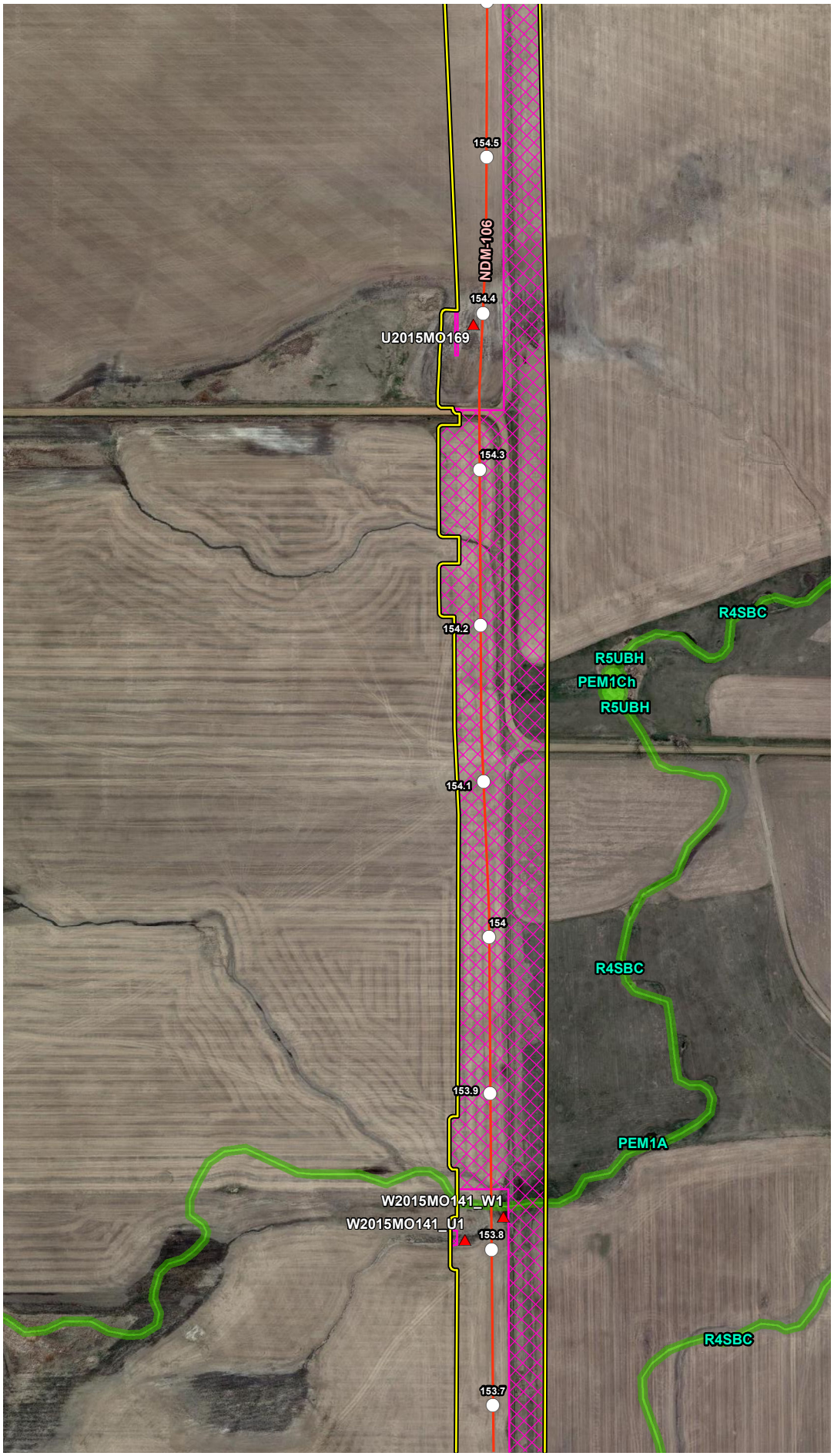
Figure Title:
NWI Map

Figure Number:
Appendix A-4

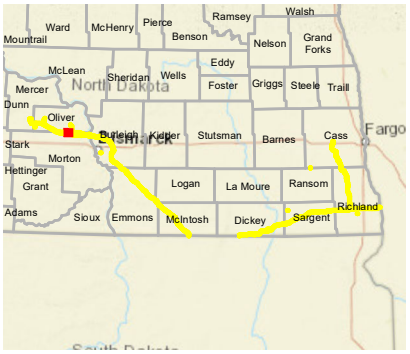
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 21 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 22 of 392 | 2001-22-004<br>Current Revision |

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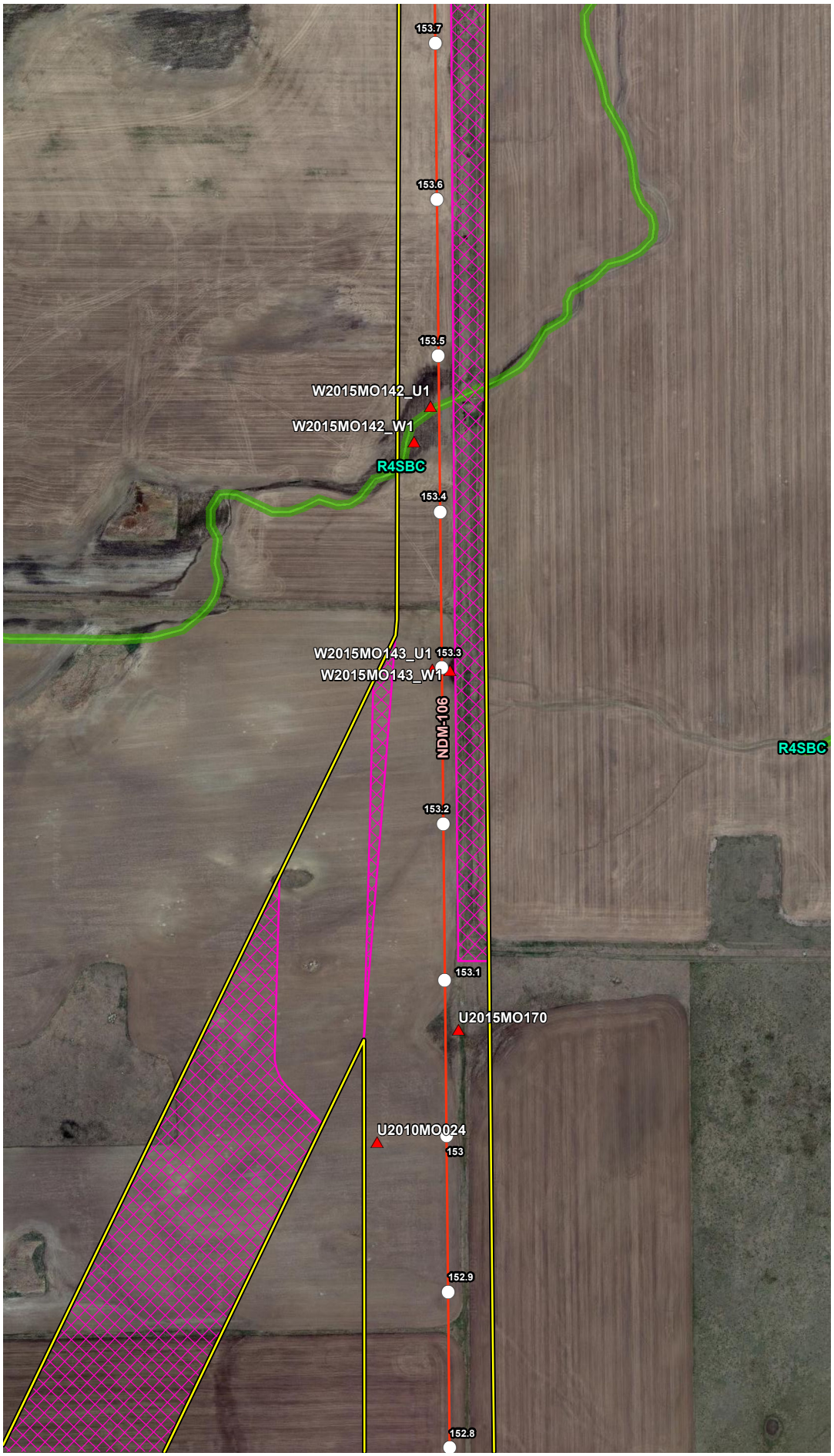
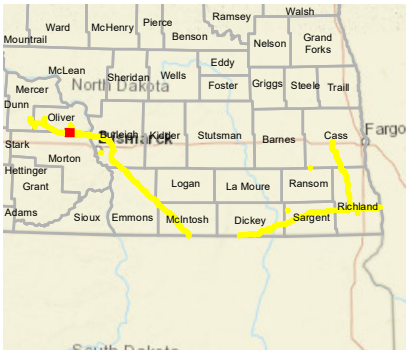
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:

NWI Map

Figure Number:

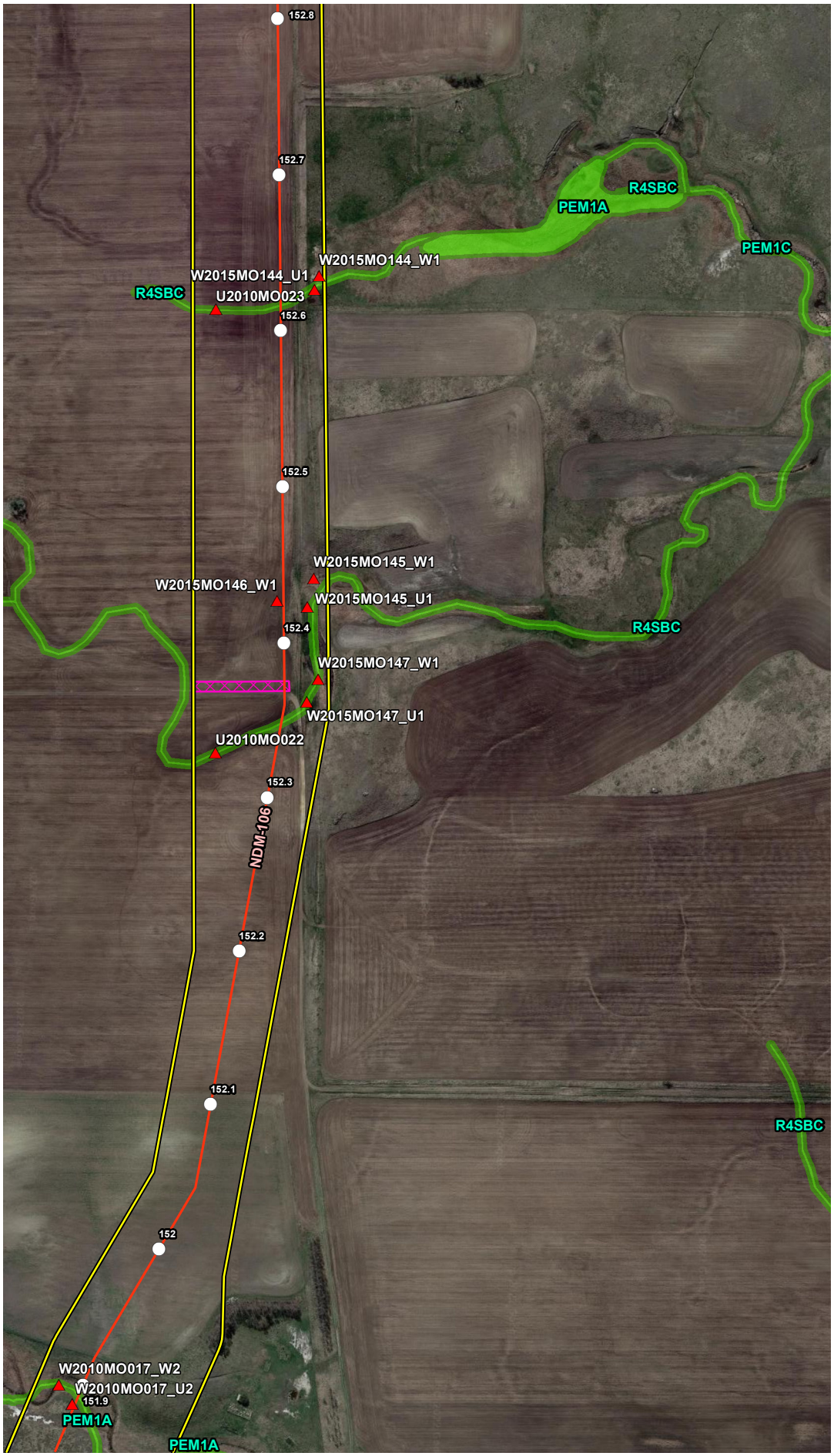
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

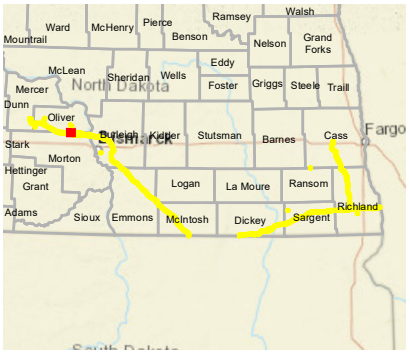
| Sheet: | Drawing Number: |
|---|---|
| 23 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ID\VWR\2022\901_VWR_NDImods\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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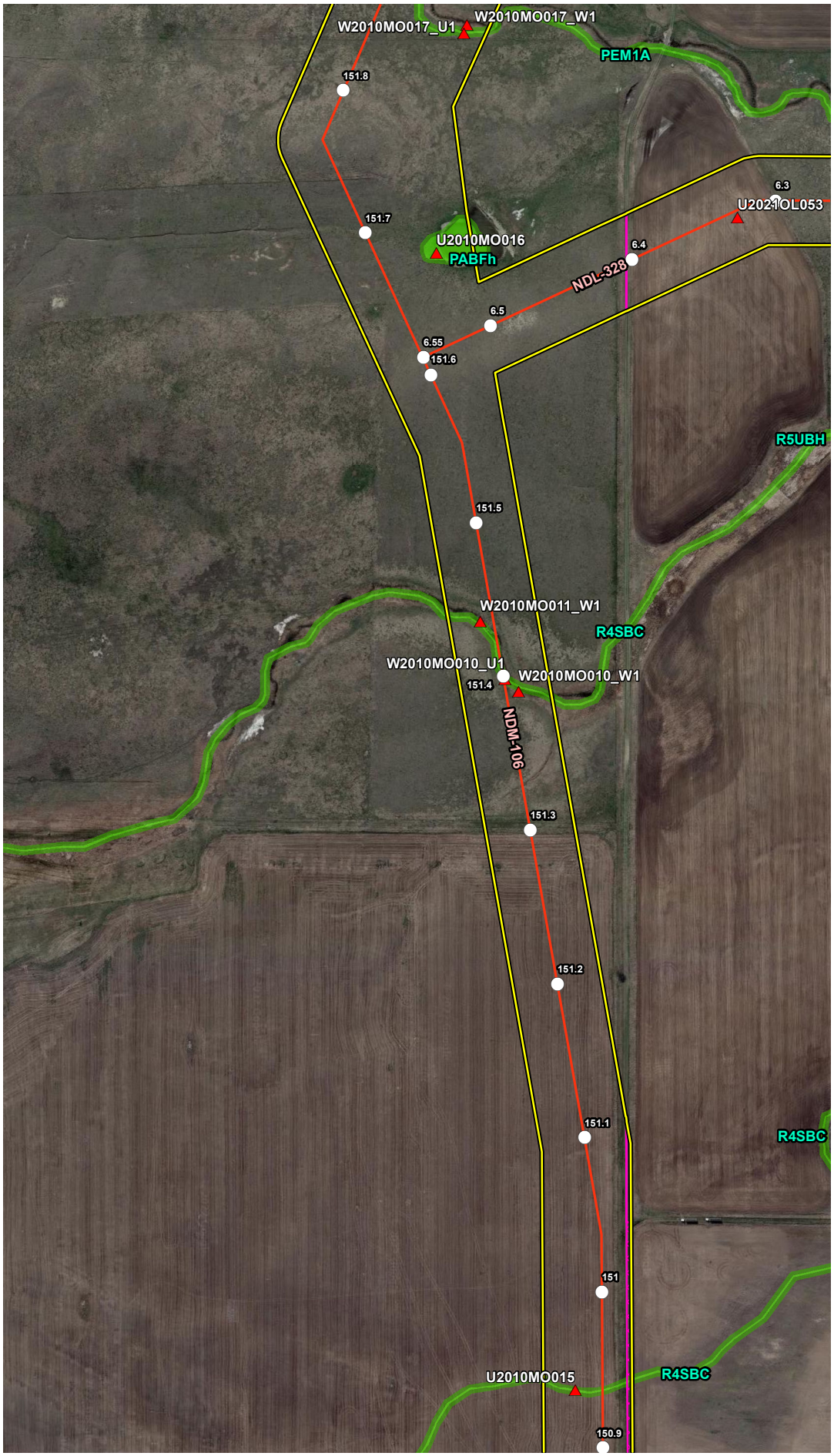
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>24 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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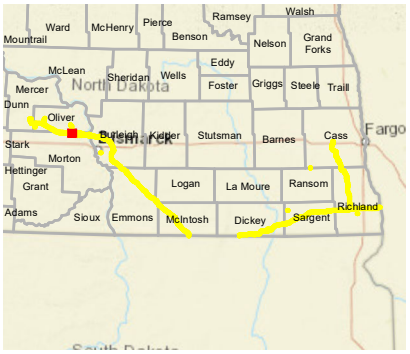


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

**Figure Number:**

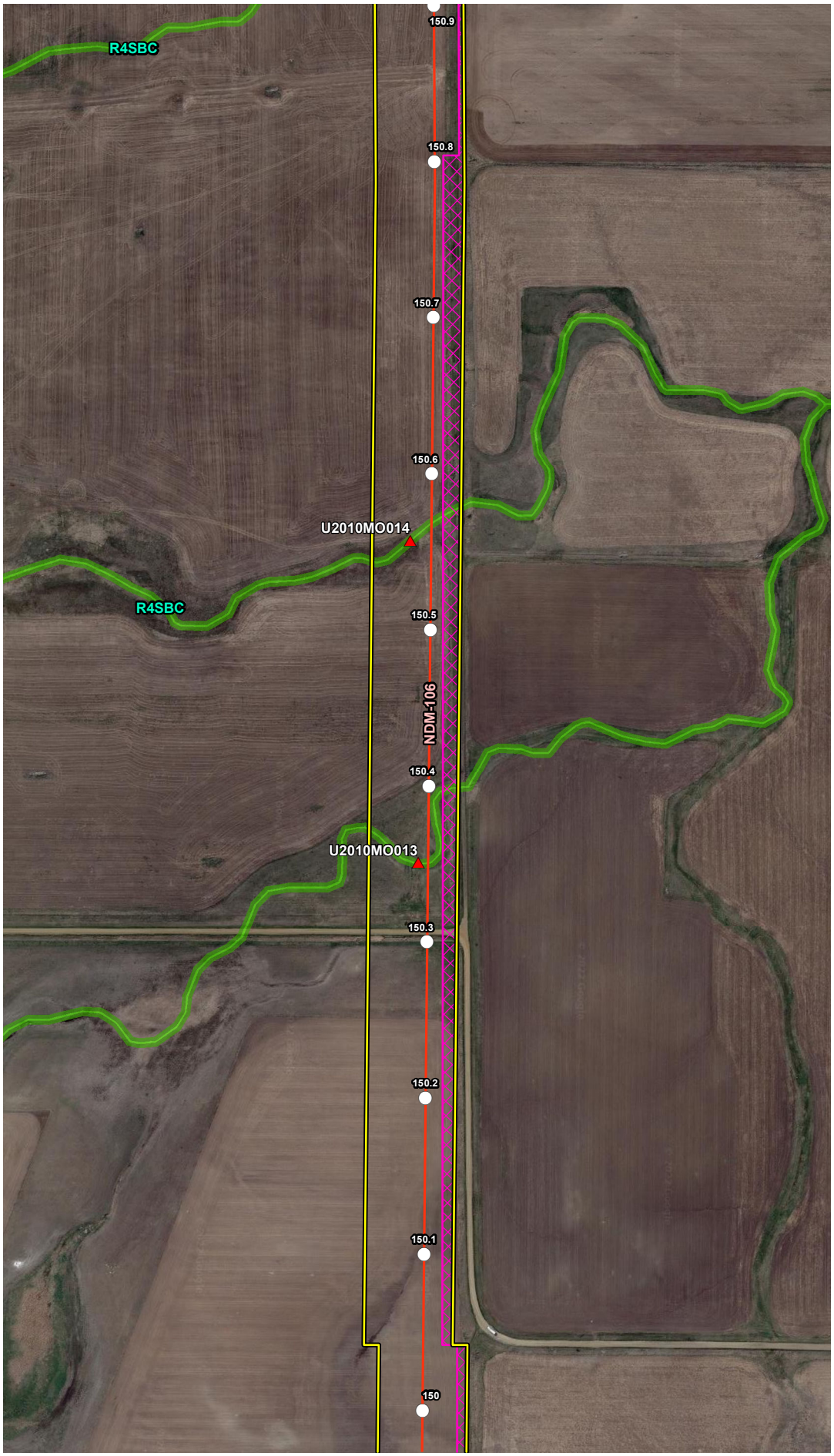
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 25 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDI\mxds\4_NWI.mxd

## NWI MAP

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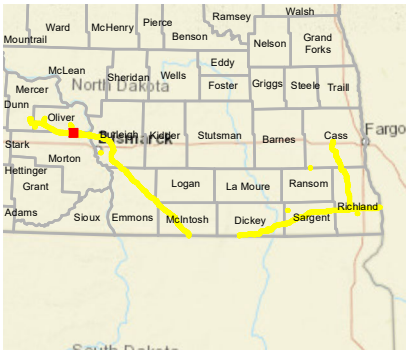


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**
NWI Map

**Figure Number:**
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 26 of 392 | 2001-22-004<br>Current Revision |

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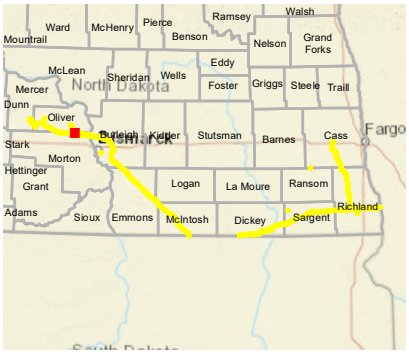
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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Figure Title:
**NWI Map**

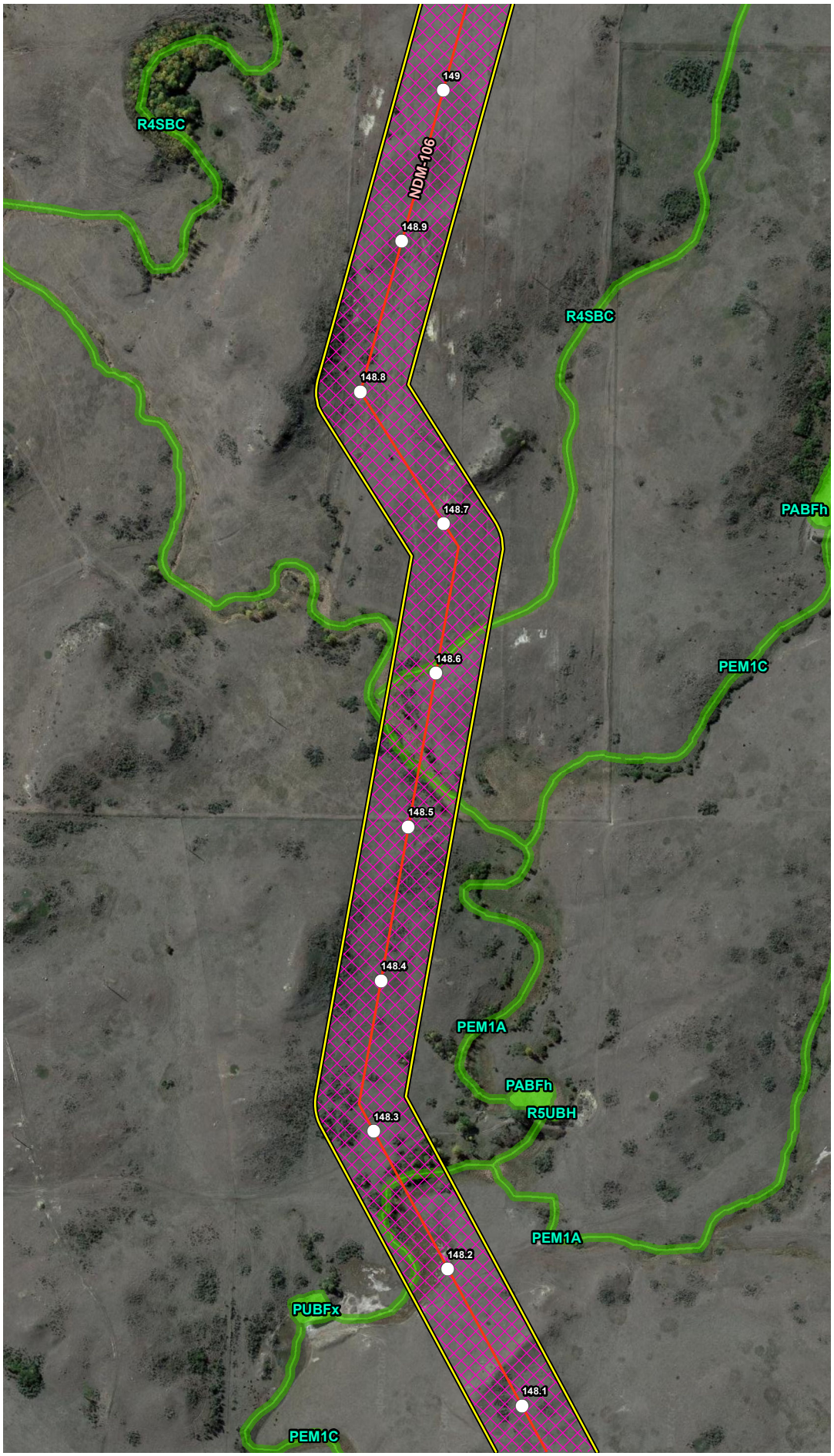
Figure Number:
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 27 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\0801_VWR_NDI\mxds\4_NWI.mxd

## NWI MAP

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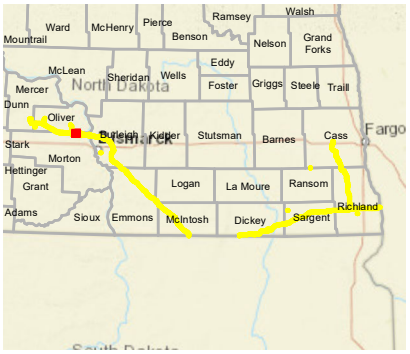


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

**Figure Number:**

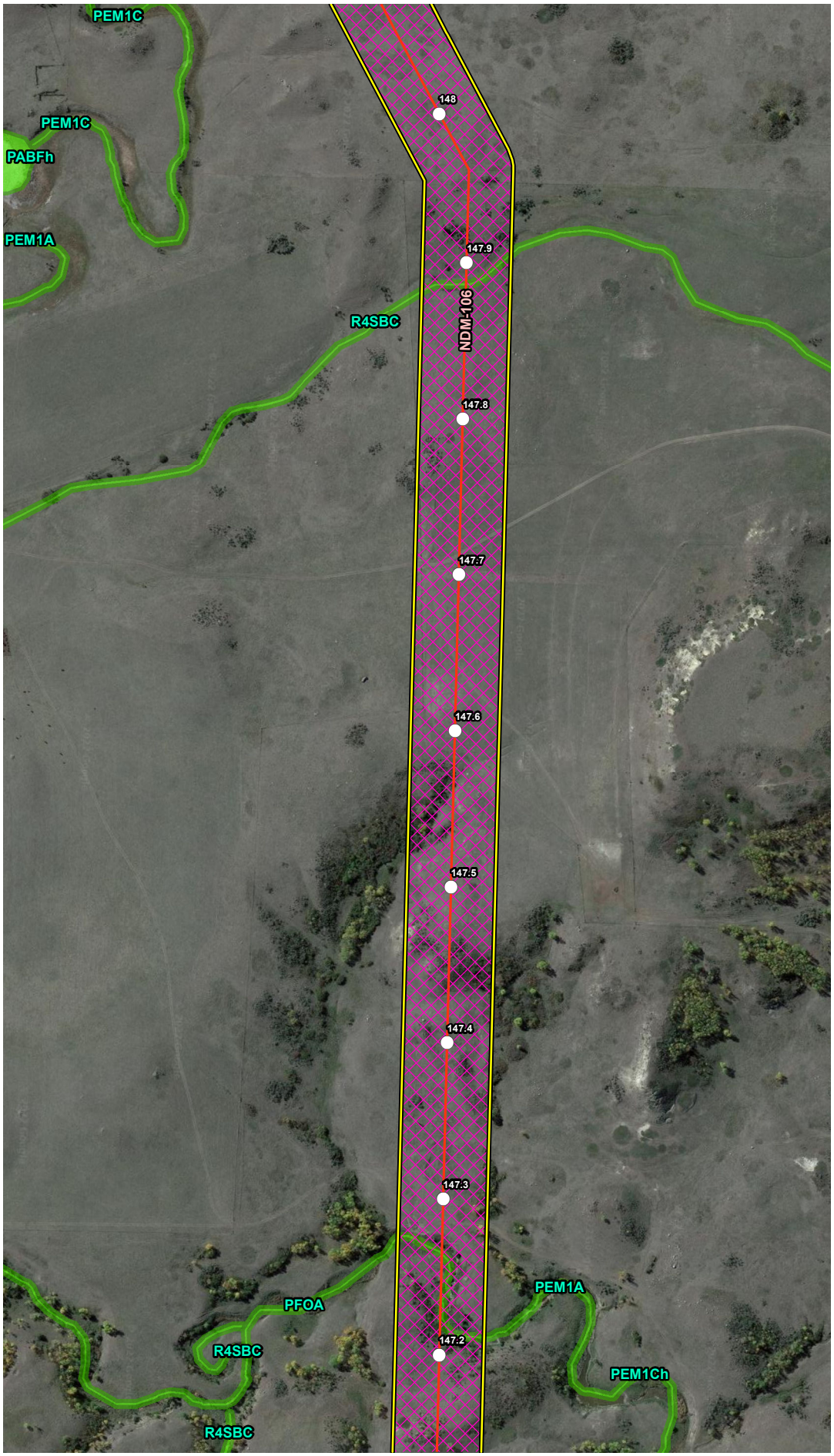
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 28 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDImods\4_NWI.mxd

## NWI MAP

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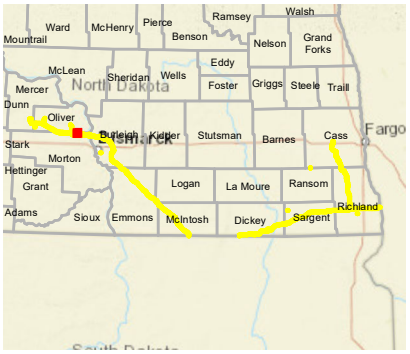


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
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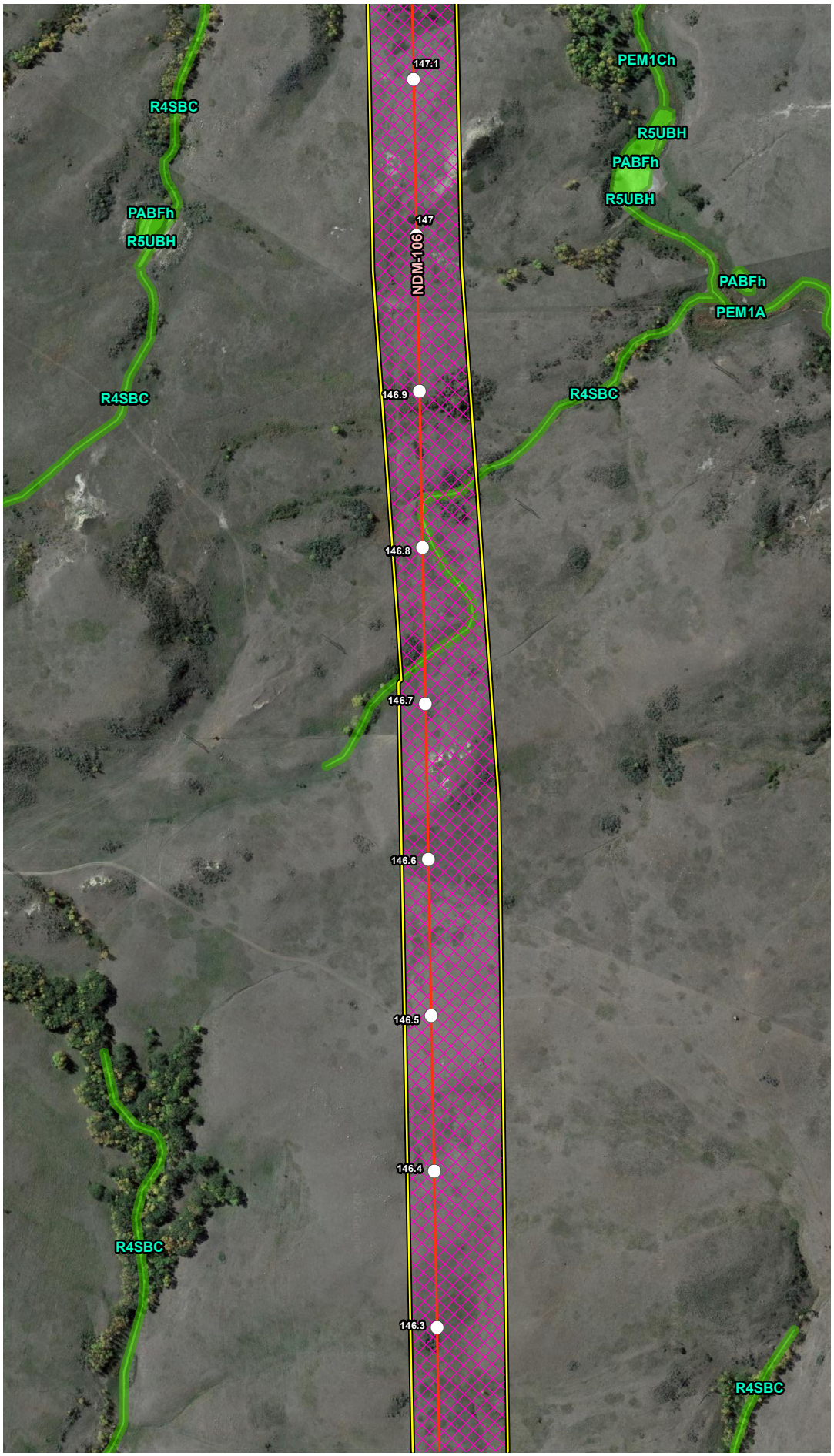
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>29 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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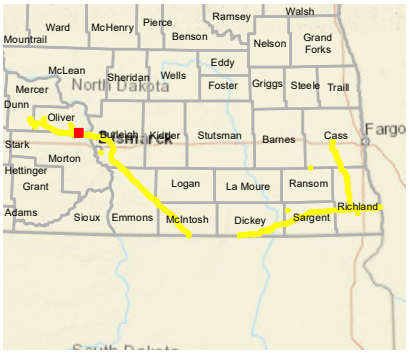


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

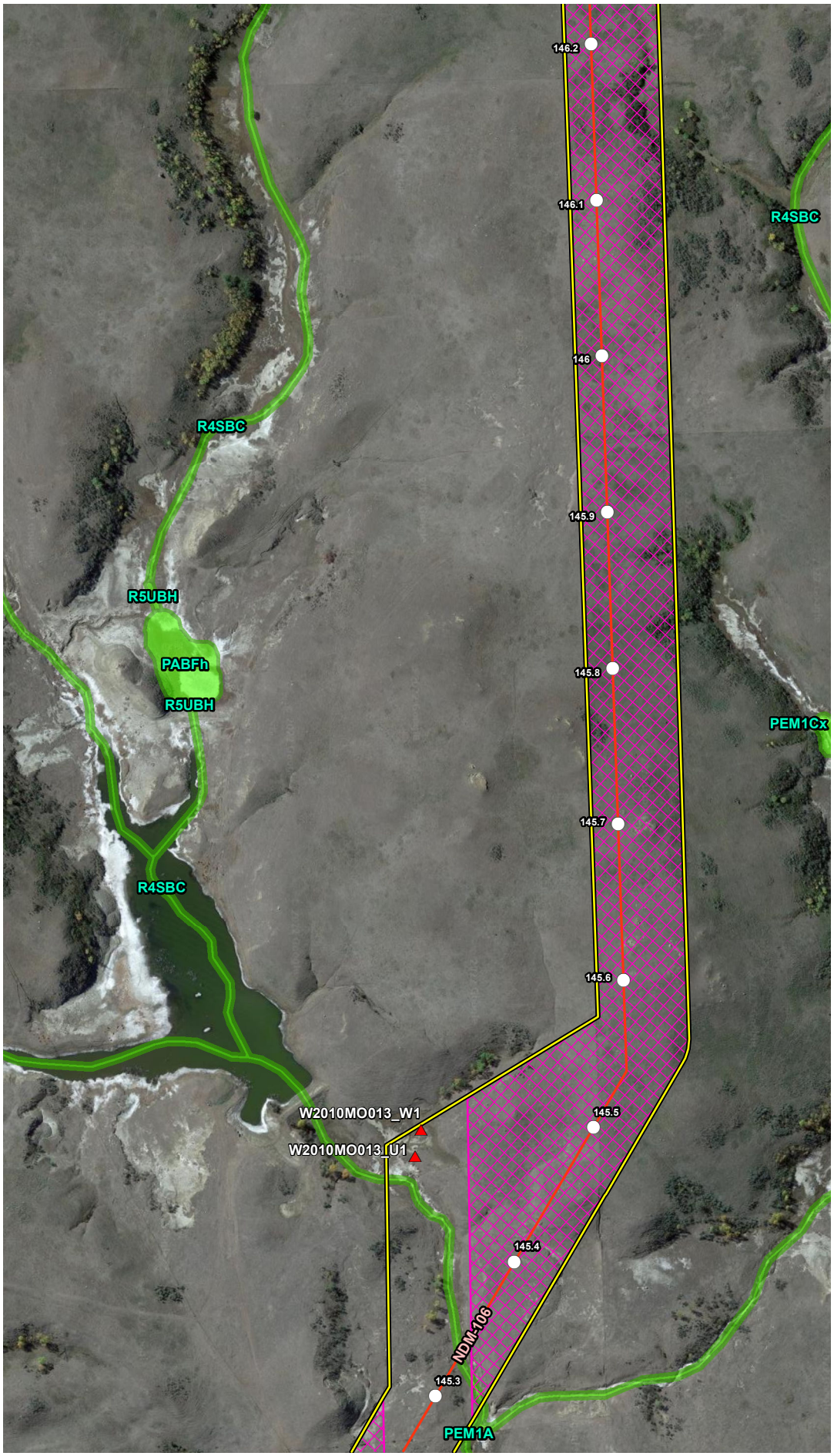
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 30 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDmxds\4_NWI.mxd

## NWI MAP

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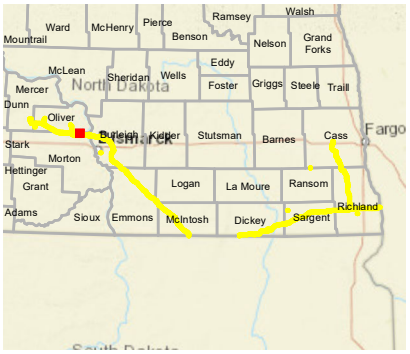


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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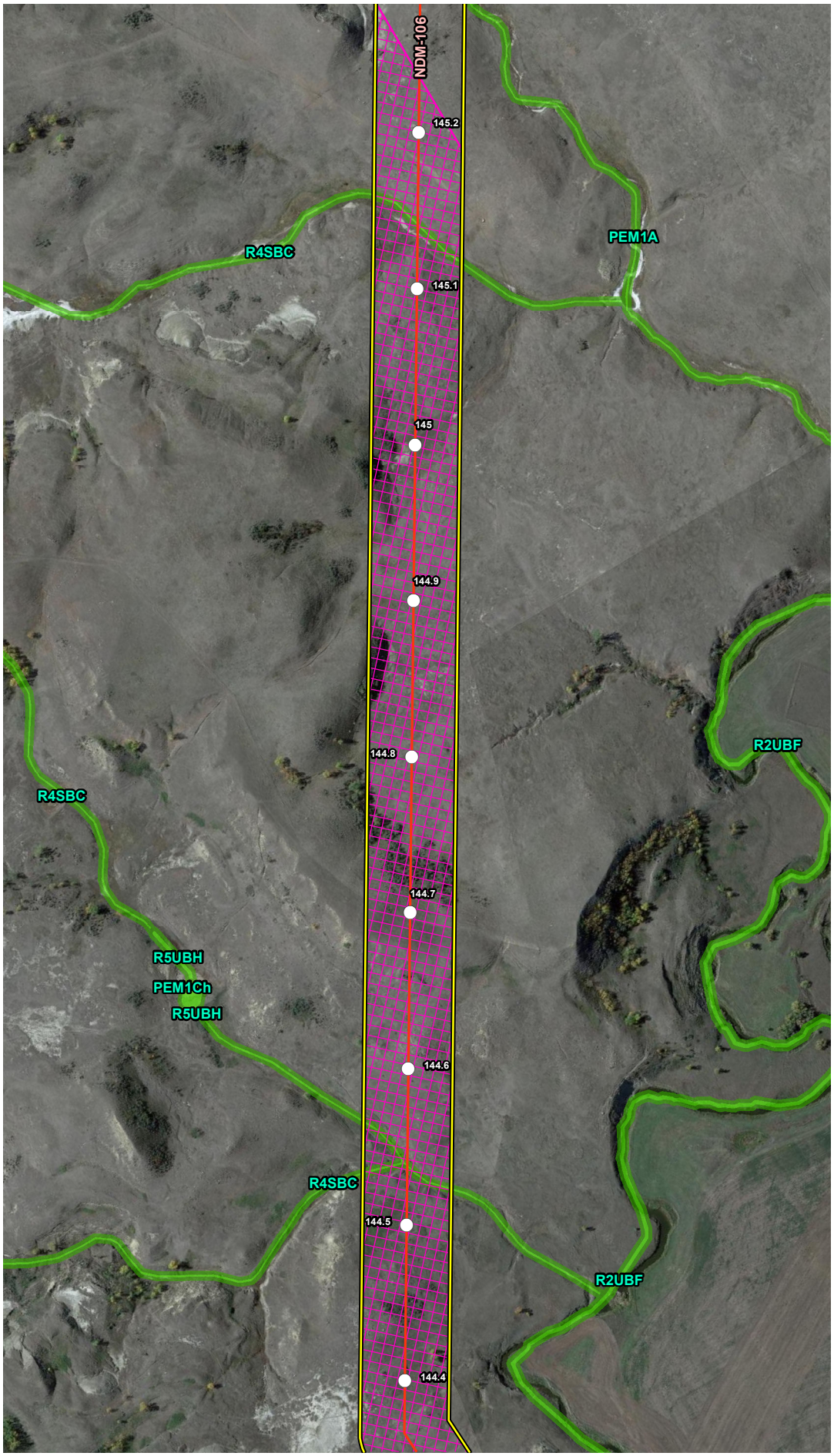
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 31 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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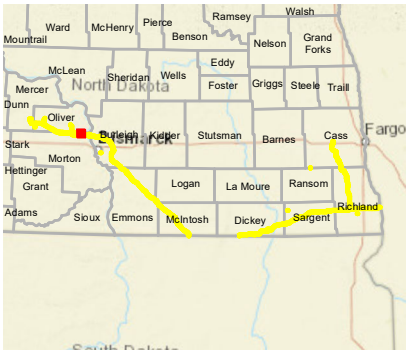


## LEGEND

- Milepost
- Soil Station
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- Environmental Survey Area
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

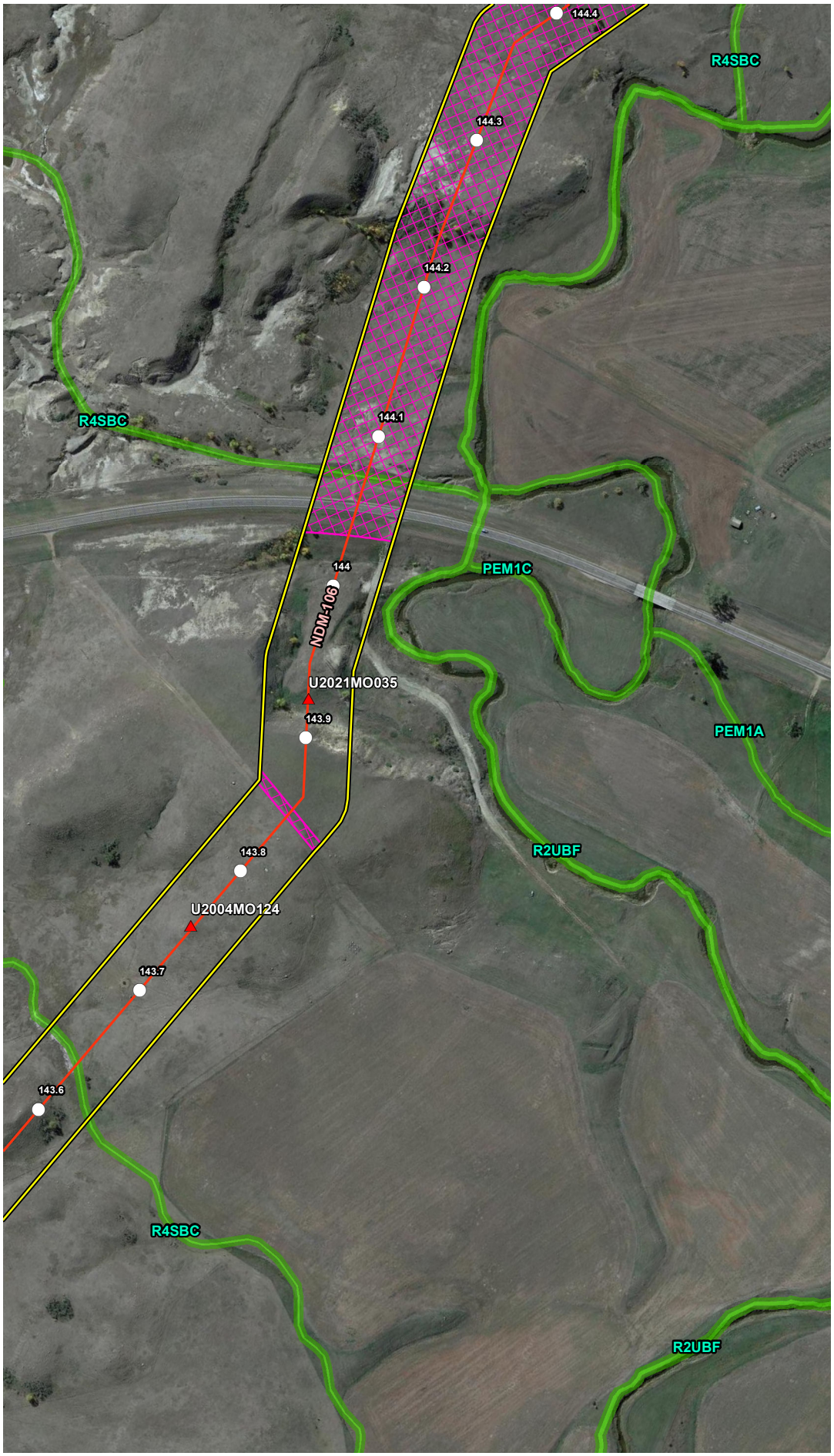
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 32 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\4_NWI.mxd

## NWI MAP

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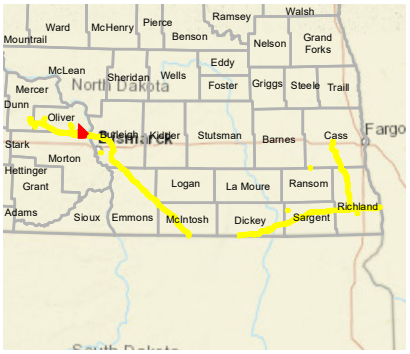


## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

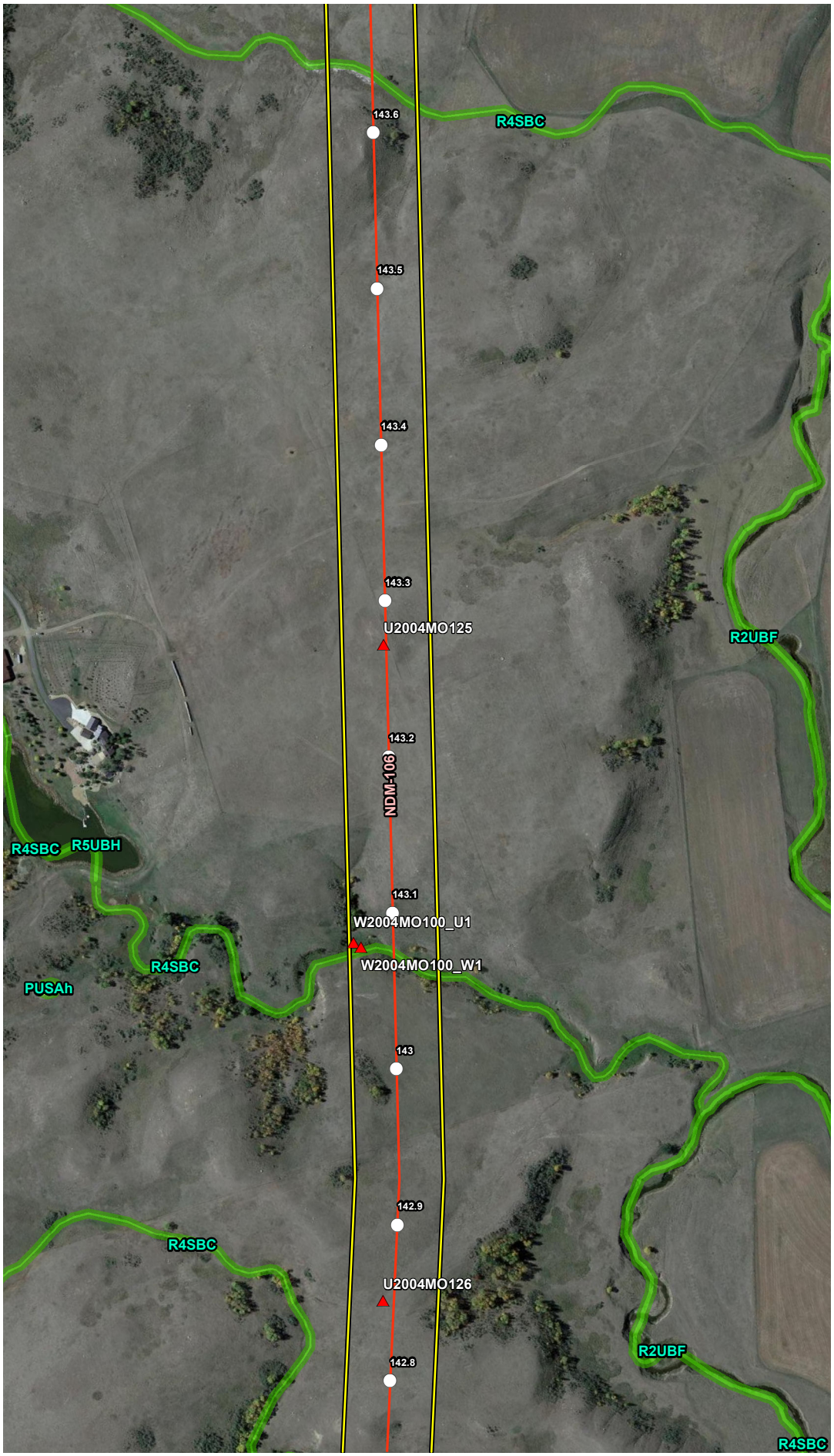
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

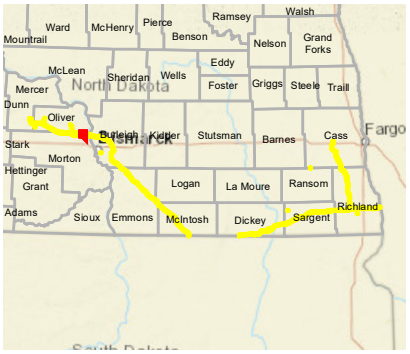
| Sheet: | Drawing Number: |
|---|---|
| 33 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\0801_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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Figure Title:

NWI Map

Figure Number:

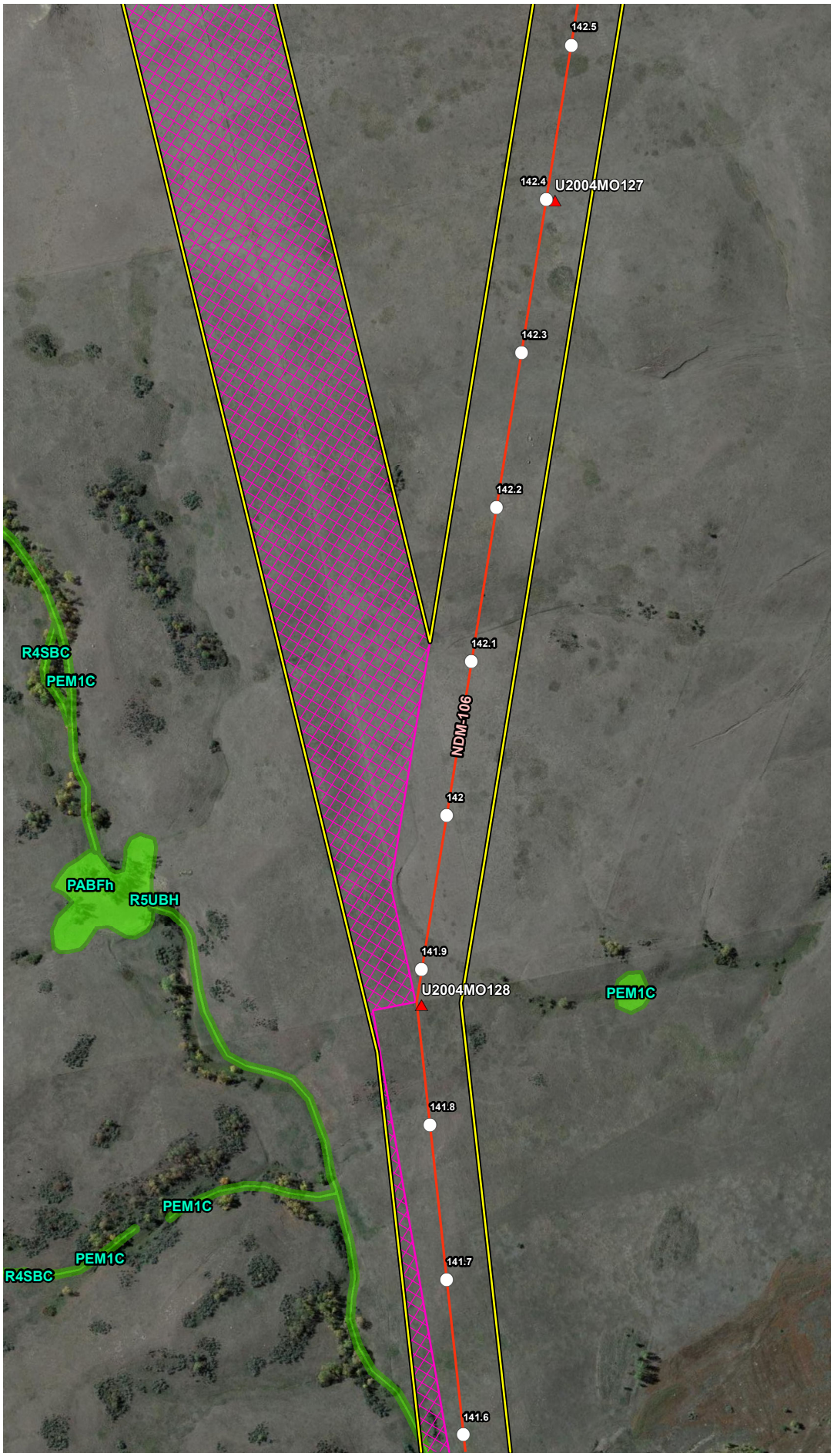
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

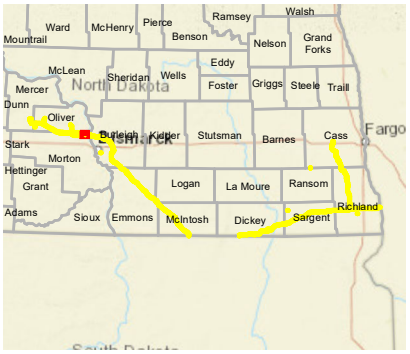
| Sheet: | Drawing Number: |
|---|---|
| 34 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

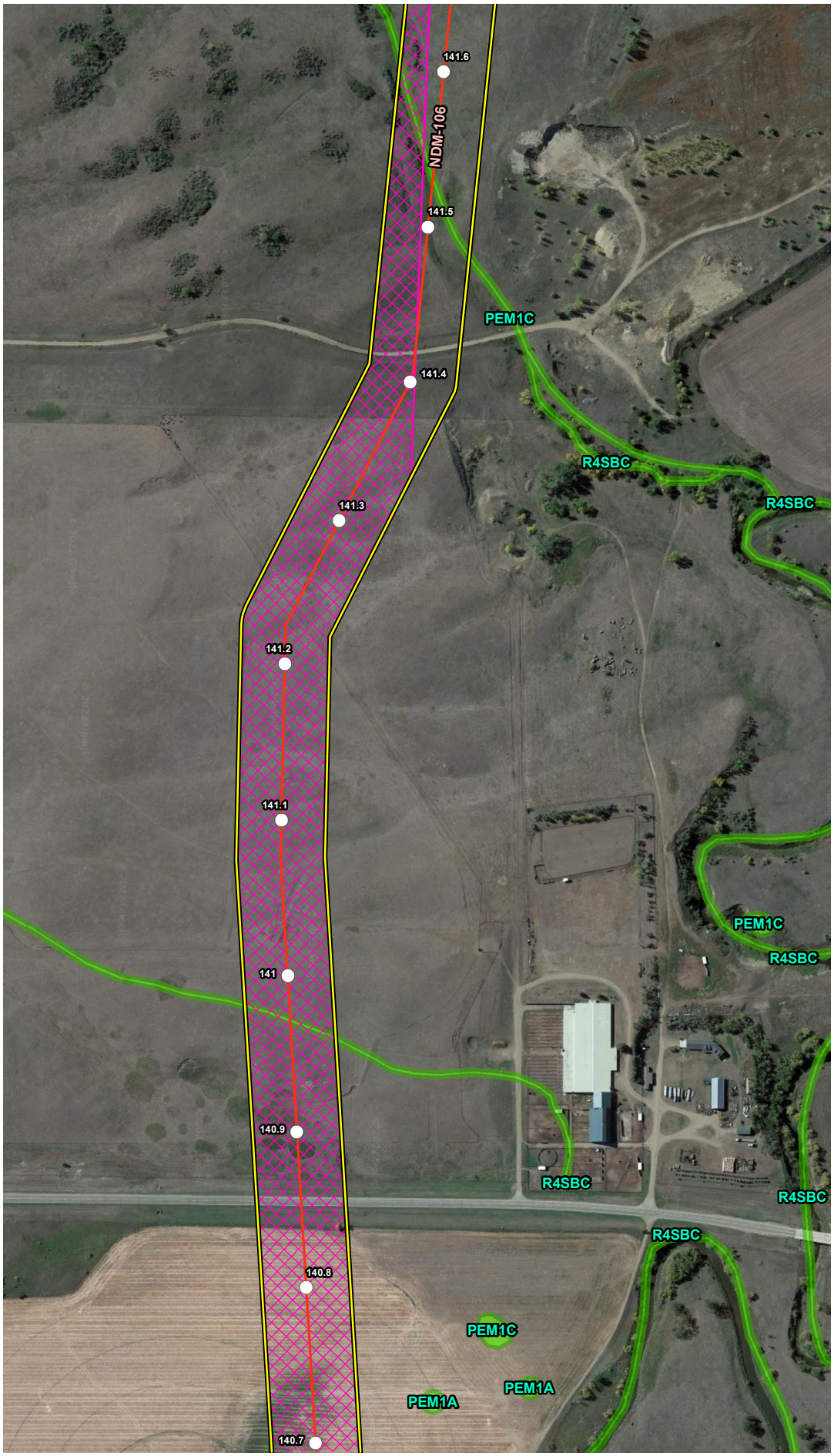
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

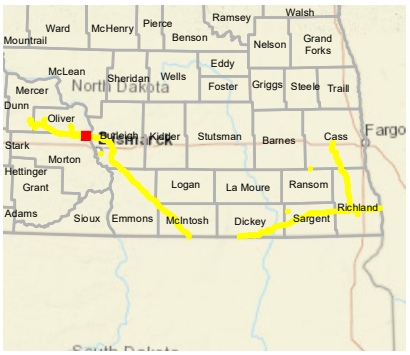
| Sheet: | Drawing Number: |
|---|---|
| 35 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDmxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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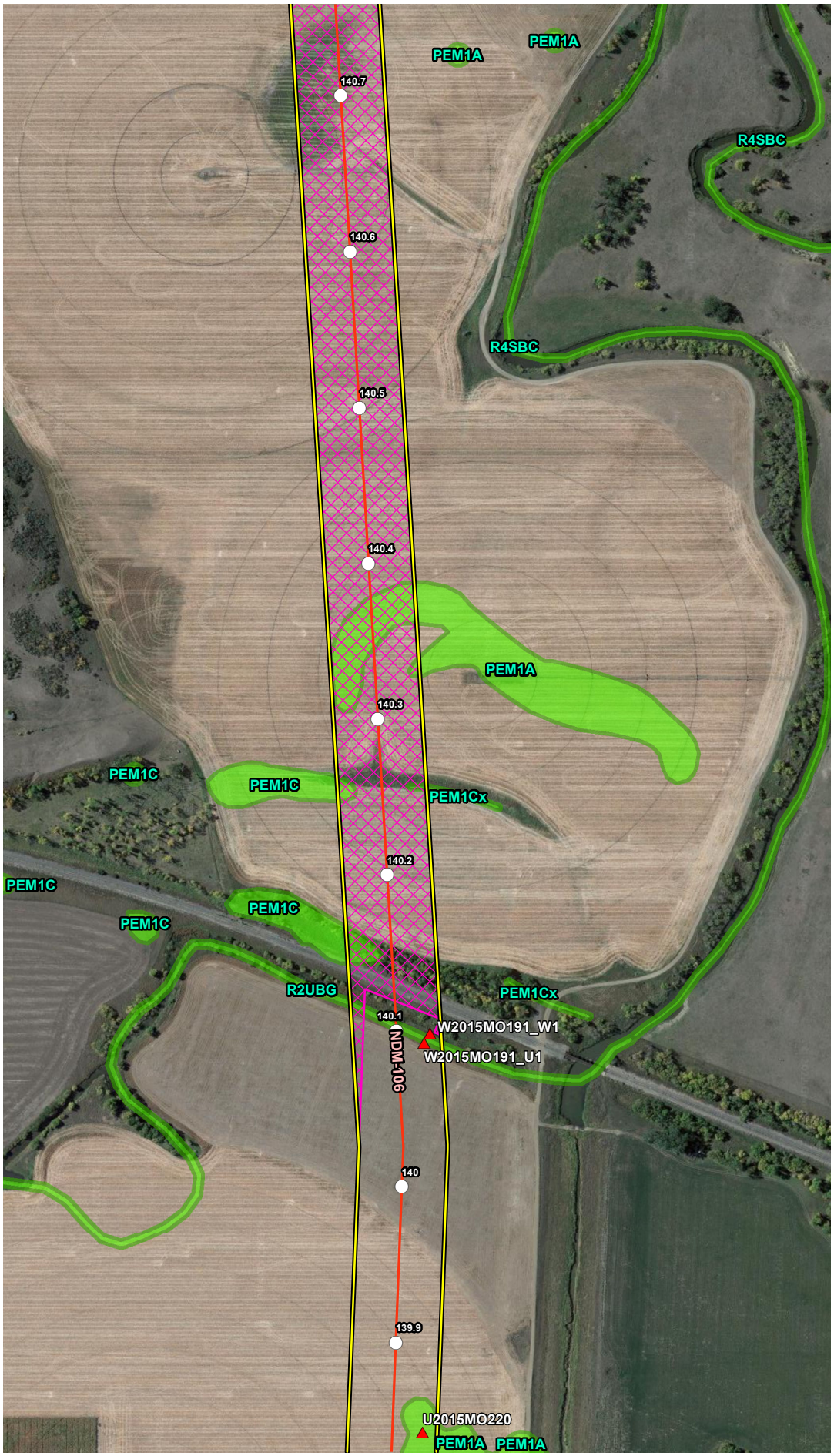
Figure Title:
NWI Map

Figure Number:
Appendix A-4

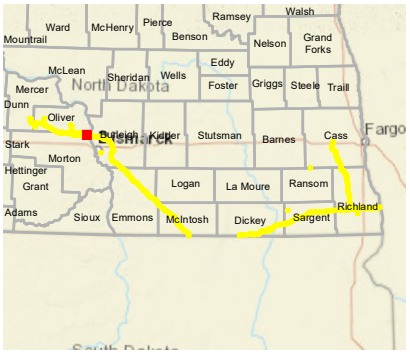
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 36 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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| | | |

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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

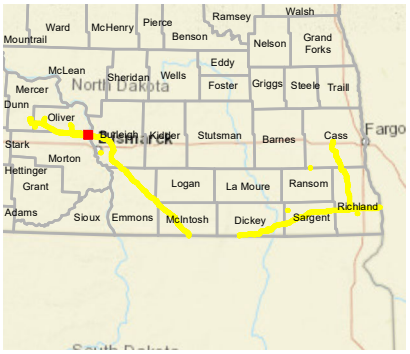
| Sheet: | Drawing Number: |
|---|---|
| 37 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\20221901_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
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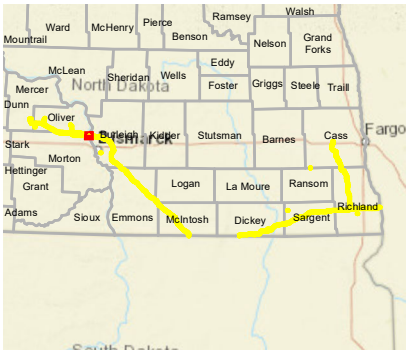
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 38 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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Figure Title:
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Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
39 of 392

Drawing Number:
2001-22-004
Current Revision

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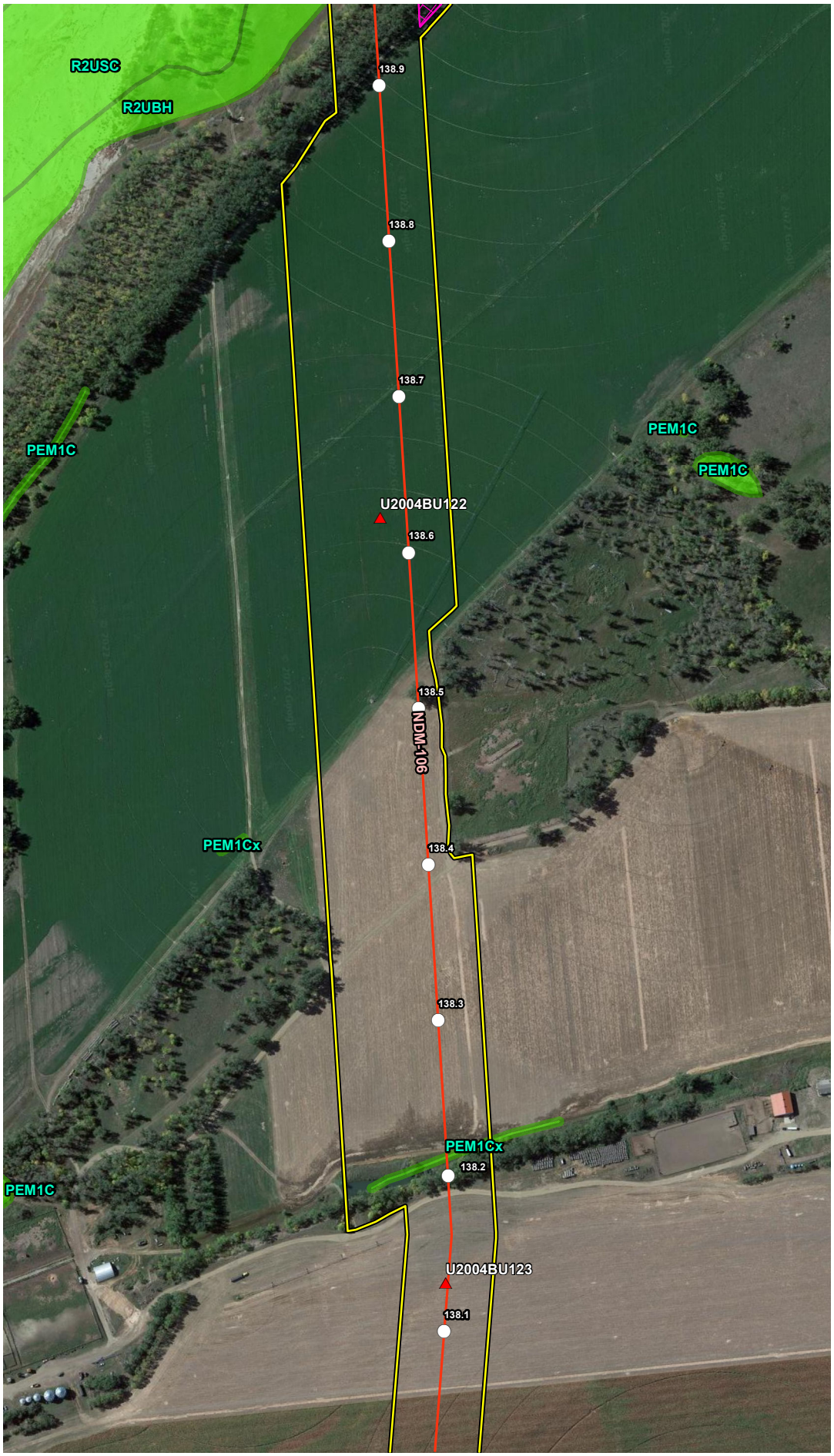
## NWI MAP

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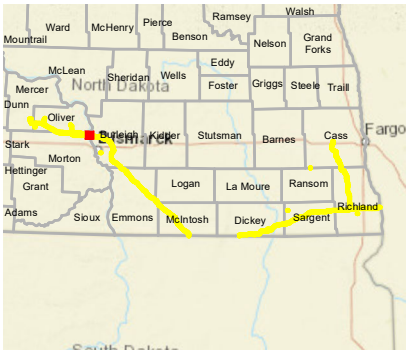


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

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Figure Title:

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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 40 of 392 | 2001-22-004<br>Current Revision |

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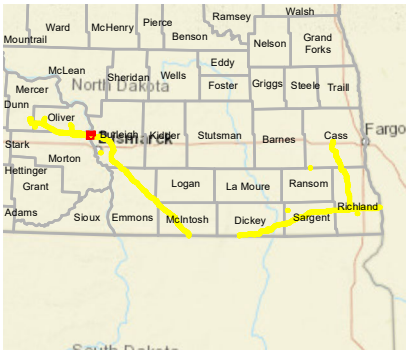
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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|---|---|---|
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**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 41 of 392 | 2001-22-004<br>Current Revision |

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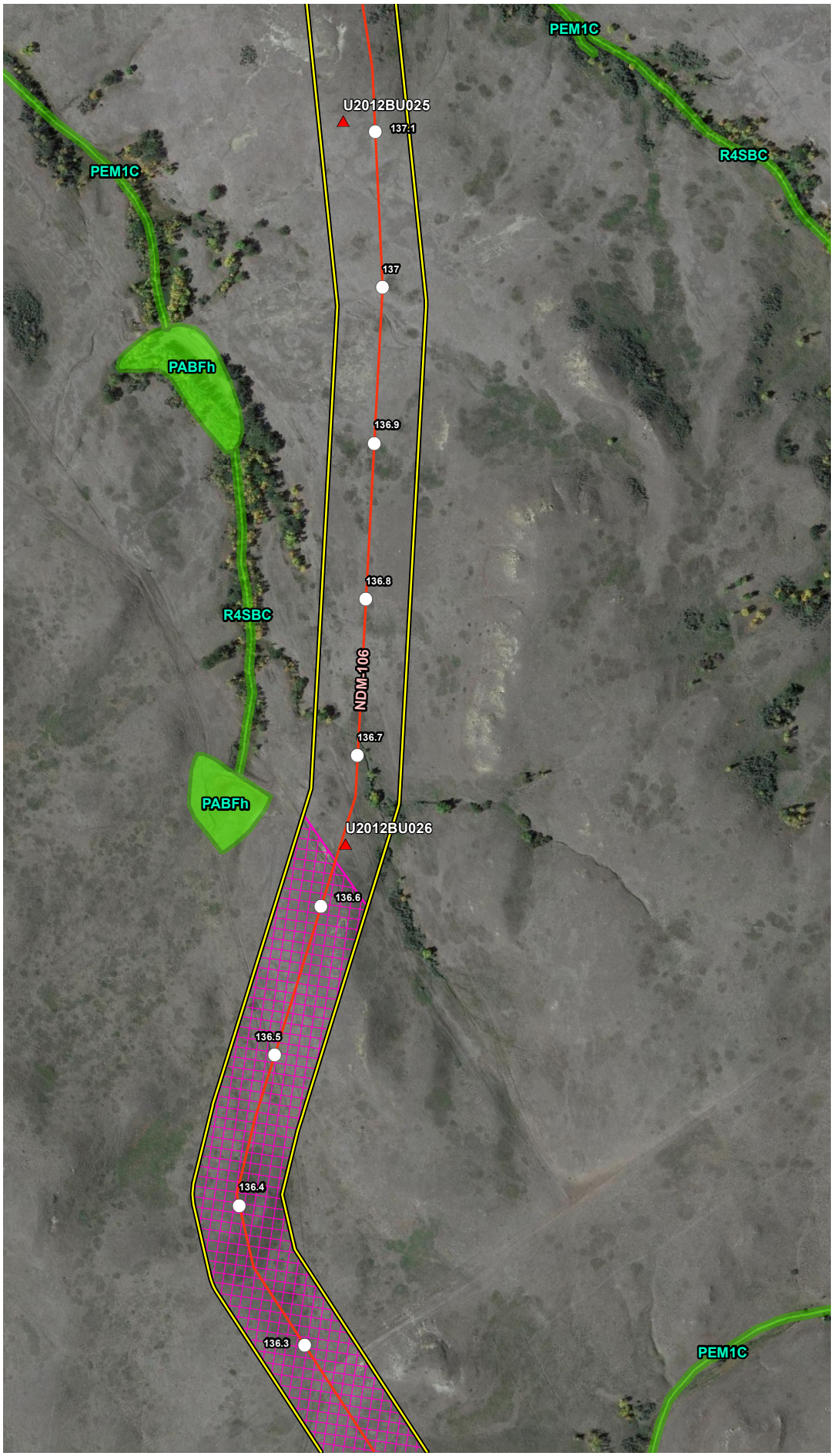
## NWI MAP

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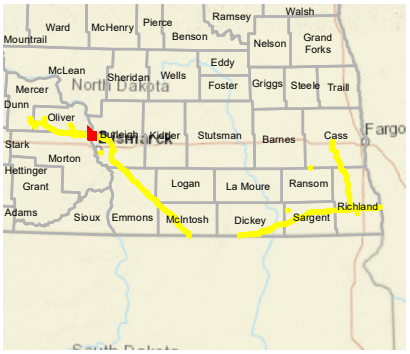


## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Figure Number:

Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

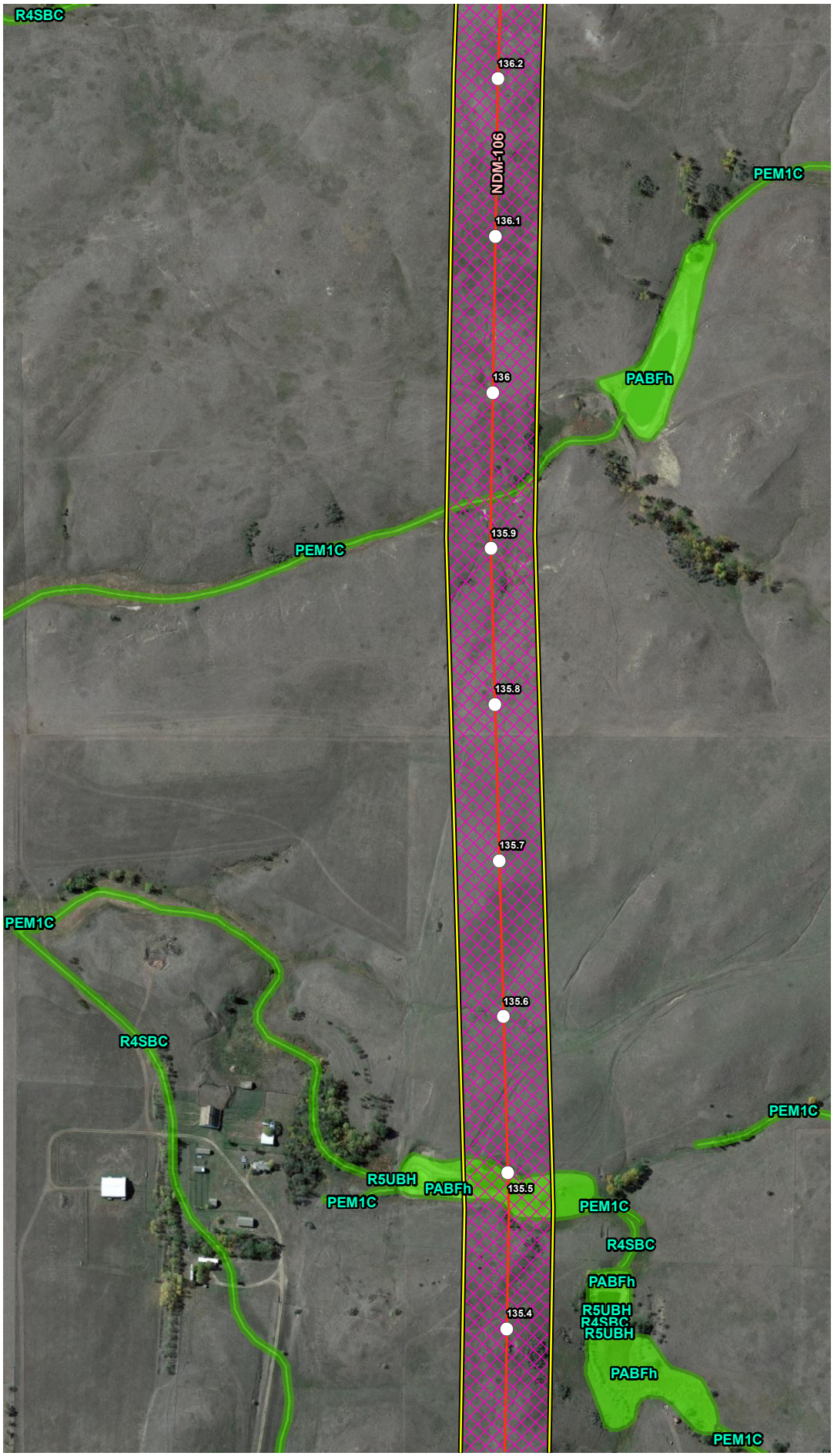
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
42 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDmxds\4_NWI.mxd

## NWI MAP

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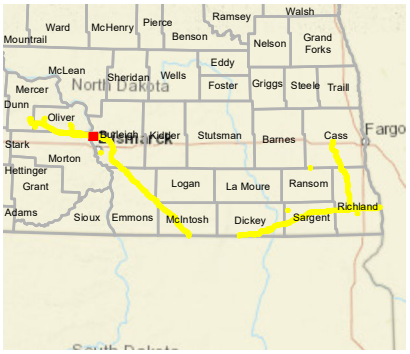


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 43 of 392 | 2001-22-004<br>Current Revision |

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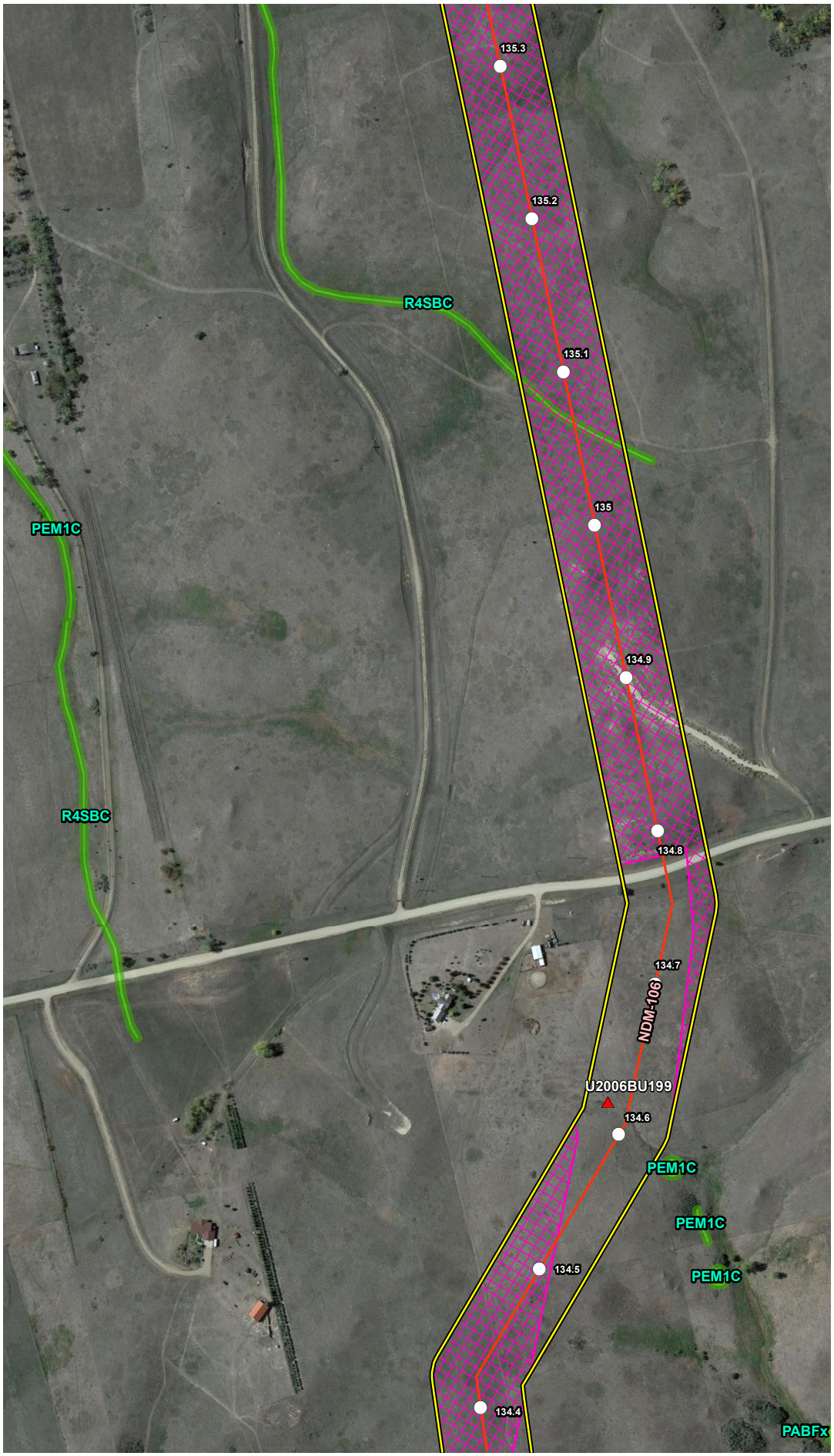
## NWI MAP

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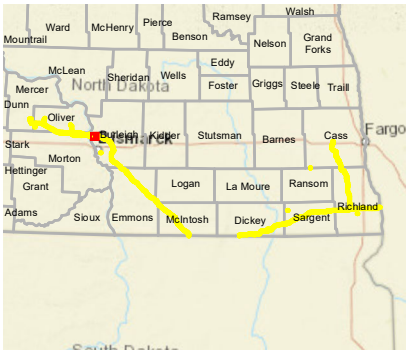


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>44 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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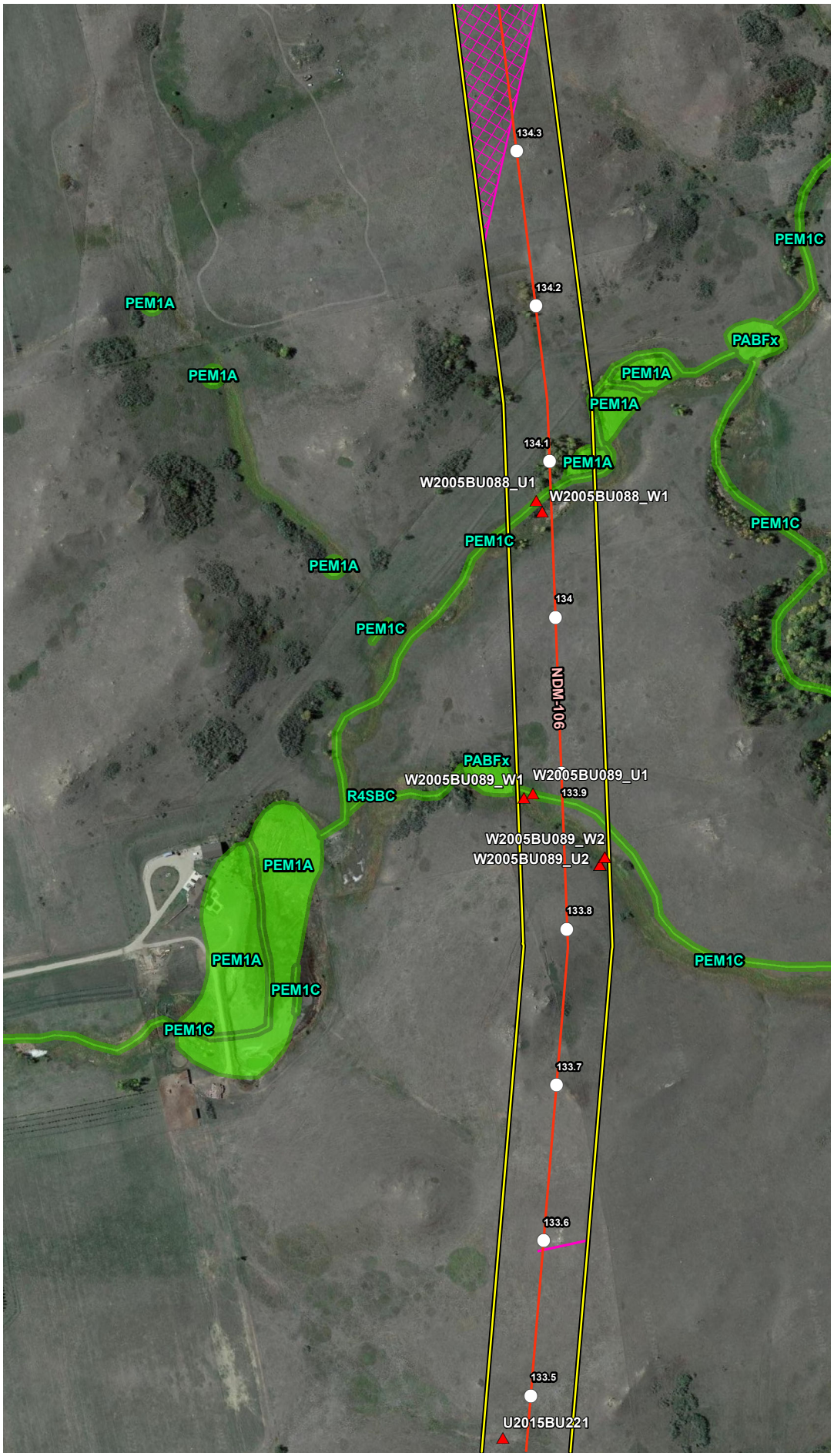
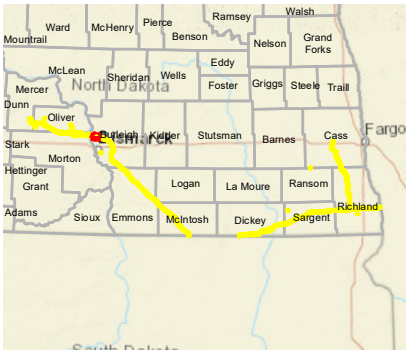
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
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1A - Revision

Revision description

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Figure Title:

NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>45 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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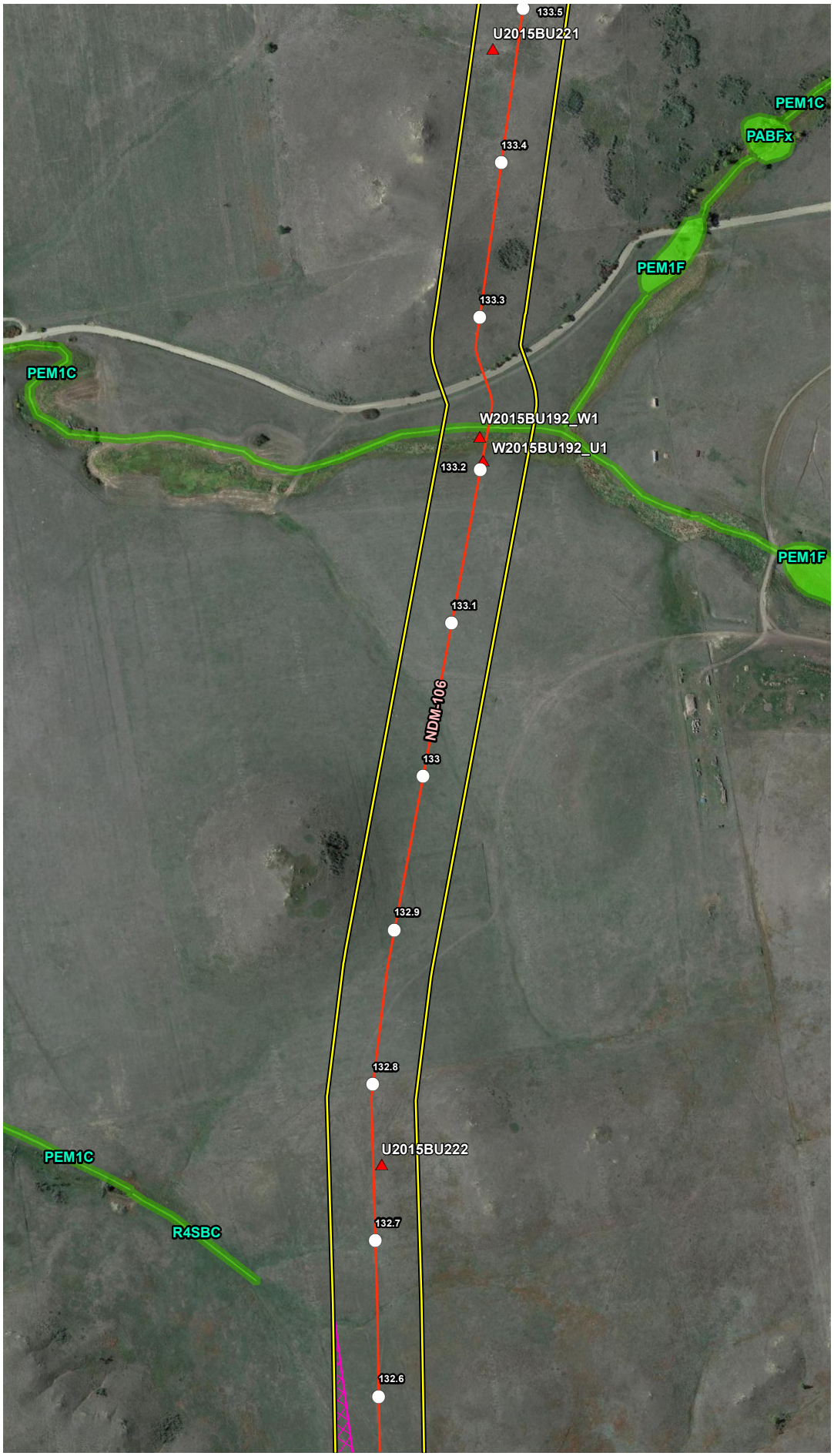
## NWI MAP

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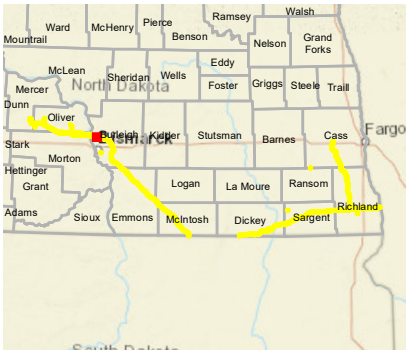


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

**NWI Map**

Figure Number:

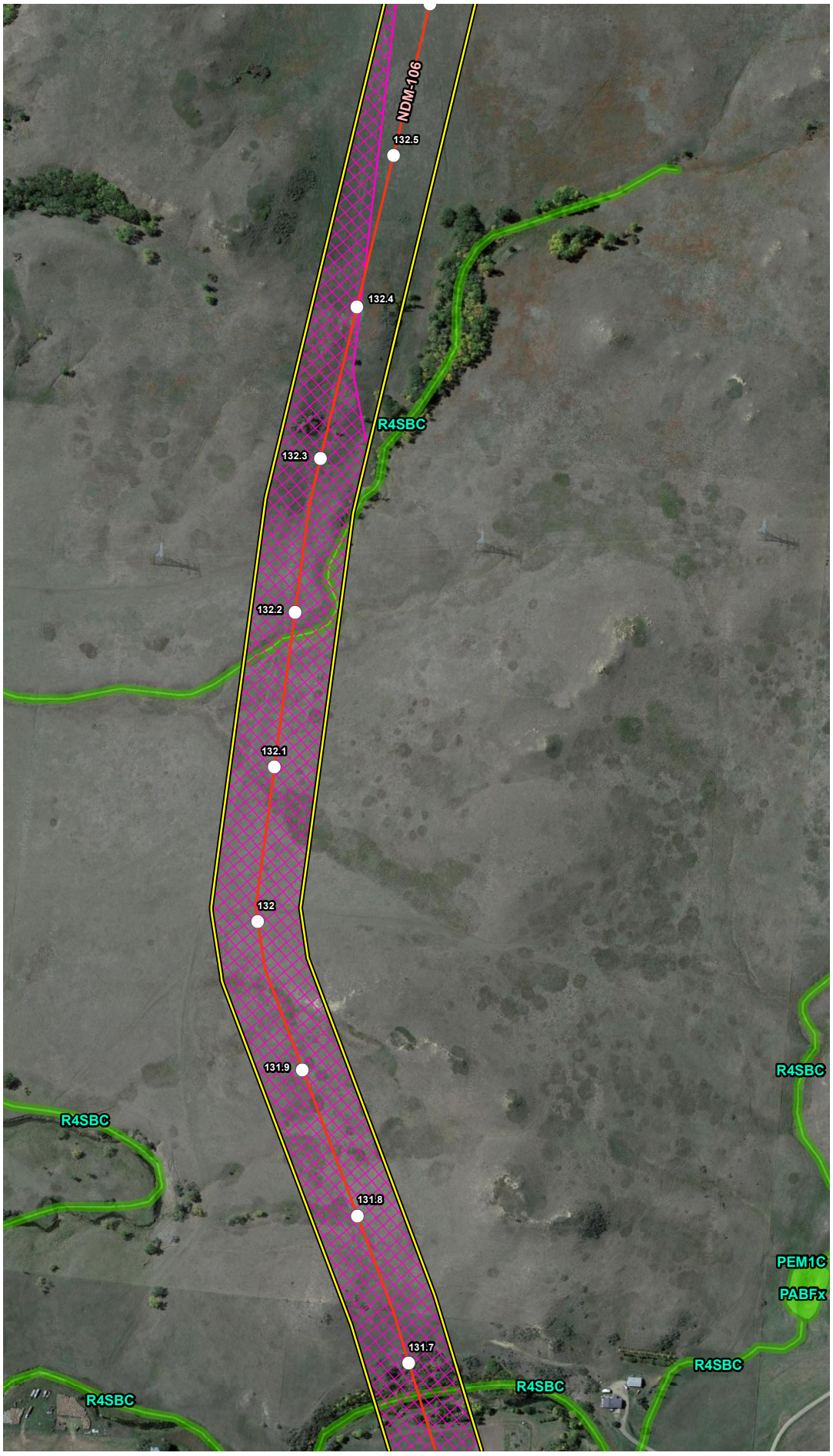
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 46 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\4_NWI.mxd

## NWI MAP

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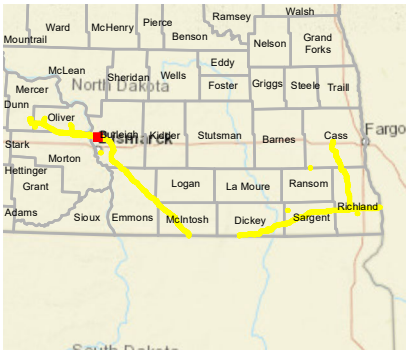


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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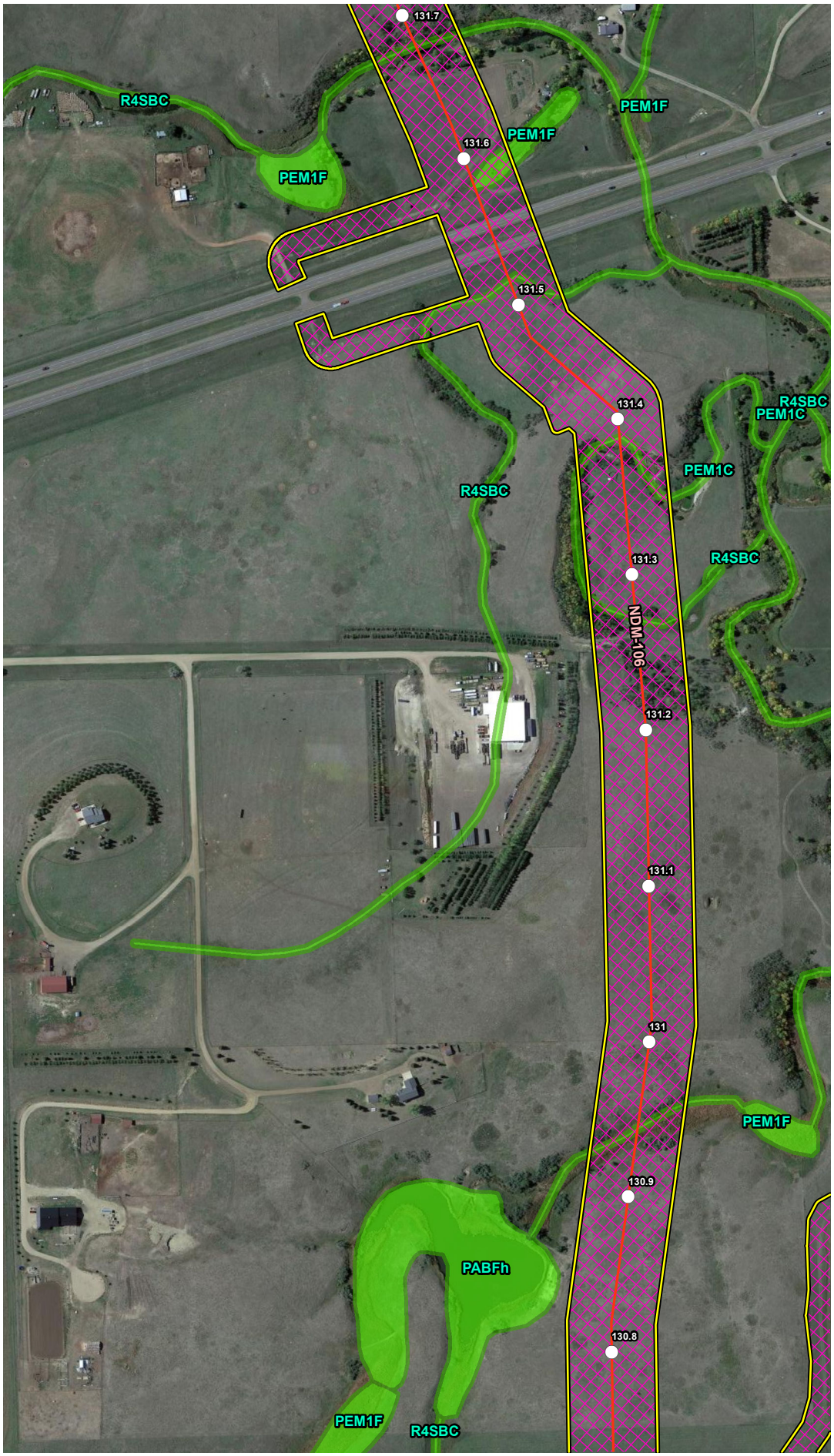
Figure Title:
NWI Map

Figure Number:
Appendix A-4

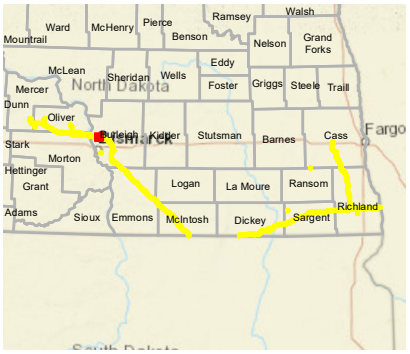
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>47 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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Figure Title:

NWI Map

Figure Number:

Appendix A-4

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 48 of 392 | 2001-22-004<br>Current Revision |

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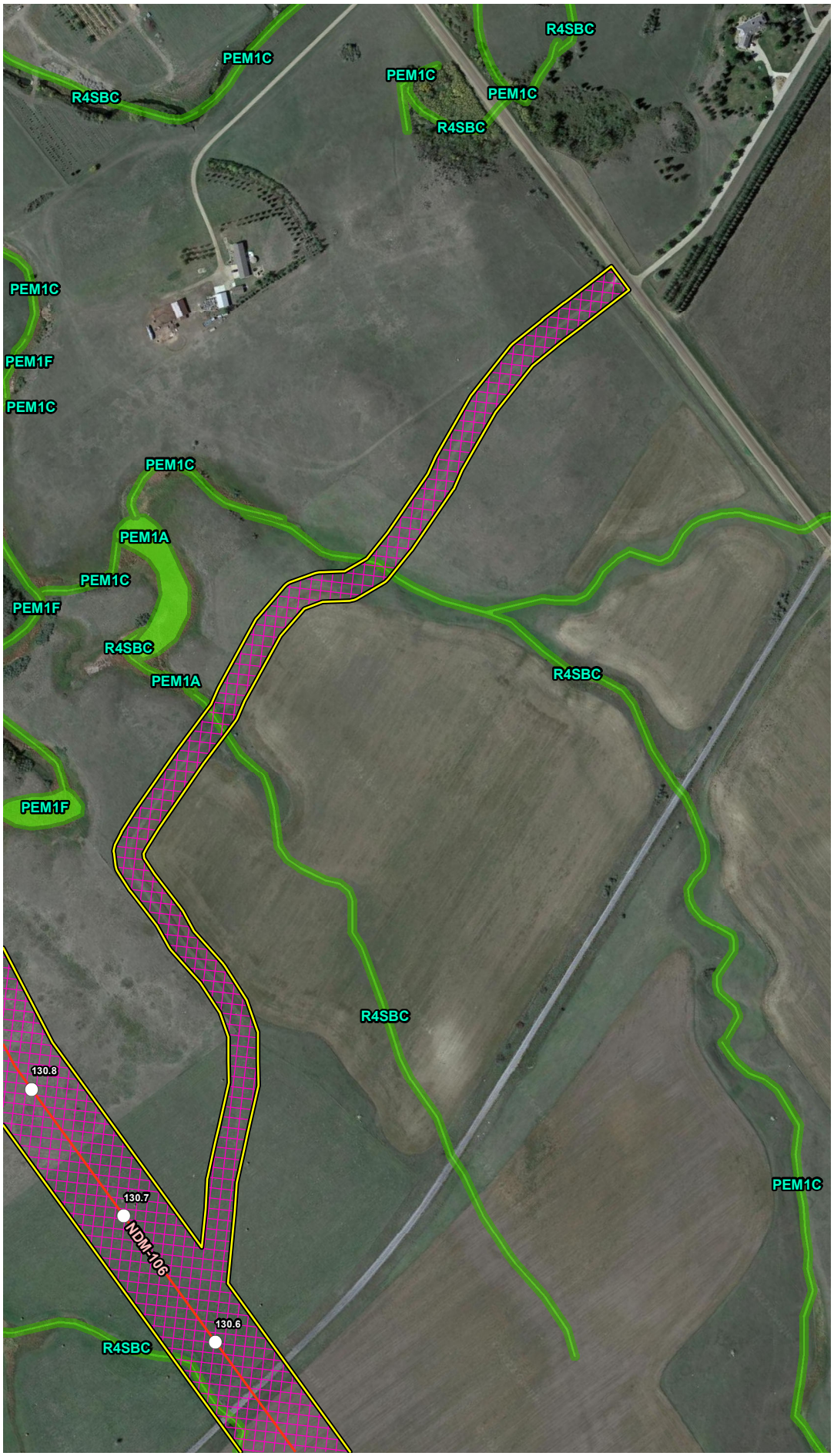
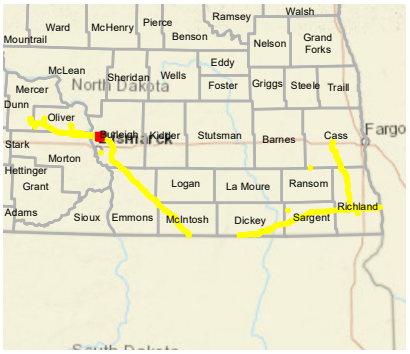
## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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Figure Title:

**NWI Map**

Figure Number:

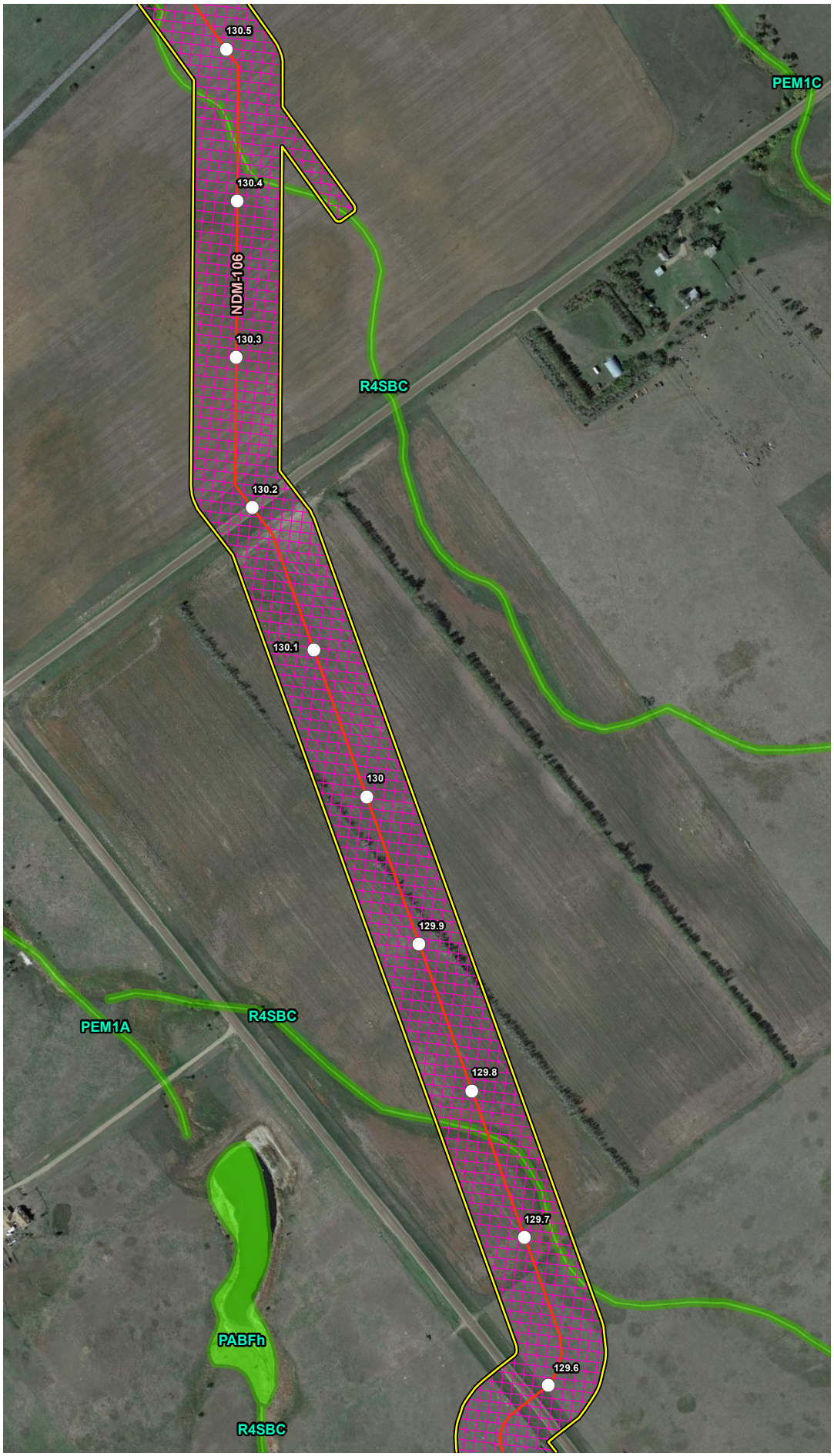
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 49 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_NDImxds\4_NWI.mxd

## NWI MAP

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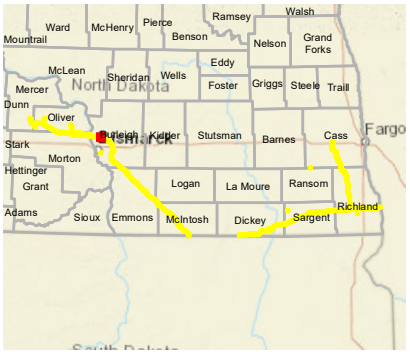


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>50 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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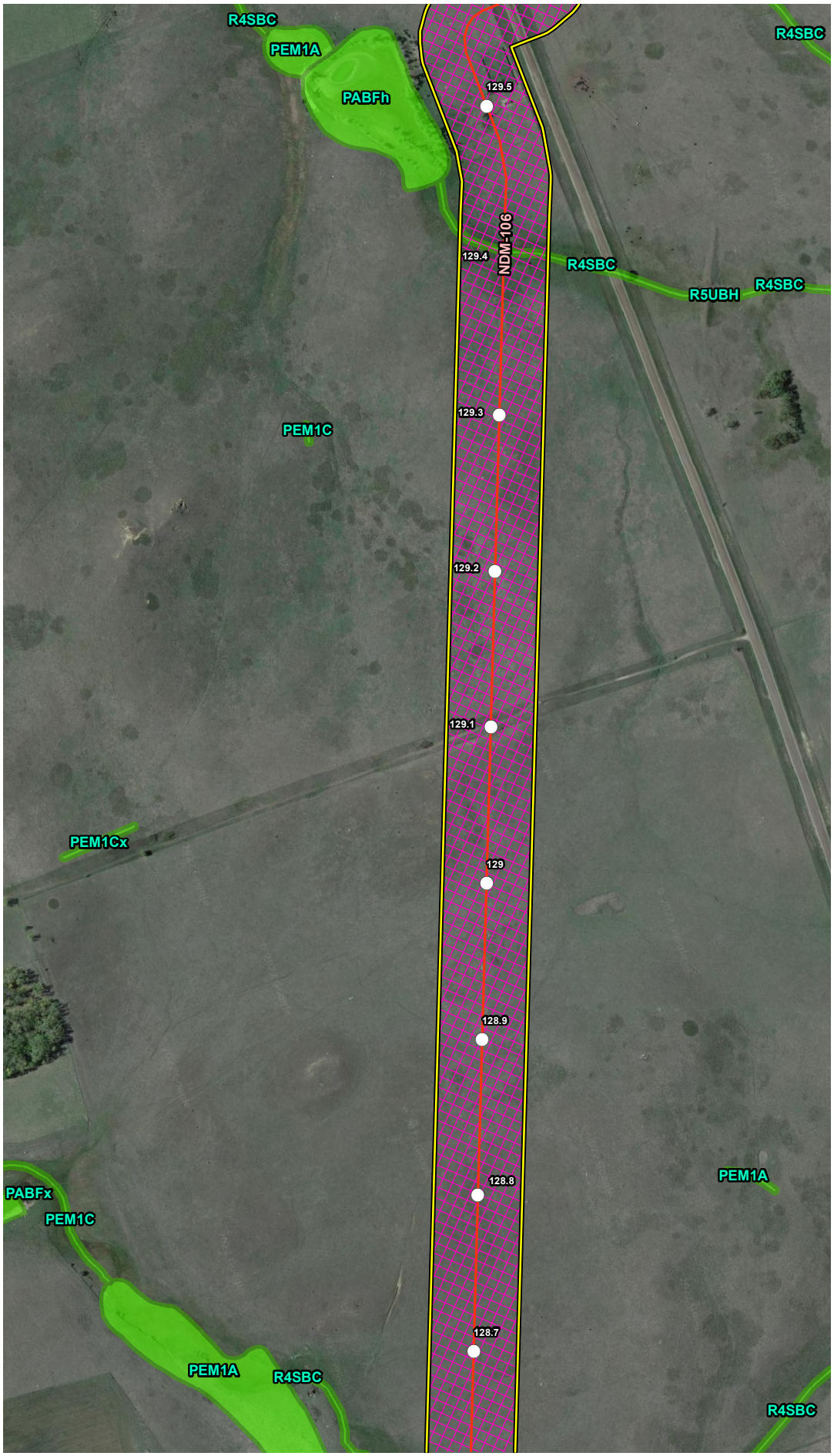
## NWI MAP

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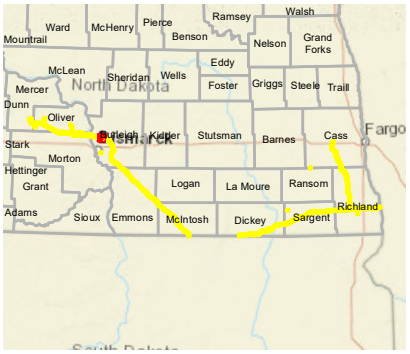


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:

NWI Map

Figure Number:

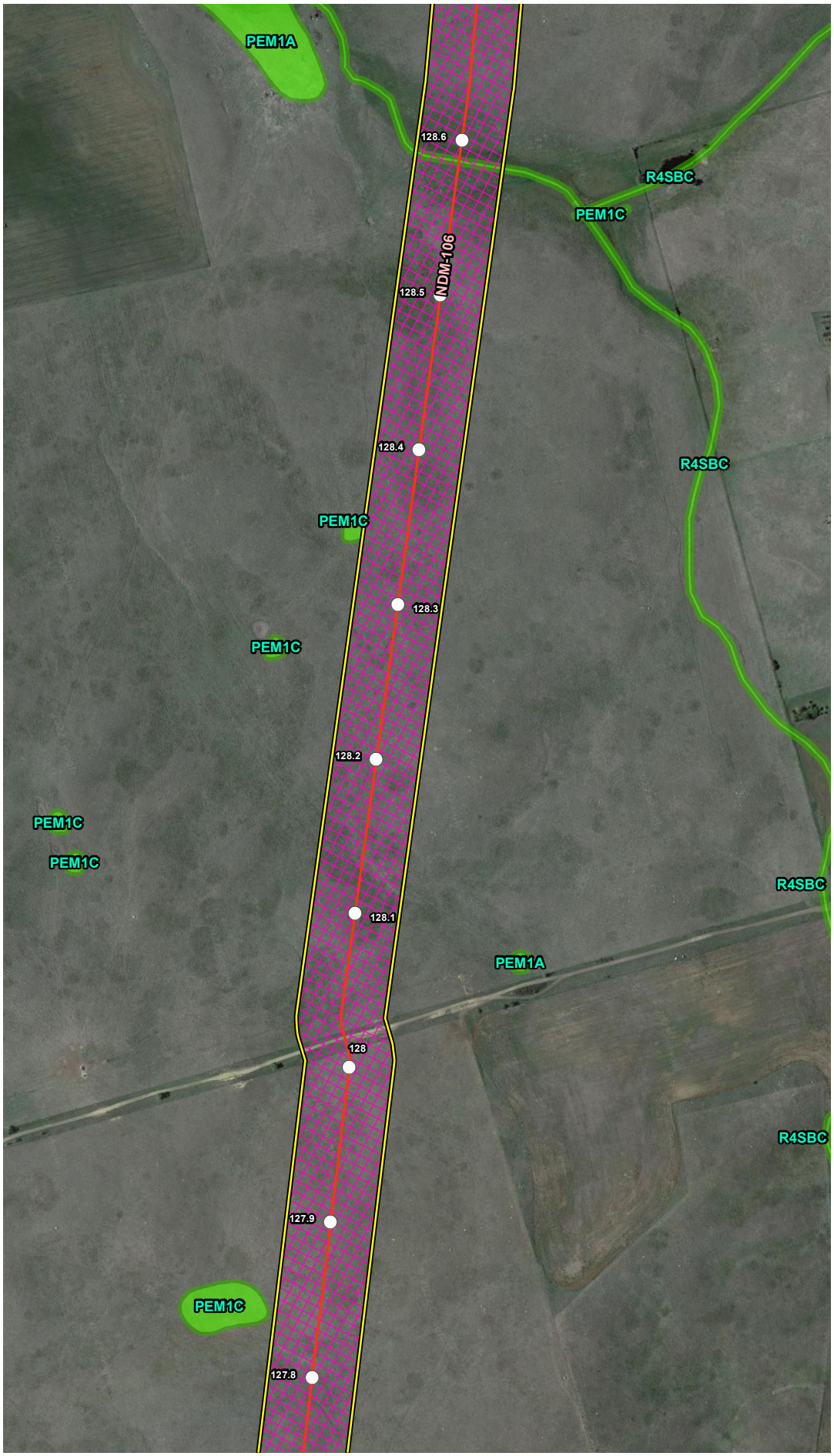
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 51 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDImxds\4_NWI.mxd

## NWI MAP

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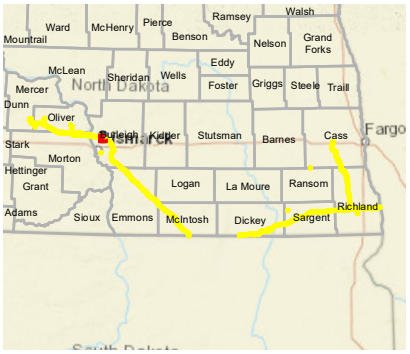


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 52 of 392 | 2001-22-004<br>Current Revision |

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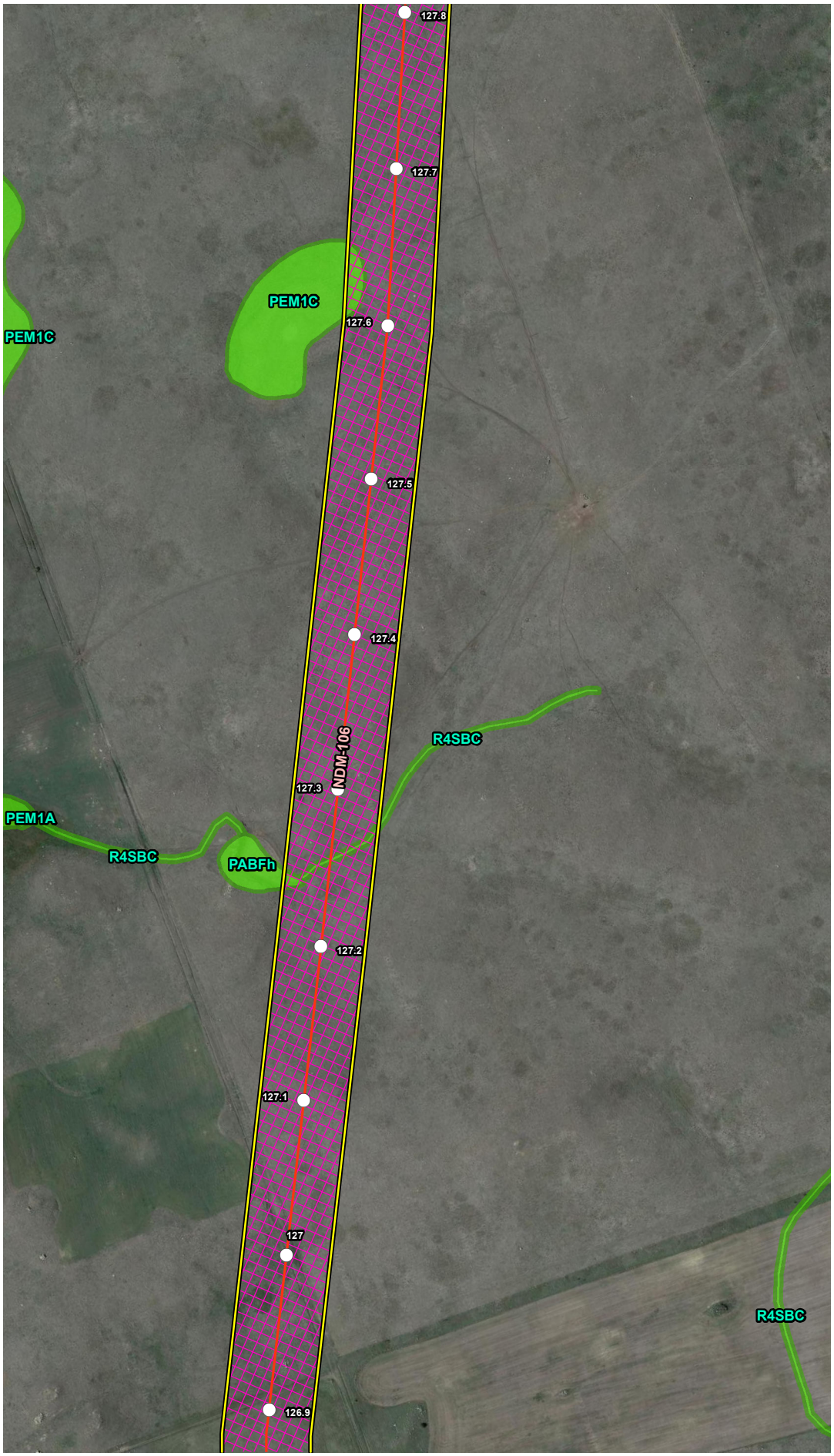
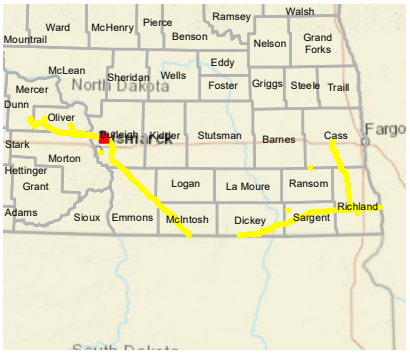
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
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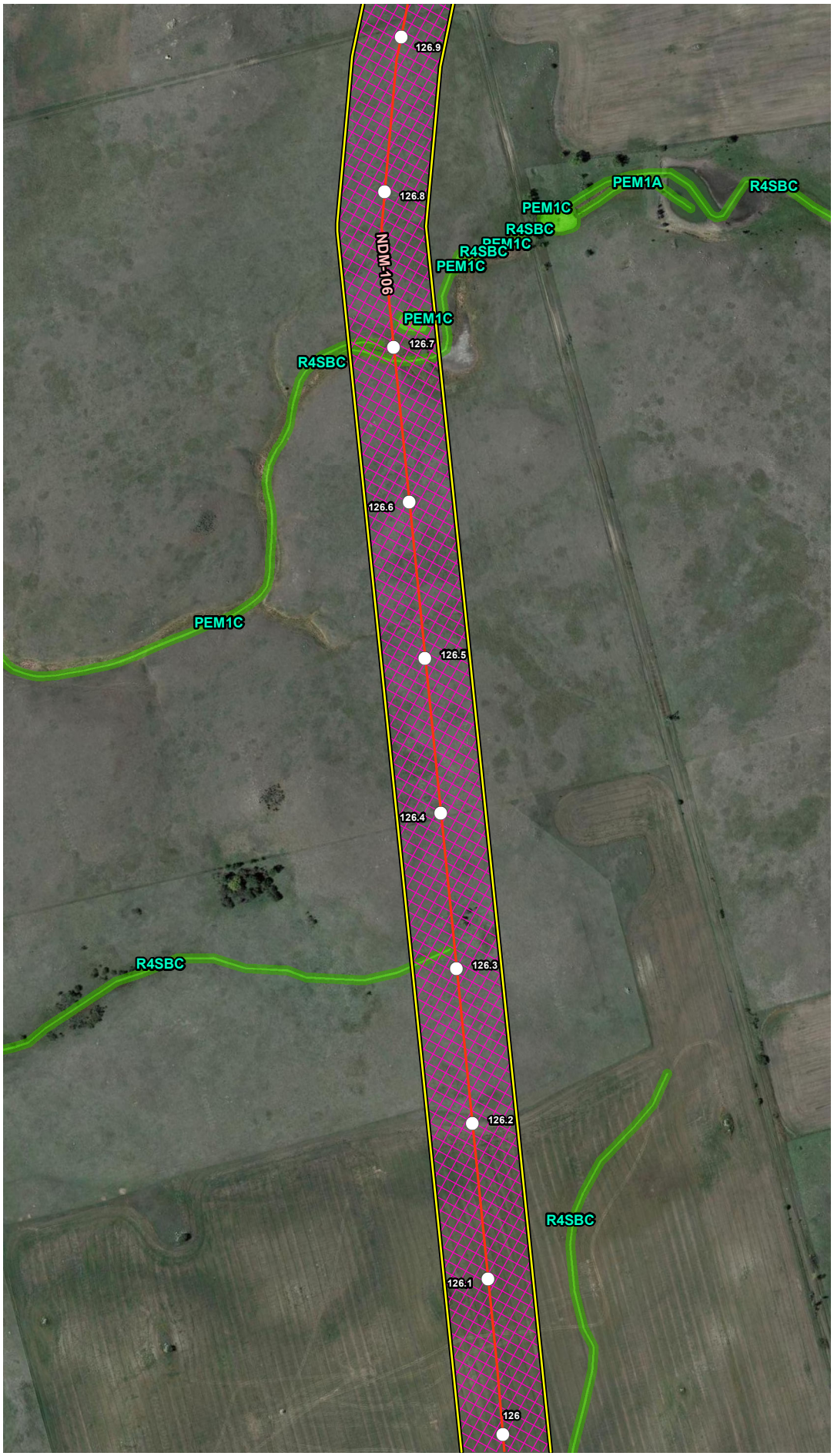
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>53 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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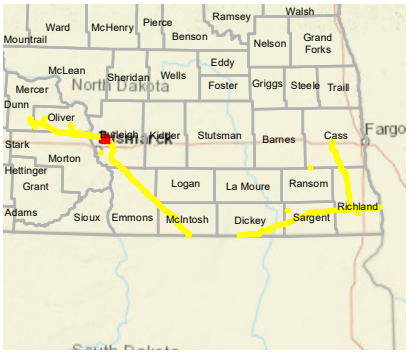


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>54 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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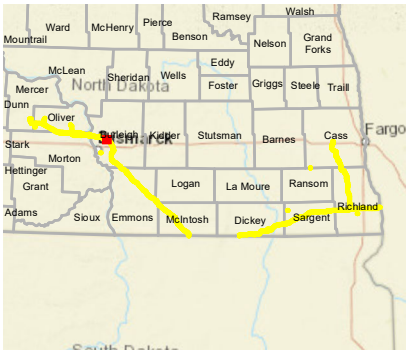
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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Appendix A-4

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 55 of 392 | 2001-22-004<br>Current Revision |

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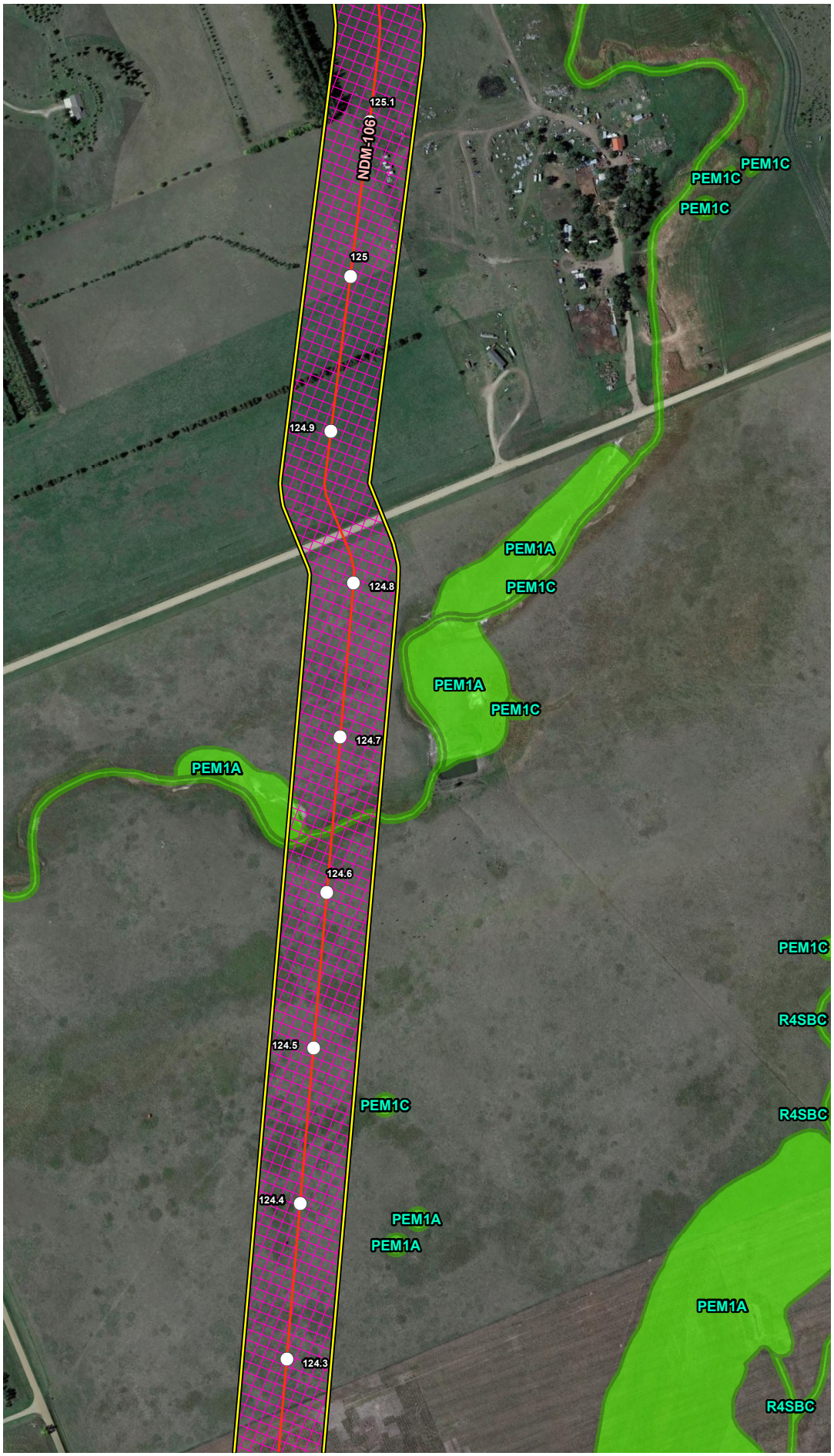
## NWI MAP

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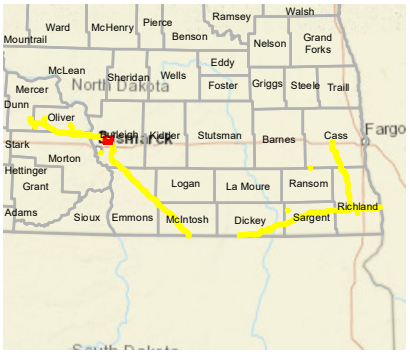


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:

NWI Map

Figure Number:

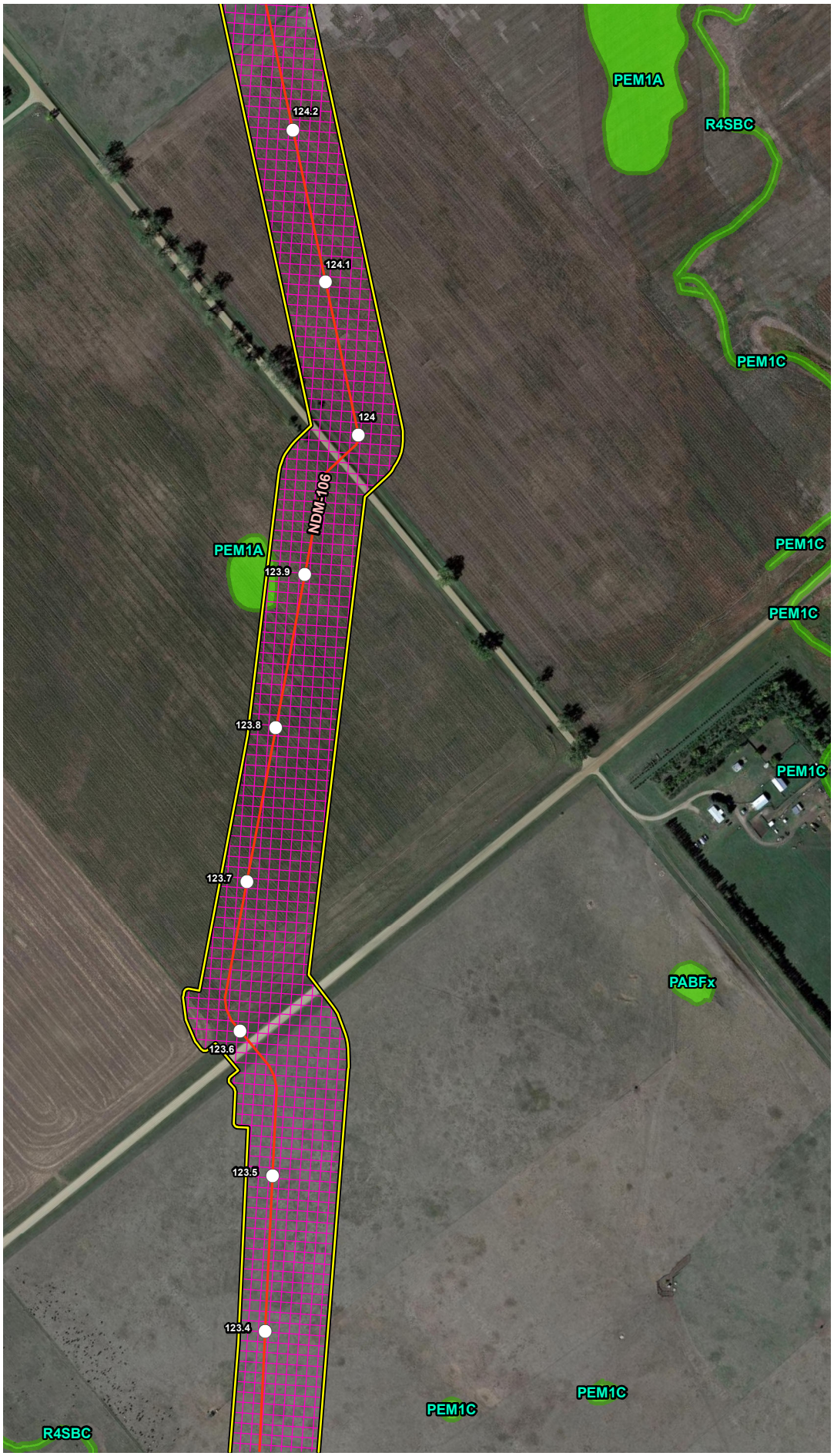
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 56 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\0801_VWR_NDImxds14_NWI.mxd

## NWI MAP

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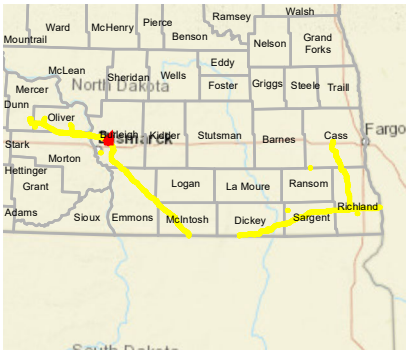


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
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Revision description

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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 57 of 392 | 2001-22-004<br>Current Revision |

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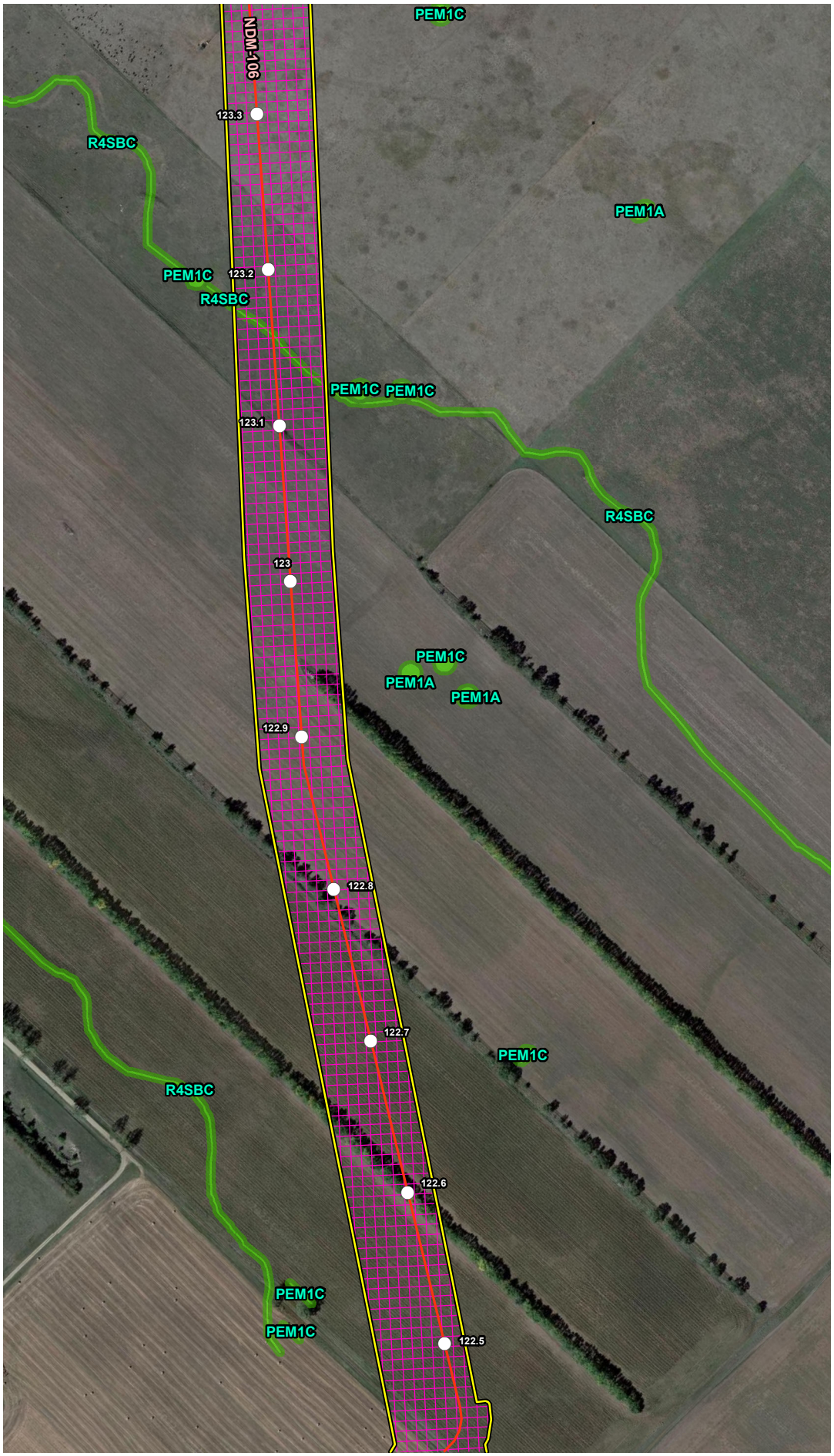
## NWI MAP

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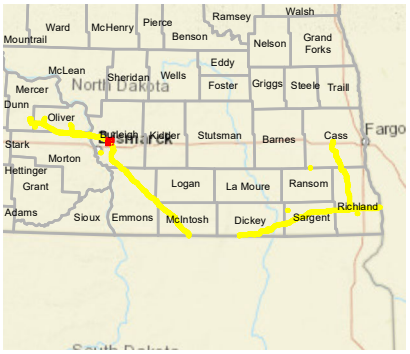


## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>58 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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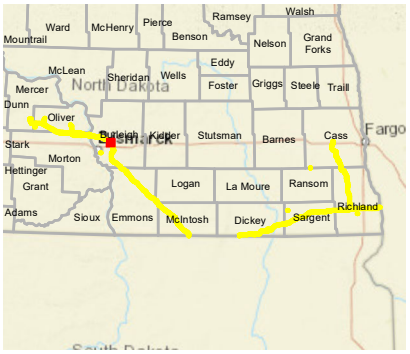
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>59 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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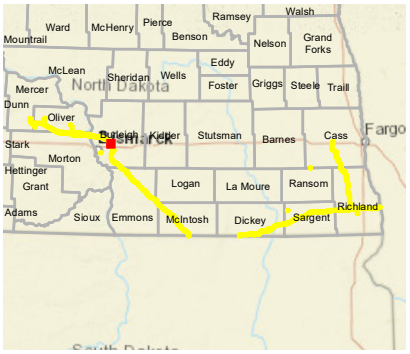
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**
NWI Map

**Figure Number:**
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 60 of 392 | 2001-22-004<br>Current Revision |

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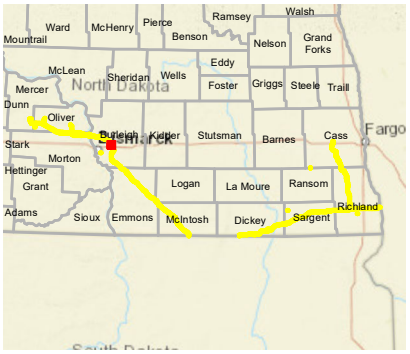
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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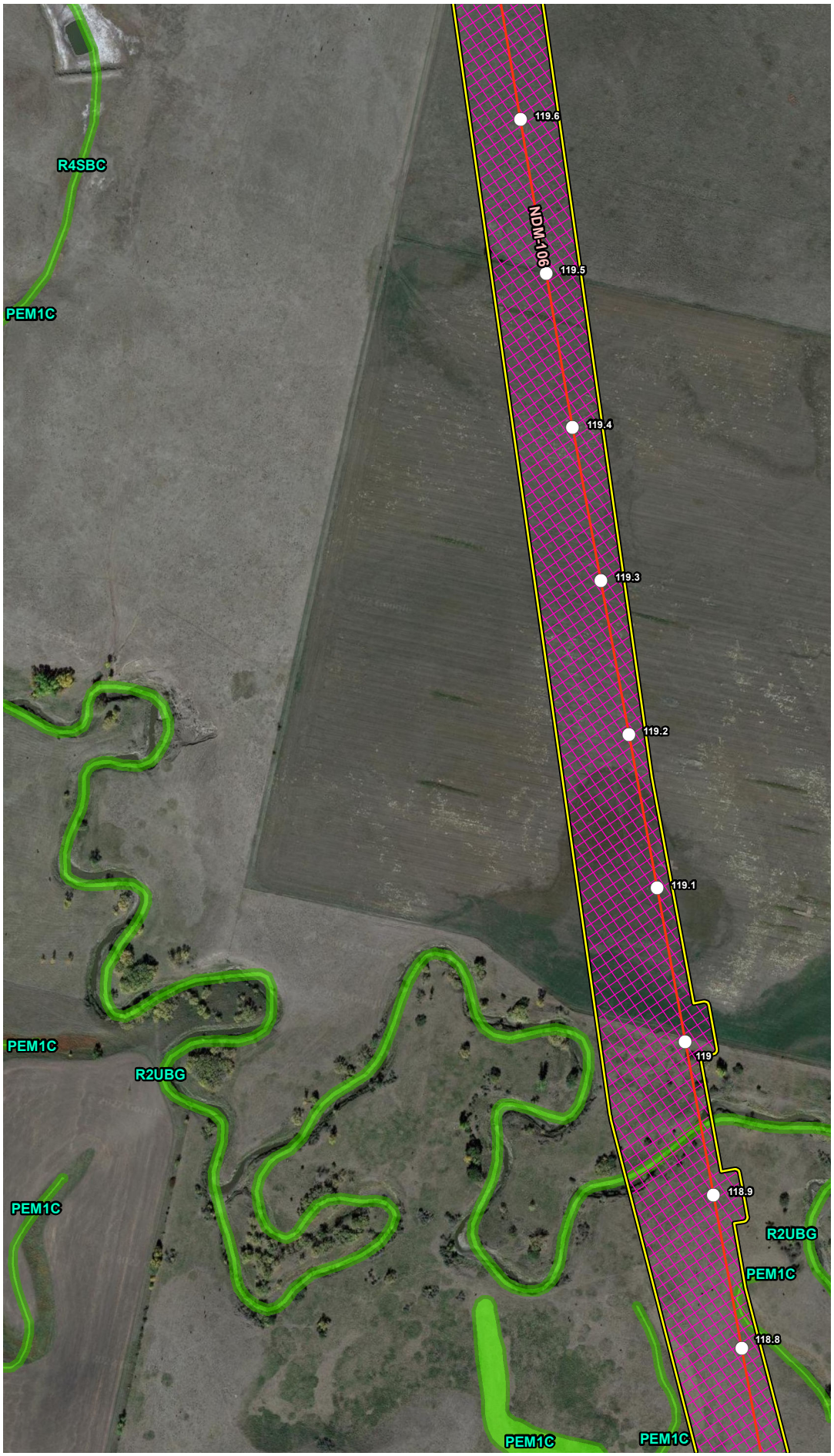
Figure Title:
NWI Map

Figure Number:
Appendix A-4

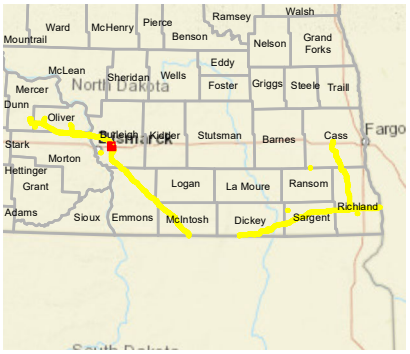
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>61 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
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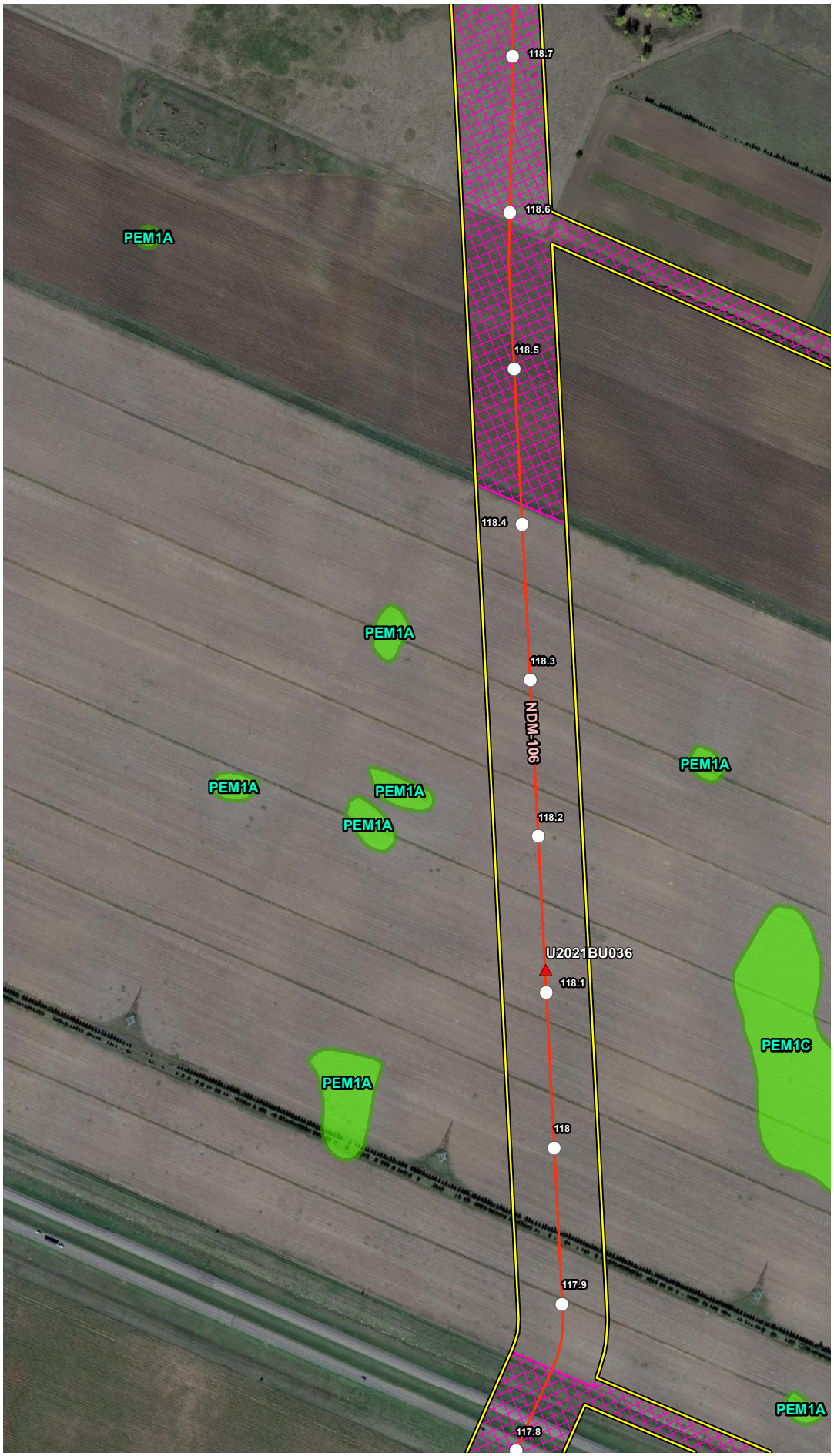
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

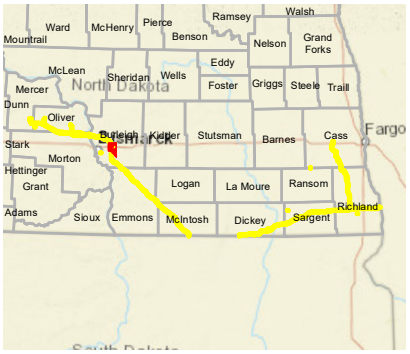
| Sheet: | Drawing Number: |
|---|---|
| 62 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:

NWI Map

Figure Number:

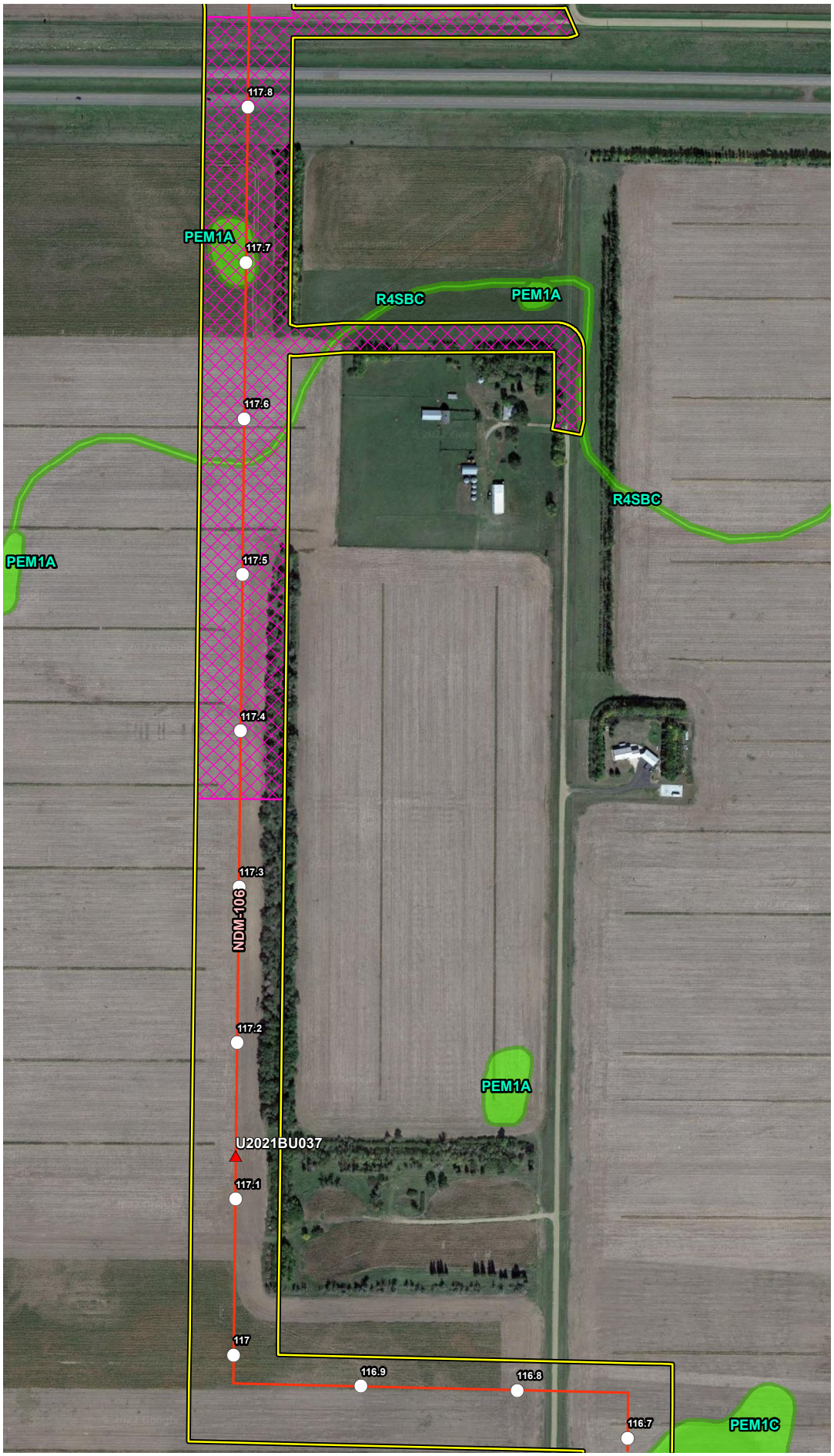
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 63 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDmxds\4_NWI.mxd

## NWI MAP

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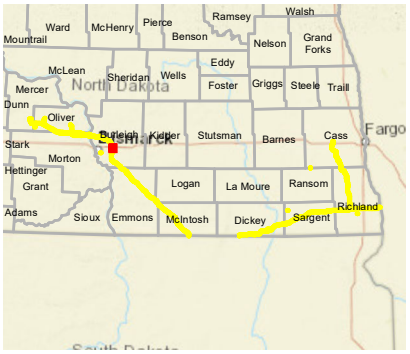


## LEGEND

- Milepost
- Soil Station
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

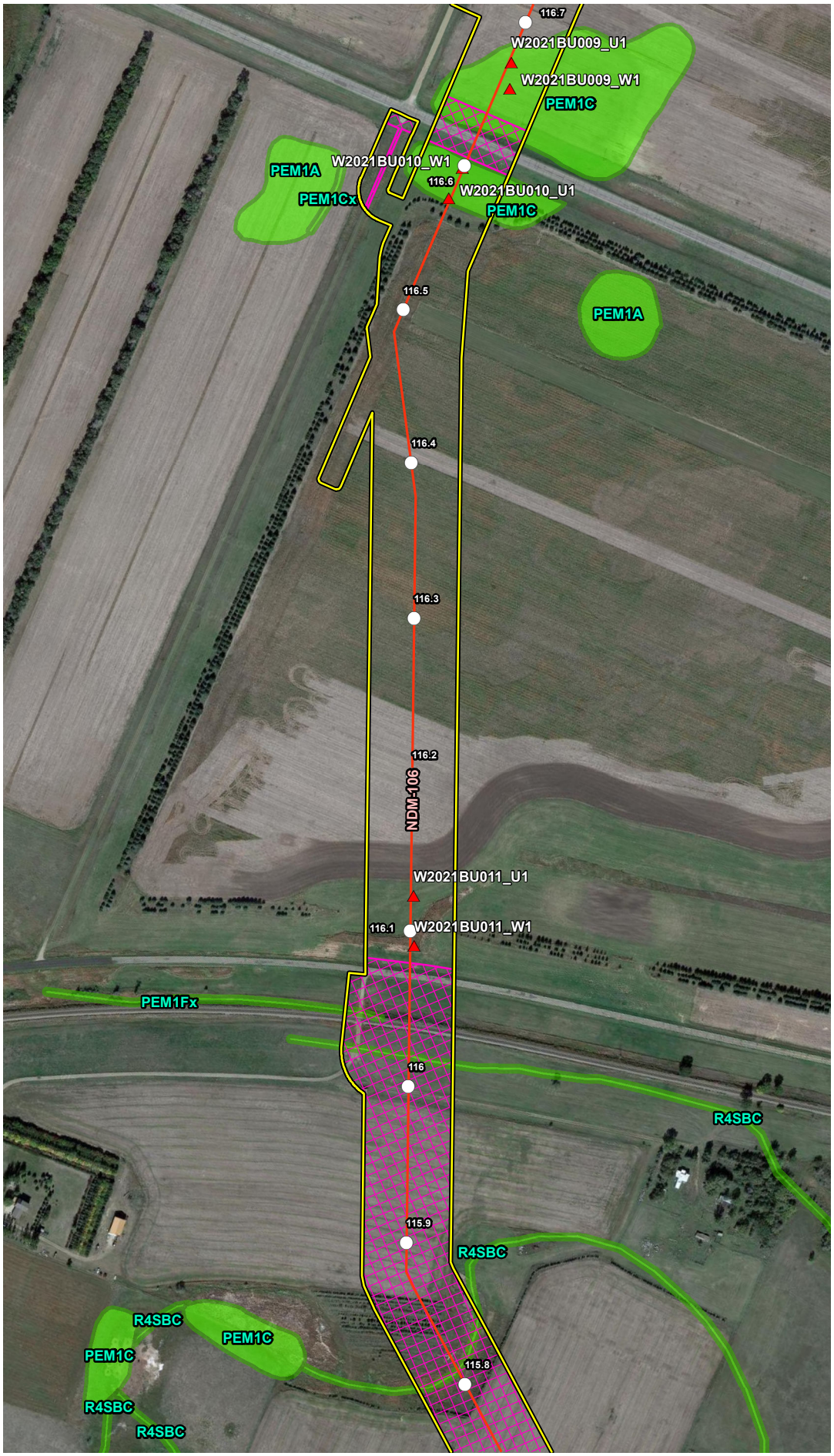
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

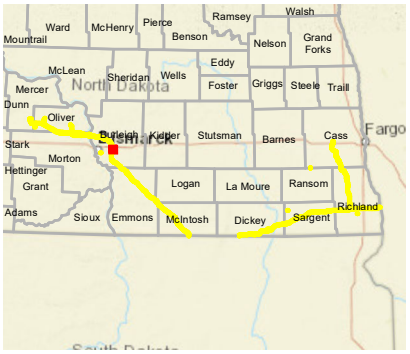
| Sheet: | Drawing Number: |
|---|---|
| 64 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Figure Title:

NWI Map

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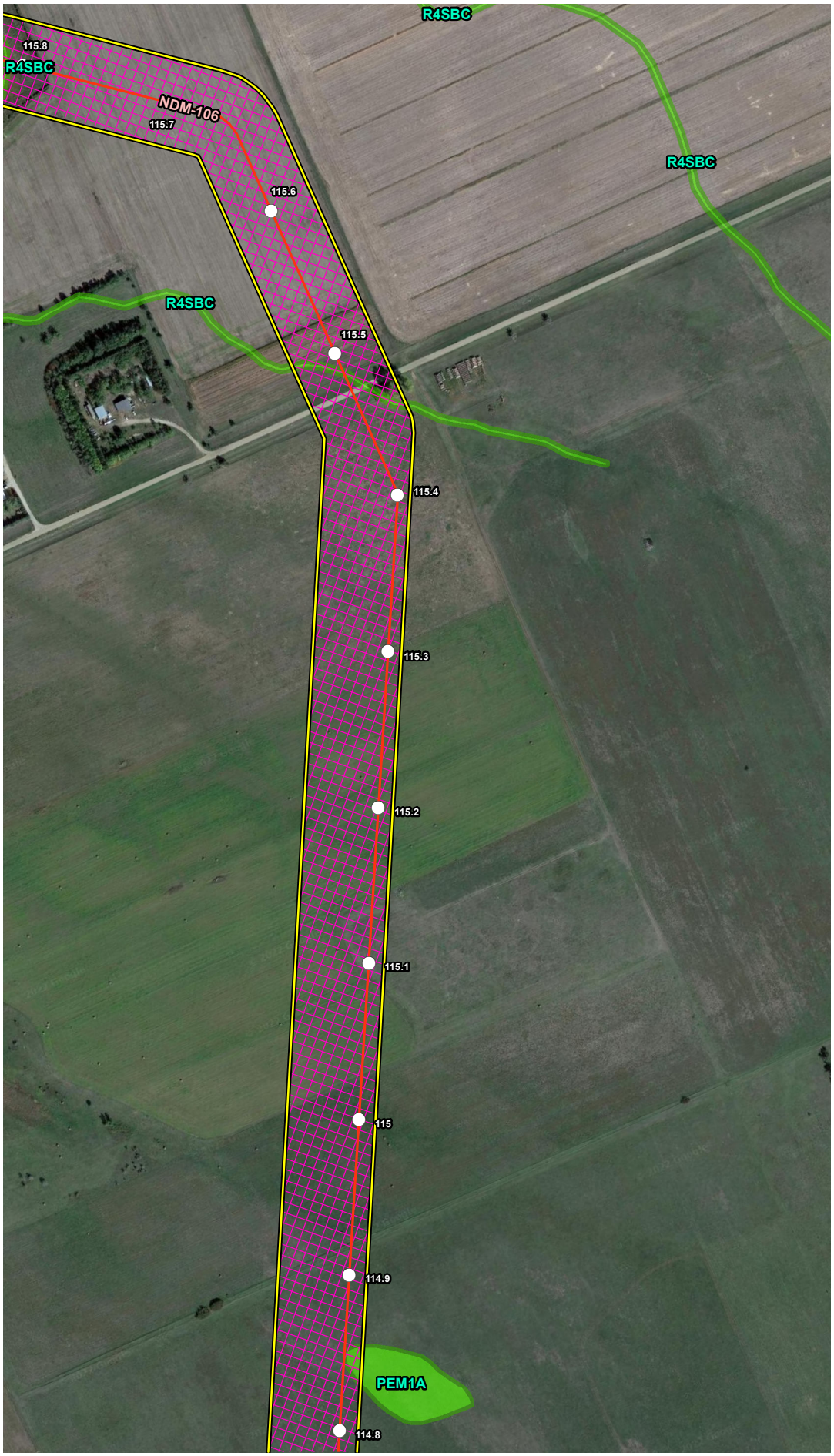
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

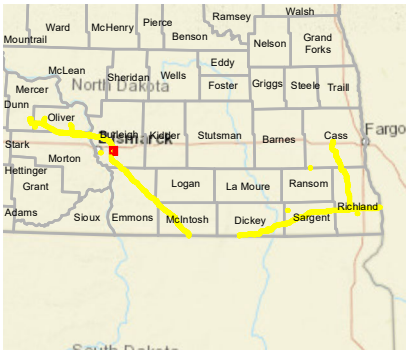
| Sheet: | Drawing Number: |
|---|---|
| 65 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 66 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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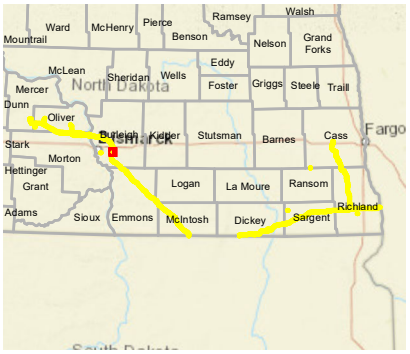
## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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**1A - Revision**

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**Figure Number:**

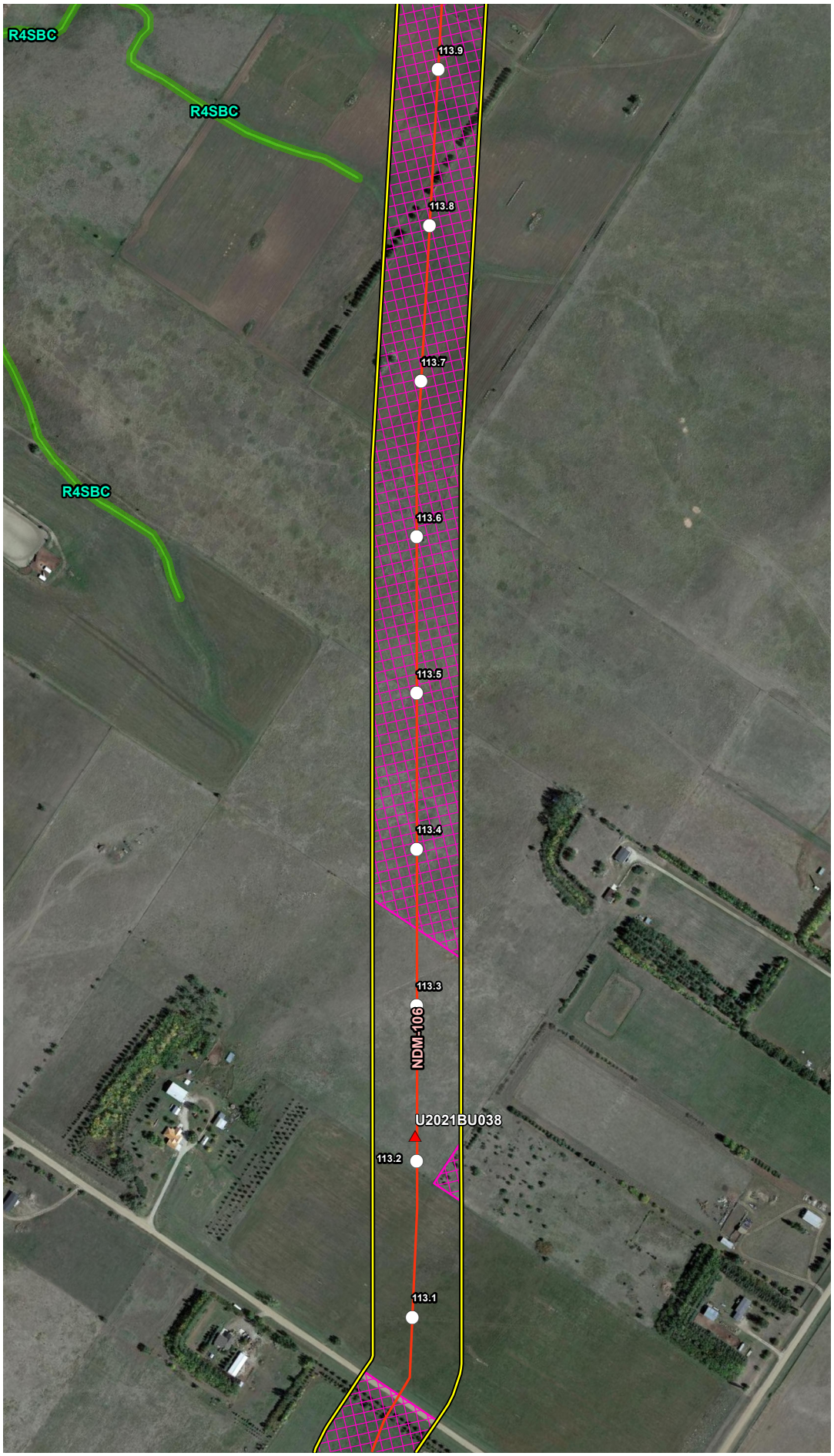
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 67 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDI\mxds\4_NWI.mxd

## NWI MAP

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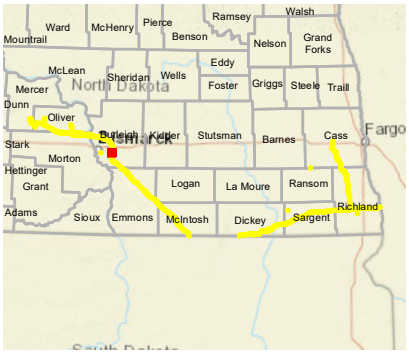


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 68 of 392 | 2001-22-004<br>Current Revision |

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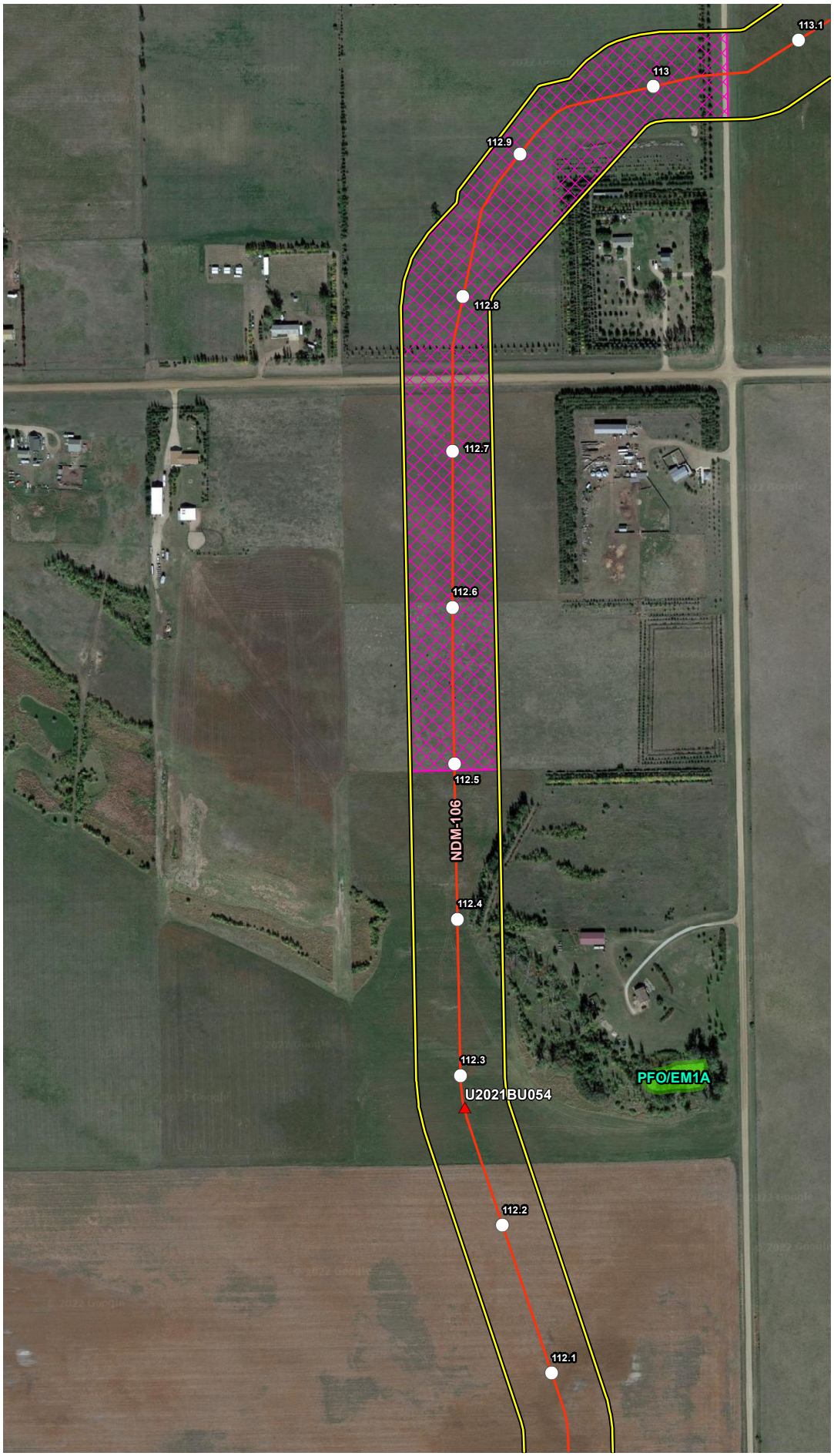
## NWI MAP

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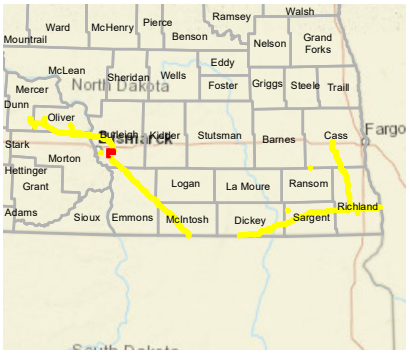


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
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**Figure Number:**

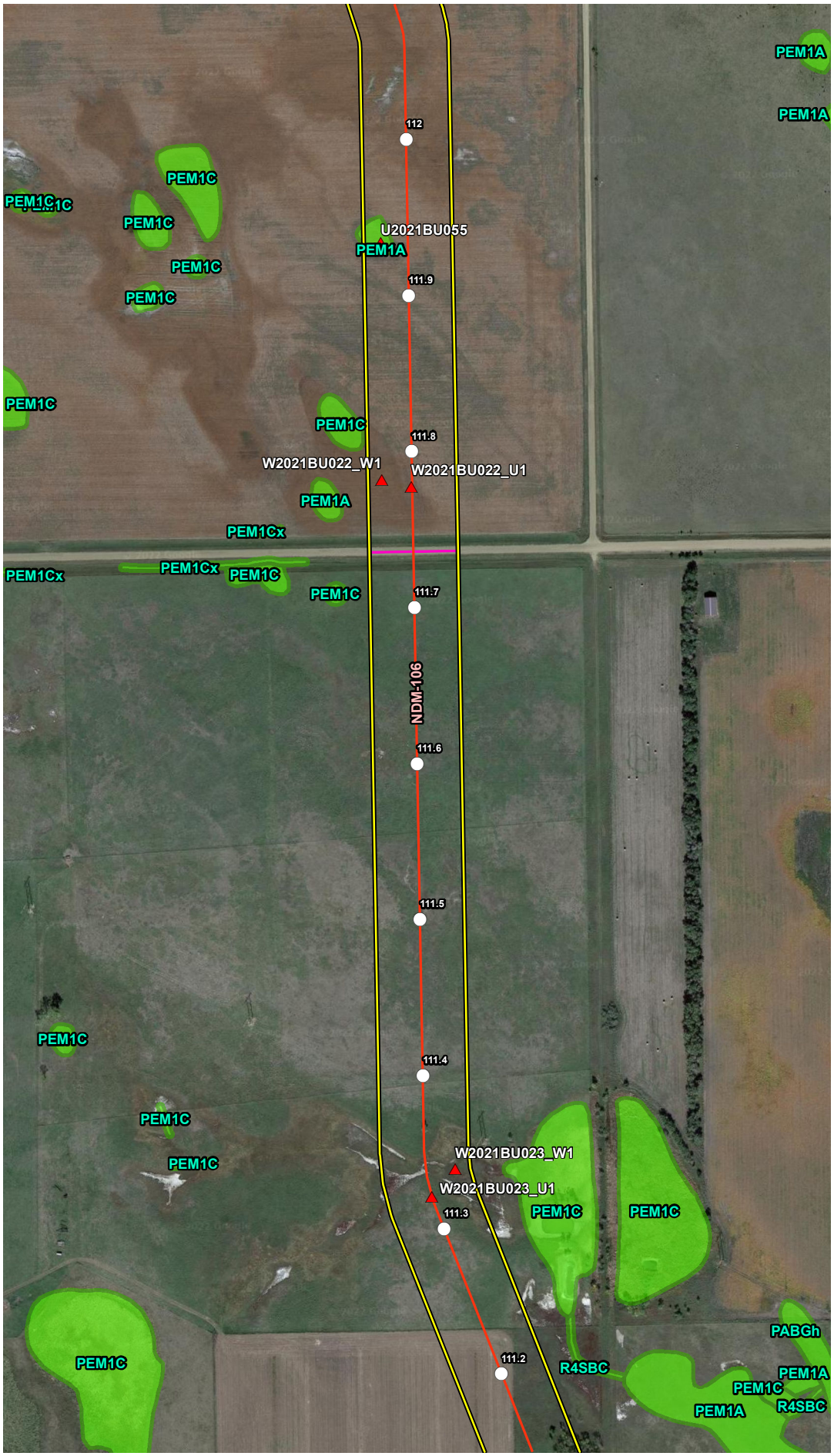
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 69 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\901_WR_NDImxds\4_NWI.mxd

## NWI MAP

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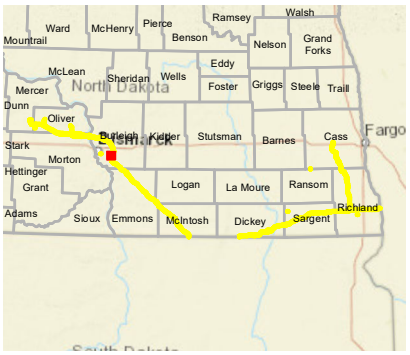


## LEGEND

- Milepost
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- Environmental Survey Area
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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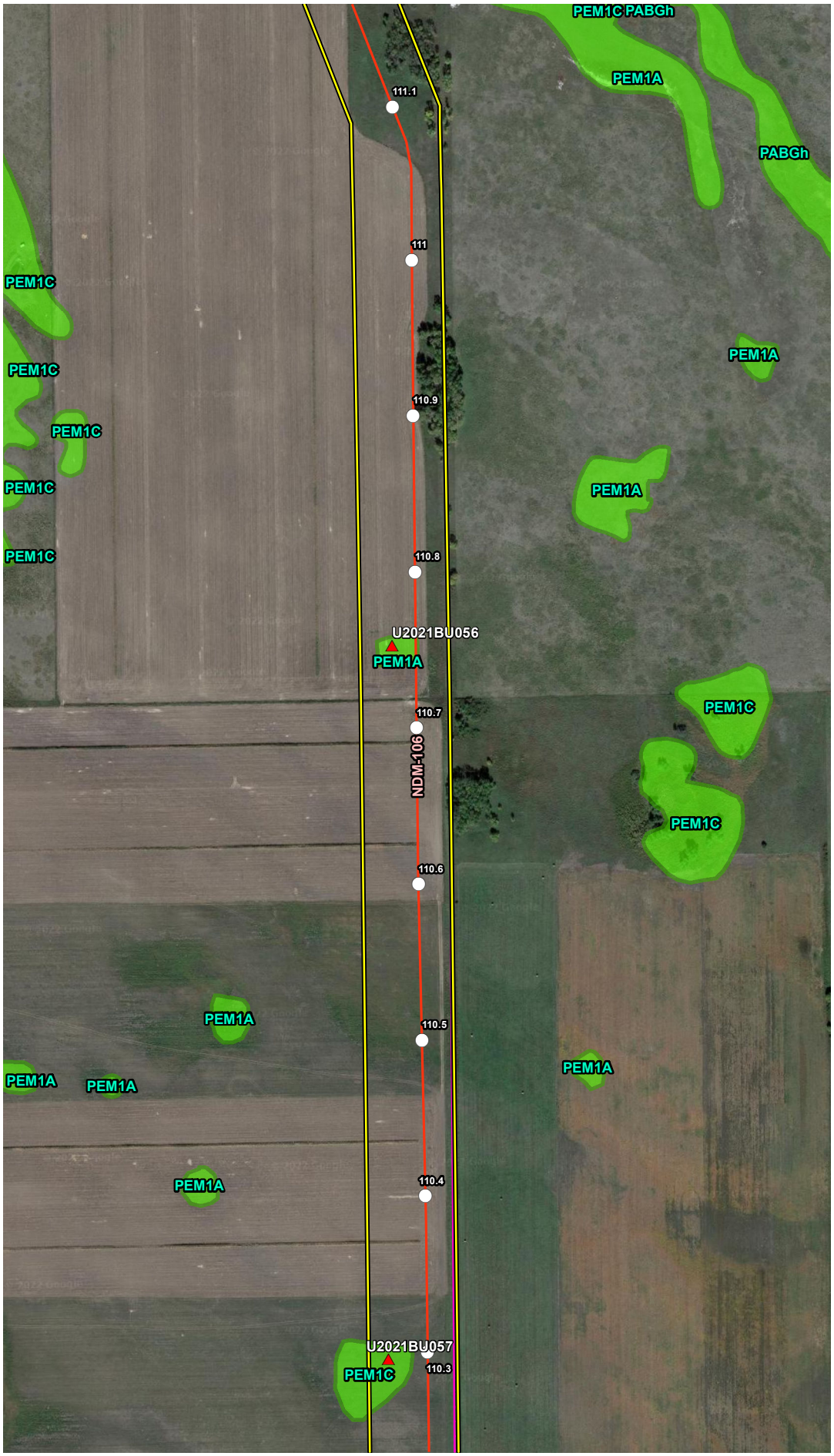
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 70 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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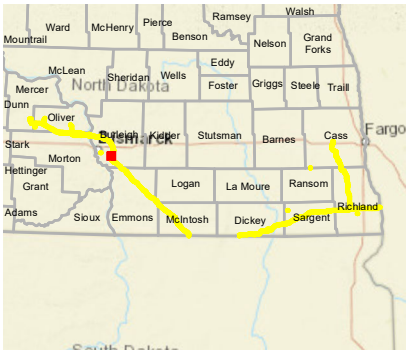


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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NWI Map

Figure Number:

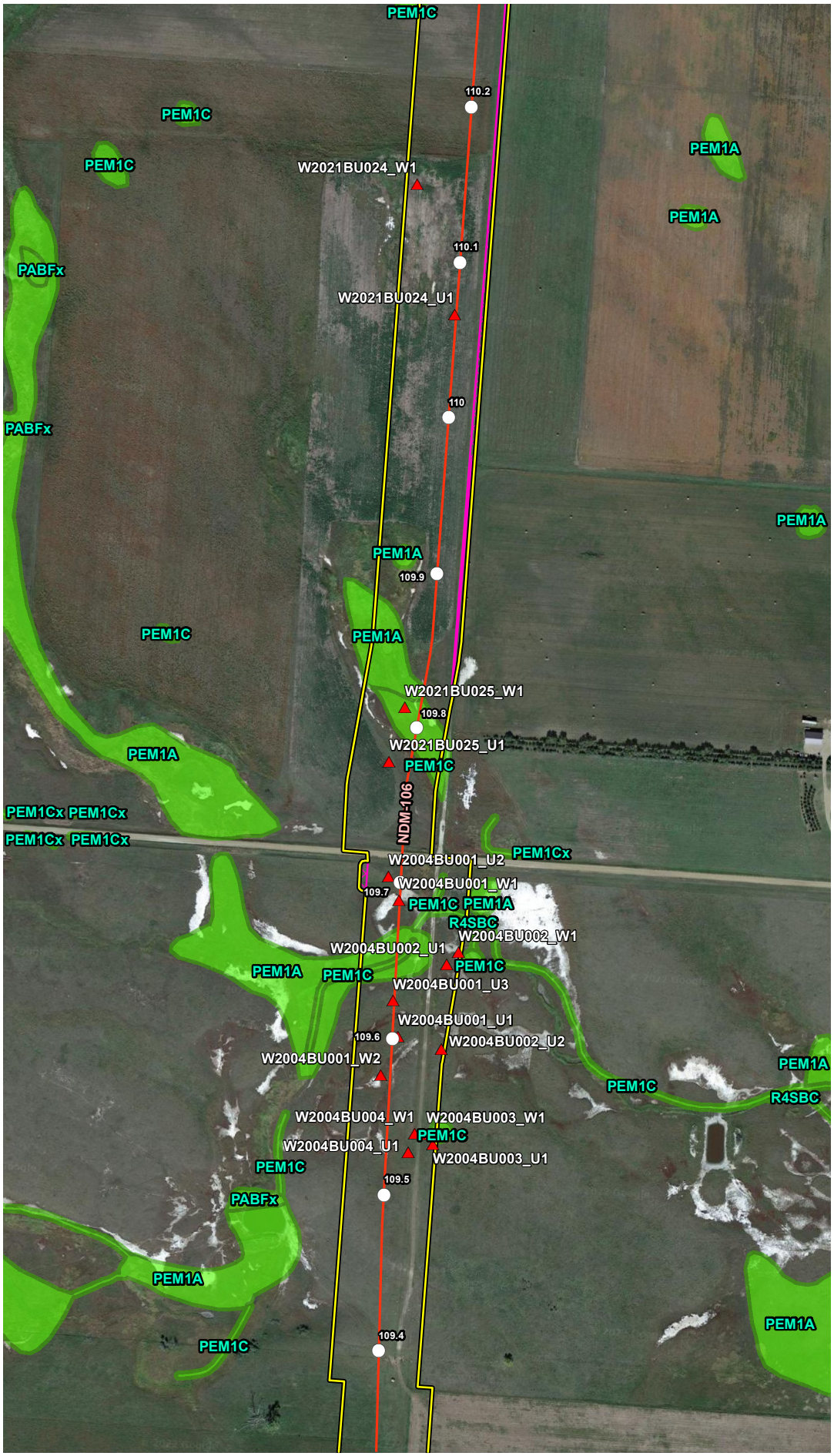
Appendix A-4

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 71 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\4_NWI.mxd

## NWI MAP

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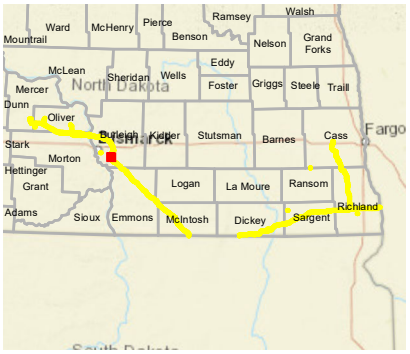


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:

NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 72 of 392 | 2001-22-004<br>Current Revision |

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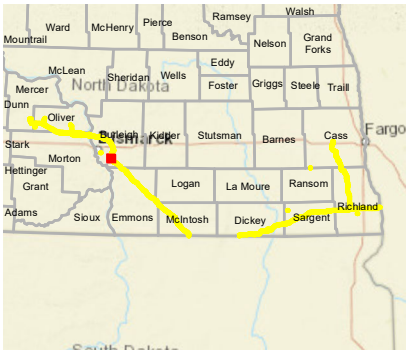
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

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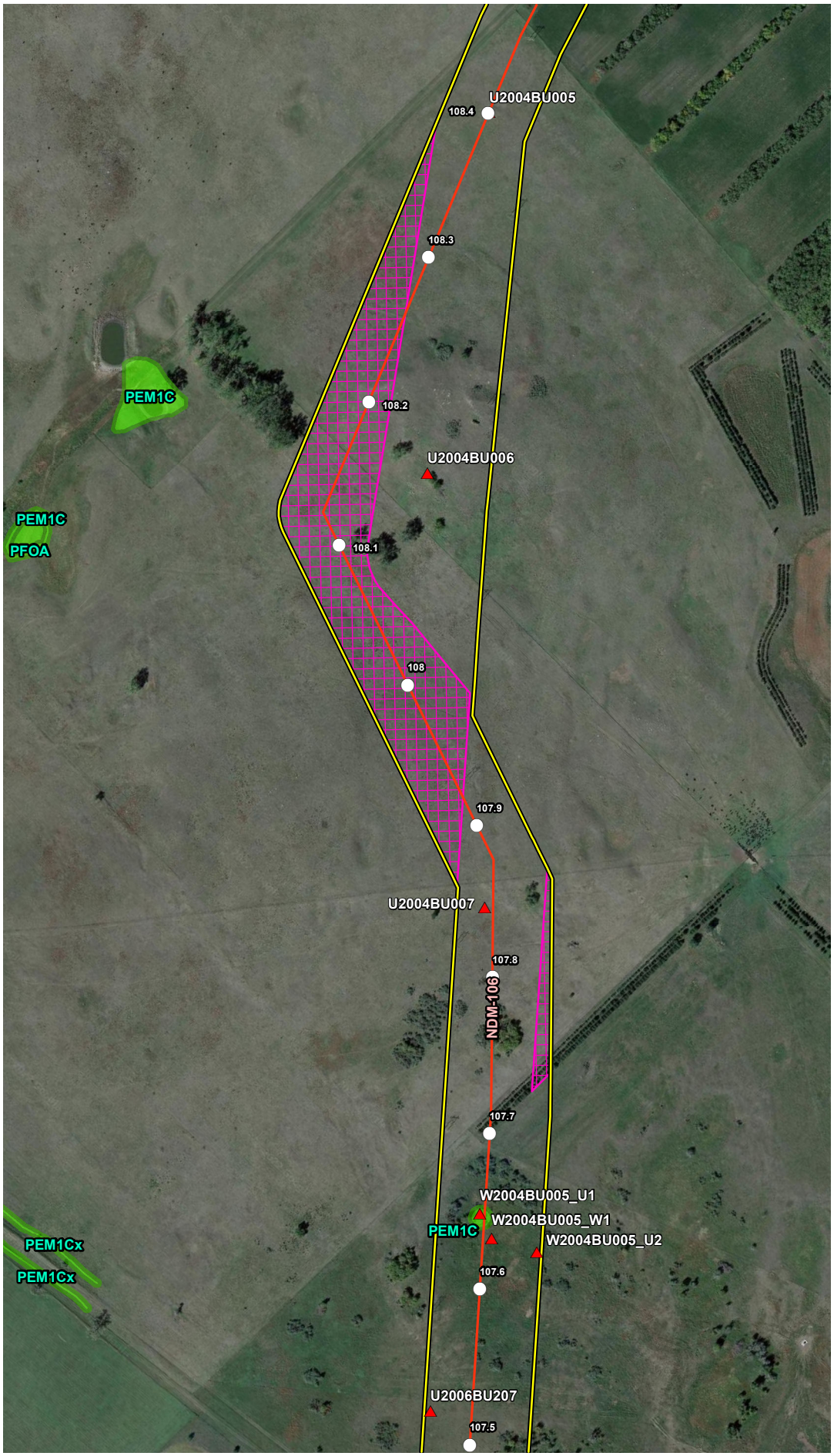
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>73 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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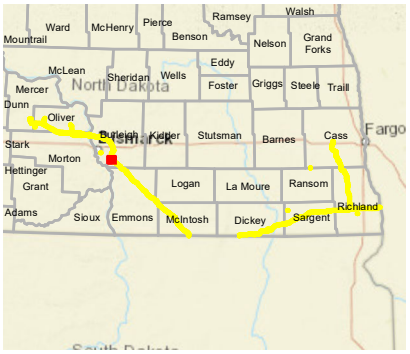


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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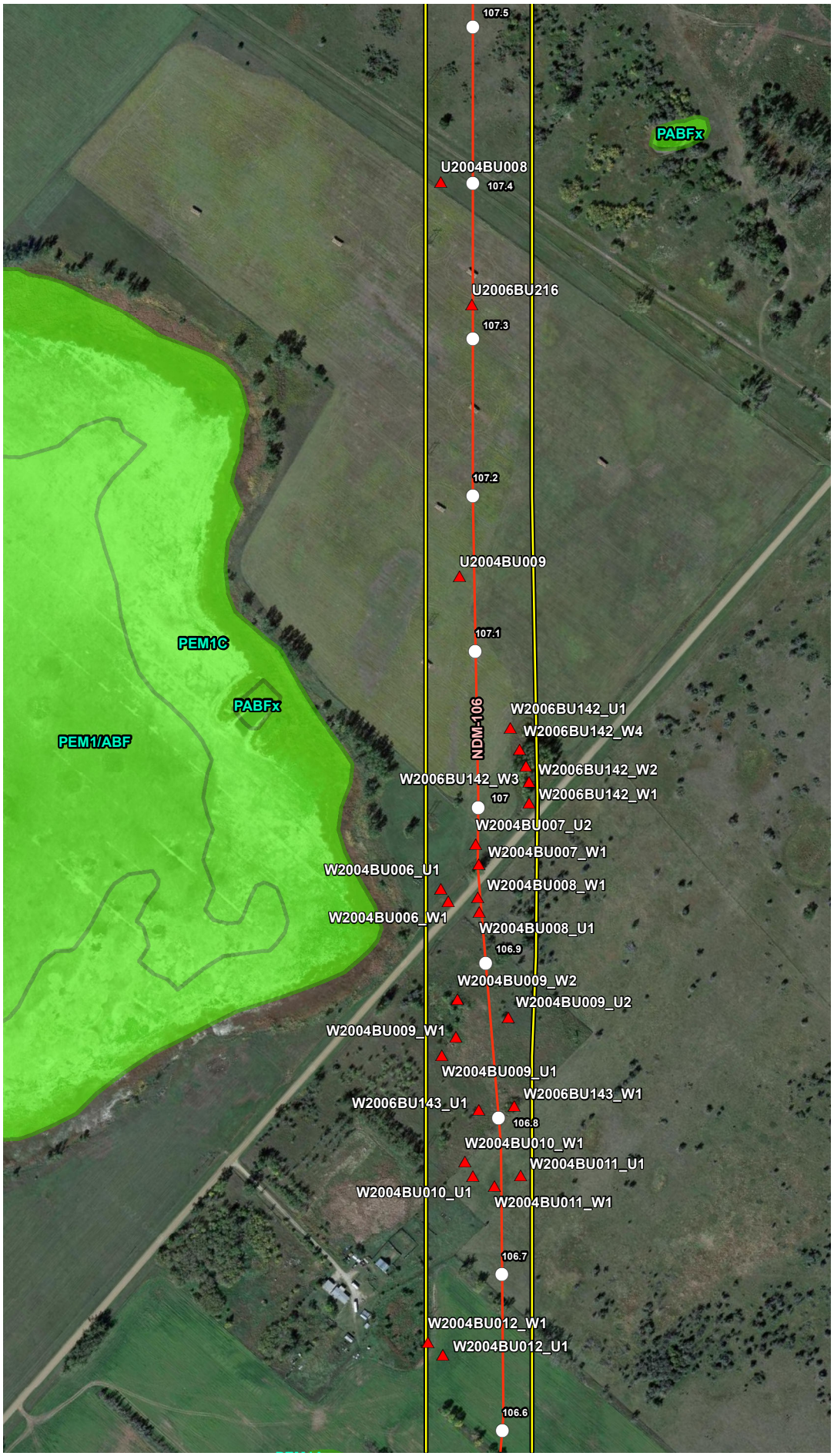
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

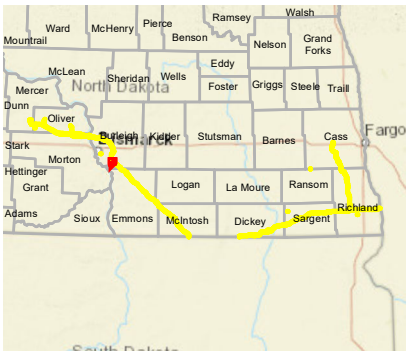
| Sheet: | Drawing Number: |
|---|---|
| 74 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\801_WR_NDmxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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## REVISIONS

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**Figure Title:**

NWI Map

**Figure Number:**

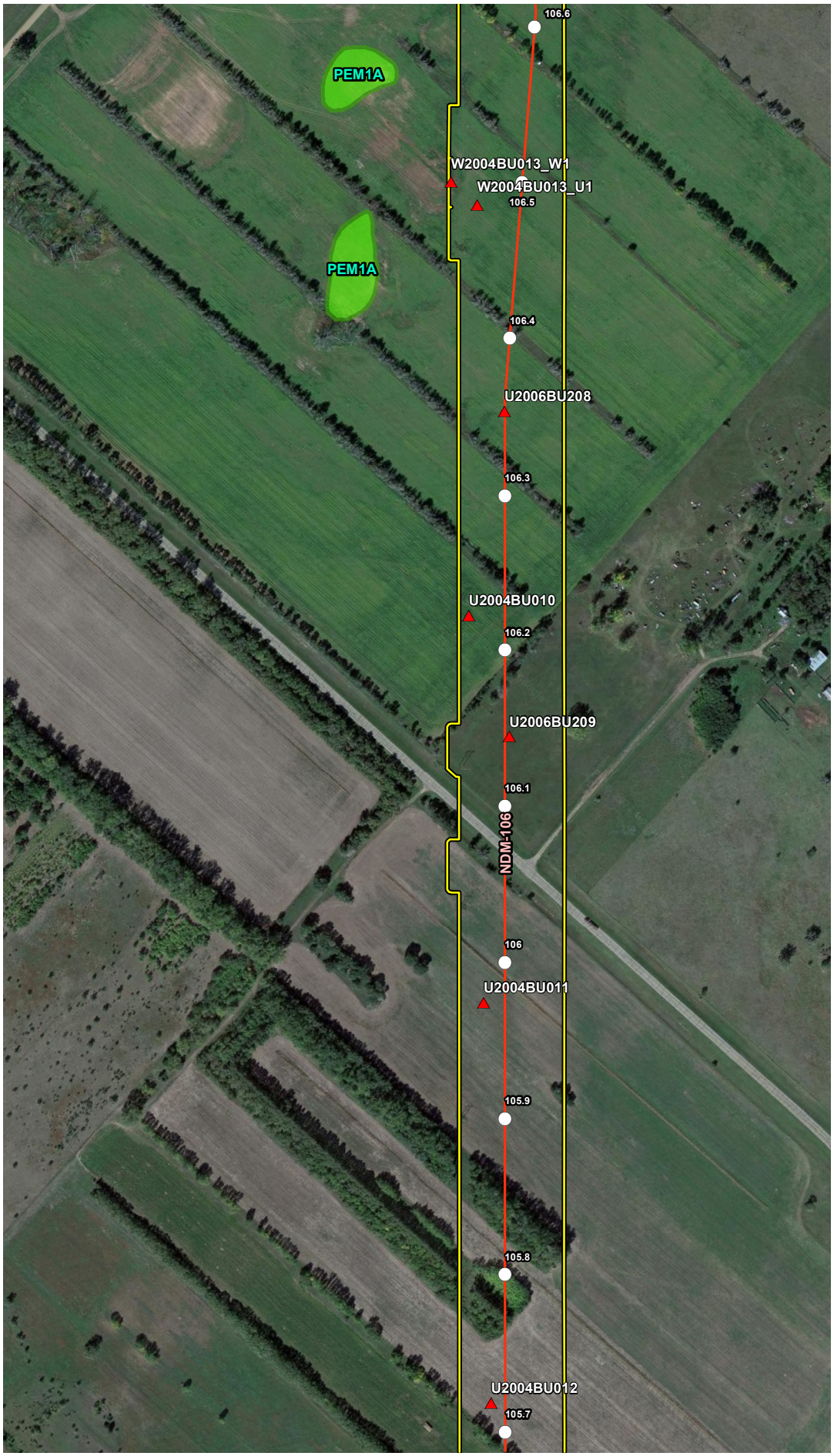
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

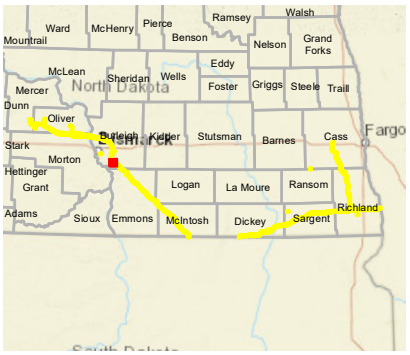
| Sheet: | Drawing Number: |
|---|---|
| 75 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:

NWI Map

Figure Number:

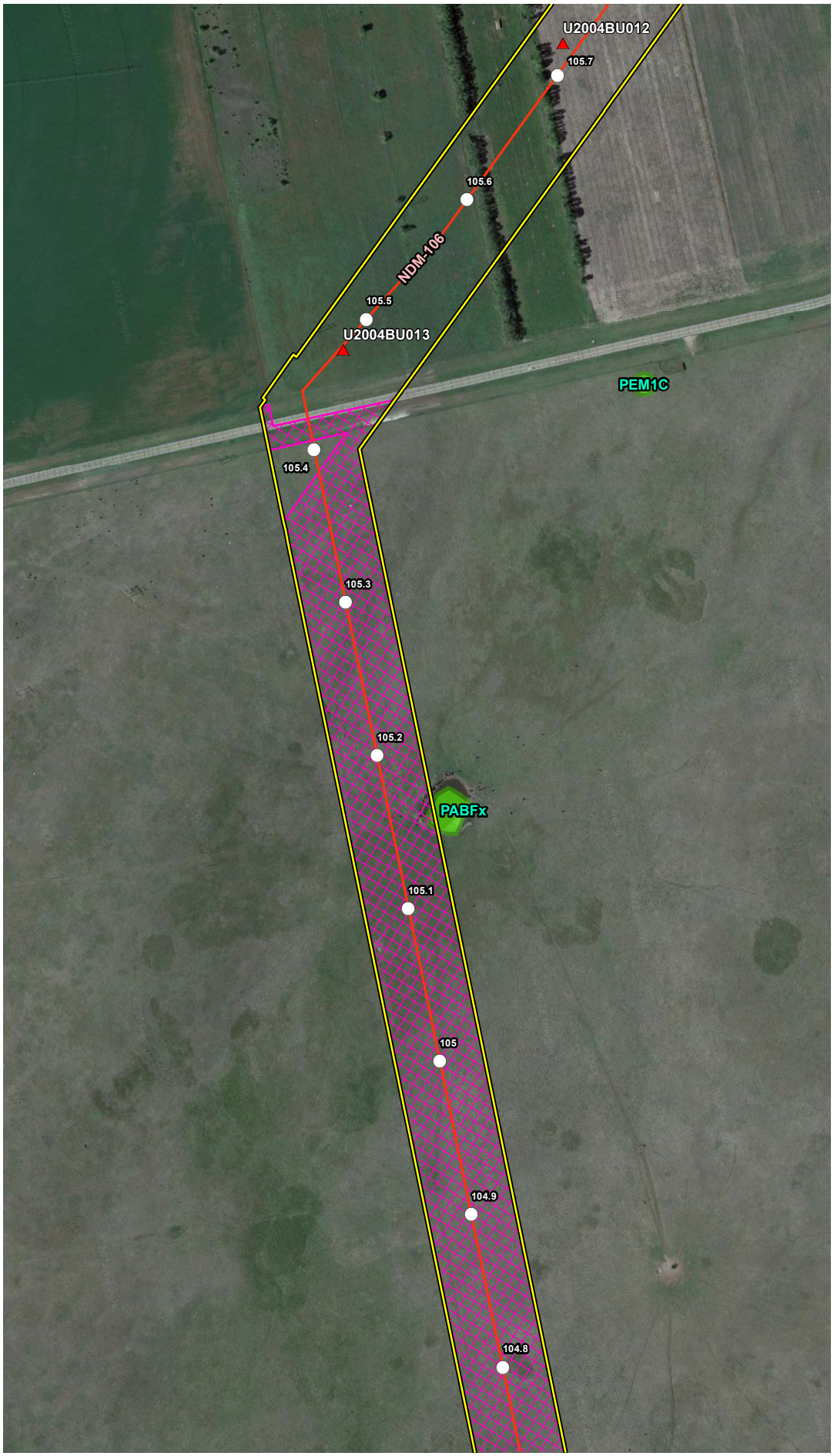
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 76 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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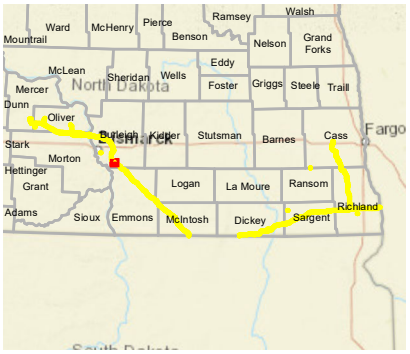


## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 77 of 392 | 2001-22-004<br>Current Revision |

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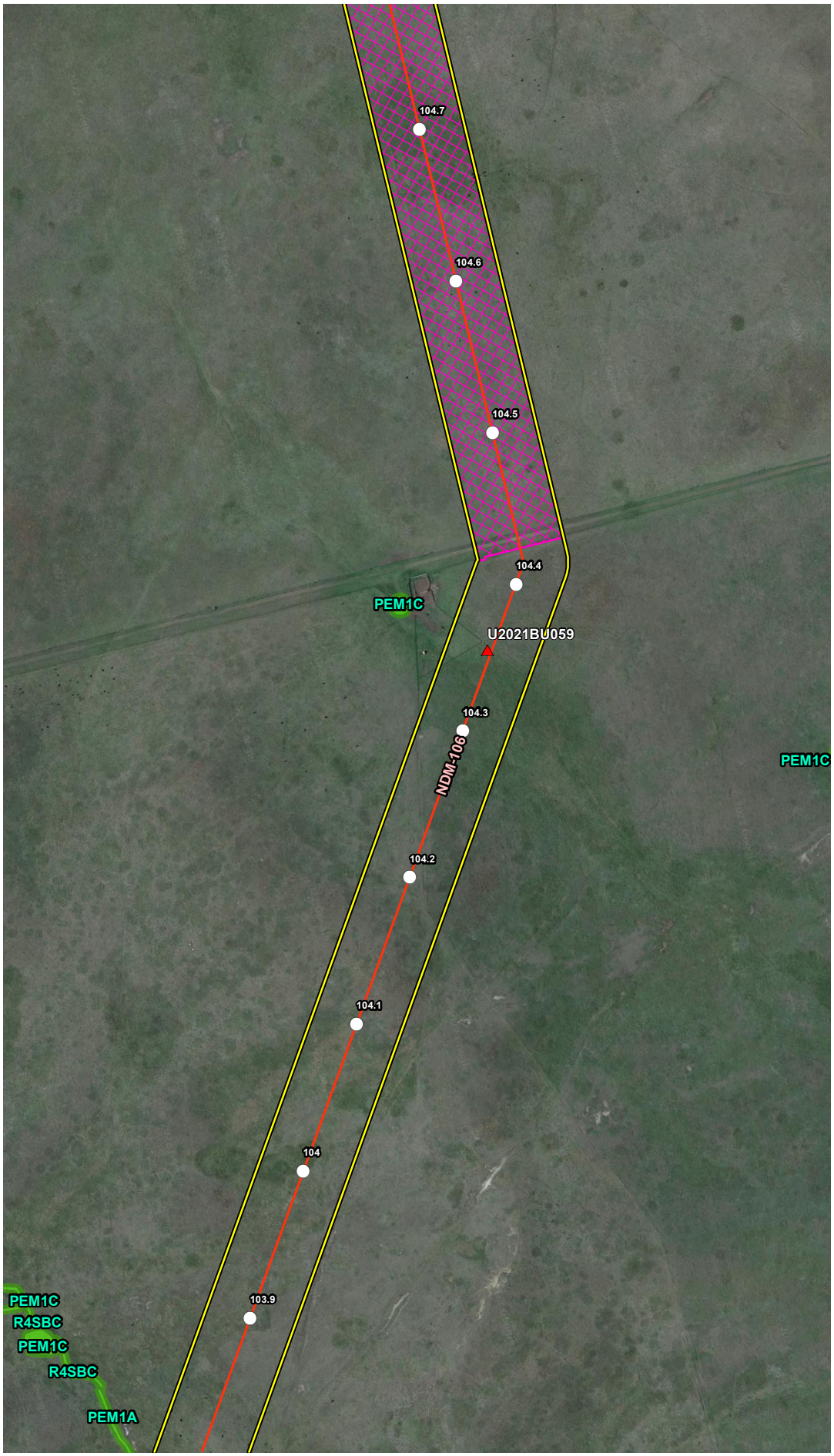
## NWI MAP

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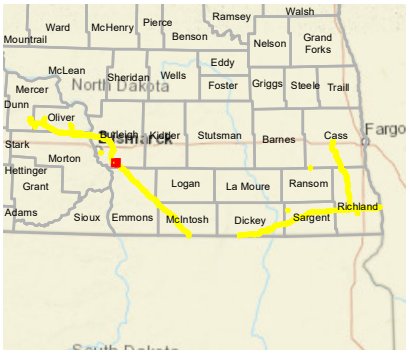


## LEGEND

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0 250 500 Feet

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

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Appendix A-4

| Scale: | Projection: |
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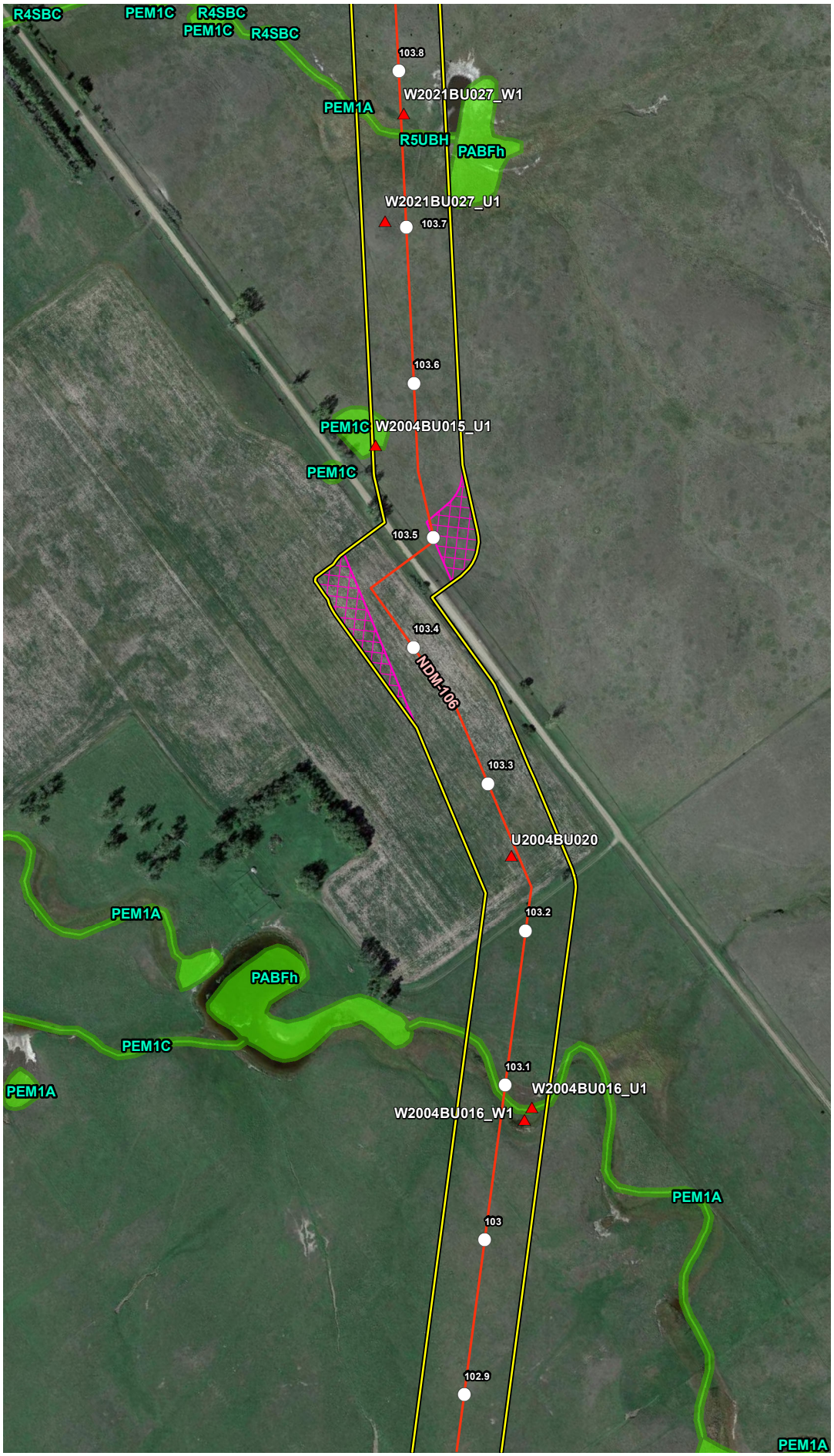
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 78 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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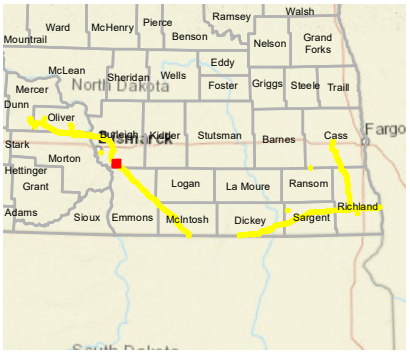


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
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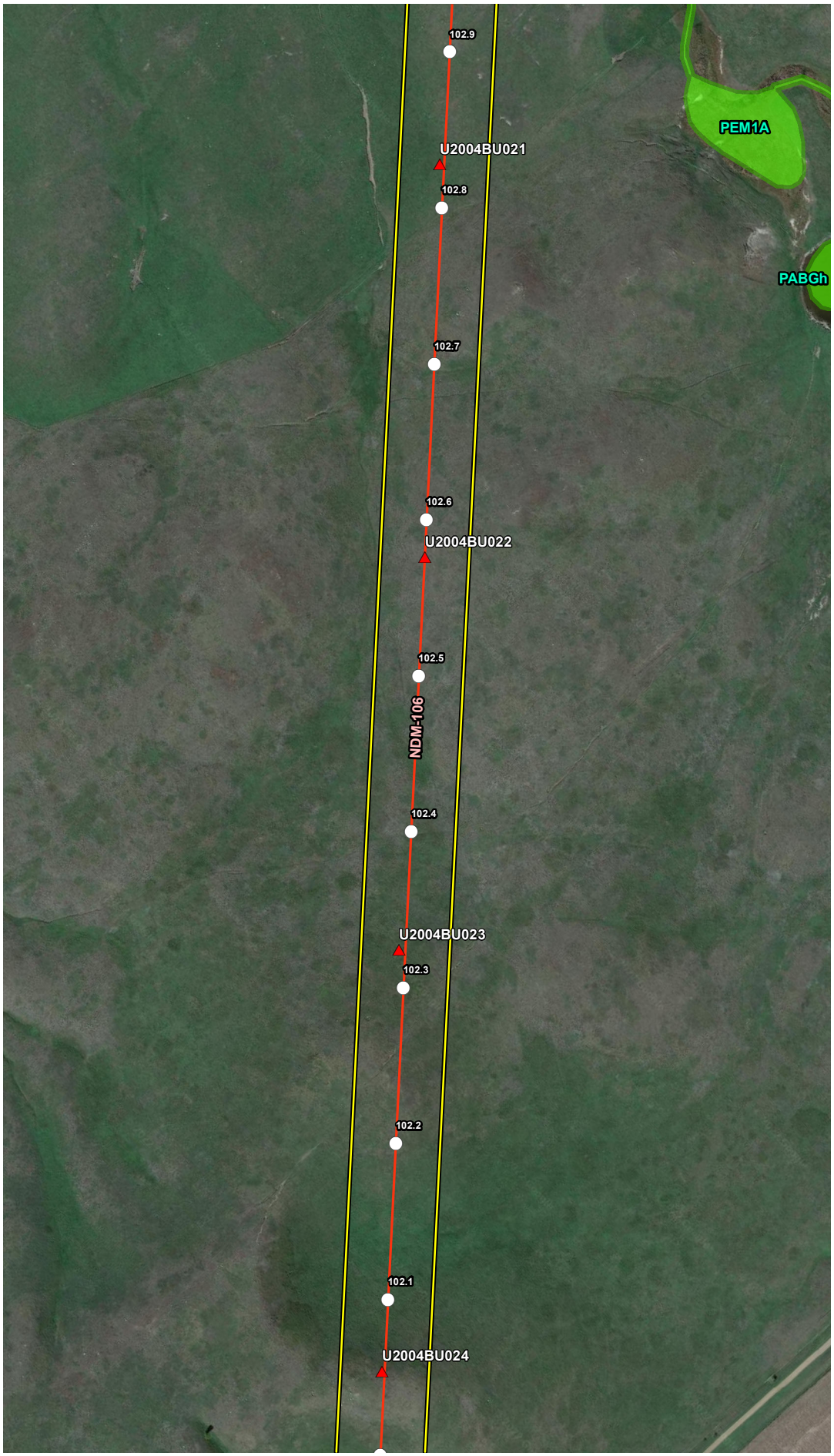
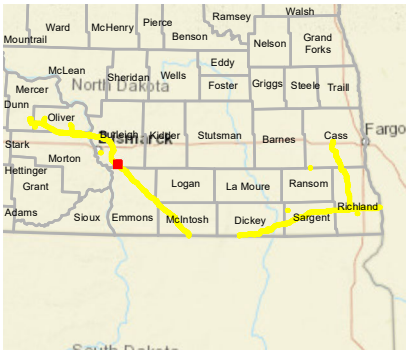
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 79 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

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Revision description

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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 80 of 392 | 2001-22-004<br>Current Revision |

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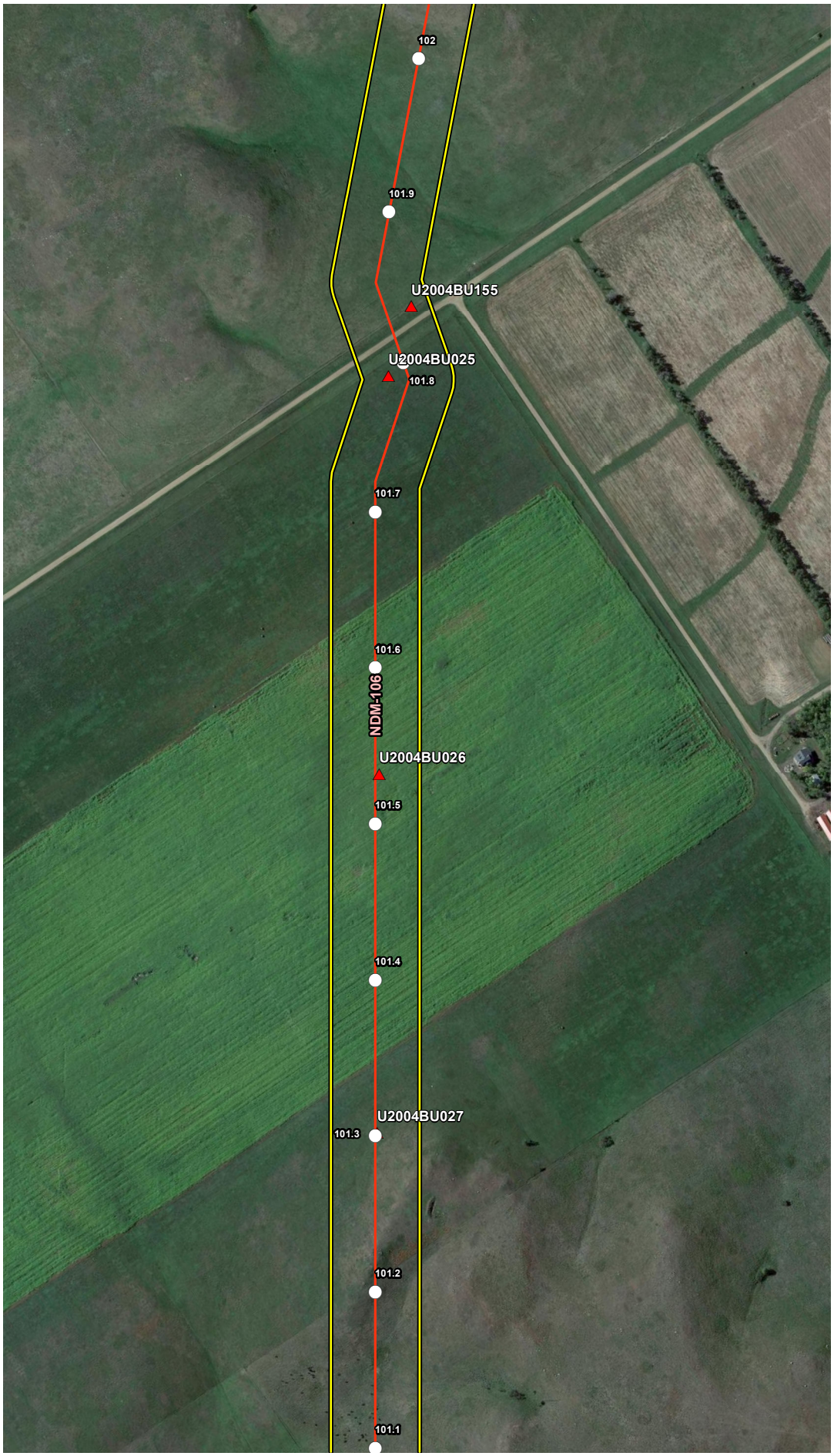
## NWI MAP

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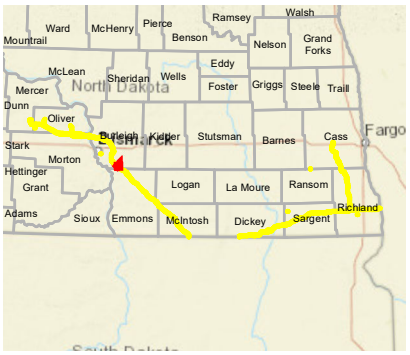


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

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|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**
NWI Map

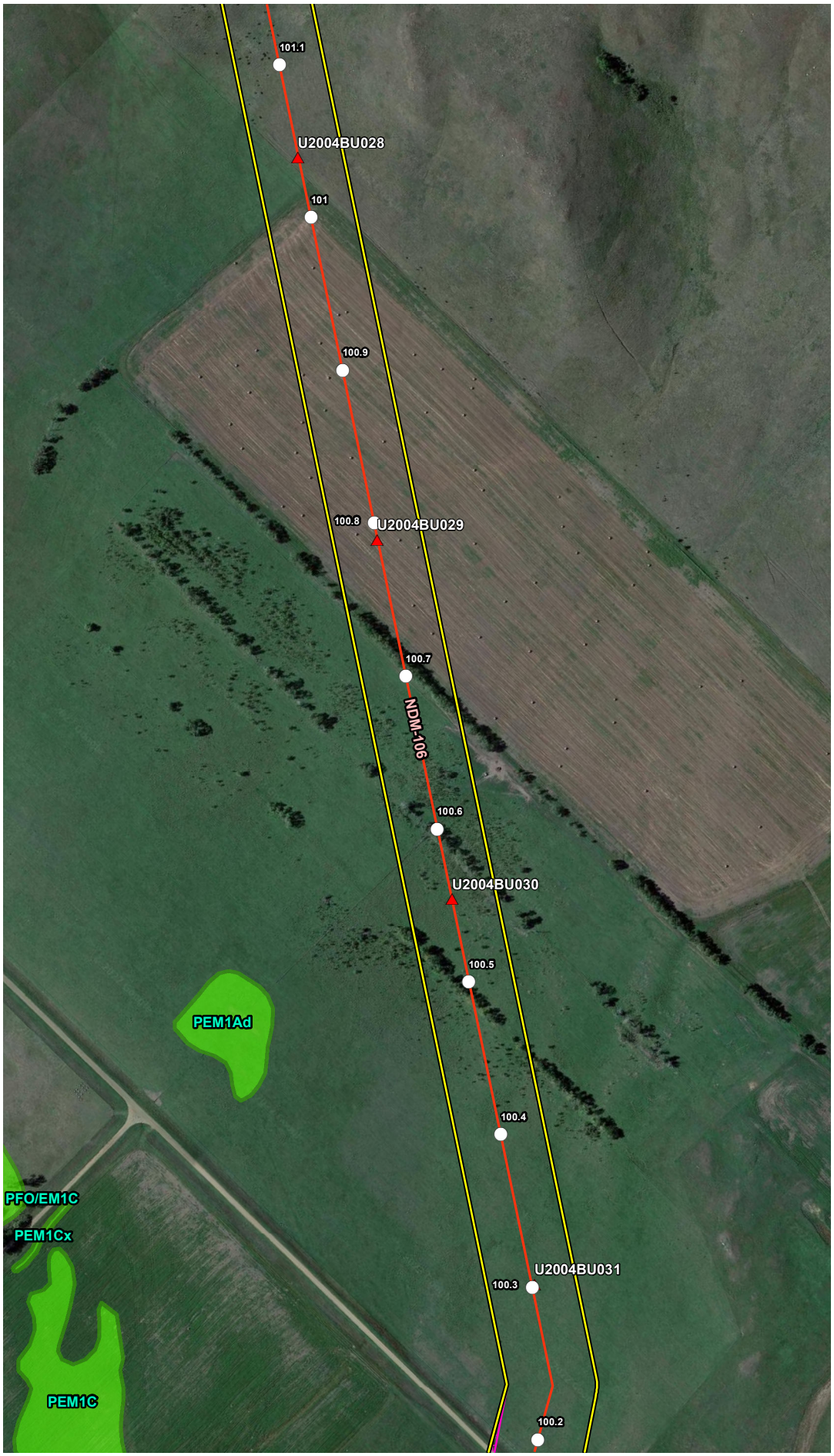
**Figure Number:**
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 81 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\4_NWI.mxd

## NWI MAP

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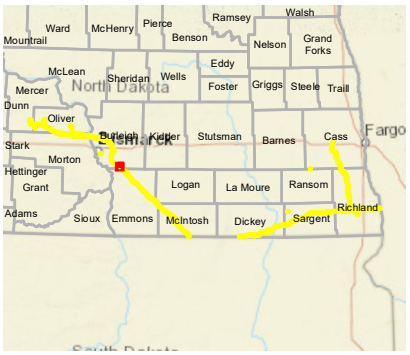


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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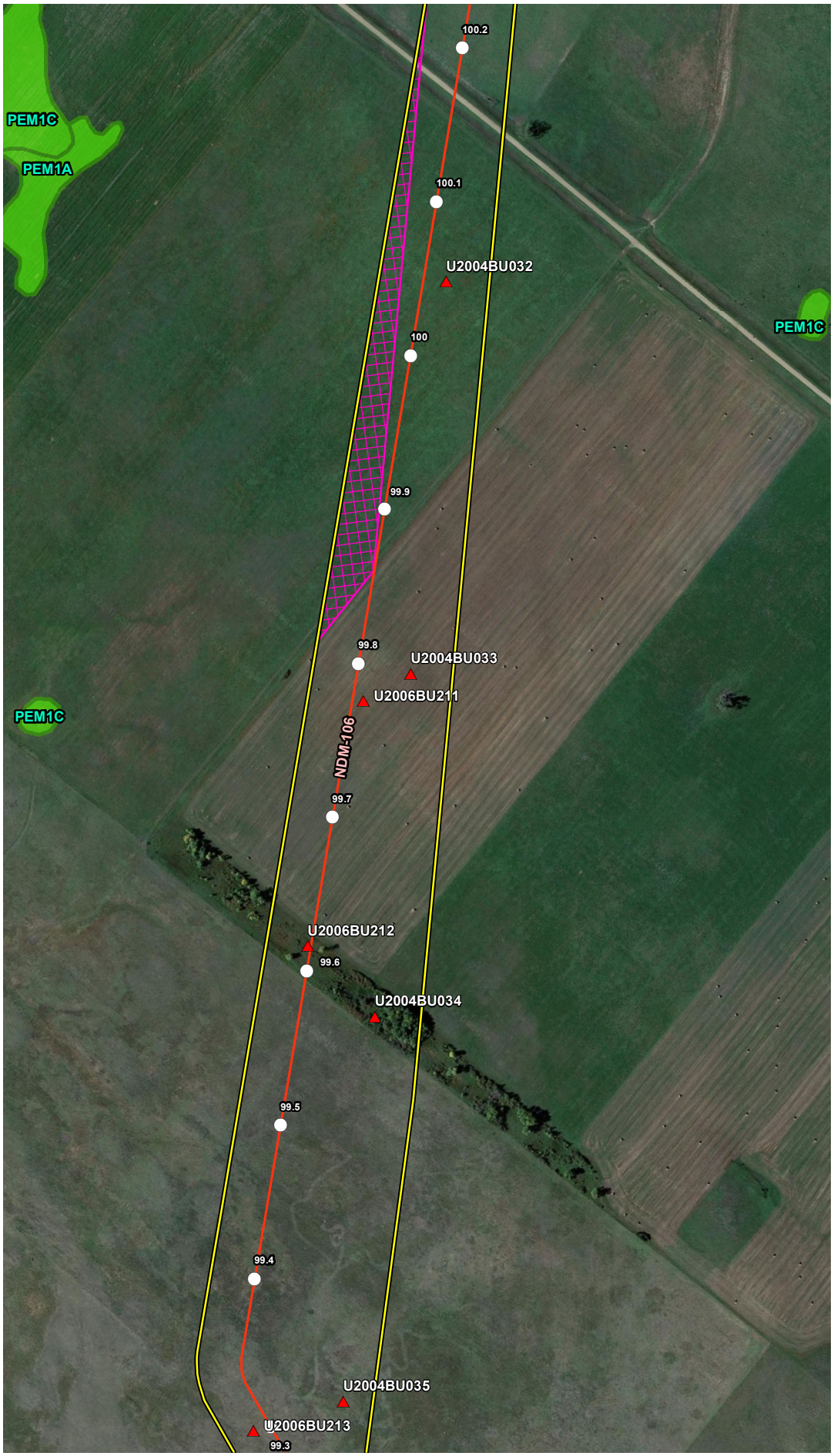
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 82 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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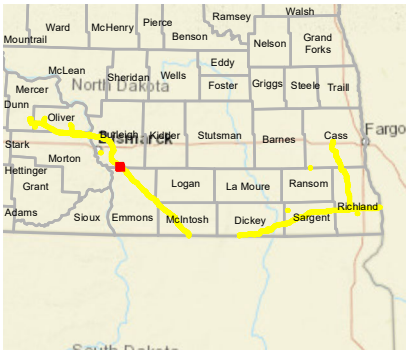


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>83 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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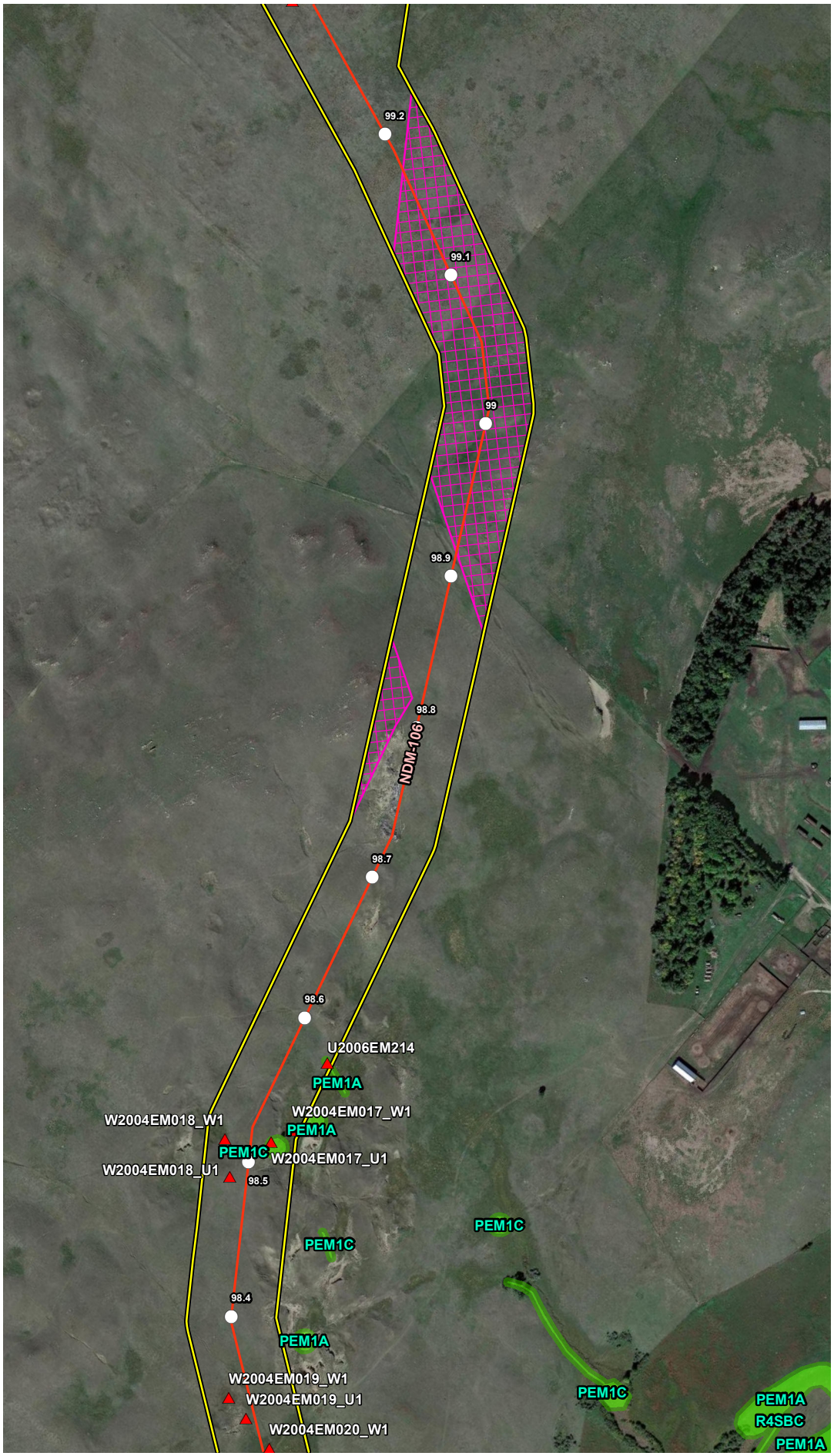
## NWI MAP

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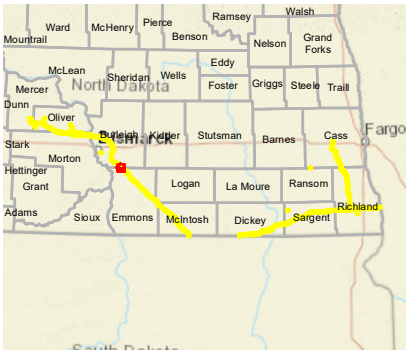


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

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|---|---|---|
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Figure Title:

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Figure Number:

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 84 of 392 | 2001-22-004<br>Current Revision |

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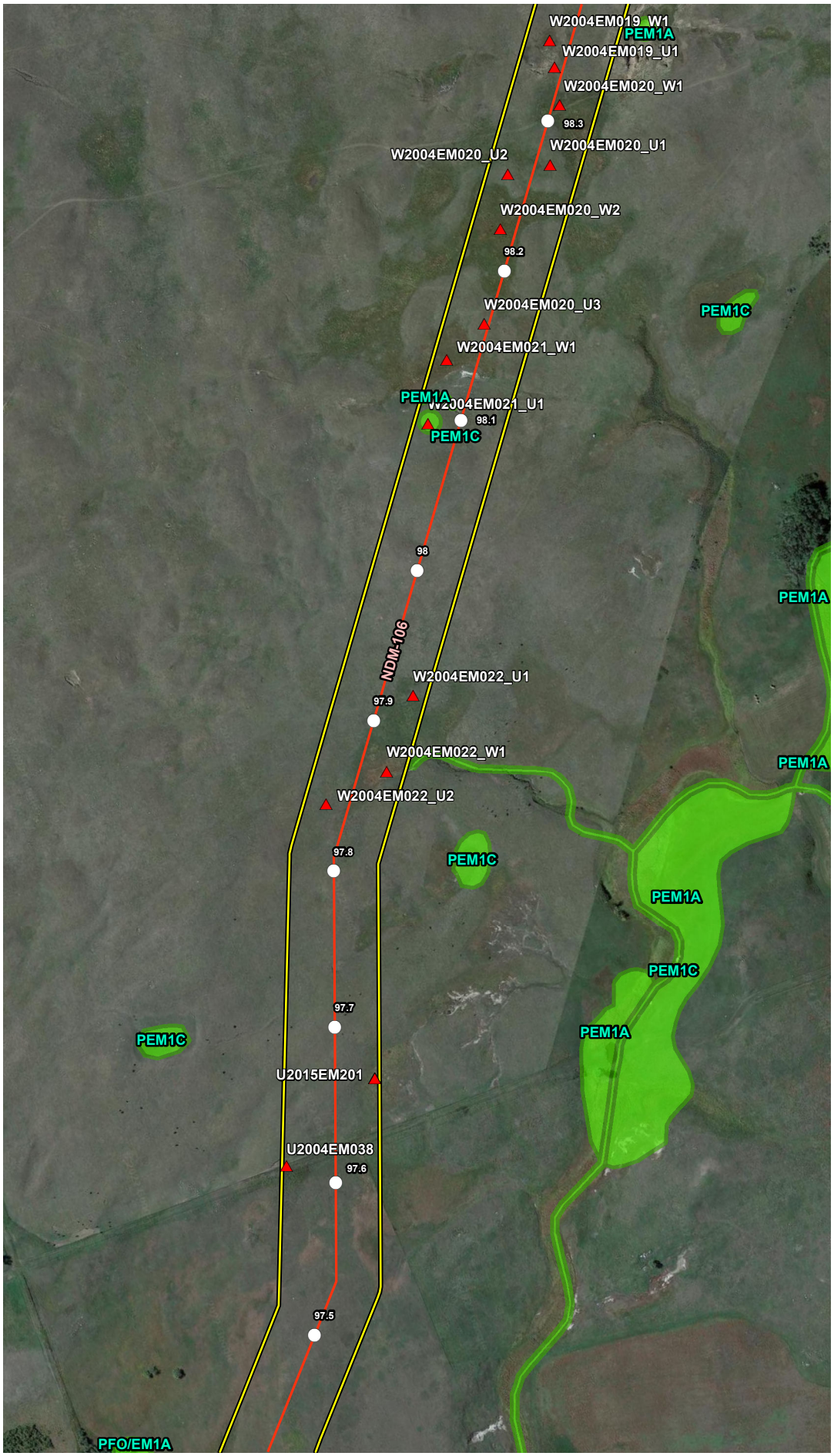
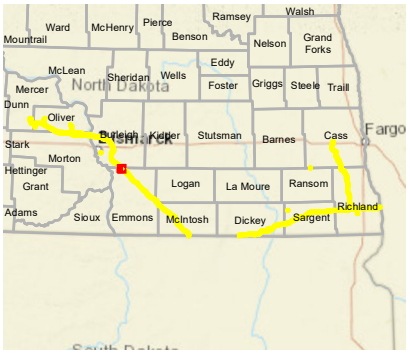
## NWI MAP




## VICINITY MAP

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|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 85 of 392 | 2001-22-004<br>Current Revision |

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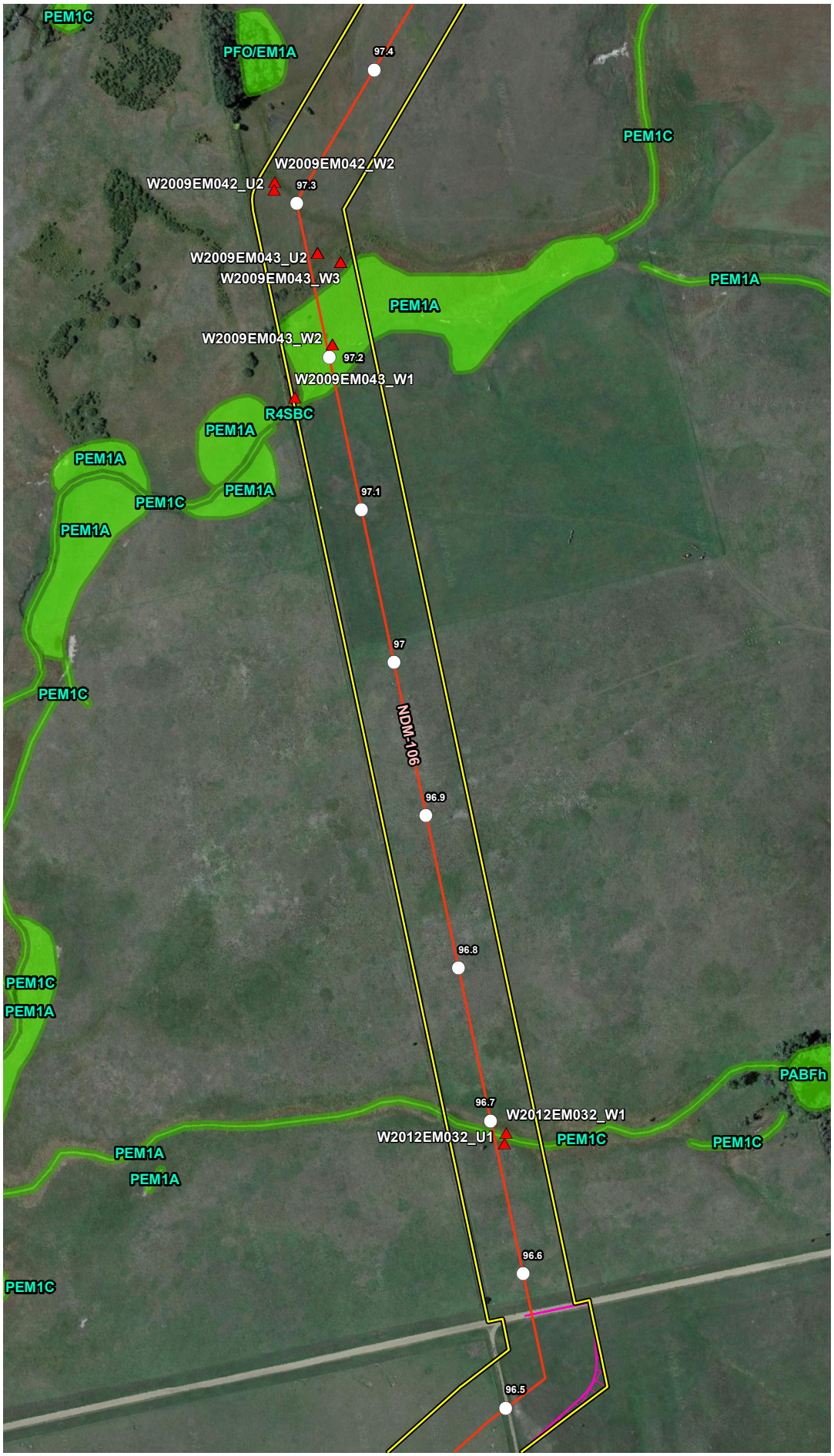
## NWI MAP

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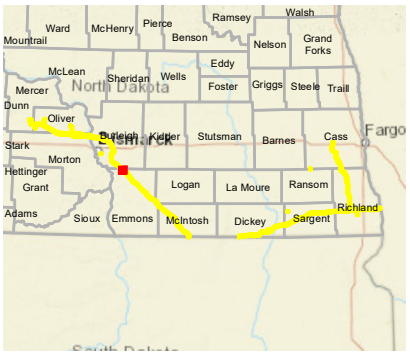


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|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>86 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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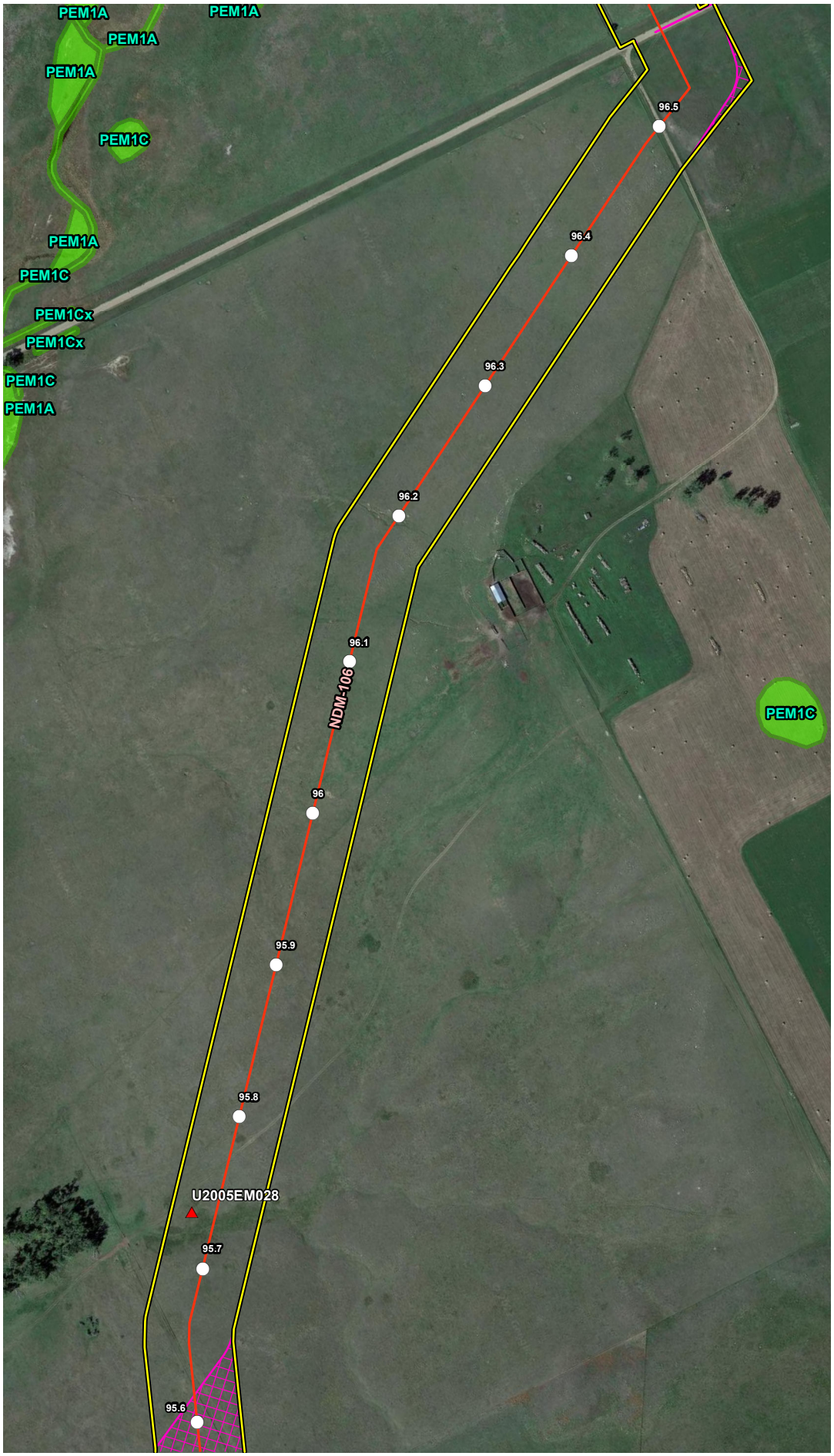
## NWI MAP

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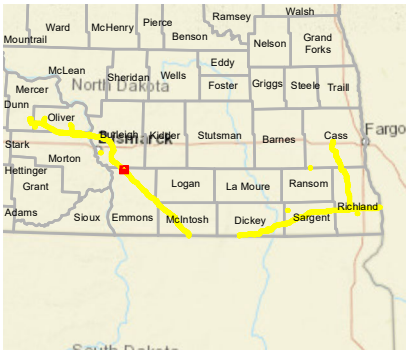


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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

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Appendix A-4

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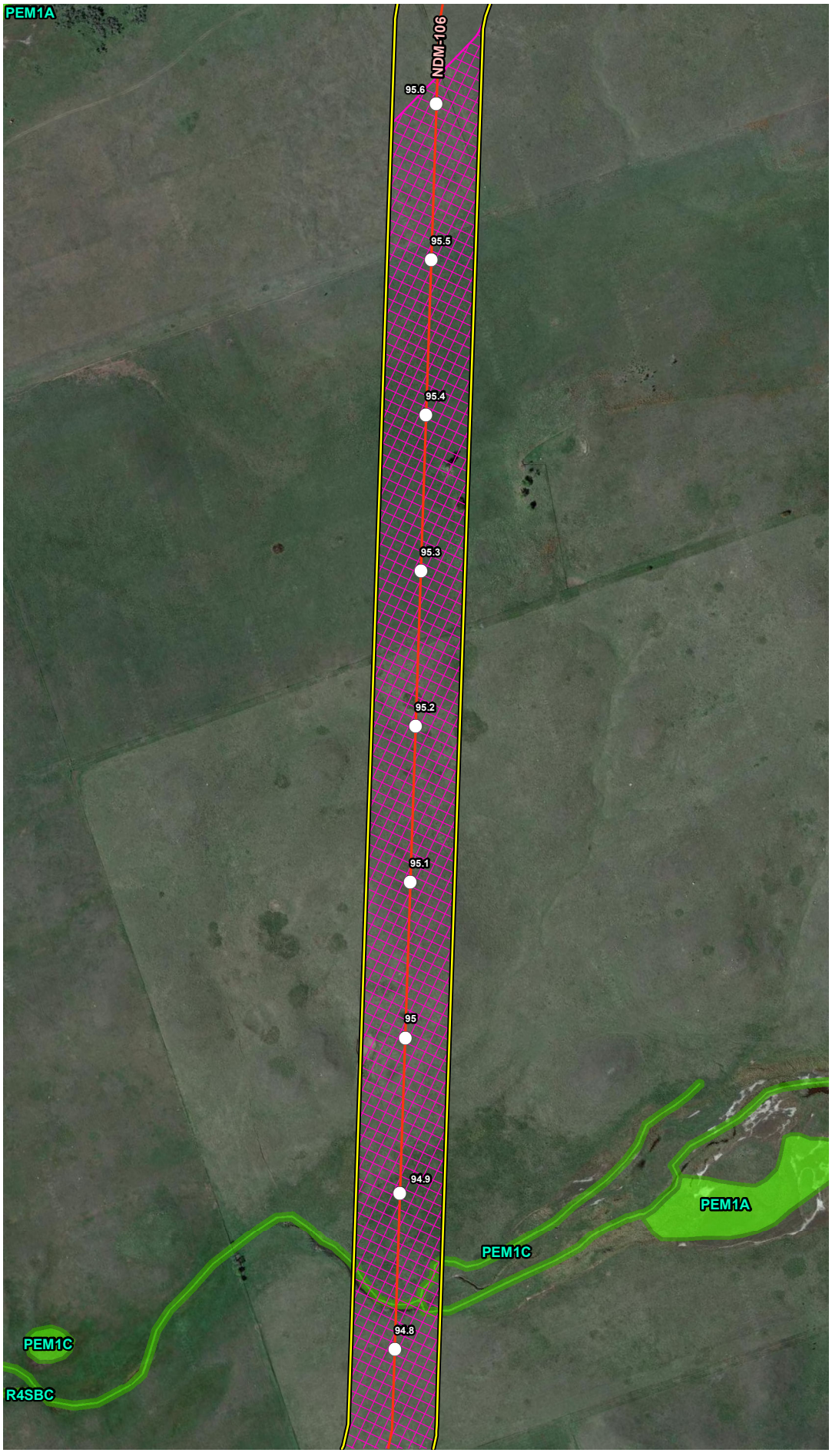
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 87 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\0801_WR_NDImxds14_NWI.mxd

## NWI MAP

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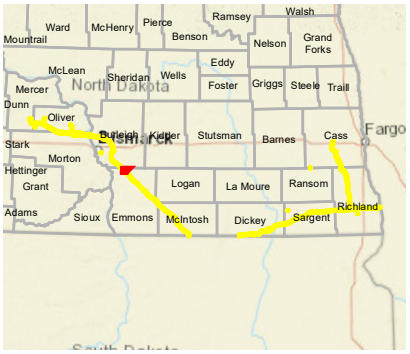


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
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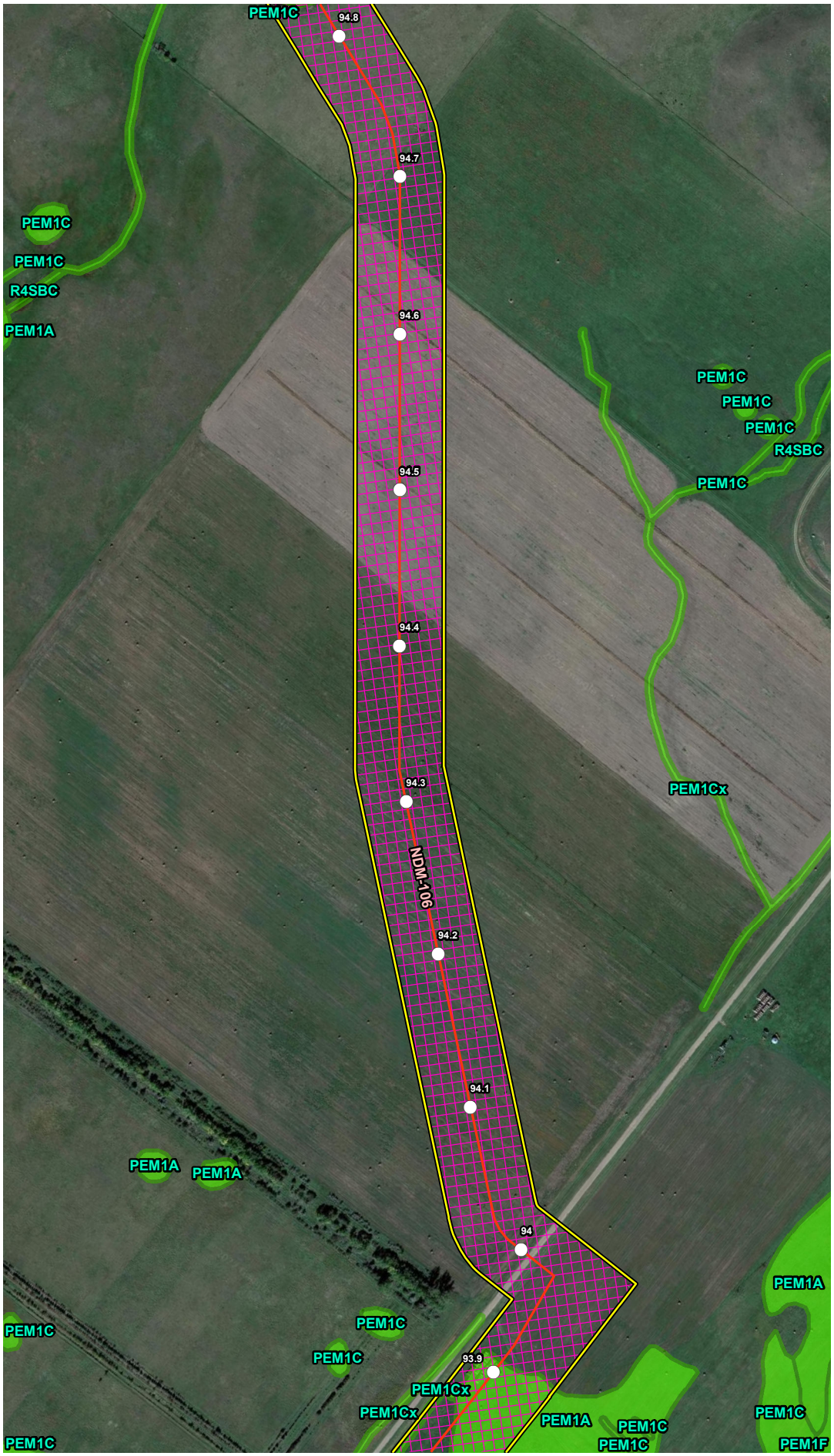
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 88 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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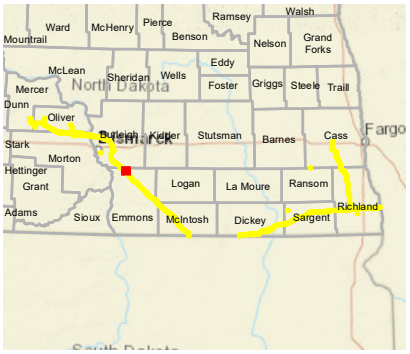


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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| Scale | Projection |
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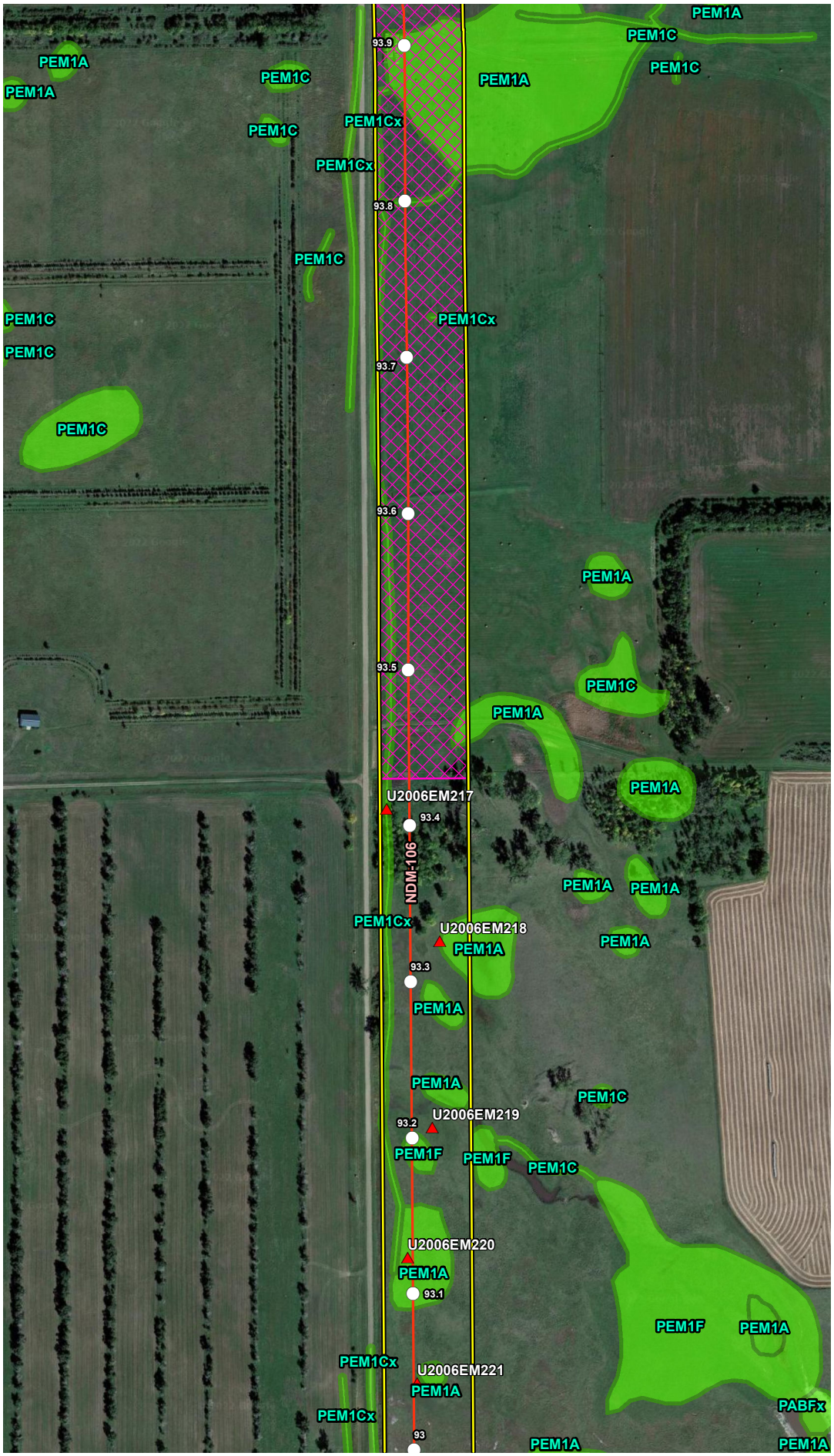
| Sheet | Drawing Number |
|---|---|
| 89 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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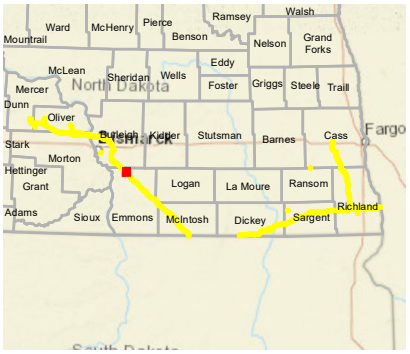


## LEGEND

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0 250 500 Feet

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| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

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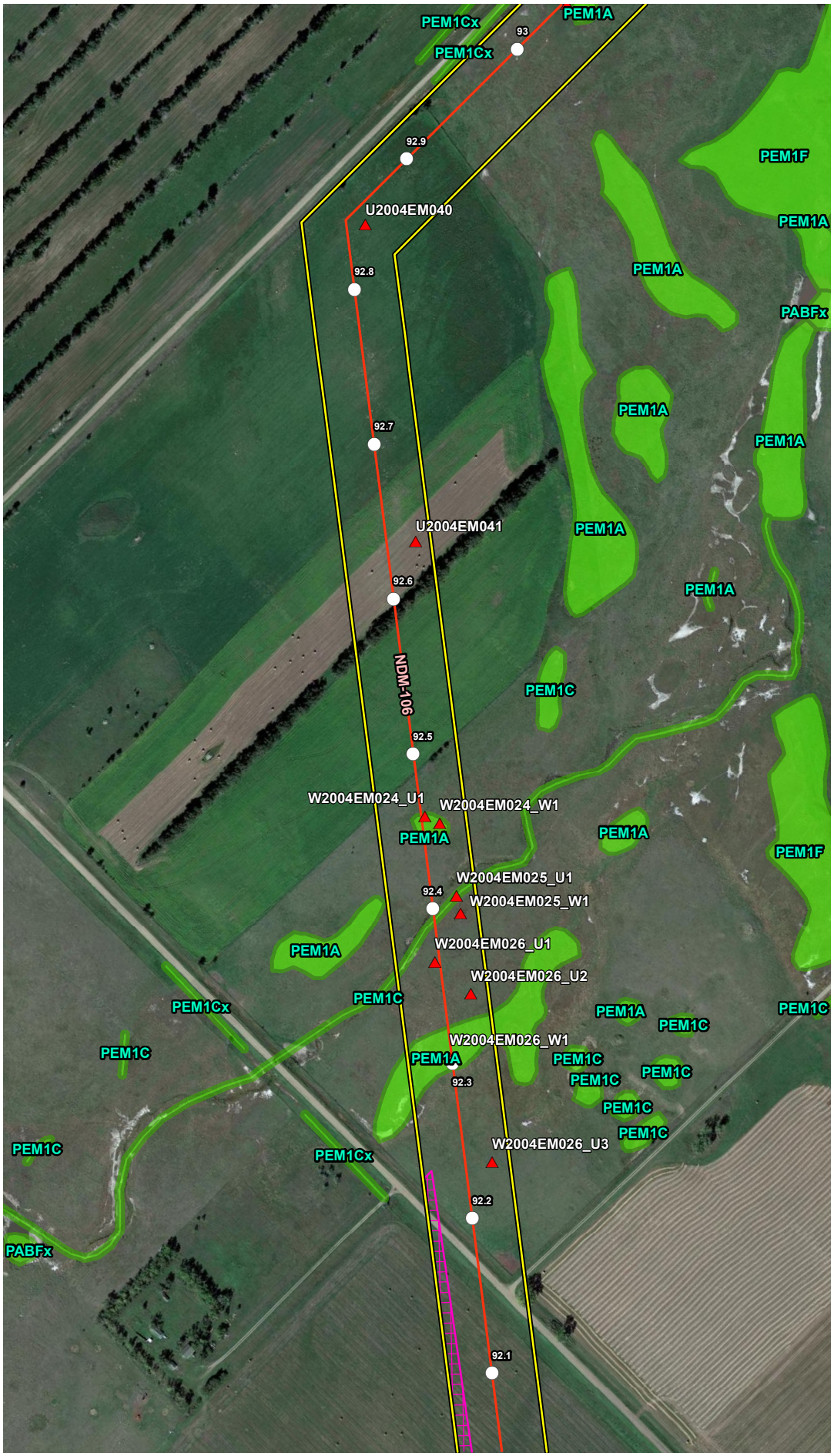
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 90 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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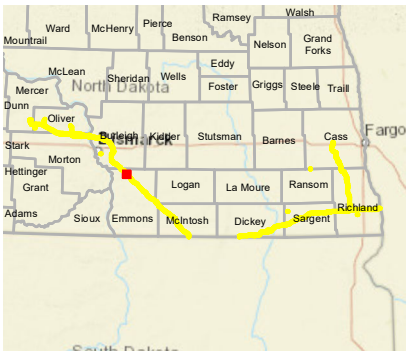


## LEGEND

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0 250 500 Feet

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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| Scale: | Projection: |
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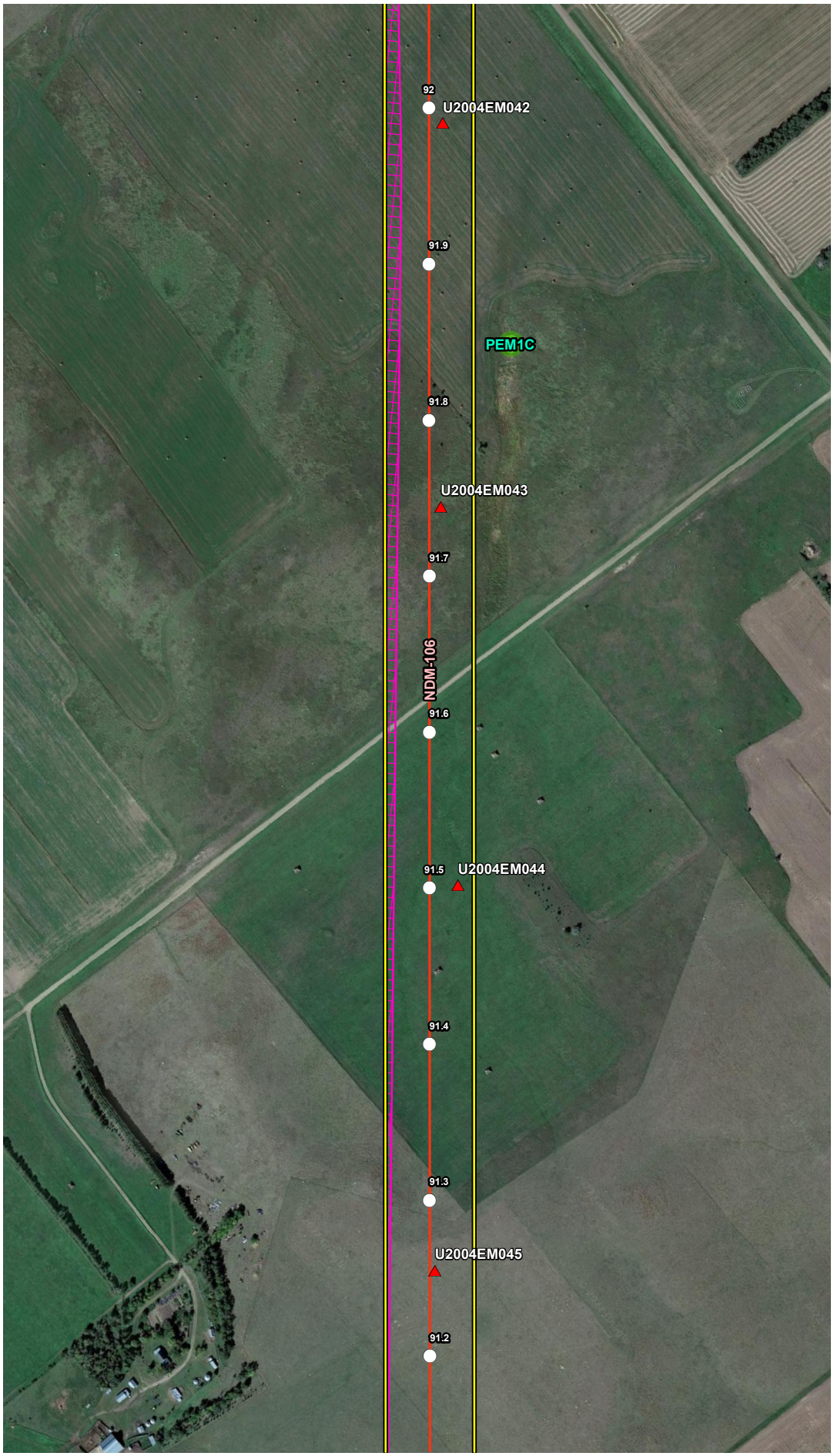
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 91 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\4_NWI.mxd

## NWI MAP

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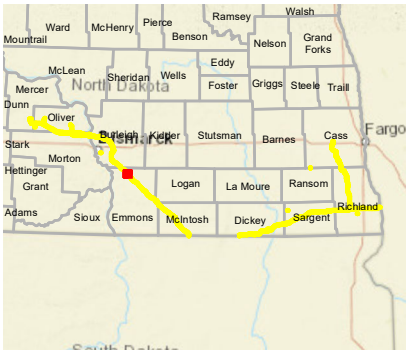


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0 250 500 Feet

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| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>92 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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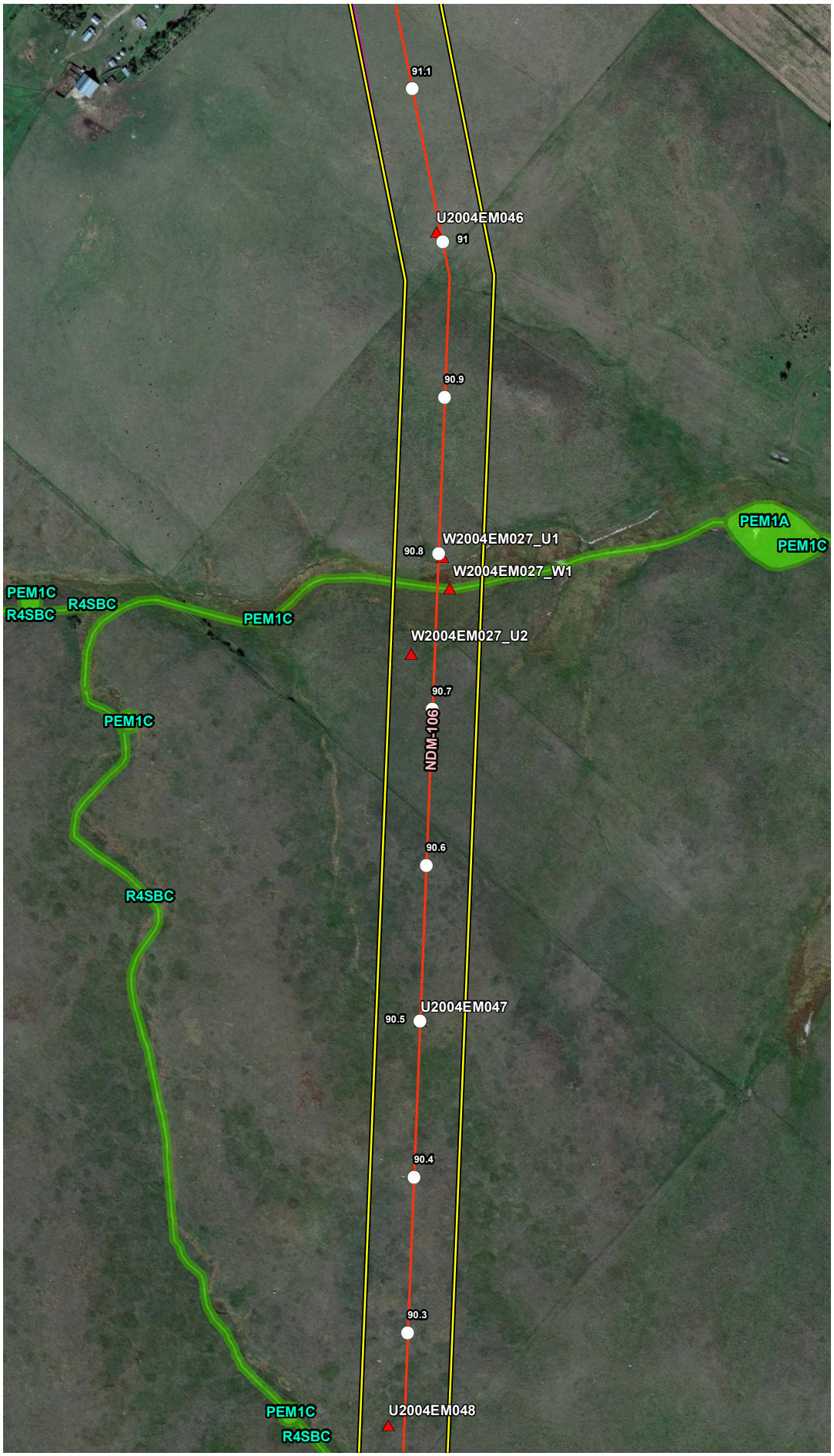
## NWI MAP

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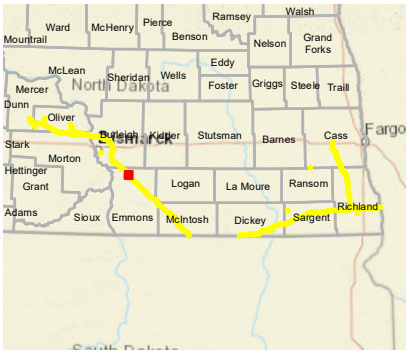


## LEGEND

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0 250 500 Feet

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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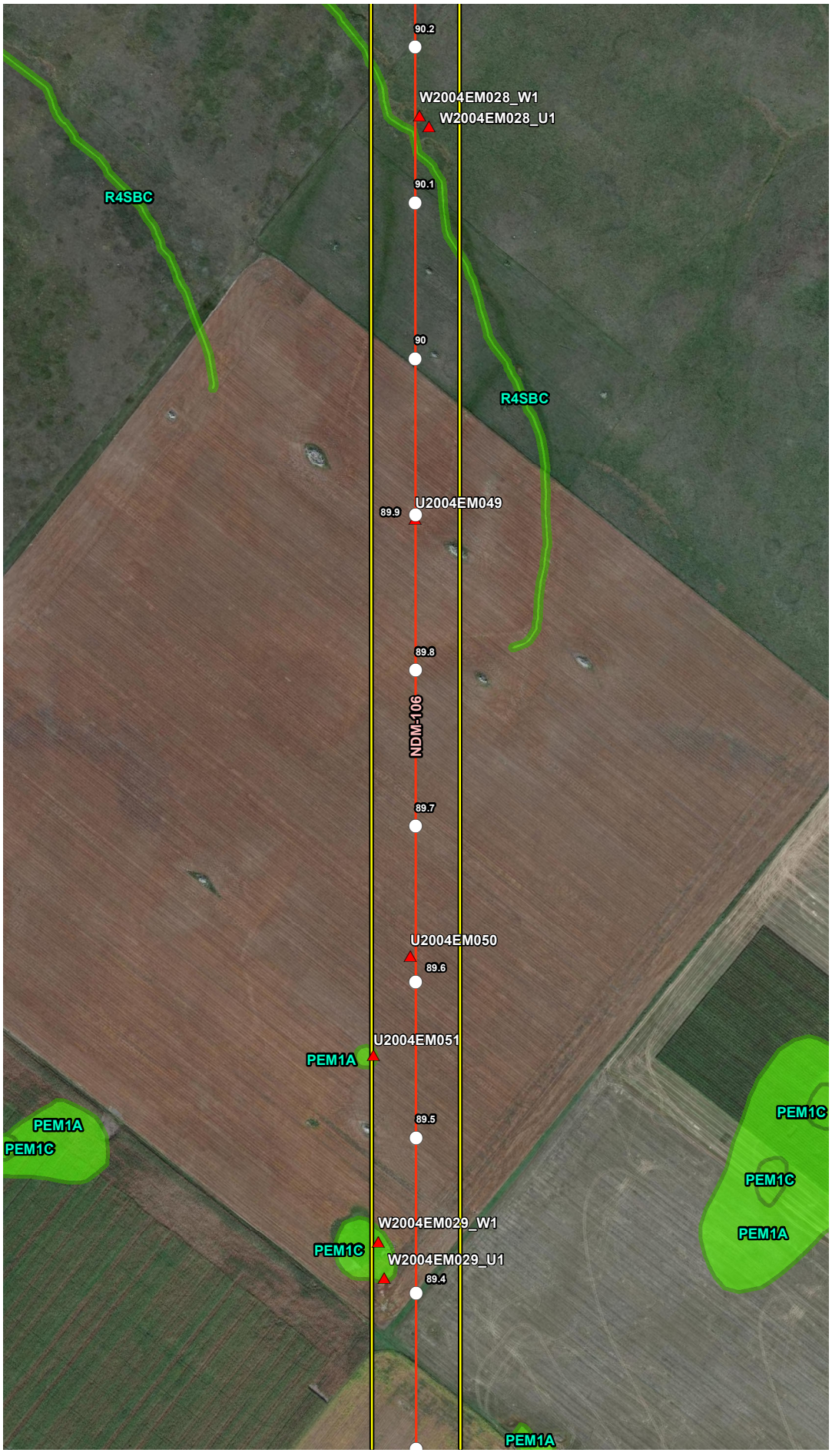
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 93 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\801_VWR_NDImxds\4_NWI.mxd

## NWI MAP

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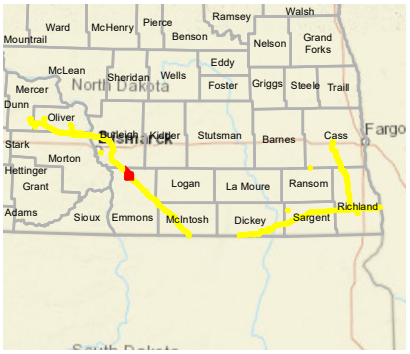


## LEGEND

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## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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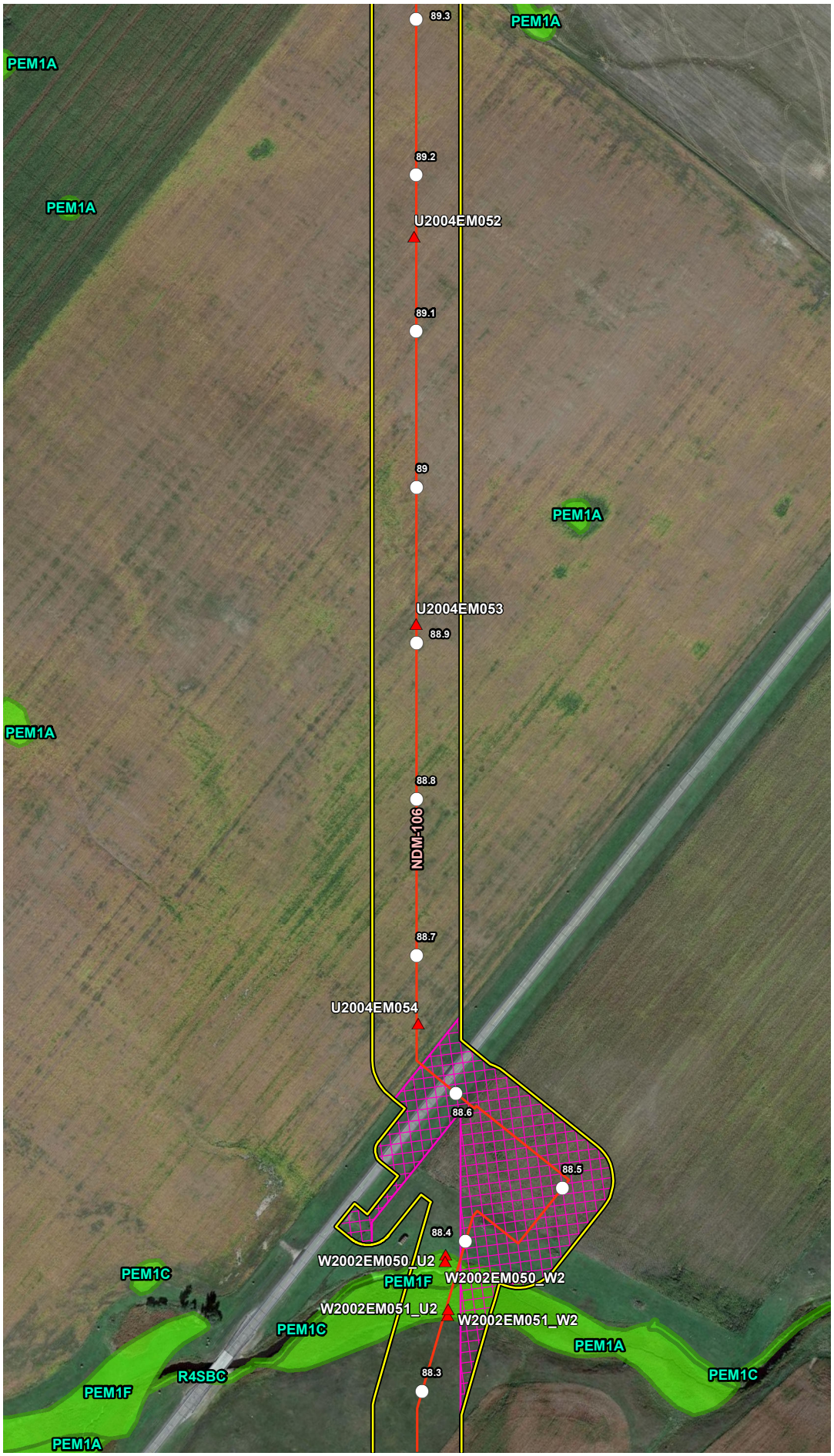
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>94 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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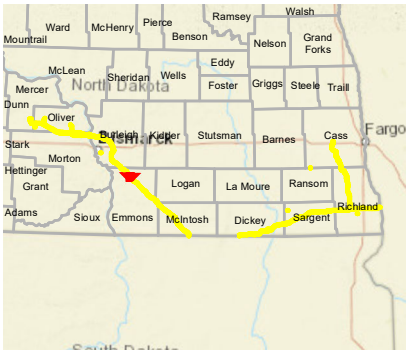


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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 95 of 392 | 2001-22-004<br>Current Revision |

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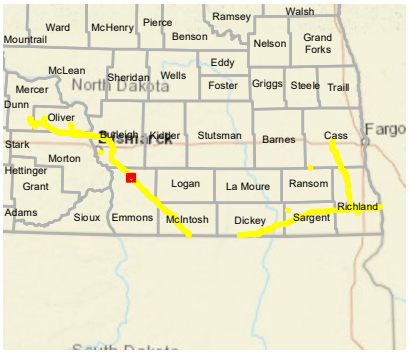
## NWI MAP




## VICINITY MAP

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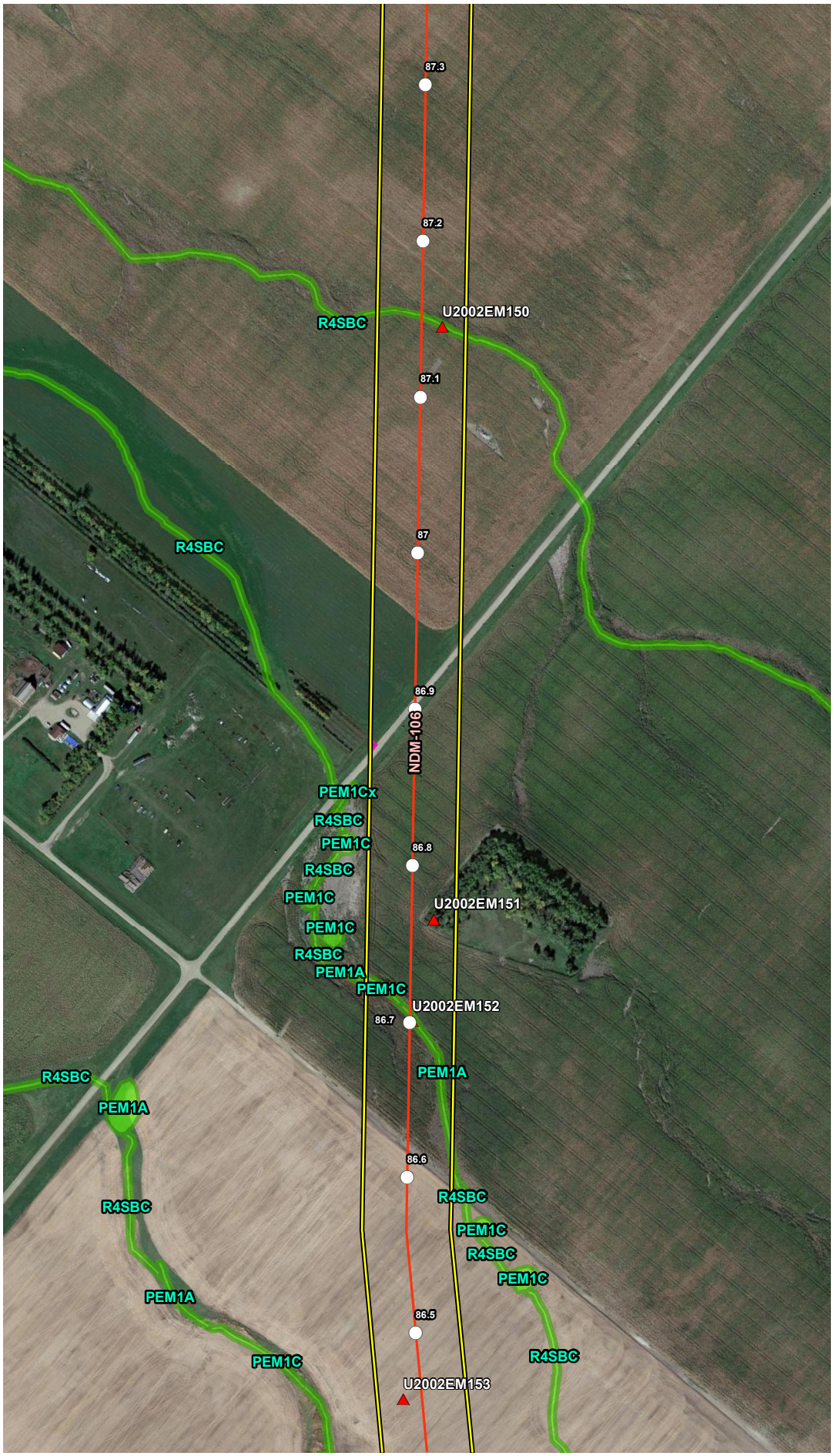
| 96 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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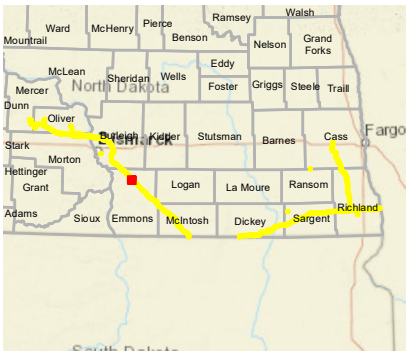


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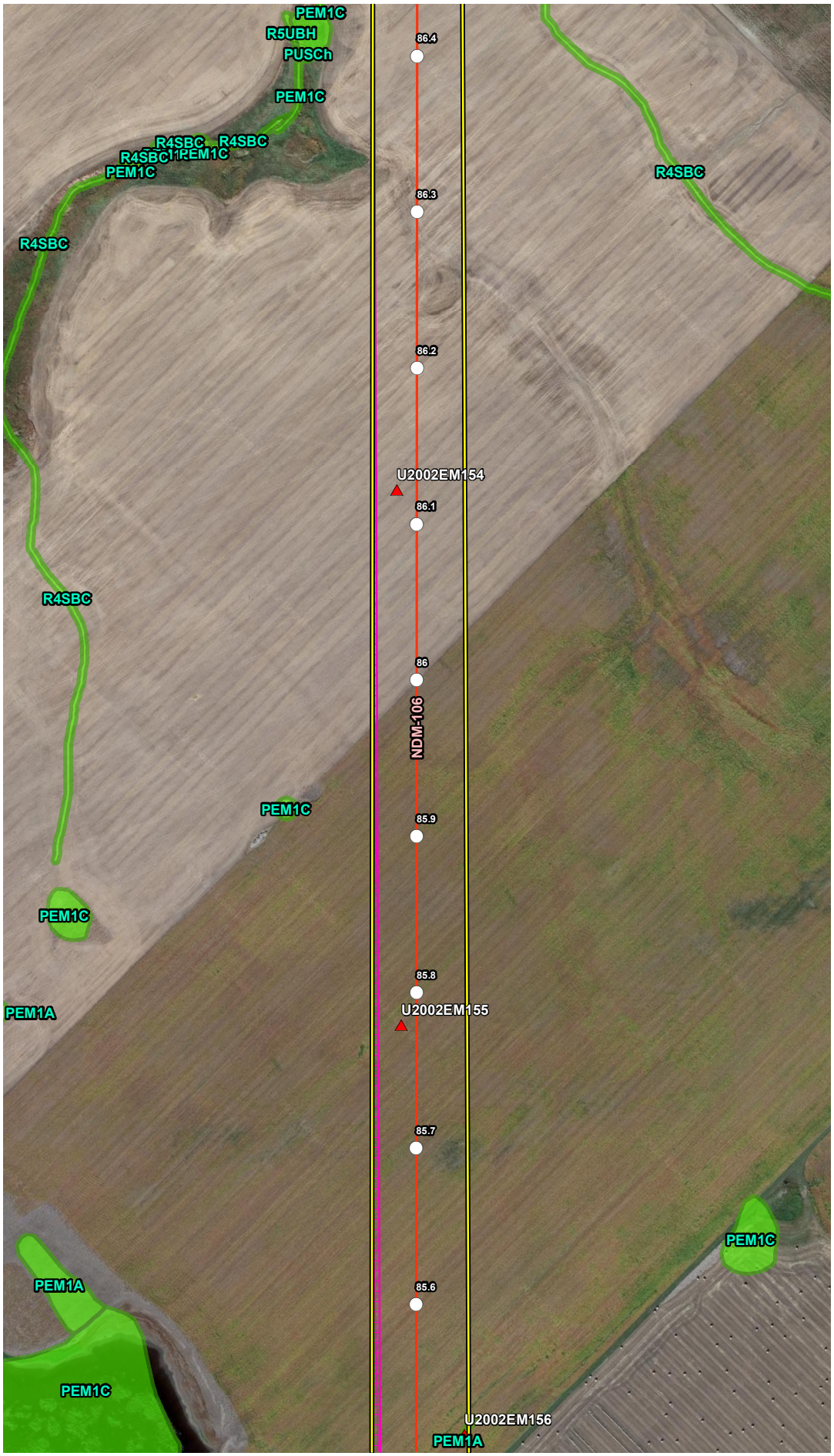
| 97 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_NDImxds14_NWI.mxd

## NWI MAP

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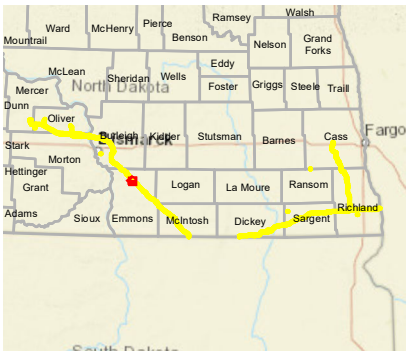


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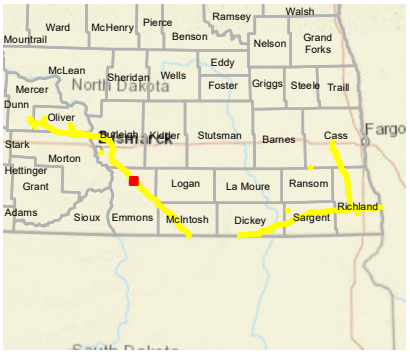
| Sheet:<br>98 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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| 99 of 392 | 2001-22-004<br>Current Revision |

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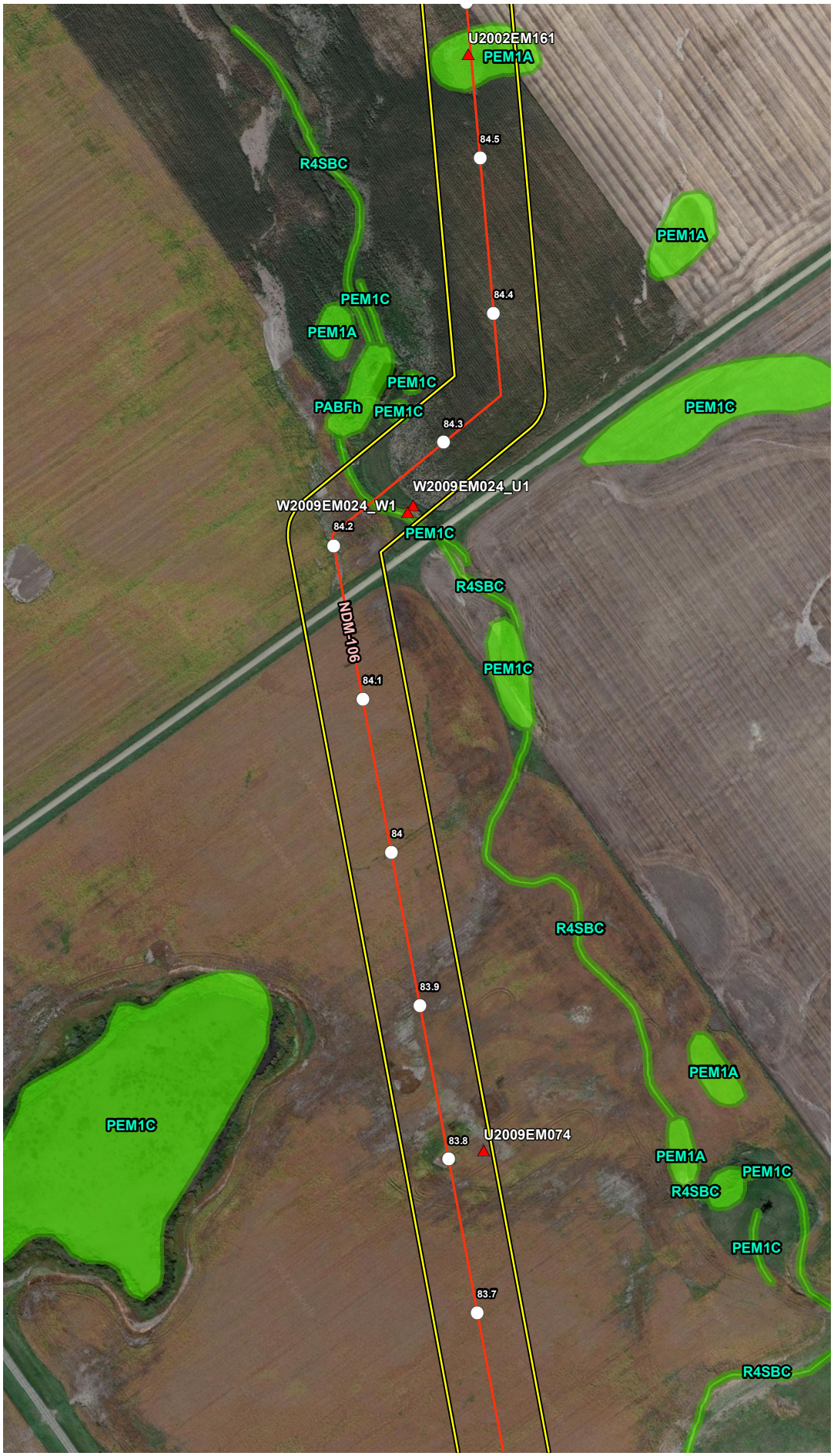
## NWI MAP

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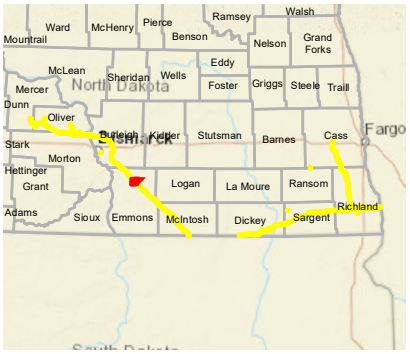


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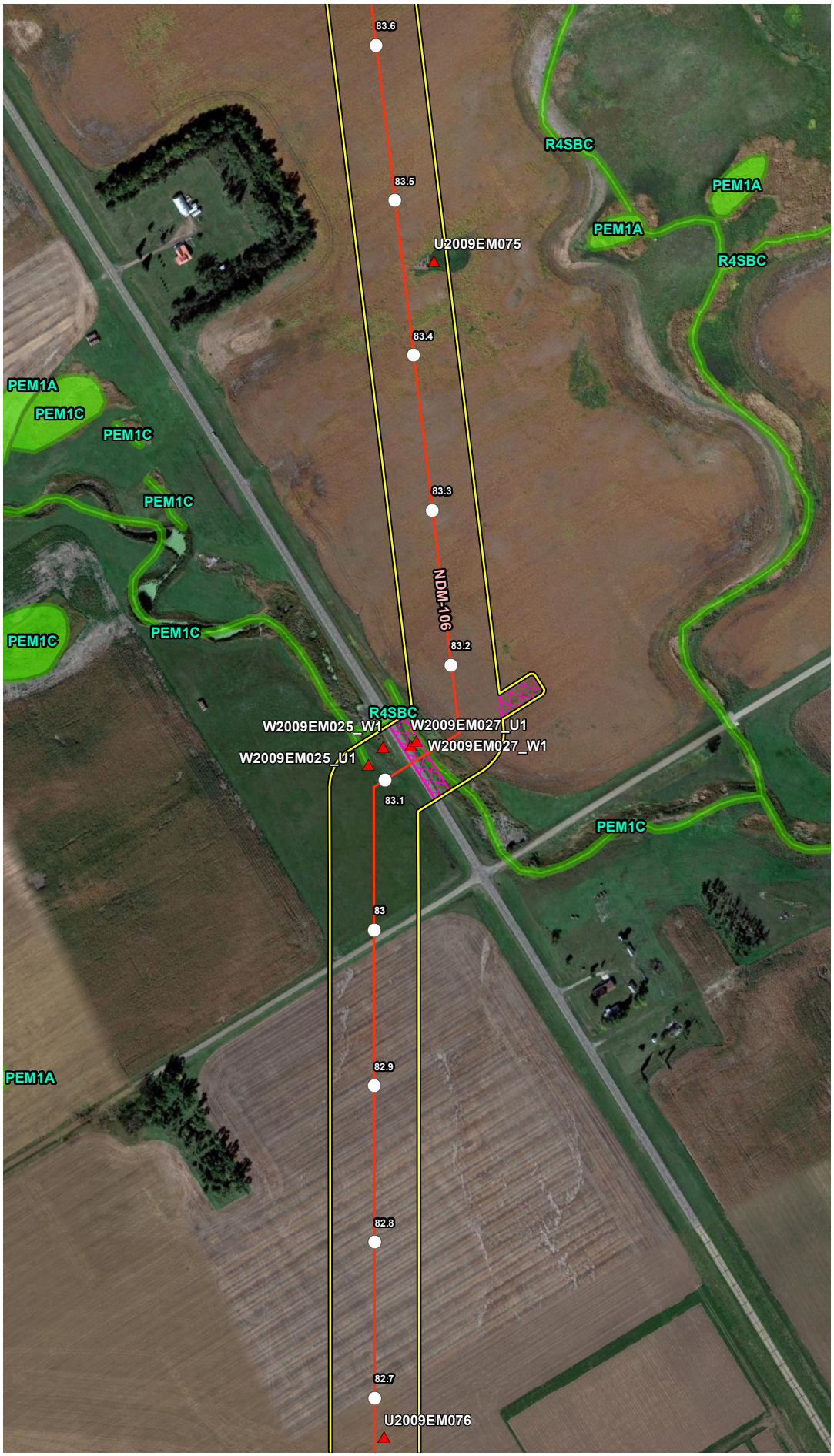
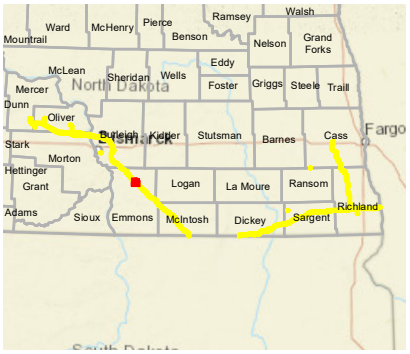
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 100 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 101 of 392 | 2001-22-004<br>Current Revision |

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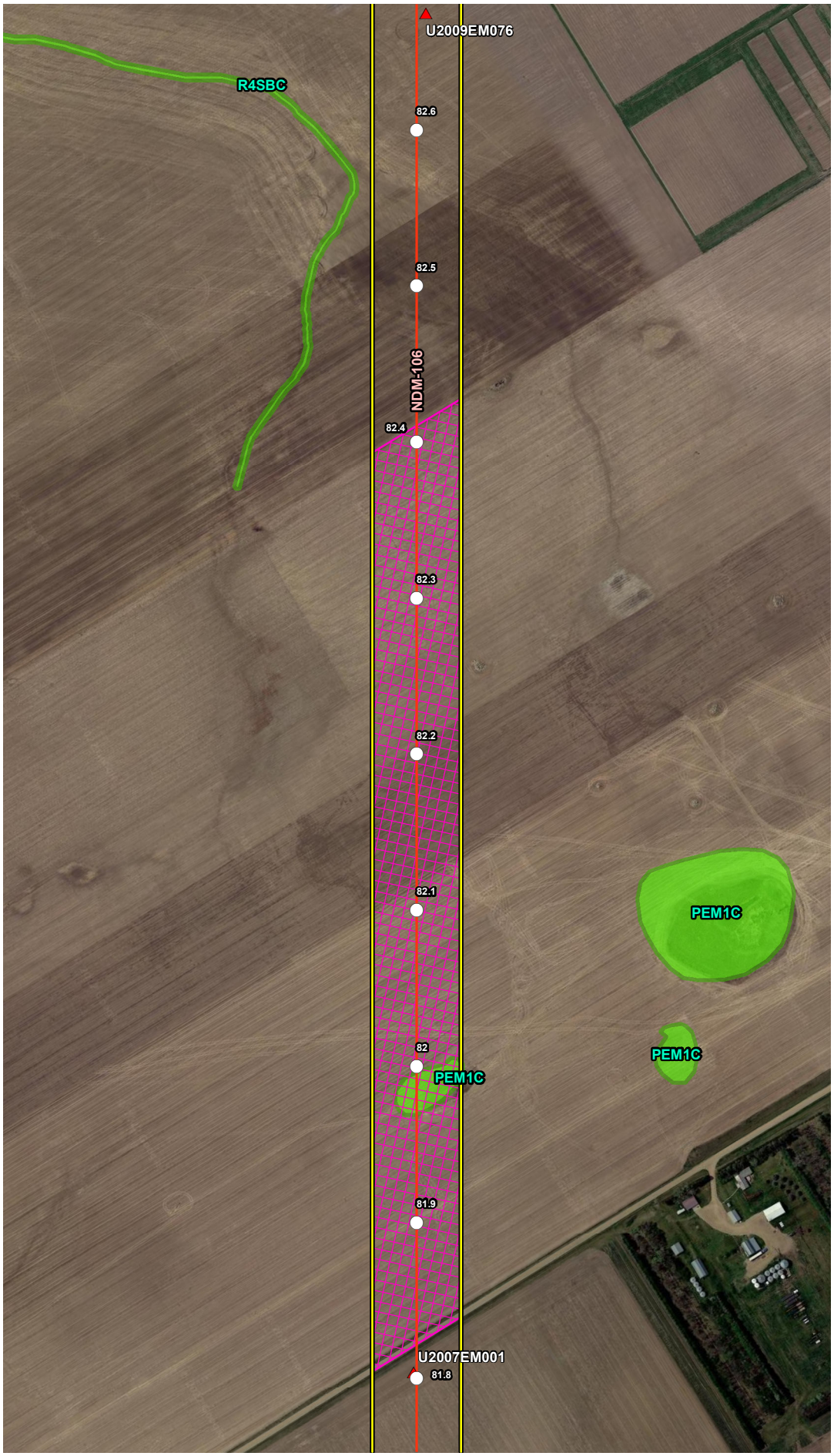
## NWI MAP

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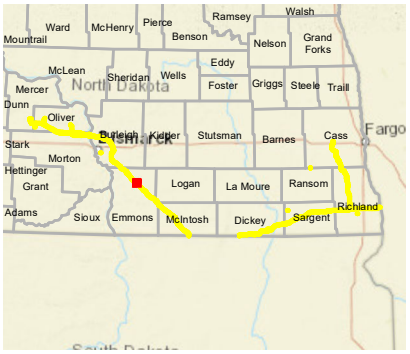


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>102 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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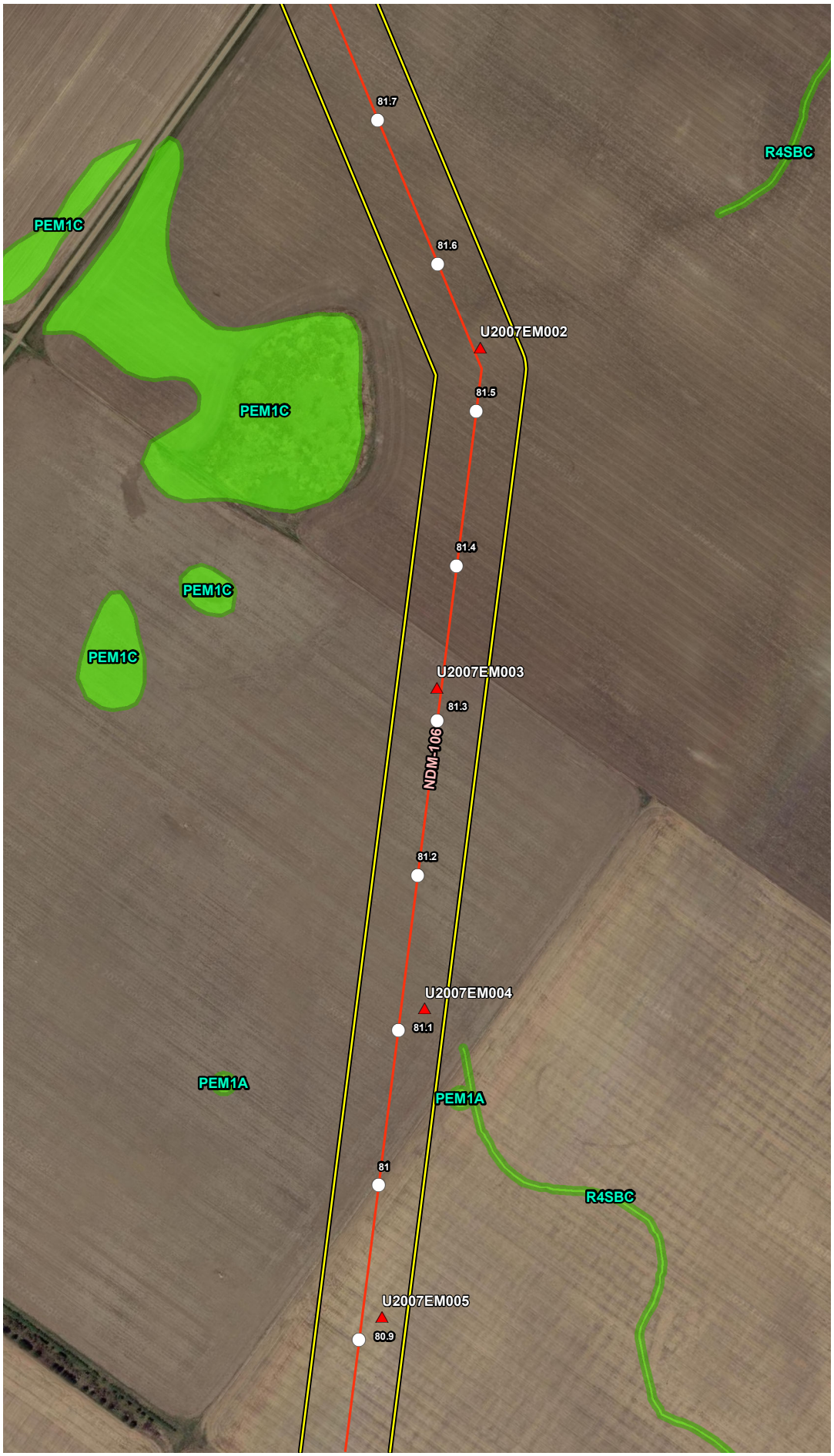
## NWI MAP

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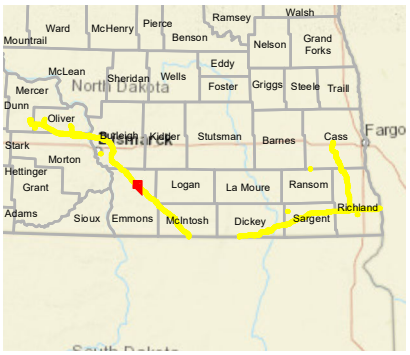


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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Figure Title:
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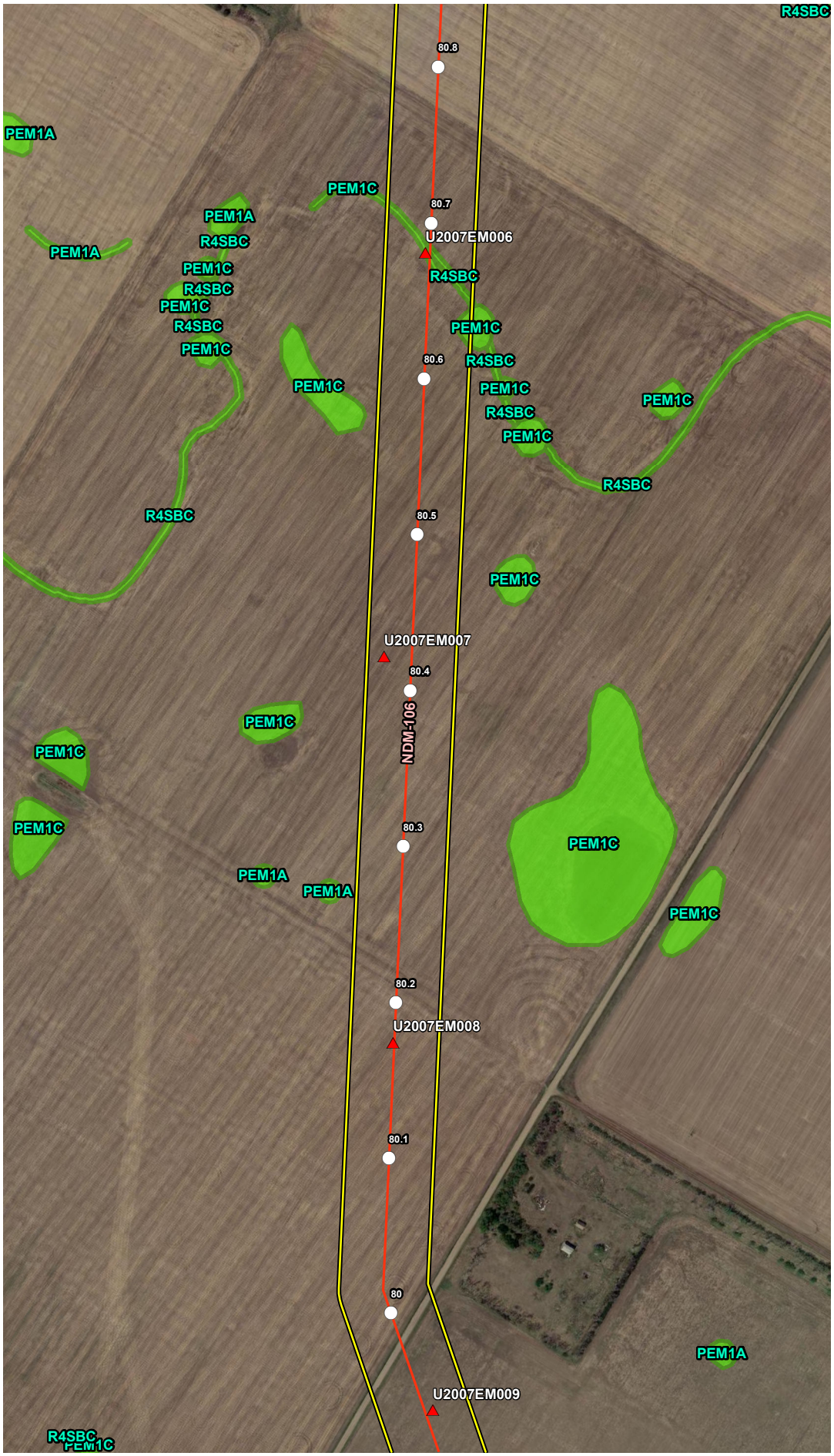
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>103 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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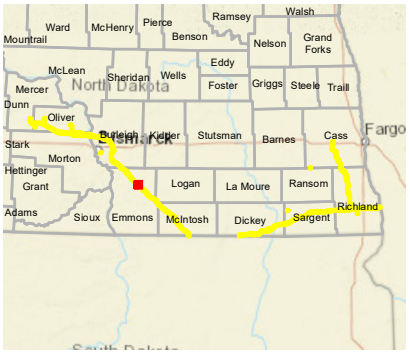


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

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Figure Title:

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Figure Number:

Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
104 of 392

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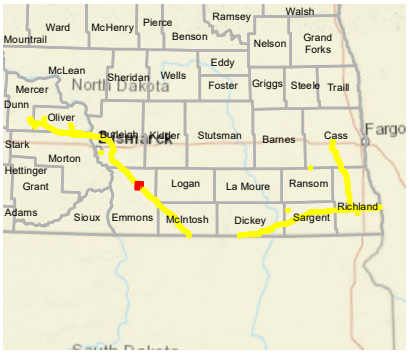
## NWI MAP




## VICINITY MAP




## LEGEND

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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>105 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

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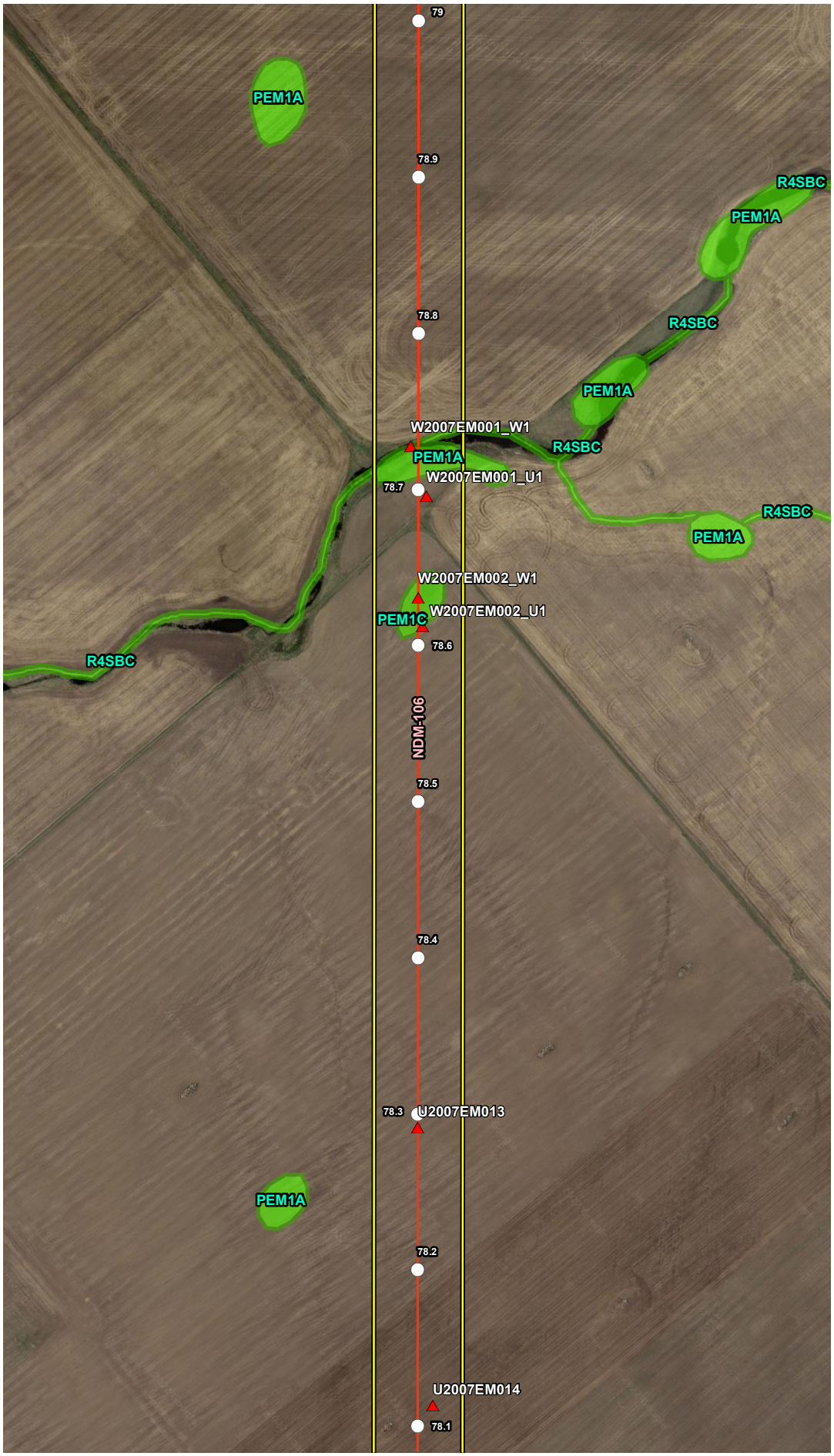


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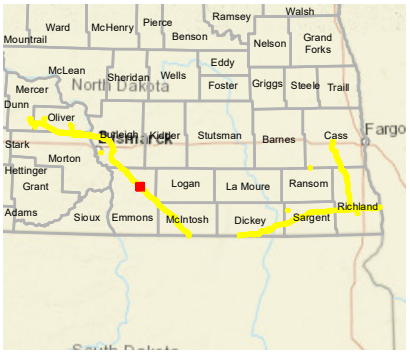


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- Milepost
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0 250 500 Feet

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| Date: | Revised by: | Checked by: |
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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000 | Transverse Mercator |
| 1 inch = 500 feet | NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 106 of 392 | 2001-22-004 |
| | Current Revision |

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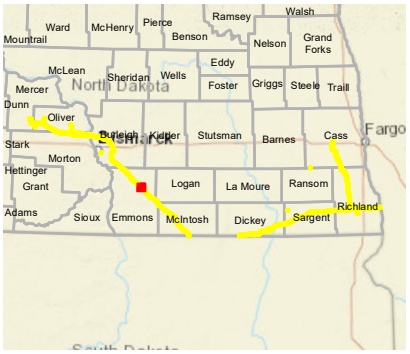
## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 107 of 392 | 2001-22-004<br>Current Revision |

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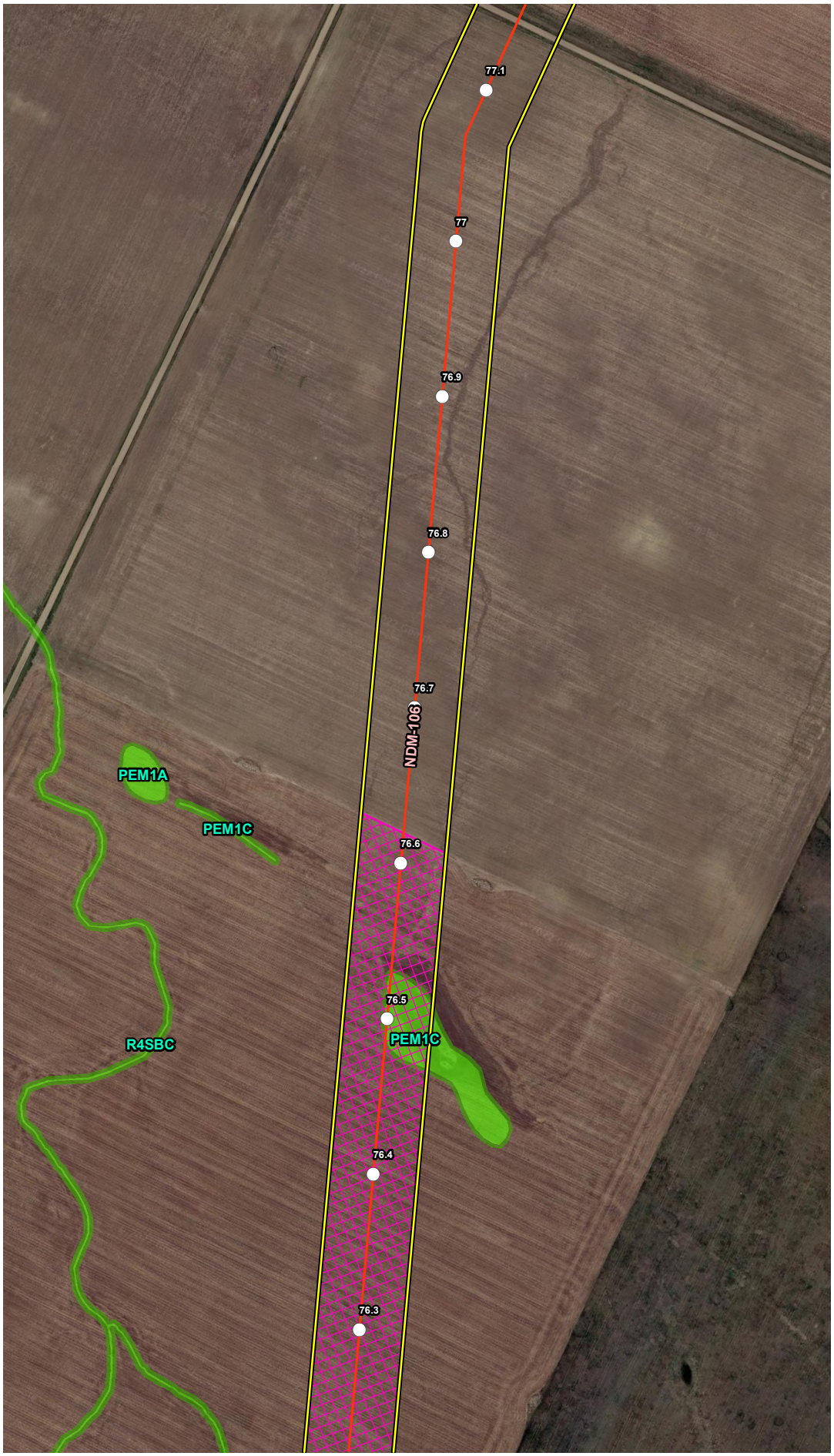
## NWI MAP

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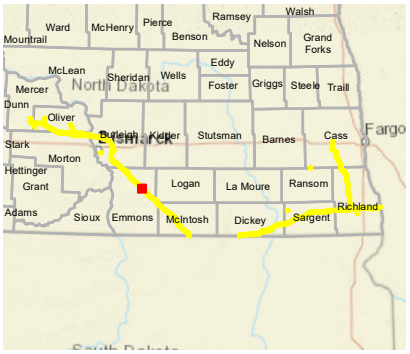


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
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**1A - Revision**
Revision description

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**Figure Title:**
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**Figure Number:**
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 108 of 392 | 2001-22-004<br>Current Revision |

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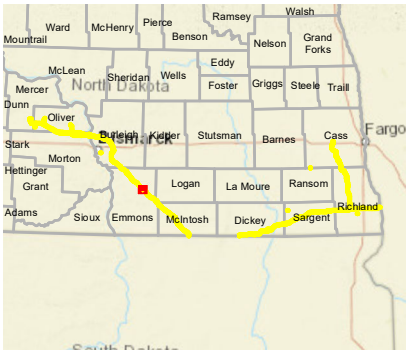
## NWI MAP




## VICINITY MAP




## LEGEND

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Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**
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| Sheet: | Drawing Number: |
|---|---|
| 109 of 392 | 2001-22-004<br>Current Revision |

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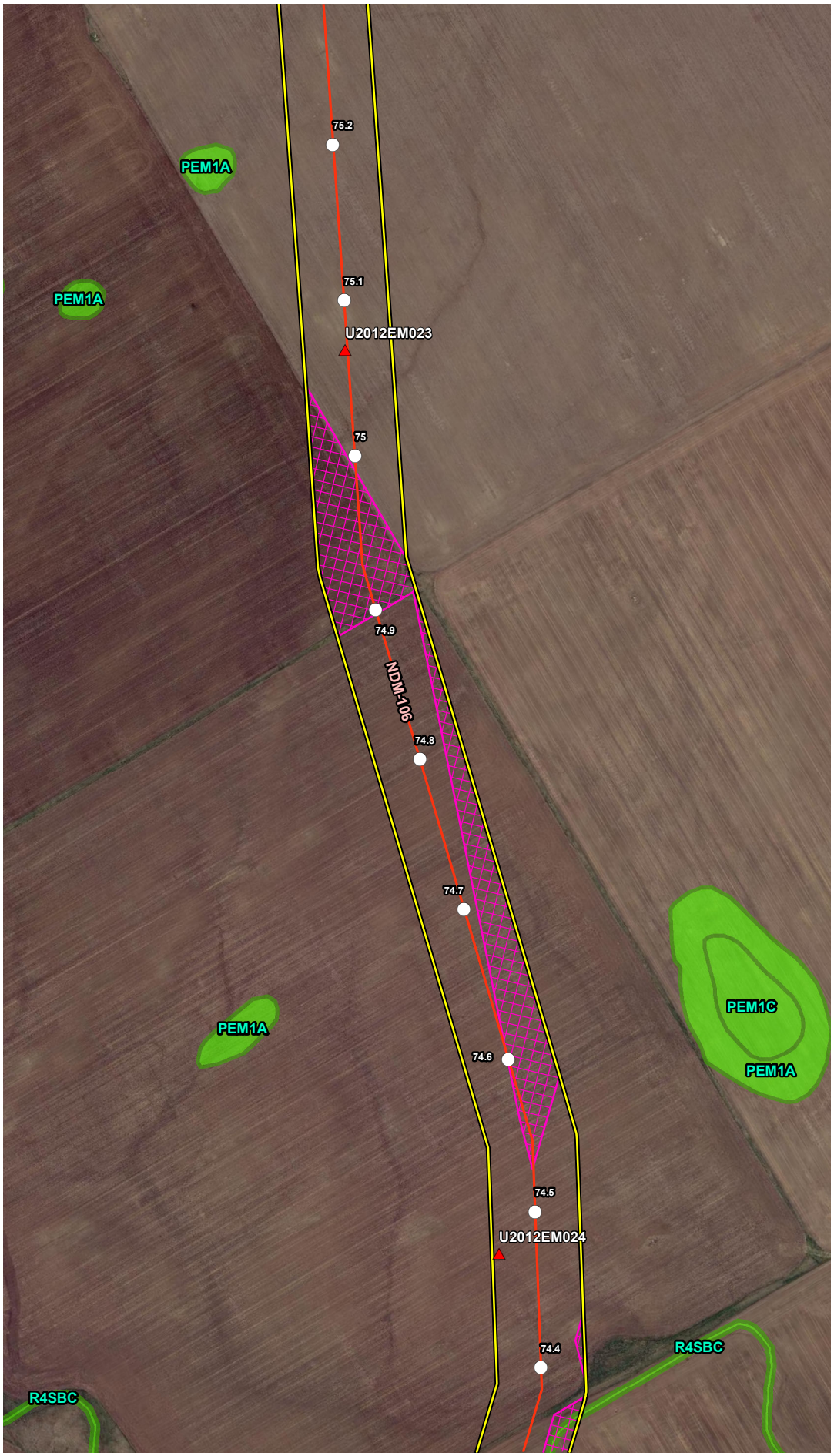
## NWI MAP

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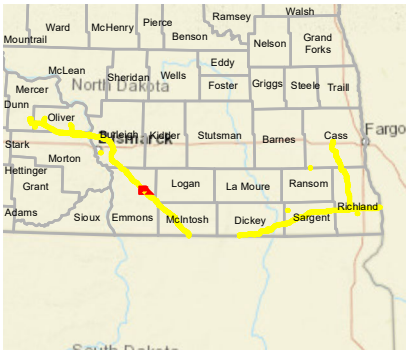


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|---|---|---|
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Figure Title:
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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>110 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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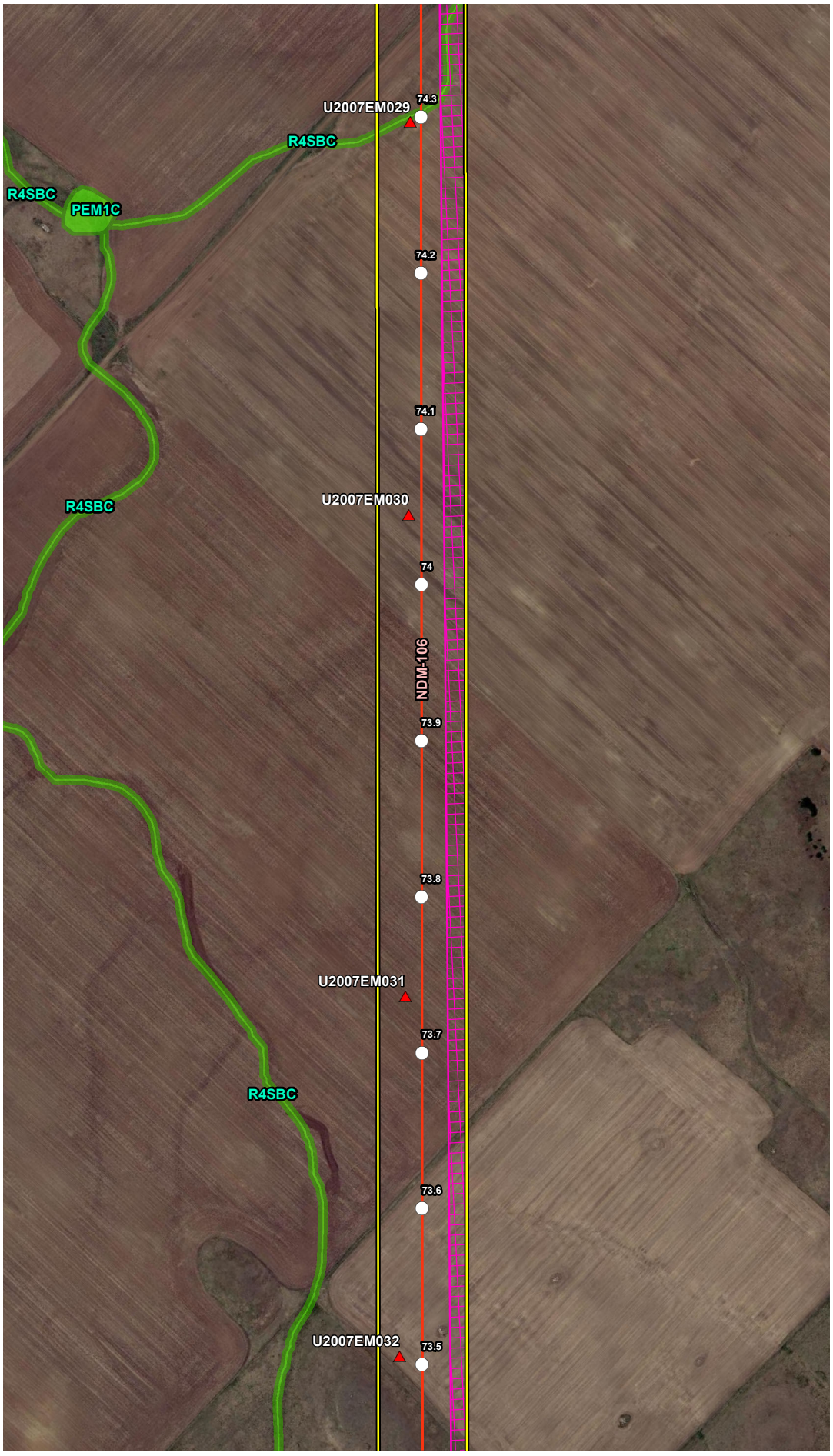
## NWI MAP

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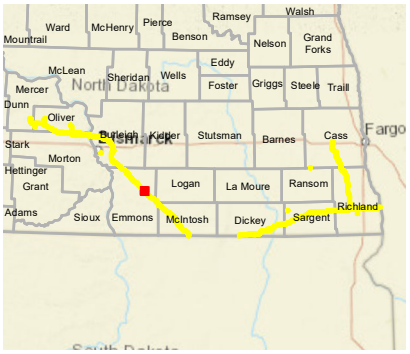


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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 111 of 392 | 2001-22-004<br>Current Revision |

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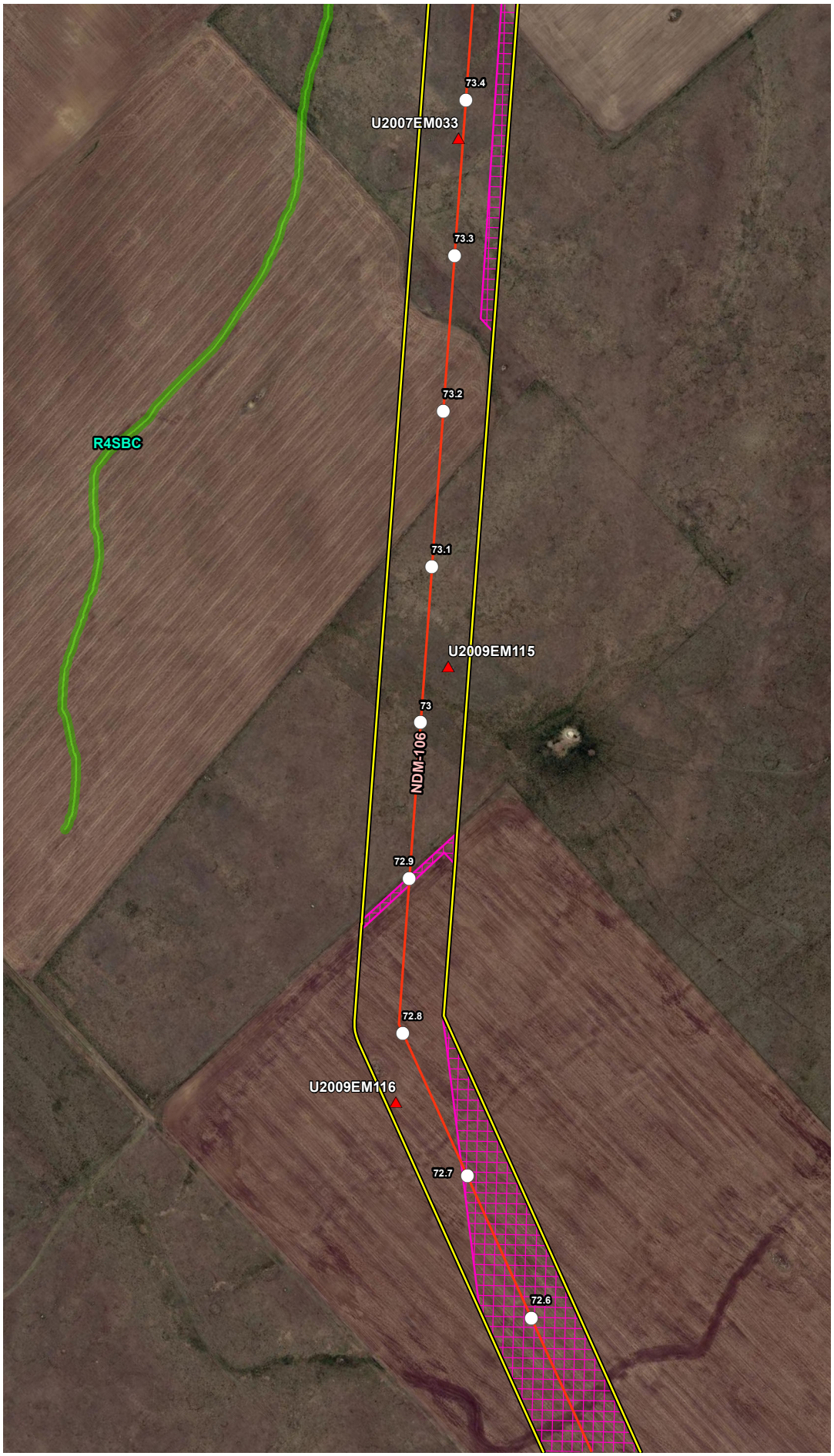
## NWI MAP

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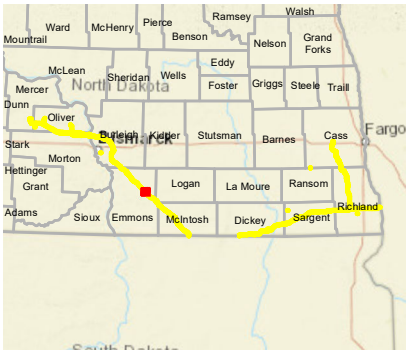


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:
**NWI Map**

Figure Number:
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 112 of 392 | 2001-22-004<br>Current Revision |

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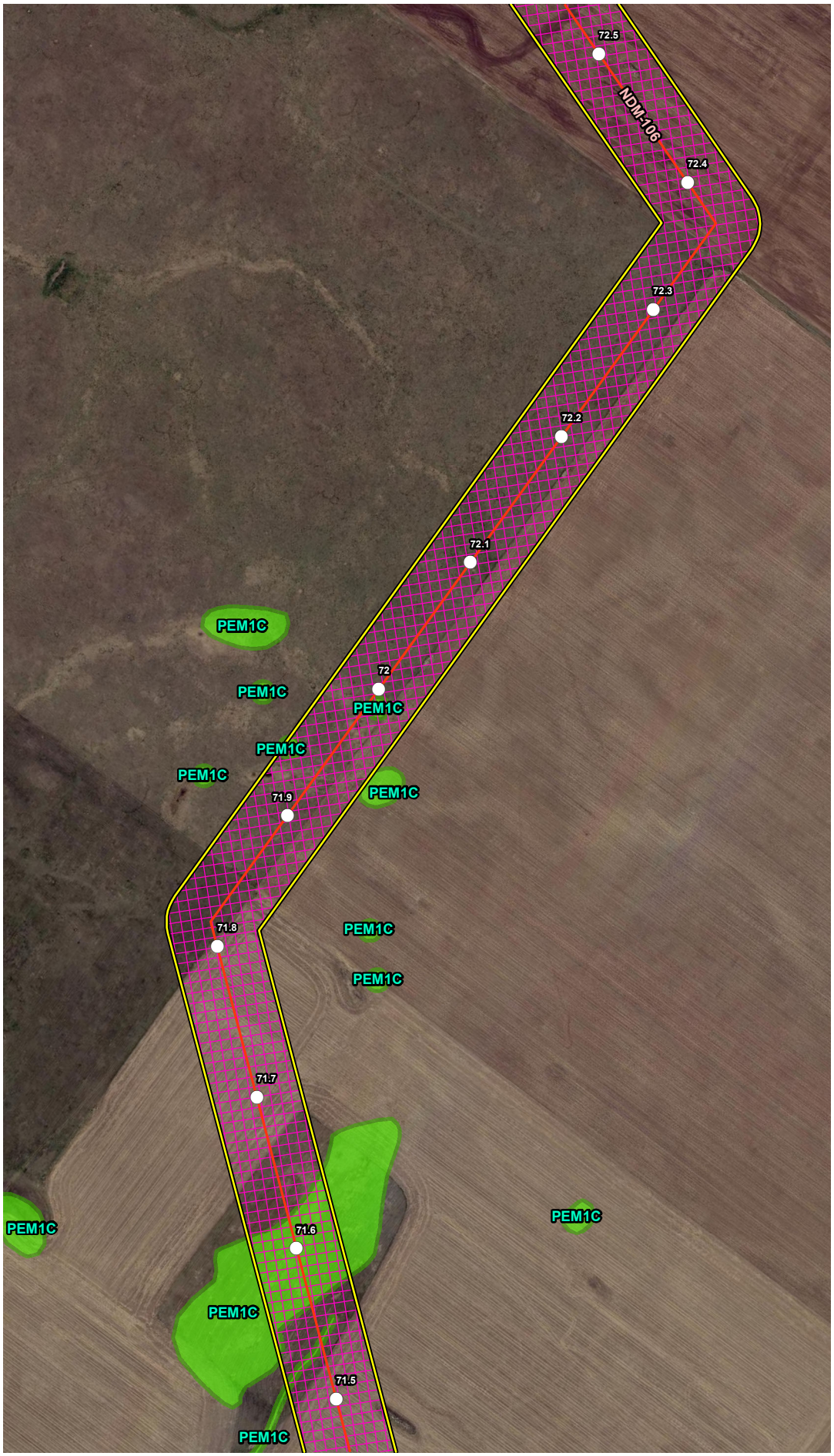
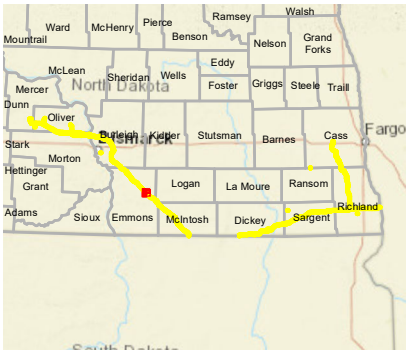
## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

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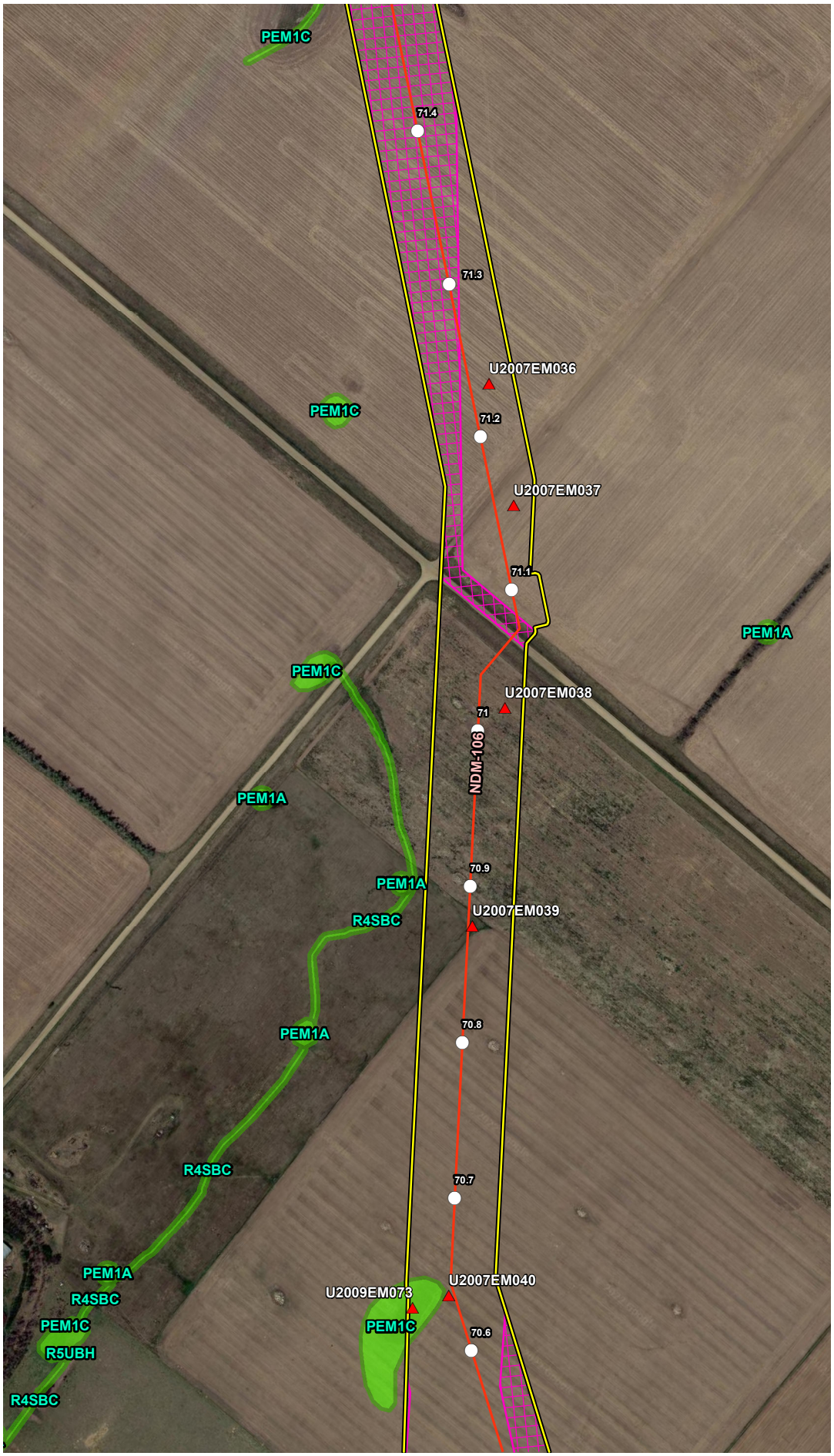
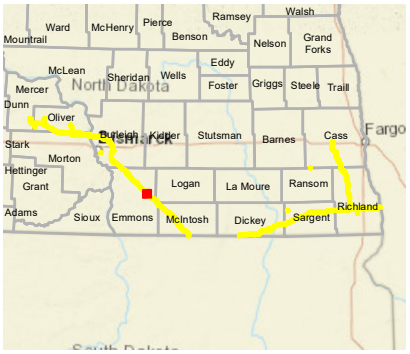
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 113 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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Figure Title:

**NWI Map**

Figure Number:

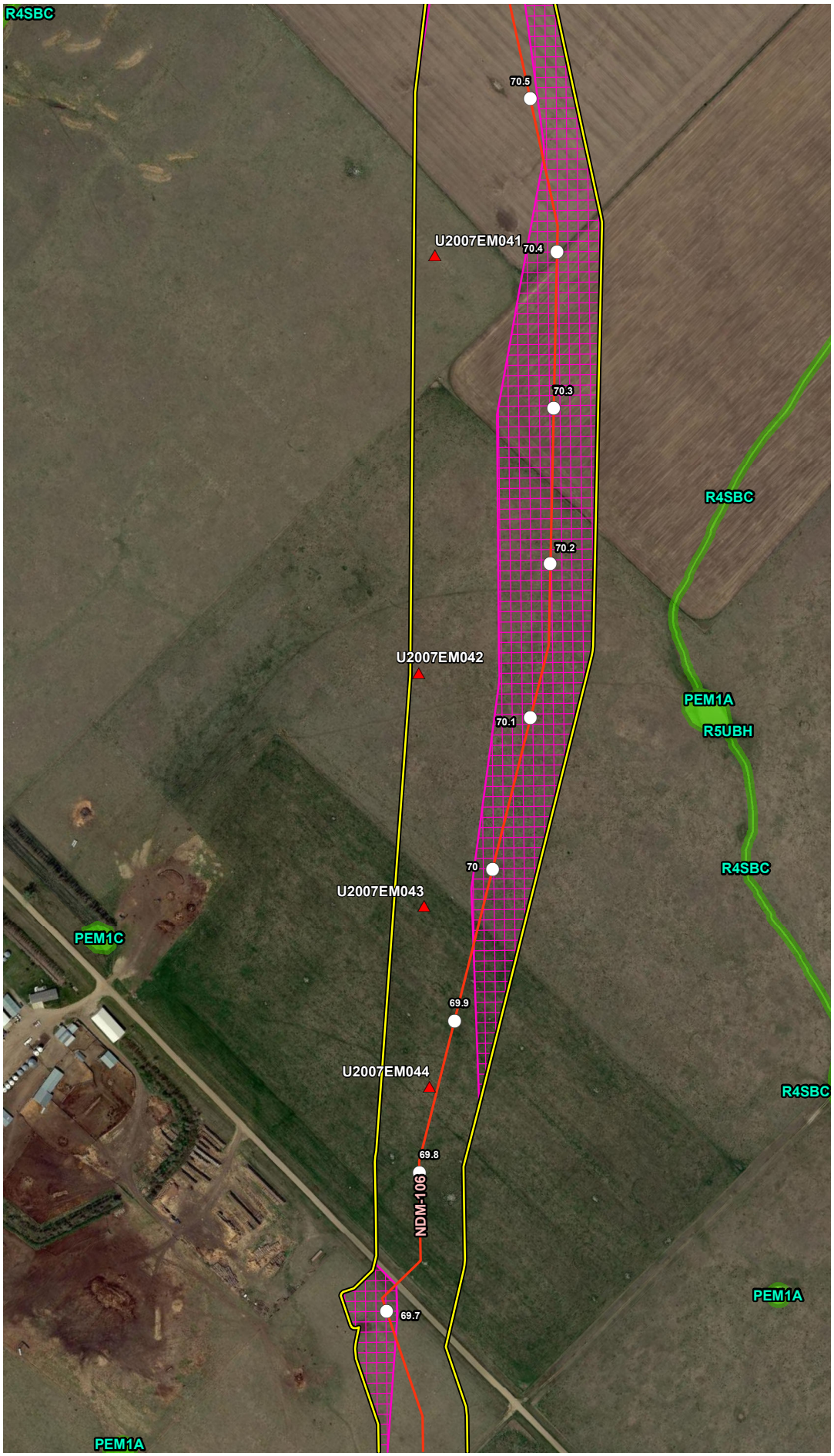
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

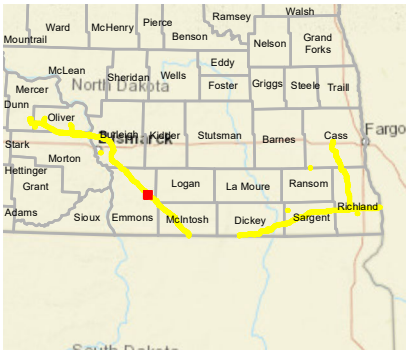
| Sheet: | Drawing Number: |
|---|---|
| 114 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\EIV\WR\2022\801_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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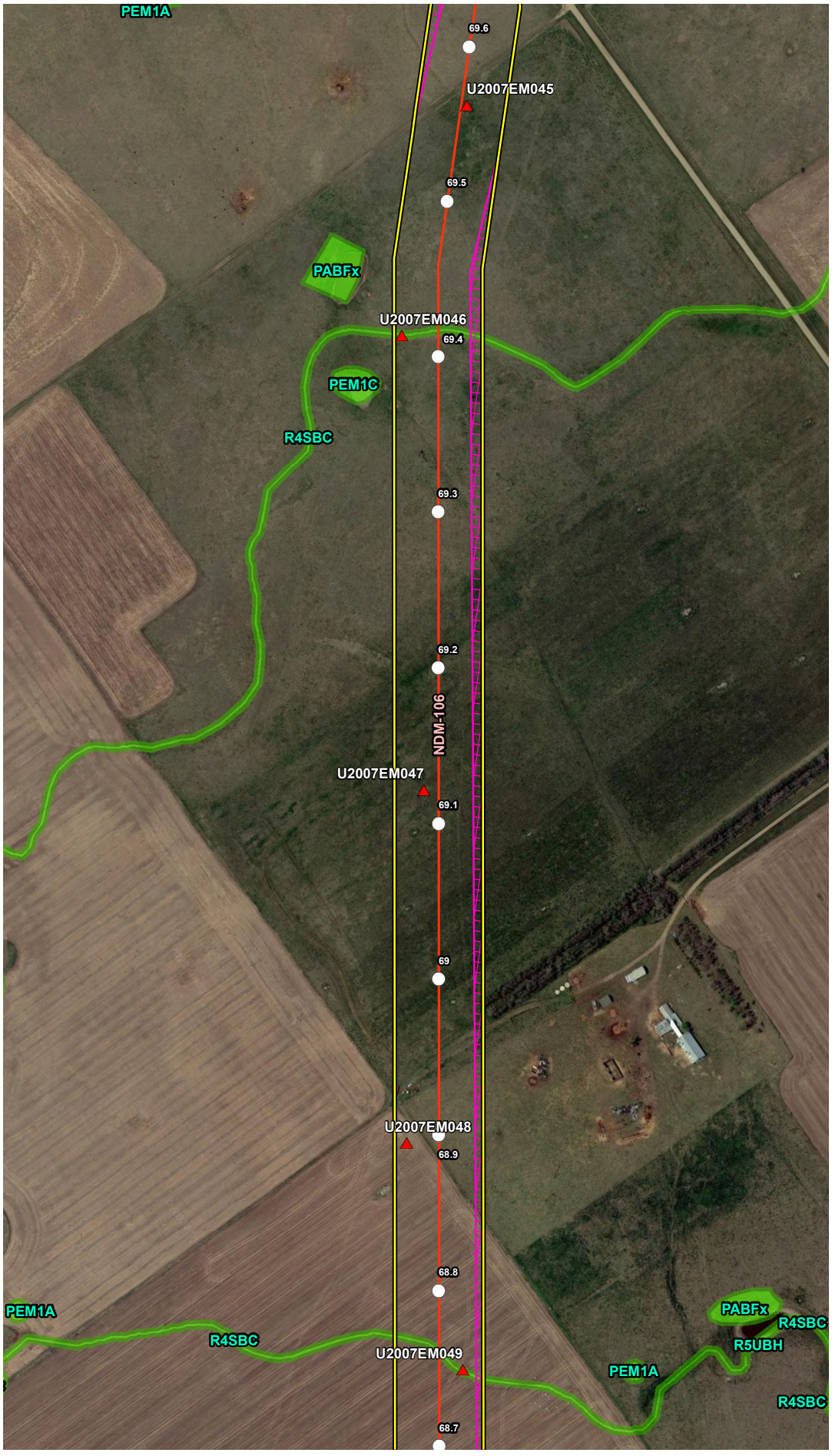
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 115 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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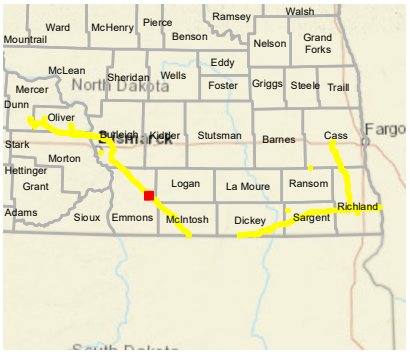


## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Title:
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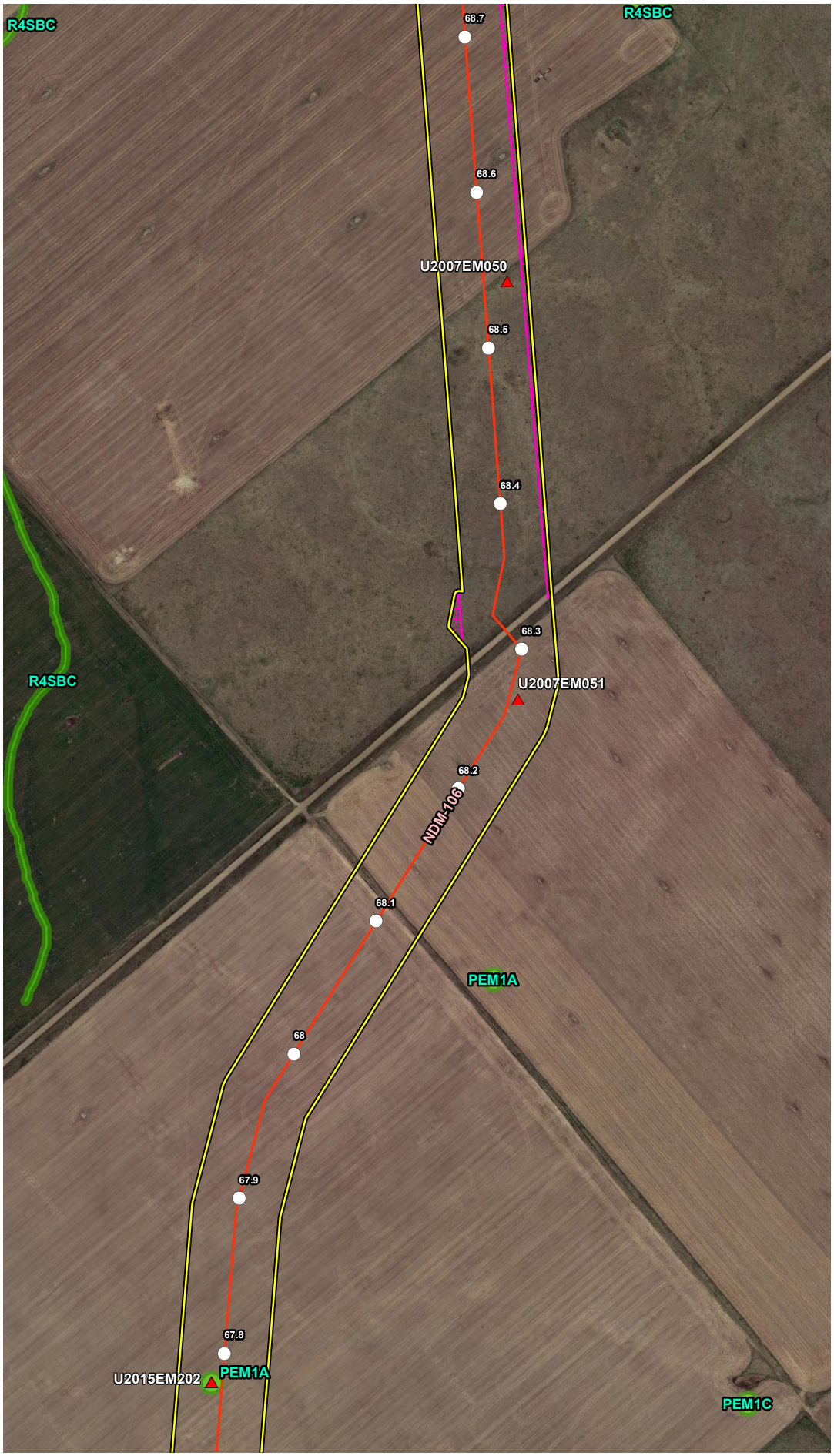
Figure Number:
Appendix A-4

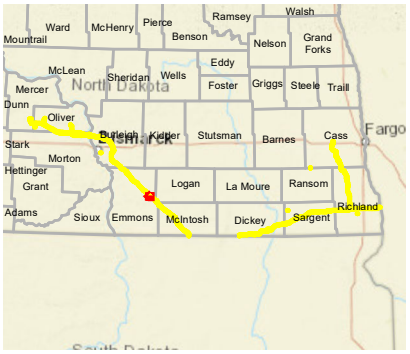
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 116 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

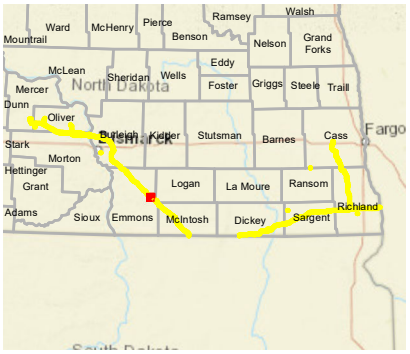
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 117 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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**Figure Number:**

Appendix A-4

| Scale: | Projection: |
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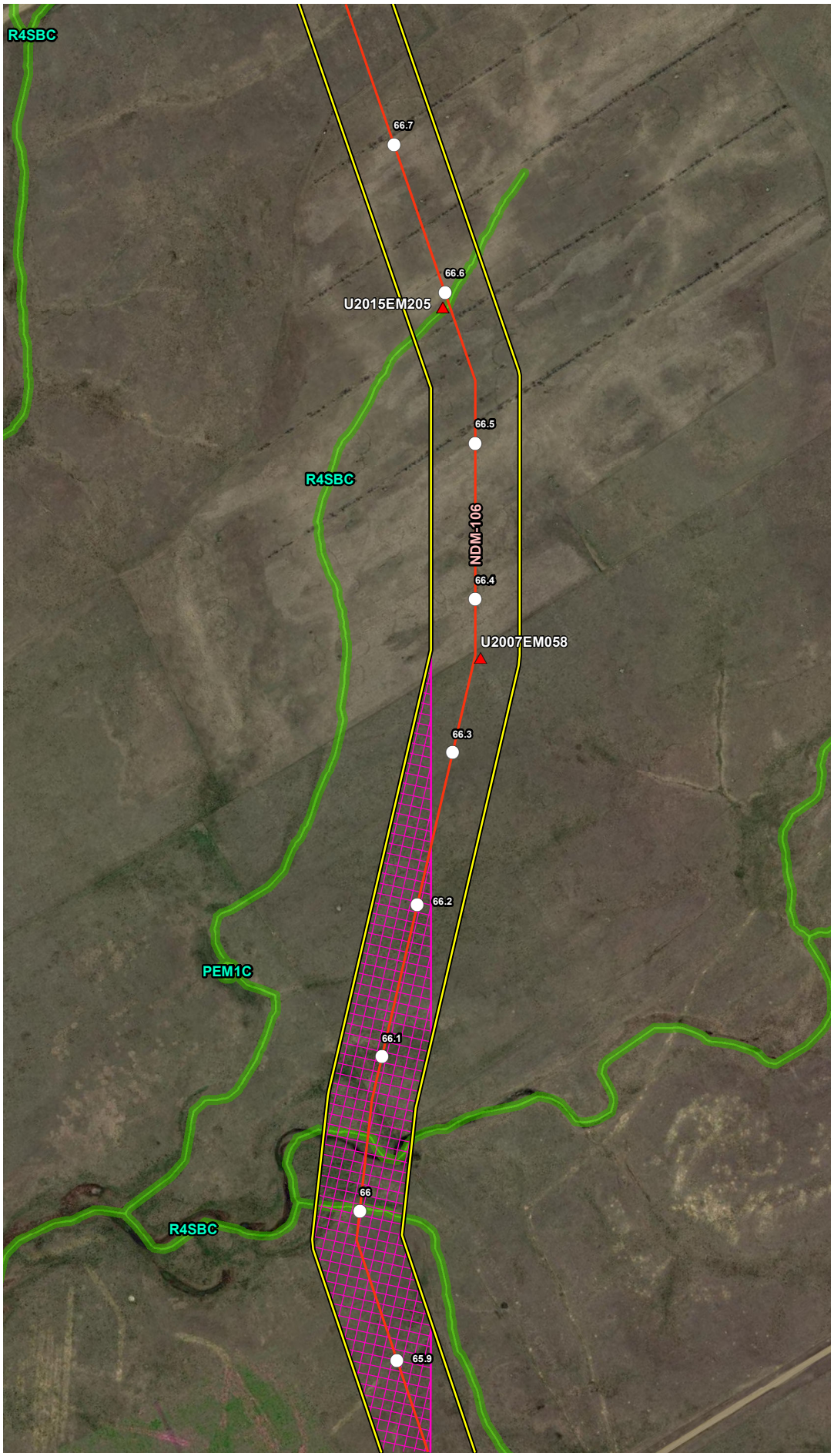
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

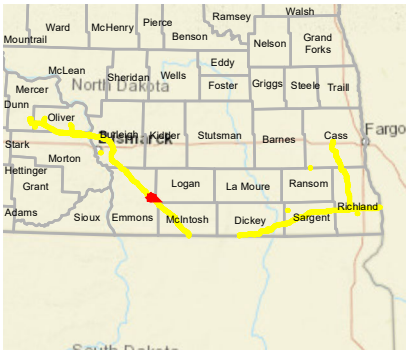
| Sheet: | Drawing Number: |
|---|---|
| 118 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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**Figure Title:**

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**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

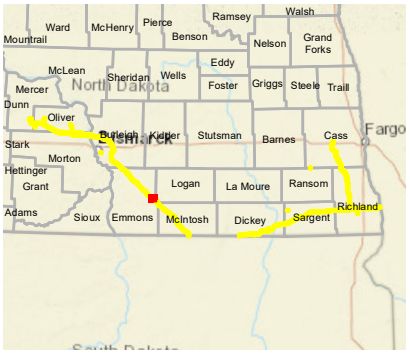
| Sheet: | Drawing Number: |
|---|---|
| 119 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ERV\WR\2022\0801_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Number:
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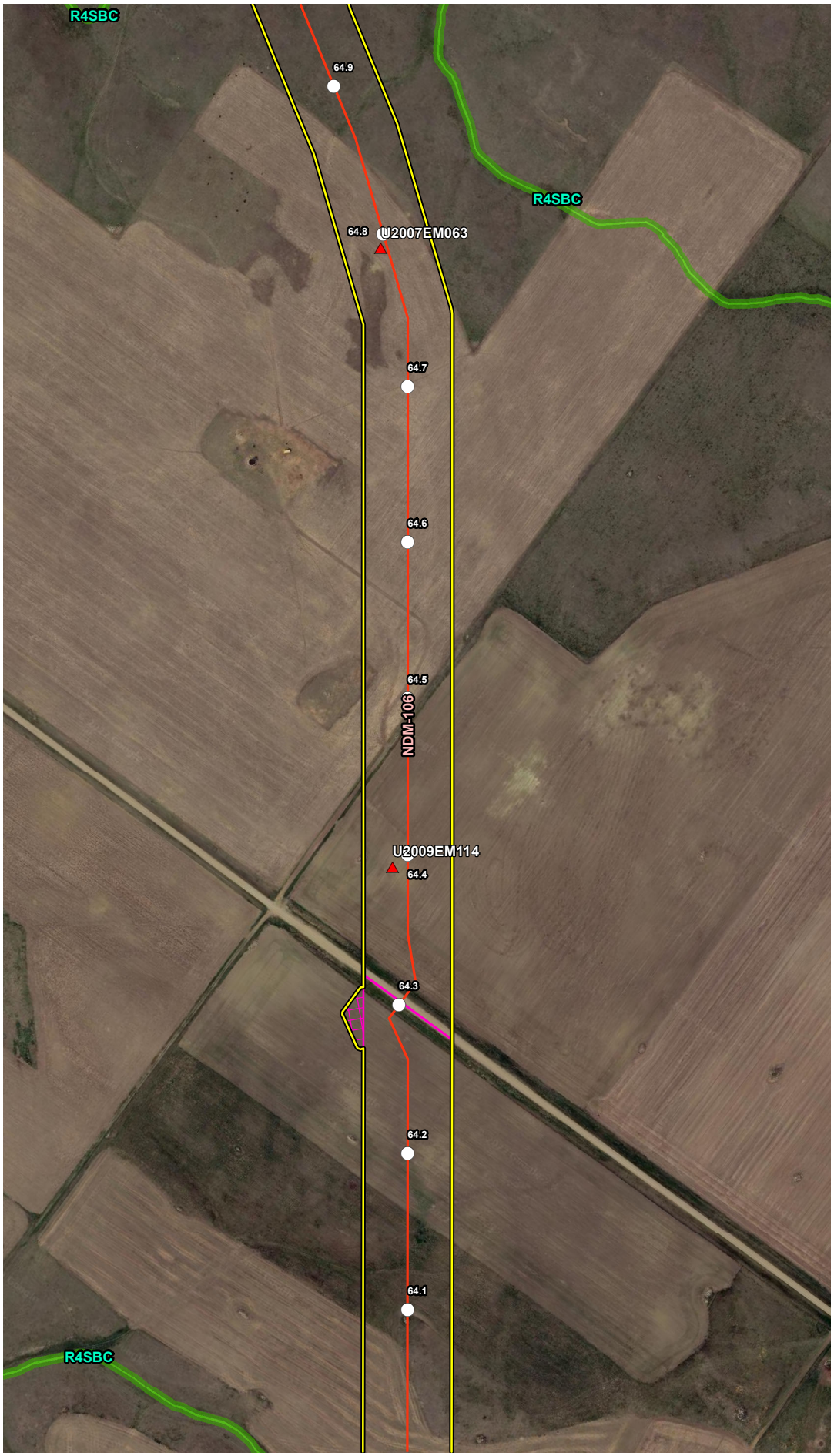
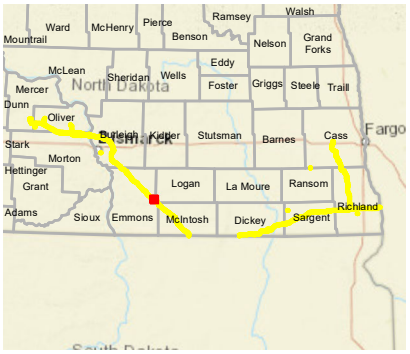
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 120 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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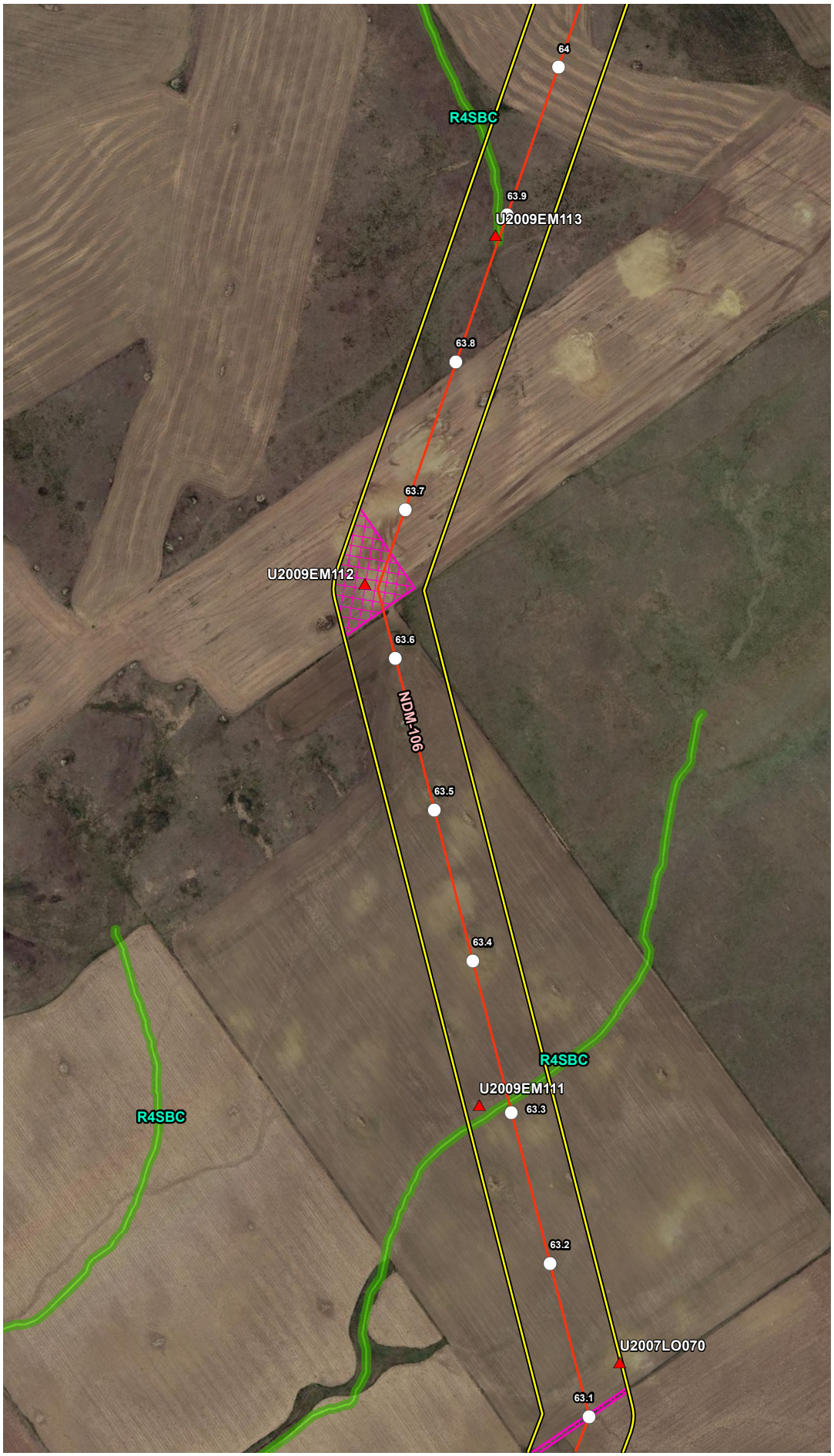
Figure Number:
Appendix A-4

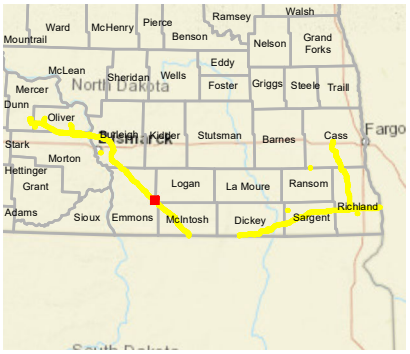
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>121 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| **Sheet:** | **Drawing Number:** |
| 122 of 392 | 2001-22-004<br>Current Revision |

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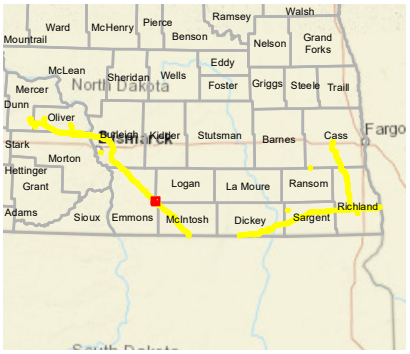
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

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Appendix A-4

| Scale: | Projection: |
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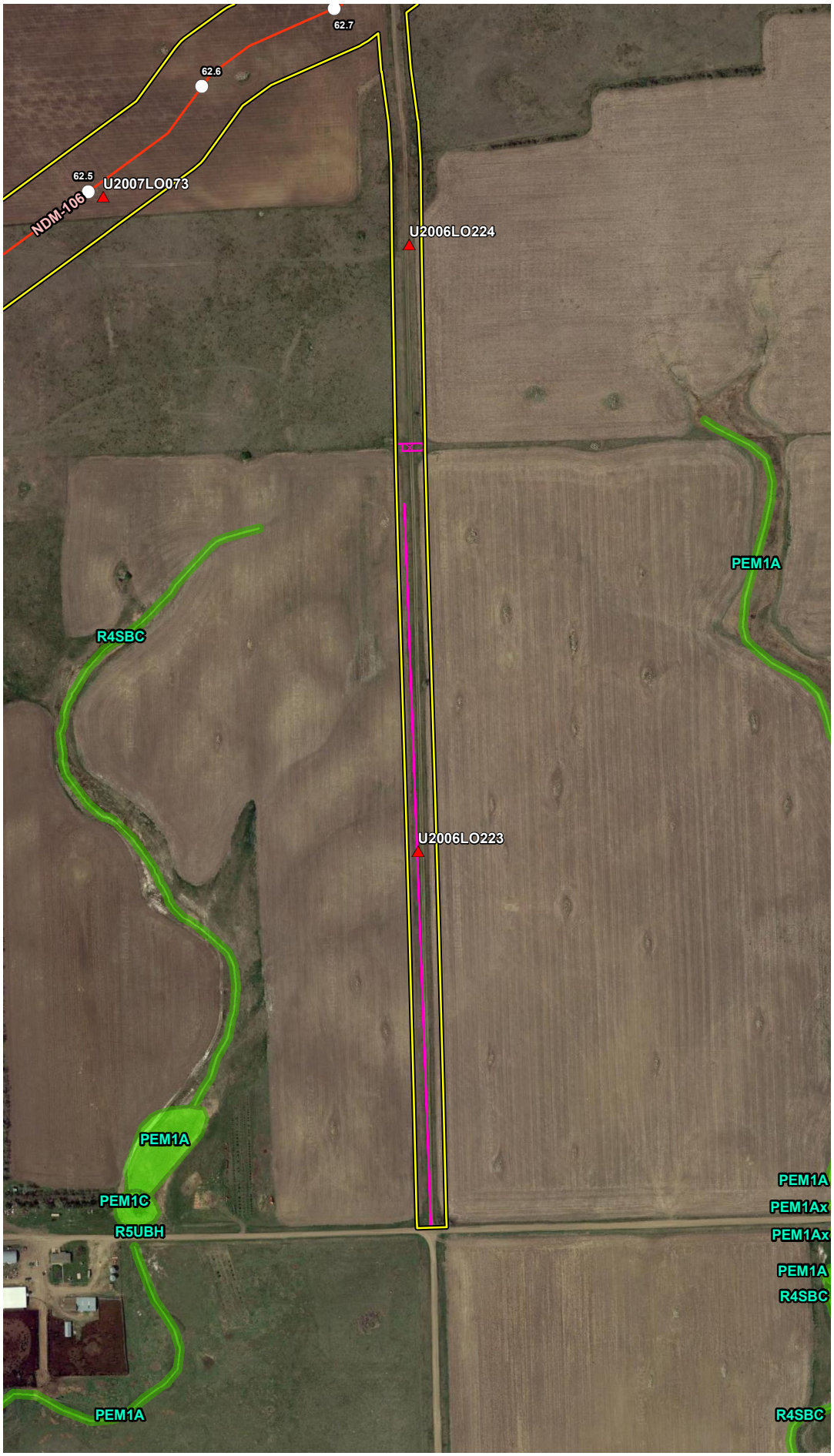
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 123 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\WR\2022\801_WR_NDI\mxds\4_NWI.mxd

## NWI MAP

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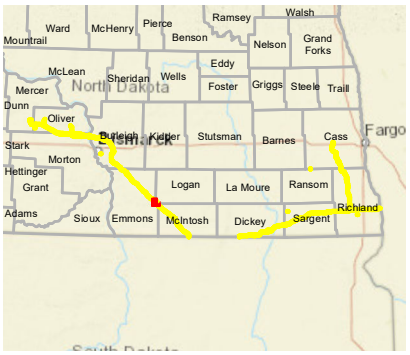


## LEGEND

- Milepost
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## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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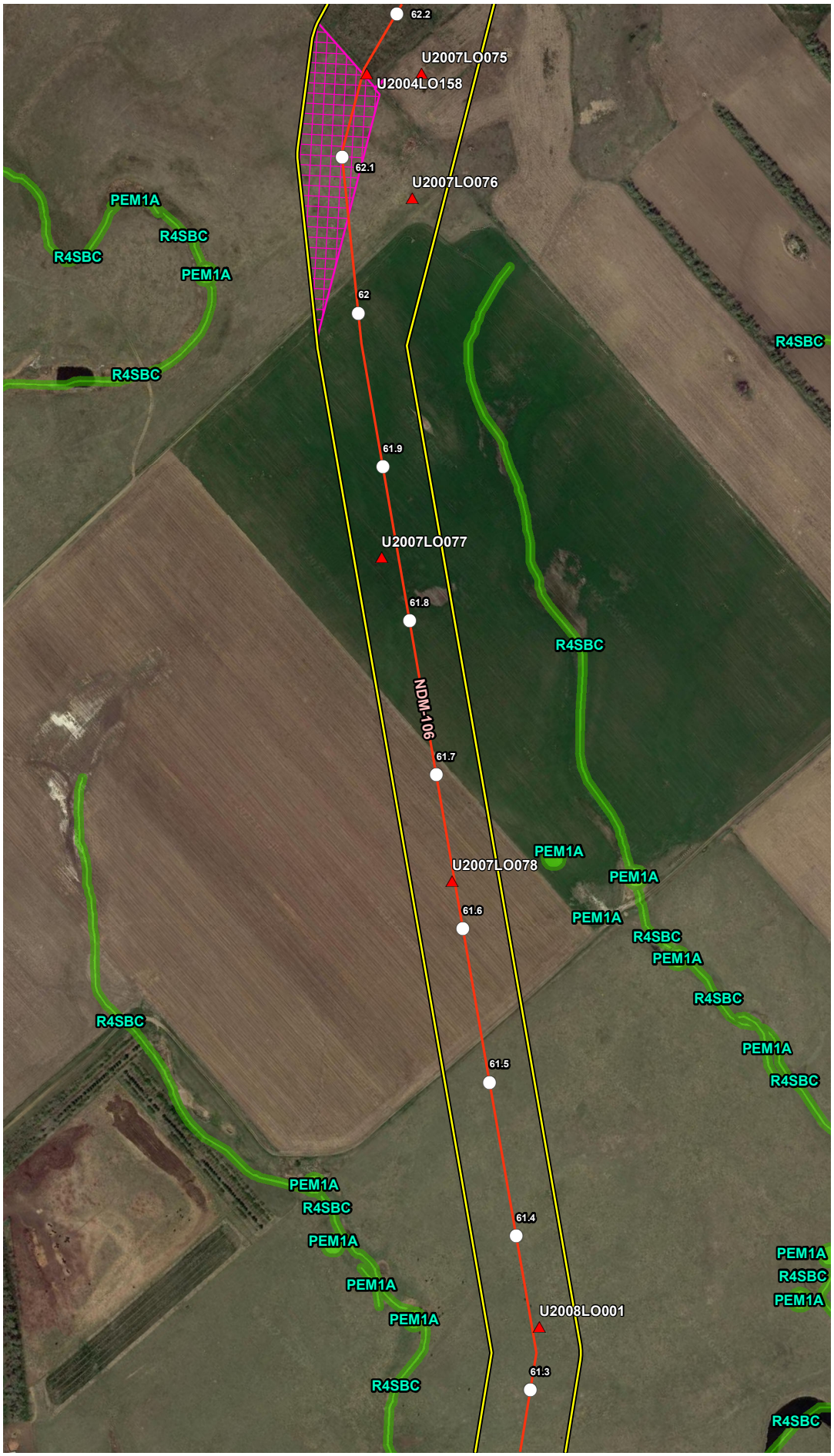
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>124 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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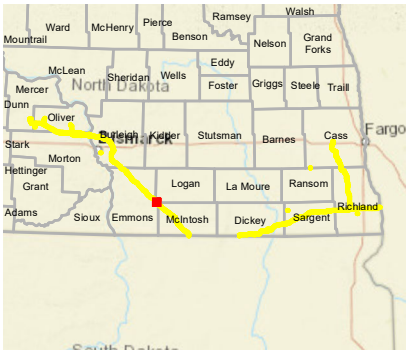


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## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:

NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 125 of 392 | 2001-22-004<br>Current Revision |

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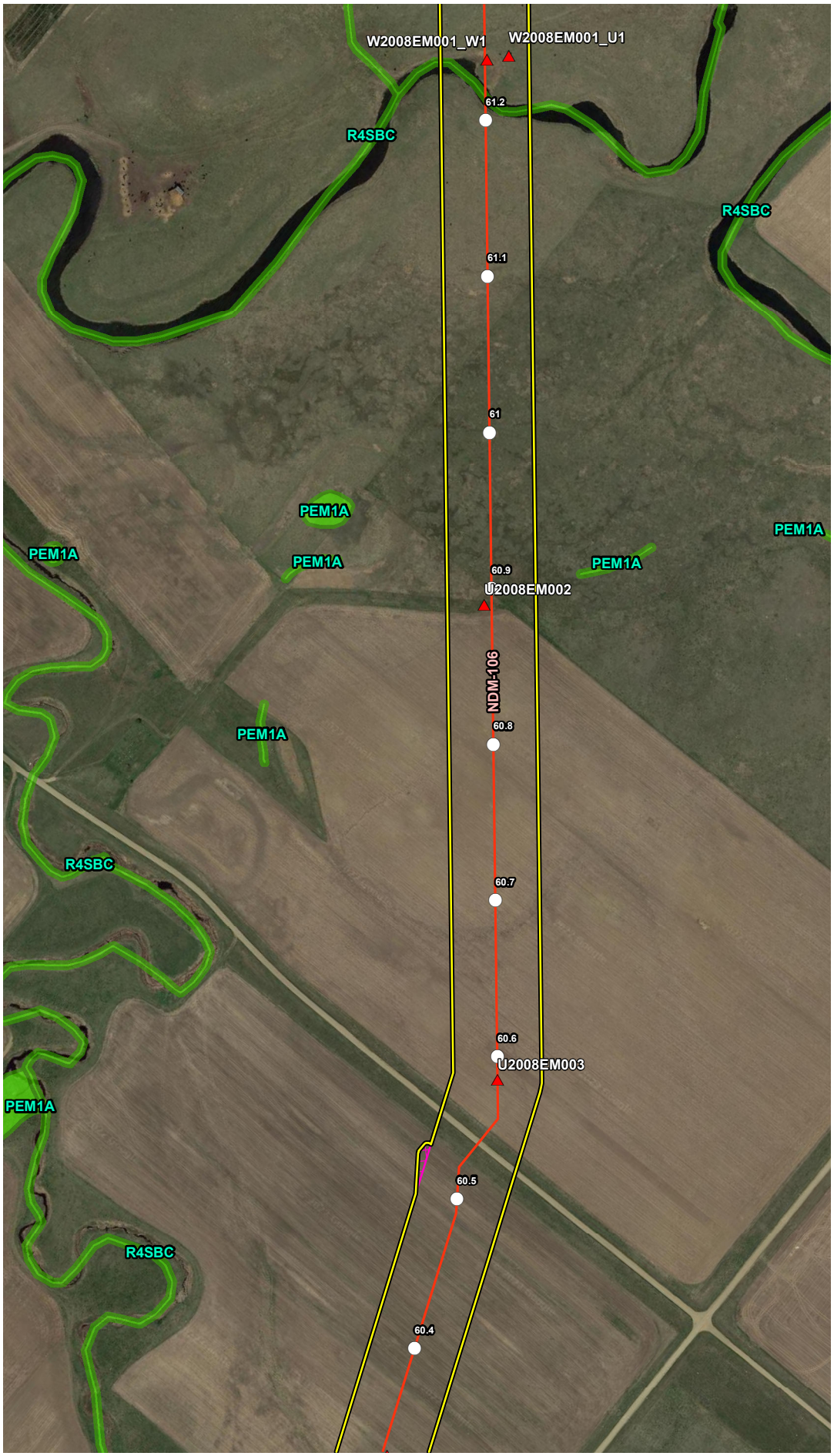
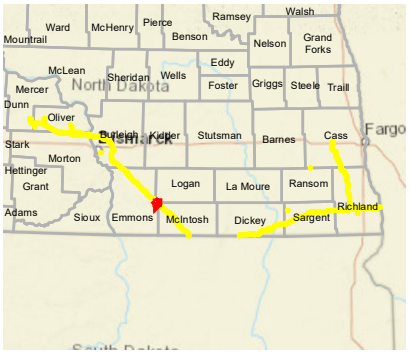
## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
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Appendix A-4

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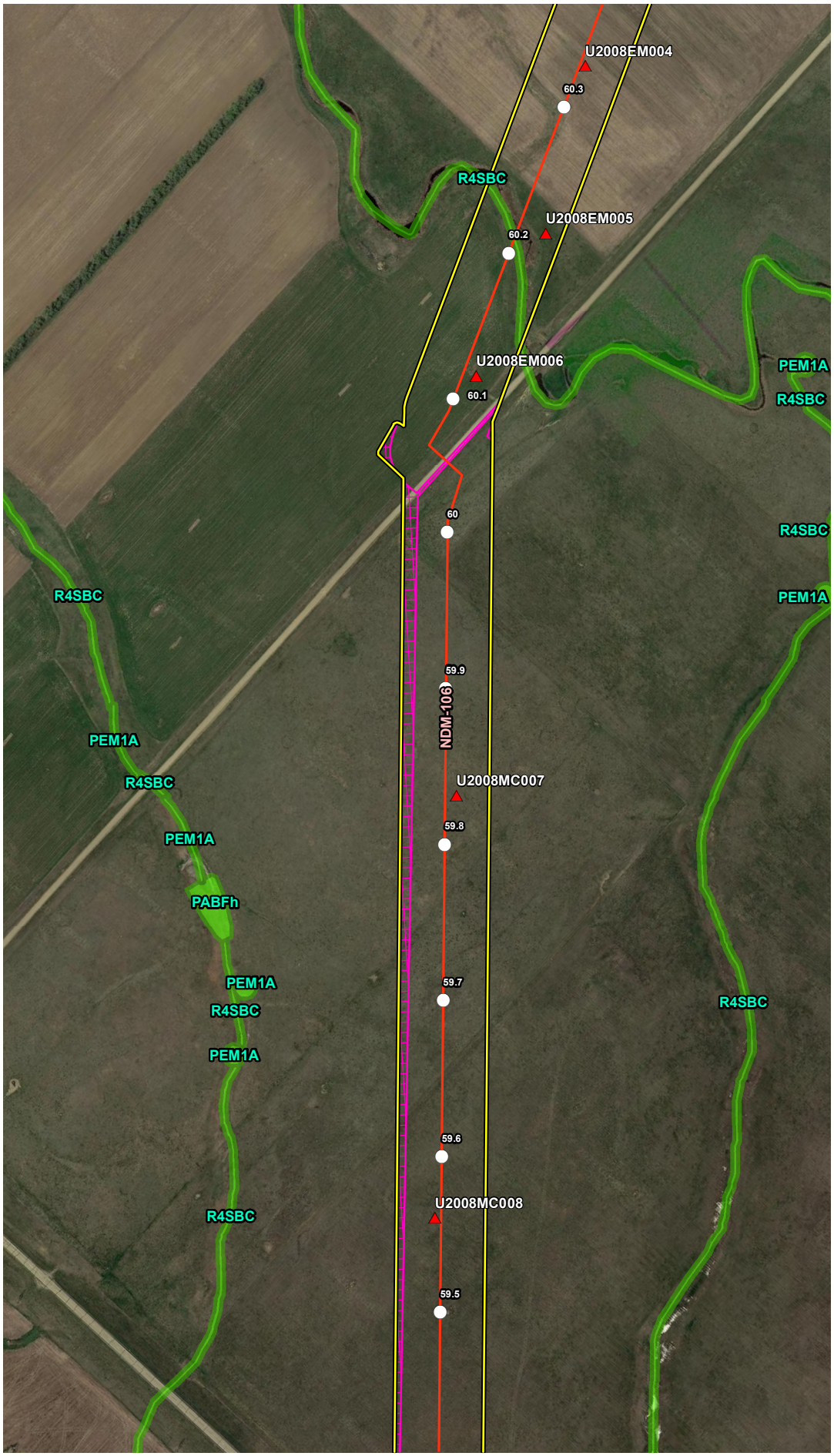
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

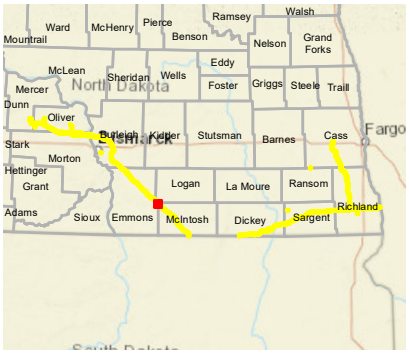
| Sheet: | Drawing Number: |
|---|---|
| 126 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\801_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 127 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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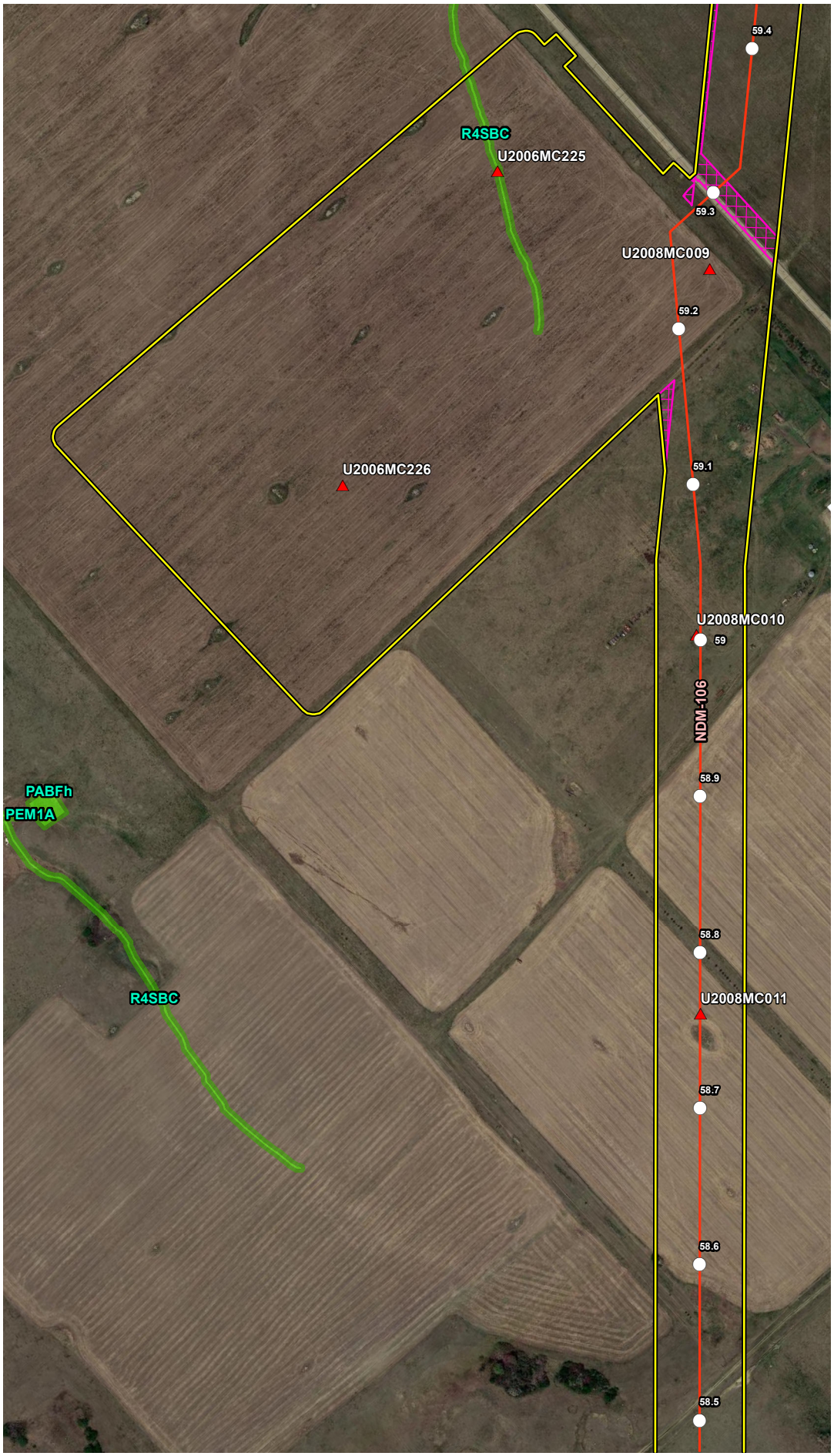
## NWI MAP

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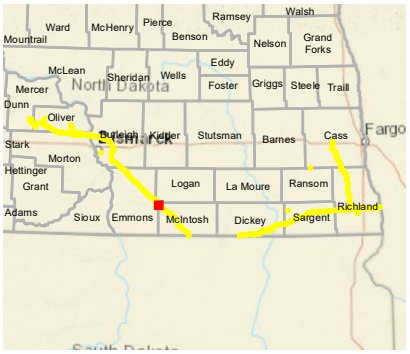


## LEGEND

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| Sheet:<br>128 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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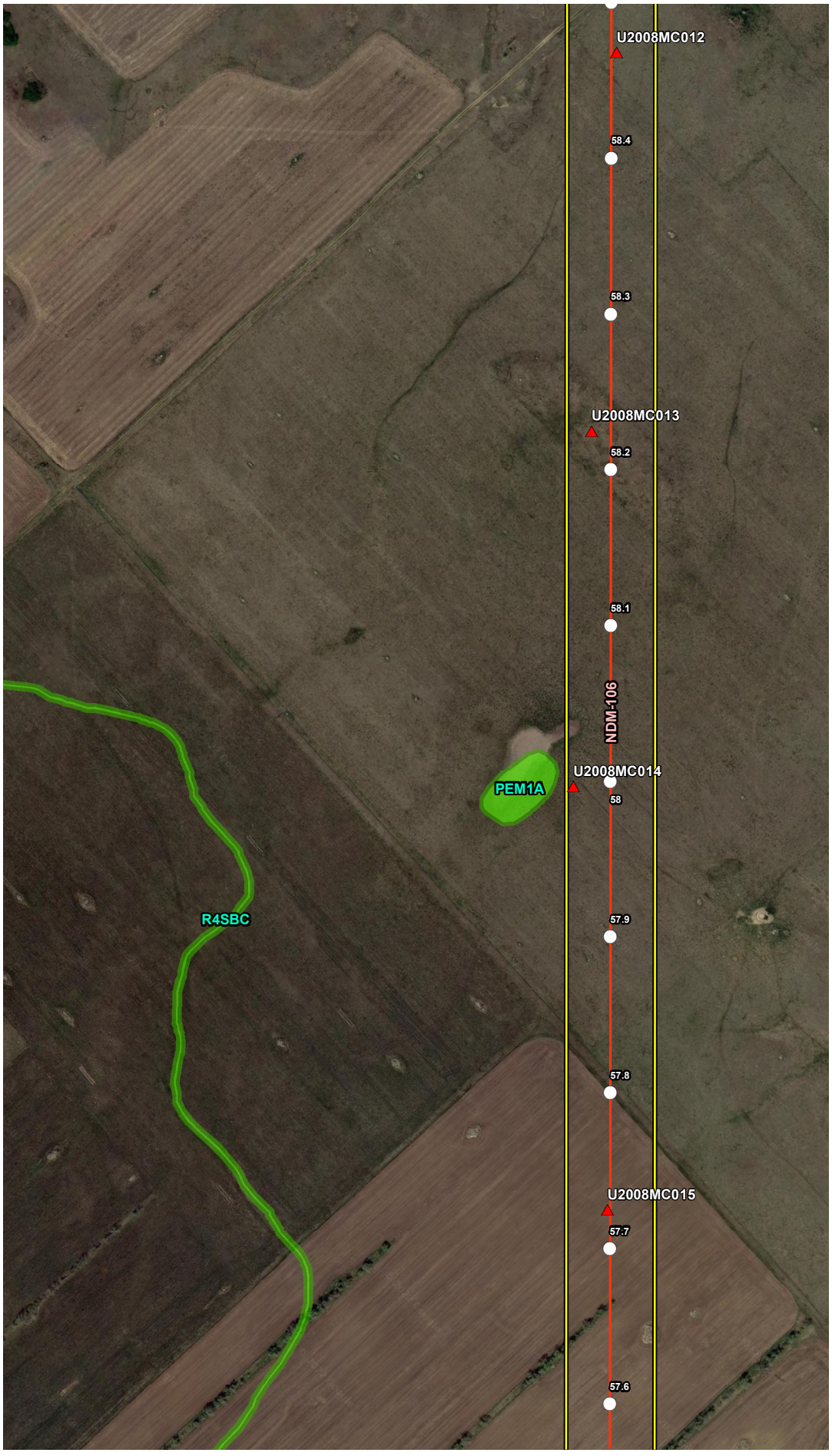
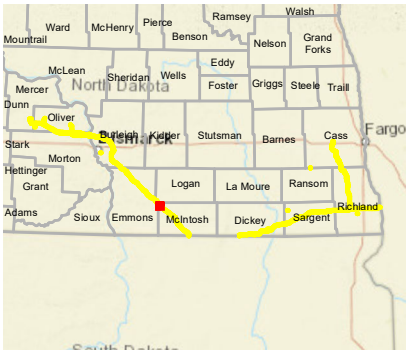
## NWI MAP




## VICINITY MAP

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| Sheet: 129 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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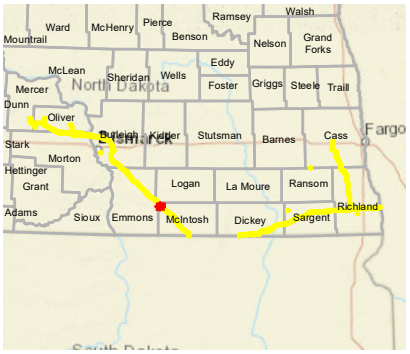
## NWI MAP




## VICINITY MAP

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| Scale: | Projection: |
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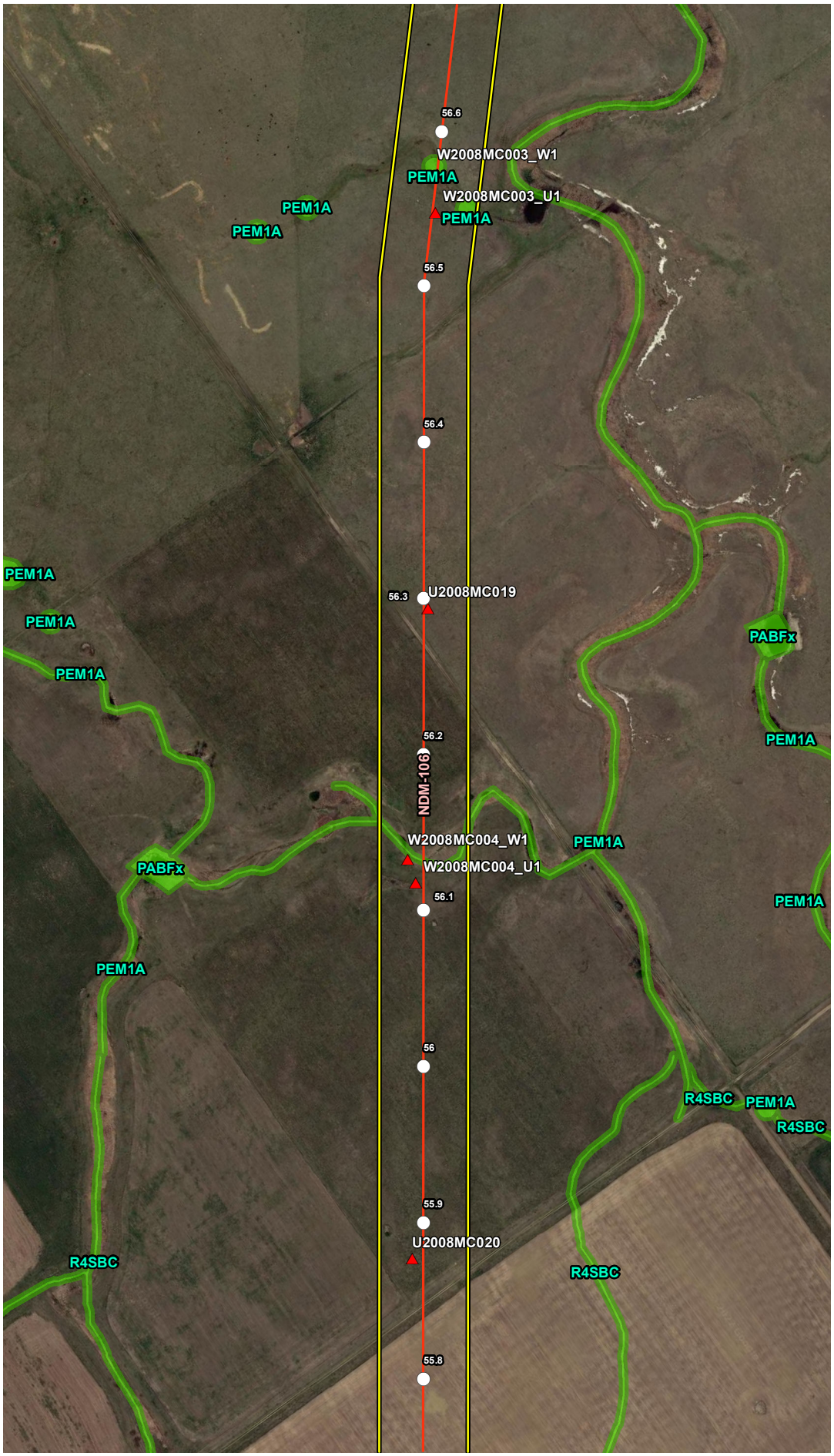
| 130 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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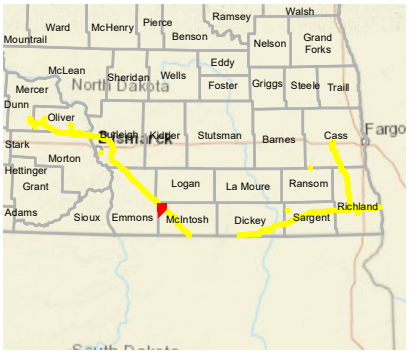


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0 250 500 Feet

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| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 131 of 392 | 2001-22-004<br>Current Revision |

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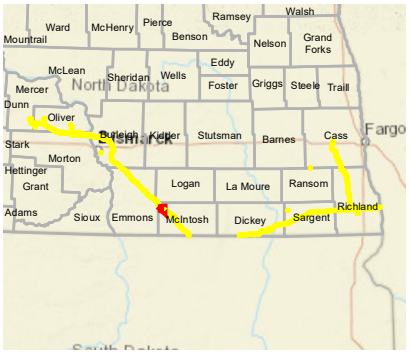
## NWI MAP




## VICINITY MAP

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| Scale: | Projection: |
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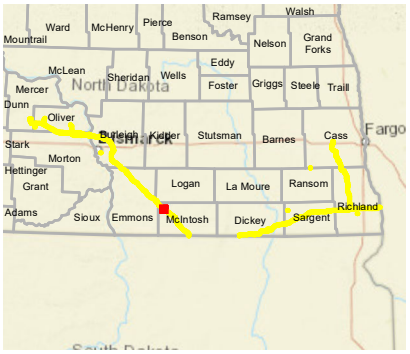
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>132 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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| Sheet:<br>133 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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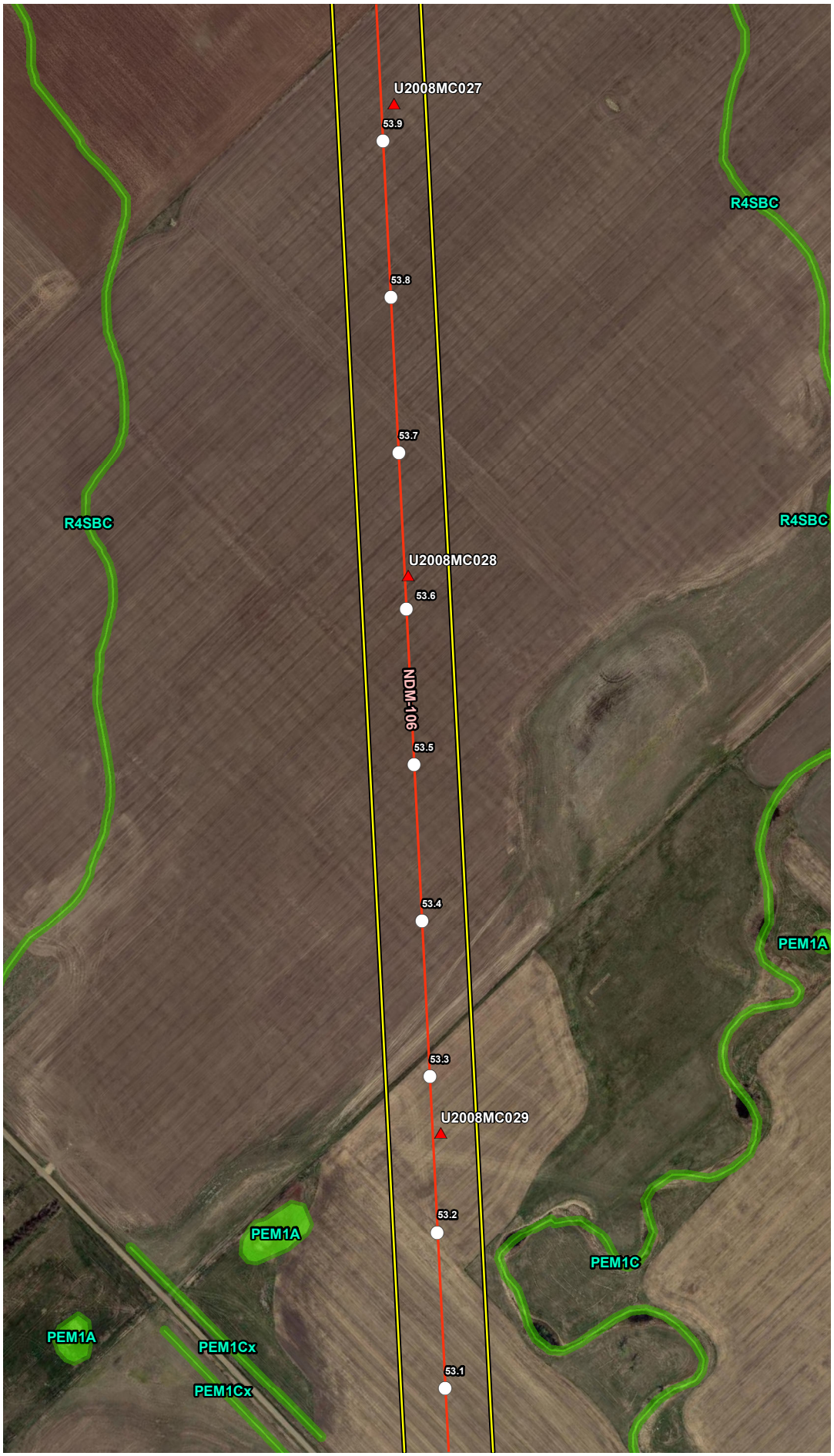


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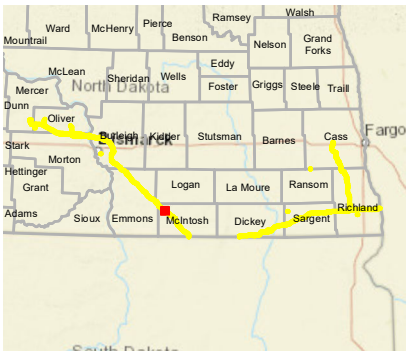


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Appendix A-4

| Scale: | Projection: |
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| Sheet: 134 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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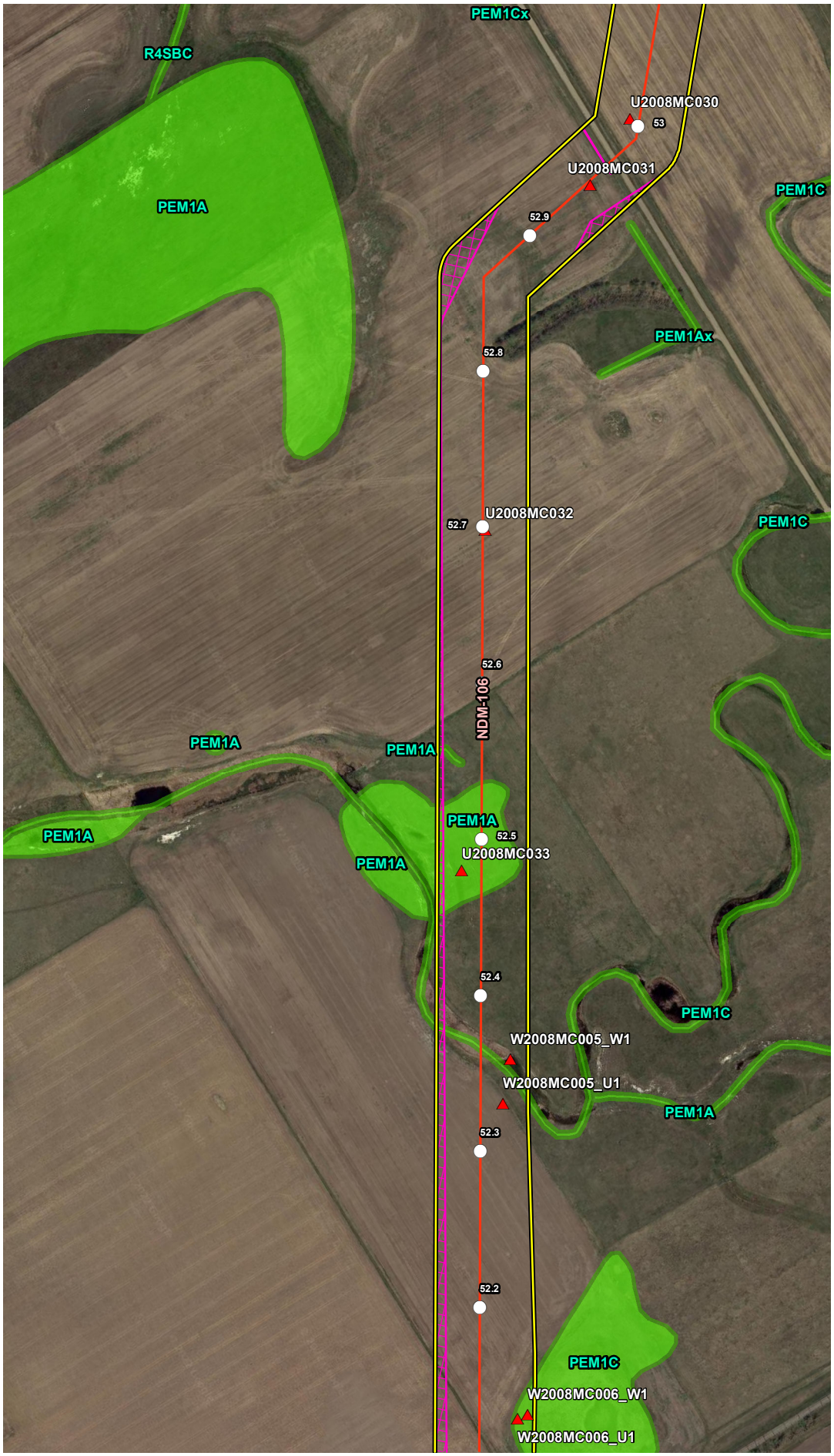
## NWI MAP

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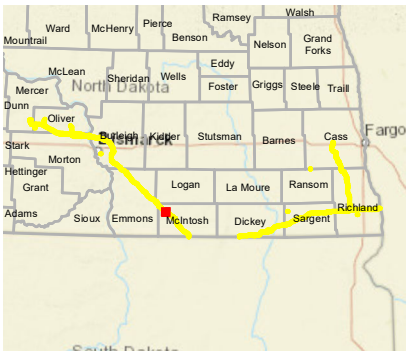


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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| Date | Revised by | Checked by |
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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 135 of 392 | 2001-22-004<br>Current Revision |

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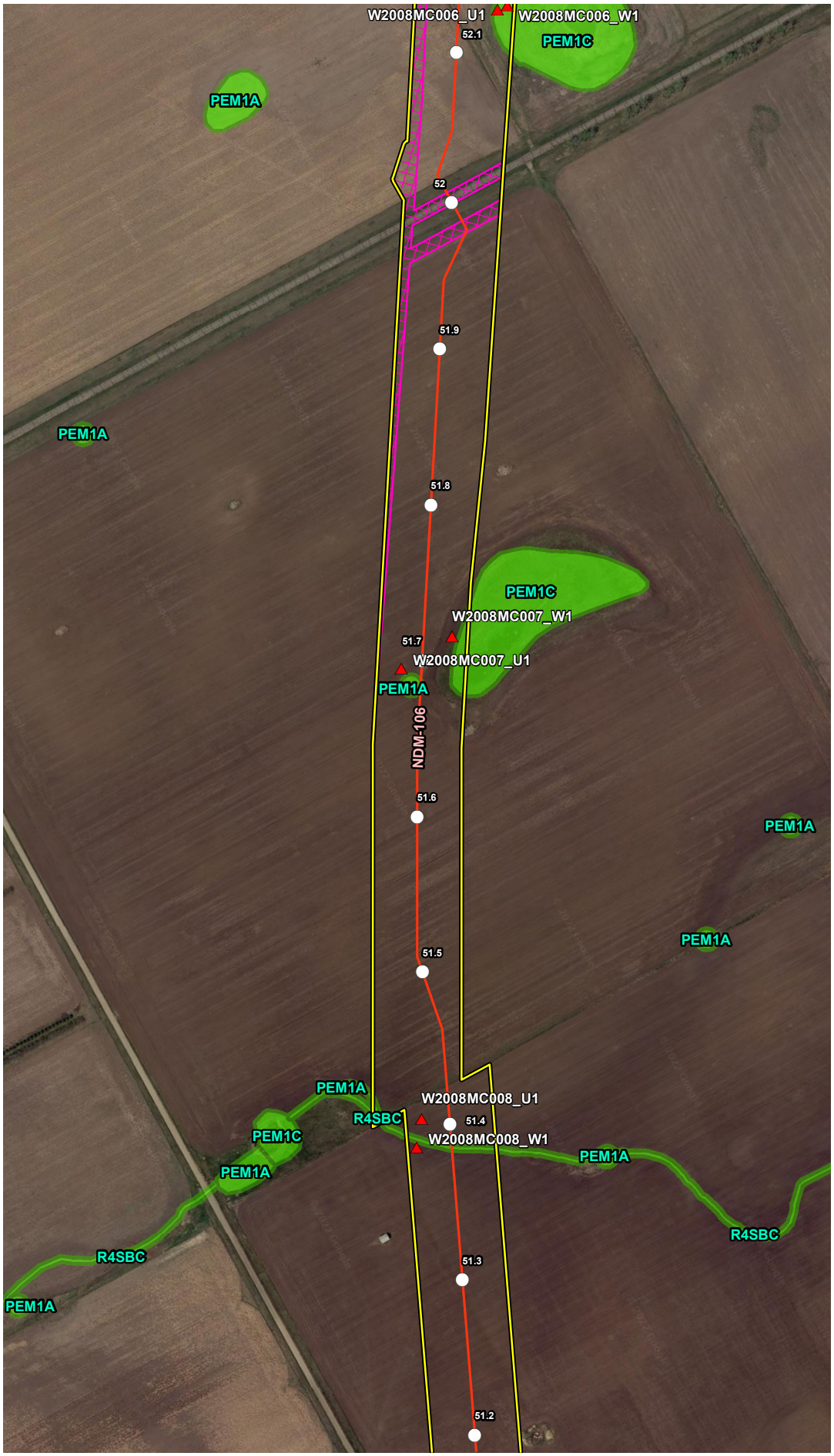
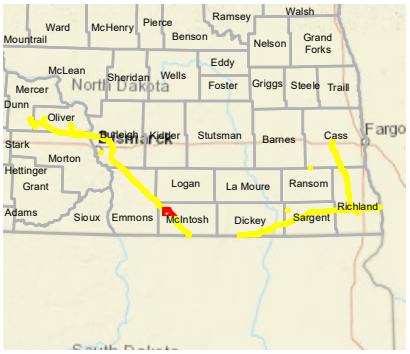
## NWI MAP




## VICINITY MAP

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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Revision description

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| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 136 of 392 | 2001-22-004<br>Current Revision |

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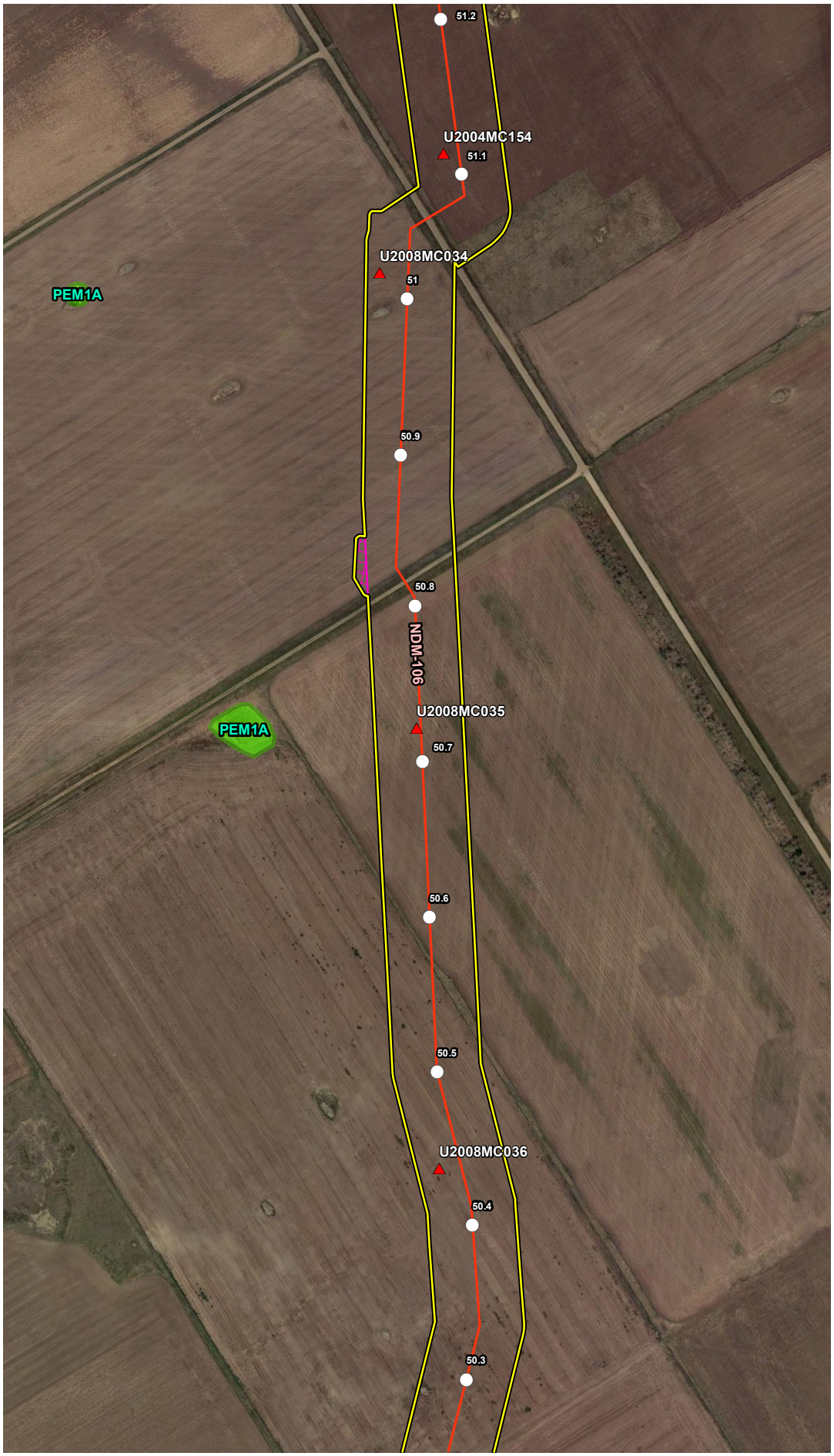
## NWI MAP

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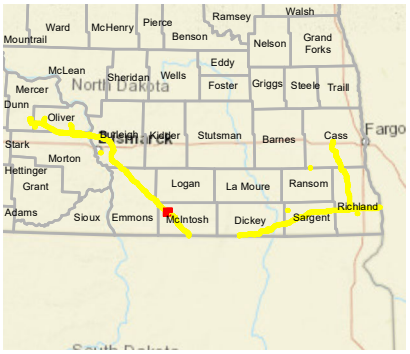


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| Scale: | Projection: |
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| Sheet:<br>137 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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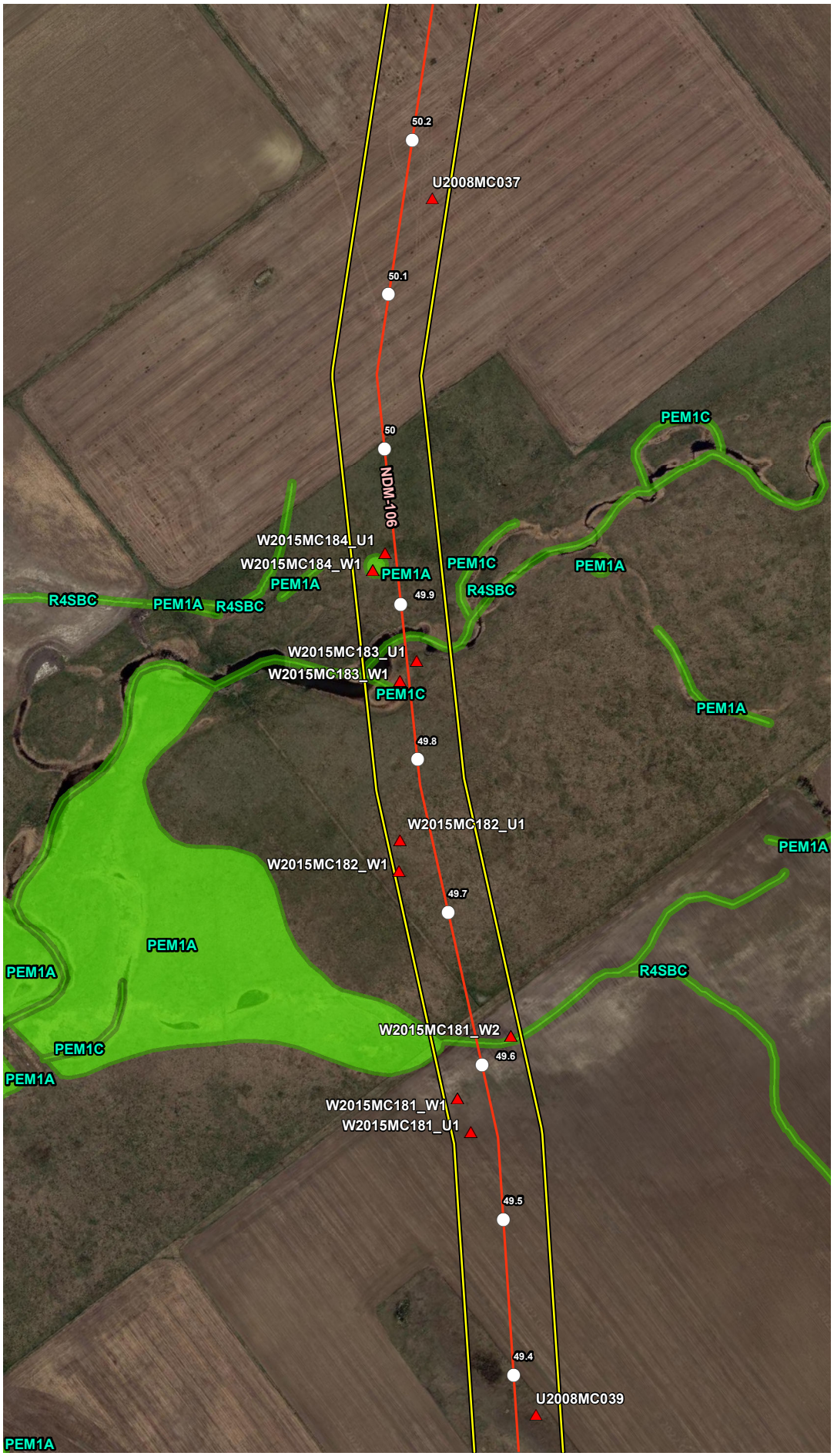
## NWI MAP

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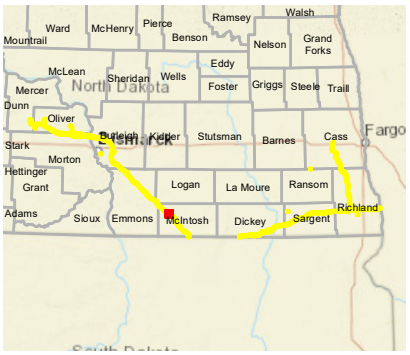


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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>138 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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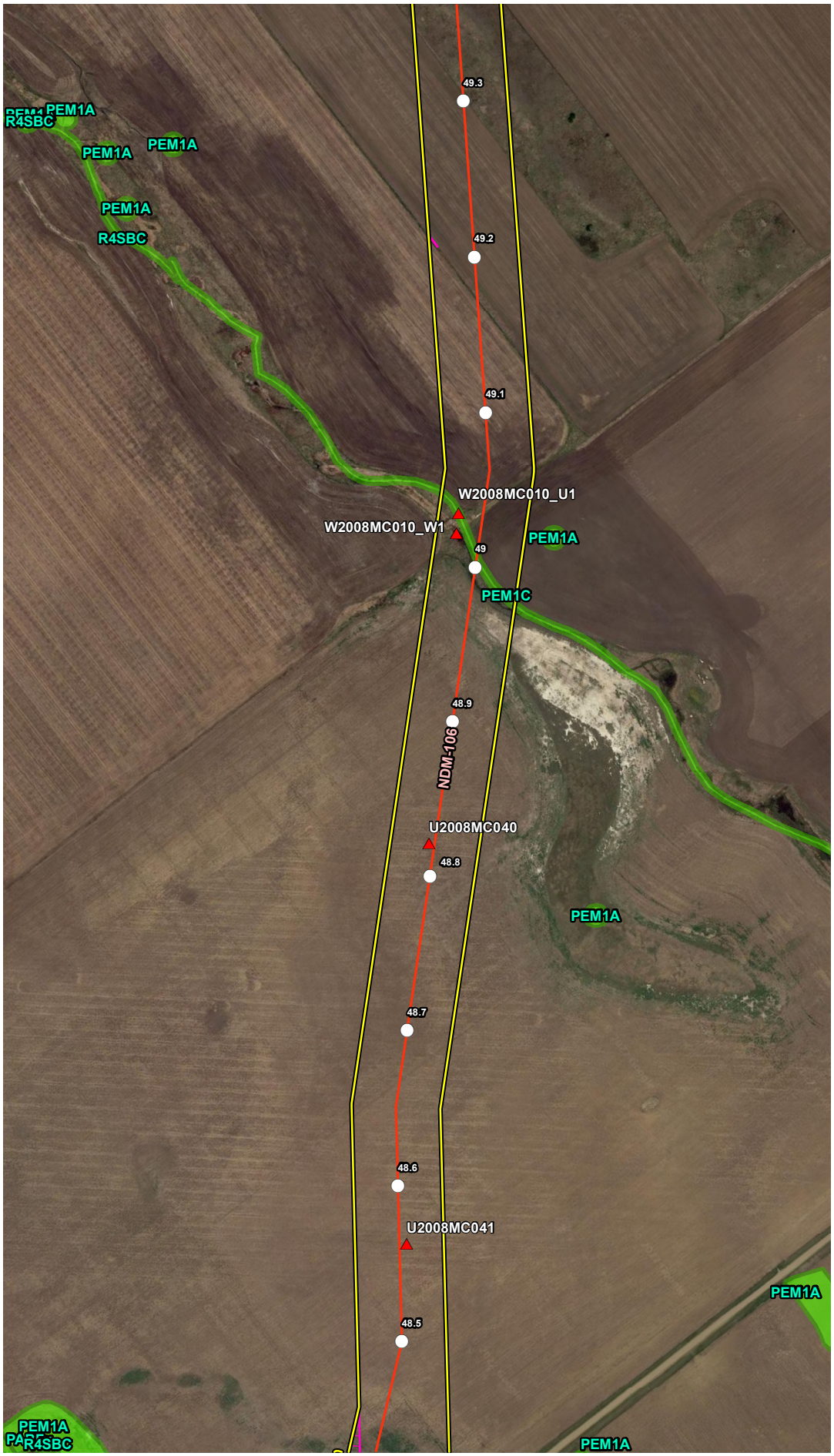
## NWI MAP

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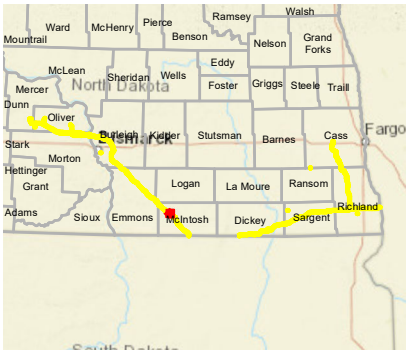


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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

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Appendix A-4

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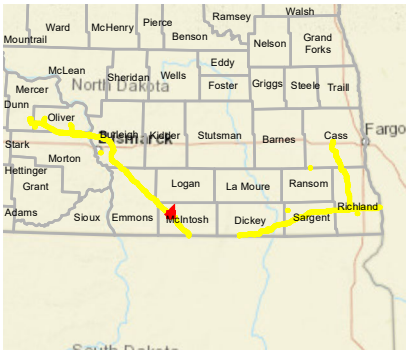
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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| | | |

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Figure Title:

NWI Map

Figure Number:

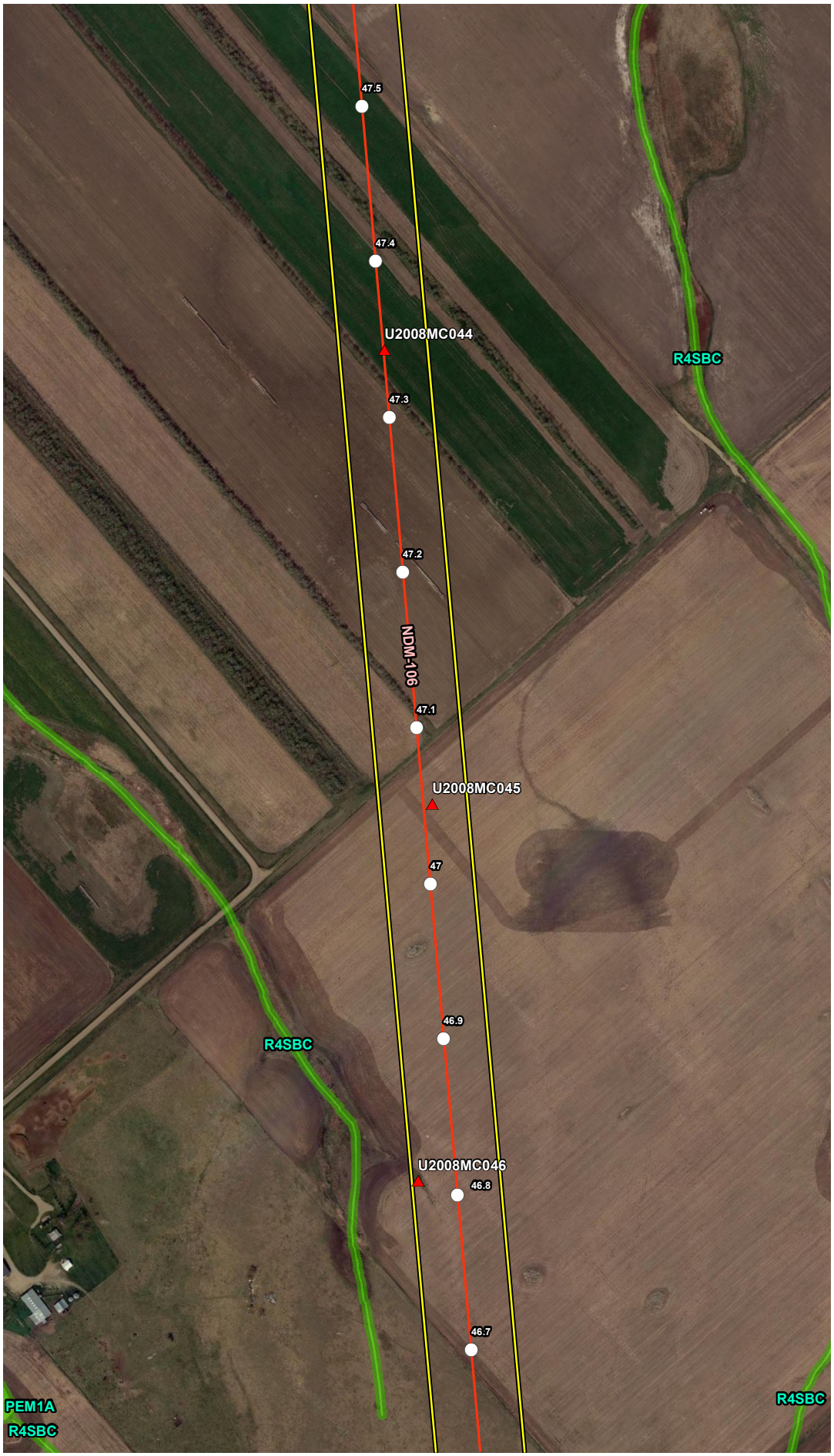
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 140 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ISV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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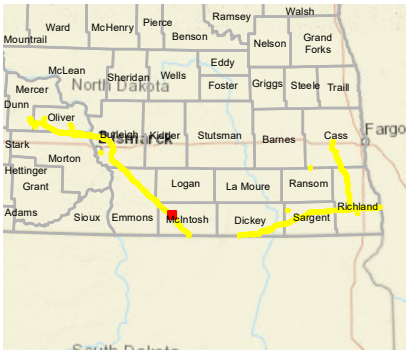


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>141 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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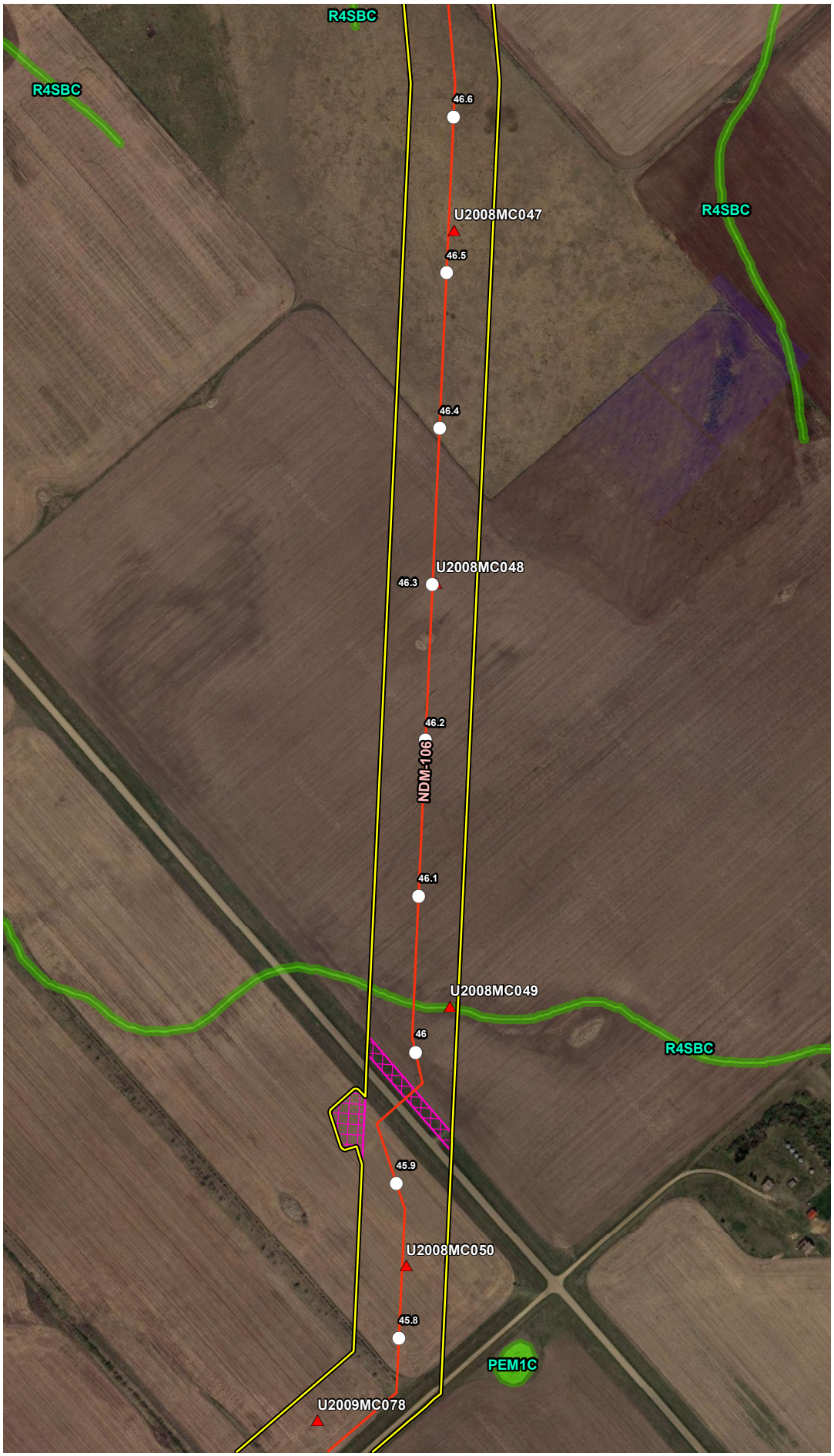


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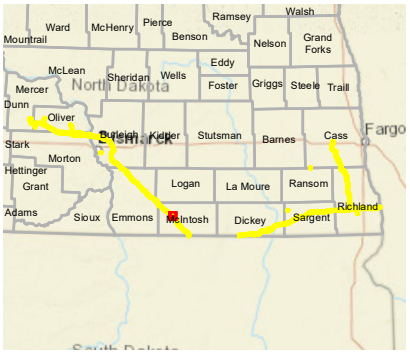


## LEGEND

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0 250 500 Feet

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| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |

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Figure Title:
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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>142 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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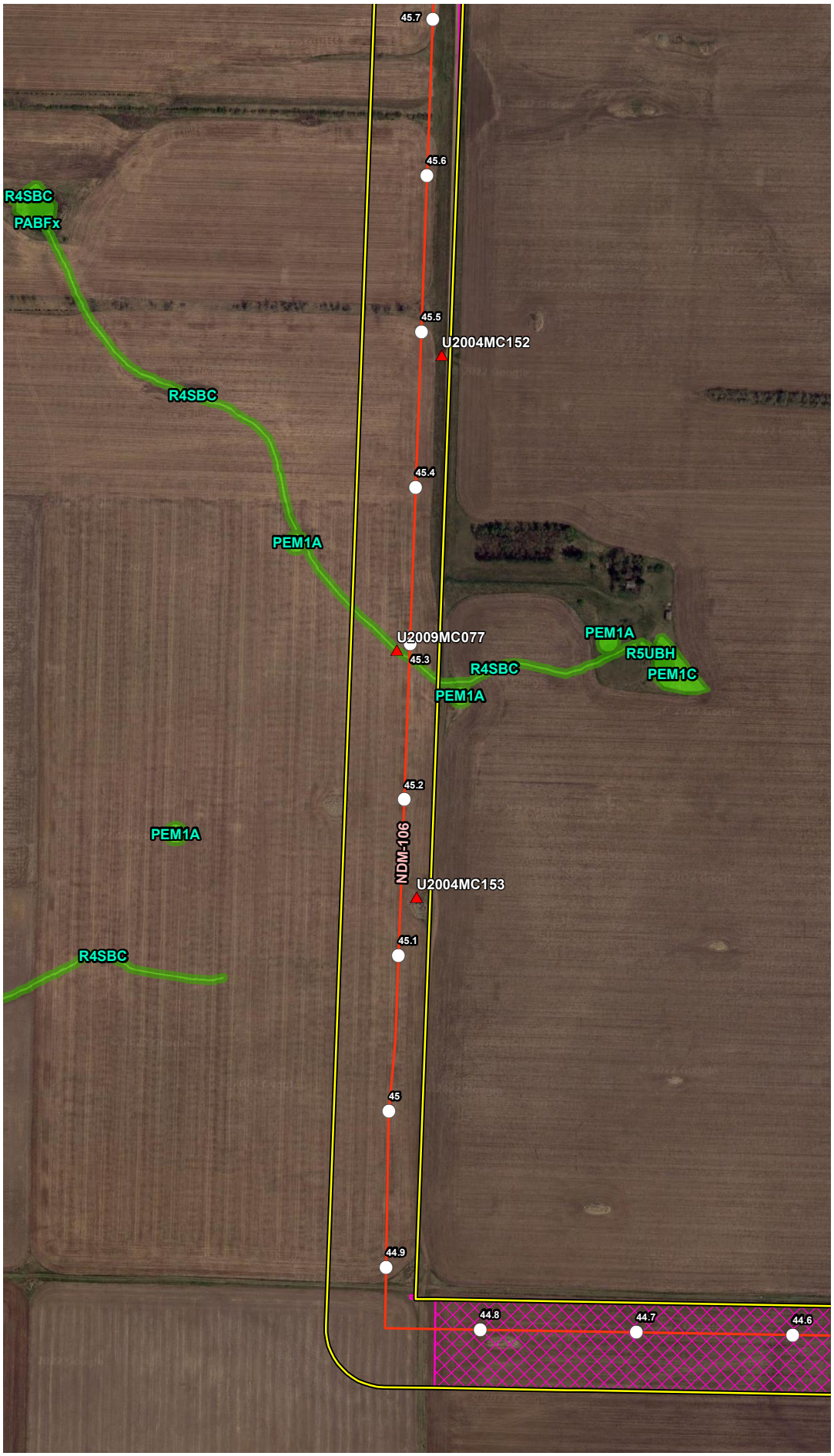
## NWI MAP

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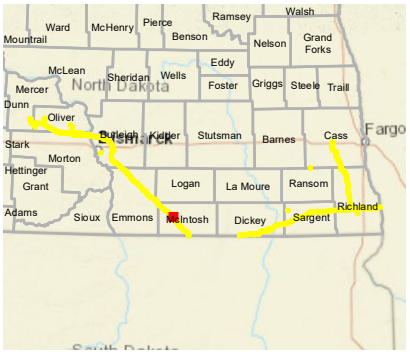


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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|---|---|---|
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Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 143 of 392 | 2001-22-004<br>Current Revision |

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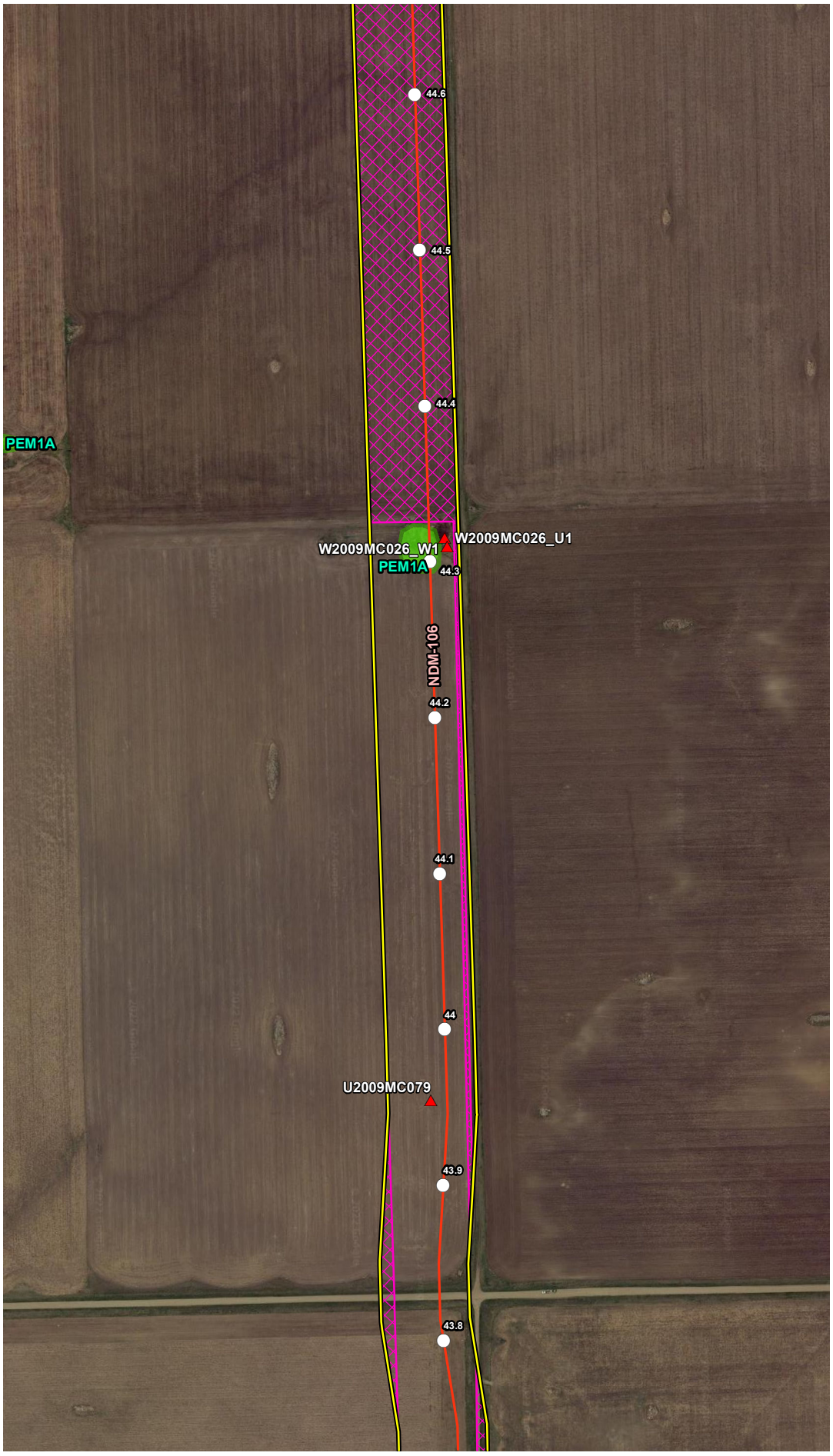
## NWI MAP

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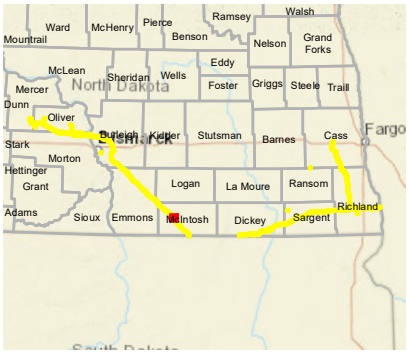


## LEGEND

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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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**Figure Number:**
Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 144 of 392 | 2001-22-004<br>Current Revision |

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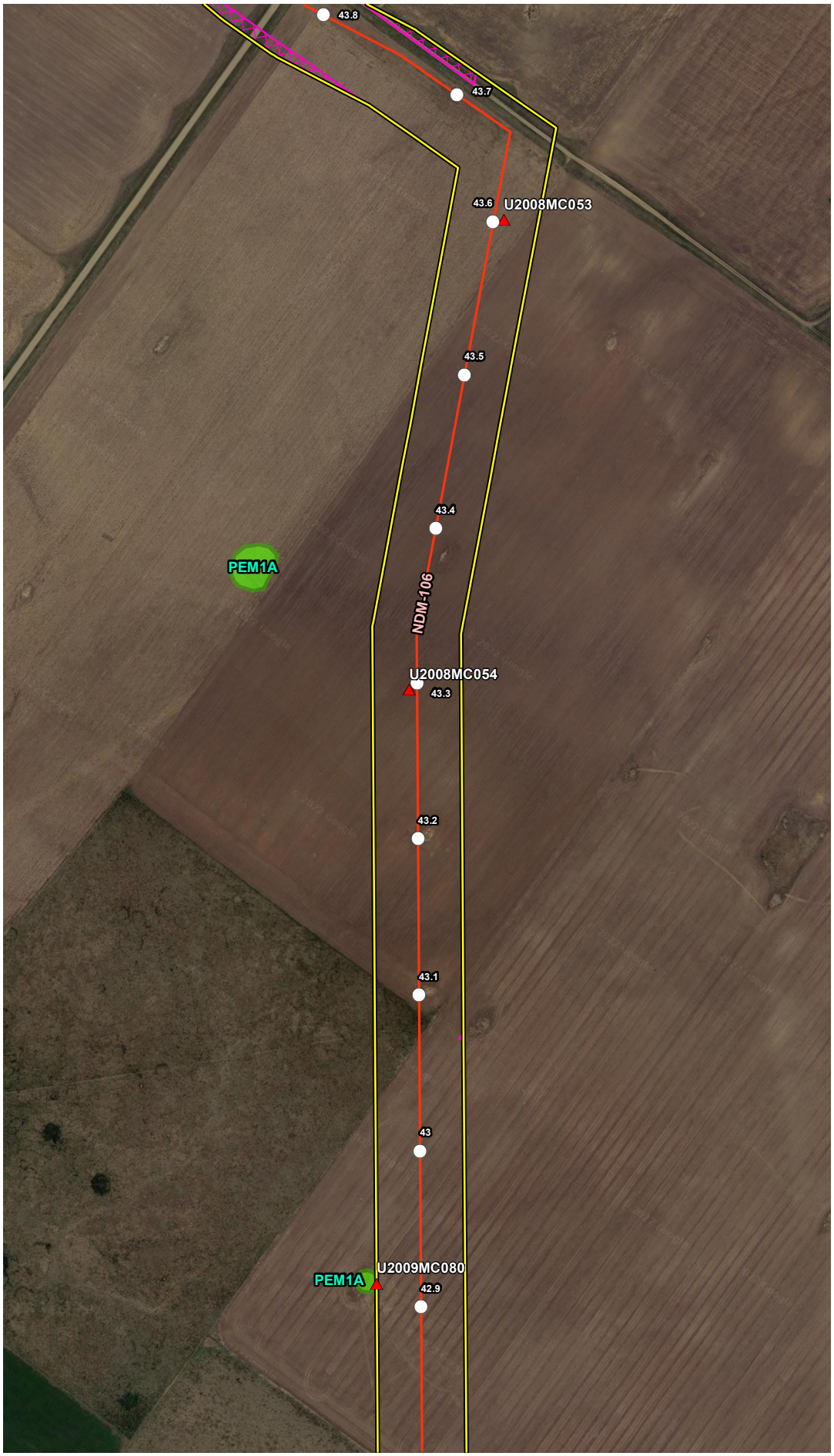
## NWI MAP

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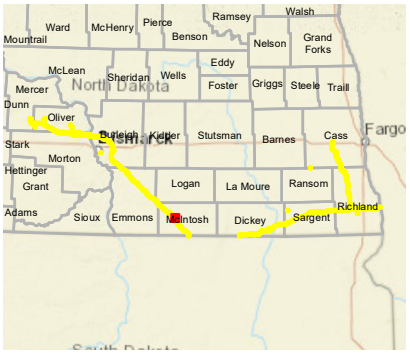


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0 250 500 Feet

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| Date: | Revised by: | Checked by: |

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Appendix A-4

| Scale: | Projection: |
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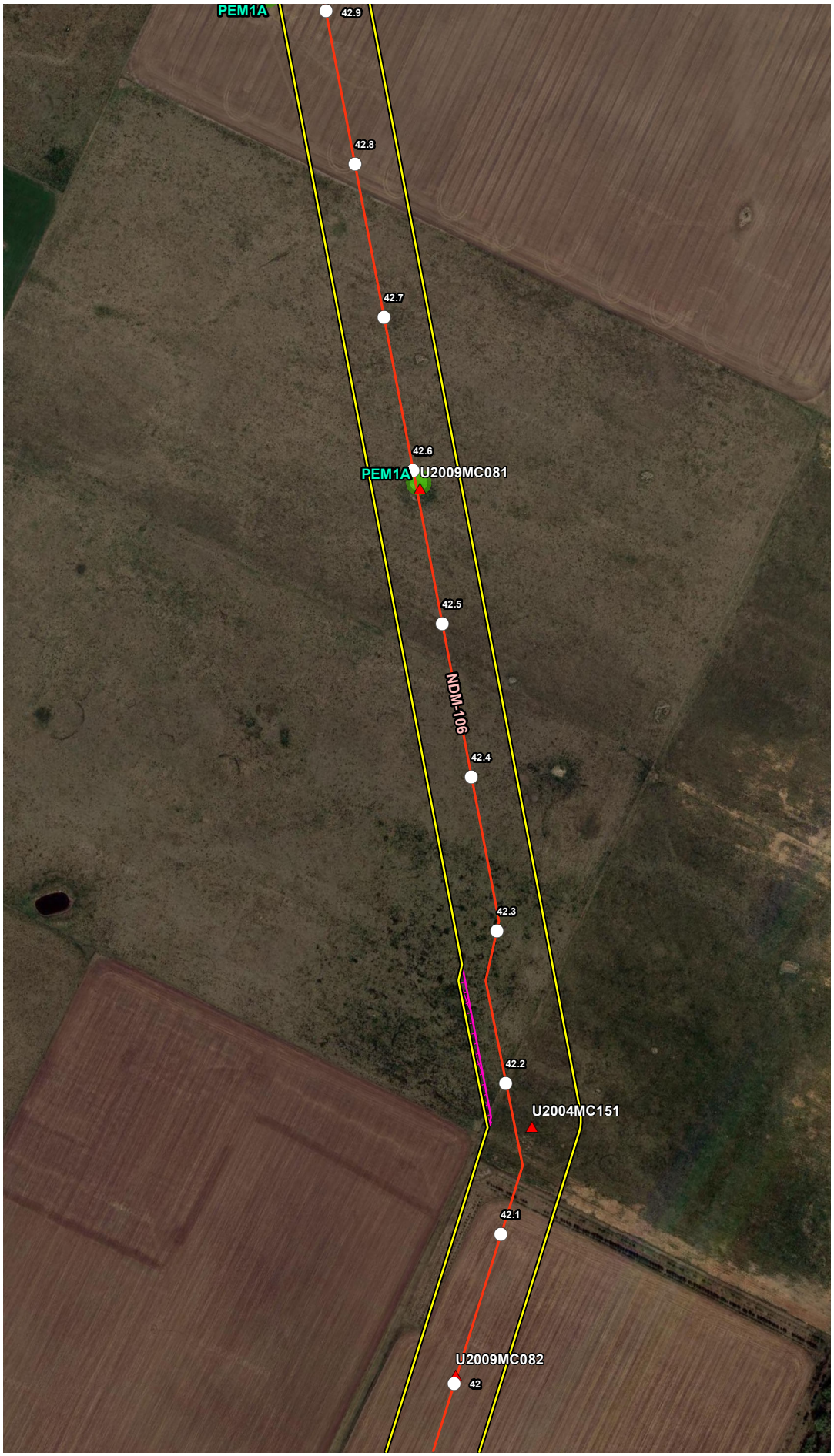
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>145 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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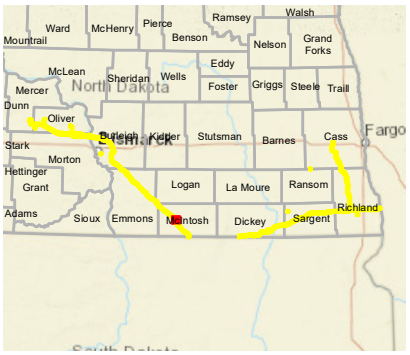


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| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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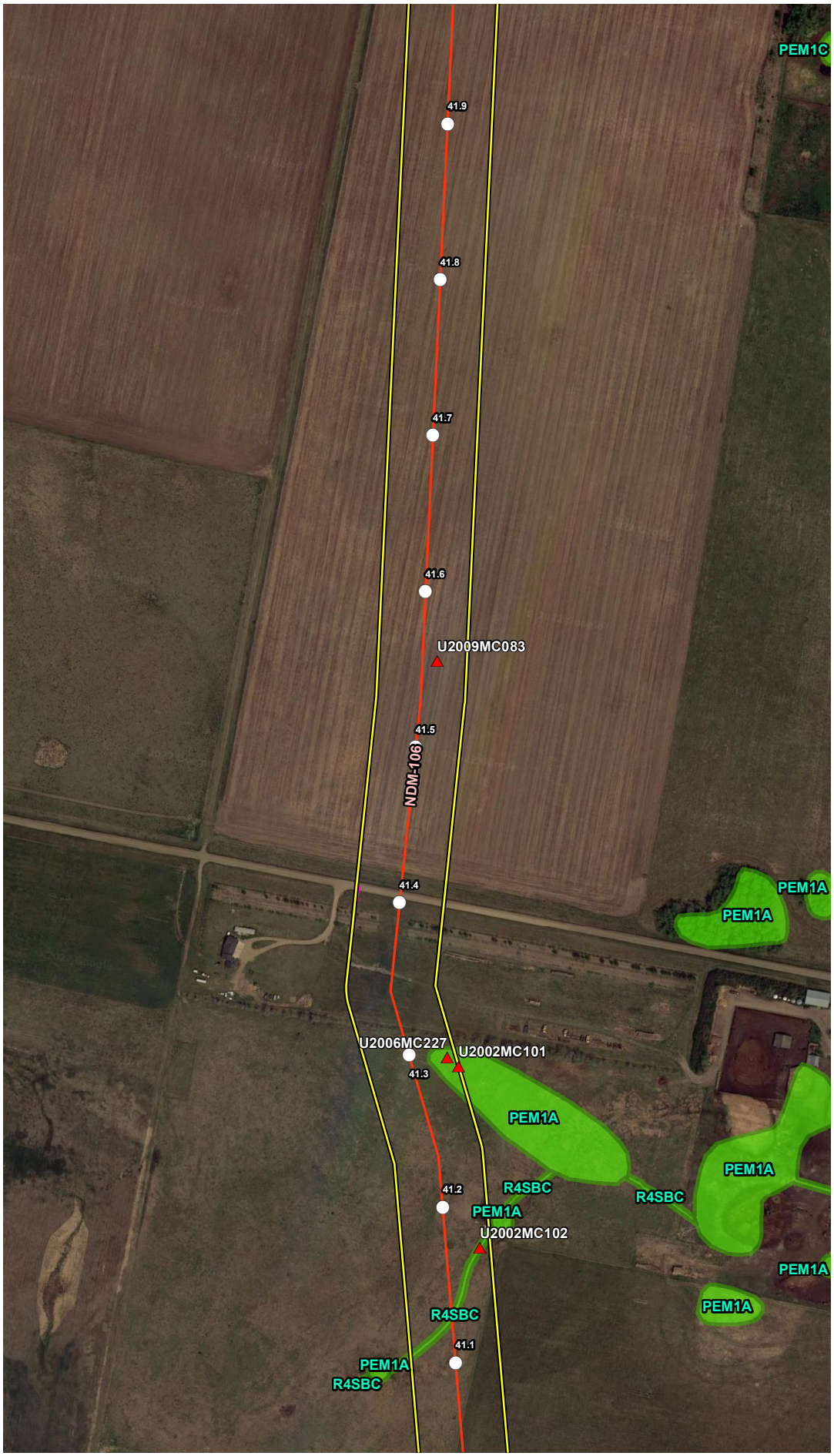
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>146 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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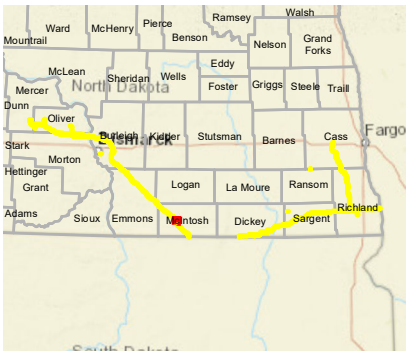


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0 250 500 Feet

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Figure Title:

NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

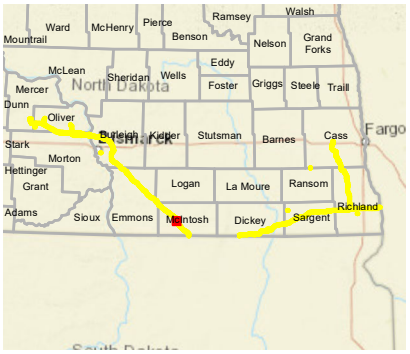
| Sheet: | Drawing Number: |
|---|---|
| 147 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP

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| Sheet: | Drawing Number: |
|---|---|
| 148 of 392 | 2001-22-004<br>Current Revision |

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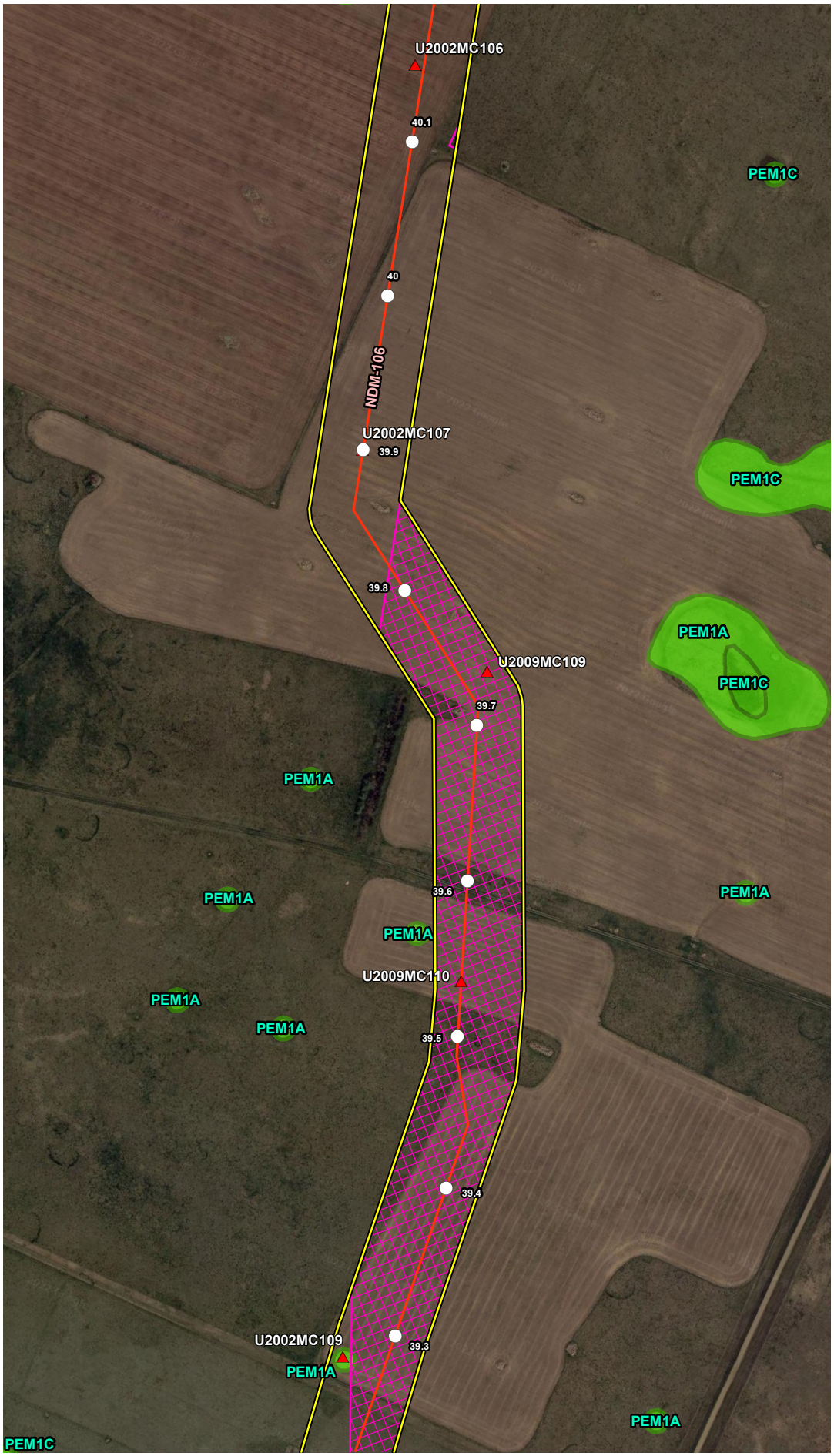
## NWI MAP

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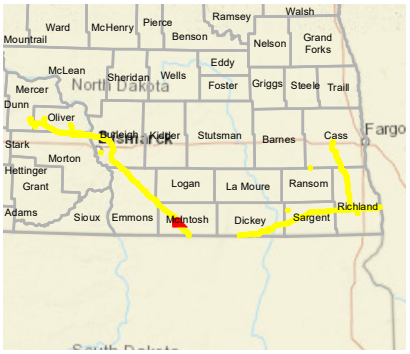


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Appendix A-4

| Scale: | Projection: |
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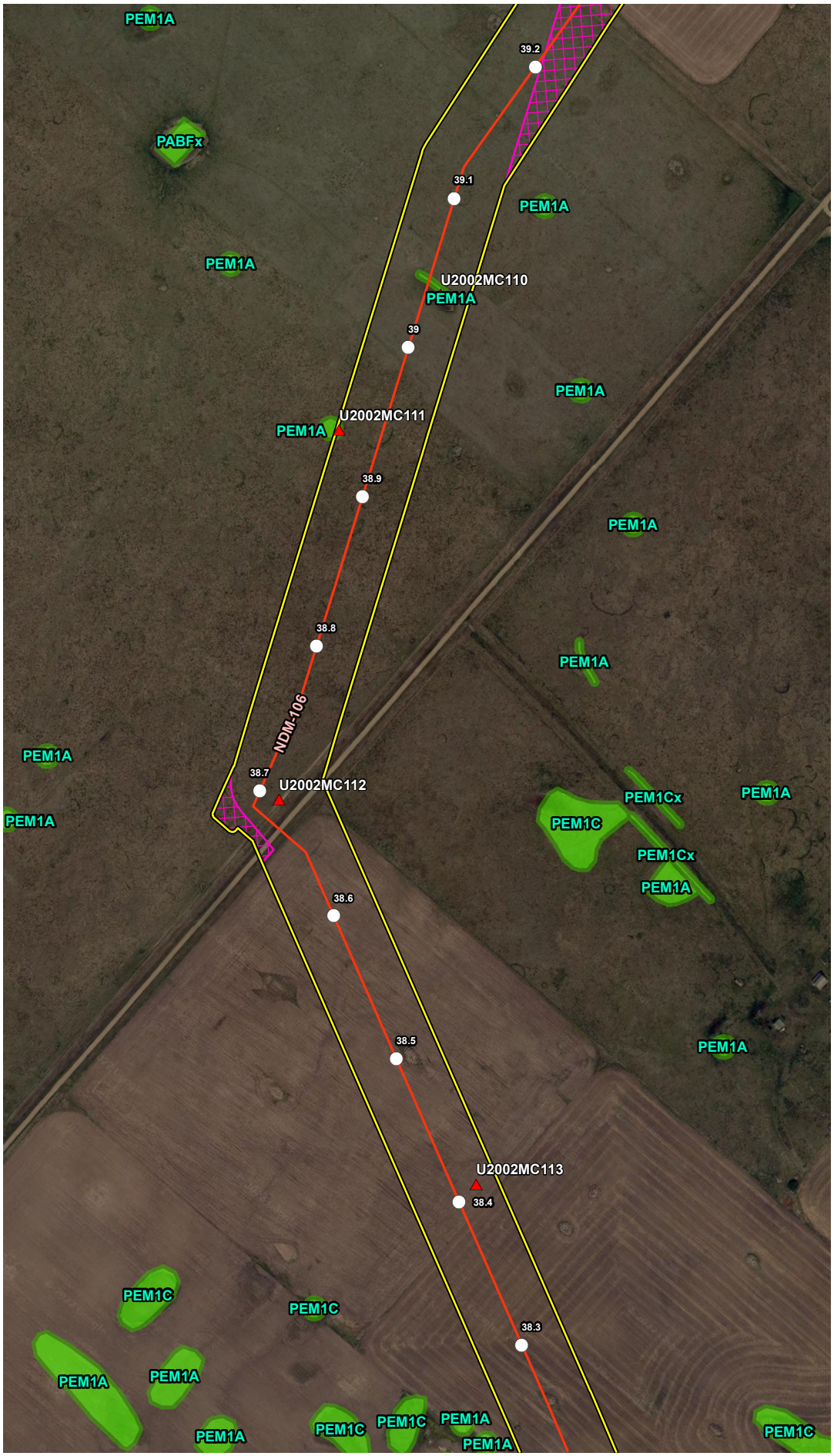
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>149 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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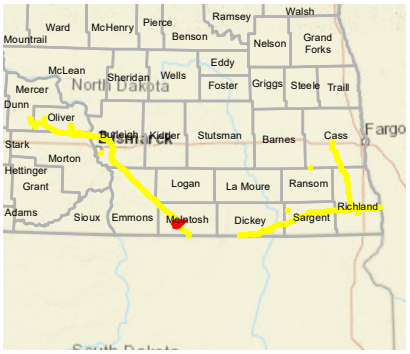


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| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 150 of 392 | 2001-22-004<br>Current Revision |

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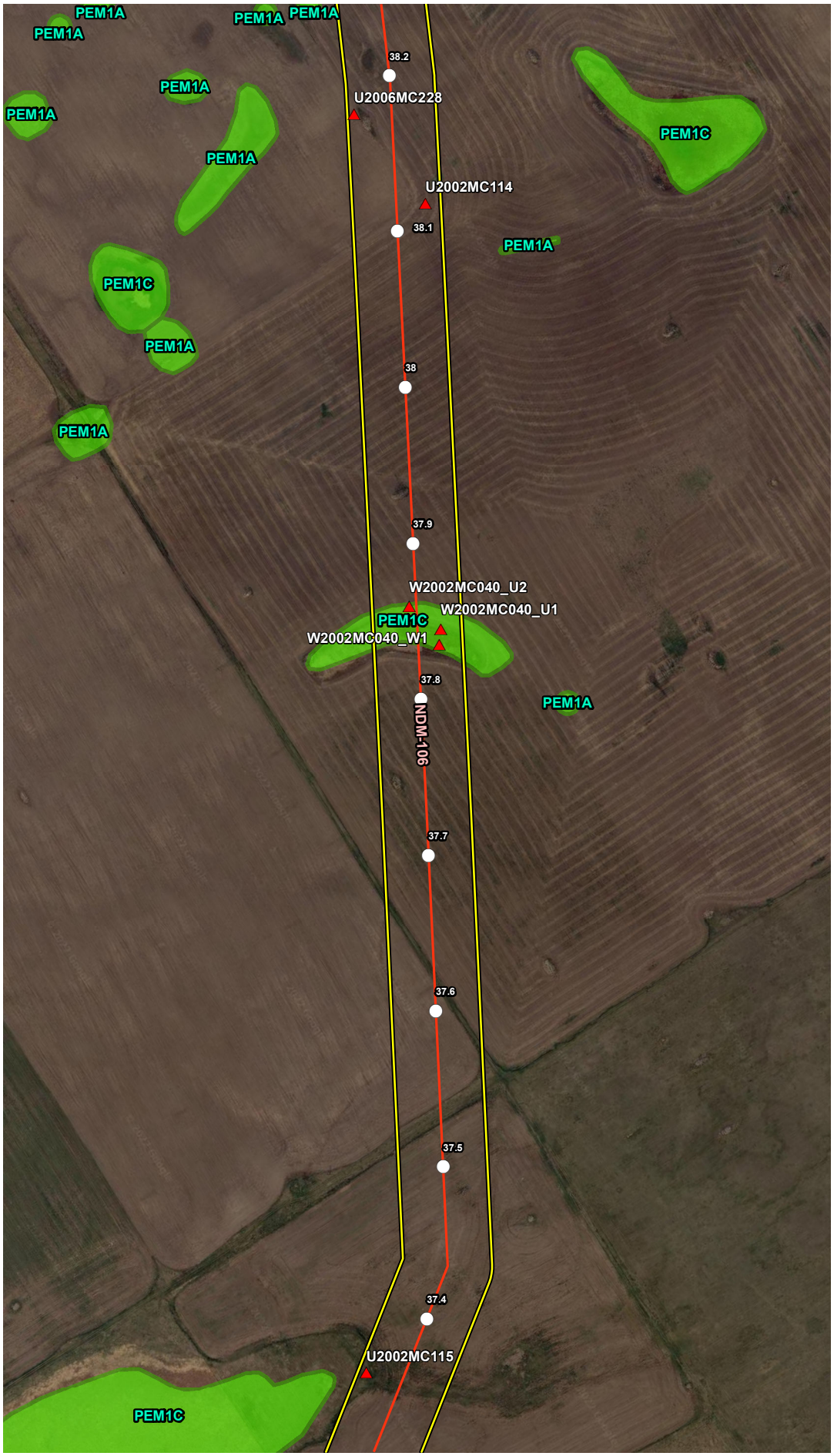
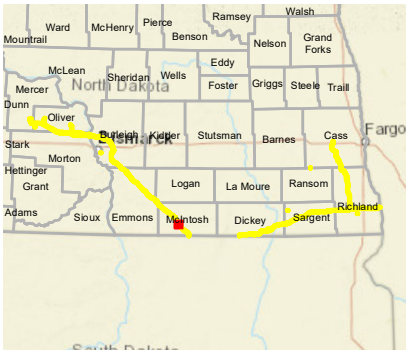
## NWI MAP




## VICINITY MAP




## LEGEND

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NWI Map

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Appendix A-4

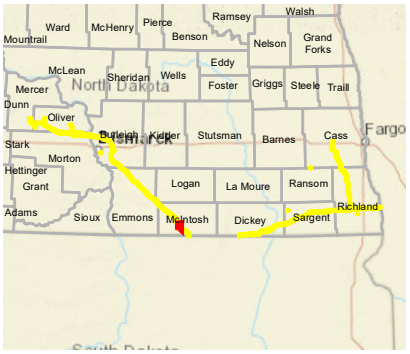
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>151 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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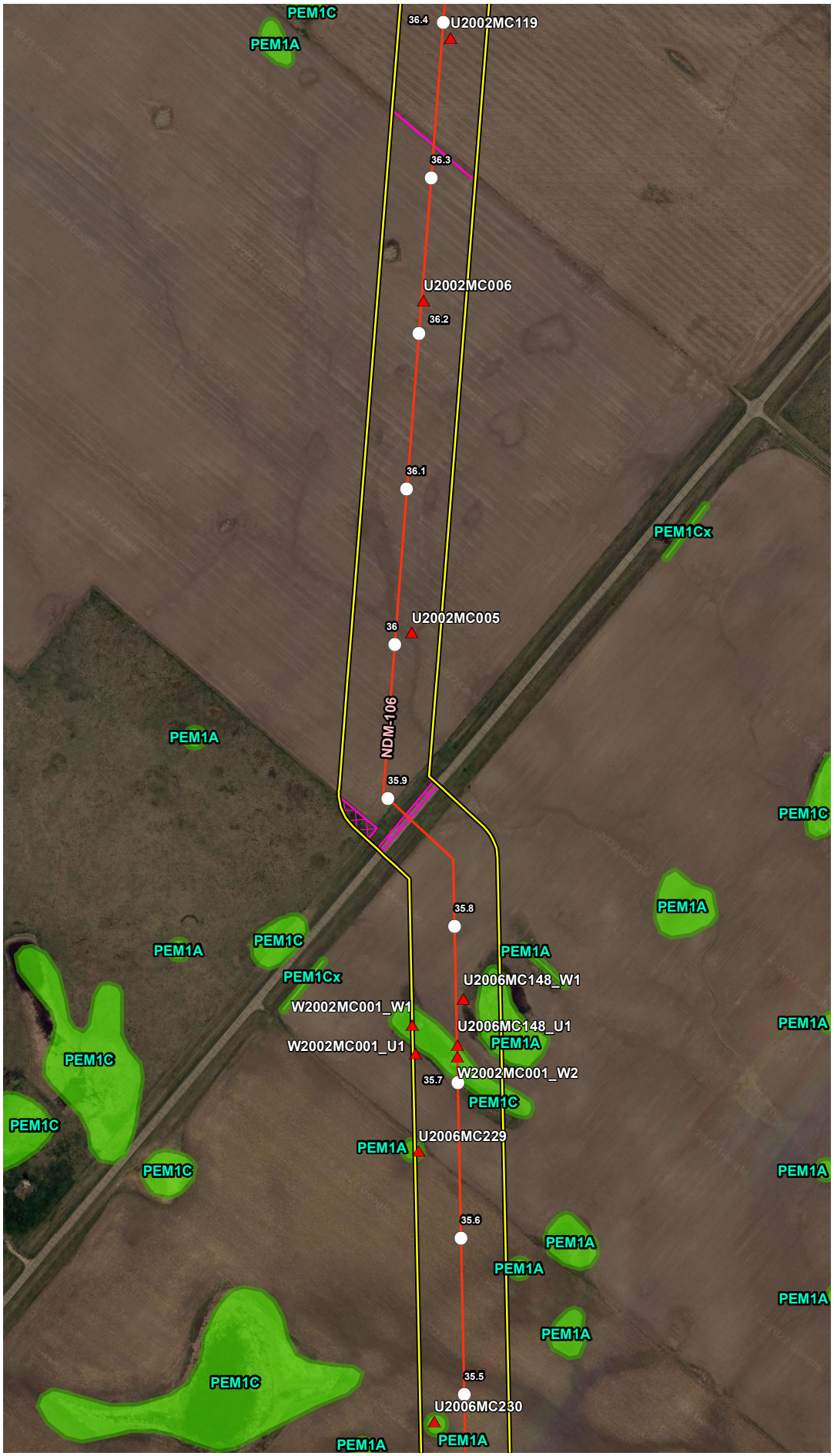
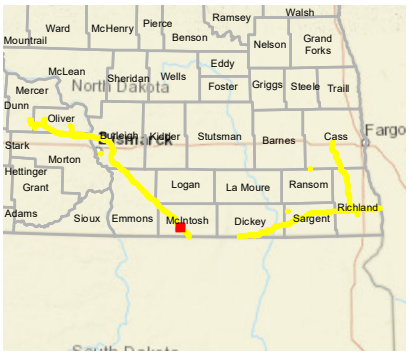
| Sheet: | Drawing Number: |
| 152 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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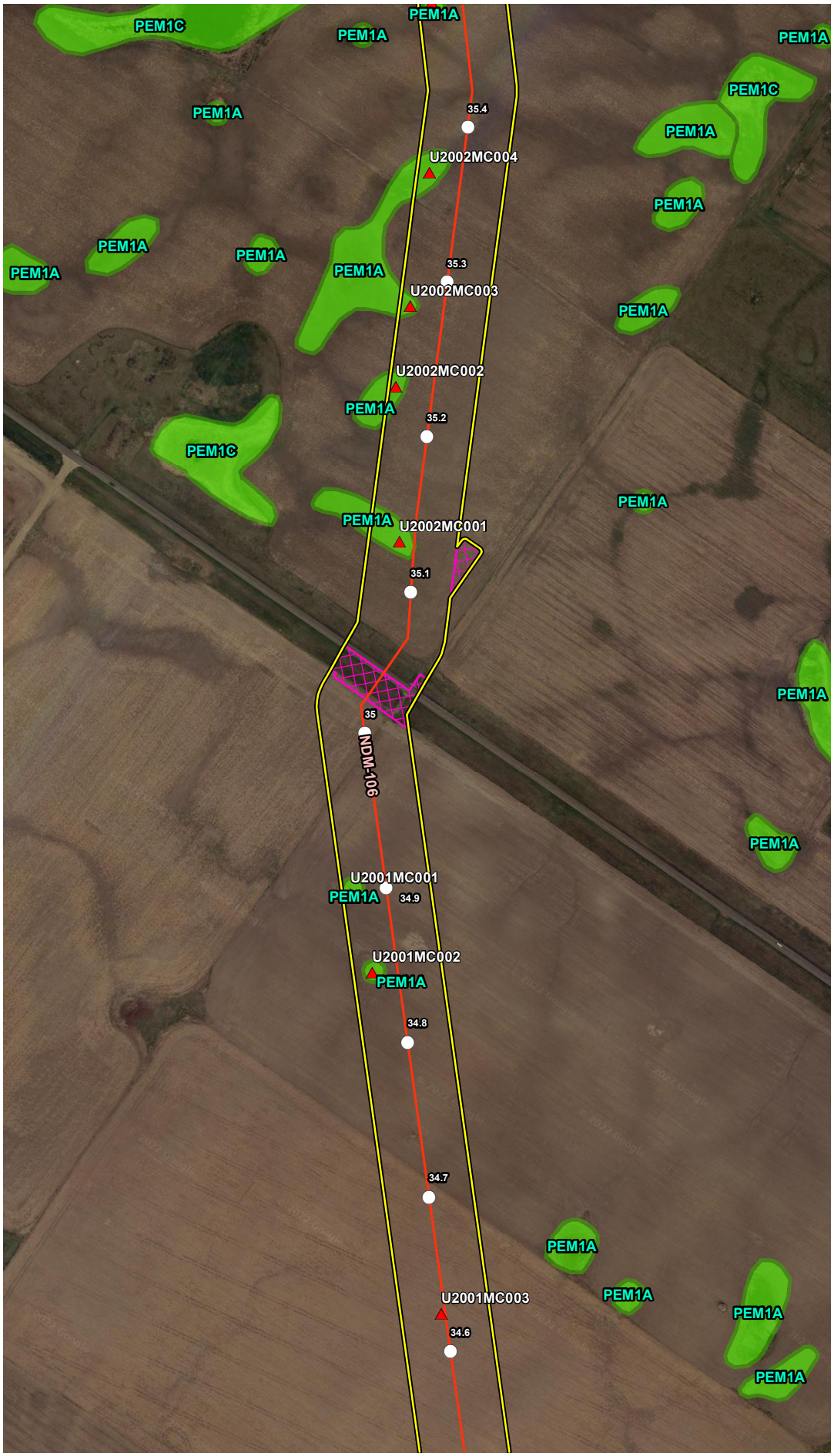
Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 153 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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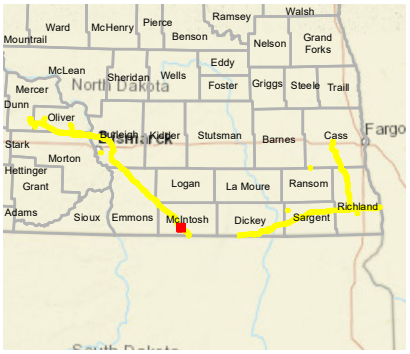


## LEGEND

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0 250 500 Feet

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

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Figure Title:

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Figure Number:

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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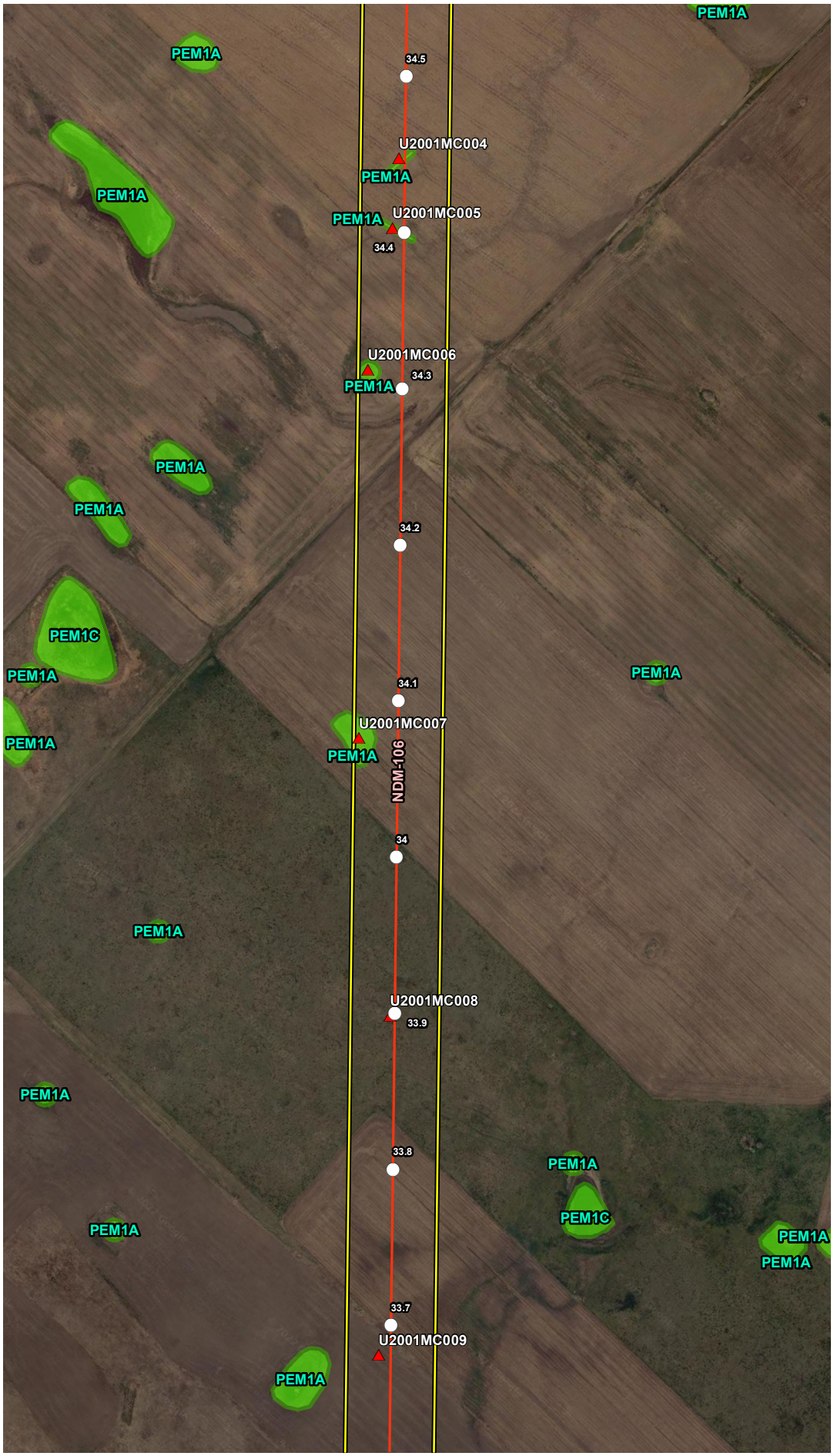
| 154 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\4_NWI.mxd

## NWI MAP

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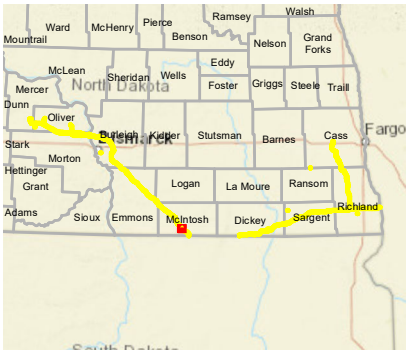


## LEGEND

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0 250 500 Feet

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| Scale: | Projection: |
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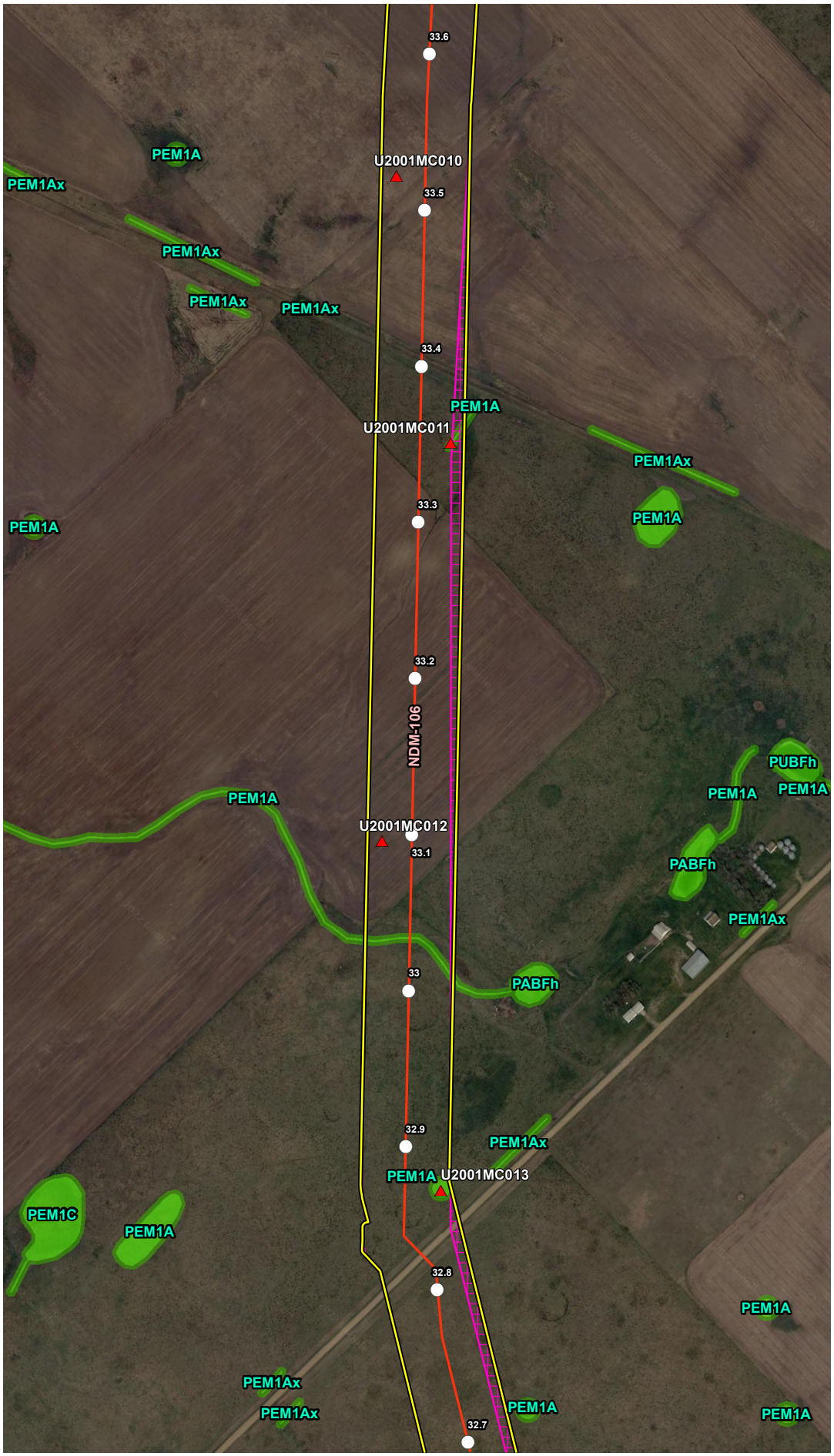
| Sheet:<br>155 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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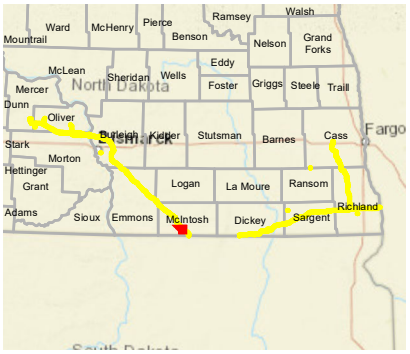


## LEGEND

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| Date: | Revised by: | Checked by: |

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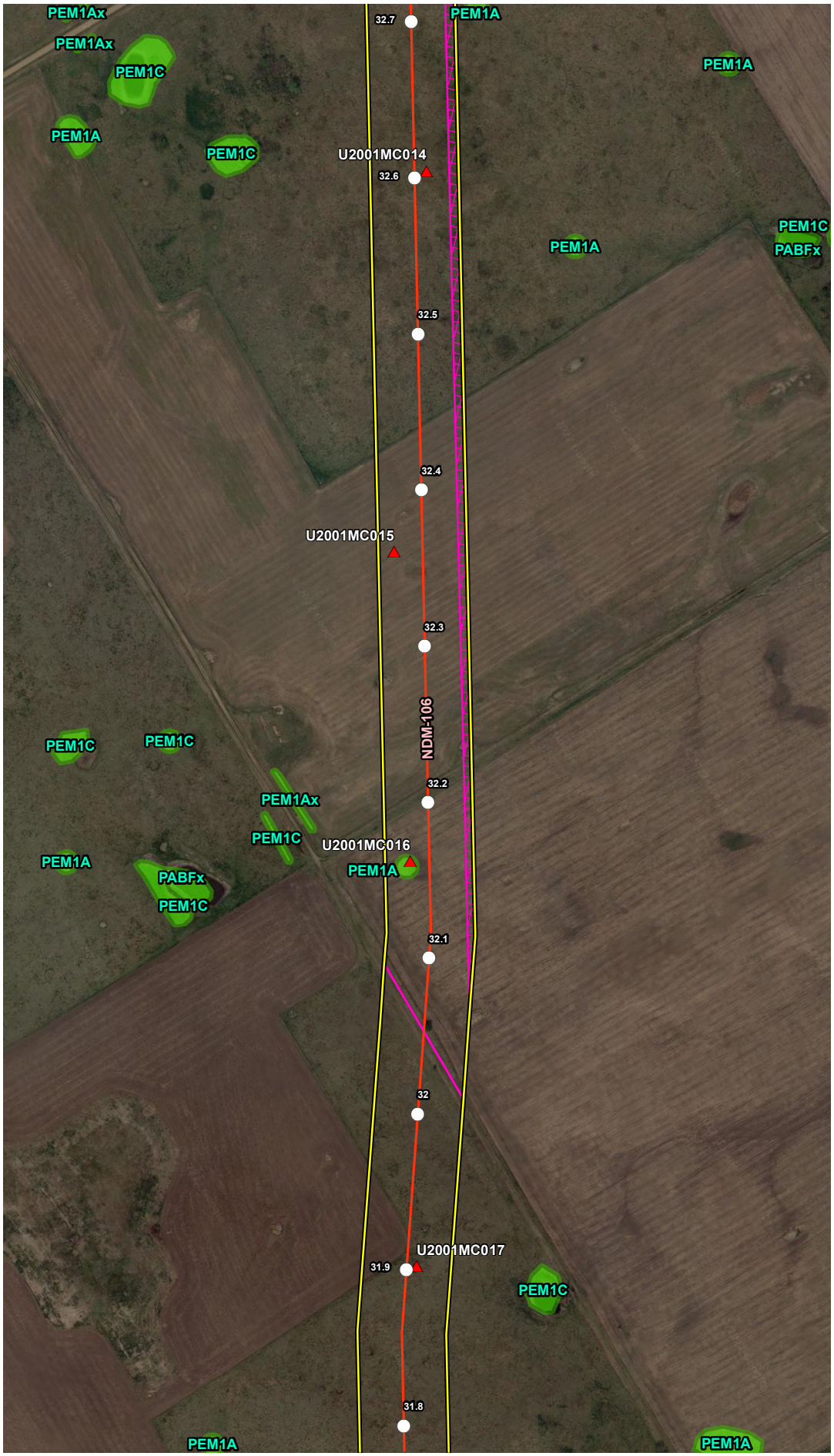
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>156 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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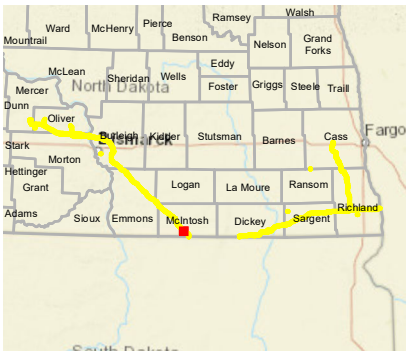


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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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**Figure Number:**

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 157 of 392 | 2001-22-004<br>Current Revision |

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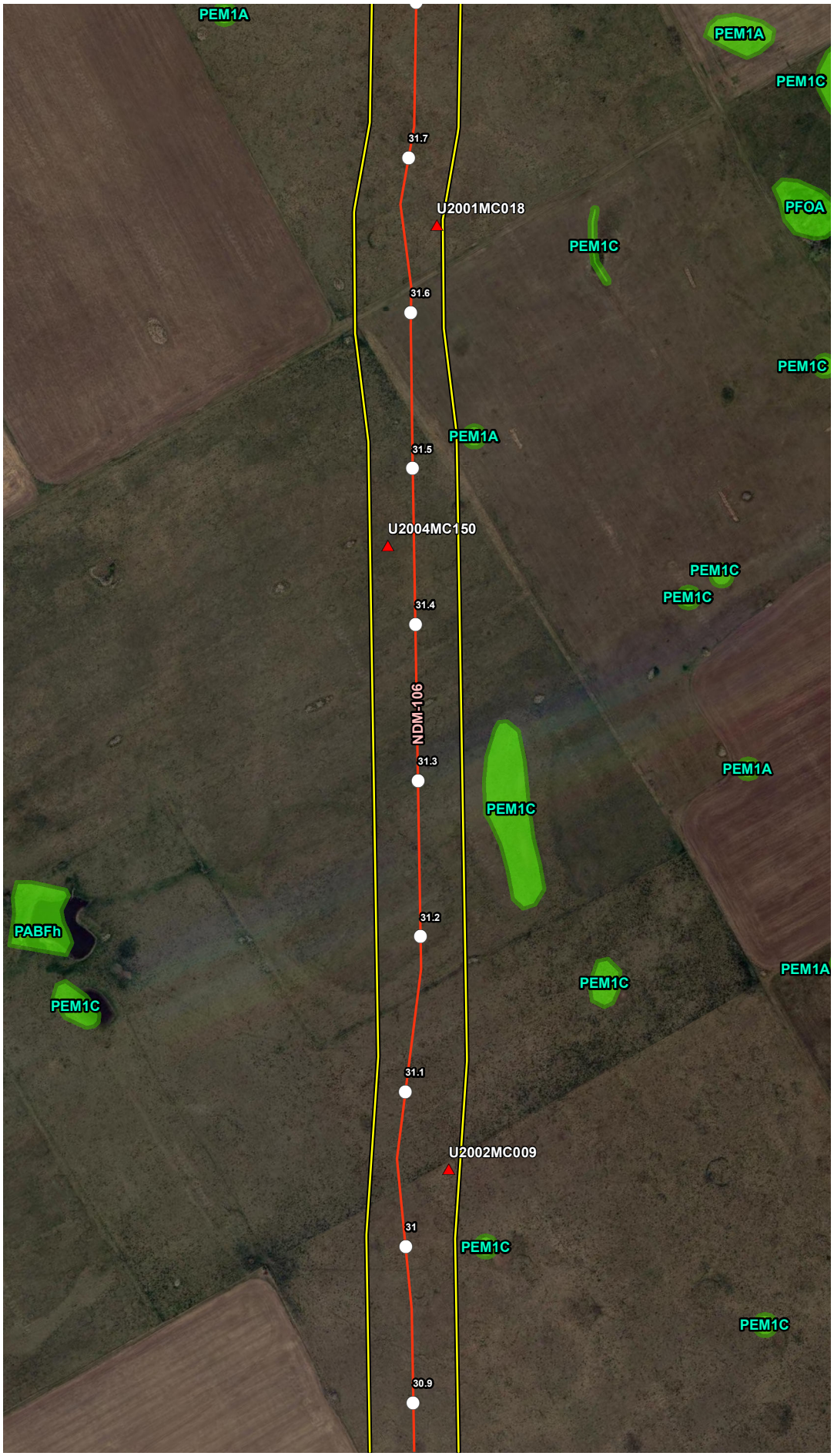
## NWI MAP

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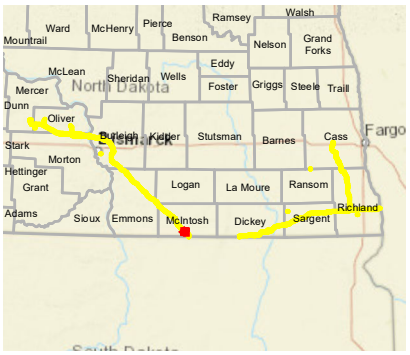


## LEGEND

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0 250 500 Feet

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| 2022-08-04 | MM | AB |

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| Date | Revised by | Checked by |
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Figure Number:

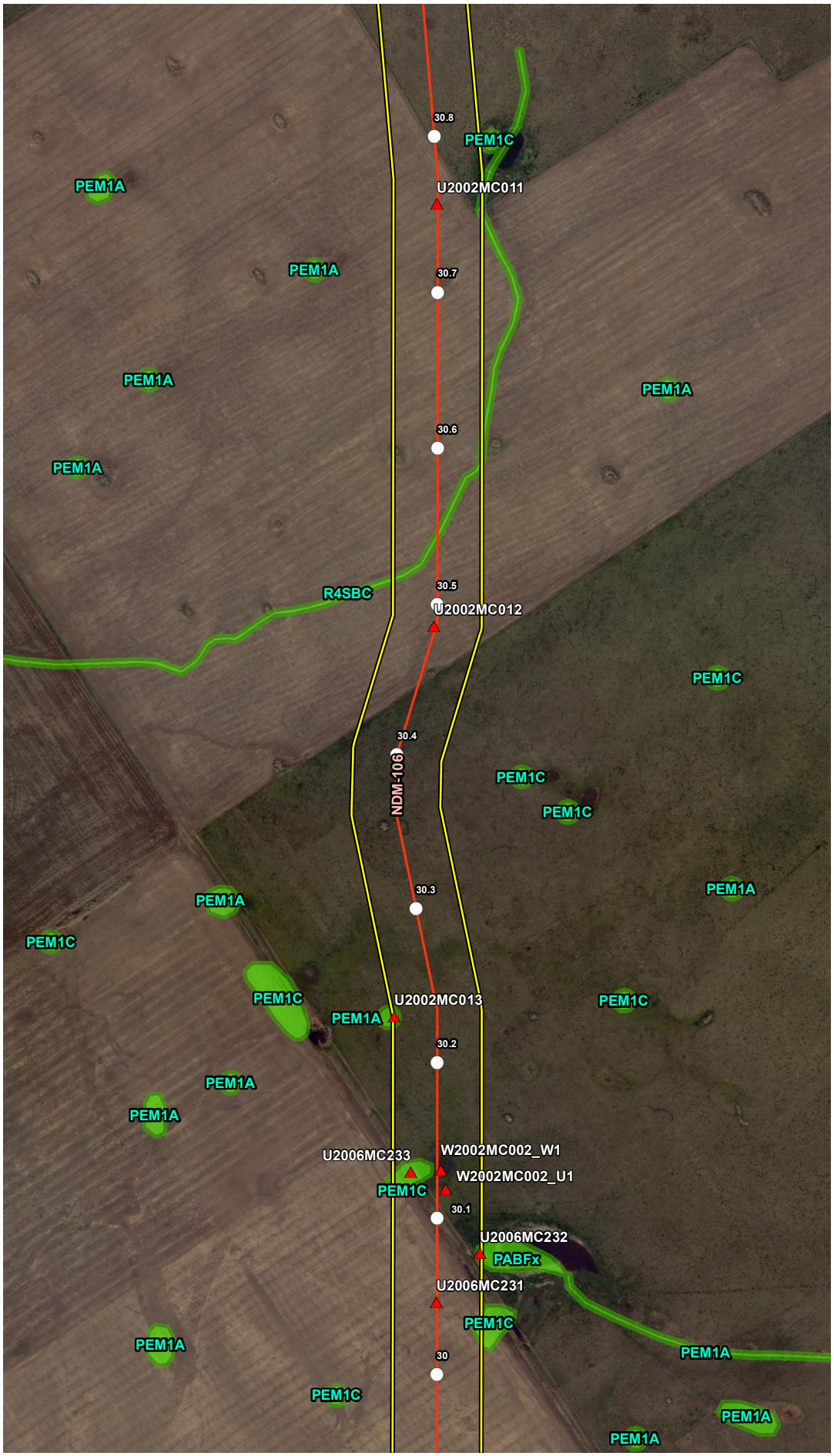
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 158 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds14_NWI.mxd

## NWI MAP

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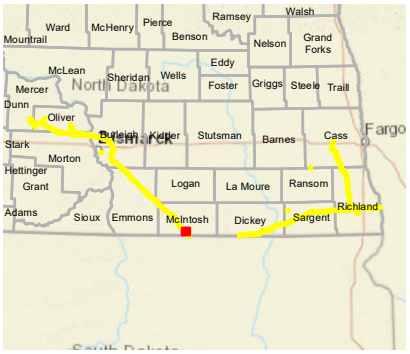


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## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

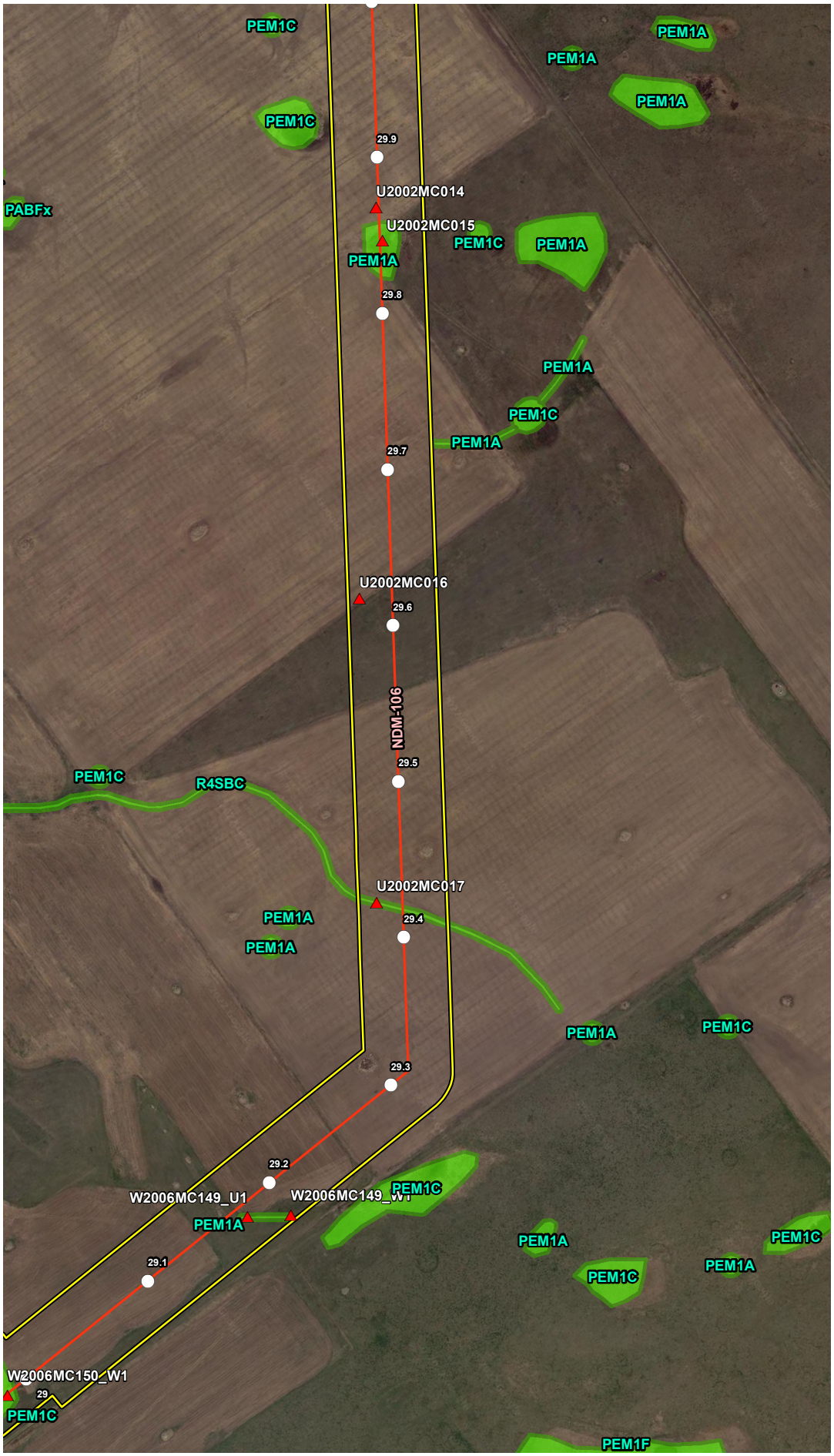
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
159 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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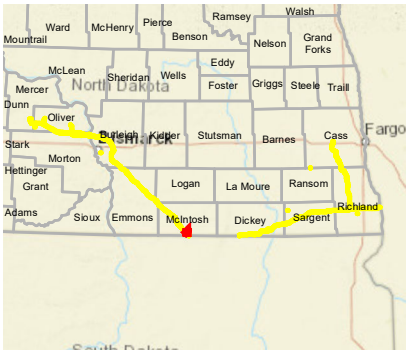


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
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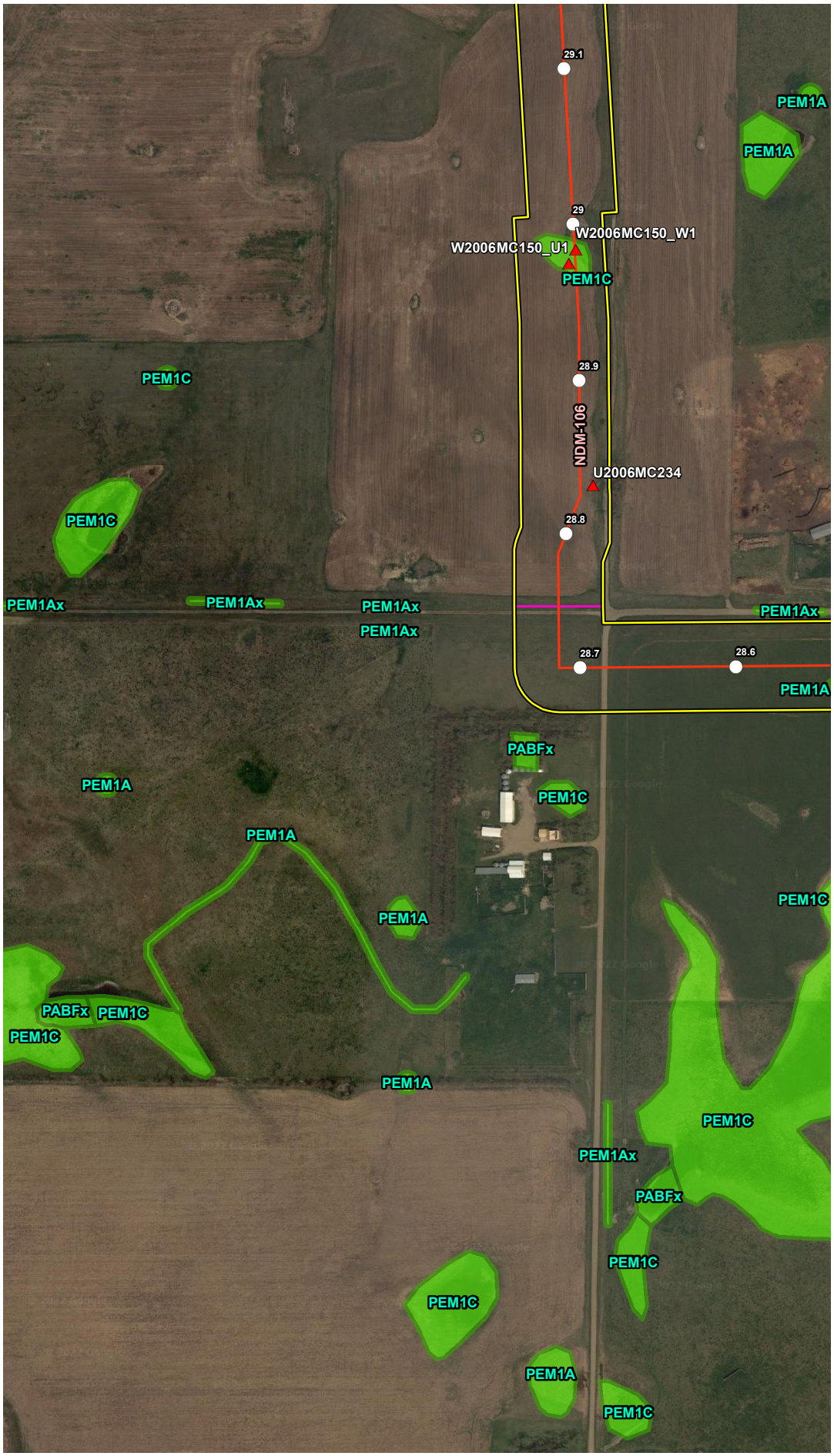
| 160 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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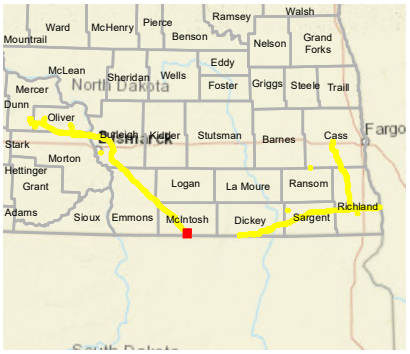


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|---|---|---|
| 2022-08-04 | MM | AB |

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| Date | Revised by | Checked by |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
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| 161 of 392 | 2001-22-004<br>Current Revision |

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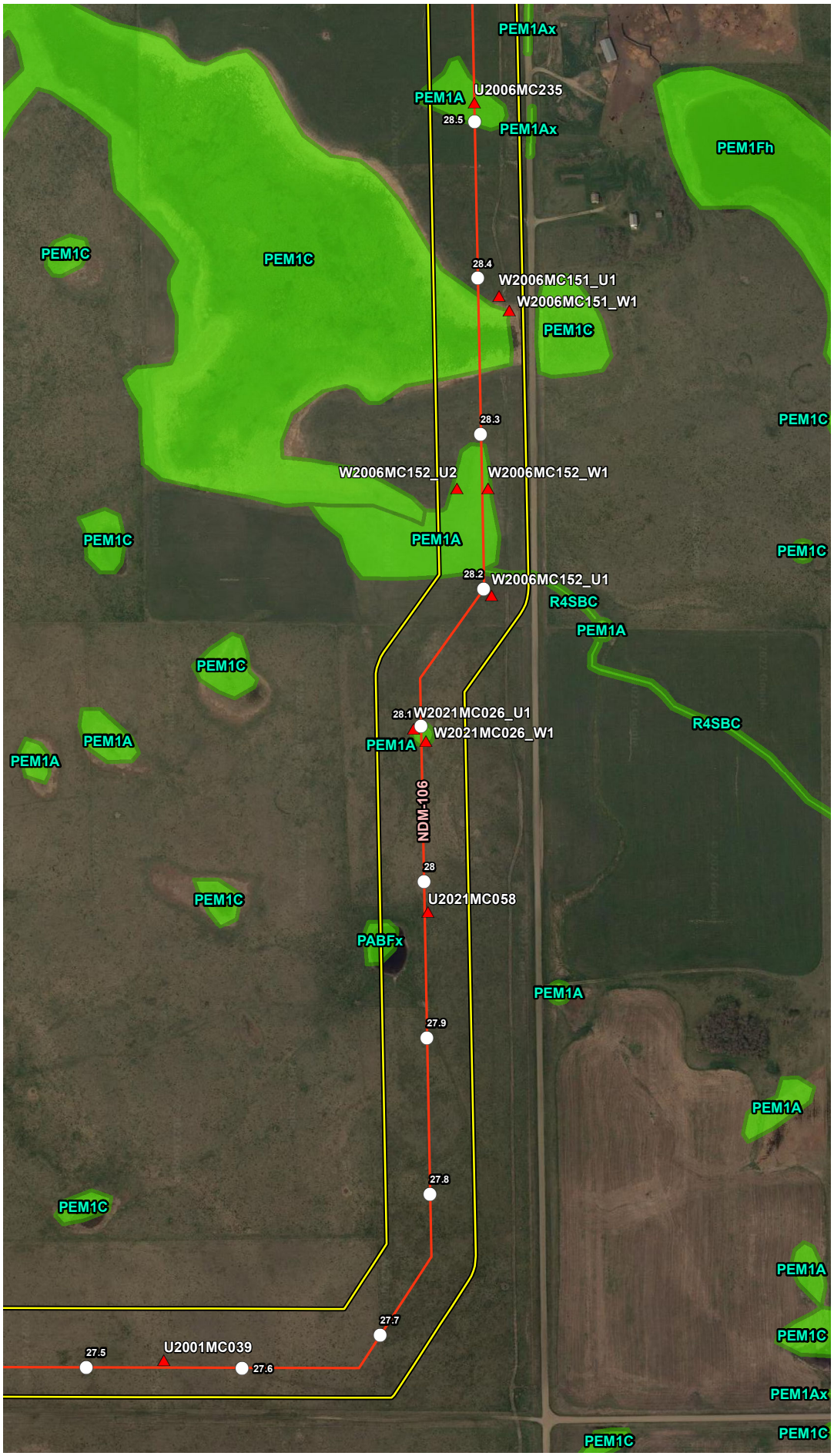
## NWI MAP

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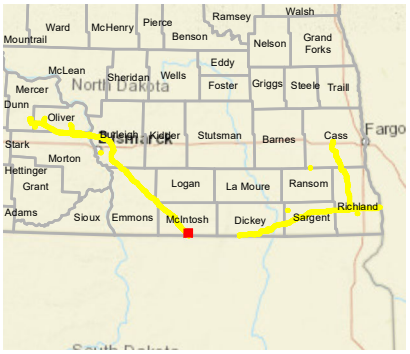


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| Date: | Revised by: | Checked by: |

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
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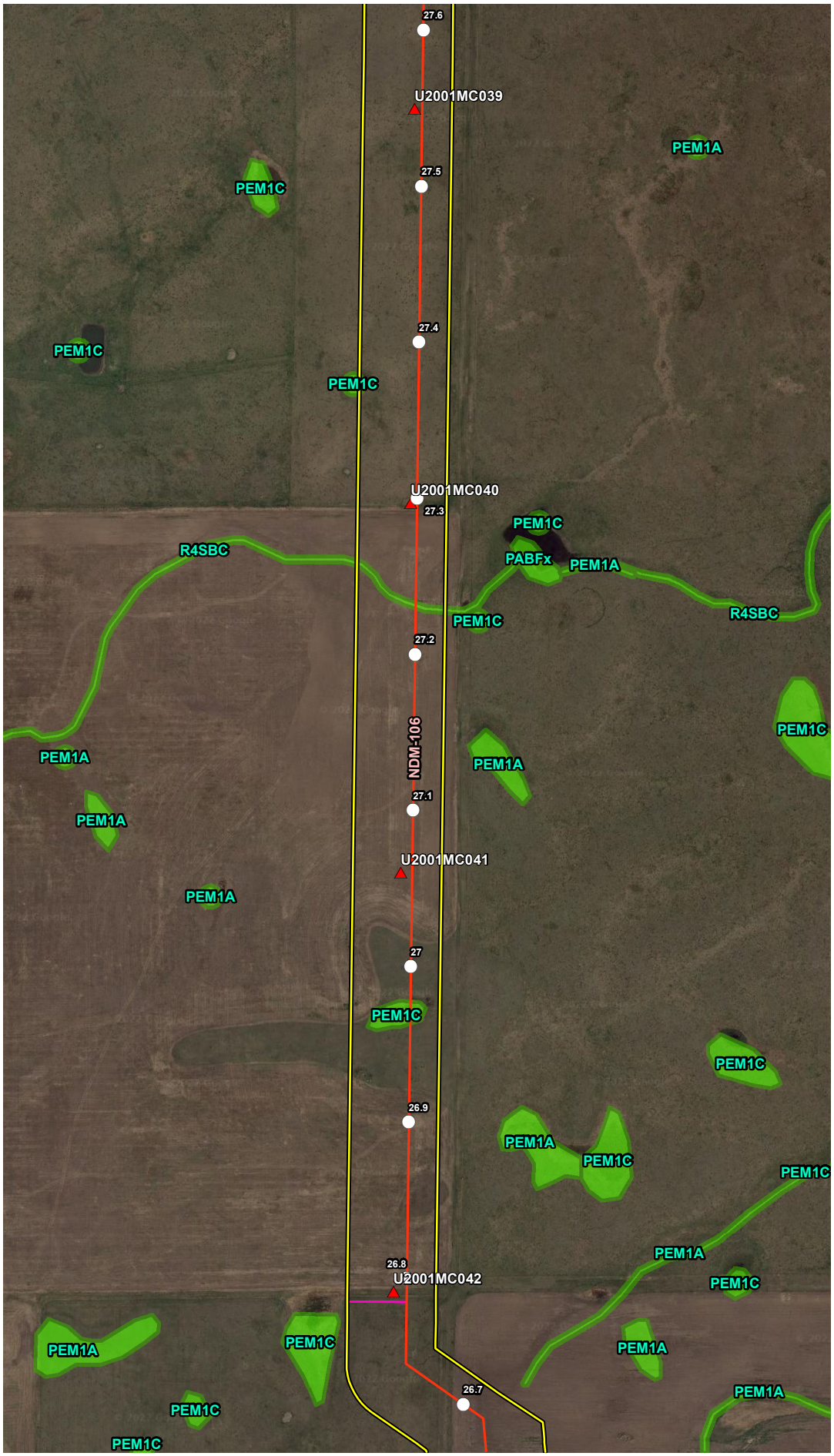
| 162 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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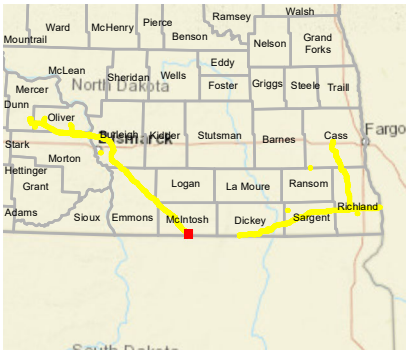


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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

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Drawing Number:
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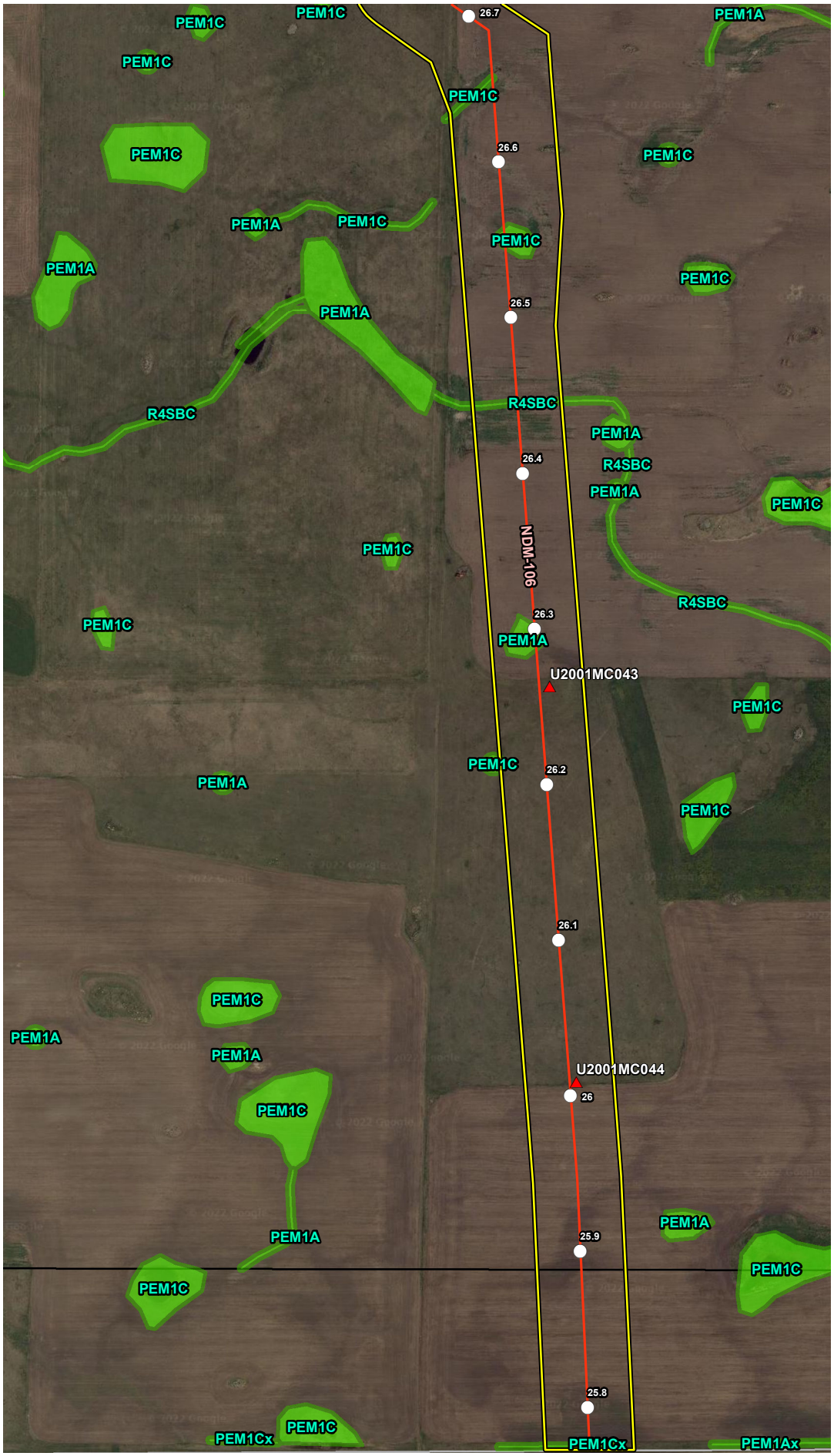
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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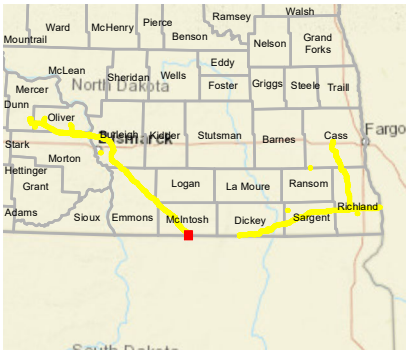


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| Sheet:<br>164 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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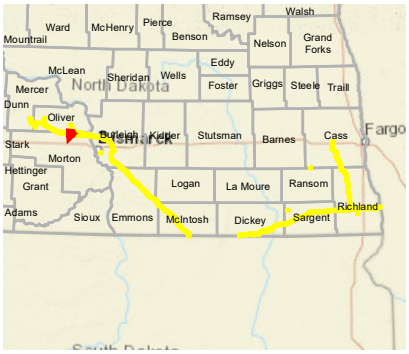
## NWI MAP




## VICINITY MAP

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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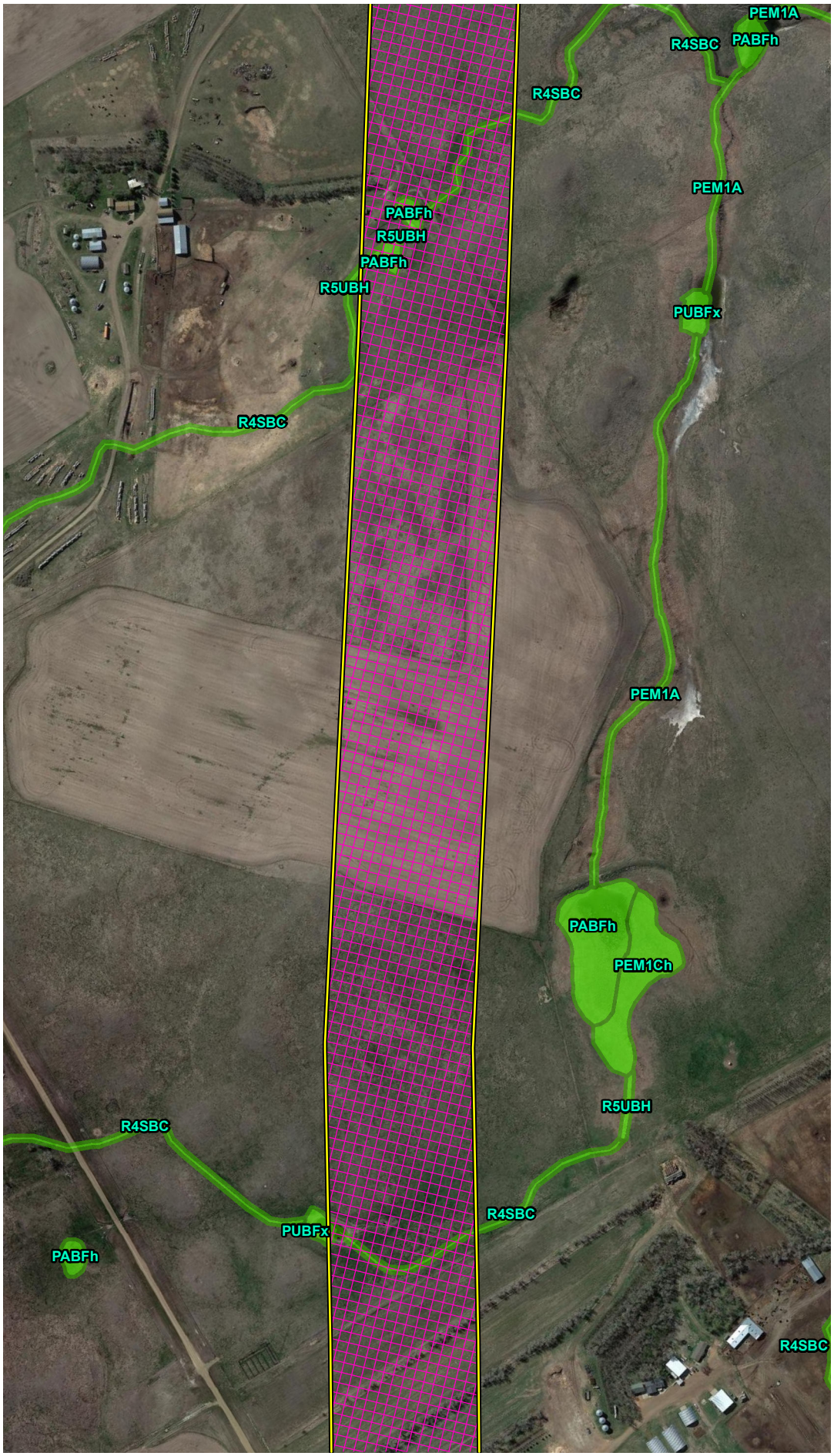
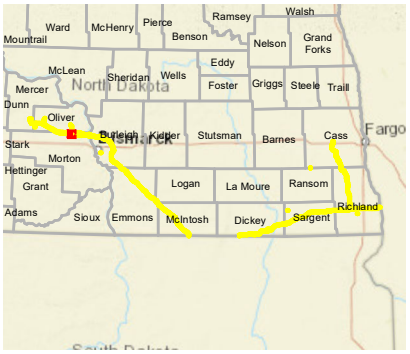
|---|---|
| 165 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**NWI Map**

Figure Number:

**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

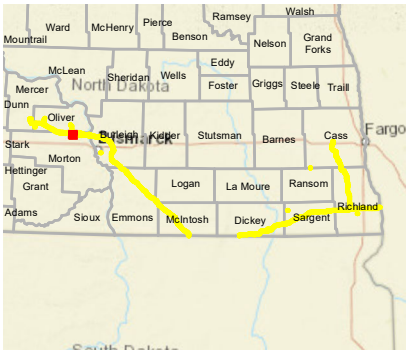
| Sheet: | Drawing Number: |
|---|---|
| 166 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ISV\WR\2022\901_WR_NDmxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
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Appendix A-4

| Scale: | Projection: |
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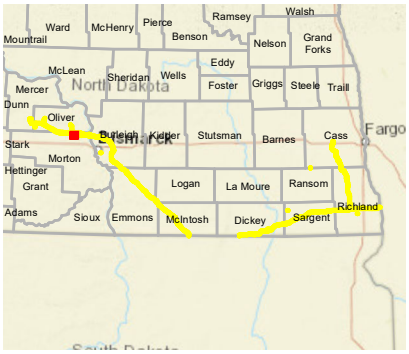
| Sheet:<br>167 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

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| 2022-08-04 | MM | AB |

**1A - Revision**

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| 168 of 392 | 2001-22-004<br>Current Revision |

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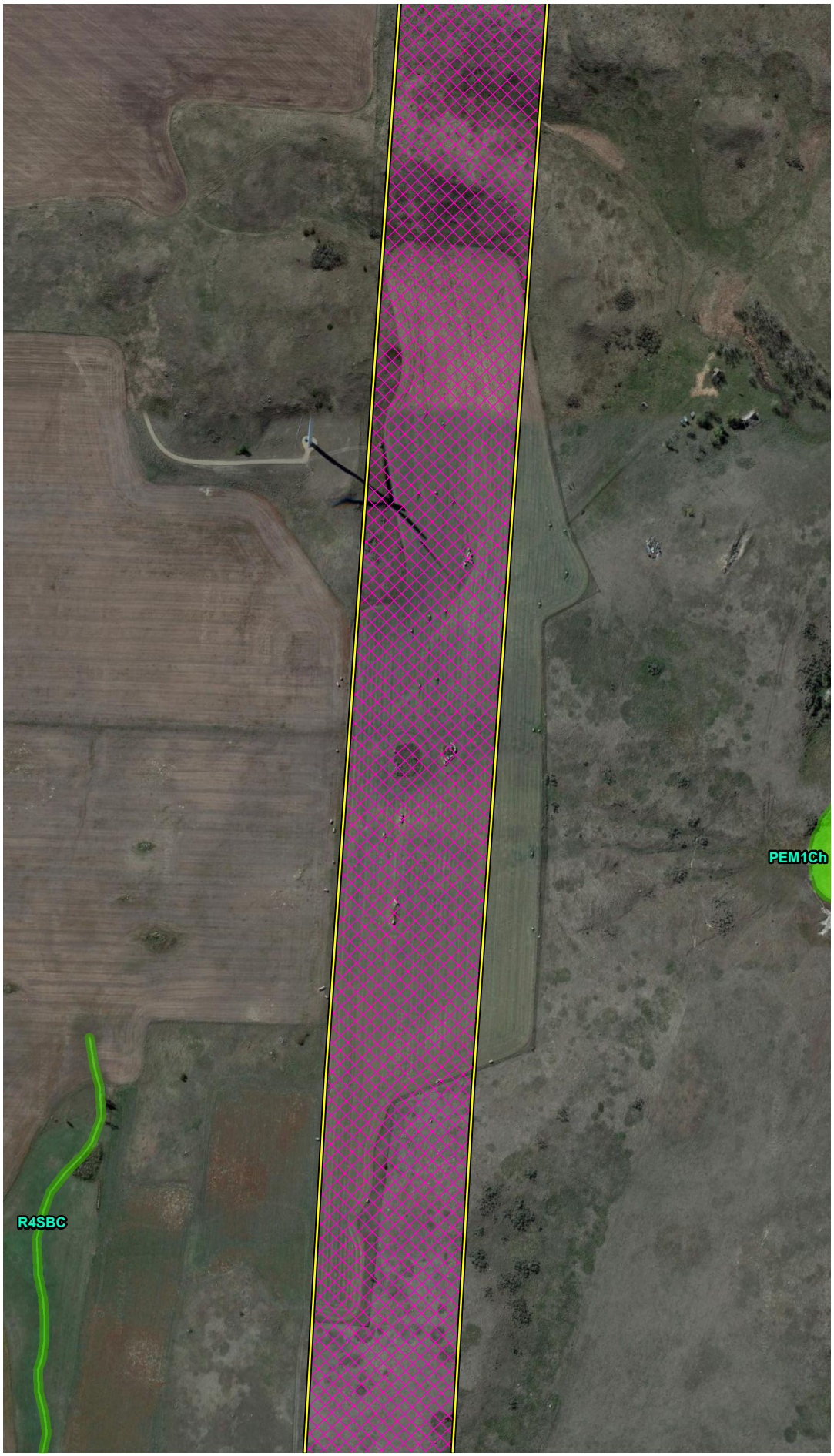
## NWI MAP

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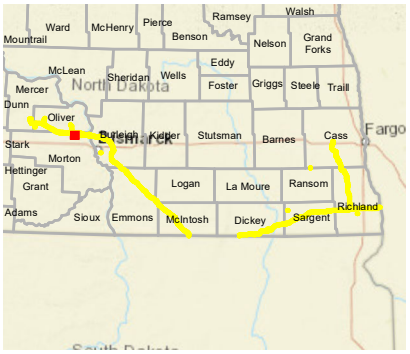


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0 250 500 Feet

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| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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| 169 of 392 | 2001-22-004<br>Current Revision |

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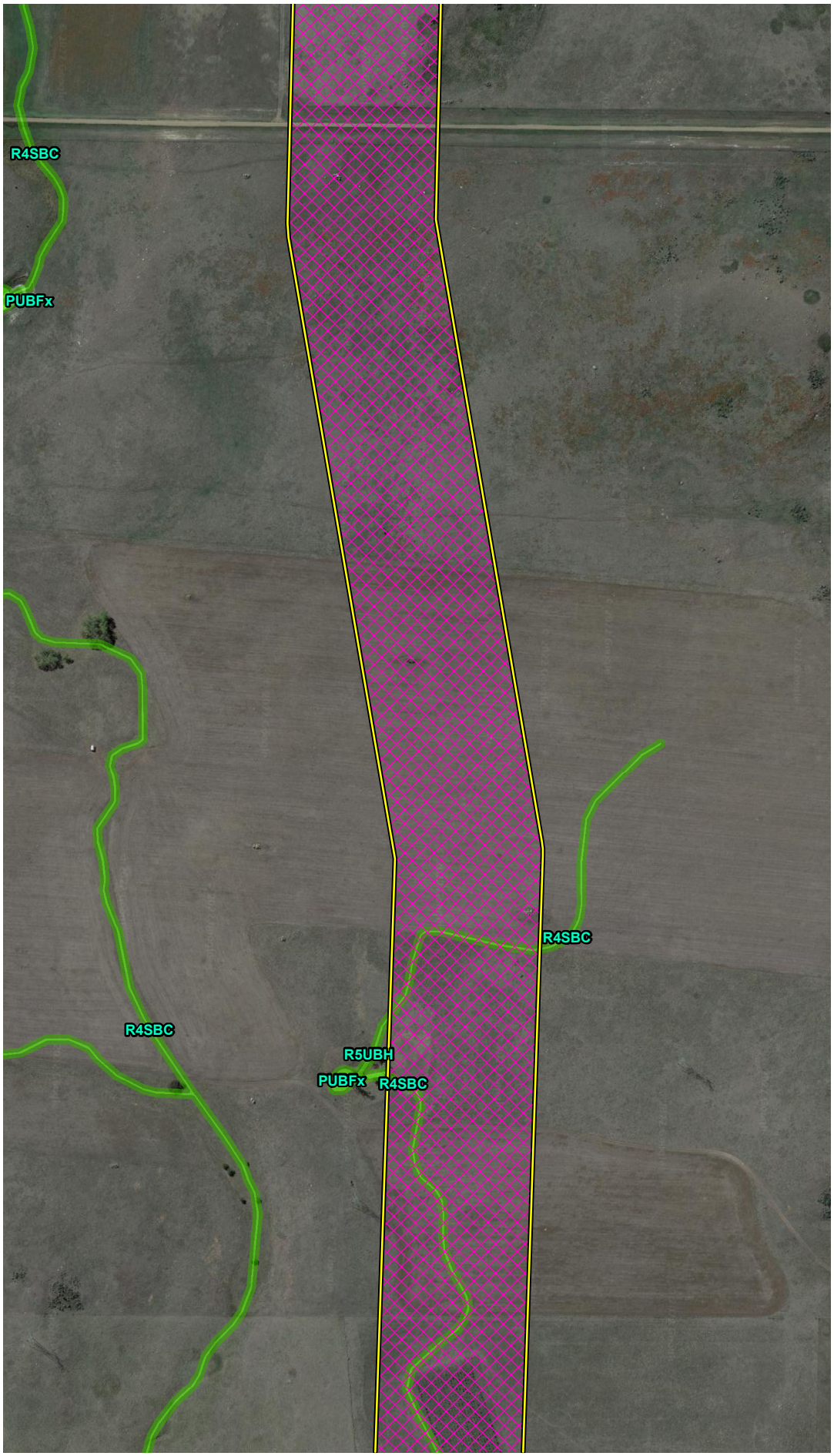
## NWI MAP

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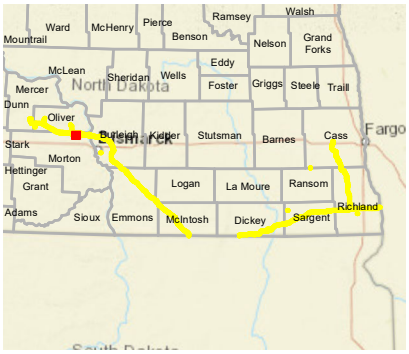


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0 250 500
Feet

## REVISIONS

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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|---|---|
| 170 of 392 | 2001-22-004<br>Current Revision |

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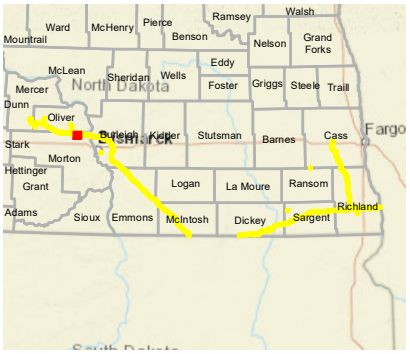
## NWI MAP




## VICINITY MAP

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0 250 500 Feet

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| 171 of 392 | 2001-22-004<br>Current Revision |

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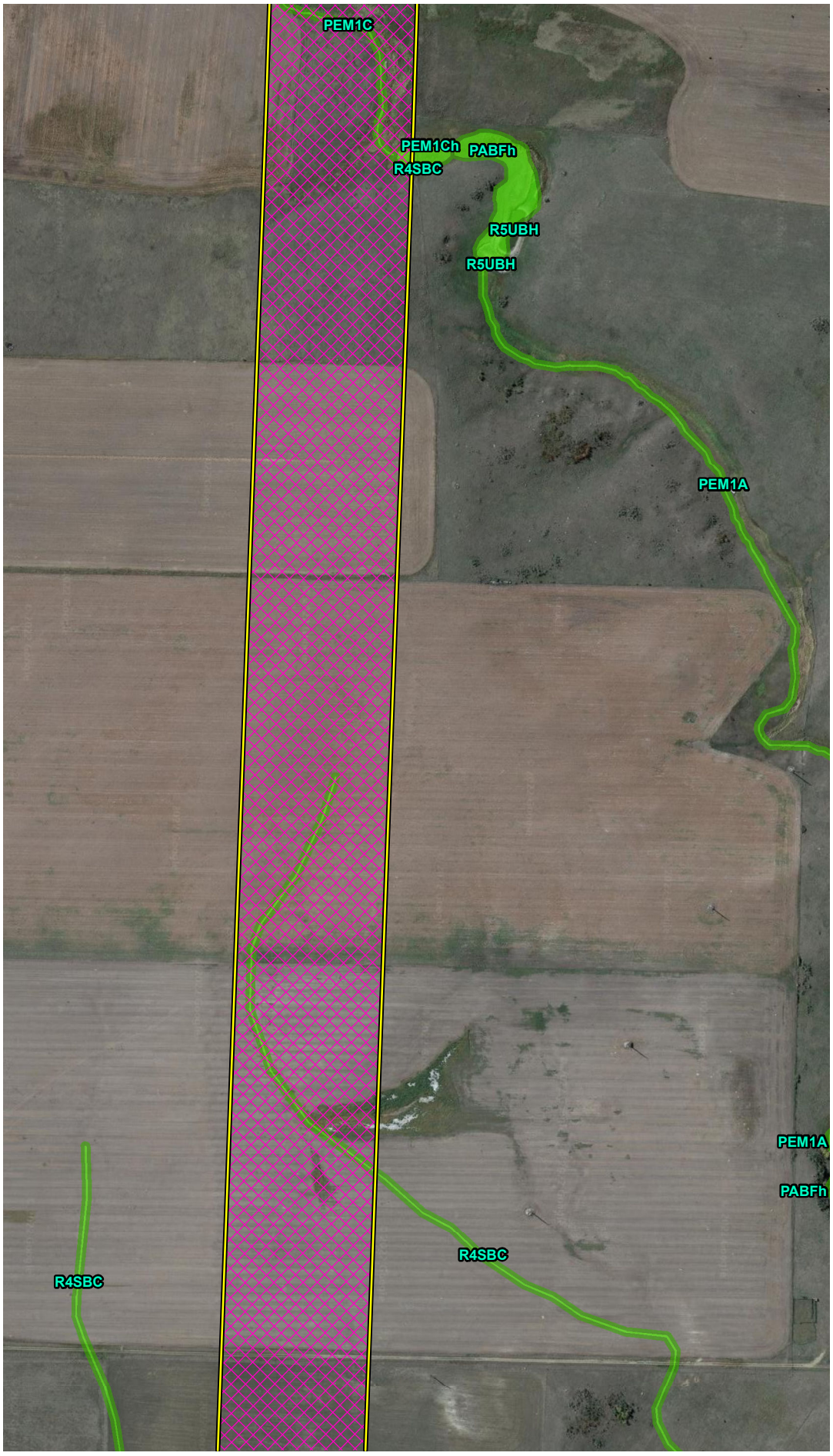
## NWI MAP

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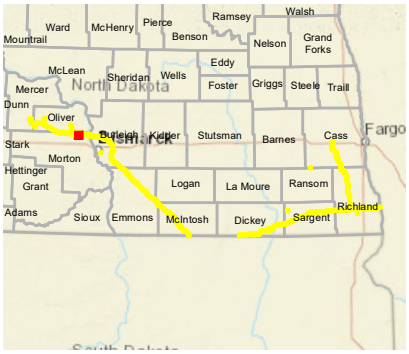


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## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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| Sheet: | Drawing Number: |
|---|---|
| 172 of 392 | 2001-22-004<br>Current Revision |

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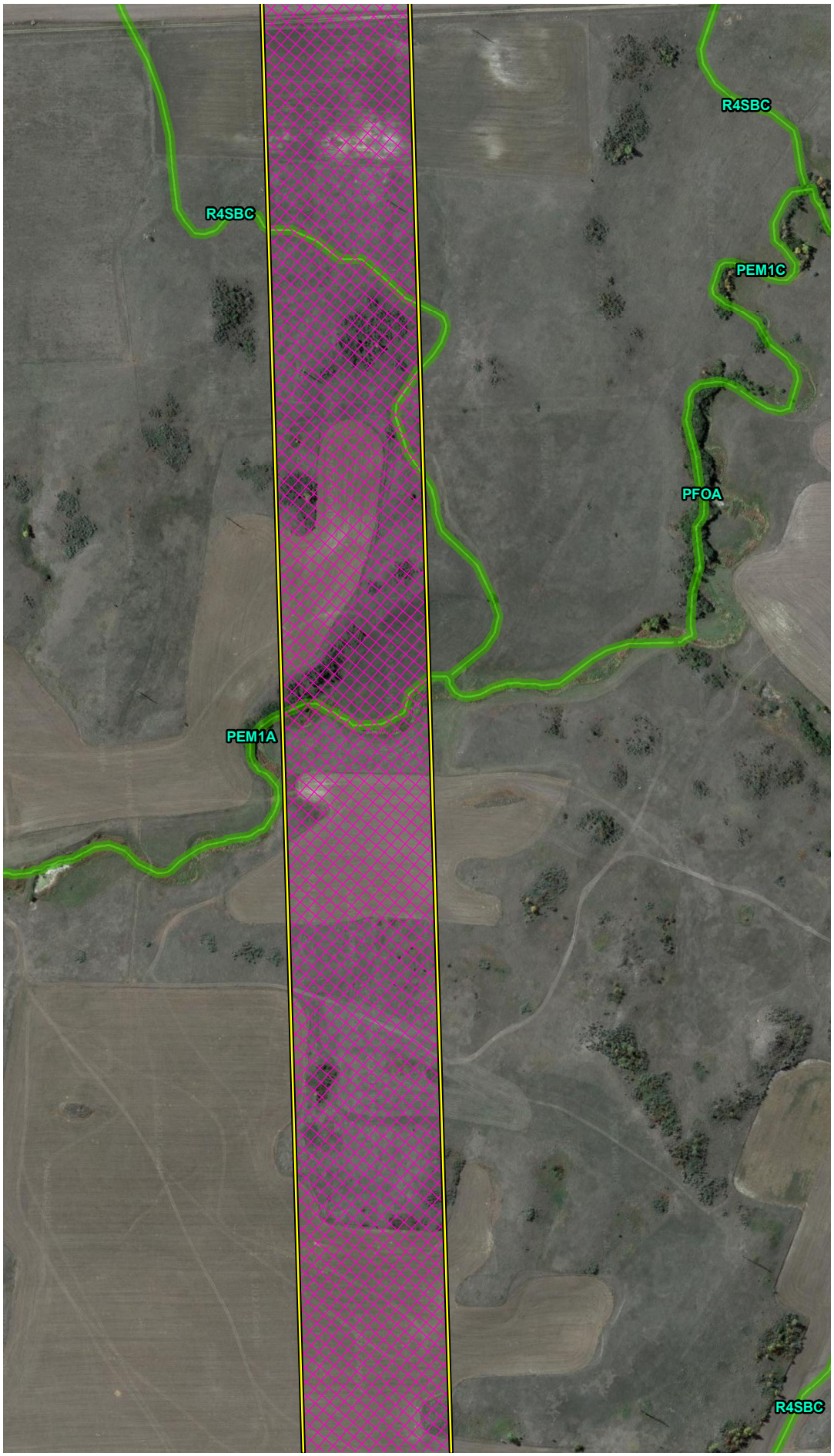
## NWI MAP

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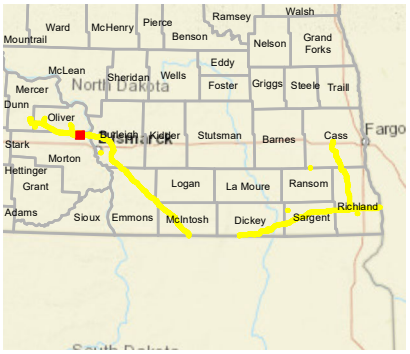


## LEGEND

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0 250 500
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## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**
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| Date: | Revised by: | Checked by: |
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**Figure Title:**
NWI Map

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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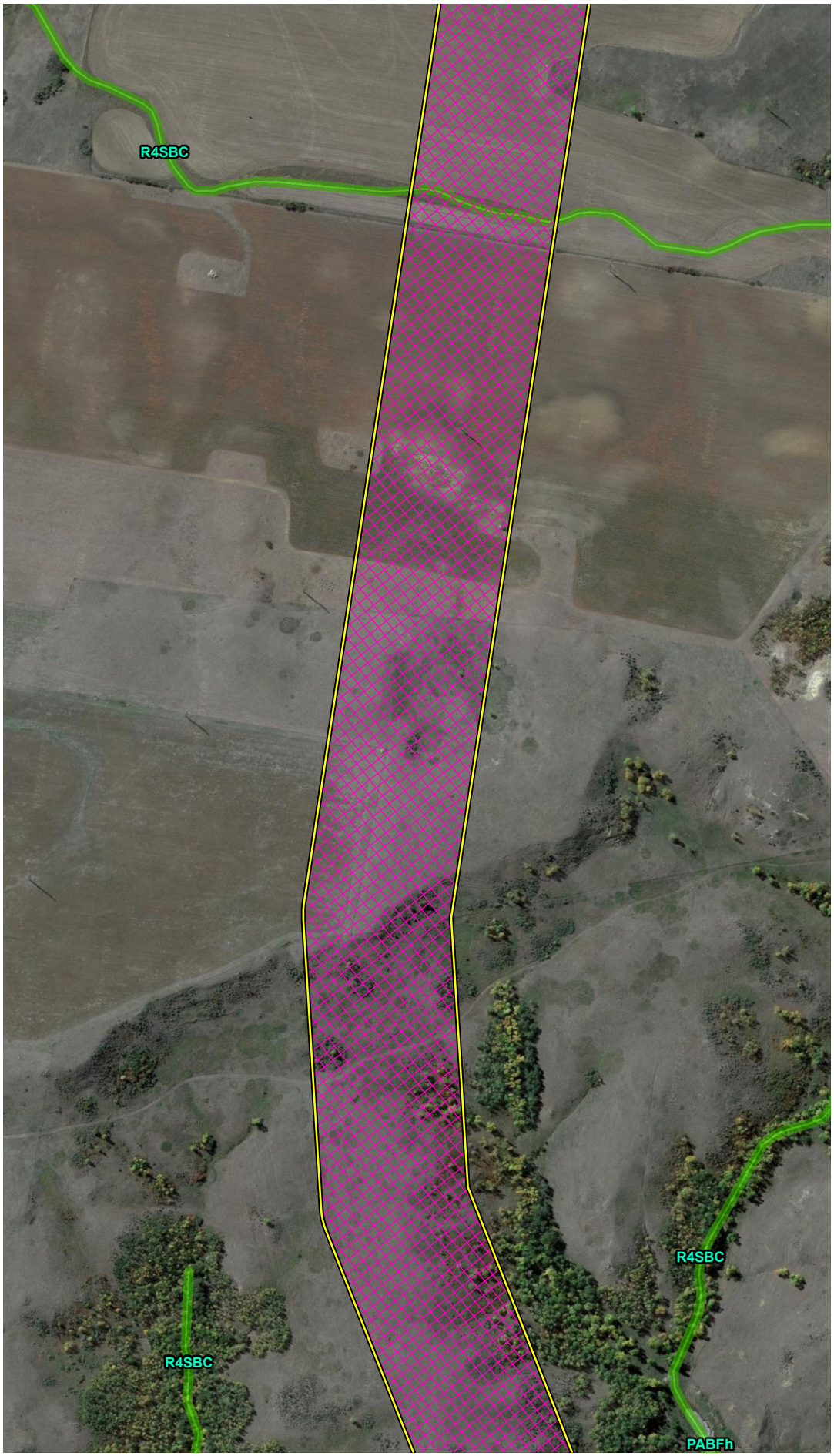
## NWI MAP

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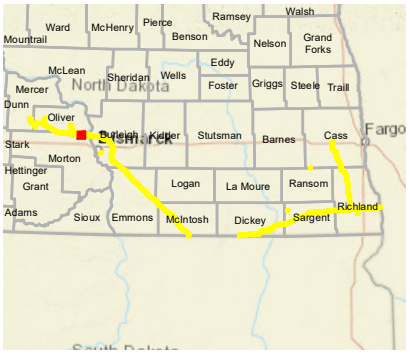


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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**
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Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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|---|---|
| 174 of 392 | 2001-22-004<br>Current Revision |

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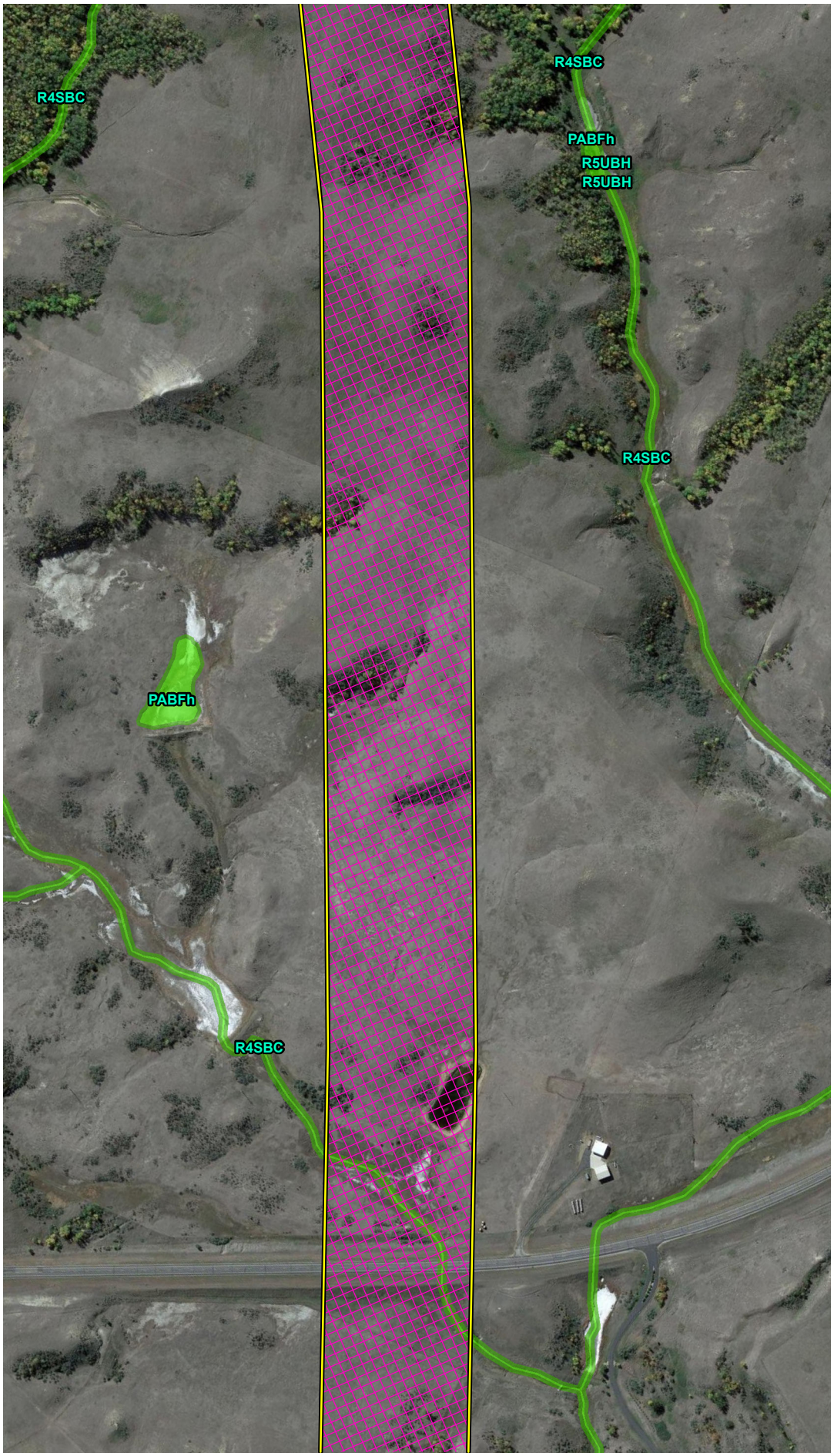
## NWI MAP

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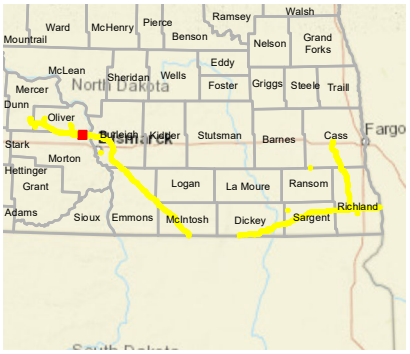


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0 250 500 Feet

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| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 175 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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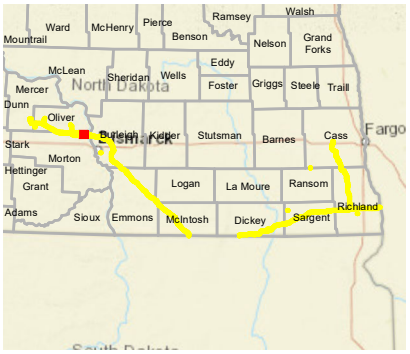
## NWI MAP




## VICINITY MAP

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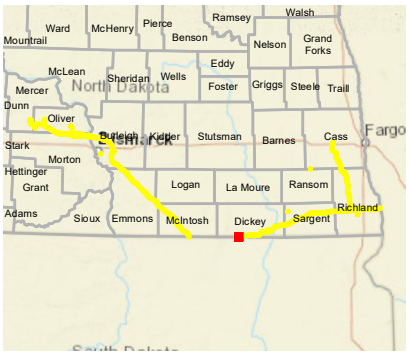
## NWI MAP




## VICINITY MAP

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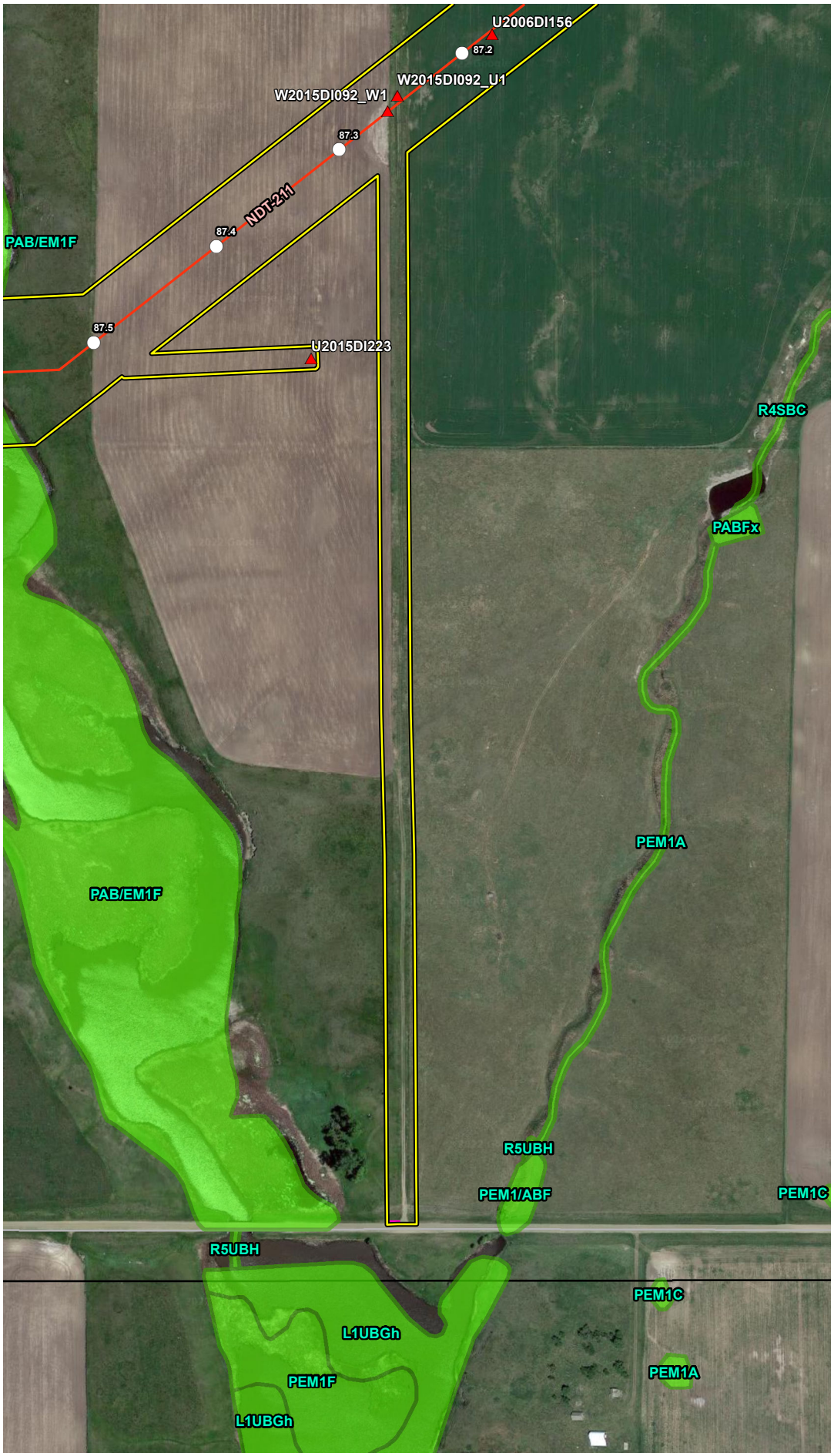
## NWI MAP

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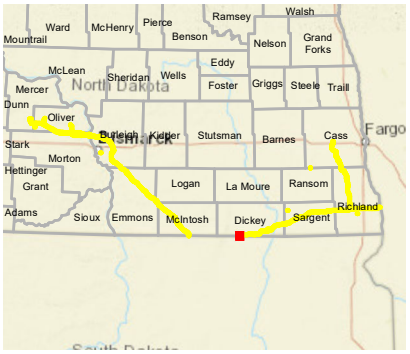


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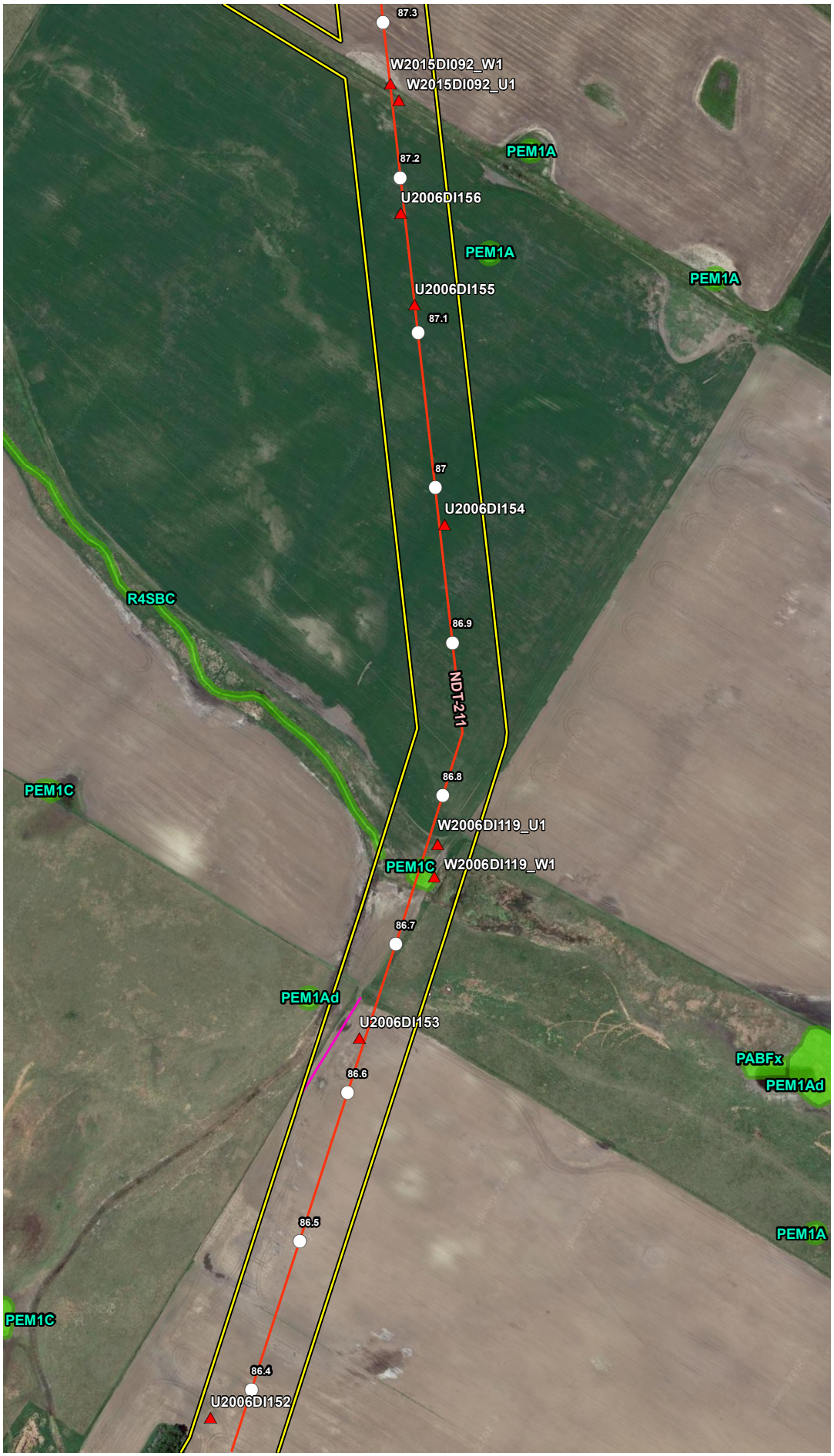
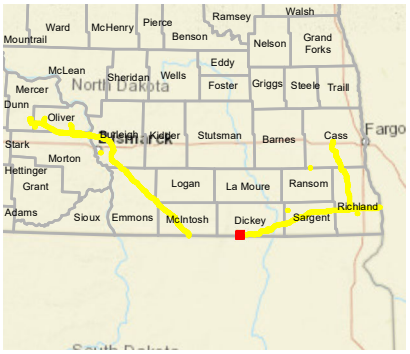
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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Figure Title:

**NWI Map**

Figure Number:

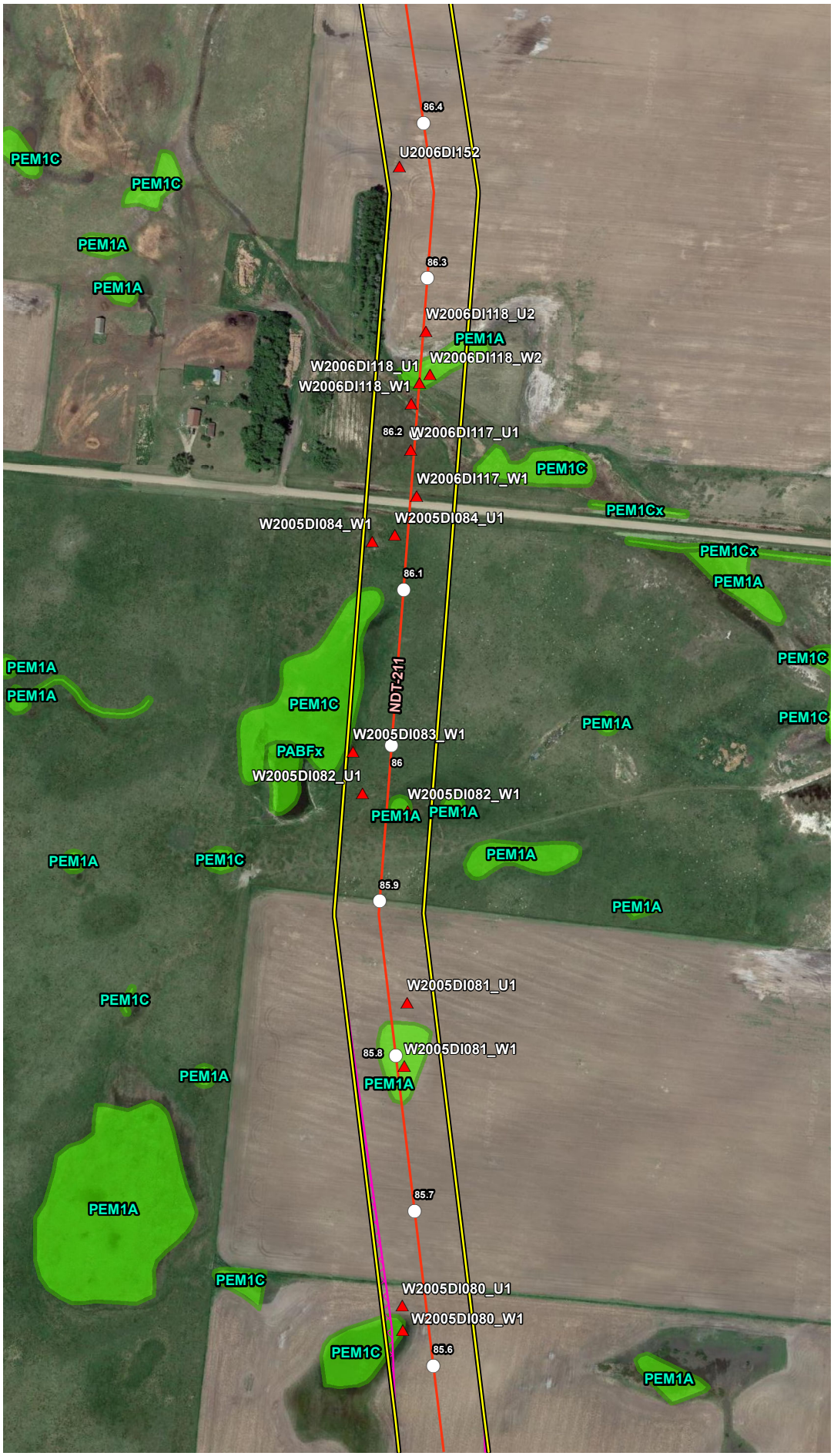
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 179 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\0801_WR_NDI\mxds\4_NWI.mxd

## NWI MAP

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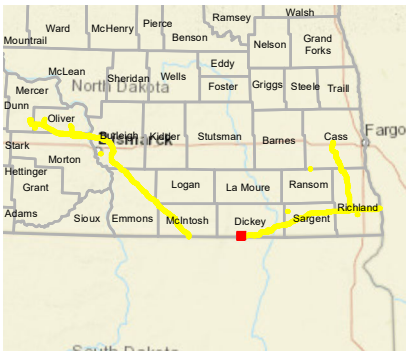


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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Figure Title:

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Figure Number:

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| Scale: | Projection: |
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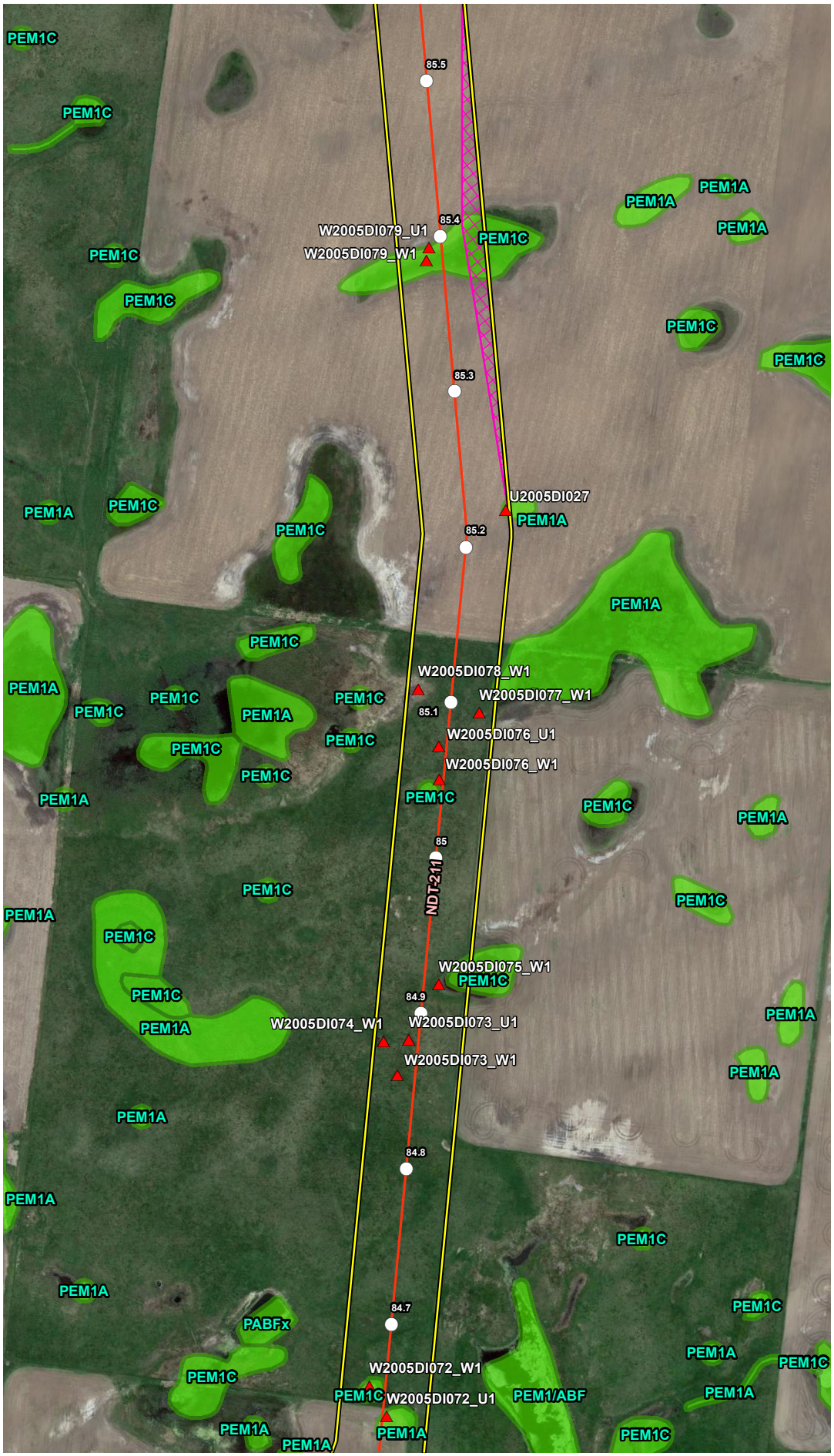
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

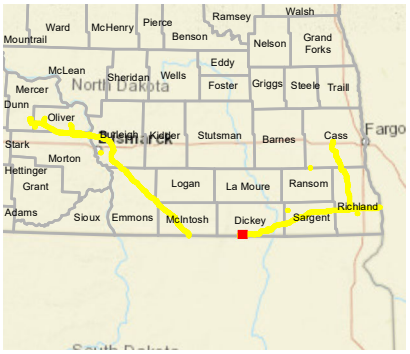
| Sheet: | Drawing Number: |
|---|---|
| 180 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDI\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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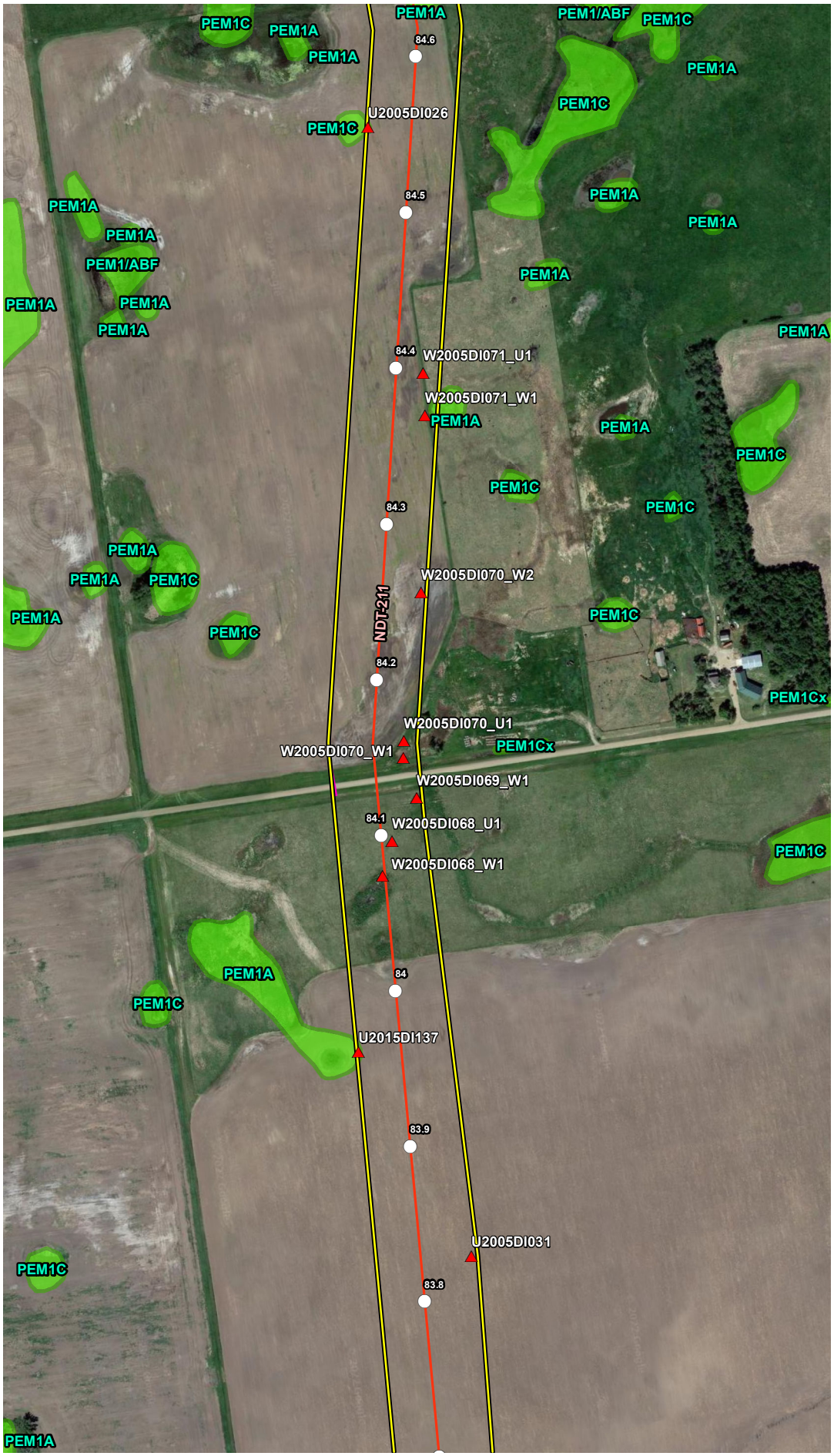
Figure Number:
Appendix A-4

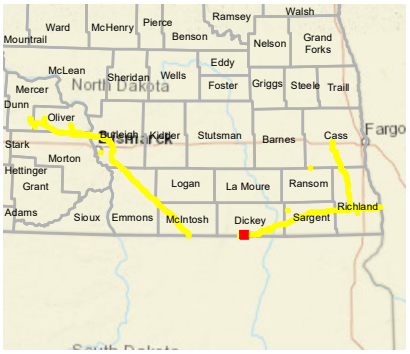
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>181 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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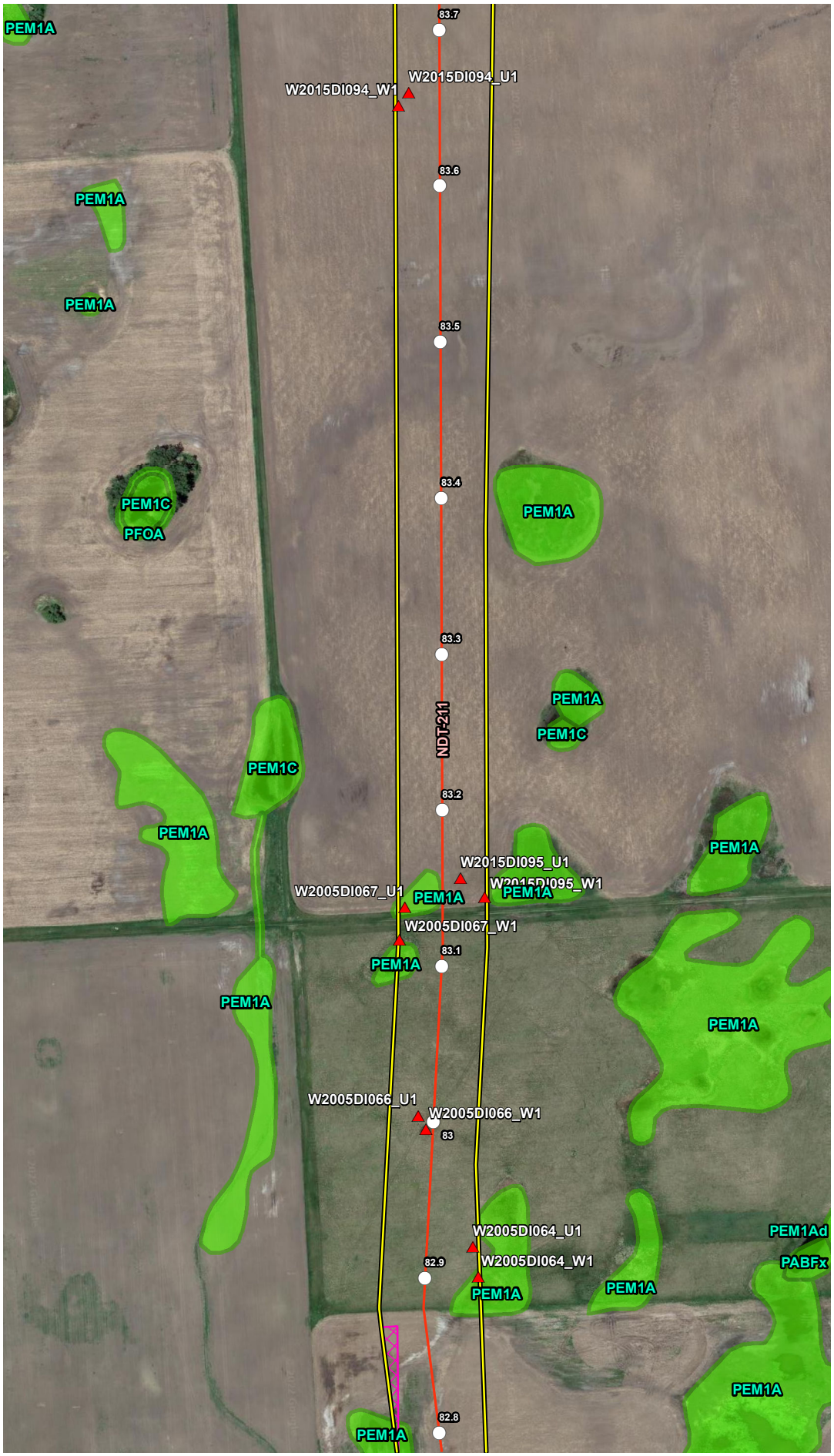
NWI Map

Figure Number:
Appendix A-4

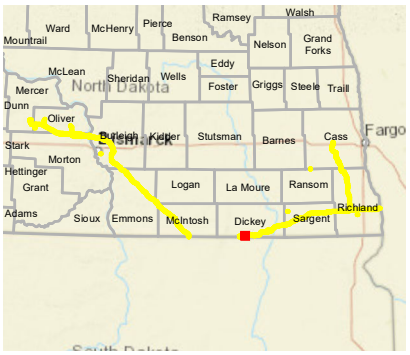
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>182 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

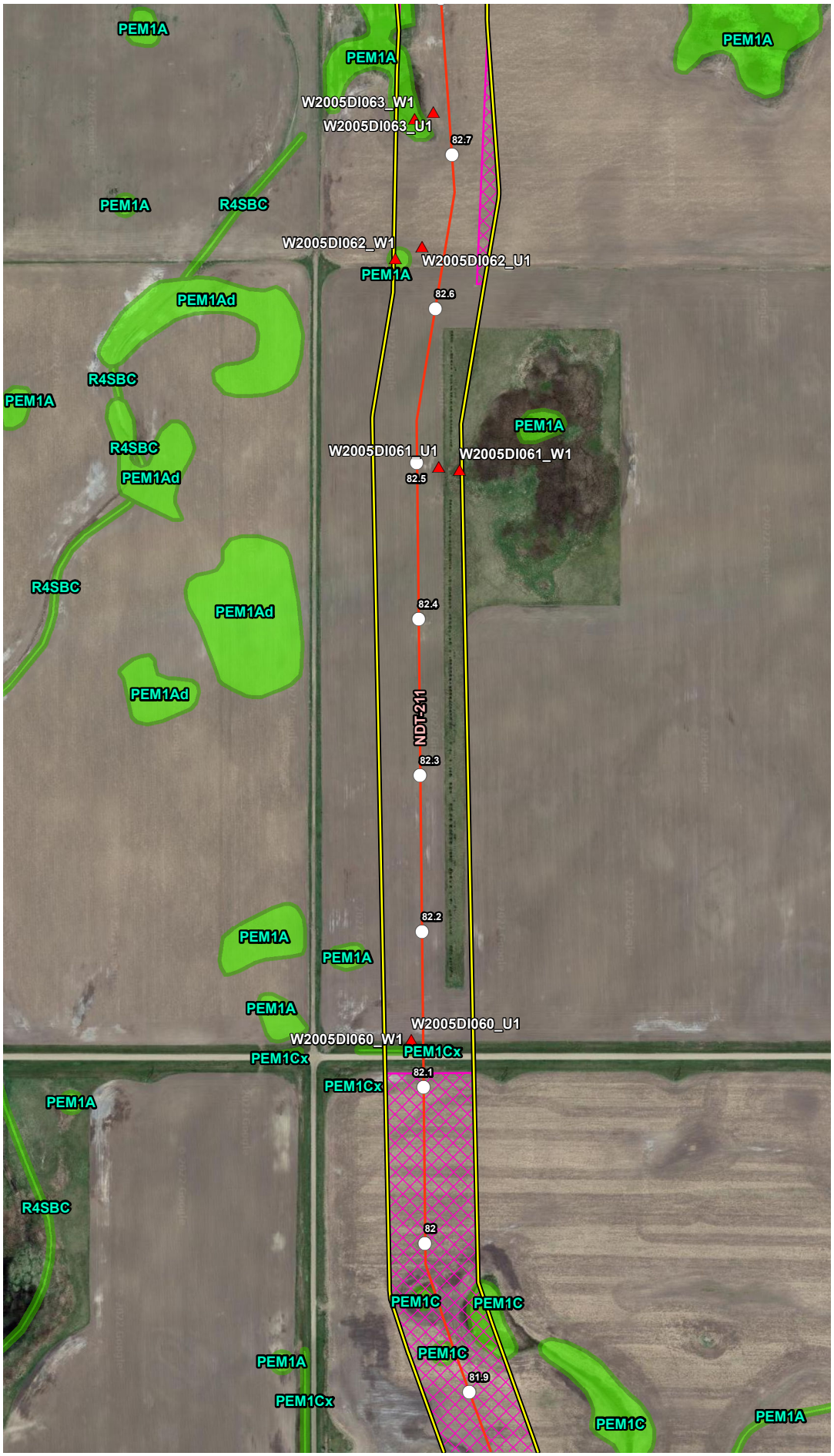
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
183 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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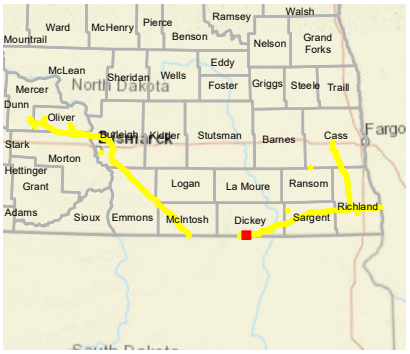


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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Figure Title:

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Figure Number:

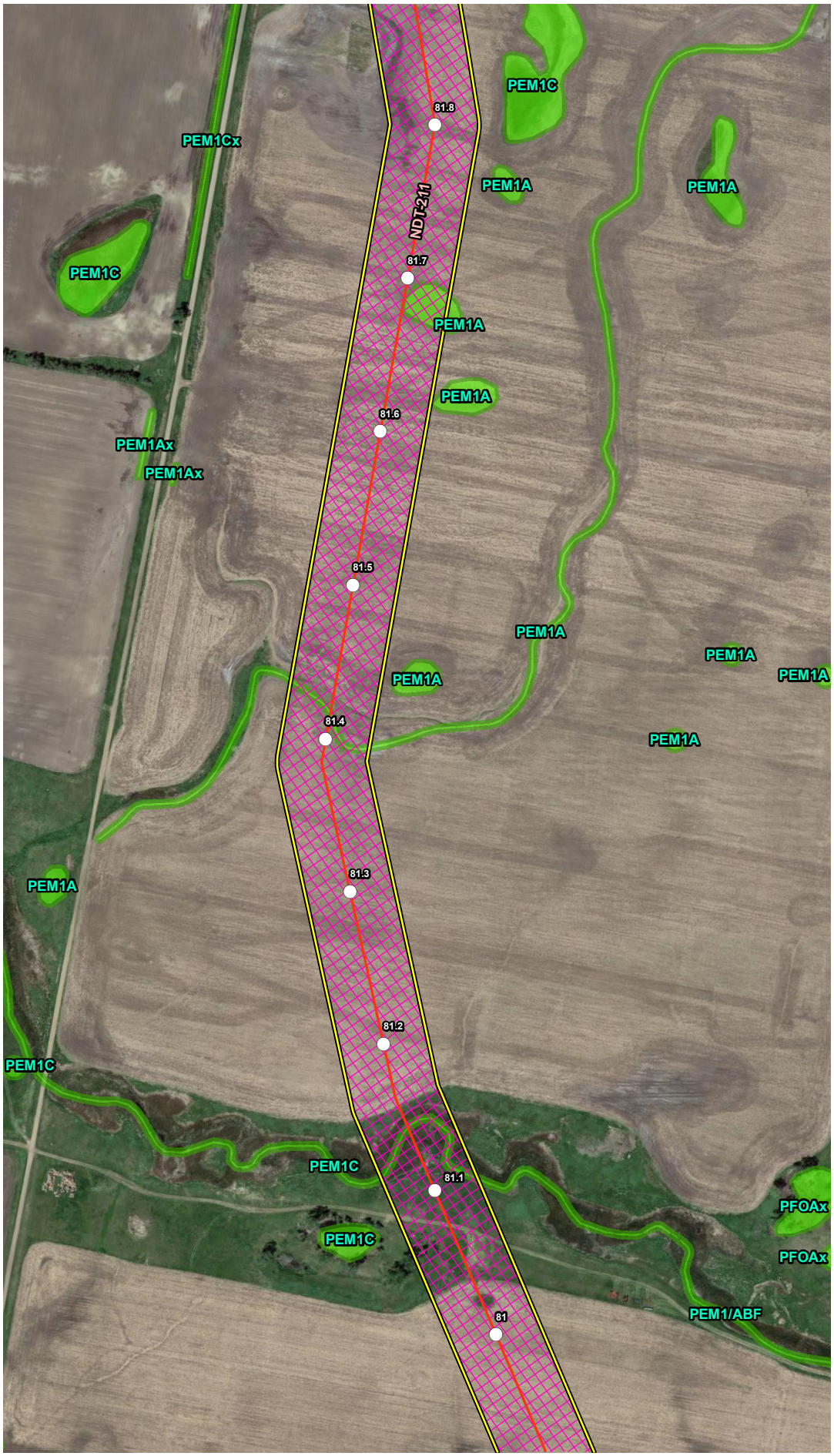
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 184 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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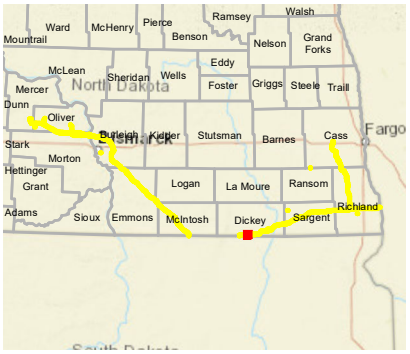


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## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Number:**

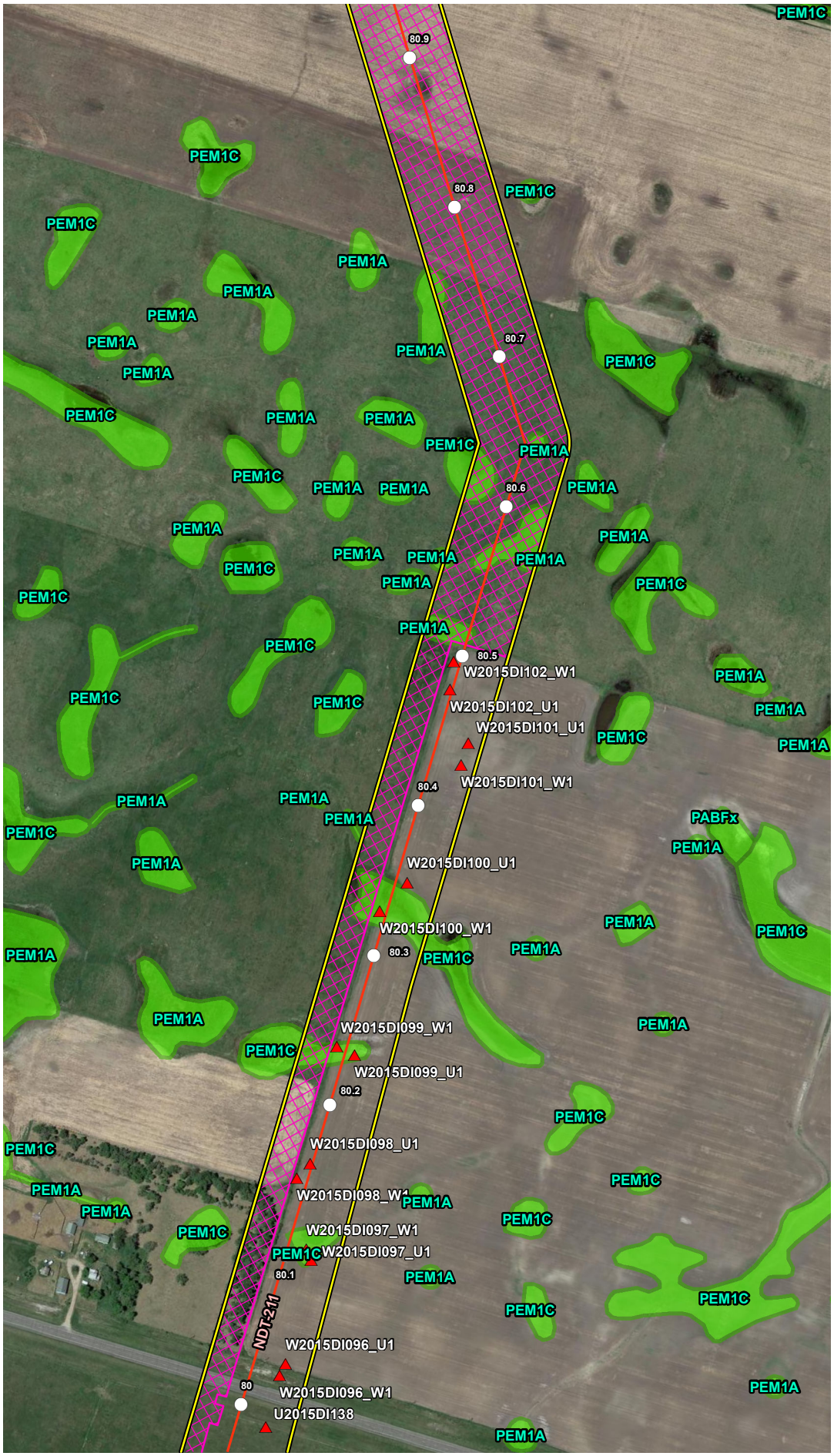
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 185 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\801_WR_NDImxds14_NWI.mxd

## NWI MAP

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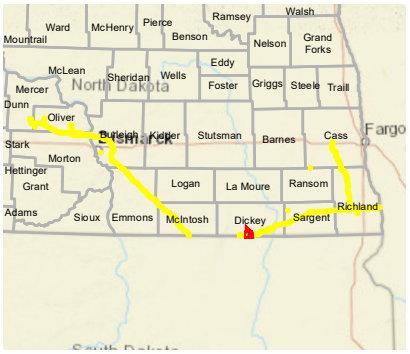


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 186 of 392 | 2001-22-004<br>Current Revision |

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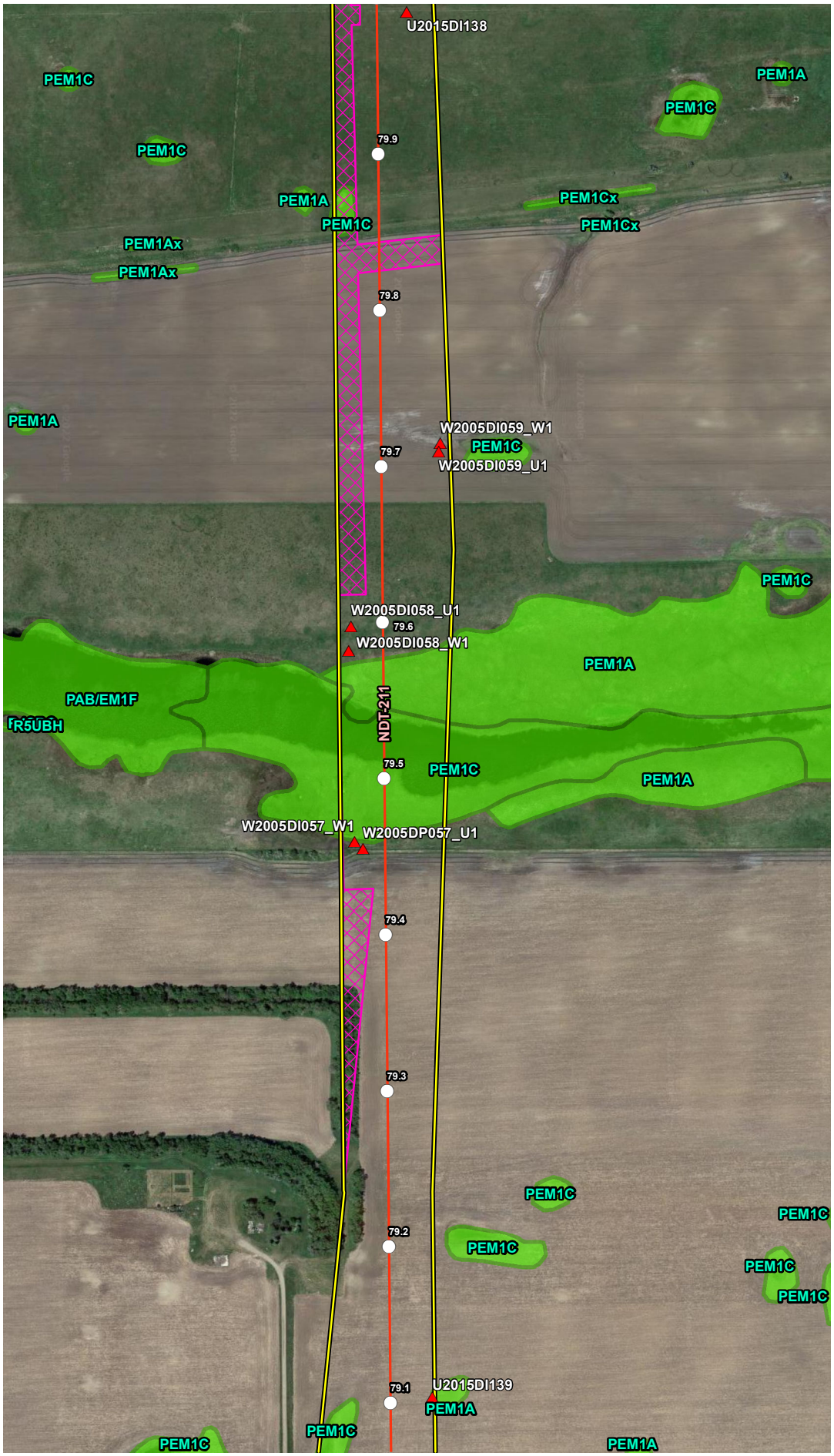
## NWI MAP

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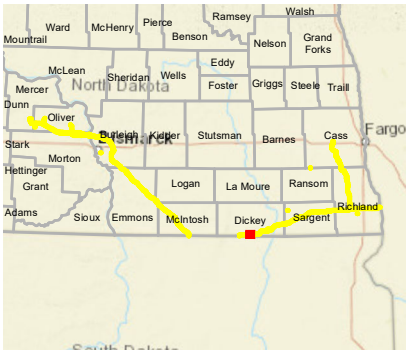


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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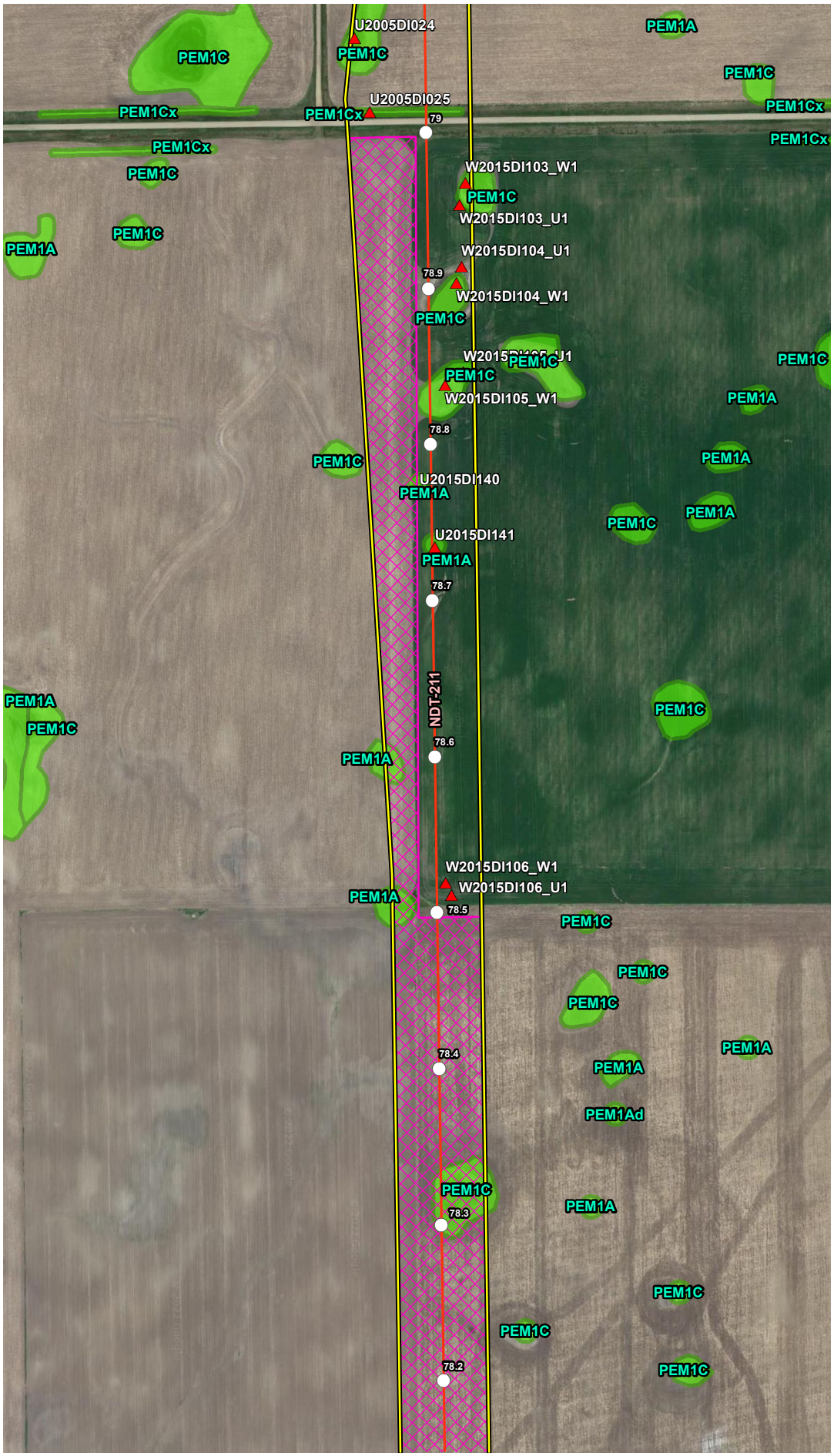
Figure Title:
NWI Map

Figure Number:
Appendix A-4

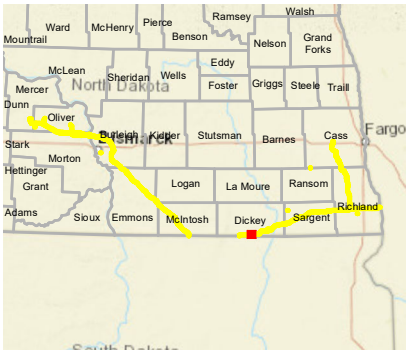
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>187 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Appendix A-4

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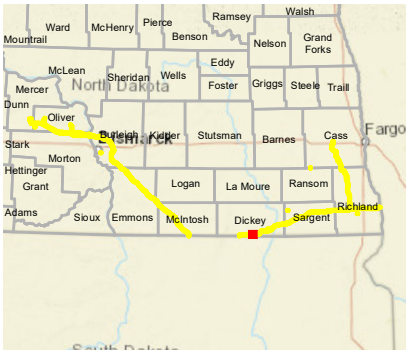
| Sheet: | Drawing Number: |
|---|---|
| 188 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDImods\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

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|---|---|---|
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1A - Revision
Revision description

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:
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Appendix A-4

| Scale | Projection |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

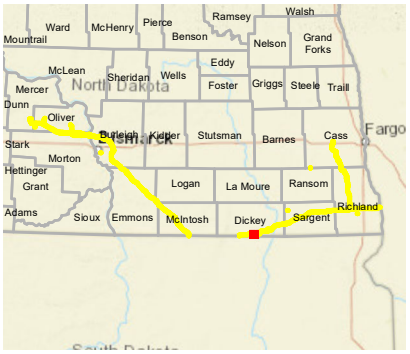
| Sheet | Drawing Number |
|---|---|
| 189 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\20221901_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

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| Sheet: | Drawing Number: |
|---|---|
| 190 of 392 | 2001-22-004<br>Current Revision |

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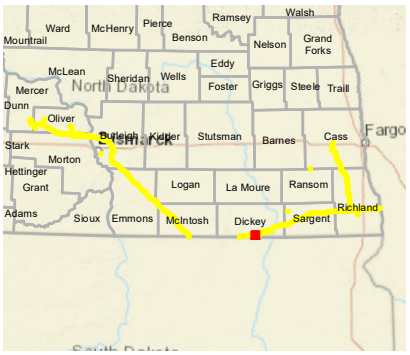
## NWI MAP




## VICINITY MAP

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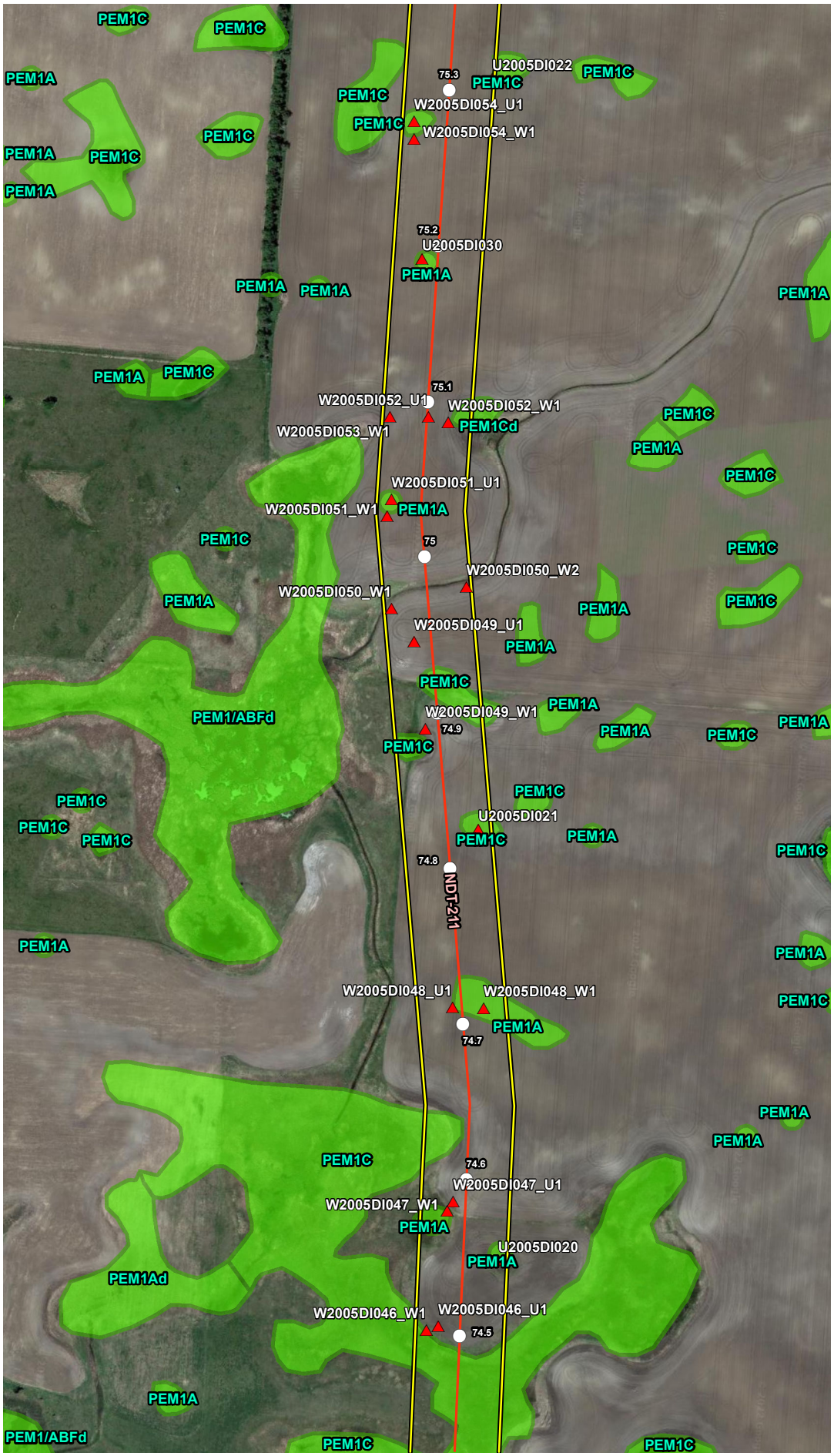
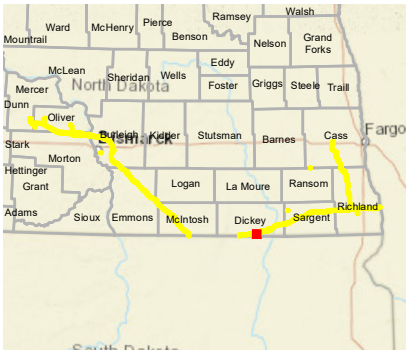
| Sheet: | Drawing Number: |
|---|---|
| 191 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:

NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 192 of 392 | 2001-22-004<br>Current Revision |

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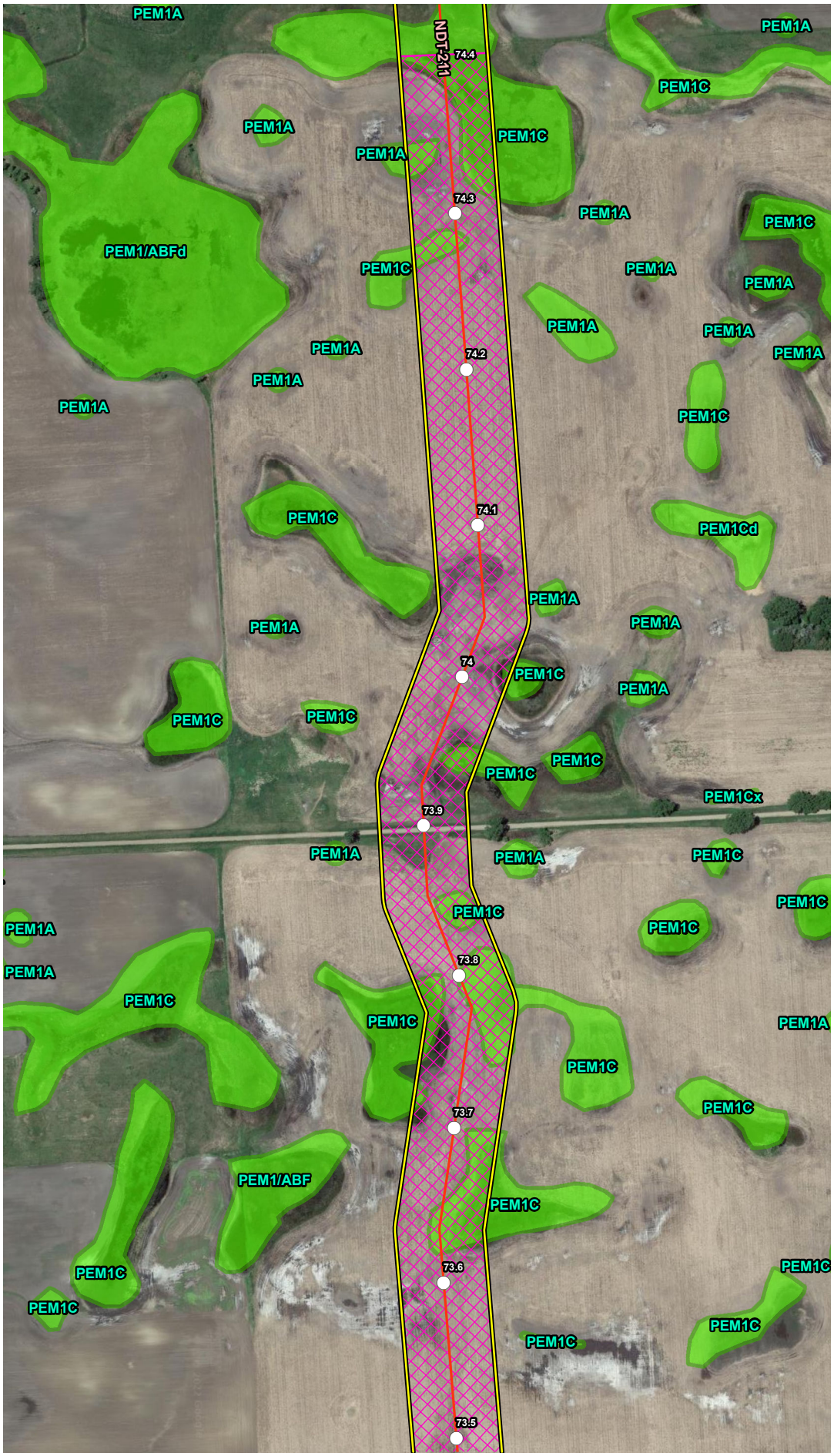
## NWI MAP

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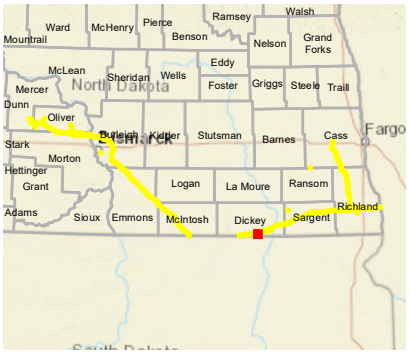


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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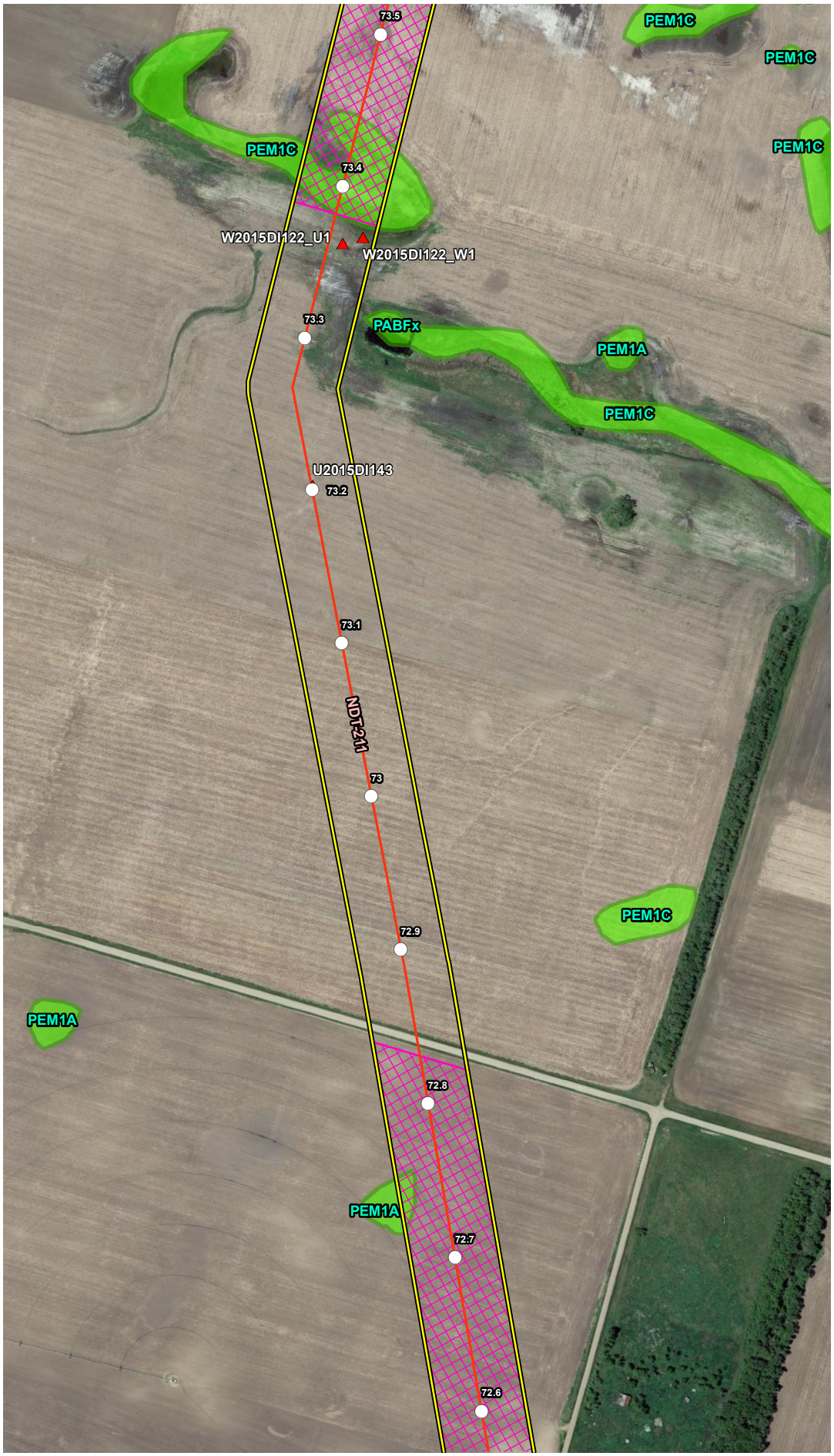
| 193 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ID\VWR\2022\801_VWR_NDImxds14_NWI.mxd

## NWI MAP

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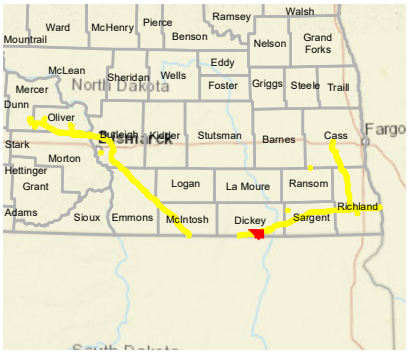


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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Figure Title:

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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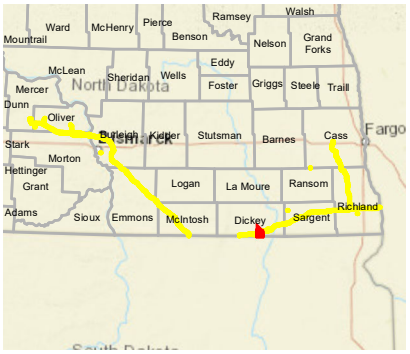
|---|---|
| 194 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

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| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 195 of 392 | 2001-22-004<br>Current Revision |

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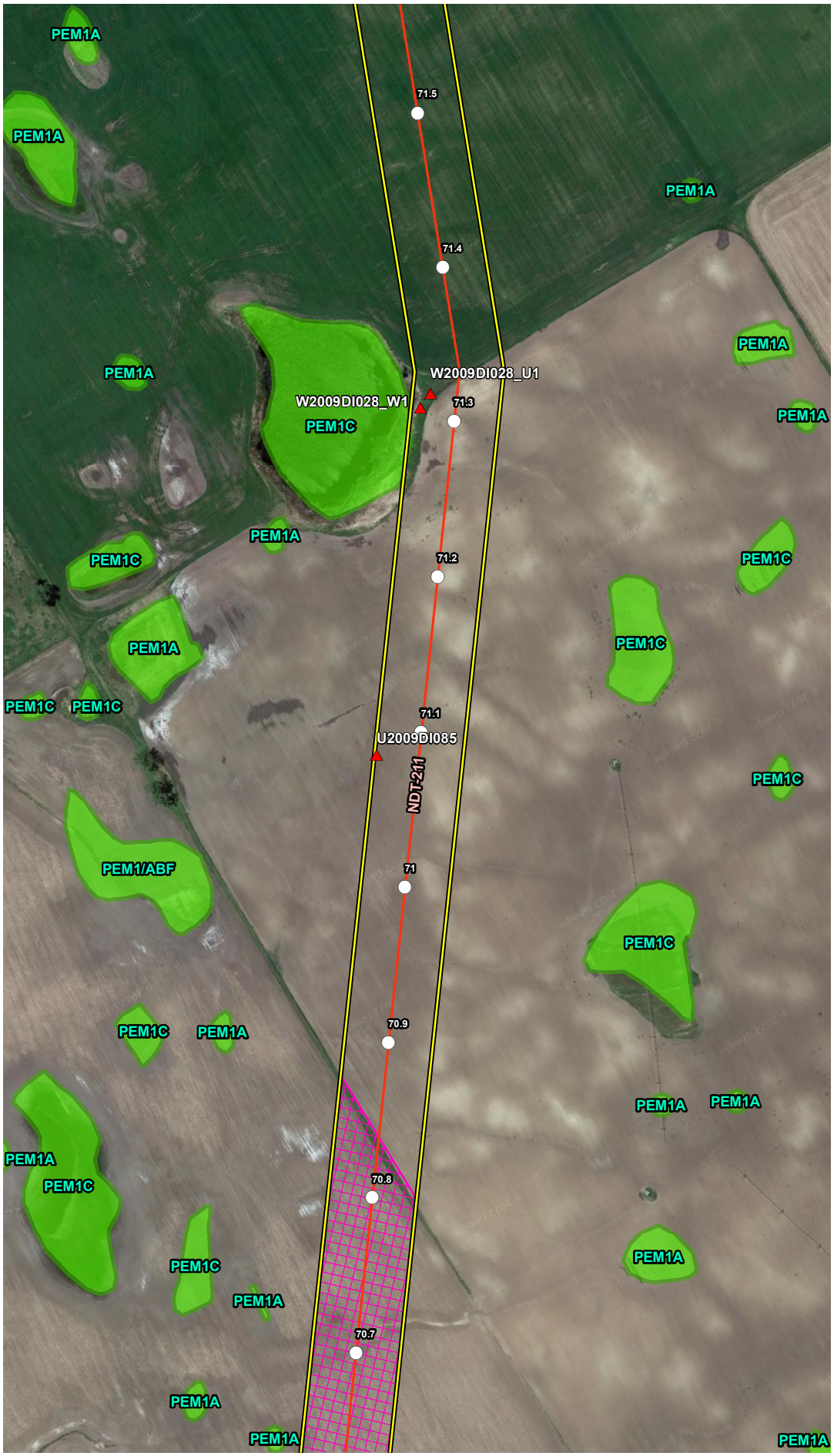
## NWI MAP

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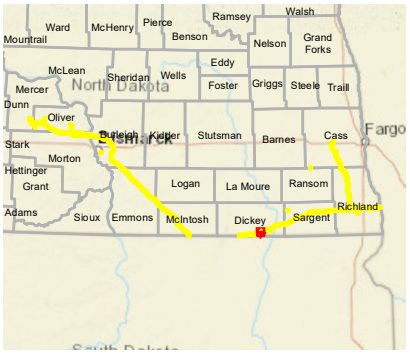


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 196 of 392 | 2001-22-004<br>Current Revision |

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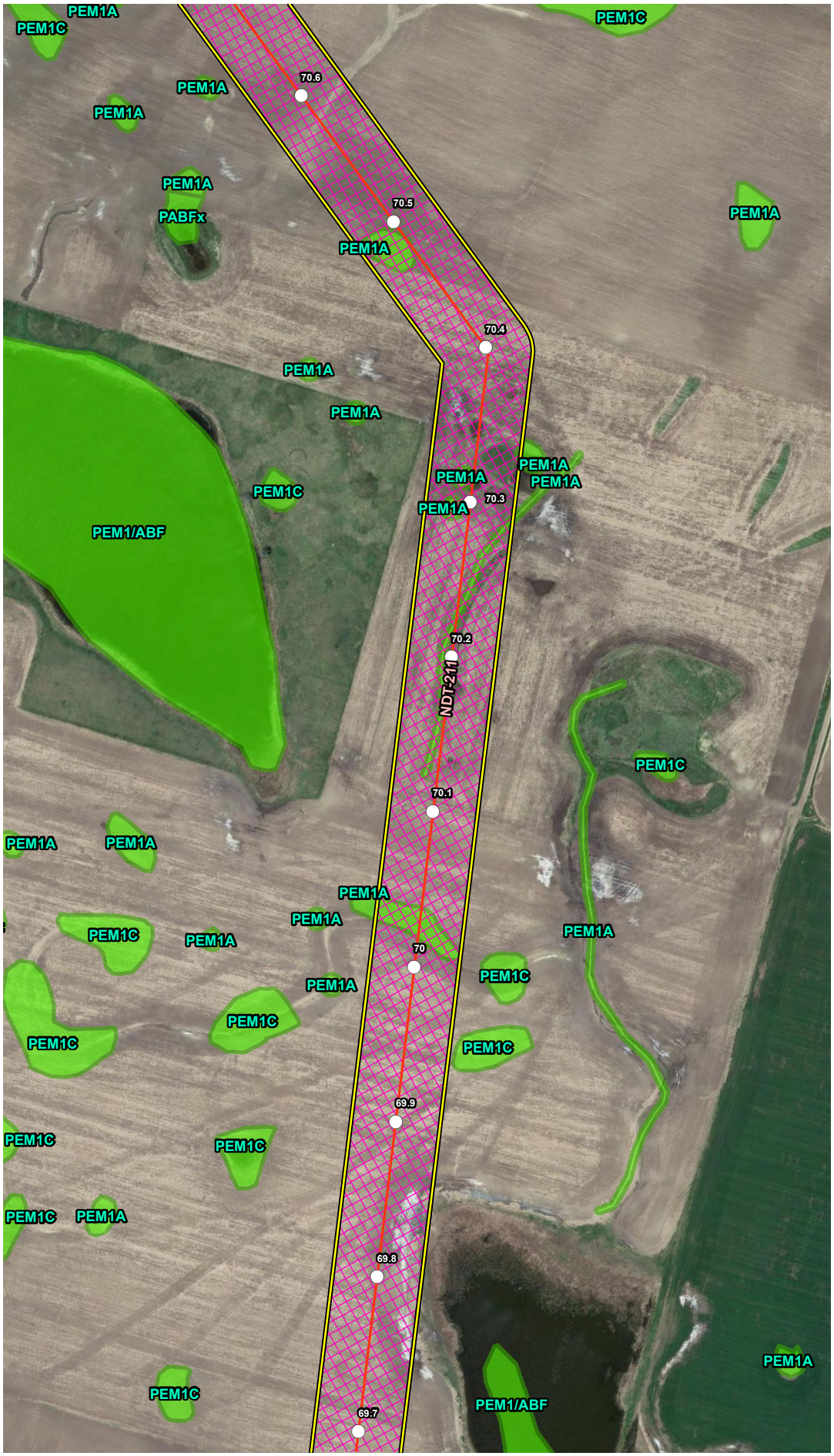
## NWI MAP

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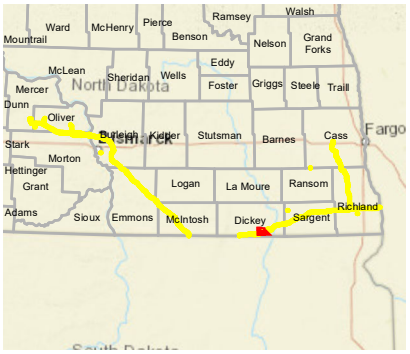


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>197 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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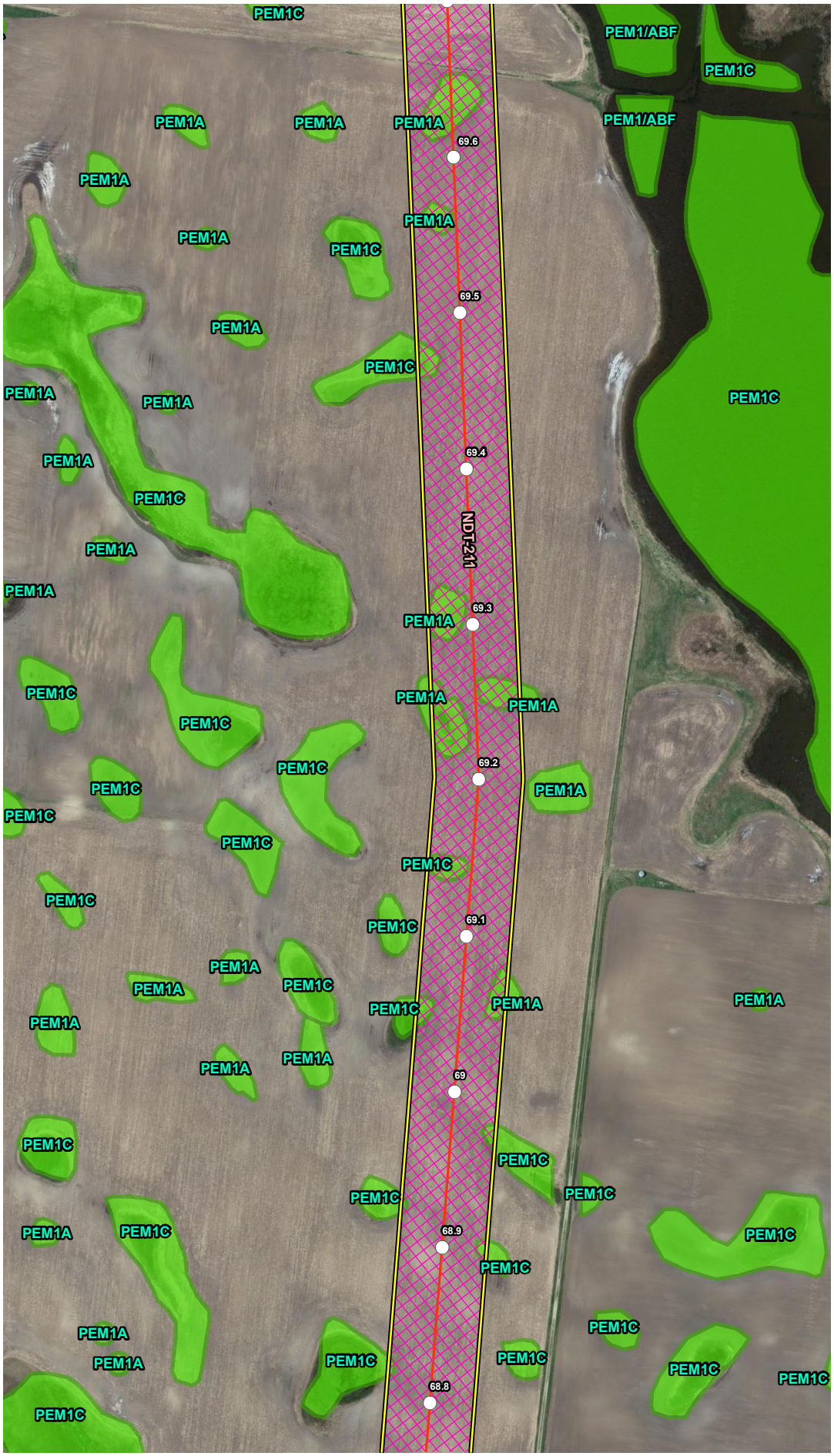
## NWI MAP

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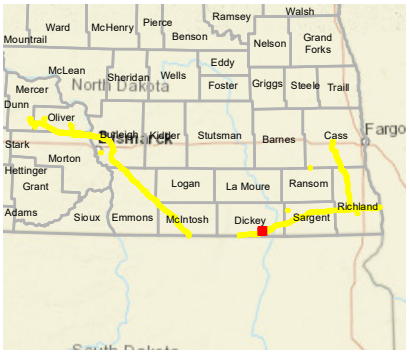


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

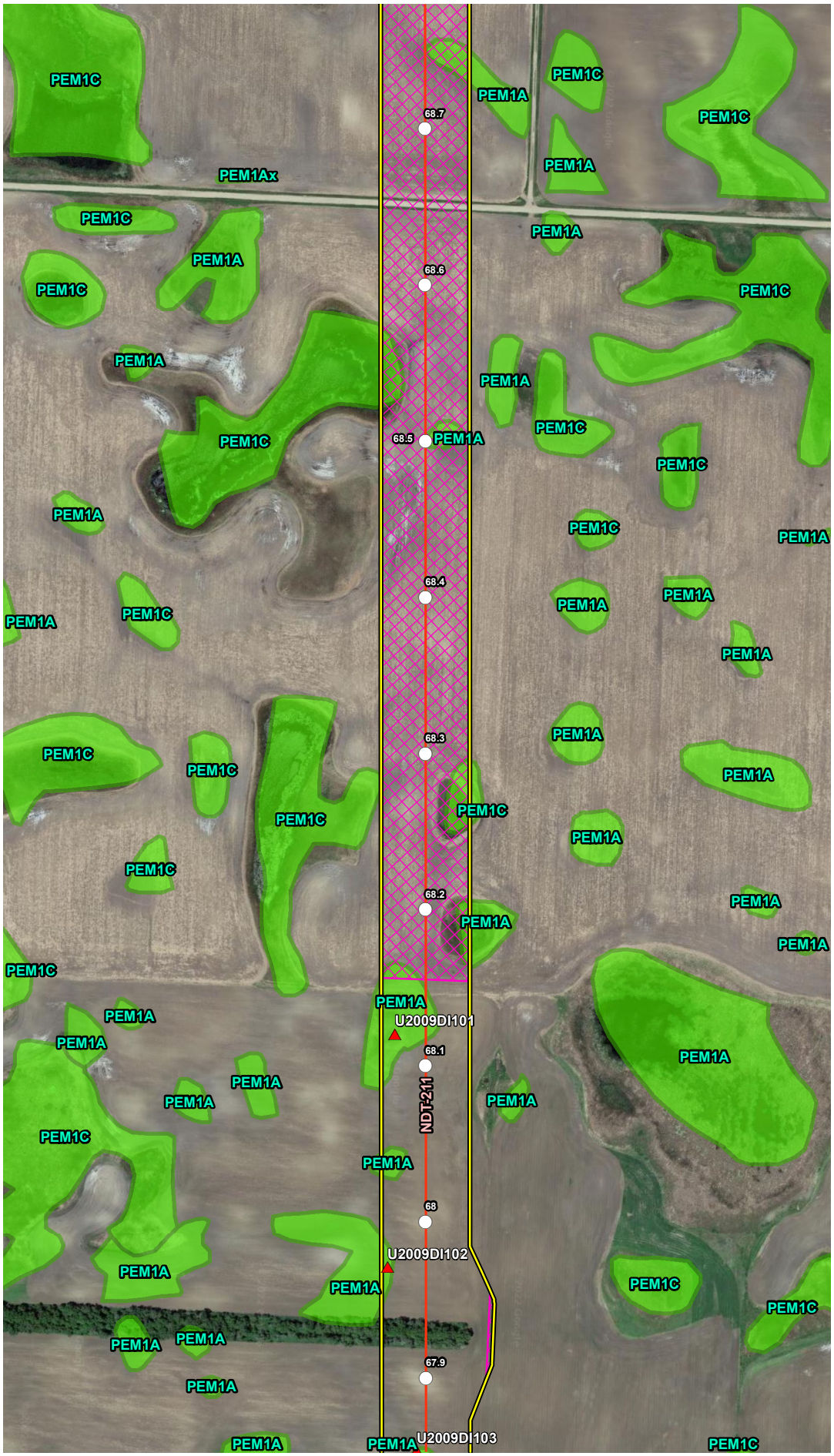
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
198 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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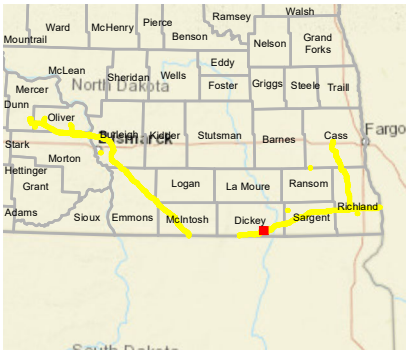


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>199 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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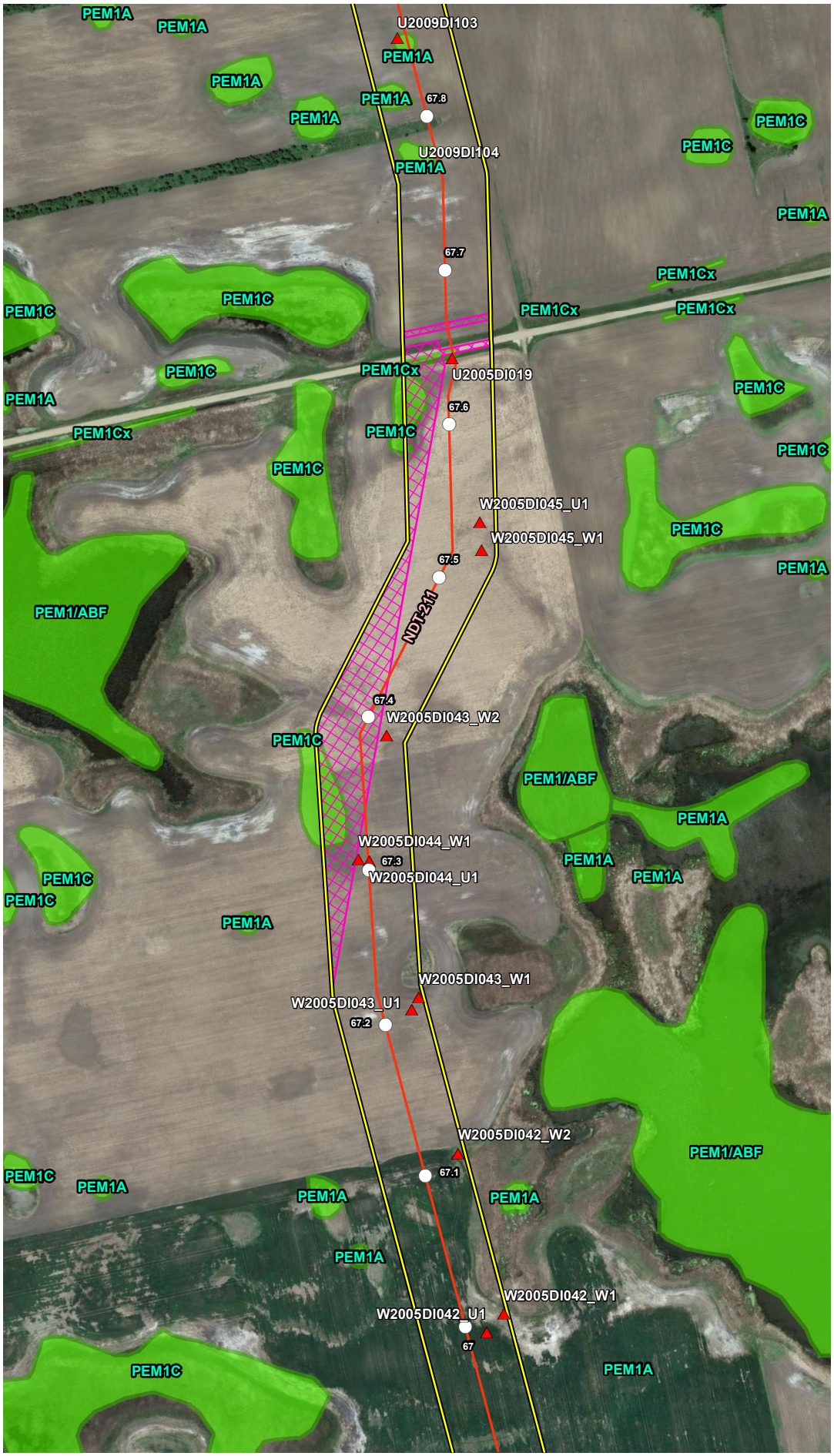
## NWI MAP

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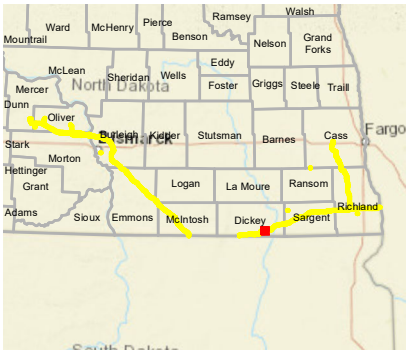


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
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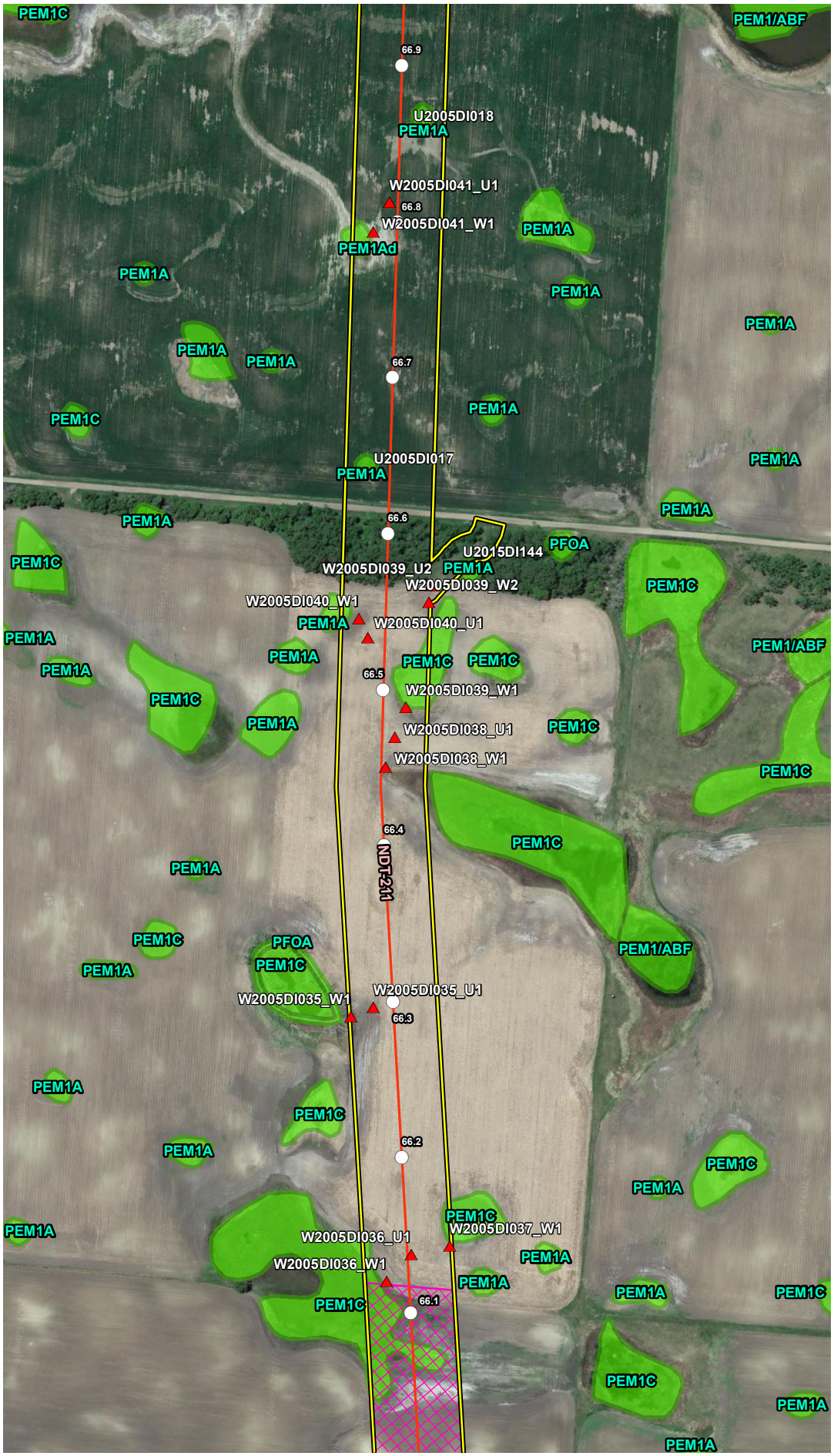
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 200 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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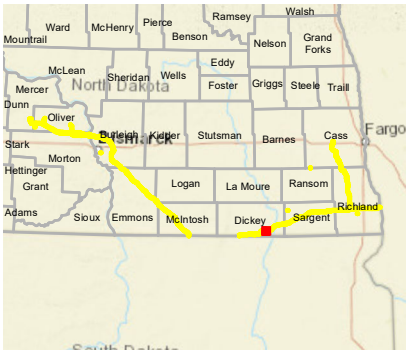


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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 201 of 392 | 2001-22-004<br>Current Revision |

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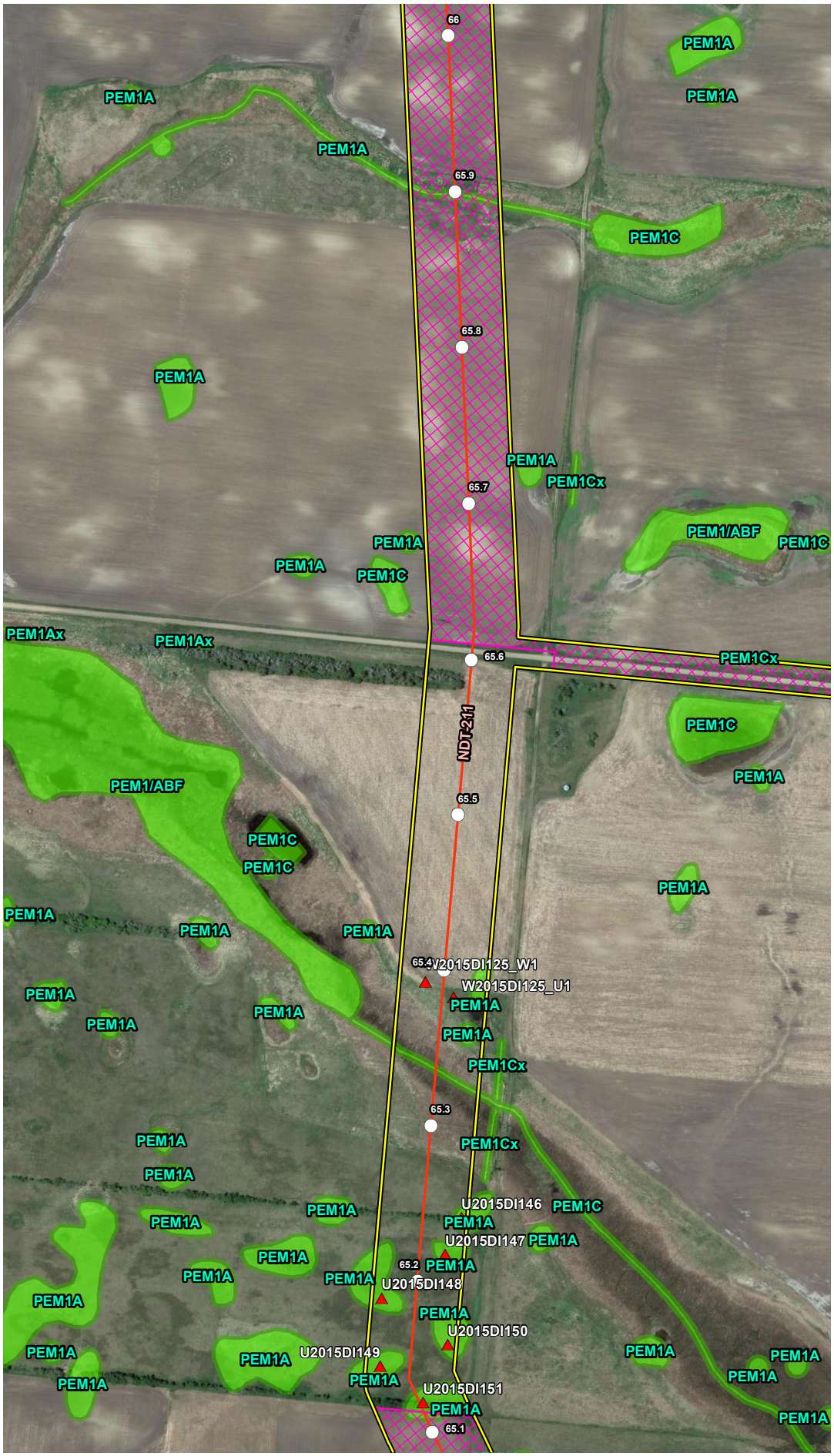
## NWI MAP

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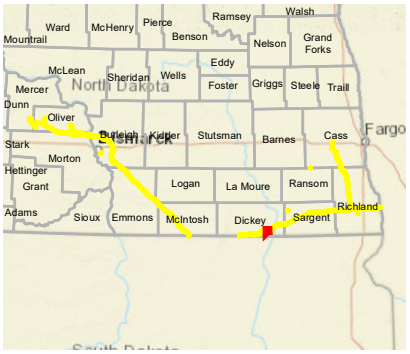


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0 250 500 Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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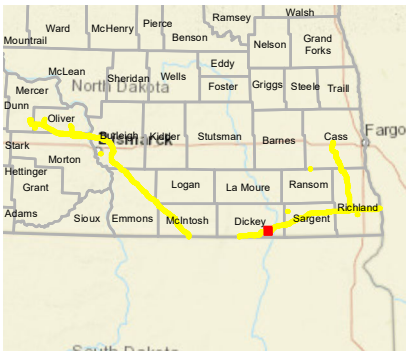
|---|---|
| 202 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP

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|---|---|---|
| 2022-08-04 | MM | AB |

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**Figure Number:**

Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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|---|---|
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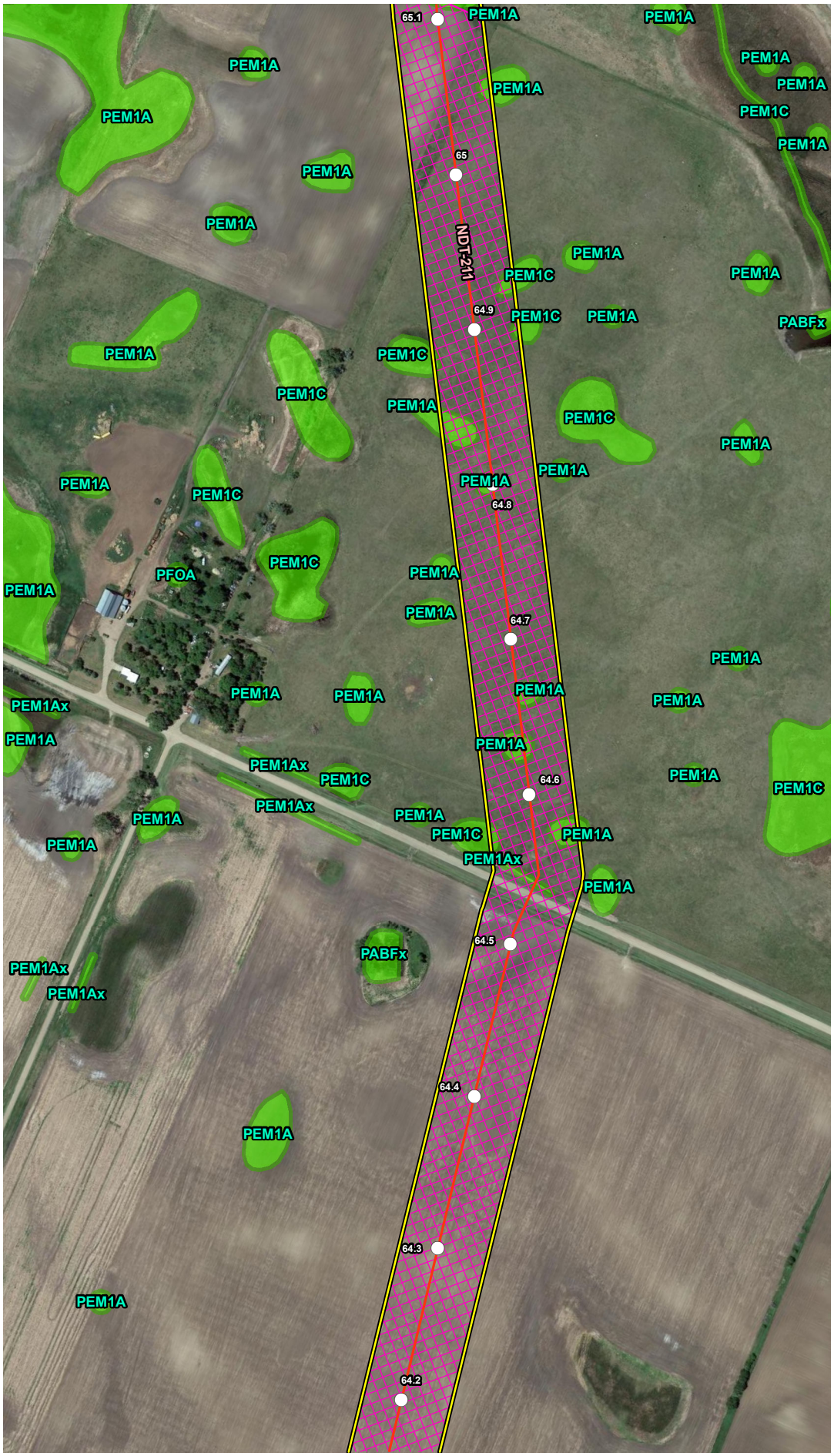
File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds14_NWI.mxd

## NWI MAP

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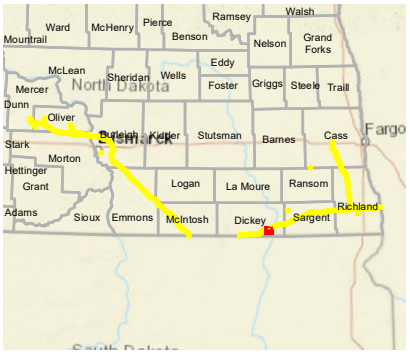


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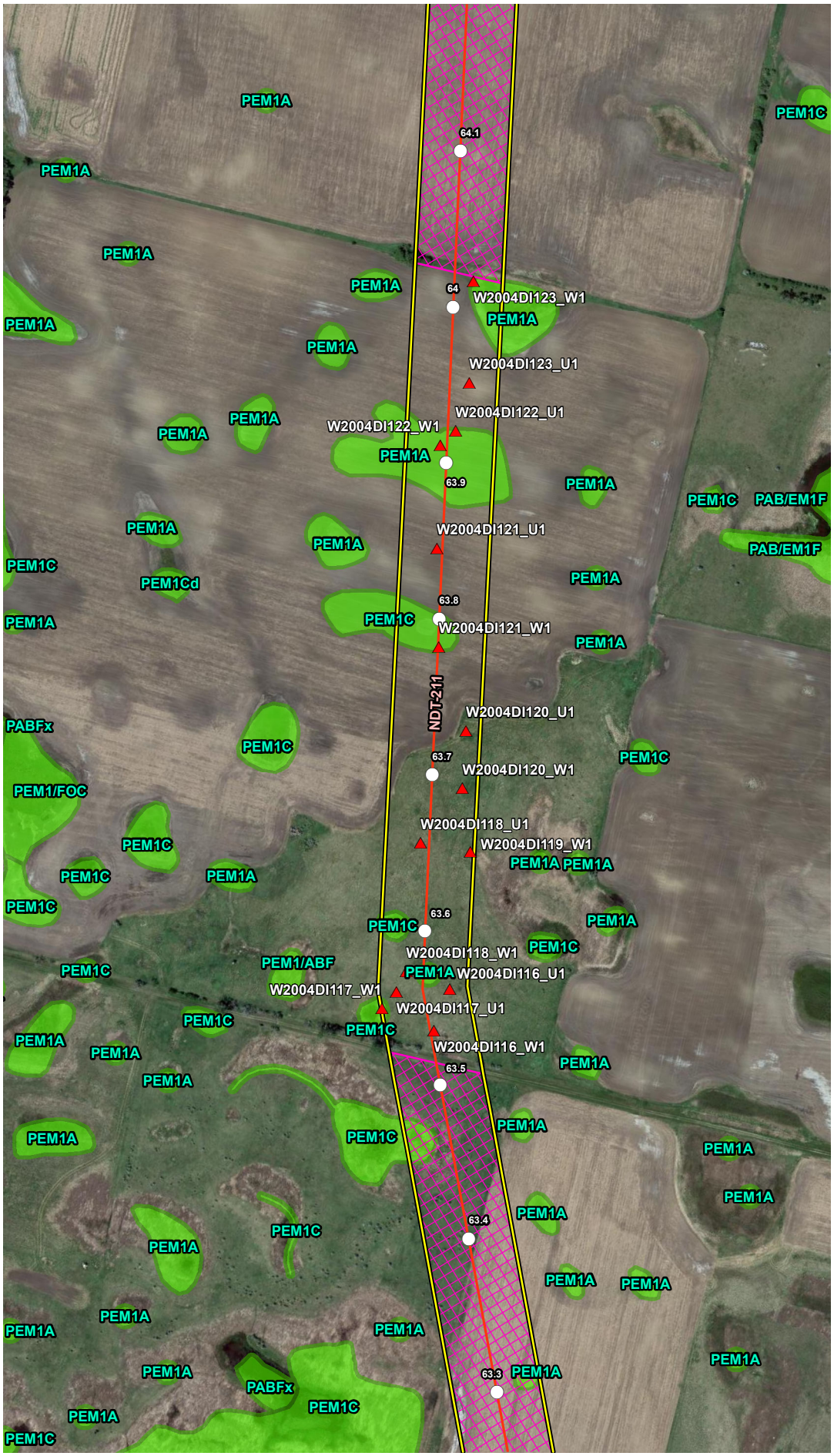
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 204 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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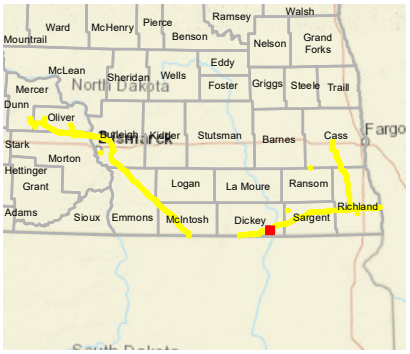


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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Figure Title:

NWI Map

Figure Number:

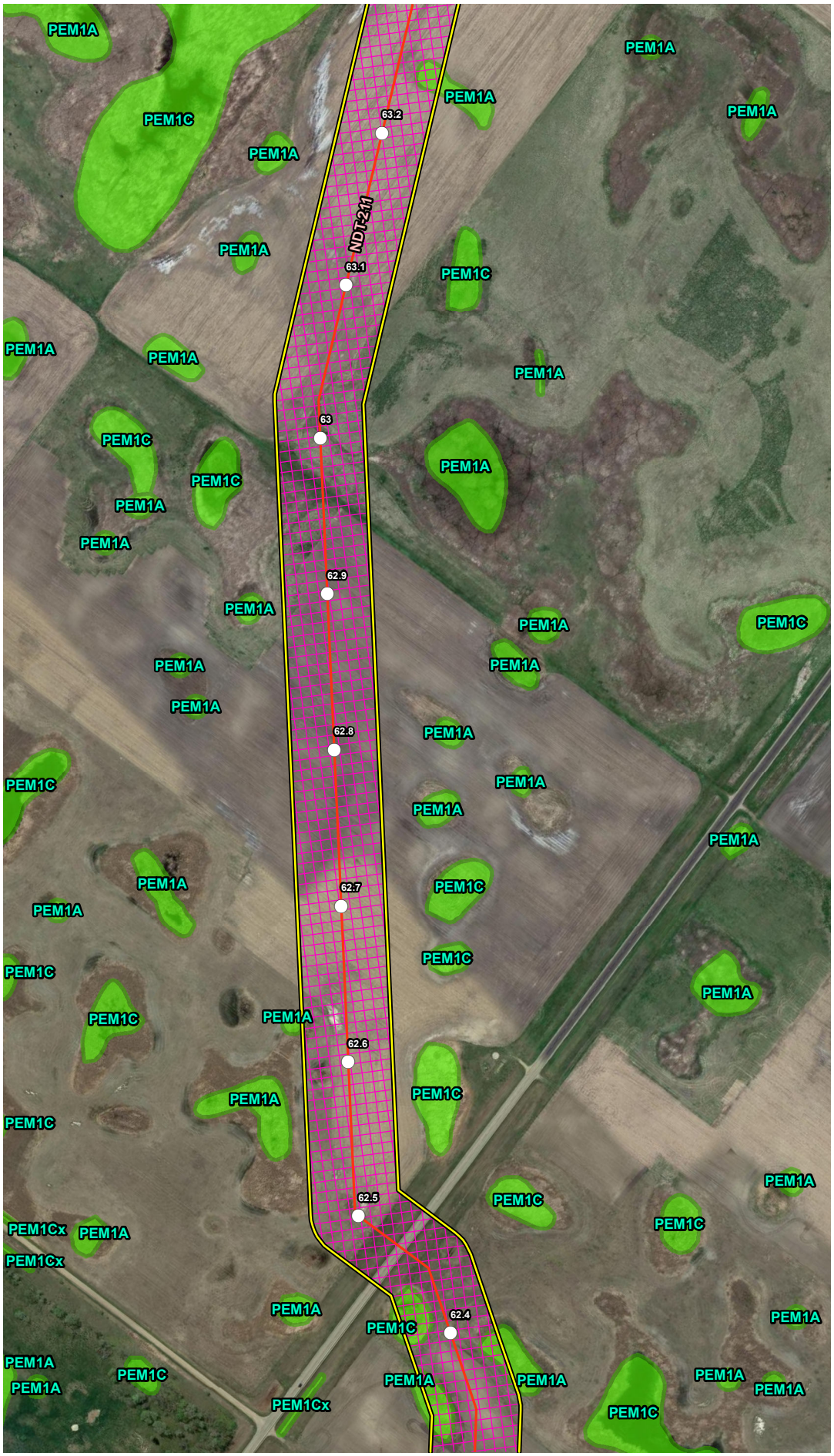
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 205 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\20221901_WR_NDImxds14_NWI.mxd

## NWI MAP

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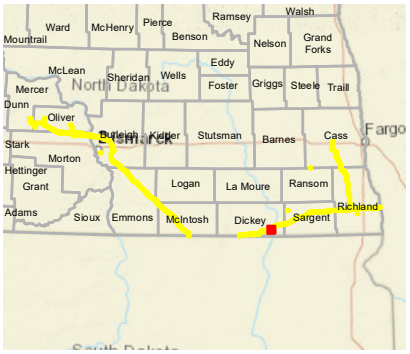


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

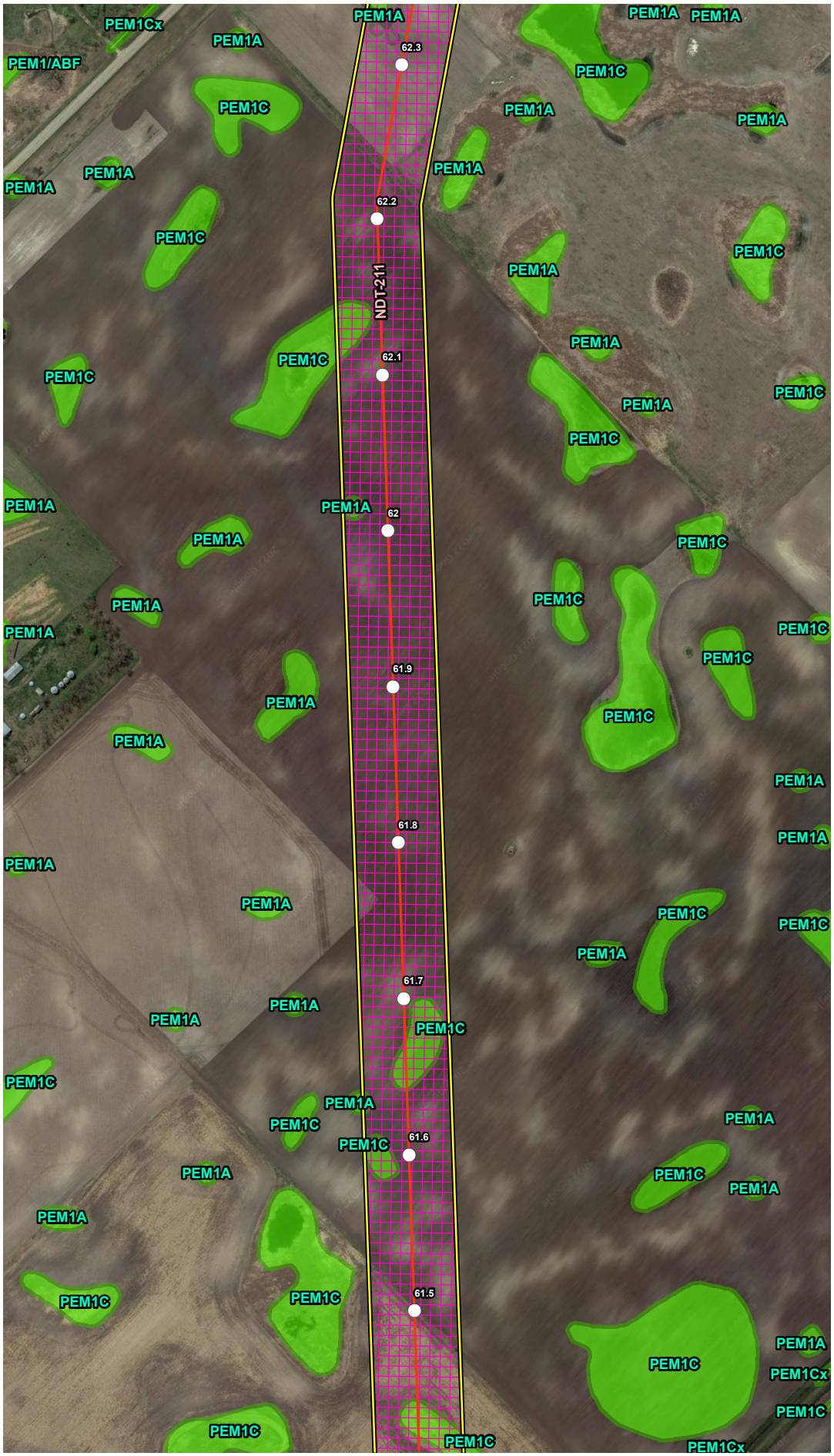
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
206 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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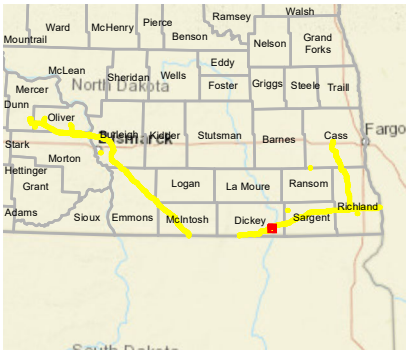


## LEGEND

- Milepost
- Soil Station
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

**Figure Number:**

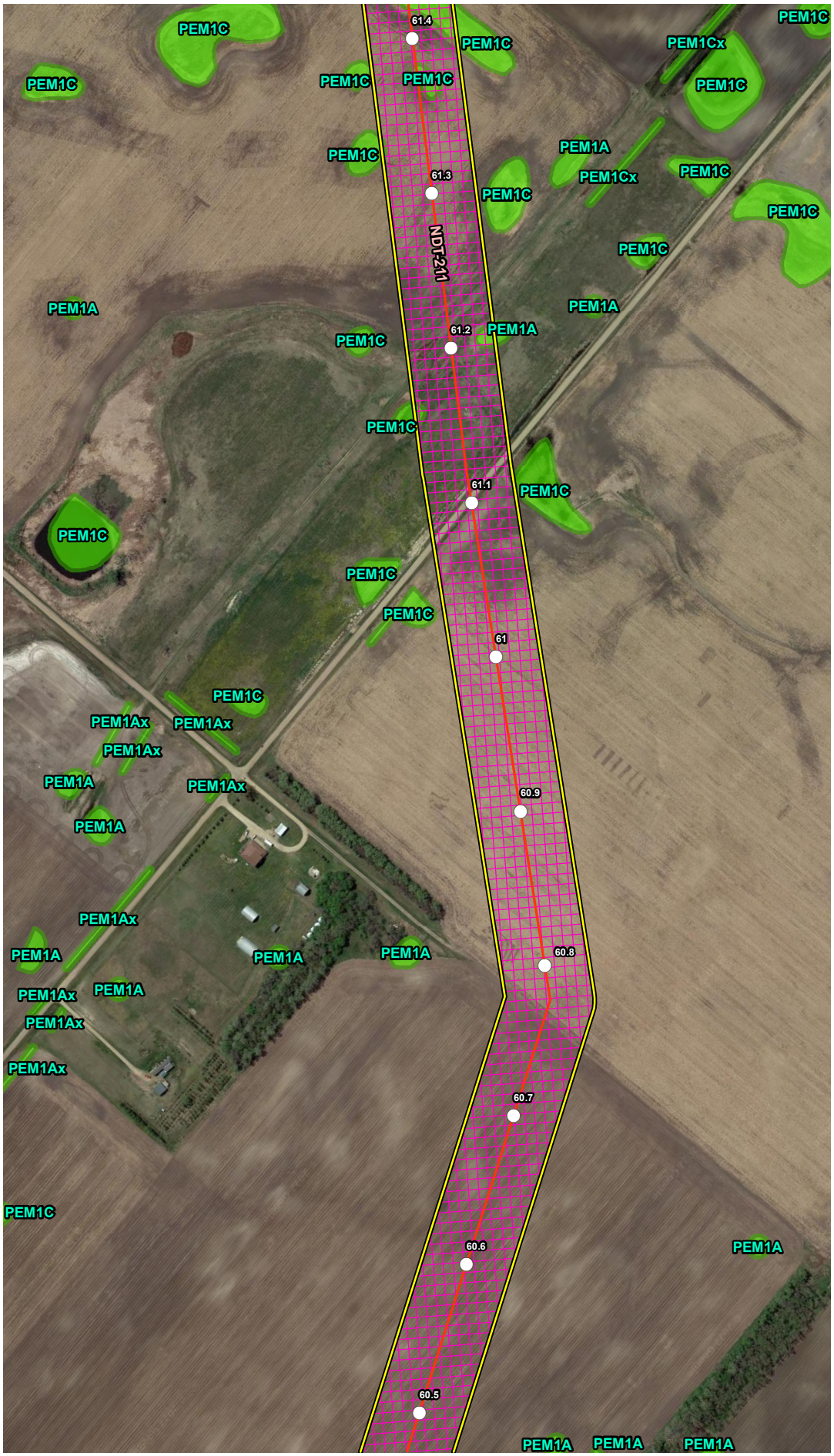
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

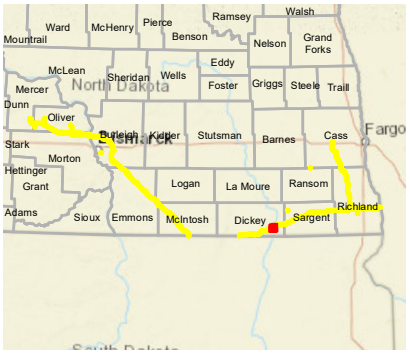
| Sheet: | Drawing Number: |
|---|---|
| 207 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDI\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
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- NWI Wetland
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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Figure Title:

NWI Map

Figure Number:

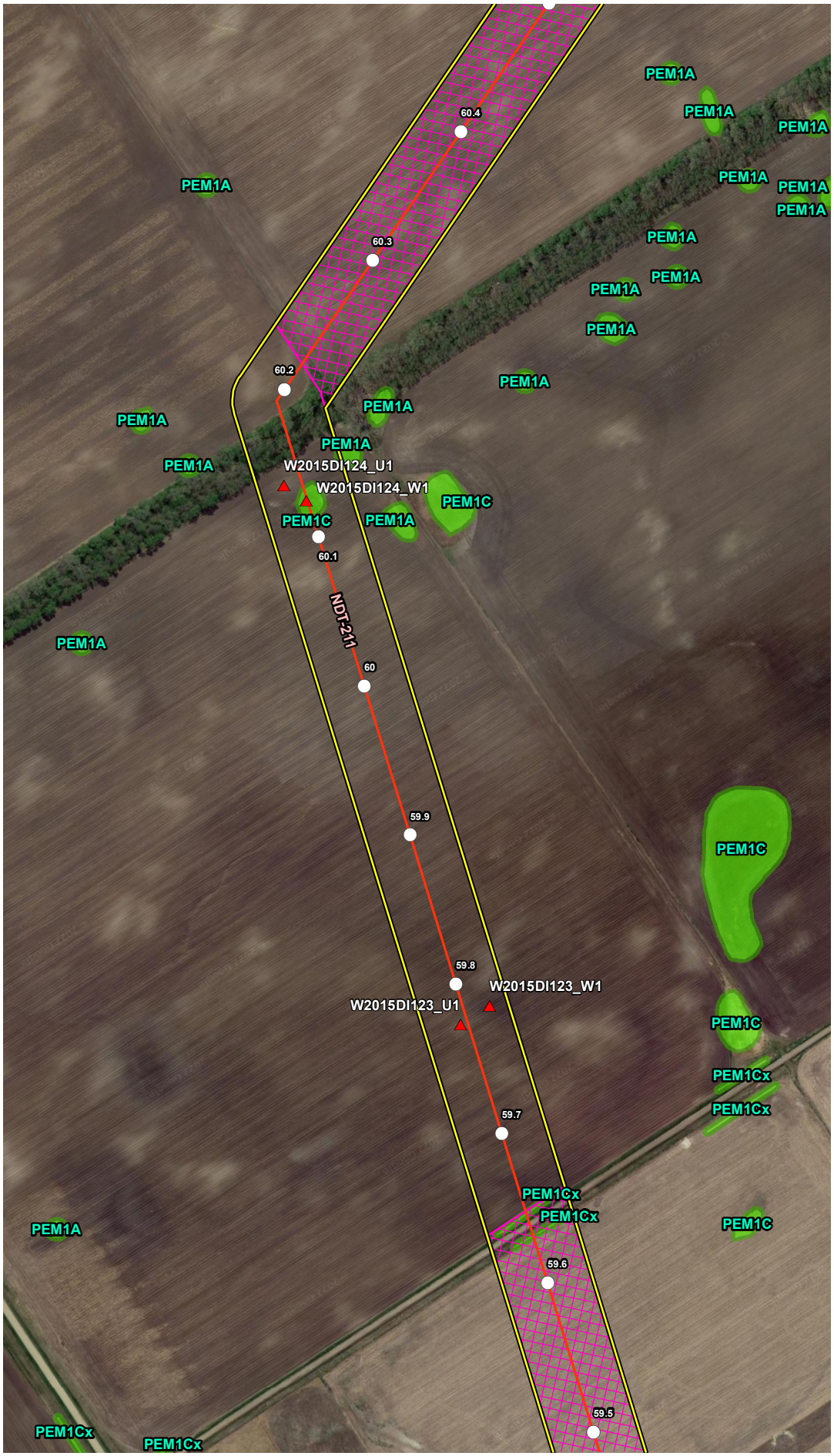
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

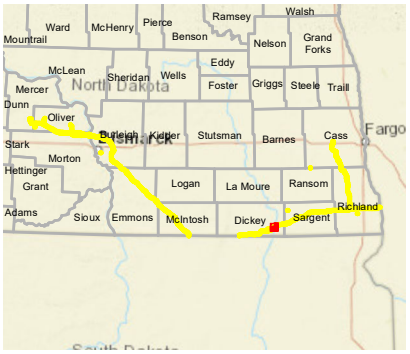
| Sheet: | Drawing Number: |
|---|---|
| 208 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ID\VWR\2022\801_VWR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
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Revision description

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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

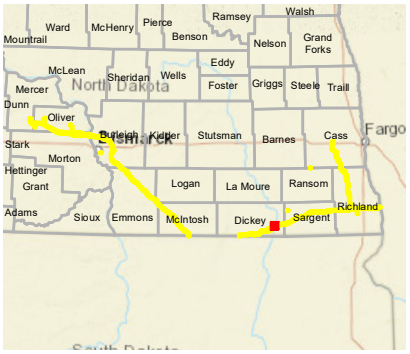
| Sheet: | Drawing Number: |
|---|---|
| 209 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ISV\WR\2022\801_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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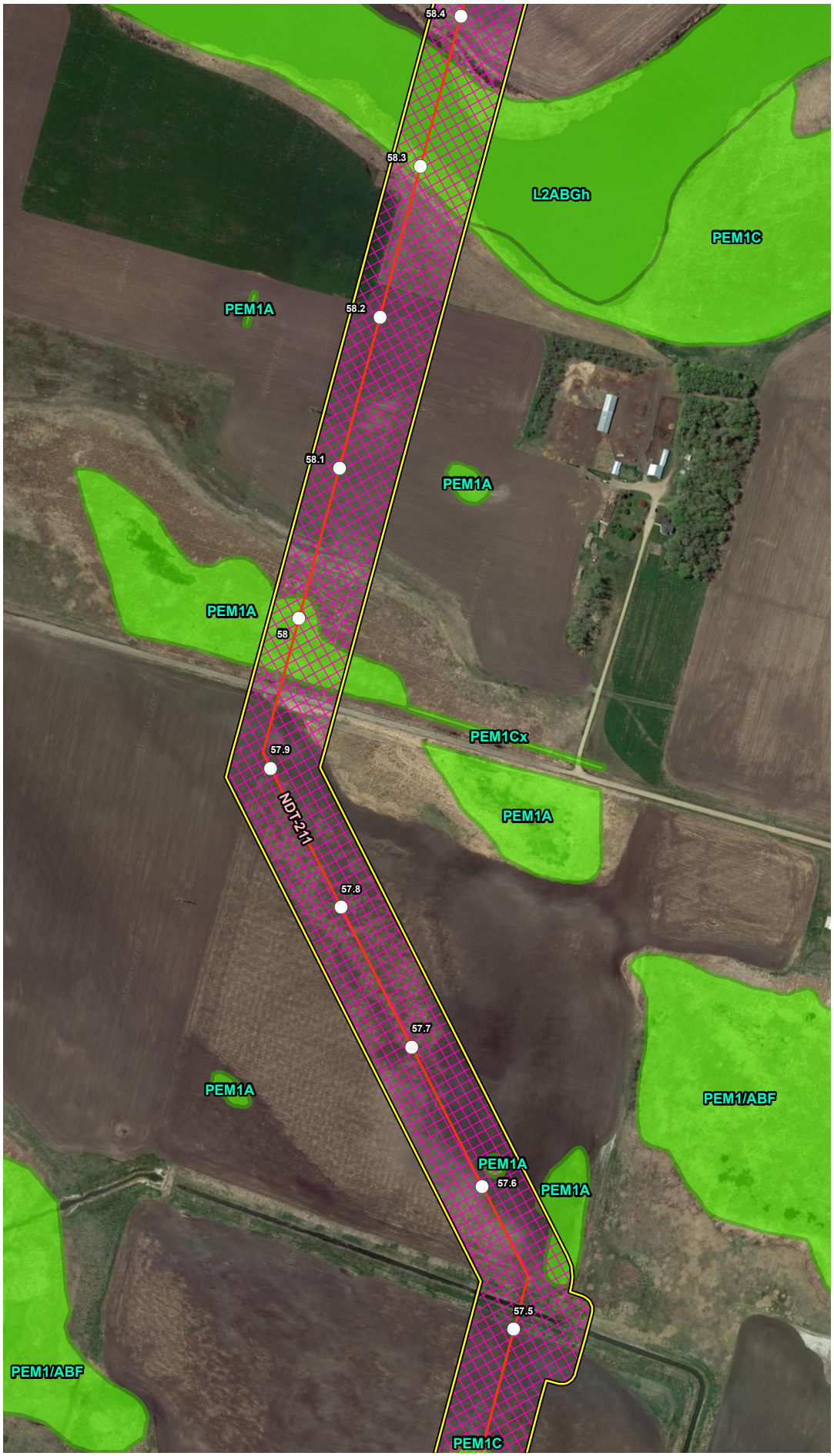
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>210 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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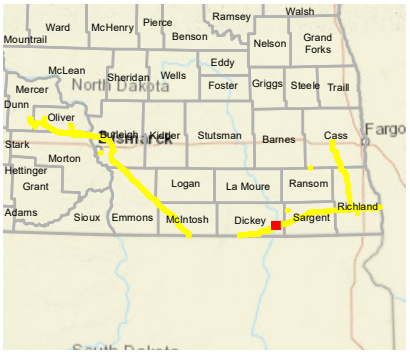


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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NWI Map

**Figure Number:**

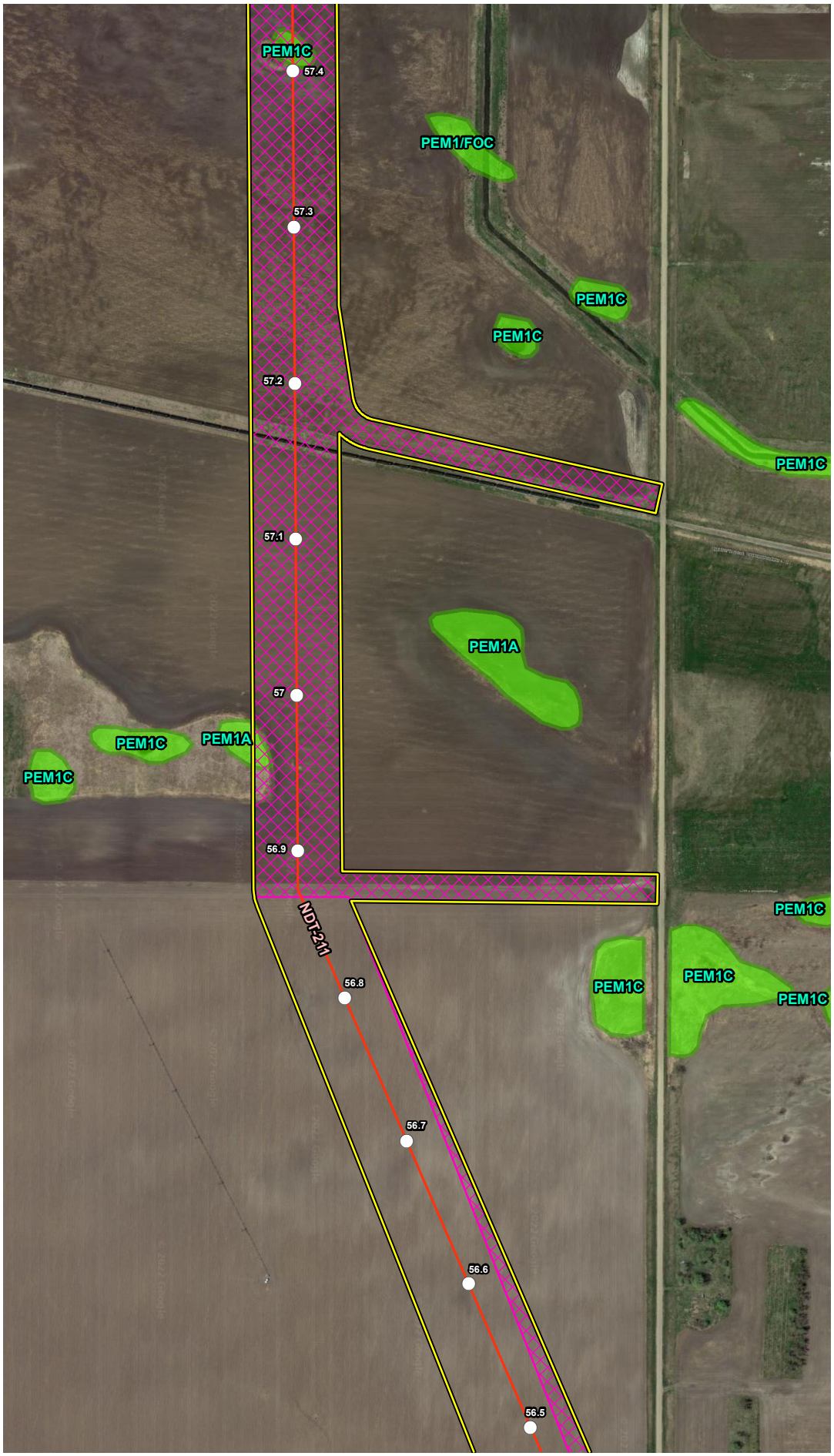
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

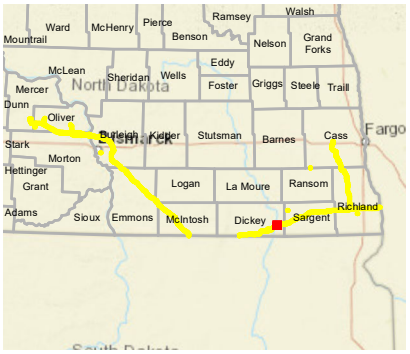
| Sheet: | Drawing Number: |
|---|---|
| 211 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- Proposed Route (07/19/22)
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

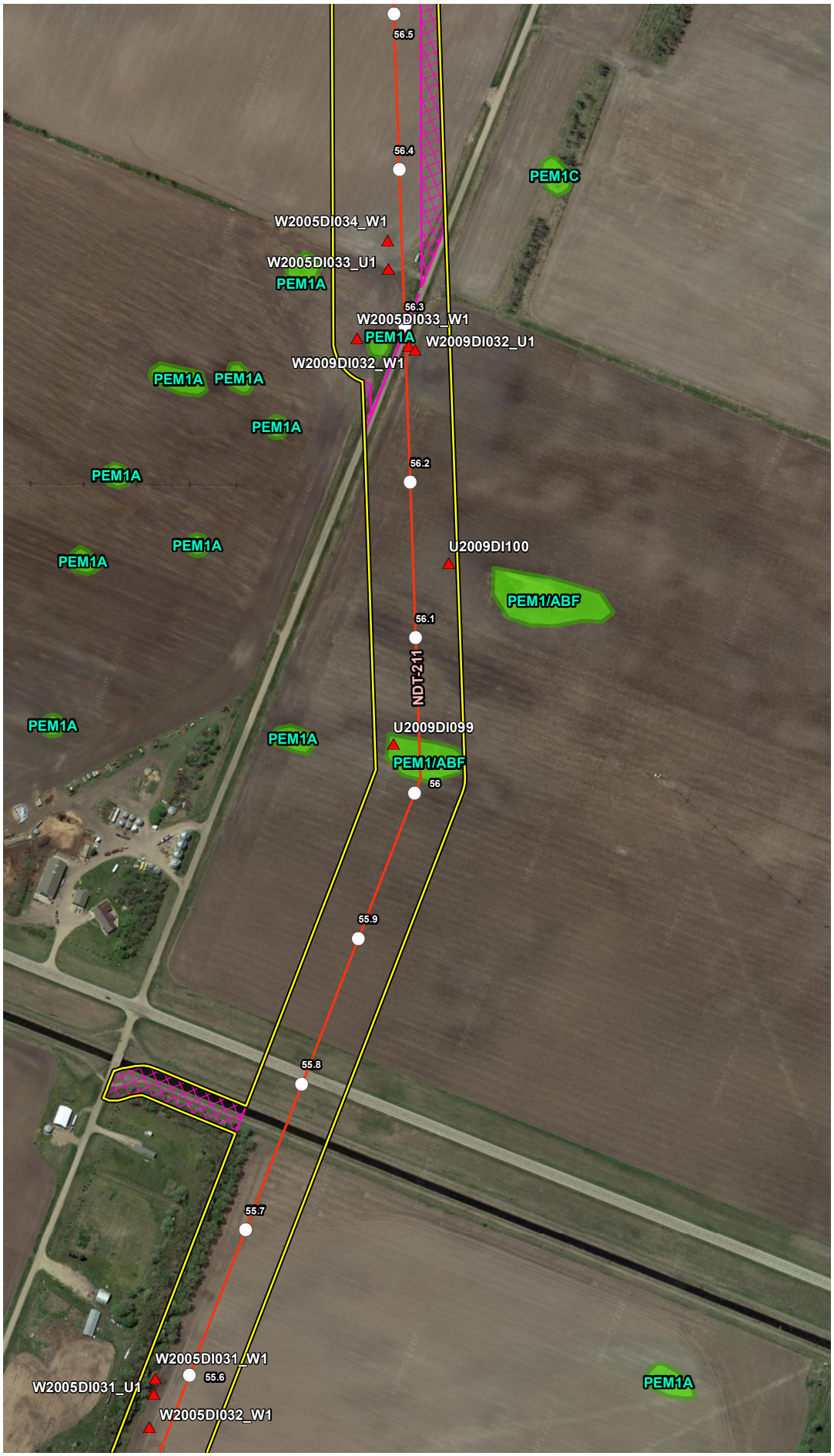
Appendix A-4

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

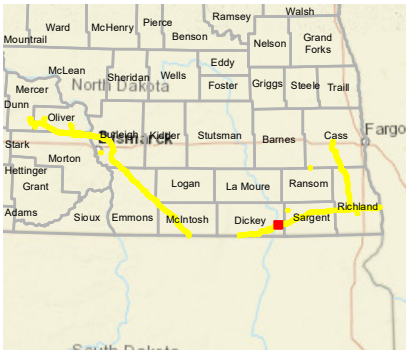
| Sheet | Drawing Number |
|---|---|
| 212 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\801_WR_NDI\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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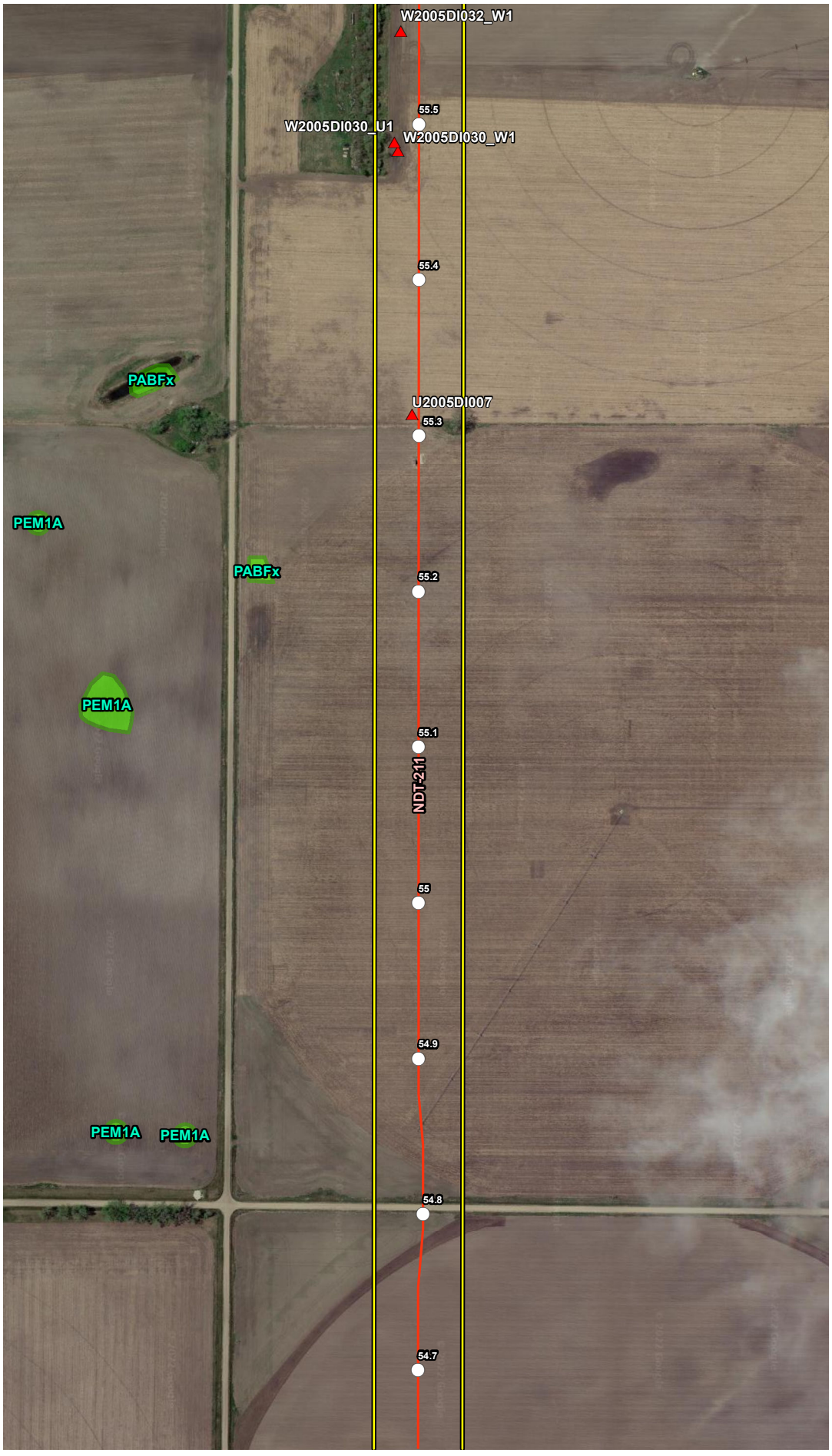
Figure Title:
NWI Map

Figure Number:
Appendix A-4

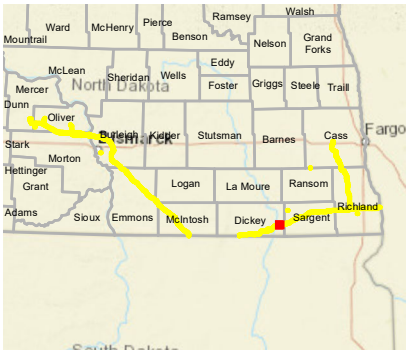
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 213 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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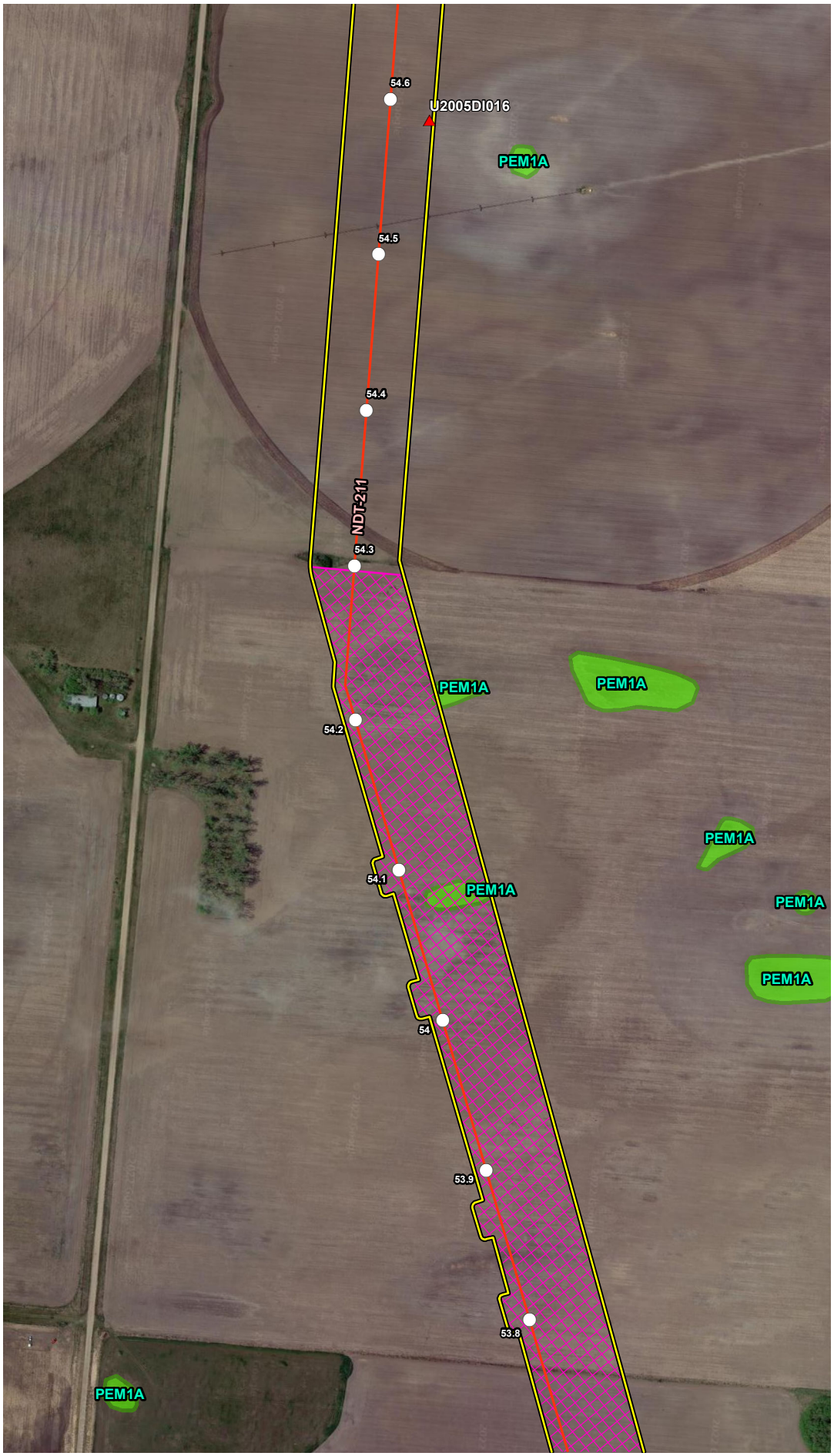
Figure Title:
NWI Map

Figure Number:
Appendix A-4

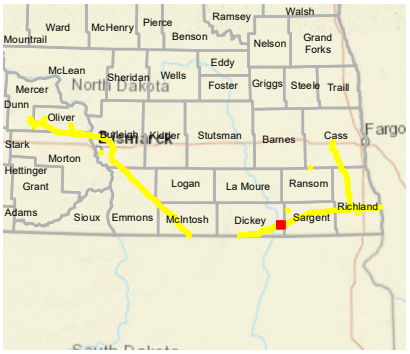
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 214 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**
NWI Map

**Figure Number:**
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

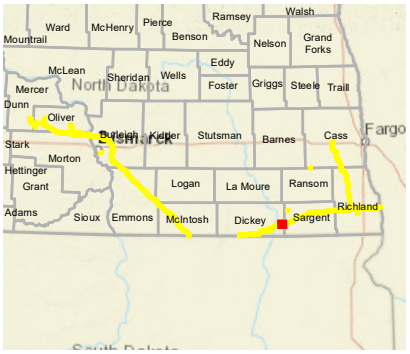
| Sheet: | Drawing Number: |
|---|---|
| 215 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDI\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- Desktop Review Area
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- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |

| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

**Figure Number:**

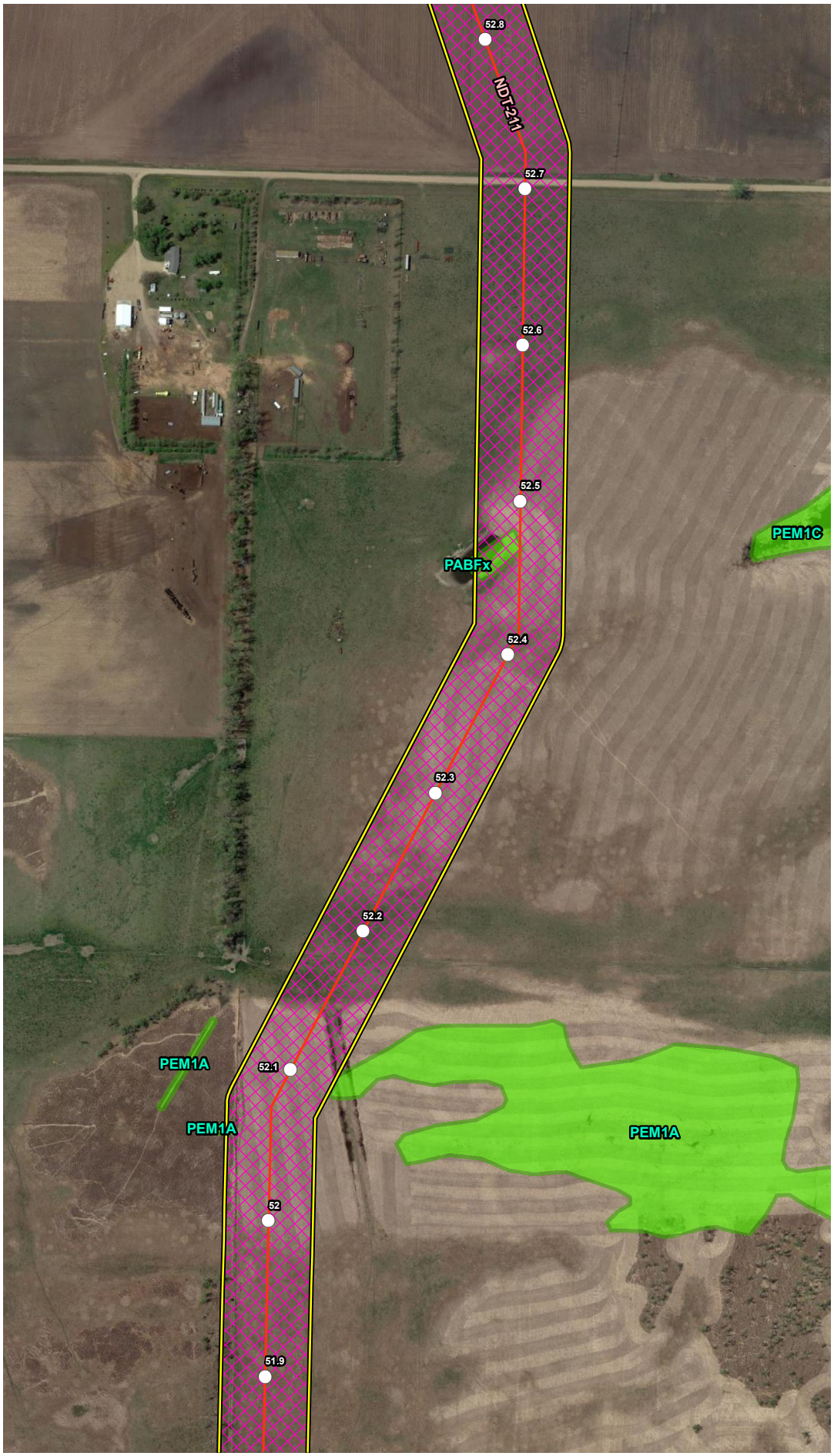
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

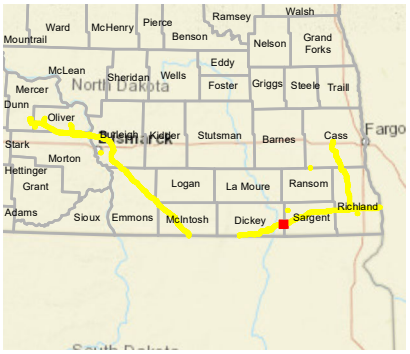
| Sheet: | Drawing Number: |
|---|---|
| 216 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDI\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

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Figure Title:

NWI Map

Figure Number:

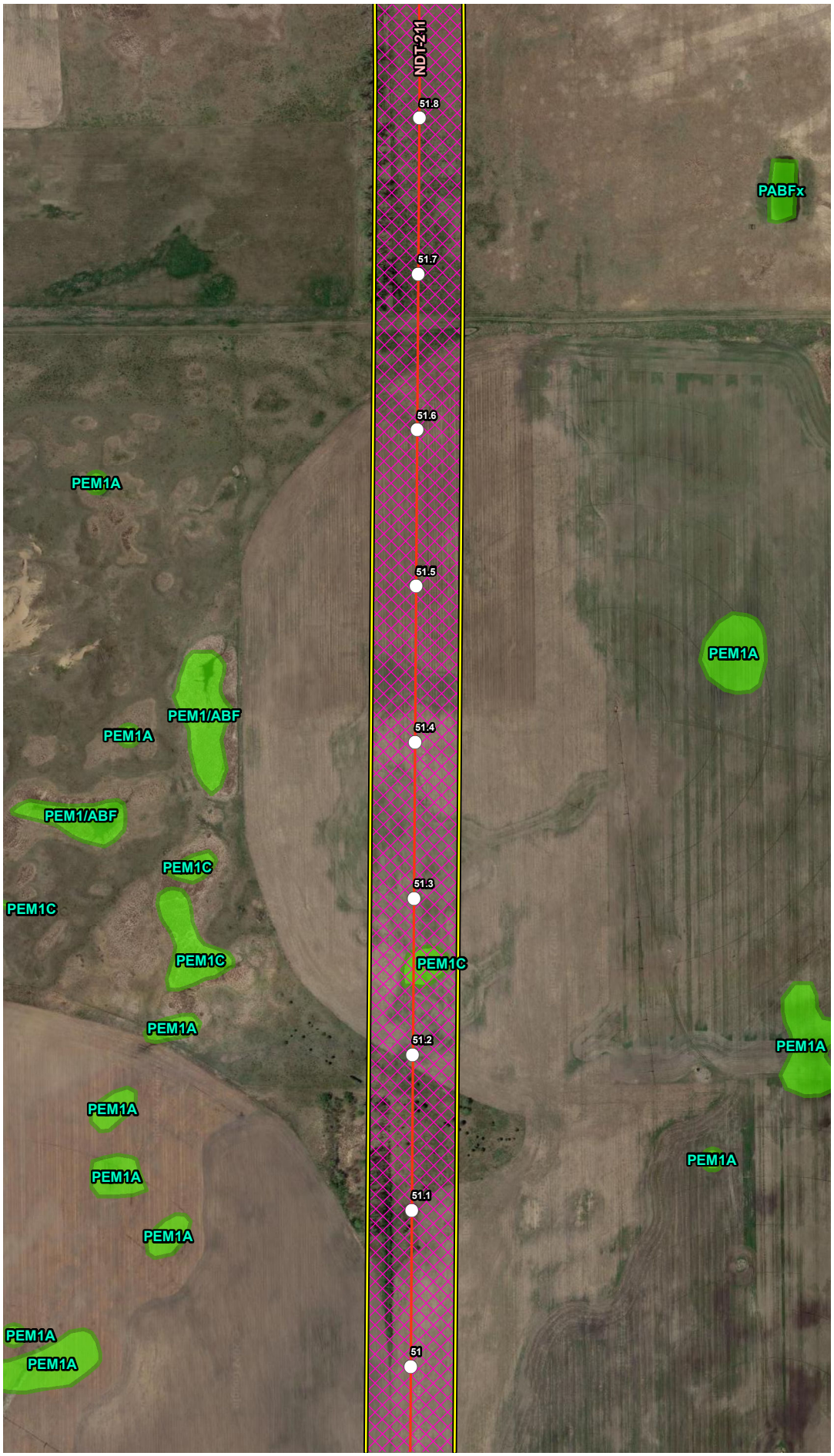
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

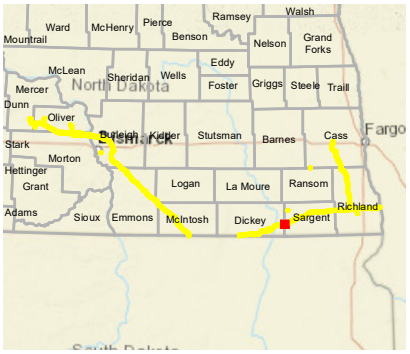
| Sheet: | Drawing Number: |
|---|---|
| 217 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDI\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
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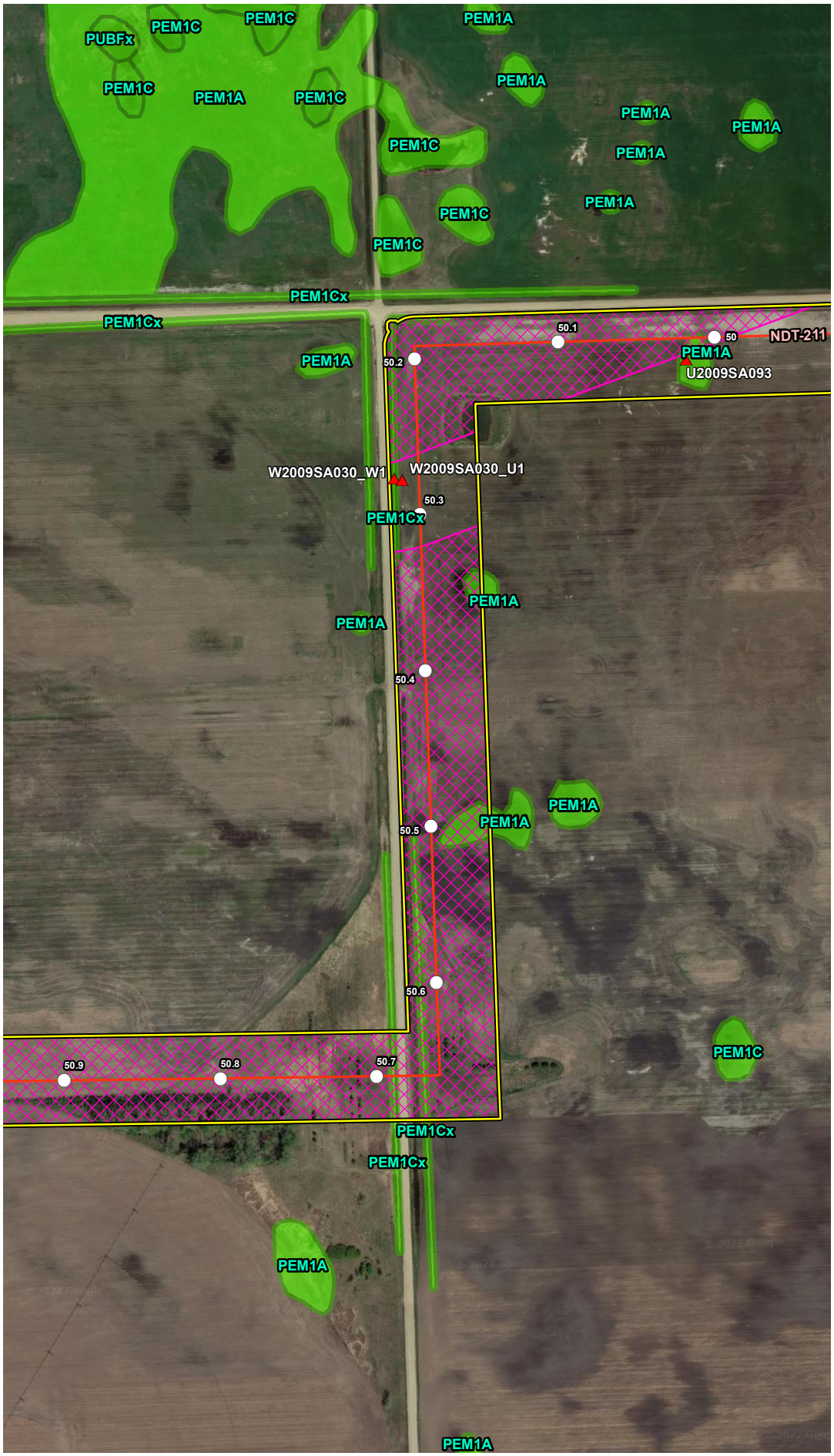
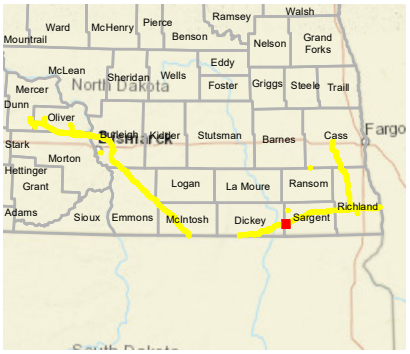
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>218 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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Figure Title:

NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

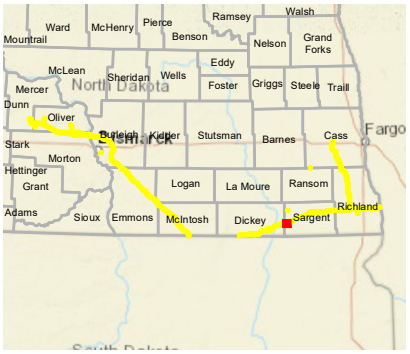
| Sheet: | Drawing Number: |
|---|---|
| 219 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ISU\WR\2022\801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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Figure Title:

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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

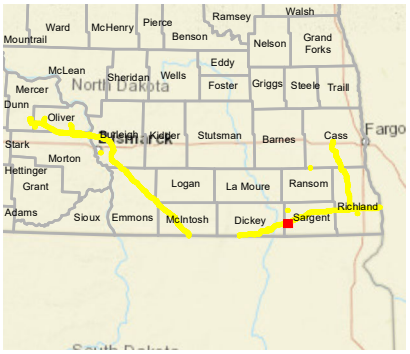
| Sheet: | Drawing Number: |
|---|---|
| 220 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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Figure Number:

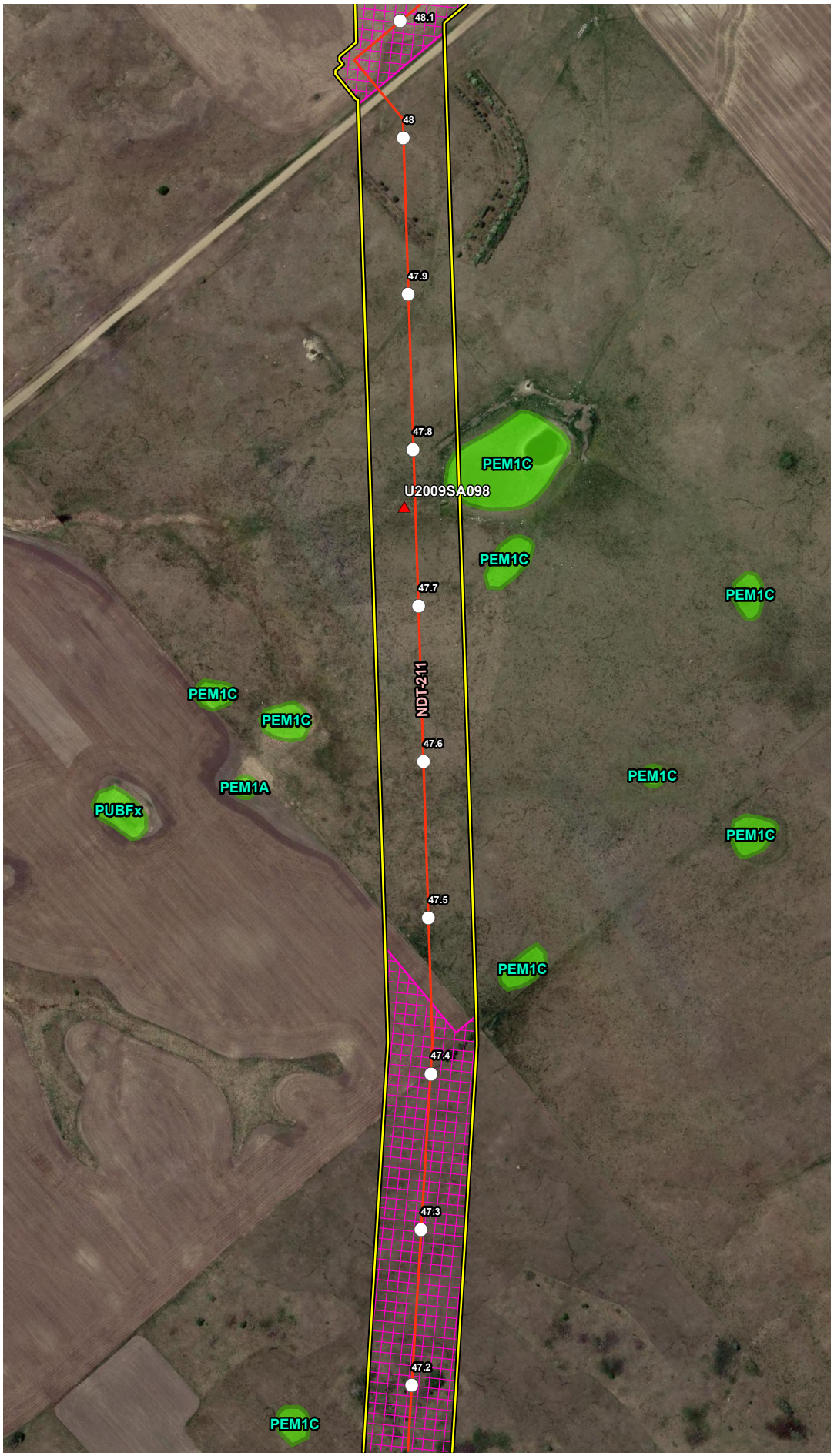
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 221 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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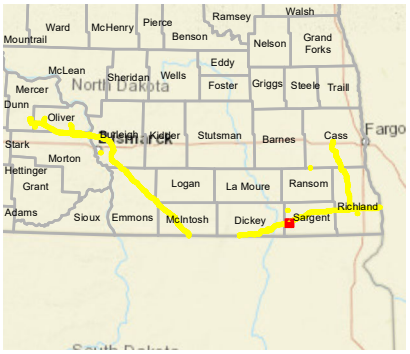


## LEGEND

- Milepost
- Soil Station
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

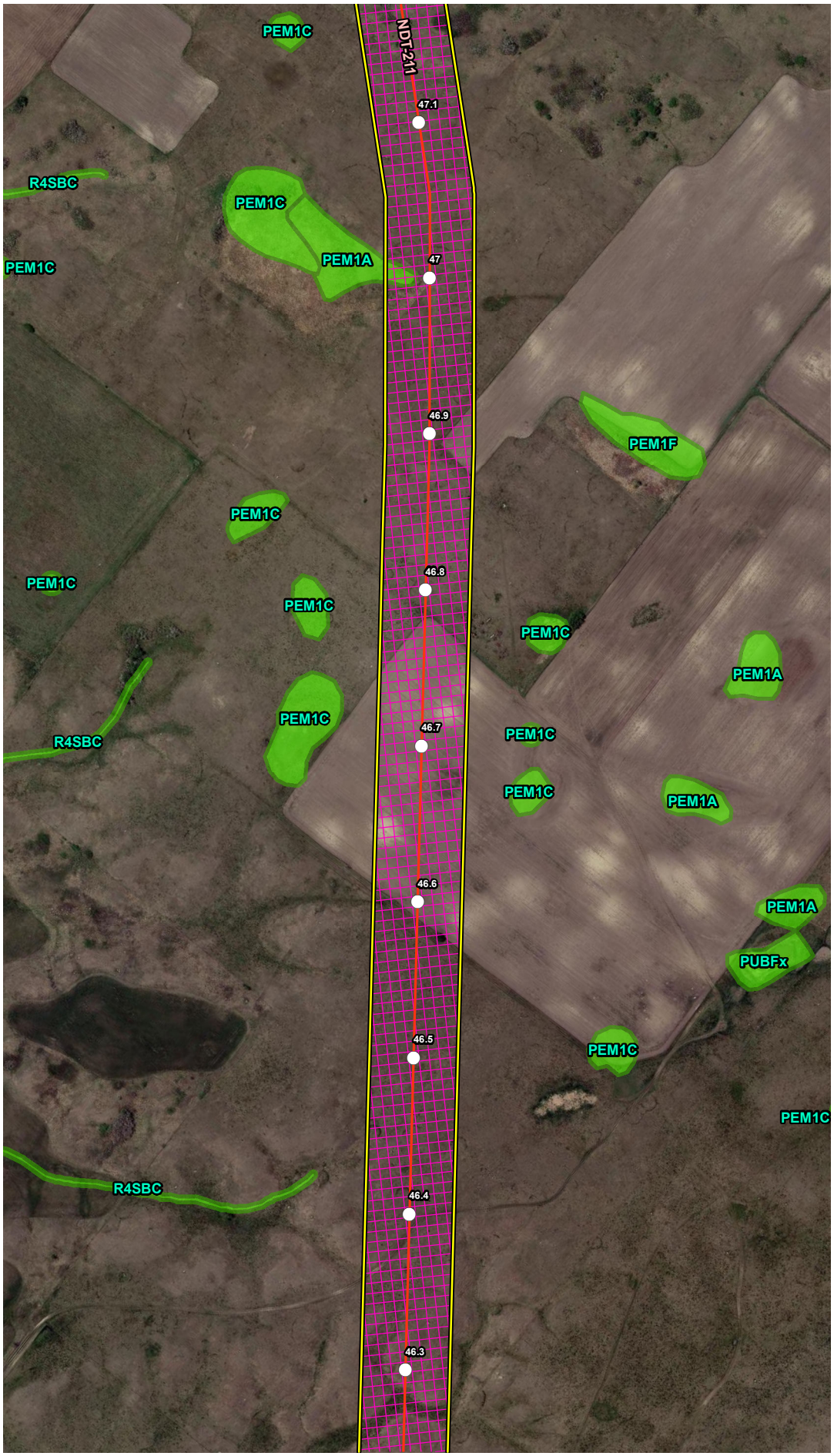
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

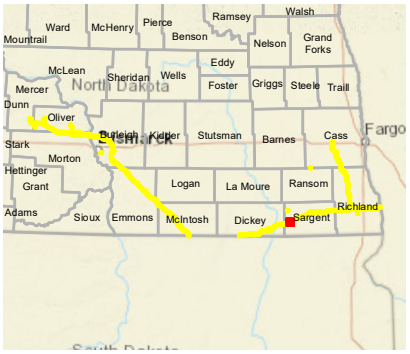
| Sheet: | Drawing Number: |
|---|---|
| 222 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDmxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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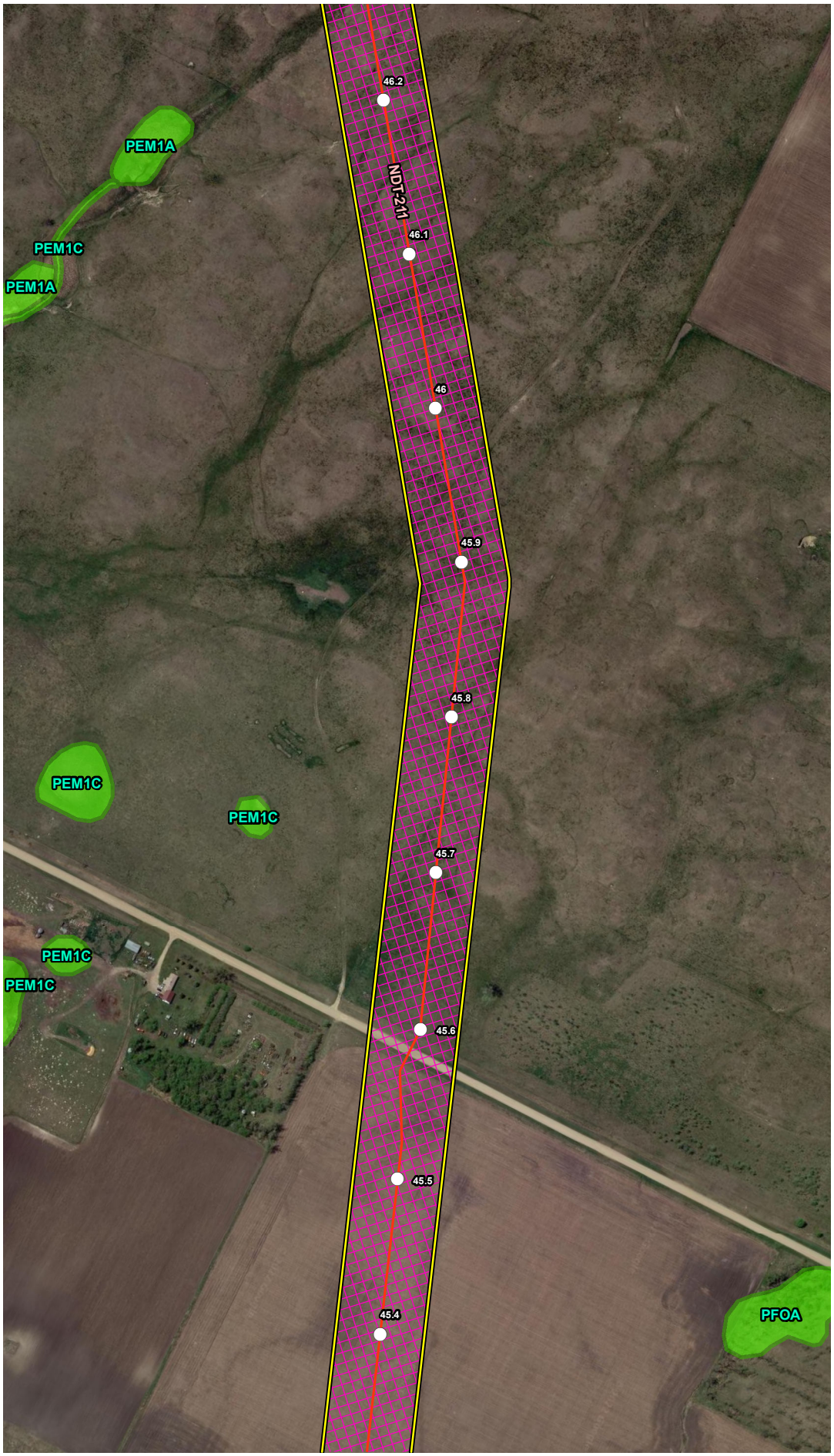
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>223 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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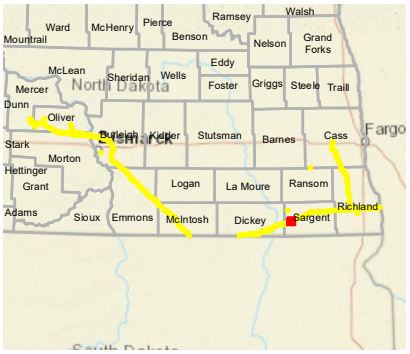


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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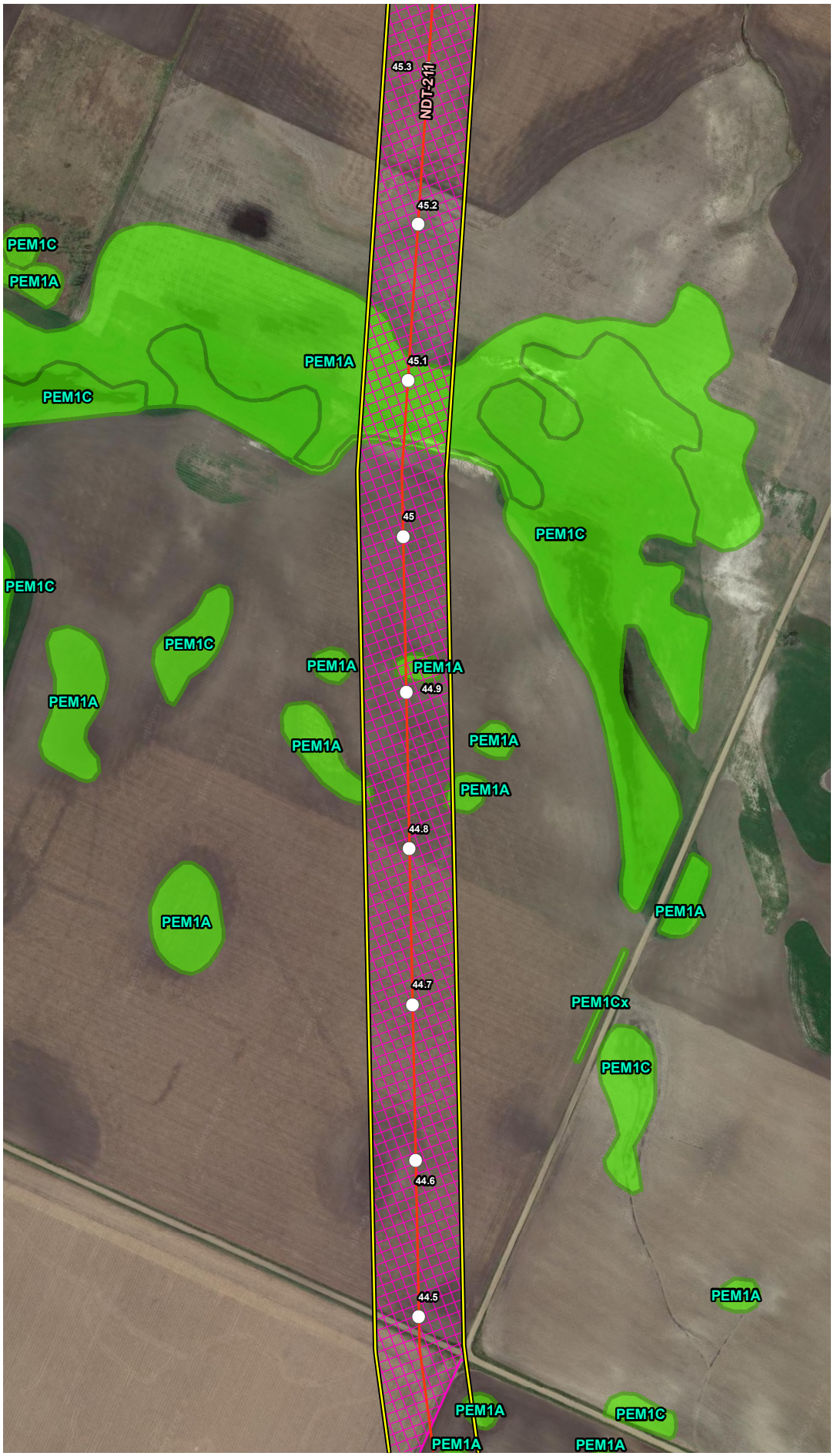
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>224 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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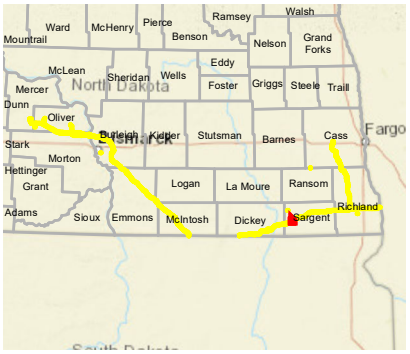


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
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- Environmental Survey Area
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- State Boundary

0 250 500
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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Figure Title:
**NWI Map**

Figure Number:
**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 225 of 392 | 2001-22-004<br>Current Revision |

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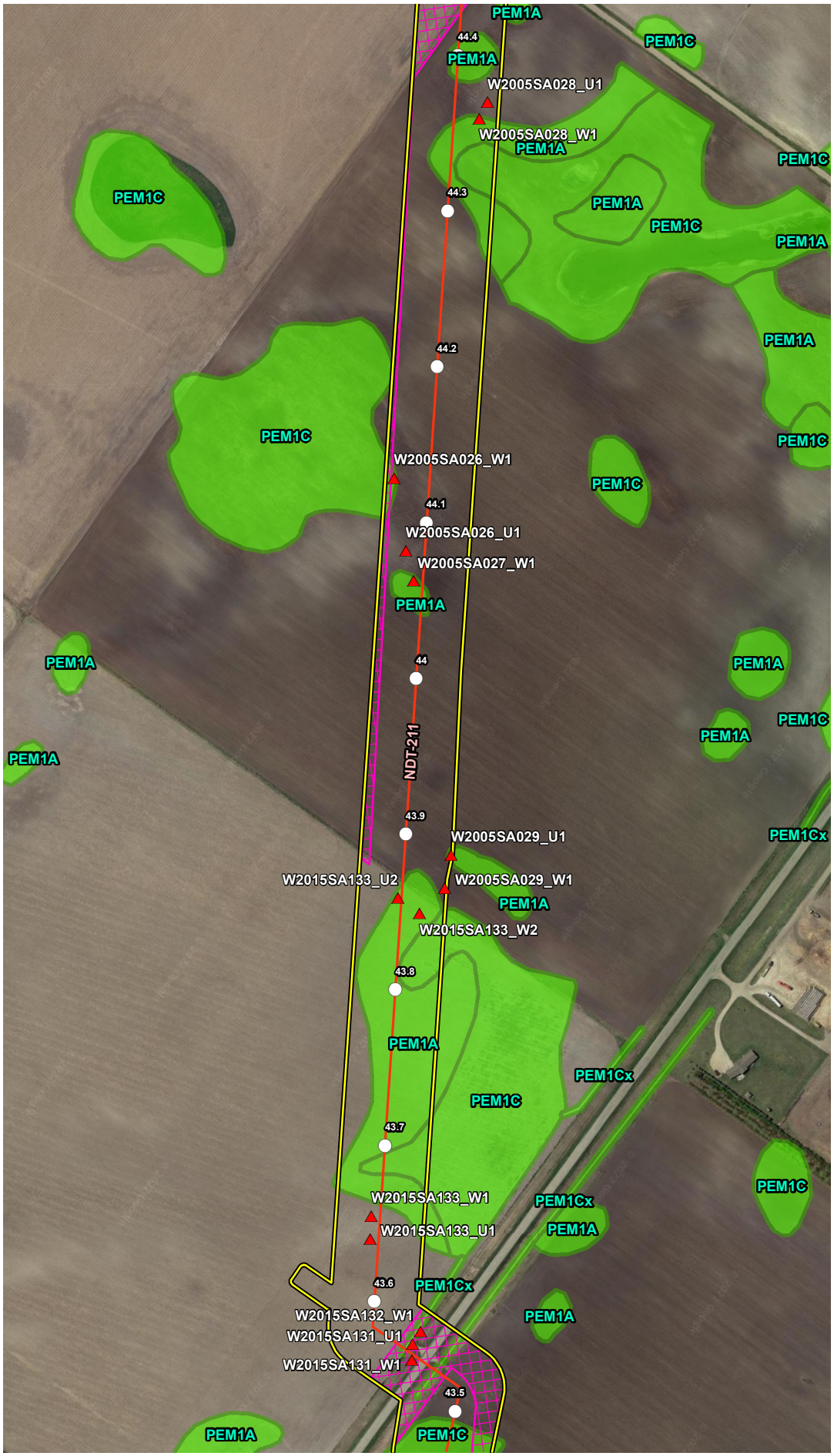
## NWI MAP

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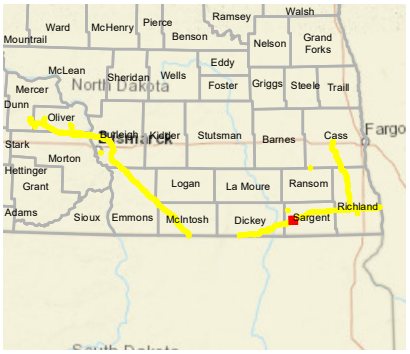


## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

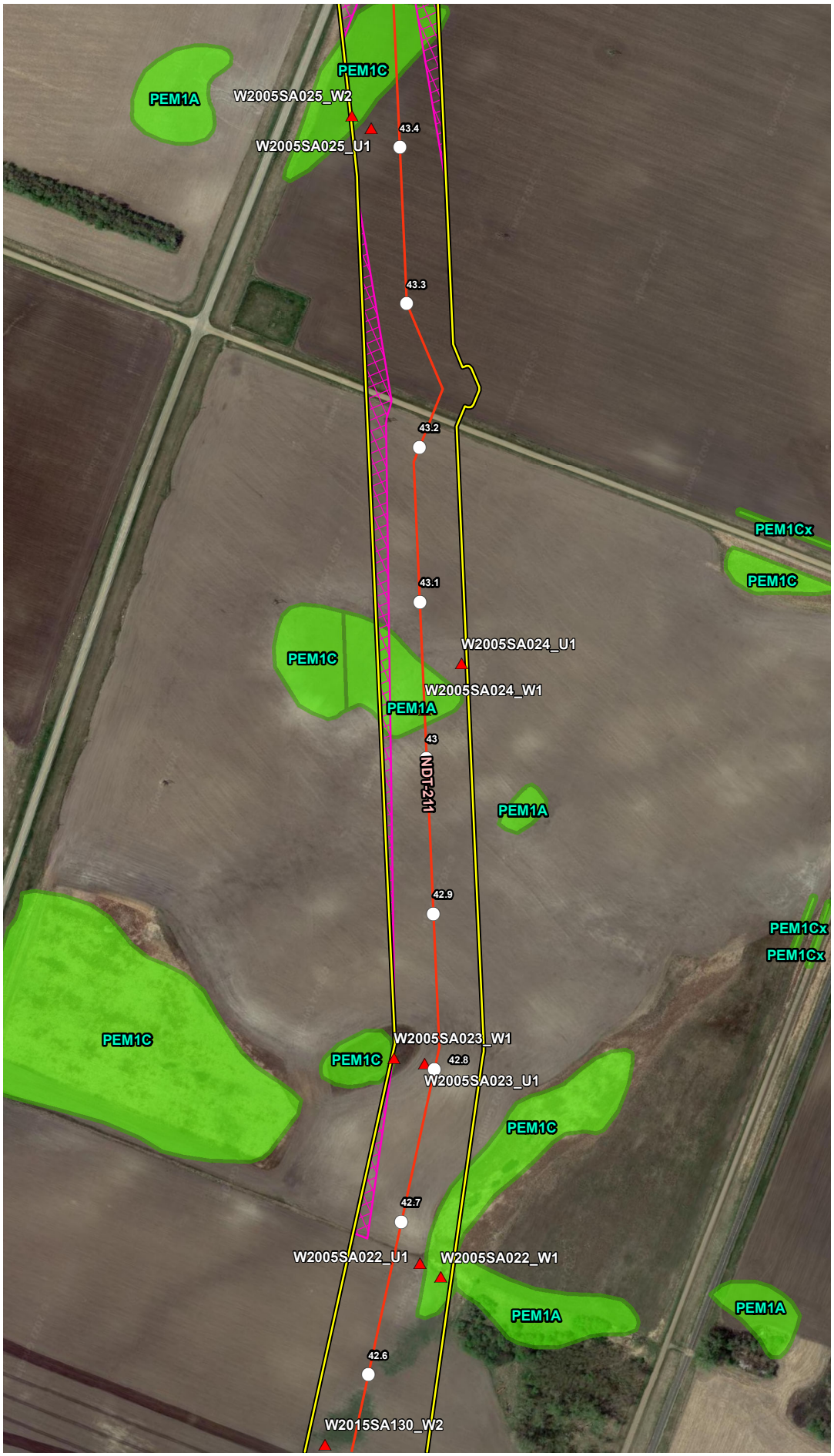
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
226 of 392

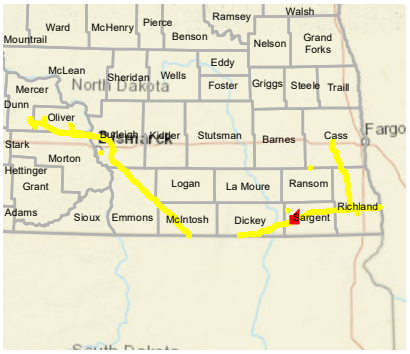
Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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Figure Number:

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 227 of 392 | 2001-22-004<br>Current Revision |

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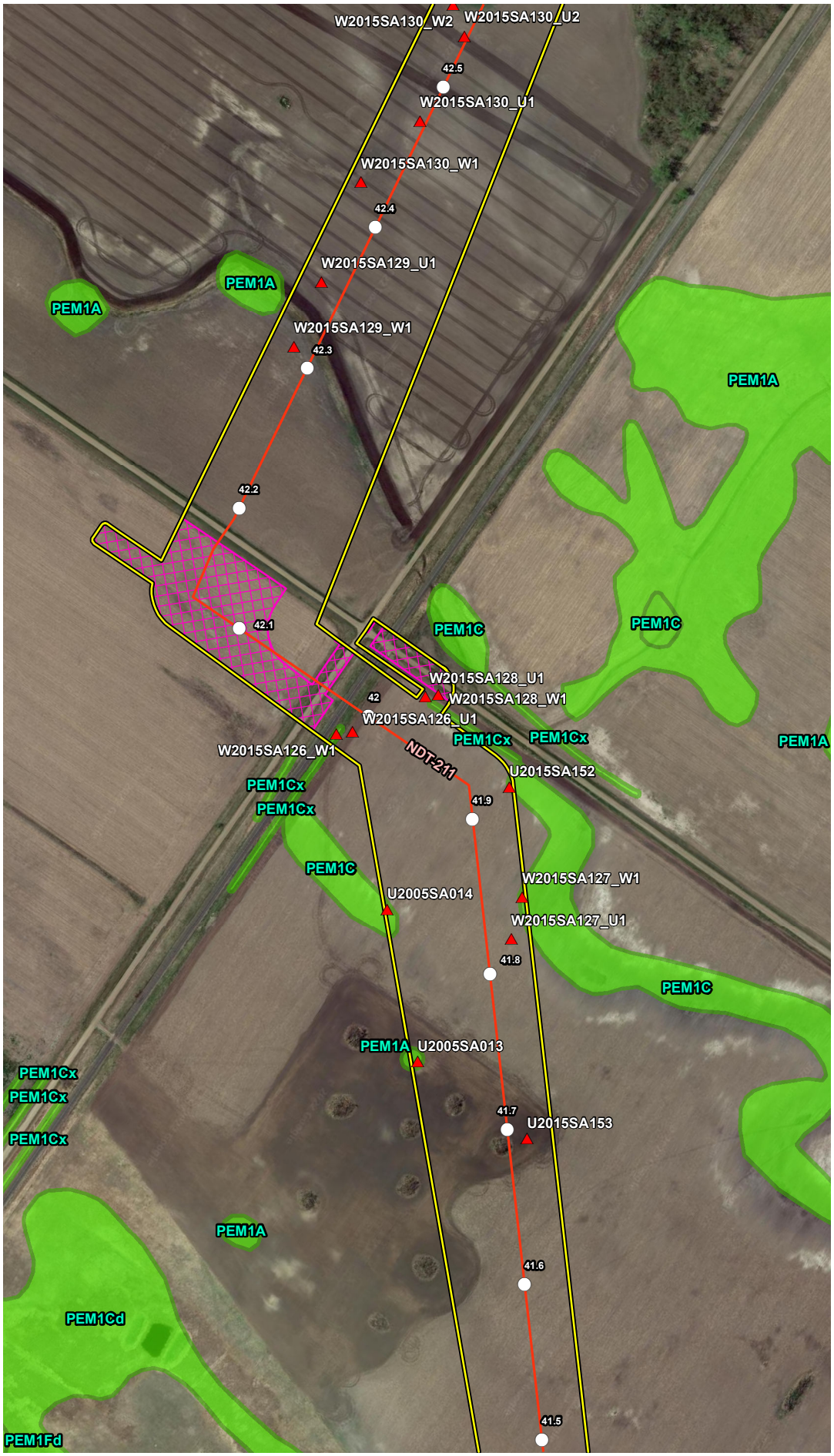
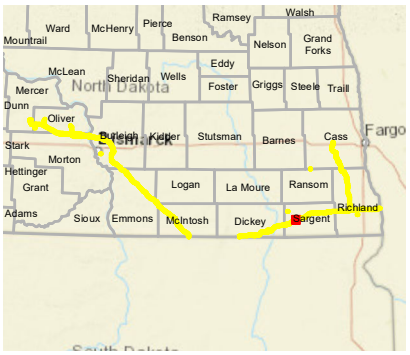
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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Figure Number:

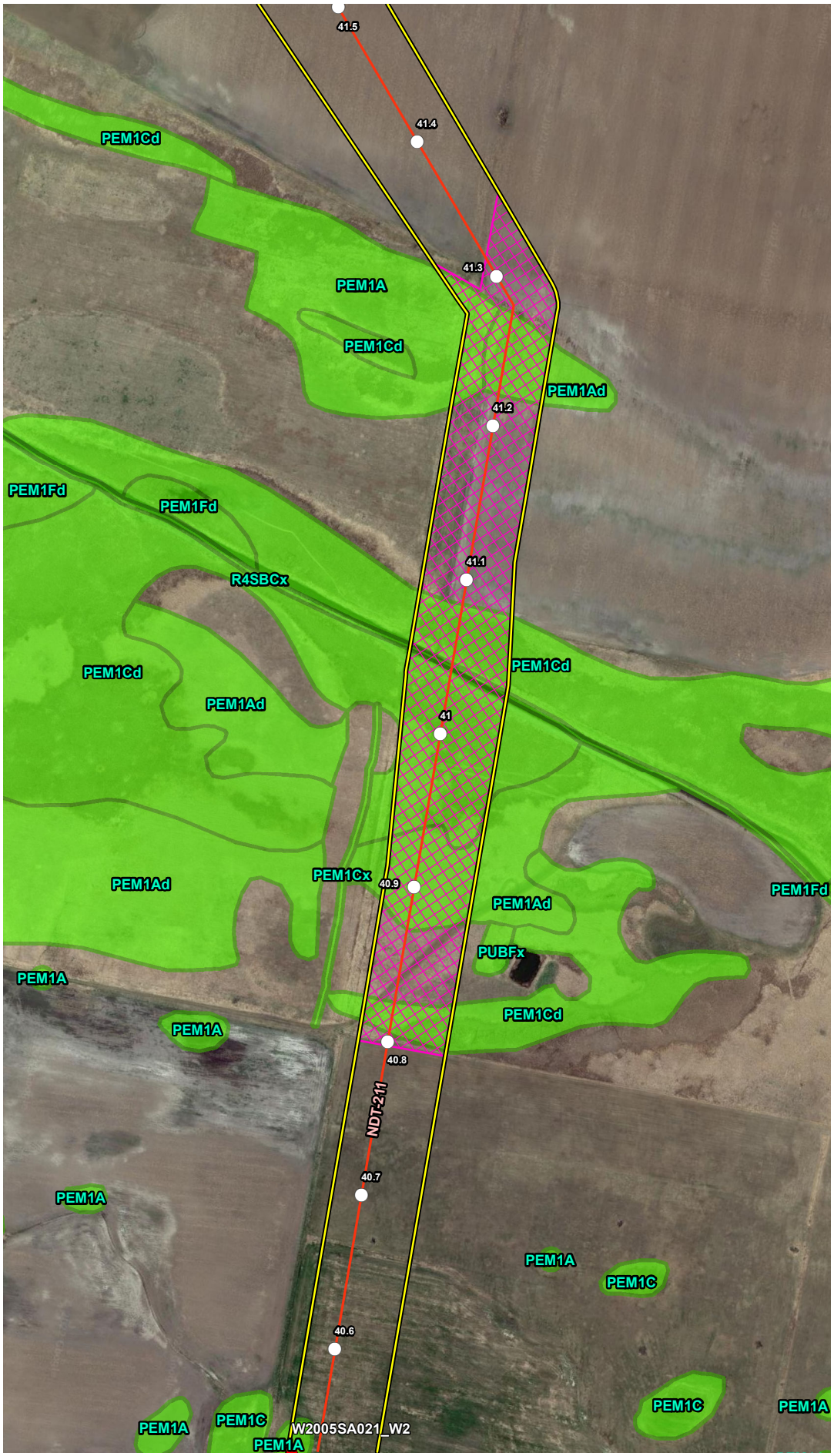
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 228 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDmxds\4_NWI.mxd

## NWI MAP

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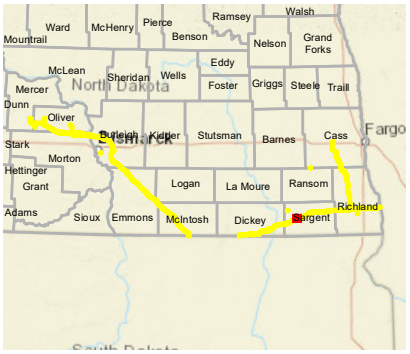


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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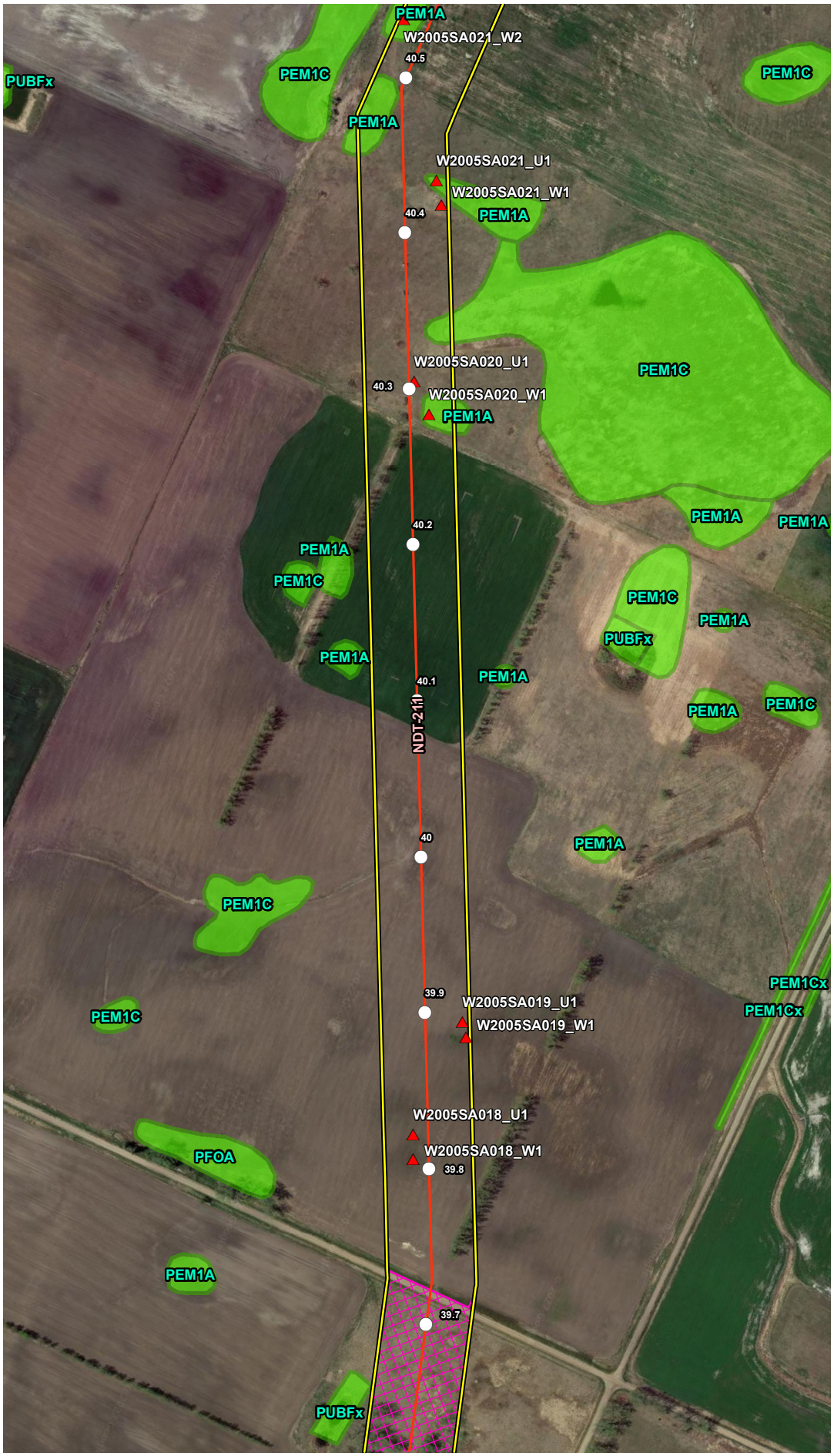
Figure Title:
NWI Map

Figure Number:
Appendix A-4

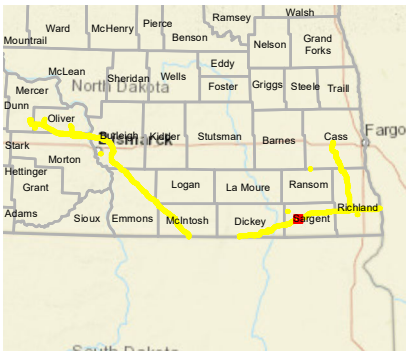
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>229 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

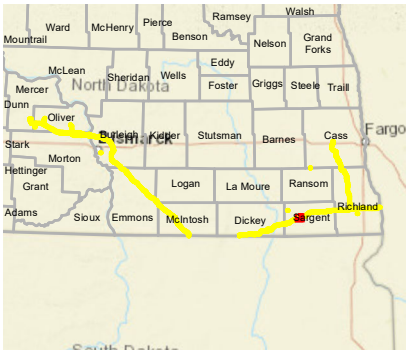
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 230 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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NWI Map

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Appendix A-4

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| Sheet: | Drawing Number: |
|---|---|
| 231 of 392 | 2001-22-004<br>Current Revision |

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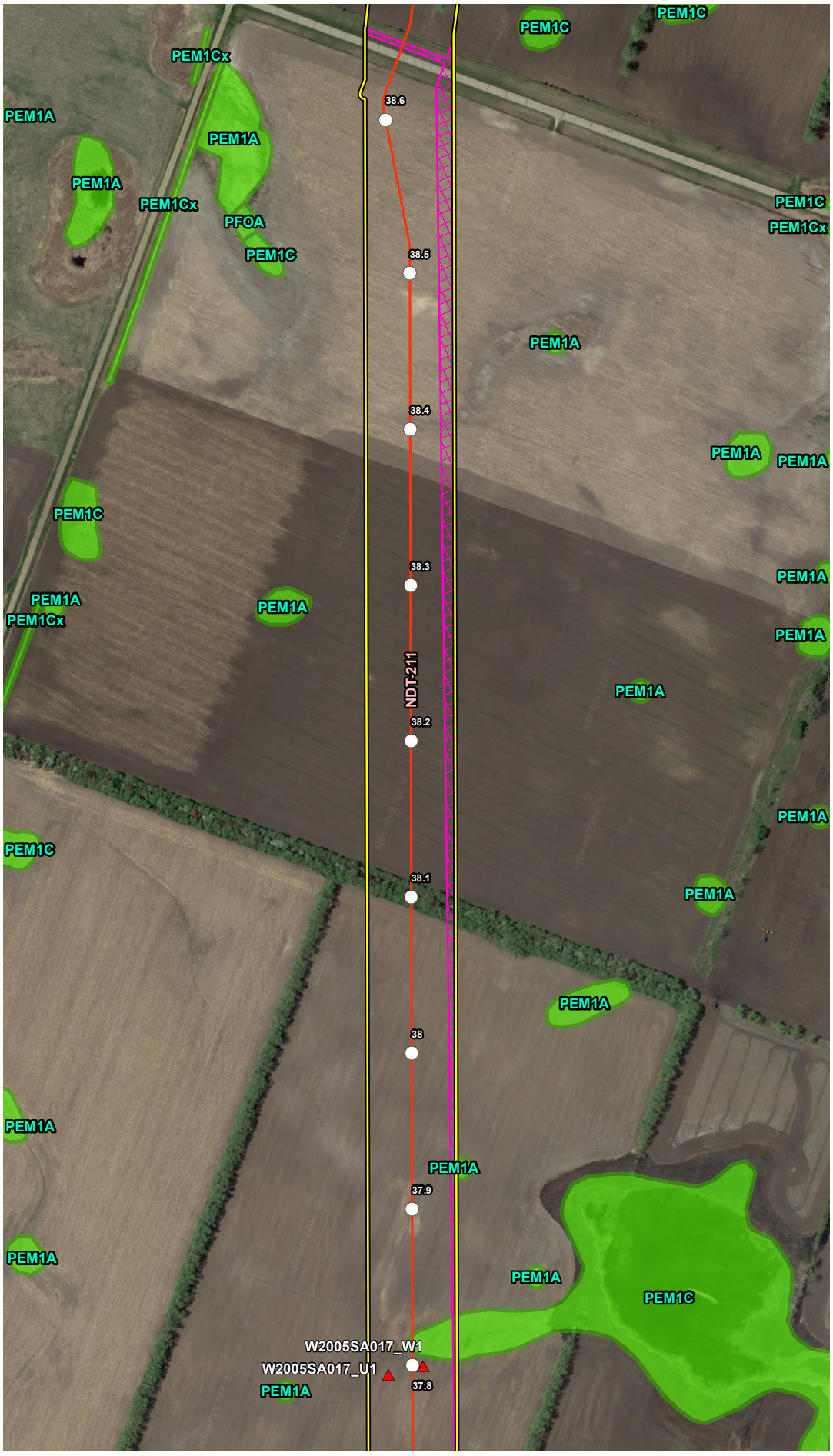
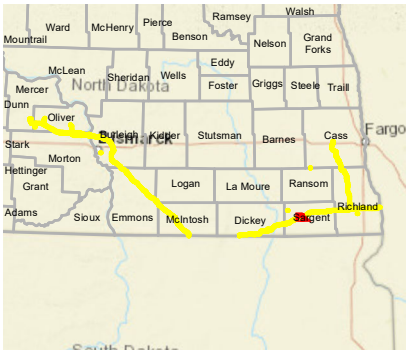
## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

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| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
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| Sheet: | Drawing Number: |
| 232 of 392 | 2001-22-004<br>Current Revision |

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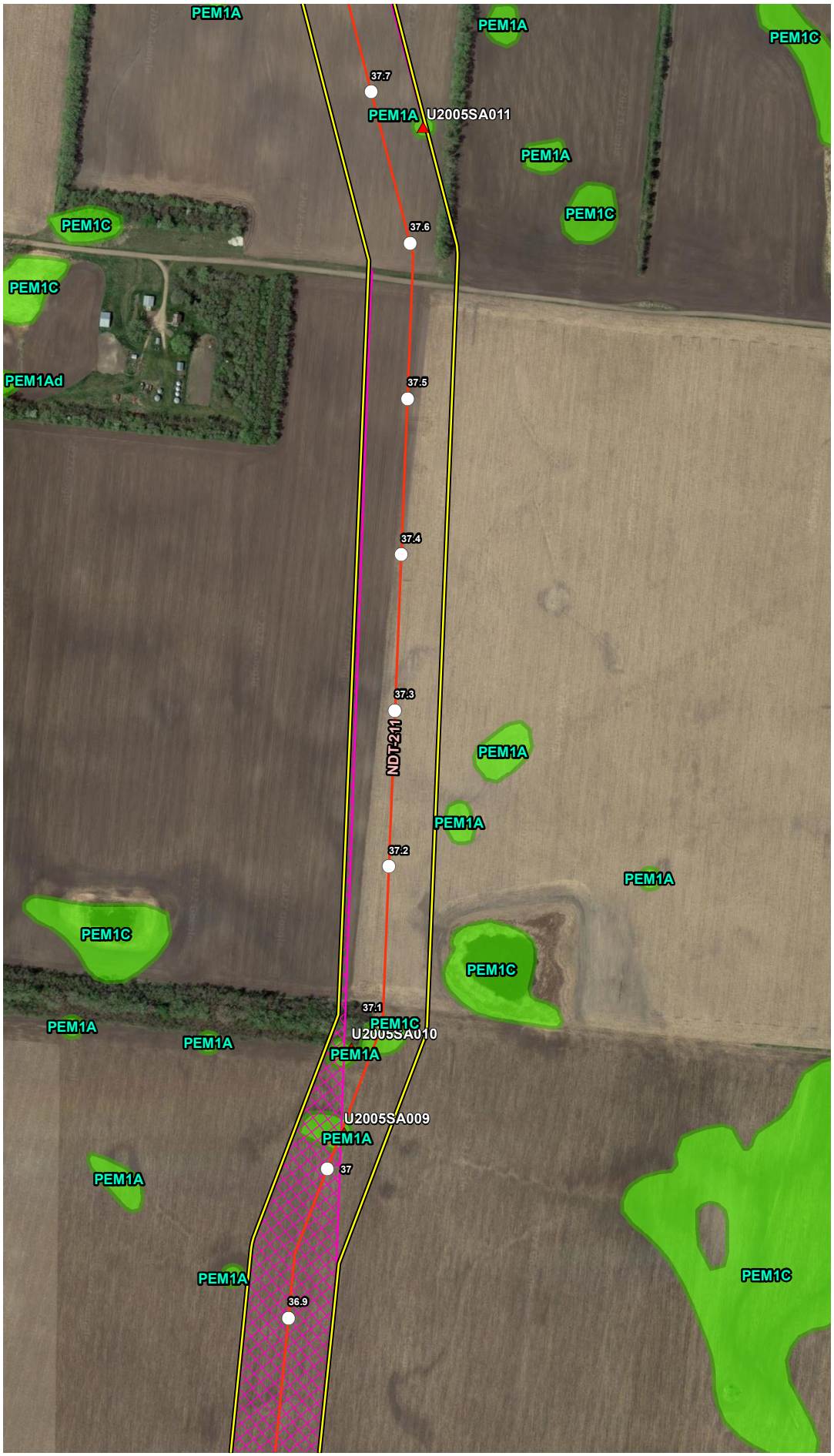
## NWI MAP

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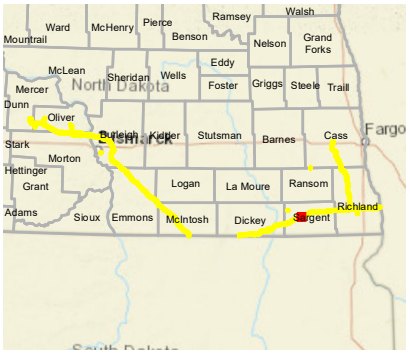


## LEGEND

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0 250 500 Feet

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| Sheet:<br>233 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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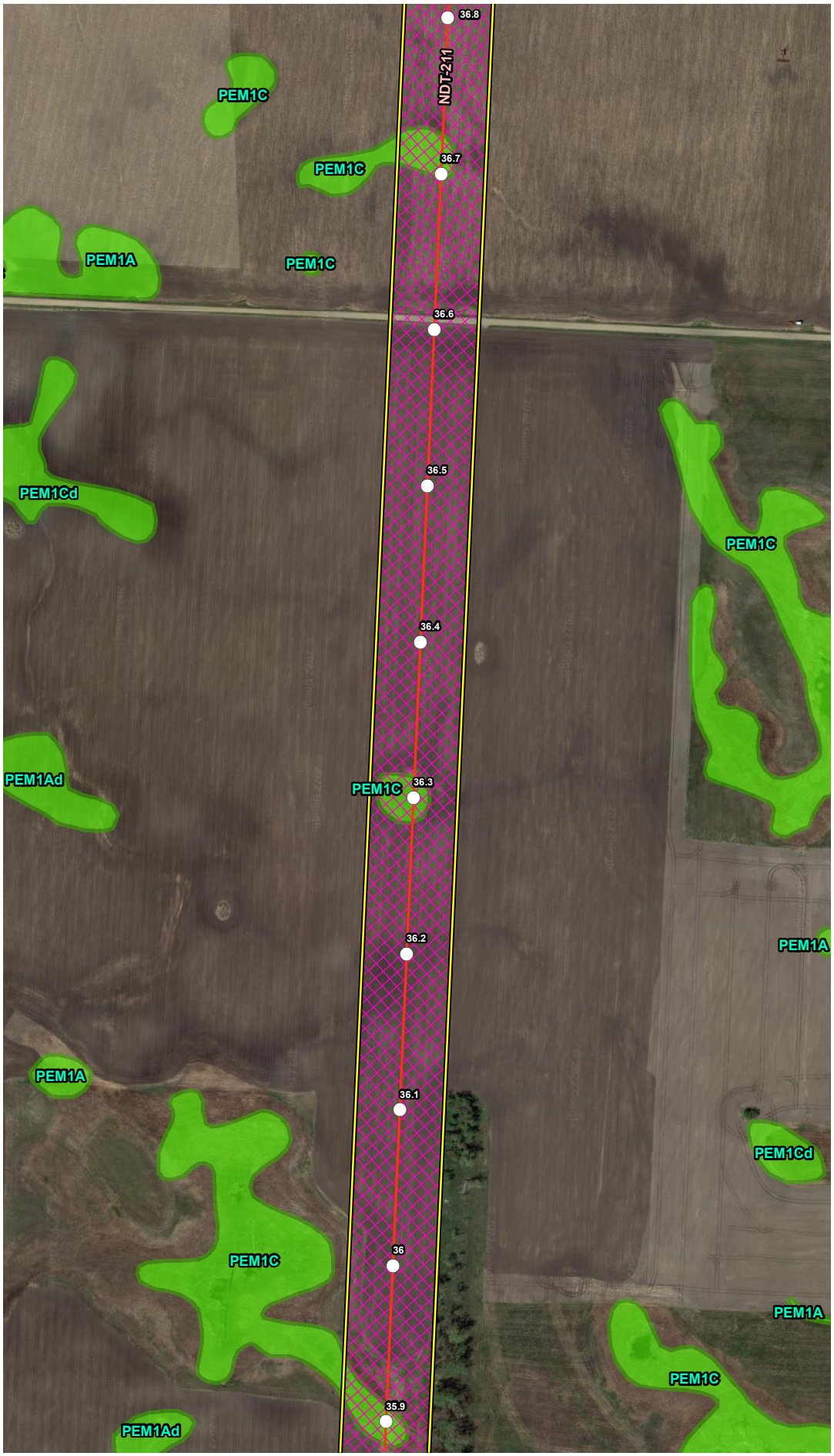


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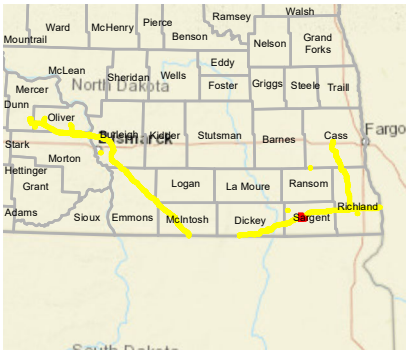


## LEGEND

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0 250 500 Feet

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| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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Appendix A-4

| Scale: | Projection: |
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|---|---|
| 234 of 392 | 2001-22-004<br>Current Revision |

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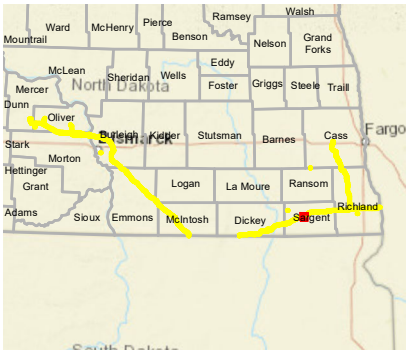
## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

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| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

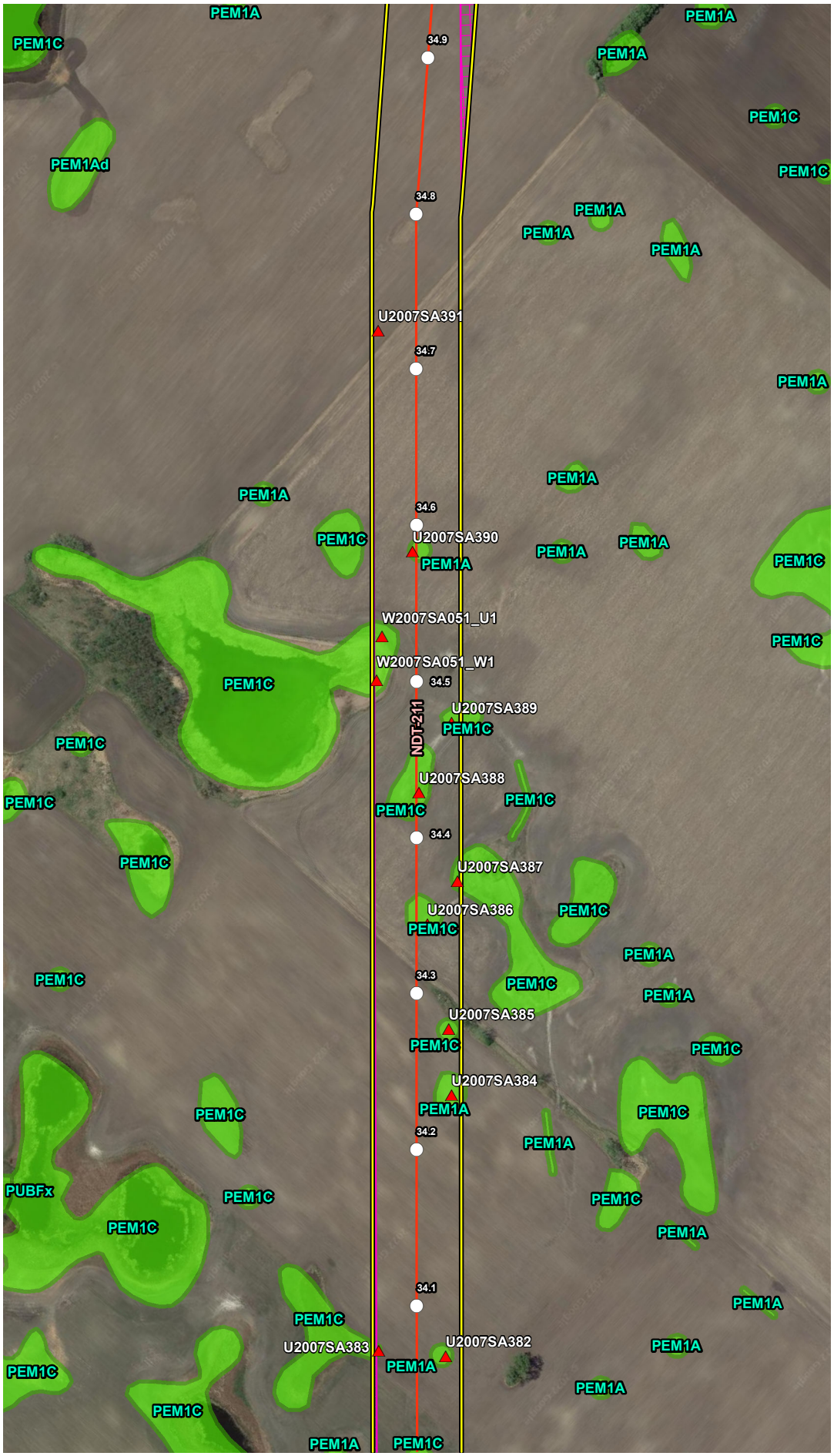
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
235 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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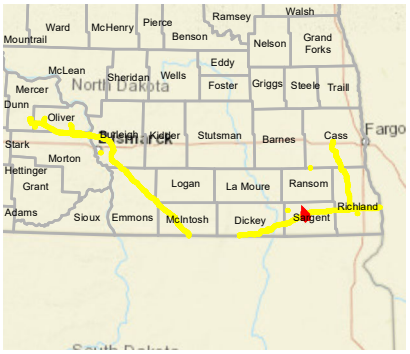


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NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

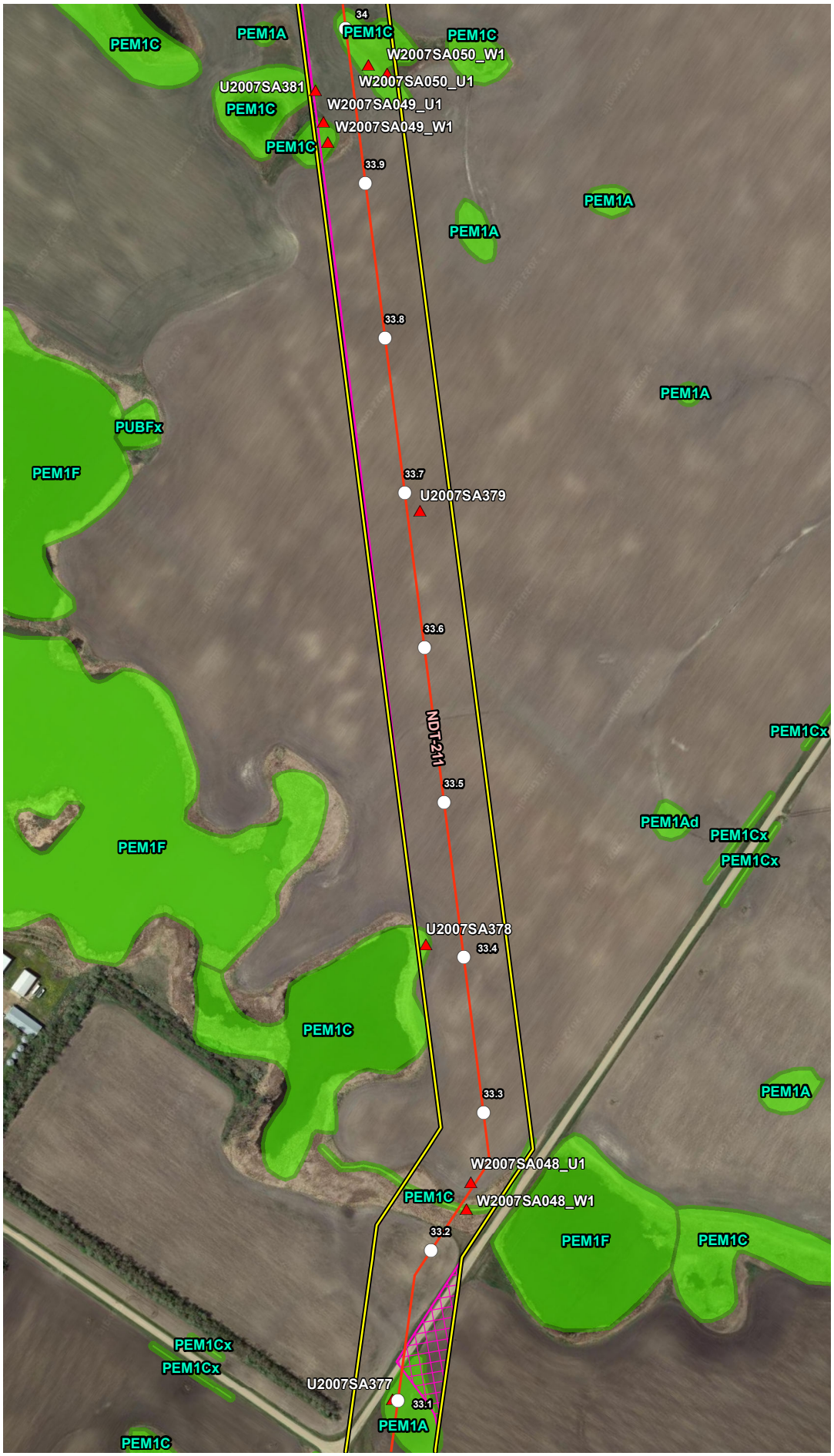
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
236 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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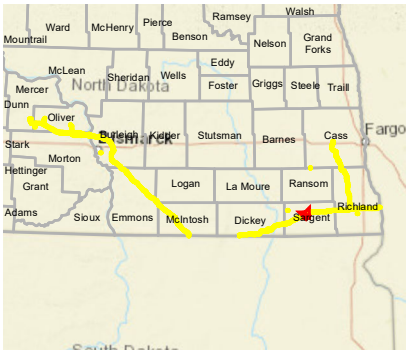


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0 250 500 Feet

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Figure Number:
Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 237 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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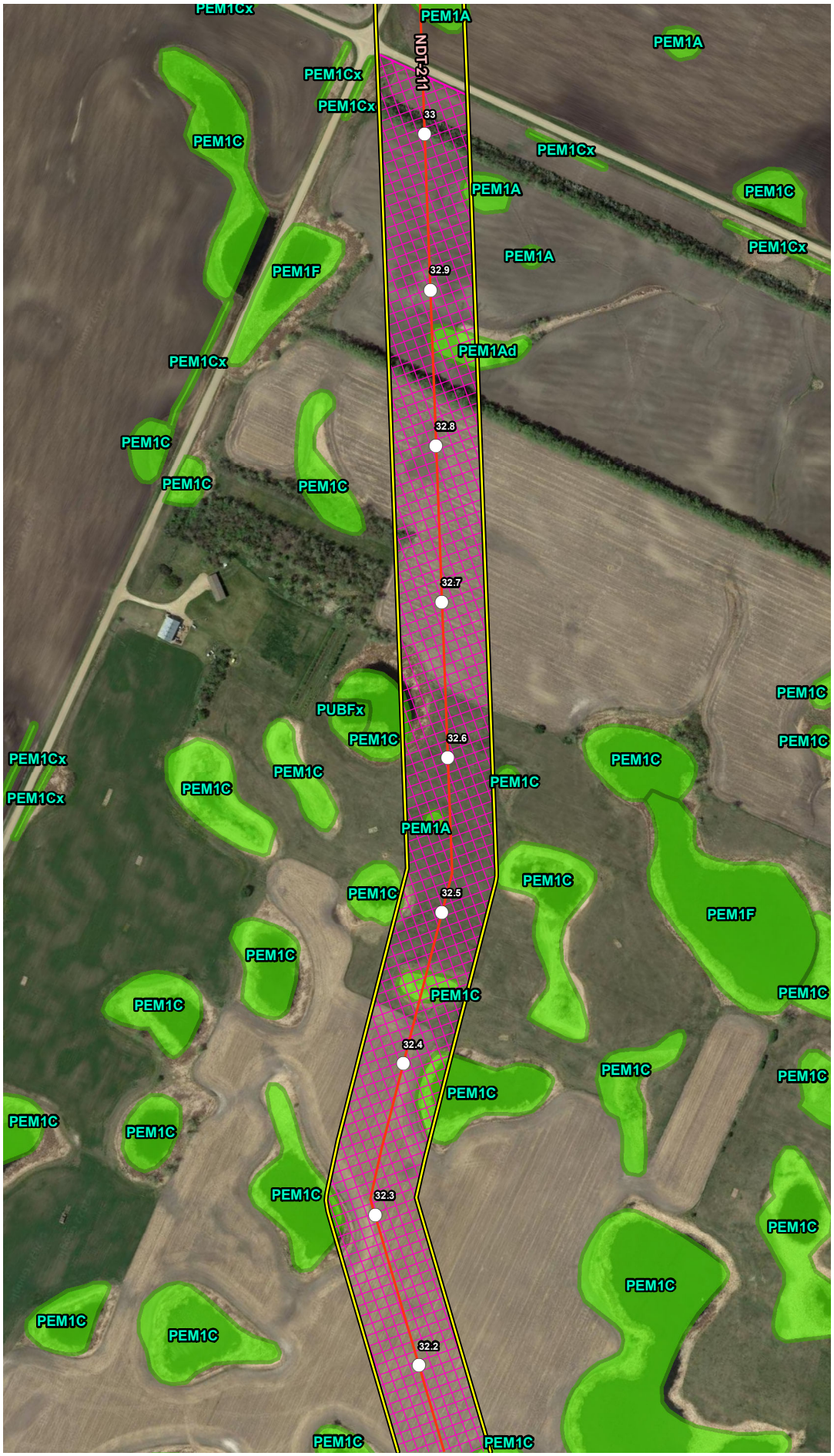
## NWI MAP

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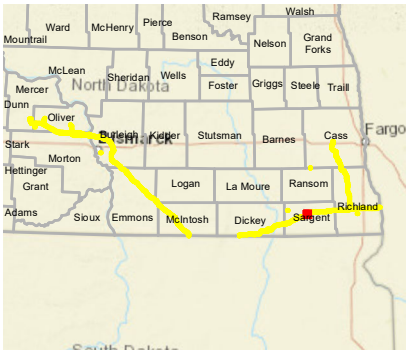


## LEGEND

- Milepost
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| 2022-08-04 | MM | AB |

**1A - Revision**

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| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 238 of 392 | 2001-22-004<br>Current Revision |

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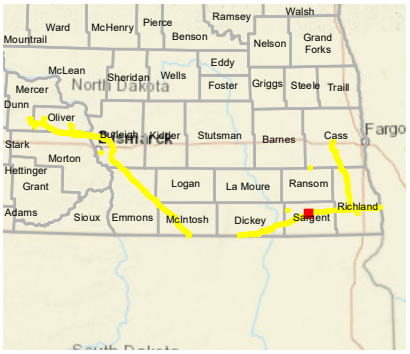
## NWI MAP




## VICINITY MAP




## LEGEND

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|---|---|
| 239 of 392 | 2001-22-004<br>Current Revision |

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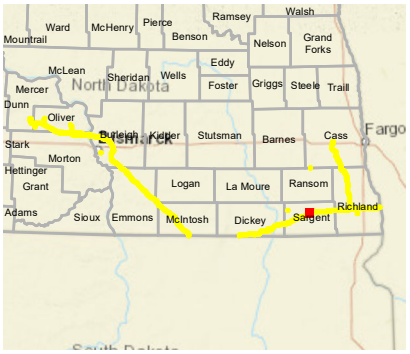
## NWI MAP




## VICINITY MAP

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| Sheet: | Drawing Number: |
| 240 of 392 | 2001-22-004<br>Current Revision |

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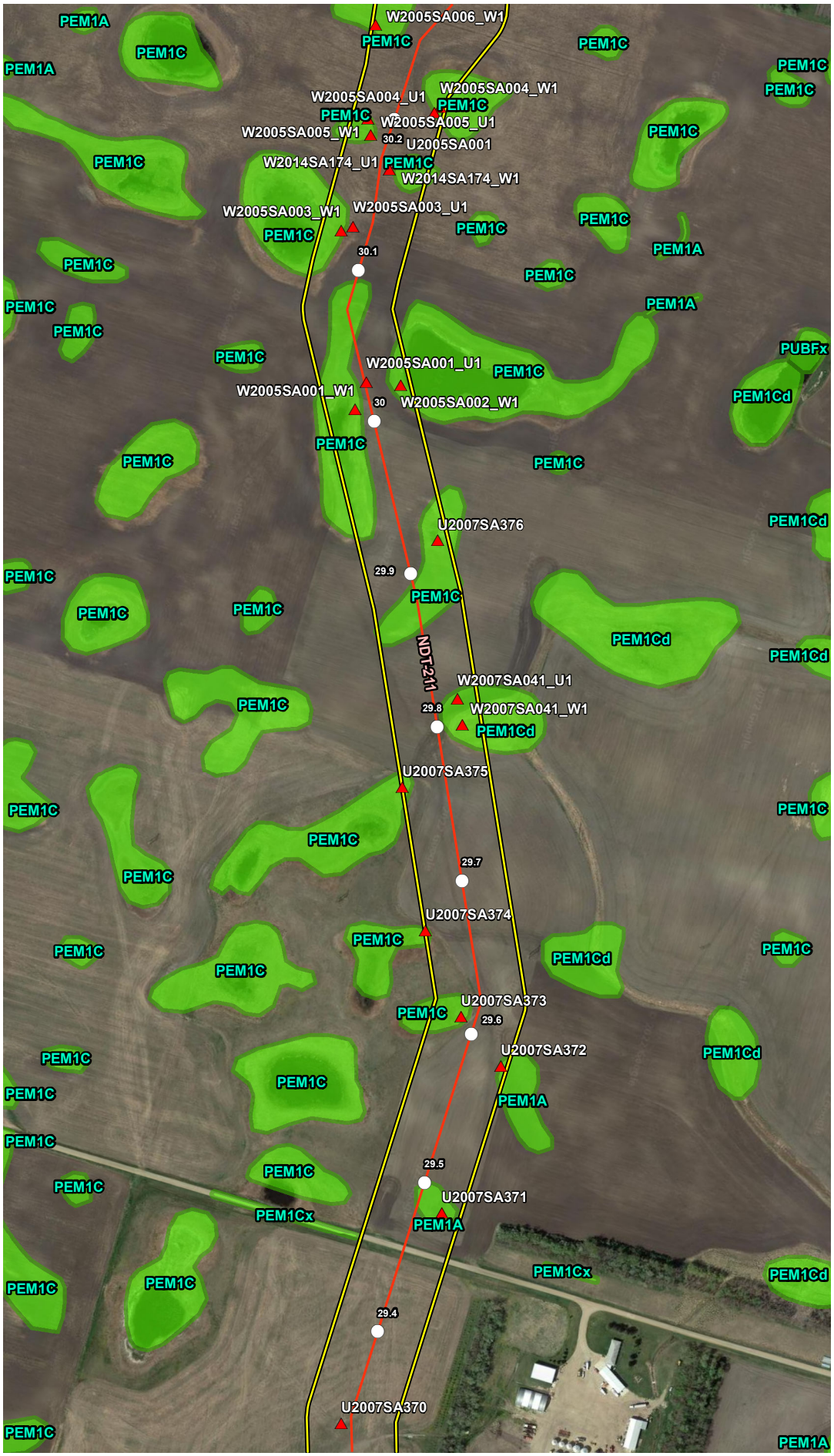
## NWI MAP

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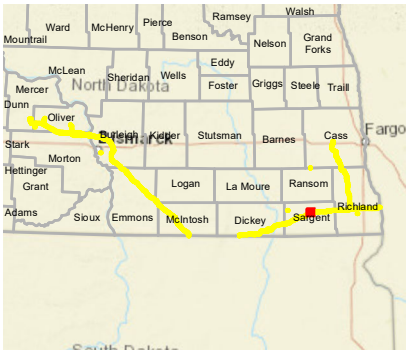


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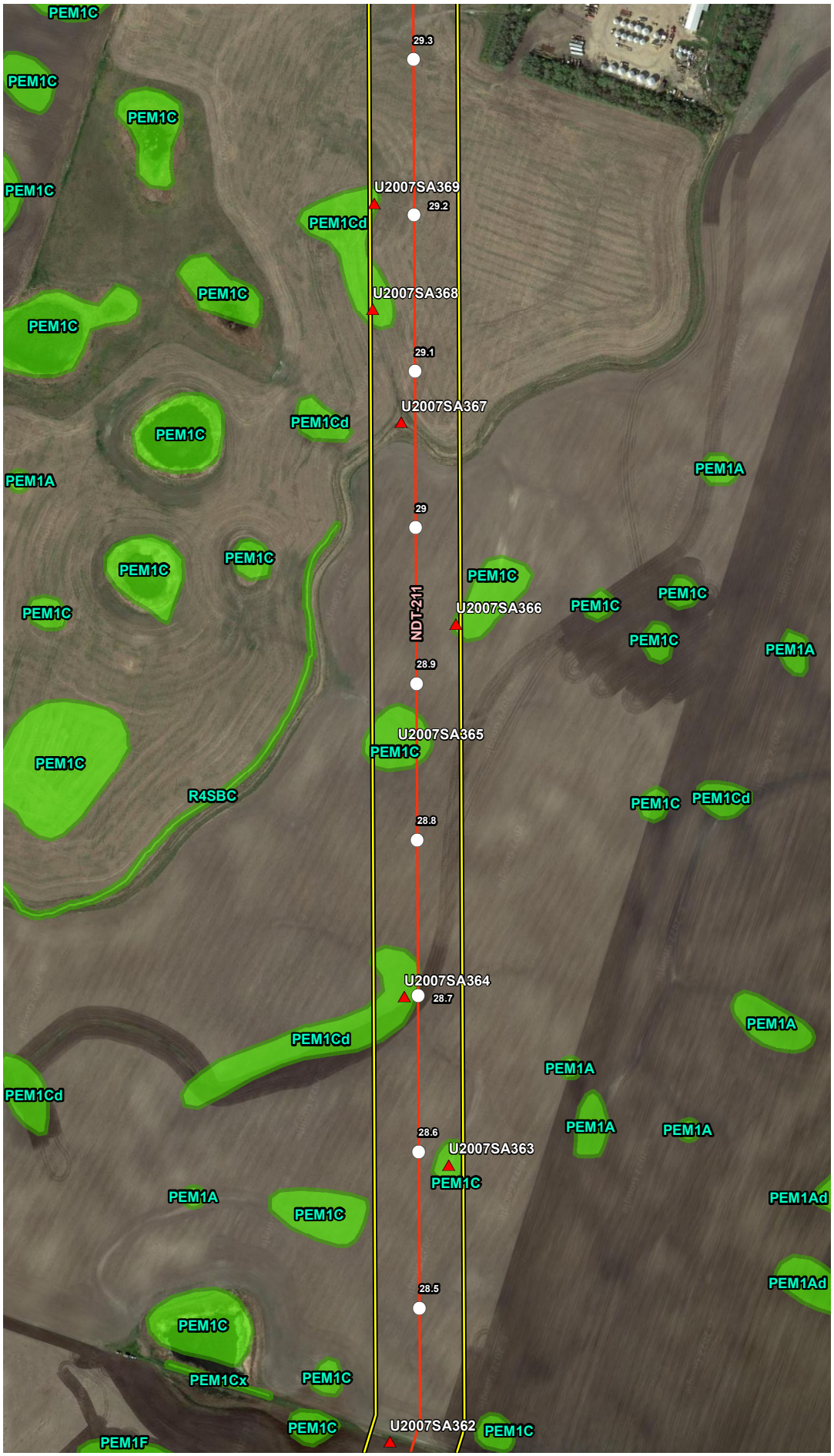
## NWI MAP

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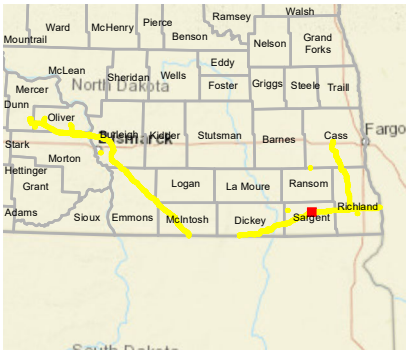


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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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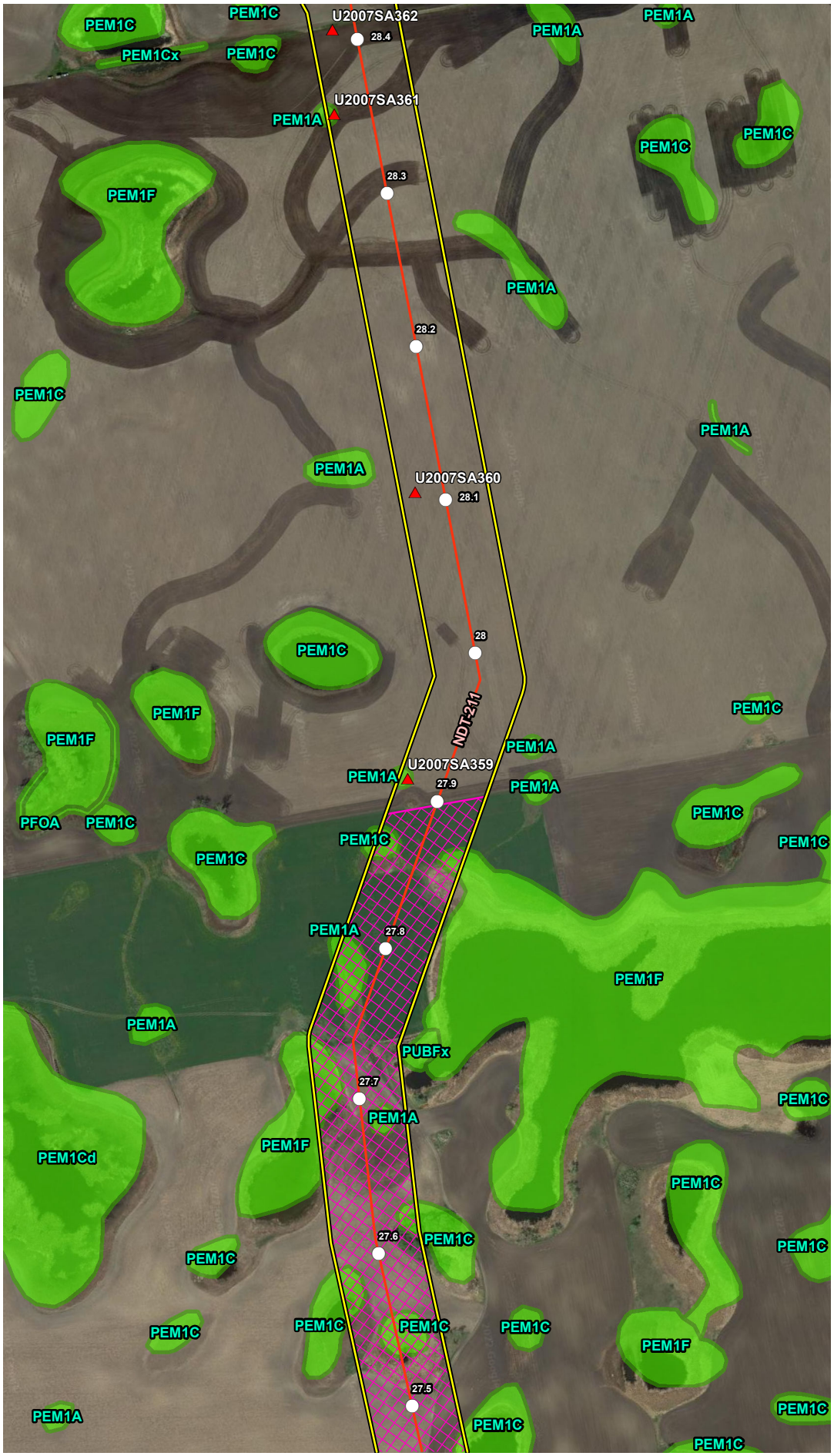
## NWI MAP

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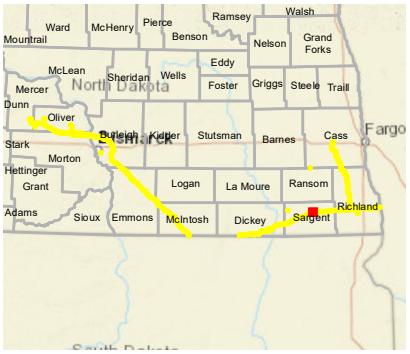


## LEGEND

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Appendix A-4

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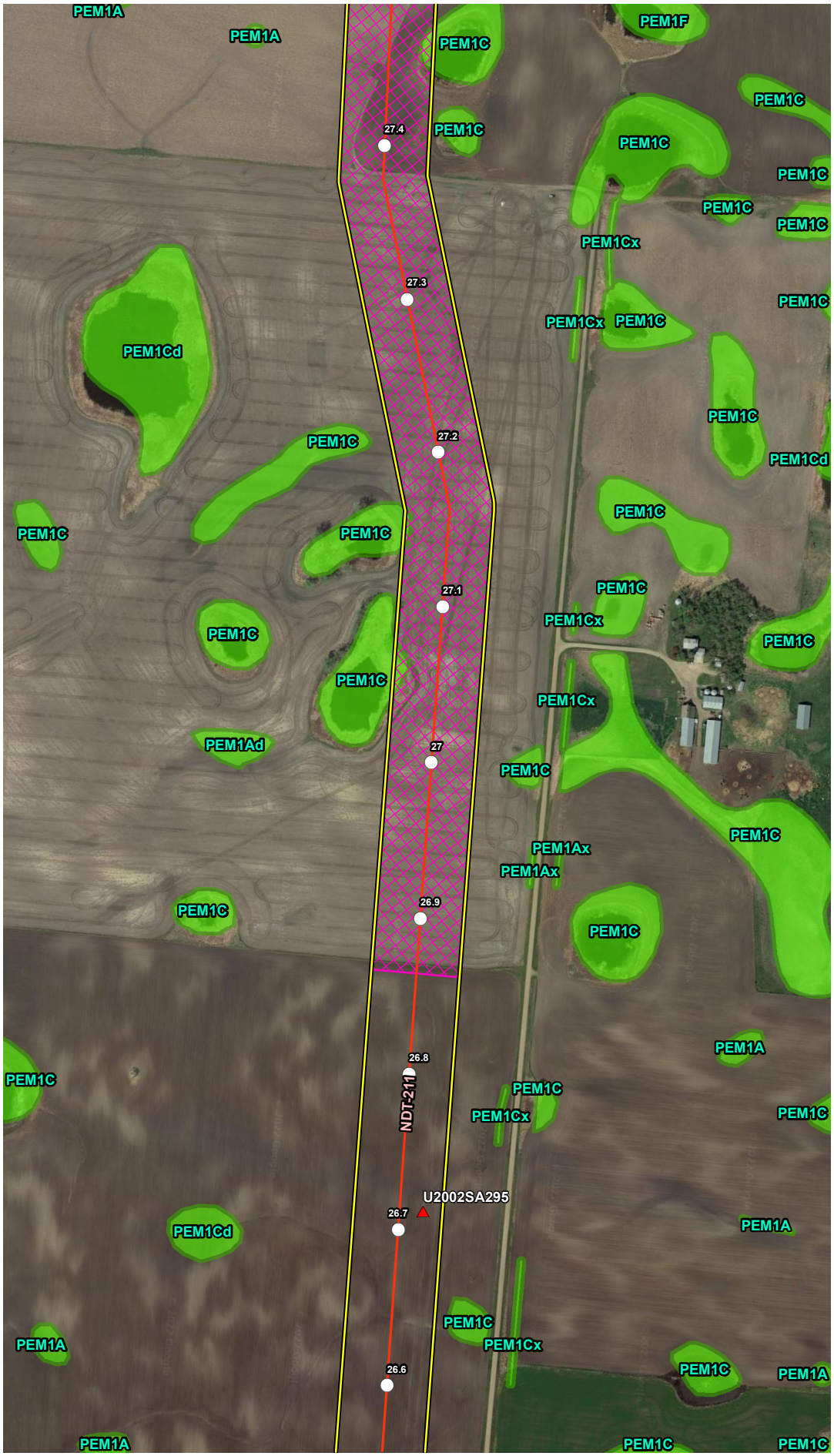
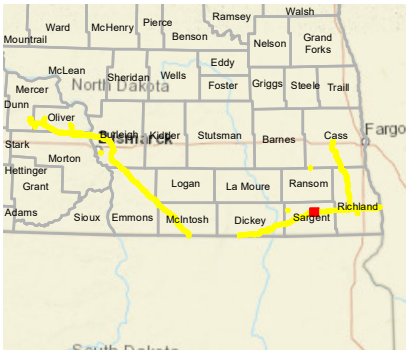
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>243 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:

NWI Map

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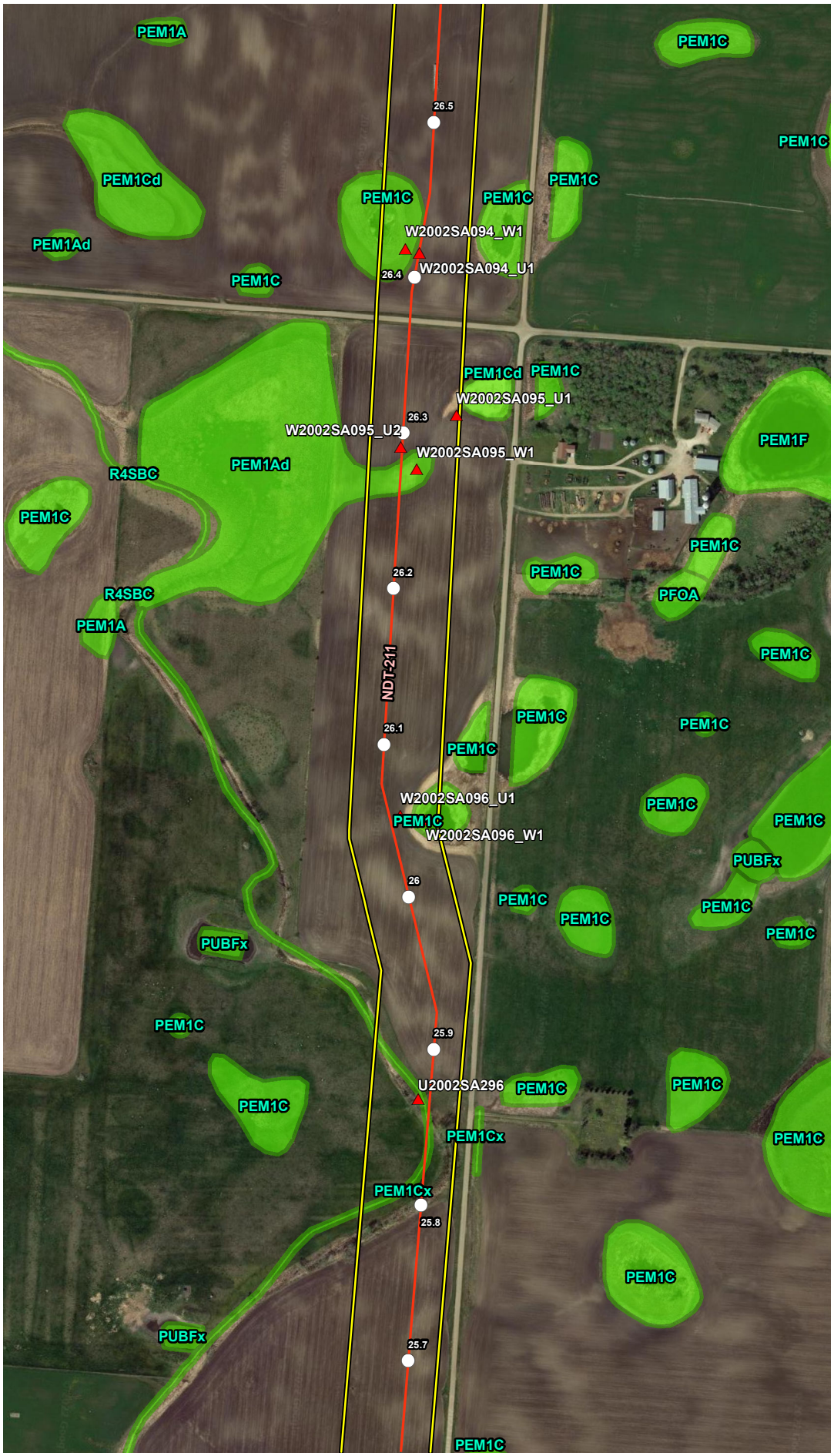
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>244 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\801_WR_NDmxds\4_NWI.mxd

## NWI MAP

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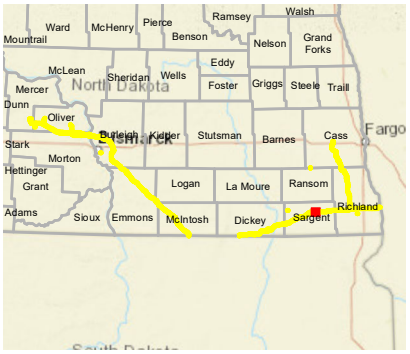


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 245 of 392 | 2001-22-004<br>Current Revision |

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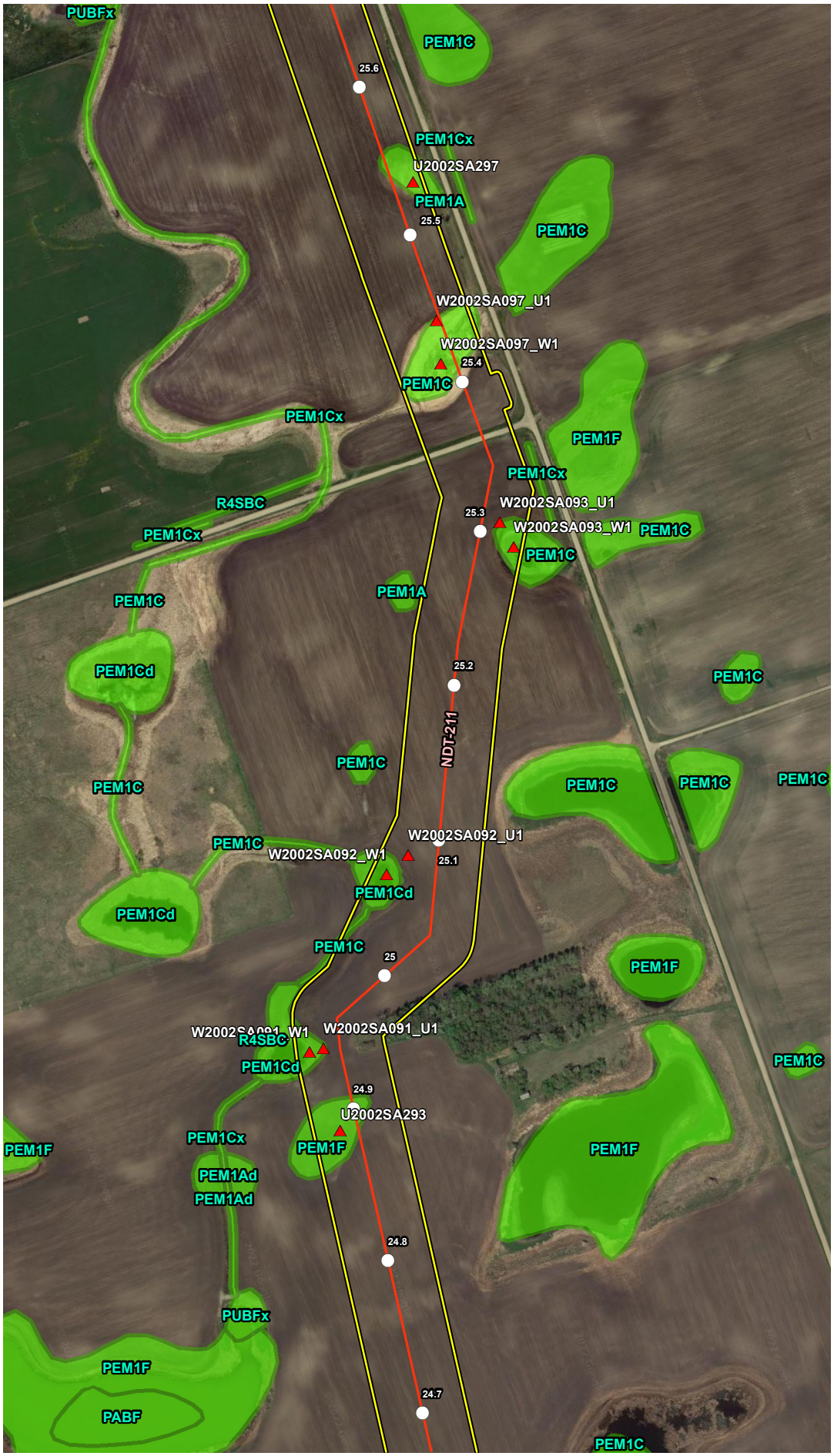
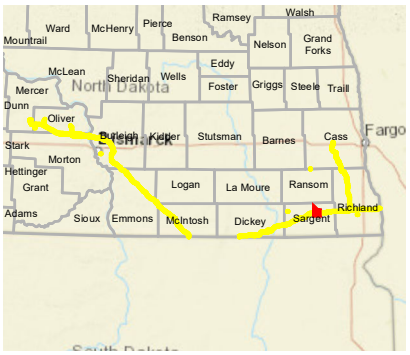
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |
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**Figure Title:** NWI Map

**Figure Number:** Appendix A-4

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 246 of 392 | 2001-22-004<br>Current Revision |

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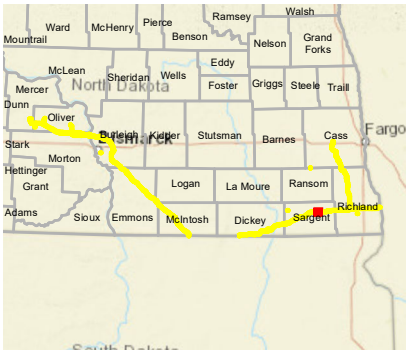
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

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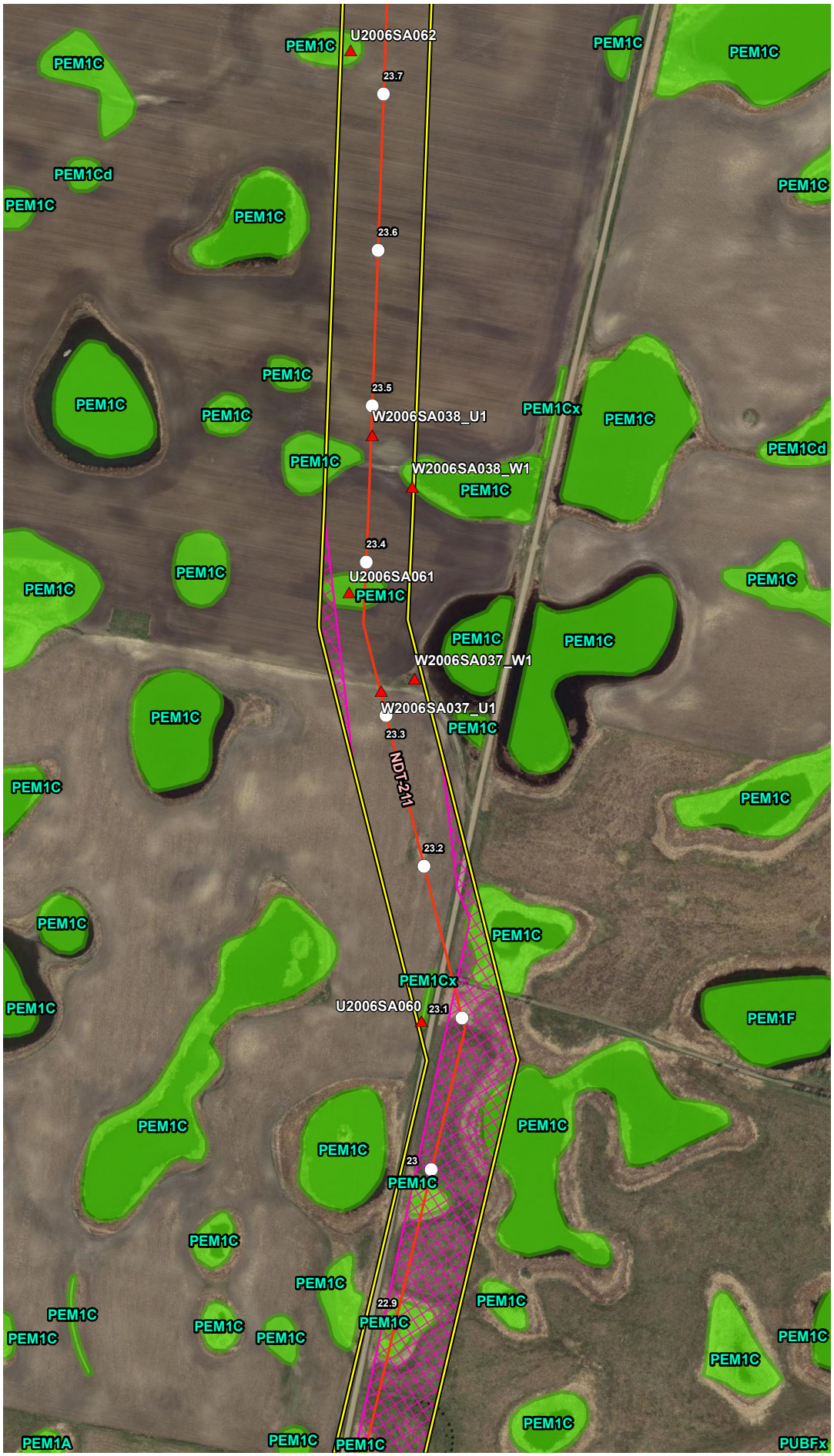
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 247 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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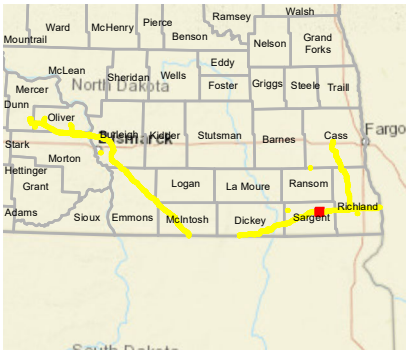


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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 248 of 392 | 2001-22-004<br>Current Revision |

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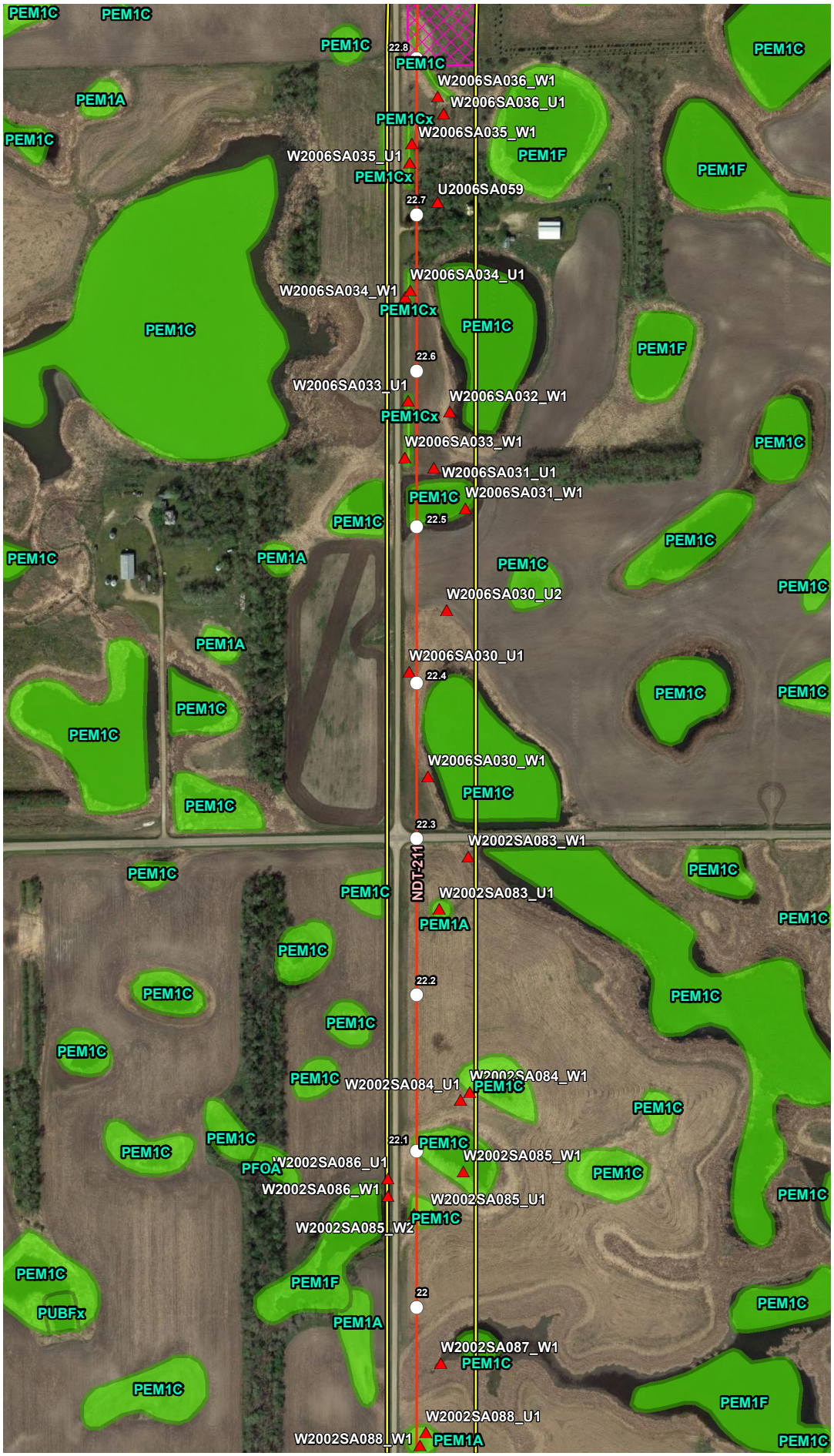
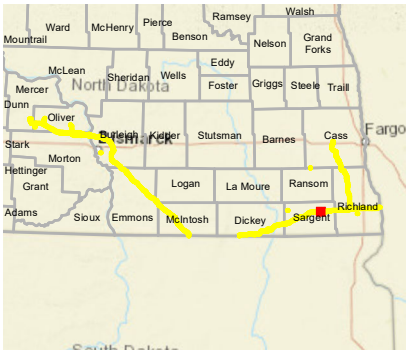
## NWI MAP




## VICINITY MAP

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0 250 500 Feet

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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 249 of 392 | 2001-22-004<br>Current Revision |

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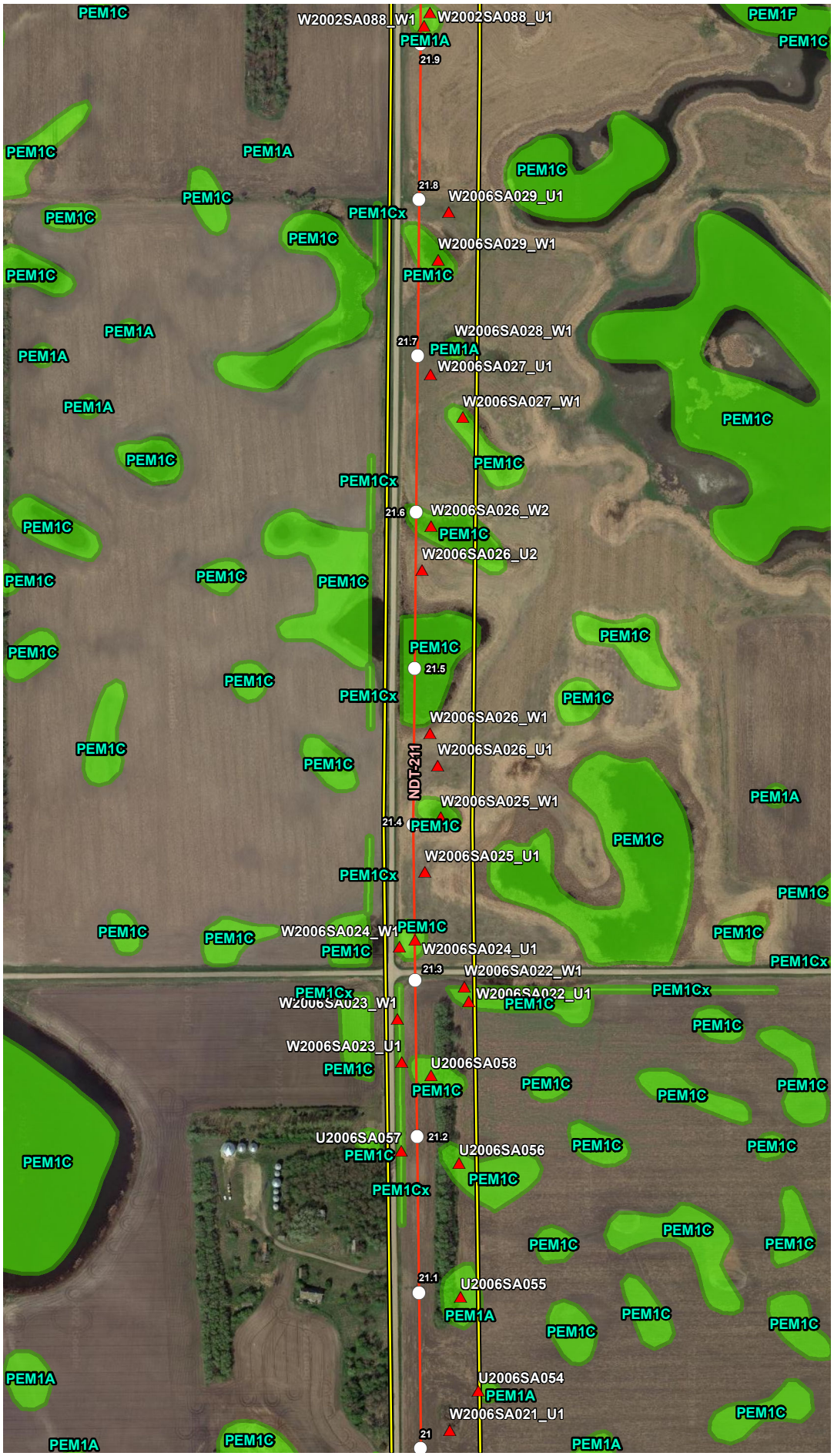
## NWI MAP

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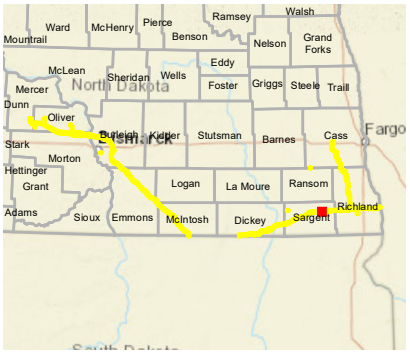


## LEGEND

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0 250 500 Feet

## REVISIONS

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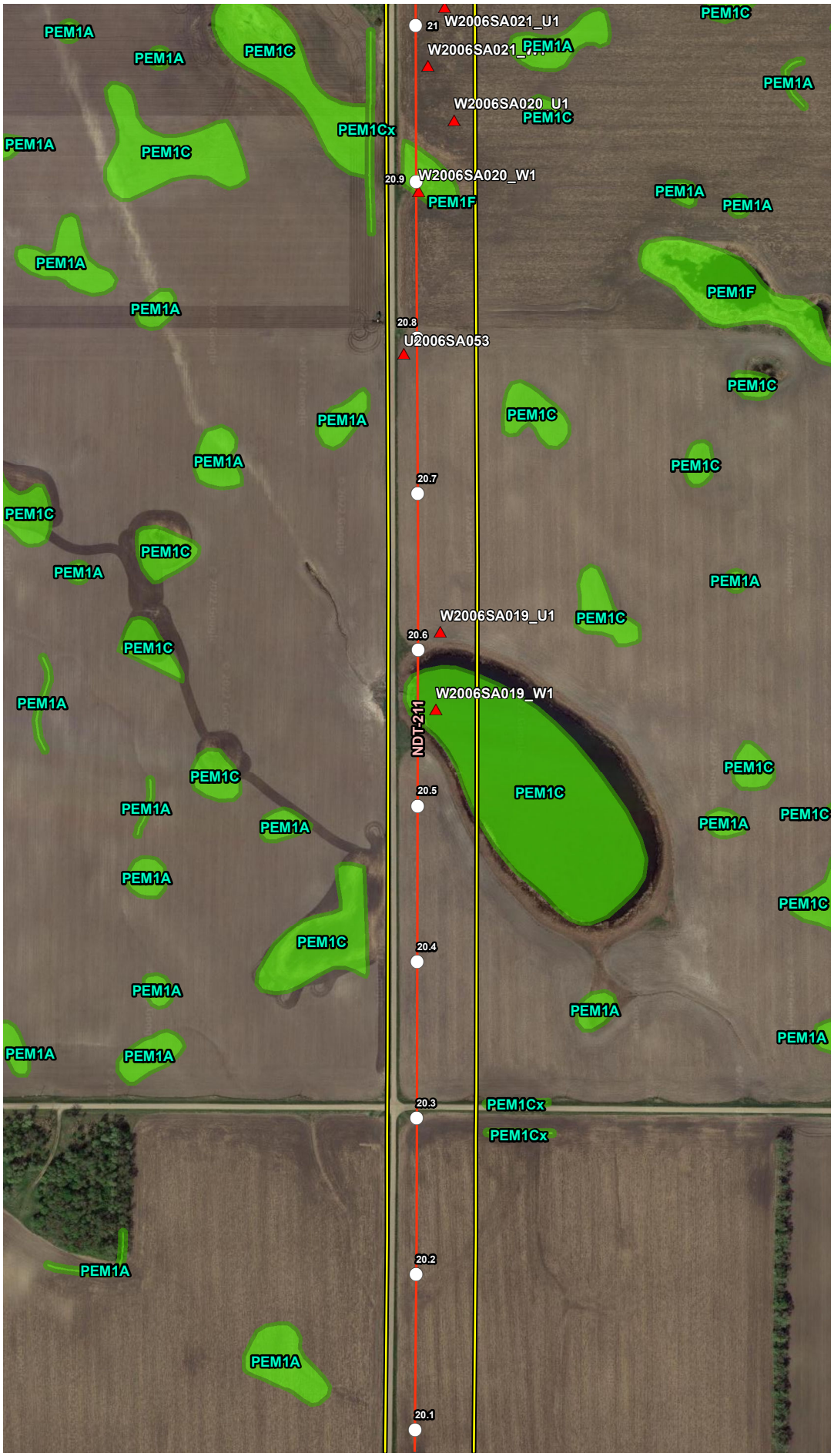
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 250 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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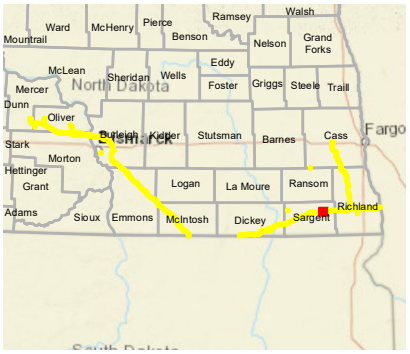


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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**Figure Number:**

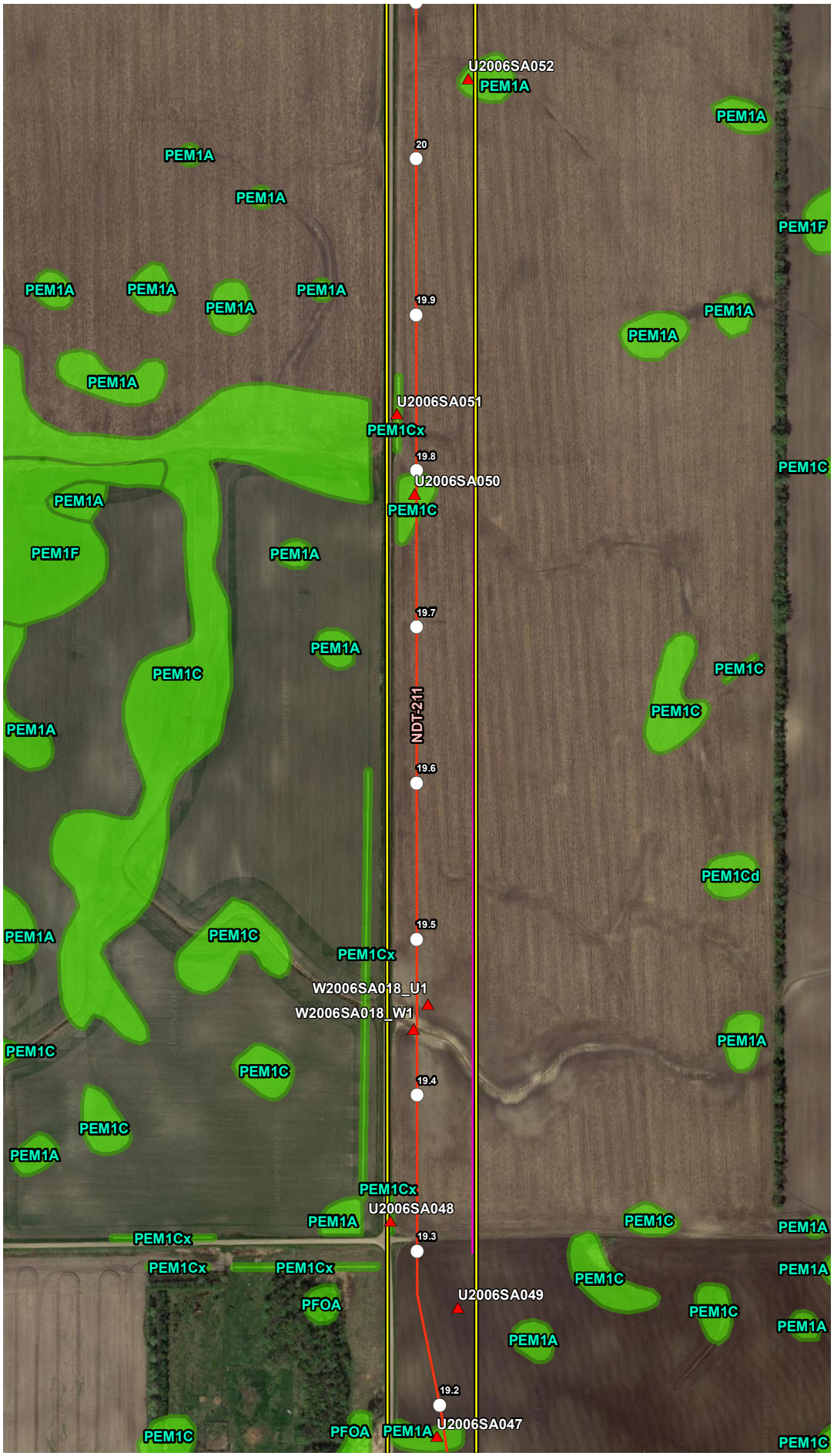
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 251 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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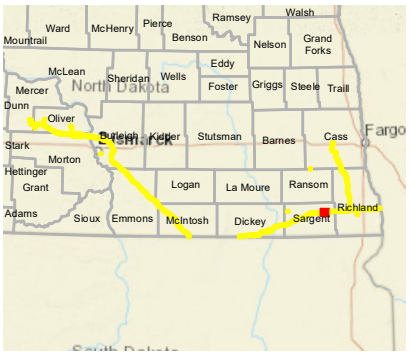


## LEGEND

- Milepost
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## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
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NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 252 of 392 | 2001-22-004<br>Current Revision |

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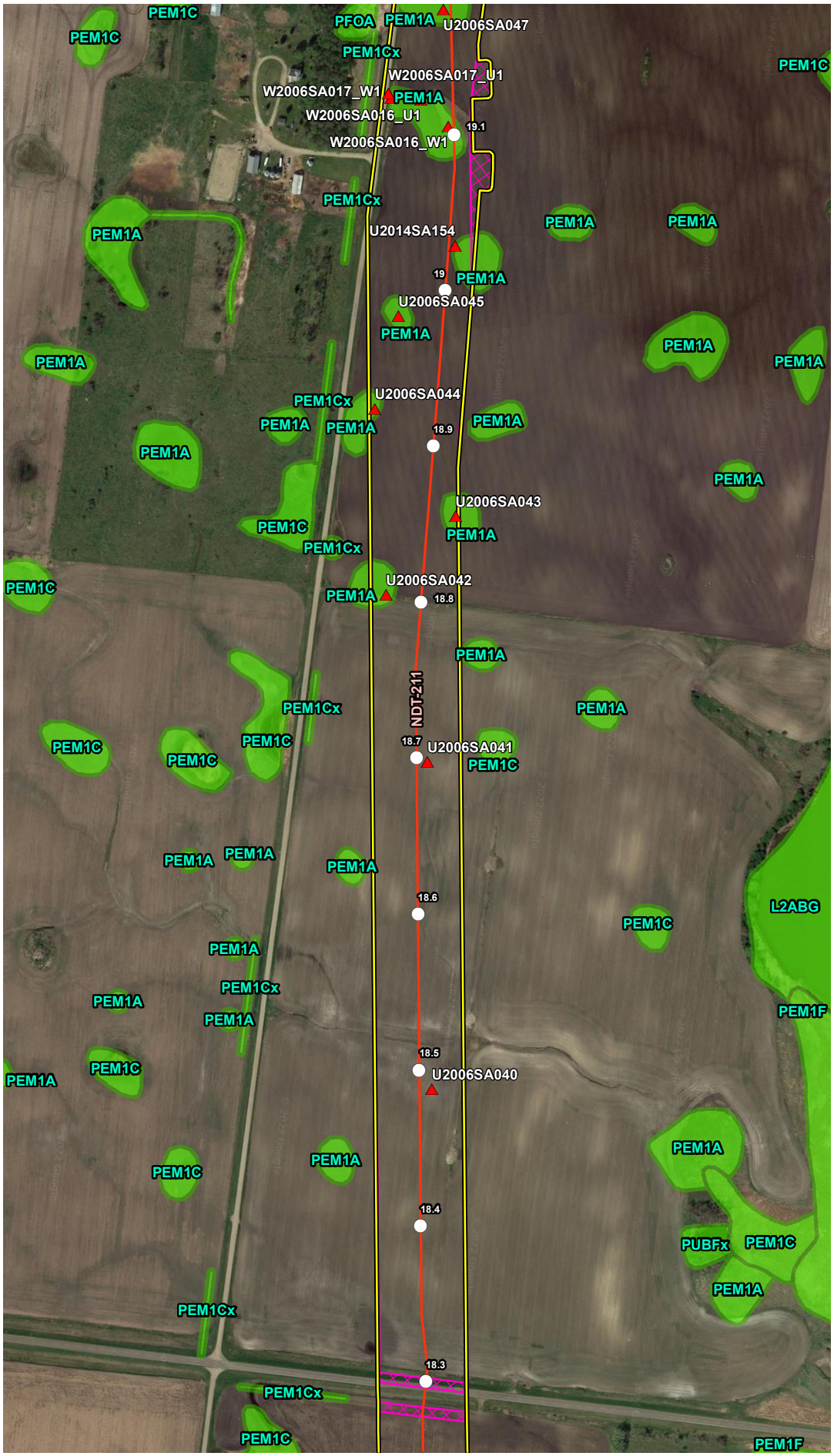
## NWI MAP

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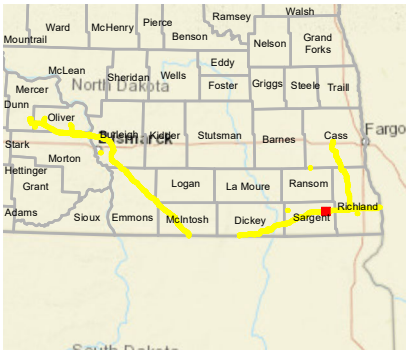


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |

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Figure Number:
Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>253 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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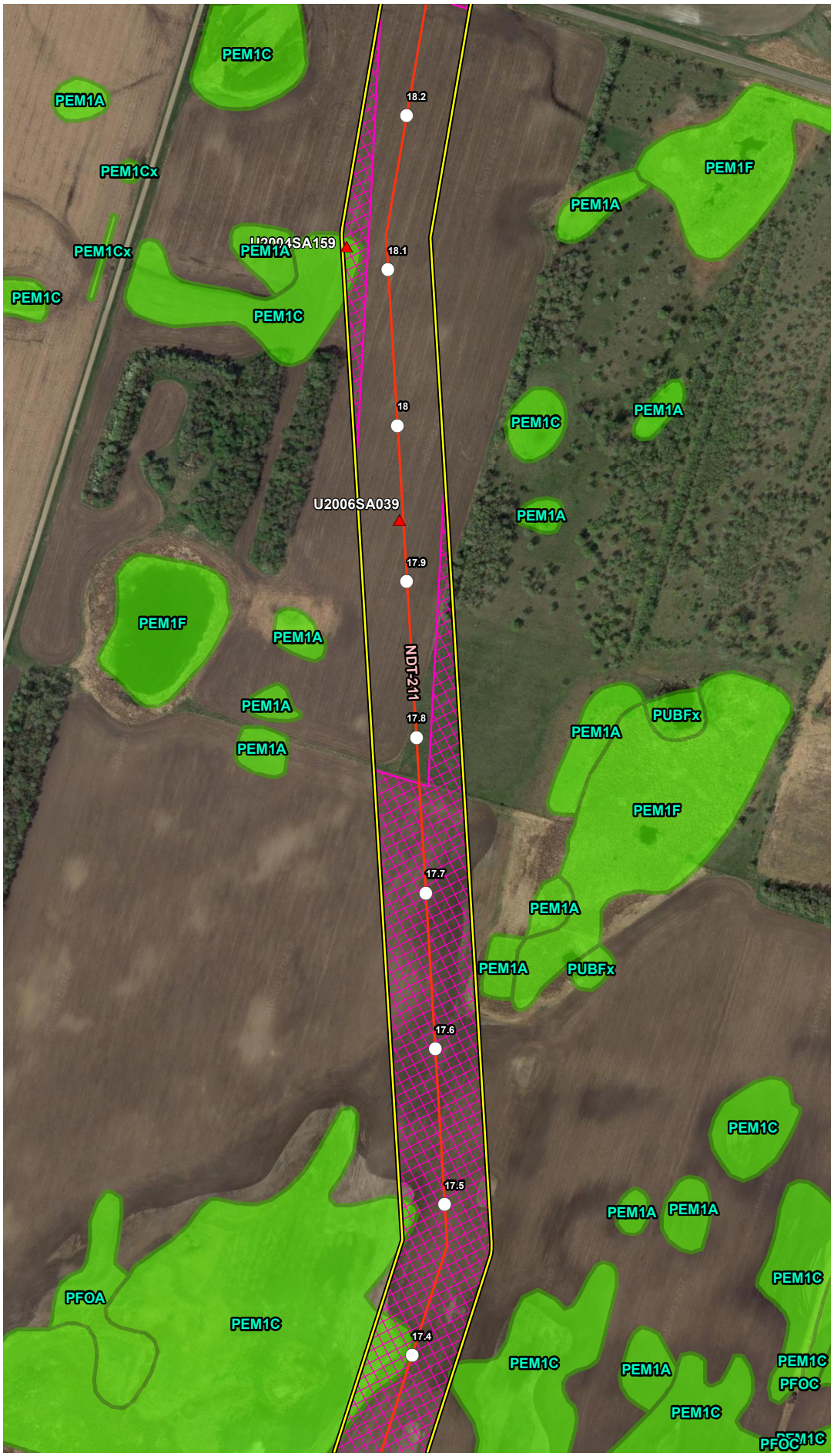
## NWI MAP

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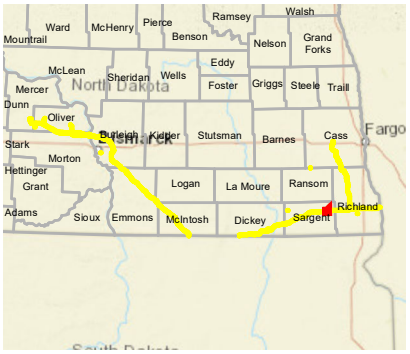


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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>254 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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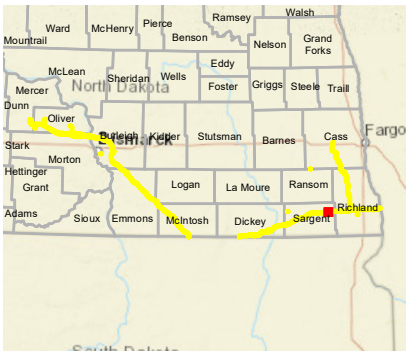
## NWI MAP




## VICINITY MAP

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
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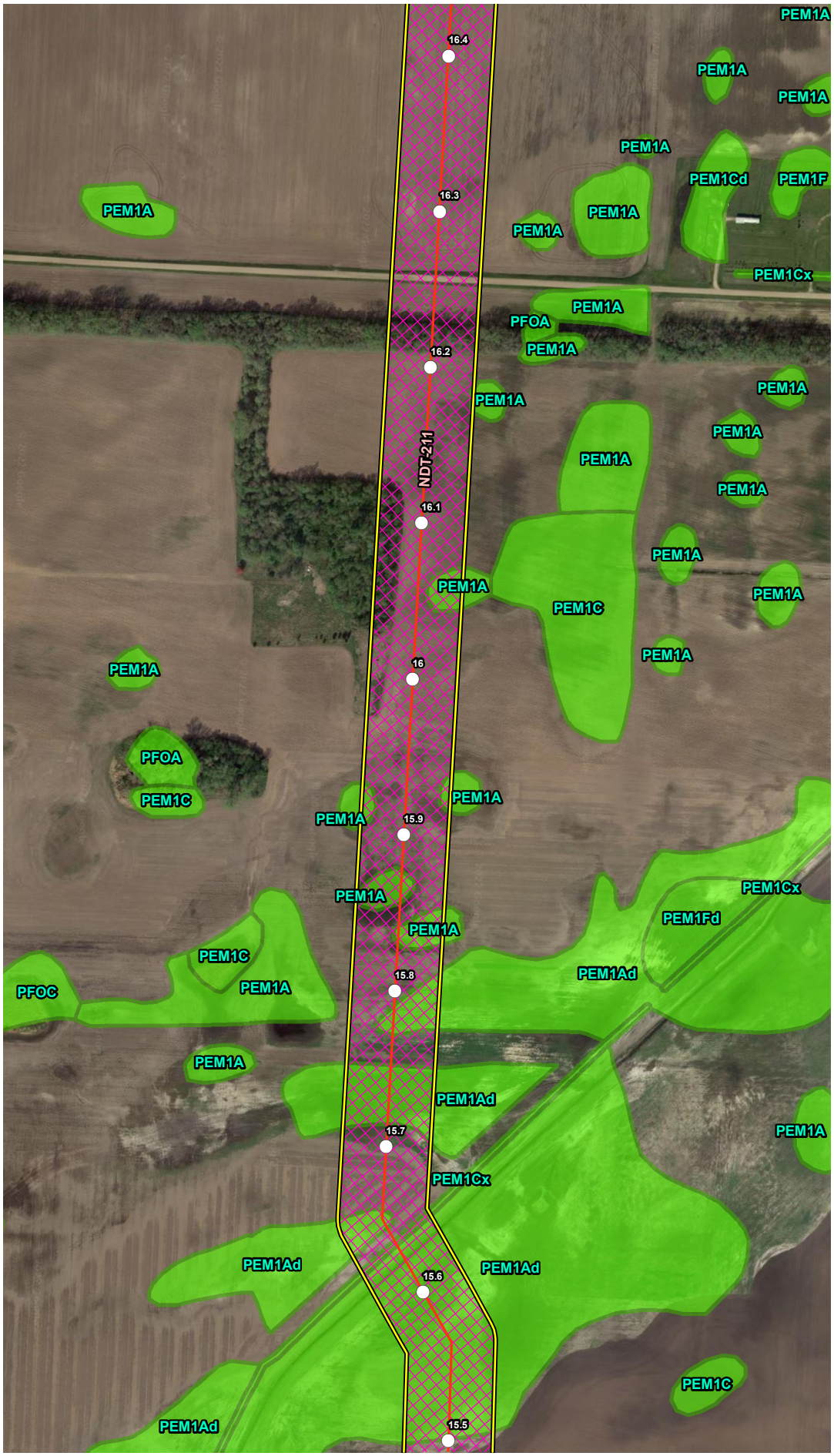
## NWI MAP

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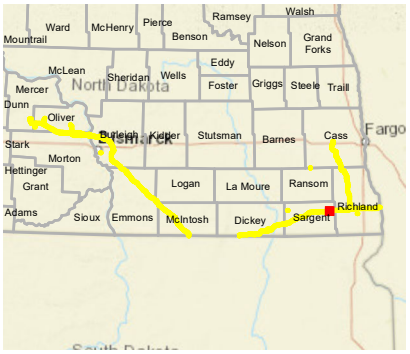


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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
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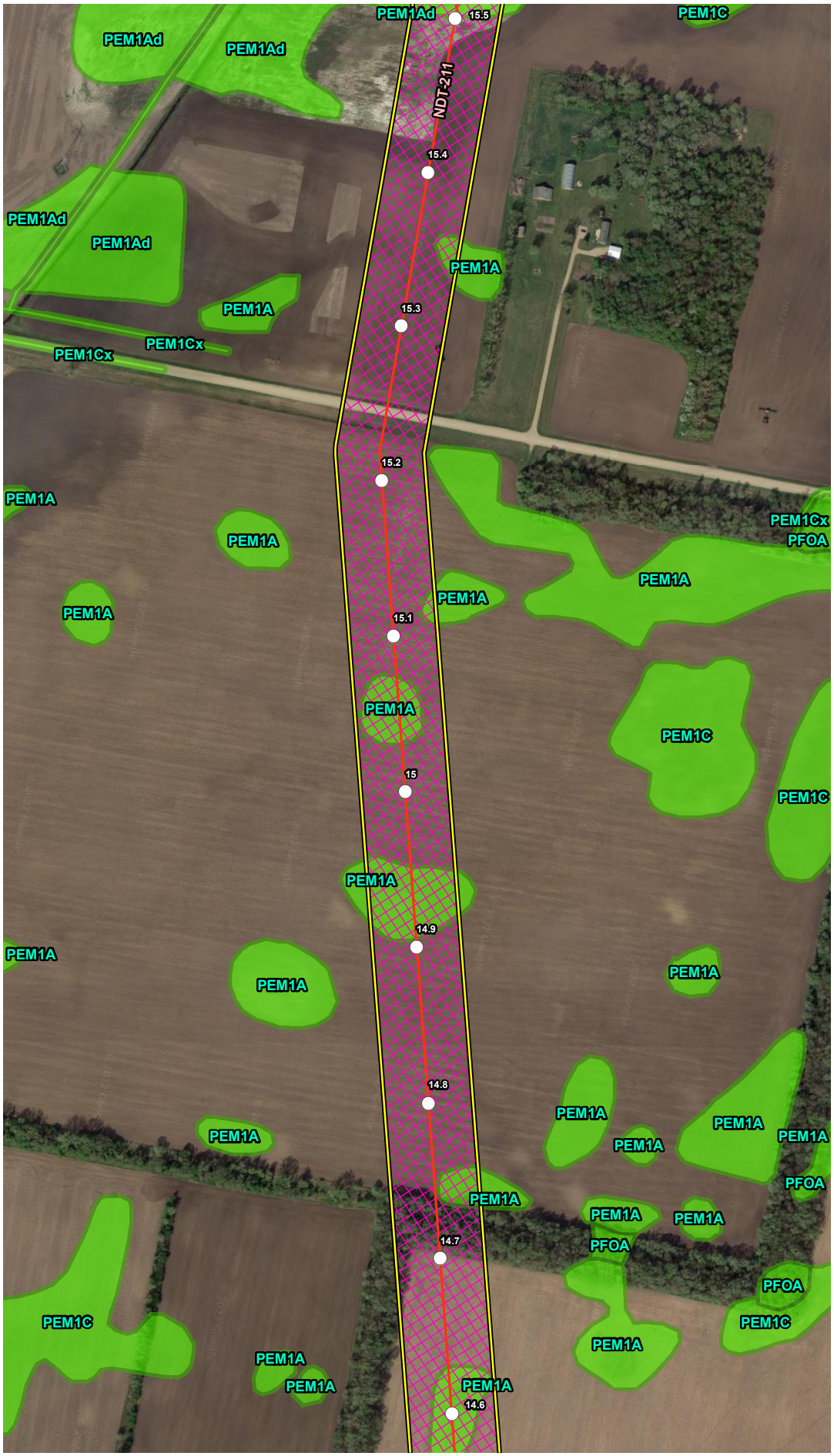
| 256 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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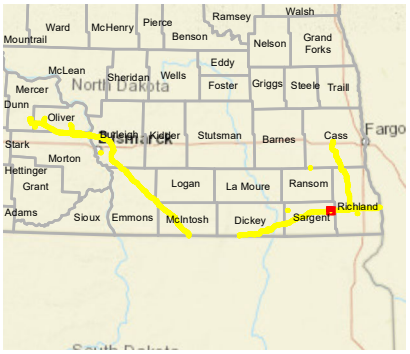


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Figure Title:

NWI Map

Figure Number:

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| 257 of 392 | 2001-22-004<br>Current Revision |

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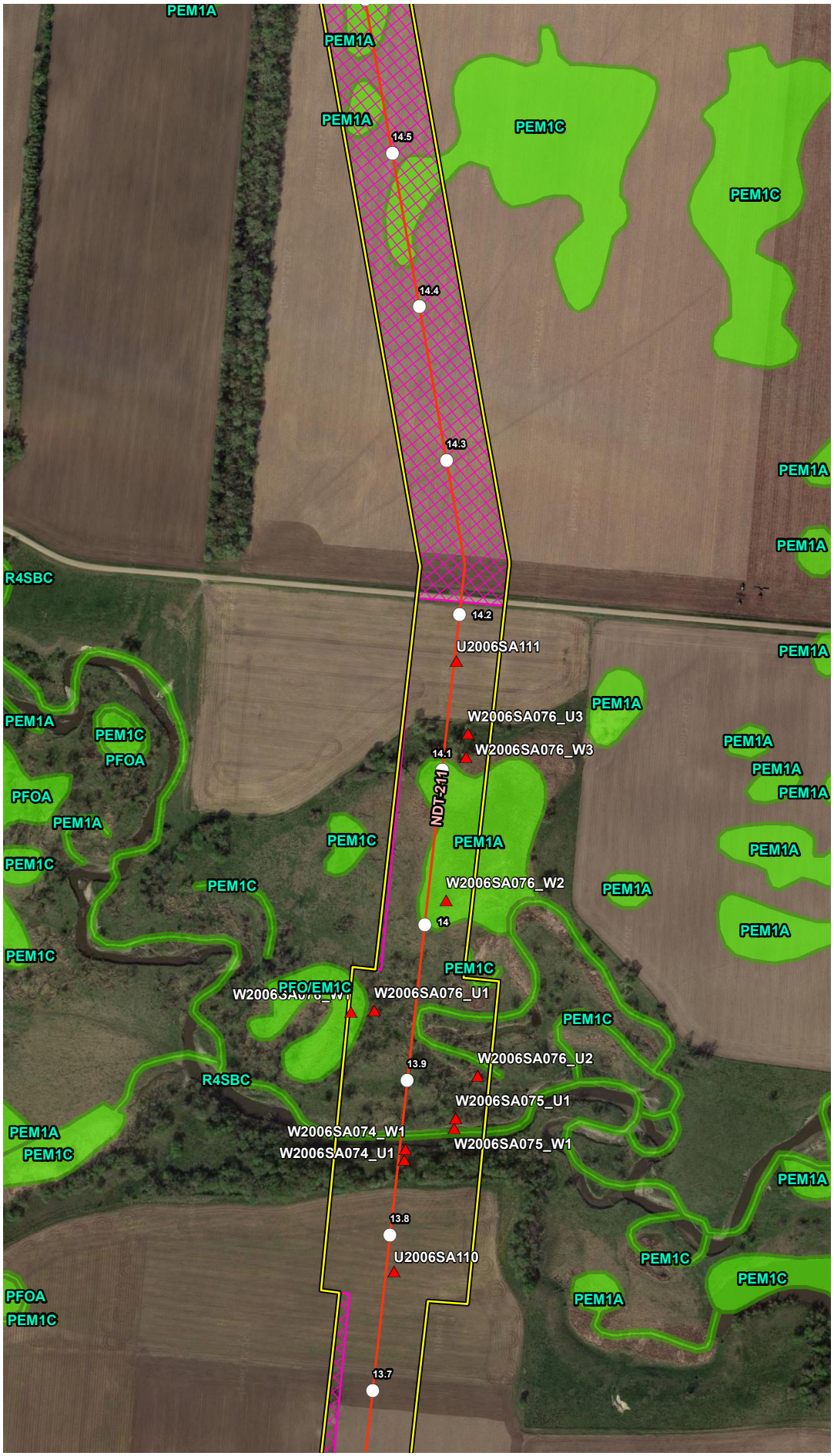
## NWI MAP

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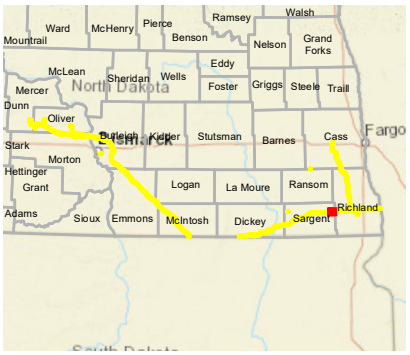


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0 250 500 Feet

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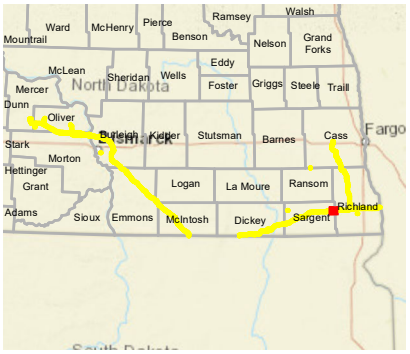
## NWI MAP




## VICINITY MAP

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| 259 of 392 | 2001-22-004<br>Current Revision |

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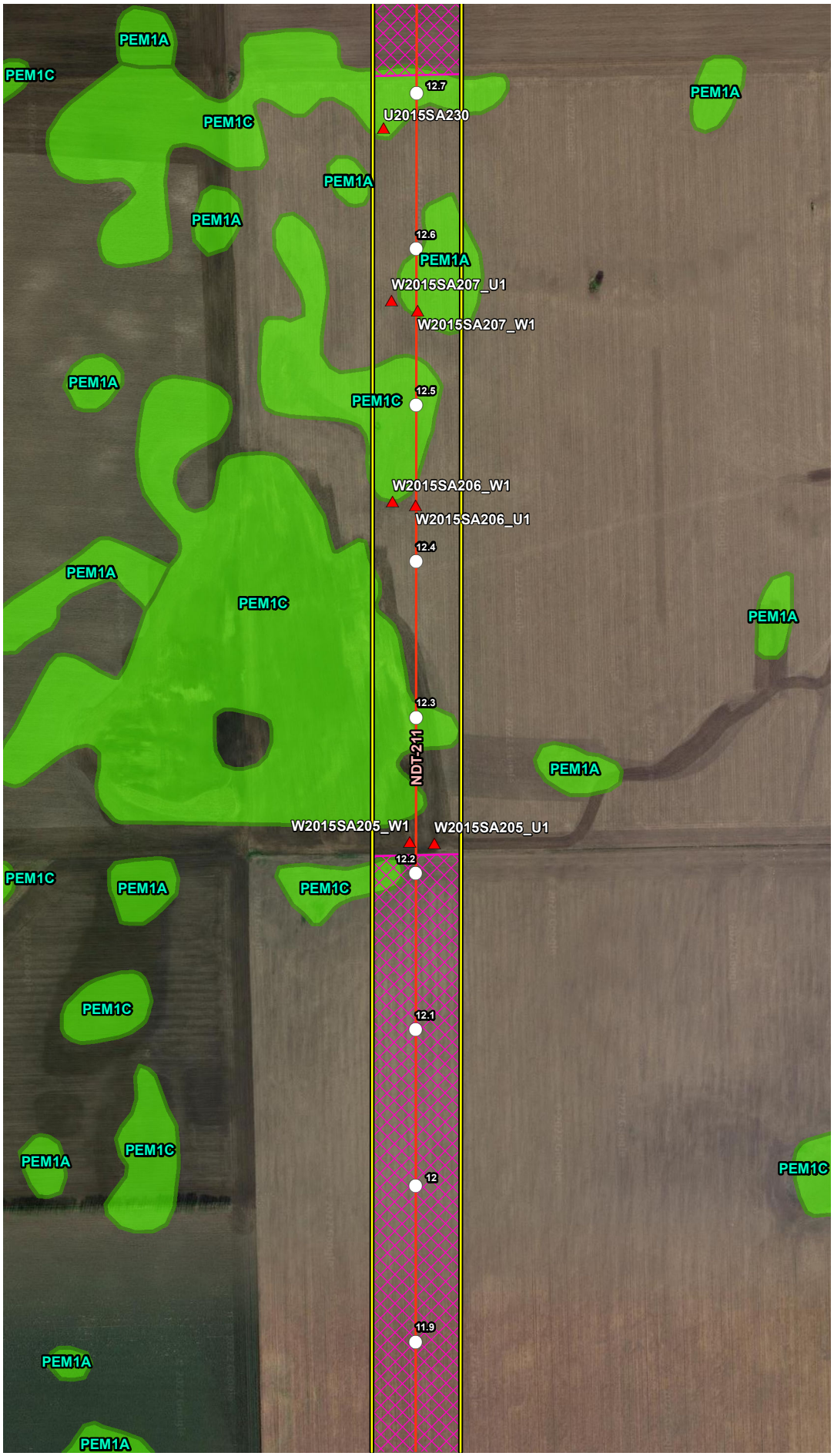
## NWI MAP

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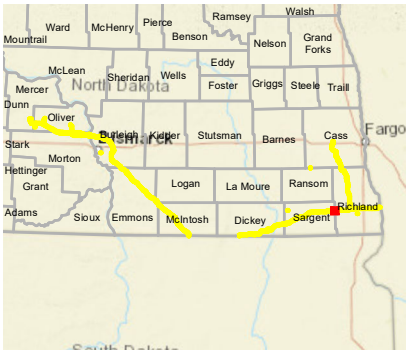


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| Sheet | Drawing Number |
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| 260 of 392 | 2001-22-004<br>Current Revision |

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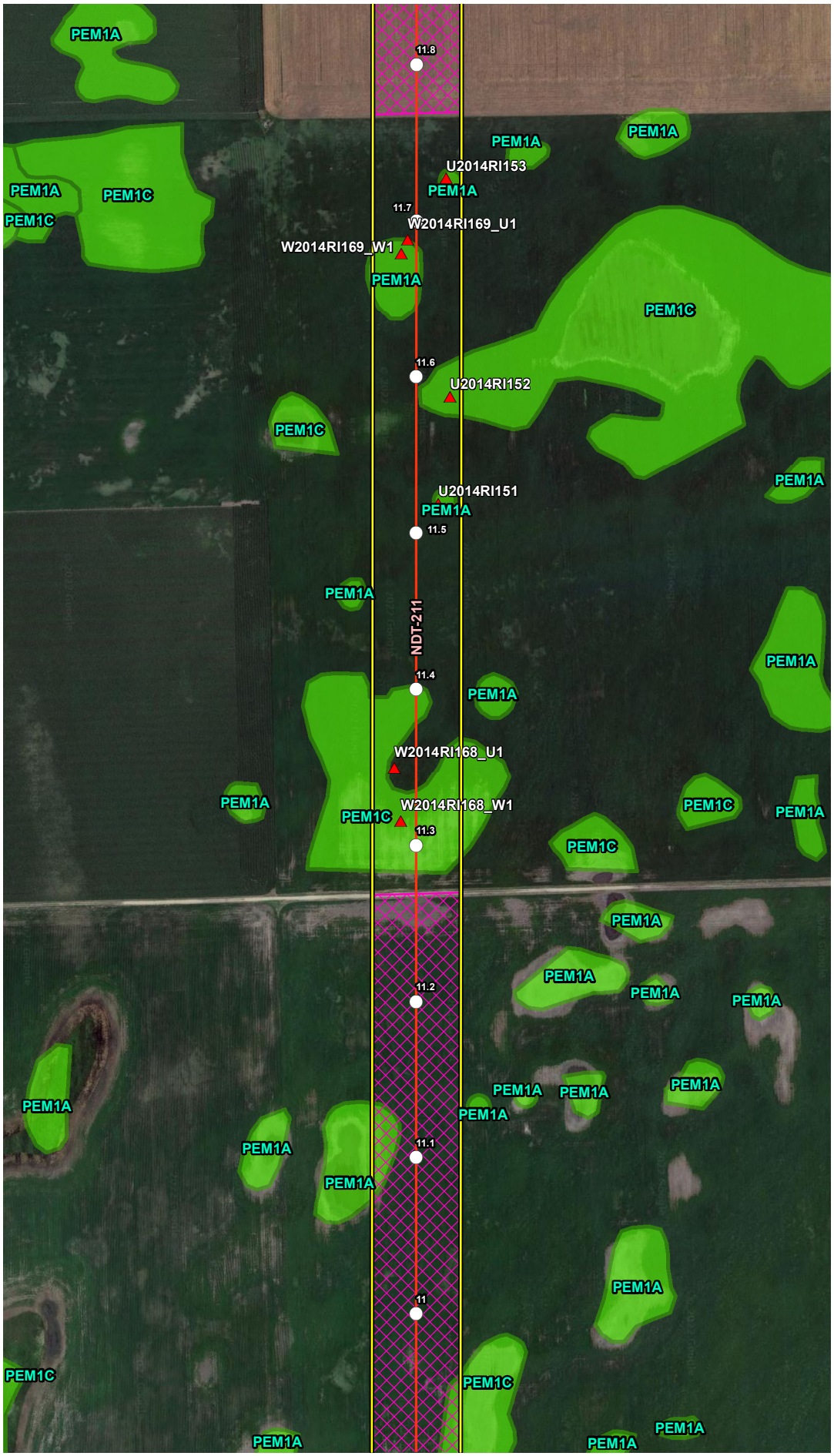
## NWI MAP

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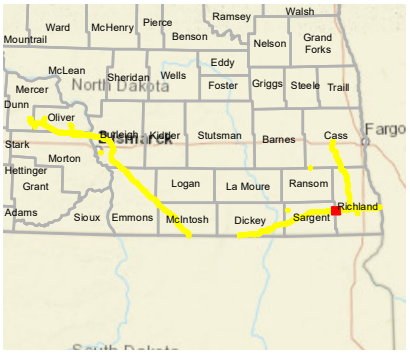


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| Scale: | Projection: |
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| 261 of 392 | 2001-22-004<br>Current Revision |

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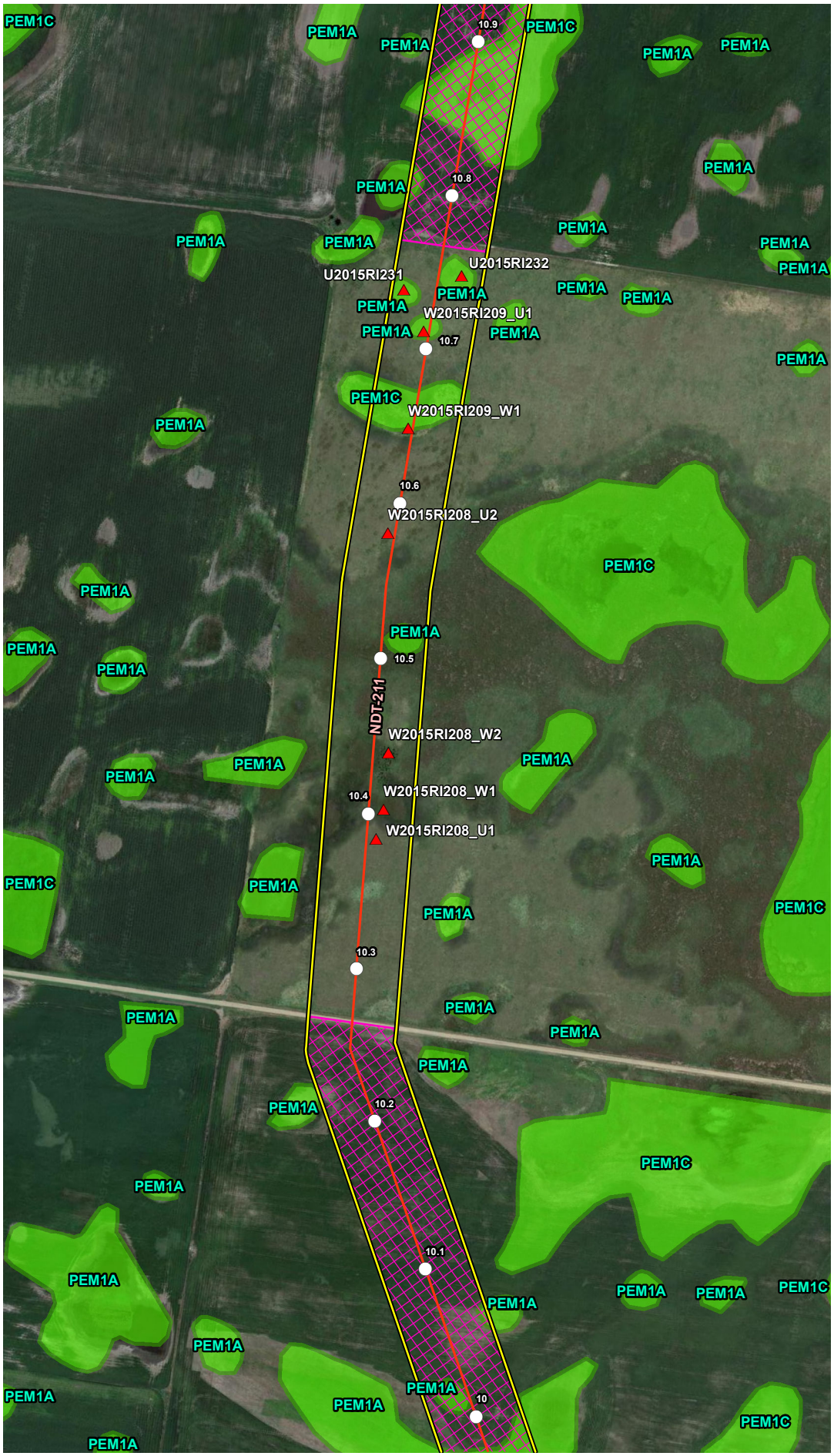
## NWI MAP

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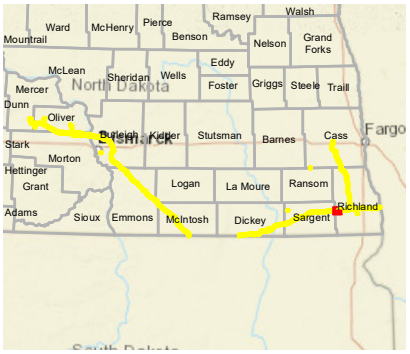


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Figure Number:

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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|---|---|
| 262 of 392 | 2001-22-004<br>Current Revision |

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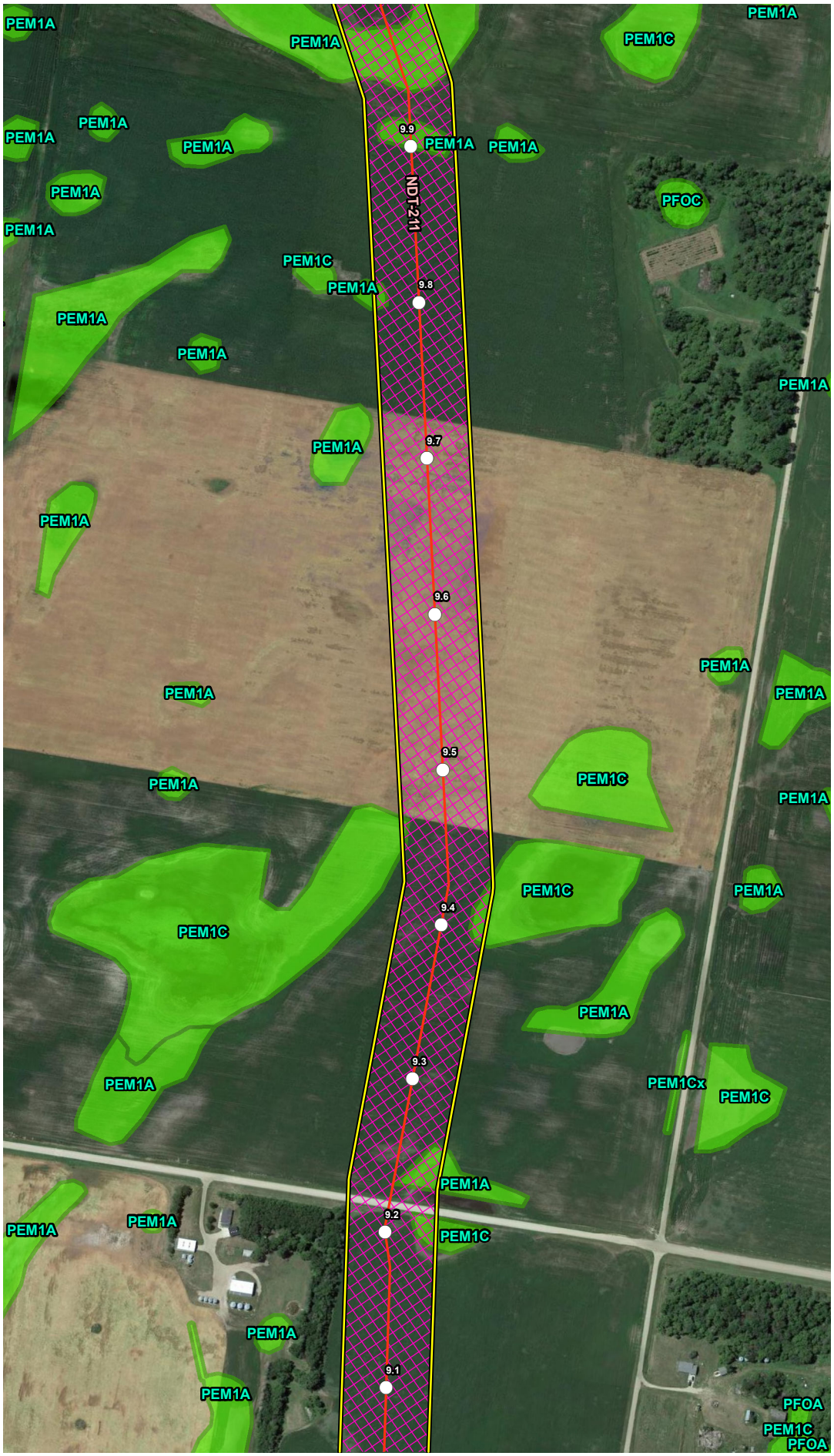
## NWI MAP

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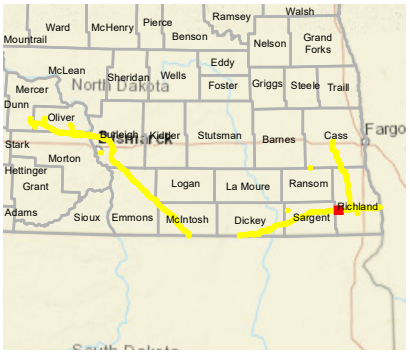


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0 250 500 Feet

## REVISIONS

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| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

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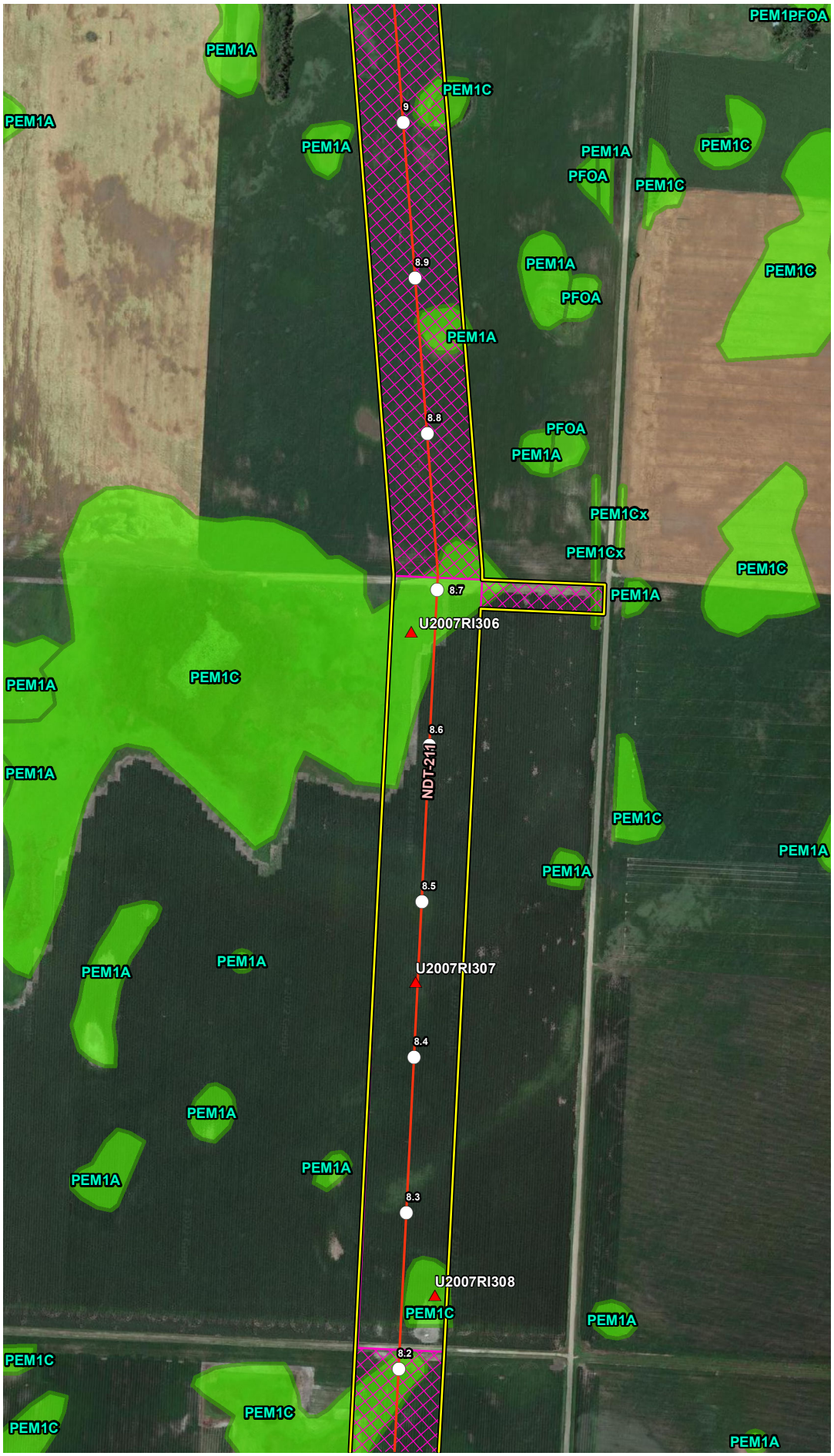
File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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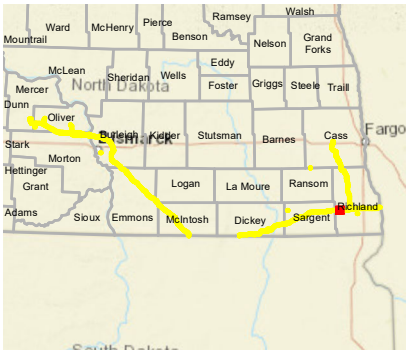


## LEGEND

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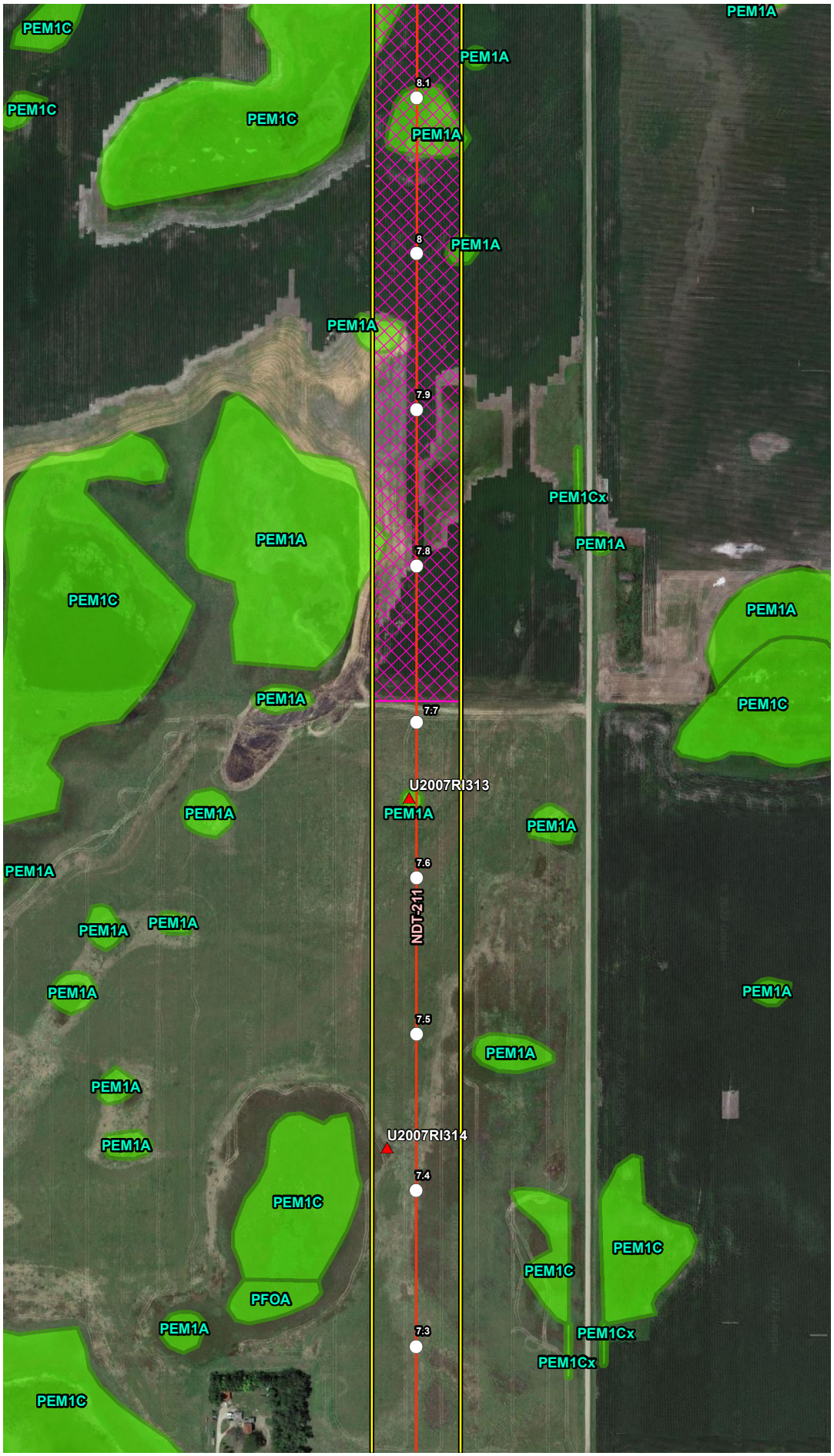
## NWI MAP

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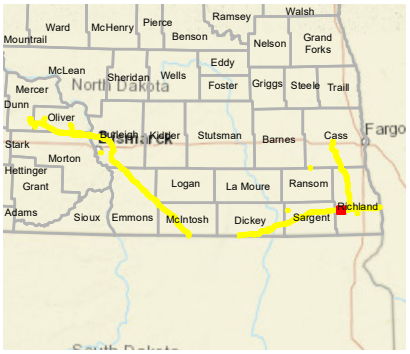


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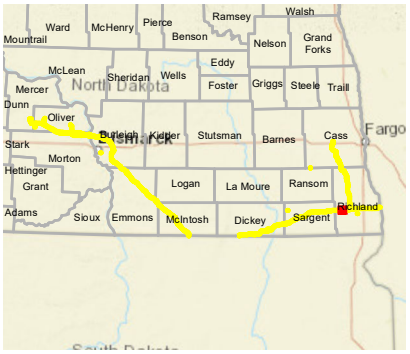
## NWI MAP




## VICINITY MAP

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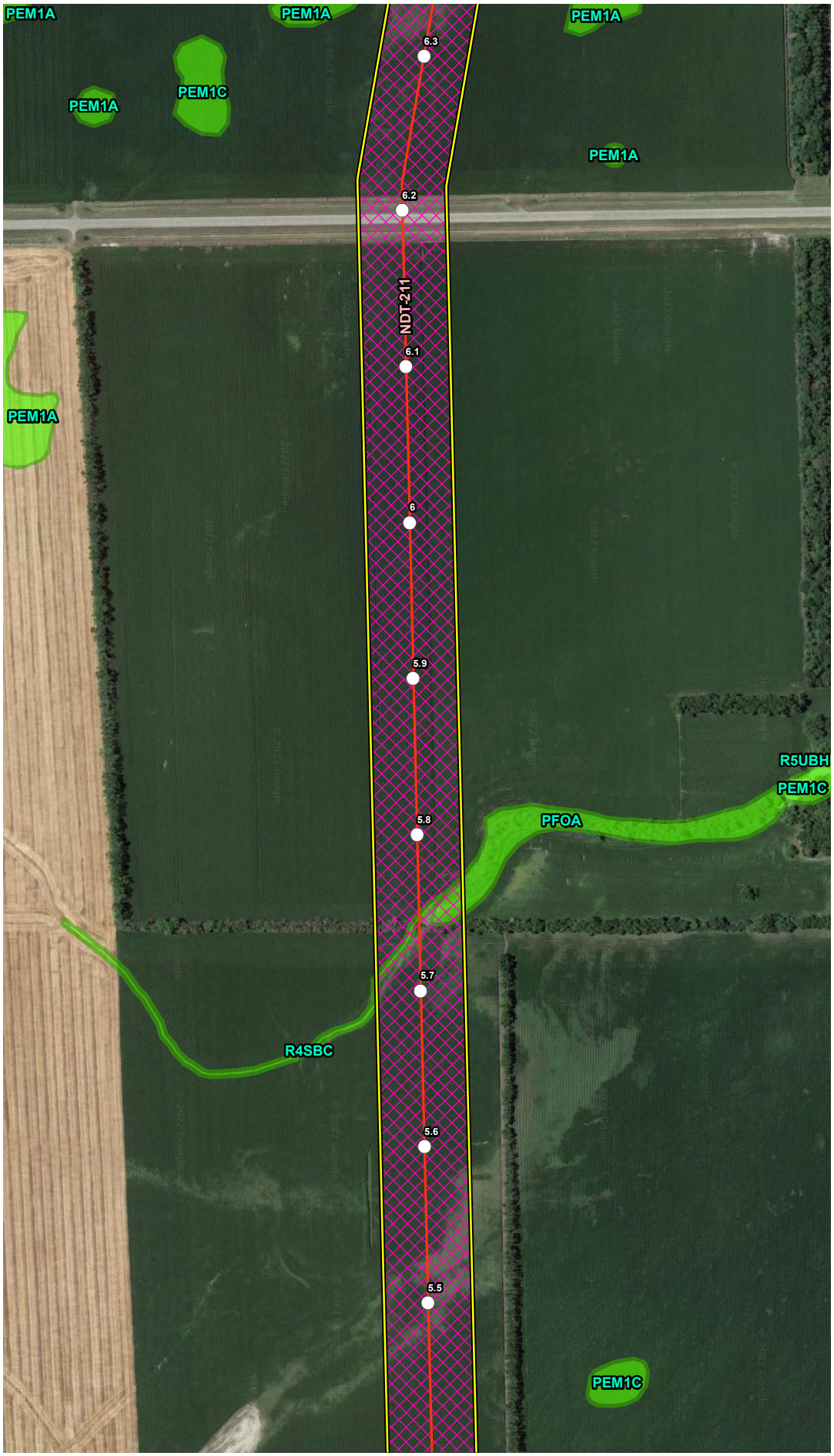
## NWI MAP

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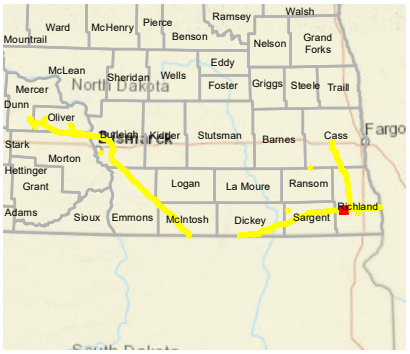


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## NWI MAP




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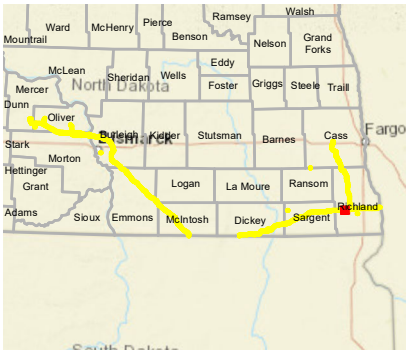


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## NWI MAP




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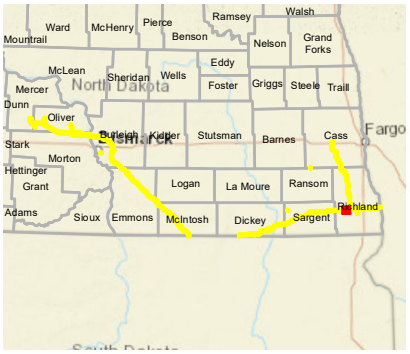


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|---|---|
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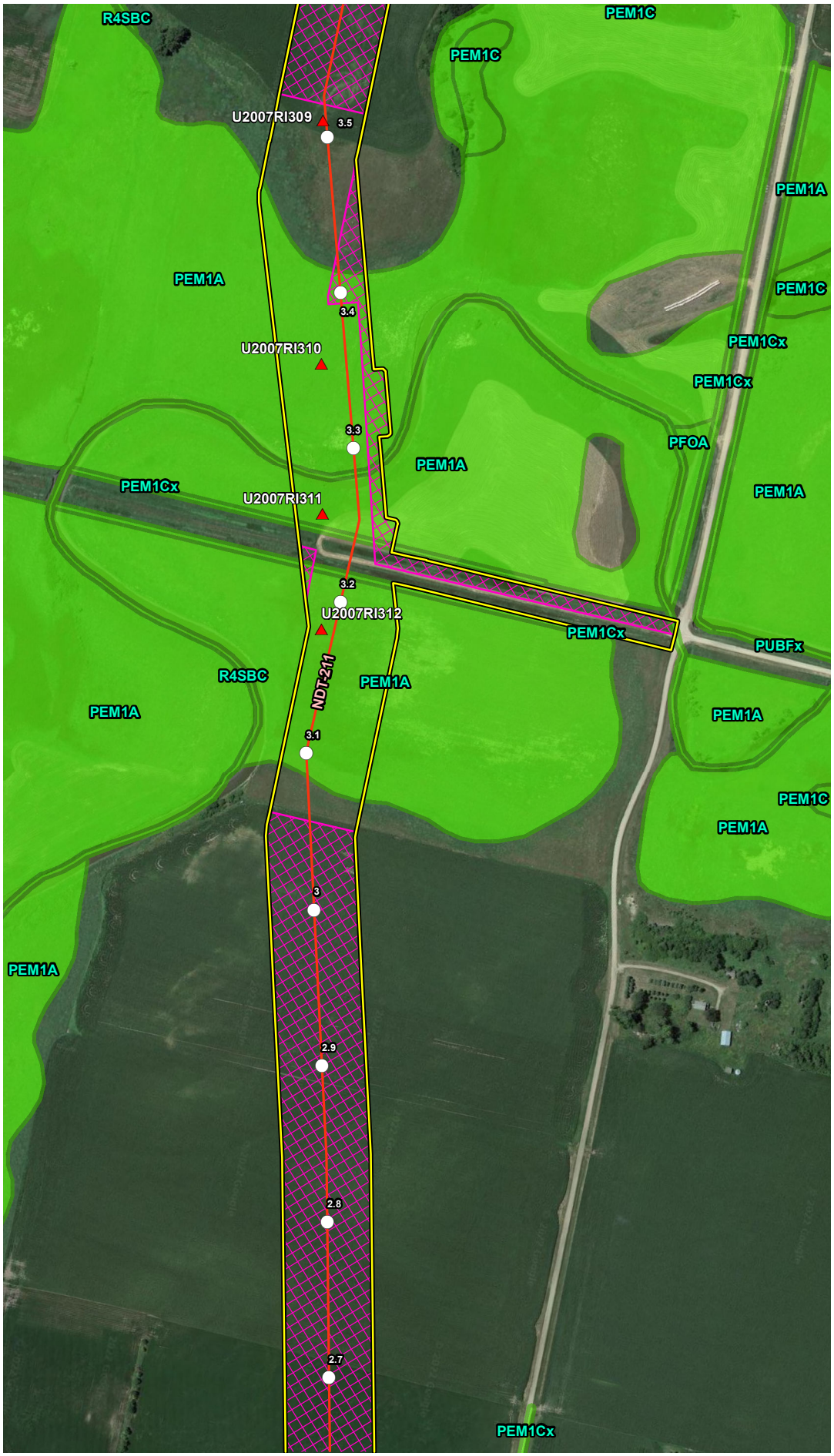
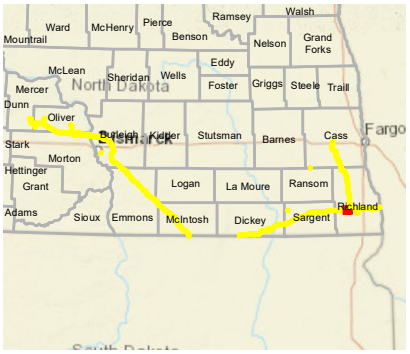
File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

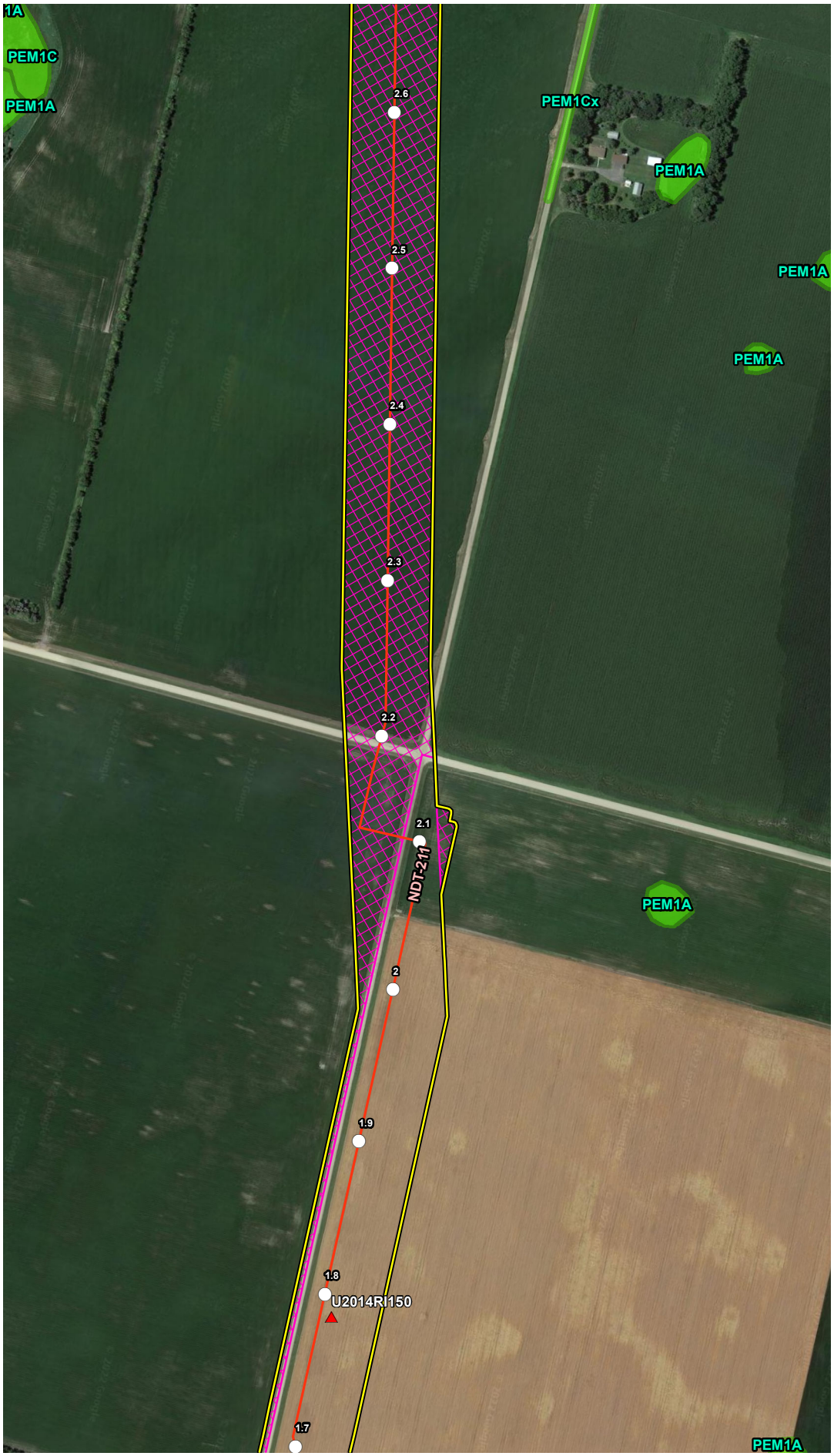
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

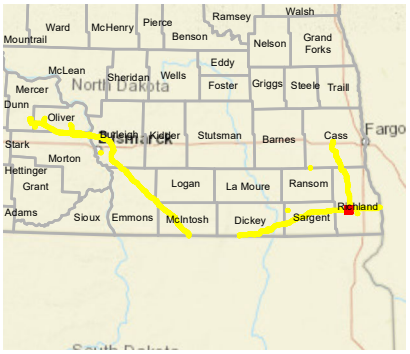
| Sheet: | Drawing Number: |
|---|---|
| 270 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

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| 2022-08-04 | MM | AB |

**1A - Revision**

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**Figure Title:**

NWI Map

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Appendix A-4

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| Sheet: | Drawing Number: |
|---|---|
| 271 of 392 | 2001-22-004<br>Current Revision |

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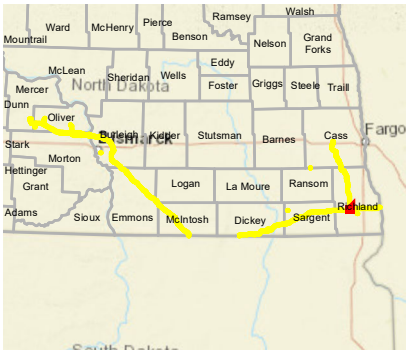
## NWI MAP




## VICINITY MAP




## LEGEND

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| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

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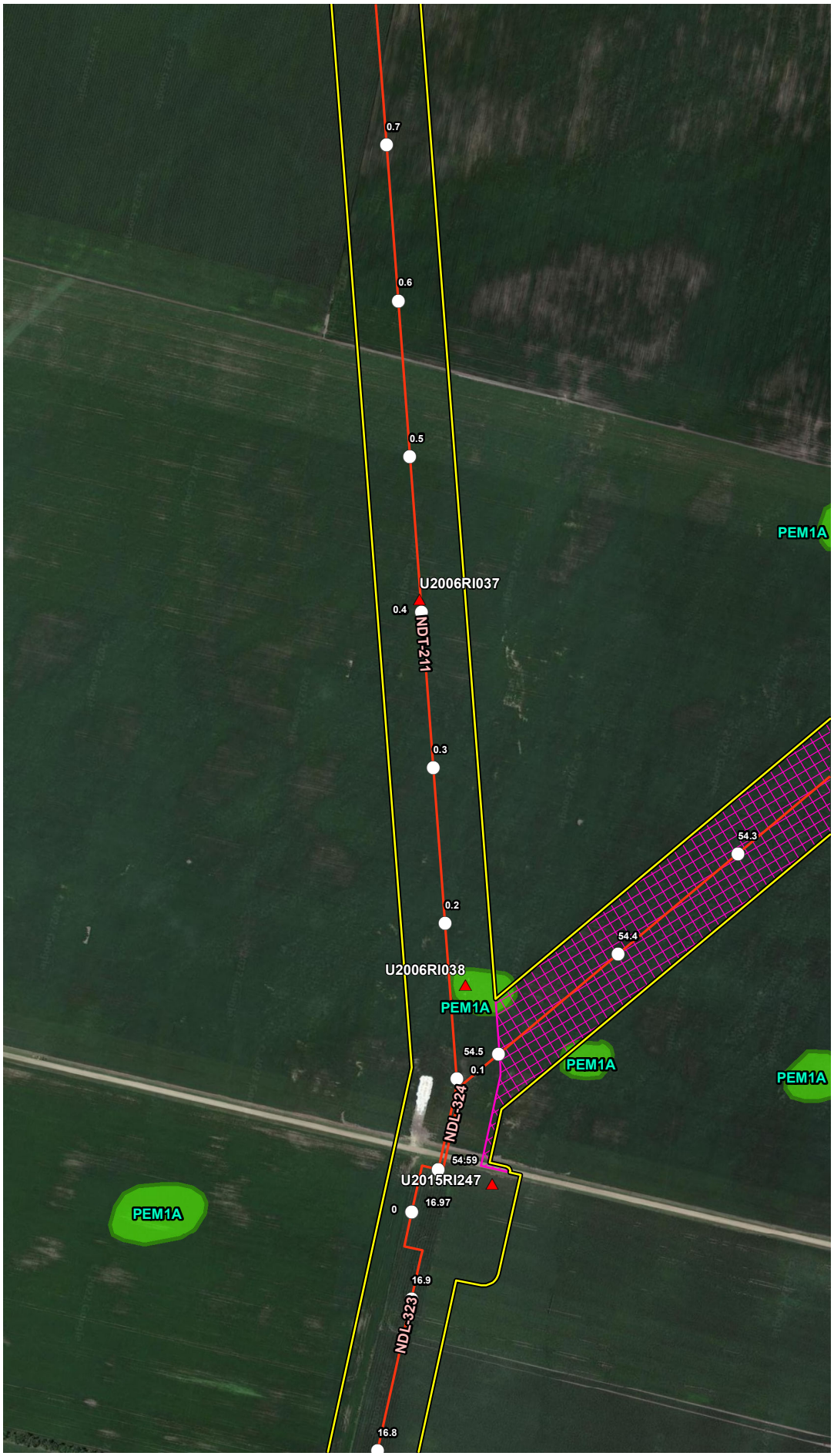
| Sheet: | Drawing Number: |
|---|---|
| 272 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds\4_NWI.mxd

## NWI MAP

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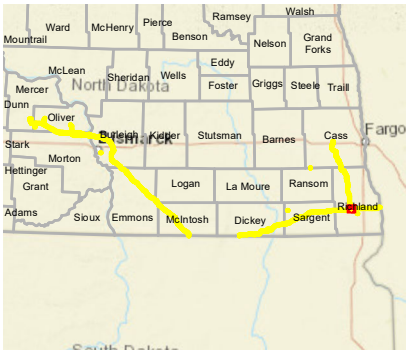


## LEGEND

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| Date | Revised by | Checked by |
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Figure Title:

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| Scale | Projection |
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| Sheet | Drawing Number |
|---|---|
| 273 of 392 | 2001-22-004<br>Current Revision |

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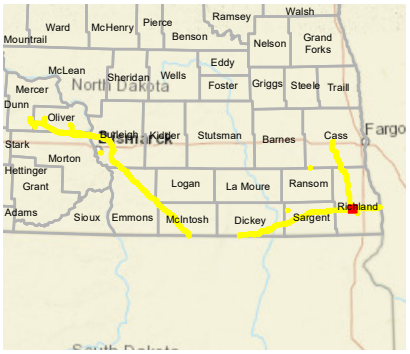
## NWI MAP




## VICINITY MAP

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0 250 500 Feet

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| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |

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Figure Title:
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| Scale: | Projection: |
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| Sheet: | Drawing Number: |
| 274 of 392 | 2001-22-004<br>Current Revision |

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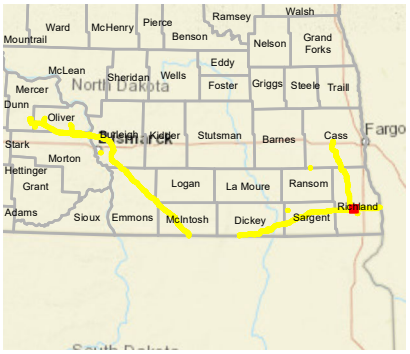
## NWI MAP




## VICINITY MAP

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| 2022-08-04 | MM | AB |

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**Appendix A-4**

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 275 of 392 | 2001-22-004<br>Current Revision |

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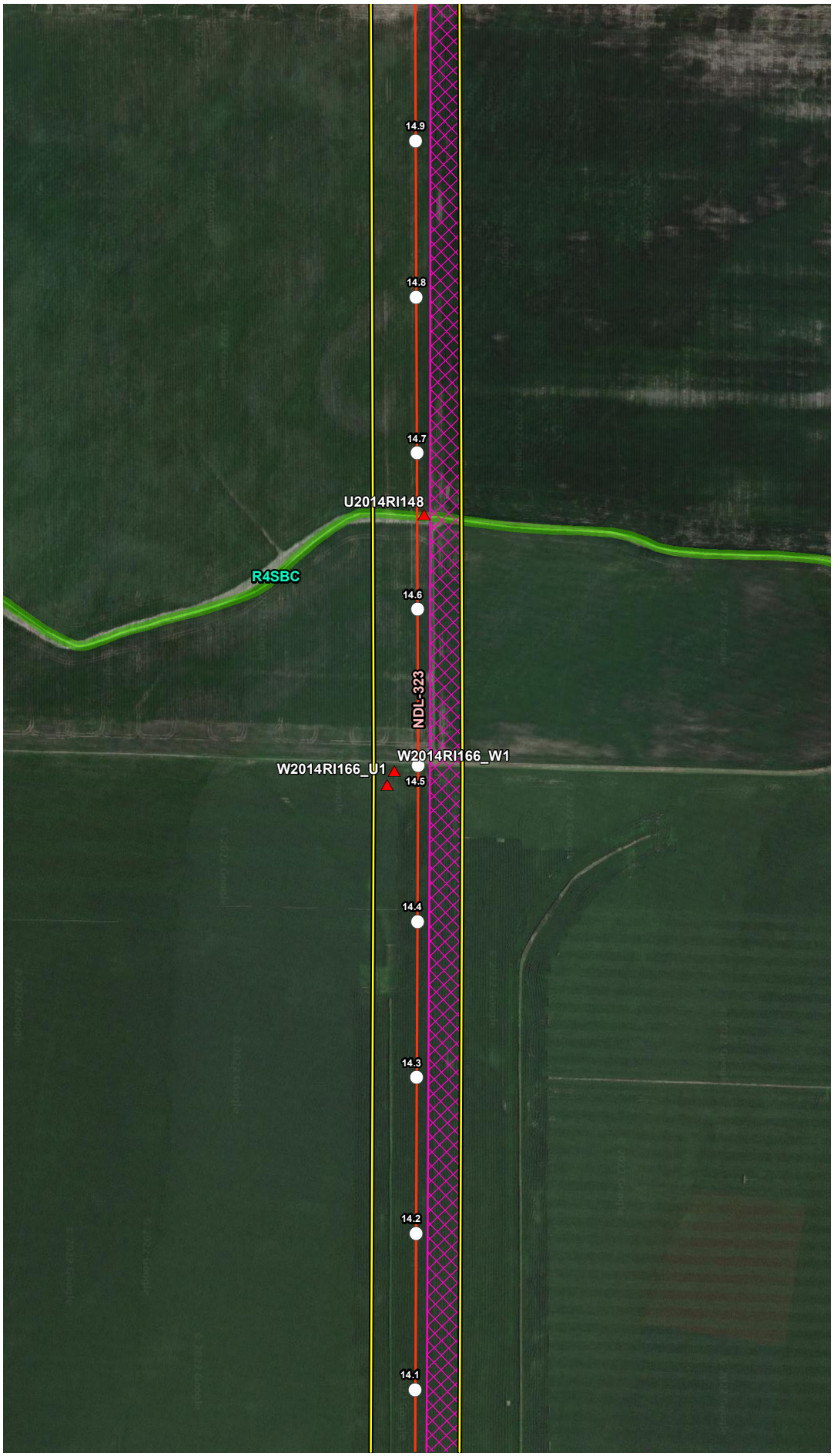
## NWI MAP

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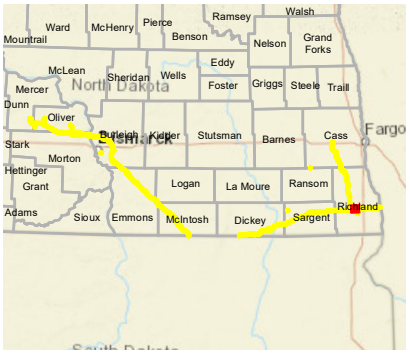


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| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 276 of 392 | 2001-22-004<br>Current Revision |

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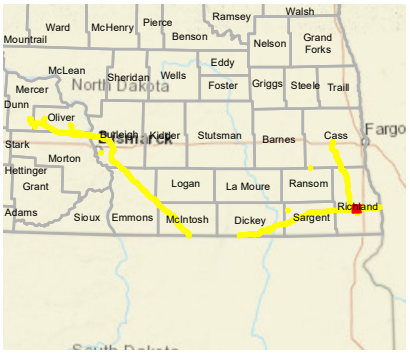
## NWI MAP




## VICINITY MAP




## LEGEND

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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

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Appendix A-4

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| Sheet: | Drawing Number: |
|---|---|
| 277 of 392 | 2001-22-004<br>Current Revision |

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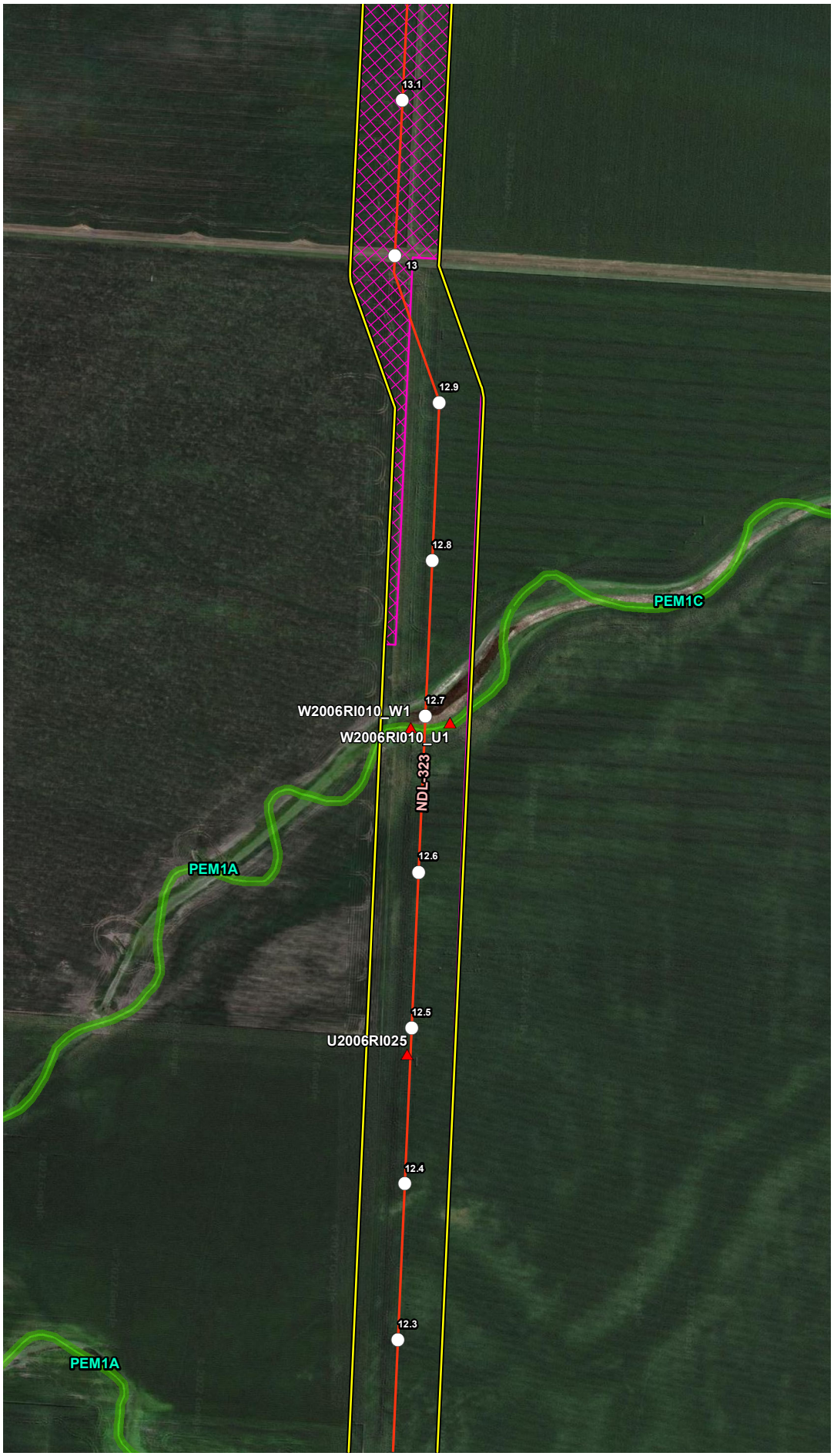
## NWI MAP

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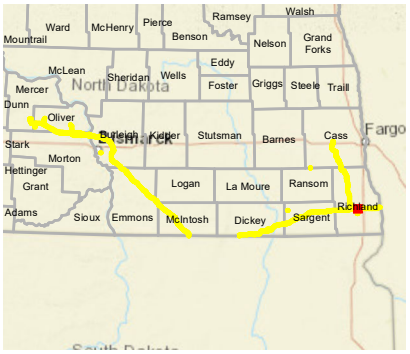


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

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| 2022-08-04 | MM | AB |

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| Sheet: | Drawing Number: |
|---|---|
| 278 of 392 | 2001-22-004<br>Current Revision |

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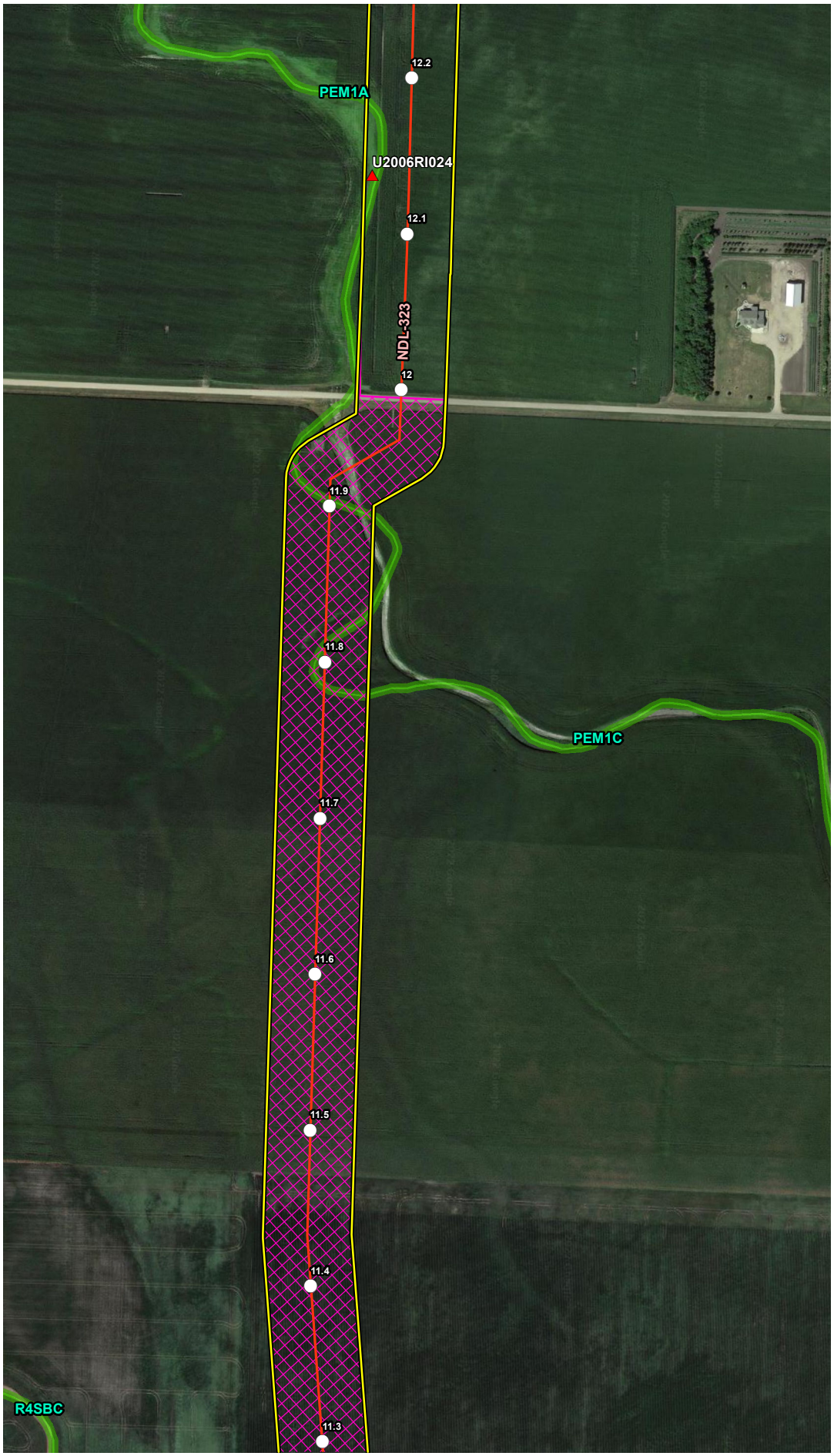
## NWI MAP

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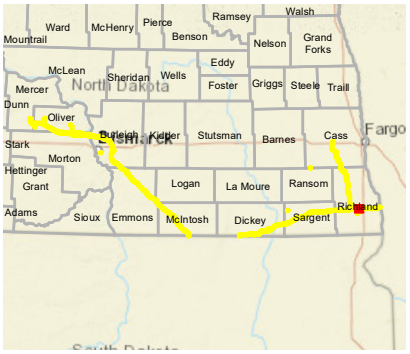


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| Date: | Revised by: | Checked by: |
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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

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|---|---|
| 279 of 392 | 2001-22-004<br>Current Revision |

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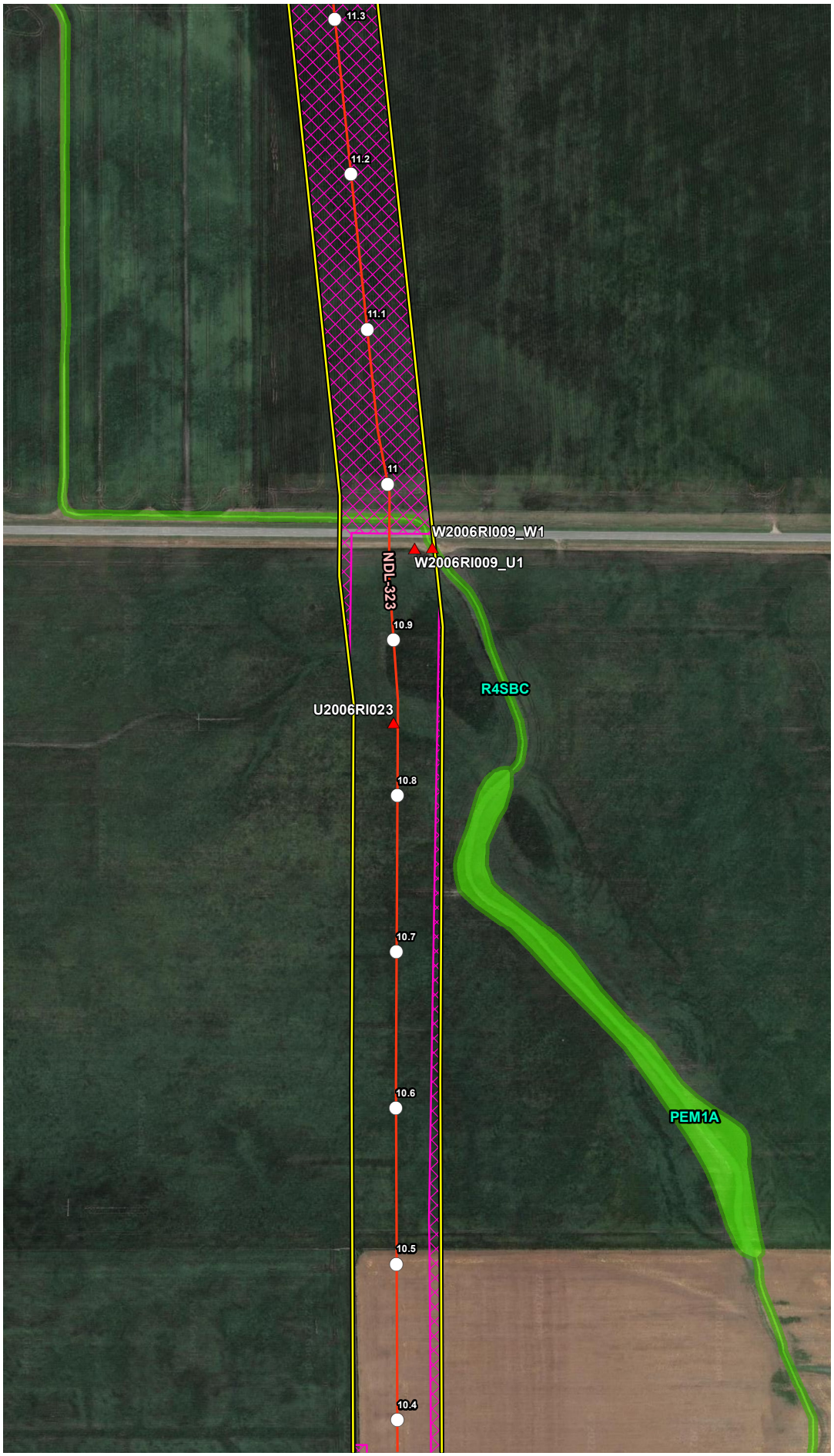
## NWI MAP

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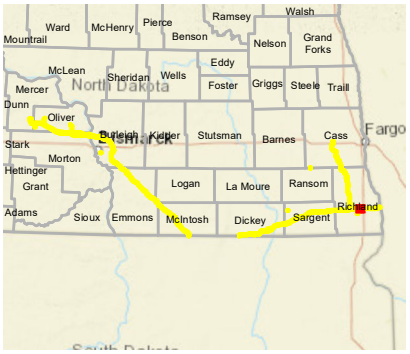


## LEGEND

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|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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NWI Map

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
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| 280 of 392 | 2001-22-004<br>Current Revision |

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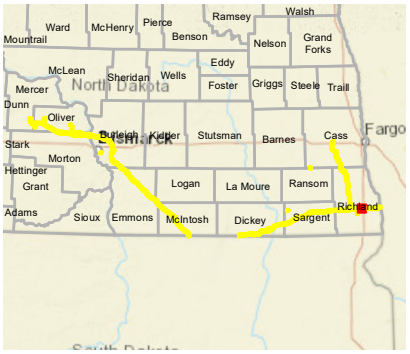
## NWI MAP




## VICINITY MAP

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Revision description

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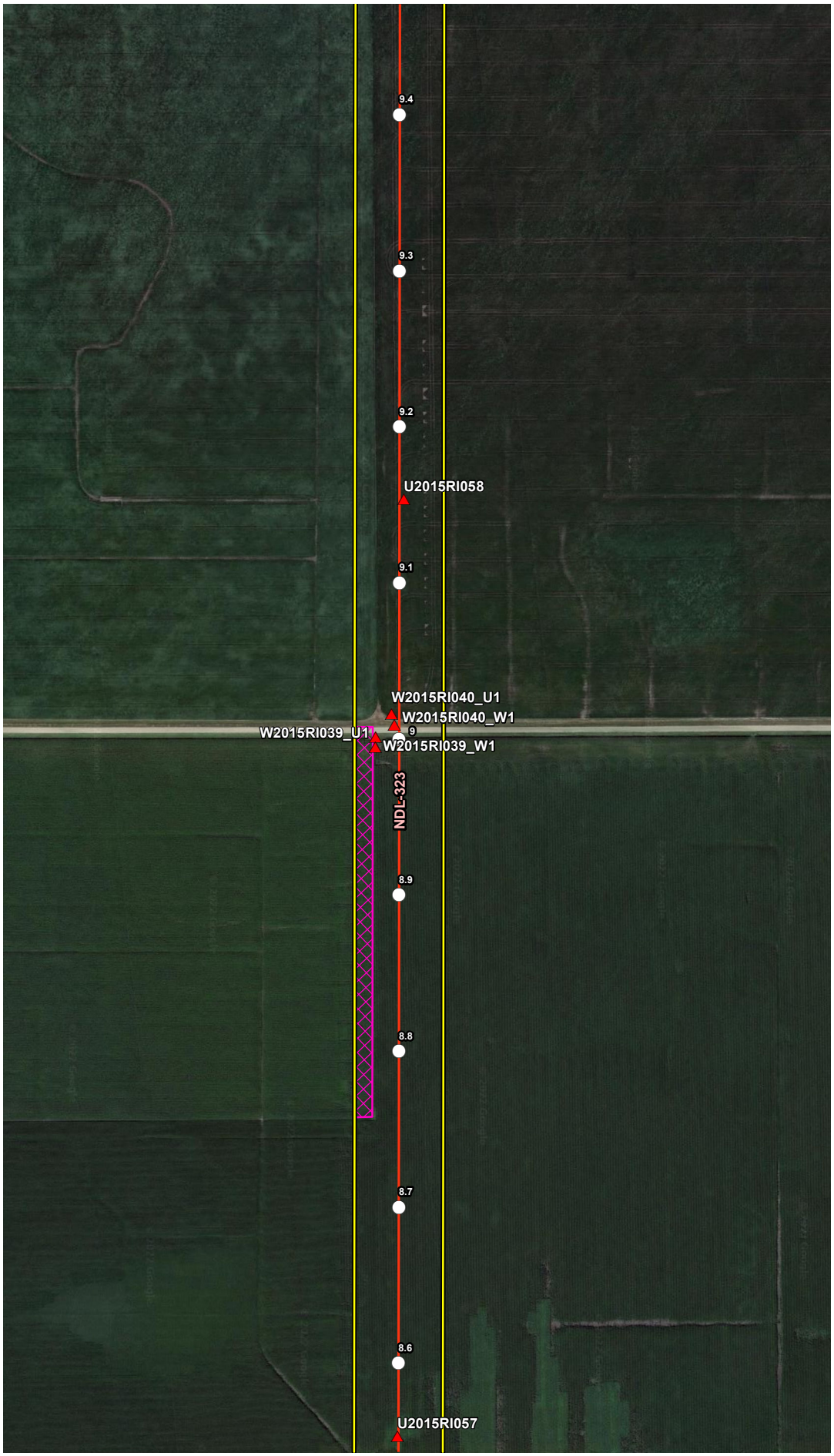
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

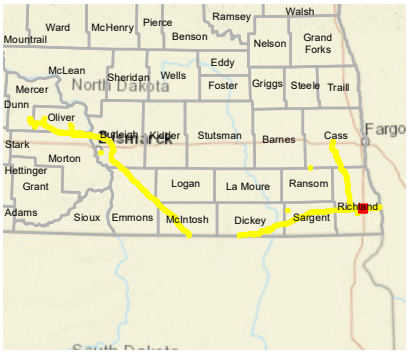
| Sheet: | Drawing Number: |
|---|---|
| 281 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\901_VWR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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**1A - Revision**

Revision description

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|---|---|
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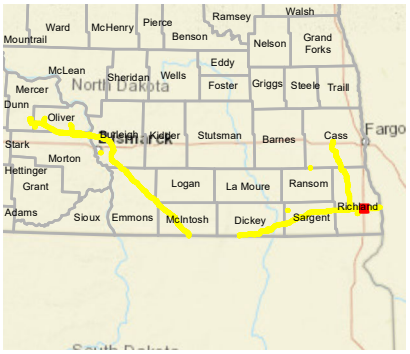
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
283 of 392

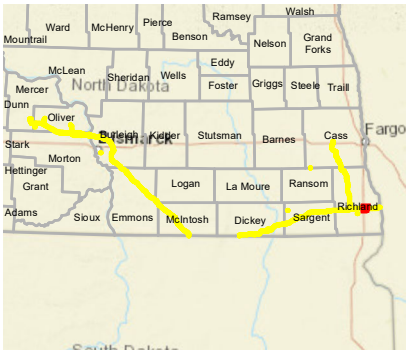
Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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0 250 500
Feet

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|---|---|
| 284 of 392 | 2001-22-004<br>Current Revision |

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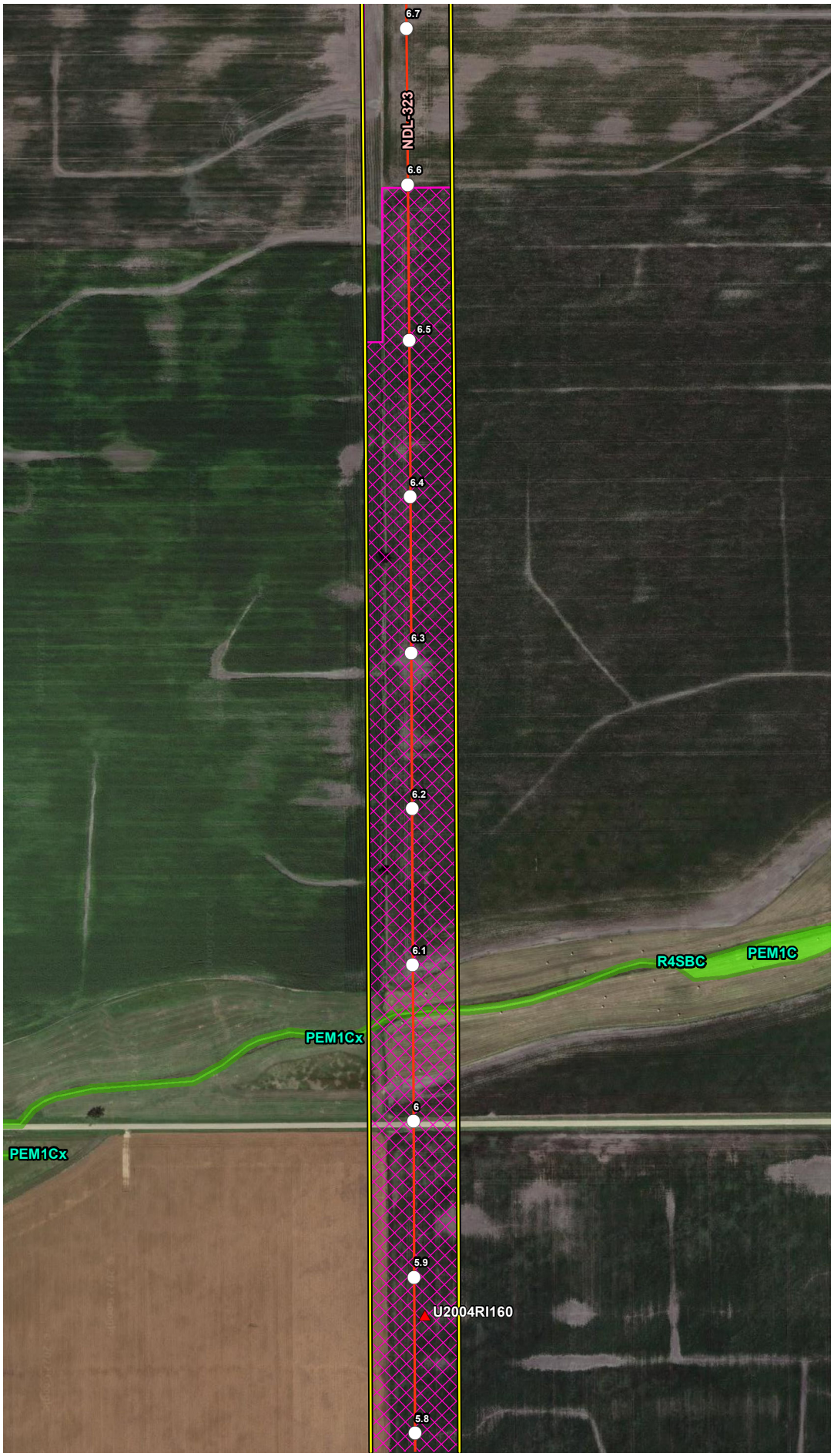


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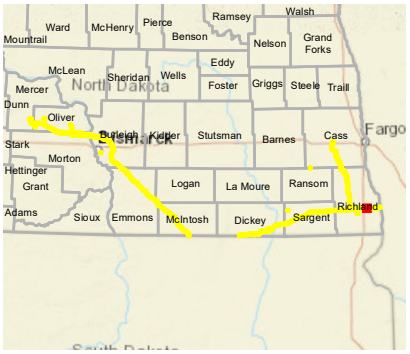


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| 285 of 392 | 2001-22-004<br>Current Revision |

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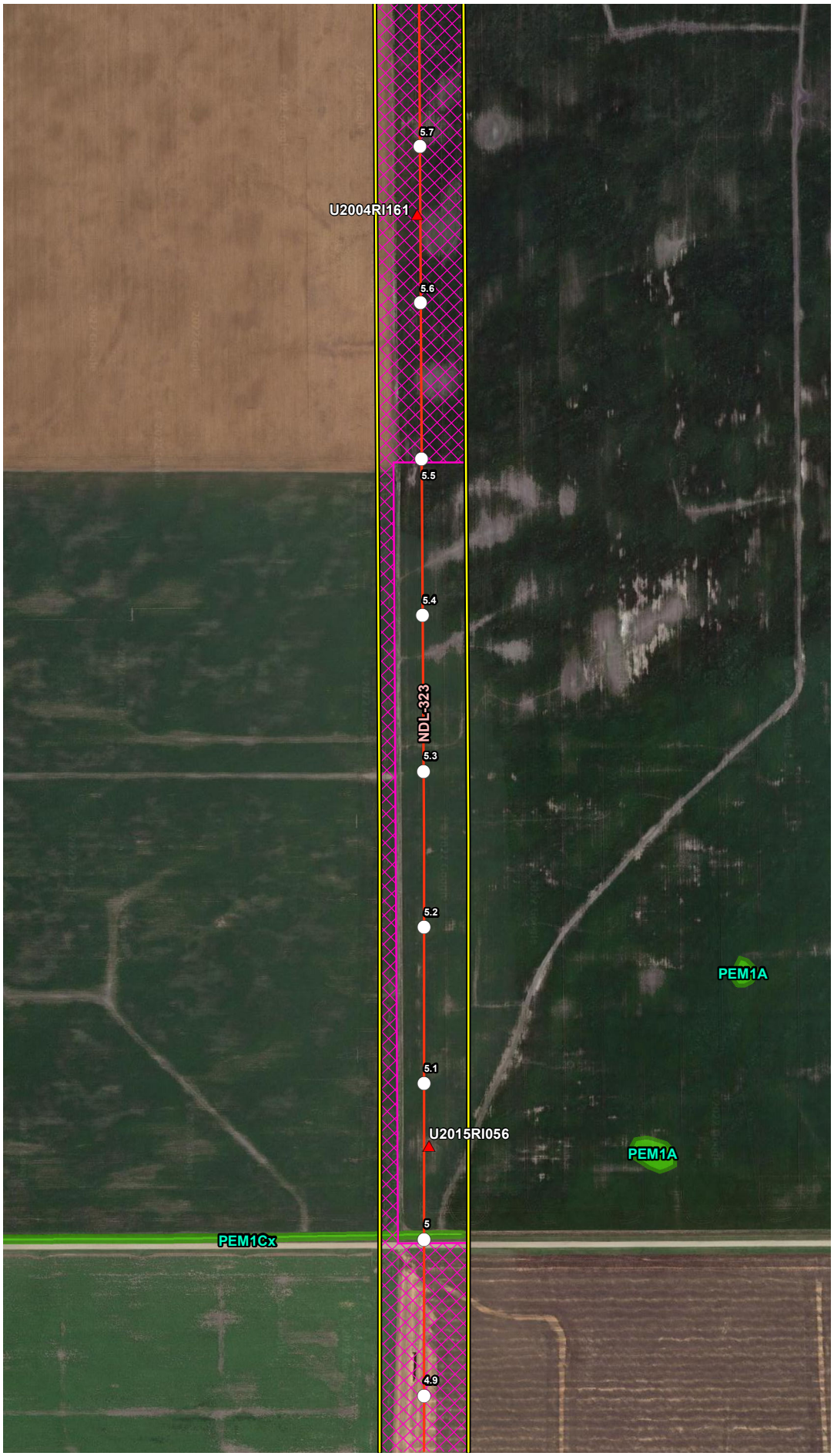


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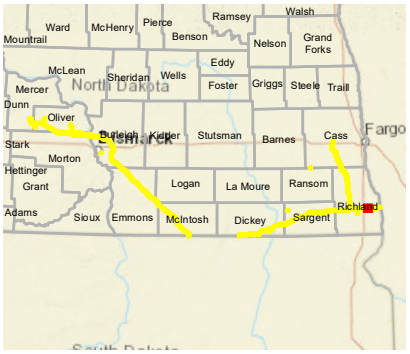


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| 286 of 392 | 2001-22-004<br>Current Revision |

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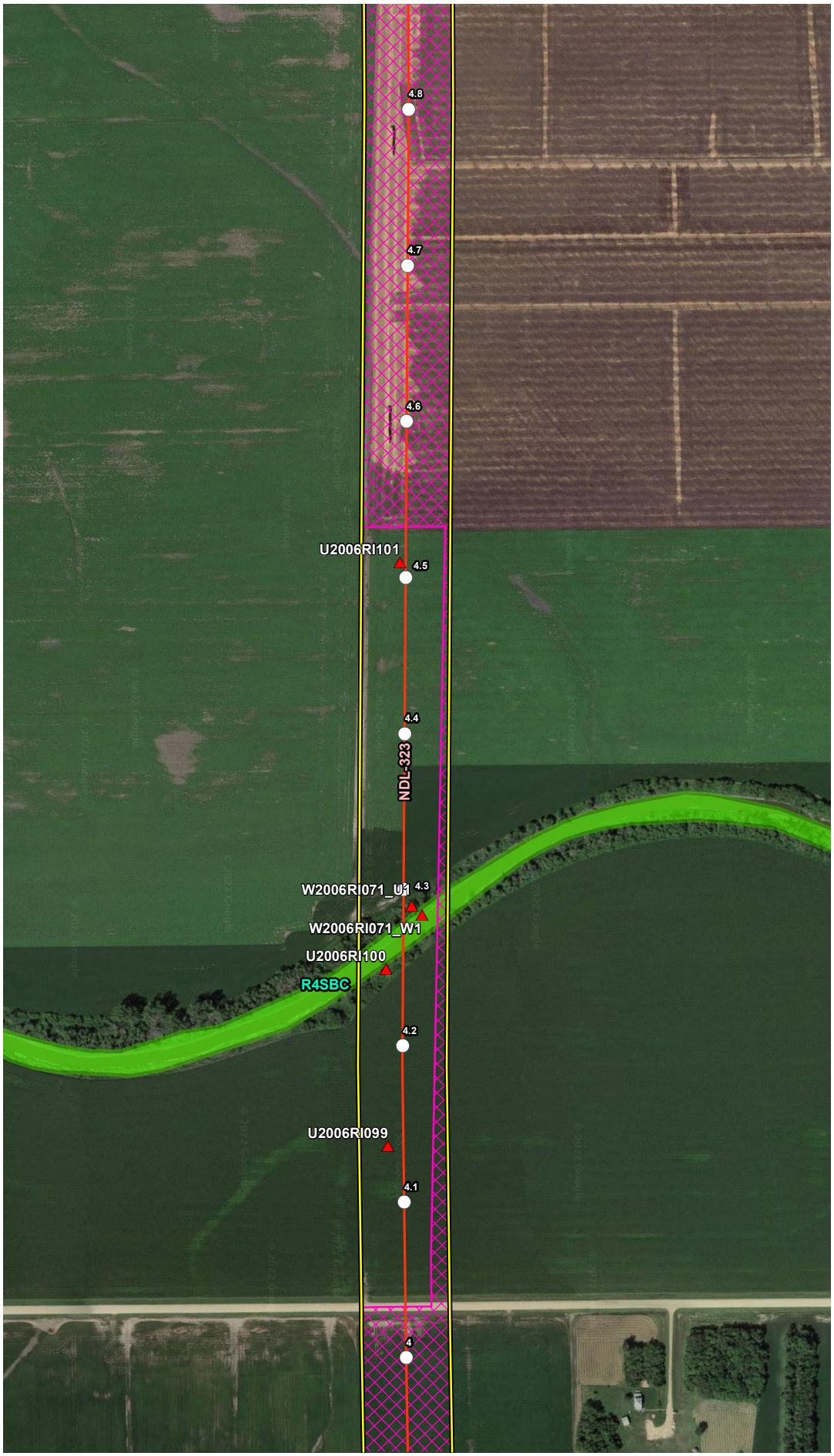
## NWI MAP

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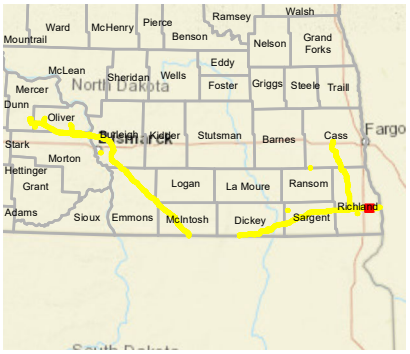


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Revision description

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Appendix A-4

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| 287 of 392 | 2001-22-004<br>Current Revision |

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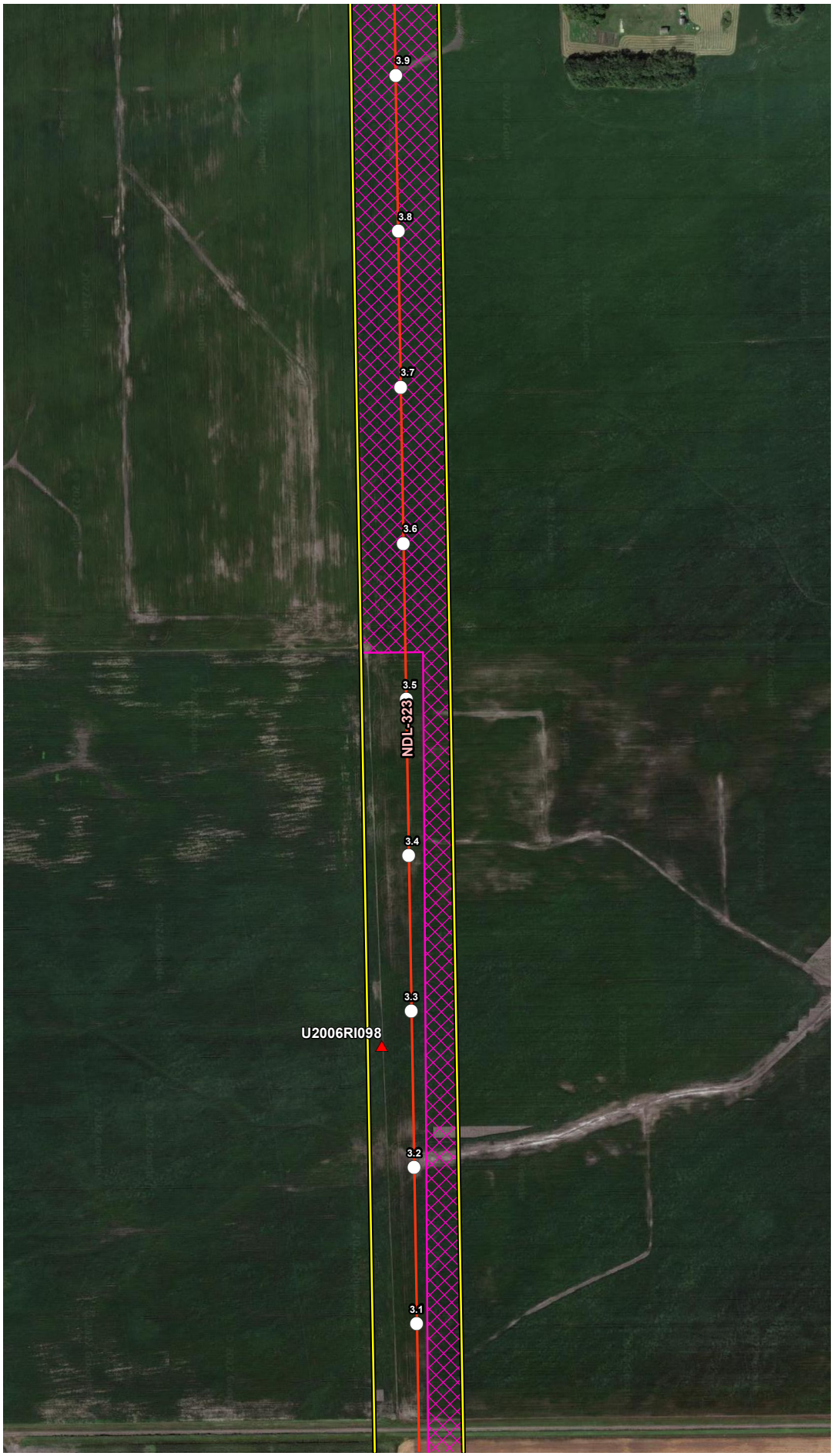
## NWI MAP

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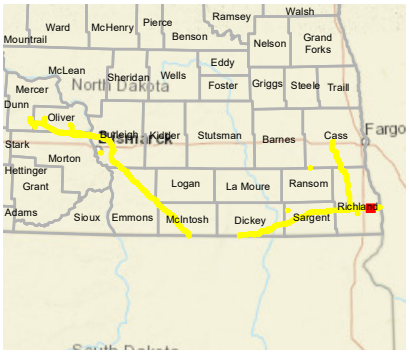


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| Sheet: | Drawing Number: |
| 288 of 392 | 2001-22-004<br>Current Revision |

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## NWI MAP




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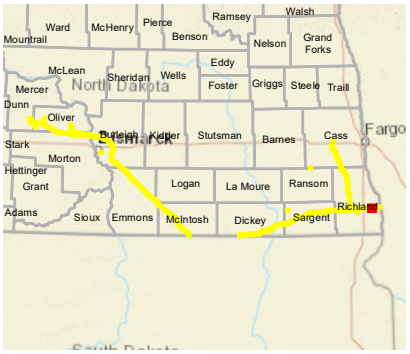


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| Sheet: | Drawing Number: |
|---|---|
| 289 of 392 | 2001-22-004<br>Current Revision |

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## NWI MAP




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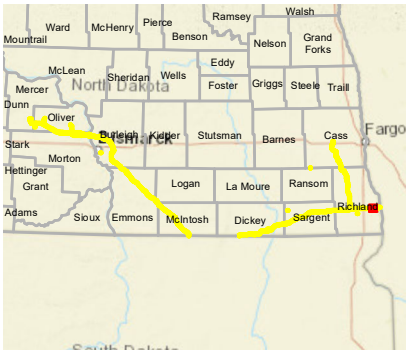


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**1A - Revision**

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| Date | Revised by | Checked by |
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| 290 of 392 | 2001-22-004<br>Current Revision |

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## NWI MAP




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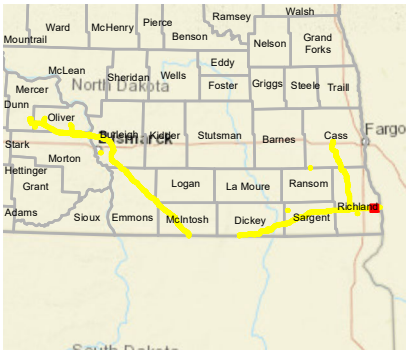


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Revision description

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## NWI MAP




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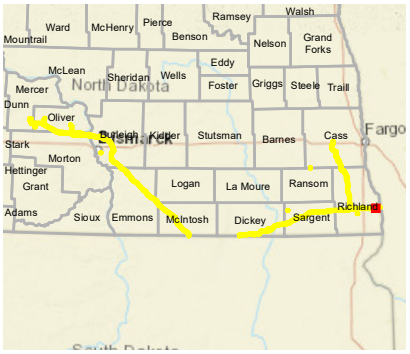


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| 292 of 392 | 2001-22-004<br>Current Revision |

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## NWI MAP




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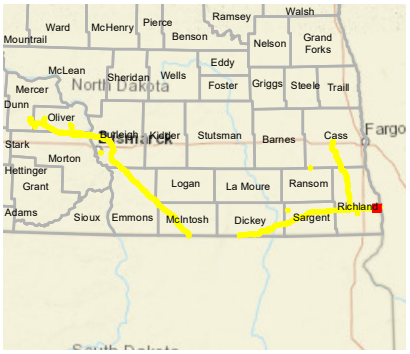


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| Sheet:<br>293 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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## NWI MAP




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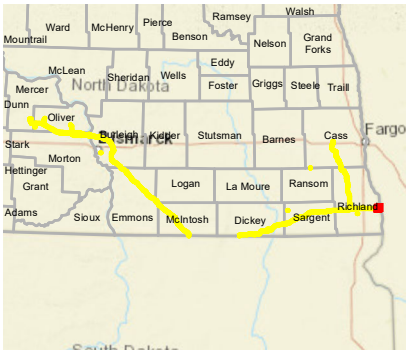


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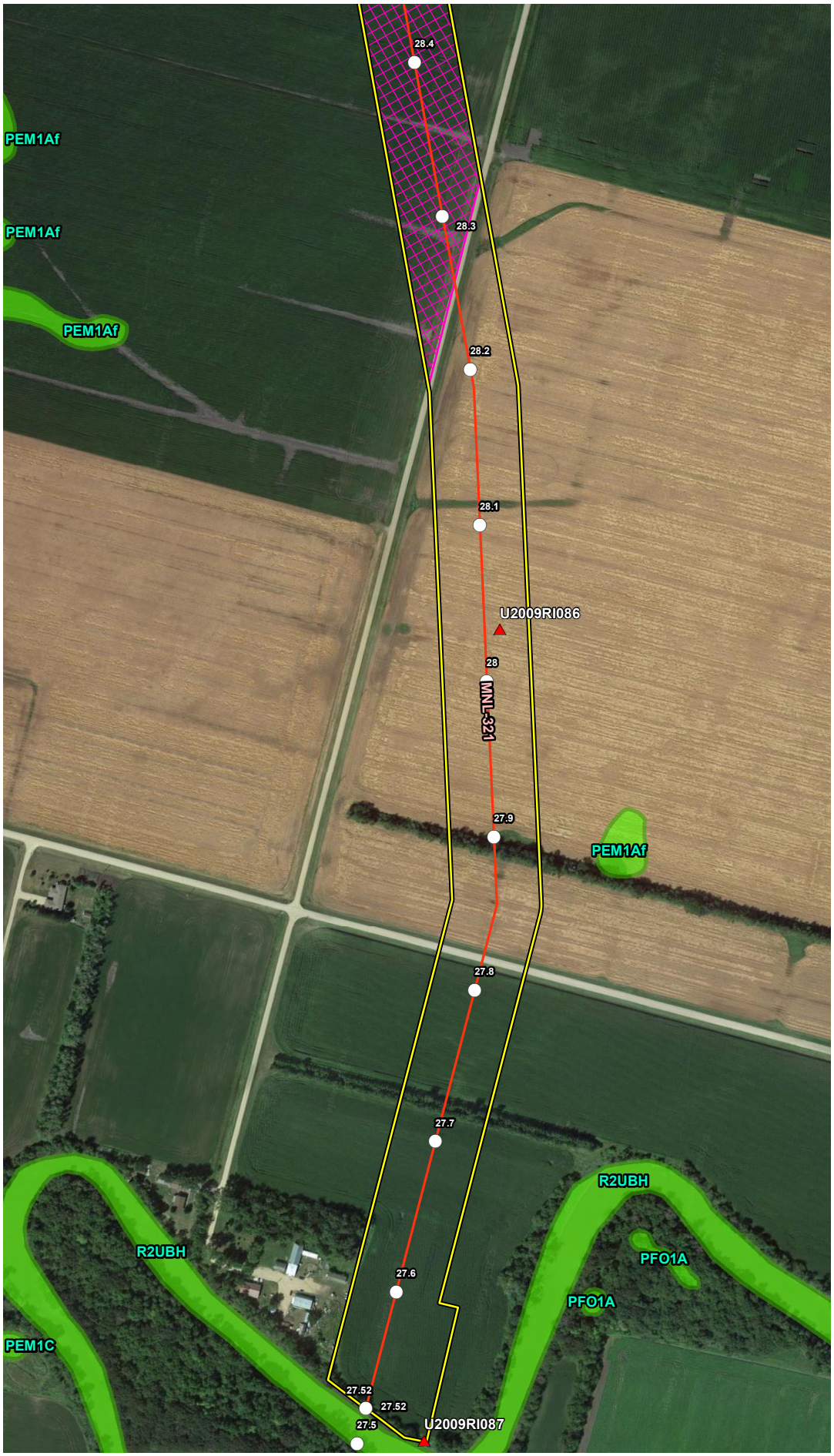


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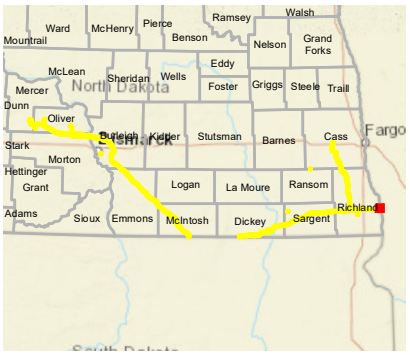


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## NWI MAP




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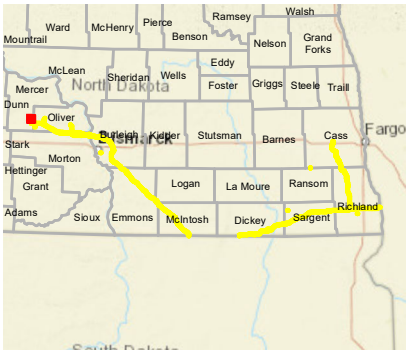


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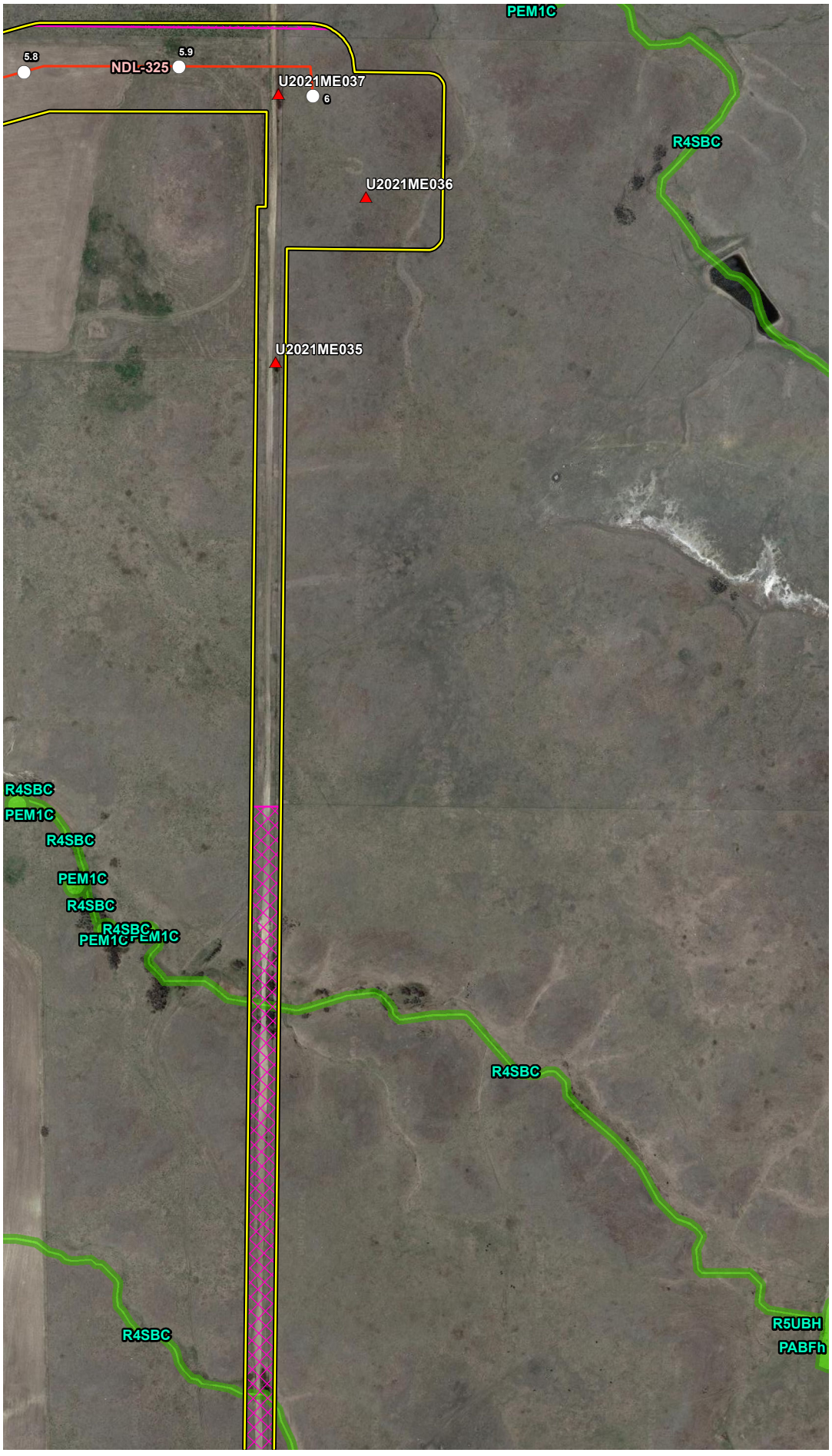
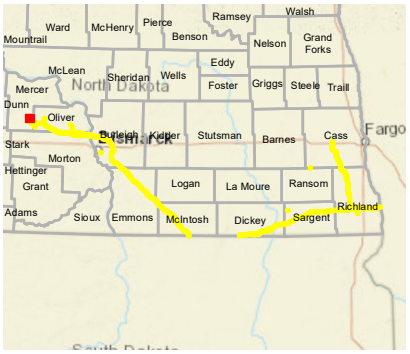



## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |
| 1A - Revision | | |
| Revision description | | |
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**Figure Title:** NWI Map

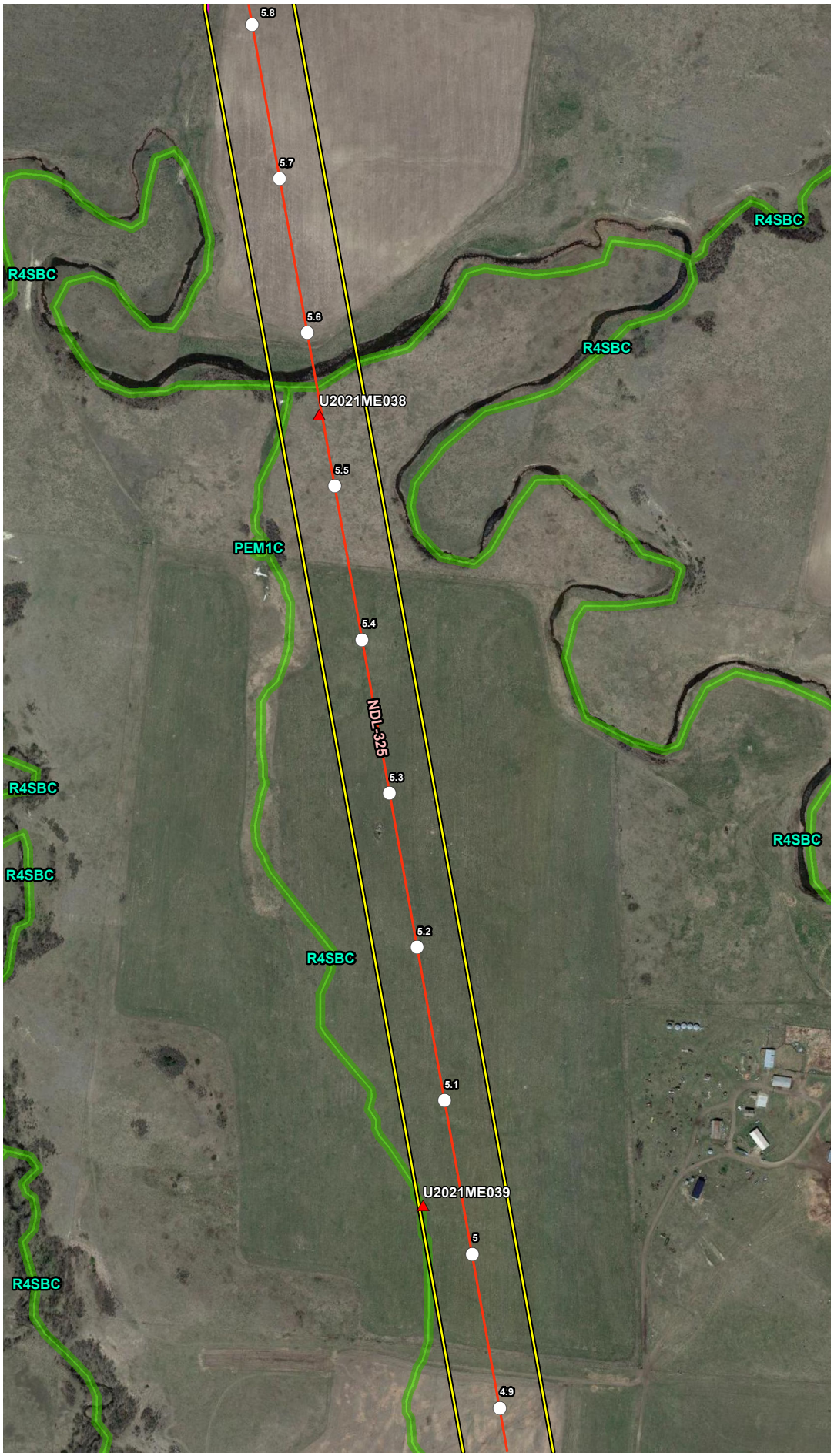
**Figure Number:** Appendix A-4

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 297 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\801_VWR_NDImxds\4_NWI.mxd

## NWI MAP

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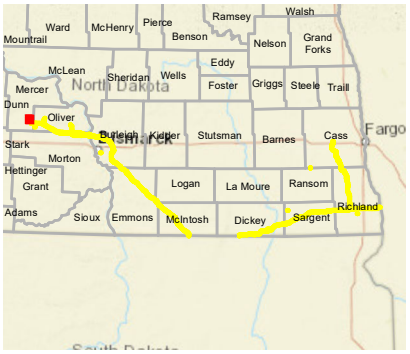


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| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:

NWI Map

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Appendix A-4

| Scale: | Projection: |
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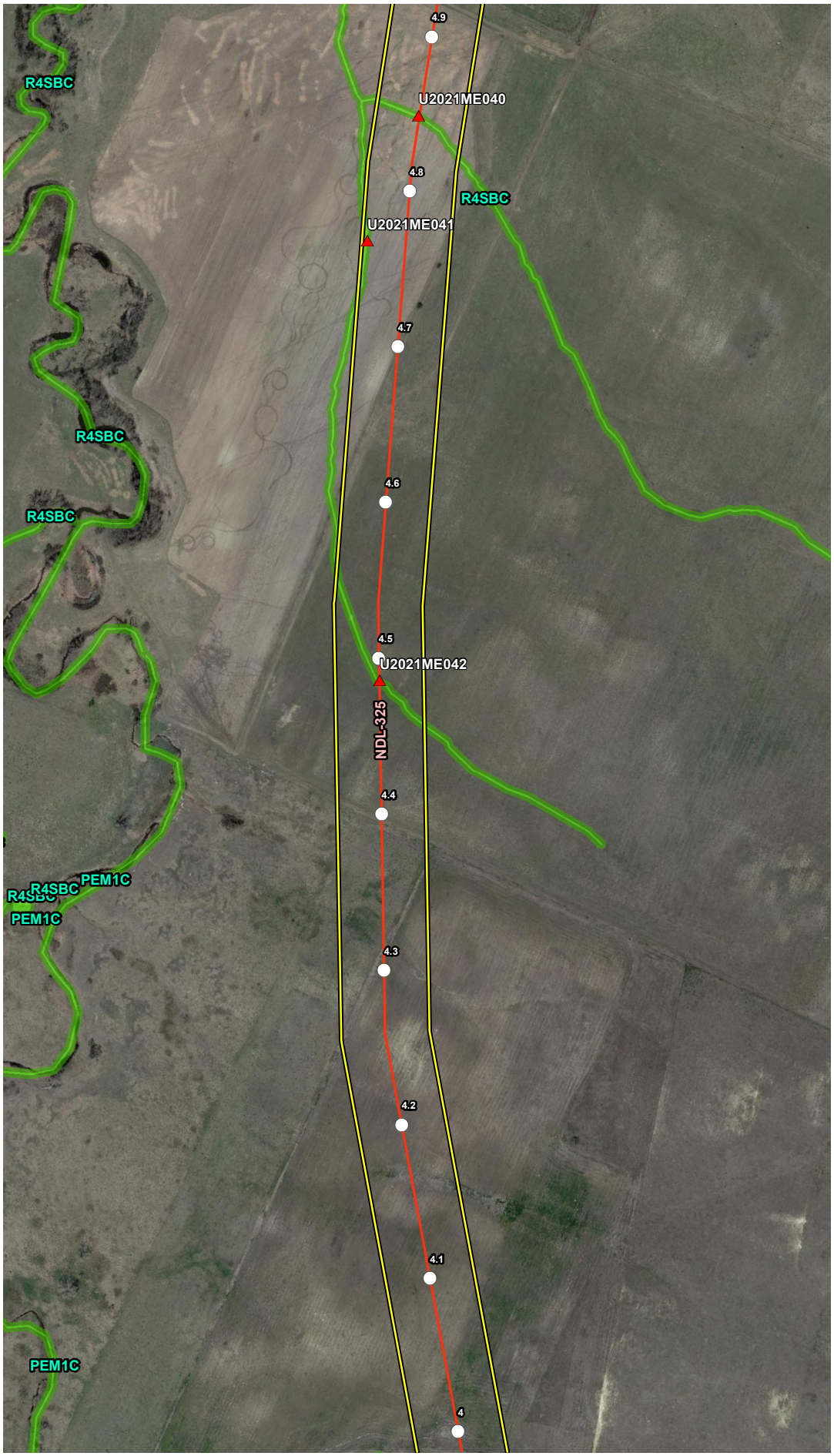
| Sheet: | Drawing Number: |
|---|---|
| 298 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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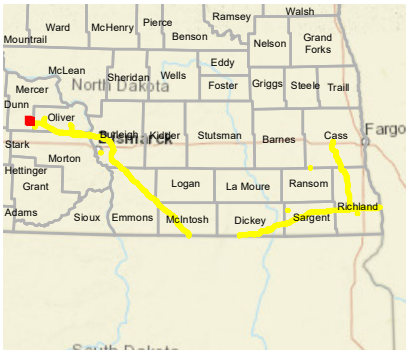


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| 2022-08-04 | MM | AB |
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

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| Scale: | Projection: |
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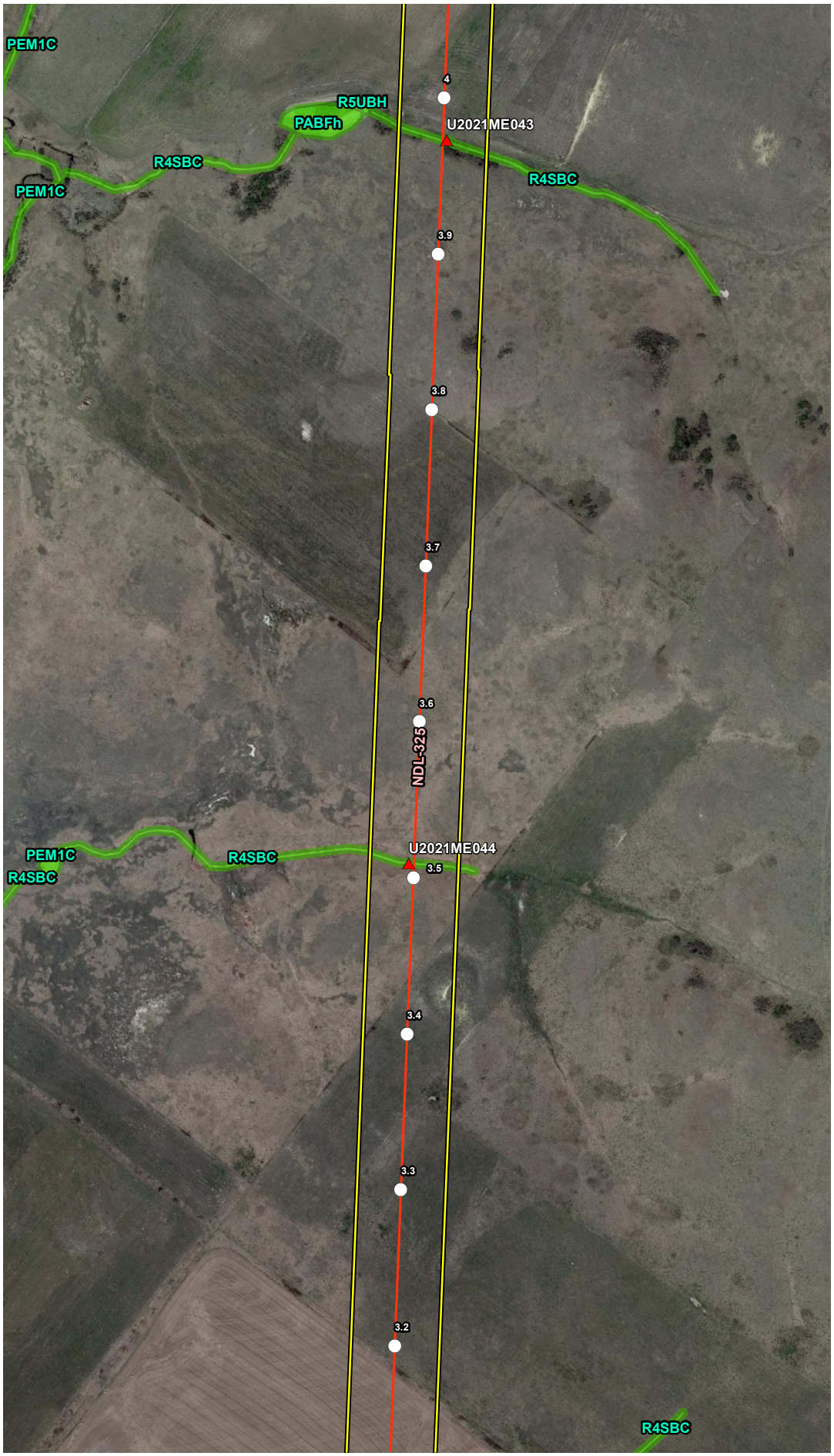
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 299 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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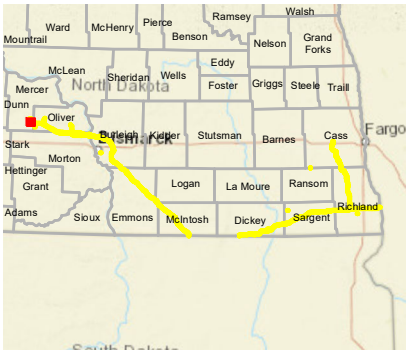


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|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 300 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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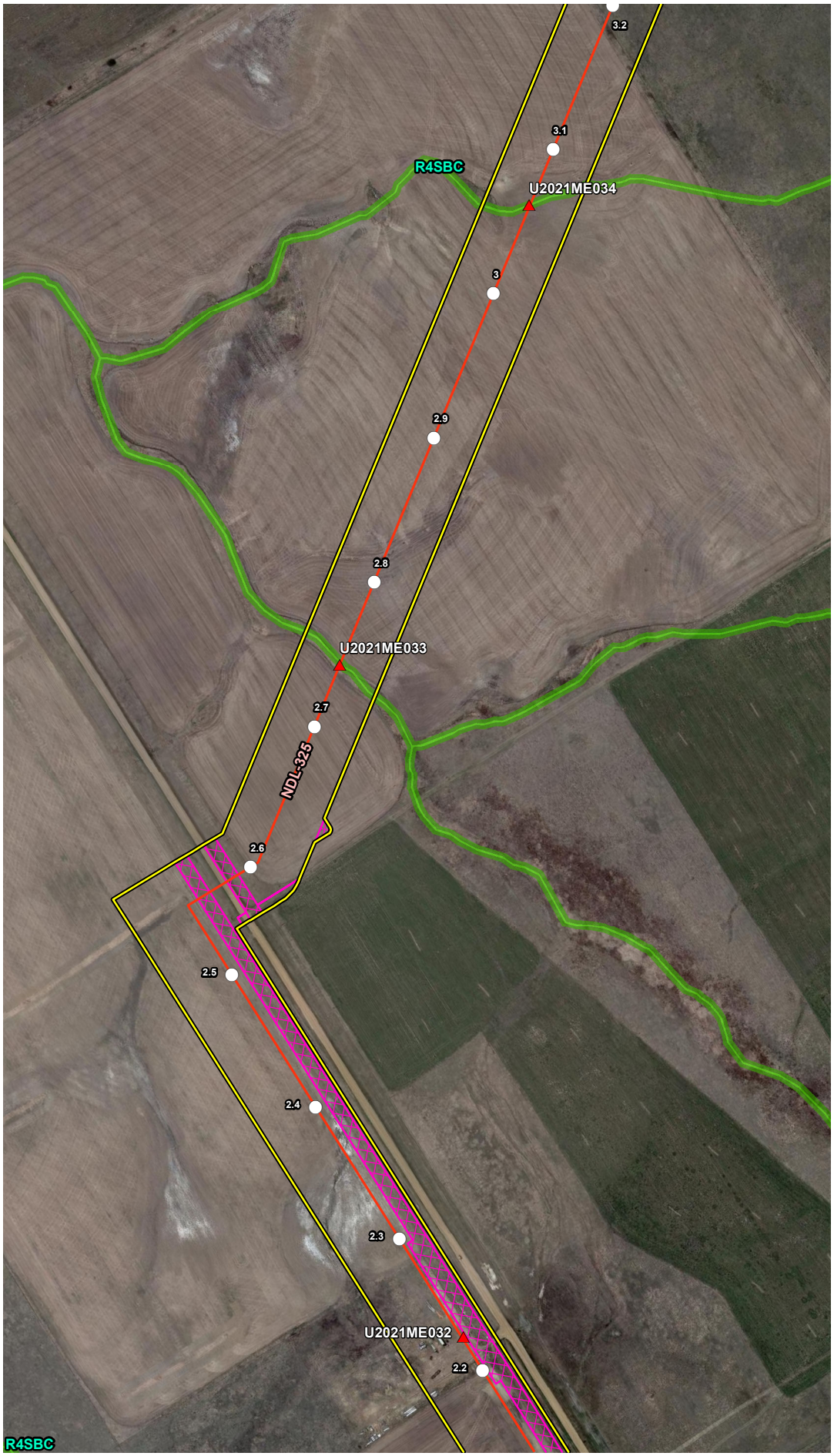
## NWI MAP

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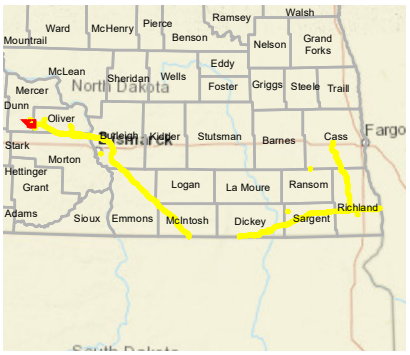


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| 2022-08-04 | MM | AB |

**1A - Revision**

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| Date: | Revised by: | Checked by: |
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**Figure Title:**

NWI Map

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 301 of 392 | 2001-22-004<br>Current Revision |

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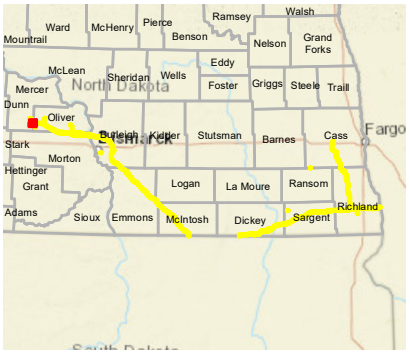
## NWI MAP




## VICINITY MAP

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0 250 500 Feet

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|---|---|---|
| 2022-08-04 | MM | AB |
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| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
302 of 392

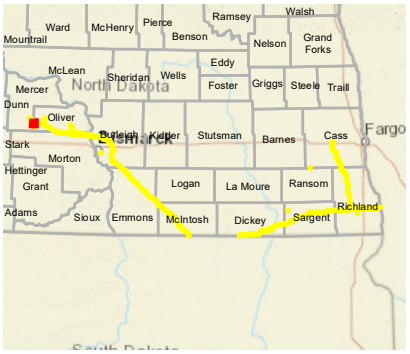
Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Figure Number:

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 303 of 392 | 2001-22-004<br>Current Revision |

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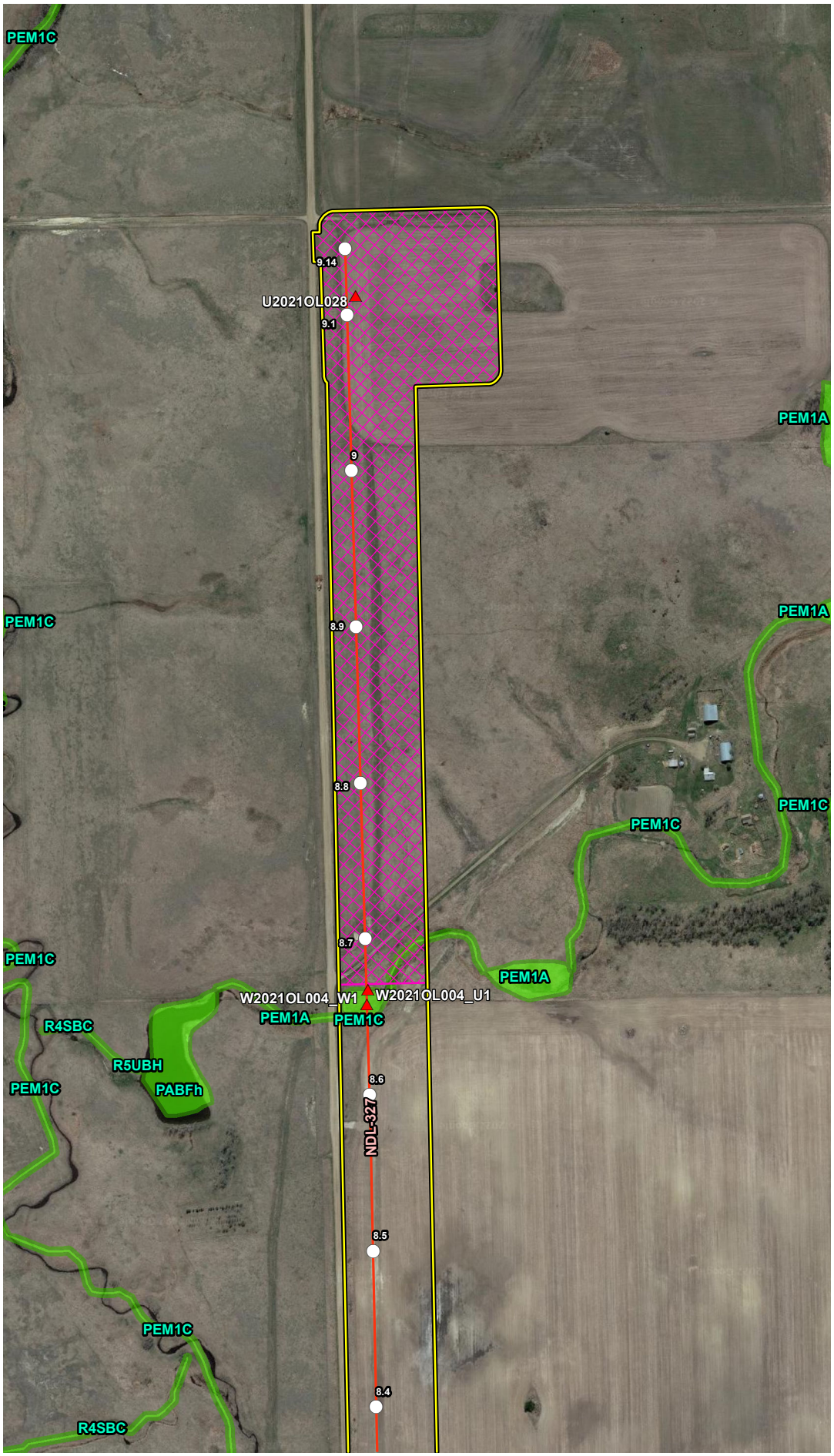
## NWI MAP

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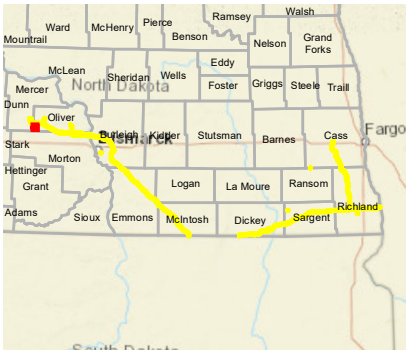


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| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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| Date | Revised by | Checked by |
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NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 304 of 392 | 2001-22-004<br>Current Revision |

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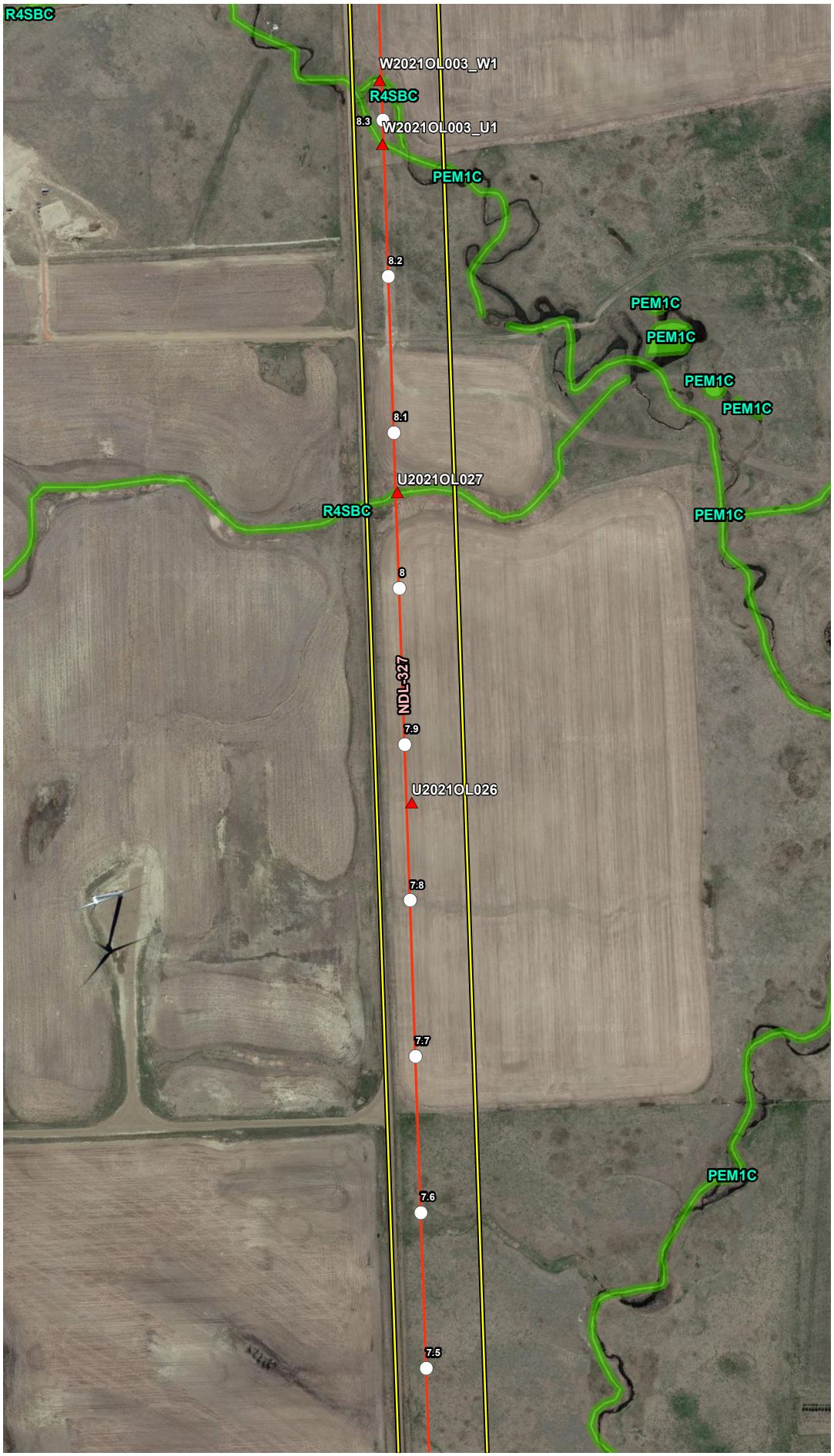
## NWI MAP

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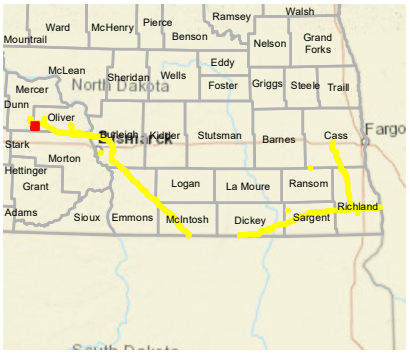


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## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
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| Sheet: 305 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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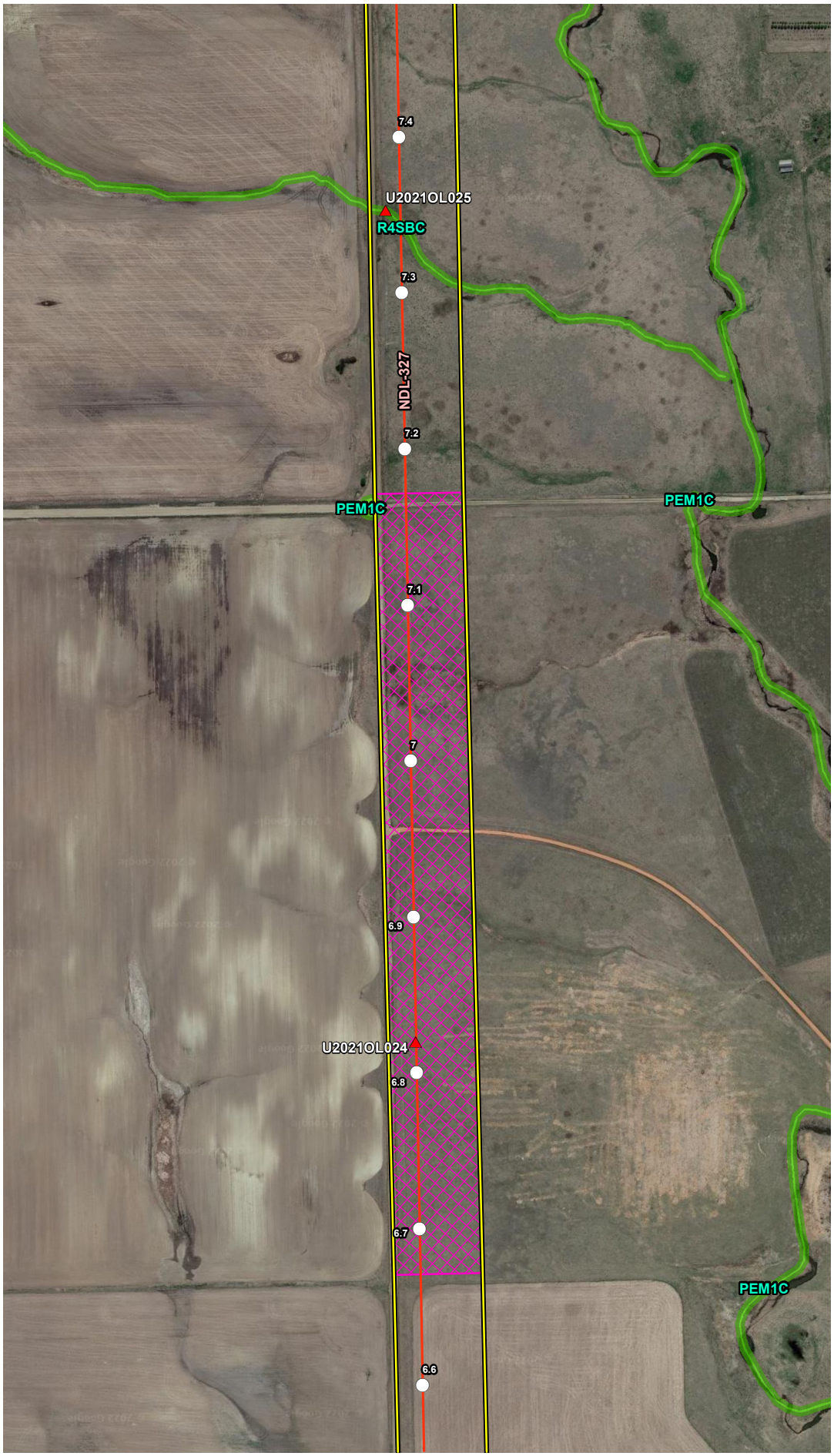
## NWI MAP

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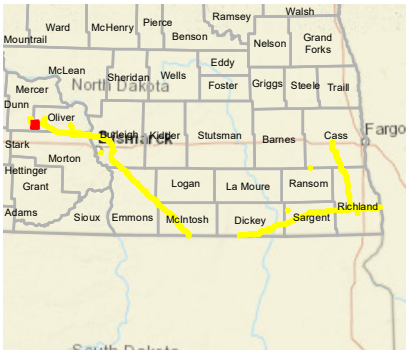


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| Sheet: | Drawing Number: |
|---|---|
| 306 of 392 | 2001-22-004<br>Current Revision |

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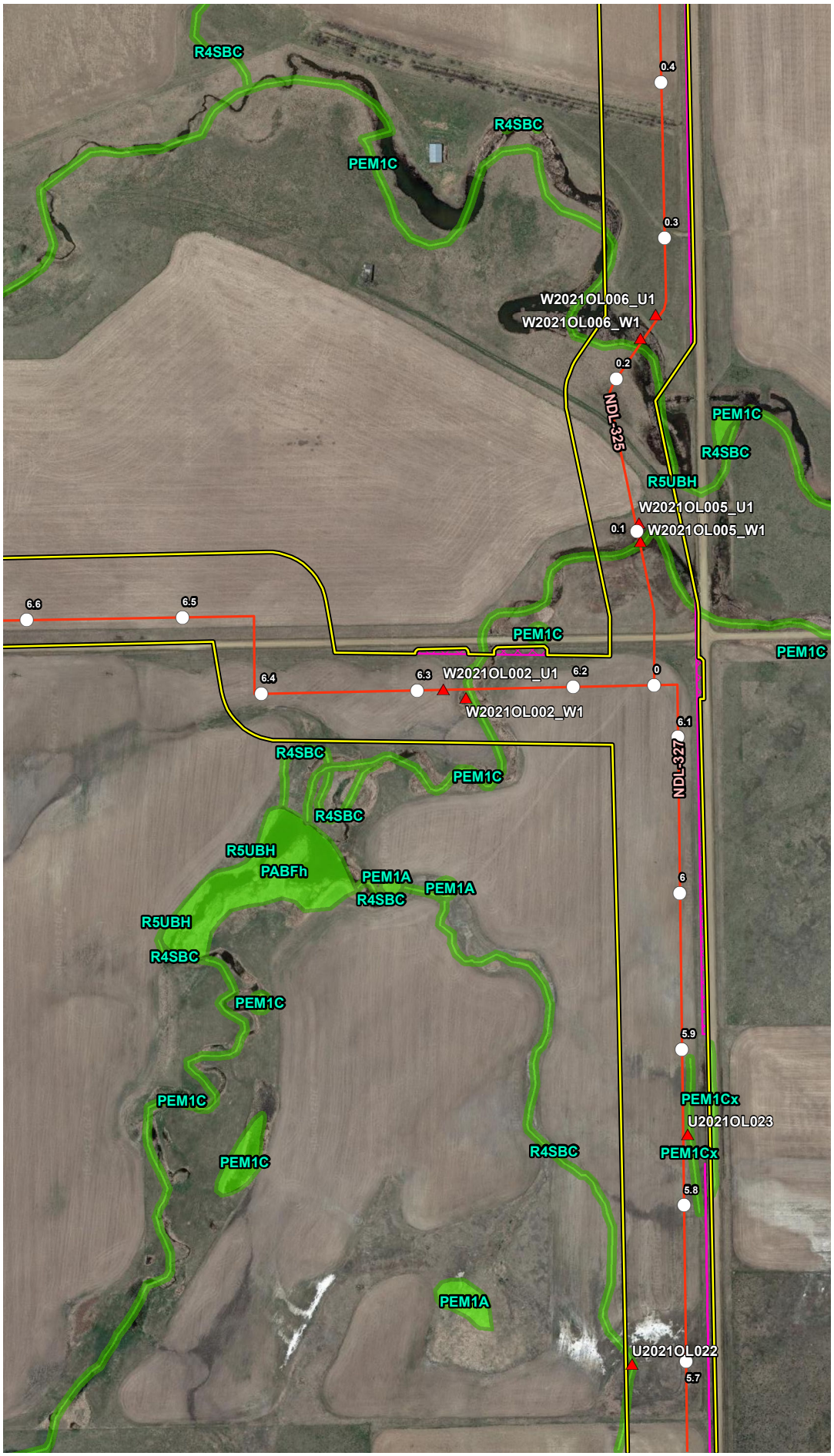
## NWI MAP

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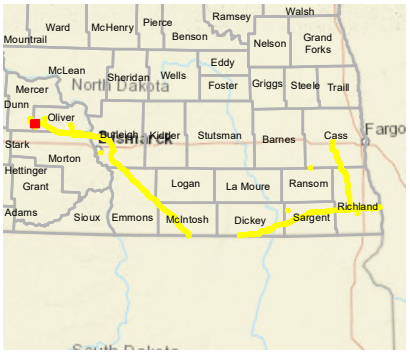


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| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Appendix A-4

| Scale: | Projection: |
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| Sheet: 307 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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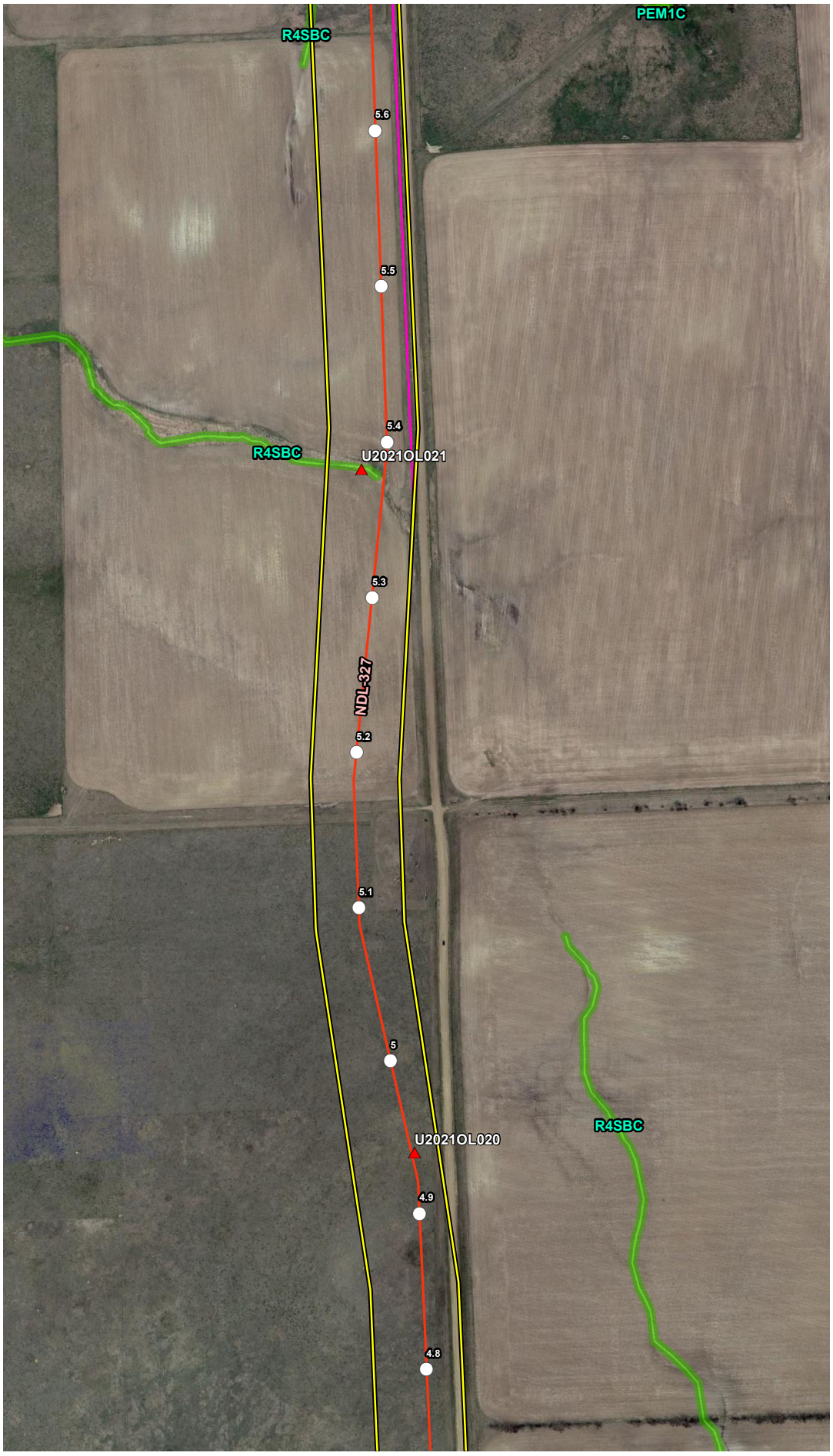
## NWI MAP

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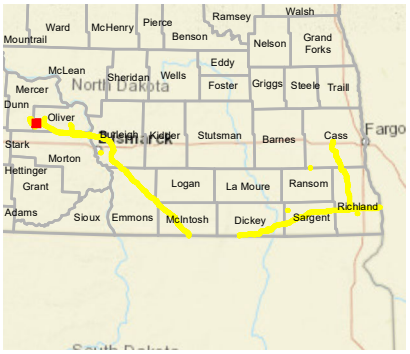


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0 250 500
Feet

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| Date | Revised by | Checked by |
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**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
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NWI Map

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Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 308 of 392 | 2001-22-004<br>Current Revision |

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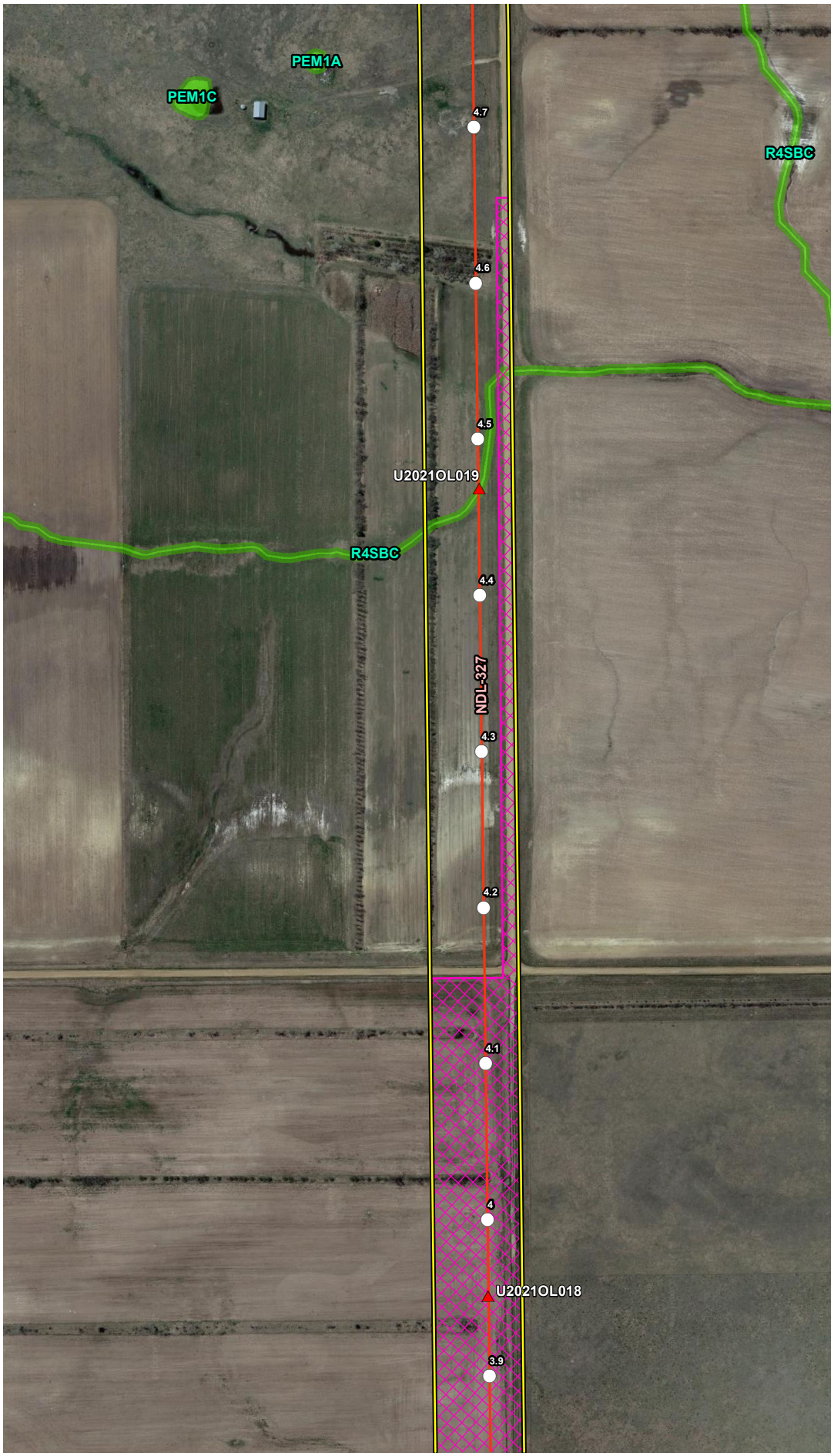
## NWI MAP

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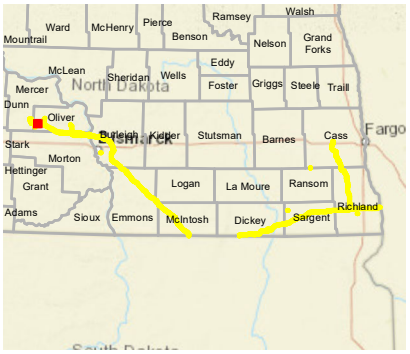


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**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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NWI Map

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Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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|---|---|
| 309 of 392 | 2001-22-004<br>Current Revision |

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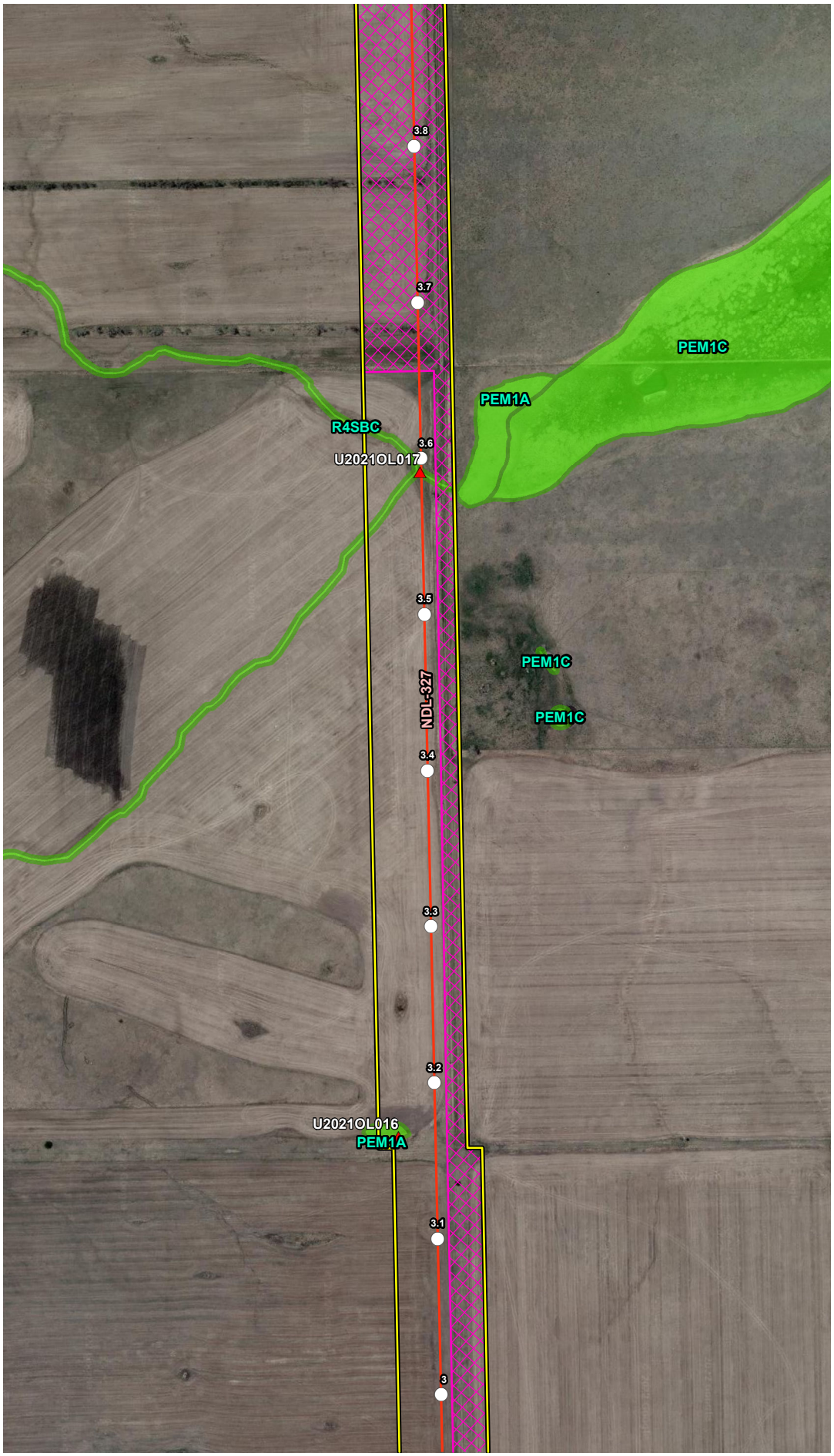
## NWI MAP

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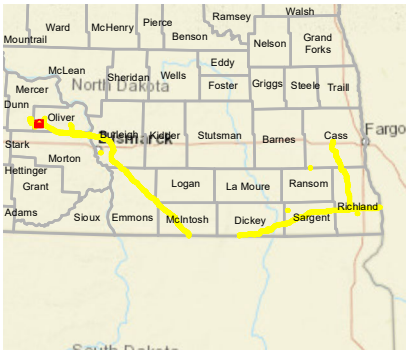


## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
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**Figure Title:**

NWI Map

**Figure Number:**

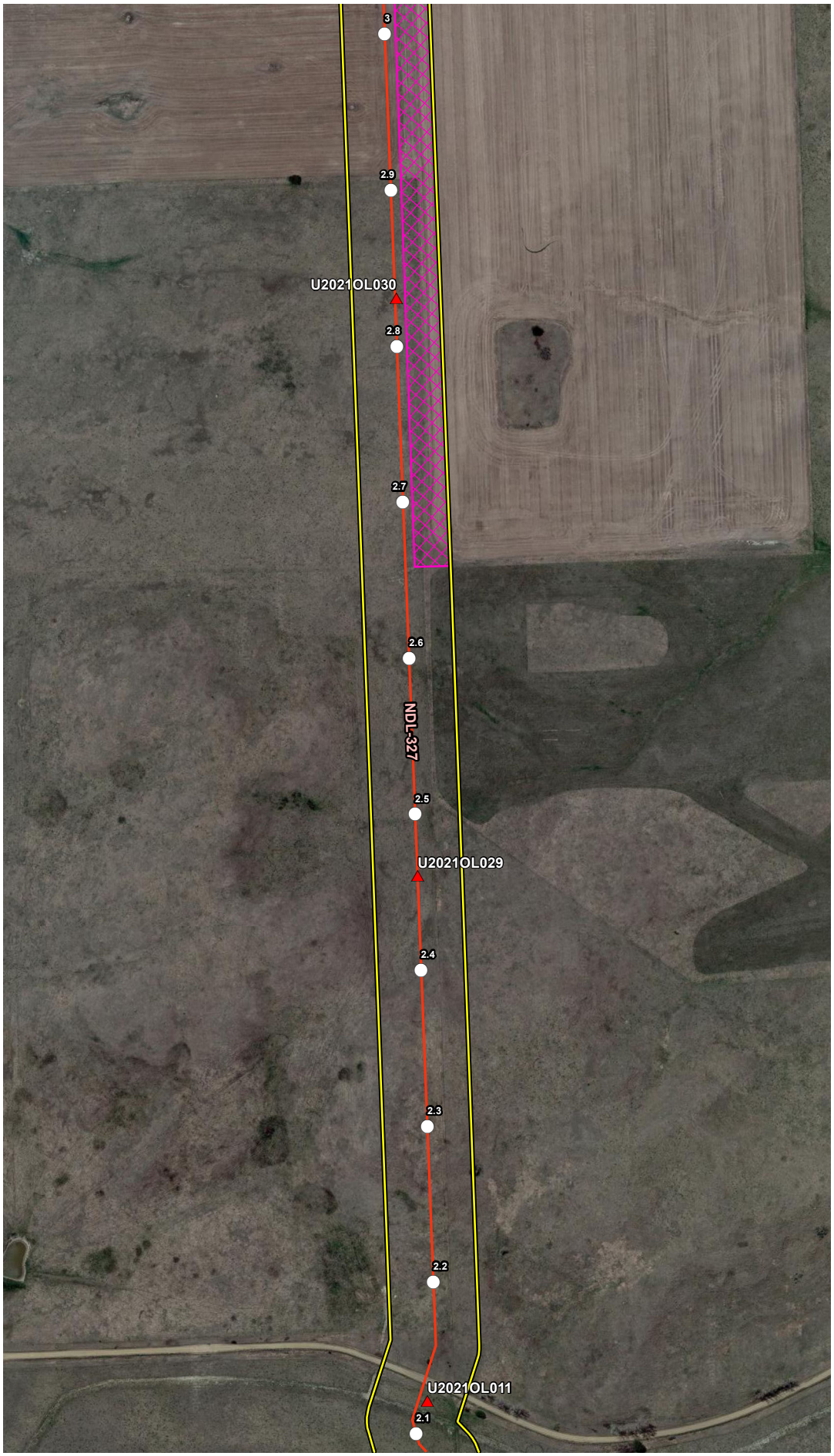
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 310 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\WR\2022\901_WR_NDI\mxds\4_NWI.mxd

## NWI MAP

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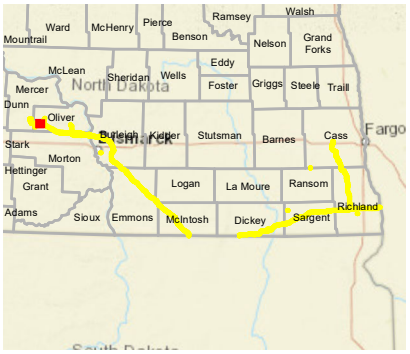


## LEGEND

- Milepost
- Soil Station
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

| Scale: | Projection: |
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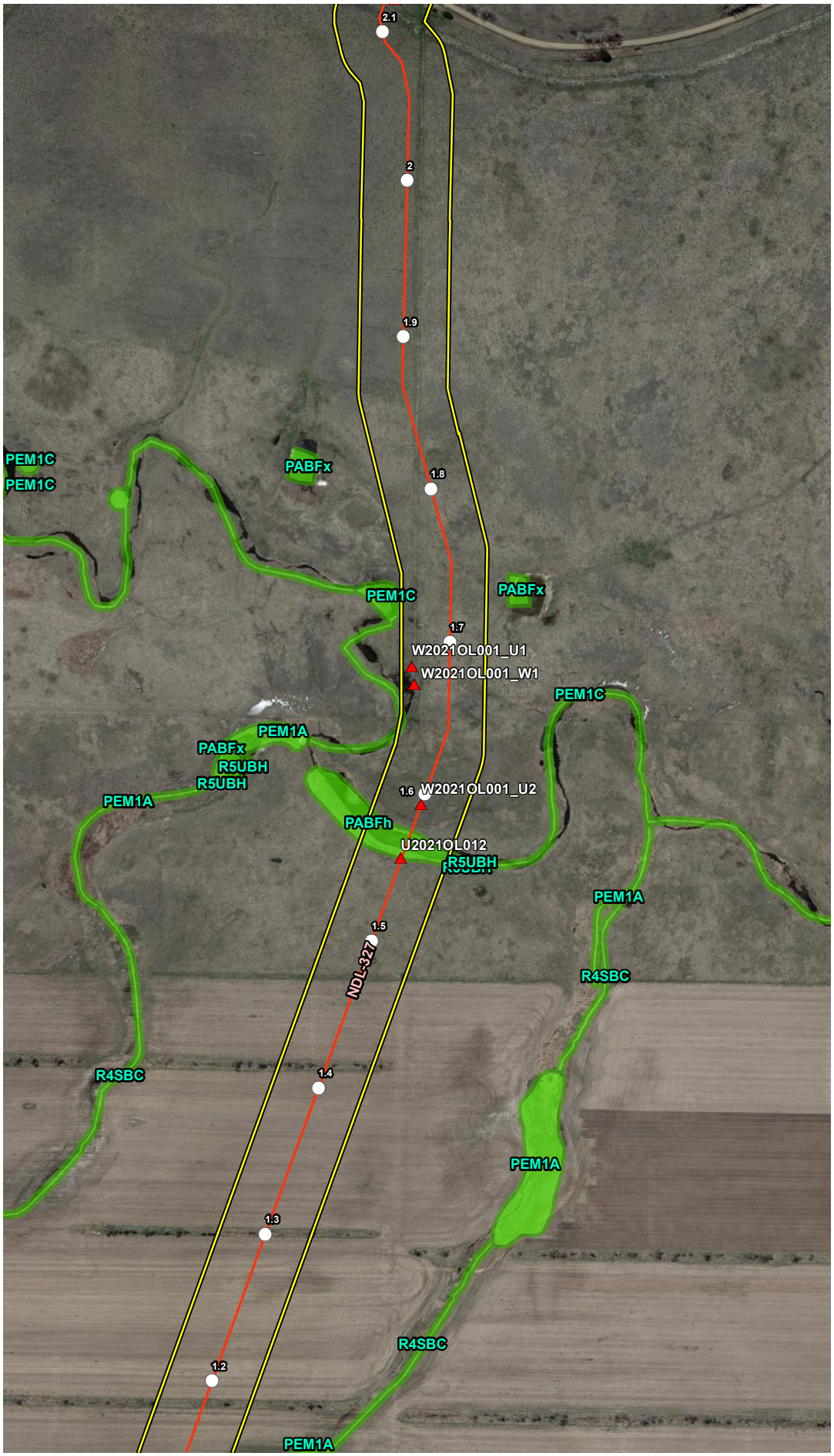
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 311 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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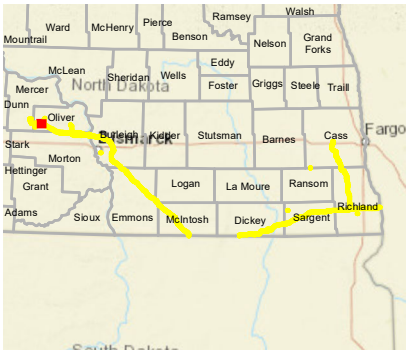


## LEGEND

- Milepost
- Soil Station
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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
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Figure Title:

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Figure Number:

Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 312 of 392 | 2001-22-004<br>Current Revision |

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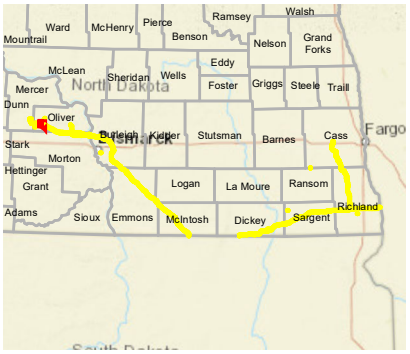
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 313 of 392 | 2001-22-004<br>Current Revision |

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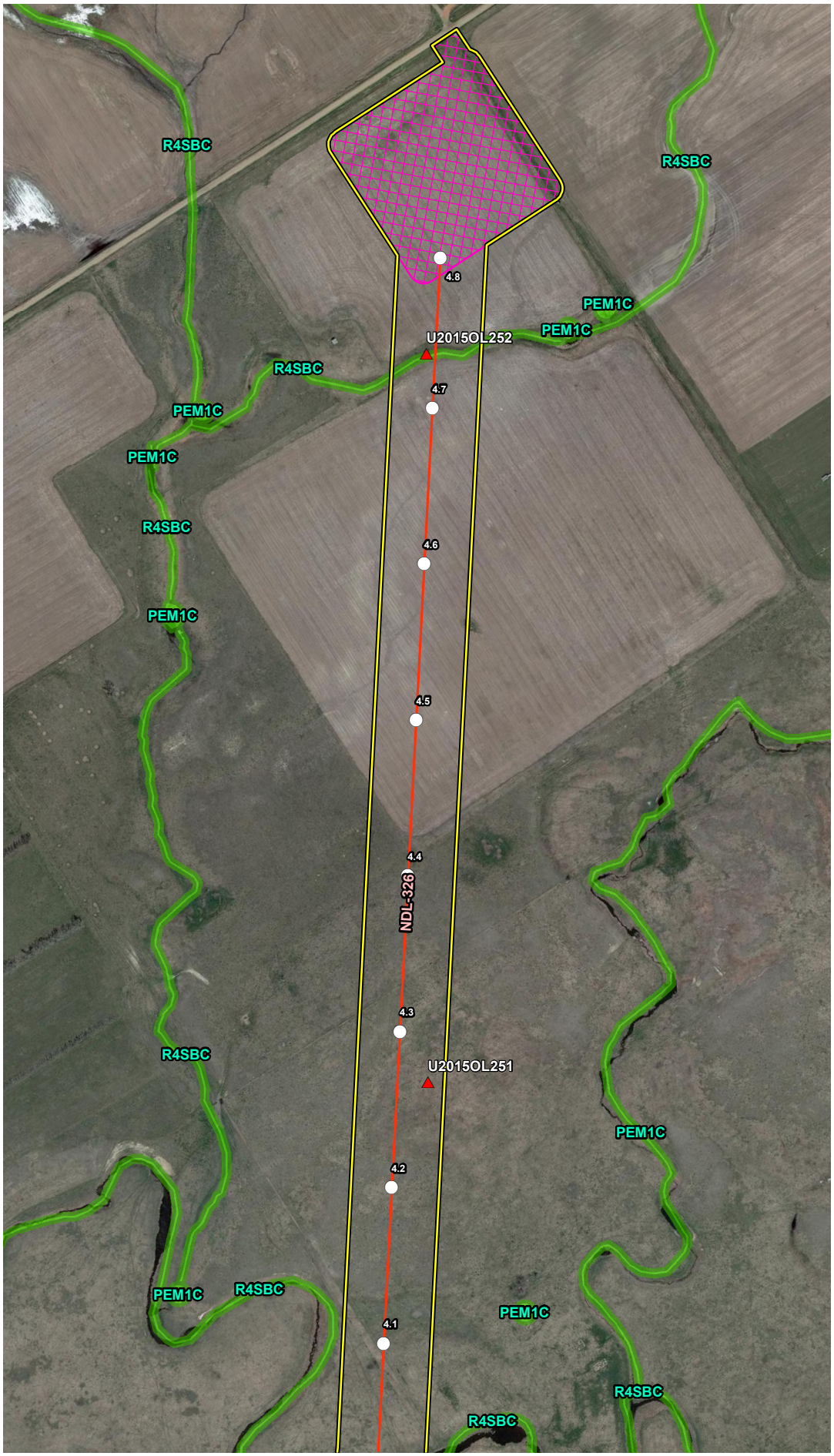
## NWI MAP

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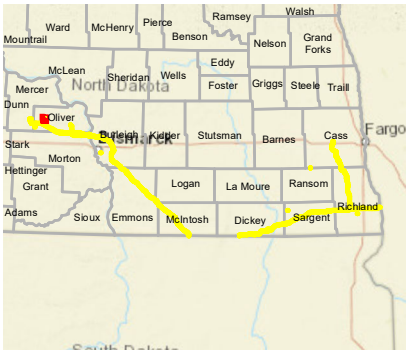


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
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| Date | Revised by | Checked by |
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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 314 of 392 | 2001-22-004<br>Current Revision |

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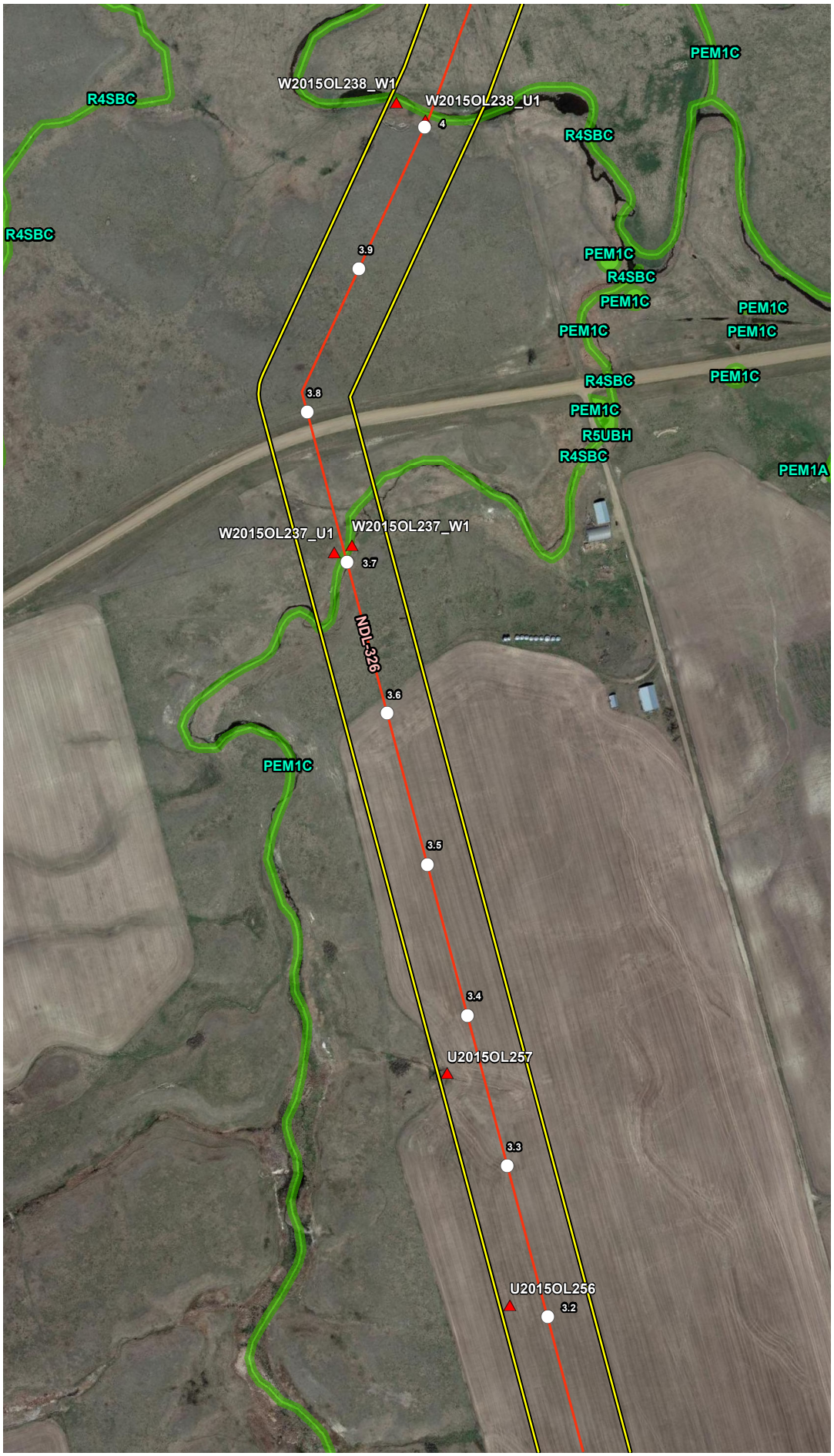
## NWI MAP

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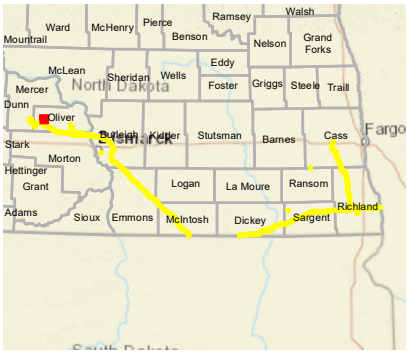


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
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Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 315 of 392 | 2001-22-004<br>Current Revision |

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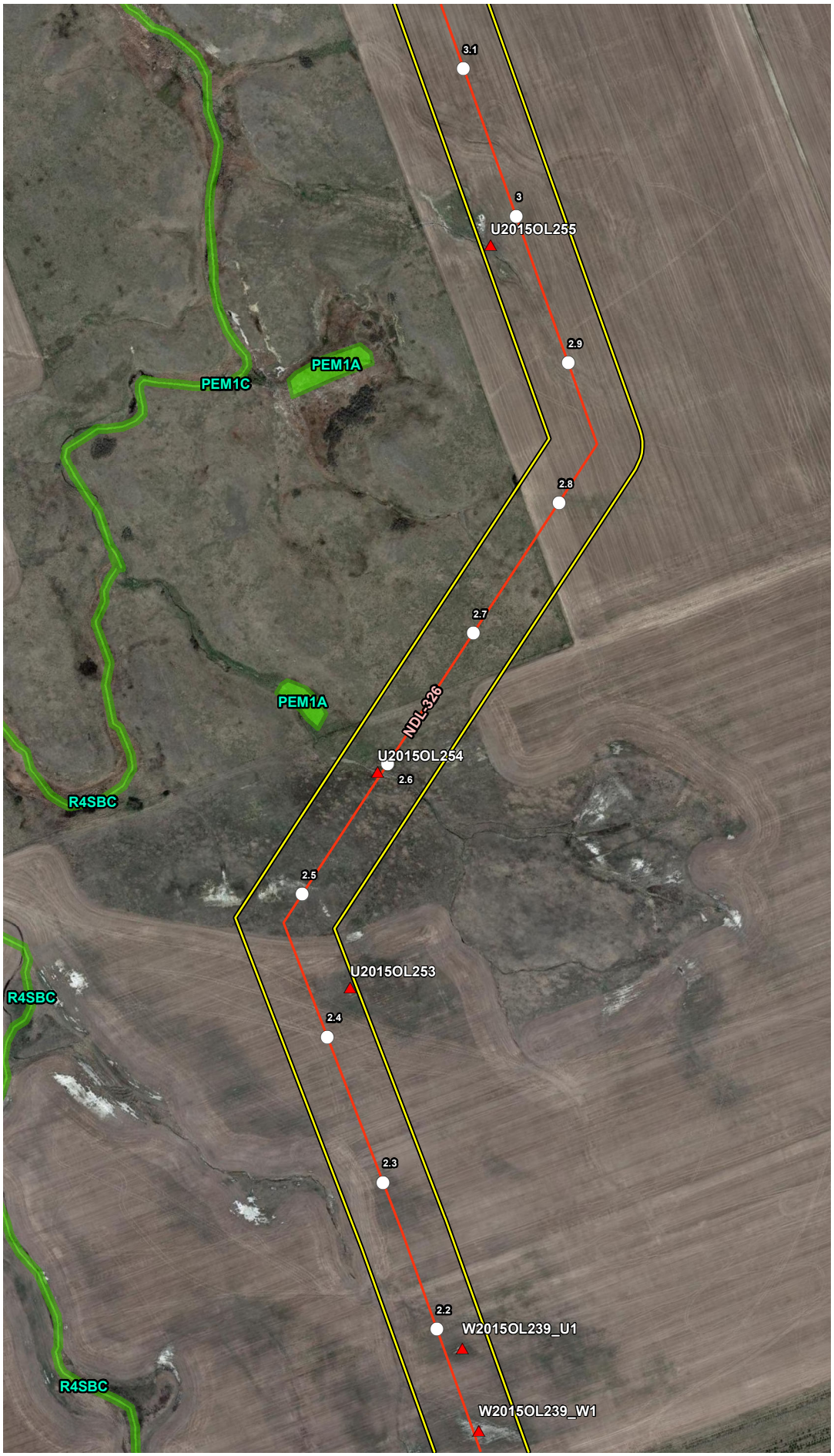
## NWI MAP

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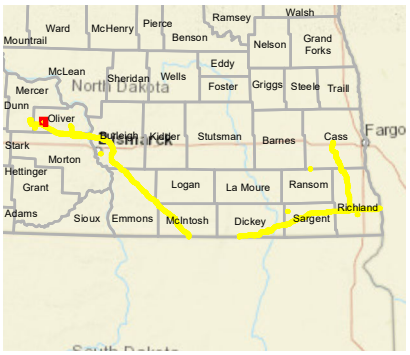


## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 316 of 392 | 2001-22-004<br>Current Revision |

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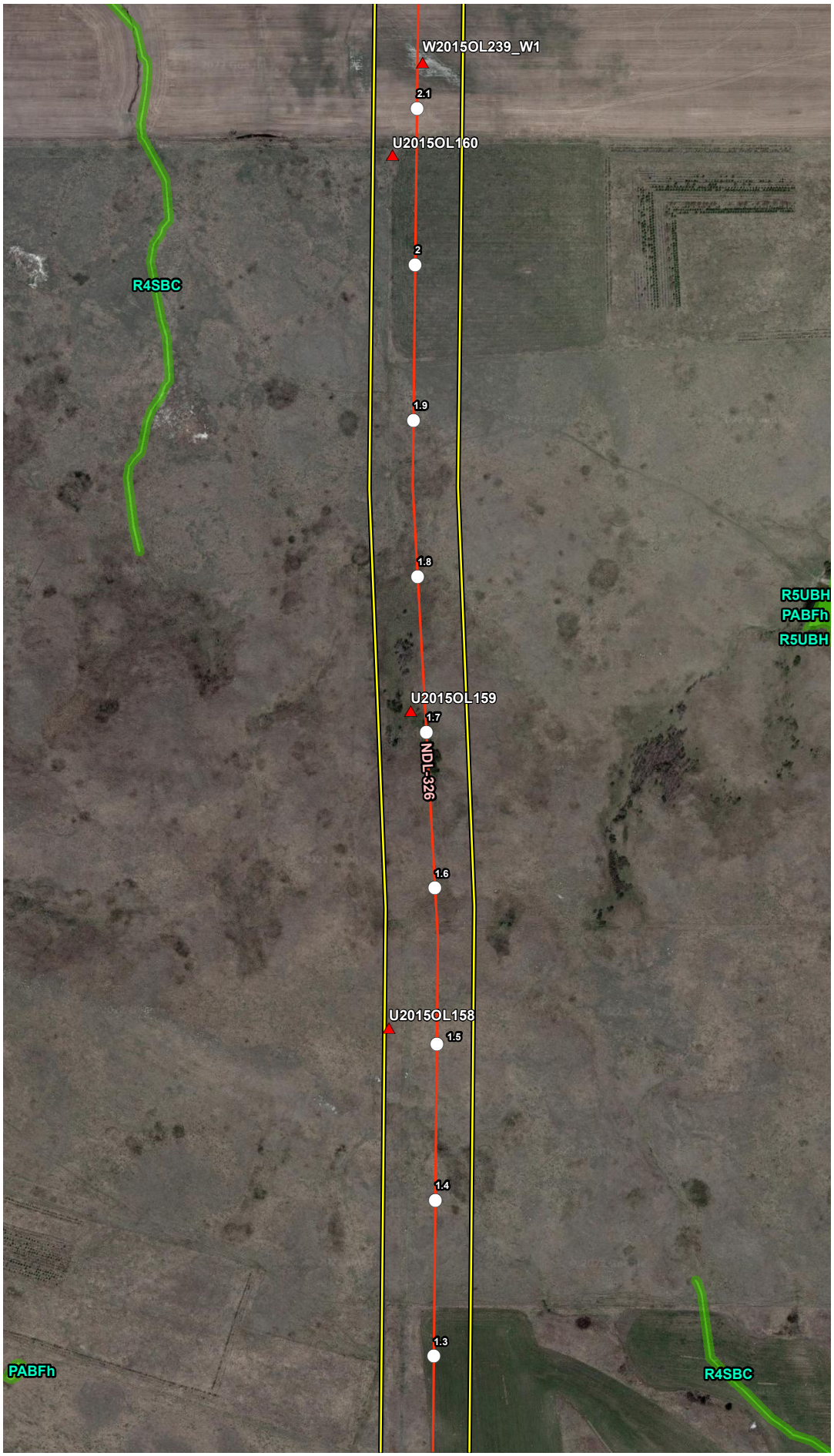
## NWI MAP

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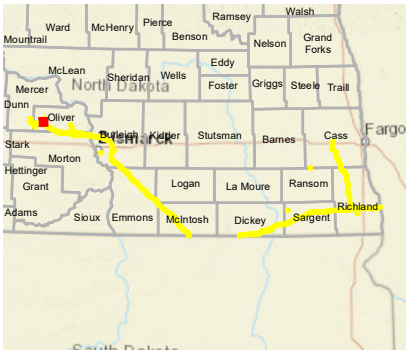


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0 250 500 Feet

## REVISIONS

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|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 317 of 392 | 2001-22-004<br>Current Revision |

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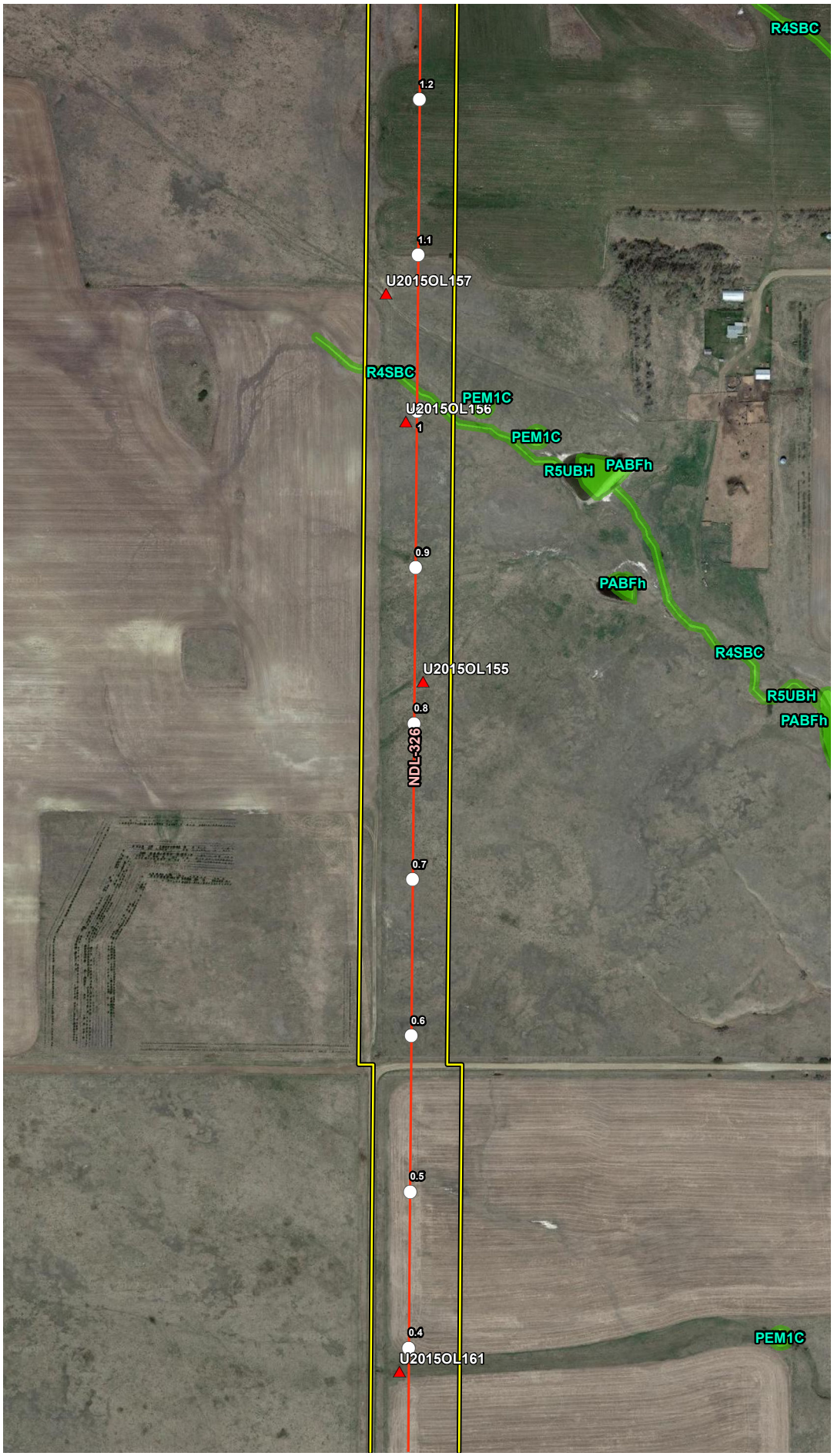
## NWI MAP

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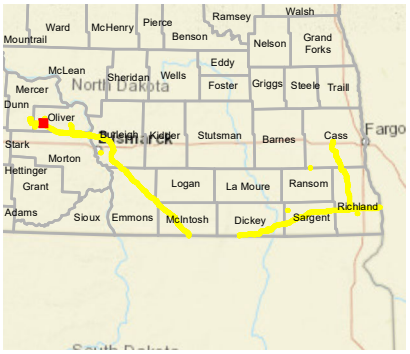


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 318 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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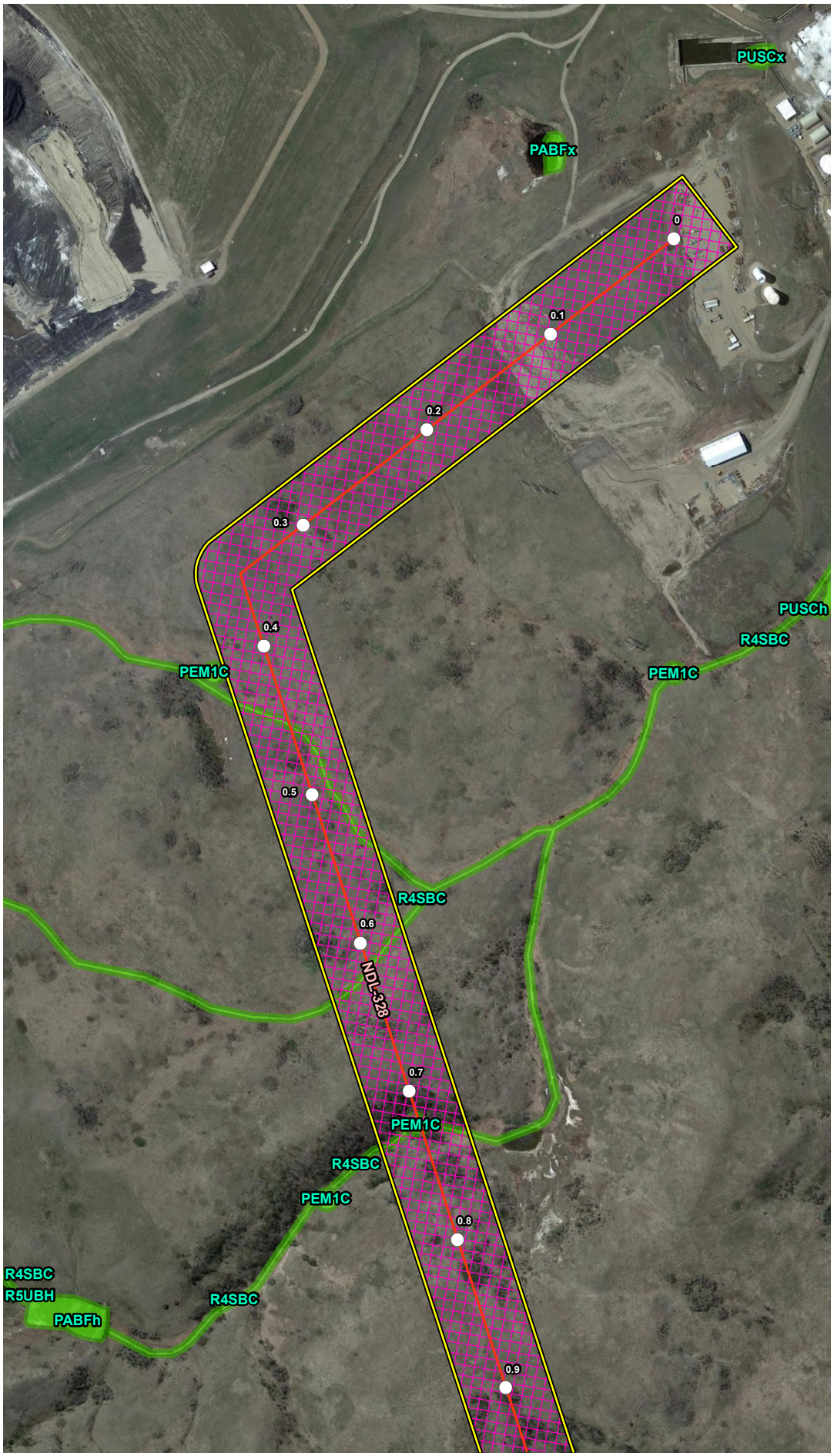
## NWI MAP

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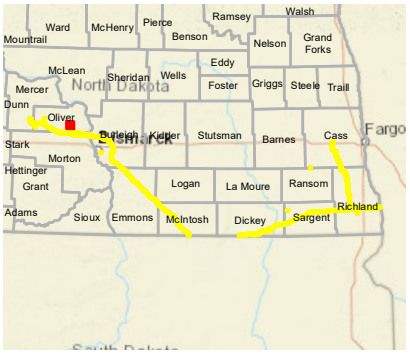


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|---|---|---|
| 2022-08-04 | MM | AB |

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NWI Map

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Appendix A-4

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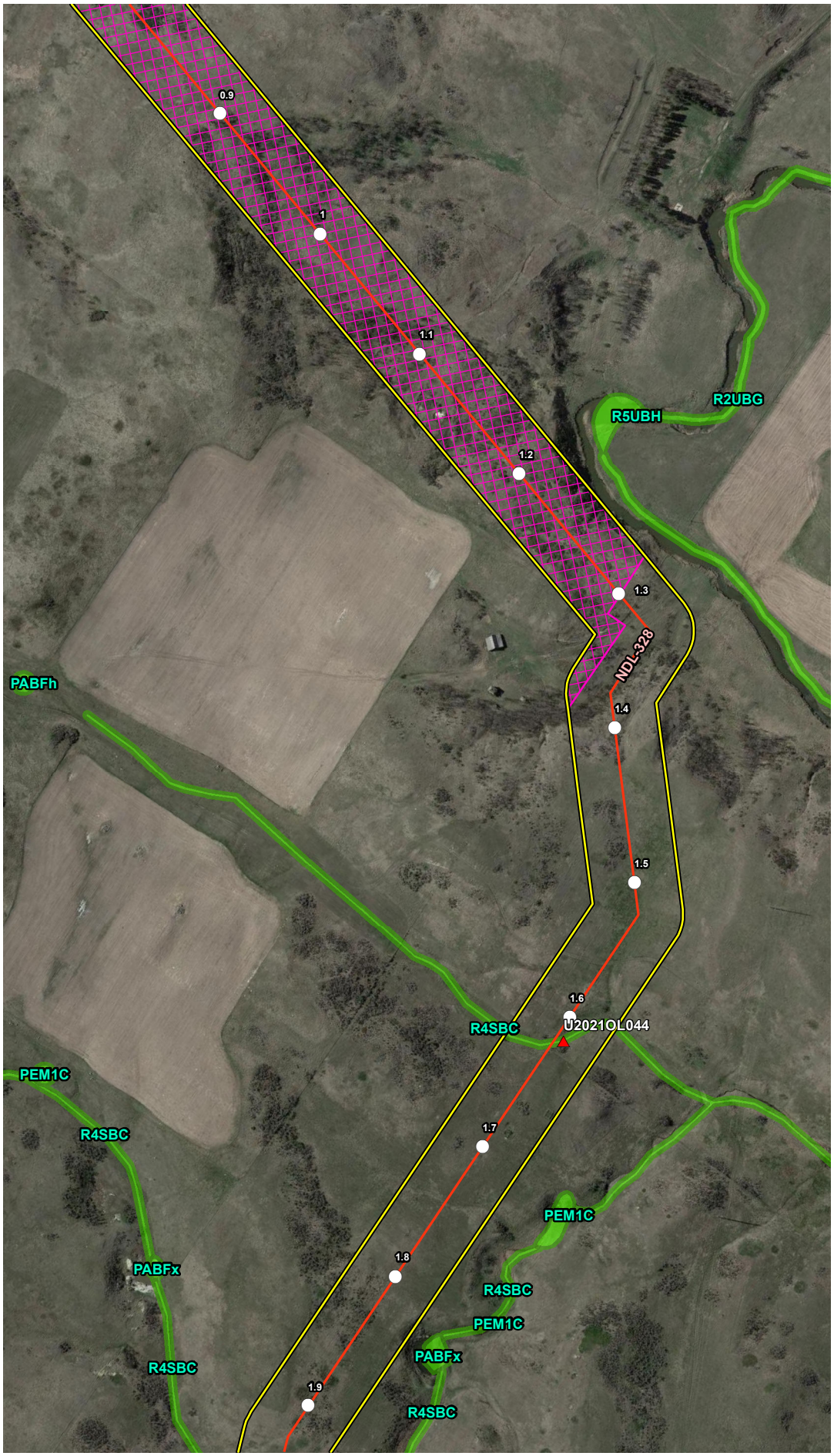
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 319 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDImxds14_NWI.mxd

## NWI MAP

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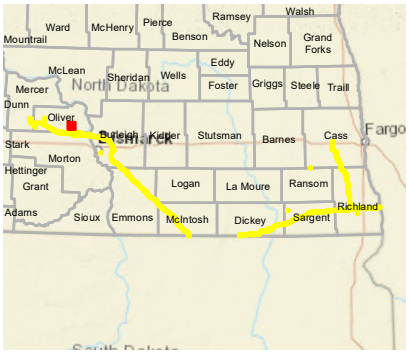


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| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |

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Figure Title:
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 320 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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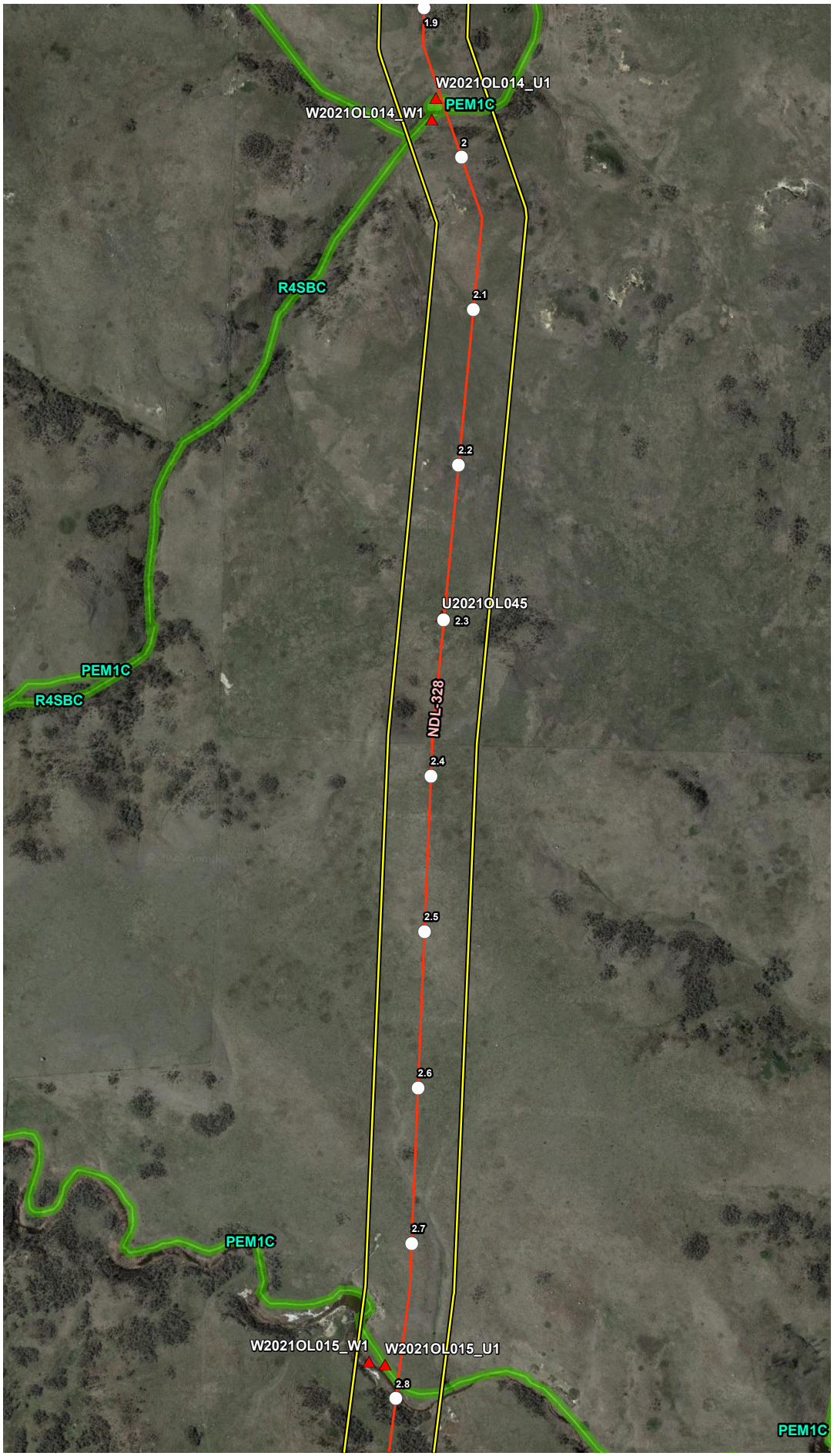
## NWI MAP

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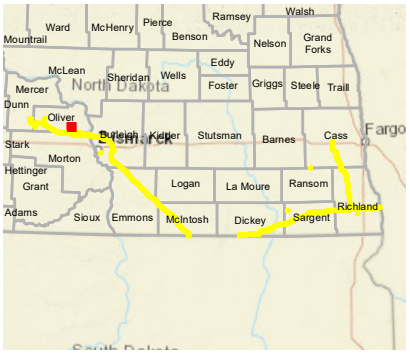


## LEGEND

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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NWI Map

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Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 321 of 392 | 2001-22-004<br>Current Revision |

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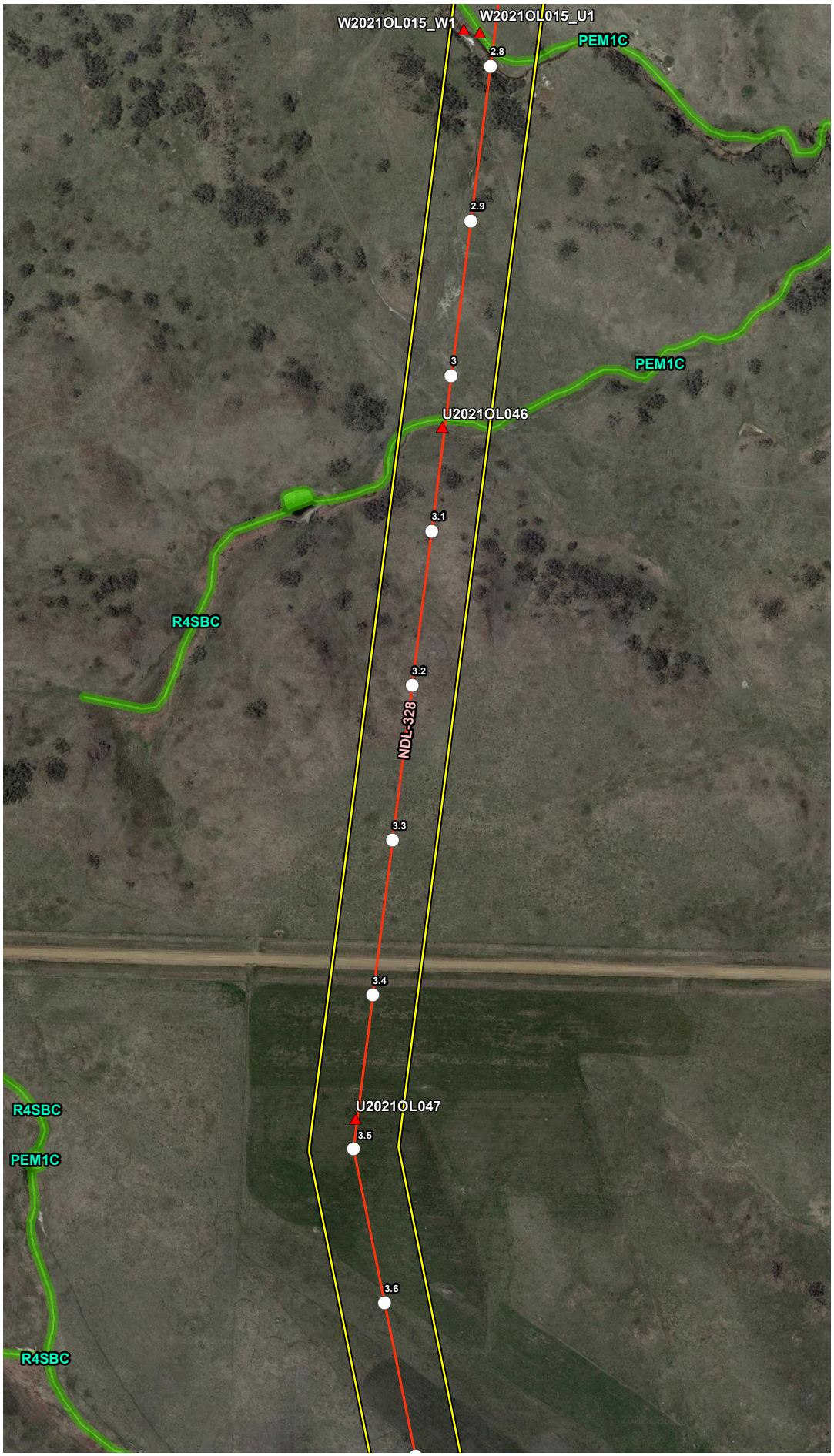
## NWI MAP

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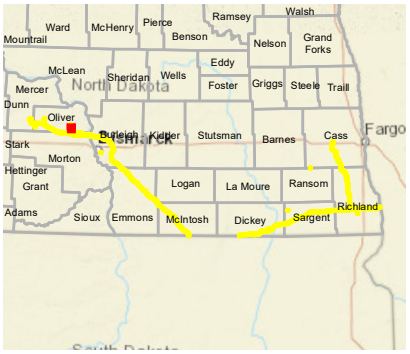


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- NWI Wetland
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
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**Figure Title:**
NWI Map

**Figure Number:**
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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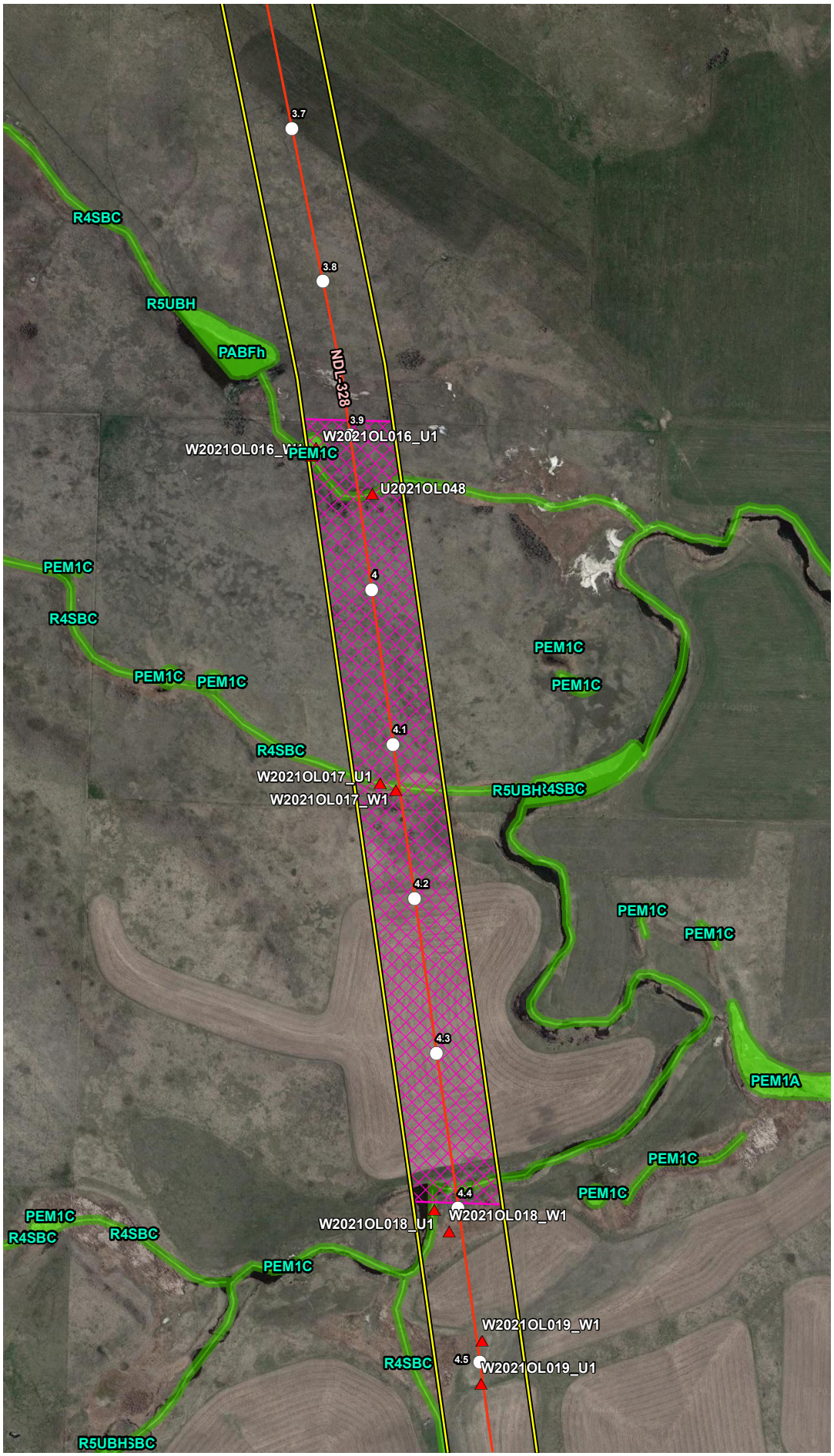
| 322 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV\VWR\2022\901_VWR_NDImxds\4_NWI.mxd

## NWI MAP

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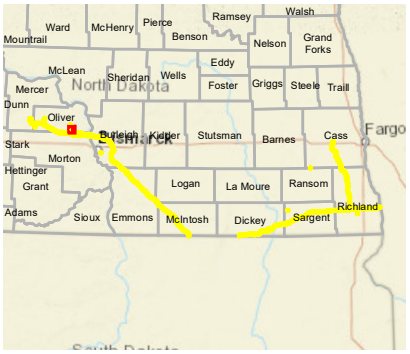


## LEGEND

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| 2022-08-04 | MM | AB |

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|---|---|
| 323 of 392 | 2001-22-004<br>Current Revision |

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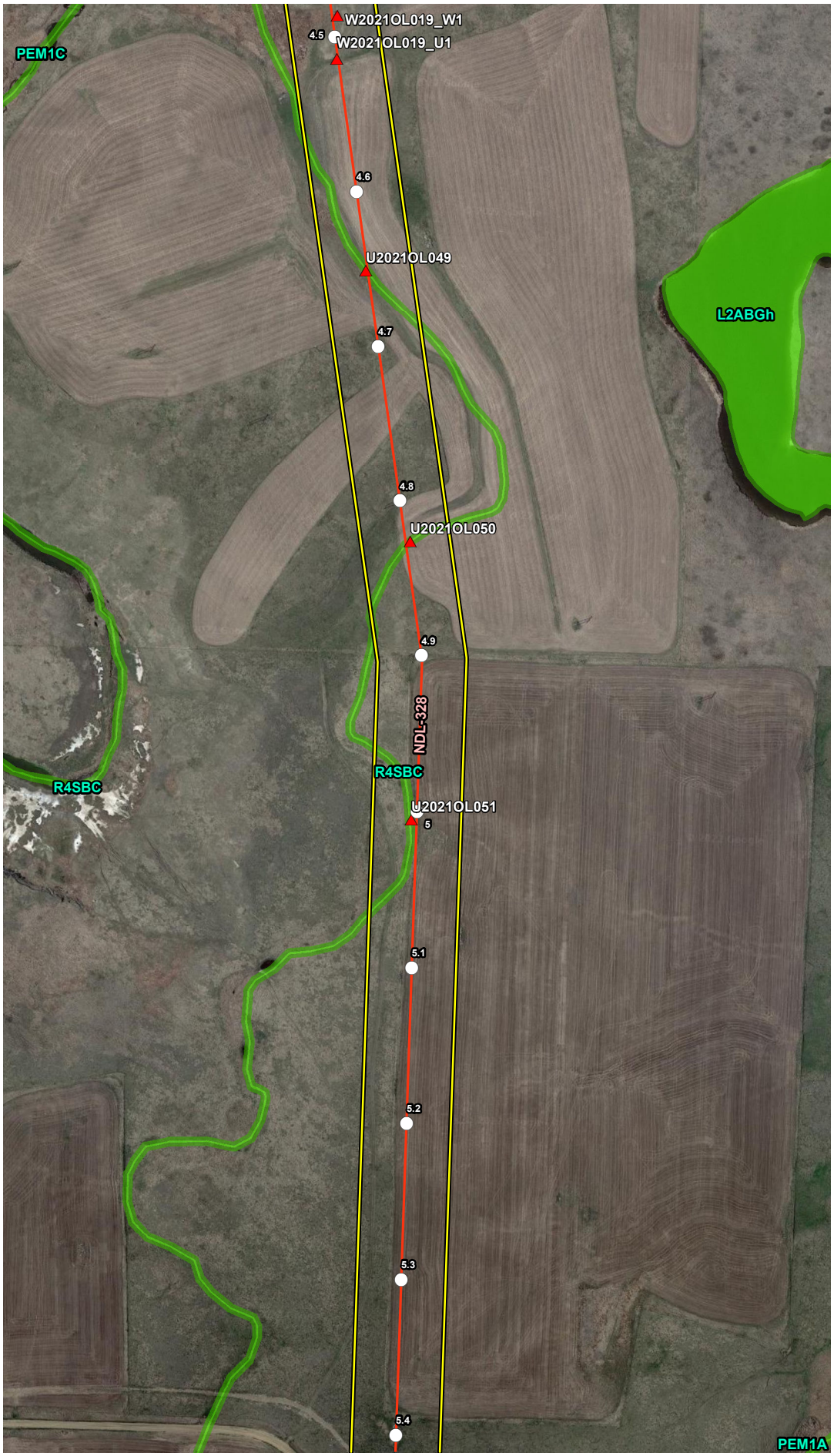
## NWI MAP

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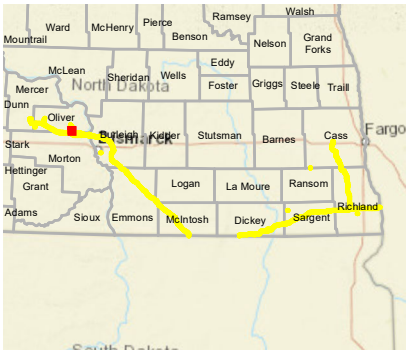


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0 250 500 Feet

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| Sheet:<br>324 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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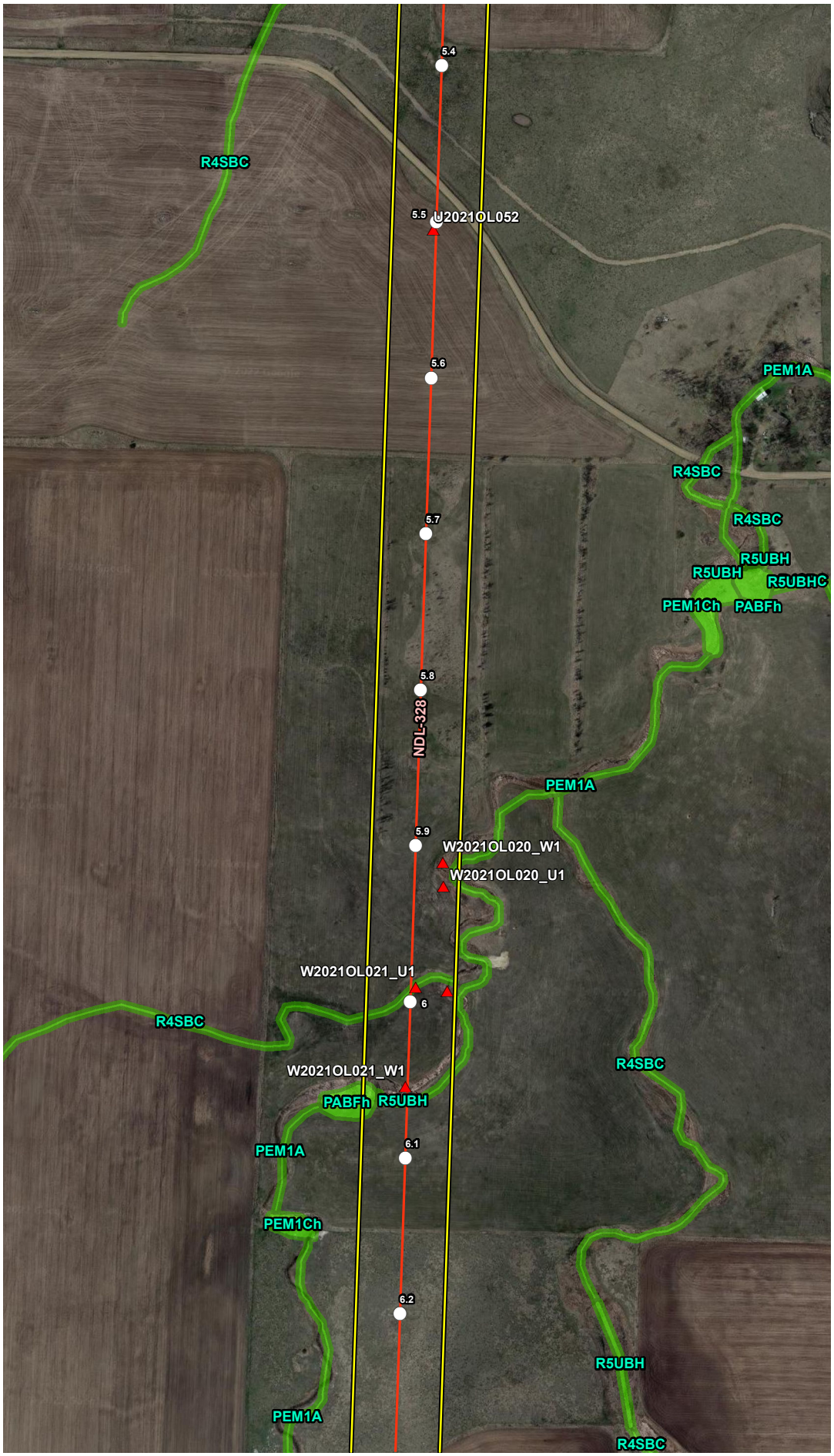
## NWI MAP

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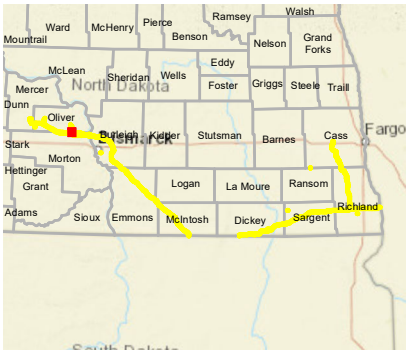


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| 325 of 392 | 2001-22-004<br>Current Revision |

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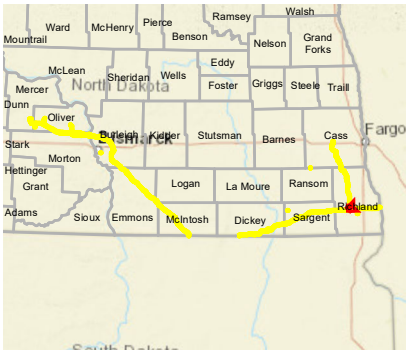
## NWI MAP




## VICINITY MAP

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## NWI MAP




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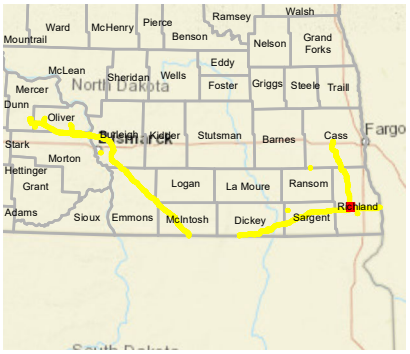


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| 327 of 392 | 2001-22-004<br>Current Revision |

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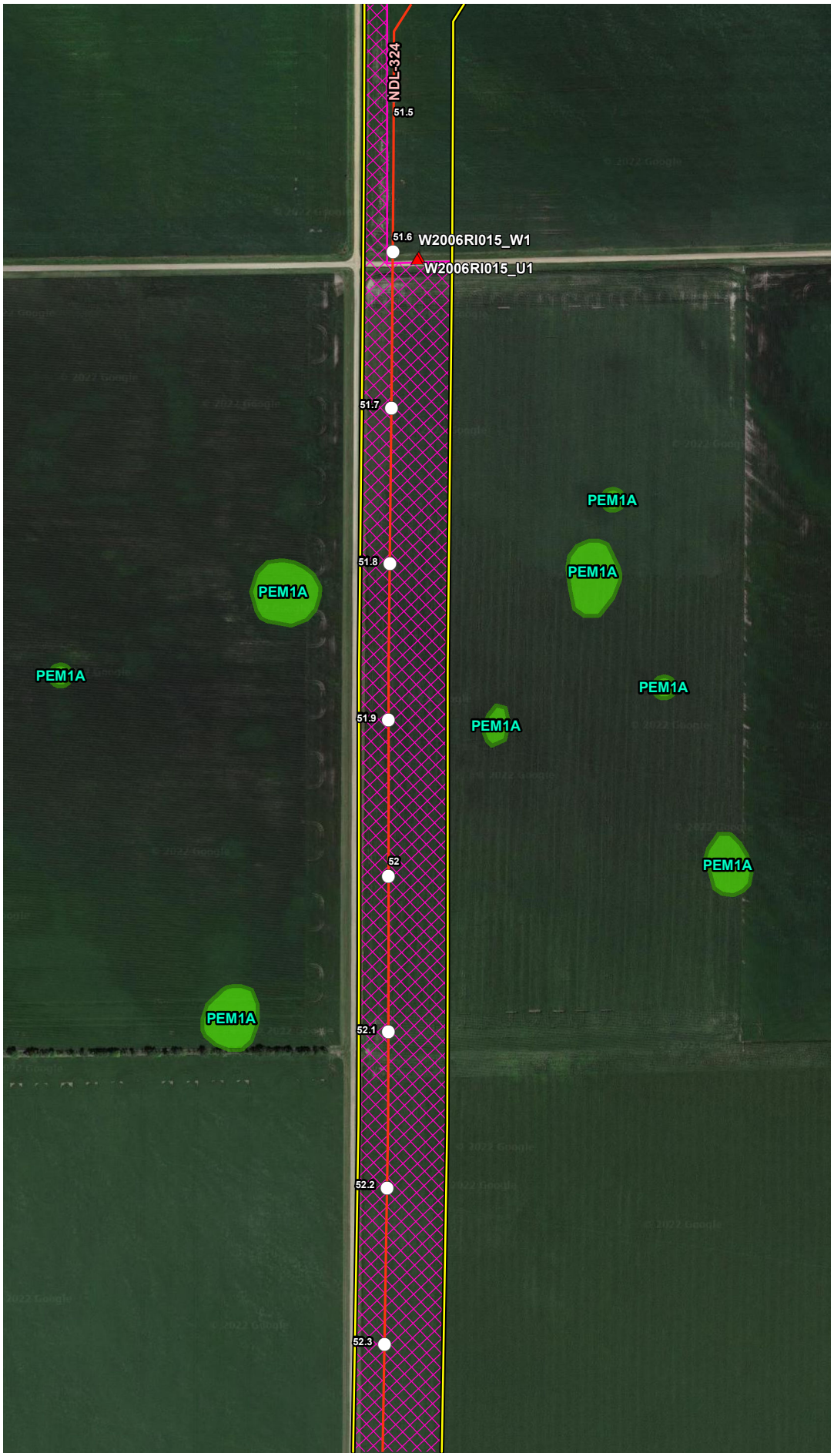
## NWI MAP

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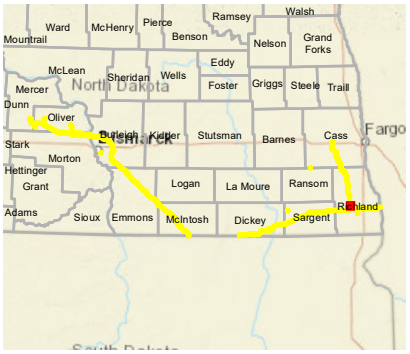


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| Scale: | Projection: |
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| Sheet:<br>328 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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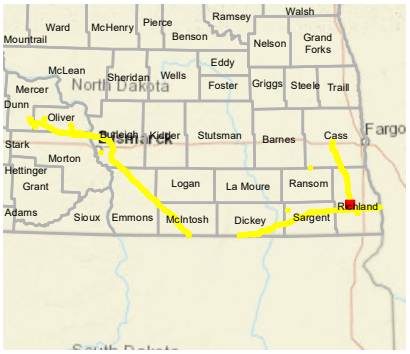
## NWI MAP




## VICINITY MAP

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Revision description

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|---|---|
| 329 of 392 | 2001-22-004<br>Current Revision |

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## NWI MAP




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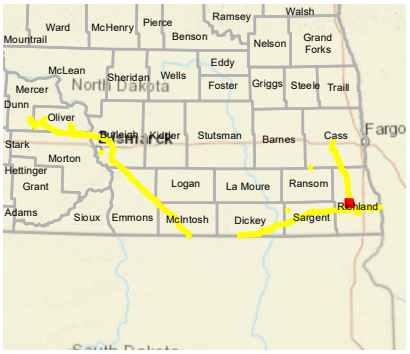


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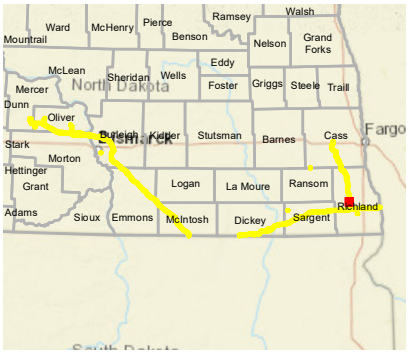
## NWI MAP




## VICINITY MAP

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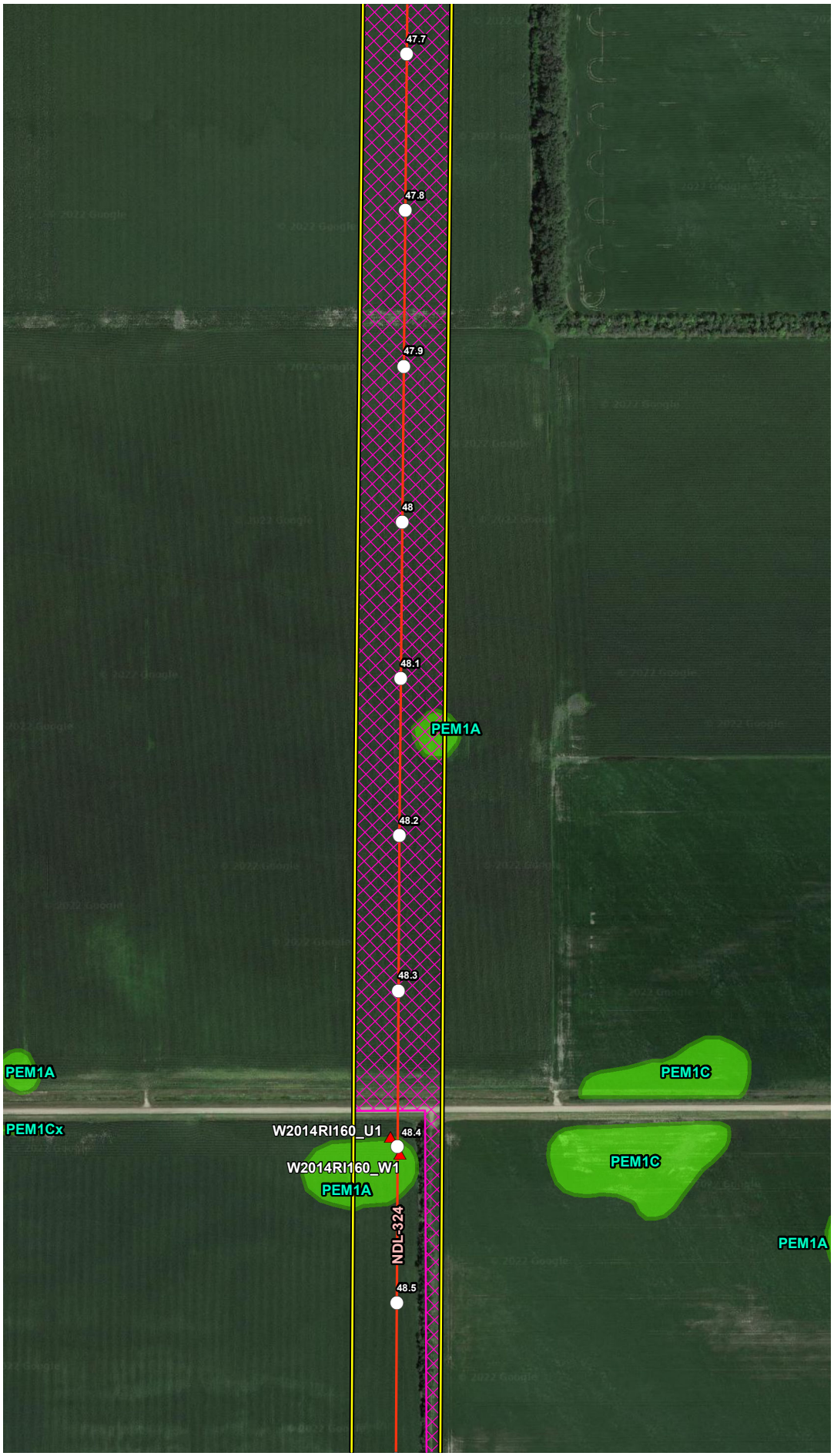
## NWI MAP

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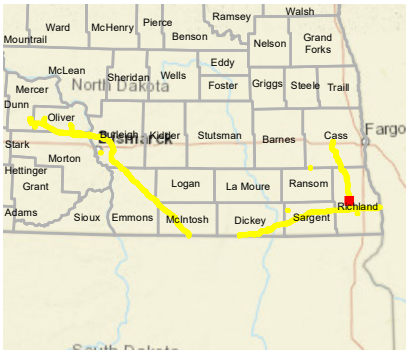


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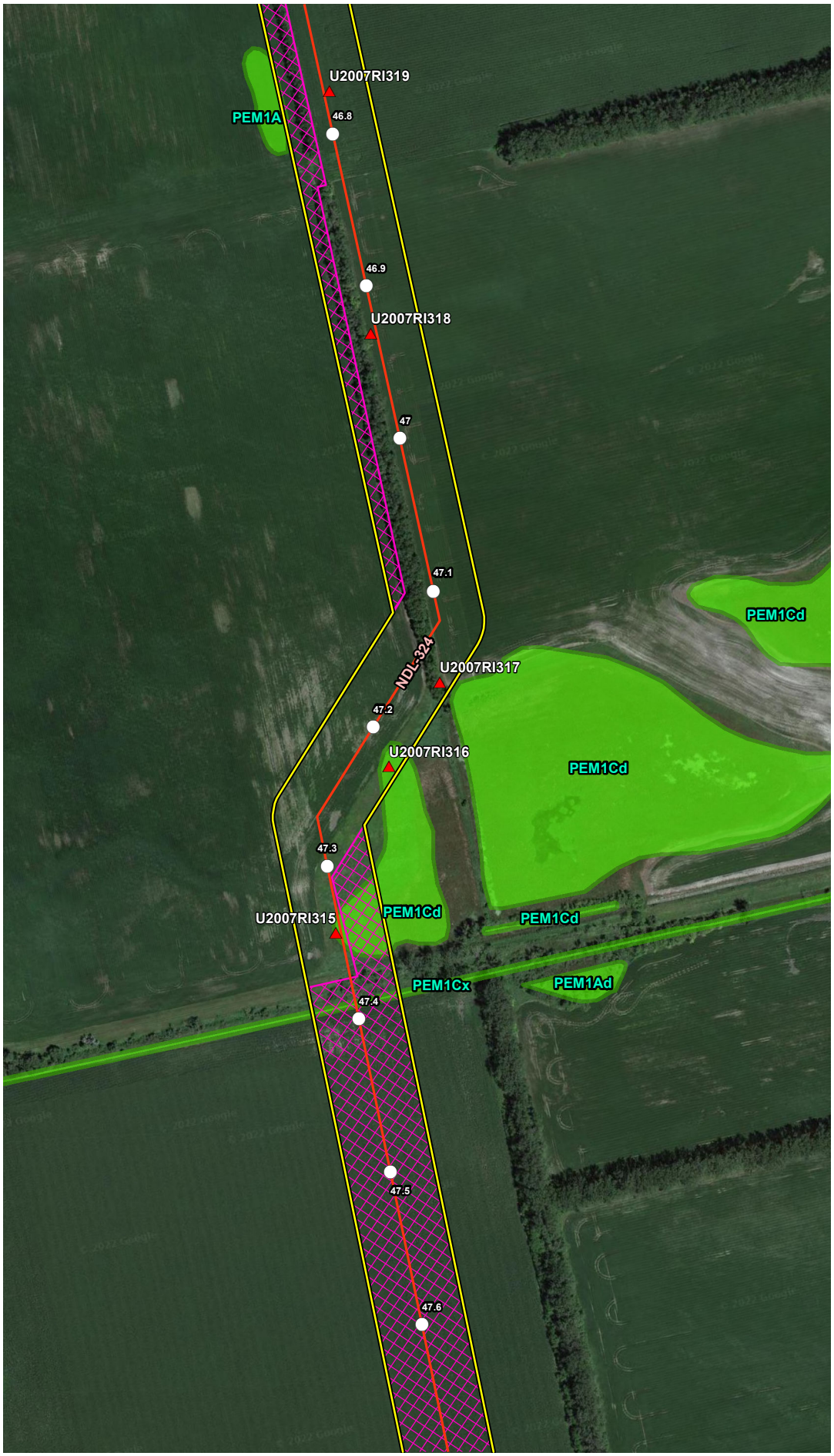
## NWI MAP

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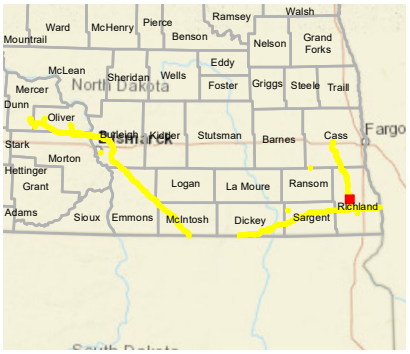


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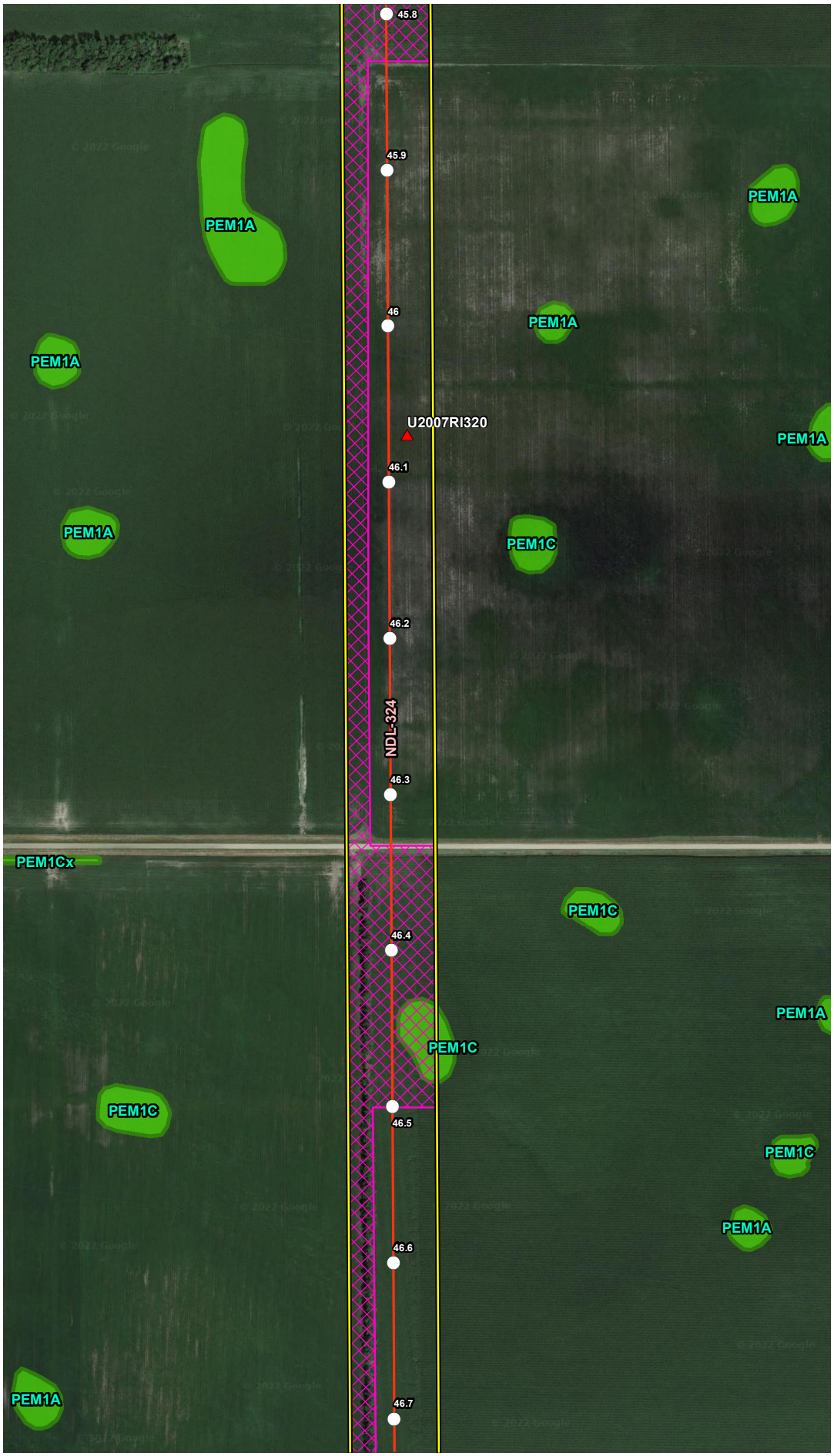
## NWI MAP

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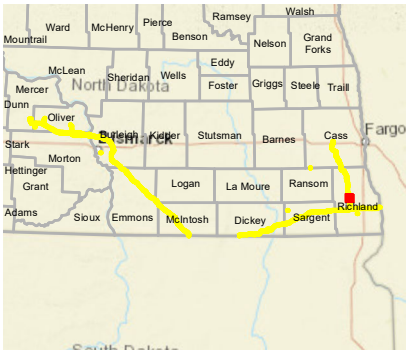


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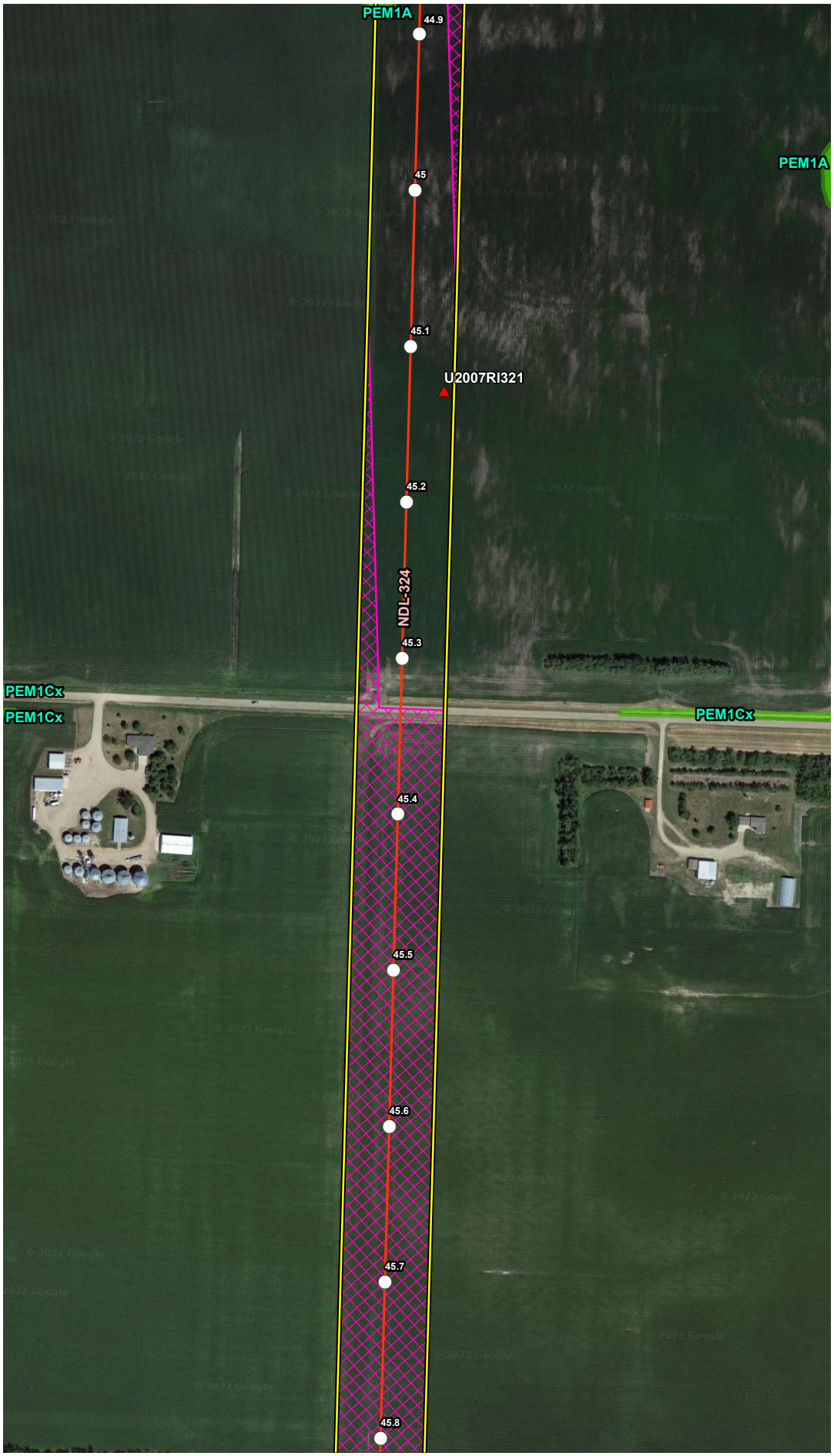


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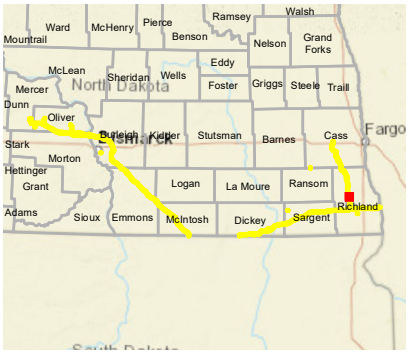


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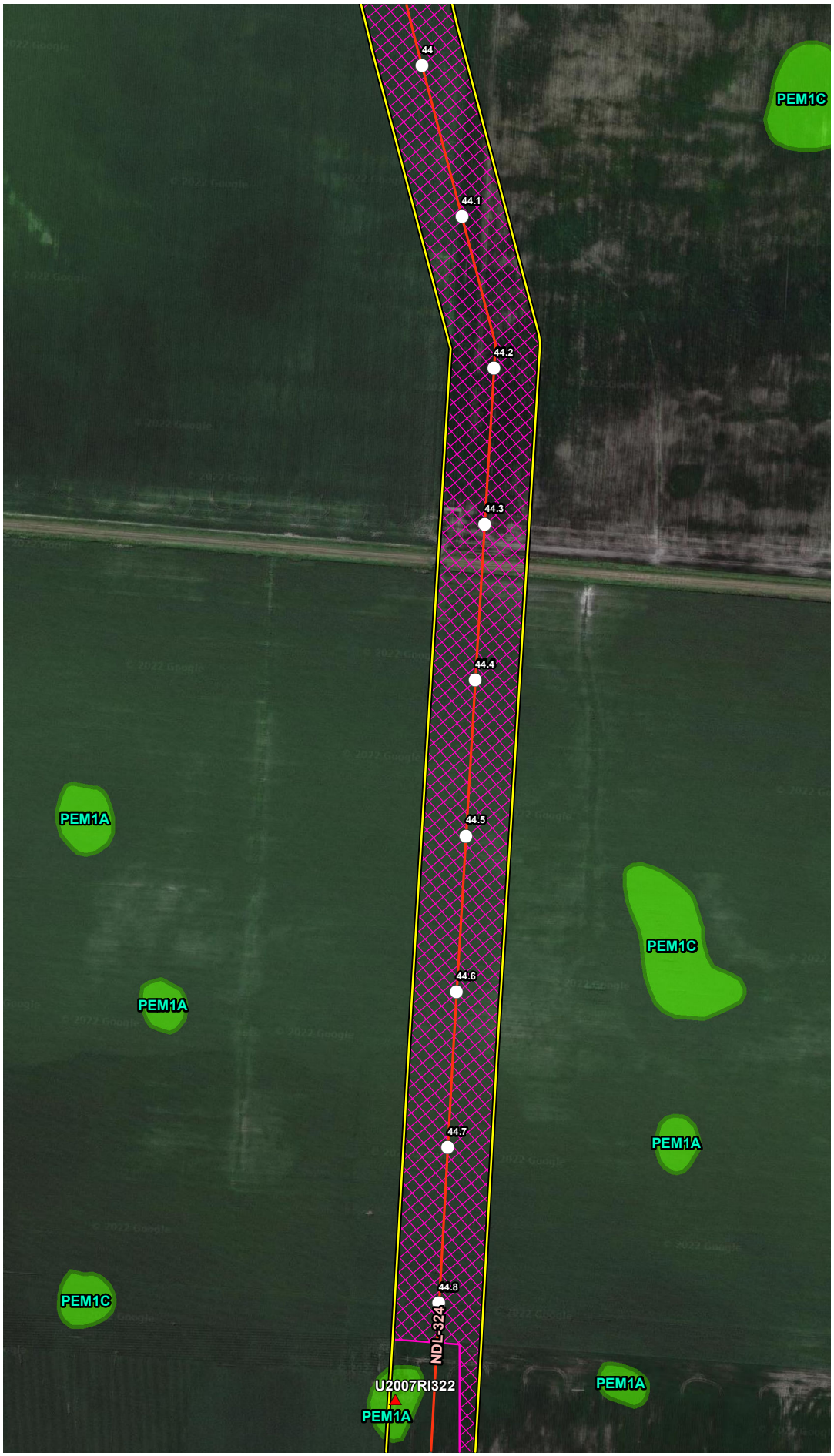
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

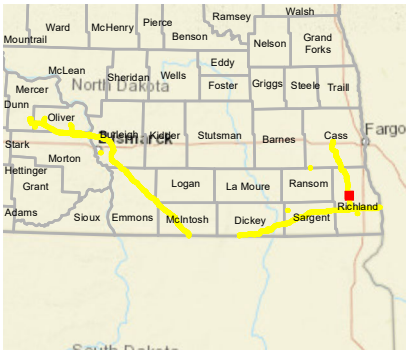
| Sheet: | Drawing Number: |
|---|---|
| 335 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\901_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date: | Revised by: | Checked by: |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

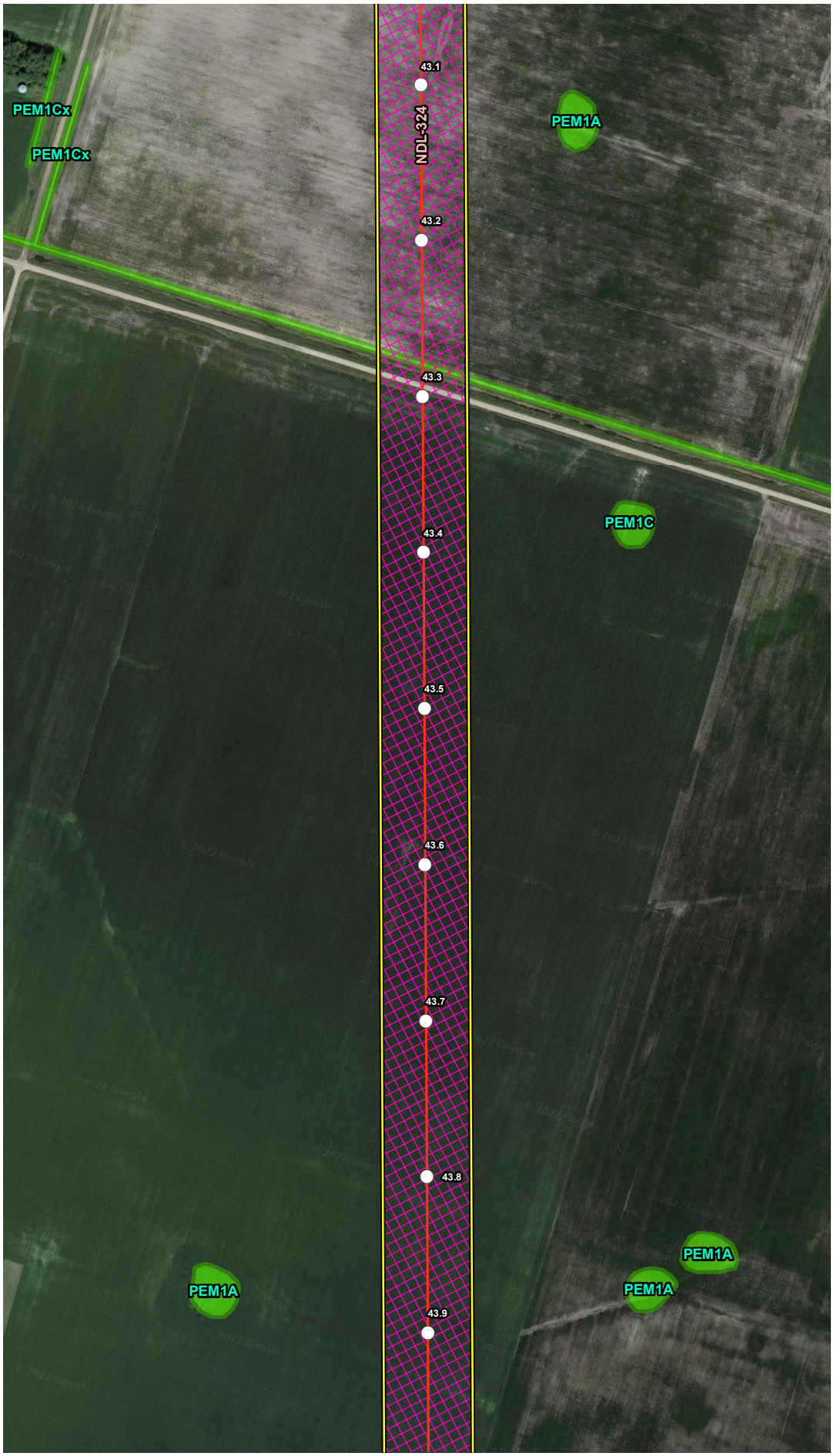
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

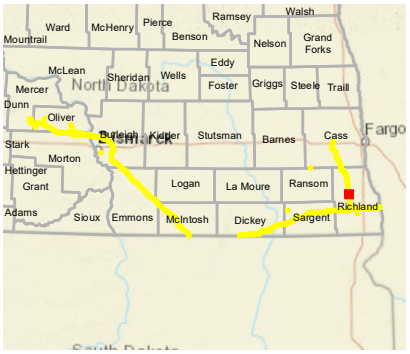
| Sheet: | Drawing Number: |
|---|---|
| 336 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SV1\WR\2022\801_WR_NDImxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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Revision description

| Date | Revised by | Checked by |
|---|---|---|
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| Date | Revised by | Checked by |
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**Figure Title:**
NWI Map

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Appendix A-4

| Scale | Projection |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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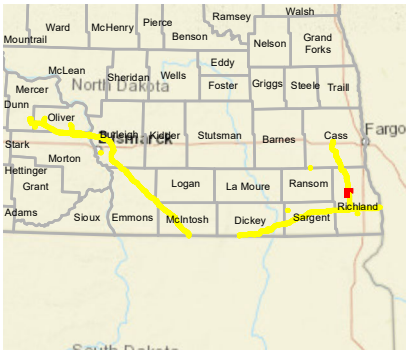
| 337 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ISV\WR\2022\901_WR_NDI\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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NWI Map

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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 338 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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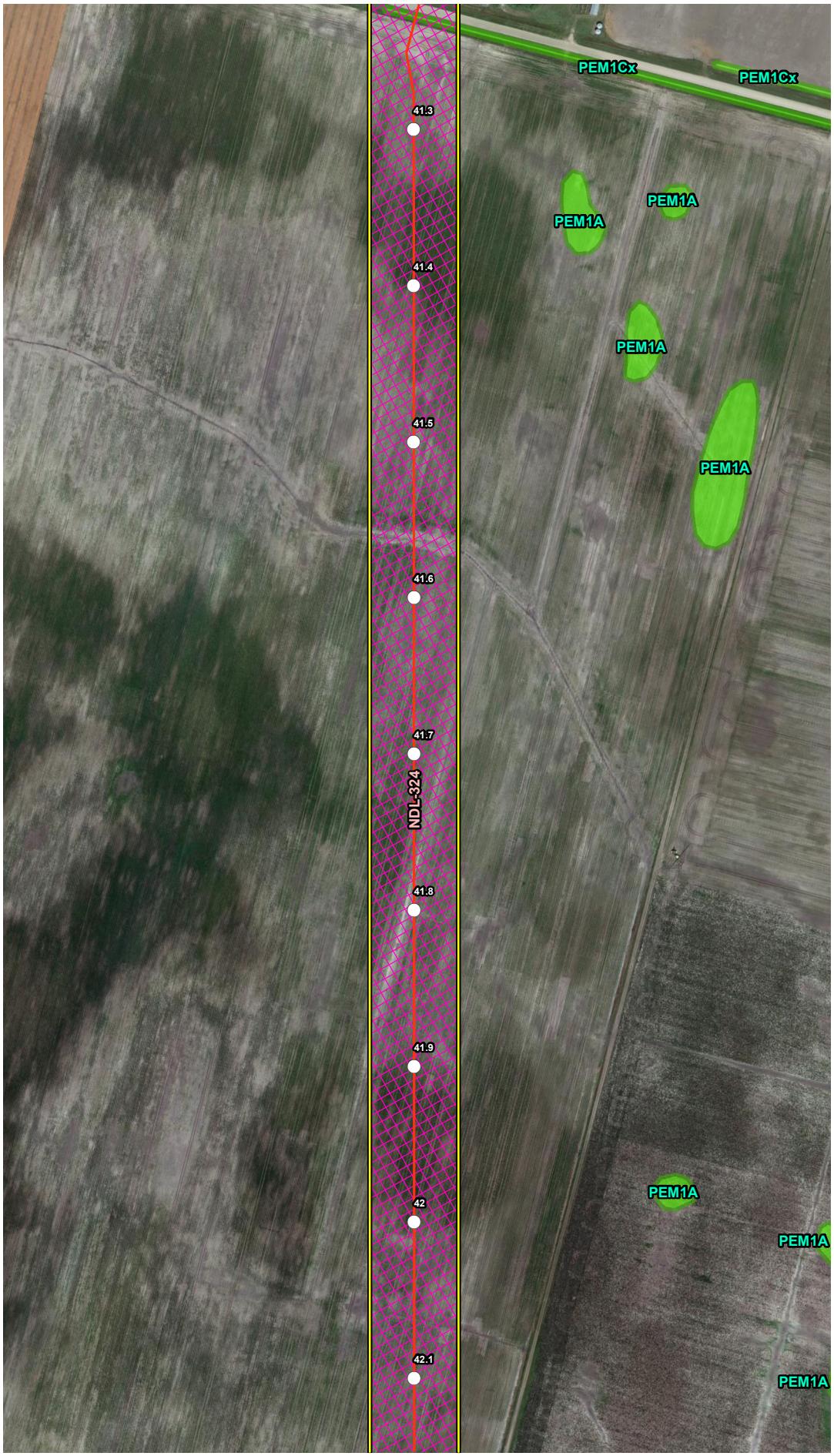
## NWI MAP

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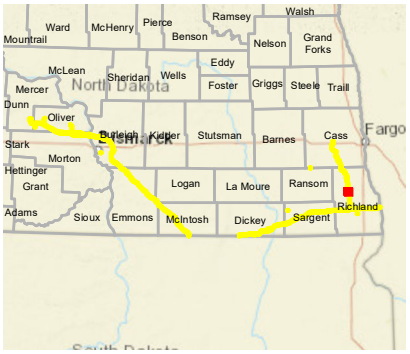


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0 250 500 Feet

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| Date: | Revised by: | Checked by: |
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| Scale: | Projection: |
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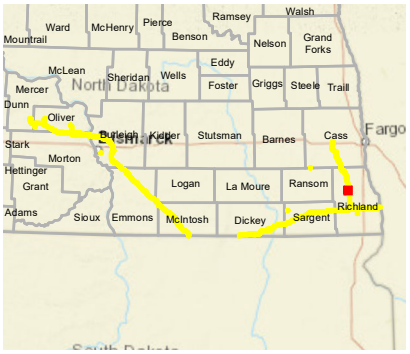
| Sheet: | Drawing Number: |
| 339 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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| 2022-08-04 | MM | AB |

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Revision description

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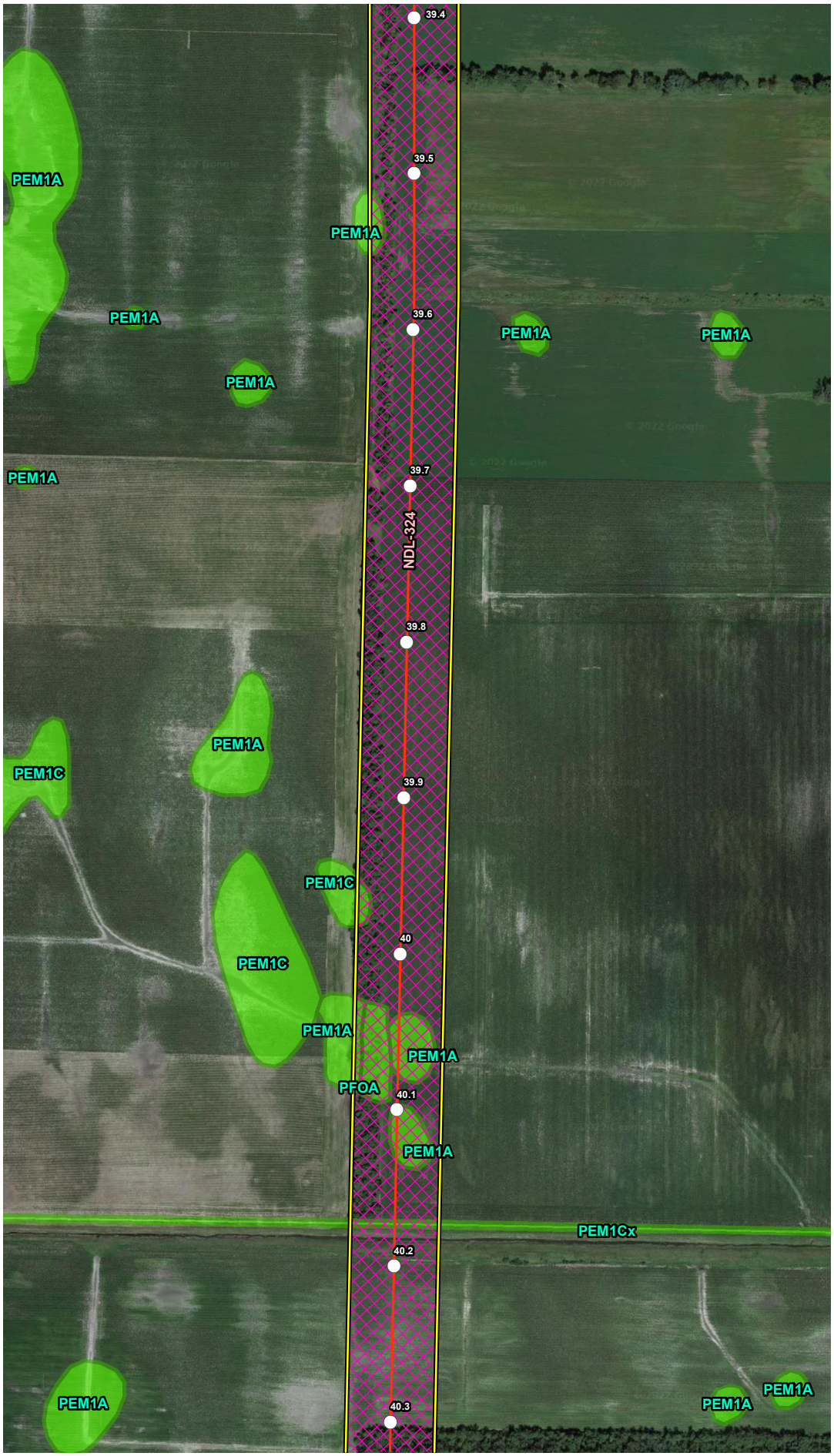
| Sheet: | Drawing Number: |
|---|---|
| 340 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDI\mxds\4_NWI.mxd

## NWI MAP

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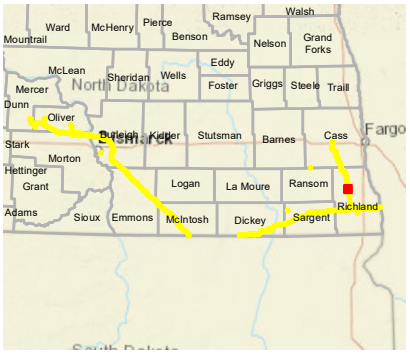


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0 250 500
Feet

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|---|---|---|
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**Figure Number:**
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| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 341 of 392 | 2001-22-004<br>Current Revision |

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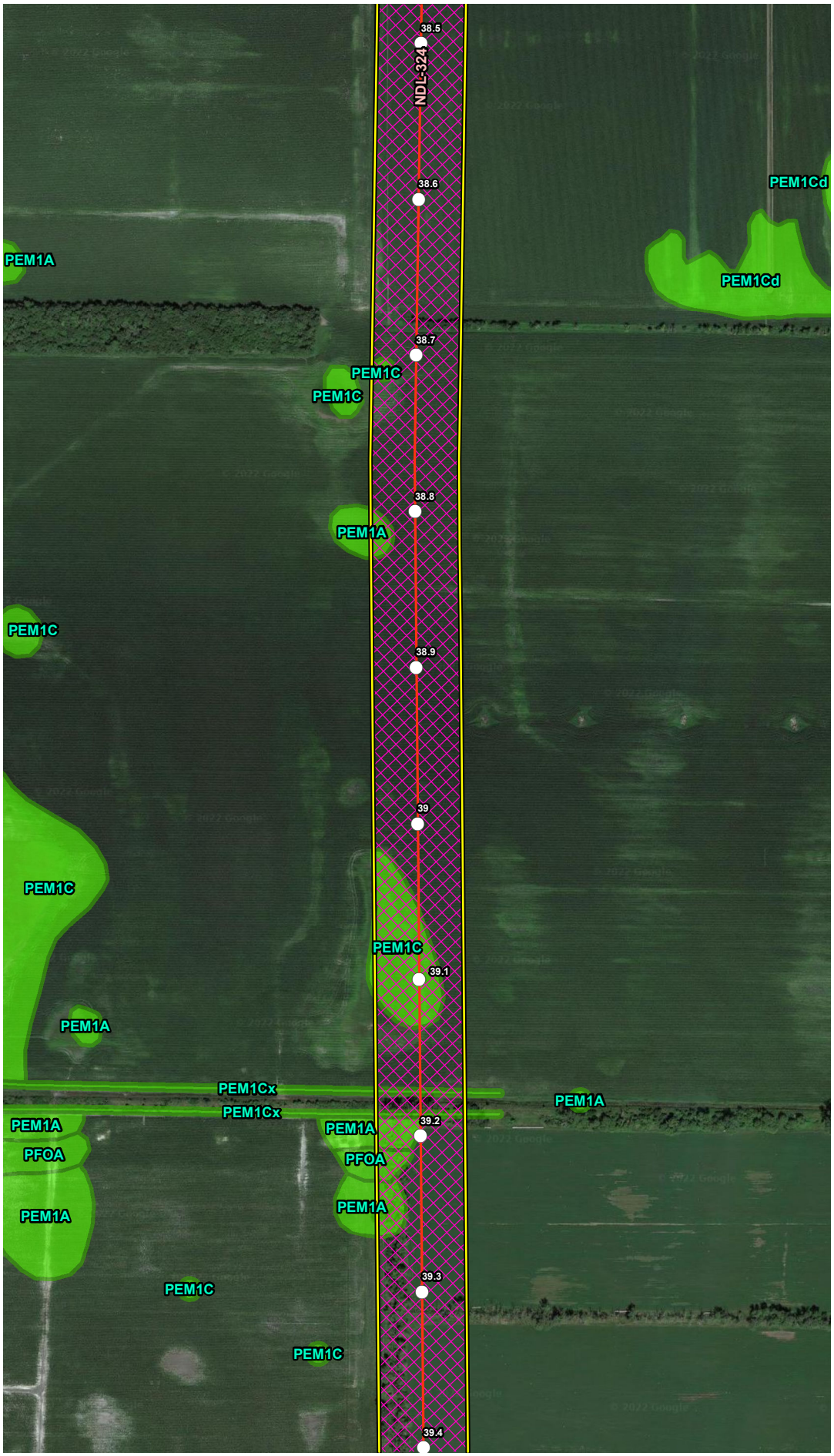
## NWI MAP

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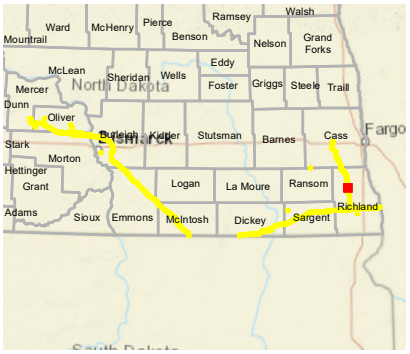


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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |

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NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

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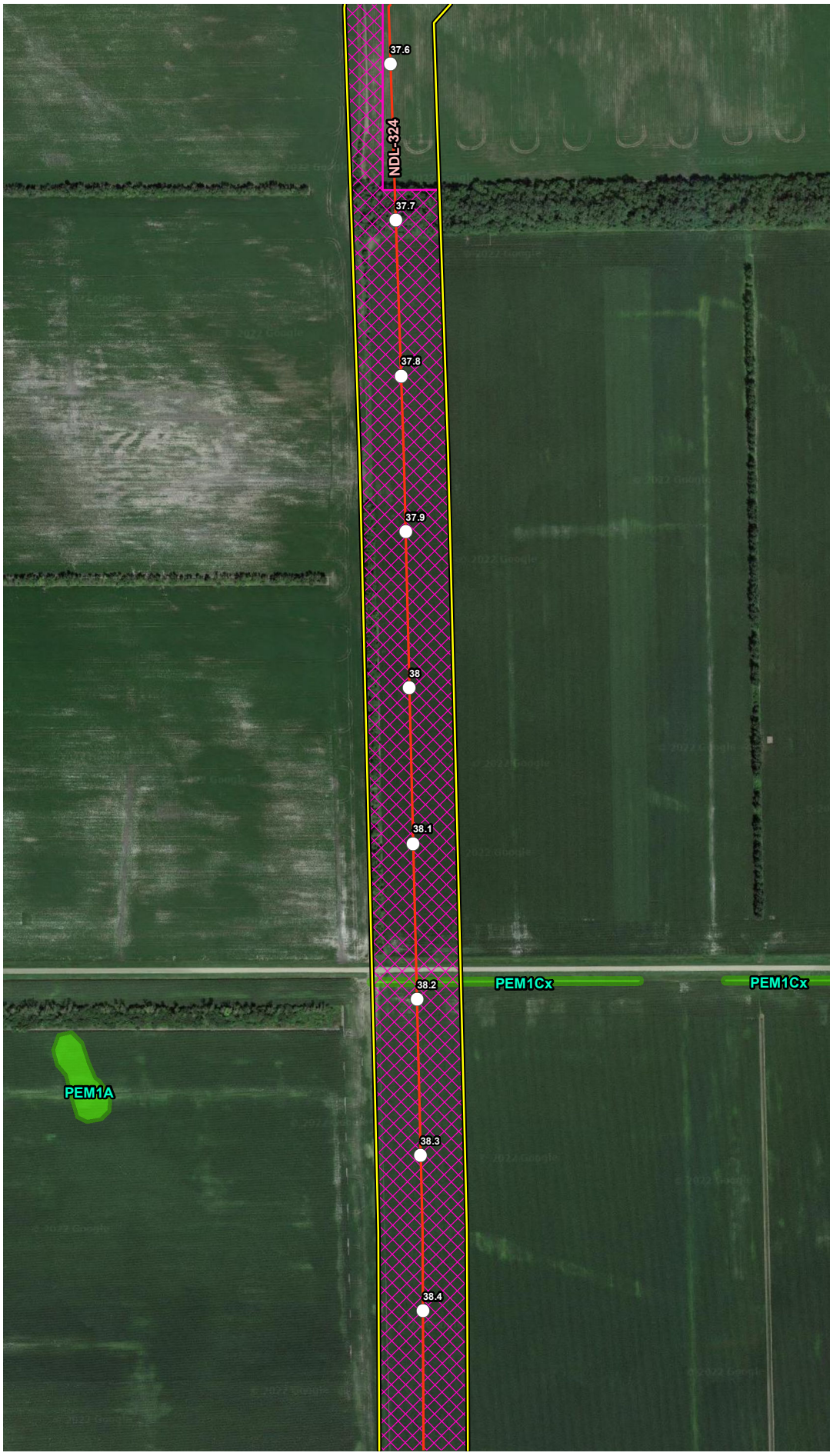
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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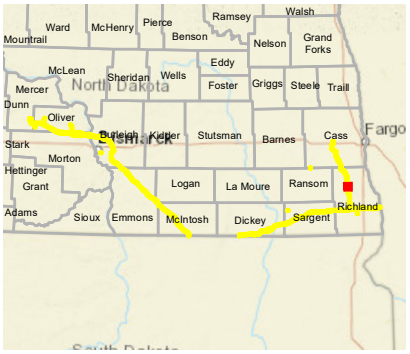


## LEGEND

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0 250 500
Feet

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| 2022-08-04 | MM | AB |

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Revision description

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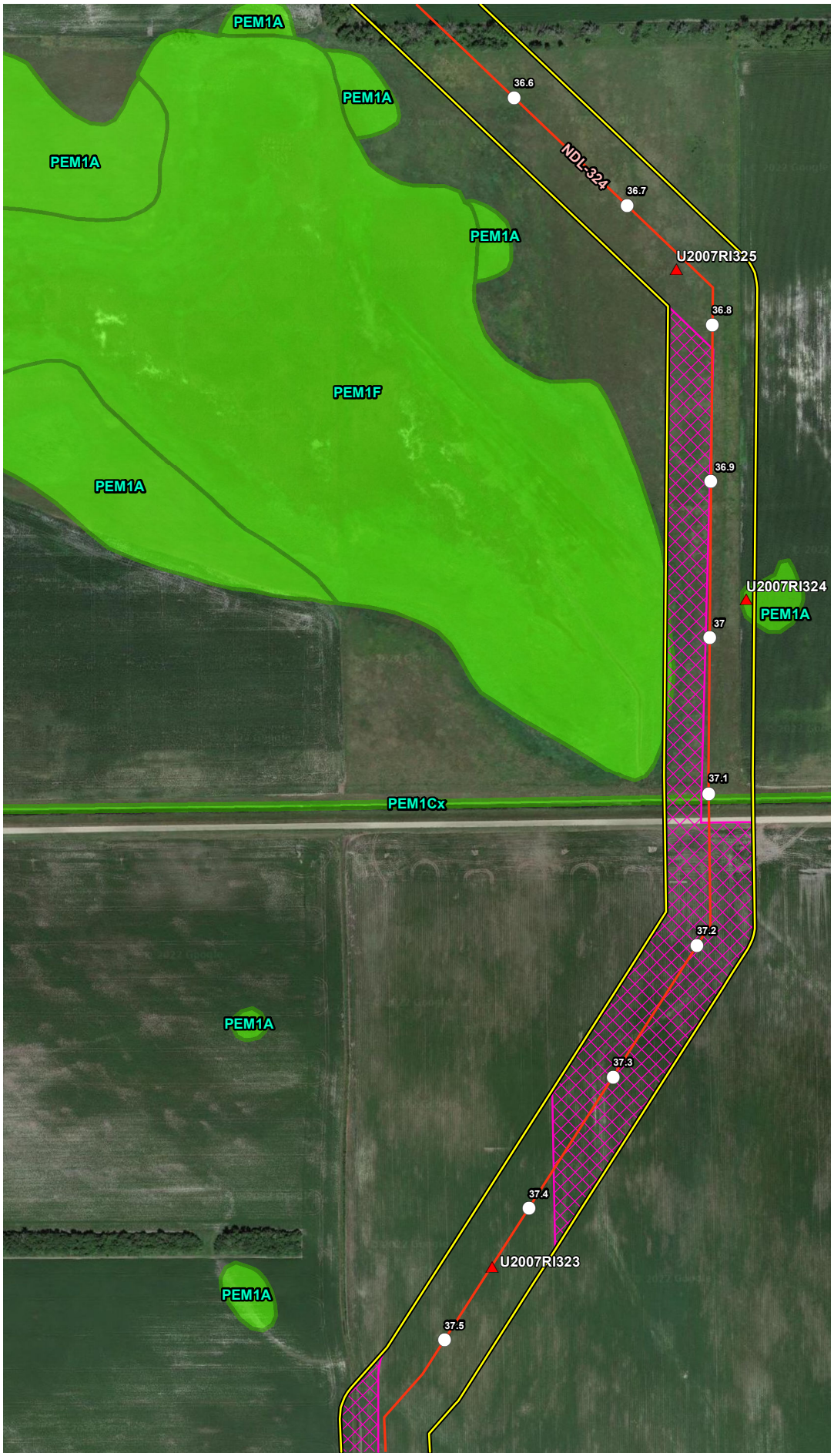
Figure Number:
Appendix A-4

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet | Drawing Number |
|---|---|
| 343 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\2022\901_WR_NDI\mxds\4_NWI.mxd

## NWI MAP

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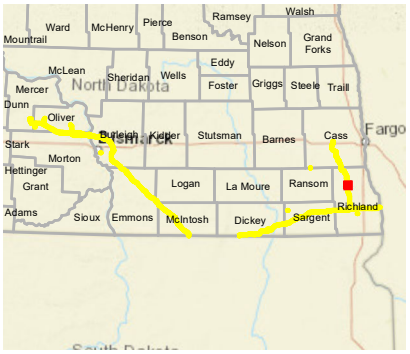


## LEGEND

- Milepost
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Revision description

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**Figure Title:**

NWI Map

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 344 of 392 | 2001-22-004<br>Current Revision |

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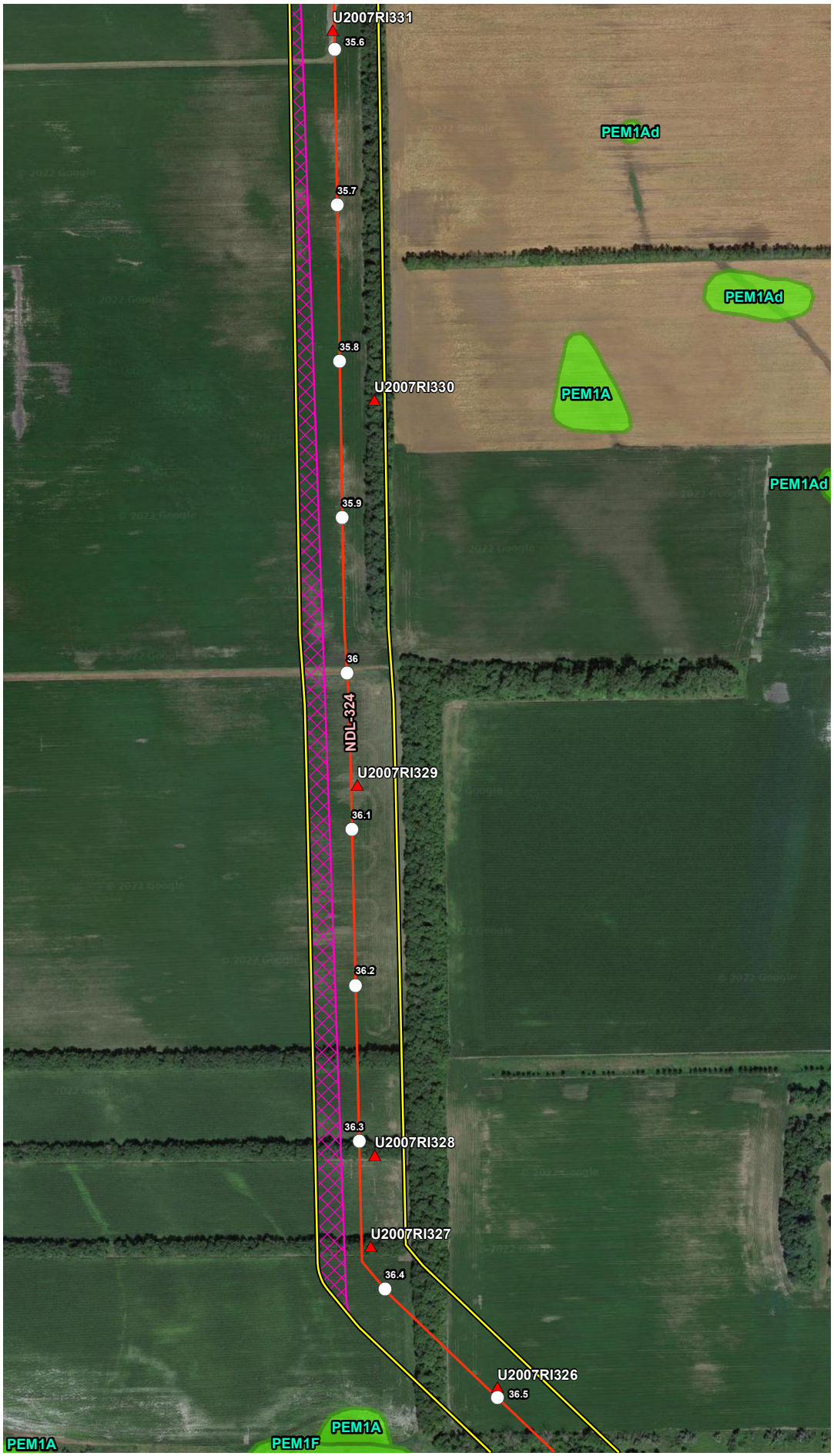
## NWI MAP

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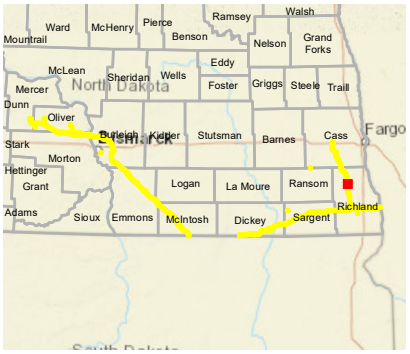


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0 250 500 Feet

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| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 345 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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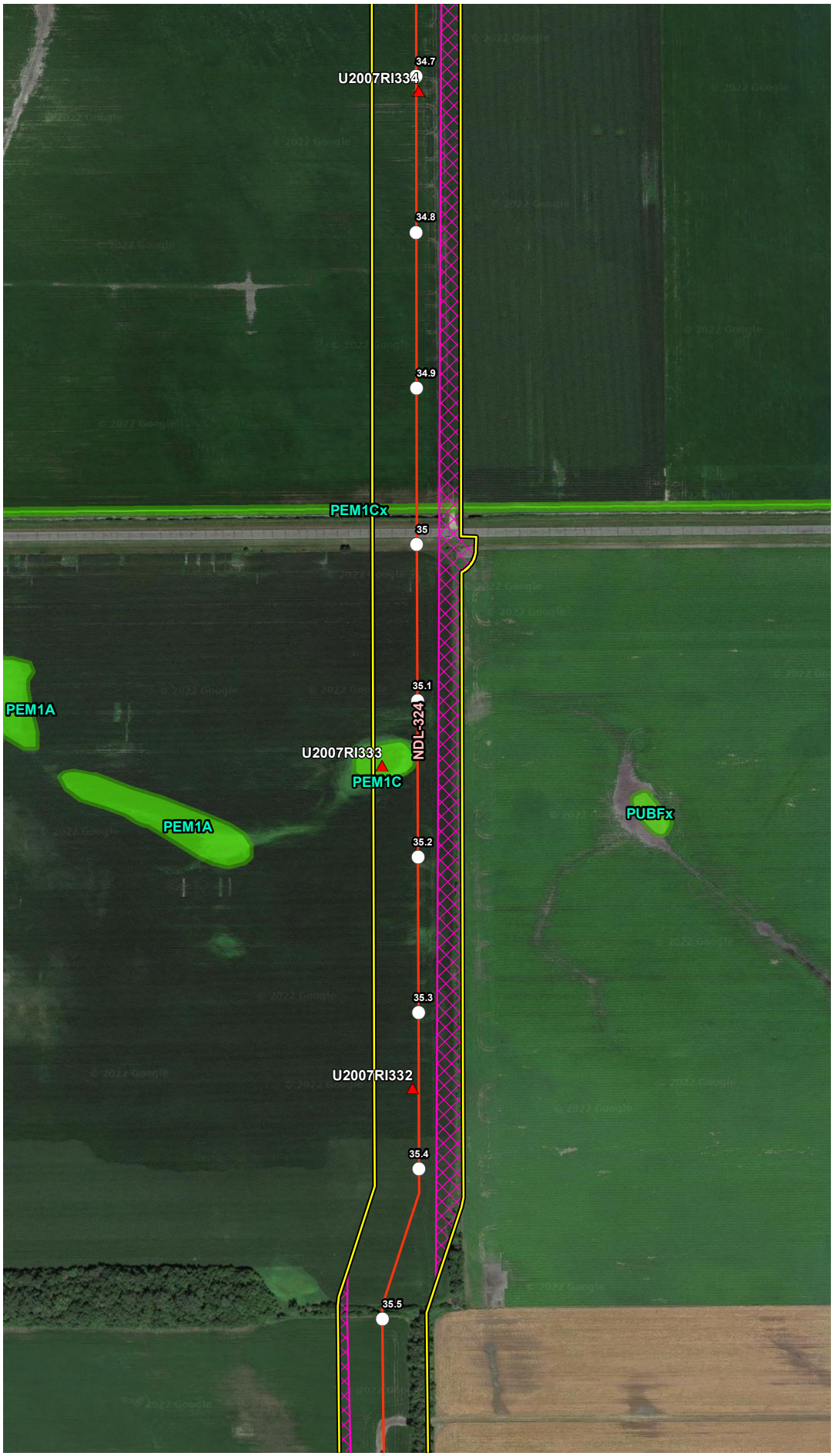
## NWI MAP

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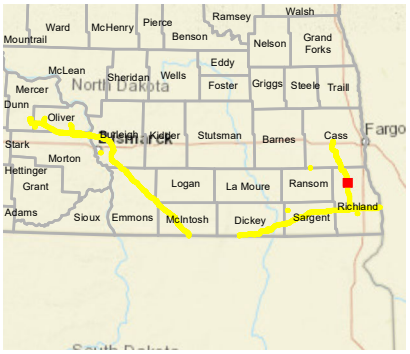


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**1A - Revision**

Revision description

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**Figure Title:**

NWI Map

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Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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| 346 of 392 | 2001-22-004<br>Current Revision |

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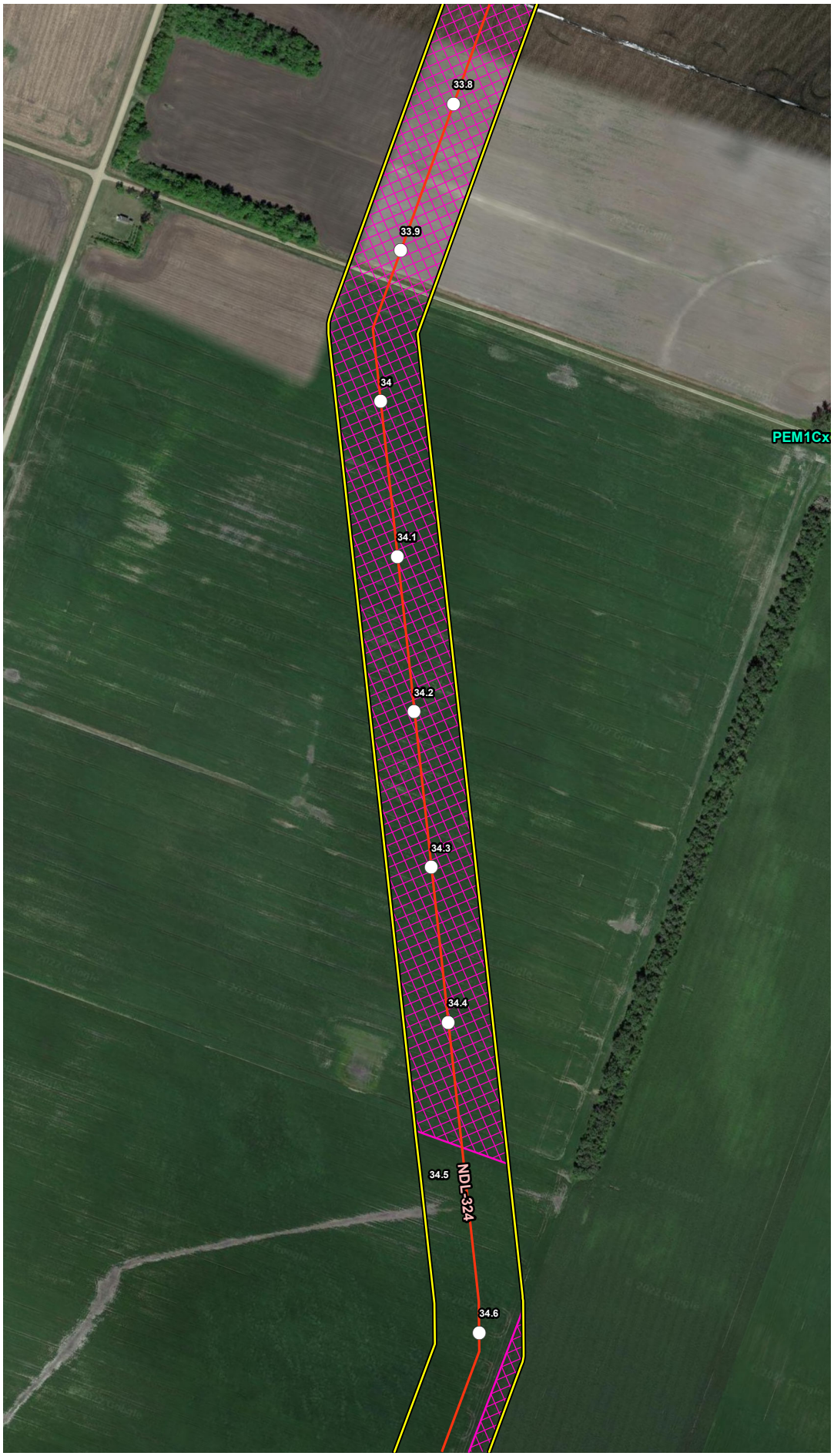
## NWI MAP

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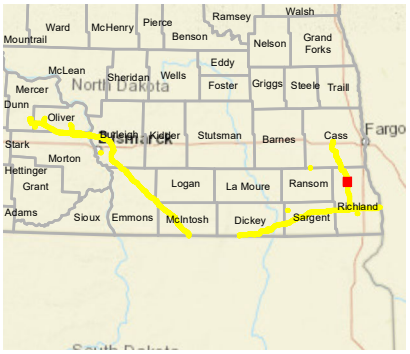


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**1A - Revision**

Revision description

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NWI Map

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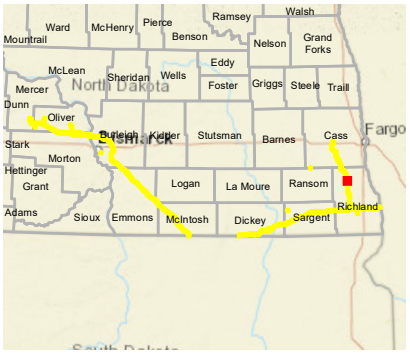
## NWI MAP




## VICINITY MAP

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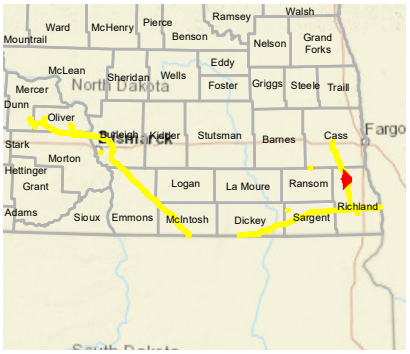
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>348 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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Figure Title:

NWI Map

Figure Number:

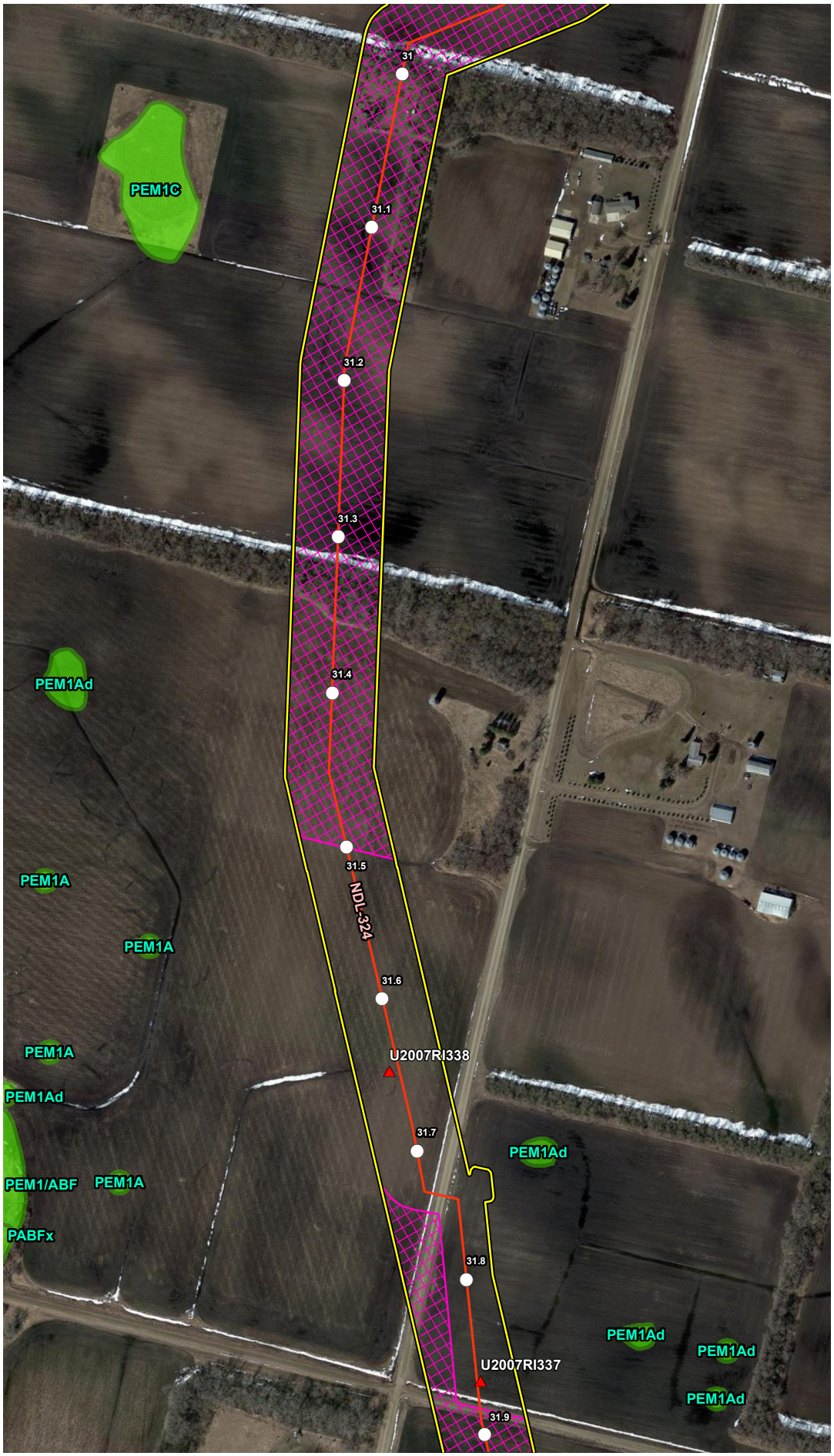
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 349 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\VWR\2022\0801_VWR_NDI\mxds\4_NWI.mxd

## NWI MAP

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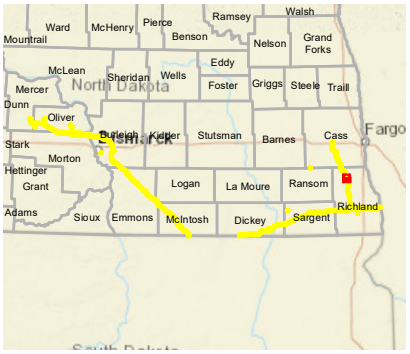


## LEGEND

- Milepost
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- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

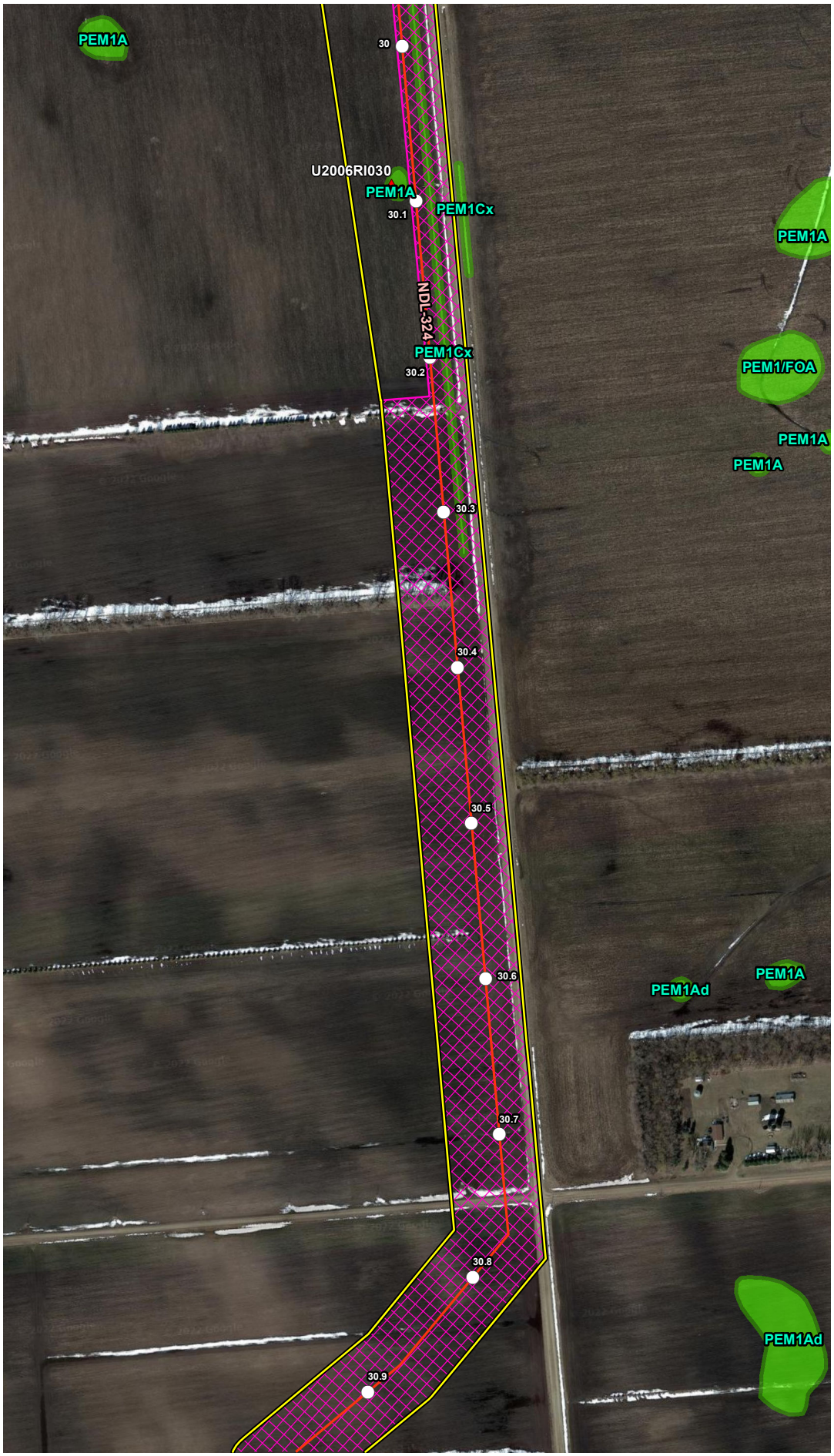
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
350 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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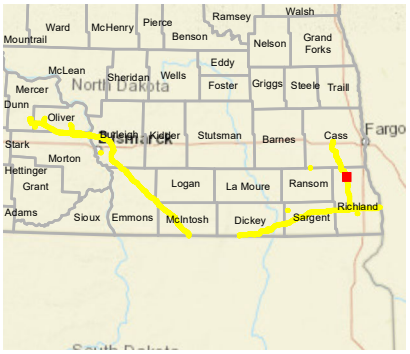


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0 250 500 Feet

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| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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Revision description

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Figure Title:

NWI Map

Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 351 of 392 | 2001-22-004<br>Current Revision |

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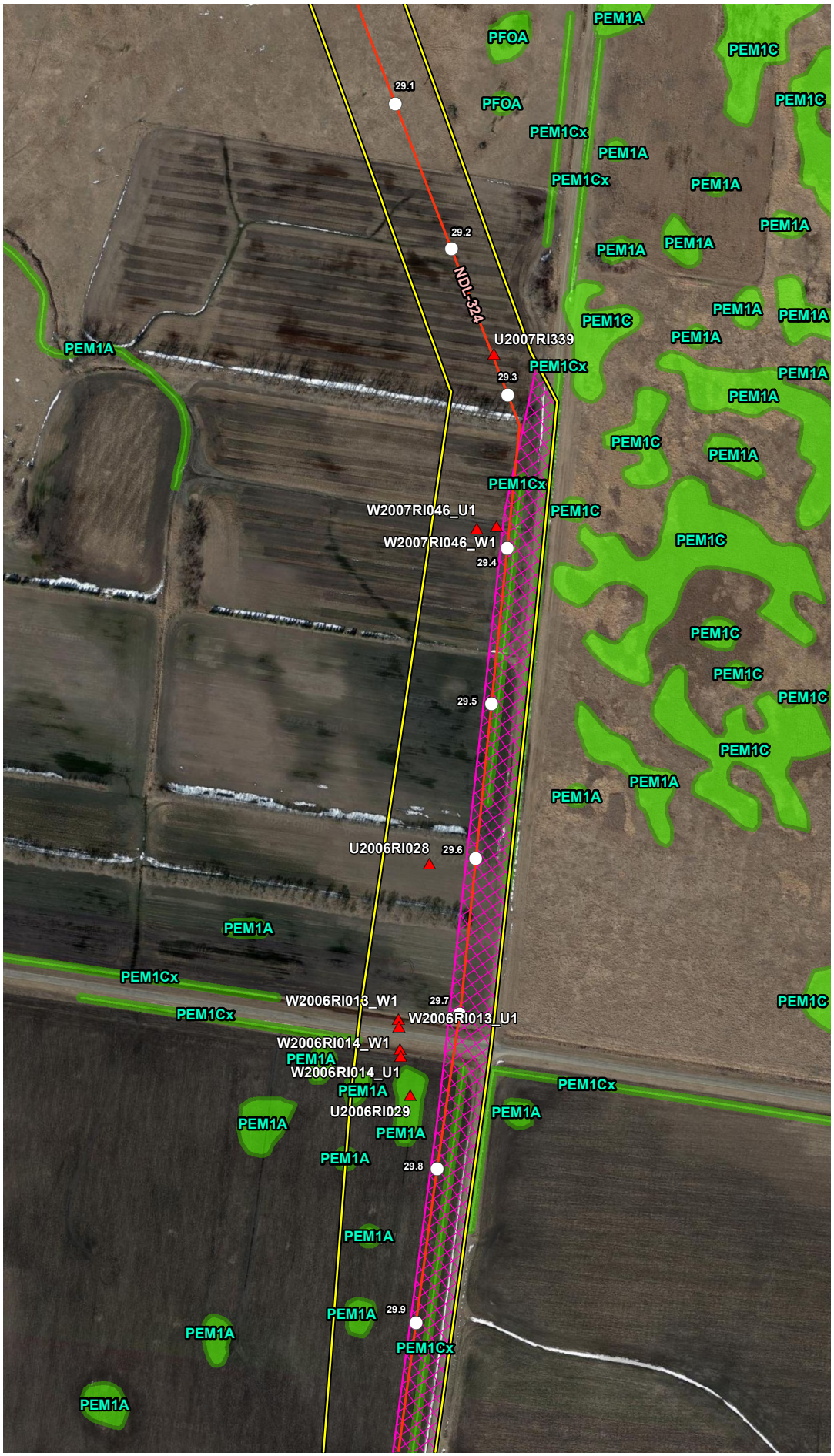
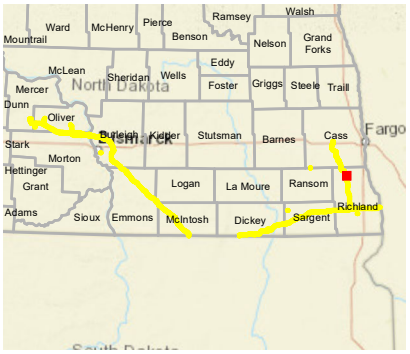
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| Date: | Revised by: | Checked by: |

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Figure Title:
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Figure Number:
Appendix A-4

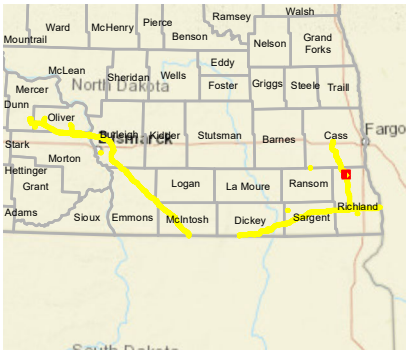
| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 352 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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## REVISIONS

| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>353 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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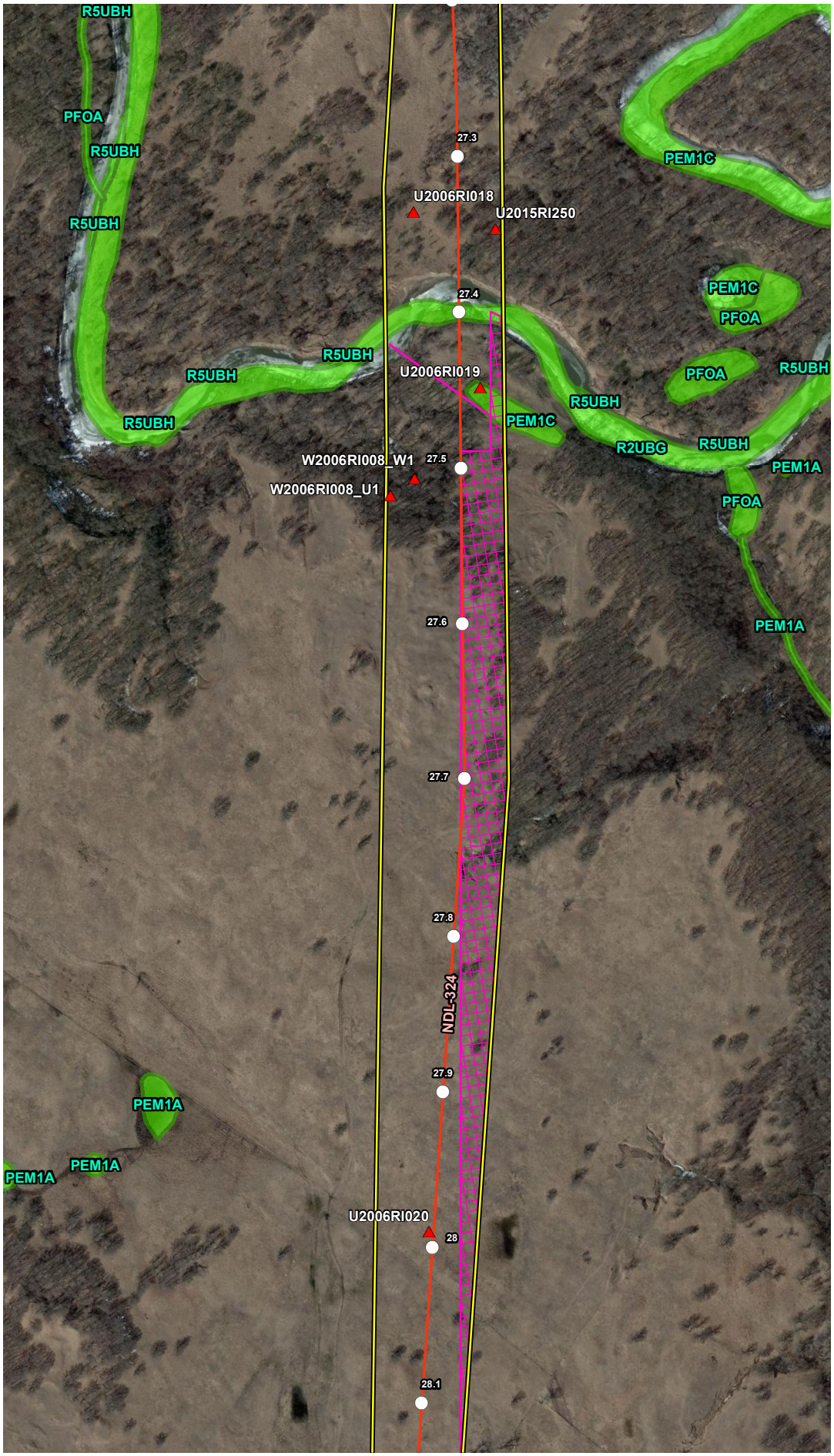
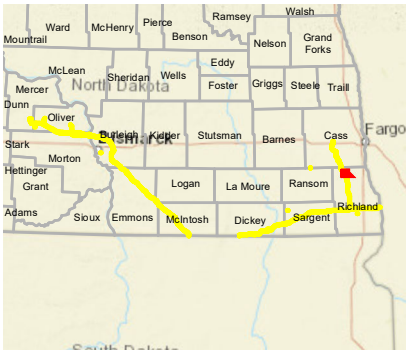



## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: | Drawing Number: |
| 354 of 392 | 2001-22-004<br>Current Revision |

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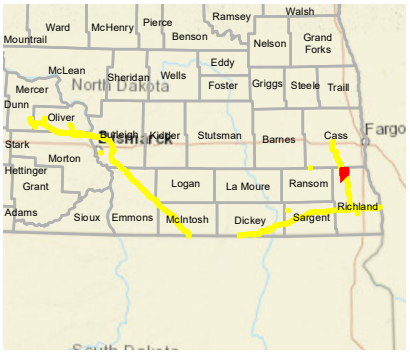
## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
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| Date: | Revised by: | Checked by: |

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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

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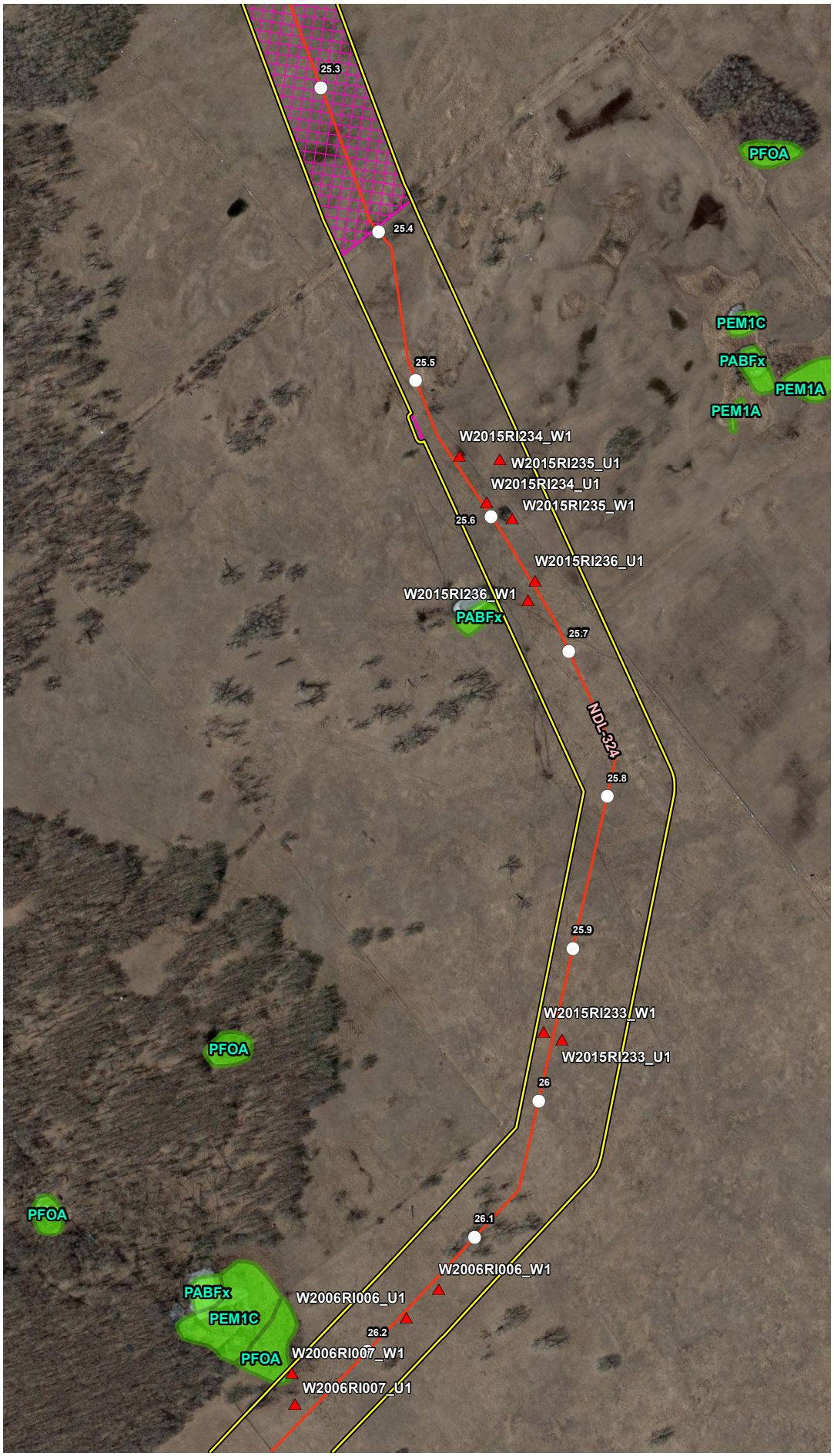
355 of 392

Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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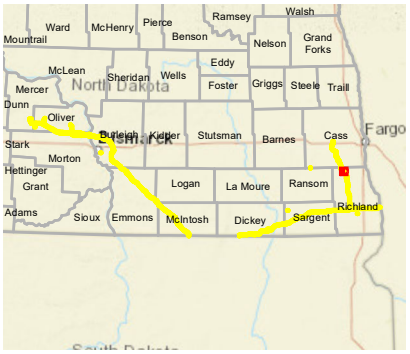


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
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| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

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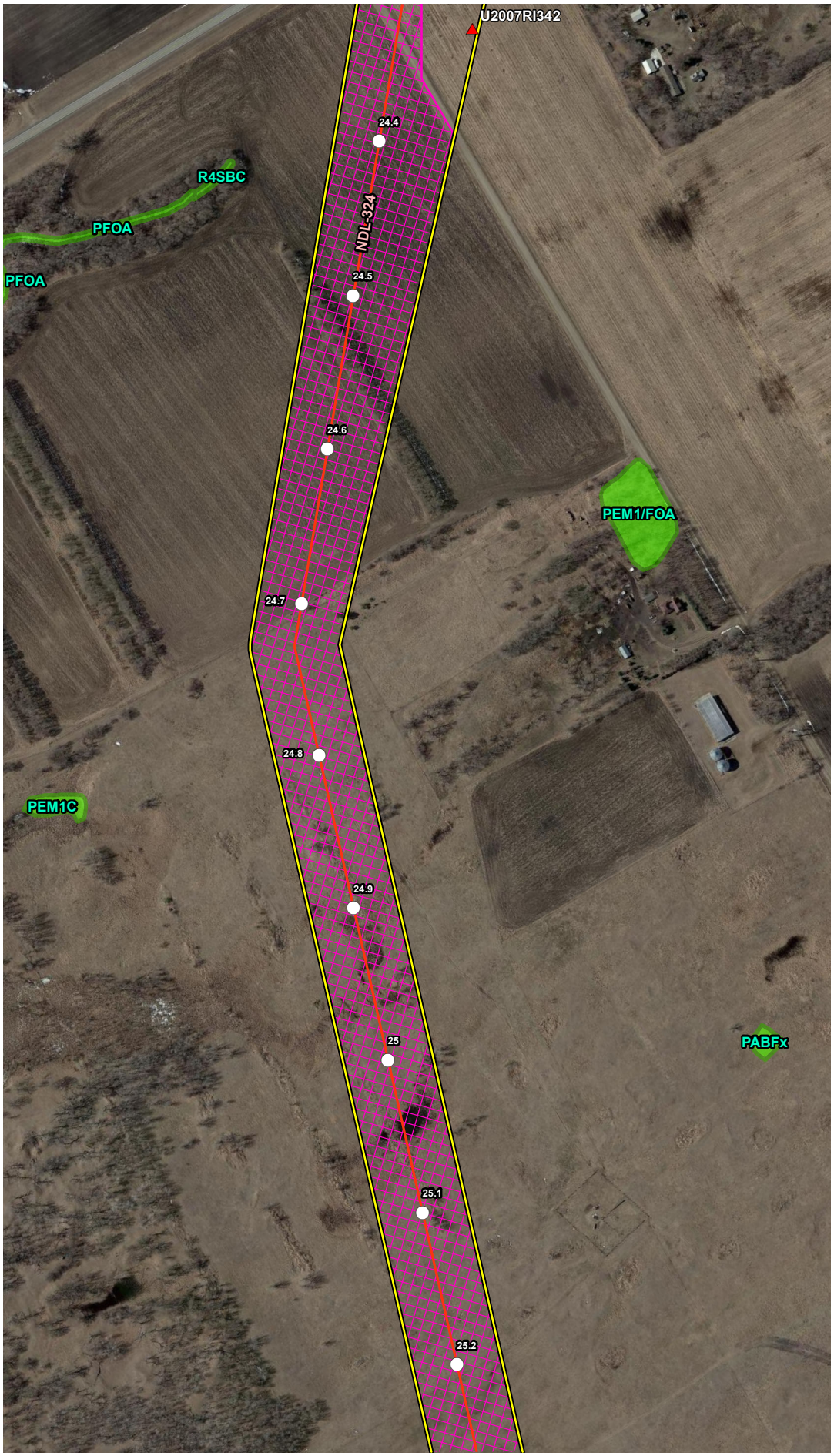
Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>356 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP

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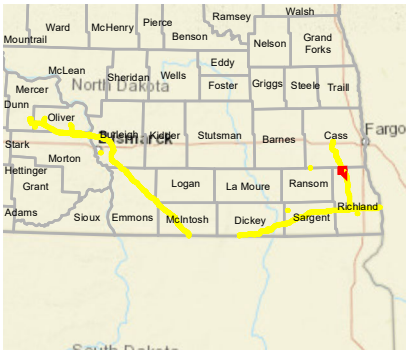


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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**Figure Number:**
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 357 of 392 | 2001-22-004<br>Current Revision |

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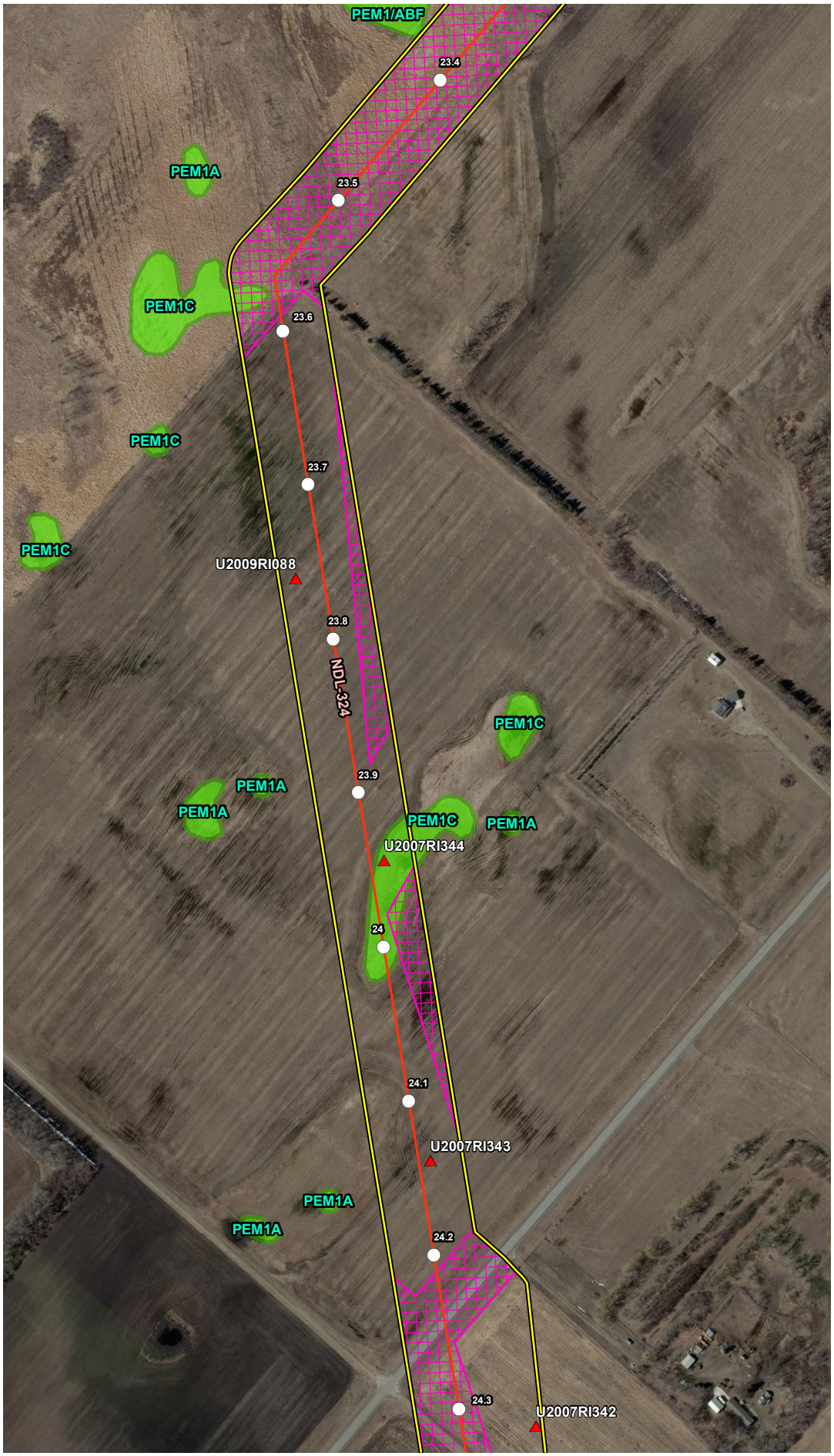
## NWI MAP

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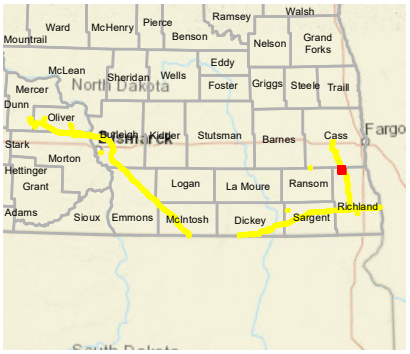


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**
Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
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**Figure Title:**
NWI Map

**Figure Number:**
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 358 of 392 | 2001-22-004<br>Current Revision |

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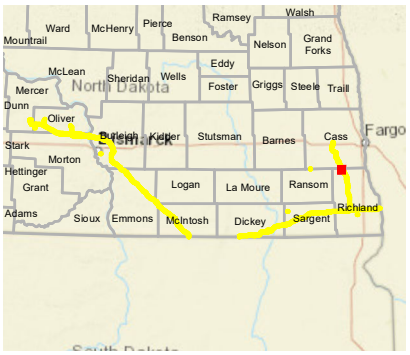
## NWI MAP




## VICINITY MAP




## LEGEND

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| Date | Revised by | Checked by |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 359 of 392 | 2001-22-004<br>Current Revision |

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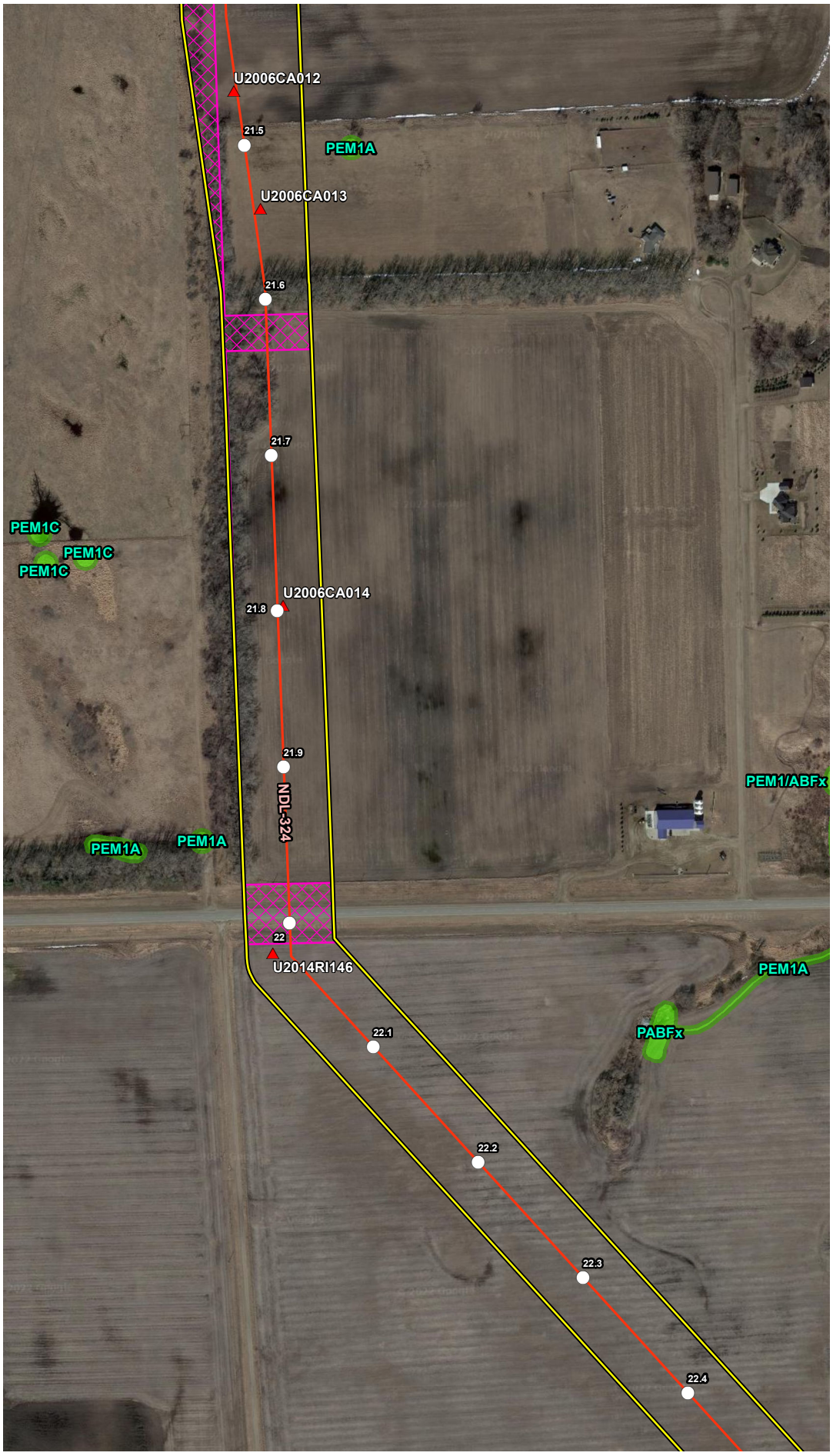
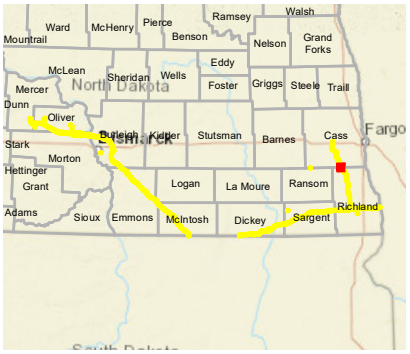
## NWI MAP




## VICINITY MAP




## LEGEND

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1A - Revision

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|---|---|---|
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Figure Title:

NWI Map

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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 360 of 392 | 2001-22-004<br>Current Revision |

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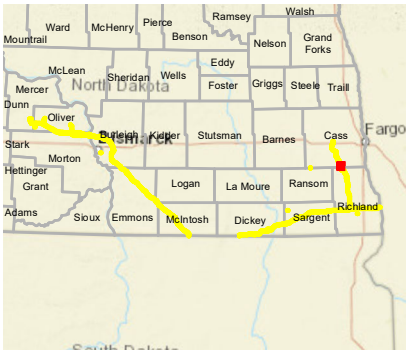
## NWI MAP




## VICINITY MAP




## LEGEND

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|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
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**Figure Title:**

NWI Map

**Figure Number:**

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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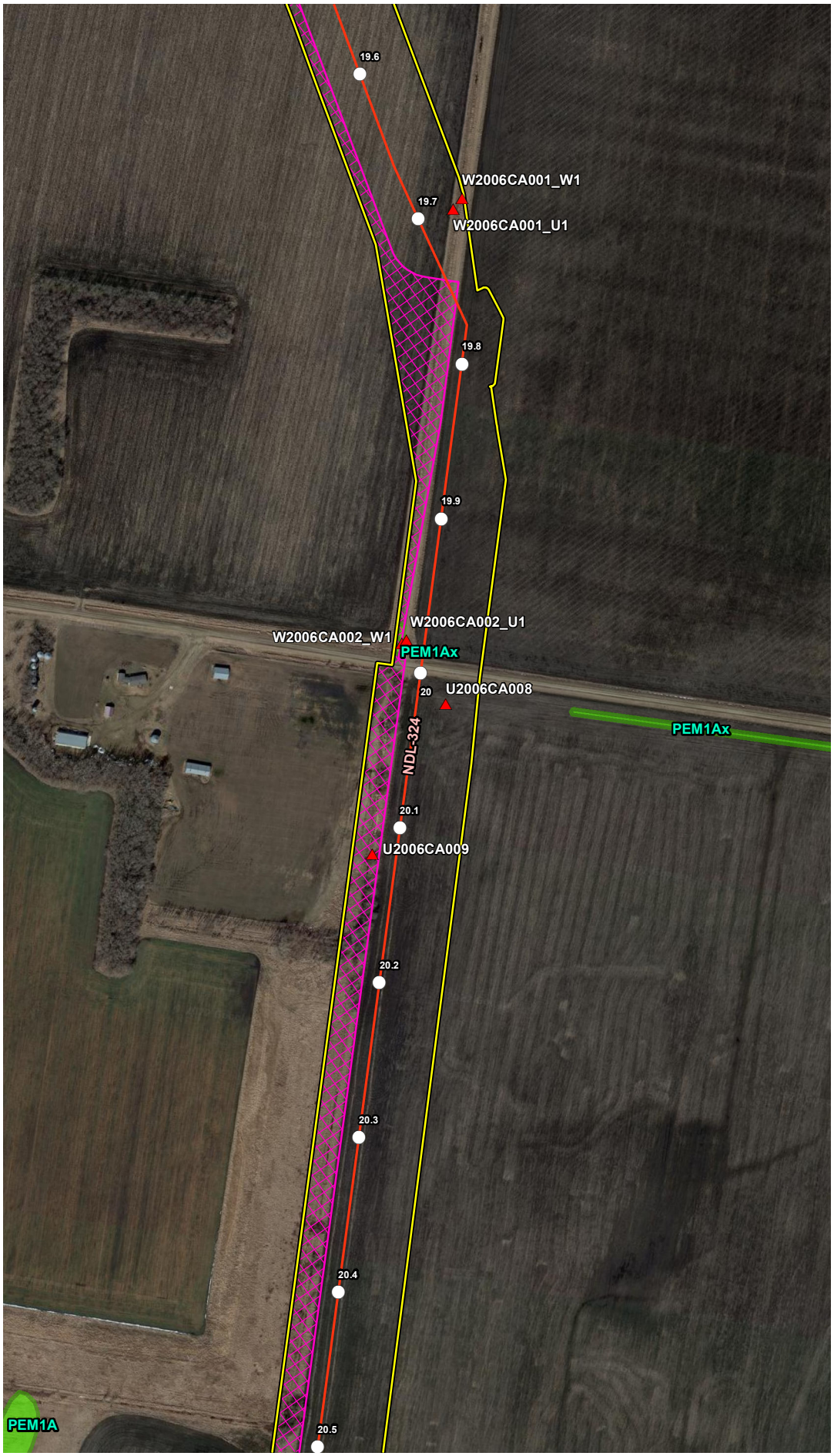
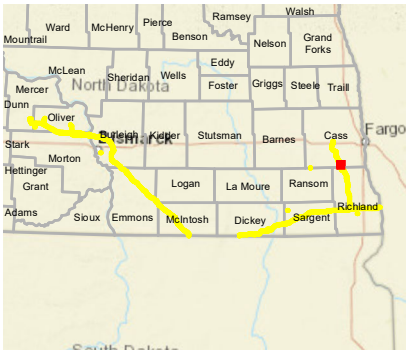
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision

Revision description

| Date | Revised by | Checked by |
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Figure Title:

NWI Map

Figure Number:

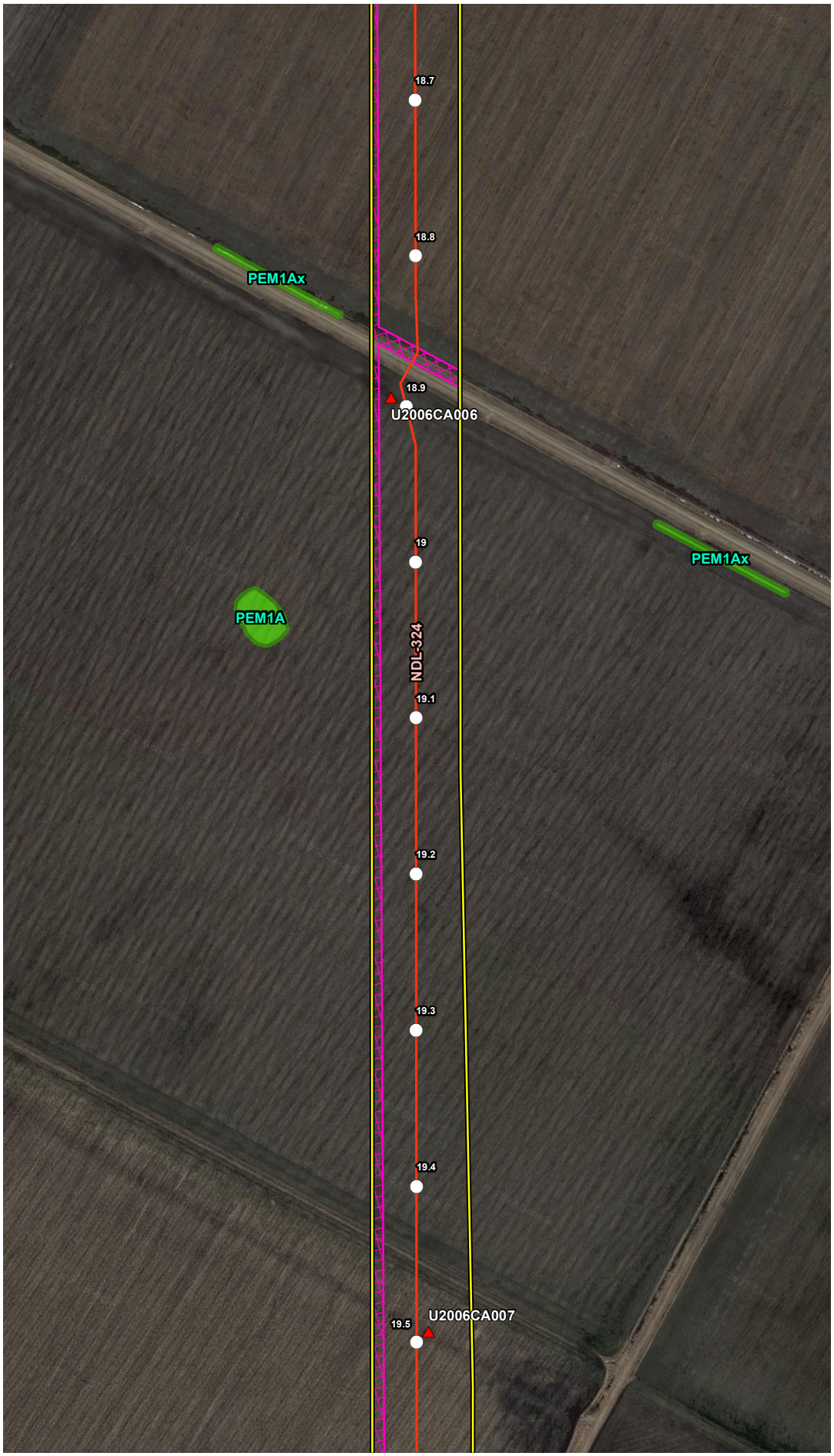
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 362 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ID\VWR\2022\901_VWR_NDImxds14_NWI.mxd

## NWI MAP

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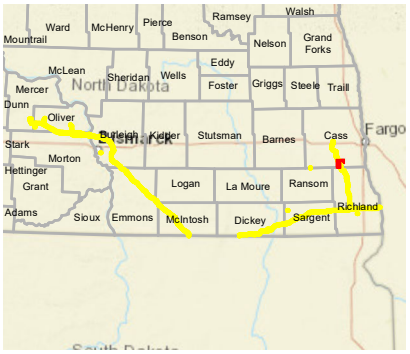


## LEGEND

- Milepost
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0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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**Figure Title:**
NWI Map

**Figure Number:**
Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 363 of 392 | 2001-22-004<br>Current Revision |

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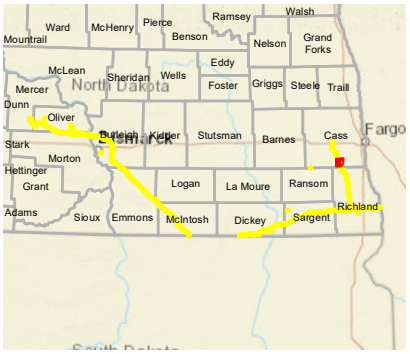
## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
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0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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Appendix A-4

| Scale: | Projection: |
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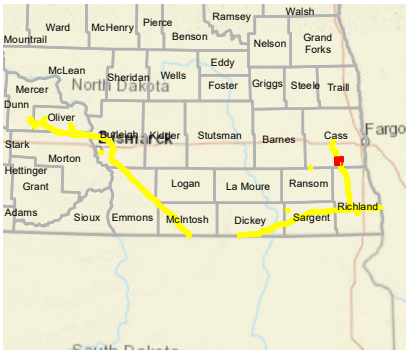
| Sheet:<br>364 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

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0 250 500 Feet

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| Date | Revised by | Checked by |
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| 2022-08-04 | MM | AB |

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**Figure Title:**

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 365 of 392 | 2001-22-004<br>Current Revision |

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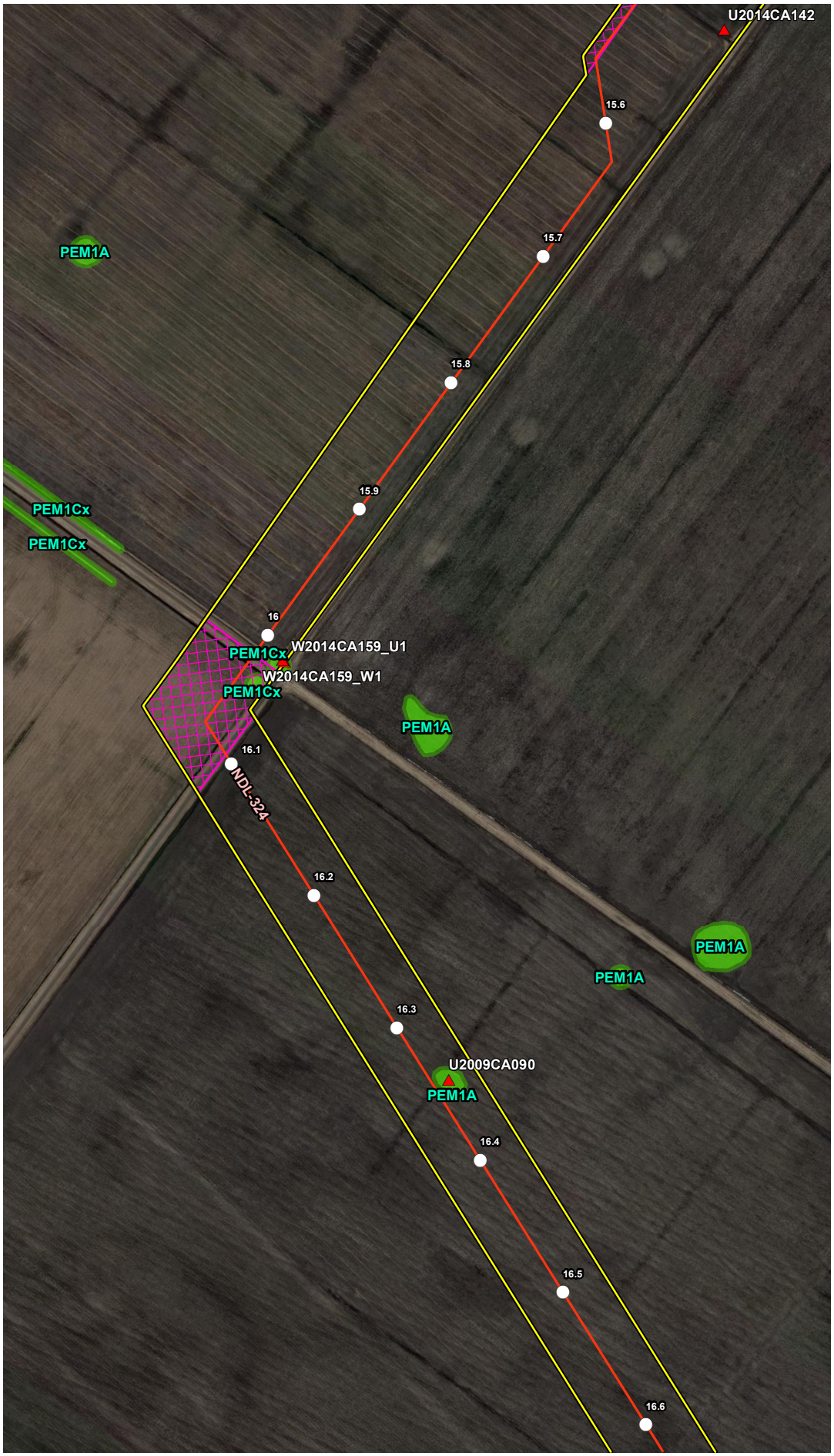
## NWI MAP

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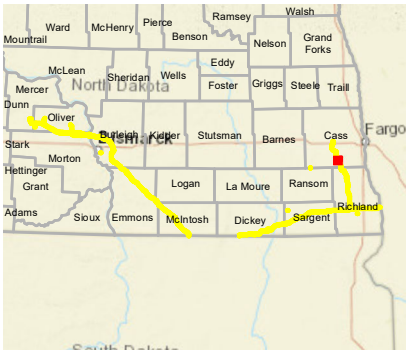


## LEGEND

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0 250 500 Feet

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| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
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| Date: | Revised by: | Checked by: |

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Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet: 366 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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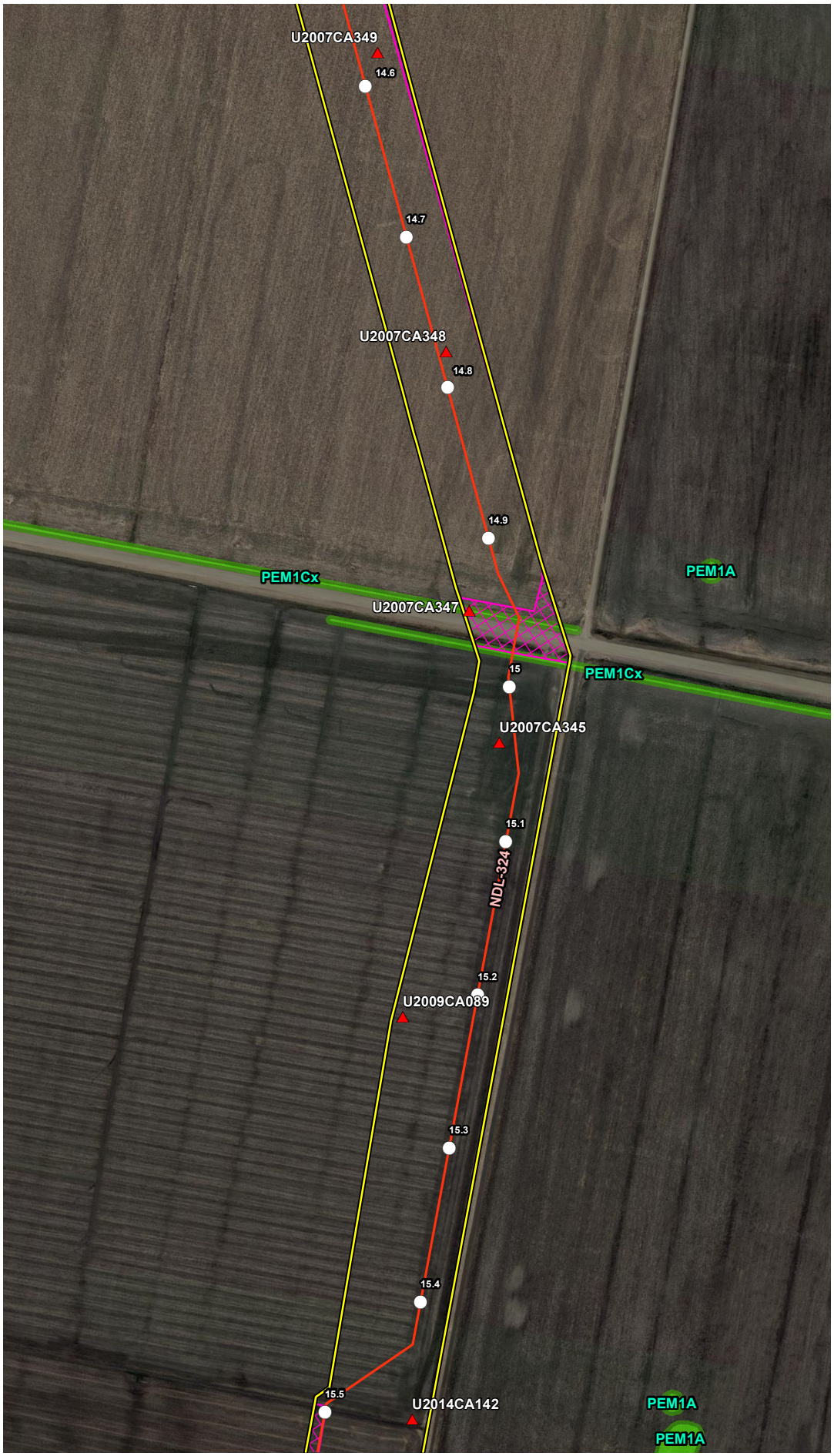
## NWI MAP

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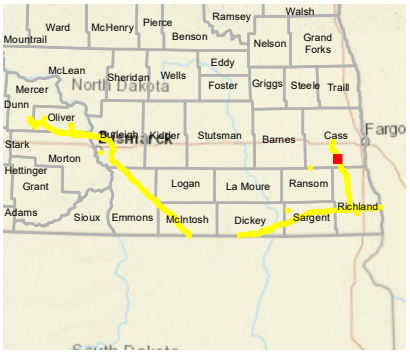


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0 250 500 Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 367 of 392 | 2001-22-004<br>Current Revision |

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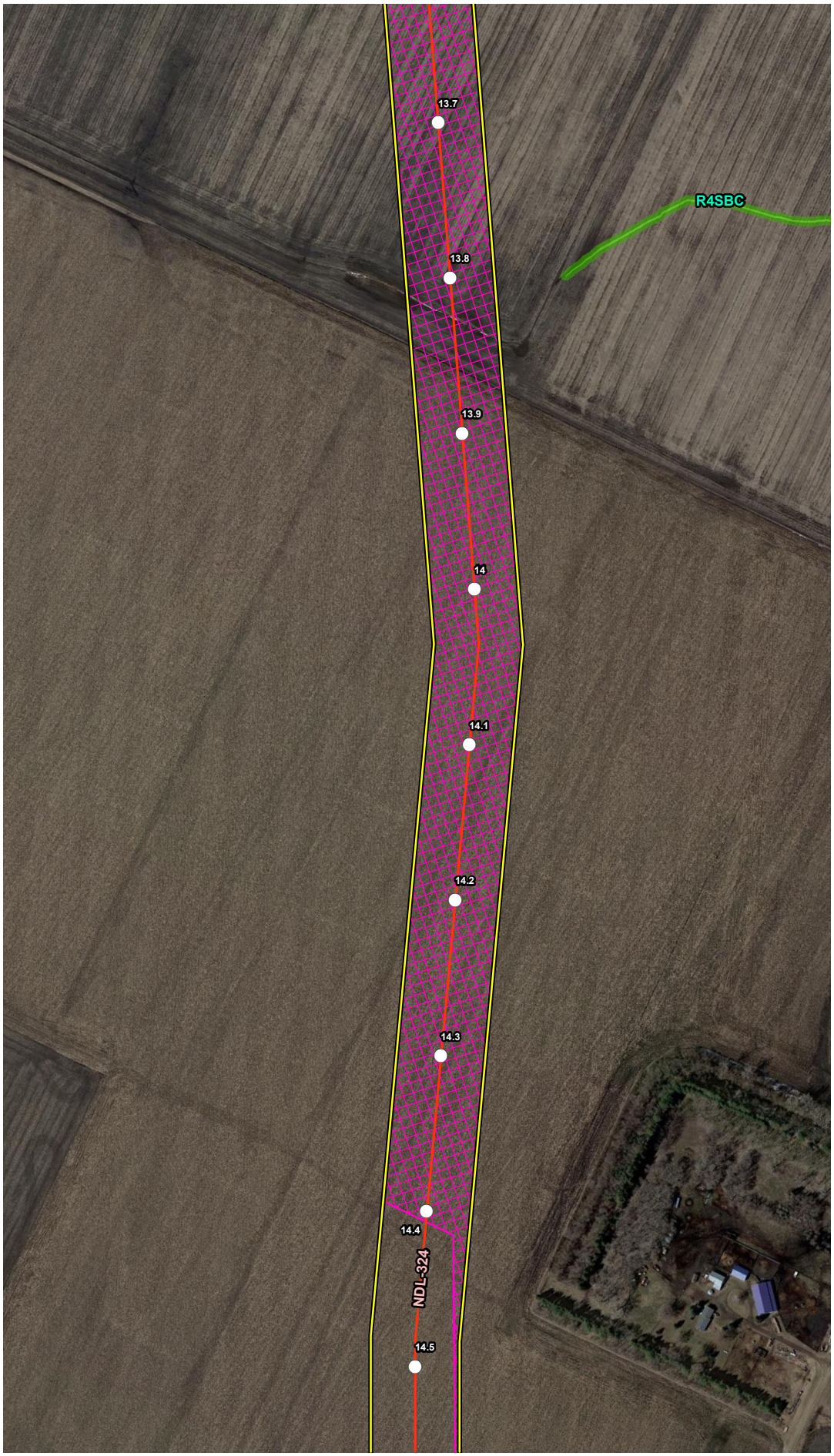
## NWI MAP

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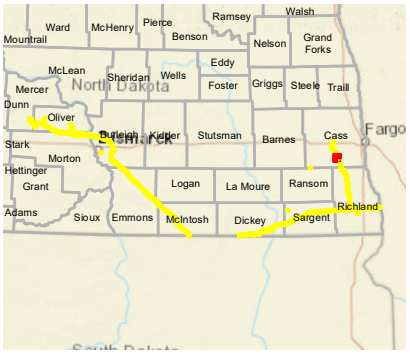


## LEGEND

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0 250 500 Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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Revision description

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Figure Number:

**Appendix A-4**

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 368 of 392 | 2001-22-004<br>Current Revision |

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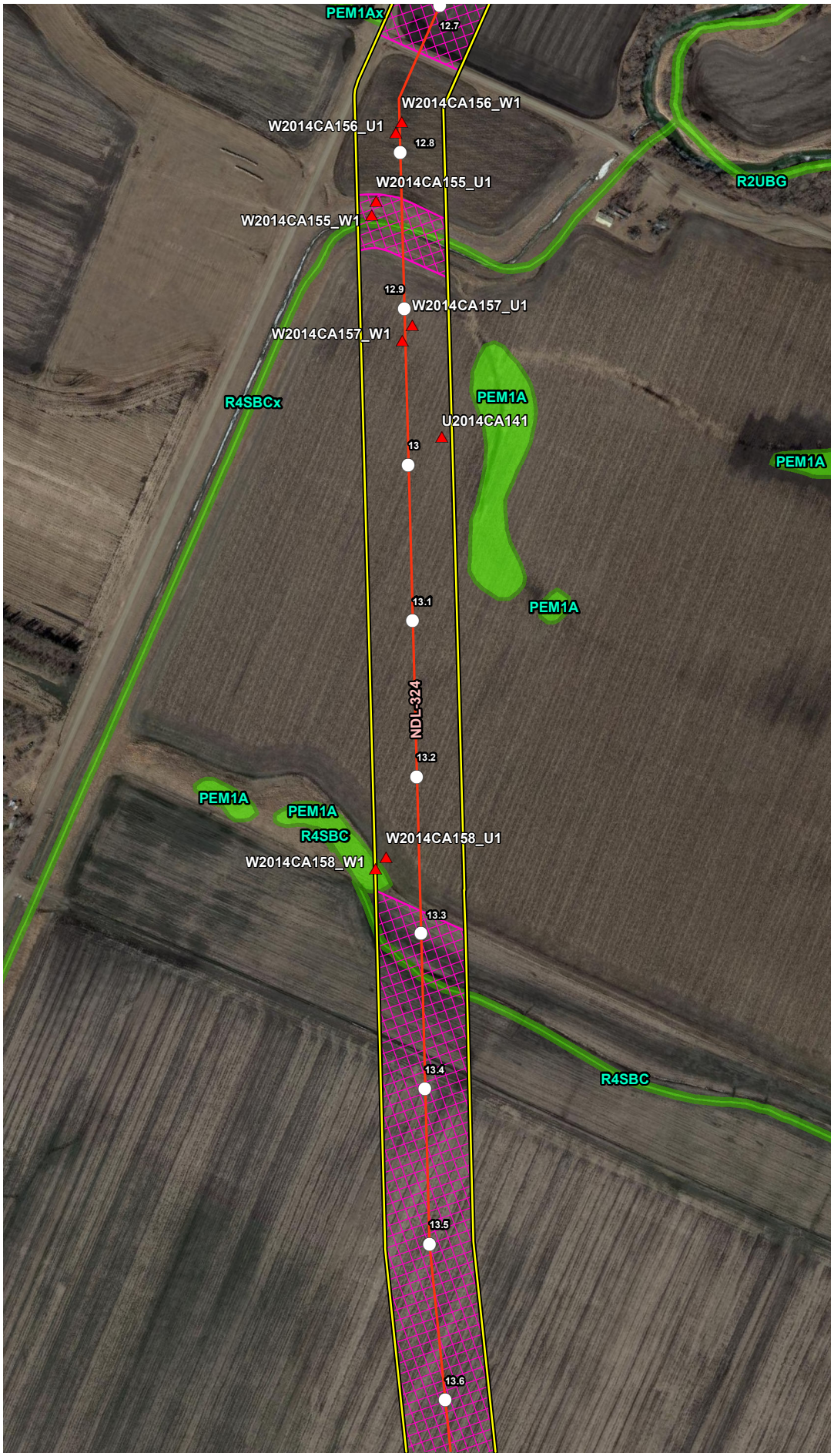
## NWI MAP

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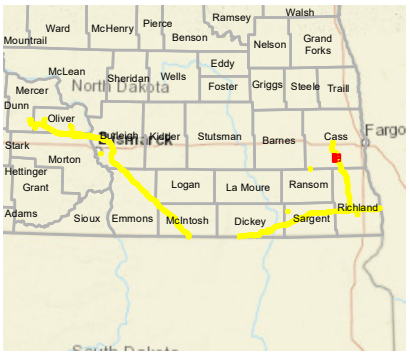


## LEGEND

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0 250 500 Feet

## REVISIONS

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1A - Revision

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Figure Number:

Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 369 of 392 | 2001-22-004<br>Current Revision |

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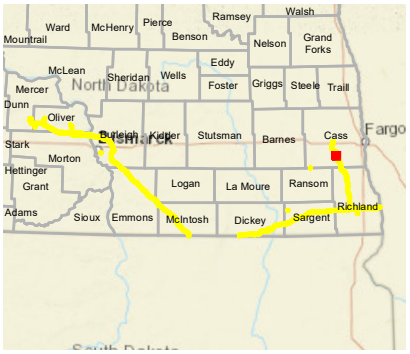
## NWI MAP




## VICINITY MAP




## LEGEND

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| 2022-08-04 | MM | AB |

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 370 of 392 | 2001-22-004<br>Current Revision |

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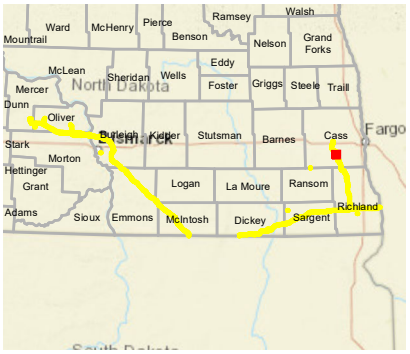
## NWI MAP




## VICINITY MAP

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| 371 of 392 | 2001-22-004<br>Current Revision |

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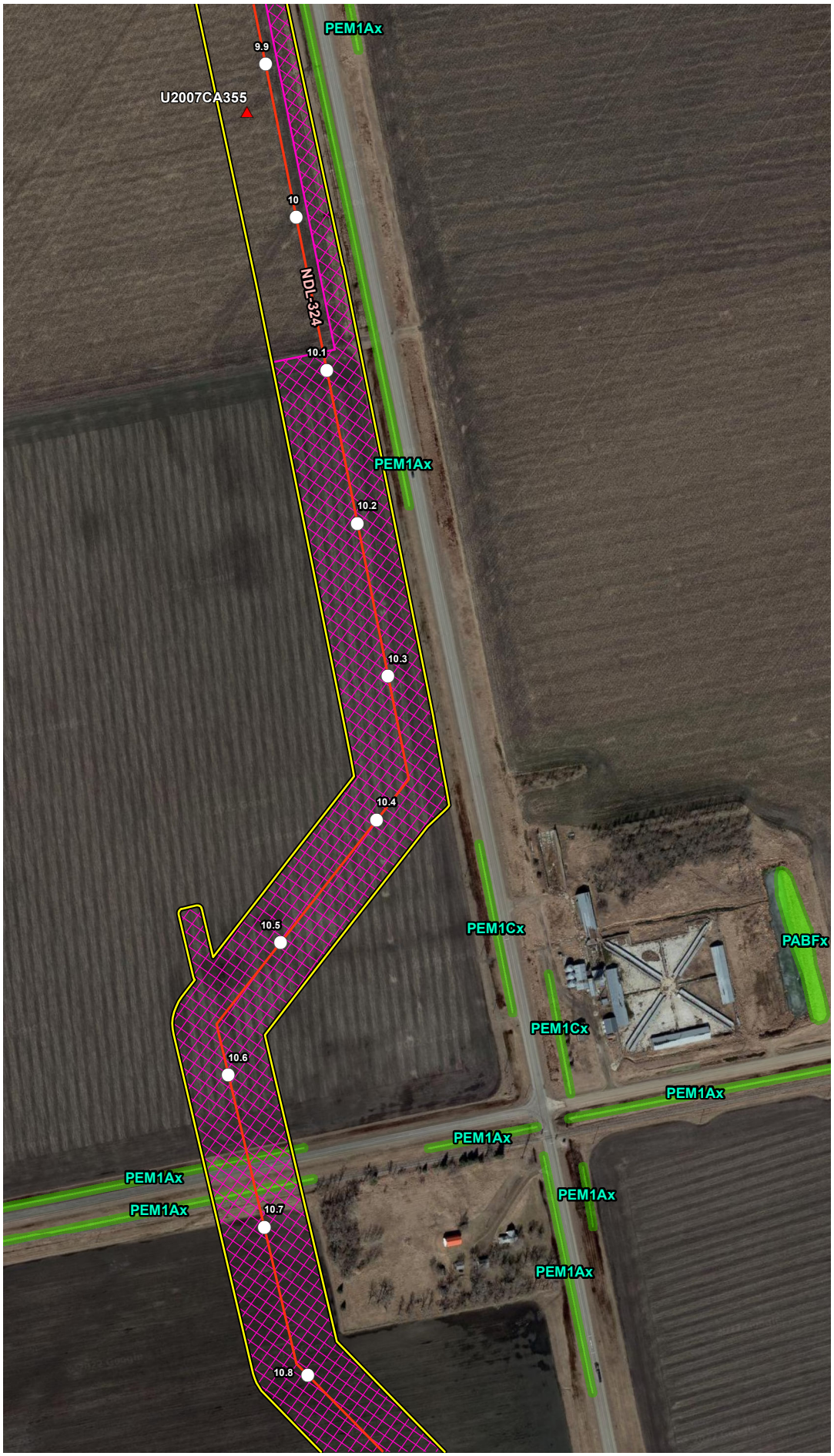
## NWI MAP

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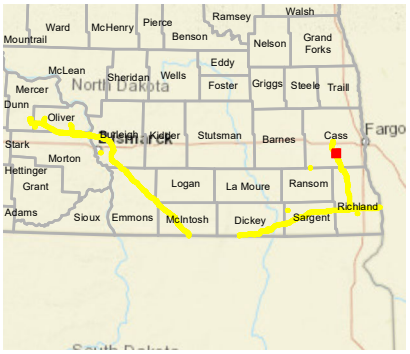


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|---|---|---|
| 2022-08-04 | MM | AB |

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Revision description

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|---|---|---|
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**Figure Title:**
NWI Map

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Appendix A-4

| Scale: | Projection: |
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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 372 of 392 | 2001-22-004<br>Current Revision |

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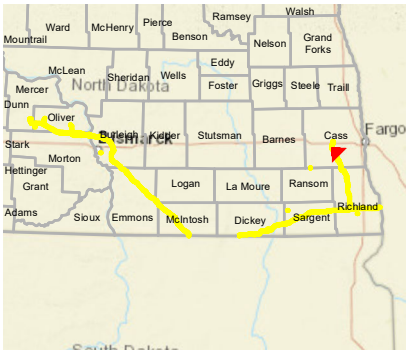
## NWI MAP




## VICINITY MAP

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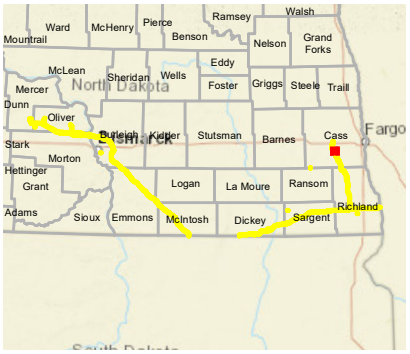
## NWI MAP




## VICINITY MAP




## LEGEND

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|---|---|---|
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| Date: | Revised by: | Checked by: |
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Appendix A-4

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| Sheet: 374 of 392 | Drawing Number: 2001-22-004<br>Current Revision |

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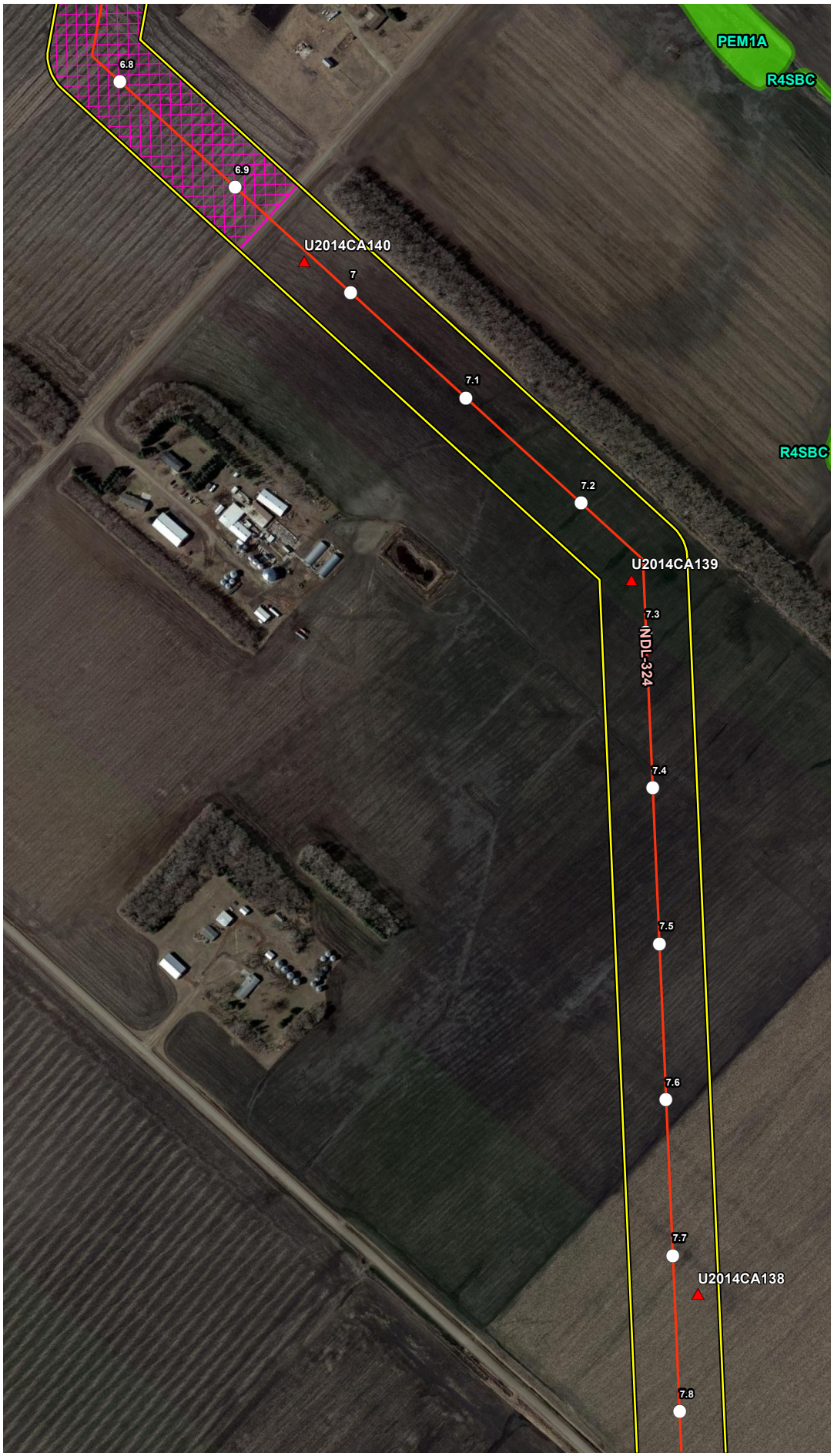
## NWI MAP

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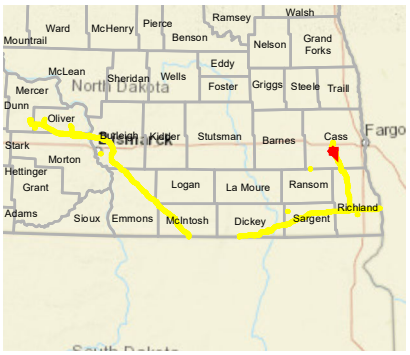


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|---|---|---|
| 2022-08-04 | MM | AB |

1A - Revision
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**Figure Title:**
NWI Map

**Figure Number:**
Appendix A-4

| Scale | Projection |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

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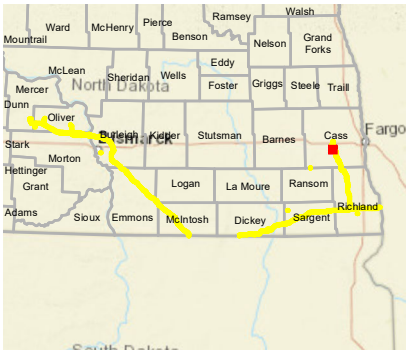
| 375 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\SD\WR\2022\801_WR_NDImxds14_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500
Feet

## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

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| 376 of 392 | 2001-22-004<br>Current Revision |

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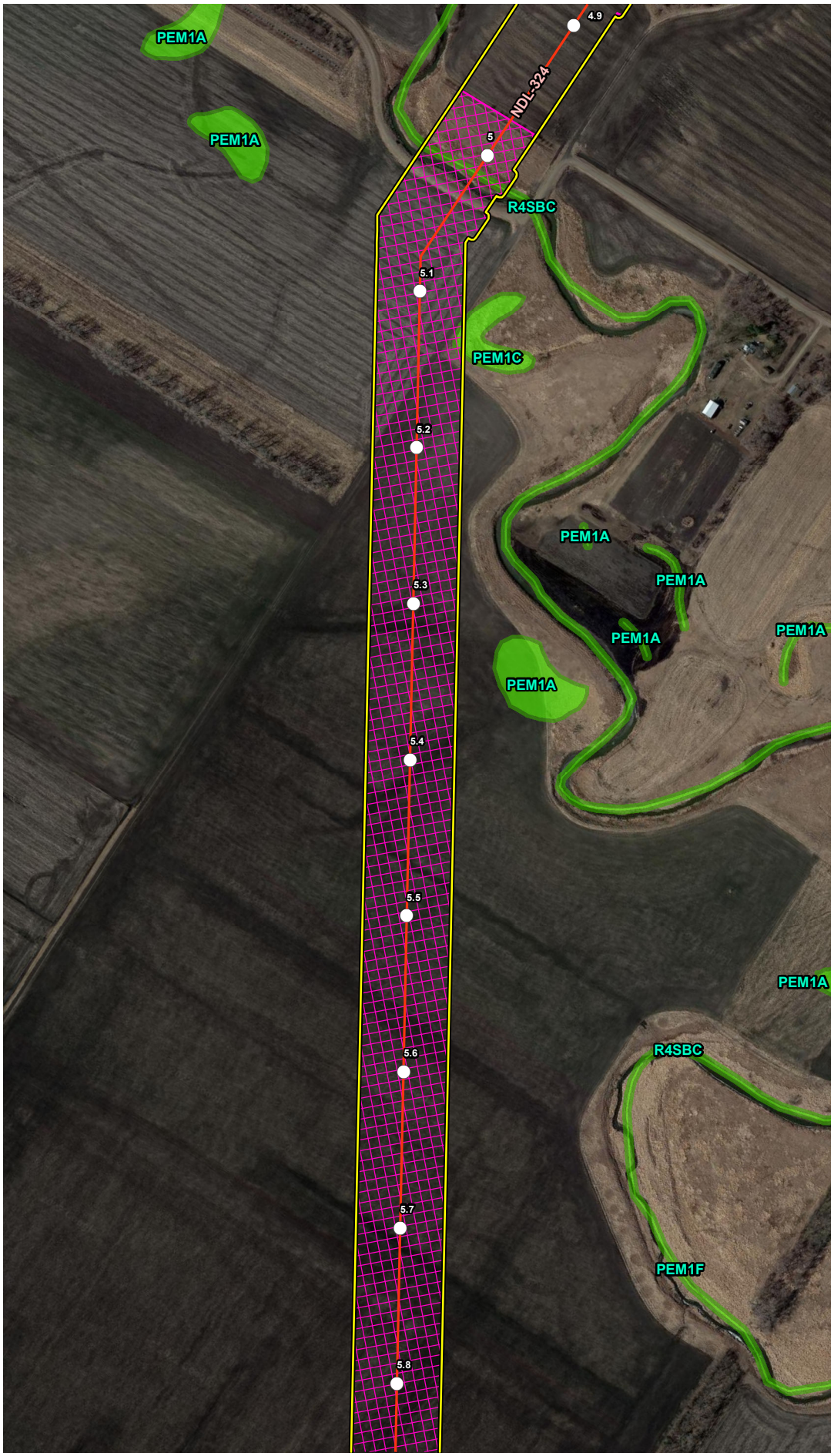
## NWI MAP

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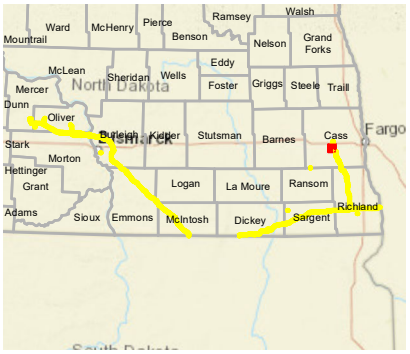


## LEGEND

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0 250 500 Feet

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| 377 of 392 | 2001-22-004<br>Current Revision |

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## NWI MAP




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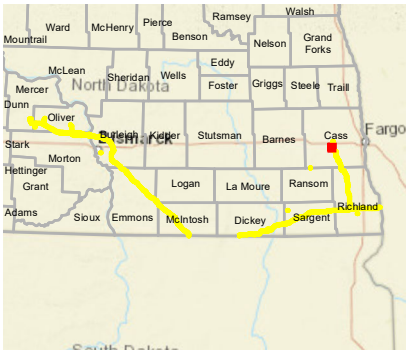


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0 250 500 Feet

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| 378 of 392 | 2001-22-004<br>Current Revision |

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## NWI MAP




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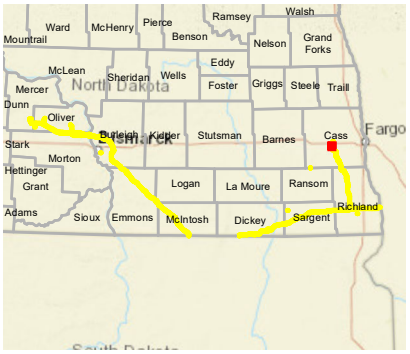


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| 379 of 392 | 2001-22-004<br>Current Revision |

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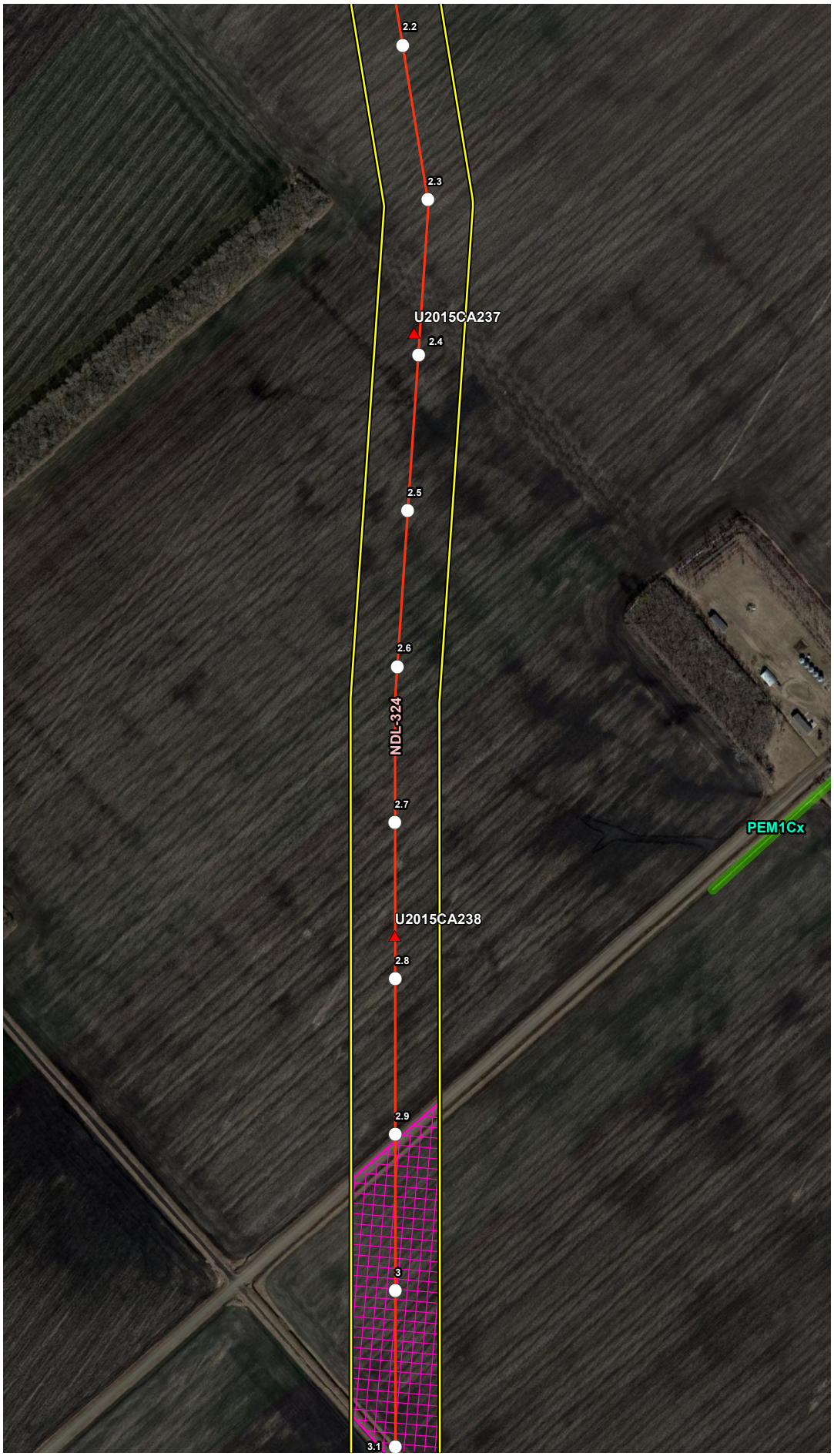
## NWI MAP

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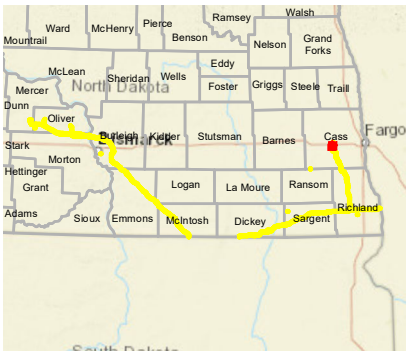


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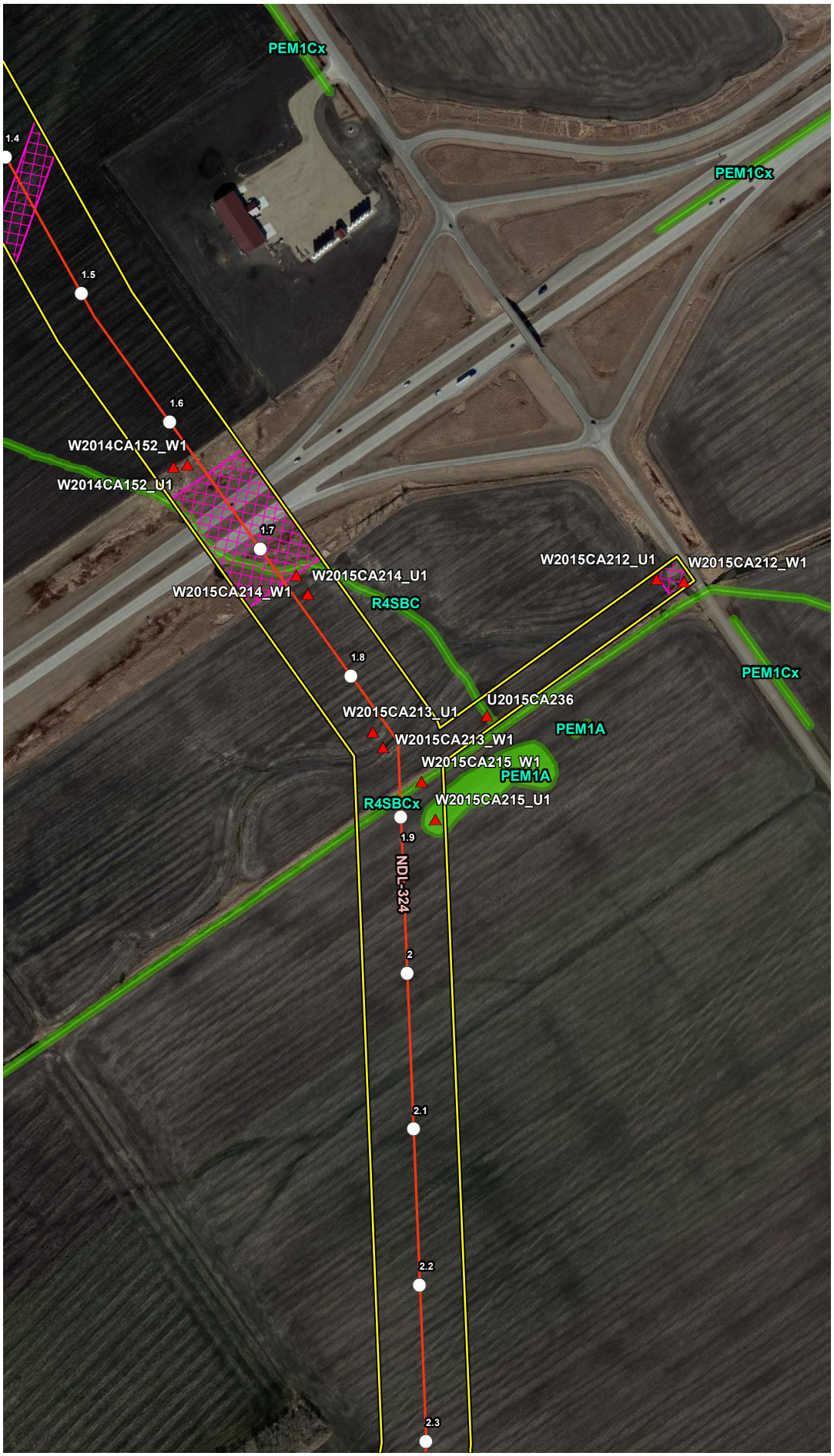


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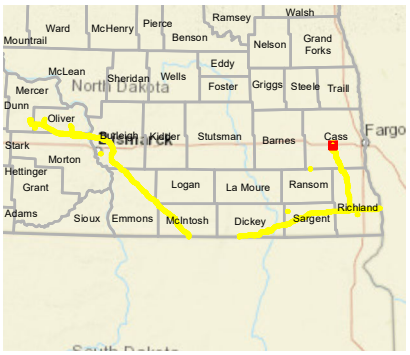


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## NWI MAP




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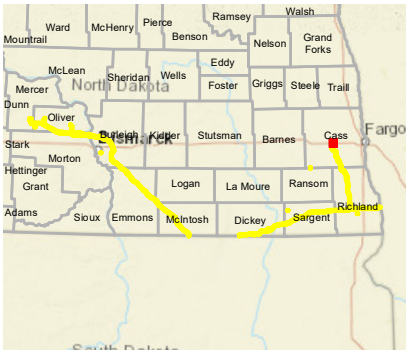


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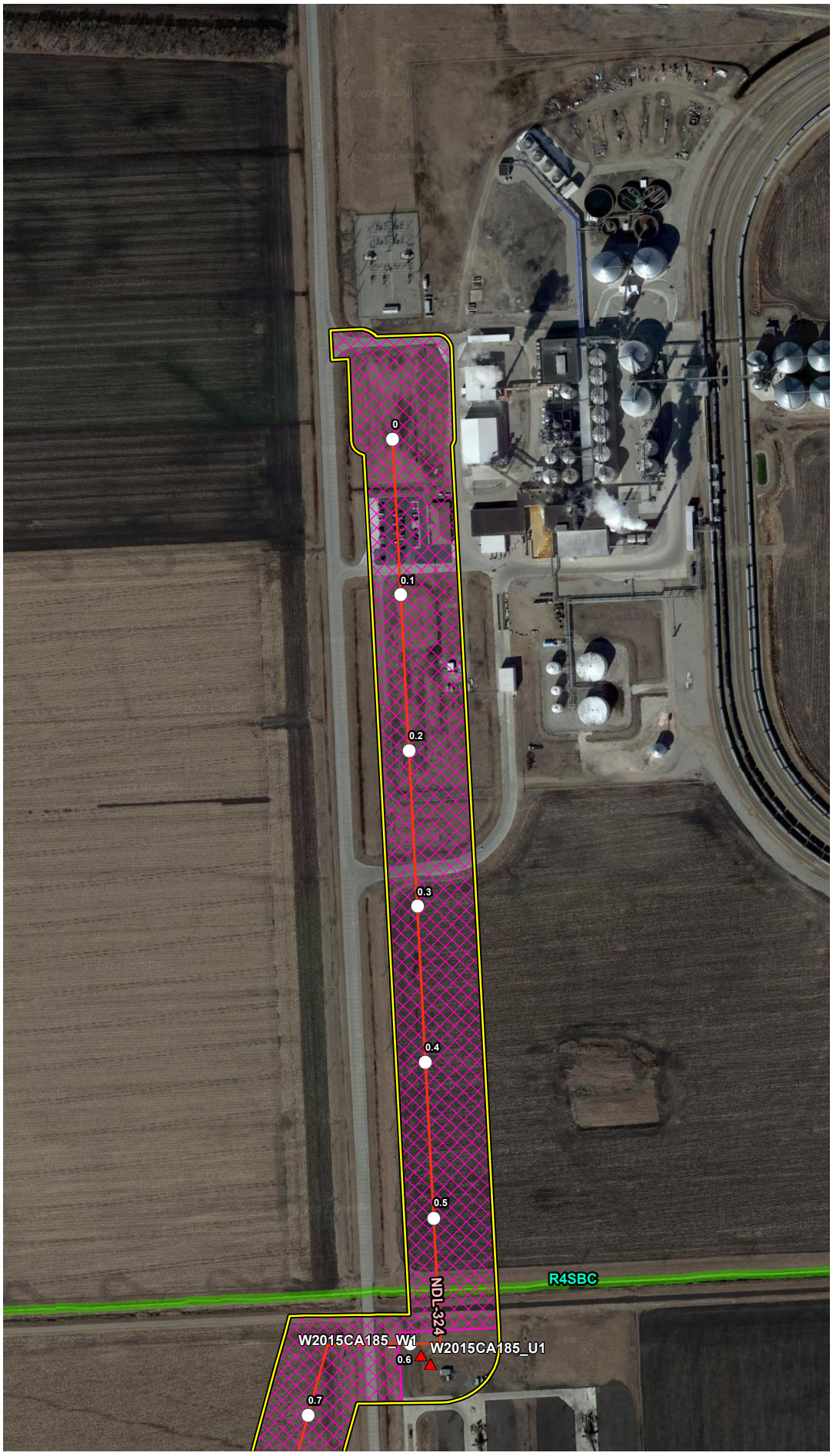
## NWI MAP

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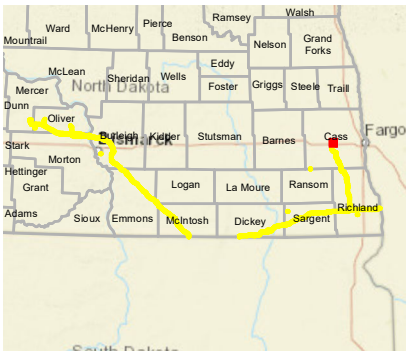


## LEGEND

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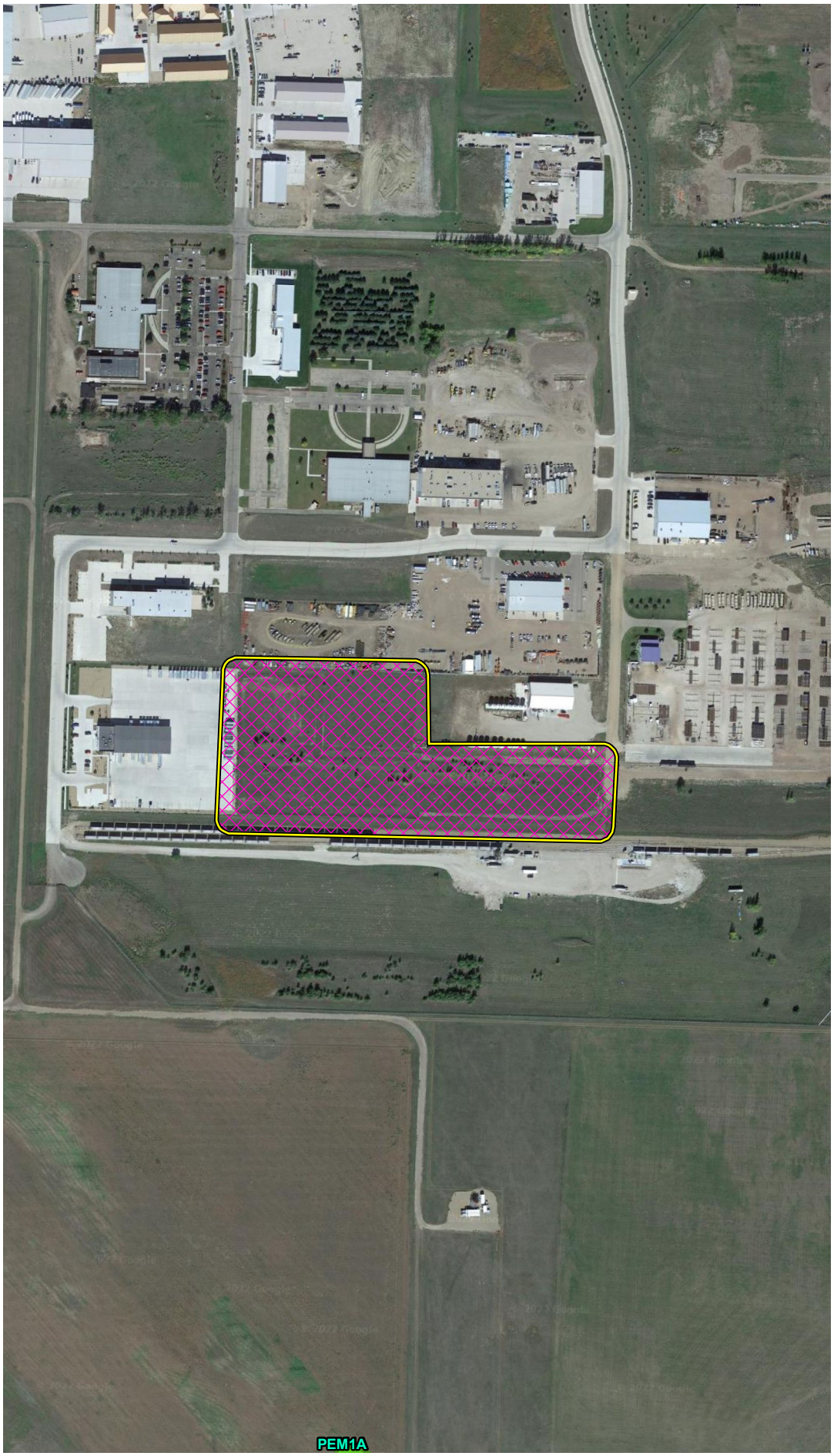
## NWI MAP

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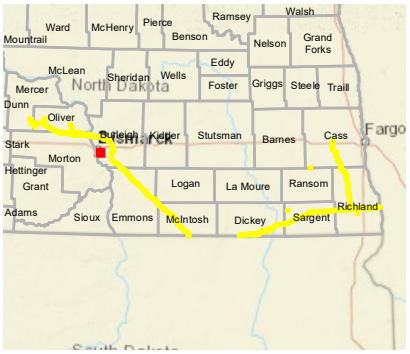


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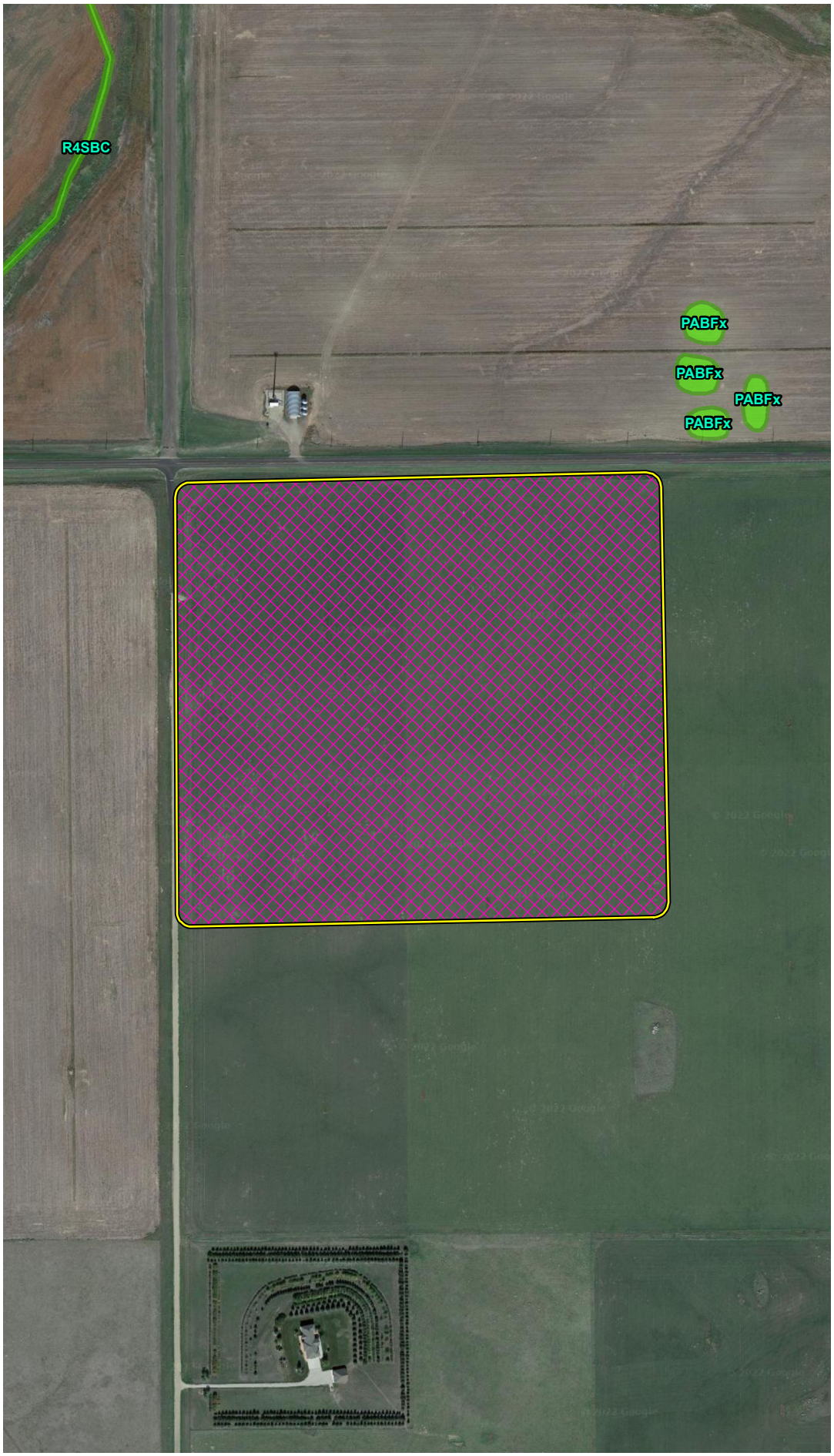


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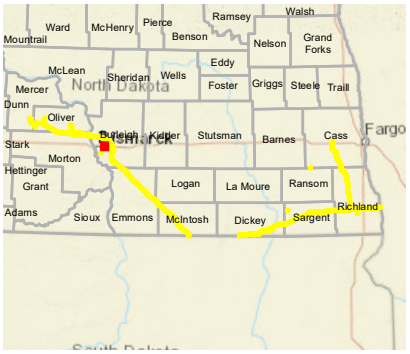


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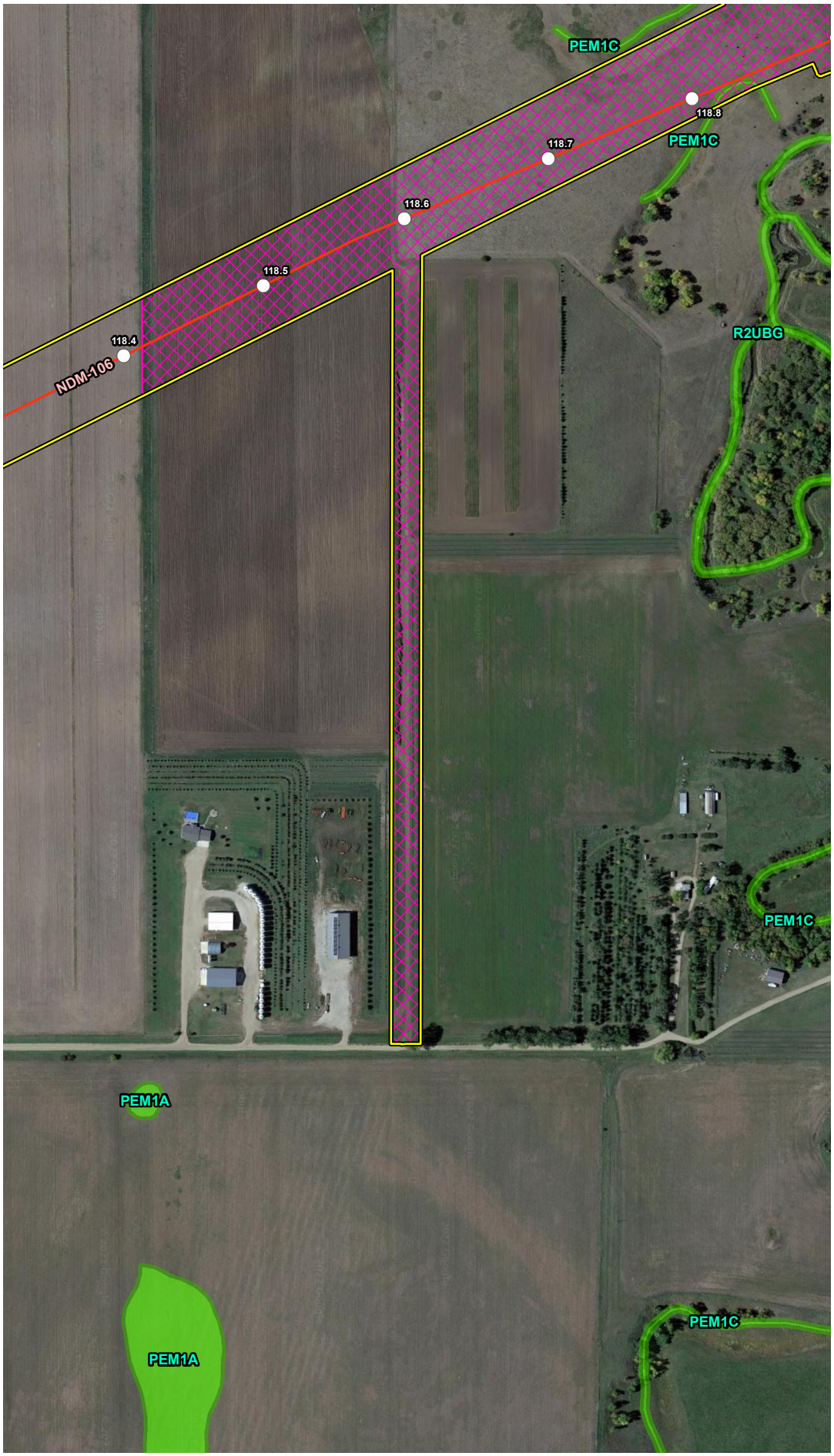
## NWI MAP

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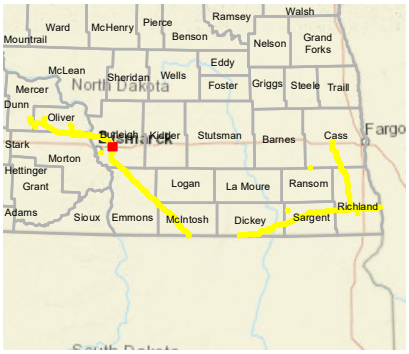


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0 250 500 Feet

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## NWI MAP




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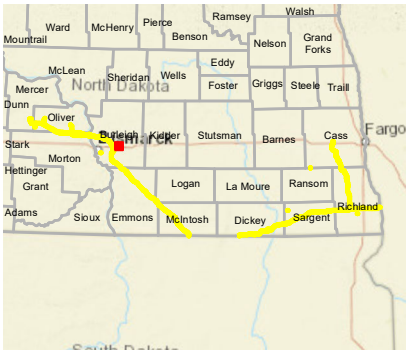


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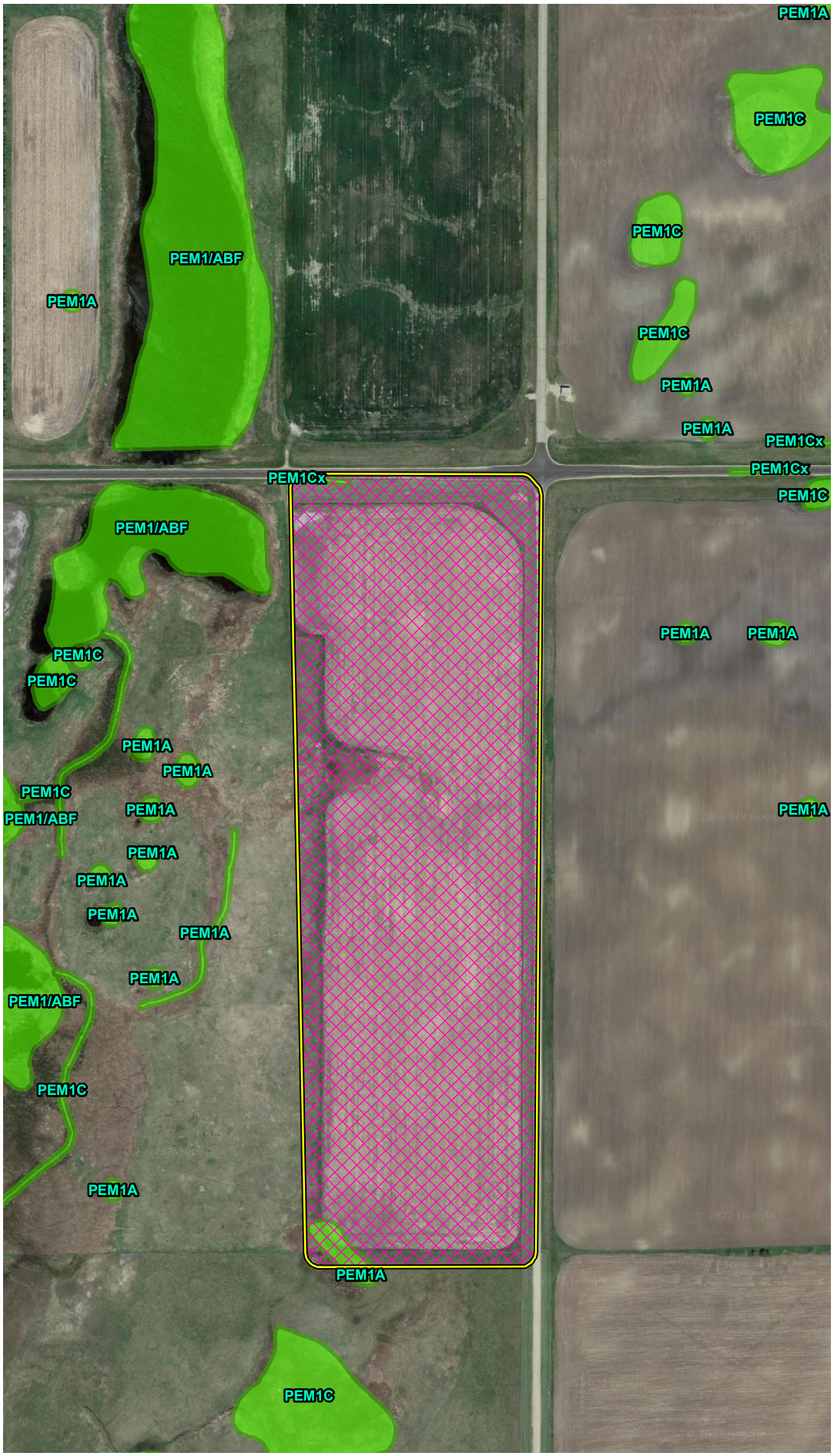
## NWI MAP

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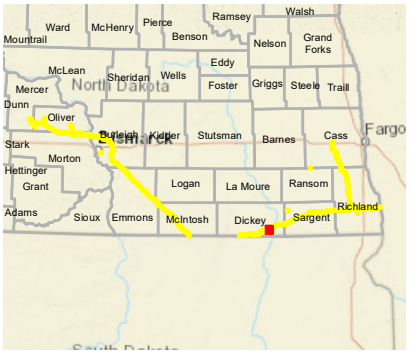


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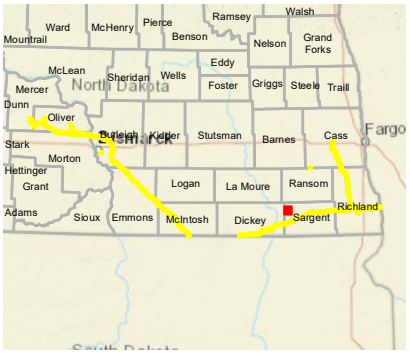
| 388 of 392 | 2001-22-004<br>Current Revision |

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ISV\WR\2022\801_WR_NDmxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP




## LEGEND

- Milepost
- Soil Station
- Proposed Route (07/19/22)
- Desktop Review Area
- Environmental Survey Area
- NWI Wetland
- County Boundary
- State Boundary

0 250 500 Feet

## REVISIONS

| Date: 2022-08-04 | Revised by: MM | Checked by: AB |
|---|---|---|
| 1A - Revision<br>Revision description | | |
| Date: | Revised by: | Checked by: |
| Date: | Revised by: | Checked by: |

## PREPARED BY


**Summit Carbon Solutions**
2321 North Loop Drive, Suite 221
Ames, Iowa 50010
United States of America
www.summitcarbonsolutions.com


SUMMIT CARBON SOLUTIONS

Figure Title:
NWI Map

Figure Number:
Appendix A-4

| Scale: | Projection: |
|---|---|
| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |
| Sheet:<br>389 of 392 | Drawing Number:<br>2001-22-004<br>Current Revision |

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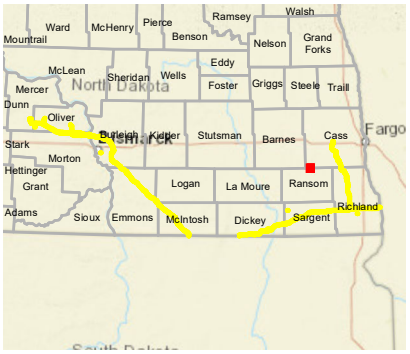
## NWI MAP




## VICINITY MAP




## LEGEND

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## REVISIONS

| Date | Revised by | Checked by |
|---|---|---|
| 2022-08-04 | MM | AB |

**1A - Revision**

Revision description

| Date | Revised by | Checked by |
|---|---|---|
| | | |

| Date | Revised by | Checked by |
|---|---|---|
| | | |

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**Figure Title:**

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Appendix A-4

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| 1:6,000<br>1 inch = 500 feet | Transverse Mercator<br>NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| 390 of 392 | 2001-22-004<br>Current Revision |

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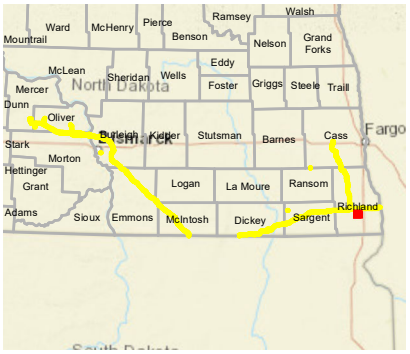
## NWI MAP



## VICINITY MAP




## LEGEND

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| 1A - Revision<br>Revision description | | |
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Figure Title:
NWI Map

Figure Number:
Appendix A-4

Scale:
1:6,000
1 inch = 500 feet

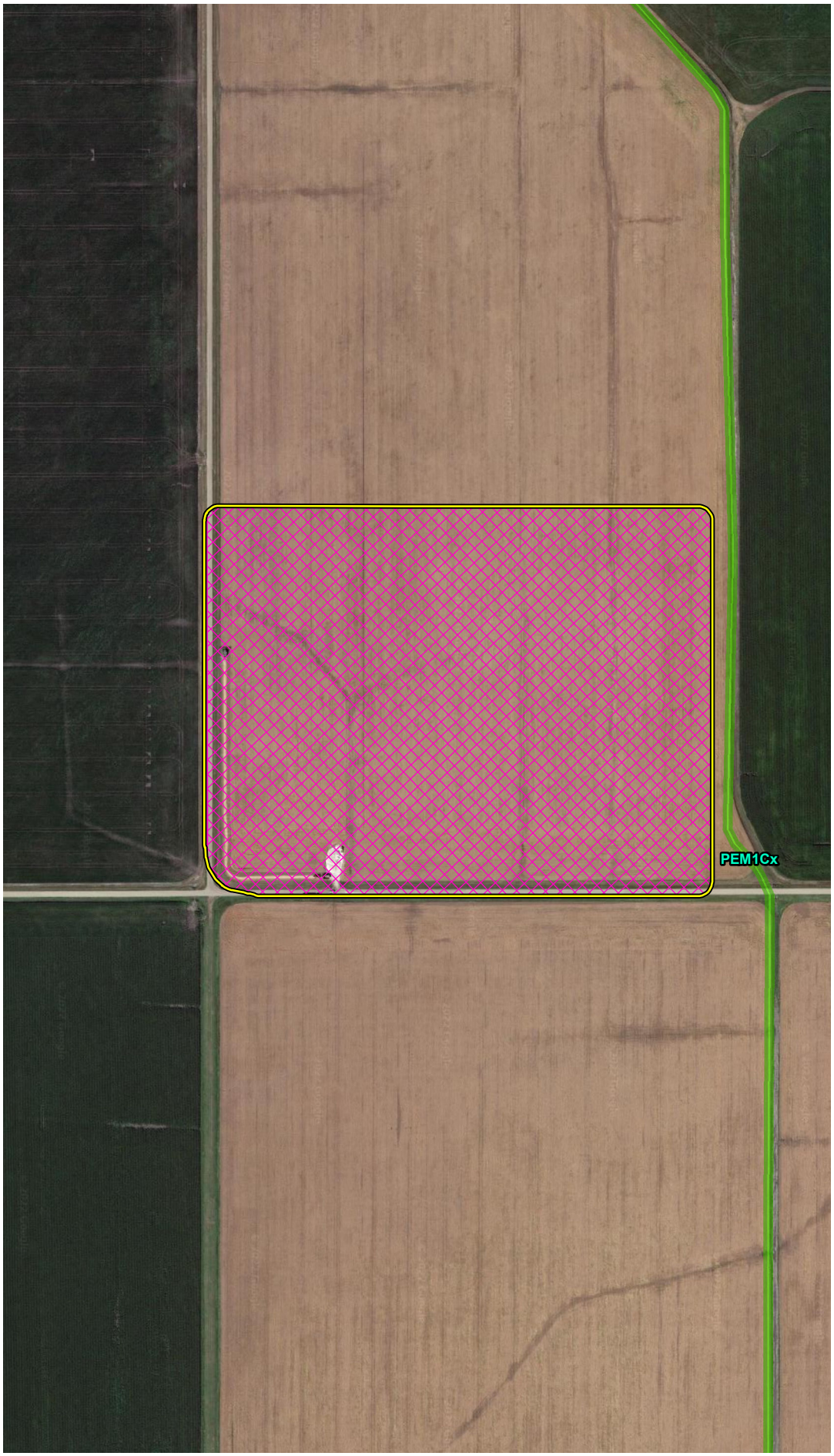
Projection:
Transverse Mercator
NAD 1983 UTM Zone 14N

Sheet:
391 of 392

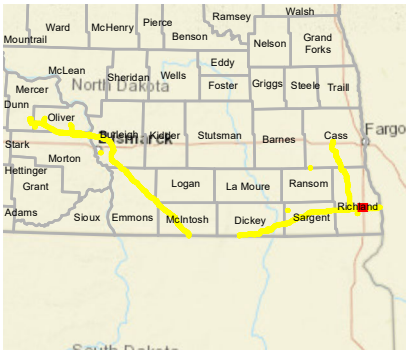
Drawing Number:
2001-22-004
Current Revision

File Path: P:\GIS\Client\Summit Carbon Solutions\MCE\Maps\ENV\WR\20220801_WR_ND\mxds\4_NWI.mxd

## NWI MAP




## VICINITY MAP

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**1A - Revision**

Revision description

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**Figure Title:**

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|---|---|
| 392 of 392 | 2001-22-004<br>Current Revision |

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# Appendix B –
# USFWS IPaC Results

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
Phone: (701) 250-4481 Fax: (701) 355-8513
https://www.fws.gov/office/north-dakota-ecological-services

In Reply Refer To: August 10, 2022
Project Code: 2022-0073245
Project Name: Midwest Carbon Express Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

**Note:** IPaC has provided all available attachments because this project is in multiple field office jurisdictions.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**North Dakota Ecological Services Field Office**
3425 Miriam Avenue
Bismarck, ND 58501-7926
(701) 250-4481

This project's location is within the jurisdiction of multiple offices. However, only one species list document will be provided for all offices. The species and critical habitats in this document reflect the aggregation of those that fall in each of the affiliated office's jurisdiction. Other offices affiliated with the project:

**Minnesota-Wisconsin Ecological Services Field Office**
4101 American Blvd E
Bloomington, MN 55425-1665
(952) 252-0092

**South Dakota Ecological Services Field Office**
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
(605) 224-8693

# Project Summary

Project Code: 2022-0073245
Project Name: Midwest Carbon Express Project
Project Type: Pipeline - Onshore - New Constr - Below Ground
Project Description: The Midwest Carbon Express Project involves the construction of new pipelines of various diameters to transfer captured carbon dioxide to proposed locations for sequestration in North Dakota.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@46.151882549999996,-96.9224636028274,14z




Counties: North Dakota and South Dakota

# Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

| NAME | STATUS |
|---|---|
| Northern Long-eared Bat *Myotis septentrionalis*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/9045 | Threatened |

## Birds

| NAME | STATUS |
|---|---|
| Piping Plover *Charadrius melodus*<br>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.<br>There is **final** critical habitat for this species. Your location overlaps the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/6039 | Threatened |
| Red Knot *Calidris canutus rufa*<br>There is **proposed** critical habitat for this species. The location of the critical habitat is not available.<br>Species profile: https://ecos.fws.gov/ecp/species/1864 | Threatened |
| Whooping Crane *Grus americana*<br>Population: Wherever found, except where listed as an experimental population<br>There is **final** critical habitat for this species. The location of the critical habitat is not available.<br>Species profile: https://ecos.fws.gov/ecp/species/758 | Endangered |

## Insects

| NAME | STATUS |
|---|---|
| Dakota Skipper *Hesperia dacotae*<br>There is **final** critical habitat for this species. The location of the critical habitat is not available.<br>Species profile: https://ecos.fws.gov/ecp/species/1028 | Threatened |
| Monarch Butterfly *Danaus plexippus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/9743 | Candidate |
| Poweshiek Skipperling *Oarisma poweshiek*<br>There is **final** critical habitat for this species. The location of the critical habitat is not available.<br>Species profile: https://ecos.fws.gov/ecp/species/9161 | Endangered |

## Flowering Plants

| NAME | STATUS |
|---|---|
| Western Prairie Fringed Orchid *Platanthera praeclara*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/1669 | Threatened |

## Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

| NAME | STATUS |
|---|---|
| Piping Plover *Charadrius melodus*<br>https://ecos.fws.gov/ecp/species/6039#crithab | Final |

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

| FACILITY NAME | ACRES |
|---|---|
| EMMONS COUNTY WATERFOWL PRODUCTION AREA<br>https://www.fws.gov/refuges/profiles/index.cfm?id=62522 | 0 |
| MCINTOSH COUNTY WATERFOWL PRODUCTION AREA<br>https://www.fws.gov/refuges/profiles/index.cfm?id=62630 | 2,706.42 |
| SARGENT COUNTY WATERFOWL PRODUCTION AREA<br>https://www.fws.gov/refuges/profiles/index.cfm?id=62660 | 0 |

# Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

**The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location.** To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|
| American Golden-plover *Pluvialis dominica*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| Bald Eagle *Haliaeetus leucocephalus*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. | Breeds Dec 1 to Aug 31 |

| NAME | BREEDING SEASON |
|---|---|
| Black Tern *Chlidonias niger*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/3093 | Breeds May 15 to Aug 20 |
| Bobolink *Dolichonyx oryzivorus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds May 20 to Jul 31 |
| Chestnut-collared Longspur *Calcarius ornatus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds May 1 to Aug 10 |
| Chimney Swift *Chaetura pelagica*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 15 to Aug 25 |
| Clark's Grebe *Aechmophorus clarkii*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Jun 1 to Aug 31 |
| Eastern Whip-poor-will *Antrostomus vociferus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds May 1 to Aug 20 |
| Ferruginous Hawk *Buteo regalis*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/6038 | Breeds Mar 15 to Aug 15 |
| Franklin's Gull *Leucophaeus pipixcan*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds May 1 to Jul 31 |
| Golden Eagle *Aquila chrysaetos*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br>https://ecos.fws.gov/ecp/species/1680 | Breeds Jan 1 to Aug 31 |
| Golden-winged Warbler *Vermivora chrysoptera*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8745 | Breeds May 1 to Jul 20 |
| Hudsonian Godwit *Limosa haemastica*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| Lark Bunting *Calamospiza melanocorys*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds May 10 to Aug 15 |

| NAME | BREEDING SEASON |
|---|---|
| Lesser Yellowlegs *Tringa flavipes*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9679 | Breeds elsewhere |
| Lewis's Woodpecker *Melanerpes lewis*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9408 | Breeds Apr 20 to Sep 30 |
| Long-eared Owl *asio otus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/3631 | Breeds Mar 1 to Jul 15 |
| Marbled Godwit *Limosa fedoa*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9481 | Breeds May 1 to Jul 31 |
| Prairie Falcon *Falco mexicanus*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/4736 | Breeds Mar 1 to Jul 31 |
| Red-headed Woodpecker *Melanerpes erythrocephalus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds May 10 to Sep 10 |
| Ruddy Turnstone *Arenaria interpres morinella*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds elsewhere |
| Short-billed Dowitcher *Limnodromus griseus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9480 | Breeds elsewhere |
| Sprague's Pipit *Anthus spragueii*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8964 | Breeds May 10 to Aug 31 |
| Western Grebe *aechmophorus occidentalis*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/6743 | Breeds Jun 1 to Aug 31 |
| Willet *Tringa semipalmata*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Apr 20 to Aug 5 |

# Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

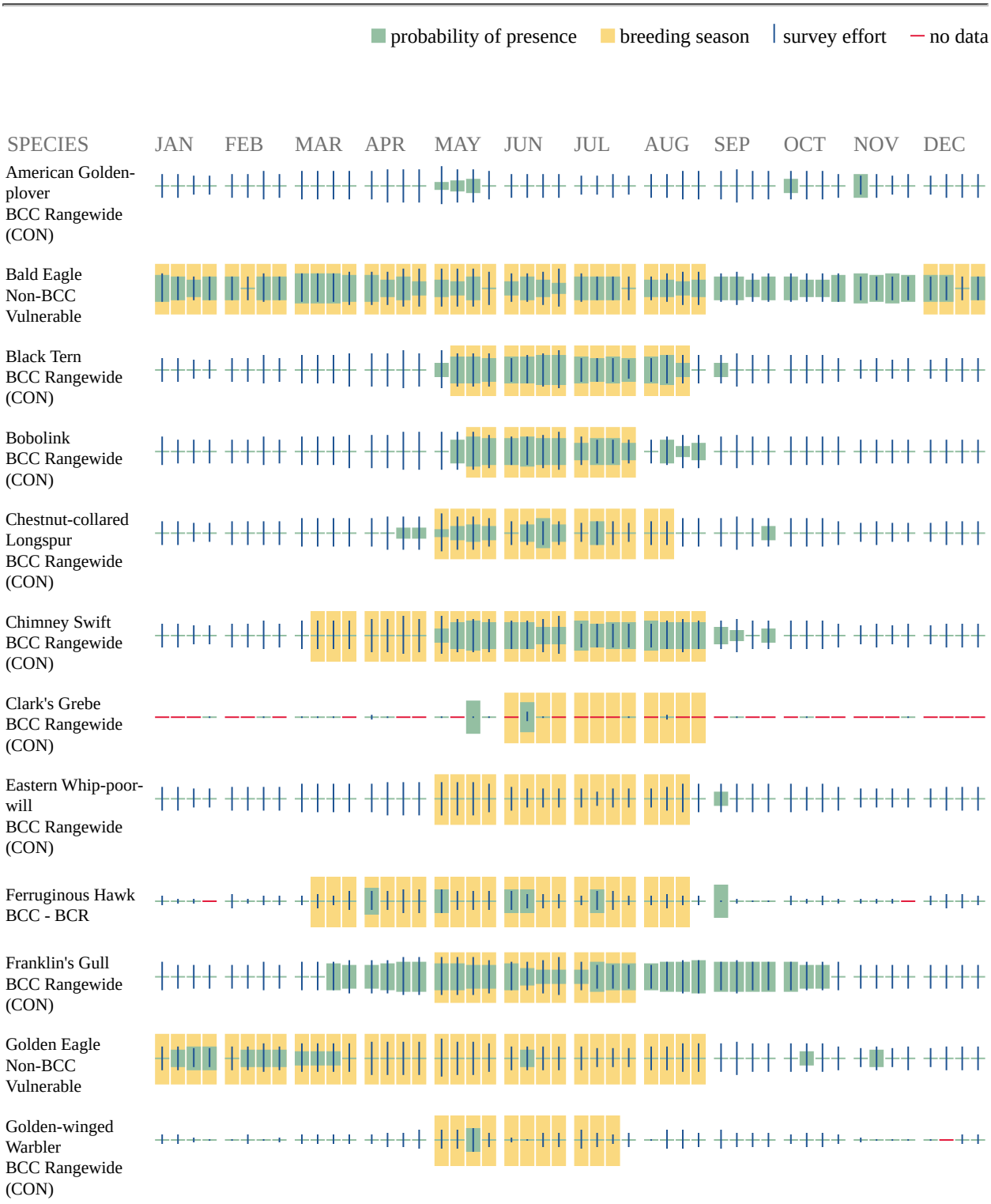
**Breeding Season (■)**
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

**No Data (–)**
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.






Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds

- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look

at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

**Details about birds that are potentially affected by offshore projects**
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

**What if I have eagles on my list?**
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be

aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

# Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

# IPaC User Contact Information


| | |
|---|---|
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# Appendix C –
# Dominant Wetland Vegetation

| Table D1: Dominant Wetland Vegetation within the Midwest Carbon Express Project Survey Area - North Dakota | |
|---|---|
| **Common Name** | **Scientific Name** |
| **Palustrine Emergent (PEM) Wetlands** | |
| American licorice | *Glycyrrhiza lepidota* |
| American sloughgrass | *Beckmannia syzigachne* |
| barnyardgrass | *Echinochloa crusgalli* |
| barnyardgrass | *Echinochloa crus-galli* |
| bearded sprangletop | *Leptochloa fusca* |
| bluejoint | *Calamagrostis canadensis* |
| broadleaf cattail | *Typha latifolia* |
| Canadian thistle | *Cirsium arvense* |
| cloaked bulrush | *Scirpus pallidus* |
| common buckthorn | *Rhamnus cathartica* |
| common duckweed | *Lemna minor* |
| common rush | *Juncus effusus* |
| common spikerush | *Eleocharis palustris* |
| common squarerush | *Schoenoplectus pungens* |
| common wheat | *Triticum x aestivum* |
| corn | *Zea mays* |
| creeping meadow foxtail | *Alopecurus arundinaceus* |
| curly dock | *Rumex crispus* |
| curlytop knotweed | *Persicaria lapathifolia* |
| devil's beggartick | *Bidens frondosa* |
| disk waterhyssop | *Bacopa rotundifolia* |
| eastern cottonwood | *Populus deltoides* |
| field sowthistle | *Sonchus arvensis* |
| foxtail barley | *Hordeum jubatum* |
| green ash | *Fraxinus pennsylvanica* |
| green bulrush | *Scirpus atrovirens* |
| hardstem bulrush | *Schoenoplectus acutus* |
| hybrid cattail | *Typha X glauca* |
| Johnsongrass | *Sorghum halepense* |
| Kentucky bluegrass | *Poa pratensis* |
| lesser clearweed | *Pilea fontana* |
| longroot smartweed | *Persicaria amphibia* |

| Table D1: Dominant Wetland Vegetation within the Midwest Carbon Express Project Survey Area - North Dakota | |
|---|---|
| **Common Name** | **Scientific Name** |
| marsh bristlegrass | *Setaria parviflora* |
| mat amaranth | *Amaranthus blitoides* |
| meadow willow | *Salix petiolaris* |
| mountain rush | *Juncus balticus* |
| narrowleaf burreed | *Sparganium emersum* |
| narrowleaf cattail | *Typha angustifolia* |
| narrowleaf dock | *Rumex stenophyllus* |
| narrowleaf willow | *Salix interior* |
| nodding beggartick | *Bidens cernua* |
| peachleaf willow | *Salix amygdaloides* |
| Pennsylvania buttercup | *Ranunculus pensylvanicus* |
| Pennsylvania smartweed | *Persicaria pensylvanica* |
| prairie cordgrass | *Spartina pectinata* |
| prairie rose | *Rosa arkansana* |
| prostrate pigweed | *Amaranthus albus* |
| quackgrass | *Elymus repens* |
| quill sedge | *Carex tenera* |
| rayless alkali aster | *Symphyotrichum ciliatum* |
| red goosefoot | *Chenopodium rubrum* |
| redroot amaranth | *Amaranthus retroflexus* |
| redtop | *Agrostis gigantea* |
| reed canarygrass | *Phalaris arundinacea* |
| river bulrush | *Schoenoplectus fluviatilis* |
| Rocky Mountain goosefoot | *Chenopodium glaucum var. salinum* |
| rough barnyardgrass | *Echinochloa muricata* |
| rough bentgrass | *Agrostis scabra* |
| rough bugleweed | *Lycopus asper* |
| rough cockleburr | *Xanthium strumarium* |
| roughfruit amaranth | *Amaranthus tuberculatus* |
| saltgrass | *Distichlis spicata* |
| Sartwell's sedge | *Carex sartwellii* |
| scouringrush horsetail | *Equisetum hyemale* |
| scratchgrass | *Muhlenbergia asperifolia* |

| Table D1: Dominant Wetland Vegetation within the Midwest Carbon Express Project Survey Area - North Dakota | |
|---|---|
| **Common Name** | **Scientific Name** |
| shortbeak sedge | *Carex brevior* |
| Siberian peashrub | *Caragana arborescens* |
| silverweed cinquefoil | *Potentilla anserina* |
| slimstem reedgrass | *Calamagrostis stricta* |
| small spikerush | *Eleocharis minima* |
| smooth brome | *Bromus inermis* |
| smoothcone sedge | *Carex laeviconica* |
| softstem bulrush | *Schoenoplectus tabernaemontani* |
| southern cattail | *Typha domingensis* |
| soybean | *Glycine max* |
| stinging nettle | *Urtica dioica* |
| swamp verbena | *Verbena hastata* |
| switchgrass | *Panicum virgatum* |
| tall goldenrod | *Solidago altissima* |
| torpedo grass | *Panicum repens* |
| uptight sedge | *Carex stricta* |
| valley redstem | *Ammannia coccinea* |
| western dogwood | *Cornus alba* |
| wheat sedge | *Carex atherodes* |
| witchgrass | *Panicum capillare* |
| woolly sedge | *Carex pellita* |
| yellow foxtail | *Setaria pumila* |
| **Palustrine Shrub-Scrub (PSS) Wetlands** | |
| American licorice | *Glycyrrhiza lepidota* |
| eastern cottonwood | *Populus deltoides* |
| narrowleaf willow | *Salix interior* |
| reed canarygrass | *Phalaris arundinacea* |
| wheat sedge | *Carex atherodes* |
| American licorice | *Glycyrrhiza lepidota* |
| **Palustrine Forested (PFO) Wetlands** | |
| redtop | *Agrostis gigantea* |
| green ash | *Fraxinus pennsylvanica* |
| hybrid cattail | *Typha X glauca* |

# Appendix D –
# 2022 Western Prairie Fringed Orchid (*Platanthera praeclara*) Survey Report

# 2022 Western Prairie Fringed Orchid (*Platanthera praeclara*) Survey Report

**Project Name:**
Summit Carbon Solutions Midwest Carbon Express Project

**Document Number: SCS-0700-ENV-02-RPT-024**

**Date**
2022-08-08

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# 1 Introduction

Summit Carbon Solutions, LLC (SCS) is preparing for construction of the SCS Midwest Carbon Express (MCE) Project (Project). The Project encompasses a proposed carbon dioxide pipeline in Minnesota, Iowa, Nebraska, South Dakota, and North Dakota and sequestration facilities in North Dakota. This report documents the results of field surveys in North Dakota, South Dakota, and Nebraska for western prairie fringed orchid (*Platanthera praeclara*), a federally listed species, by WESTECH Environmental Services, Inc. (WESTECH) in 2022.

# 2 Methods

## 2.1 Habitat Identification

Western prairie fringed orchid is generally found in wet to mesic tallgrass prairies and complexes of wet or mesic prairie and sedge communities (Taft and Solecki 1990). The species requires deep moist soils and may occasionally be found in roadside ditches adjacent to mesic prairies and wetland complexes (Sheviak and Bowles 2003; USFWS 1996; NGPC 2022). The conversion of native prairie to cropland has been the primary cause of population decline, though overgrazing, annual haying, invasive plant introduction, and herbicide use can also negatively impact the species (NGPC 2022).

Because western prairie fringed orchid has specific habitat requirements, identifying suitable habitat is a key step in determining where to conduct surveys. Prior to initiating surveys, WESTECH contacted Gerry Steinauer, a biologist and ecologist for the Nebraska Game and Parks Commission (NGPC) and the Nebraska Natural Heritage Program (NNHP), to discuss habitat requirements for the western prairie fringed orchid in Nebraska. Mr. Steinauer provided a habitat description to aid desktop analysis and field surveys (Steinauer 2013) (**Appendix A**). This habitat description provides the summary of field indicators for suitable orchid habitat in Nebraska, although it is also applicable in South Dakota and North Dakota.

In addition to the habitat description, WESTECH utilized a variety of measures to select areas of potentially suitable habitat within the Project Environmental Survey Area (ESA), including a review of: 1) the mapped range of western prairie fringed orchid (USFWS 2022), 2) aerial imagery, and 3) results of initial habitat assessments completed by Perennial Environmental Services Inc (Perennial) in 2021. These areas were presented in the *Summit Carbon Solutions Midwest Carbon Express 2022 Western Prairie Fringed Orchid Study Plan* (WESTECH 2022). This study plan was also provided to the US Fish and Wildlife Service (USFWS) for review and comment; no comments were received, and both the South Dakota and North Dakota field offices stated that the study plan was acceptable (pers. comm. Charlene Bessken USFWS South Dakota Ecological Services Field Office to John Beaver WESTECH on April 6, 2022; Heidi Riddle USFWS North Dakota Ecological Services Field Office to John Beaver WESTECH on April 21, 2022). The western prairie fringed orchid study plan was also provided to the NGPC, which stated that the study plan was acceptable (pers. comm. Melissa Marinovich NGPC to John Beaver WESTECH on April 7, 2022).

This survey report includes species information, data collection methods, and results from the 2022 field surveys. The results of these surveys will be submitted to the USFWS and all appropriate state agencies.

## 2.2 Field Survey

Using the aforementioned tools, WESTECH identified approximately 1,247 acres of potential habitat for western prairie fringed orchid along the Project route. The majority of the identified potential habitat was in Nebraska (approximately 62 percent), with most of the remainder in South Dakota (approximately 36 percent). North Dakota had minimal potential habitat, with less than 3 percent. Survey locations for western prairie fringed orchid are shown in Figure 1.

It was determined that surveys for western prairie fringed orchid would take place between July 1 and July 15 during the blooming window when the species is most identifiable. At sites where suitable habitat was identified, surveyors walked slowly back and forth across the width of the ESA, which consists of a 300-feet wide corridor (150-feet either side of the proposed pipeline centerline). The ESA is wider in some areas where additional workspace would be required during construction. Surveyors visually scanned the entire potential habitat area. Notes regarding topography, plant species, and hydrology were recorded for indications of habitat.

Recorded field data pertinent to the surveyed area were used to characterize the habitat according to a rating system created by WESTECH that corresponds to rankings defined in the NNHP Ecological Community Survey Form guidance document (NNHP 2015). Habitat for western prairie fringed orchid was evaluated and rated according to the following criteria:

- Excellent (A) – completely native tall-grass/lowland/mesic prairie, appears to be mowed or lightly grazed every year or two. Suitable hydrology present.
- Good (B) – primarily native tall-grass/lowland/mesic prairie, appears to be hayed or lightly grazed every year or two. Suitable hydrology present.
- Fair (C) – mix of native tall-grass/lowland/mesic prairie and non-native vegetation, appears to be hayed or lightly grazed approximately every year or two. Suitable hydrology present.
- Poor (D) – primarily non-native vegetation with a minor native tall-grass/lowland/mesic prairie component, appears to be hayed or lightly grazed every year or two, or is a mix of native and non-native plant species but heavily grazed and/or sprayed to reduce broadleaf species. Suitable hydrology present.

NNHP Ecological Community Survey Forms were filled out for sites of western prairie fringed orchid habitat in Nebraska with a habitat quality rating of Fair and above. WESTECH also developed an Orchid Survey Form for use in South Dakota, North Dakota, and areas of unsuitable habitat in Nebraska for documentation. If populations or individuals of western prairie fringed orchid were encountered, they were recorded on the NNHP Element Occurrence Rare Plant Survey Form, and the population boundary was mapped using sub-meter resource grade GPS units.

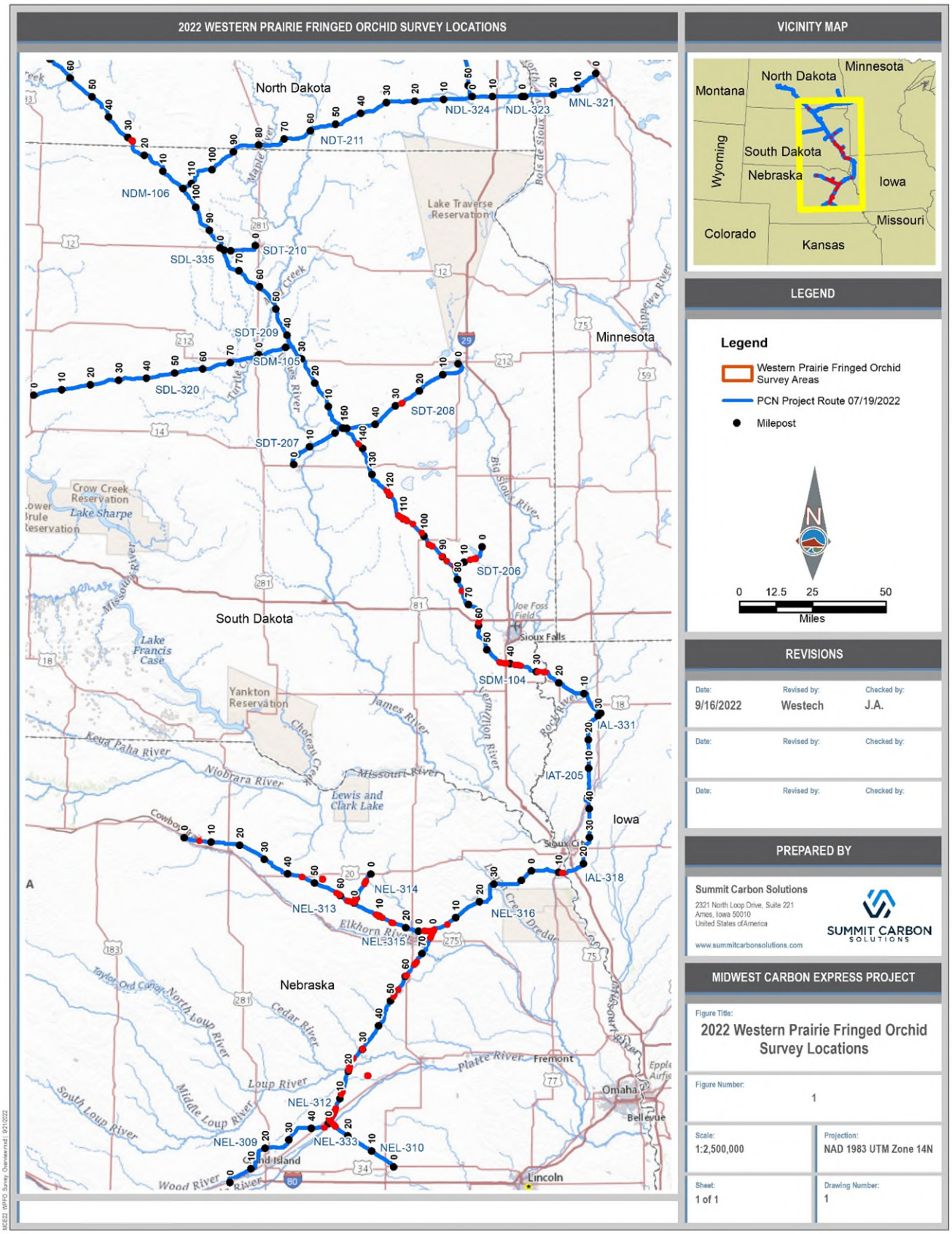



**Figure 1: Western Prairie Fringed Orchid Survey Locations**

# 3 Results

Pedestrian surveys for western prairie fringed orchid took place July 9 – 13, 2022, and were completed by Alicia Admiraal, Jessica Allewalt, Charity Grummert, and Lacey Gunther of WESTECH. Ms. Admiraal and Ms. Allewalt both have extensive experience throughout the Midwest with botanical surveys and habitat characterizations. The survey was conducted within the ESA as described in Section 2.2 above. Note that habitat in this report is described relative to its geographical location and ecological features, not property tract boundaries.

No western prairie fringed orchid individuals or populations were observed in any of the areas that support suitable habitat for the species, or at any of the other survey sites within the Project survey corridor. As will be described below, the majority of survey sites were dominated by non-native grasses and/or disturbed by grazing or agriculture. **Appendix B** lists each survey site, summarizes vegetation at the site, and classifies habitat suitability. Individual site maps of each western prairie fringed orchid survey site, including depictions of each site's habitat suitability and access status, are provided in **Appendix C**. Completed NNHP Ecological Community Survey Forms and Orchid Survey Forms for these sites are presented in **Appendix D**; a site photograph is included with each respective survey form. If suitable habitat was not present at a site, it was given a code of No_Hab_WPFO_#. If suitable habitat was present, the site was named according to the Project's protocol of Habitat (H), Crew # (e.g., 2016), County Code, Site #, and Species Code (e.g., WPFO).

Out of the 1,247 acres identified as potential western prairie fringed orchid habitat, surveyors were able to access approximately 1,033 acres (83%). The remaining 17 percent could not be surveyed because the property parcels were denied and/or inaccessible.

Of the accessible survey acreage, no survey sites were rated as Excellent. About 9 percent of the acreage was determined to have suitable orchid habitat with a quality rating of Good. These sites had predominantly native vegetation, suitable hydrology, and were minimally disturbed. Ten percent of the accessible survey acreage had a quality rating of Fair, and typically consisted of a mix of native and non-native vegetation. About 13 percent of the site acreage received a Poor rating, with the remaining 68 percent deemed unsuitable or "non-habitat."

Commonly encountered native graminoids on suitable habitat sites included Baltic rush (*Juncus balticus*), common spikerush (*Eleocharis palustris*), switchgrass (*Panicum virgatum*), prairie cordgrass (*Spartina pectinata*), expressway sedge (*Carex praegracilis*), brown fox sedge (*Carex vulpinoidea*), big bluestem (*Andropogon gerardii*), and little bluestem (*Schizachyrium scoparium*). Other associated vegetative indicators include Canada anemone (*Anemone canadensis*) and hairy hedgenettle (*Stachys palustris*) (Wolken et al. 2001). Wetlands dominated by narrow-leaf cattail (*Typha angustifolia*) or broad-leaf cattail (*Typha latifolia*) were determined to be too wet for orchids (Steinauer 2013).

The highest quality western prairie fringed orchid sites (with a habitat quality rating of Good) occurred in Nebraska in Nance, Pierce, and Stanton counties. In Nance County, site H2016NA001_WPFO (47 acres), a proposed Contractor Yard, is native mesic grassland with swell-swale topography. Site H2016NA002_WPFO

(9 acres) is a wet meadow dominated by native grasses, sedges, and rushes. In Pierce County, site H2016PI001 (18 acres) is a mesic hay meadow with good diversity and abundance of native forbs. Similarly, site H2019PI002_WPFO (14 acres) was a mesic meadow with good native forb diversity, though there was no evidence of disturbance (i.e. haying or grazing). Lastly, in Stanton County, site H2019ST001_WPFO (3 acres) was a mesic sedge hay meadow with excellent forb abundance and diversity.

The majority of surveyed sites (81 percent) did not constitute suitable orchid habitat. Agriculture is the primary industry in eastern Nebraska and eastern South Dakota where orchid surveys occurred. The majority of the landscape has been converted to cultivated cropland planted with corn or soybeans, though areas of pastureland and hayland are also common. Sites rated as Unsuitable or Poor will be removed from consideration for future survey efforts, as their condition is not suited to supporting the western prairie fringed orchid. The most common reasons sites were classified as non-habitat were:

- The area was dominated by non-native grasses such as smooth brome (*Bromus inermis*) or reed canary grass (*Phalaris arundinacea*). The western prairie fringed orchid is typically not found in grasslands that are completely dominated by smooth brome or reed canary grass (Steinauer 2013). Other non-native grasses such as Kentucky bluegrass (*Poa pratensis*), timothy grass (*Phleum pratense*), and redtop (*Agrostis stolonifera*) were also commonly encountered during surveys, but usually in addition to a native grass component. Woody encroachment from eastern redcedar (*Juniperus virginianus*) was also observed at several sites.
- The site was converted to cultivated cropland.
- The site lacked suitable hydrology to support orchids.
- The site was overgrazed.
- The site was sprayed indiscriminately with herbicides to kill forb species.
- The site was overrun with noxious weeds such as leafy spurge (*Euphorbia esula*) or Canada thistle (*Cirsium arvense*). Other commonly encountered weeds included musk thistle (*Carduus nutans*) and bull thistle (*Cirsium vulgare*).
- The site had been previously disturbed or re-seeded.

In some areas where access was not allowed, biologists could assess the habitat from a public roadway or an adjacent parcel and determine if the area provided suitable habitat. For instance, survey site No_hab_NE_WPFO_002 in Merrick County, Nebraska, was pending access at the time of survey, but surveyors could clearly see from the roadside that the entire site was cultivated cropland planted with corn; consequently, it was categorized as non-habitat and considered surveyed. A summary of surveyable acreage and habitat quality by county is presented in Table 1.

**Table 1. Western Prairie Fringed Orchid Suitable Habitat Quality by State and County**

| County | Habitat Quality (acres within each category) | | | | |
|---|---|---|---|---|---|
| | Good | Fair | Poor | Unsuitable | Total Acres |
| NORTH DAKOTA | | | | | |
| McIntosh | - | - | - | 31.8 | 31.8 |
| **Total North Dakota** | **-** | **-** | **-** | **31.8** | **31.8** |
| SOUTH DAKOTA | | | | | |
| Clark | - | - | - | 15.8 | 15.8 |
| Kingsbury | - | - | - | 78.4 | 78.4 |
| Lake | - | - | 40.9 | 28.7 | 69.6 |
| Lincoln | - | - | - | 100.5 | 100.5 |
| Miner | - | - | - | 103.7 | 103.7 |
| Minnehaha | - | 5.6 | - | 29.7 | 35.3 |
| **Total South Dakota** | **-** | **5.6** | **40.9** | **356.9** | **403.4** |
| NEBRASKA | | | | | |
| Antelope | - | 3.5 | 8.8 | 54.2 | 66.5 |
| Dakota | - | - | 15.3 | - | 15.3 |
| Hamilton | - | 8.4 | - | - | 8.4 |
| Holt | - | - | - | 1.0 | 1.0 |
| Madison | - | - | 20.8 | 9.1 | 29.8 |
| Merrick | - | 50.9 | 19.0 | 100.8 | 170.6 |
| Nance | 56.1 | - | 23.5 | 24.6 | 104.2 |
| Pierce | 31.9 | 25.1 | - | 89.3 | 146.3 |
| Stanton | 3.4 | 7.8 | 5.3 | 33.7 | 50.2 |
| Wayne | - | - | - | 5.2 | 5.2 |
| **Total Nebraska** | **91.3** | **95.7** | **92.6** | **317.8** | **597.4** |
| **Grand Total** | **91.3** | **101.2** | **133.5** | **706.5** | **1032.6** |

A complete list of all survey sites (listed in order from north to south) is provided in **Appendix B** and includes the site ID, acreage, habitat quality rating, and habitat suitability rationale.

Twenty-one sites totaling approximately 215 acres within the ESA could not be accessed to determine if suitable habitat was present. However, some of these areas could be viewed from public roads or were viewed from adjacent parcels where access was allowed. In order to evaluate the potential for suitable habitat to occur within inaccessible areas, a rating system was developed to rank the likelihood of suitable habitat presence. The following criteria were assessed for suitable habitat on each inaccessible parcel:

A. Suitable habitat present adjacent to the inaccessible parcel.
B. Suitable habitat visible from a public road.
C. Site is within one mile of suitable habitat (identified from survey of proximal parcels).
D. Aerial imagery indicates potentially suitable habitat in areas that cannot be seen from a public road or adjacent parcel.

In each case a value of 1 was assigned for a positive response (e.g., suitable habitat was present in an adjacent parcel) and a value of 0 was assigned for a response of no data (e.g., a site could not be viewed from an adjacent

parcel, or from a public road). In addition, a value of -1 could be assigned to criteria if habitat was determined unsuitable from those vantage points. This method therefore weighted on-the-ground observations from proximal areas more heavily than remote aerial imagery data. For example, if aerial imagery of inaccessible parcels indicated potentially suitable habitat, this score of 1 could be negated or confirmed by an observation from an adjacent parcel or public road.

The sum of each criterion was calculated for each site as an indicator of the potential for suitable habitat within the site. An assessment of these scores was given the following ranking:

- Scores ≥ 3: The site likely contains areas of suitable habitat.
- Scores 1 – 2: The site potentially contains areas of suitable habitat.
- Scores <1: The site likely is unsuitable habitat.

Table 2 summarizes the rating system results and likelihood of suitable habitat presence for inaccessible survey sites. The majority of inaccessible survey sites that were predicted to be likely suitable were near survey sites that had been rated as Fair suitable habitat. The majority of inaccessible survey sites categorized as potentially suitable had no nearby survey access or data other than aerial imagery.

**Table 2. Western Prairie Fringed Orchid Likelihood of Suitable Habitat by State and County**

| County | Likely suitable (acres) | Potentially suitable (acres) | Unlikely suitable (acres) | Total Acres |
|---|---|---|---|---|
| SOUTH DAKOTA | | | | |
| Lake | - | 37.7 | - | 37.7 |
| Lincoln | - | 2.5 | 1.1 | 3.5 |
| **Total South Dakota** | **-** | **40.1** | **1.1** | **41.2** |
| NEBRASKA | | | | |
| Antelope | 89.1 | - | - | 89.1 |
| Dakota | - | - | 6.0 | 6.0 |
| Madison | - | 27.4 | - | 27.4 |
| Merrick | - | - | 2.7 | 2.7 |
| Nance | - | - | 0.8 | 0.8 |
| Pierce | 4.2 | 22.0 | - | 26.2 |
| Stanton | 12.6 | 9.1 | - | 21.7 |
| **Total Nebraska** | **106.0** | **58.5** | **9.5** | **173.9** |
| **Grand Total** | **106.0** | **98.6** | **10.6** | **215.1** |

# 4 Summary

In July 2022, experienced biologists visited approximately 1,033 acres and completed surveys for western prairie fringed orchid consistent with the flowering period for the species. No western prairie fringed orchid individuals or populations were observed in any of the areas of habitat within the Project survey corridor. Habitat quality analysis was also completed for inaccessible survey sites. Sites with likely or potentially suitable habitat that were not available for survey in 2022 are scheduled for survey in 2023 if access is available.

The majority of surveyed habitat along the Project route was unsuitable, poor, or marginal for western prairie fringed orchid. This lack of suitable habitat is consistent with the knowledge that habitat for western prairie fringed orchid is limited within its former range, due primarily to cultivation and the dominance of non-native vegetation that has replaced high-quality native prairie (NGPC 2022).

Table 3 provides a summary of acreage and habitat quality ratings for all orchid survey sites on the Project in Nebraska, South Dakota, and North Dakota.

**Table 3. Summary of Western Prairie Fringed Orchid Habitat Quality Acreages by State**

| State | Habitat Quality (acres within each category) | | | | | | | Total Acres |
|---|---|---|---|---|---|---|---|---|
| | Good | Fair | Poor | Unsuitable | Likely suitable | Potentially suitable | Unlikely suitable | |
| North Dakota | - | - | - | 31.8 | - | - | - | 31.8 |
| South Dakota | - | 5.6 | 40.9 | 356.9 | - | 40.1 | 1.1 | 444.6 |
| Nebraska | 91.3 | 95.7 | 92.6 | 317.8 | 106.0 | 58.5 | 9.5 | 771.3 |
| **Grand Total** | **91.3** | **101.2** | **133.5** | **706.5** | **106.0** | **98.6** | **10.6** | **1,247.8** |
| ***Percentage of Total*** | ***7.3%*** | ***8.1%*** | ***10.7%*** | ***56.6%*** | ***8.5%*** | ***7.9%*** | ***0.8%*** | ***100%*** |

A habitat description from the NNHP for western prairie fringed orchid is presented in **Appendix A**. **Appendix B** lists each survey site, summarizes vegetation at the site, and classifies habitat suitability. Individual site maps of each western prairie fringed orchid survey site are provided in **Appendix C**. Site maps are ordered north to south, from North Dakota to Nebraska. Completed NNHP Ecological Community Survey Forms and Orchid Survey Forms for these sites are presented in **Appendix D**; a site photograph is included with each respective survey form. Survey forms in **Appendix D** are also ordered north to south to match the sequence of site maps in **Appendix C**.

# 5 References

Nebraska Game and Parks Commission. 2022. Western prairie fringed orchid habitat description. Available at: http://outdoornebraska.gov/westernprairiefringedorchid/ . [Accessed on February 20, 2022].

Nebraska Natural Heritage Program. 2015. Element Occurrence Ranking Instructions. http://outdoornebraska.gov/wp-content/uploads/2015/09/EORankInstructionsNENHP.pdf

Sheviak, C.J, and M.L. Bowles. 2003. *Platanthera praeclara*. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 27+ vols. New York and Oxford. Vol. 26, pp. 552, 564, 566.

Steinauer, G. 2013. Description of Western Prairie Fringed Orchid (*Platanthera praeclara*) Habitat in Nebraska. Nebraska Game and Parks Commission.

Taft, J.B. and M.K. Solecki. 1990. Vascular flora of the wetland and prairie communities of Gavin Bog and Prairie Nature Preserve, Lake County, Illinois. Rhodora 92(871), pp. 142-165.

US Fish and Wildlife Service. 1996. Western Prairie Fringed Orchid Recovery Plan (*Platanthera praeclara*). U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota.

US Fish and Wildlife Service. 2022. Western prairie fringed orchid (*Platanthera praeclara*). ECOS Environmental Conservation Online System. Available at: https://ecos.fws.gov/ecp/species/1669. Accessed January 14, 2022.

WESTECH Environmental Services, Inc. 2022. Summit Carbon Solutions Midwest Carbon Express 2022 Western Prairie Fringed Orchid Study Plan. March 4, 2022. 4 pages + appendices

Wolken, Paige M., C. Hull Sieg, and S.E. Williams. 2001. Quantifying suitable habitat of the threatened western prairie fringed orchid. Journal of Range Management, 54:611-616.

# Appendix A –
# Nebraska Natural Heritage Program Orchid Habitat Definition (2013)

**A Description of Western Prairie Fringed Orchid (*Platanthera praeclara*) Habitat in Nebraska**

By Gerry Steinauer, Botanist, Nebraska Game and Parks Commission
May 14, 2013

General Range and Habitat

The western prairie fringed orchid (WPFO) (*Platanthera praeclara*) is found in southeastern Nebraska in lowland tallgrass prairie and in upland tallgrass prairie in ravines and on low slopes. In the central Platte River valley the WPFO is known from a single wet meadow. In the Sandhills and areas of northeast Nebraska, the WPFO occurs in areas with sand dune and sand sheet geology. Here it is found in wet meadows, often characterized by swell and swale topography, Sandhill fens and river valley bottoms.

Soils

In southeastern Nebraska tallgrass prairie the orchid is usually associated with clay loam to silty loam soils. In the Sandhills, northeast Nebraska and the Platte valley the orchid is associated with peaty sandy loam and sandy loam to loamy sand soils.

Land Use

The WPFO generally occurs in sites that are hayed annually (sites hayed late in the season usually have the most orchids) or lightly to moderately grazed, though sites that are occasionally heavily grazed can support the orchid. Sites which are idled for several years can also support the orchid as well as sites managed with prescribed fire.

Plant Communities

The WPFO orchid is found in the following plant communities in Nebraska as described in the Terrestrial Ecological Systems and Natural Communities of Nebraska (Version IV – March 9, 2010) (by Rolfsmeier and Steinauer):

1) Lowland tallgrass prairie
2) Tallgrass prairie
3) Sandhills fen
4) Sandhills wet meadow
5) Sandhills mesic tallgrass prairie

The WPFO usually occurs in higher quality native grasslands dominated by native tall grasses, sedges and spikerushes (plant species commonly found in orchid grasslands are listed below). These grasslands also usually have a fair native forb component, though the forb composition can be highly variable from sites to site.

The WPFO, however, can also occur in somewhat degraded grasslands. In the Sandhills and northeast Nebraska redtop (*Agrostis gigantea*) and timothy (*Phleum pratense*) can be co-dominant to dominant in orchid meadows, though native graminoids are also usually found in these grasslands. Native forb diversity can be rather low in orchid grasslands and exotic forbs, such as clovers (*Trifolium* and *Melilotus spp*.), leafy spurge (*Euphorbia esula*) and thistles may also be prominent in these sites. The WPFO is generally not found in meadows with nearly complete dominance by smooth brome (*Bromus inermis*) or reed canary grass (*Phalaris arundinacea*), though these two species can be scattered to common in orchid meadows. The WPFO orchid can be found in road ditches, especially those adjacent to wet meadows or those with native vegetation. The orchid does not occur in deeper wetlands dominated by marsh plants such as cattails and bulrushes.

***Table 1: Plant species that regularly occur in grasslands containing the WPFO in Nebraska.***

| **Scientific name** | |
|---|---|
| *Achillea millefolium* | *Juncus marginata* |
| *Agrostis gigantea* | *Liatris aspera* |
| *Allium canadense* | *Liatris lancifolia* |
| *Ambrosia psilostycha* | *Lobelia spicata* |
| *Amorpha canescens* | *Lysimachia hybrida* |
| *Andropogon gerardii* | *Oenothera sp.* |
| *Anemone canadensis* | *Panicum acuminatum* |
| *Antennaria neglecta* | *Panicum virgatum* |
| *Apocynum cannabinum* | *Phleum pratense* |
| *Asclepias verticillata* | *Poa compressa* |
| *Aster lanceolatus* | *Poa pratensis* |
| *Bromus inermis* | *Polygala sanguinea* |
| *Calamagrostis canadensis* | *Potentilla arguta* |
| *Calamagrostis stricta* | *Potentilla recta* |
| *Carex bicknellia* | *Potentilla simplex* |
| *Carex buxbaumii* | *Prunella vulgaris* |
| *Carex nebraskensis* | *Prunus pumila* |
| *Carex pellita* | *Rosa arkansana* |
| *Carex praegracilis* | *Rudbeckia hirta* |
| *Carex scoparia* | *Salix humilis* |
| *Carex vulpinoidea* | *Silphium integrifolium* |
| *Cicuta maculate* | *Solidago canadensis* |
| *Dalea candida* | *Solidago missouriensis* |
| *Eleocharis elliptica* | *Solidago rigida* |
| *Elymus canadensis* | *Sorghastrum nutans* |
| *Equisetum sp.* | *Spartina pectinata* |
| *Erigeron sp.* | *Sporobolus heterolepis* |
| *Euphorbia esula* | *Toxicodendron rydbergii* |
| *Euthamia gymnospermoides* | *Trifolium pratense* |
| *Fimbristylis puberula* | *Trifolium repens* |
| *Gentiana puberulenta* | *Vernonia baldwinii* |
| *Glyceria striata* | *Vernonia fasciculata* |
| *Helenium autumale* | *Veronicasturm virginicum* |
| *Helianthus rigidus* | *Zizia aurea* |
| *Hypoxis hirsuta* | |
| *Juncus balticus* | |
| *Juncus brachyphyllus* | |
| *Juncus interior* | |

# Appendix B –
# Survey Site Habitat Quality Ratings and Descriptions

Appendix B - Survey Site Habitat Quality Ratings and Descriptions for Western Prairie Fringed Orchid

| State | County | Latitude | Longitude | Route | Milepost Start | SiteID | Habitat Quality Assessment | Acreage | Habitat Description |
|---|---|---|---|---|---|---|---|---|---|
| ND | MCINTOSH | 45.96659938 | -99.42461603 | NDM-106 | 27.29 | No_hab_ND_WPFO_001 | Unsuitable | 31.8 | Non-native grassland dominated by smooth brome and Kentucky bluegrass. |
| SD | CLARK | 44.68484103 | -97.50831501 | SDT-208 | 27.41 | No_hab_SD_WPFO_019 | Unsuitable | 15.8 | Non-native grassland, transitions into wetland. Area has been grazed and forbs have been sprayed with herbicide. |
| SD | KINGSBURY | 44.48279458 | -97.80596883 | SDM-104 | 142.20 | No_hab_SD_WPFO_018 | Unsuitable | 11.1 | Non-native grassland dominated by smooth brome and Kentucky bluegrass. |
| SD | KINGSBURY | 44.24905276 | -97.60679427 | SDM-104 | 121.88 | No_hab_SD_WPFO_017 | Unsuitable | 31.8 | Non-native grassland dominated by smooth brome and Kentucky bluegrass, no forbs except for musk thistle. Wetlands are dominated by broad-leaf cattail. |
| SD | KINGSBURY | 44.23333583 | -97.59208109 | SDM-104 | 119.84 | No_hab_SD_WPFO_016 | Unsuitable | 35.6 | Non-native grassland, few forbs, dominated by smooth brome and Kentucky bluegrass with some wetland potholes. |
| SD | MINER | 44.12838263 | -97.52938858 | SDM-104 | 111.93 | No_hab_SD_WPFO_015b | Unsuitable | 8.4 | Non-native grassland, dominated by smooth brome and Kentucky bluegrass. Grazed, very few forbs. |
| SD | MINER | 44.12261432 | -97.51930631 | SDM-104 | 111.32 | No_hab_SD_WPFO_015a | Unsuitable | 4.4 | Non-native grassland, dominated by smooth brome and Kentucky bluegrass. Grazed, very few forbs. |
| SD | MINER | 44.11475542 | -97.50049851 | SDM-104 | 109.62 | No_hab_SD_WPFO_014c | Unsuitable | 52.3 | Cultivated cropland - soybeans |
| SD | MINER | 44.10920478 | -97.48419573 | SDM-104 | 109.28 | No_hab_SD_WPFO_014b | Unsuitable | 5.0 | Non-native grassland dominated by smooth brome, Kentucky bluegrass, and reed canarygrass. |
| SD | MINER | 44.10623871 | -97.4757057 | SDM-104 | 108.52 | No_hab_SD_WPFO_014a | Unsuitable | 23.9 | Non-native grassland dominated by smooth brome, Kentucky bluegrass, and reed canarygrass. |
| SD | MINER | 44.1017064 | -97.47099668 | SDM-104 | 108.37 | No_hab_SD_WPFO_014a | Unsuitable | 5.9 | Non-native grassland dominated by smooth brome, Kentucky bluegrass, and reed canarygrass. |
| SD | MINER | 44.08713998 | -97.42867035 | SDM-104 | 105.96 | No_hab_SD_WPFO_013 | Unsuitable | 3.9 | Non-native pasture, severely overgrazed. |
| SD | LAKE | 44.04301129 | -97.36924006 | SDM-104 | 101.65 | - | Potentially suitable | 3.5 | Inaccessible small parcel surrounded by hayland and cultivated land. Waterbodies nearby. |
| SD | LAKE | 43.98504788 | -97.320668 | SDM-104 | 96.46 | No_hab_SD_WPFO_012b | Unsuitable | 6.1 | East Fork Vermillion River. Non-native grassland, severely grazed |
| SD | LAKE | 43.98365319 | -97.31546298 | SDM-104 | 96.05 | - | Potentially suitable | 14.9 | Inaccessible area near East Fork Vermillion River. Surrounding lands are majority non-native grassland. |
| SD | LAKE | 43.98067375 | -97.30735867 | SDM-104 | 95.54 | - | Potentially suitable | 19.3 | Inaccessible area near East Fork Vermillion River. Surrounding lands are majority non-native grassland. |

| State | County | Latitude | Longitude | Route | Milepost Start | SiteID | Habitat Quality Assessment | Acreage | Habitat Description |
|---|---|---|---|---|---|---|---|---|---|
| SD | LAKE | 43.97750771 | -97.29963093 | SDM-104 | 95.18 | No_hab_SD_WPFO_012a | Unsuitable | 14.3 | East Fork Vermillion River. Non-native grassland completely dominated by smooth brome on hills, though some areas with better diversity are present closer to denied tracts. Lacking suitable hydrology for orchids. |
| SD | LAKE | 43.92745878 | -97.23021313 | SDM-104 | 90.32 | No_hab_SD_WPFO_011 | Unsuitable | 3.3 | Non-native grassland dominated by smooth brome and Kentucky bluegrass, low diversity. |
| SD | LAKE | 43.91423587 | -97.00484287 | SDT-206 | 5.46 | H2019LA001_WPFO | Poor | 34.5 | Mesic grassland with native and non-native species. Area is used for grazing and as hayland. Smooth brome and reed canarygrass are present. |
| SD | LAKE | 43.90892133 | -97.0382929 | SDT-206 | 7.71 | No_hab_SD_WPFO_009 | Unsuitable | 3.0 | Non-native grassland |
| SD | LAKE | 43.90228902 | -97.19763535 | SDM-104 | 87.95 | No_hab_SD_WPFO_010 | Unsuitable | 2.0 | Mixed grassland and ditch, ditch dominated by reed canarygrass. Surrounded by cultivated land. |
| SD | LAKE | 43.87864663 | -97.14582037 | SDT-206 | 13.88 | H2019LA002a_WPFO | Poor | 6.4 | Wet meadow swale surrounded by mixed grassland. Mostly native species in the swale. Area is actively grazed pastureland. |
| SD | MINNEHAHA | 43.75471003 | -97.09603618 | SDM-104 | 75.58 | H2019MI001_WPFO | Fair | 5.6 | Mesic native grassland on hillsides adjacent to a wetland/pond. Pond likely dug artificially to water stock, but no signs of recent disturbance. Lightly grazed. Reed canarygrass is present in the wetland, smooth brome dominant on upland terraces. |
| SD | MINNEHAHA | 43.62515718 | -96.97019511 | SDM-104 | 62.78 | No_hab_SD_WPFO_008 | Unsuitable | 26.5 | Non-native grassland dominated by smooth brome, Kentucky bluegrass, and timothy grass. |
| SD | MINNEHAHA | 43.59835942 | -96.98093135 | SDM-104 | 61.04 | No_hab_SD_WPFO_007 | Unsuitable | 3.2 | Cultivated cropland - corn. Weedy |
| SD | LINCOLN | 43.40099772 | -96.83935061 | SDM-104 | 43.62 | No_hab_SD_WPFO_006 | Unsuitable | 4.4 | Non-native grassland dominated by smooth brome, has been hayed. |
| SD | LINCOLN | 43.3989988 | -96.83129914 | SDM-104 | 42.99 | No_hab_SD_WPFO_005 | Unsuitable | 18.9 | Cultivated cropland - soybeans. Swale appears dominated by non-native grasses. |
| SD | LINCOLN | 43.39522482 | -96.80384234 | SDM-104 | 41.70 | No_hab_SD_WPFO_004a | Unsuitable | 8.9 | Cultivated cropland - corn |
| SD | LINCOLN | 43.39511003 | -96.79401887 | SDM-104 | 41.24 | No_hab_SD_WPFO_004b | Unsuitable | 6.6 | Cultivated cropland - corn |
| SD | LINCOLN | 43.38725472 | -96.73105396 | SDM-104 | 37.74 | No_hab_SD_WPFO_003 | Unsuitable | 23.0 | Cultivated cropland - corn and disturbed grassland |
| SD | LINCOLN | 43.3859255 | -96.712531 | SDM-104 | 36.87 | No_hab_SD_WPFO_002c | Unsuitable | 18.0 | Cultivated cropland |
| SD | LINCOLN | 43.38502332 | -96.704264 | SDM-104 | 36.60 | No_hab_SD_WPFO_002b | Unsuitable | 6.8 | Road ditch dominated by reed canarygrass with cultivated cropland adjacent. |
| SD | LINCOLN | 43.38374409 | -96.69945343 | SDM-104 | 36.27 | No_hab_SD_WPFO_002a | Unsuitable | 12.0 | Cultivated cropland |

| State | County | Latitude | Longitude | Route | Milepost Start | SiteID | Habitat Quality Assessment | Acreage | Habitat Description |
|---|---|---|---|---|---|---|---|---|---|
| SD | LINCOLN | 43.35255018 | -96.57865952 | SDM-104 | 29.39 | - | Potentially suitable | 2.5 | Riparian area, partially forested. No nearby survey/access. Surrounded by hayland and cultivated cropland. |
| SD | LINCOLN | 43.35069527 | -96.52771695 | SDM-104 | 26.67 | - | Unlikely suitable | 1.1 | Unlikely to be WPFO habitat - forested area. Closest surveyed area within 1 mile buffer was also unsuitable habitat. |
| SD | LINCOLN | 43.34982414 | -96.5406183 | SDM-104 | 27.34 | No_hab_SD_WPFO&LS_001 | Unsuitable | 2.0 | Mesic drainage to the west of the Big Sioux River. Drainage is surrounded by cropland. Reed canarygrass is dominant, few forbs. |
| NE | HOLT | 42.50457719 | -98.85372834 | | 5.82 | No_hab_NE_WPFO_024 | Unsuitable | 1.0 | Non-native vegetation around drain pipe |
| NE | DAKOTA | 42.3539194 | -96.42635718 | IAL-318 | 11.13 | H2016DA001_WPFO | Poor | 15.3 | Riparian habitat along the Missouri River and an old side channel. Mixed grassland and forested. Vegetation is very thick and dense, some woody encroachment into meadows. Invasive species such as leafy spurge and Canada thistle dominant in some areas. |
| NE | DAKOTA | 42.3538999 | -96.42065303 | IAL-318 | 11.54 | - | Unlikely suitable | 6.0 | Riparian habitat along the Missouri River, forested. |
| NE | ANTELOPE | 42.33400262 | -98.16590295 | NEL-313 | 44.96 | H2019AN003b_WPFO | Fair | 2.5 | Native mesic grassland south of Highway 20. Wetland vegetation present in swale. Hayland with evidence of herbicide use. |
| NE | ANTELOPE | 42.3331705 | -98.16280406 | NEL-313 | 45.04 | H2019AN003a_WPFO | Poor | 8.8 | Mixed grassland that was likely overseeded. Vegetation is very thick and likely too overgrown for orchids. Some woody encroachment. A few depressional features with more mesic vegetation are present. |
| NE | ANTELOPE | 42.32313944 | -98.02658609 | N/A | 0.00 | No_hab_NE_WPFO_023 | Unsuitable | 51.7 | Laydown Yard. Restored grassland with native species, no suitable hydrology for orchids. Recommend placing laydown yard on cultivated land instead. |
| NE | PIERCE | 42.3161017 | -97.73829557 | NEL-314 | 3.13 | H2016PI002b_WPFO | Fair | 0.4 | Roadside ditch wetland off of Highway 13. Wetter portion of wetland is dominated by narrow-leaf cattail, but aside from presence of reed canarygrass the wetland edges are decent habitat. |
| NE | PIERCE | 42.31256271 | -97.74042093 | NEL-314 | 3.14 | H2016PI002a_WPFO | Fair | 19.1 | Mixed grassland with mesic areas. Area is a mosaic of hayland and pastureland. Some pastures have been grazed. Very few forbs in some of the hayland, area has likely been sprayed with herbicide. |
| NE | PIERCE | 42.30850998 | -97.74280607 | NEL-314 | 3.67 | No_hab_NE_WPFO_020a | Unsuitable | 3.7 | Sprayed with herbicide, all vegetation is dead. |

| State | County | Latitude | Longitude | Route | Milepost Start | SiteID | Habitat Quality Assessment | Acreage | Habitat Description |
|---|---|---|---|---|---|---|---|---|---|
| NE | PIERCE | 42.30476949 | -97.74544184 | | 3.77 | No_hab_NE_WPFO_020b | Unsuitable | 17.0 | Cultivated cropland - corn |
| NE | ANTELOPE | 42.25499671 | -97.93325597 | | 58.40 | No_hab_NE_WPFO_022 | Unsuitable | 2.5 | Non-native pasture infested with Canada thistle. |
| NE | ANTELOPE | 42.24934603 | -97.91883362 | NEL-313 | 58.76 | - | Likely suitable | 33.2 | Grassland, east portion of parcel along Willow Creek. |
| NE | ANTELOPE | 42.24480909 | -97.91246157 | NEL-313 | 59.68 | H2019AN001_WPFO | Fair | 1.1 | Wet meadow/wetland along Willow Creek. The wet meadow is dominated by native species, the hummocky wetland is dominated by reed canarygrass. Area has been grazed but little evidence of other disturbance. |
| NE | PIERCE | 42.22406258 | -97.8050892 | | 10.18 | No_hab_NE_WPFO_021a | Unsuitable | 19.2 | Non-native pasture |
| NE | PIERCE | 42.22005934 | -97.80677466 | NEL-314 | 10.71 | H2016PI003a_WPFO | Fair | 1.5 | Native wet meadow adjacent to Willow Creek. Hayland and pastureland with low forb presence. |
| NE | ANTELOPE | 42.21676954 | -97.85934398 | | 62.91 | - | Likely suitable | 18.3 | Native grassland and fair quality orchid habitat in proximity. |
| NE | PIERCE | 42.21604381 | -97.80993933 | NEL-314 | 11.00 | H2016PI003b_WPFO | Fair | 4.1 | Wet meadow south of Willow Creek. Low forb presence, mostly sedges and grasses. |
| NE | ANTELOPE | 42.21450188 | -97.84455109 | NEL-313 | 63.43 | - | Likely suitable | 37.6 | Native grassland and wet meadows in proximity. |
| NE | PIERCE | 42.21208156 | -97.83392575 | NEL-313 | 64.46 | - | Likely suitable | 4.2 | Native grassland and wet meadows in proximity. |
| NE | PIERCE | 42.21118899 | -97.81336299 | | 11.30 | No_hab_NE_WPFO_021b | Unsuitable | 9.7 | Non-native pasture |
| NE | PIERCE | 42.14930632 | -97.66816474 | NEL-315 | 8.62 | No_hab_NE_WPFO_019 | Unsuitable | 8.8 | Cultivated cropland - corn |
| NE | PIERCE | 42.14716199 | -97.66292592 | NEL-315 | 8.86 | H2019PI002_WPFO | Good | 13.9 | Mesic/wet meadow with good forb diversity. Mostly native, though some introduced grasses are present. No evidence of disturbance; area had not been hayed or grazed as of mid-July. |
| NE | PIERCE | 42.14464835 | -97.65628798 | | 9.24 | No_hab_NE_WPFO_018b | Unsuitable | 14.2 | Sandy prairie and mixed grassland. Lacks suitable hydrology for orchids. |
| NE | PIERCE | 42.14135795 | -97.64950255 | NEL-315 | 9.63 | H2016PI001_WPFO | Good | 18.1 | Mesic hay meadow with mostly native species. Not grazed, good diversity and abundance of forbs. |
| NE | PIERCE | 42.13944076 | -97.64272871 | | 10.13 | No_hab_NE_WPFO_018a | Unsuitable | 10.2 | Non-native pasture |
| NE | PIERCE | 42.13458063 | -97.62887863 | NEL-315 | 10.96 | No_hab_NE_WPFO_017 | Unsuitable | 6.6 | Pastureland dominated by smooth brome and Kentucky bluegrass. Habitat quality would be improved if herbicide was not sprayed on forbs. Lacking sufficient hydrology. Grazed. |
| NE | PIERCE | 42.10985605 | -97.56374973 | NEL-315 | 14.66 | - | Potentially suitable | 12.7 | Grassland, surrounding area mostly cultivated cropland and hayland. |

| State | County | Latitude | Longitude | Route | Milepost Start | SiteID | Habitat Quality Assessment | Acreage | Habitat Description |
|---|---|---|---|---|---|---|---|---|---|
| NE | PIERCE | 42.10784418 | -97.55532605 | NEL-315 | 15.16 | - | Potentially suitable | 9.3 | Grassland, surrounding area mostly cultivated cropland and hayland. |
| NE | WAYNE | 42.10116416 | -97.19478946 | NEL-316 | 6.21 | No_hab_NE_WPFO_014 | Unsuitable | 5.2 | Non-native pasture dominated by smooth brome, grazed |
| NE | STANTON | 42.07465341 | -97.28235265 | NEL-316 | 0.79 | - | Potentially suitable | 9.1 | Grassland. Some areas of suitable habitat outside of a 1-mile radius. |
| NE | STANTON | 42.07006901 | -97.34686384 | NEL-315 | 26.61 | No_hab_NE_WPFO_016 | Unsuitable | 11.8 | Non-native grassland |
| NE | STANTON | 42.06882156 | -97.33647446 | NEL-315 | 27.17 | - | Likely suitable | 12.6 | Grassland. One area of suitable habitat within 1-mile radius. |
| NE | STANTON | 42.06868107 | -97.3214582 | NEL-315 | 28.07 | H2019ST001_WPFO | Good | 3.4 | Native grass hayland with excellent forb abundance and diversity, though surrounded predominately by cultivated fields. Mesic sedge meadow in swale. Site was hayed by July 10, 2022. |
| NE | STANTON | 42.0686326 | -97.30914698 | NEL-315 | 28.68 | H2019ST003_WPFO | Fair | 5.0 | Mesic meadow with native and non-native grasses. Transitions into a hummocky wetland dominated by prairie cordgrass and reed canary grass. Portions of the area had been heavily grazed by early July, and the site was much drier than in late May. |
| NE | STANTON | 42.06859404 | -97.30530843 | | 28.82 | No_hab_NE_WPFO_015 | Unsuitable | 9.3 | Non-native upland dominated by smooth brome, grazed. |
| NE | STANTON | 42.05673705 | -97.29517056 | | 78.05 | No_hab_NE_WPFO_013b | Unsuitable | 8.3 | Non-native grassland dominated by smooth brome. |
| NE | STANTON | 42.04689263 | -97.30006488 | | 77.41 | No_hab_NE_WPFO_013a | Unsuitable | 3.2 | Non-native pasture |
| NE | STANTON | 42.03936617 | -97.30406947 | NEL-312 | 76.83 | H2019ST002b_WPFO | Poor | 5.3 | Mesic mixed grassland, hayed and bailed as of 7/9/22. Previously sprayed with herbicides for leafy spurge. |
| NE | STANTON | 42.03406229 | -97.30750978 | NEL-312 | 76.45 | H2019ST002a_WPFO | Fair | 2.8 | Native mesic grassland swale, some introduced grasses. Area has been grazed. |
| NE | STANTON | 42.03346455 | -97.30818021 | NEL-312 | 76.42 | No_hab_NE_WPFO_012 | Unsuitable | 1.1 | Non-native pastureland dominated by smooth brome, timothy grass, and leafy spurge. |
| NE | MADISON | 41.91506171 | -97.39864357 | NEL-312 | 66.42 | - | Potentially suitable | 9.1 | Grassy drainage. Surrounding area cultivated cropland with a nearby feedlot. |
| NE | MADISON | 41.90588885 | -97.40867148 | NEL-312 | 65.58 | - | Potentially suitable | 8.8 | Mesic meadow, surrounding area cultivated cropland with a nearby feedlot. |
| NE | MADISON | 41.90303553 | -97.41302305 | NEL-312 | 65.36 | - | Potentially suitable | 3.5 | Mesic meadow, surrounding area cultivated cropland with a nearby feedlot. |
| NE | MADISON | 41.84873246 | -97.465401 | NEL-312 | 60.59 | No_hab_NE_WPFO_011b | Unsuitable | 3.5 | Non-native grassland surrounding Taylor Creek, grazed. |
| NE | MADISON | 41.84776144 | -97.4693875 | NEL-312 | 60.34 | No_hab_NE_WPFO_011a | Unsuitable | 5.6 | Non-native grassland surrounding Taylor Creek, grazed. |

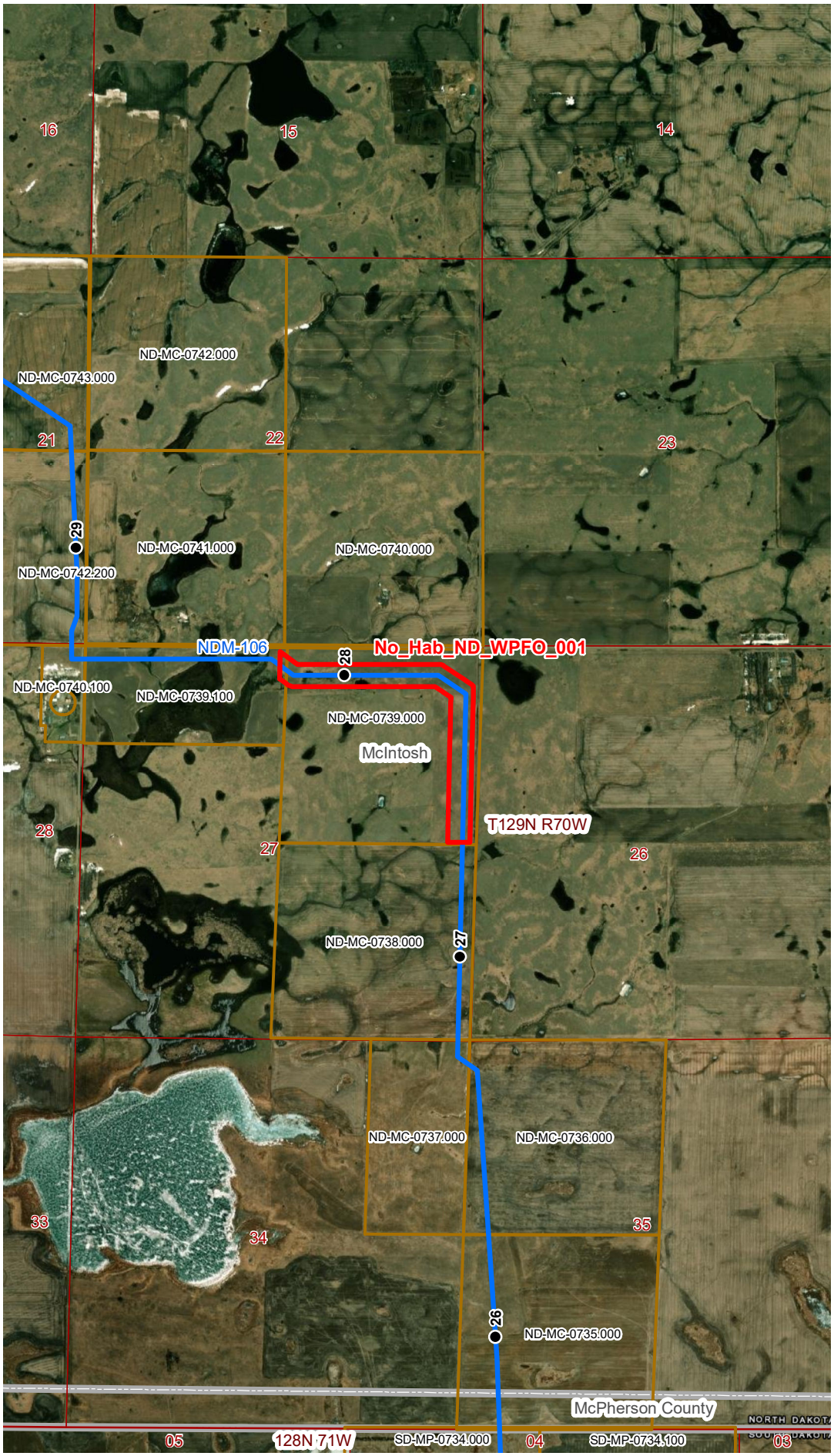
| State | County | Latitude | Longitude | Route | Milepost Start | SiteID | Habitat Quality Assessment | Acreage | Habitat Description |
|---|---|---|---|---|---|---|---|---|---|
| NE | MADISON | 41.77802461 | -97.51829282 | NEL-312 | 54.75 | - | Potentially suitable | 1.6 | Riparian area surrounded by cultivated cropland. Small parcel. |
| NE | MADISON | 41.77598538 | -97.52001016 | NEL-312 | 54.53 | - | Potentially suitable | 4.3 | Riparian area surrounded by cultivated cropland. |
| NE | MADISON | 41.74672225 | -97.54903506 | NEL-312 | 51.79 | H2019MA001_WPFO | Poor | 20.8 | Mesic meadow along SF Union Creek and NF Union Creek with some forested areas. Could not access entire parcel due to deeply incised streambanks. Mix of native and non-native species, moderately grazed. Reed canarygrass dominant in some areas. |
| NE | NANCE | 41.48365219 | -97.75225988 | NEL-312 | 30.13 | No_hab_NE_WPFO_009 | Unsuitable | 4.8 | Mesic swale has been planted with corn and disturbed. Now cultivated cropland. |
| NE | NANCE | 41.48025734 | -97.75392815 | NEL-312 | 29.90 | - | Unlikely suitable | 0.8 | Inaccessible small parcel with sparse forest/shrub cover, surrounded by cultivated cropland. |
| NE | NANCE | 41.43520777 | -97.81267535 | NEL-312 | 25.22 | No_hab_NE_WPFO_007 | Unsuitable | 6.0 | Mixed grassland, lacks suitable hydrology for orchids. |
| NE | NANCE | 41.40157581 | -97.83721339 | NEL-312 | 22.21 | No_hab_NE_WPFO_006 | Unsuitable | 0.5 | Weedy railside ditch, has been sprayed with herbicide. |
| NE | NANCE | 41.39898729 | -97.83740188 | NEL-312 | 21.88 | H2019NA001a_WPFO | Poor | 11.4 | Loup River floodplain. Mesic grassland with low forb diverisity and mix of native and non-native species, though native species appear dominant in wetter areas. Has been overgrazed in some pastures. |
| NE | NANCE | 41.39442101 | -97.83851147 | NEL-312 | 21.55 | H2019NA001b_WPFO | Poor | 12.1 | Loup River floodplain. Could not survey majority of parcel due to access denial; appears to be mostly native grassland with eastern redcedar encroachment. |
| NE | NANCE | 41.3892595 | -97.83834797 | NEL-312 | 21.28 | No_hab_NE_WPFO_005c | Unsuitable | 5.5 | Floodplain of Loup River, no orchid habitat. Reed canarygrass present. |
| NE | NANCE | 41.38281419 | -97.83783466 | NEL-312 | 20.70 | H2016NA002a_WPFO | Good | 1.7 | Native grassland/wet meadow, grazed, low forb diversity but good mix of native sedges and rushes. |
| NE | NANCE | 41.38276686 | -97.83965448 | NEL-312 | 20.80 | H2016NA002b_WPFO | Good | 7.1 | Native grassland/wet meadow, grazed, low forb diversity but good mix of native sedges and rushes. |
| NE | NANCE | 41.38104957 | -97.84056461 | NEL-312 | 20.79 | No_hab_NE_WPFO_005b | Unsuitable | 1.2 | Non-native pastureland, overgrazed. |
| NE | NANCE | 41.37838462 | -97.84159056 | NEL-312 | 20.49 | No_hab_NE_WPFO_005a | Unsuitable | 6.5 | Overgrazed and dry mixed grassland with steep slopes unsuitable for orchids. |
| NE | NANCE | 41.35028283 | -97.71777089 | N/A | 0.00 | H2016NA001_WPFO | Good | 47.3 | Contractor Yard. Native grassland with swell-swale topography. Visually assessed from road. Less wet than aerial indicates. |

| State | County | Latitude | Longitude | Route | Milepost Start | SiteID | Habitat Quality Assessment | Acreage | Habitat Description |
|---|---|---|---|---|---|---|---|---|---|
| NE | MERRICK | 41.26842758 | -97.88270367 | | 12.46 | No_hab_NE_WPFO_025 | Unsuitable | 3.5 | Non-native moist drainageway dominated by reed canarygrass in the swale and smooth brome elsewhere, surrounded by cultivated areas, very few forbs. |
| NE | MERRICK | 41.25726768 | -97.89168617 | NEL-312 | 11.56 | - | Unlikely suitable | 2.7 | Inaccessible small parcel adjacent to partially channelized drainage with some trees/shrubs. Surrounded by cultivated cropland. Surveyed area ~1mile away in similar drainage dominated by non-native grass. |
| NE | MERRICK | 41.18221459 | -97.92860725 | NEL-312 | 5.46 | H2019ME002_WPFO | Fair | 29.6 | Mostly native prairie grassland with good diversity. Swell-swale topography may have suitable hydrology to support orchids in swales. Grazed lightly to moderately. |
| NE | MERRICK | 41.17311922 | -97.93238538 | | 4.94 | No_hab_NE_WPFO_004 | Unsuitable | 19.0 | Non-native pastureland dominated by smooth brome and Kentucky bluegrass |
| NE | MERRICK | 41.15466194 | -97.94137398 | NEL-312 | 3.80 | No_hab_NE_WPFO_003 | Unsuitable | 3.5 | Established two-track road/hayland dominated by non-native grasses, not within the ROW. |
| NE | MERRICK | 41.13482848 | -97.96680321 | N/A | 0.00 | No_hab_NE_WPFO_002 | Unsuitable | 67.5 | Laydown Yard. |
| NE | MERRICK | 41.12435995 | -97.9606569 | NEL-312 | 0.99 | H2019ME001_WPFO | Poor | 12.4 | Heavily grazed pasture surrounding Warm Slough, infested with bull thistle. Would be better quality if grazing was limited. |
| NE | MERRICK | 41.10776666 | -97.94170891 | NEL-310 | 26.52 | H2016ME001_WPFO | Poor | 6.6 | Platte River floodplain. Mixed grassland partially dominated by introduced grasses such as smooth brome. Low forb diversity. May be lacking suitable hydrology for orchids on terraces. |
| NE | MERRICK | 41.10178921 | -97.93240805 | NEL-310 | 25.68 | H2019HA/ME001c_WPFO | Fair | 21.3 | Platte River floodplain. Could not survey entire parcel due to property denials. Mix of wet meadow intersected by forested areas of eastern redcedar and cattail-dominated wetlands. Area has been grazed. |
| NE | HAMILTON | 41.09793024 | -97.92836978 | NEL-310 | 25.57 | H2019HA/ME001b_WPFO | Fair | 3.7 | Platte River floodplain. Mesic hay meadow that was previously planted with alfalfa. Some swell-swale topography. Canada goldenrod is the dominant forb. The area has been hayed in the past and there is some evidence of grazing, though nothing recent. |

| State | County | Latitude | Longitude | Route | Milepost Start | SiteID | Habitat Quality Assessment | Acreage | Habitat Description |
|---|---|---|---|---|---|---|---|---|---|
| NE | HAMILTON | 41.09655062 | -97.92713059 | NEL-310 | 25.45 | H2019HA/ME001a_WPFO | Fair | 4.6 | Platte River floodplain. Mesic and wet meadow complex with mix of native and non-native species. Meadows intersected by forested areas of eastern redcedar and cattail-dominated wetlands. Some swell-swale topography and decent representation of sedges. |
| NE | MERRICK | 41.0912245 | -97.99861839 | NEL-309 | 44.44 | No_hab_NE_WPFO_001 | Unsuitable | 7.1 | Engineered mitigation wetland, previously disturbed. |

# Appendix C –
# Survey Site Maps

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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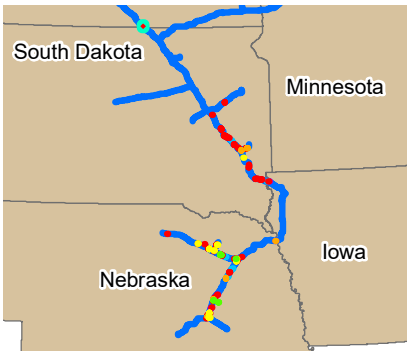


## LEGEND

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**Habitat Quality Rating**

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 1, Sheet 1 of 50 | **Drawing Number:** 1 |

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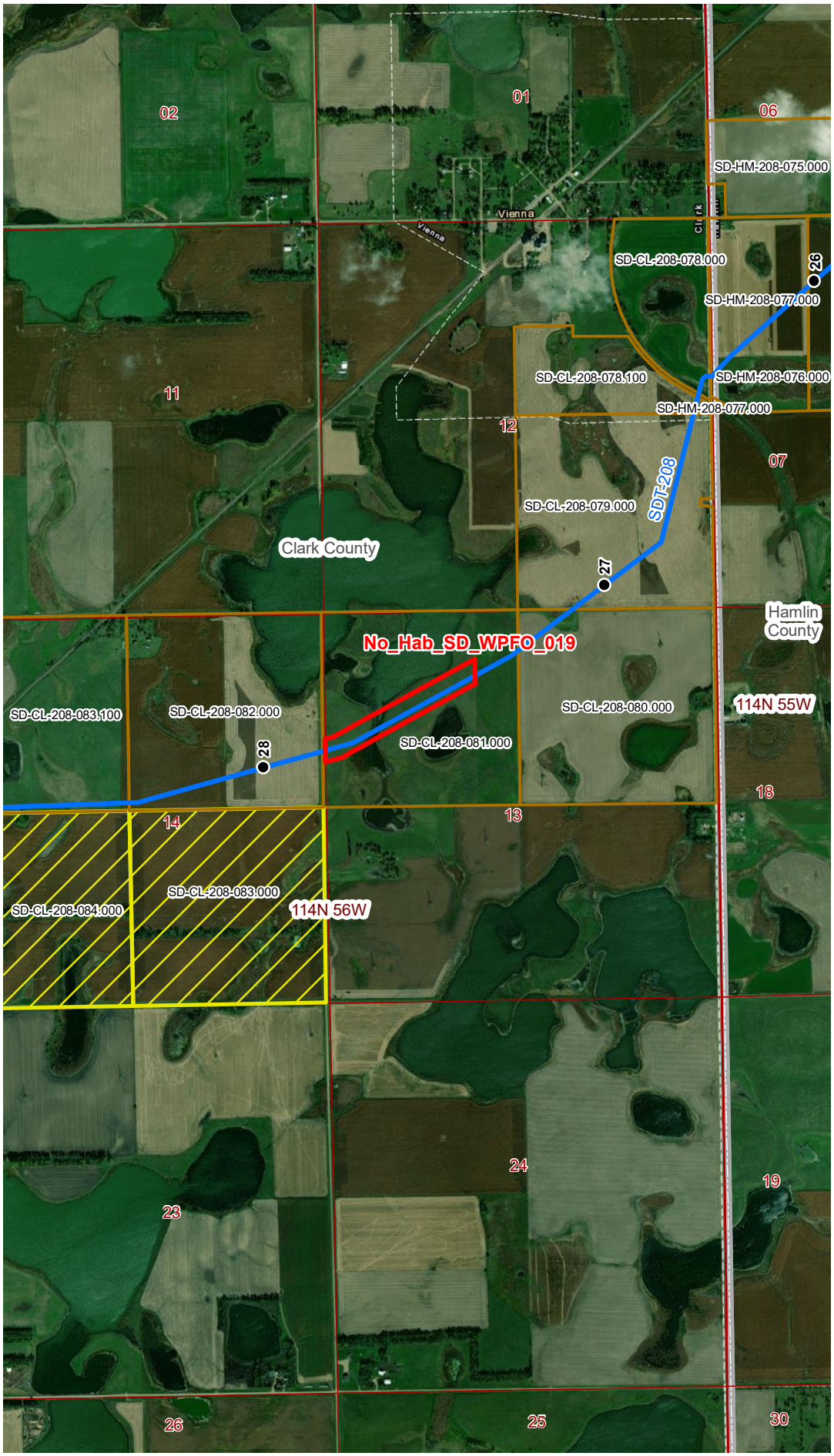
## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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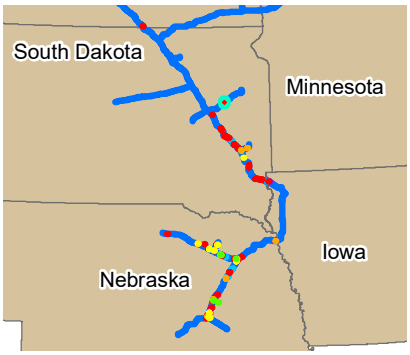


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## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




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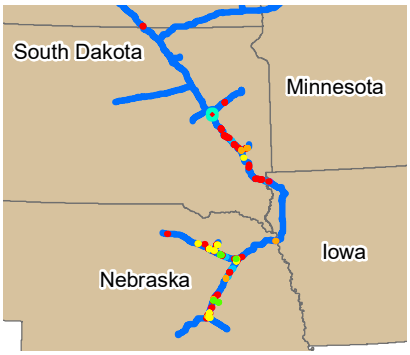


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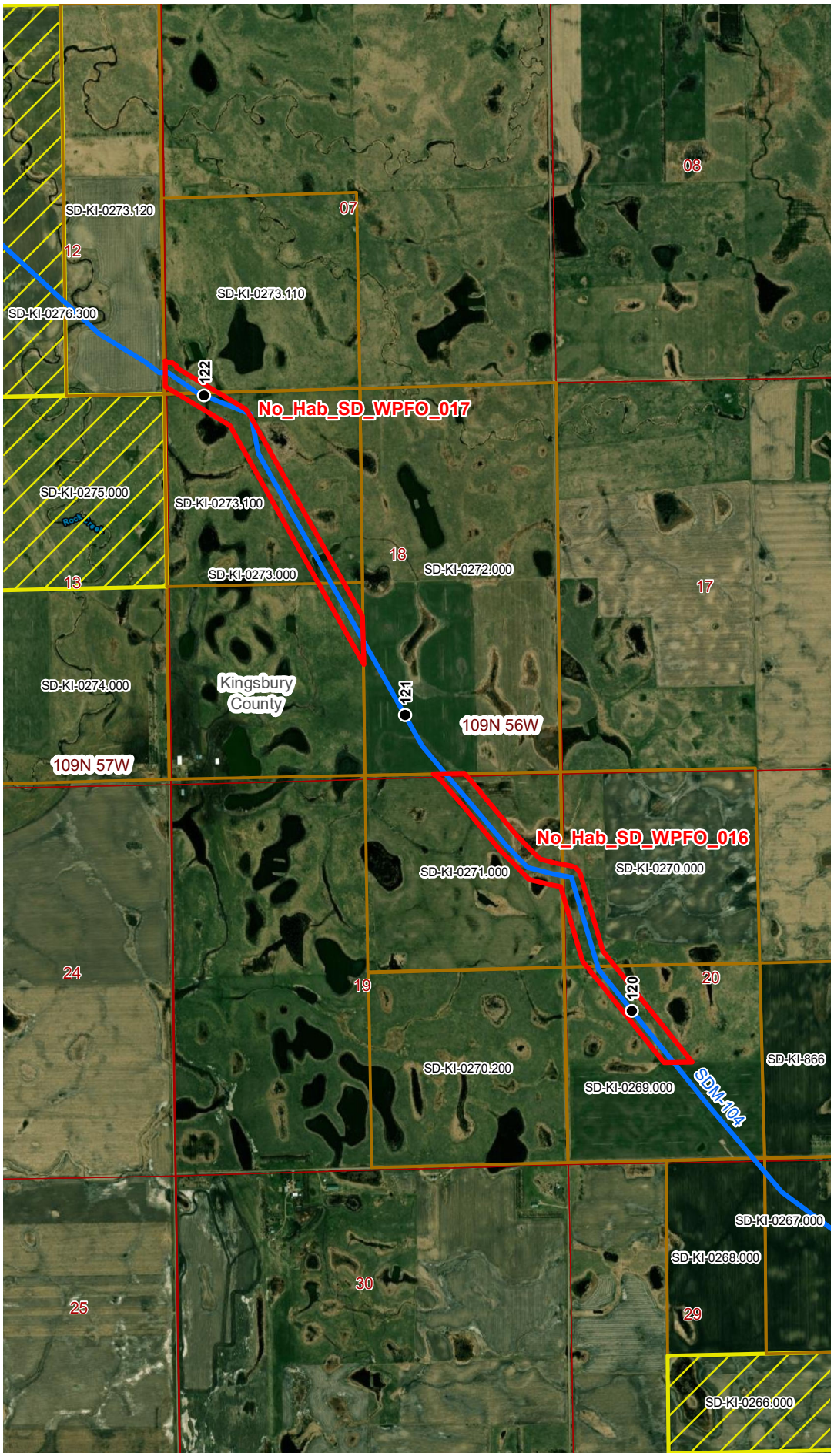


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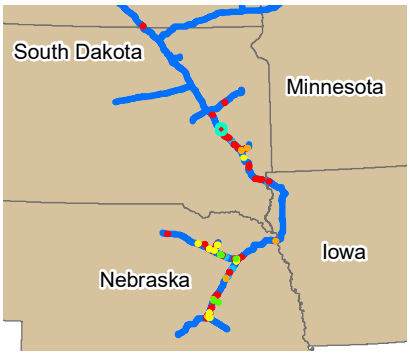


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MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

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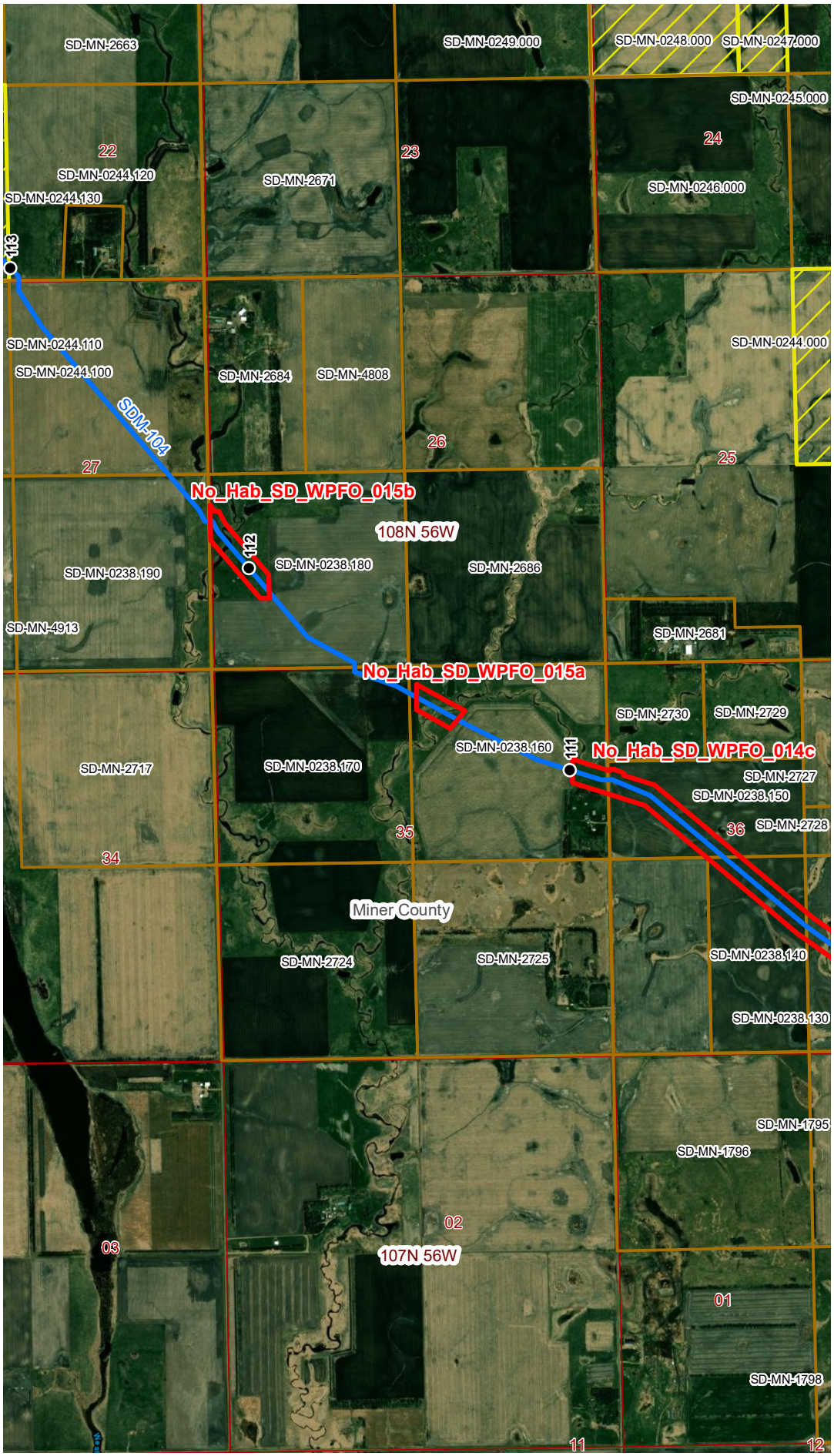


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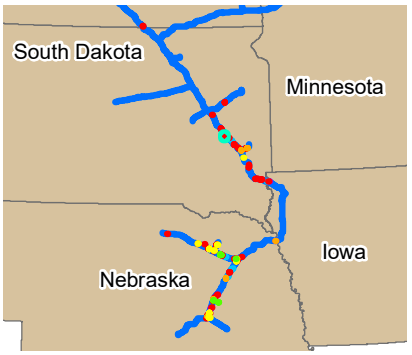


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| B - 5<br>Sheet 5 of 50 | 1 |

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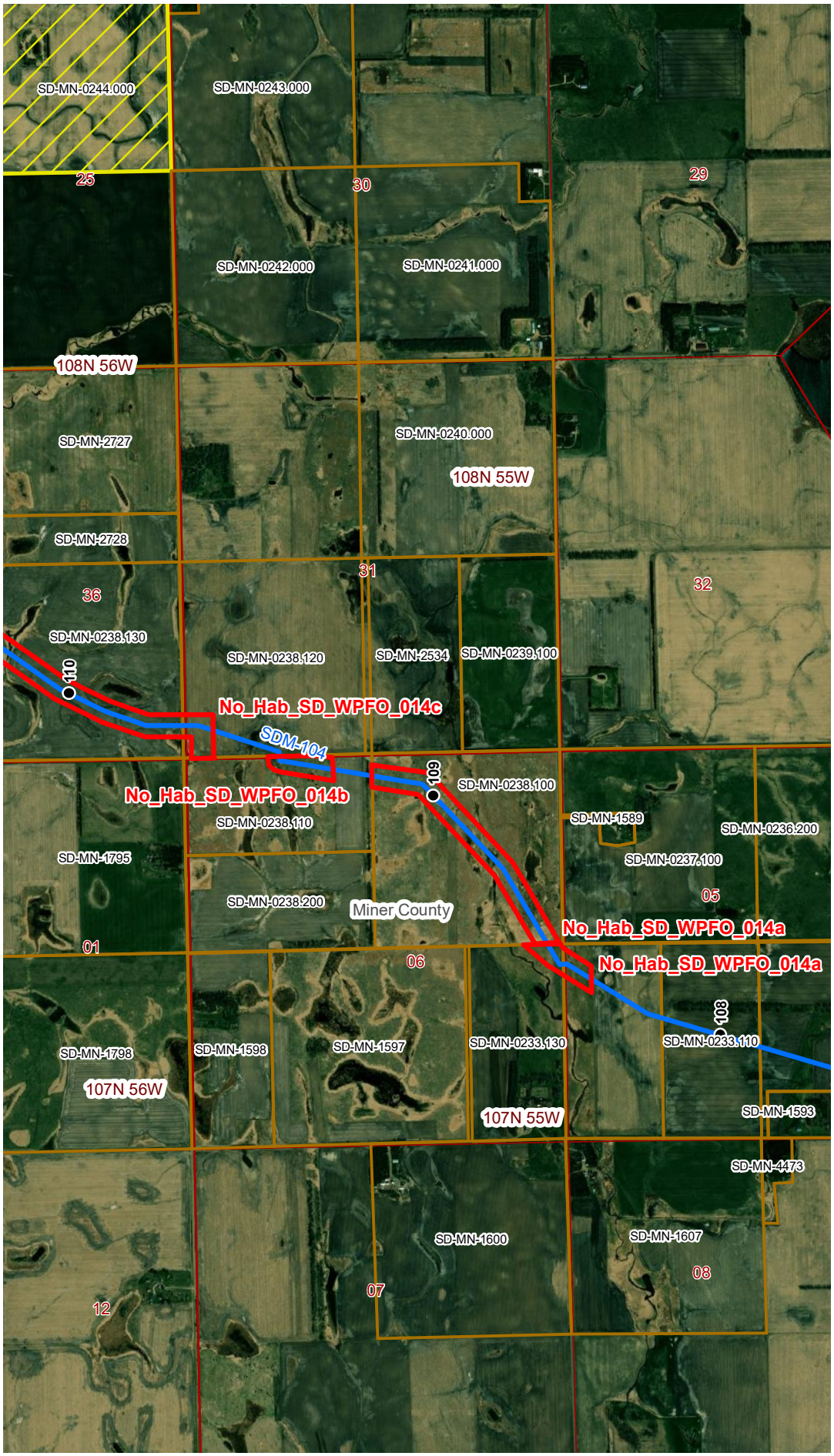
## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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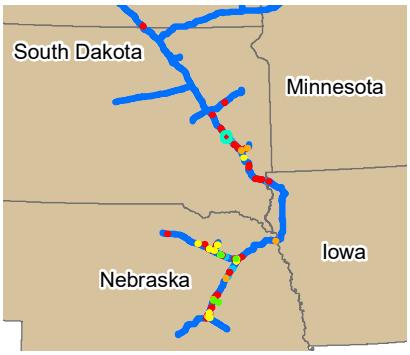


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| **Sheet:** B - 6 Sheet 6 of 50 | **Drawing Number:** 1 |

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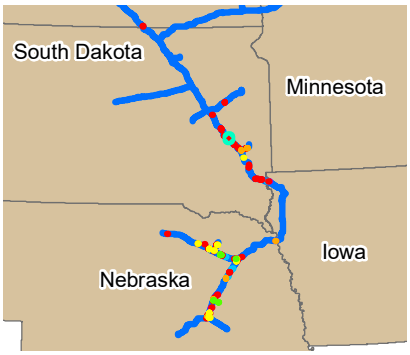
## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP

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| **Sheet:** B - 7 Sheet 7 of 50 | **Drawing Number:** 1 |

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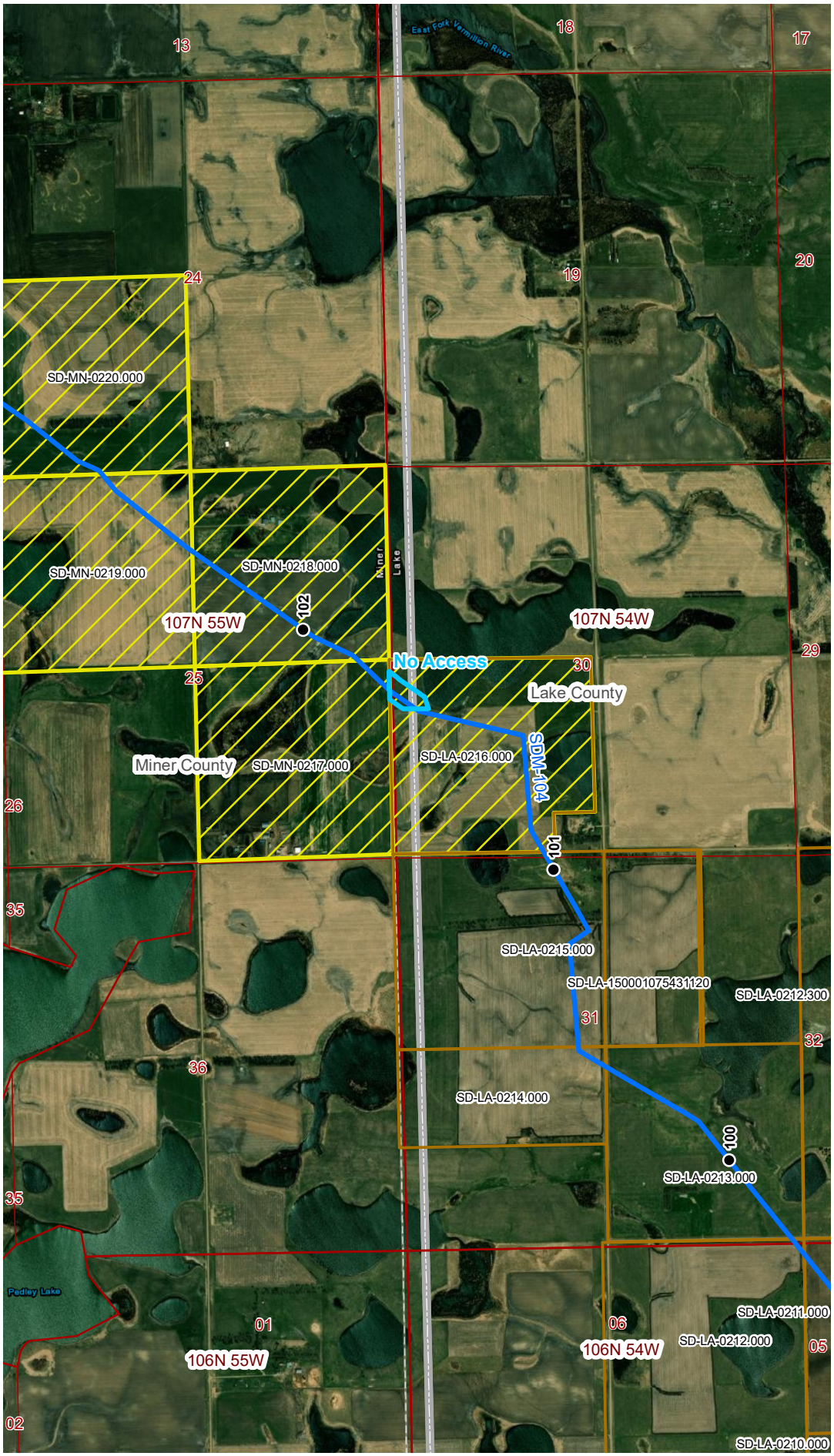
## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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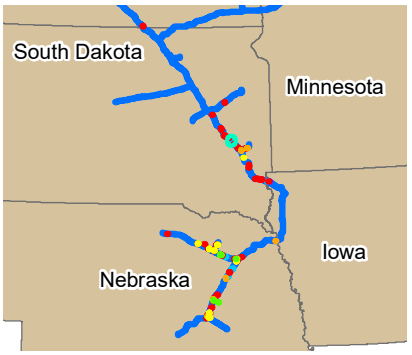


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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

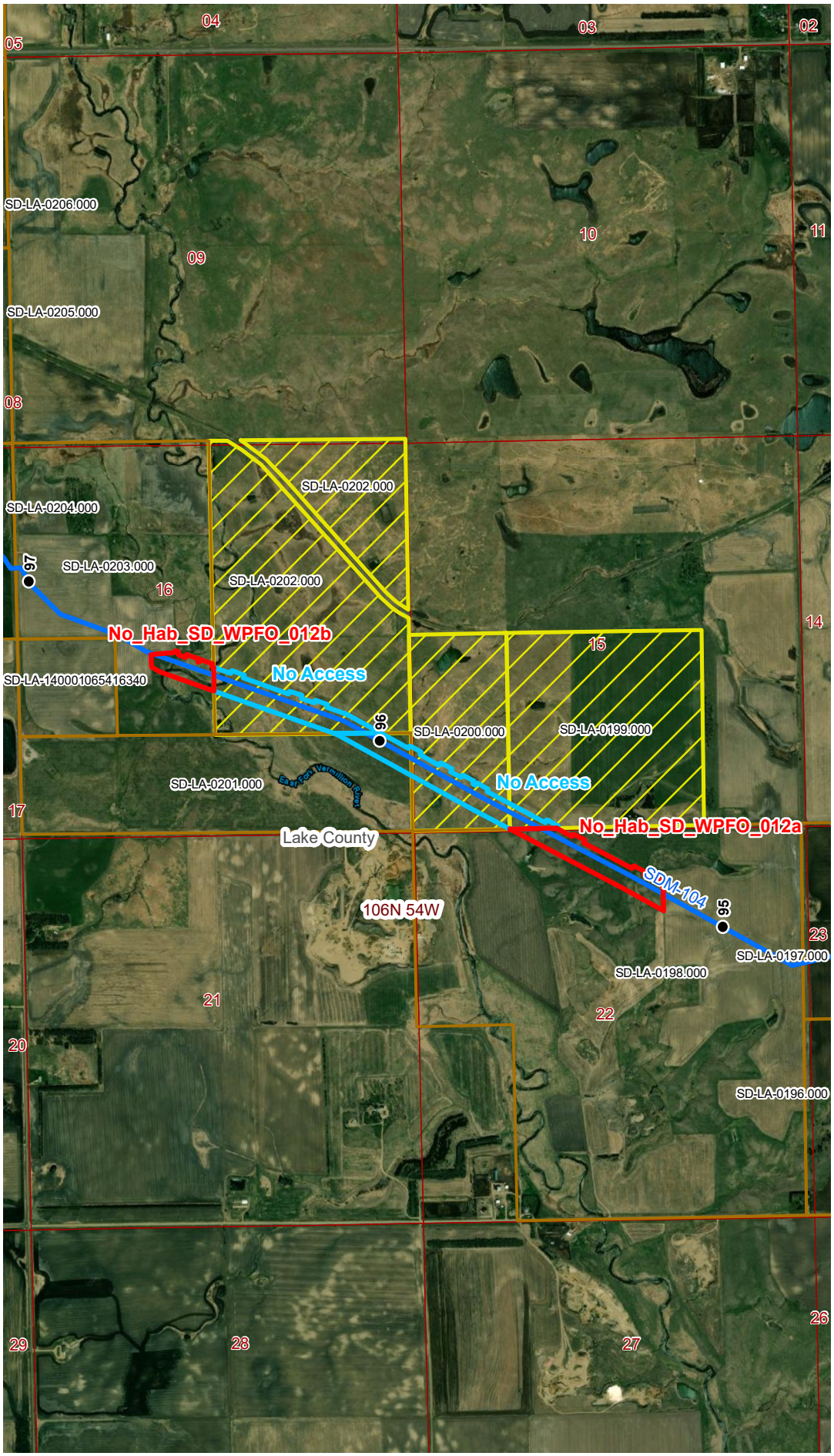
Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

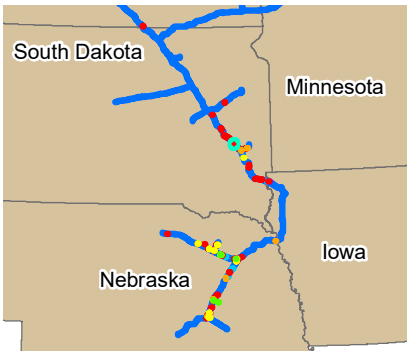
| Sheet: | Drawing Number: |
|---|---|
| B - 8<br>Sheet 8 of 50 | 1 |

MCE22_WFFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

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## MIDWEST CARBON EXPRESS PROJECT

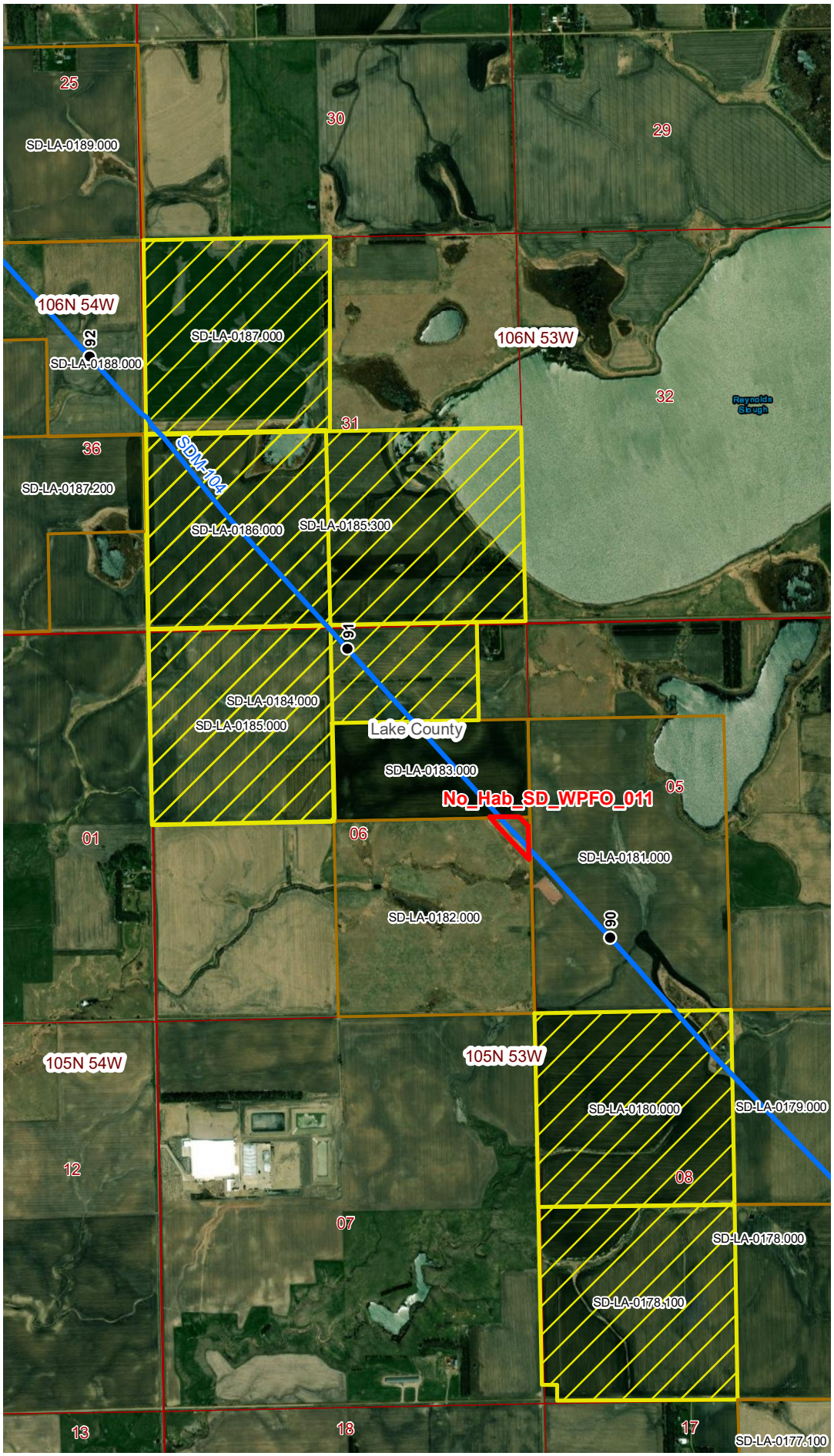
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

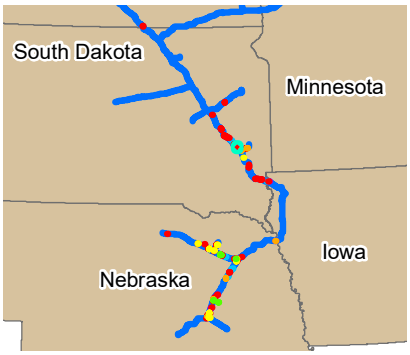
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 9, Sheet 9 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

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Miles

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## MIDWEST CARBON EXPRESS PROJECT

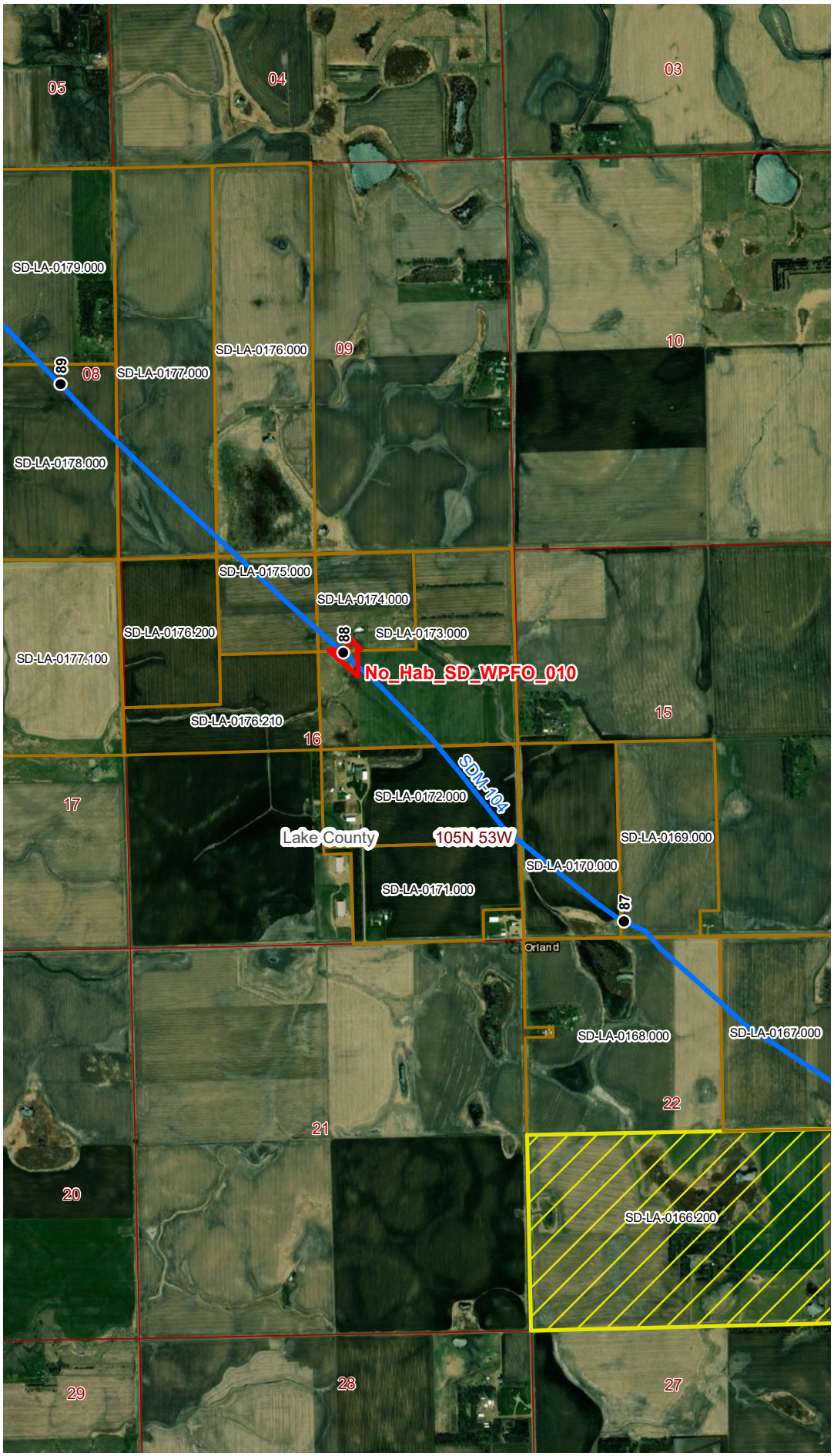
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

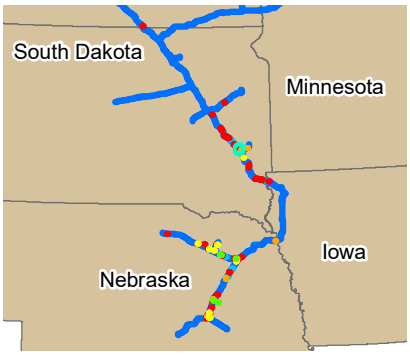
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 10 Sheet 10 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

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0 0.125 0.25 0.5
Miles

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## MIDWEST CARBON EXPRESS PROJECT

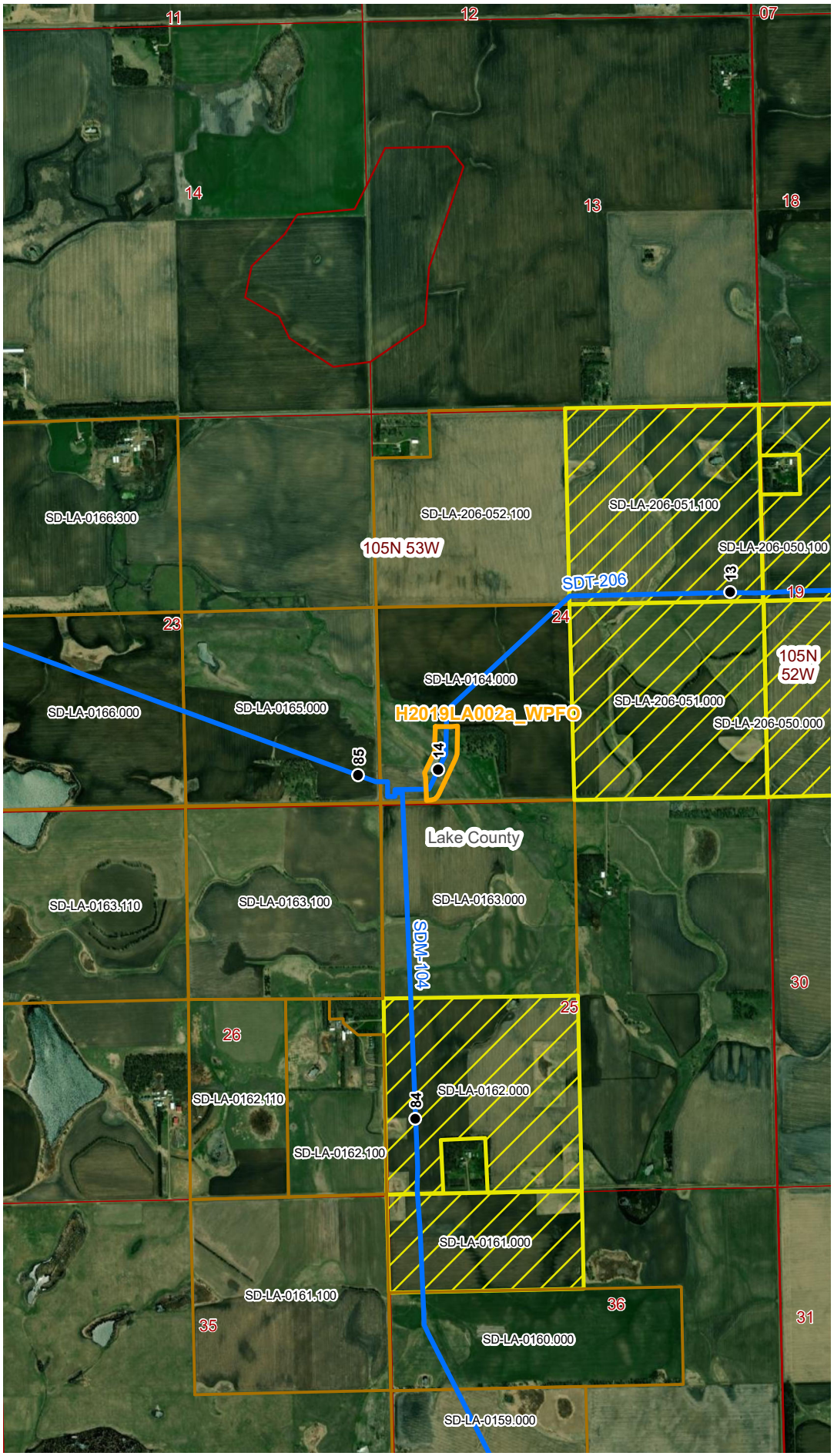
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

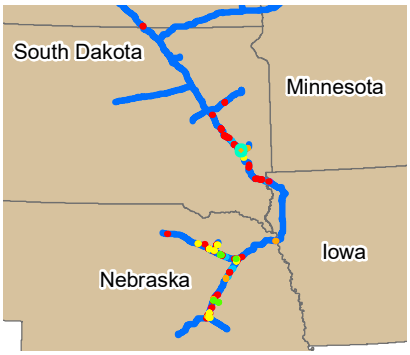
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 11, Sheet 11 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

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0 0.125 0.25 0.5
Miles

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## MIDWEST CARBON EXPRESS PROJECT

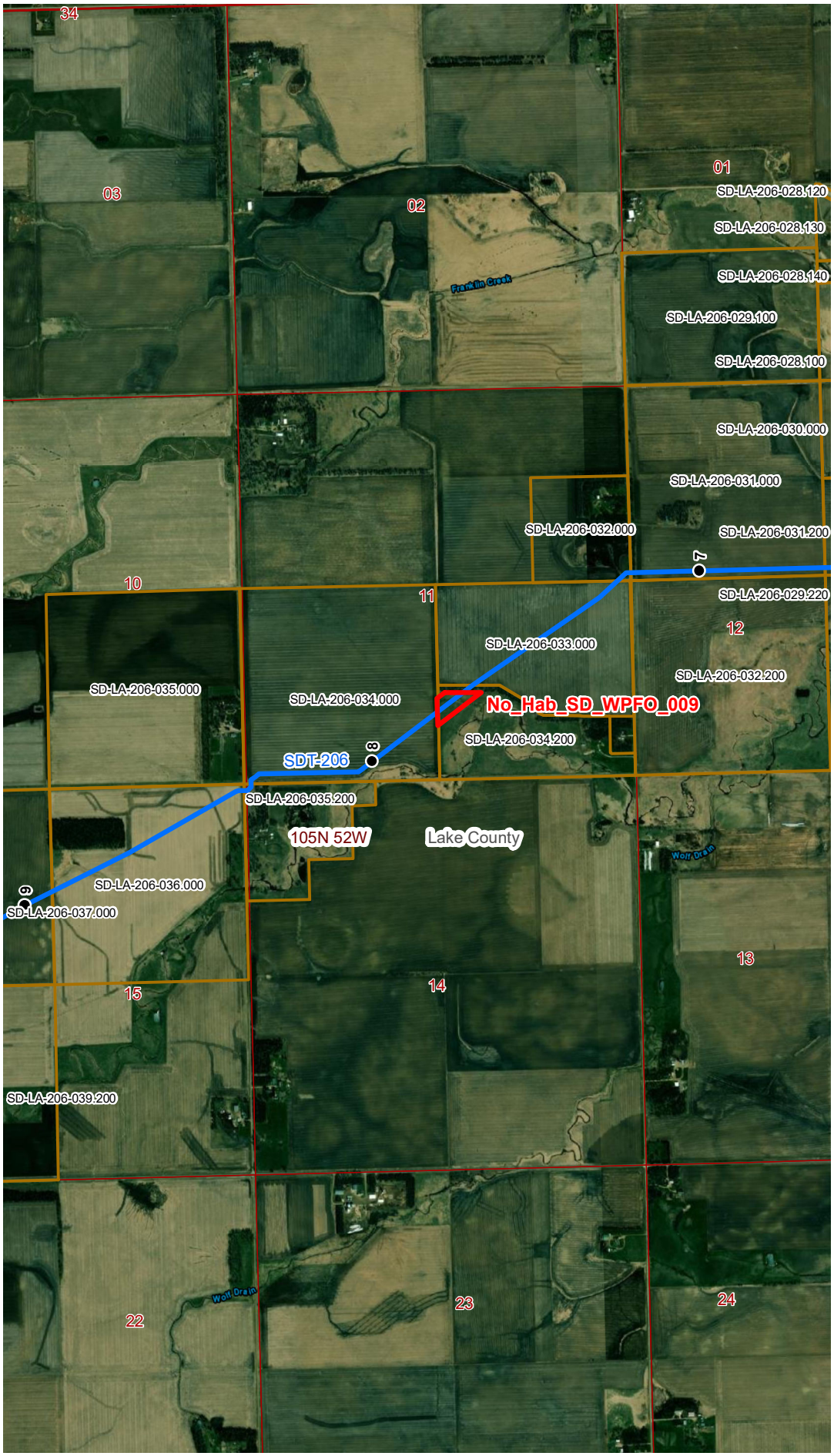
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

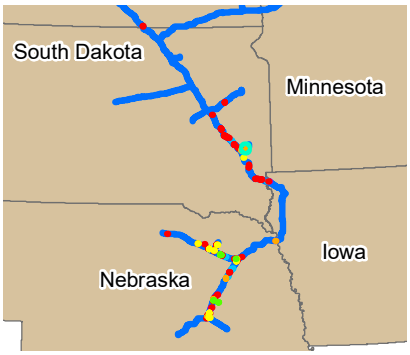
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 12 Sheet 12 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
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**Habitat Quality Rating**

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0 0.125 0.25 0.5
Miles

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

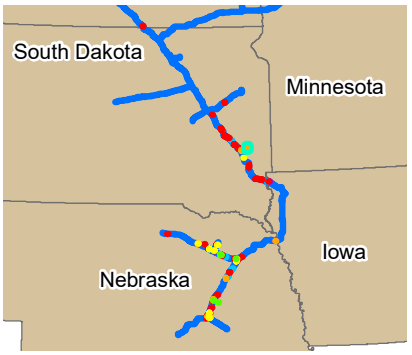
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 13, Sheet 13 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
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Figure Title:
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Figure Number:
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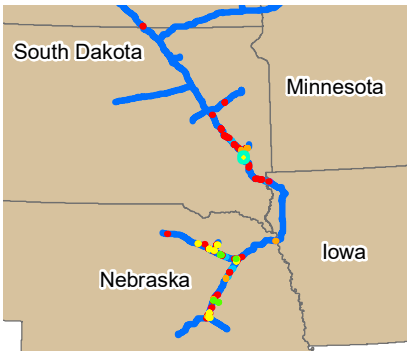
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 14 Sheet 14 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
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Figure Title:
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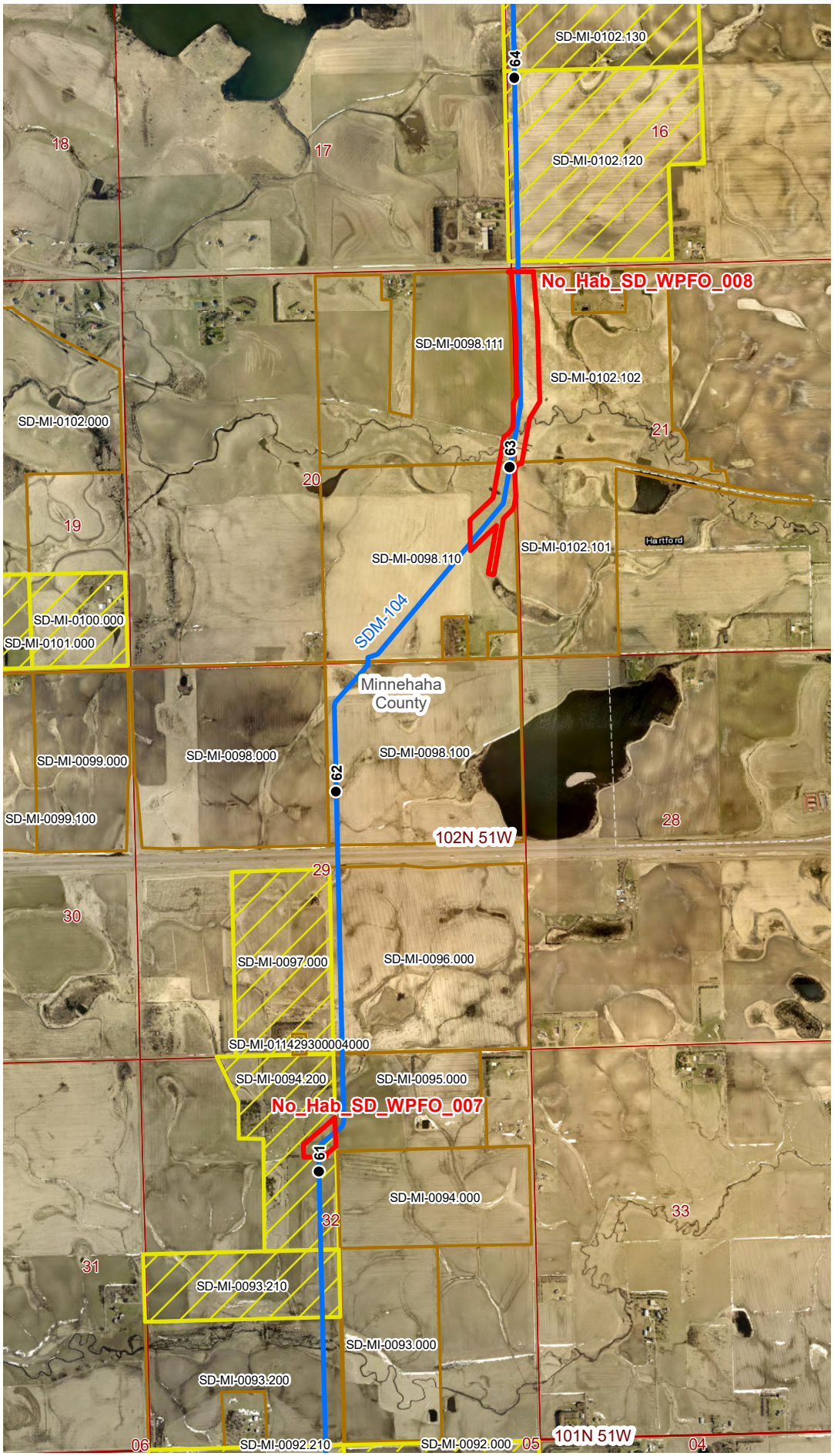
Figure Number:
Appendix C

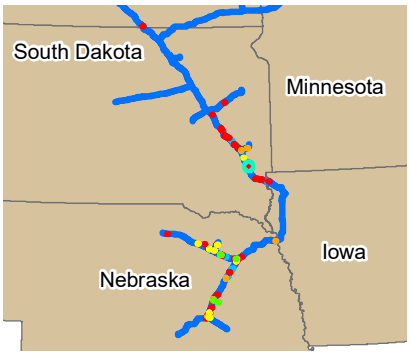
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 15, Sheet 15 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

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Figure Title:
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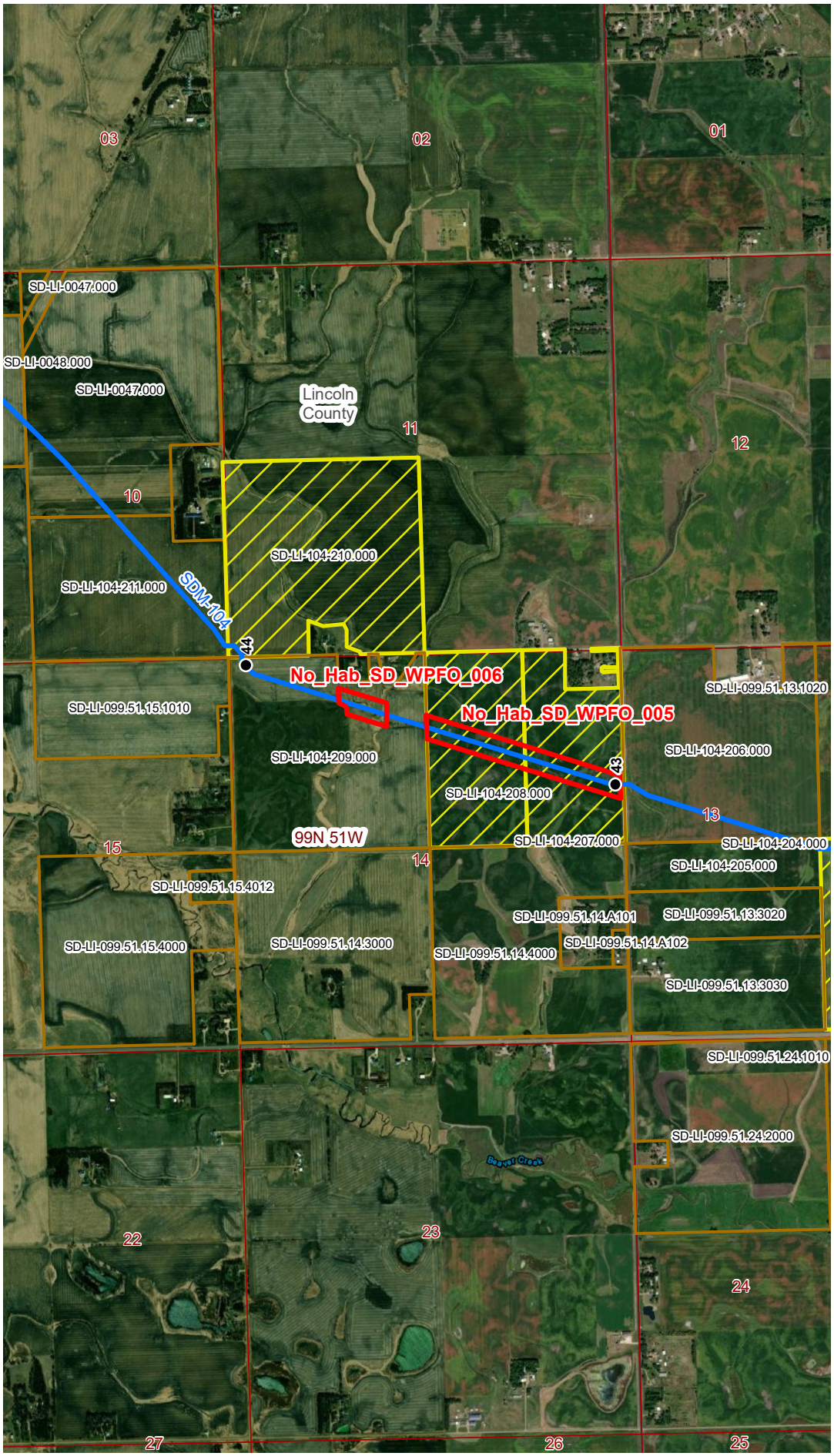
Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

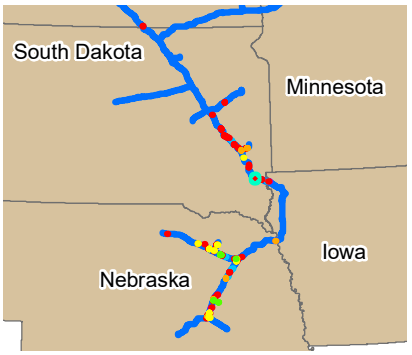
| Sheet: | Drawing Number: |
|---|---|
| B - 16<br>Sheet 16 of 50 | 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
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0 0.125 0.25 0.5
Miles

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## MIDWEST CARBON EXPRESS PROJECT

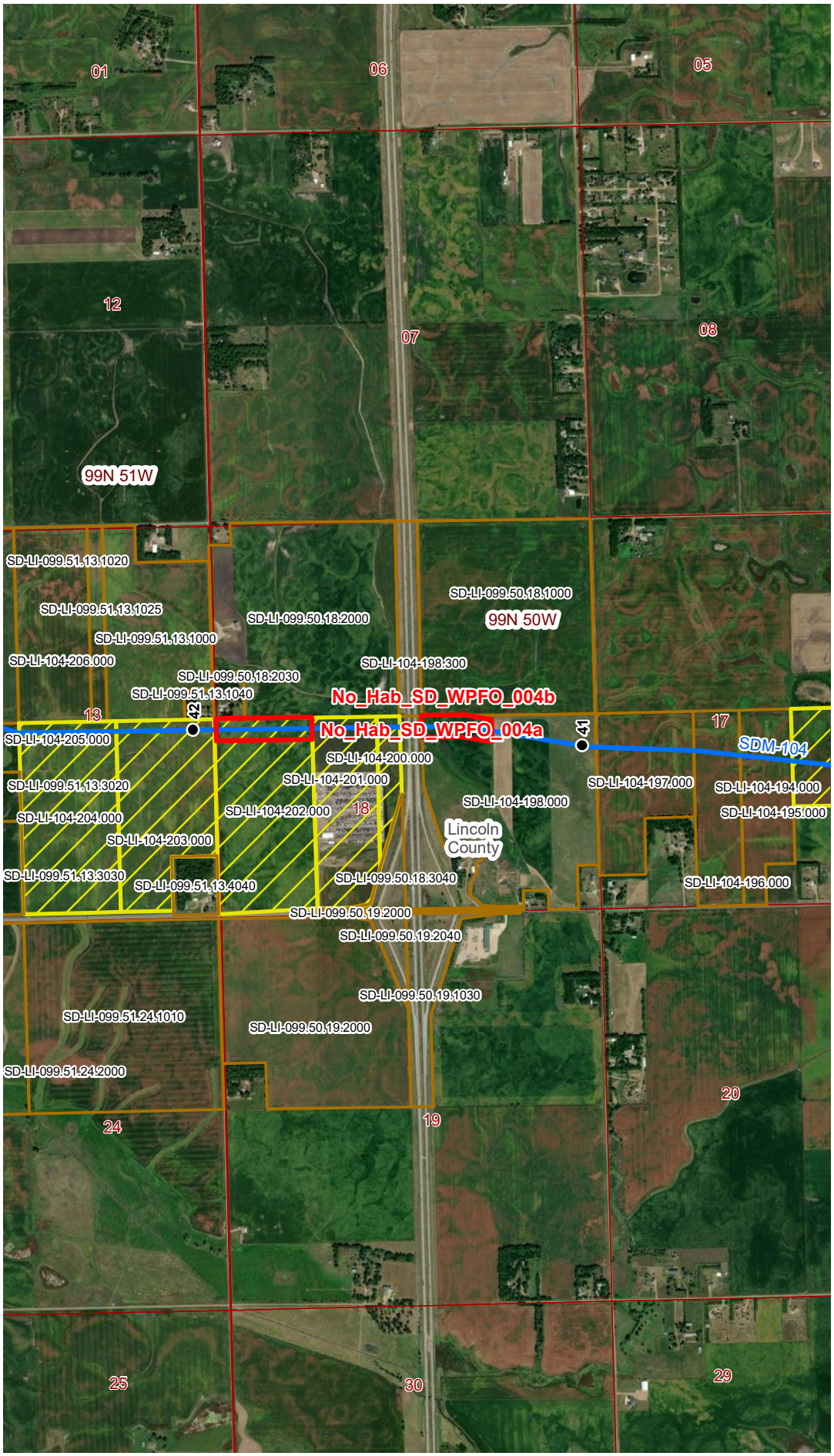
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

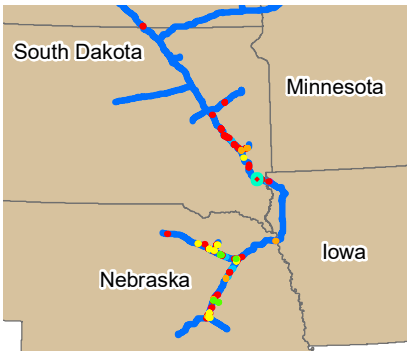
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 17, Sheet 17 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
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Figure Title:
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Figure Number:
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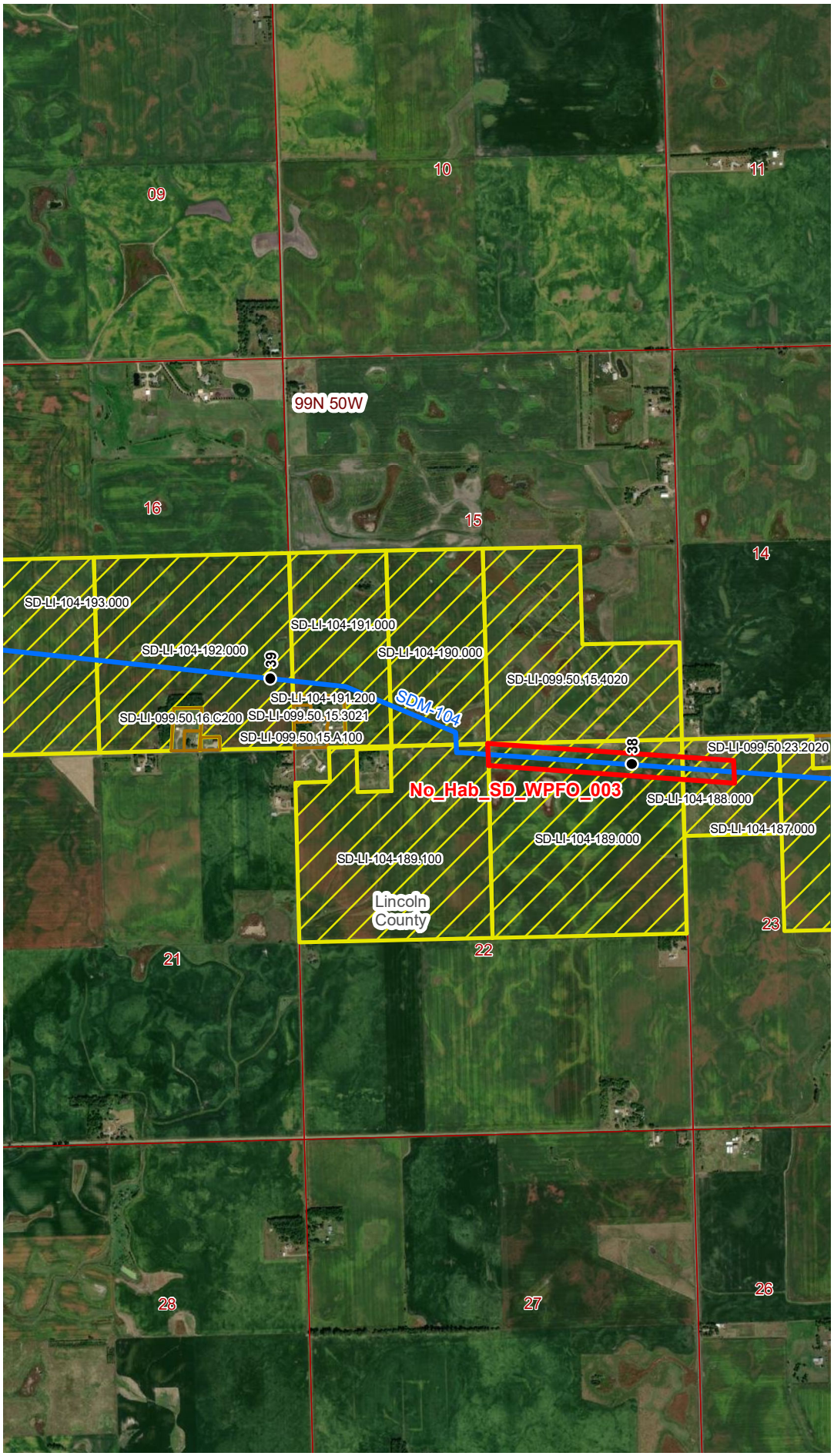
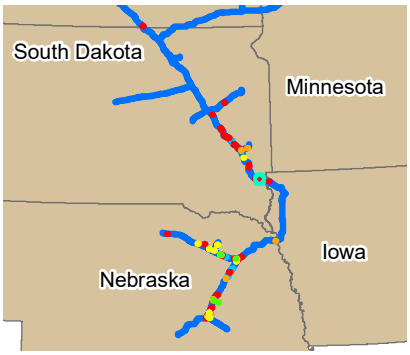
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 18 Sheet 18 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
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- Property Tract
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Figure Title:
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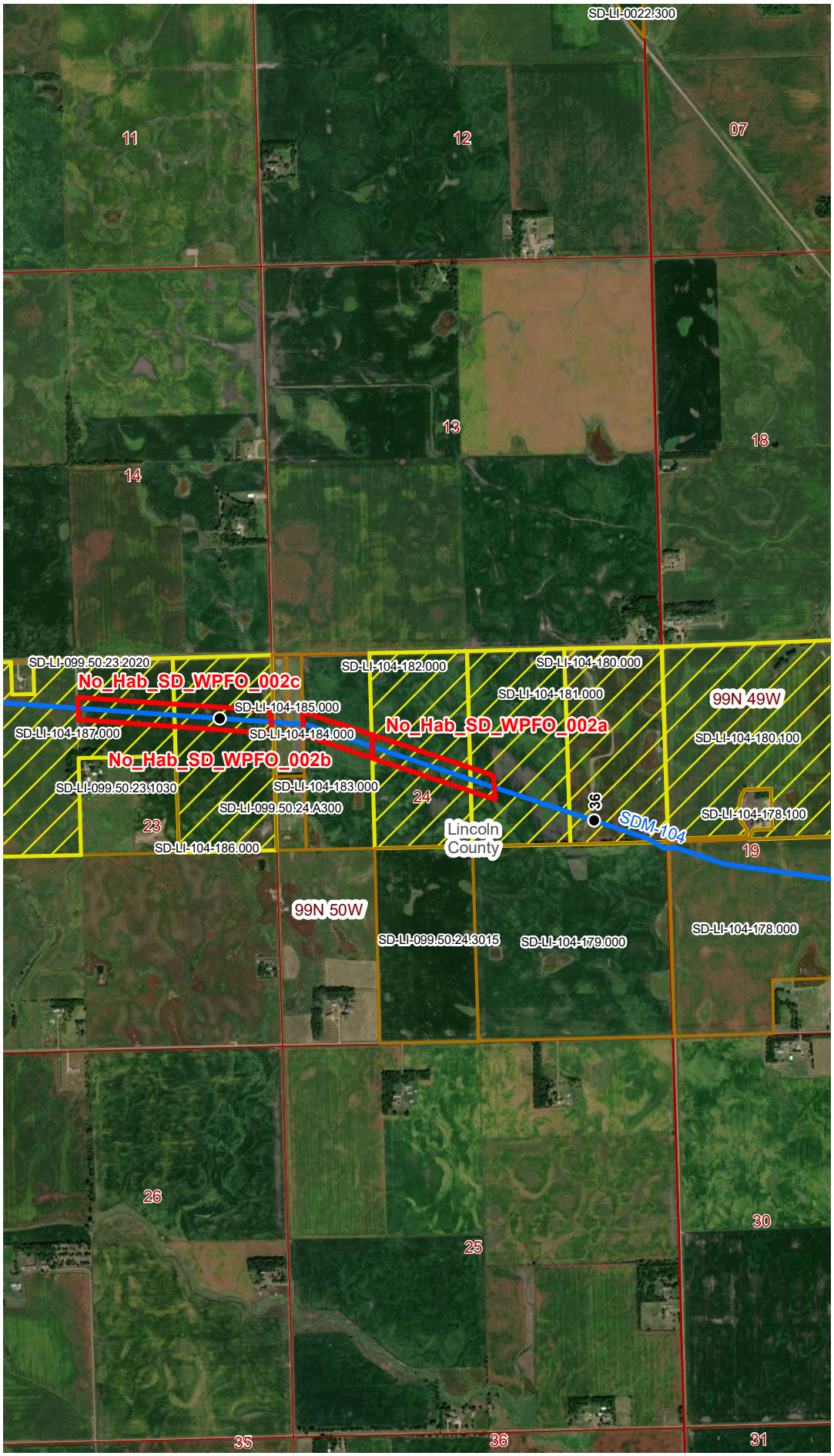
Figure Number:
Appendix C

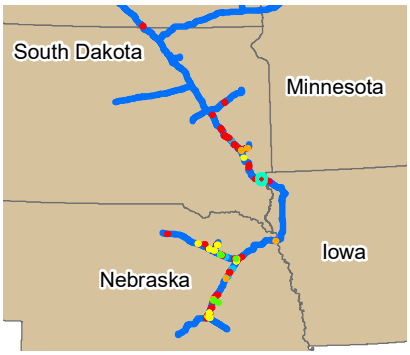
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 19 Sheet 19 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
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Figure Title:
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Figure Number:
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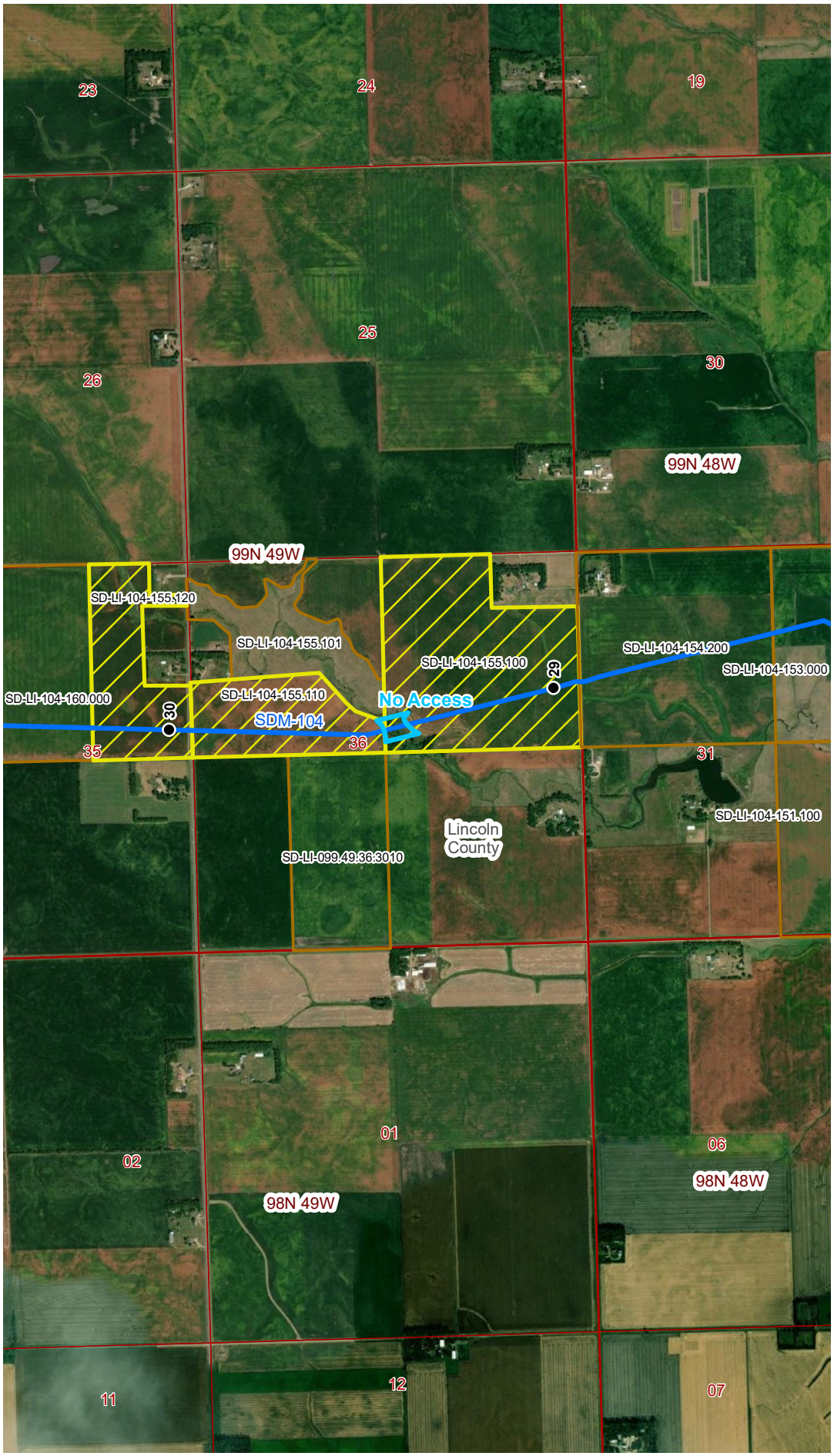
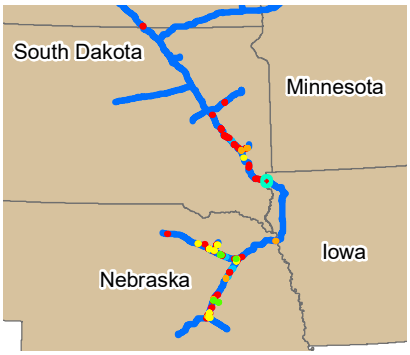
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 20 Sheet 20 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

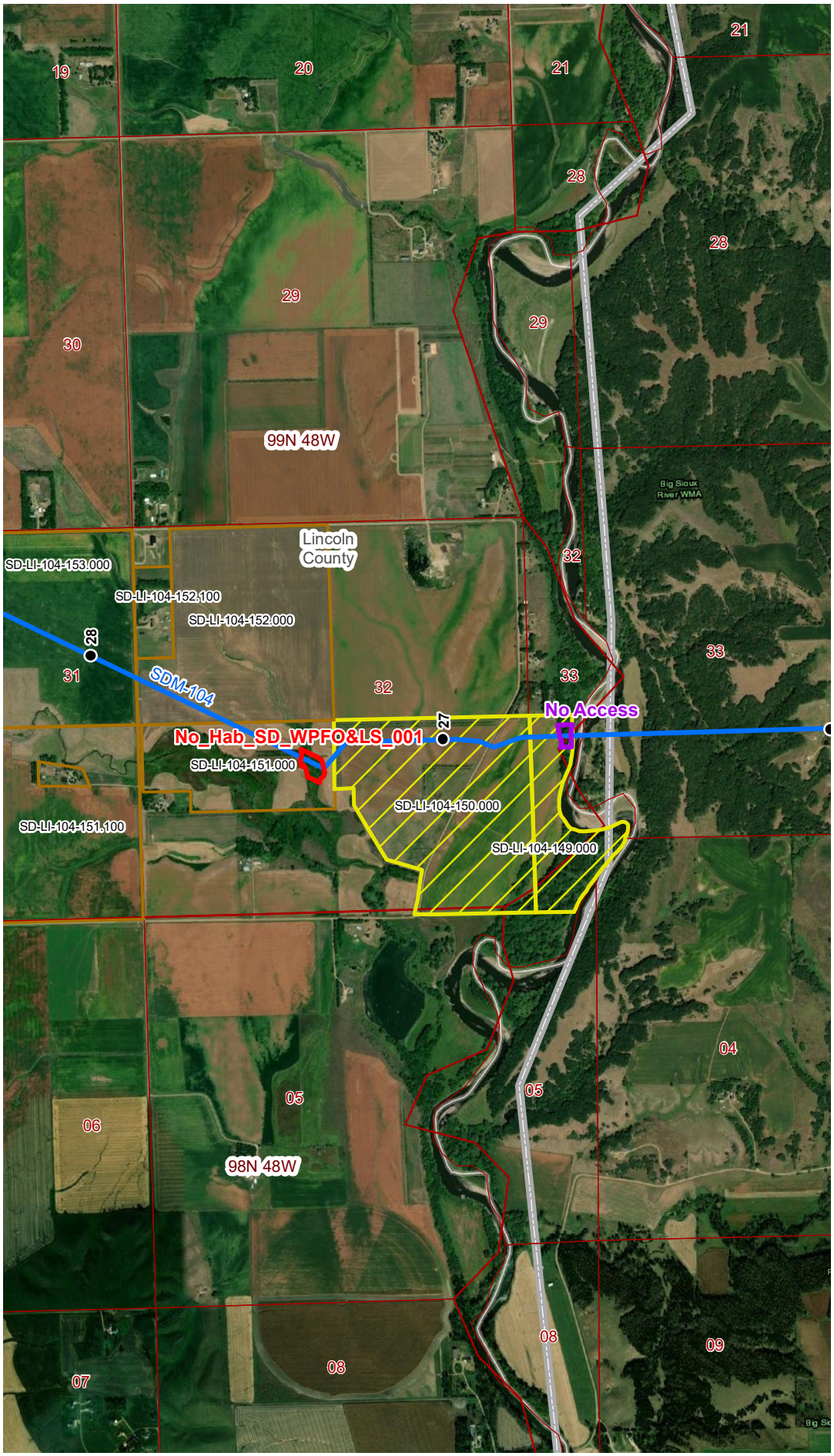
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

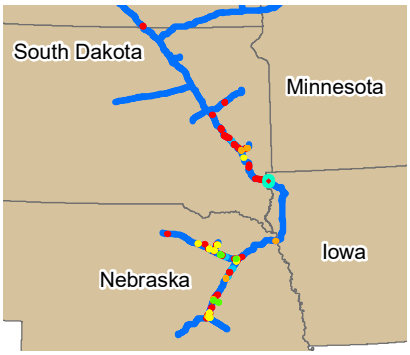
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 21, Sheet 21 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
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**Habitat Quality Rating**

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0 0.125 0.25 0.5
Miles

N

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## MIDWEST CARBON EXPRESS PROJECT

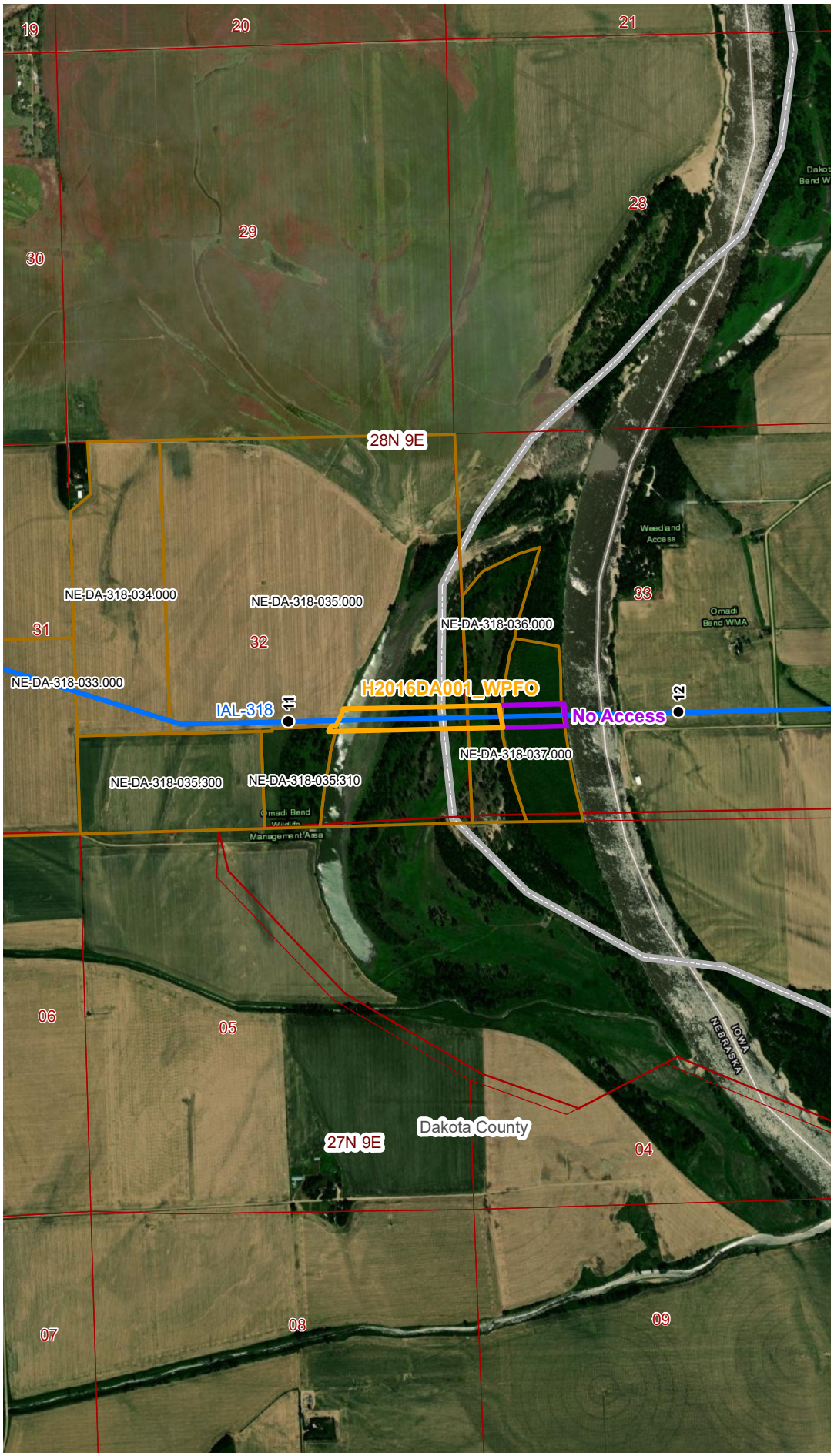
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

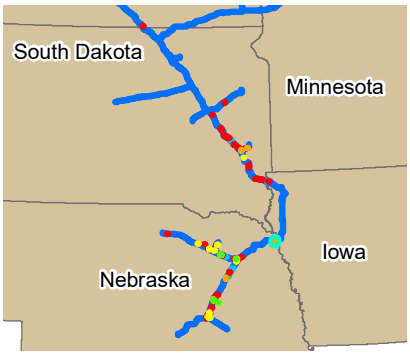
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 22, Sheet 22 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

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0 0.125 0.25 0.5
Miles

N

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## MIDWEST CARBON EXPRESS PROJECT

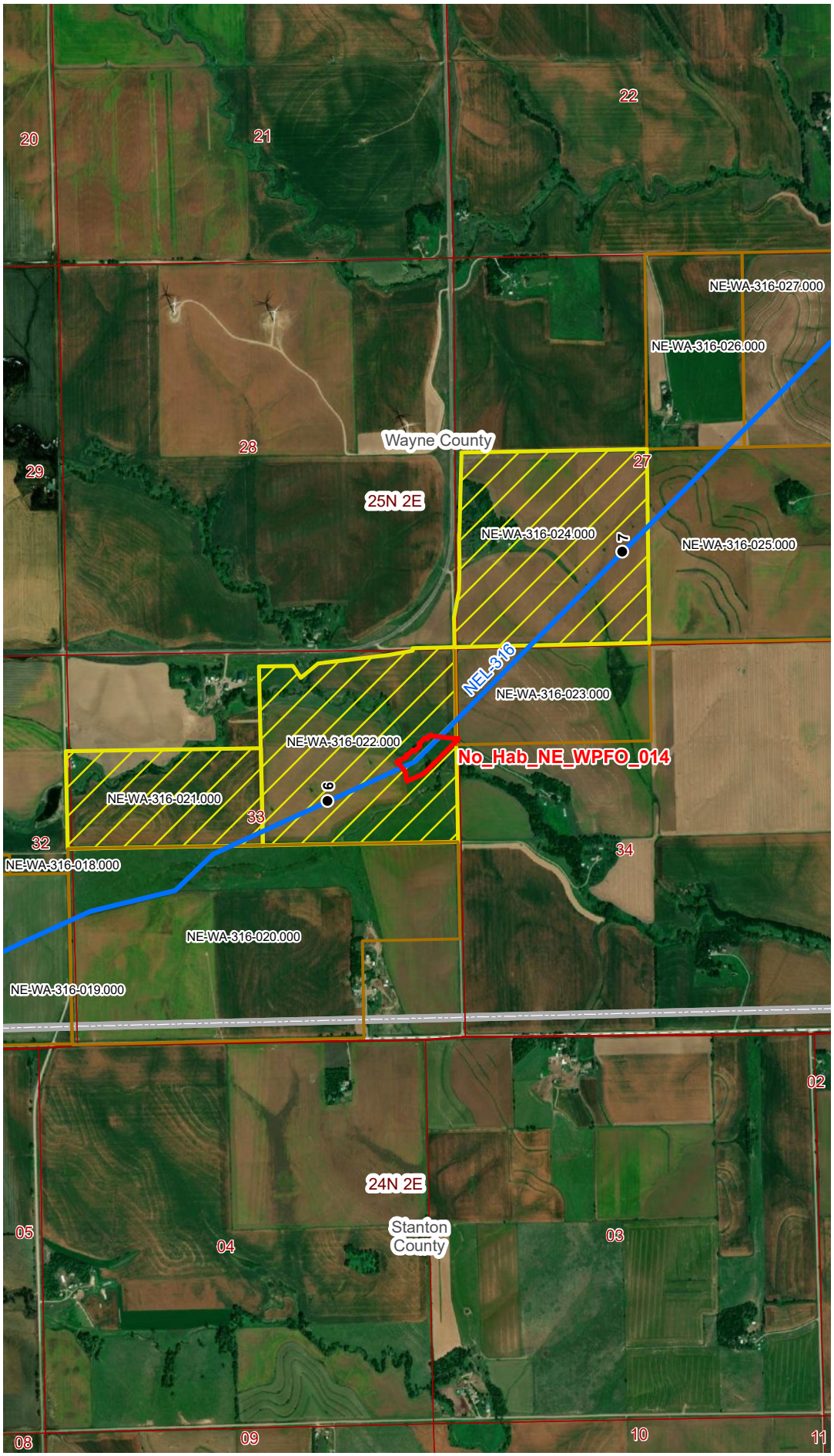
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

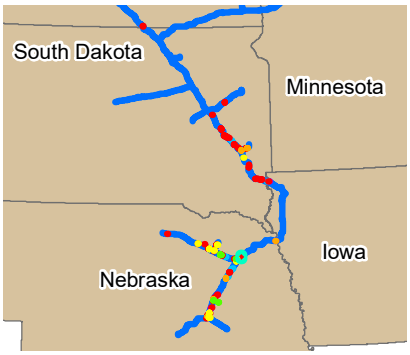
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 23 Sheet 23 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
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**Habitat Quality Rating**

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0 0.125 0.25 0.5
Miles

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

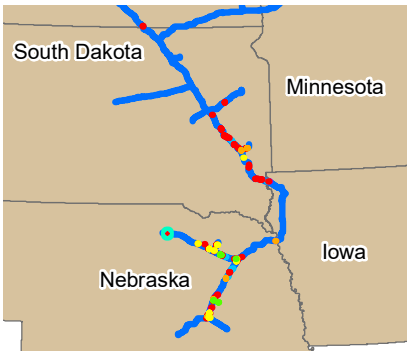
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 24 Sheet 24 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

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0 0.125 0.25 0.5
Miles

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## MIDWEST CARBON EXPRESS PROJECT

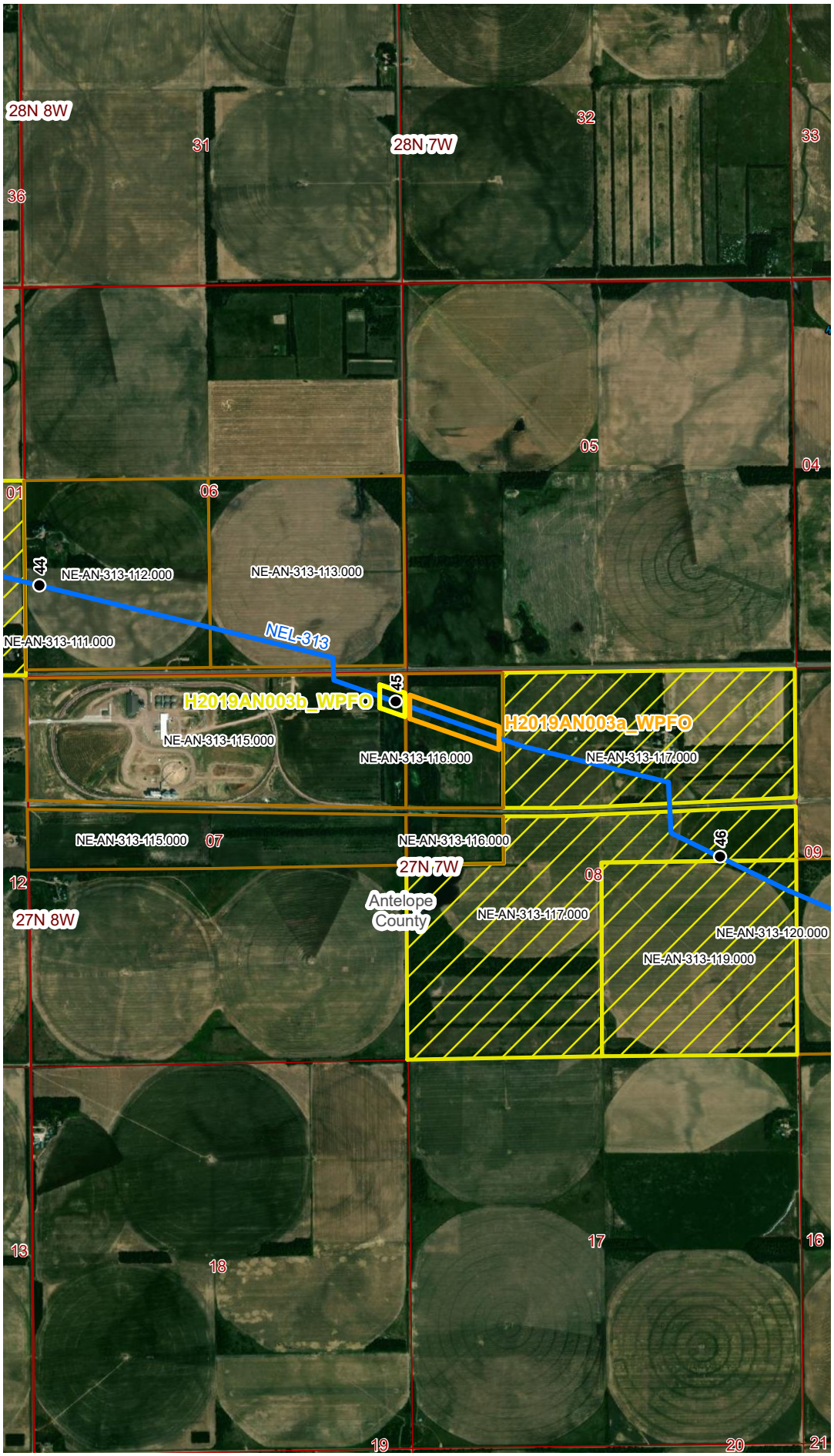
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

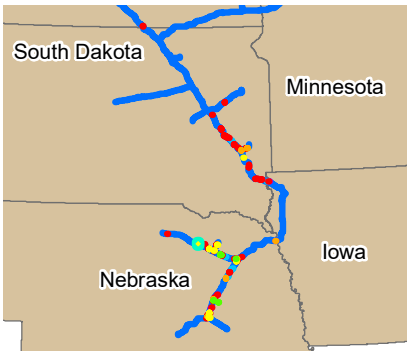
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 25 Sheet 25 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
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0 0.125 0.25 0.5
Miles

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 26 Sheet 26 of 50 | **Drawing Number:** 1 |

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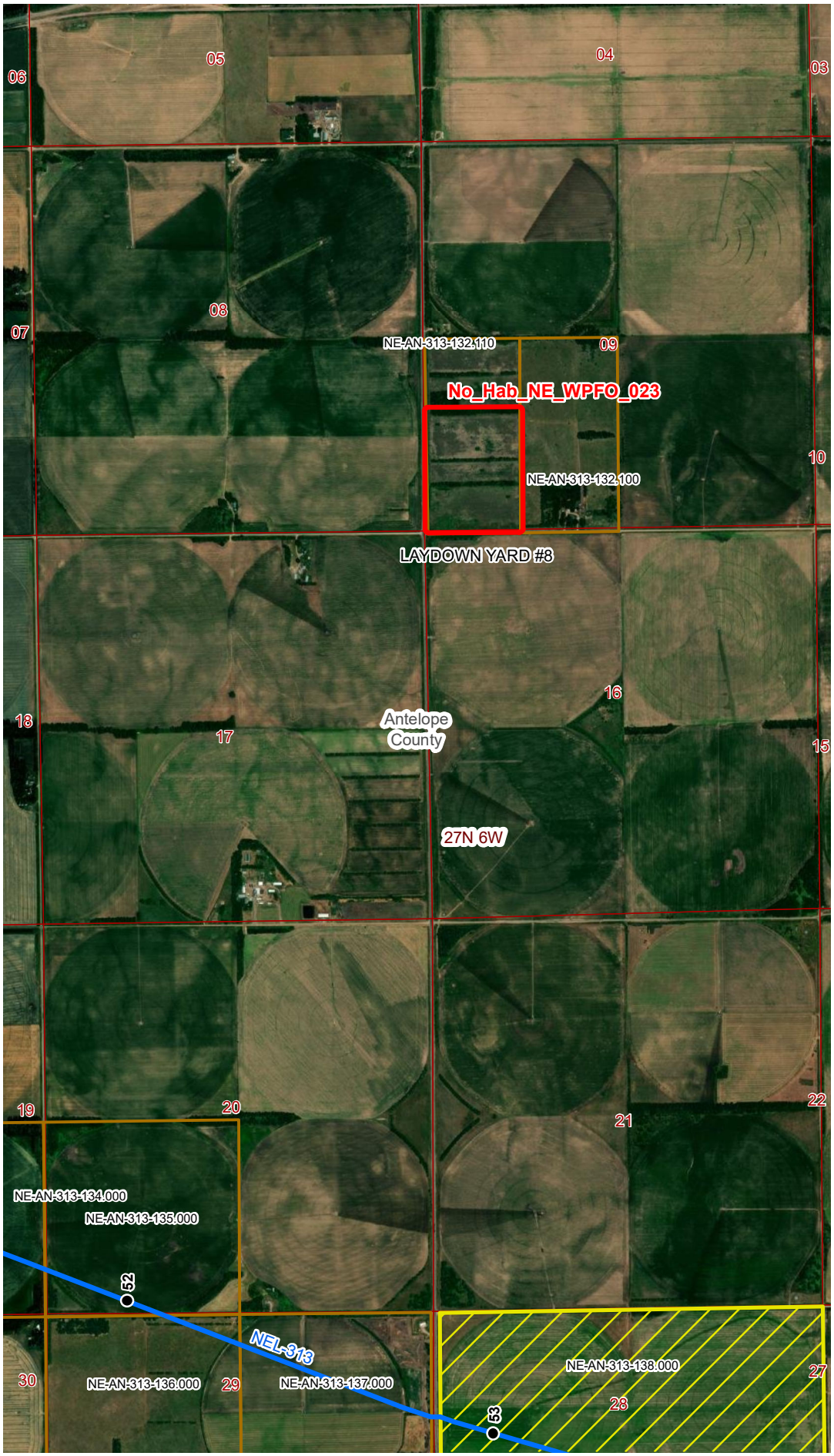
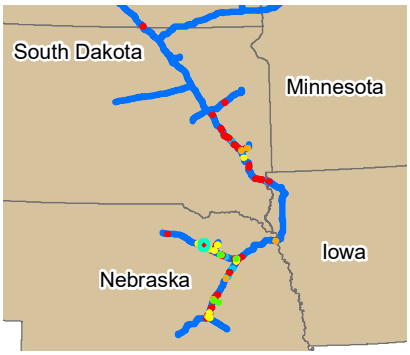
## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

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0 0.125 0.25 0.5
Miles

N

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## MIDWEST CARBON EXPRESS PROJECT

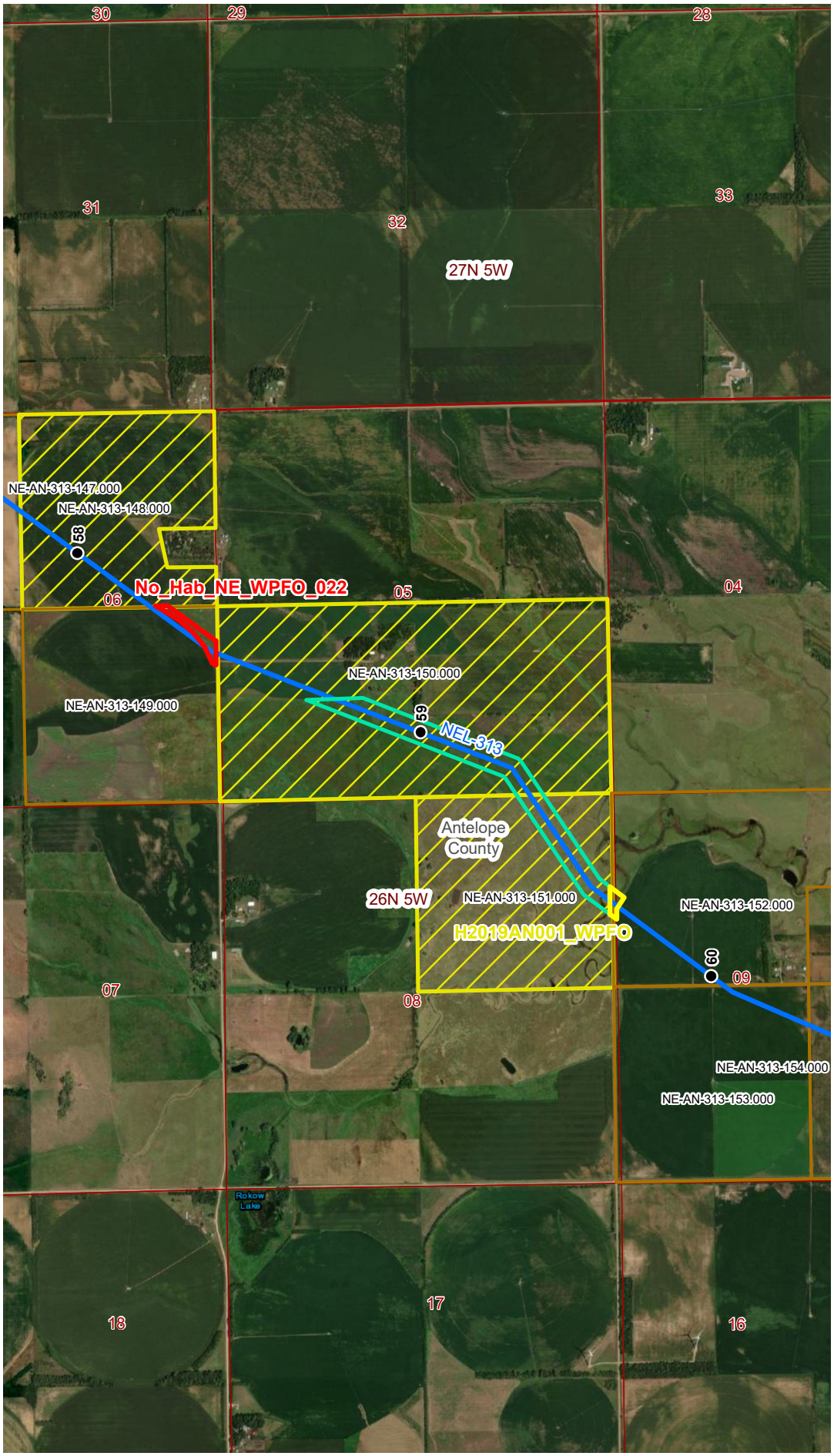
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

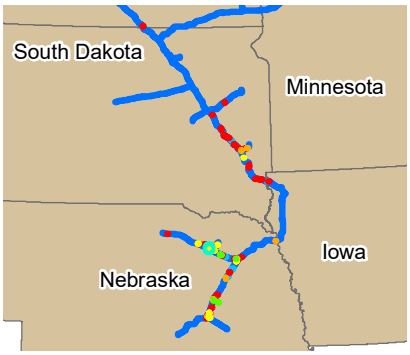
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 27 Sheet 27 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

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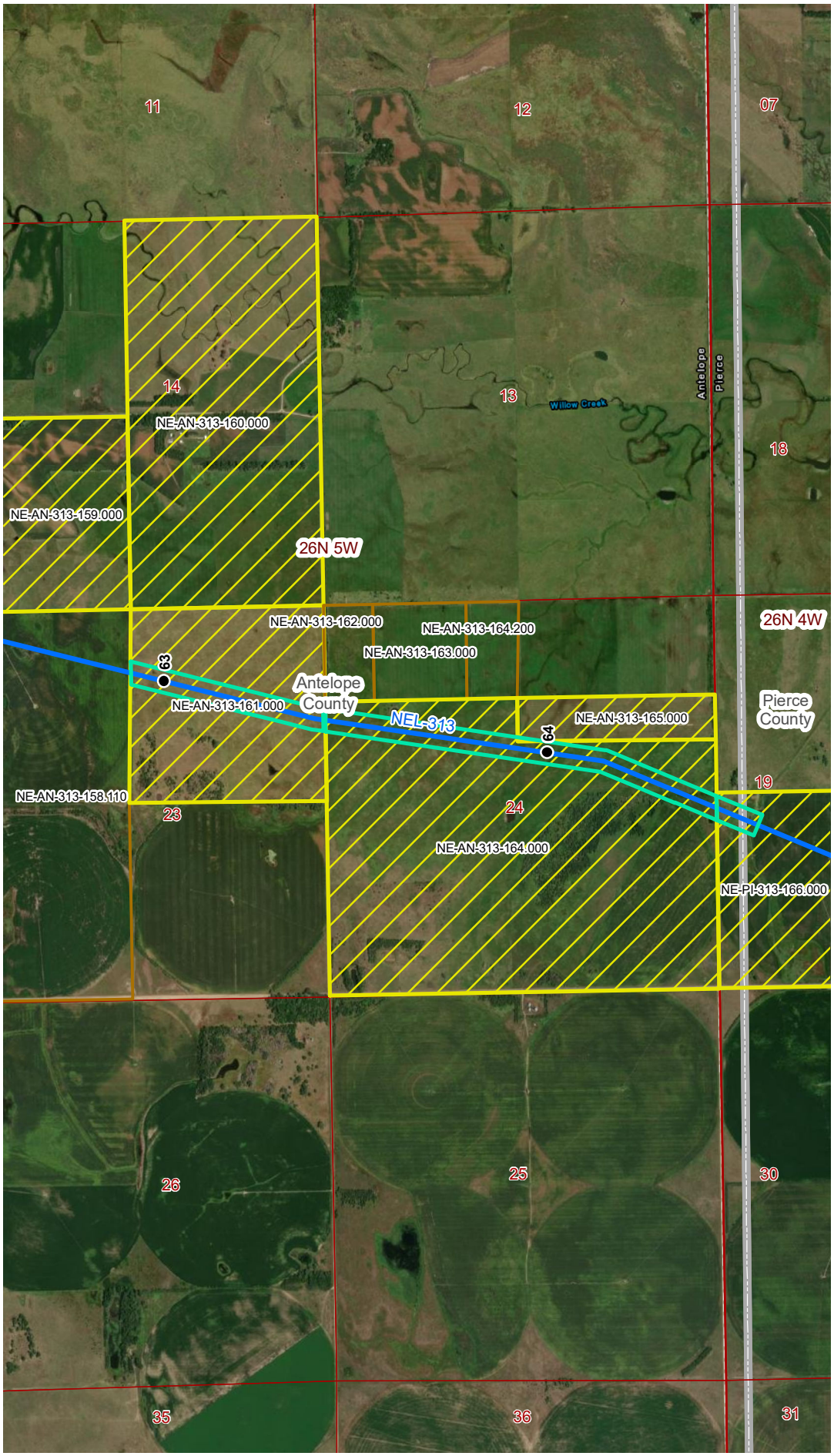
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

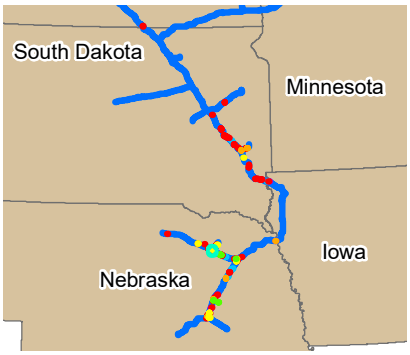
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 28 Sheet 28 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

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- Milepost
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0 0.125 0.25 0.5
Miles

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## MIDWEST CARBON EXPRESS PROJECT

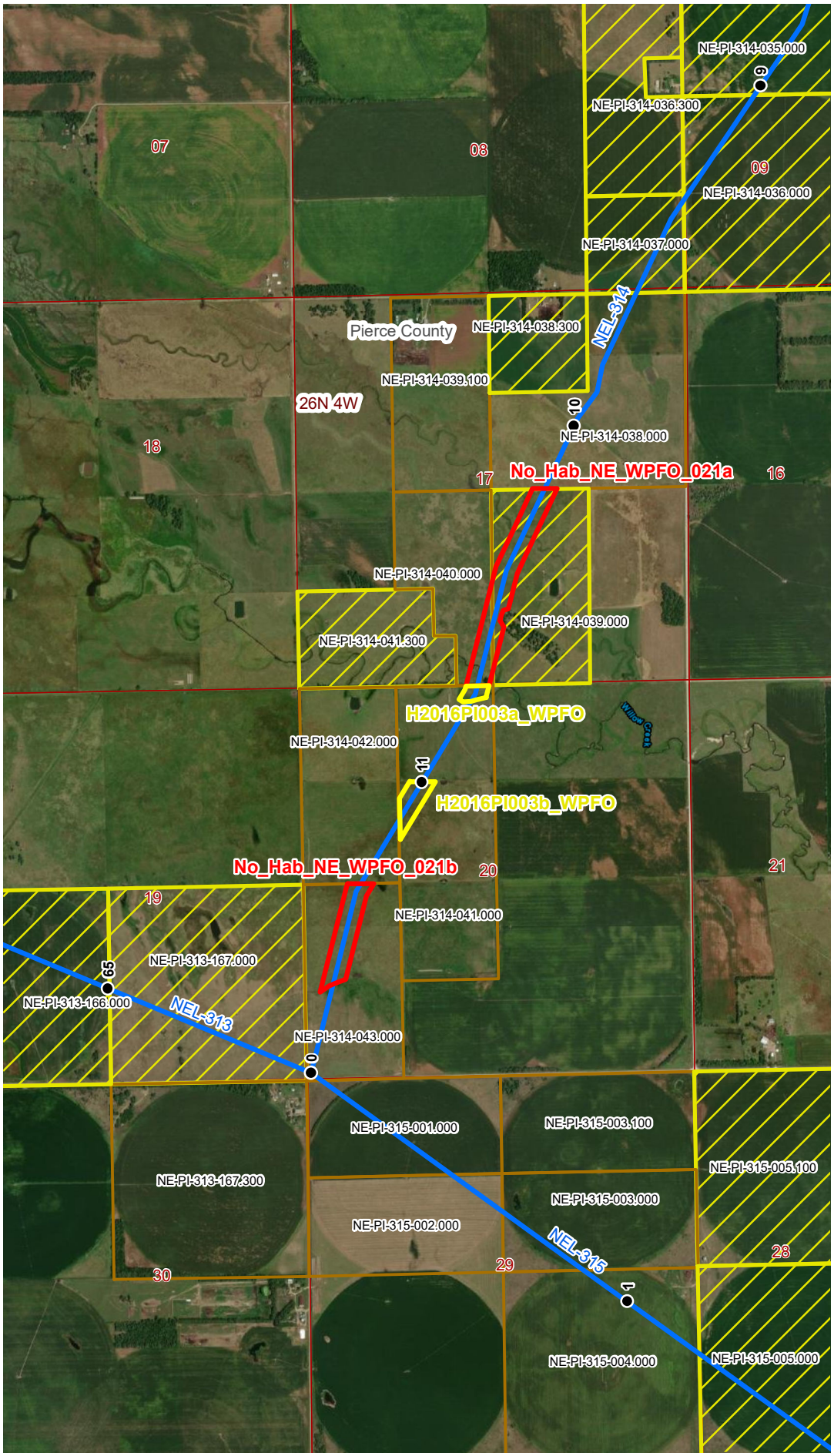
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

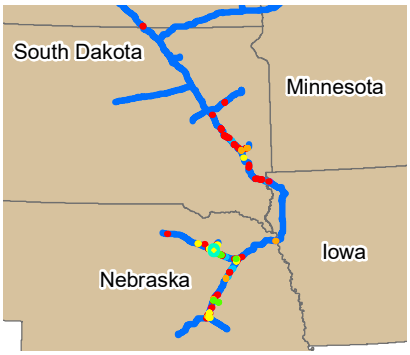
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 29 Sheet 29 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

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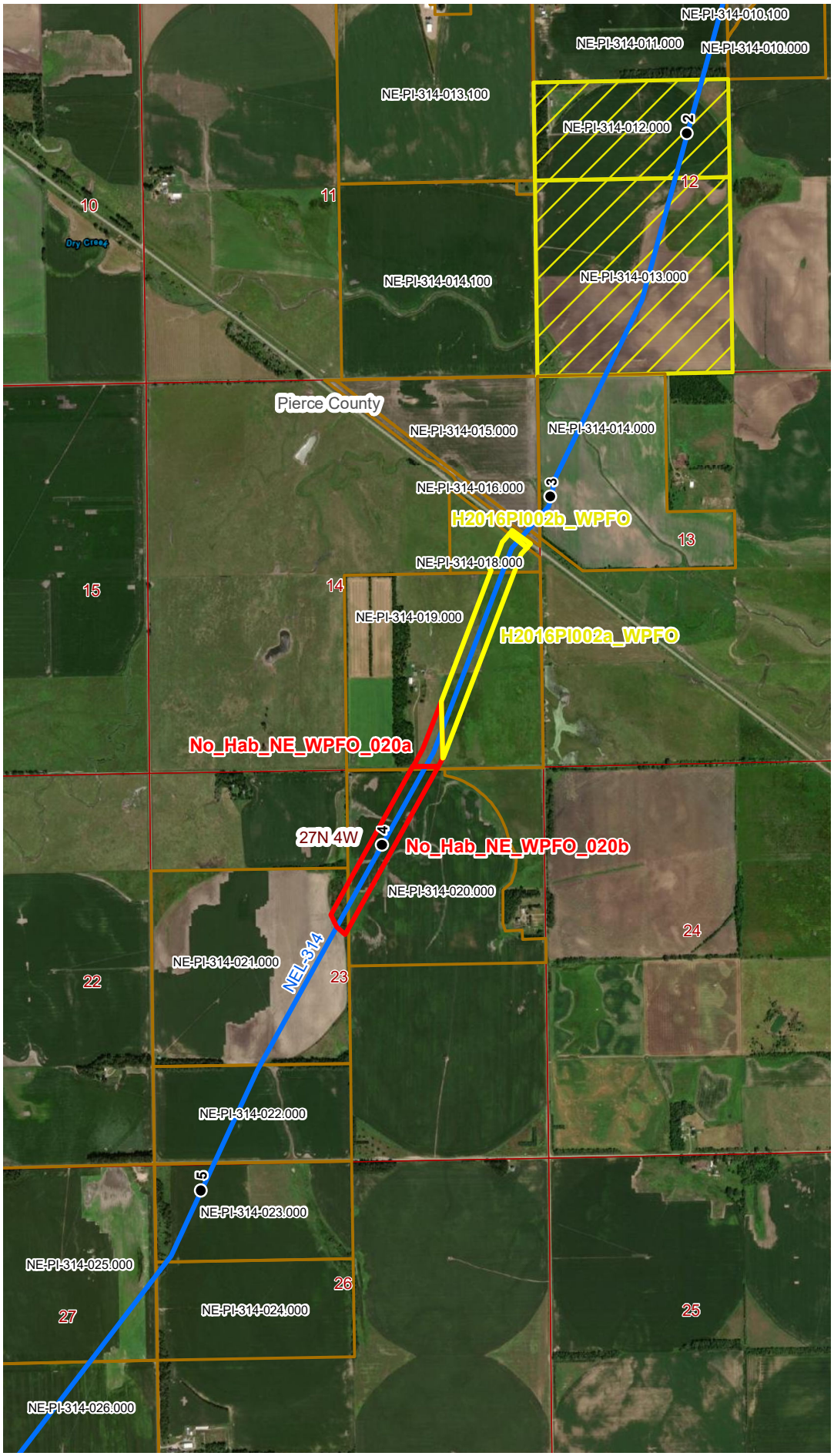
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

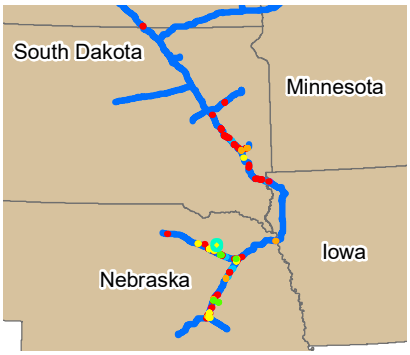
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 30 Sheet 30 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

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- Property Tract
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
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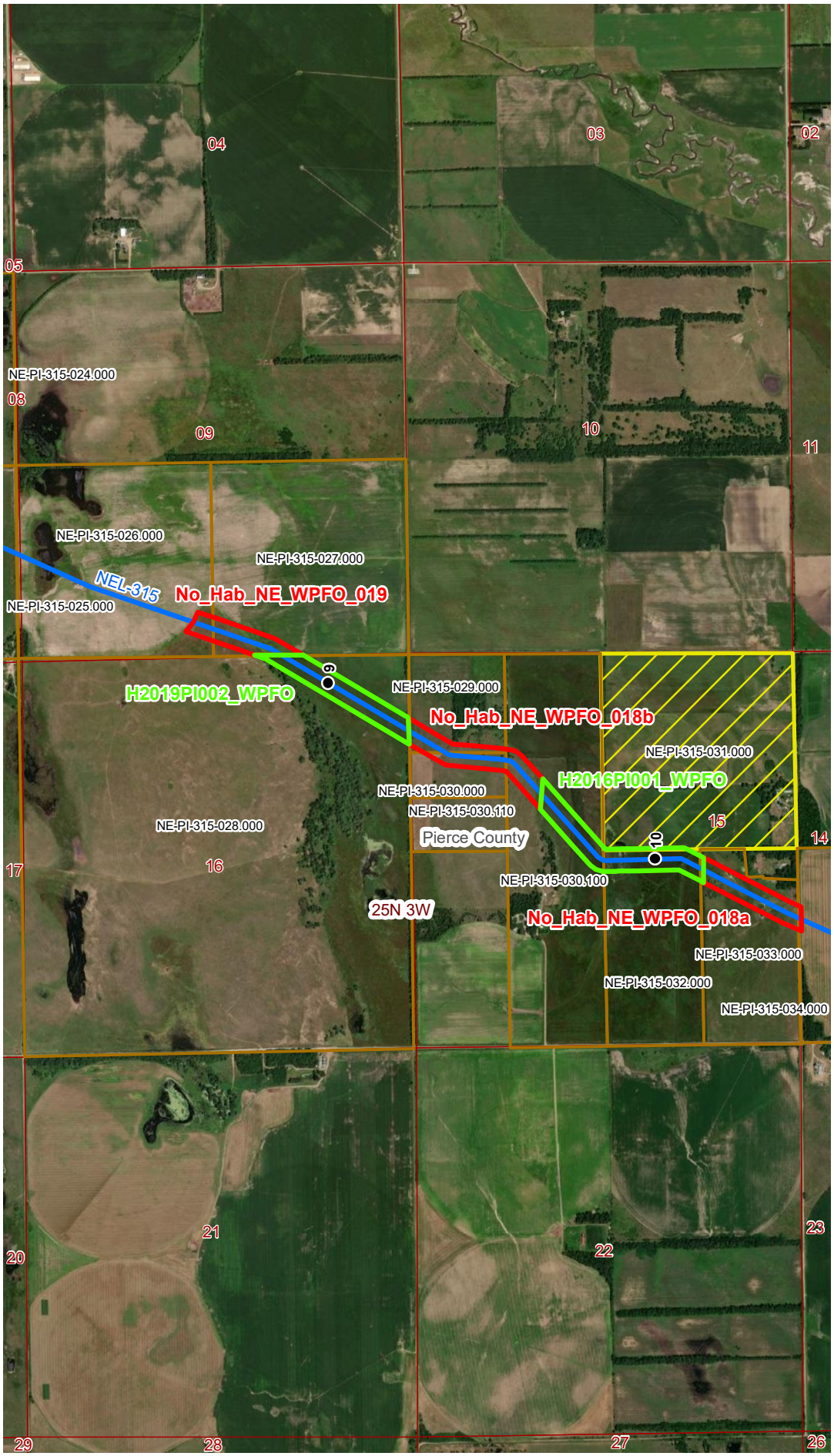
Figure Number:
Appendix C

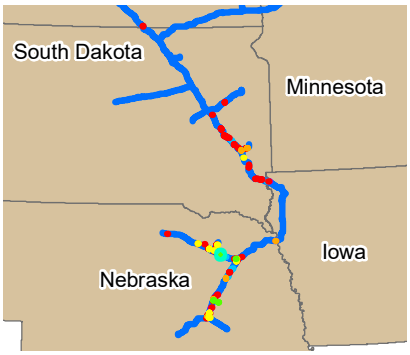
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 31 Sheet 31 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

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Figure Number:
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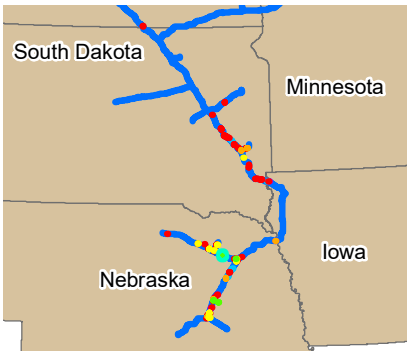
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 32 Sheet 32 of 50 | **Drawing Number:** 1 |

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

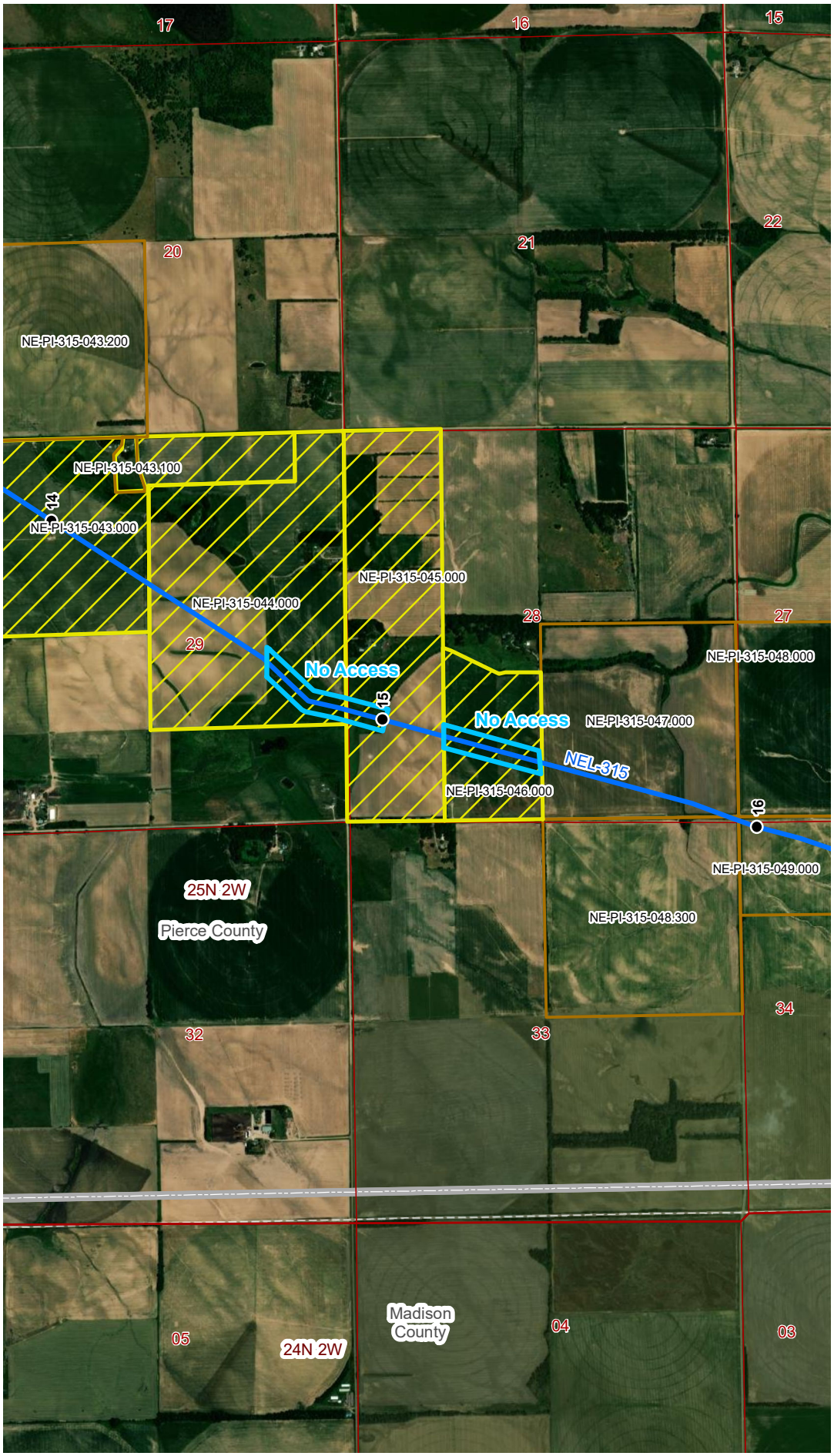
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 33, Sheet 33 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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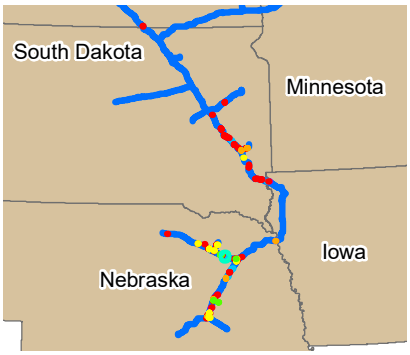


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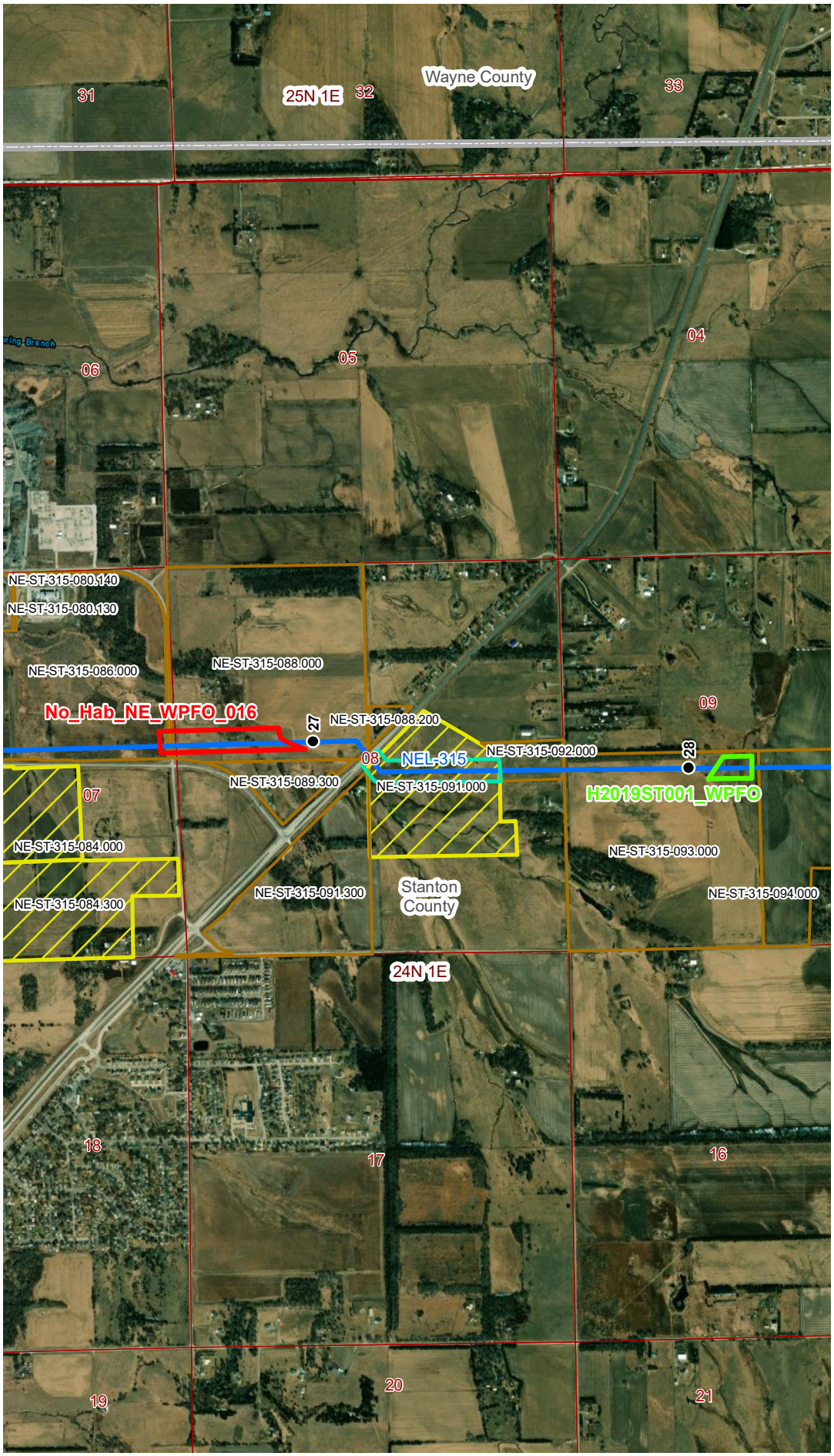
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 34 Sheet 34 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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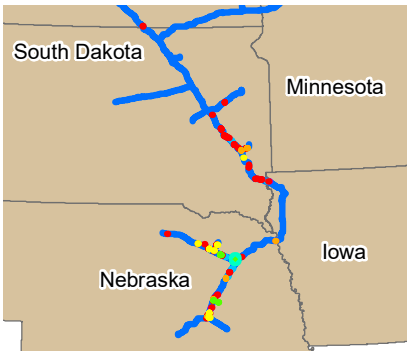


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Figure Title:
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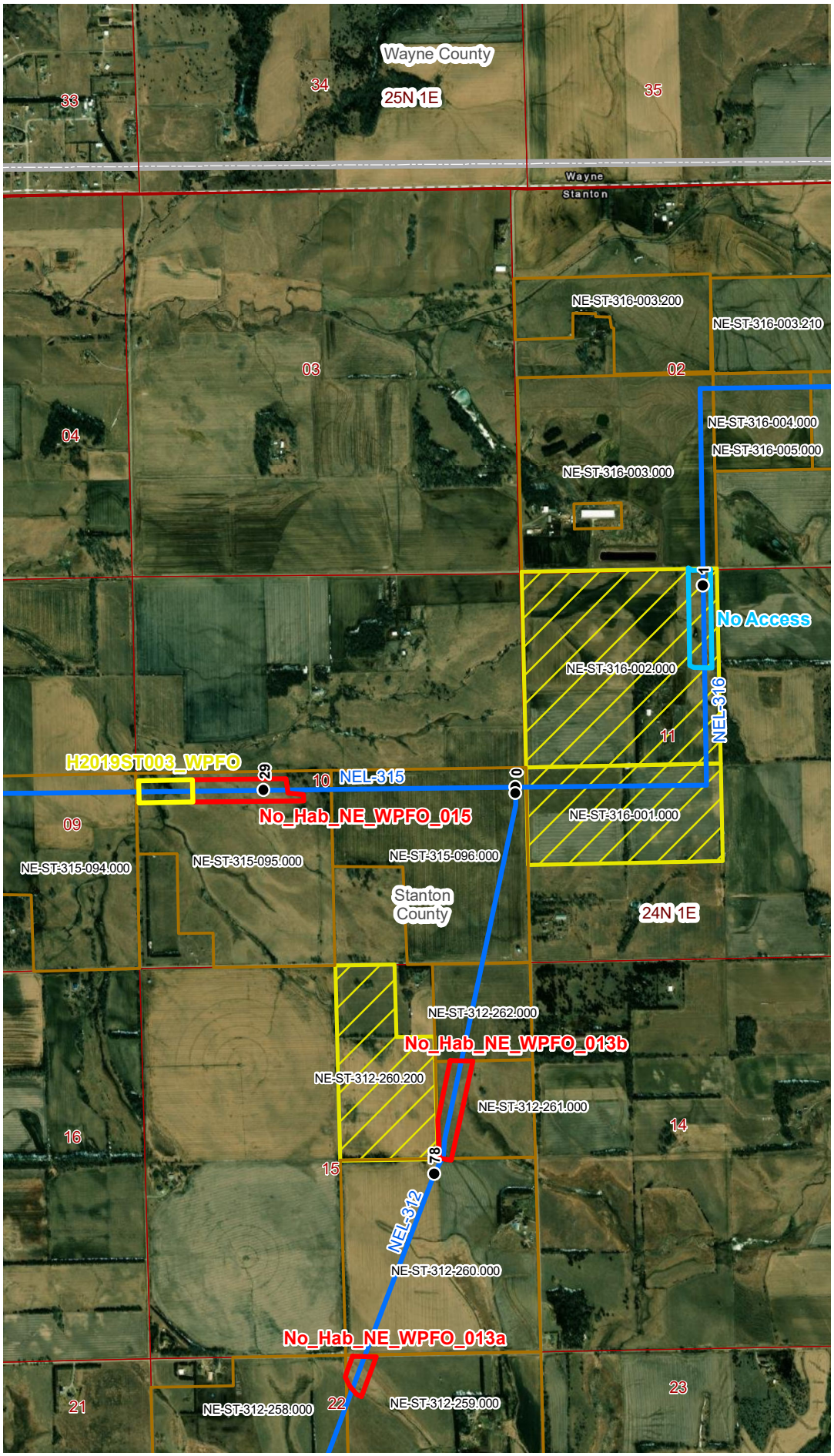
Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 35, Sheet 35 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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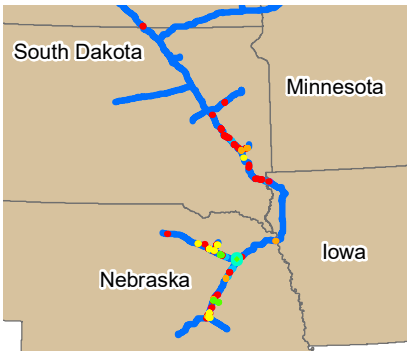


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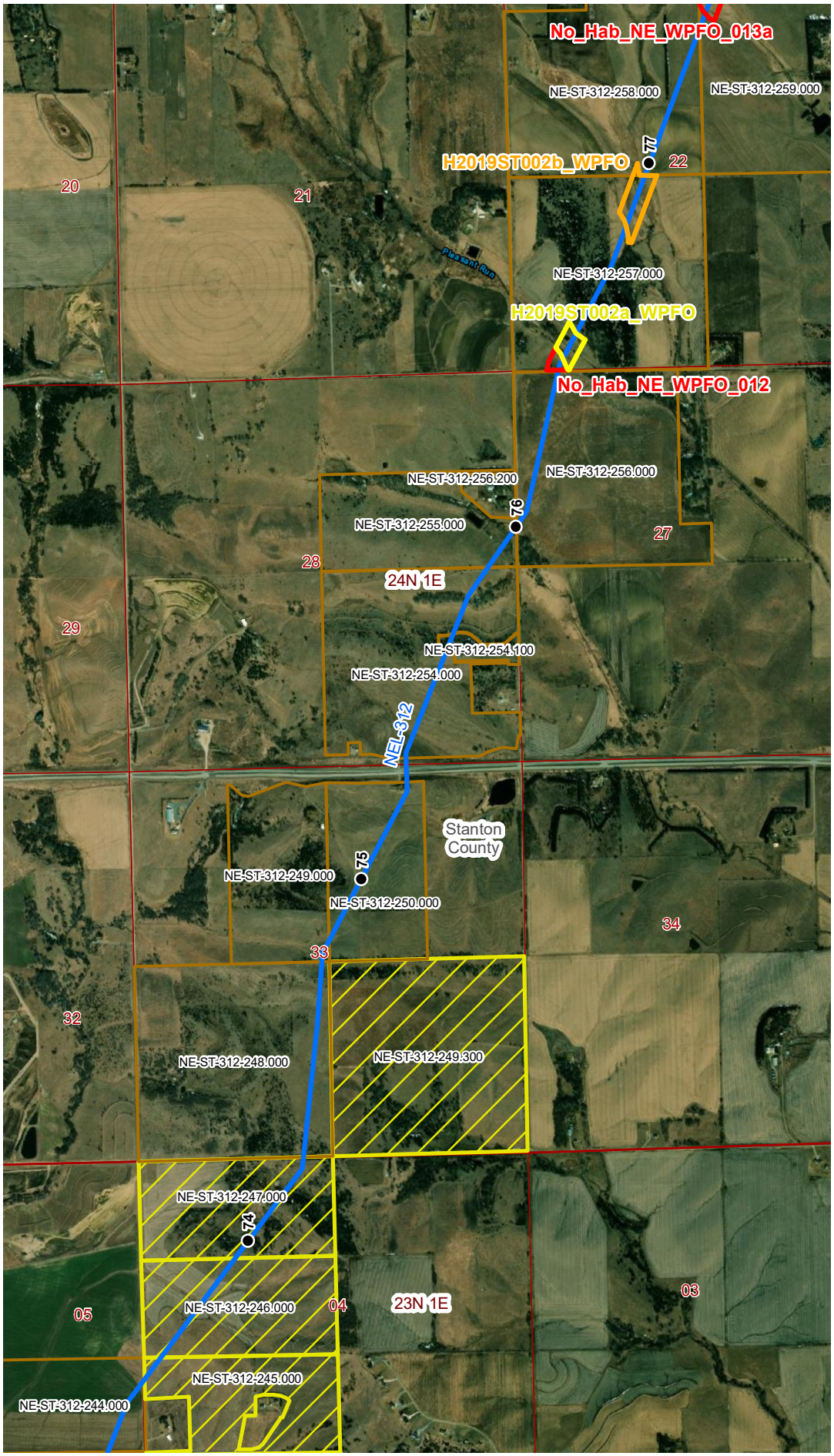
Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 36 Sheet 36 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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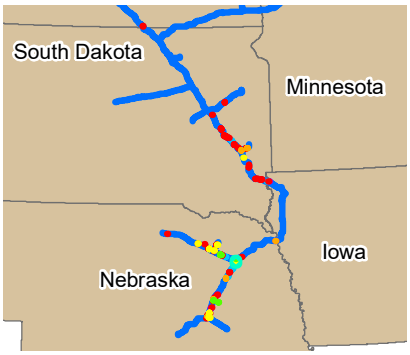


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Figure Title:
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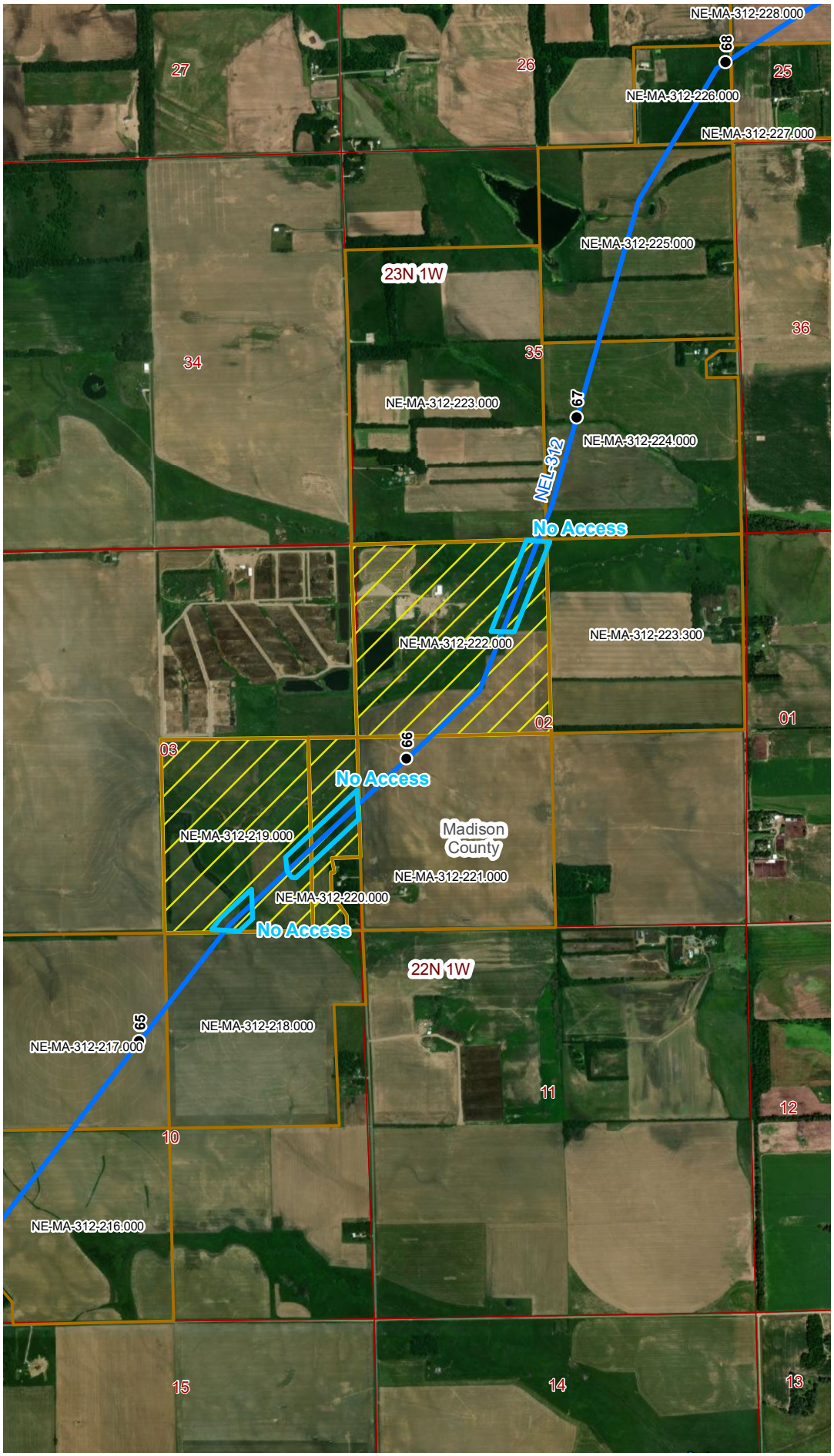
Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 37 Sheet 37 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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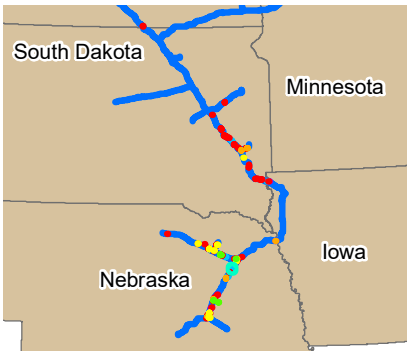


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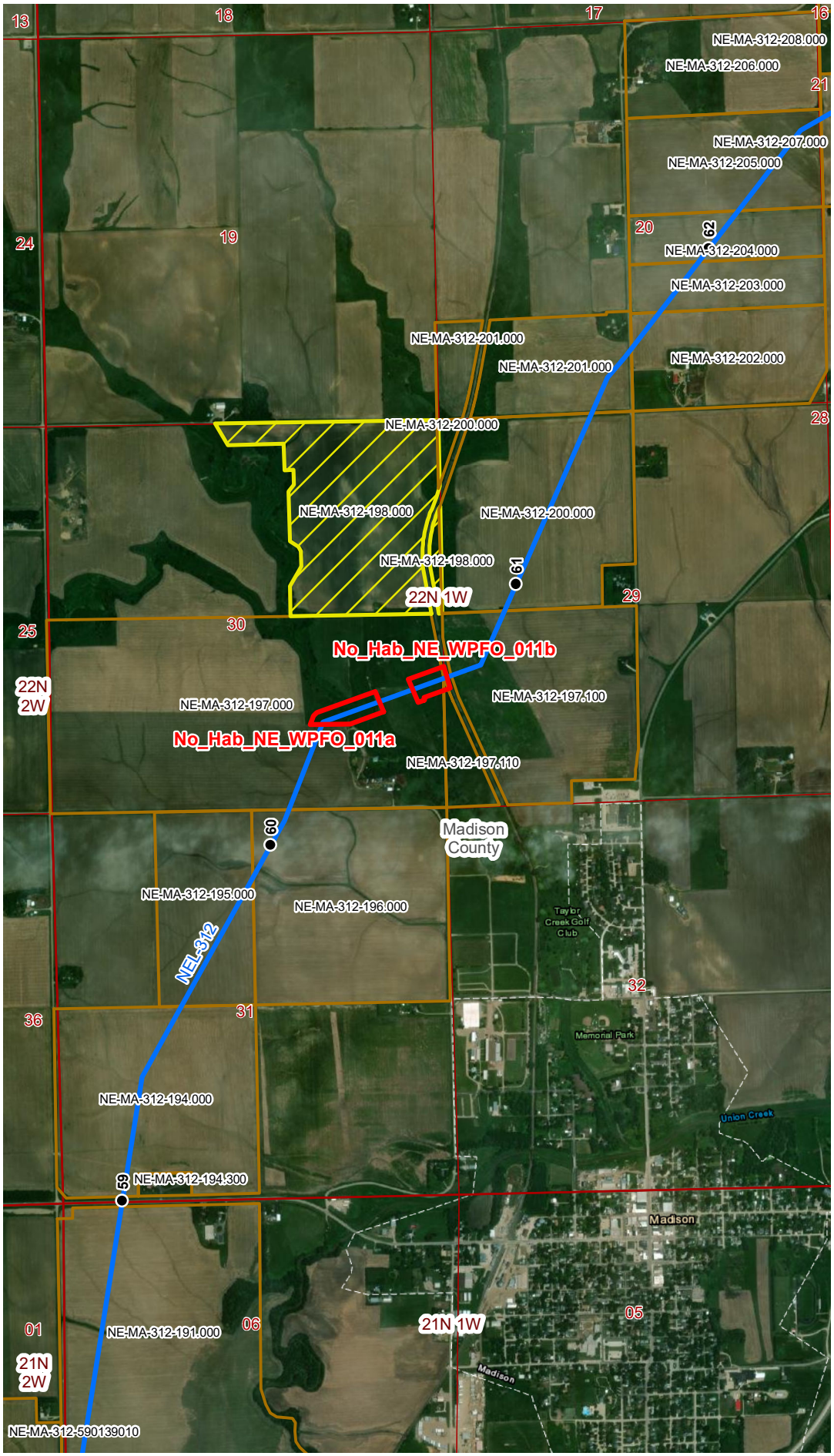
Figure Number:
Appendix C

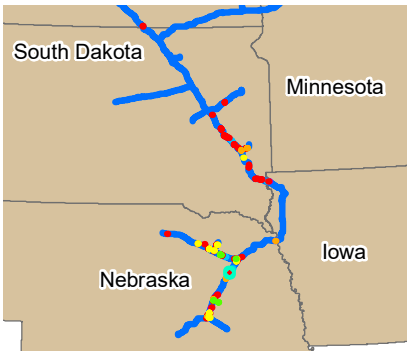
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 38, Sheet 38 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP

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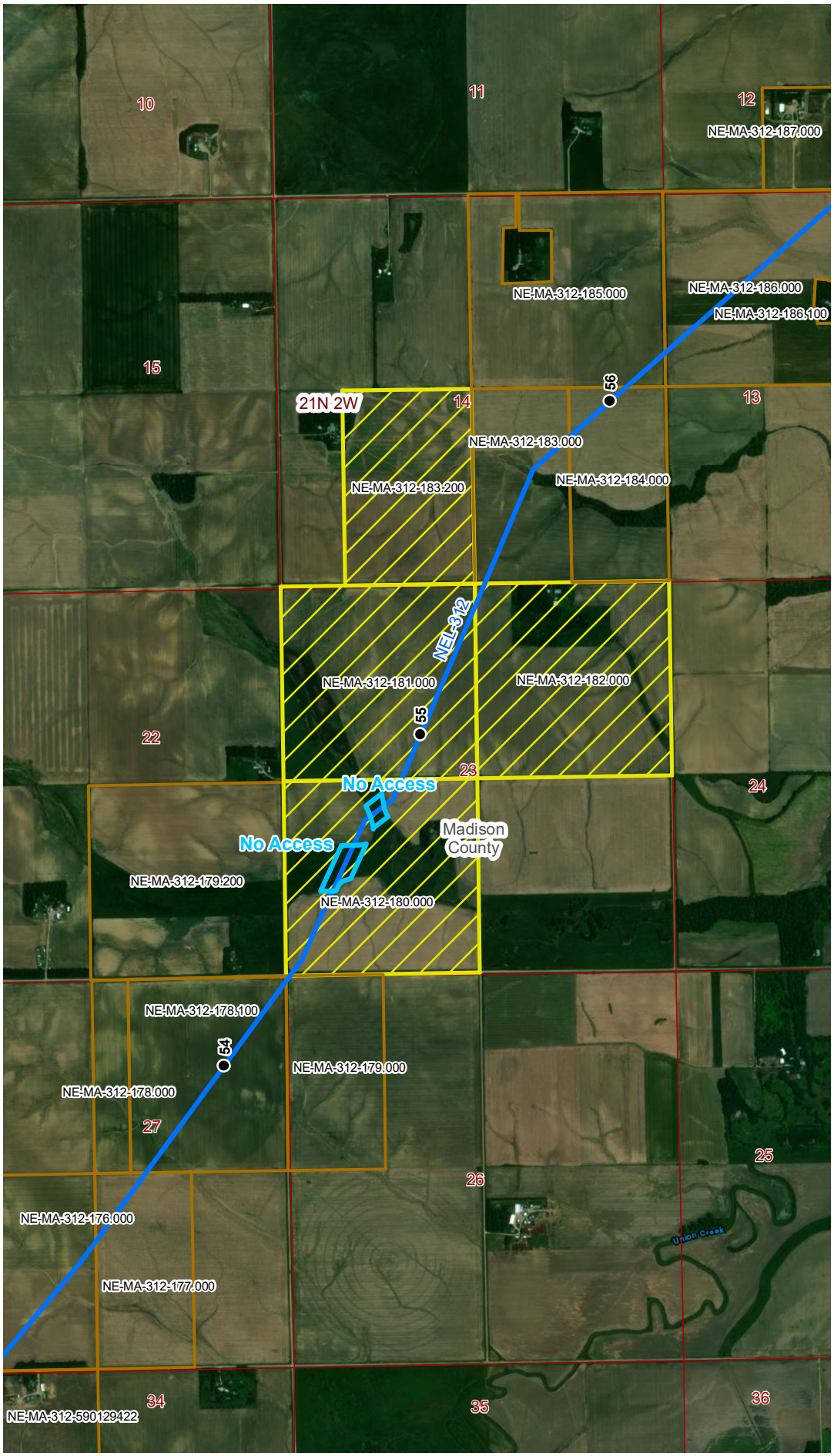
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 39 Sheet 39 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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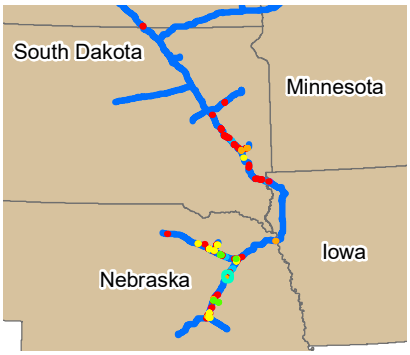


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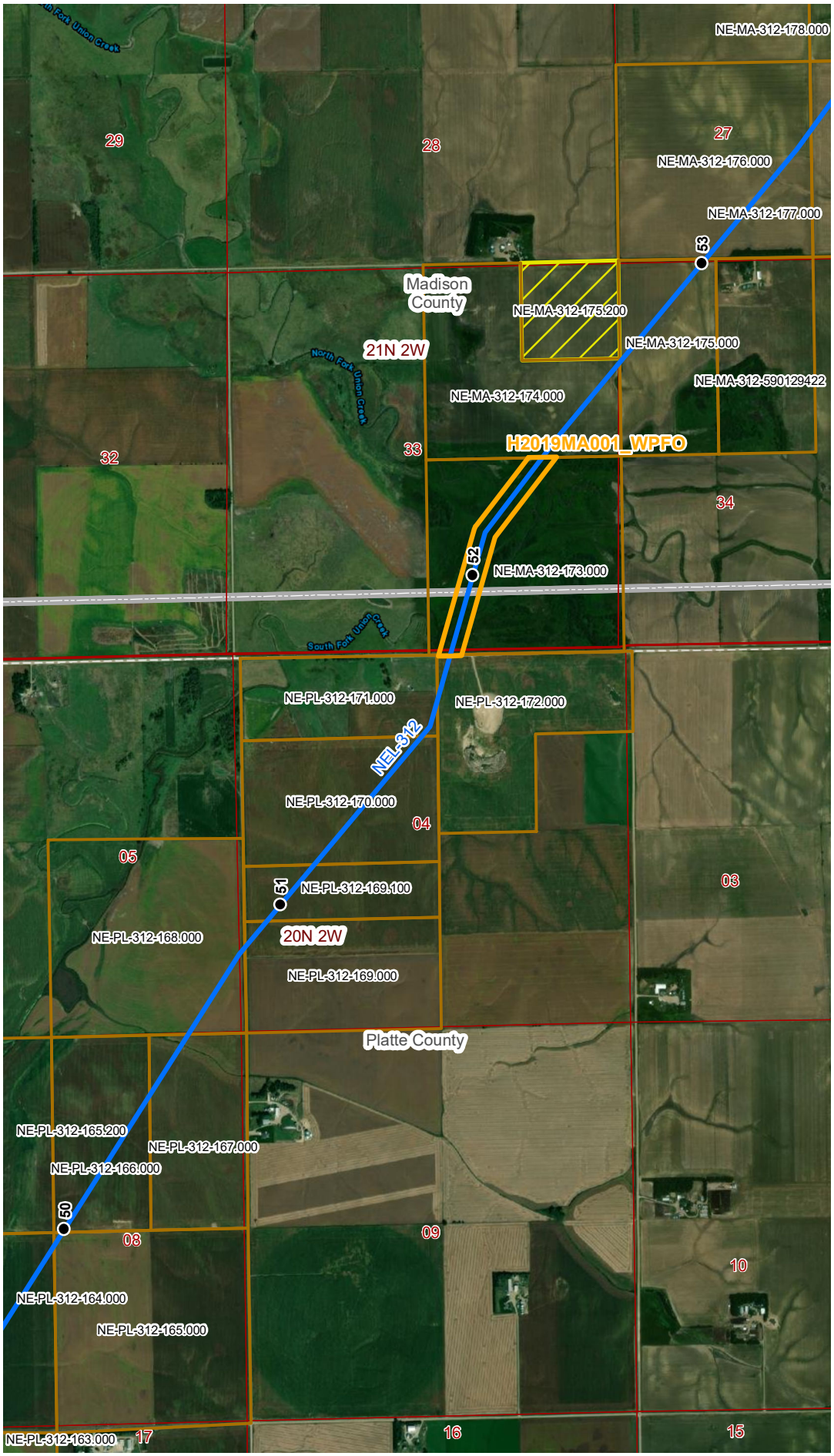
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 40, Sheet 40 of 50 | Drawing Number: 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES

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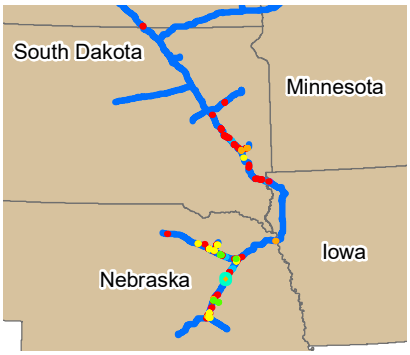


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| Sheet: | Drawing Number: |
|---|---|
| B - 41<br>Sheet 41 of 50 | 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

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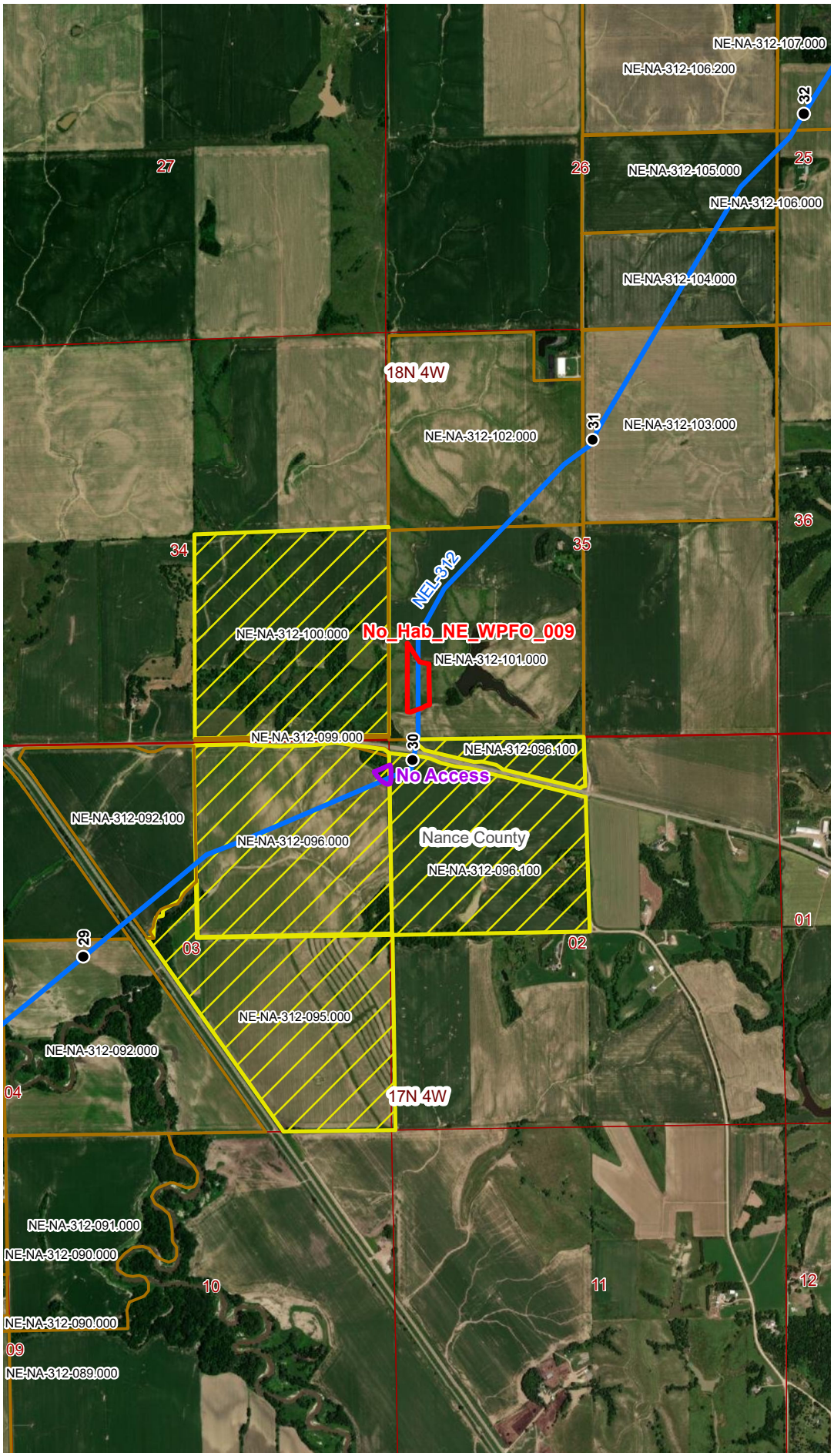


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| **Sheet:** B - 42, Sheet 42 of 50 | **Drawing Number:** 1 |

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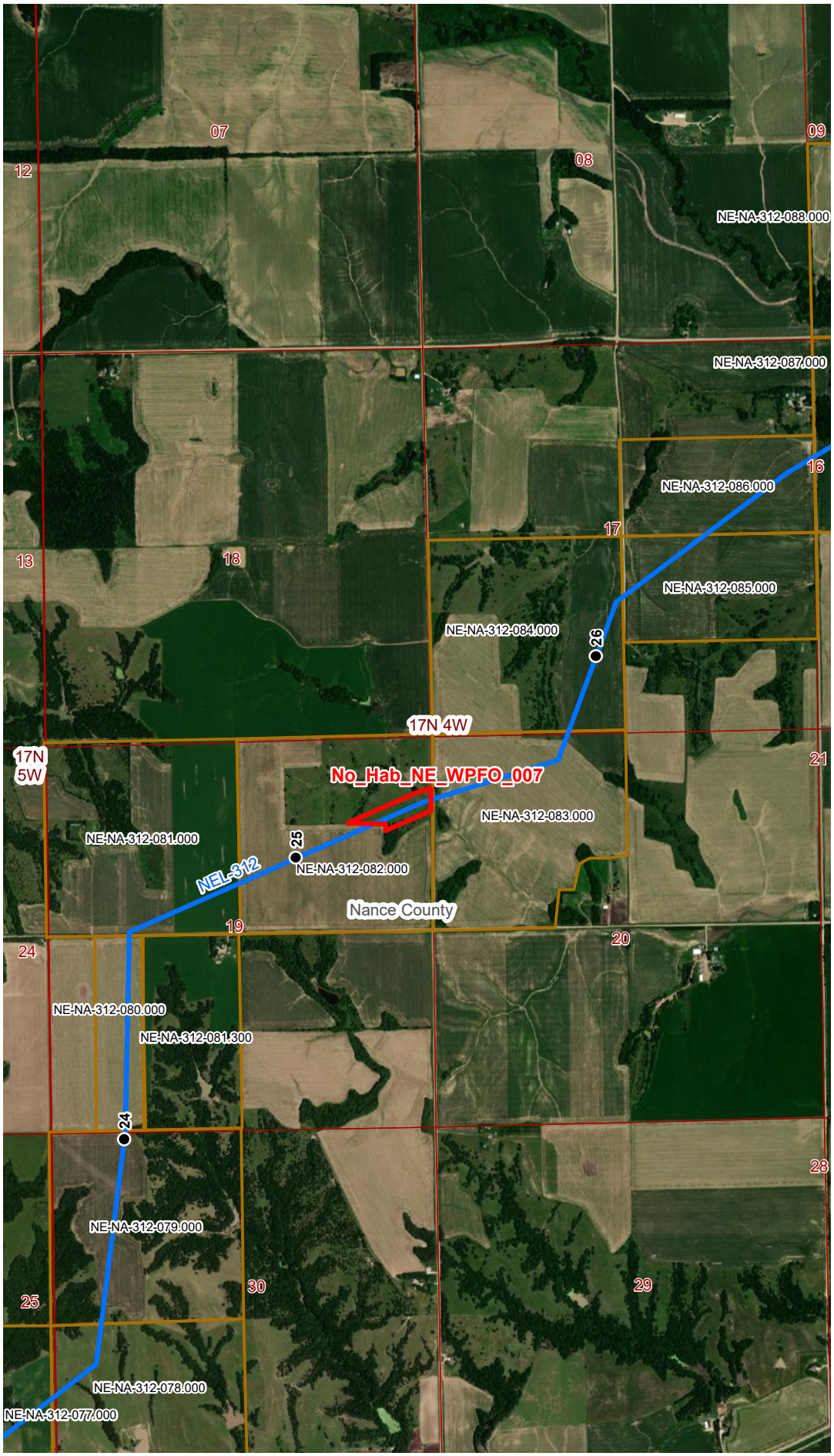


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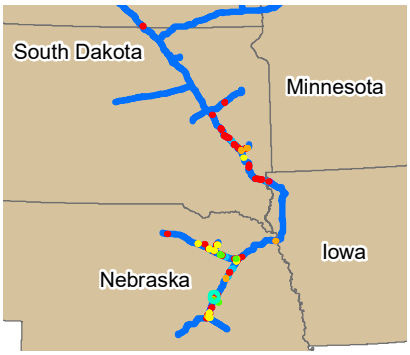


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| **Sheet:** B - 43 Sheet 43 of 50 | **Drawing Number:** 1 |

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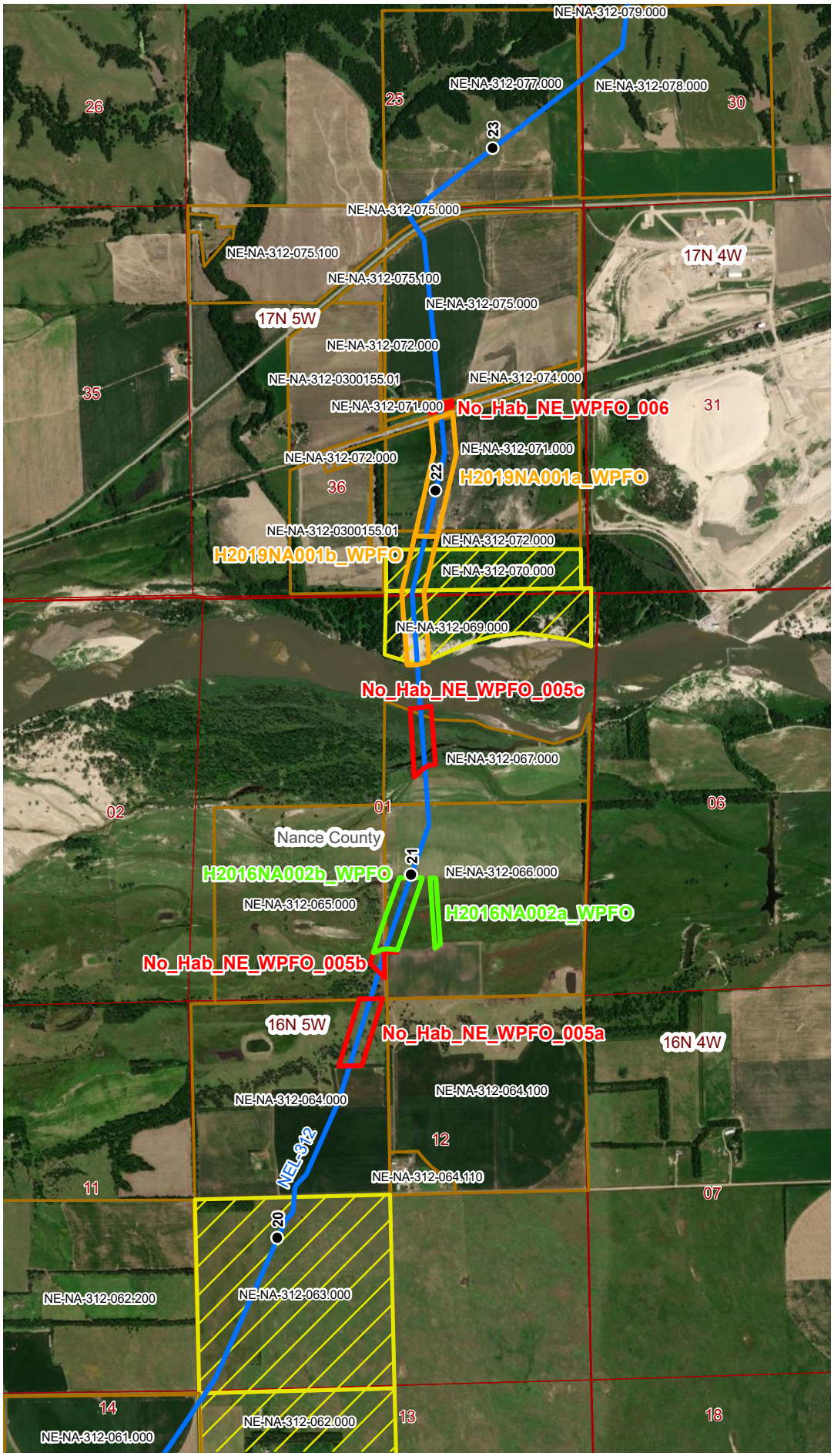


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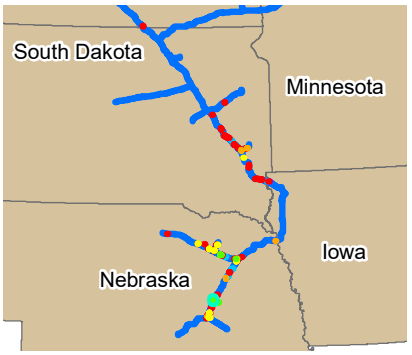


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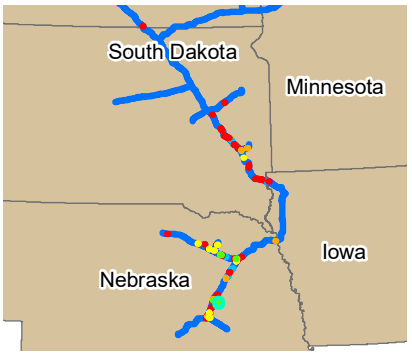
## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP

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- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |
| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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United States of America
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## MIDWEST CARBON EXPRESS PROJECT

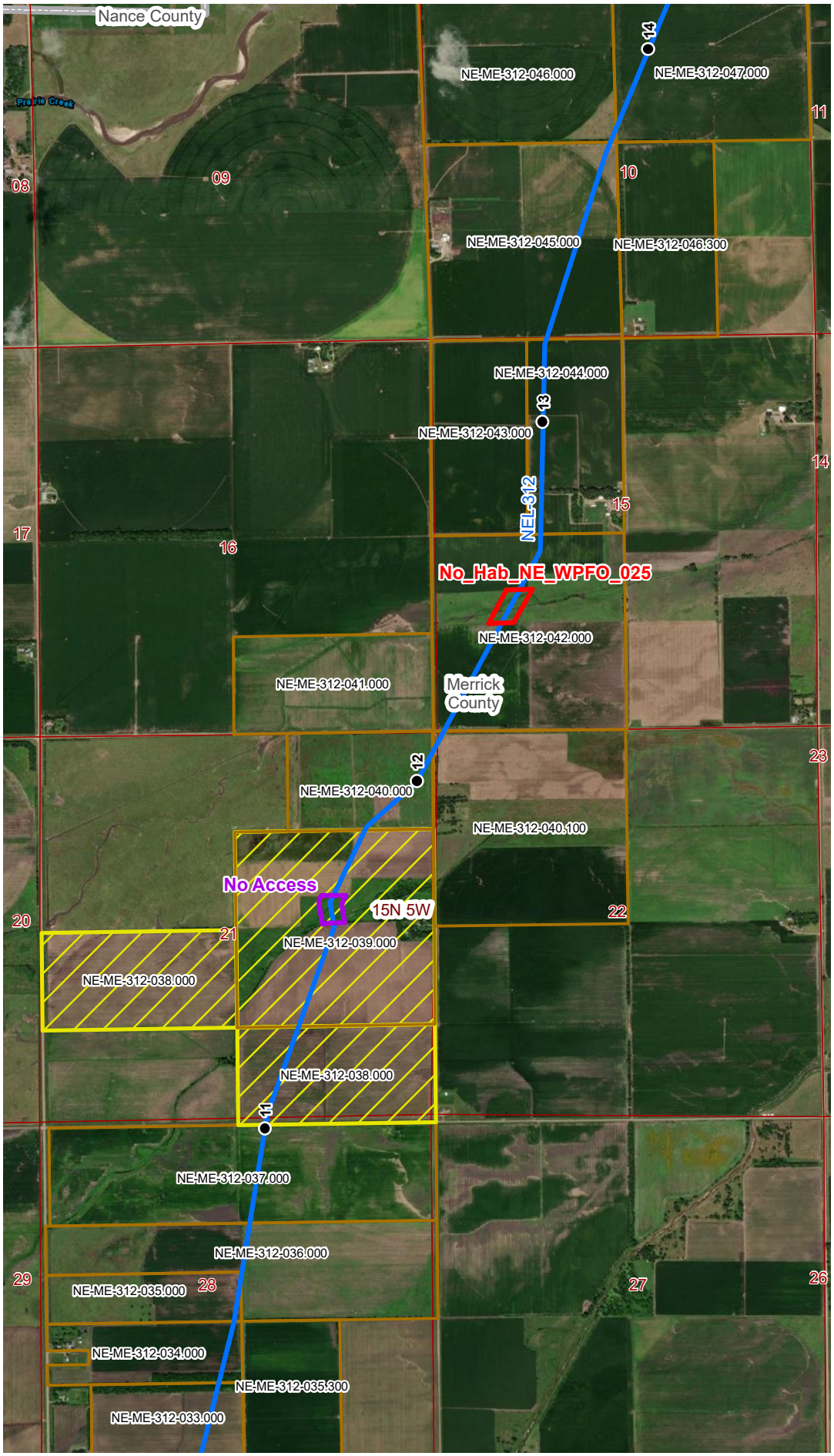
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

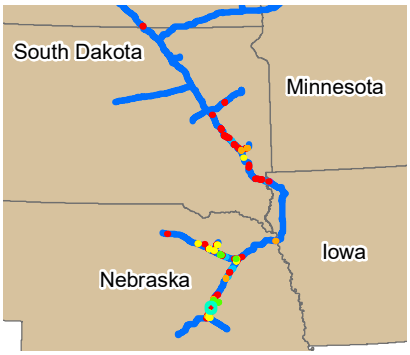
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 45 Sheet 45 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

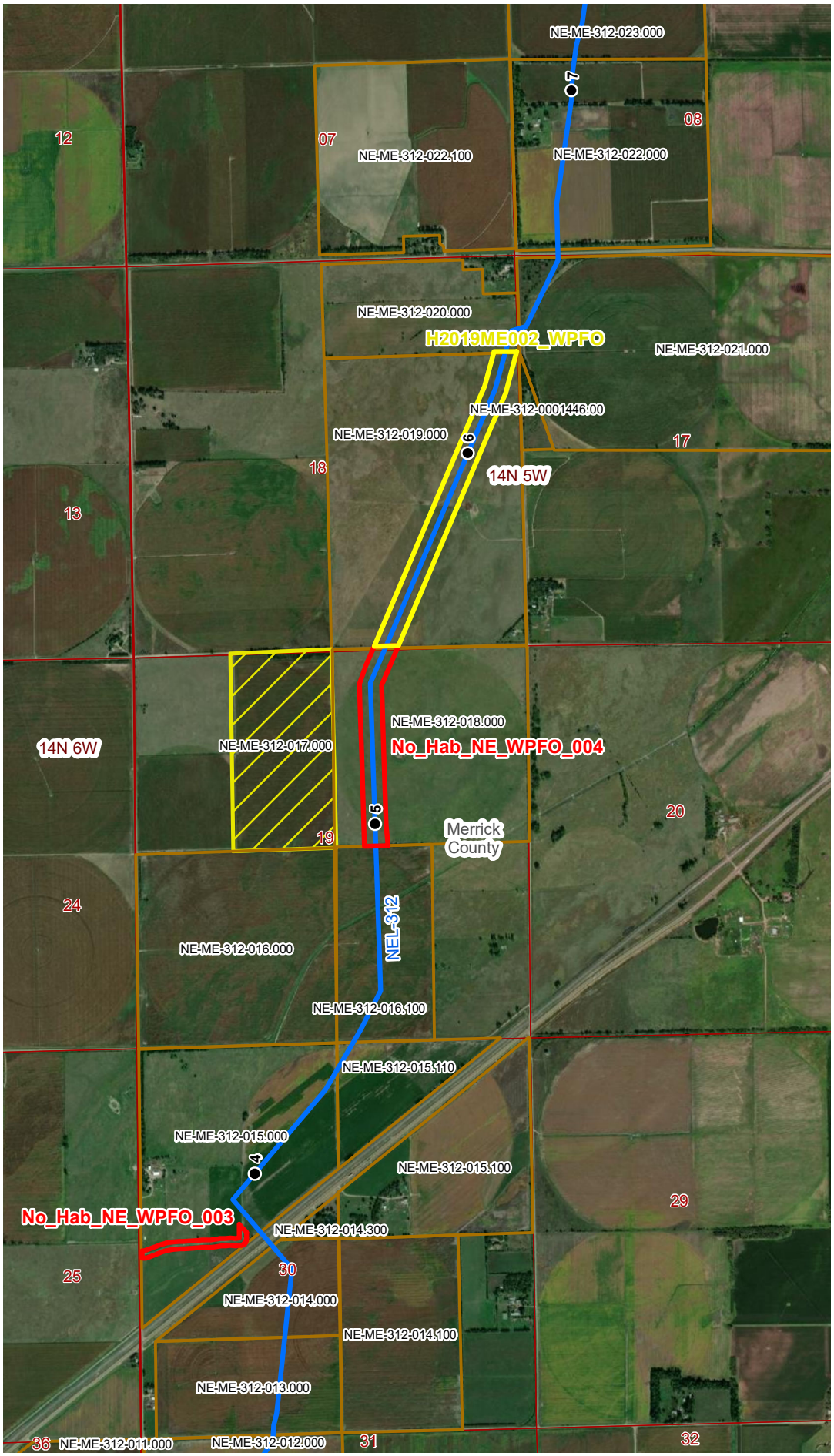
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

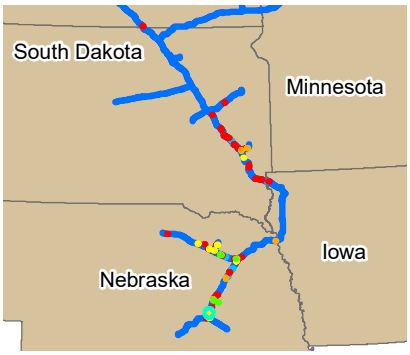
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 46 Sheet 46 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

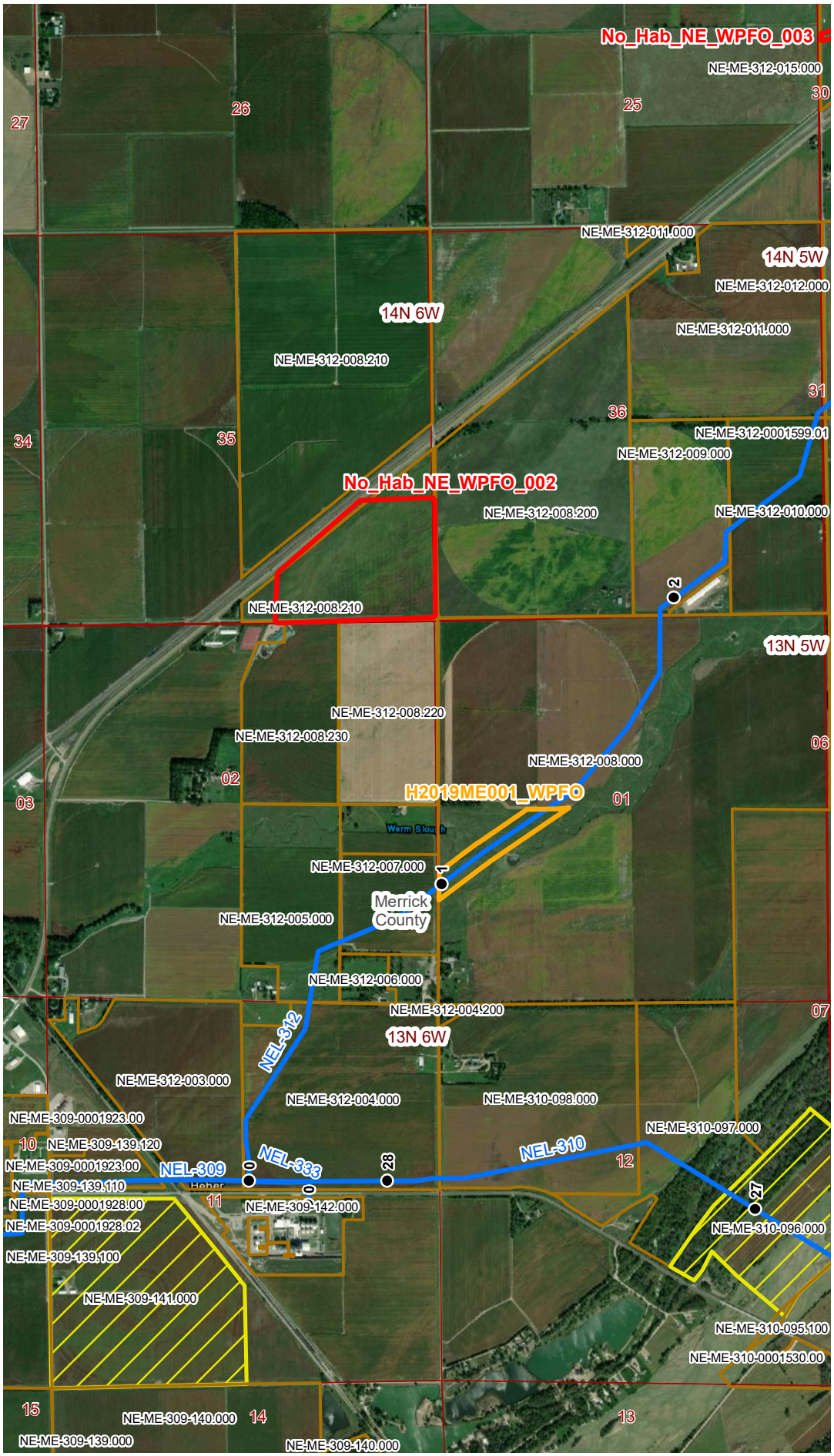
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

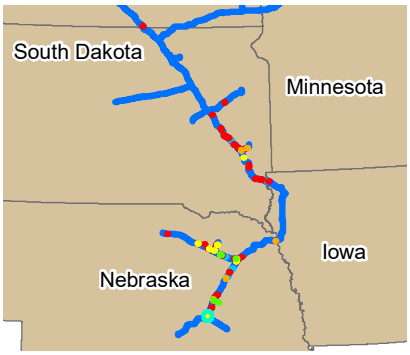
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 47 Sheet 47 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

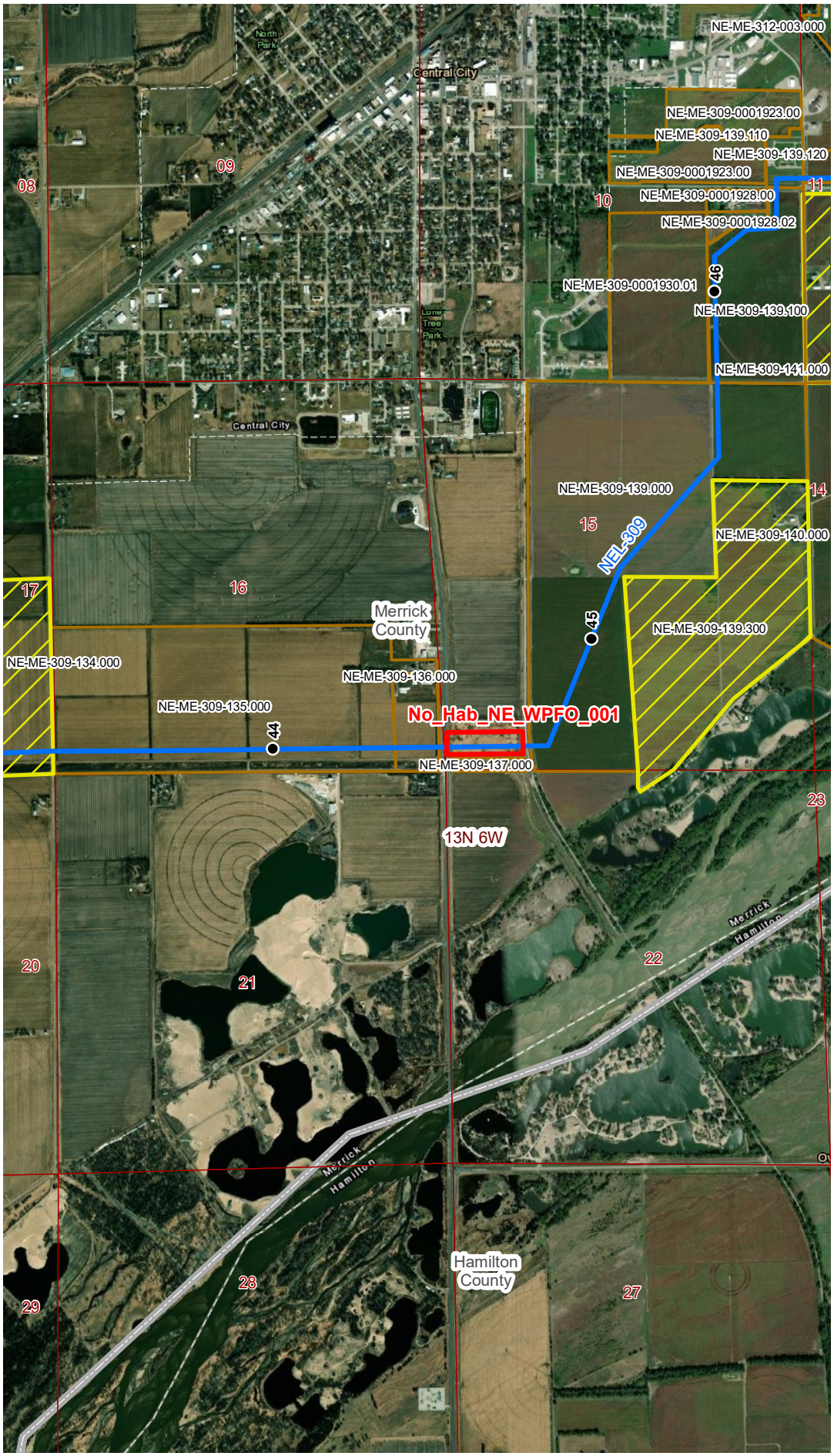
Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

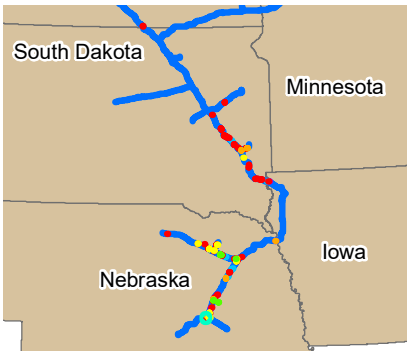
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 48 Sheet 48 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

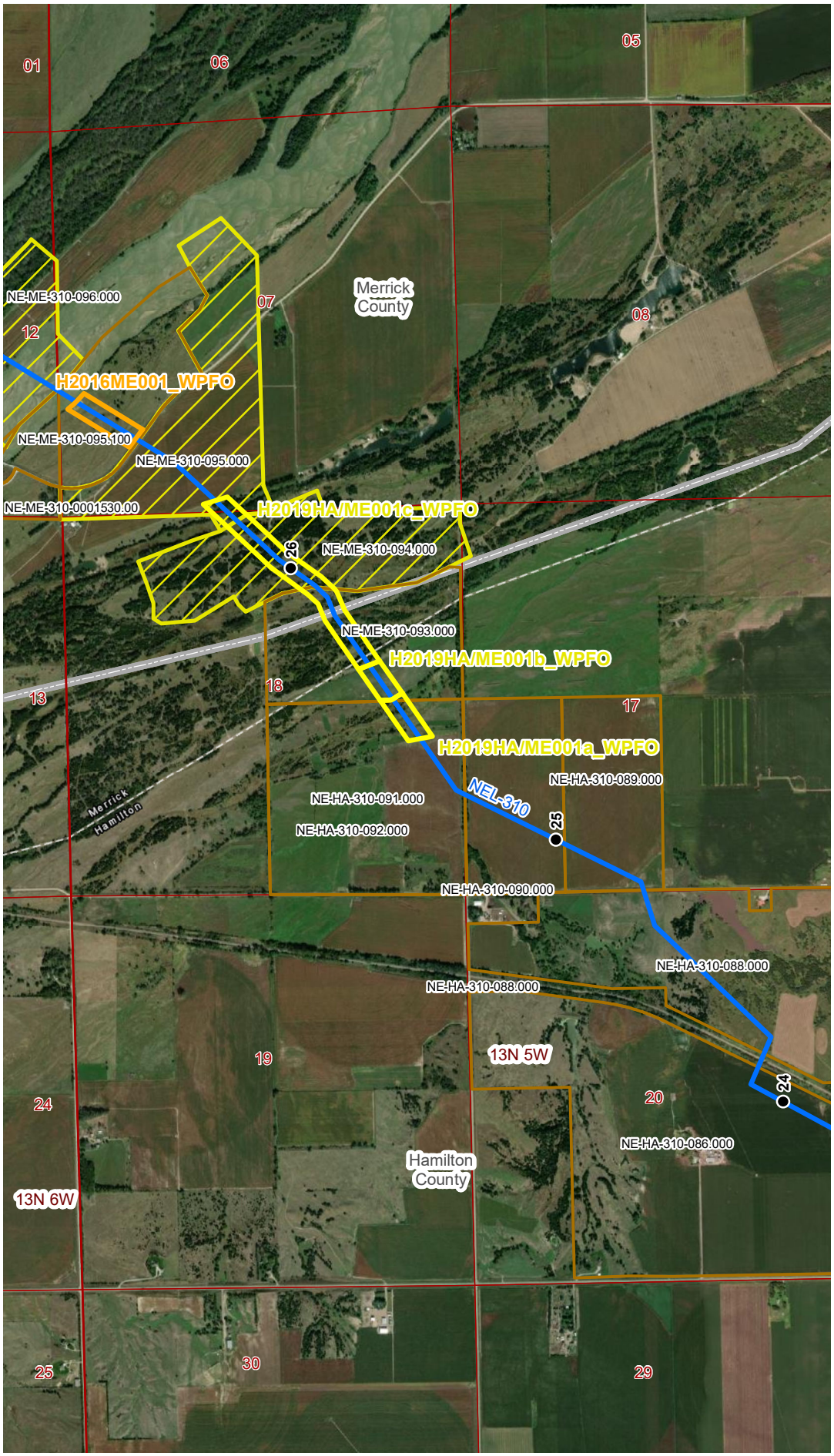
Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

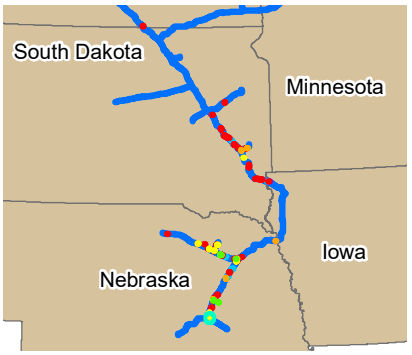
| Sheet: | Drawing Number: |
|---|---|
| B - 49<br>Sheet 49 of 50 | 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

## 2022 WESTERN PRAIRIE FRINGED ORCHID SURVEY SITES




## VICINITY MAP




## LEGEND

**Legend**

- PCN Project Route 07/19/2022
- Milepost
- Property Tract
- Denied Property Tract
- PLSS Township & Range
- PLSS Section

**Habitat Quality Rating**

- Good
- Fair
- Poor
- Unsuitable
- Likely Suitable
- Potentially Suitable
- Unlikely Suitable

0 0.125 0.25 0.5
Miles

N

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |
| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Western Prairie Fringed Orchid Survey Sites**

Figure Number:
Appendix C

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 50 Sheet 50 of 50 | **Drawing Number:** 1 |

MCE22_WPFO_Survey_Locations.mxd | 9/19/2022

# Appendix D –
# Survey Forms and Site Photographs

# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Beaver, D. Culwell<br>Date: 7/3/2022 | Site ID:<br>No_hab_ND_WPFO_001 |
| Grazing: ☐None ☐Light ☒ Moderate ☐Heavy | | Tract #s:<br>ND-MC-0739.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: DC378-379 | | State: North Dakota<br>County: McIntosh |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow<br>☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated<br>☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grassland. Unsuitable for WPFO due to domination by smooth brome and Kentucky bluegrass. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert (2016)<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_019 |
| Grazing: ☐None ☐Light ☒ Moderate ☐Heavy | | Tract #s:<br>SD-CL-208-081.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land | | |
| Photo #s: JA5308-5309 | | State: South Dakota<br>County: Clark |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow<br>☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated<br>☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | SOLCAN | TYPANG | | |
| POAPRA | | CIRARV | | | |
| AGRSTO | | ARTABS | | | |
| SPAPEC | | TEUCAN | | | |
| PHAARU | | CARVUL | | | |
| ELEPAL | | MENARV | | | |
| | | POLAMP | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):
Mostly non-native grassland – the upland prairie has been sprayed for forbs. Area transitions into a herbaceous wetland in the middle of the tract; wetland fringe has better diversity of species, wetland center is dominated by cattails. Area has been grazed. Unsuitable for WPFO due to domination by introduced perennial grasses.



## ORCHID VEGETATION INVENTORY FORM

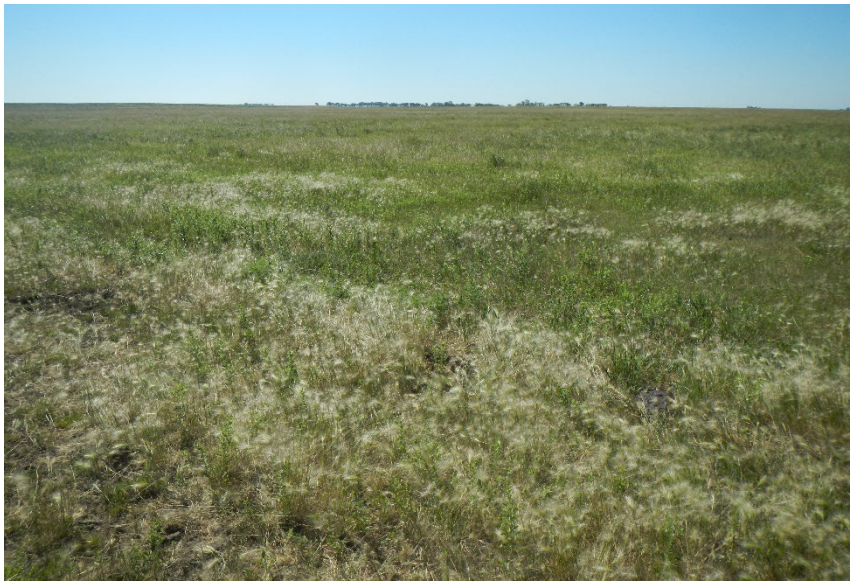
| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert (2016)<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_018 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-KI-0331.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Pastureland | | |
| Photo #s: JA5310 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | GRISQU | | CARNUT | |
| POAPRA | | CIRARV | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Poor, non-native grassland dominated by introduced perennial grasses. Few forbs, mostly weedy species. Dominance by smooth brome and Kentucky bluegrass make this area unsuitable habitat for WPFO. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert (2016)<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_2016 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-KI-0269.000<br>SD-KI-0270.000<br>SD-KI-0271.000<br>State: South Dakota<br>County: Kingsbury |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: JA5312-5315 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | VERFAS | | | |
| POAPRA | | CIRARV | | | |
| SPAPEC | | ANECAN | | | |
| AGRSTO | | | | | |
| HORJUB | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grassland, dominated by smooth brome and Kentucky bluegrass. Prairie wetland potholes present but almost no forbs. Road ditches are weedier with Canada thistle, trace amounts of ANECAN. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_017 |
| Grazing: ☐None ☐Light ☒ Moderate ☐Heavy | | Tract #s:<br>SD-KI-0273.100<br>SD-KI-0273.000 |
| Target Species: ☐Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land | | State: South Dakota<br>County: Kingsbury |
| Photo #s: JA5311 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow<br>☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated<br>☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | TYPANG | | CARNUT | |
| POAPRA | | | | | |
| HORJUB | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Poor, non-native grassland dominated by smooth brome and Kentucky bluegrass. Very few forbs with the exception of musk thistle. Wetland dominated by TYPANG/HORJUB. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert (2016)<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_015 |
| Grazing: ☐None ☐Light ☒ Moderate ☐Heavy | | Tract #s:<br>SD-MN-0238.180<br>SD-MN-0238.160 (west half only) |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land | | |
| Photo #s: JA5316-5317 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow<br>☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated<br>☐Other: | | |
| Habitat Quality: ☐Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | GRISQU | | | |
| POAPRA | | | | | |
| HORJUB | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native pasture/rangeland. Very few forbs. Actively grazed. |



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_014 |
| Grazing: ☐None ☒Light ☒ Moderate ☐Heavy | | Tract #s:<br>SD-MN-0233.120<br>SD-MN-0233.130<br>SD-MN-0238.100<br>SD-MN-0238.110<br>SD-MN-0238.120<br>SD-MN-0238.130<br>SD-MN-0238.140<br>SD-MN-0238.150<br>SD-MN-0238.160 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land and cropland | | |
| Photo #s: JA5317 - 5326 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow<br>☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☒Cultivated<br>☐Other: | | State: South Dakota<br>County: Miner |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| PHAARU | | | | | |
| | | | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

Land east of tract 0238.120 is non-native grassland that is dominated by smooth brome. Reed canary grass is more common in low-lying areas. Area has been grazed. Domination by introduced perennial grasses make this area unsuitable for WPFO.

Land west of tract 0238.120 is mostly cultivated cropland that is currently planted with soybeans. Conversion of prairie to cropland and repeated disturbance make this area unsuitable habitat for WPFO.



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert (2016)<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_013 |
| Grazing: ☐None ☐Light ☐ Moderate ☒Heavy | | Tract #s:<br>SD-MN-0229.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land | | |
| Photo #s: JA5343 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Obliterated by overgrazing, vegetation was too overgrazed to identify. |



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther, C. Grummert<br><br>Date: 7/12/2022 and 7/13/2022 | Site ID:<br>No_hab_SD_WPFO_012 |

Grazing: ☒None ☐Light ☐ Moderate ☒Heavy

Target Species: ☒Western Prairie Fringed Orchid (WPFO)
☐ Small White Lady Slipper (SWLS)

Land Use (if known): Grazing (west side)

Photo #s: LG1490-1494 (east side), AA001-002 (west side)

Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other:

Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent

Tract #s:

SD-LA-0198.000 (east side)

SD-LA-0199.000 (denied)
SD-LA-0200.000 (denied)
SD-LA-0201.000 (landlocked)
SD-LA-0202.000 (denied)

SD-LA-0203.000 (west side)

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | CONARV | | | |
| POAPRA | | | | | |
| AGRCRI | | | | | |
| SPAPEC | | | | | |
| HORJUB | | | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

East side (right photograph):

Non-native grassland with low grass and forb diversity. Some areas have severe domination by smooth brome. No grazing. Unsuitable as WPFO habitat due to dominance of smooth brome and other introduced perennial grasses. Hillsides closer to denied tracts have more native grasses and forbs present, but their upland landscape position lacks suitable hydrology to support orchids.

West side (left photograph):

Tract is dominated by introduced perennial grasses and is currently heavily grazed on lower terraces. Stream banks are mostly unvegetated because of intense grazing, and minimal native perennial vegetation was observed. Though proximity to the East Fork Vermillion River may provide favorable hydrology and the landscape position is typical, current land use has severely degraded this grassland.





## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: L. Gunther, A. Admiraal<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_011 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-LA-0182.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: LG1488-1489 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | CIRARV | | | |
| POAPRA | | MEDSAT | | | |
| | | SONARV | | | |
| | | SYMLAN | | | |
| | | APOCAN | | | |
| | | ASCSYR | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grassland with low grass and forb diversity. Unsuitable as WPFO habitat due to dominance of smooth brome and other introduced perennial grasses. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: L. Gunther, A. Admiraal<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_010 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-LA-0174.000<br>SD-LA-0173.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: LG1486-1487 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| PHAARU | | CIRARV | | HELANN | |
| BROINE | | | | | |
| SPAPEC | | | | | |
| AGRSTO | | | | | |
| HORJUB | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Mixed grassland dominated by introduced perennial grasses (reed canary grass and smooth brome). Narrow ditch (~2-3ft wide but incised) cuts through the habitat parcel – ditch fringe has more mesic qualities and native grasses. However, overall site is not suitable WPFO habitat due to domination by introduced perennial grasses. |



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: L. Gunther, A. Admiraal<br>Date: 7/12/2022 | Site ID:<br>H2019LA002_WPFO |

Grazing: ☐None ☒Light ☒ Moderate ☐Heavy

Target Species: ☒Western Prairie Fringed Orchid (WPFO)
☐ Small White Lady Slipper (SWLS)

Land Use (if known): Grazing land

Photo #s: LG1480-1485

Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☒Wet Meadow
☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated
☐Other:

Habitat Quality: ☐Unsuitable ☒Poor ☐Fair ☐Good ☐Excellent

Tract #s:
SD-LA-0164.000

State: South Dakota
County: Lake

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| CARVUL | BROINE | STAPAL | | | |
| ELEPAL | PHLPRA | LYOAME | | | |
| POAPRA | SCHPUN | VERHAS | | | |
| PANVIR | HORJUB | | | | |
| NASVIR | AGRTRA | | | | |
| KOEMAC | | | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):
Dominant/common species listed for the wet meadow swale.
Marginal suitable habitat in wet meadow swale with more native species. Area is grazed and poor quality overall. Low forb abundance and diversity.
Unsuitable WPFO habitat on upper terraces to hillsides. Mixed grassland dominated by BROINE and POAPRA.



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: L. Gunther, A. Admiraal<br>Date: 7/12/2022 | Site ID:<br>No_hab_SD_WPFO_009 |
| Grazing: ☐None ☒Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-LA-206-034.200<br>(near North Buffalo Creek) |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing | | |
| Photo #s: LG1478-1479 | | |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow<br>☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated<br>☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| AGRINT | | | | | |
| PHLPRA | | | | | |
| PHAARU | | | | | |
| JUNDUD | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Grazing land dominated by introduced grasses. Small swale is wetter with PHAARU and JUNDUD. Low forb diversity/presence.<br>Unsuitable for WPFO due to domination by introduced perennial grasses. |



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: L. Gunther, A. Admiraal (2019)<br>Date: 7/12/2022 | Site ID:<br>H2019LA001_WPFO |
| Grazing: ☐None ☒Light ☒ Moderate ☐Heavy | | Tract #s:<br>SD-LA-206-029.000<br>SD-LA-206-029.110<br>SD-LA-206-031.200 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land (029.110), Hayland (031.200) | | |
| Photo #s: LG1469-1477 | | |
| Habitat Type: ☐Tallgrass Prairie ☒Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☐Unsuitable ☒Poor ☐Fair ☐Good ☐Excellent | | |

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA | HORJUB | SOLCAN | CIRARV | CARNUT | |
| BROINE | | LYCASP | PLAMAJ | | |
| AGRSTO | | SYMLAN | | | |
| CARPRA | | TRIHYB | | | |
| SCHPUN | | ANECAN | | | |
| POACOM | | LOBSPI | | | |
| CARBRE | | RUDHIR | | | |
| PASSMI | | VIOPRA | | | |
| ELEPAL | | GLYLEP | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):
Poor WPFO habitat. Recently hayed tract (031.200) has greater forb diversity than grazed tracts. Groundwater-fed meadows. Areas of heavy grazing noted along stream and many introduced grasses dominant. PHAARU abundant on neighboring tracts which are currently denied. Management needs include control of non-native grasses and modification of haying cycle to allow for native forb reproduction.



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: L. Gunther, A. Admiraal (2019)<br><br>Date: 7/12/2022 | Site ID:<br>H2019MI001_WPFO |

Grazing: ☐None ☒Light ☐ Moderate ☐Heavy

Target Species: ☒Western Prairie Fringed Orchid (WPFO)

☐ Small White Lady Slipper (SWLS)

Land Use (if known): Grazing land

Photo #s: LG1460-1468

Habitat Type: ☐Tallgrass Prairie ☒Mesic Meadow ☐Wet Meadow ☒Wetland ☐Mixed Grassland ☐Non-native Grassland ☐Cultivated ☒Other: Wet Mesic Native Prairie

Habitat Quality: ☐Unsuitable ☐Poor ☒Fair ☐Good ☐Excellent

Tract #s:

SD-MI-0138.000
SD-MI-0137.000

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| PHAARU | HORJUB | LYCASP | | | |
| SPAPEC | | LYCAMER | | | |
| AGRSTO | | ASCINC | | | |
| CAREX sp. | | VERHAS | | | |
| LEEORY | | | | | |
| SCIATR | | | | | |
| ELEPAL | | | | | |
| BECSYZ | | | | | |
| PHLPRA | | | | | |

WPFO or SWLS Observed:

☒ NO

☐ YES

NOTES (Mgmt, context, mapping, etc):

Only SD-MI-0138.000 provides suitable habitat. Habitat lies within low quality native prairie along West Branch Skunk Creek. Habitat reaches lower slopes which are also groundwater fed, and it extends along the creek to the east and west. A shallow water marsh dominated by SCHACU, ELEPAL, and SPAPEC borders the habitat. Management needs include control of non-native grasses and CIRARV in surrounding native prairie (dominant grasses: BROINE, NASVIR, POACOM, SCHSCO).

Fair WPFO habitat.



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: D. Hagen<br>Date: 7/6/2022 | Site ID:<br>**No_hab_SD_WPFO_007** |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-MI-0094.200 (*Denied, assessed from road*) |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Cropland | | |
| Photo #s: | | State: South Dakota |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | County: Minnehaha |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| ZEAMAY | | | | | |
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|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br><br>Cultivated cropland – currently planted with corn. No habitat for WPFO. |

## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: D. Hagen<br>Date: 7/6/2022 | Site ID:<br>**No_hab_SD_WPFO_008** |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-MI-0098.110<br>SD-MI-0098.111 (Pending)<br>SD-MI-0102.101<br>SD-MI-0102.102 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: DH704-705 | | State: South Dakota<br>County: Minnehaha |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| PHLPRA | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grassland dominated by introduced perennial grasses. No habitat for WPFO. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/11/2022 | Site ID:<br>**No_hab_SD_WPFO_006** |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-LI-104-209.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Hayland | | |
| Photo #s: LG1456-1459 | | State: South Dakota |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | County: Lincoln |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | MEDSAT | | | |
| POAPRA | | ASCSYR | | | |
| PHAARU | | CONARV | | | |
| | | CIRARV | | | |
| | | TYPANG | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grass hayland. Swale/ditch is mostly dominated by reed canary grass. Few forbs, disturbed. No habitat for WPFO. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/11/2022 | Site ID:<br>**No_hab_SD_WPFO_005** |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-LI-104-207.000<br>SD-LI-104-208.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Cropland | | |
| Photo #s: N/A | | State: South Dakota<br>County: Lincoln |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| PHAARU | | | | GLYMAX | |
| BROINE | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br><br>Cultivated cropland – currently planted with soybeans. No habitat for WPFO. Swale appears to be dominated by non-native grasses such as BROINE and PHAARU. |

## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/13/2022 | Site ID:<br>**No_hab_SD_WPFO_004** |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-LI-104-198.000<br>SD-LI-104-202.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Cropland | | |
| Photo #s: AA003 | | State: South Dakota<br>County: Lincoln |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| ZEAMAY | | | | | |
| | | | | | |
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| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Cultivated cropland – currently planted with corn. No habitat for WPFO. |



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, C. Grummert (2019)<br>Date: 7/13/2022 | Site ID:<br>**No_hab_SD_WPFO_003** |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-LI-104-189.000<br>SD-LI-104-188.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Cropland | | |
| Photo #s: AA004, 006 | | State: South Dakota<br>County: Lincoln |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| PHAARU | ZEAMAY | | | | POPDEL |
| SPAPEC | | | | | FRAPEN |
| BROINE | | | | | GLETRI |
| | | | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

West tract is cultivated corn, though small areas where soil was too wet to plant were dominated by annual grasses and smartweeds.

East tract had been cropped or disturbed in previous years. It has been recolonized by perennial grasses as well as several tree species that have reached shrub size.

Neither tract is suitable WPFO habitat because of disturbance.

No habitat for WPFO.



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt and C. Grummert (2016)<br>Date: 7/11/2022 | Site ID:<br>**No_hab_SD_WPFO_002** |

Grazing: ☒None ☐Light ☐ Moderate ☐Heavy

Target Species: ☒Western Prairie Fringed Orchid (WPFO)
☐ Small White Lady Slipper (SWLS)

Land Use (if known): Cropland

Photo #s: JA5306-5307

Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other:

Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent

Tract #s:
SD-LI-104-187.000
SD-LI-104-186.000
SD-LI-104-183.000
SD-LI-104-182.000
SD-LI-104-181.000

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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| | | | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

Cultivated crop field.



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C Grummert<br>Date: 7/11/2022 | Site ID:<br>No_hab_SD_WPFO&LS_001 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>SD-LI-104-151.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Lined Snake (LS) | | |
| Land Use (if known): | | |
| Photo #s: JA5305 | | |
| Habitat Type: ☐Tallgrass Prairie ☒Mesic Meadow ☐Wet Meadow<br>☒Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated<br>☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| SPAPEC | | | | HELGRO | SAMCAN |
| PHAARU | | | | | |
| TYPANG | | | | | |
| BROINE | | | | | |
| POAPRA | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>WPFO habitat survey; plant species observed are listed above.<br>Narrow incised creek bottom and banks. Dense TYPANG in outer meander areas with PHAARU and SPAPEC along banks with HELGRO and SAMCAN. Very dense and tall vegetation with few forbs. Vegetation community quickly/abruptly shifts from crop to BROINE/POAPRA to wetland. Not suitable for WPFO. |



Site ID:H2016DA001_WPFO

Target Species: ☐ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 07 - 11 (Y/M/D) Surveyor(s), principal surveyor listed first: J. Allewalt, A. Admiraal

Additional survey work needed? Y **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #:

## LOCATION

Survey site: Tract: NEDA-318-035.310, NEDA-318-035.000, NEDA-318-036.000 County: Dakota

Elevation (range if applicable): 334 **m** ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.353939 Longitude: -96.423954 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

The physical setting is comprised of a large outside bend overflow channel that is periodically inundated or flooded/scoured.

Area also includes an island with mixed wooded and open areas. The open areas contained a thick cover of Kentucky bluegrass. Sandy/silty ridges run the length island.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A **B** C D ?

Area of occupancy : 21.4 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 0.4 m km ft **miles** Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID:H2016DA001_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?
Condition rank comments: Condition of this assessment area is fair. Trees in the wooded areas are largely mature with development of a relatively diverse herbaceous understory. The open channel and grassy areas were degraded by presence of invasive or introduced grasses and forbs. River process of flooding still occurs periodically.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy POPDEL, SALAMY

Subcanopy

Tall shrub

Short shrub

Herbaceous SOLCAN, POAPRA

Rare species

Exotic species CIRARV, EUPESU, VERTHA

Ecological processes and abiotic physical/chemical factors

Current land use Recreational (hunting)

Soil type: Sandy loam Parent material: Limestone/sandstone

Slope 1-2 Aspect E MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

The overflow channel is connected to main Missouri River channel and floods as permitted by flood control measures. Island is fragmented.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Natural disturbance from periodic flooding in overflow channel. Some human alteration from presence of roads.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/07/13 (Y/M/D)

EOrank summary comments Overall, the quality of this area viewed through this assessment method is fair. However, for WPFO, it is unsuitable due to woody encroachment and thick, overgrown herbaceous vegetation.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland):
Control CIRARV and EUPESU; allow natural flooding regime to return. Not suitable for WPFO due to recurring periodic scouring, invasion by non-native species and insufficient hydrology for long periods of time.

Miscellaneous comments:

Site ID:H2016DA001_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: K. Kottas, L. Gunther<br>Date: 5/23/2022 | Site ID:<br>No_hab_NE_WPFO_024 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-HO-313-015.100<br>NE-HO-313-016.100 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Weedy roadside ditch | | |
| Photo #s: LG1141-1146 | | State: Nebraska<br>County: Holt |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| PHAARU | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grassland dominated by smooth brome and reed canary grass in roadside ditch. Area is weedy and disturbed, intersected by road 482 Ave. |



Site ID: H2019AN003_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 23 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Resurveyed 7/9/2022

Additional survey work needed? **Y** **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? **Y** **N** if Y, explain _____

Photo/slide taken? **Y** **N** Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1147-1149, LG1150-1152

## LOCATION

Survey site: Tract: NE-AN-313-115.000, NE-AN-313-116.000 County: Antelope

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.33319855 Longitude: -97.16280365 Accuracy of the coordinates: ~10 m ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

Geographic (lat/long), WGS 1984 | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** **N** If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Tract NE-AN-313-115.000 is a hayed wet meadow. EUPESU and all milky sap species sprayed.

Tract NE-AN-313-115.000 is overgrown/dense vegetation with some woody encroachment. Possible CRP land; burning would improve habitat potential.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C D ?

Area of occupancy : 0.8 (116-3.5) $m^2$ hectares $km^2$ $ft^2$ acres $miles^2$ Type of measurement: Precise Estimate

Observed length: 80 (116-400) m km ft miles Type of measurement: Precise Estimate

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019AN003_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ? Tract 116: overseeded with MEDSAT and DANVIR. Potentially CRP - covered in thatch.
Condition rank comments:

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy Tract 116 only: FRAPEN, PRUVIR

Subcanopy

Tall shrub

Short shrub Tract 116 only: ROSWOO

Herbaceous Tract 115: CARPEL, CAREMO, POAPRA (D), ELEPAL, APOCAN / Tract 116: PANVIR, APOCAN, MEDSAT

Rare species

Exotic species EUPESU, MEDSAT / Tract 116: CIRARV, EUPESU

Ecological processes and abiotic physical/chemical factors

EUPESU and all other species with milky sap had been sprayed on Tract 115.

Current land use

Soil type: Parent material:

Slope 0-5 Aspect W to E MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?

Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).
Better orchid habitat on Tract 115. However, herbicide application reduces potential for orchids. Majority of surrounding area is cultivated.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.
Sprayed with herbicide on Tract 115.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/23 (Y/M/D)

EOrank summary comments Habitat is fair on Tract 115. Tract 116: Active management needed to return to more suitable habitat.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland):

Tract 115: Continue control of EUPESU. Leave other species. Remove hay bales left on good habitat.
Tract 116: Controlled burn would be beneficial. Control Canada thistle; remove woody species.

Miscellaneous comments:

Site ID: H2019AN003_WPFO

Site Photographs: Top photo is from Tract 115, bottom photo is from Tract 116





## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/10/2022 | Site ID:<br>No_hab_NE_WPFO_023 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-AN-313-132.100 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Potentially CRP – native restoration | | |
| Photo #s: LG1409 | | State: Nebraska<br>County: Antelope |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| ANDGER | | | | | |
| SCHSCO | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Mixed grassland – likely seeded with native species as restoration project. Lacks suitable hydrology for orchids. Several large, planted windbreaks. Recommend moving this proposed Laydown Yard to cropland to avoid further disturbance of restoration and windbreaks. |



Site ID: H2019AN001_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 23 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Additional survey work needed? **Y** **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? **Y** **N** if Y, explain _____

Photo/slide taken? **Y** **N** Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1153-1156

## LOCATION

Survey site: Tract: NE-AN-313-152.000 County: Antelope

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.24480057 Longitude: -97.912249847 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** **N** If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

West side of cropfield - adjoining larger tract to west. Channel with PHAARU, CAREMO, ELOPAL, SCHPUN. Hummocky and deep pits from cattle use. Survey access was restricted west of Willow creek.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C **D** ?

Area of occupancy : 30 $m^2$ hectares $km^2$ **$ft^2$** acres $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 4000 m km **ft** miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019AN001_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?

Condition rank comments: Canada thistle is abundant on eastern edge but not yet invading entire area. Reed canary grass is confined to the deeper wetland.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous CAREMO (D), PHAARU (D), ELOPAL (D), SCHPUN (C)

Rare species

Exotic species CIRARV (C) edge of field

Ecological processes and abiotic physical/chemical factors

Saturated and moist soils.

Current land use Grazing land

Soil type: Parent material:

Slope 0-5 Aspect W MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?

Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Cultivated field to the east. Wet meadow hayland to the west. Extensive cattle use.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Deep depressions and large grass hummocks from cattle use.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/23 (Y/M/D)

EOrank summary comments Size is small, but part of a larger area to the west.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Control of invasive Canada thistle is needed.

Miscellaneous comments:

Site ID: H2019AN001_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: K. Kottas, L. Gunther<br>Date: 5/23/2022 | Site ID:<br>No_hab_NE_WPFO_022 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-PI-313-149.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Hayland | | |
| Photo #s: LG1152 | | State: Nebraska<br>County: Pierce |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | MEDSAT | | | |
| | | CIRARV | | | |
| | | | | | |
| | | | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

Non-native pasture dominated by smooth brome and alfalfa, infested with Canada thistle.



Site ID: H2019AN002_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 23 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Additional survey work needed? **Y** **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? **Y** **N** if Y, explain _____

Photo/slide taken? **Y** **N** Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1160-1166

## LOCATION

Survey site: Tract: NE-AN-313-162.000 County: Antelope

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.21829987 Longitude: -97.85320282 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** **N** If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Wet meadow; mostly native (except for PHAARU). Some hummocks. No longer part of Project route.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B **C** D ?

Area of occupancy : 4.5 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 1/8 m km ft **miles** Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019AN002_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?
Condition rank comments: Not disturbed recently. Road edges fair; center good; lots of PHAARU.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy FRAPEN

Subcanopy

Tall shrub SALEXI

Short shrub

Herbaceous PHAARU, ASCSYR, HELGRO, SOLGIG, SYMLAN, EQUARV, JUNVIR, CAREMO, ELEPAL

Rare species HYPHIR

Exotic species EUPESU

Ecological processes and abiotic physical/chemical factors

Current land use PRP wetland

Soil type: Parent material:

Slope 0-4 Aspect MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).
Has not been grazed/hayed for last few years as evidenced by woody encroachment.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.
Some MEDSAT.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/23 (Y/M/D)

EOrank summary comments Phalaris overgrowth and woody encroachment weaken this habitat. It is part of a larger complex considering habitat to the west.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Area should be burned or hayed to remove thatch occasionally. Woody species need to be controlled.

Miscellaneous comments:

Site ID: H2019AN002_WPFO

Site Photograph:



Site ID: H2016PI003_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 23 (Y/M/D) Surveyor(s), principal surveyor listed first: J. Allewalt, A. Admiraal

Additional survey work needed? **Y** N Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: JA5148

## LOCATION

Survey site: Tract:NE-PI-314.041.000 County: Pierce

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.2201004 Longitude: -97.80680084 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Area includes a former oxbow of Willow Creek and nearby floodplain. Surrounded by wet meadow of similar or lower quality. Both native and introduced grasses are present. Includes portion of corridor not originally designated as potential habitat that connects two existing segments.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B **C** D ?

Area of occupancy :_____ $m^2$ hectares $km^2$ $ft^2$ acres $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 2000 m km **ft** miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2016PI003_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ? Area has many characteristic sedge and grass species; few forbs are present. Hydrology is suitable and area is maintained by occasional haying. Subsurface tile was observed. Site is also grazed occasionally.
Condition rank comments:

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous CARPEL (C), CAREMO (C), ELECOM (D), SPAPEC (D), ELEPAL (C)

Rare species

Exotic species ALOARU (D), POAPRA (D), EUPESU (C), AGRSTO (C)

Ecological processes and abiotic physical/chemical factors

Site may have been sprayed to eliminate forbs.

Current land use Haying/grazing

Soil type: Parent material:

Slope 0-2 Aspect all MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Site is bordered by an unimproved county road to the north and similar to lower quality meadow on remaining boundaries.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Occasional haying and grazing has occurred. Large population of leafy spurge occurs in property lying southwest of the habitat.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/24 (Y/M/D)

EOrank summary comments Hydrology is suitable and characteristic native sedges and grasses are present. However, the absence of forbs is concerning.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Control of leafy spurge is needed. If regular spraying for forbs has occurred, the spraying should be discontinued to allow native forbs to become established.

Miscellaneous comments:

Site ID: H2016PI003_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, J. Allewalt<br>Date: 5/23/2022 | Site ID:<br>No_hab_NE_WPFO_021 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-PI-314-040.000<br>NE-PI-314-043.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: JA5168 | | State: Nebraska |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | County: Pierce |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | EUPESU | | | |
| PHAARU | | TAROFF | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native pasture dominated by smooth brome and reed canary grass. |



Site ID: H2016PI002_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 23 (Y/M/D) Surveyor(s), principal surveyor listed first: J. Allewalt, A. Admiraal

Additional survey work needed? Y **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1417-1418

## LOCATION

Survey site: Tract:NE-PI-314-018.000, NE-PI-314-019.000 County: Pierce

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.31259918 Longitude: -97.74040222 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Site includes a wetland road ditch, hay meadow, and pasture. A known SWLS population is within 10 miles. Both native grasses and sedges and introduced pasture grasses are present.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C **D** ?

Area of occupancy : 8.5 $m^2$ **hectares** $km^2$ $ft^2$ acres $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 0.25 m km ft **miles** Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2016PI002_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ? Hydrology is suitable. Wetland ditch contains species assemblage similar to that of nearby SWLS population.
Condition rank comments: Hay meadow and pasture have very few forbs.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous Ditch: ELEPAL (D), PHAARU (D), CAREMO (C), CARPEL (C), ANECAN (C), PANVIR (C), THADAS (C), JUNBAL (C). Pasture/hay meadow: ELECOM (D), PANVIR (C), SPAPEC (D), SPOCOM (C)

Rare species

Exotic species Ditch: TYPGLA (D) Pasture/hay meadow: EUPESU (C), MELOFF (C), TRIPRA (C), CIRARV (uncommon), POAPRA (D)

Ecological processes and abiotic physical/chemical factors

Site receives hydrologic input from a high groundwater table. Ditch also receives surface runoff.

Current land use Hay meadow, grazed pasture

Soil type: Parent material:

Slope 0-2 Aspect NA MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Tracts bordered by a state highway, county roads, and similar mesic grassland. Field on south end had been sprayed to kill all vegetation.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Hay meadow and pasture may have been overseeded with non-native grasses and legumes. Pasture may have been sprayed to eliminate forbs.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/24 (Y/M/D)

EOrank summary comments Hydrology is suitable and some characteristic native species are present.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Control of leagy spurge and Canada thistle is needed. If regular spraying (herbicide) for forbs has occurred in the hay meadow and pasture, this practice should be discontinued to permit native forbs to become established.

Miscellaneous comments: No return in 2022.

Site ID: H2016PI002_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, J. Allewalt<br><br>Date: 5/23/2022 | Site ID:<br>No_hab_NE_WPFO_020 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-PI-314-020.000<br>NE-PI-314-019.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: JA5168 | | State: Nebraska<br><br>County: Pierce |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| | ZEAMAY | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br><br>Tract NE-PI-314-020.000 is cultivated corn. Tract NE-PI-314-019.000 was heavily sprayed with herbicide – most vegetation is dead. Too much disturbance to be suitable orchid habitat. |



Site ID: H2016PI001_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 24 (Y/M/D) Surveyor(s), principal surveyor listed first: J. Allewalt, A. Admiraal

Additional survey work needed? **Y** N Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: JA5163, 5164-5166

## LOCATION

Survey site: Tract:NE-PI-315-030.100, NE-PI-315-032.000 County: Pierce

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.14139938 Longitude: -97.64949799 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? Y **N** If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Moderately diverse mesic native hay meadow. Adjacent to the west has been grazed; site is mowed for hay. Suitable habitat is bordered by a wetland and drainage ditch on the east.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B **C** D ?

Area of occupancy : 18 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 1800 m km **ft** miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2016PI001_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ? Condition rank comments: Moderately diverse native, mesic prairie, containing some introduced species. Suitable hydrology in lowest part, but species composition is typical of good habitat in slightly drier mesic zone.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous ANDGER (D), SPAPEC (C), PANACU (C), VIOPED (C), EUTGYM (C), CARPEL (C), PHAARU (D), SISCAM (C), HYPHIR (C), ELECOM (C)

Rare species

Exotic species MEDFAL (C), TAROFF (C), POAPRA (D), PLALAN (C), AGRSTO (C), EUPESU (C)

Ecological processes and abiotic physical/chemical factors

Current land use Hay meadow

Soil type: Parent material:

Slope 0-2 Aspect All MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?

Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Project area is surrounded by disturbed sand prairie on the west and a drainage ditch to the east. Suitable habitat may extend north and south of project area.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Valley has been ditched east of habitat, partially draining the site. Medicago falcata may have been interseeded. Site is mowed regularly.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/24 (Y/M/D)

EOrank summary comments Typical associated species are present but hydrology is marginal.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Control of introduced species is needed.

Miscellaneous comments: Increased precipitation may restore suitable hydrology to the entire site.

Site ID: H2016PI001_WPFO

Site Photograph:



Site ID: H2019PI002_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 24 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Re-surveyed 7-10-2022

Additional survey work needed? **Y** N Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1170-74

## LOCATION

Survey site: Tract:NE-PI-315-028.000 County: Pierce

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.14720154 Longitude: -97.66290283 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Cornfield to the north; sandy hill to the west. Mesic meadow dominated by sedges. Decent forb diversity.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B **C** D ?

Area of occupancy : 13 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 500 **m** km ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019PI002_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?
Condition rank comments: Good species diversity. Sedge meadow. Leafy spurge in NW corner near crop.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous CAREMO (D), CARPEL (D), POAPAL (D), PANVIR (D), SYMLAN (C), EUTGYM (C), JUNBAL (C), VERHAS (C), EQULAV (C)

Rare species

Exotic species EUPESU, PHAARU

Ecological processes and abiotic physical/chemical factors

Current land use Grazing land - had not been grazed as of 7/10/22

Soil type: Parent material:

Slope 0-3 Aspect E MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Native upland prairie on sandy hillside to west. Crop on north; additional habitat south.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.
Some reed canary grass and leafy spurge.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/24 (Y/M/D)

EOrank summary comments Good variety of species present. While size is small, with current management it could persist.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Control leafy spurge in NW corner, near crop field.

Miscellaneous comments:

Site ID: H2019PI002_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: K. Kottas, L. Gunther<br>Date: 5/24/2022 | Site ID:<br>No_hab_NE_WPFO_019 |
| Grazing: ☒None ☐Light ☒ Moderate ☐Heavy | | Tract #s:<br>NE-PI-315-027.000<br>NE-PI-315-026.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: JA5168 | | State: Nebraska |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | County: Pierce |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| | ZEAMAY | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br><br>Cultivated cropland planted with corn. Some non-native grasses and leafy spurge on cornfield edges. |



Site ID: No_hab_NE_WPFO_017

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 24 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Also surveyed 7/10/2022 - JA and LG

Additional survey work needed? **Y** **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? **Y** **N** if Y, explain _____

Photo/slide taken? **Y** **N** Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1175-1176

## LOCATION

Survey site: Tract:NE-PL-315-035.000 County: Pierce

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.13460159 Longitude: -97.62889862 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** **N** If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Mesic meadow dominated by non-native grasses (brome and Kentucky bluegrass). Surrounded by cultivated cropland to the east and south. Land use is grazing. Very few forbs, lacks suitable hydrology for orchids.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B **C** D ?

Area of occupancy : 6 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 400 **m** km ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: No_hab_NE_WPFO_017

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?
Condition rank comments: Native sedges and non-native grass species in beautiful meadow but low forb diversity. Area was much drier in July - native species died back.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous POAPRA (D), PHLPRA (C), ELECOM (D), PLAERI (C), BROINE (C), CARPEL (C), JUNBAL

Rare species

Exotic species EUPESU

Ecological processes and abiotic physical/chemical factors

Low forb diversity suggests low seed bank from high cattle use or chemical treatment to remove forbs.

Current land use Grazing

Soil type: Parent material:

Slope 0-3 Aspect W MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Cultivated land on two sides and apparent chemical use. Rank this site lower than its visual appeal.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/24 (Y/M/D)

EOrank summary comments Good condition of grasslike species, but low forb diversity, small size and surrounding crop areas.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland):

Spot treat EUPESU, graze lightly.

Miscellaneous comments:

Site ID: No_hab_NE_WPFO_017

Site Photograph:



Site ID: H2019ST001_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 24 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Additional survey work needed? **Y** **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? **Y** **N** if Y, explain _____

Photo/slide taken? **Y** **N** Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1178-79

## LOCATION

Survey site: Tract:NE-ST-315-093.000 County: Stanton

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.06869888 Longitude: -97.32150269 Accuracy of the coordinates: ~10 m ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

Geographic (lat/long), WGS 1984 | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** **N** If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Small part of a mesic valley surrounded by crop fields. Area changes to more upland species on east and west but with mesic species still included. Great forb diversity in meadow. Mostly native grassland though some non-native species are present.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C D ?

Area of occupancy : 4 $m^2$ hectares $km^2$ $ft^2$ acres $miles^2$ Type of measurement: Precise Estimate

Observed length: 200 m km ft miles Type of measurement: Precise Estimate

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019ST001_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?
Condition rank comments: Good diversity; no evidence of spraying or disturbance.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous POAPRA (D), SPAPEC (D in low areas), CARVUL (D in low areas), CAREMO (D in low areas), ANECAN (C), BROINE (C), JUN BAL (C), HYPHYS, ARTLUD, SOLGIG

Rare species

Exotic species POTREC, EUPESU

Ecological processes and abiotic physical/chemical factors

Current land use Hayland

Soil type: Parent material:

Slope 0-5 Aspect W MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).
Site is surrounded by cultivated fields and is relatively small. The diversity of the site is encouraging, although some exotic species are present.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.
Site was hayed by 7/10/2022.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/24 (Y/M/D)

EOrank summary comments Diverse mesic meadow. Area along swale was most likely location for SWLS.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Spot treat Euphorbia esula. Haying later in the season would benefit orchid species and other native forbs by allowing their bloom cycle to complete.

Miscellaneous comments:

Site ID: H2019ST001_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, J. Allewalt<br>Date: 5/24/2022 | Site ID:<br>No_hab_NE_WPFO_016 |
| Grazing: ☐None ☐Light ☒ Moderate ☐Heavy | | Tract #s:<br>NE-ST-315-088.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: JA5168 | | State: Nebraska<br>County: Stanton |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| PHAARU | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grassland dominated by smooth brome and Kentucky bluegrass near State Hwy 35. No orchid habitat. |



Site ID: H2019ST003_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 24 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Re-surveyed 2022-07-10

Additional survey work needed? **Y** N Why? Second year of monitoring needed due to bloom cycle.

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1444-1447 NESW

## LOCATION

Survey site: Tract: NE-ST-315-095.000 County: Stanton

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.0685997 Longitude: -97.30919647 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area). Saturated lowland surrounding perennial stream. Only one edge was near a cultivated field. All other sides were surrounded by additional wetland or grassland. Eastern edge moved into Brome dominated upland. Herbaceous wetland in a toeslope swale/drainage within fenced pasture.

Water is applied or diverted from indeterminable uphill location and ponds to some extent in N/NW corner of parcel.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A **B** C D ?

Area of occupancy : 5 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 250 **m** km ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019ST003_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?

Condition rank comments: Less frequent use by cattle would improve conditions. Forb diversity lower than it could be. Area was much drier in July than in May, very little standing or flowing water remained.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous PHAARU (D), CAREMO (D), SPAPEC (D), CARVUL (D), PANVIR (C), RANSCE (C), EQUARV (C), ELEPAL (C) VERHAS (C). 2022/07/22 survey also observed SCIPAL, SCHPUN (C), MENARV (C), AGRSTO (C), SAGLAT (C), HORJUB (C)

Rare species

Exotic species EUPEUS, CIRARV (None observed in 2022/07/10 survey)

Ecological processes and abiotic physical/chemical factors

Current land use Grazing/pasture

Soil type: Loam Parent material: Sedimentary

Slope 0-6 Aspect W MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?

Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Area surrounded by cultivated fields and pastureland.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Wetland is deeply pitted with large hummocks from cattle use.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/24 (Y/M/D)

EOrank summary comments Habitat could improve and persist with good management and in the context of larger matrix.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland):

Spot treatment of EUPESU/CIRARV. Less frequent grazing on saturated soils.

Miscellaneous comments:

Site ID: H2019ST003_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: K. Kottas, L. Gunther<br>Date: 5/24/2022 | Site ID:<br>No_hab_NE_WPFO_015 |
| Grazing: ☐None ☐Light ☒ Moderate ☐Heavy | | Tract #s:<br>NE-ST-315-095.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Pastureland | | |
| Photo #s: LG1185-87 | | State: Nebraska<br>County: Stanton |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

Non-native grassland dominated by smooth brome. No orchid habitat, much drier than adjacent wetland/wet meadow. The area was more heavily grazed when surveyors returned in July.



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, A. Admiraal<br>Date: 5/24/2022 | Site ID:<br>No_hab_NE_WPFO_013 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-ST-312-259.000<br>NE-ST-312-261.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Pastureland | | |
| Photo #s: JA5169-5172 | | State: Nebraska<br>County: Stanton |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grassland dominated by smooth brome and Kentucky bluegrass. No orchid habitat. |



Site ID: H2019ST002_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 24 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Re-surveyed 2022-07-09

Additional survey work needed? **Y** N Why? Second year of monitoring needed due to bloom cycle.

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1189-94

## LOCATION

Survey site: Tract: NE-ST-312-257.000 County: Stanton

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 42.03409958 Longitude: -97.30750275 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area). Small section of a mesic valley surrounded by cropland and a wooded hillside to the north.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B **C** D ?

Area of occupancy : 5 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 300 **m** km ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019ST002_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?
Condition rank comments:

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy
Subcanopy
Tall shrub
Short shrub
Herbaceous PHAARU (D), CAREMO (D), CARVUL (D), SOLGIG (C), ANECAN (C), POAPRA (C), BROINE (C)
Rare species
Exotic species EUPESU
Ecological processes and abiotic physical/chemical factors Area has been sprayed with herbicide 2,4-D to combat leafy spurge.
Current land use Grazing/pasture
Soil type: Loam
Parent material: Sedimentary
Slope 0-5 Aspect S MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)
TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).
Part of an ~1/2 mile long mesic valley - better habitat exists to the east.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.
Cropland surrounds the valley.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/24 (Y/M/D)
EOrank summary comments The broadcast application of 2,4-D is detrimental to forbs and forb diversity as orchids would be flowering. Not good for habitat.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland):
Spot treatment of EUPESU instead of broadcast spraying would be better for forbs/habitat.
Miscellaneous comments:

Site ID: H2019ST002_WPFO

Site Photograph:



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert<br>Date: 7/9/2022 | Site ID:<br>No_hab_NE_WPFO_012 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-ST-312-257.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land | | |
| Photo #s: JA5275-78 | | State: Nebraska<br>County: Stanton |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | EUPESU | | | |
| PHLPRA | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native grassland dominated by smooth brome and timothy grass. Invaded by leafy spurge. No orchid habitat. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, C. Grummert<br>Date: 7/9/2022 | Site ID:<br>No_hab_NE_WPFO_011 |
| Grazing: ☐None ☐Light ☐ Moderate ☒Heavy | | Tract #s:<br>NE-MA-312-097.110<br>NE-MA-312-097.100 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land | | |
| Photo #s: JA5275-78 | | State: Nebraska<br>County: Madison |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☒Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | BROTEC | SOLCAN | | | SYMOCC |
| POAPRA | | GRISQU | | | |
| | | LITOCC | | | |
| | | EQULAE | | | |
| | | HELGRO | | | |
| | | CONARV | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

Non-native grassland dominated by smooth brome surrounding Taylor Creek. Western snowberry along streambanks. Area has been overgrazed. Few forbs, poor hydrology, too disturbed and dry for WPFO. The parcels are surrounded by cultivated cropland – currently planted with soybeans.

Reduction in grazing would improve conditions here.



Site ID:H2019MA001_WPFO

Target Species: ☐ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 07 - 08 (Y/M/D) Surveyor(s), principal surveyor listed first: A. Admiraal, L. Gunther

Additional survey work needed? Y **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1399-1404 (WESTECH)

## LOCATION

Survey site: Tract: NE-MA-312-173.000 County: Madison

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 41.74670029 Longitude: -97.5490036 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Grazing land in wet meadow adjacent to SF Union Creek.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C **D** ?

Area of occupancy : <1 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 250 **m** km ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID:H2019MA001_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?

Condition rank comments: Heavily grazed and dominated by introduced species.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous PHAARU (D), CARLAE (C), POAPRA (C), ELYCAN (C), AGRSMI, HELGRO, PHRAUS, CARSTI, BROJAP, VERURT, SCIATR, LYCAME, HORJUB, ALOARU, PERMAC

Rare species

Exotic species CIRARV, CIRVUL, CARNUT

Ecological processes and abiotic physical/chemical factors

Current land use Grazing

Soil type: Parent material:

Slope 0-3 Aspect N MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?

Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Grazing land surrounded by cultivated fields to the N, E, and S. Introduced species such as PHAARU are dominant.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Cattle use appears heavy. Evidence of past beaver activity.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/07/10 (Y/M/D)

EOrank summary comments

Small area observed on S side of SF Union Creek would provide poor quality SPFE habitat. Dominated by PHAARU and grazed.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Rotational grazing would reduce impact on area.

Miscellaneous comments:

Site ID:H2019MA001_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/8/2022 | Site ID:<br>No_hab_NE_WPFO_010 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-PL-312-118.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Cropland | | |
| Photo #s: No photos taken, just cropland. | | State: Nebraska<br>County: Platte |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| | ZEAMAY | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Cultivated cropland – currently planted with corn. |

## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/8/2022 | Site ID:<br>No_hab_NE_WPFO_008 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-NA-312-090.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): | | |
| Photo #s: LG1394-1395 | | State: Nebraska<br>County: Nance |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | VERBAL | | | |
| POAPRA | | ASCSYR | | | |
| ANDGER | | | | | |
| BOUCUR | | | | | |
| BROJAP | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Mixed grassland with some natives – potentially restored? Too dry for orchids, adjacent to a corn field and on a side hill. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: K. Kottas, L. Gunther<br>Date: 5/25/2022 | Site ID:<br>No_hab_NE_WPFO_009 |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-NA-312-101.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Cropland | | |
| Photo #s: LG1197-99 | | State: Nebraska<br>County: Nance |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| | ZEAMAY | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Cultivated cropland – currently planted with corn. The swale was likely a wetland before being plowed, now heavily disturbed. No orchid habitat. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/8/2022 | Site ID:<br>No_hab_NE_WPFO_007 |
| Grazing: ☐None ☒Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-NA-312-082.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land | | |
| Photo #s: LG1396-98 | | State: Nebraska<br>County: Nance |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | ARTLUD | LIAPUN | | JUNVIR |
| POAPRA | | SPOCRY | VERTHA | | SYMOCC |
| CARBRE | | EUPESU | AMBPSI | | |
| SCHPAN | | ANTNEG | ECHANG | | |
| CARGRA | | RATCOL | | | |
| KOEMAC | | SYMERI | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

Mostly native grassland, dominant species BROINE/POAPRA/CARBRE. Lightly grazed, cows present at time of survey. Decent forb diversity upslope of drainage dominated by BROINE, but too dry for orchids.



Site ID:H2016NA002_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 26 (Y/M/D) Surveyor(s), principal surveyor listed first: J. Allewalt, A. Admiraal

Additional survey work needed? **Y** **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? **Y** **N** if Y, explain _____

Photo/slide taken? **Y** **N** Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: JA5280

## LOCATION

Survey site: Tract: NE-NA-312-066.000 County: Nance

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 41.38280106 Longitude: -97.83779907 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** **N** If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Native grassland/wet meadow. Grazed.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C D ?

Area of occupancy : 8.7 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: .25 m km ft **miles** Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID:H2016NA002_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ? Native grassland in decent condition. Area has been grazed and has low diversity, very few forbs.
Condition rank comments: _____

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy POPDEL

Subcanopy _____

Tall shrub _____

Short shrub _____

Herbaceous AGRSTO (D), HORJUB (D), VERHOS (C), PANVIR, ELECAN,

Rare species _____

Exotic species _____

Ecological processes and abiotic physical/chemical factors _____

Current land use Grazing

Soil type: _____ Parent material: _____

Slope _____ Aspect _____ MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?

Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).
Grassland is surrounded by cultivated fields of corn and soybeans to the east and west. Some forested areas of cottonwoods to the north.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.
Agriculture, grazing.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/7/9 (Y/M/D)

EOrank summary comments Native grassland/wet meadow. Grazed. Low forb diversity but good mix of native sedges and rushes.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): _____

Miscellaneous comments: _____

Site ID:H2016NA002_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, A. Admiraal, C. Grummert<br><br>Date: 5/26/2022 and 7/9/2022 | Site ID:<br>No_hab_NE_WPFO_005 |
| Grazing: ☐None ☐Light ☒ Moderate ☒Heavy | | Tract #s:<br>NE-NA-312-064.000<br>NE-NA-312-065.000<br>NE-NA-312-067.000<br><br>South of the Loup River |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing | | |
| Photo #s: JA5179-80, 5183-84, JA5279-80 | | State: Nebraska<br><br>County: Nance |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| POAPRA | | | | | |
| AGRSMI | | | | | |
| CARBRE | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br><br>Native and mixed grassland with heavy grazing utilization (~90%). Area is dry and has steep slopes unsuitable for orchids. |



# ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/8/2022 | Site ID:<br>**H2019NA001_WPFO**<br>and No_hab_NE_WPFO_006 |
| Grazing: ☐None ☒Light ☒ Moderate ☒Heavy | | Tract #s:<br>NE-NA-312-074.000<br>NE-NA-312-071.000<br>NE-NA-312-072.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Grazing land | | |
| Photo #s: LG1387-93 | | State: Nebraska<br>County: Nance |
| Habitat Type: ☐Tallgrass Prairie ☒Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☒Poor ☐Fair ☐Good ☐Excellent | | |

## CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| CARVUL | Carex spp. | VERBAL | | | JUNVIR |
| SCHPUN | POAPRA | RUDLAC | | | |
| HORJUB | AGRSTO | EUPESU | | | |
| SCHARU | ALOARU | DICISA | | | |
| BROINE | | IVAANN | | | |
| | | ASCSYR | | | |
| | | CONMAC | | | |

WPFO or SWLS Observed:
☒ NO
☐ YES

NOTES (Mgmt, context, mapping, etc):

Mostly native grassland with varying degrees of grazing utilization, more mesic in tract NE-NA-312-071.000. Low forb diversity and presence.



Site ID:No_hab_NE_WPFO_025

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 25 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, A. Admiraal

Additional survey work needed? Y **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: AA03N1, AA04S1

## LOCATION

Survey site: Tract: NE-ME-312-042.000 County: Merrick

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 41.26839828 Longitude: -97.8852005 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Moist drainageway surrounded by cultivated acres.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C **D** ?

Area of occupancy : 3 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 100 **m** km ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID:No_hab_NE_WPFO_025

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ?
Condition rank comments: Invasive native and non-native species. Very few forb species are present.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous PHAARU (D), BROINE (D), POAPRA (D), CARPEL (C), CARBRE (C), ELEPAL (C), VERSTR

Rare species

Exotic species

Ecological processes and abiotic physical/chemical factors

Current land use Grazing

Soil type: Parent material:

Slope _____ Aspect _____ MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Crops surround the N and S edges. The ditch/swale extends to the east. Quality to the east is unknown.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Cattle traffic is evident. Few forbs are present indicating either drift or heavy cattle usage.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/25 (Y/M/D)

EOrank summary comments This mesic area is dominated by PHAARU in the swale/drainage and BROINE elsewhere.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Prescribed burns and chemical treatments for control of BROINE and PHAARU species.

Miscellaneous comments:

Site ID:No_hab_NE_WPFO_025

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/8/2022 | Site ID:<br>No_hab_NE_WPFO_003 |
| Grazing: ☐None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-ME-312-015.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Hayland, established two-track road | | |
| Photo #s: LG1383-1386 | | State: Nebraska |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated ☒Other: Two-track road | | County: Merrick |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | MEDSAT | CHLVER | | |
| SCHARU | | TRITER | POLAVI | | |
| | | PERAMP | | | |
| | | AMBPSI | | | |
| | | GRISQU | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Well-established two-track road cuts through mixed grassland (mostly non-native) and hayland dominated by BROINE and MEDSAT. |



Site ID: H2019ME002_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 25 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Additional survey work needed? **Y** N Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1200-1204 (WESTECH)

## LOCATION

Survey site: Tract: NE-ME-312-019.000, NE-ME-312-020.000 County: Merrick

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 41.18220139 Longitude: -97.9285965 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Mesic meadow with swell and swale topography. Pastureland (irrigated meadow) to the south; cultivated land.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C D ?

Area of occupancy : 30 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 1.3 m **km** ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019ME002_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ? Mostly native meadow with good diversity. Swales have SWLS habitat. Area is grazed rotationally. Drier site; especially on higher ground. Better for WPFO than SWLS.
Condition rank comments:

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy

Subcanopy

Tall shrub

Short shrub

Herbaceous SPAPEC (D), POAPRA (D), ELEPAL (C), CARPEL (C), PANVIR (C), EUTGYM (C), ACHMIL (C)

Rare species

Exotic species POTREC, BROTEC

Ecological processes and abiotic physical/chemical factors

Current land use Grazing

Soil type: Parent material:

Slope 0-5 Aspect S/F MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Surrounded by cultivated pasture lands; however, fairly large stretch of pasture in tract.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 2022/05/25 (Y/M/D)

EOrank summary comments Hydrology may not support SWLS but species diversity to size of pasture were good. Better suited for WPFO.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Continued rotational grazing to reduce effects of cattle on area.

Miscellaneous comments:

Site ID: H2019ME002_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, J. Allewalt<br>Date: 5/25/2022 | Site ID:<br>No_hab_NE_WPFO_004 |
| Grazing: ☒None ☒Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-ME-312-018.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Pastureland | | |
| Photo #s: JA5176-5177 | | State: Nebraska<br>County: Merrick |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☒Non-native Grassland ☐Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| CARPEL | | | | | |
| ELECOM | | | | | |
| PANVIR | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Non-native pastureland; irrigated. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, L. Gunther<br>Date: 7/8/2022 | Site ID:<br>No_hab_NE_WPFO_002 |
| Grazing: ☒None ☐Light ☒ Moderate ☐Heavy | | Tract #s:<br>NE-ME-312-008.210 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Cultivated | | |
| Photo #s: NA | | State: Nebraska<br>County: Merrick |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow ☐Wetland ☐Mixed Grassland ☐Non-native Grassland ☒Cultivated ☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| | ZEAMAY | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Corn field, no orchid habitat. |

Site ID: H2019ME001_WPFO

Target Species: ☐ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 07 - 08 (Y/M/D) Surveyor(s), principal surveyor listed first: A. Admiraal, L. Gunther

Additional survey work needed? Y **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1375-82 (WESTECH)

## LOCATION

Survey site: Tract: NE-ME-312-008.000 County: Merrick

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 41.12440109 Longitude: -97.96070099 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

**Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983

Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Wetland fringe along Warm Slough. Terraces are heavily grazed by cattle. Surrounding area is mostly cultivated cropland.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C **D** ?

Area of occupancy : 1 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 100 **m** km ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. Y **N** ? Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019ME001_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ? Heavily grazed on terraces surrounding Warm Slough, and weedy with CIRVUL.
Condition rank comments: Slough lightly grazed at time of survey.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy N/A

Subcanopy

Tall shrub

Short shrub

Herbaceous PHAARU, CARGRA, SAGLAT, ELEPAL, BROINE, POAPRA, TRIREP, AMBPSI, CONCAN, RATCOL, HORJUB, SETPUM

Rare species

Exotic species CIRVUL

Ecological processes and abiotic physical/chemical factors

Current land use Grazing

Soil type: Parent material:

Slope 0-5 Aspect NE MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).
Surrounding landscape is cultivated cropland.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.
The pasture is overgrazed.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: 22/07/10 (Y/M/D)

EOrank summary comments Poor quality WPFO habitat along Warm Slough due to heavy grazing.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland): Reduce grazing; could fence off Warm Slough so cattle cannot access.

Miscellaneous comments:

Site ID: H2019ME001_WPFO

Site Photograph:



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: A. Admiraal, K. Kottas<br>Date: 5/27/2022 | Site ID:<br>No_hab_NE_WPFO_001 |
| Vegetation Community Type:<br>Mixed grassland | Grazing:<br>☒None ☐Light ☐ Moderate ☐Heavy | Tract #s: N/A, just south of Central City and adjacent to tract NE-ME-309-137.000 |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☐ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Wetland | | |
| Photo #s: AA01-02 | | State: Nebraska<br>County: Merrick |
| Habitat Type: ☐Tallgrass Prairie ☐Mesic Meadow ☐Wet Meadow<br>☒Wetland ☐Mixed Grassland ☐Non-native Grassland ☐Cultivated<br>☐Other: | | |
| Habitat Quality: ☒Unsuitable ☐Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br>Engineered mitigation wetland by the NE Department of Roads. Not habitat, area not surveyed in detail. |



## ORCHID VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: J. Allewalt, L. Gunther, A. Admiraal<br><br>Date: 5/26/2022 and 7/8/2022 | Site ID:<br>**H2016ME001_WPFO** |
| Grazing: ☒None ☐Light ☐ Moderate ☐Heavy | | Tract #s:<br>NE-ME-310-095.100<br><br>South of the Platte River |
| Target Species: ☒Western Prairie Fringed Orchid (WPFO)<br>☒ Small White Lady Slipper (SWLS) | | |
| Land Use (if known): Recreation | | |
| Photo #s: LG1210-1213, LG1373-74 | | State: Nebraska<br><br>County: Merrick |
| Habitat Type: ☐Tallgrass Prairie ☒Mesic Meadow ☐Wet Meadow<br>☐Wetland ☒Mixed Grassland ☐Non-native Grassland ☐Cultivated<br>☐Other: | | |
| Habitat Quality: ☐Unsuitable ☒Poor ☐Fair ☐Good ☐Excellent | | |

### CLASS/SPECIES

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS/TREES |
|---|---|---|---|---|---|
| BROINE | | VIOSOR | | | JUNVIR |
| POAPRA | | TRIREP | | | |
| PANVIR | | PHYLAN | | | |
| CARBRE | | | | | |
| | | | | | |

| | |
|---|---|
| WPFO or SWLS Observed:<br>☒ NO<br>☐ YES | NOTES (Mgmt, context, mapping, etc):<br><br>Mixed grassland just south of the Platte River. Sandy floodplain mostly dominated by introduced perennial grasses, but some native grasses and forbs present. Poor habitat for orchids. |



Site ID: H2019HA/ME_001_WPFO

Target Species: ☑ Small White Lady Slipper (SWLS) ☑ Western Prairie Fringed Orchid (WPFO)

Project name _____ Completed by NE NHP staff

EO ID_____ Source Feature ID_____ Reference Code_____

# NEBRASKA NATURAL HERITAGE PROGRAM
# ECOLOGICAL COMMUNITY SURVEY FORM

## SURVEY INFORMATION

Form last rev. 5/2014

Survey date 2022 - 05 - 26 (Y/M/D) Surveyor(s), principal surveyor listed first: K. Kottas, L. Gunther

Additional survey work needed? Y **N** Why? If Yes: Determine based on final project route; future monitoring may be necessary due to orchid bloom cycle. If No: Not suitable habitat for orchids

## IDENTIFICATION

Community name N/A - Surveying potential habitat for SWLS/WPFO

Classification problems? Y **N** if Y, explain _____

Photo/slide taken? **Y** N Where has photo/slide been deposited? WESTECH Environmental Photo Repository (e-filed). Photo #: LG1214-1226 (WESTECH)

## LOCATION

Survey site: Tract: NE-HA-310-091.000; NE-ME-310-092.000; NE-ME-310-093.000 County: Hamilton / Merrick

Elevation (range if applicable): _____ m ft

T/R/S/ ¼ ¼ sec and/or directions to site Please refer to WESTECH GIS dataset for the legal description.

GPS Coordinates: Latitude: 41.0965004 Longitude: -97.92710114 Accuracy of the coordinates: ~10 **m** ft

GPS unit type: Internal GPS on cellular device/tablet

What coordinate system, map units, and datum are the above x/y coordinates in (select one)?

| | | |
|---|---|---|
| **Geographic (lat/long), WGS 1984** | UTM (meters) Zone 13, NAD 1983 | UTM (meters) Zone 15, NAD 1983 |
| Geographic (lat/long), NAD 1983 | UTM (meters) Zone 14, NAD 1983 | Other _____ |

Landowner: Private Landowner comments: N/A

Managed Area Name N/A

Is the observed area known to be located within some feature(s) identifiable from an aerial photo (e.g., clump of trees, hay field, lake, road, trail)? **Y** N If so, identify feature Please refer to WESTECH GIS dataset for parcel boundaries and landmarks.

## GENERAL HABITAT DESCRIPTION

Short description of the area where the element is located (physical setting and, when known, land use and natural communities in surrounding area).

Farmland and grazing land in the area. Stretch of habitat 300 feet wide perpendicular to the river in Platte River floodplain. Large area of potential habitat follow the floodplain. Crop to the south.

## SIZE OF ELEMENT OCCURRENCE

Size is a quantitative measure of the area of an occurrence. Rank: A B C D ?

Area of occupancy : 14 $m^2$ hectares $km^2$ $ft^2$ **acres** $miles^2$ Type of measurement: Precise **Estimate**

Observed length: 550 **m** km ft miles Type of measurement: Precise **Estimate**

Indicate whether there is confidence that the observed area represents the full extent of occupied area for the community at that location. **Y** **N** **?** Y = confident full extent is known; N = confident full extent is not known; ? = uncertain

Site ID: H2019HA/ME_001_WPFO

## CONDITION

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the observed area, and the degree to which they affect the continued existence of the occurrence. Components of condition for communities are: 1) development/maturity, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors.

Rank: A B C D ? Hydrology and native species are present. Invasive trees and planted alfalfa reduce good habitat.
Condition rank comments: Solidago canadensis is also dominant in part of this area.

**Dominant Species** (in parentheses behind species include estimate of canopy coverage and **D** for dominants, **C** for common)

Tree canopy JUNVIR, POPDEL

Subcanopy CORDRU

Tall shrub

Short shrub

Herbaceous Swell: CALINV (D), BROTEC (D), PANVIR (C), PASSMI (C)
Swale: CARPEL (D), SOLCAN (D), PHAARU, SPAPEC (C), CAREMO (C), SCHPUN (C), HELAUT, VERHAS (C), DESILL, CIRALT, JUNDUD (C), EQULAN, SIUSUA

Rare species

Exotic species MEDSAT, BROINE, BROTEC

Ecological processes and abiotic physical/chemical factors South of 310-092 was overseeded in MEDSAT.
The alfalfa is not doing well but wet meadow species are abundant and diverse. Eastern Red Cedar is overtaking several areas. There is a newly planted windbreak on 310-091.

Current land use Grazing / hunting

Soil type: Parent material:

Slope 0-10 Aspect MOISTURE: hydric (inundated) wet-mesic (saturated) mesic (moist) dry-mesic xeric (dry)

TOPOGRAPHIC POSITION: crest upper slope mid slope lower slope bottom

## LANDSCAPE CONTEXT

An integrated measure of the quality of biotic and abiotic factors, structures and processes surrounding the observed area, and the degree to which they may affect the continued existence of the community at that location. Rank: A B C D ?
Describe the landscape surrounding the habitat of the occurrence (e.g. land cover, connectivity/fragmentation, condition of habitat).

Situated in the middle of a large stretch of the Platte River floodplain.

Comment on evidence of disturbance (past and current) and alteration of ecological processes in the area surrounding the observation.

Windbreak plantings on the south; alfalfa in the midsection and invading Eastern Red Cedar on the north create adverse conditions for preservation.

**EOrank** (size + condition + landscape context)(see instructions): A B C D ? Eorank date: (Y/M/D)

EOrank summary comments Encroaching trees and human interference with plantings.

## MISCELLANEOUS

Management, research and protection needs for the element at this site (e.g. burning, control exotics, study effects of grazing, protect entire wetland):

Removing JUNVIR would improve habitat. Many of the windbreak trees were not doing well and will further reduce habitat. Alfalfa plantings should be allowed to fade out.

Miscellaneous comments:

Site ID: H2019HA/ME_001_WPFO

Site Photograph:



# Appendix E – 2022 Dakota Skipper (*Hesperia dacotae*) Survey Report

# 2022 Dakota Skipper (*Hesperia dacotae*) Survey Report

**Project Name:**
Summit Carbon Solutions Midwest Carbon Express Project

**Document Number: SCS-0700-ENV-02-RPT-026**

**Date**
2022-08-08

# REVISION HISTORY

| | REVISION | REVISION DESCRIPTION | PREPARED BY: | REVIEWED BY: | APPROVED BY: |
|---|---|---|---|---|---|
| 2022-08-08 | 0 | Final Draft | JB | MC | JZ |
| | | | | | |

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Appendix B – 2022 Dakota Skipper Survey Site Summary Midwest Carbon Express Project

Appendix C – 2022 Dakota Skipper Survey Sites Midwest Carbon Express Project

Appendix D – 2022 Dakota Skipper Survey Forms Midwest Carbon Express Project

# 1 Introduction

Summit Carbon Solutions, LLC (SCS) is preparing for construction of the SCS Midwest Carbon Express (MCE) Project (Project). This survey report presents survey methodologies and results for Dakota skipper (*Hesperia dacotae*), a federally-listed threatened species of butterfly in North and South Dakota (USFWS 2014). Preliminary pre-construction field surveys to identify potentially suitable habitat for Dakota skipper were conducted by Perennial Environmental Services (Perennial) in 2021, and a desktop habitat assessment was conducted by WESTECH Environmental Services, Inc. (WESTECH) in February of 2022. This report documents the results of on-the-ground surveys for Dakota skipper habitat, and Dakota skipper individuals, along the Project route in late June and early July, 2022. Surveys were completed in areas where suitable habitat was identified based on the desktop assessment and previous surveys.

# 2 Field Surveys

## 2.1 Habitat Assessment

Dakota skippers are obligate residents of undisturbed, high-quality prairie including wet-mesic tallgrass prairie and dry-mesic mixed grass prairie in North Dakota, South Dakota, Minnesota, and Canada (Royer and Marrone 1992); they do not inhabit "non-native grasslands, weedy roadsides, tame hayland, or other habitats that are not remnant prairie, including reconstructed prairie (USFWS 2018; 2021; 2022a). According to the U.S. Fish and Wildlife Service (Service):

"High-quality prairie contains a high diversity of native species, including flowering herbaceous species (forbs). Degraded habitat consists of a high abundance of non-native plants, woody vegetation, and a low abundance of native grasses and flowering forbs available during the larval growth period and a low abundance of native flowering forbs available during adult nectaring periods..... Therefore, based on the information above, we identify the necessary physical or biological features for the Dakota skipper as nondegraded native tallgrass prairie and native mixed-grass prairie habitat devoid of non-native plant species, or habitat in which non-native plant species and non-native woody vegetation are maintained at levels that allow persistence of native tall grass species and forbs and, therefore, the persistence of the Dakota skipper" (USFWS 2015).

Non-native grasses such as smooth brome (*Bromus inermis*) or Kentucky bluegrass (*Poa pratensis*), as well as non-native forbs such as Canada thistle (*Cirsium arvense*) or leafy spurge (*Euphorbia esula*), often outcompete native prairie vegetation and lead to the deterioration or elimination of Dakota skipper habitat (USFWS 2015). Smooth brome and Kentucky bluegrass in particular pose the greatest threat to native plant composition in Dakota skipper habitat (USFWS 2018). Further, pastures and prairies that are dominated by non-native grasses and forbs, or areas of cultivation, fragment habitat for Dakota skipper which may be incapable of moving more than 0.6 miles between patches of high-quality prairie habitat (USFWS 2014; 2018). The loss of habitat is the greatest factor in the decline of Dakota skipper (USFWS 2014, Davis 2020).

The Service has defined two types of Dakota skipper habitat, Type A and Type B (USFWS 2022a). Type A habitat consists of low wet-mesic prairie with little topographic relief that occurs on near-shore glacial lake deposits. Type B habitat occurs in the western extent of the Dakota skipper's range, on rolling terrain over gravelly glacial moraine deposits. Table 1 identifies regularly observed plant species for each habitat type.

**Table 1: Common plant species observed during Dakota skipper flight periods by habitat type**

| HABITAT TYPE A | | |
|---|---|---|
| **Common Name** | **Scientific Name** | **Plant Type** |
| **Prairie lily** | *Lilium philadelphicum* | Forb |
| **Bluebell bellflower** | *Campanula rotundifolia* | Forb |
| **Mountain death camas** | *Zigadenus elegans* | Forb |
| **Blackeyed susan** | *Rudbeckia hirta L. var. pulcherrima* | Forb |
| **Big bluestem** | *Andropogon gerardii* | Grass |
| **Little bluestem** | *Schizachyrium scoparium* | Grass |
| **HABITAT TYPE B** | | |
| **Purple coneflower** | *Echinacea angustifolia* | Forb |
| **Purple prairie clover** | *Dalea purpurea* | Forb |
| **White prairie clover** | *Dalea candida* | Forb |
| **Yellow sundrops** | *Calylophus serrulatus* | Forb |
| **Prairie groundsel** | *Packera plattensis* | Forb |
| **Little bluestem** | *Schizachyrium scoparium* | Grass |
| **Needle-and-thread and porcupine grasses** | *Hesperostipa comata*<br>*Hesperostipa spartea* | Grass |

Source: USFWS 2022b

Because Dakota skipper have very specific habitat requirements, identifying suitable habitat for occupancy surveys is a key step in determining where, or if, to conduct surveys (USFWS 2022a). Potential locations of suitable habitat for Dakota skipper within the Project footprint were discussed with the Service in January 2022 (informal consultation January 25, 2022). The Service recommended using modeled Dakota skipper habitat (USFWS 2022b) to help identify landscape-level areas that have historically supported the species, combined with recent records of Dakota skipper presence, aerial imagery, and any field data to determine potentially suitable Dakota skipper habitat. The Service also noted that if occupancy surveys could not be completed due to the short flight window, weather constraints, or lack of access, that determining habitat suitability in lieu of occupancy surveys was appropriate and the best alternative (informal consultation January 25, 2022).

Based on this direction, WESTECH utilized a variety of measures to identify potentially suitable habitat on the Project prior to field investigation, including a review of: a) mapped Dakota skipper habitat (USFWS 2022b); b) Dakota skipper occupancy records (USFWS 2018; Davis 2020); c) aerial imagery; and d) pre-construction habitat assessments by Perennial. These areas were presented in the *Summit Carbon Solutions Midwest Carbon Express 2022 Dakota Skipper Study Plan* (WESTECH 2022) which was provided to the Service for review and comment; no comments were received, and both the North Dakota and South Dakota field offices stated that the study plan was acceptable (pers. comm. Charlene Bessken USFWS South Dakota Ecological Services Field Office to John Beaver WESTECH on April 6, 2022; Heidi Riddle USFWS North Dakota Ecological Services Field Office to John Beaver WESTECH on April 21, 2022).

Surveys were led and supervised by biologist Jim Reiser. Mr. Reiser possesses Service recovery permit (Permit number TE66113B-1) to conduct and directly supervise Dakota skipper surveys and has over 40 years' experience in *Lepidoptera* survey, including several surveys specifically for Dakota skipper. Additional qualified biologists who worked under the direct, on-site supervision of Mr. Reiser included: JT Reiser, John Beaver, Pete Christensen, and Dave Hagen. JT Reiser has over 10 years' experience in *Lepidoptera* survey, including numerous surveys for Dakota skipper and their habitat. Messrs. Beaver, Christensen, and Hagen all have previous experience in completing surveys for Dakota skipper, their habitat, or surveys for other rare *Lepidoptera* (e.g., Carson wandering skipper (*Pseudocopaeodes eunus obscurus*) or monarch (*Danaus plexippus*)), as well as extensive experience in prairie vegetation surveys. Mr. Dan Culwell also participated in surveys and operated the sub-meter GPS units to record survey tracks and to ensure surveys occurred within the appropriate survey corridor and on property where access was granted by the landowner.

Surveys to identify Dakota skipper habitat, and complete occupancy surveys for the species where suitable habitat is present, were scheduled for the adult flight period which typically occurs in late June/early July when flowering plants are at the optimal phenological stage (USFWS 2018). In 2022, Dakota skipper emerged somewhat later than typical with the first individual observed and recorded on July 2, 2022 (pers. comm. Jerry Reinisch USWFS Biologist to Jim Reiser July 2, 2022). Because Dakota skipper occupancy surveys prior to this date were not considered valid in 2022, Project biologists focused efforts on assessing habitat that had been identified as potentially suitable for Dakota skipper in order to eliminate areas from occupancy survey that could not support the species. This method allowed for an assessment of habitat when plants were readily identifiable and prioritized sites for the more intensive occupancy surveys as described in the *2022 Dakota Skipper (Hesperia dacotae) North Dakota Survey Protocol* (USFWS 2022a). As noted above, assessing habitat prior to implementing occupancy surveys is a key criterion of the protocol. To assist in identifying Dakota skipper habitat, all biologists visited Ordway Prairie in South Dakota and Cross Ranch in North Dakota to observe habitat characteristics in two areas that have supported Dakota skipper in the past. Both of these properties are owned by The Nature Conservancy and are in the vicinity of the Project. Further, Mr. Reiser has completed several previous surveys for Dakota skipper at the Ordway Prairie site.

The Project preliminarily identified 70 areas of potentially suitable habitat on 115 property tracts along the route. Further investigation of aerial imagery eliminated several sites prior to survey as more recent aerial photos showed cultivation or other disturbance at these sites. Ultimately, 56 areas of potentially suitable habitat were identified for on-the-ground survey if access was available; an overview of survey sites is presented in Figure 1.

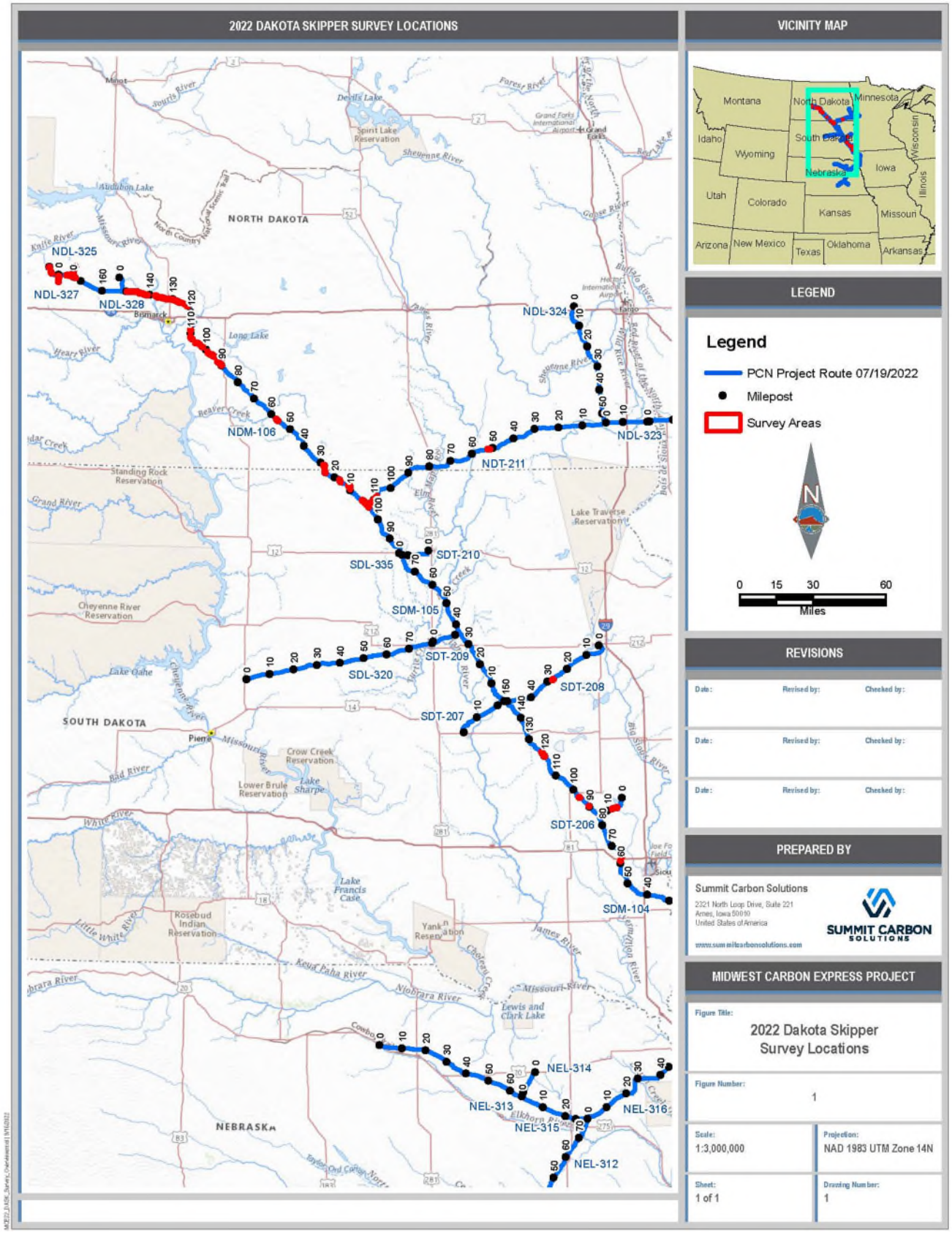


**Figure 1: Dakota Skipper Survey Locations**

At each survey site where access was allowed, biologists recorded dominant vegetation, recorded all butterfly species observed, photographed the site, and determined if the area was consistent with suitable habitat characteristics for Dakota skipper. In some areas where access was not allowed, biologists could view the habitat from a public roadway or an adjacent parcel and determine if the area provided suitable habitat.

All butterfly species that were observed at a site were identified, if possible, either through capture and safe release, or at a distance. Primary resources for identifying butterflies included a review of specimens previously collected by Mr. Reiser and available on-site, as well as *Kaufman Field Guide to Butterflies of North America* (Kaufman 2006), *National Audubon Society Field Guide to North American Butterflies* (Pyle 1981), *Field Guide to Butterflies of South Dakota* (Marrone 2002), and *Butterflies of North Dakota: An Atlas and Guide* (Royer 1988).

As further described in Section 3 of this report, only two accessible areas on the Project supported suitable habitat for Dakota skipper and warranted further occupancy surveys. Instead, almost all sites were dominated by one of two non-native grasses, smooth brome or Kentucky bluegrass; both of these species indicate unsuitable Dakota skipper habitat as described above. Biologists used several lines of evidence to determine if a site supported suitable habitat for Dakota skipper, including: 1) the description of Dakota skipper habitat provided by the Service in numerous publications (USFWS 2014; 2015; 2018; 2021; 2022a), 2) comparison with the two reference areas (Ordway Prairie and Cross Ranch), and 3) Mr. Reiser's experience in surveying, and locating, Dakota skipper on previous efforts.

### 2.2 Occupancy Survey

At the two accessible sites where suitable habitat was present, surveys were conducted within a 300-feet wide Environmental Study Area (ESA) that was centered on the proposed pipeline centerline (i.e., 150 feet either side of the Project centerline). This survey width was the allowable access space on each property consistent with landowner agreement. Per the Service's Dakota skipper survey protocol, walking routes within the survey area were established to ensure the entirety of each habitat patch was adequately surveyed. Biologists slowly walked routes parallel to each other and spaced approximately 10 meters apart in accordance with the survey protocol (USFWS 2022a). Surveys were completed after 1000 hours (10:00 am) when air temperatures were above 70˚ F, wind speeds were less than 19 miles/hour, and skies were primarily clear. Three repeat surveys were completed at each of the two sites. Although it is preferable if surveys are completed at least 48 hours apart, in some cases this amount of time could not be allowed between surveys to avoid inclement weather and still complete the survey within the flight window. In these cases, surveys were completed under optimal weather conditions at least 24 hours apart. In addition to a general site description form that was completed at all sites, a Dakota Skipper Flowering Plant Line Count Data Sheet was completed at each site on each day of occupancy survey. Surveys followed the *2022 Dakota Skipper (Hesperia dacotae) North Dakota Survey Protocol* (USFWS 2022a) which is provided in Appendix A.

## 3 Results

No Dakota skipper were observed at the two areas that support suitable habitat for the species, or at any of the other survey sites. Butterfly species that were observed at a site are listed on the survey forms in Appendix D. As

noted above, most areas that were accessible, or visible from a public road or adjacent parcel, were dominated by the non-native grasses smooth brome or Kentucky bluegrass. Few to no native plant species were present at most sites. Appendix B lists each survey site, summarizes vegetation at the site, and classifies habitat suitability. Appendix C depicts all the sites along with each site's habitat suitability and access status, and Appendix D contains field forms for all sites where survey was completed, including survey to determine if suitable habitat was present even if subsequent occupancy surveys were not completed. If suitable habitat was not present at a site, it was given a code of No_Hab_DASK_#. If suitable habitat was present, the site was named according to the Project's protocol of Habitat (H) Crew # (e.g., 2017), County Code, Site #, and Species Code (e.g., DASK).

Suitable habitat for Dakota skipper was observed at two sites on the Project: site H2017ME001_DASK (two acres within the ESA) at the western terminus of the Project in Mercer County, North Dakota; and site H2018BU001_DASK in Burleigh County, North Dakota, on the east side of the Missouri River (18 acres). The Mercer County site is part of a large, contiguous native grassland that is minimally invaded by non-native species and supports little bluestem, needle-and-thread, and purple coneflower in addition to other native vegetation that could provide nectar sources for Dakota skipper. Although site H2017ME001_DASK is the most suitable habitat that was surveyed for the Project, ridgelines and knolls that support greater density of little bluestem and purple coneflower were observed to the north and east of the Project boundary, indicating that additional habitat for Dakota skipper occurs outside the survey area as well. Three surveys for Dakota skipper were completed at this site; none were observed. A summary of butterflies that were observed at the site, as well as flowering plant counts, photos, and other field notes are provided in Appendix D. Subsequent to the Dakota skipper occupancy survey, the Project elected to avoid this area of suitable habitat by moving construction disturbance outside of the suitable habitat and into a pasture dominated by smooth brome south of site H2017ME001_DASK; consequently, this habitat would not be affected.

The Burleigh County site is dominated by needle-and-thread grass; there is less purple coneflower and little bluestem than at the Mercer County site although both of these species are present in small, dispersed areas, as well as other native species that could serve as nectar sources for Dakota skipper. Unlike the Mercer County site, this site occurs in a more fragmented landscape; much of the habitat within 0.6 miles of this site is either non-native pasture dominated by smooth brome, or residential. Consequently, it is unlikely that Dakota skipper would access this habitat from surrounding areas as they are unlikely to move more than 0.6 miles (USFWS 2014; 2018) Three surveys for Dakota skipper were completed at this site; none were observed. A summary of butterflies that were observed at the site, as well as flowering plant counts, photos, and other field notes are provided in Appendix D.

Sixteen areas totaling approximately 679 acres within the ESA could not be accessed to determine if suitable habitat was present. However, some of these areas could be viewed from public roads or were viewed from adjacent parcels where access was allowed. In order to evaluate the potential for suitable habitat to occur within inaccessible areas, a rating system was developed to rank the likelihood of suitable habitat presence. The following criteria were assessed for suitable habitat on each inaccessible parcel:

A. Suitable habitat present on one side of inaccessible parcel.
B. Suitable habitat present on both sides of inaccessible parcel.
C. Suitable habitat visible from public road.

D. Aerial image indicates potentially suitable habitat in areas that cannot be seen from a public road or adjacent parcel.

E. Site is within one mile of potentially suitable habitat (identified either from aerial imagery or survey of proximal parcels).

In each case a value of 1 was assigned for a positive response and a value of 0 was assigned for a response of no data (e.g., a site was not viewed from one side on an adjacent parcel, or a site was not viewed from a public road). In addition, a value of -1 could be assigned to criteria A, B, or C if habitat was determined unsuitable from those vantage points. This method therefore weighted on-the-ground observations from proximal areas more heavily than remote data. For example, if aerial imagery of inaccessible parcels indicated potentially suitable habitat, this score of 1 could be negated or confirmed by an observation from an adjacent parcel or public road. The sum of each criterion was calculated for each site as an indicator of the potential for suitable habitat within the site. An assessment of these scores was given the following ranking:

- Scores ≥ 3: The site likely contains areas of suitable habitat.
- Scores 1 – 2: The site potentially contains areas of suitable habitat.
- Scores <1: The site likely is unsuitable habitat.

Areas rated ≥ 3 occur in two inaccessible areas of the Leola Hills in McPherson County, South Dakota; these sites total approximately 114 acres within the ESA. The Leola Hills are untilled, glacial deposit moraines (Martin et al. 2004) and contain native prairie remnants (e.g., Ordway Prairie approximately 3.5 miles southwest of the Project). Although suitable habitat may be present on the route in the Leola Hills, the portion of the Project immediately southeast of the Leola Hills that could be accessed near Milepost 112 on route NDT-111 did not provide suitable habitat (site No_Hab_DASK_027). This area had not been tilled historically but was nonetheless dominated by the non-native grasses smooth brome and Kentucky bluegrass, with some significant areas of leafy spurge. Although some native species persisted within this area, it lacked little bluestem and purple coneflower, and it did not provide, "nondegraded native tallgrass prairie and native mixed-grass prairie habitat devoid of non-native plant species, or habitat in which non-native plant species and non-native woody vegetation are maintained at levels that allow persistence of native tall grass species and forbs and, therefore, the persistence of the Dakota skipper" (USFWS 2015). Consequently, although the two inaccessible areas in the Leola Hills are rated as likely to contain suitable habitat, any suitable habitat may occur in small areas on hilltops and ridges while the remaining areas may be dominated by non-native grasses as occurs at Milepost 112. This situation also occurred at Ordway Prairie where the only suitable habitat occurred on hilltops and ridges, while swales and lower areas were dominated by smooth brome and Kentucky bluegrass.

Three inaccessible areas rated scores of 1 or 2. The northernmost site occurs at approximately Milepost 3.5 on route NDL-325 in Mercer County, North Dakota. The site is approximately 29 acres within the ESA and is approximately 2 miles south of the highest quality habitat that was located on the Project (H2017ME001_DASK). This inaccessible site could not be observed from public roads or adjacent parcels; however, aerial imagery indicates suitable habitat may be present and the area is proximal to known suitable habitat. A second area of potentially suitable habitat occurs at approximately Milepost 134 on route NDM-106 adjacent to the other area of suitable habitat that was located on the Project, site H2018BU001_DASK in Burleigh County, North Dakota. This area contains approximately 25 acres within the ESA. The eastern extent of the site appeared dominated by smooth brome from the adjacent parcel and would not provide suitable habitat; however, surveyors could not

determine vegetation composition or habitat suitability from a distance on the higher ridges and knobs within this site. Consequently, the site was conservatively rated as potentially suitable. The final site contains approximately 13 acres within the ESA near Milepost 95.7 on route SDM-104 in Lake County, South Dakota. The site could not be viewed from adjacent parcels or public roads and occurs in an area of glacial potholes that could provide suitable habitat in untilled areas if those areas are not dominated by smooth brome or other non-native species. Most grasslands in this area are dominated by non-native grasses; however, since surveyors could not definitively determine habitat composition for this site it was conservatively rated as potentially suitable.

Eleven sites totalling approximately 499 acres within the ESA rated scores of <1; habitat at these sites is likely unsuitable. These areas occur primarily either side of the Missouri River in North Dakota, and in glacial pothole terrain either side of the Leola Hills in McPherson County, South Dakota. Aerial imagery at all of these sites indicates the potential for suitable habitat; however, field observations from either adjacent parcels and/or public roads revealed that these areas are dominated by non-native grasses and forbs that do not provide suitable habitat for Dakota skipper. Consequently, these areas were rated as likely unsuitable habitat based on field observations that negated the original aerial photo interpretations.

In total, 40 separate sites totaling approximately 1,178 acres were assessed within the ESA; only two sites totaling approximately 20 acres, or 1.6 percent of the surveyed area, contained suitable habitat for Dakota skipper. This lack of suitable habitat is consistent with the Service's assessment that very limited habitat for Dakota skipper remains within its former range due primarily to cultivation and the dominance of non-native vegetation which has replaced high-quality native prairie (USFWS 2018).

Table 2 summarizes habitat along the Project within North Dakota and South Dakota by county. Sites with likely or potentially suitable habitat that were not available for survey in 2022 are scheduled for survey in 2023 if access is available. Similarly, a second season survey at site H2018BU001_DASK is scheduled for 2023 consistent with survey protocol (USFWS 2022a); a second season survey at site H2017ME001_DASK is not schedule in 2023 since the Project footprint would now avoid this habitat and would be located in unsuitable habitat.

**Table 2: Dakota skipper suitable habitat, unsuitable habitat, and likelihood of suitable habitat by state and county**

| County | Suitable Habitat (Acres) | Unsuitable Habitat (Acres) | Likely Suitable (Acres) | Potentially Suitable (Acres) | Likely Unsuitable (Acres) | Total Acres |
|---|---|---|---|---|---|---|
| **NORTH DAKOTA** | | | | | | |
| **BURLEIGH** | 18 | 369 | | 25 | 149 | 561 |
| **DICKEY** | | | | | 37 | 37 |
| **EMMONS** | | 148 | | | 65 | 212 |
| **MCINTOSH** | | 30 | | | 31 | 60 |
| **MERCER** | 2 | 0 | | 29 | | 31 |
| **MORTON** | | 120 | | | 105 | 225 |
| **OLIVER** | | 177 | | | | 177 |
| **TOTAL NORTH DAKOTA** | **20** | **844** | **0** | **53** | **386** | **1303** |
| **SOUTH DAKOTA** | | | | | | |
| **CLARK** | | 16 | | | | 16 |
| **KINGSBURY** | | 64 | | | | 64 |
| **LAKE** | | 41 | | 13 | | 53 |
| **MCPHERSON** | | 167 | 114 | | 113 | 394 |
| **MINNEHAHA** | | 27 | | | | 27 |
| **TOTAL SOUTH DAKOTA** | **0** | **314** | **114** | **13** | **113** | **554** |

# 4 References

Davis, K.A. 2020. The Status of Dakota Skipper (Hesperia dacotae Skinner) in Eastern South Dakota and the Effects of Land Management. Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange.

Kaufman, J.P. 2006. Kaufman Field Guide to Butterflies of North America. Mariner Books. 392 pages.

Martin, J.E., J.F. Sawyer, M.D. Fahrenbach, D.W. Tomahve, and L.D. Schulz. 2004. Geological Map of South Dakota. The Geologic Survey, Department of Environment and Natural Resources. Available at: http://www.sdgs.usd.edu/pubs/pdf/G-10.pdf. Accessed September 2022.

Marrone, G.M. 2002. Field Guide to Butterflies of South Dakota. South Dakota Game, Fish, and Parks. 478 pages.

Pyle, R.M. 1981. National Audubon Society Field Guide to North American Butterflies. Alfred A. Knopf, Inc. 928 pages.

Royer, R.A. 1988. Butterflies of North Dakota: An Atlas and Guide. Minot State University. 192 pages.

Royer, R.A., and G.M. Marrone. 1992. Conservation Status of the Dakota Skipper (Hesperia dacotae) in North and South Dakota. A report to the United States Department of the Interior Fish and Wildlife Service Denver Colorado. 44 pages + appendices

US Fish and Wildlife Service. 2014. Endangered and Threatened Wildlife and Plants; Threatened Species Status for Dakota Skipper and Endangered Species Status for Poweshiek Skipperling; Final Rule Federal Register 79:63672-63748.

US Fish and Wildlife Service. 2015. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Dakota Skipper and Poweshiek Skipperling; Final Rule Federal Register 80:59248-59384

US Fish and Wildlife Service. 2018. Dakota skipper (Hesperia dacotae) Report on the Species Status Assessment Version 2 – September 2018. 97 pages.

US Fish and Wildlife Service. 2021. Recovery Plan for the Dakota Skipper (*Hesperia dacotae*). September 2021. US Fish and Wildlife Service, Great Lakes Region, Bloomington, Minnesota. Accessed February 2022.

US Fish and Wildlife Service. 2022a. 2022 Dakota Skipper (*Hesperia dacotae*) North Dakota Survey Protocol. US Fish and Wildlife Service Mountain-Prairie Region, Region 6. Denver, Colorado.

US Fish and Wildlife Service. 2022b. Dakota skipper (*Hesperia dacotae*). ECOS Environmental Conservation Online System. Available at: https://ecos.fws.gov/ecp/species/1028. Accessed January 14, 2022

WESTECH Environmental Services, Inc. 2022. Summit Carbon Solutions Midwest Carbon Express 2022 Dakota Skipper Study Plan. March 4, 2022. 4 pages + appendices.

# Appendix A –
# 2022 Dakota Skipper (*Hesperia dacotae*) North Dakota Survey Protocol

# 2022 Dakota Skipper (*Hesperia dacotae*)
# North Dakota Survey Protocol



*Photo credit: Jerry Reinisch*


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# 2022 Dakota Skipper Survey Protocol

Assessing Sites for Dakota Skipper Presence in North Dakota

## Background & Purpose

This protocol is offered as a recommended approach when conducting occupancy surveys on grasslands in North Dakota where and when the objective is to detect the presence of the Dakota skipper (*Hesperia dacotae*) at the site scale. This protocol is designed to address the species' likelihood and level of occupancy at the site scale when and where little or no pre-existing information is available to determine if the species is present. This protocol may be used in other states if agreed to by Ecological Services field office personnel in those states.

This protocol can be used for surveys for which the primary objective is to monitor the species' abundance or population status and trend over extended timeframes or large spatial scales. The current range map for Dakota skipper is included in Appendix A.

This document provides the user with information to decide where surveys for the Dakota skipper may be warranted; standardized 'ground rules' to help ensure that survey methods are repeatable and results will be as reliable as possible; and outlines how to report survey data to the FWS. The reliability of survey results for Dakota skippers depends on several factors, including: the abilities and expertise of observers; survey timing relative to the species' flight period; time of day and weather conditions; and, the species' density. The species' flight period varies somewhat from year to year depending on annual variations in weather (Dearborn and Westwood 2014, entire).

For additional information on Dakota skipper ecology and threats to its continued existence contact the U.S. Fish and Wildlife Service North Dakota Ecological Services Field Office (NDFO) or visit the following website:

http://ecos.fws.gov/ecp/species/1028

## Historical and Current Dakota Skipper Distribution in North Dakota

The Dakota skipper inhabits grassland habitat in north-central United States andsouthern Canada. In the United States, the species occurs in portions of Minnesota, North Dakota, and South Dakota. The species is currently presumed to be absent from Illinois, Iowa,and eastern Minnesota (79 FR 63672:63667).

**The 2022 Township Map (Appendix A)** depicts observations of the Dakota skipper at the township level in North Dakota where the species has occurred historically within the last 30 years (McCabe 1981, p. 179-193).

**Making a Decision to Conduct an Occupancy Survey**

Site Assessments and Delineating the Survey Areas

To determine whether surveys for Dakota skippers are warranted, we recommend first delineating the area that may be affected (directly or indirectly), by the proposed or ongoing action referred to as the action area[1]. The action area should be entered into IPAC to determine if DASK could be associated with the area, the second step would be to assess whether Dakota skipper suitable habitat is present. We recommend contacting the NDFO for assistance for survey decisions [2]. By comparing the IPAC analysis to the current township occurrence and DASK range map occupancy surveys can be justified.

Determining if Dakota skipper habitat is present requires an assessment of the vegetation. Sites containing native prairie grassland and having features indicative of Dakota skipper habitat, described on pages 7-9 of this document, may harbor the species[3]. **Dakota skippers are not likely to be present in cropped areas, previously cropped areas, non-native haylands, pasture or other grassland that is dominated by non-native species, or in areas where trees or shrubs predominate.The species occurs in some grazed lands that are dominated by native prairie vegetation.**

Dakota skipper habitat often occurs in a patchy mosaic pattern on the landscape due to underlying site characteristics, prior land management, and other factors. Occupancy surveys are conducted during the flight period and are performed within the patches that contain features and conditions typical of Dakota skipper habitat. Surveys should encompass a 250 meter buffer to adjacent habitat when nectar sources are present, in bloom, and in close proximity to other suitable habitat.The habitat patches should be mapped (location and size) in order to evaluate the landscape habitat connectivity.

The proximity of habitat patches informs how a site of interest may play a role in the species viability in a given landscape, in regards to reproduction, movement and persistence (Haddad 1999, entire). The detection rate for the species has not been modeled under differing densities (due to habitat, weather, or population factors), so the only means of reducing the risk of incorrectly concluding the species is not present, when it actually is present is to increase survey effort. For this reason, we recommend surveys be conducted for a minimum of two consecutive seasons (flight periods).

[1] Action area is defined as all areas that may be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. It encompasses the geographic extent of environmental changes (i.e., the physical, chemical and biotic effects) that will result directly and indirectly from the action. The action area may be up to 1 km (0.6 mi) larger than the area

[2] There remains a potential that the species may currently reside in some counties listed as 'presumably absent' due to the incomplete nature of past survey efforts. An IPAC search would assist with determining presence.

[3] For a more detailed description of typical Dakota skipper habitat features, see 79 FR 63672:63674-63675.

Alternatively, if it is not practicable to complete two seasons of surveys, the survey effort within one season of surveys should be increased by surveying all suitable Dakota skipper habitat and recording total number of DASK out to a minimum of 250 m (820 ft) from the site of interest. In the special case when the site of interest is within 1 km (0.6 mi) of an established population of Dakota skippers, we recommend the buffer distance be increased to 500 m (0.3 mi) due to the importance of knowing the precise distribution of occurrence of the species in these areas.

If the action area is included in an area designated by the National Weather Service as being in an extreme or exceptional drought status, two years of occupancy surveys are required to establish the status of the Dakota skipper. This drought status is updated by the National Weather Service weekly on the Drought Monitor Map.

In some cases, occupancy survey results from prior years may be available for the site, section, or township of interest. This may be used to inform the likelihood of occupancy at the site. For example, if there is a known location where the species has been documented within 1 km (0.6 mi) of the site of interest, and there is sufficient connectivity between the two sites, occupancy may be assumed by consulting with the Service. In other instances, there may be three or more years of pre-existing surveys at a site that resulted in no detections of Dakota skippers, which may be sufficient to conclude the species is not present. We recommend that you coordinate with the NDFO to ensure survey results being being considered are reliable with regard to the Dakota skipper's status at a site.

Persons with sufficient expertise in prairie ecology, Dakota skipper ecology, or both should preview sites before the flight period to delineate survey areas. Pre-survey reconnaissance of action area and 250 meter buffer could facilitate efficient use of limited surveyor time by delineating habitat patches that should be surveyed during the flight period. In some cases, occupancy surveys may be limited to those habitat patches directly affected by the footprint of the action.

**Minimum Qualifications for Surveyors**

Dakota skippers are not readily identified in the field without specialized training and experience. Therefore, agencies and others who want to determine whether or not the species is present in an area must secure the assistance of individuals who are qualified to carry out scientifically credible surveys and who are permitted by the USFWS to complete these surveys.

The Service assesses the qualifications of individuals pursuant to the following criteria:

1. Demonstrated ability to complete surveys for Dakota skippers or similar species and prepare technical reports to convey results along with working with a permitted surveyor for one season (able to obtain reference from the permitted surveyor); and,

2. Previous experience surveying and identifying Dakota skippers. Exceptions may be made for persons with prior experience with similar species and/or extensive experience with other butterfly species – e.g., extensive experience conducting surveys for other rare butterfly species.

Persons who may attempt to capture Dakota skippers during surveys need to obtain a permit from the Service (see, https://fwsepermits.servicenowservices.com/fws). A list of persons who have obtained such permits and who have agreed to allow the Service to release their contact information may be obtained from the NDFO. To obtain a permit please contact theService's Endangered Species Permit Coordinators in the Midwest and Mountain-Prairie regional offices or download the permit application form at https://fwsepermits.servicenowservices.com/.

**Survey Ground Rules**

FWS recommends that surveys adhere to the following 'ground rules' to ensure that results will beuseful for determining whether Dakota skippers may be present in the survey area. **For project action areas of greater than 10 acres the Service recommends the use of more than one permitted surveyor whenever possible. Time expended during a survey effort should be recorded and included in the annual report (See Additional Recommendations Section for suggested rates).**

*Timing & Number of Surveys*

The initiation date for surveys is a critical component of data reliability for the Dakota skipper. Multiple surveys (minimum of three (3) during the flight period) are necessary to determine the species' likelihood of occurrence at a site because the species is exceptionally difficult to detect because the species often occurs at low density and it is difficult to identify. The start of the flight period varies considerably among years (Rigney 2013, p. 138; Dearborn and Westwood 2014, entire), but typically begins in mid to late June in North Dakota. The flight period occurs one time period per year and may last 13-19 days or less at any given site (e.g., Rigney 2013, p. 138). Recent information related to emergence in North and South Dakota (Skadson 2018, pers. comm.) place the flight period sometime between June 12th to July 15th.

- To ensure that surveys are initiated at the proper time (encompassing the peak of the flight period) requires documentation of the following:
    - emergence at one or more reference sites in North Dakota[3], where the species occurs on an annual basis, and
    - the flowering plants within the action area are at the optimum phenological stage (see the section entitled *Phenological Indicators*)
      In all survey areas for Dakota skipper the entire action area and 250 m buffer should be surveyed. Total numbers of DASK observed would be recorded for each survey and
    - three (3) survey days have been completed of the action area and buffer during the *peak*[4] of the flightperiod; or
    - at least two (2) surveys of the entire action area and buffers have been conducted during the peakflight period over a two consecutive year period (this option is available in cases where prolonged unfavorable weather conditions may preclude three surveys at a location during the flightperiod).

[3] Select the reference sites that are nearest to the site in question;

[4] The likelihood of detecting Dakota skippers is low during the early and late stages of the 13-19-day flight period and may be highest during an approximately five-day period when the male flight overlaps with the peak of the female flight (Rigney 2013, p. 140).

**If the action area is included in an area designated by the National Weather Service as being in an extreme or exceptional drought status, two years of occupancy surveys are required to establish the status of the Dakota skipper. This drought status is updated by the National Weather Service weekly on the Drought Monitor Map.**

Surveys:

- should be conducted between 1000 and 1730 hours (10:00 am – 5:30 pm); times can be adjusted to particular time zones where the surveys occur and by individual surveyor's preference based on experience..
- should never be conducted during periods of fog, drizzle, or rain;
- are recommended to be conducted only during periods of sustained or gusting winds that average *less than* 30 km/hr (19 mi/hr) measured during a 30 second period, at a height of 1.2-1.8 m (4-6 ft) above ground level (*corresponding to a Beaufort Scale of 4 or less*);
- are recommended to be conducted when temperature in the shade at ground level is less than $21^0$ C ($70^0$ F) and the cloud cover is less than 50 percent, or less than $30^0$ C ($86^0$ F) when cloud cover is 50 percent or more..
- Survey transect coordinates are available from NDFO for verifying Dakota skipper flight dates for permitted surveyors (included coordinates and access procedures). Be sure to contact agencies or land owners and obtaining any necessary permits prior to conducting surveys.

- The three (3) surveys during one flight period should be separated by 48 hrs unless doing so would result in subsequent surveys occurring past the *peak* of the flight period. This recommendation to conduct field surveys on separate days is intended to increase the likelihood of detection. Given the short duration of the Dakota skipper flight period, surveys will not be rejected when they are not separated by 48hrs ***if*** justification is given, and, surveys are conducted under optimal weather conditions.

*Phenological Indicators*

Documentation of the phenological indicators is typically the most important consideration when deciding the date to initiate the first survey of the flight period. Phenological indicators also can aid a retrospective assessment of whether a previous survey for Dakota skipper was appropriately timed. There are two types of phenological indicators to consider: the emergence of other butterflies and the availability/abundance of nectar sources.

The phenological progression of adult butterfly emergence in a Manitoba, Canada study area occurred as follows: European skipper (*Thymelicus lineola*), long dash (*Polites mystic*), tawny-edged skipper *(P. themistocles),* Peck's skipper (*P. peckius*), Dakota Skipper, silver-spotted skipper (*Epargyreus clarus*) and dun skipper (*Euphyes vestris*; Rigney 2013, p. 14). Peck's

skipper, which is similar in appearance to Dakota skipper, emerged "immediately before and at the same time as Dakota Skipper" and that dun skipper emerged "near the end of the Dakota Skipper flight period" (Rigney 2013, p. 141). Notably, the peak flight period for the wood nymph (*Cercyonis pegala*), a conspicuous species in many Dakota skipper habitats, corresponded to the emergence of Dakota skippers (Rigney 2013, p. 141). Thus, life history of other butterfly species can be very useful towards informing the timing of the peak flight period for Dakota skippers.

Plant phenology is also a reliable means to establish the timing of Dakota skipper surveys. The abundance and diversity of flowering plants should be used to better understand the preferred nectar sources of butterflies. Therefore, dominant floristic data should be reported as part of the data collection for each survey. The form included in the survey protocol can be used as an example (Appendix B).

In North Dakota, Dakota skippers are found in the following two general habitat types:

1. **Type A Habitat**

The first type is a low-lying, wet-mesic prairie with little topographic relief that occurs on near-shore glacial lake deposits. Royer et al. (2008, p. 14-16) referred to this as Type A Dakota skipper habitat.

Although Type A habitats vary throughout the growing season (Rigney 2013), during Dakota skipper's flight period, three plant species are almost always present and blooming: prairie lily *(Lilium philadelphicum),* bluebell bellflower (*Campanula rotundifolia),* and mountain deathcamas (smooth camas; *Zigadenus elegans)* - the latter appears to be an especially strong indicator of Dakota skipper Type A habitat in North Dakota (McCabe 1981, p. 190; Royer et al. 2014, p. 1).

Later in the season, common forbs in bloom in Type A habitat include Rocky Mountain blazing star *(Liatris ligulistylis),* Canada goldenrod *(Solidago canadensis),* strict blue-eyed grass *(Sisyrinchium montanum),* common goldstar (yellow star grass; *Hypoxis hirsuta),* and blackeyed Susan (Lenz 1999, p. 6). Type A habitats also contain small patches of dry-mesic prairie inhabited by Dakota skippers. Stiff sunflower *(Helianthus pauciflorus Nutt. ssp. pauciflorus)* and candle anemone *(Anemone cylindrica)* are typical in these dry-mesic habitats; purple coneflower *(Echinacea angustifolia),* an indicator of Type B habitats (see below) may be present, but is rare in these dry-mesic 'inclusions' (Lenz 1999, p. 6-11).

Plants that are important as nectar sources for Dakota skipper 'Type A' habitats appear to vary geographically, but blackeyed Susan *(Rudbeckia hirta L. var. pulcherrima)* is significant throughout the range of this habitat type. Habitat conservation value for Dakota skippers may be greater at sites where the presence of a variety of species that serve as nectar sources occurs because plant species likely vary in their energetic value or availability during the adult flight period (Dana 1991, p. 48).

Big bluestem *(Andropogon gerardii)* and little bluestem (*Andropogon scoparius*) are typically the dominant grasses in North Dakota 'Type A' habitats and indiangrass

*(Sorhastrum nutans)* may also be present (Royer et al. 2014, p. 1). Dakota skipper adults are typically encountered in "pre-floral stands" of these grass species where they are associated with the forb species described above (Royer et al.2014, p. 1).

### 2. Type B Habitat

Dakota skipper Type B habitat (Royer *et al.* 2008, p. 14), typically supports a high diversity and abundance of native forbs, including purple coneflower, purple prairie clover *(Dalea purpurea),* white prairie clover (D. *candida),* yellow sundrops *(Calylophus serrulatus),* lambstongue groundsel *(Senecio integerrimus),* groundplum milkvetch *(Astragalus crassicarpus),* eastern pasqueflower *(Pulsatilla patens),* old man's whiskers (prairie smoke, *Geum triflorum),* western silver aster *(Symphyotrichum sericeum),* dotted blazingstar *(Liatris punctata),* tall blazing star (L. *aspera),* meadow zizia (heartleaf golden alexanders; *Zizia aptera),* blanket flower *(Gaillardia sp.),* prairie sagewort *(Artemisia frigida),*and leadplant *(Amorpha canescens)* (Skadsen 2006, p. 1-2). Prairie milkvetch *(Astragalus laxmannii Jacq. var. robustior)* also occurs in 'Type B' habitats in Minnesota(Dana 1997, p. 8).

In the rolling terrain of river valleys and the Missouri Coteau of North Dakota, on the western edge of the species' known range, Dakota skippers inhabit a variant of 'Type B' habitats (Fig. 5). These habitats typically contain an association of little bluestem, big bluestem, and needlegrasses that is often invaded by Kentucky bluegrass *(Poa pratensis)* (Royer and Marrone 1992, p. 22). These prairies, also typically contain prairie lily, bluebell bellflower, coneflowers, and other asters as nectar sources; in some areas, mountain death camas also occurs (Royer and Marrone 1992, p. 22).

Type B habitat (Royer *et al.* 2008, p. 14), occurs primarily on rolling terrain over gravelly glacial moraine deposits and is dominated by big bluestem, little bluestem, and needle or porcupine grasses *(Hesperostipa spp.)* (Fig. 4). As in 'Type A' habitats, bluebell bellflower and prairie lily are present in 'Type B' habitats, but they support more extensive stands of purple coneflower, upright prairie coneflower *(Ratibida columnifera),* and common gaillardia (blanketflower; *Gaillardia aristata)* (Royer et al. 2014, p. 1-2). Each of these is a documented nectar source for the Dakota skipper in 'Type B' habitats (McCabe 1981; Dana 1991).

Little bluestem and porcupine grass *(Hesperostipa spartea)* are the predominant grass species in South Dakota 'Type B' habitats, but side oats grama, needle-and-thread grass *(H. comata),* and prairie dropseed are also typical (Skadsen 2006, p. 1-2). In a variant of 'Type B' habitats found in western North Dakota (Fig. 5), western wheatgrass *(Pascopyrum smithii)* is also typical (Royer et al. 2014, entire).

*Survey Routes and Survey Area*

Data to Collect

- Record the location (GPS coordinates and projection); time of day; and the plant upon which the individual was observed (if applicable). A shapefile of positive occurrence locations should be included in the annual report.
- Record the numbers of other butterfly species observed in each survey area. Data regarding the identity and numbers of other butterfly species present during surveys should be collected because it may be useful in evaluating survey results. Rigney (2013, p. 142), for example, indicated that the ratio of Dakota skippers to long dash, tawny-edged skippers, Peck's skippers, and European skipper may be indicative of habitat quality for Dakota skipper.
- Record the route surveyed (GPS track log), number of surveyors, weather conditions (temperature, cloud cover, and wind speed), and observations about habitat conditions, threats, or management pre- and post-survey. To the extent feasible, record the sex and condition of eachDakota skipper observed. **The track logs of each survey completed (positive or negative) should be included as a shapefile in the annual report to the NDFO**.

- Handling affects the behavior of some butterflies after their release (Mallet et al. 1987, p. 328). Therefore, we are seeking information with respect to the post-release behavior of any Dakota skippers that are captured and released. The behavior of each captured and released butterfly will be noted and reported annually as follows:
    - Flew to and perched on herbaceous vegetation, low shrubs, or to out-of-sight location in herbaceous vegetation (e.g., into plant litter or duff layer or into bases of grasses);
    - Flew into tall shrubs or trees and out-of-sight;
    - Flew away – did not see butterfly perch or fly into vegetation; or,
    - Post-release behavior unknown

- If the survey is conducted under the authority of an ESA section 10(a)1(a) permit issued by the Service for work in North Dakota, the surveyor must meet any additional requirements for collection and reporting per the conditions specified in the permit.

*Additional Recommendations*

- Surveys should be conducted by qualified surveyors walking along routes through the survey area (patches). Survey routes can cover up to 5 m (16.4 ft) meters on each side of the observer. Establish enough routes to ensure that the survey will cover all of the survey area. If a Dakota skipper sighting has been confirmed, an additional survey should be completed to quantify the extent of occupancy of the action area and buffer.

- Conduct surveys at an average rate of 1-3 ha/hr (2-7 ac/hr, based on the 35 meters/minute survey pace and the assumption that five meters are effectively surveyed on either side of the observer, as reported by Royer and Royer (2012). Survey rates may be adjusted according to butterfly activity and surveyor's experience level.

- Survey routes should be roughly parallel to each other, spaced approximately 10 m (32.8 ft) apart, and within 5 m (16.4 ft) of the survey area boundary to ensure complete coverage of the habitat within the entire action area and buffer.

- Do not conduct Dakota skipper surveys concurrently with any other focused survey, such as plant surveys, bird surveys, etc.

- Adjustments to the survey area boundaries may be made during the survey if areas that do not contain Dakota skipper habitat are encountered. Areas of no habitat should be mapped and described in the final survey report.

**Identification of Dakota Skippers**

- Positive identification of Dakota skippers may be confirmed by capture (netting) and release, close-up (perched) examination, or photo-documentation.

- Persons not qualified to conduct typical surveys for Dakota skipper may attempt to document the species' presence with photography. Surveys sufficient to support a presumption of absence, however, should follow the netting and release protocol.

- To ensure that species identity may be confirmed, multiple photos should be taken from both the dorsal and ventral perspective (Rigney 2013, p. 141). Negative surveys conducted by persons who do not meet the minimum qualifications for surveyors, described above, would not be considered sufficient as a basis for the species absence.

**Results from surveys conducted under environmental conditions that do not conform to the optimum climatic and phenological conditions, or time of day and other recommended methods described herein may be considered *unreliable*.**

*Reporting Results*

Provide survey reports to the North Dakota Field Office by December 15 of the current field season along with a copy of their current recovery permit. The following information should be included:

- Geographic coordinates of any Dakota skipper observed and a map depicting the survey area(s), and survey route(s). In addition, include shapefiles of positive Dakota skipper occurrences and survey routes for each location surveyed whether Dakota skippers are observed or not.

- Provide maps depicting the location and extent of Dakota skipper habitat at the survey site. If possible, also provide the associated GIS data that could be used to identify the location and extent of Dakota skipper habitat, the survey area, and survey routes. Include coordinate system, projection and datum with all GIS data.

- For each survey include weather conditions: wind speed (or Beaufort Scale), air temperature, cloud cover, and the time at beginning and end of each survey route. In addition, include names of dominant flowering plants encountered during the survey (see Data Sheet in Appendix B).

**Conclusion: Implication of Survey Results**

If Dakota skippers are not detected at a site using the methods described herein (for either 1 or two seasons of surveys), the Service will consider the species absent from a site for a period of one year from date of survey subject to the following circumstances:

- For sites > 1 km (0.6 mi) from a previously confirmed Dakota skipper sites:
    - Additional survey seasons of a site are unnecessary if the species has not been detected during three prior seasons of surveys. In this case, the site (plus the 250 m buffer) is considered 'not occupied by Dakota skippers' for a minimum of two (2) additional seasons (three (3) full seasons including the year of the last survey).
    - Additional survey seasons may recommended to reassess species status at a site if the species is later confirmed to be present within 1 km (0.6 mi) of the site following the date of the last negative survey.

- For sites ≤ 1 km (0.6 mi) from a previously confirmed Dakota skipper sites:
    - Additional survey seasons of a site are unnecessary if the species has not been detected during three prior seasons of surveys. In this case, the site (plus the 500 m buffer) is considered 'not occupied by Dakota skippers' for a minimum of two (2) additional seasons (three (3) full seasons including the year of the last survey).

If one or more Dakota skippers are detected at a site, the Service will assume the site is occupied for a minimum of two additional years (three years total). Additional surveys before the three year minimum occupancy period are not recommended, but if completed and negative (no detections), the results will *not* supersede the occupied status. After three years, additional Dakota skipper surveys are recommended to update the occupancy status. A flowchart describing this process is included in Appendix C.

Literature Cited

Dana, R. P. 1991. Conservation management of the prairie skippers Hesperia dacotae and Hesperia ottoe. Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul, Minnesota. 63 p.

Dana, R. 1997. Characterization of three Dakota skipper sites in Minnesota. Minnesota Department of Natural Resources, Natural Heritage and Nongame Research Program, St. Paul, MN. 17 p.

Dearborn, K. and R. Westwood. 2014. Predicting adult emergence of Dakota skipper and Poweshiek skipperling (Lepidoptera: Hesperiidae) in Canada. Journal of Insect Conservation 18:875-884.

Haddad, N.R., 1999 "Corridor Use Predicted from Behaviors at Habitat Boundaries.," The American Naturalist 153, no. 2 (February 1999): 215-227.

Lenz, D. 1999. Characterization of Dakota skipper habitat in the Towner-Karlsruhe prairie complex. Natural Heritage Inventory, Nature Preserves Program, North Dakota Parks and Recreation Department, Bismarck, North Dakota. 23 p.

Mallet, James, and Michael C. Singer. "Individual selection, kin selection, and the shifting balance in the evolution of warning colours: the evidence from butterflies." Biological Journal of the Linnean Society 32, no. 4 (1987): 337-50.

McCabe, T. L. 1981. The Dakota skipper: range and biology, with special reference to North Dakota. Journal of the Lepidopterists' Society. 35(3):179-193.

Rigney, C. L. 2013. Habitat characterization and biology of the threatened Dakota skipper (Hesperia dacotae) in Manitoba. Masters of Science. The University of Winnipeg, Winnipeg, Manitoba, Canada. 259 p.

Royer, R.A. and G.M. Marrone. 1992a. Conservation Status of the Dakota skipper (Hesperia dacotae)in North and South Dakota. U.S. Fish and Wildlife Service Endangered Species Office. Denver, CO. 44pp, plus maps and appendices.

Royer, R.A., R.A. McKenney, and W.E. Newton. 2008. A characterization of non- biotic environmental feature of prairies hosting the Dakota skipper (Hesperia dacotae)across its remaining U.S. range. Journal of the Lepidopterists Society. 62:1-17.

Royer, R.A., M.R. Royer, and E.A. Royer. 2014. Dakota skipper field survey and habitat assessment at twelve North Dakota sites during the 2014 season. A final report submitted to the Twin Cities Field Office, U.S. Fish and Wildlife Service, Bloomington, Minnesota. Minot State University, Minot, ND. 53p.

Skadson, D.R. 2006. Surveys for Butterflies Listed as Endangered, Threatened of Species of Tribal Concern on the Sisseton-Wahpeton Oyate lake Traverse Reservation. Natural History Investigations and Biological Services, Inc., Webster, SD. 18p.

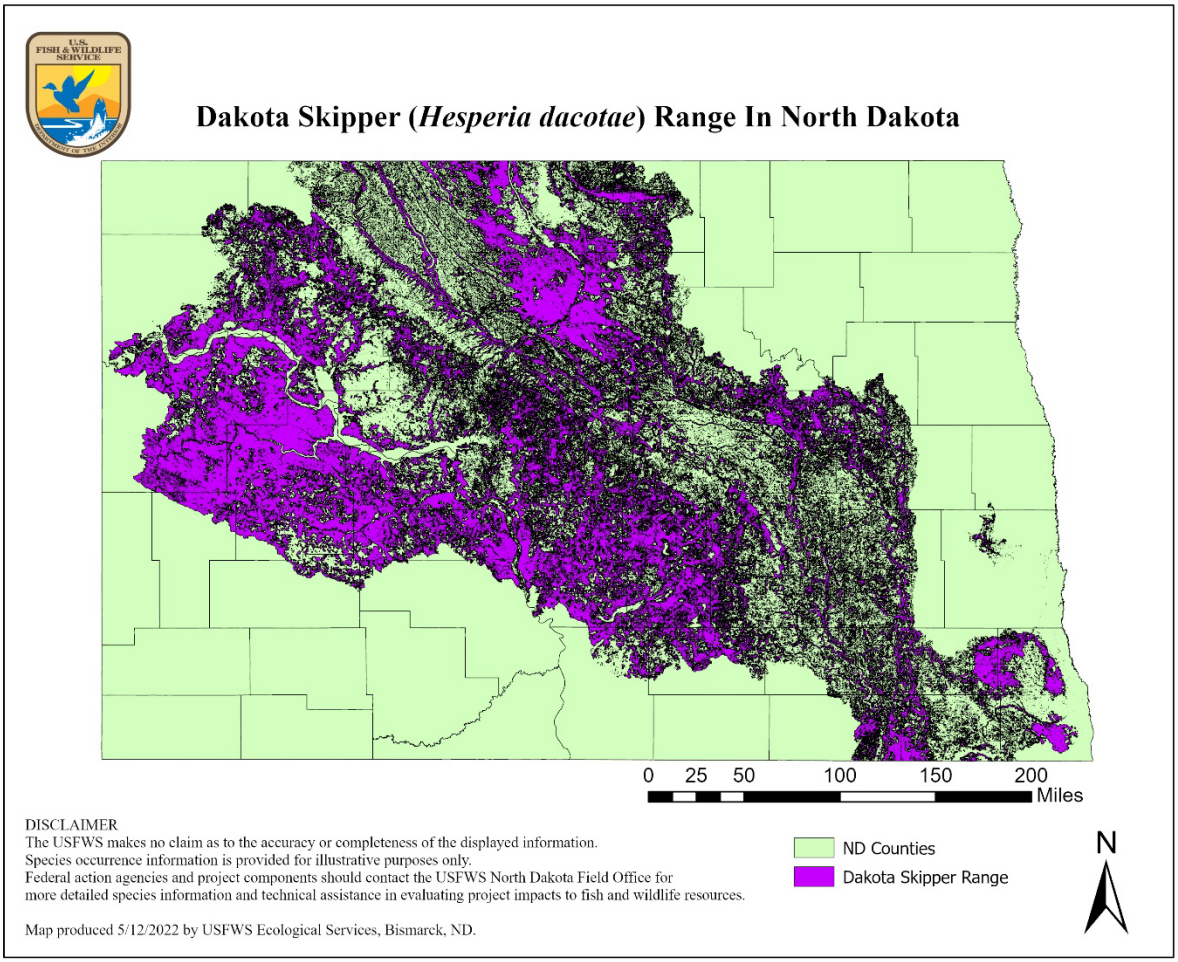
Skadson, D.R 2018. Private consultant, Dakota skipper surveyor specialist. Telephone conversations with Jerry Reinisch, seasonal employee, US Fish and Wildlife Service, Ecological Services, Bismarck, North Dakota, January 18, 2018. Topic: survey methodology.

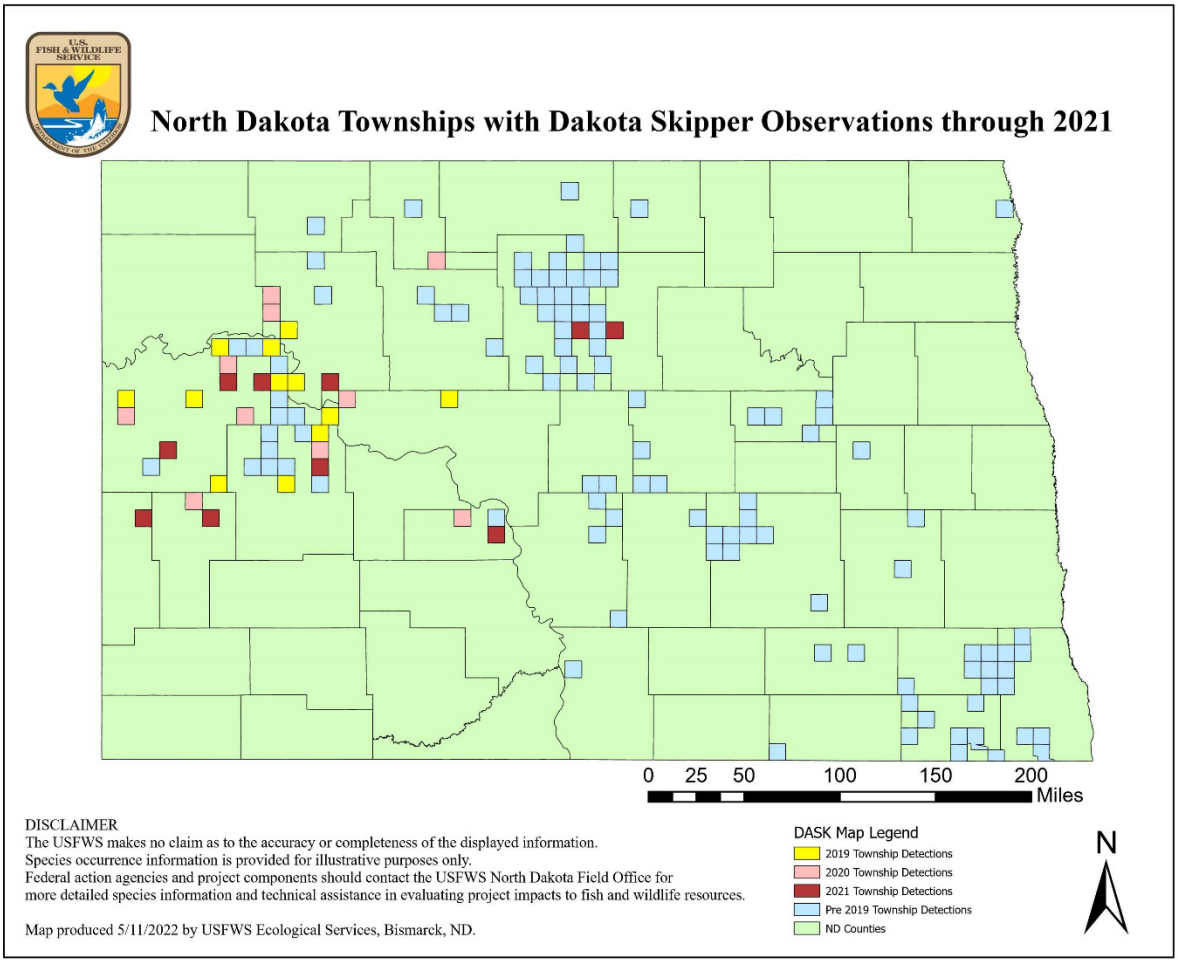
USFWS. 2017. County Occurrence of Endangered, Threatened, Proposed, and Candidate Species and Designated Critical Habitat in North Dakota. USFWS website. 1p.

USFWS. 2014. Endangered and Threatened Wildlife and Plants; Threatened Species Status for Dakota Skipper and Endangered species Status for Powershiek Skipperling; Final Rule Federal Register 79:63672-63748.

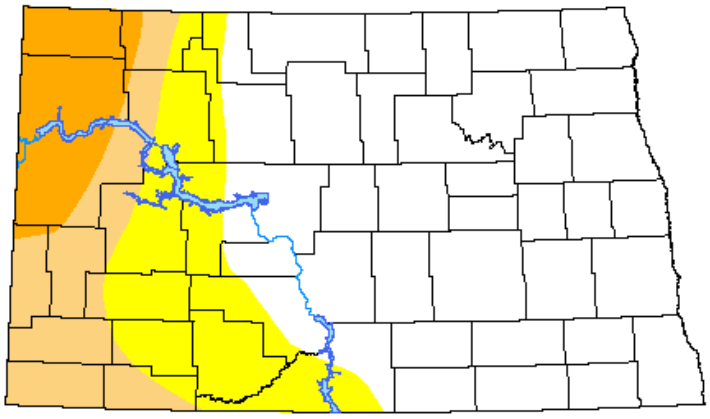
# APPENDICES

## Appendix A




North Dakota Townships with Dakota Skipper Observations through 2021
0 25 50 100 150 200
Miles
DISCLAIMER
The USFWS makes no claim as to the accuracy or completeness of the displayed information.
Species occurrence information is provided for illustrative purposes only.
Federal action agencies and project components should contact the USFWS North Dakota Field Office for more detailed species information and technical assistance in evaluating project impacts to fish and wildlife resources.
Map produced 5/11/2022 by USFWS Ecological Services, Bismarck, ND.
DASK Map Legend
2019 Township Detections
2020 Township Detections
2021 Township Detections
Pre 2019 Township Detections
ND Counties
N

## *U.S. Drought Monitor*
# North Dakota



## May 3, 2022
*(Released Thursday, May. 5, 2022)*
Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|---|---|---|---|---|---|---|
| **Current** | 63.51 | 36.49 | 19.37 | 7.98 | 0.00 | 0.00 |
| **Last Week** 04-26-2022 | 63.52 | 36.48 | 19.37 | 8.26 | 0.10 | 0.00 |
| **3 Months Ago** 02-01-2022 | 19.47 | 80.53 | 52.23 | 26.27 | 7.04 | 0.00 |
| **Start of Calendar Year** 01-04-2022 | 20.02 | 79.98 | 54.03 | 22.01 | 8.21 | 0.00 |
| **Start of Water Year** 09-28-2021 | 0.24 | 99.76 | 99.64 | 92.08 | 58.62 | 0.43 |
| **One Year Ago** 05-04-2021 | 0.00 | 100.00 | 97.84 | 92.99 | 84.98 | 0.00 |

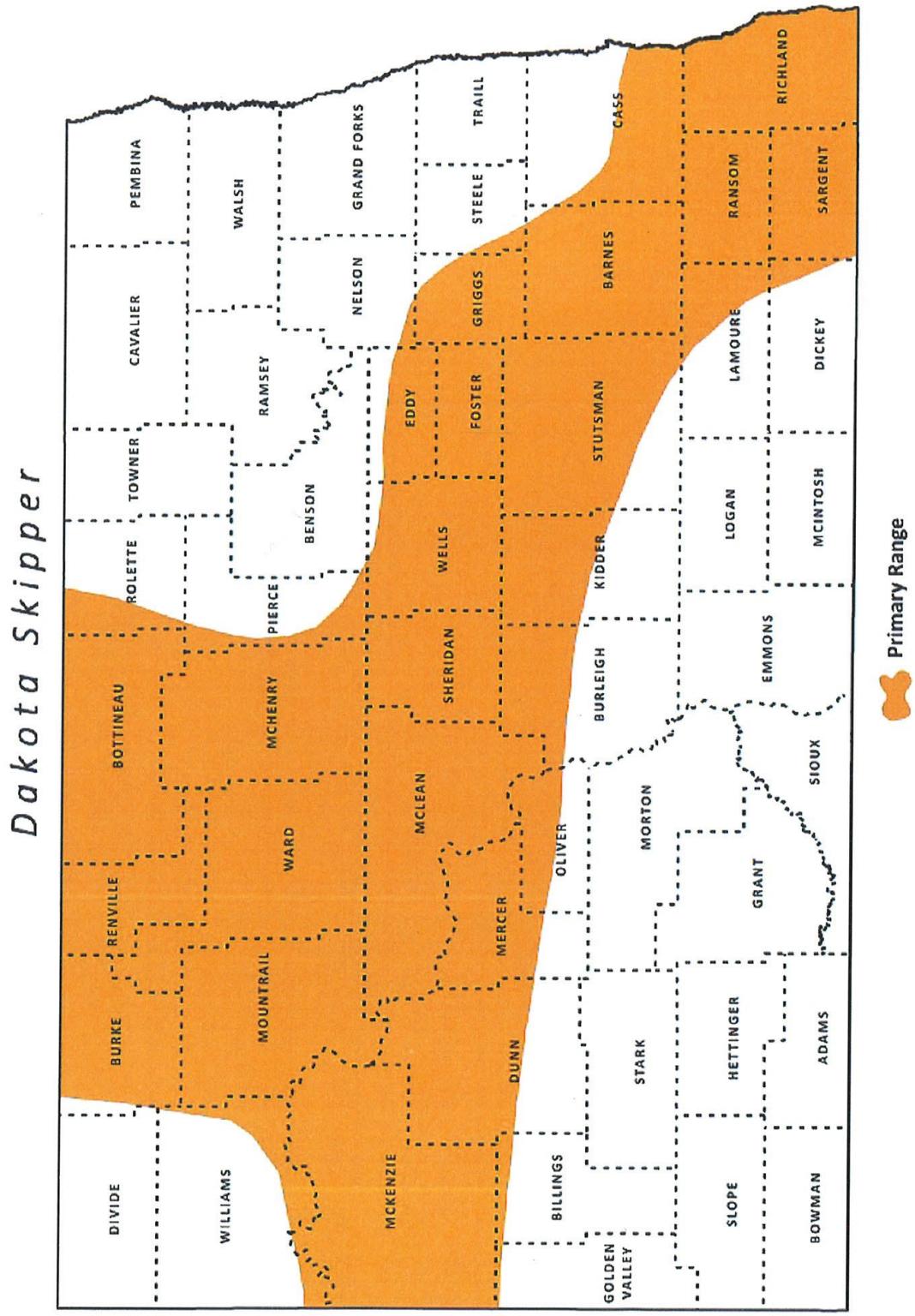
*Intensity:*

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx*

*Author:*
David Simeral
Western Regional Climate Center

**droughtmonitor.unl.edu**


Dakota Skipper
PEMBINA
WALSH
GRAND FORKS
TRAILL
CASS
RICHLAND
CAVALIER
NELSON
STEELE
RANSOM
SARGENT
RAMSEY
EDDY
GRIGGS
BARNES
LAMOURE
DICKEY
TOWNER
FOSTER
STUTSMAN
LOGAN
MCINTOSH
ROLETTE
BENSON
WELLS
KIDDER
PIERCE
SHERIDAN
BURLEIGH
EMMONS
BOTTINEAU
MCHENRY
SIOUX
MCLEAN
OLIVER
MORTON
WARD
GRANT
RENVILLE
MERCER
BURKE
MOUNTRAIL
STARK
HETTINGER
ADAMS
DUNN
DIVIDE
WILLIAMS
MCKENZIE
BILLINGS
SLOPE
BOWMAN
GOLDEN VALLEY
Primary Range

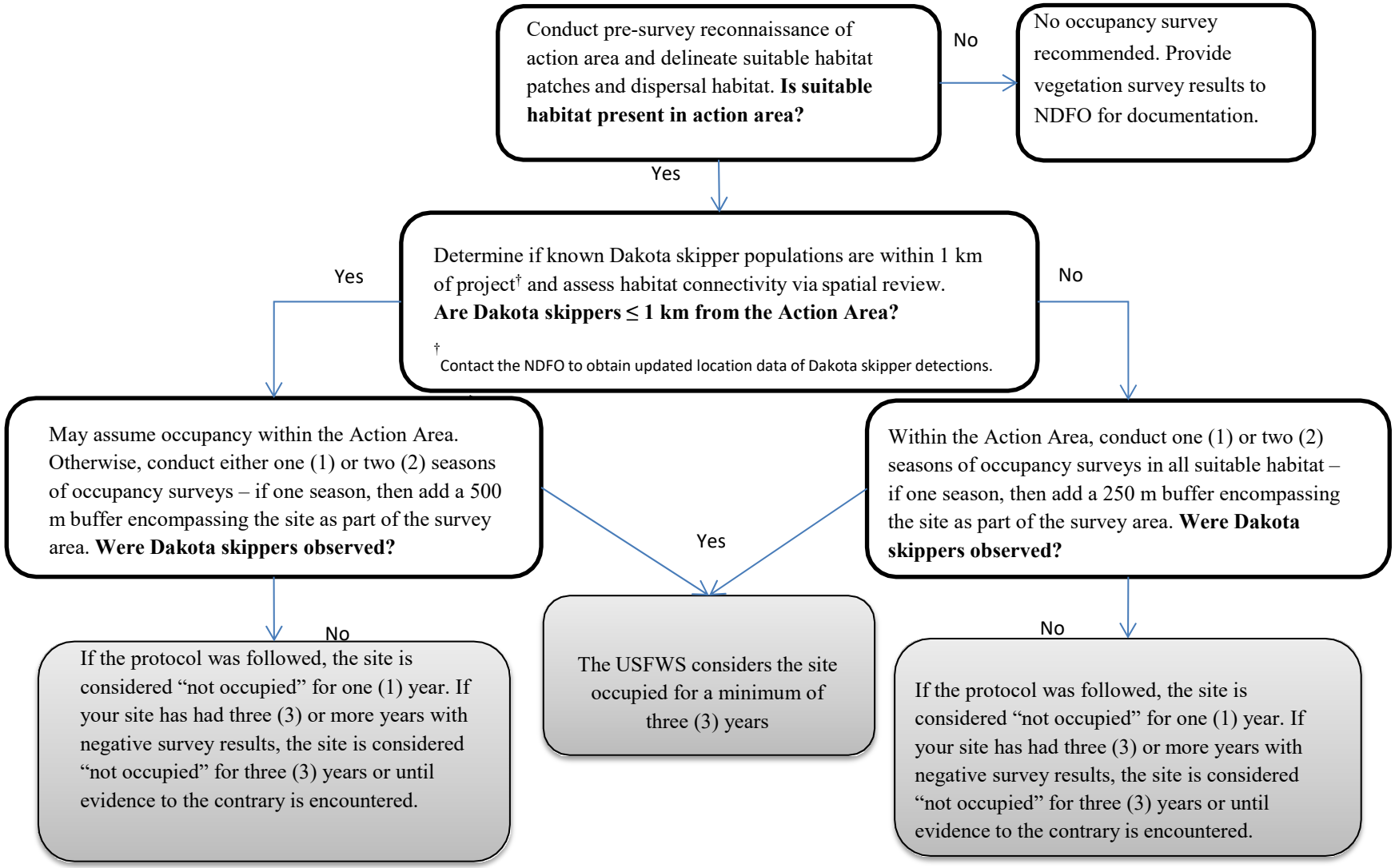
## Appendix B
## Dakota Skipper Flowering Plant Line Count Data Sheet

Site name/ID_____Date_____
County_____Legal:¼S,T,R_____
Survey____of_____Observer(s)_____

| Species | Tally: flowering stems | n | Tally: non-flowering stems | n |
|---|---|---|---|---|
| Purple coneflower | | | | |
| Milkweed (all spp.) | | | | |
| Vetch (all spp.) | | | | |
| Alfalfa* | | | | |
| Thistle (all spp.) | | | | |
| Yellow coneflower | | | | |
| Prairie Violet | | | | |
| Goldenrod | | | | |
| Wild Rose | | | | |
| Curlycup gumweed | | | | |
| Blazing star | | | | |
| Penstemon spp. | | | | |
| Smooth fleabane | | | | |
| Western wallflower | | | | |
| Prairie lily | | | | |
| Purple prairie clover | | | | |
| Black-eyed Susan | | | | |
| Scarlet globemallow | | | | |
| Maximilian sunflower | | | | |
| Spiderwort | | | | |
| Harebell | | | | |
| Silverleaf scurfpea | | | | |
| Leadplant | | | | |
| Wild bergamot | | | | |
| R. Mtn. bee-plant | | | | |
| Blanket flower | | | | |
| Dandelion | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

NOTES:

## Appendix C


Conduct pre-survey reconnaissance of action area and delineate suitable habitat patches and dispersal habitat. **Is suitable habitat present in action area?**
No
No occupancy survey recommended. Provide vegetation survey results to NDFO for documentation.
Yes
Determine if known Dakota skipper populations are within 1 km of project† and assess habitat connectivity via spatial review. **Are Dakota skippers ≤ 1 km from the Action Area?**
† Contact the NDFO to obtain updated location data of Dakota skipper detections.
Yes
No
May assume occupancy within the Action Area. Otherwise, conduct either one (1) or two (2) seasons of occupancy surveys – if one season, then add a 500 m buffer encompassing the site as part of the survey area. **Were Dakota skippers observed?**
Within the Action Area, conduct one (1) or two (2) seasons of occupancy surveys in all suitable habitat – if one season, then add a 250 m buffer encompassing the site as part of the survey area. **Were Dakota skippers observed?**
Yes
No
No
If the protocol was followed, the site is considered "not occupied" for one (1) year. If your site has had three (3) or more years with negative survey results, the site is considered "not occupied" for three (3) years or until evidence to the contrary is encountered.
The USFWS considers the site occupied for a minimum of three (3) years
If the protocol was followed, the site is considered "not occupied" for one (1) year. If your site has had three (3) or more years with negative survey results, the site is considered "not occupied" for three (3) years or until evidence to the contrary is encountered.

# Appendix B –
# 2022 Dakota Skipper Survey Site Summary Midwest Carbon Express Project

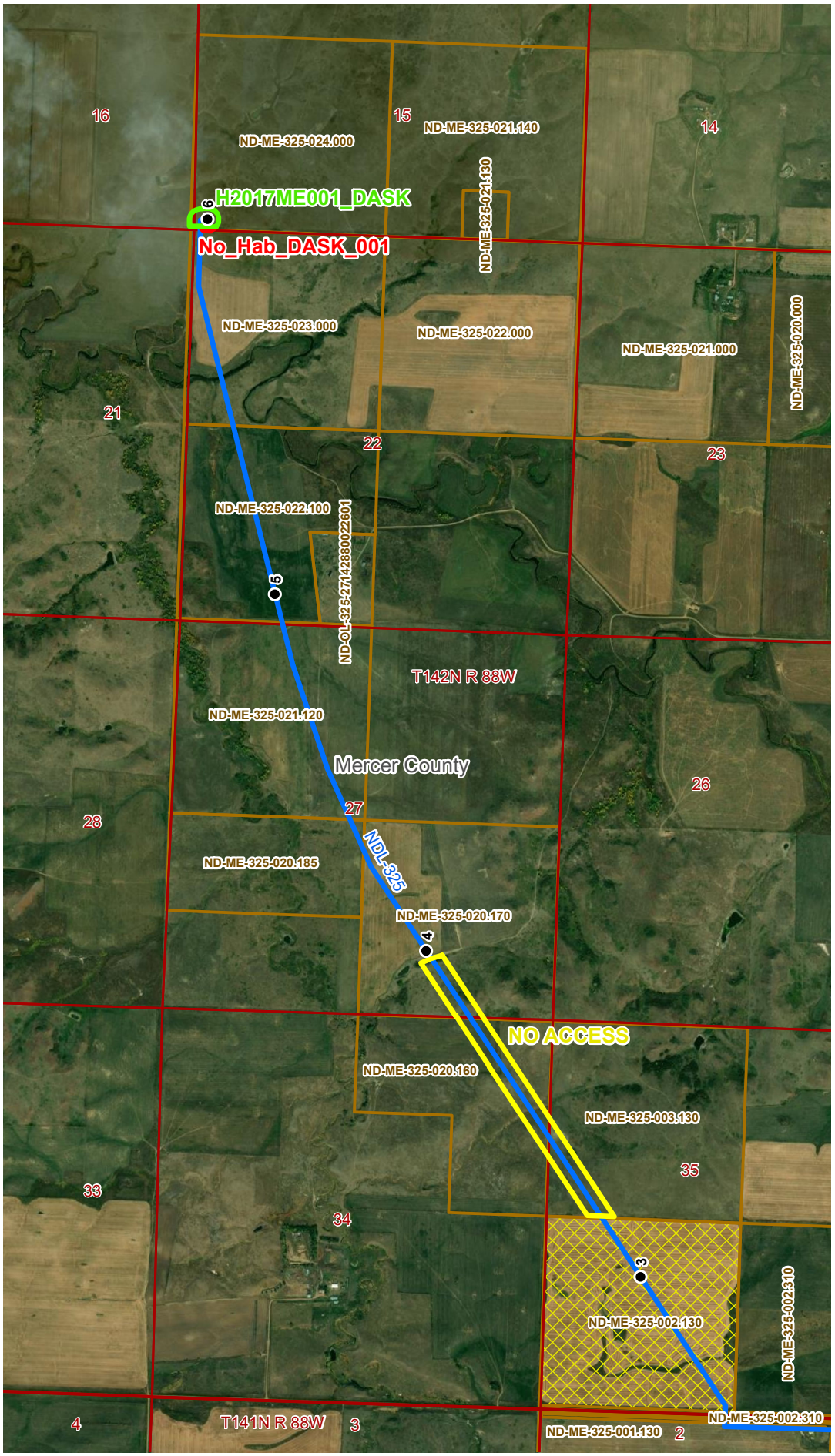
| Latitude | Longitude | State | County | Route | Center Milepost | Site ID | Acres | Habitat Description | Habitat Assessment |
|---|---|---|---|---|---|---|---|---|---|
| 47.111705 | -101.827224 | ND | MERCER | NDL-325 | 6.0 | H2017ME001_DASK | 1.9 | Native grassland dominated by needle-and-thread, little bluestem, some coneflower and minimal Kentucky bluegrass. | Suitable |
| 47.111329 | -101.827014 | ND | MERCER | NDL-325 | 6.0 | No_Hab_DASK_001 | 0.2 | 80% smooth brome, minimal native species. | Unsuitable |
| 47.079896 | -101.808595 | ND | MERCER | NDL-325 | 3.6 | NO ACCESS | 28.6 | NA | Potentially Suitable |
| 47.029052 | -101.744047 | ND | OLIVER | NDL-327 | 8.9 | No_Hab_DASK_004 | 7.1 | 40% smooth brome, 30% Kentucky bluegrass, minimal native species. | Unsuitable |
| 47.038108 | -101.744024 | ND | OLIVER | NDL-327 | 8.2 | No_Hab_DASK_003 | 3.9 | 60% Kentucky bluegrass, 20% smooth brome. | Unsuitable |
| 47.053514 | -101.74398 | ND | OLIVER | NDL-327 | 7.2 | No_Hab_DASK_002 | 30.3 | 90% smooth brome, minimal native species. | Unsuitable |
| 47.067831 | -101.666261 | ND | OLIVER | NDL-327 | 2.5 | No_Hab_DASK_005 | 25.0 | 20% Kentucky bluegrass, 15% smooth brome, common native species but not consistent with Service description of suitable habitat. | Unsuitable |
| 47.068096 | -101.651762 | ND | OLIVER | NDL-327 | 1.8 | No_Hab_DASK_006 | 24.8 | 60% smooth brome, 20% Kentucky bluegrass, 10% crested wheatgrass | Unsuitable |
| 47.060842 | -101.618639 | ND | OLIVER | NDL-327 | 0.2 | No_Hab_DASK_007 | 13.5 | 80% smooth brome, 15% Kentucky bluegrass | Unsuitable |
| 47.083551 | -101.615978 | ND | OLIVER | NDL-326 | 1.7 | No_Hab_DASK_010 | 23.2 | 60% Kentucky bluegrass, 15% needle-and-thread, common native species but not consistent with Service description of suitable habitat. | Unsuitable |
| 47.062093 | -101.615801 | ND | OLIVER | NDL-326 | 0.2 | No_Hab_DASK_008 | 5.4 | 50% smooth brome, 15% Kentucky bluegrass, some native species but not consistent with Service description of suitable habitat. | Unsuitable |
| 47.115886 | -101.60595 | ND | OLIVER | NDL-326 | 4.1 | No_Hab_DASK_009 | 28.9 | 40% smooth brome, 5% Kentucky bluegrass, some native species but not consistent with Service description of suitable habitat. | Unsuitable |
| 47.055846 | -101.601813 | ND | OLIVER | NDM-106 | 173.0 | No_Hab_DASK_011 | 15.4 | 40% smooth brome, 40% Kentucky bluegrass, some native species but not consistent with Service description of suitable habitat. | Unsuitable |
| 46.980178 | -101.11438 | ND | MORTON / OLIVER | NDM-106 | 148.3 | NO ACCESS | 104.5 | NA | Likely Unsuitable |
| 46.982646 | -101.058624 | ND | MORTON / OLIVER | NDM-106 | 145.6 | No_Hab_DASK_012 | 104.5 | 15% Kentucky bluegrass, 10% smooth brome, many native species but not consistent with Service description of suitable habitat, also areas with most native species very small. Suitable habitat likely exists off ESA on ridges to southwest. | Unsuitable |
| 46.9709 | -101.008138 | ND | MORTON | NDM-106 | 143.0 | No_Hab_DASK_013 | 78.3 | 40% Kentucky bluegrass, 15% smooth brome, 35% leafy spurge, some areas with native species but dominated by non-native species. | Unsuitable |
| 46.964831 | -100.981297 | ND | MORTON | NDM-106 | 141.6 | No_Hab_DASK_013b | 18.8 | 60% smooth brome, 60% leafy spurge, 15% Kentucky bluegrass | Unsuitable |
| 46.963289 | -100.970746 | ND | MORTON | NDM-106 | 141.1 | No_Hab_DASK_013a | 18.3 | 15% crested wheagrass, 10% smooth brome, 15% leafy spurge. Low-quality semi-native pasture not consistent with Service description of suitable habitat. | Unsuitable |
| 46.959209 | -100.88853 | ND | BURLEIGH | NDM-106 | 137.2 | No_Hab_DASK_014 | 38.3 | 50% crested wheagrass, 20% smooth brome, 15% Kentucky bluegrass | Unsuitable |

| Latitude | Longitude | State | County | Route | Center Milepost | Site ID | Acres | Habitat Description | Habitat Assessment |
|---|---|---|---|---|---|---|---|---|---|
| 46.951405 | -100.866181 | ND | BURLEIGH | NDM-106 | 135.9 | NO ACCESS | 49.1 | NA | Likely Unsuitable |
| 46.951261 | -100.842817 | ND | BURLEIGH | NDM-106 | 134.8 | No_Hab_DASK_015 | 30.8 | 60% smooth brome, 25% needle-and-thread, patches of native grassland but small and low diversity, not consistent with Service description of suitable habitat. | Unsuitable |
| 46.947949 | -100.828756 | ND | BURLEIGH | NDM-106 | 134.1 | NO ACCESS | 24.5 | NA | Potentially Suitable |
| 46.945991 | -100.816991 | ND | BURLEIGH | NDM-106 | 133.5 | H2018BU001_DASK | 17.9 | 45% needle-and-thread with some patches of extensive coneflower, little bluestem restricted to small knobs, few non-native species. | Suitable |
| 46.94231 | -100.795734 | ND | BURLEIGH | NDM-106 | 132.5 | No_Hab_DASK_016 | 58.0 | 85% smooth brome, minimal native species. | Unsuitable |
| 46.934338 | -100.719074 | ND | BURLEIGH | NDM-106 | 128.6 | No_Hab_DASK_017 | 76.3 | 75% smooth brome, 10% Kentucky bluegrass | Unsuitable |
| 46.924098 | -100.686727 | ND | BURLEIGH | NDM-106 | 126.9 | NO ACCESS | 49.6 | NA | Likely Unsuitable |
| 46.914235 | -100.63989 | ND | BURLEIGH | NDM-106 | 124.5 | No_Hab_DASK_018 | 32.7 | 95% smooth brome | Unsuitable |
| 46.761593 | -100.586437 | ND | BURLEIGH | NDM-106 | 111.5 | No_Hab_DASK_019 | 17.9 | 90% smooth brome | Unsuitable |
| 46.712676 | -100.57756 | ND | BURLEIGH | NDM-106 | 107.9 | No_Hab_DASK_020 | 46.6 | 50% smooth brome, 40% Kentucky bluegrass | Unsuitable |
| 46.685666 | -100.524315 | ND | BURLEIGH | NDM-106 | 104.5 | No_Hab_DASK_021 | 68.6 | 60% smooth brome, 20% Kentucky bluegrass | Unsuitable |
| 46.669674 | -100.490645 | ND | BURLEIGH | NDM-106 | 102.5 | NO ACCESS | 50.3 | NA | Likely Unsuitable |
| 46.621202 | -100.416382 | ND | EMMONS | NDM-106 | 97.5 | No_Hab_DASK_022 | 86.1 | 65% Kentucky bluegrass, 15% smooth brome, some native species but no little bluestem, no coneflower, not consistent with Service description of suitable habitat. | Unsuitable |
| 46.609147 | -100.38217 | ND | EMMONS | NDM-106 | 95.5 | NO ACCESS | 64.7 | NA | Likely Unsuitable |
| 46.576882 | -100.347546 | ND | EMMONS | NDM-106 | 92.3 | No_Hab_DASK_023 | 11.0 | 70% Kentucky bluegrass, 10% smooth brome, 15% meadow foxtail | Unsuitable |
| 46.562394 | -100.322354 | ND | EMMONS | NDM-106 | 90.8 | No_Hab_DASK_024 | 50.6 | 70% Kentucky bluegrass, 20% smooth brome, untilled but minimal native species. | Unsuitable |
| 46.235002 | -99.829047 | ND | MCINTOSH | NDM-106 | 56.7 | NO ACCESS | 30.7 | NA | Likely Unsuitable |
| 45.968117 | -99.42389 | ND | MCINTOSH | NDM-106 | 27.8 | No_Hab_DASK_025 | 29.6 | 40% smooth brome, 30% Kentucky bluegrass, high native forb diversity but no little bluestem, not consistent with Service description of suitable habitat. | Unsuitable |
| 45.928912 | -99.419011 | SD | MCPHERSON | NDM-106 | 25.0 | NO ACCESS | 32.0 | NA | Likely Unsuitable |
| 45.873163 | -99.288491 | SD | MCPHERSON | NDM-106 | 16.7 | NO ACCESS | 42.3 | NA | Likely Unsuitable |
| 45.844777 | -99.205002 | SD | MCPHERSON | NDM-106 | 11.9 | No_Hab_DASK_026 | 67.1 | 40% Kentucky bluegrass, 30% crested wheatgrass, 25% smooth brome | Unsuitable |
| 45.760454 | -99.099088 | SD | MCPHERSON | NDM-106 | 2.9 | NO ACCESS | 7.7 | NA | Likely Unsuitable |
| 45.745755 | -99.077223 | SD | MCPHERSON | NDM-106 | 1.4 | NO ACCESS | 78.0 | NA | Likely Suitable |
| 45.724926 | -99.048945 | SD | MCPHERSON | SDM-105 | 107.1 | NO ACCESS | 36.3 | NA | Likely Suitable |
| 45.746779 | -99.030323 | SD | MCPHERSON | NDT-211 | 111.9 | No_Hab_DASK_027 | 59.6 | 60% Kentucky bluegrass, 15% smooth brome, 15% leafy spurge, untilled prairie and numerous native species interspersed, only trace little bluestem, minimal needle-and-thread and coneflower. Aerial image appears to indicate habitat but on-the-ground observations confirm area is not consistent with Service description of suitable habitat. | Unsuitable |
| 45.76165 | -98.998941 | SD | MCPHERSON | NDT-211 | 110.0 | NO ACCESS | 30.9 | NA | Likely Unsuitable |
| 45.777012 | -98.9771 | SD | MCPHERSON | NDT-211 | 108.5 | No_Hab_DASK_028 | 40.3 | 65% Kentucky bluegrass, 15% western wheatgrass, some native species but not consistent with Service description of suitable habitat. | Unsuitable |
| 46.059939 | -98.018108 | ND | DICKEY | NDT-211 | 52.2 | NO ACCESS | 37.5 | NA | Likely Unsuitable |

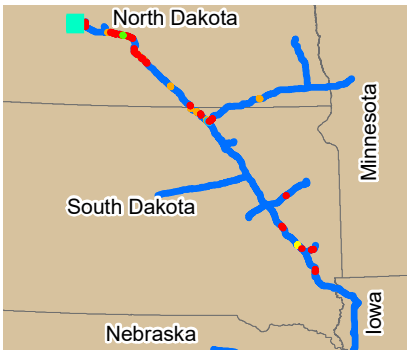
| Latitude | Longitude | State | County | Route | Center Milepost | Site ID | Acres | Habitat Description | Habitat Assessment |
|---|---|---|---|---|---|---|---|---|---|
| 44.246895 | -97.604857 | SD | KINGSBURY | SDM-104 | 121.5 | No_Hab_DASK_030 | 32.6 | Dominated by smooth brome and Kentucky bluegrass | Unsuitable |
| 44.23477 | -97.592429 | SD | KINGSBURY | SDM-104 | 120.4 | No_Hab_DASK_031 | 31.2 | Dominated by smooth brome and Kentucky bluegrass | Unsuitable |
| 44.684719 | -97.508277 | SD | CLARK | SDT-208 | 27.6 | No_Hab_DASK_029 | 15.7 | Dominated by smooth brome and Kentucky bluegrass | Unsuitable |
| 43.98017 | -97.305892 | SD | LAKE | SDM-104 | 95.7 | NO ACCESS | 12.6 | NA | Potentially Suitable |
| 43.927432 | -97.230247 | SD | LAKE | SDM-104 | 90.4 | No_Hab_DASK_032 | 3.1 | Dominated by smooth brome and Kentucky bluegrass | Unsuitable |
| 43.908921 | -97.038293 | SD | LAKE | SDT-206 | 7.7 | No_Hab_DASK_033 | 3.0 | Dominated by smooth brome, Kentucky bluegrass, reed canary grass | Unsuitable |
| 43.913674 | -97.006615 | SD | LAKE | SDT-206 | 6.1 | No_Hab_DASK_034 | 34.5 | Dominated by smooth brome and reed canary grass | Unsuitable |
| 43.598381 | -96.98086 | SD | MINNEHAHA | SDM-104 | 61.1 | No_Hab_DASK_036 | 3.0 | Weedy fallow field | Unsuitable |
| 43.621121 | -96.97179 | SD | MINNEHAHA | SDM-104 | 62.8 | No_Hab_DASK_035 | 24.2 | 60% smooth brome, 25% Kentucky bluegrass | Unsuitable |

# Appendix C –
# 2022 Dakota Skipper Survey Sites Midwest Carbon Express Project

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
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- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

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## REVISIONS

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 1, Sheet 1 of 40 | **Drawing Number:** 1 |

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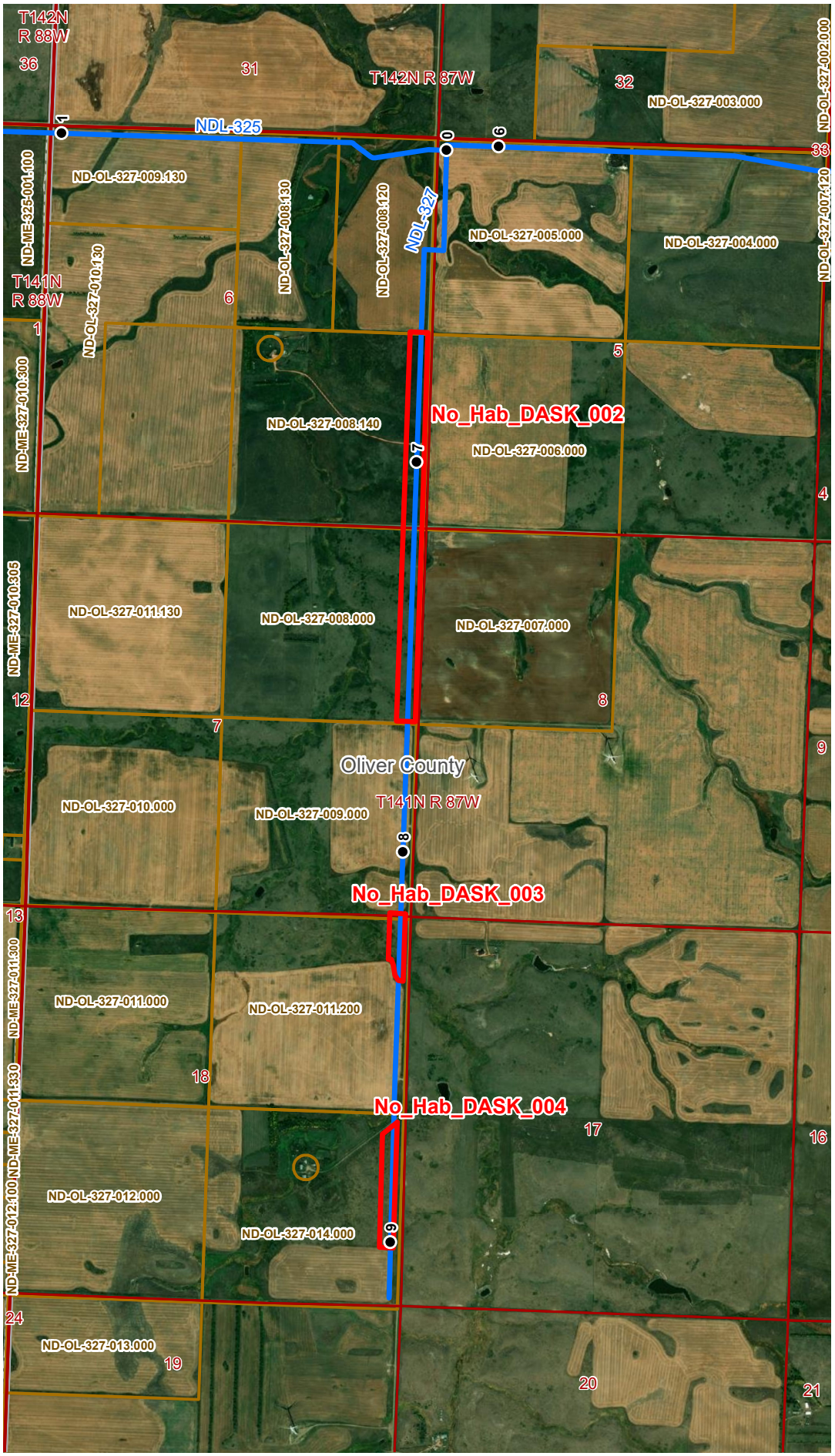
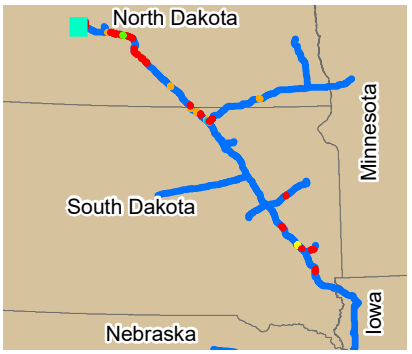
## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP

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| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 2, Sheet 2 of 40 | **Drawing Number:** 1 |

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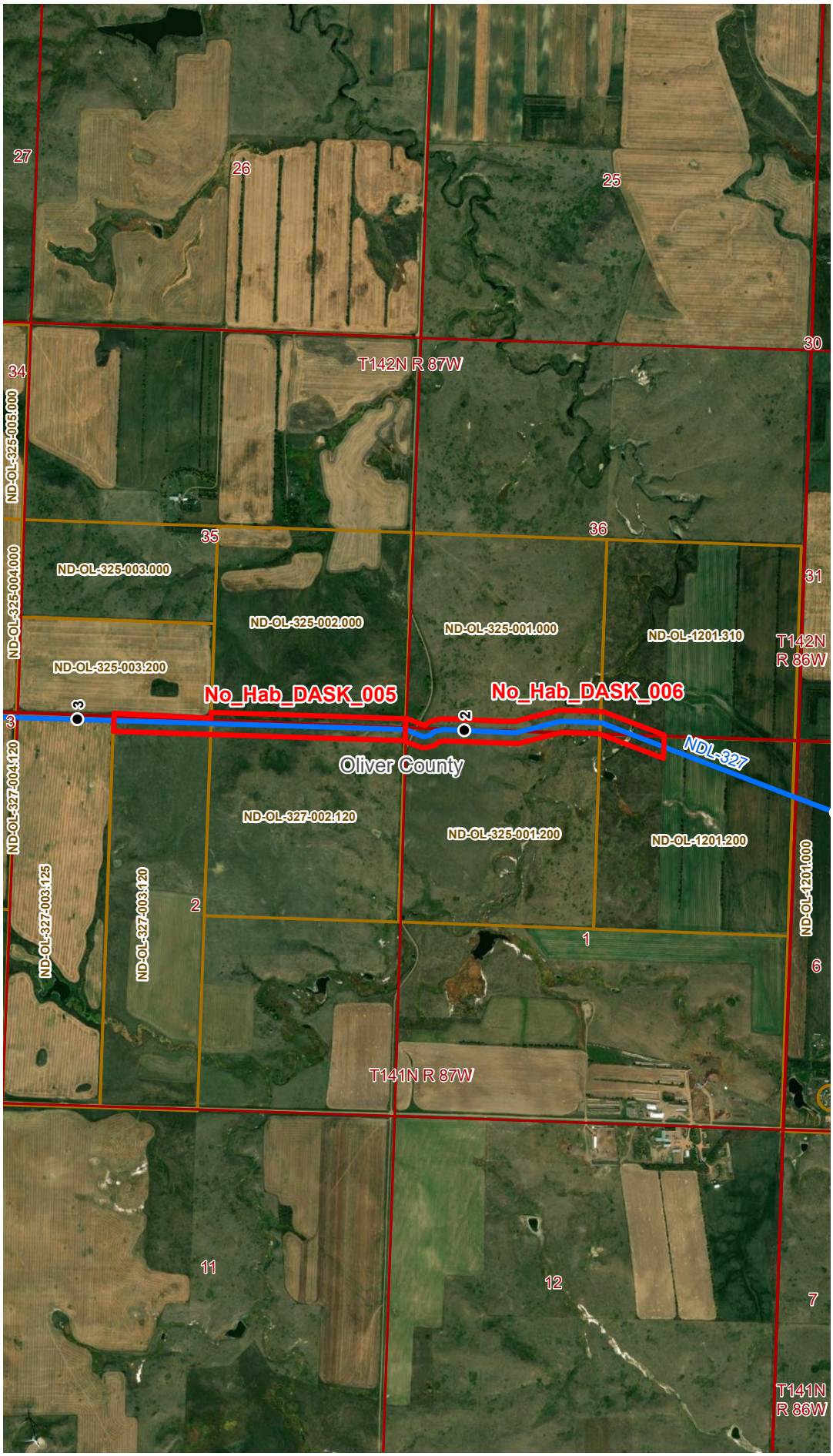
## 2022 DAKOTA SKIPPER SURVEY LOCATIONS

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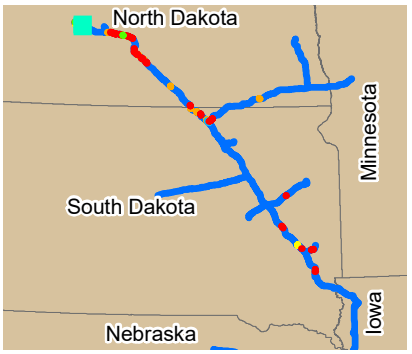


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| Scale: | Projection: |
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| 1:24,000 | NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
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| B - 3<br>Sheet 3 of 40 | 1 |

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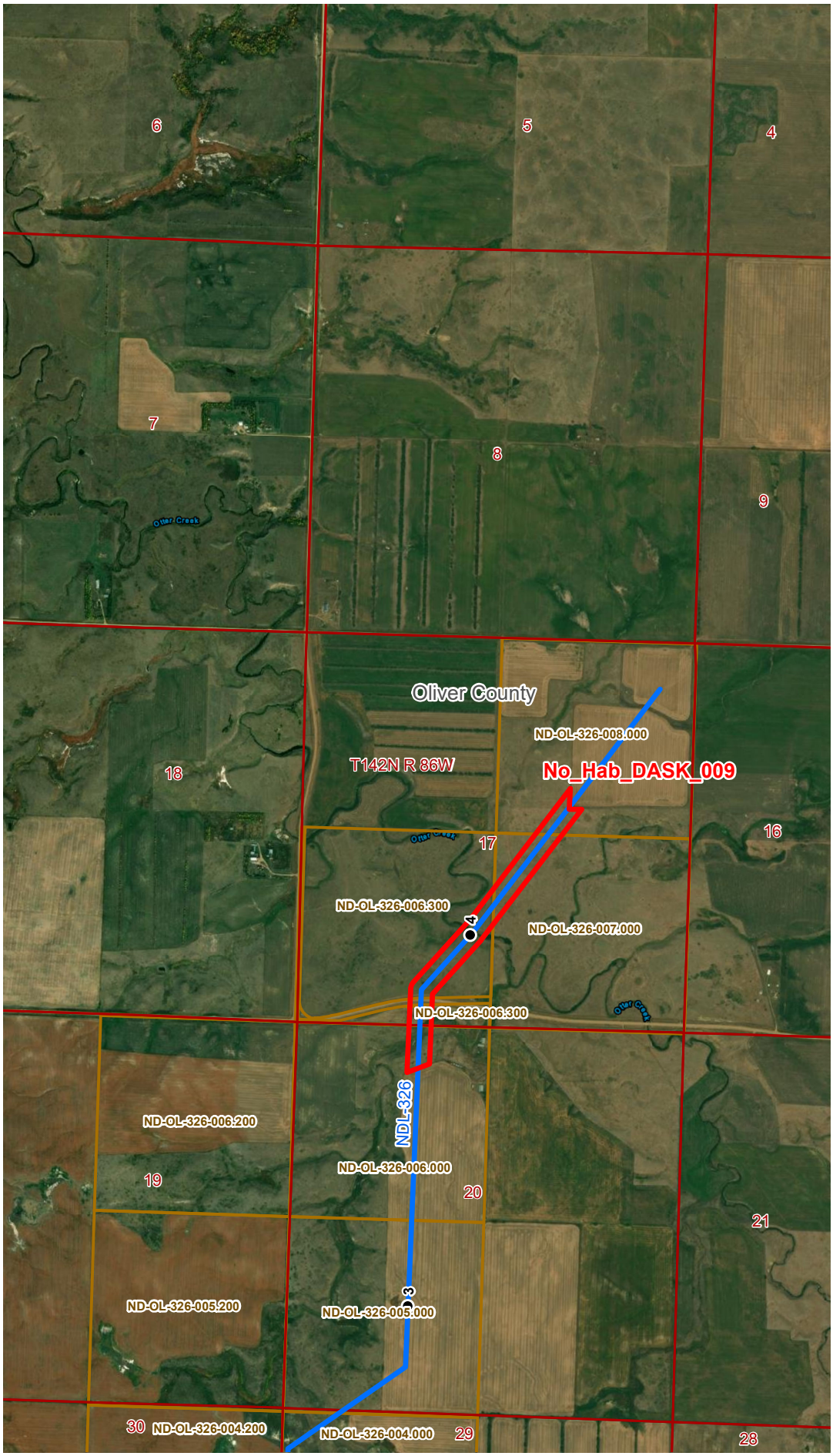
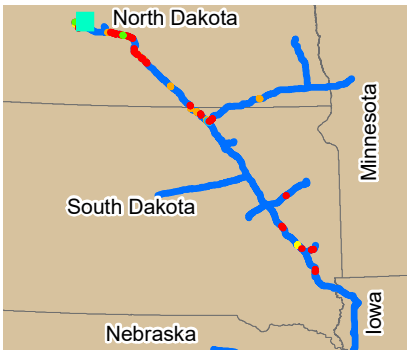
## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP

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| Scale: | Projection: |
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| 1:24,000 | NAD 1983 UTM Zone 14N |

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| B - 4<br>Sheet 4 of 40 | 1 |

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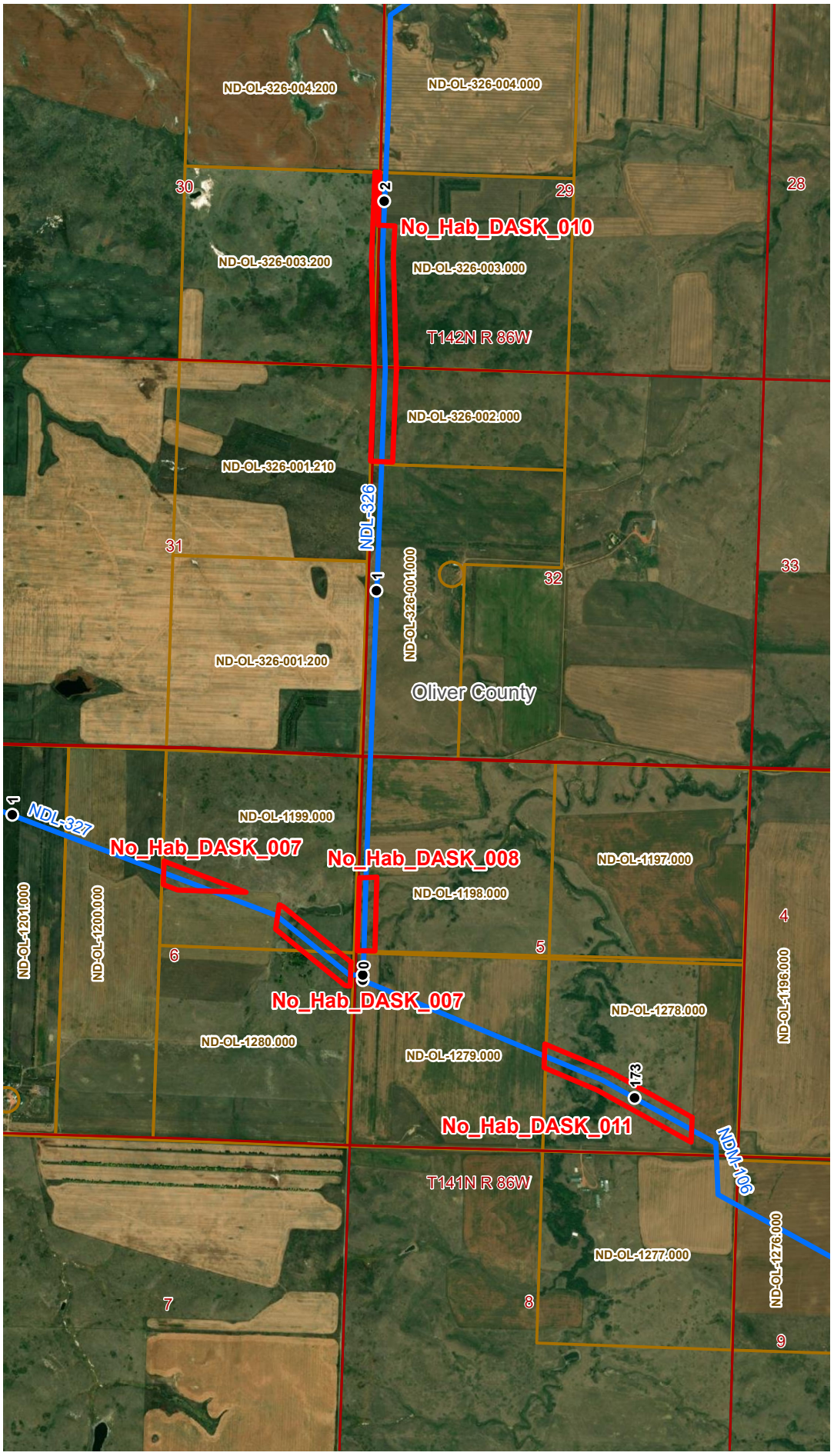
## 2022 DAKOTA SKIPPER SURVEY LOCATIONS

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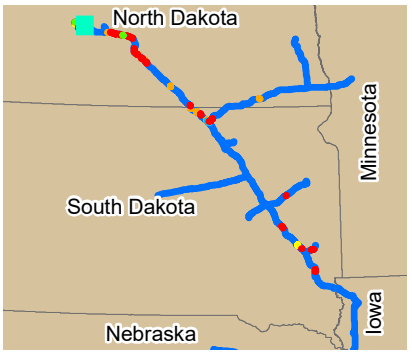


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Figure Title:
**2022 Dakota Skipper Survey Sites**

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| Scale: | Projection: |
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| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 5 Sheet 5 of 40 | **Drawing Number:** 1 |

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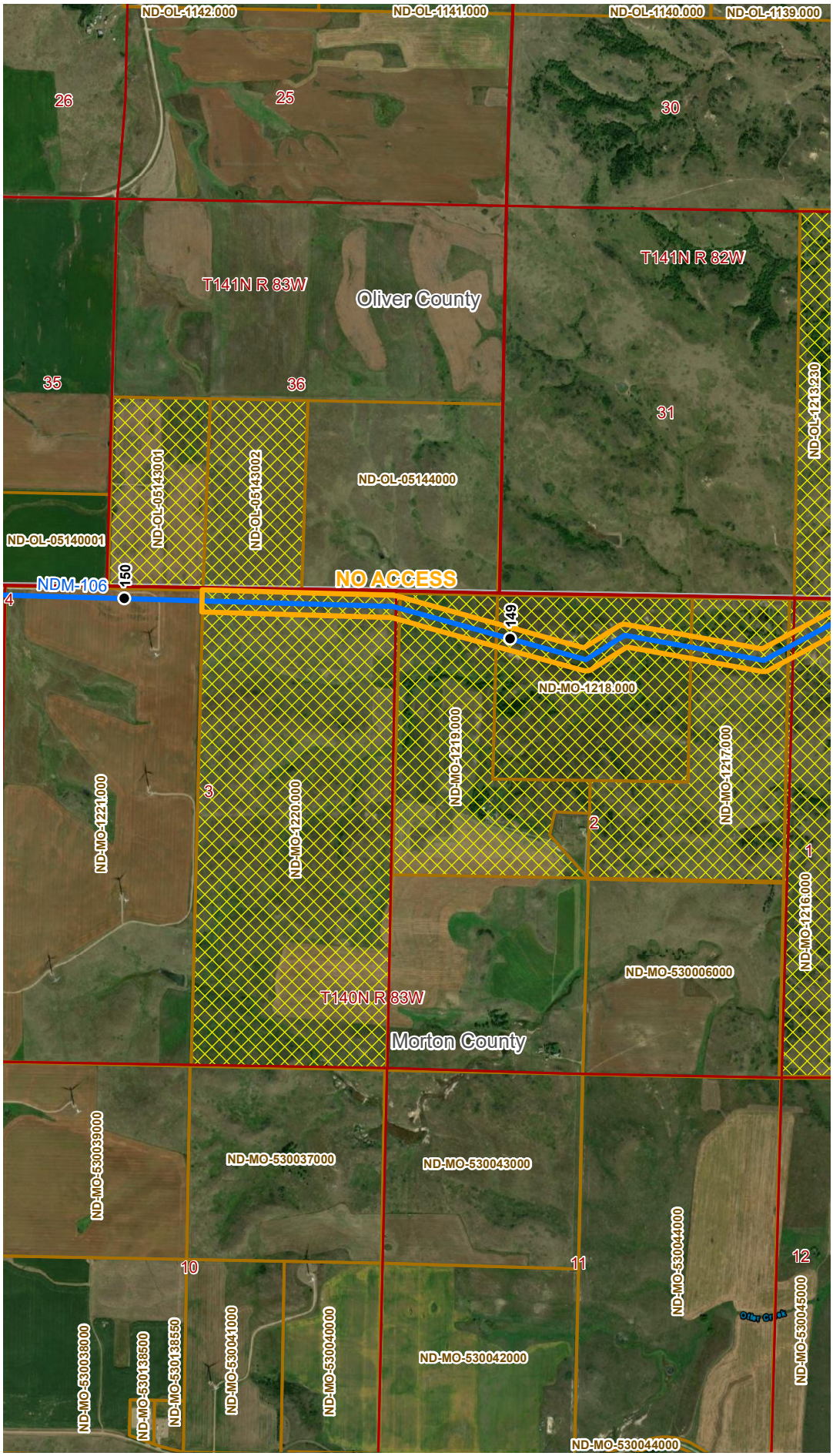
## 2022 DAKOTA SKIPPER SURVEY LOCATIONS

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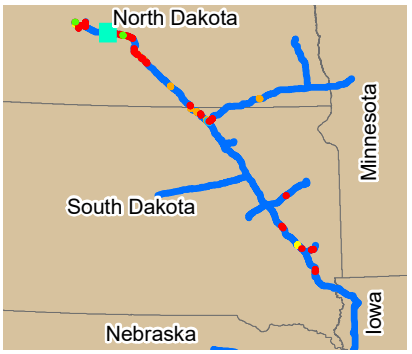


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| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 6 Sheet 6 of 40 | **Drawing Number:** 1 |

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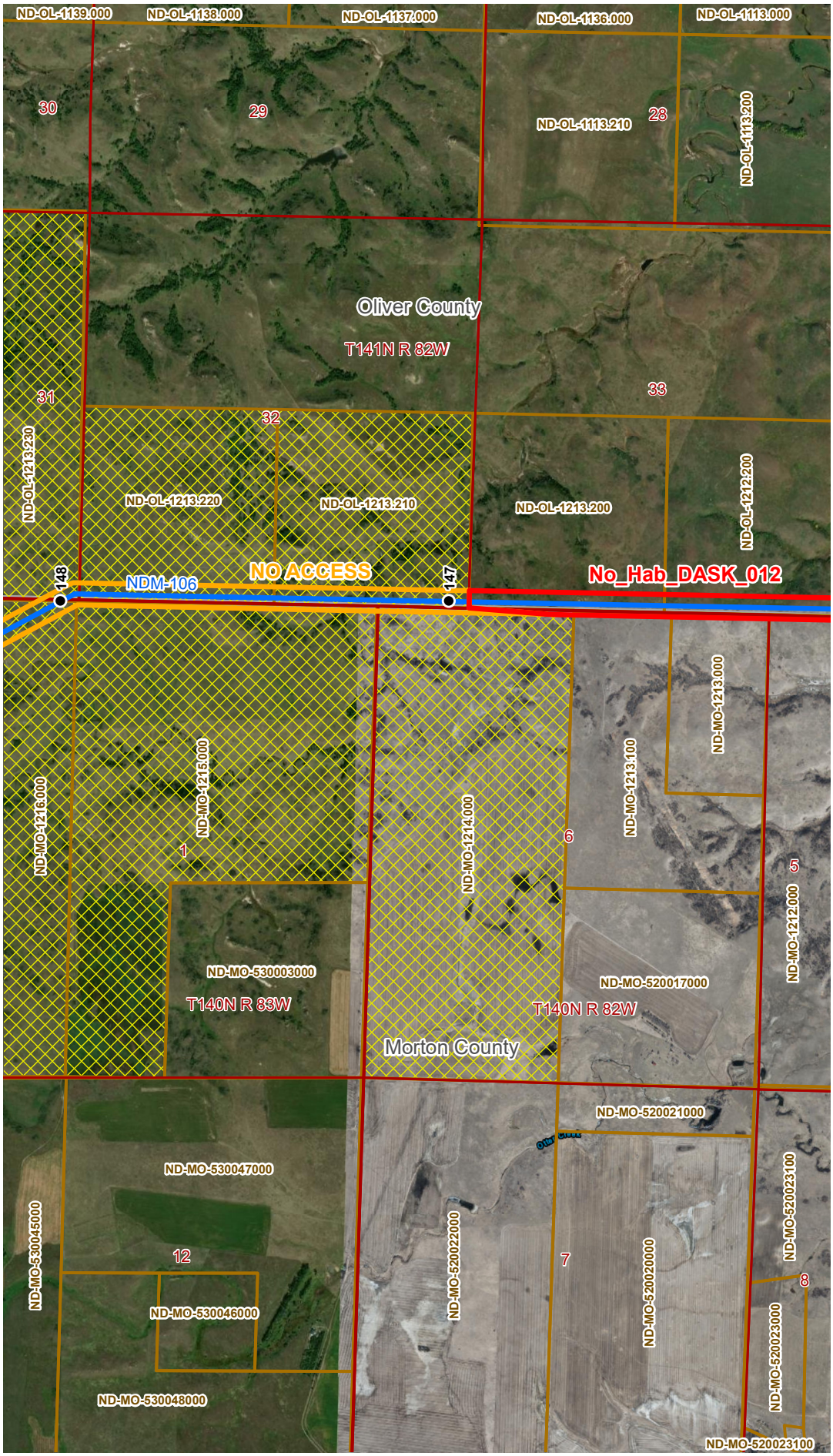
## 2022 DAKOTA SKIPPER SURVEY LOCATIONS

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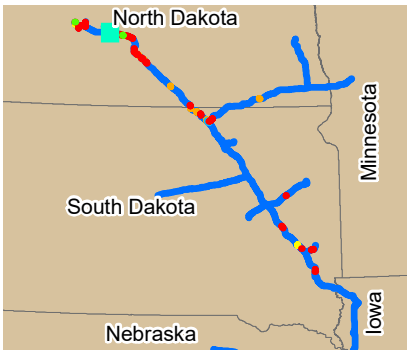


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Appendix B

| Scale: | Projection: |
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| Sheet: | Drawing Number: |
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| B - 7<br>Sheet 7 of 40 | 1 |

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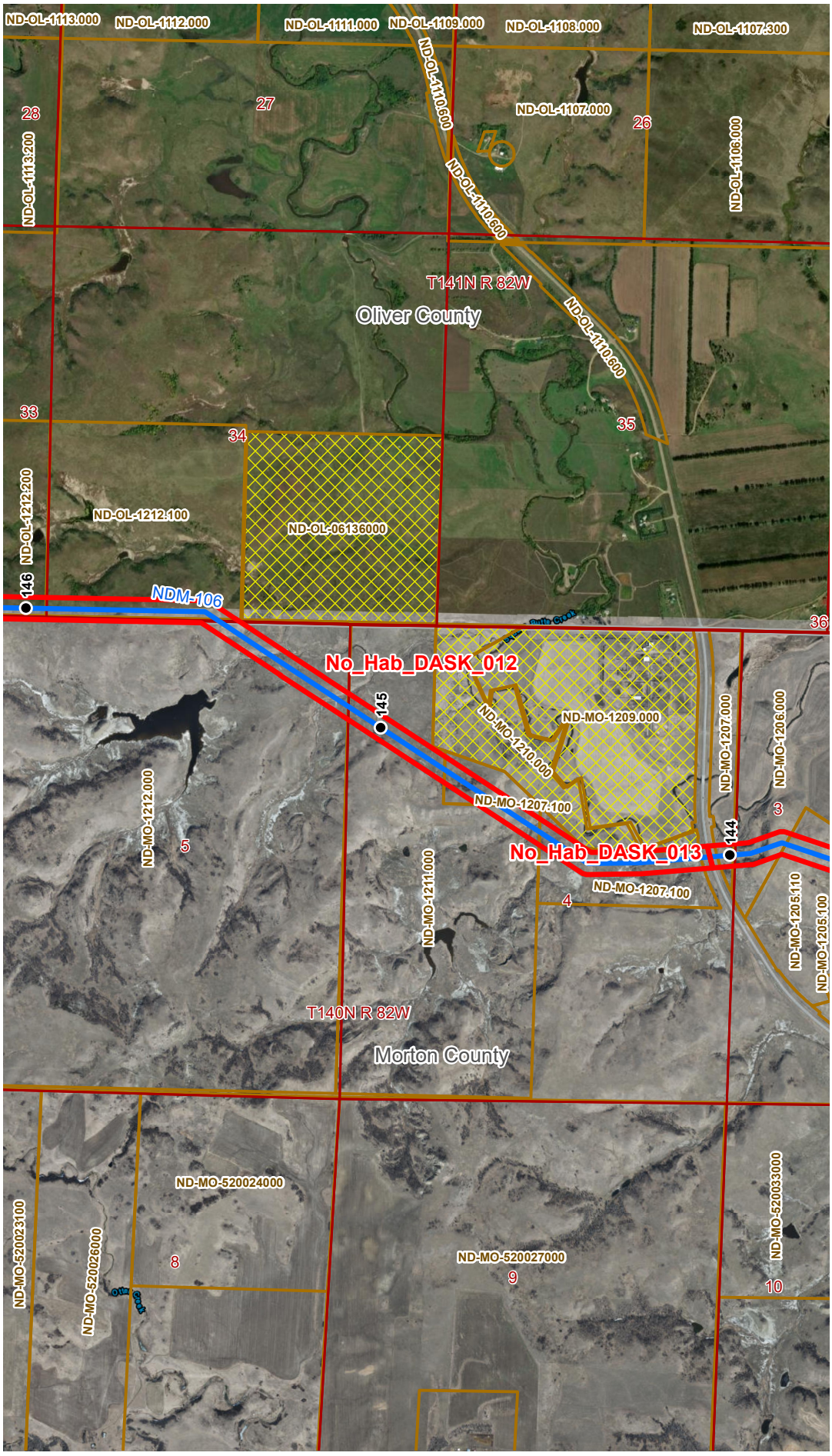
## 2022 DAKOTA SKIPPER SURVEY LOCATIONS

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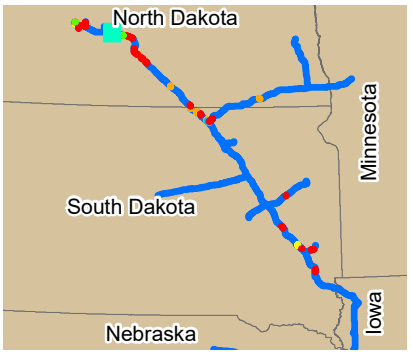


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Appendix B

| Scale: | Projection: |
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| 1:24,000 | NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
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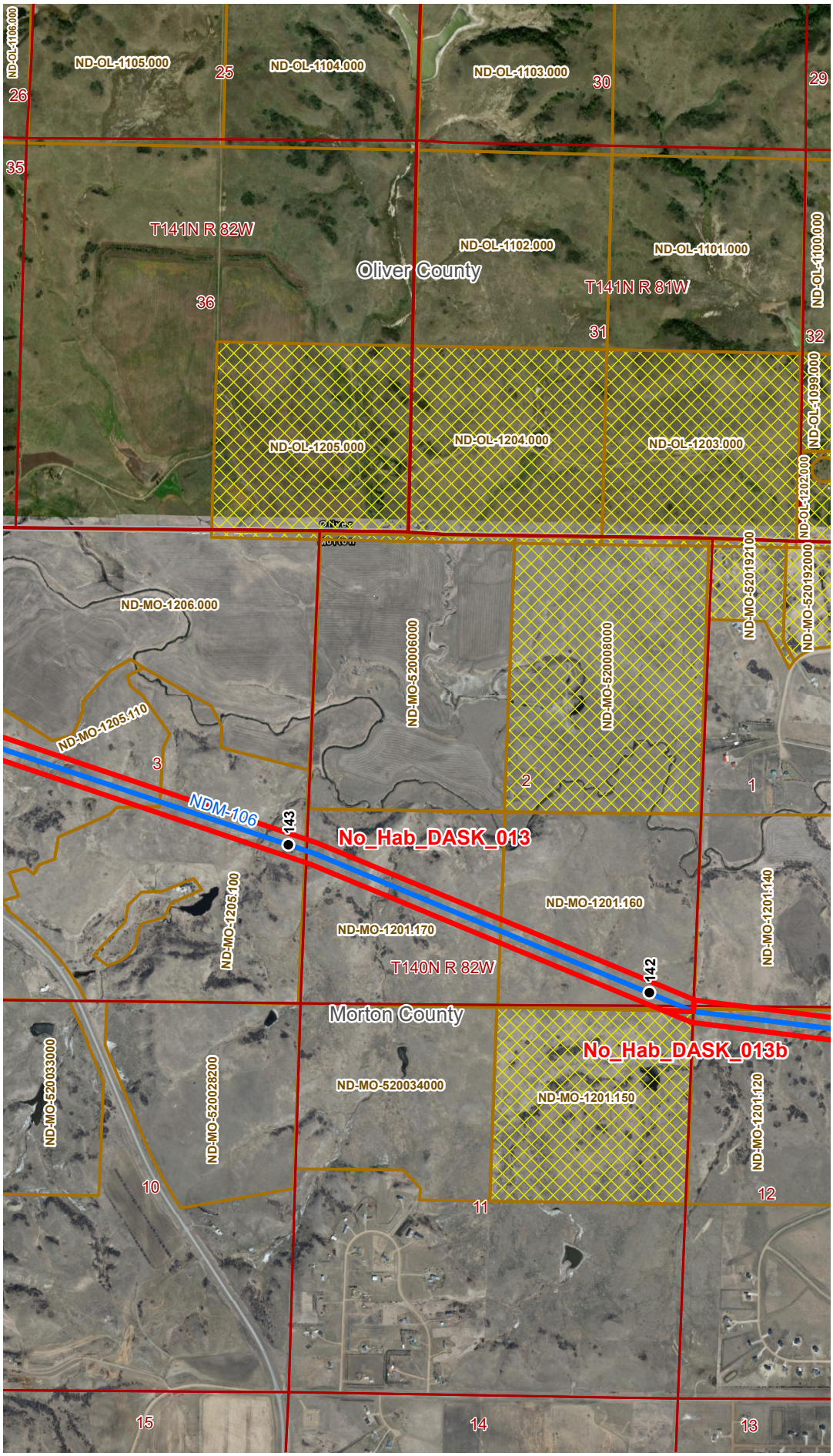
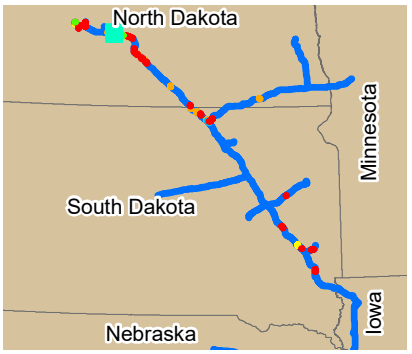
| B - 8<br>Sheet 8 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

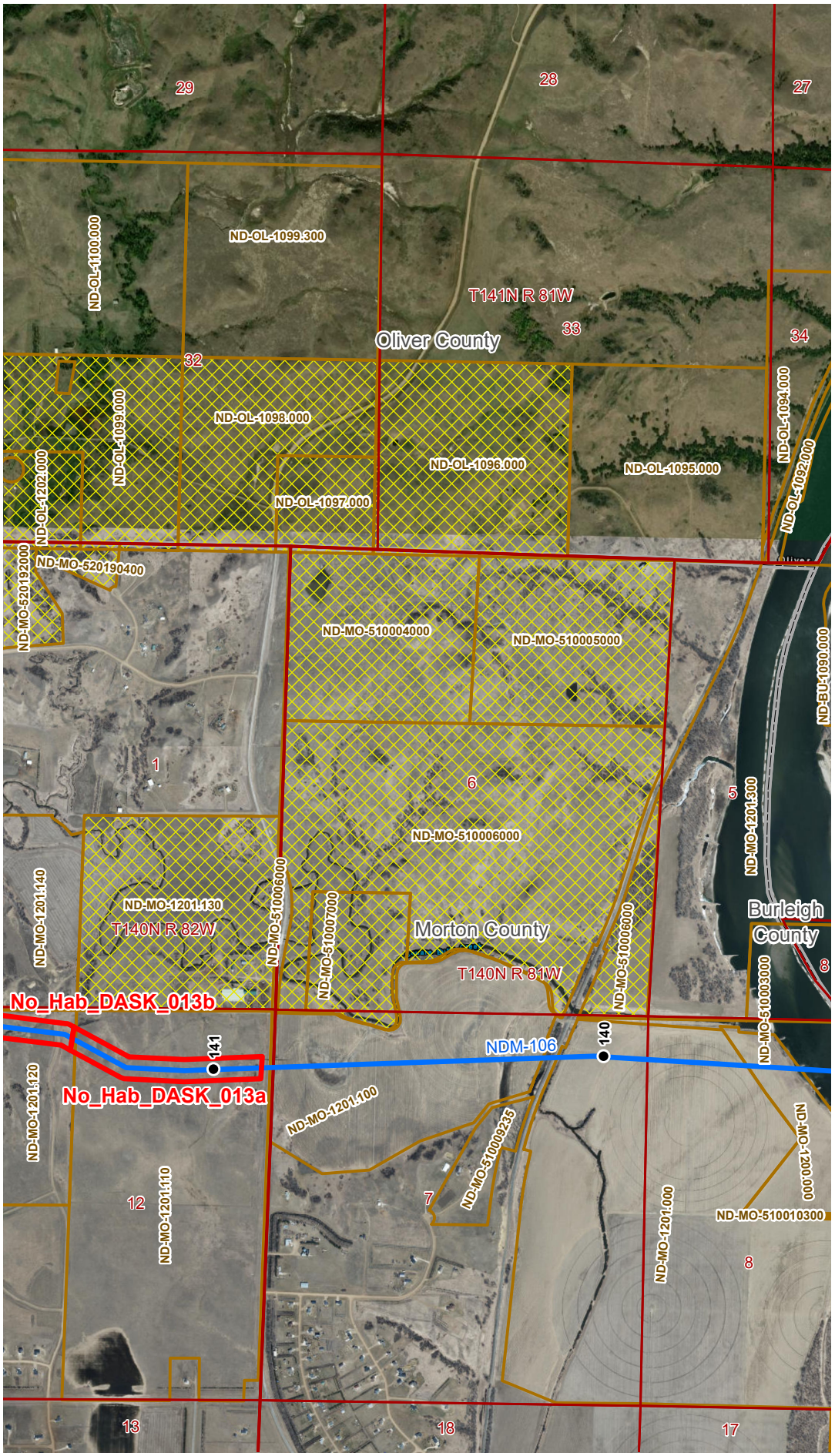
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

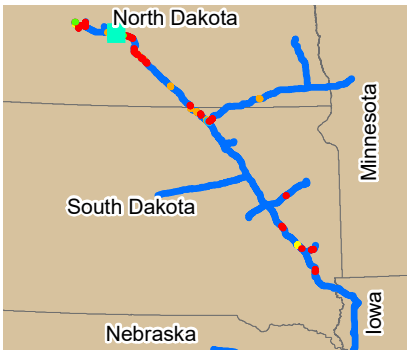
| Sheet: | Drawing Number: |
|---|---|
| B - 9<br>Sheet 9 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
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- PCN Project Route 07/19/2022
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0 1,000 2,000
Feet

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

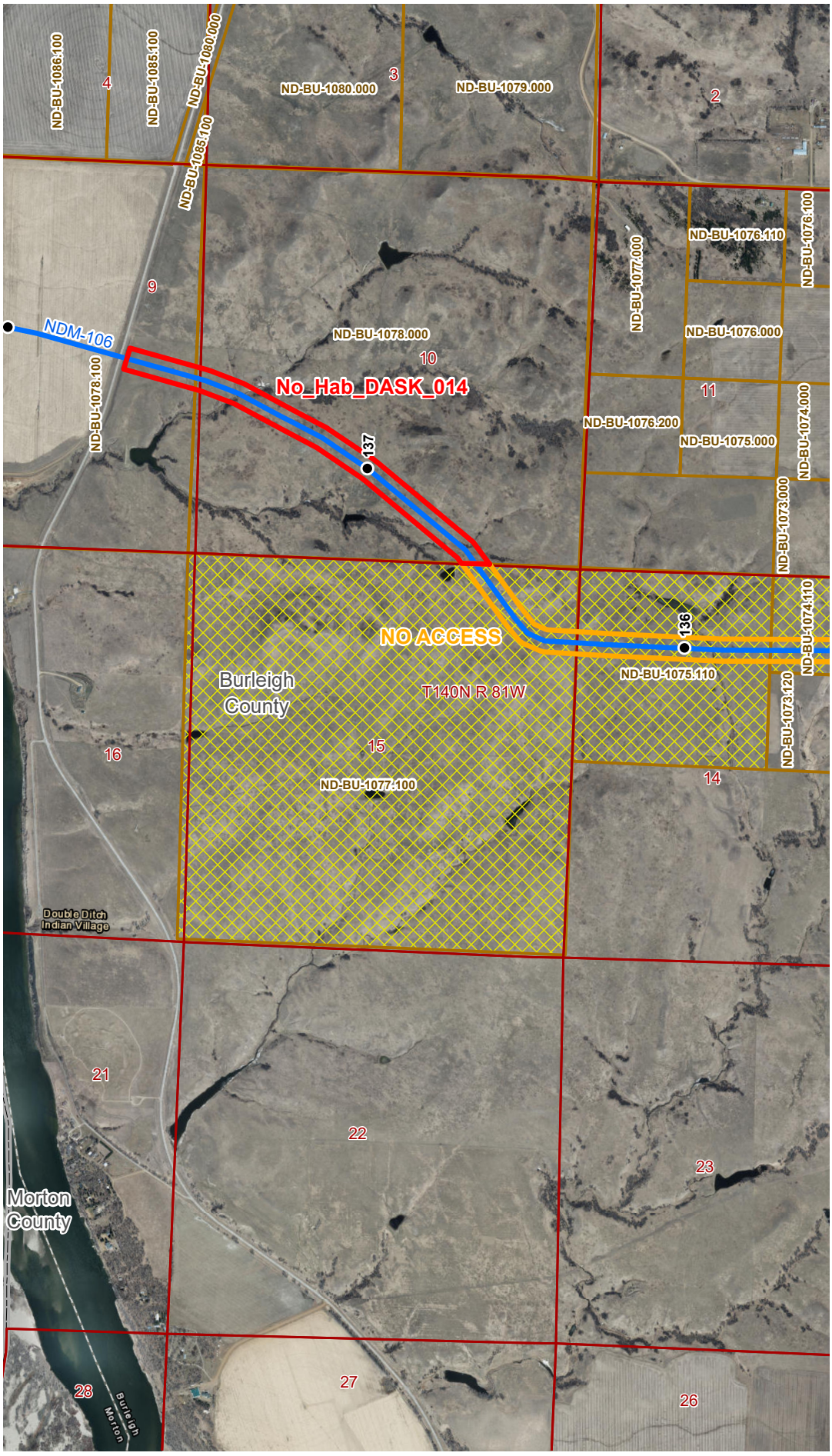
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

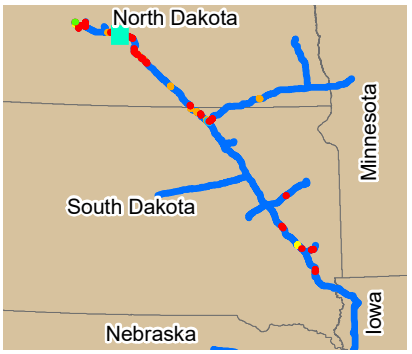
| Sheet: | Drawing Number: |
|---|---|
| B - 10<br>Sheet 10 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
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- PCN Project Route 07/19/2022
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0 1,000 2,000
Feet

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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

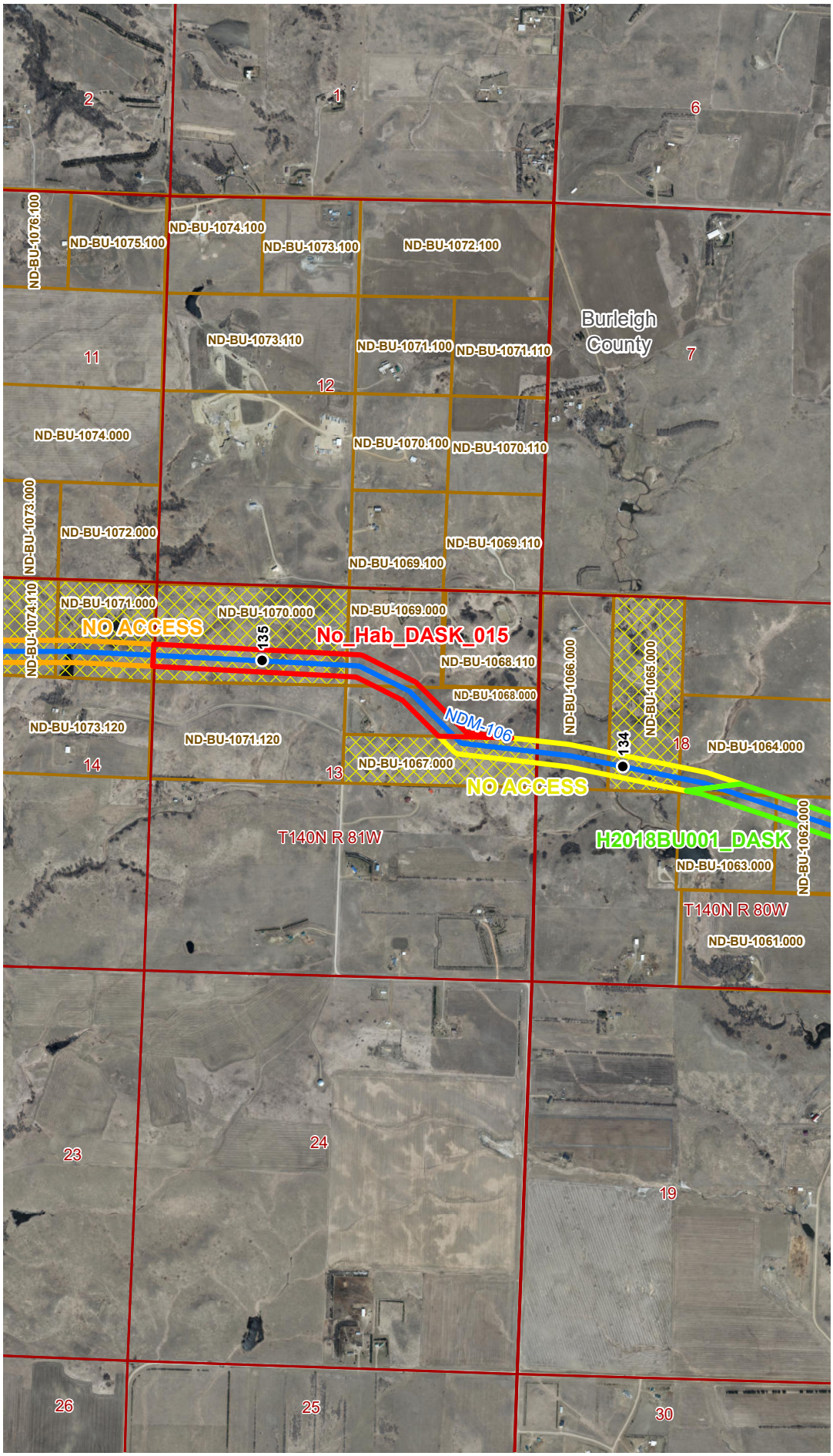
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

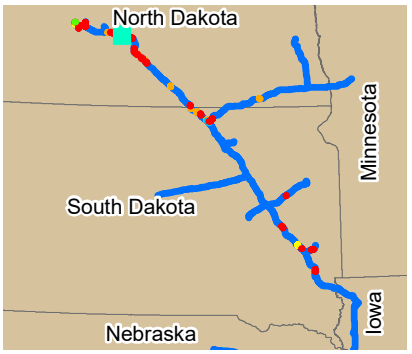
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 11, Sheet 11 of 40 | Drawing Number: 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
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0 1,000 2,000
Feet

## REVISIONS

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

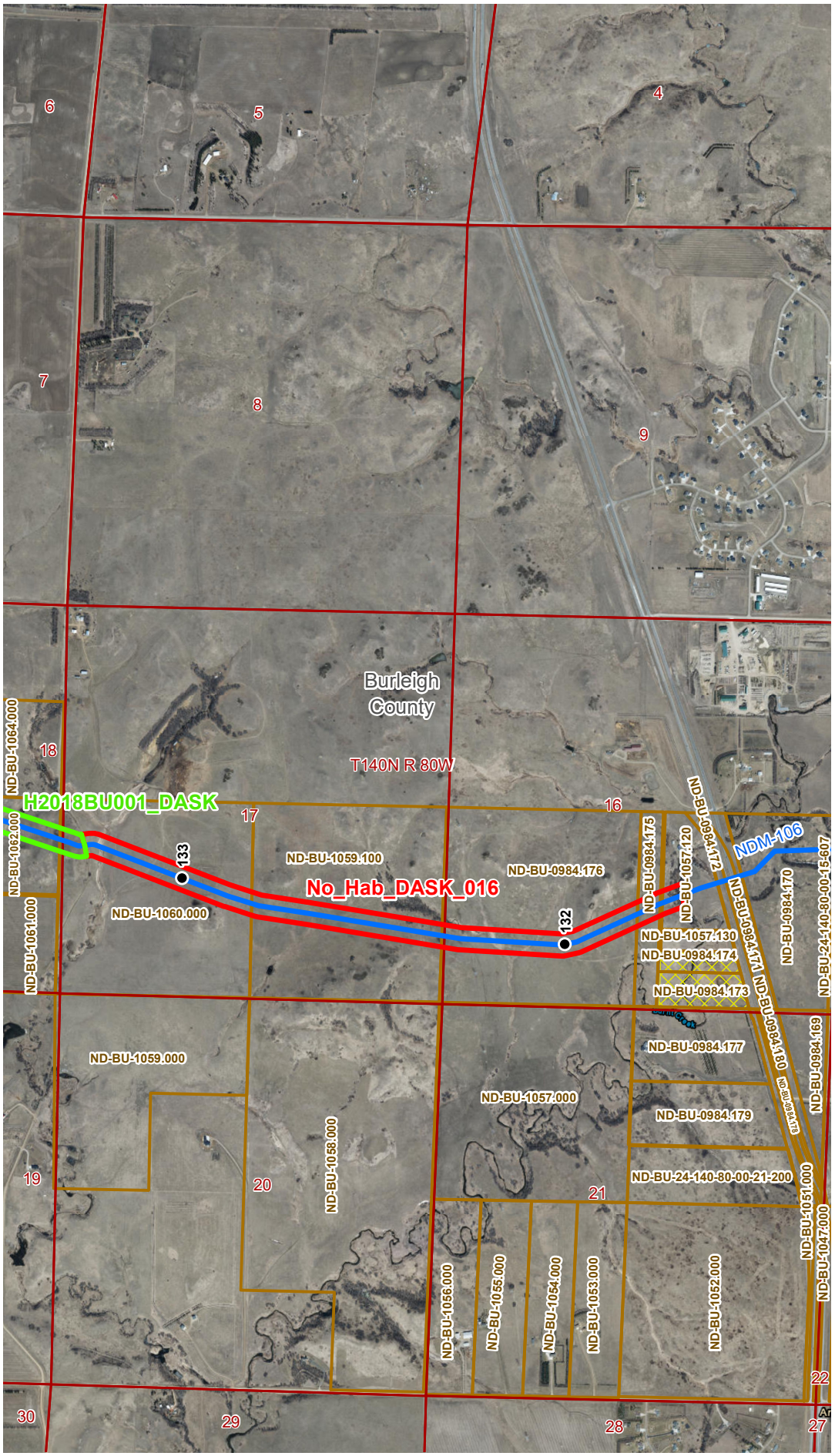
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

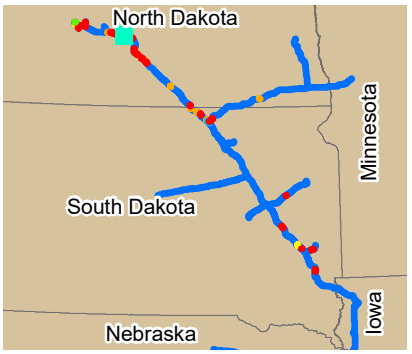
| Sheet: | Drawing Number: |
|---|---|
| B - 12<br>Sheet 12 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
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- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

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## MIDWEST CARBON EXPRESS PROJECT

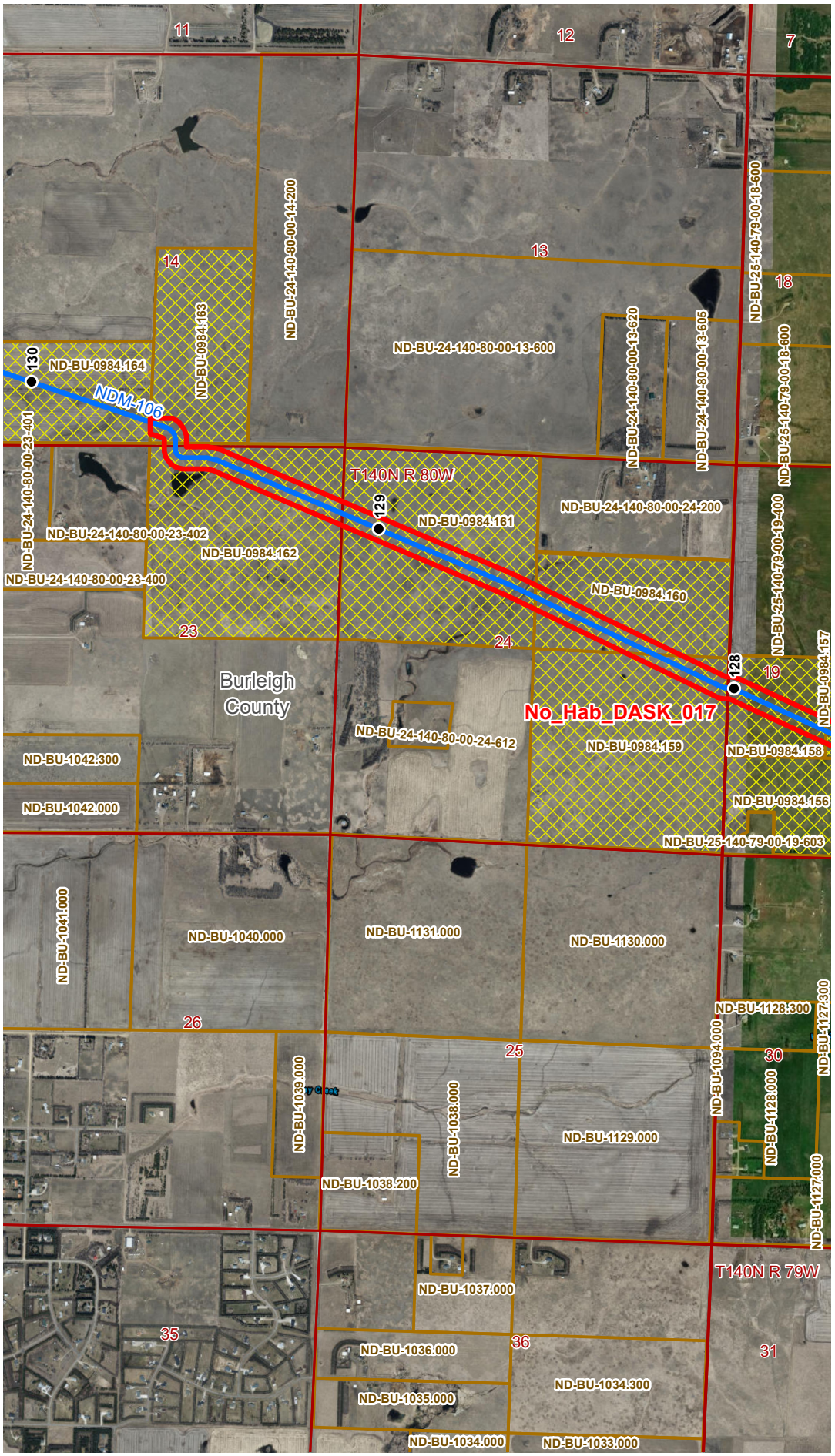
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

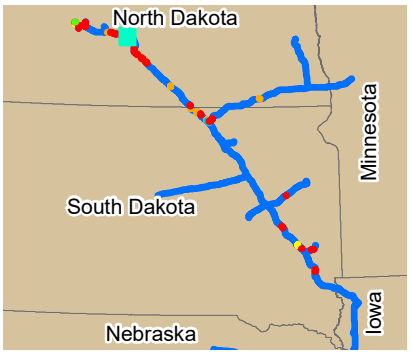
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 13 Sheet 13 of 40 | **Drawing Number:** 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
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0 1,000 2,000
Feet

## REVISIONS

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

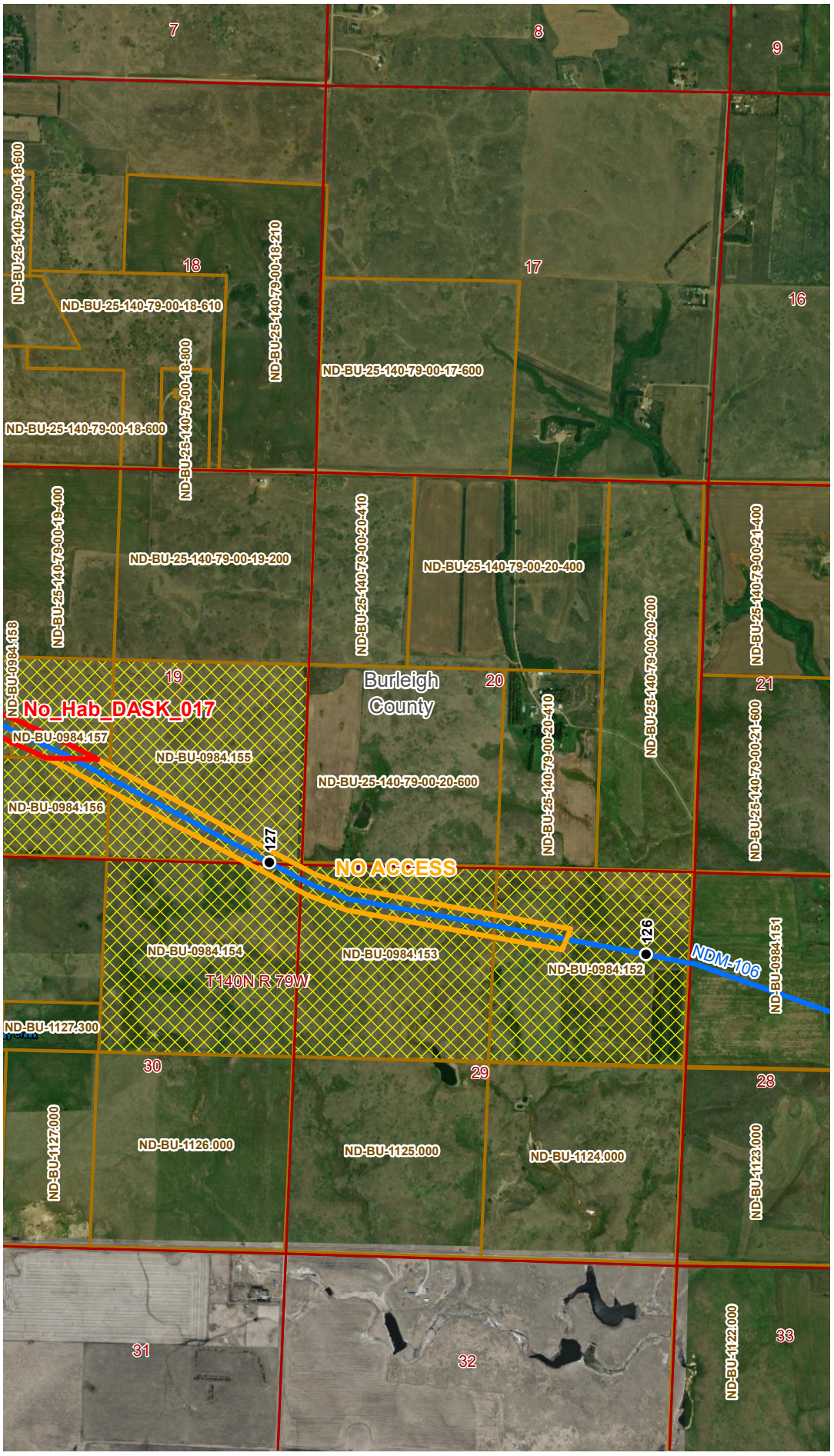
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

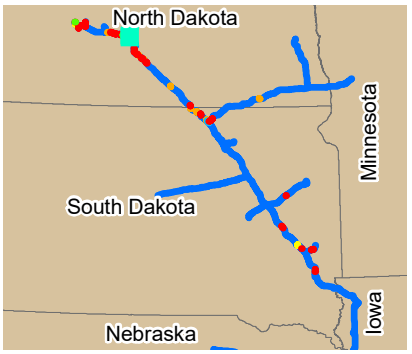
| Sheet: | Drawing Number: |
|---|---|
| B - 14<br>Sheet 14 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
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- PCN Project Route 07/19/2022
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0 1,000 2,000
Feet

## REVISIONS

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## MIDWEST CARBON EXPRESS PROJECT

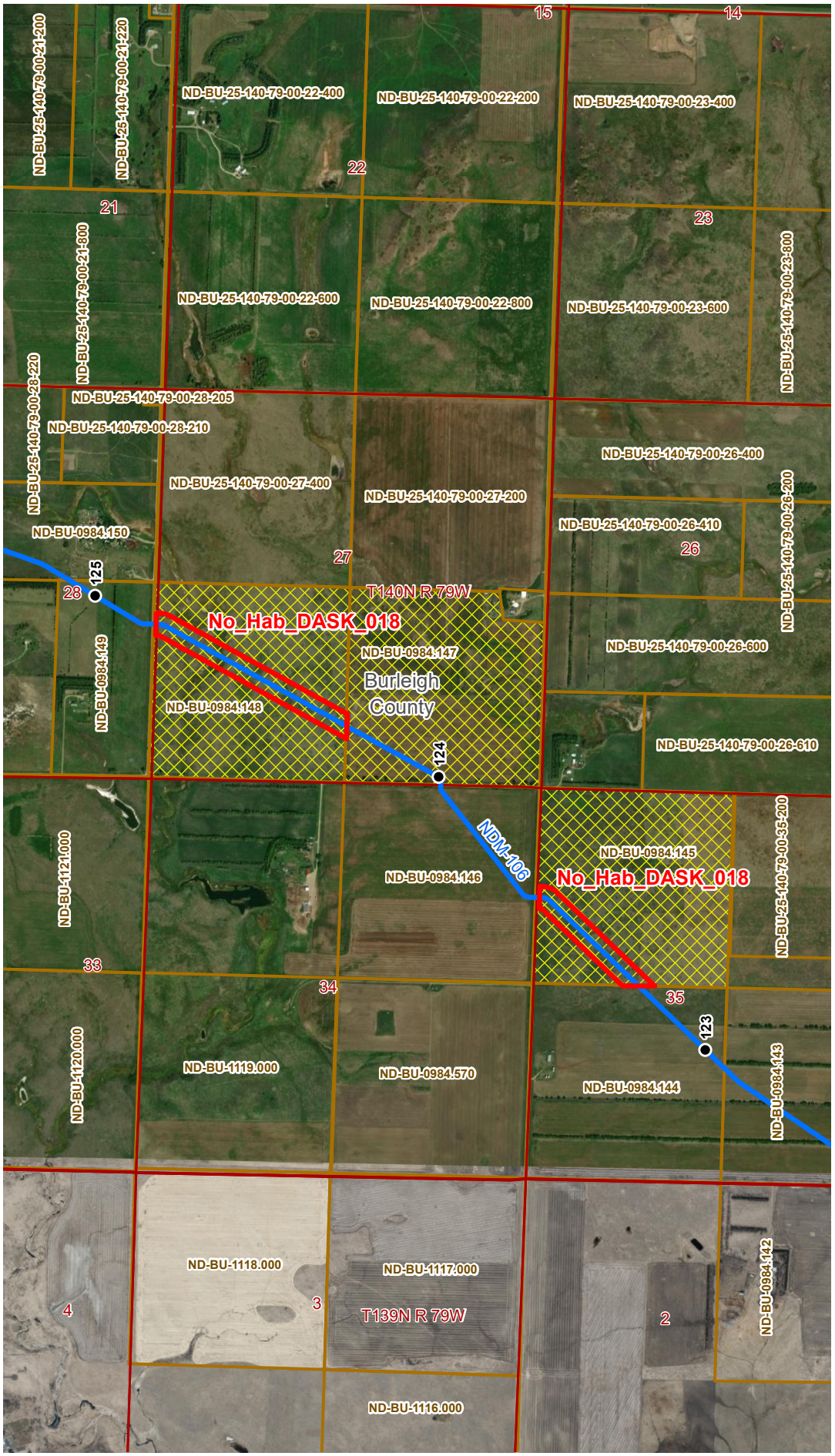
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

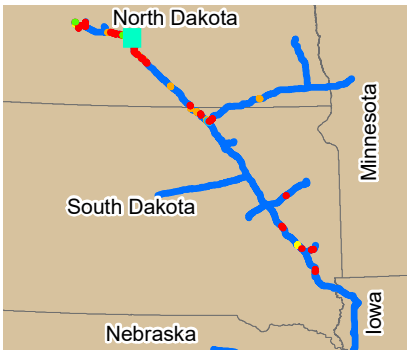
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 15, Sheet 15 of 40 | Drawing Number: 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

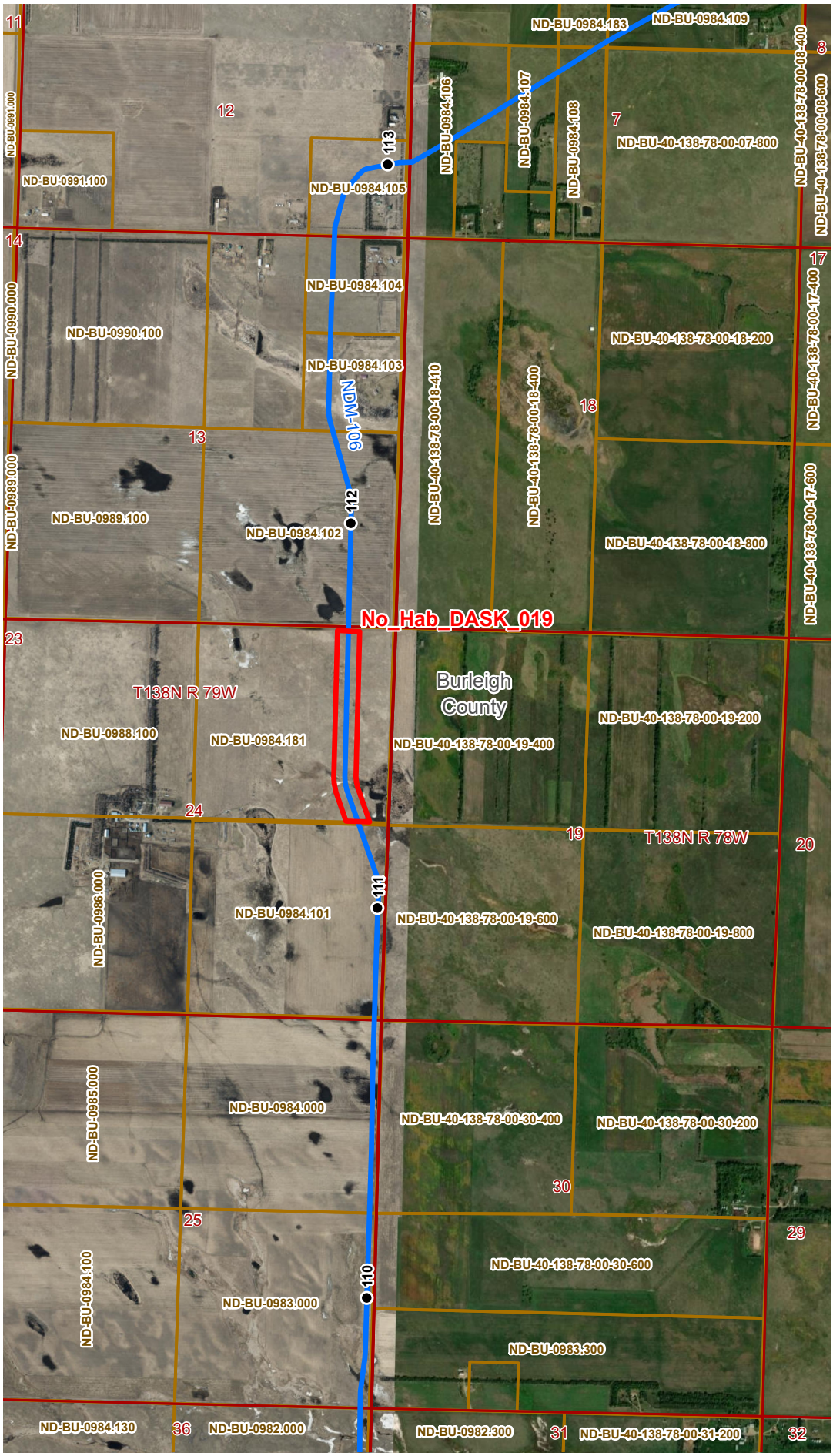
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

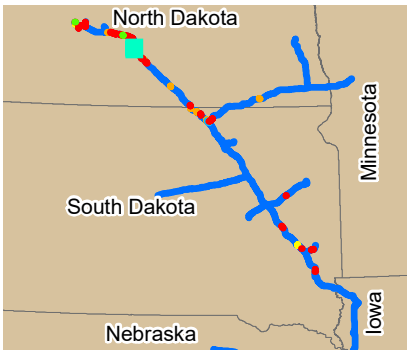
| Sheet: | Drawing Number: |
|---|---|
| B - 16 | 1 |
| Sheet 16 of 40 | |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
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- Unsuitable Habitat
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0 1,000 2,000
Feet

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

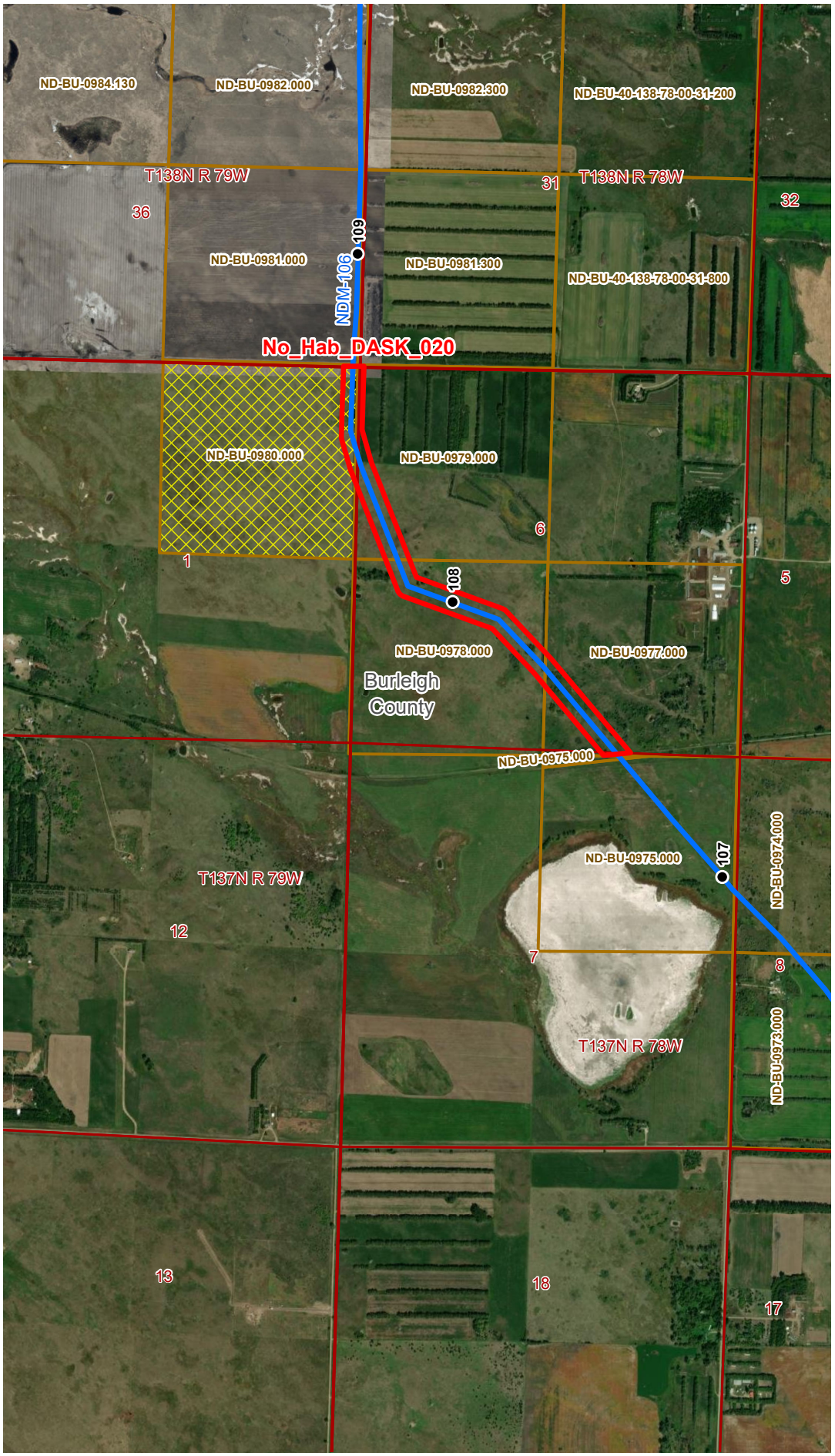
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

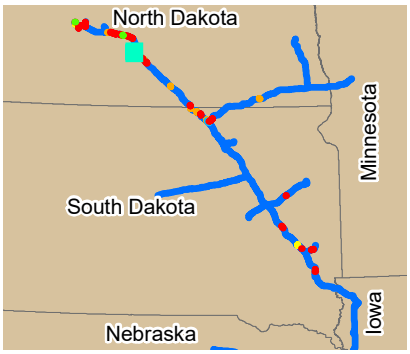
| Sheet: | Drawing Number: |
|---|---|
| B - 17<br>Sheet 17 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

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0 1,000 2,000
Feet

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

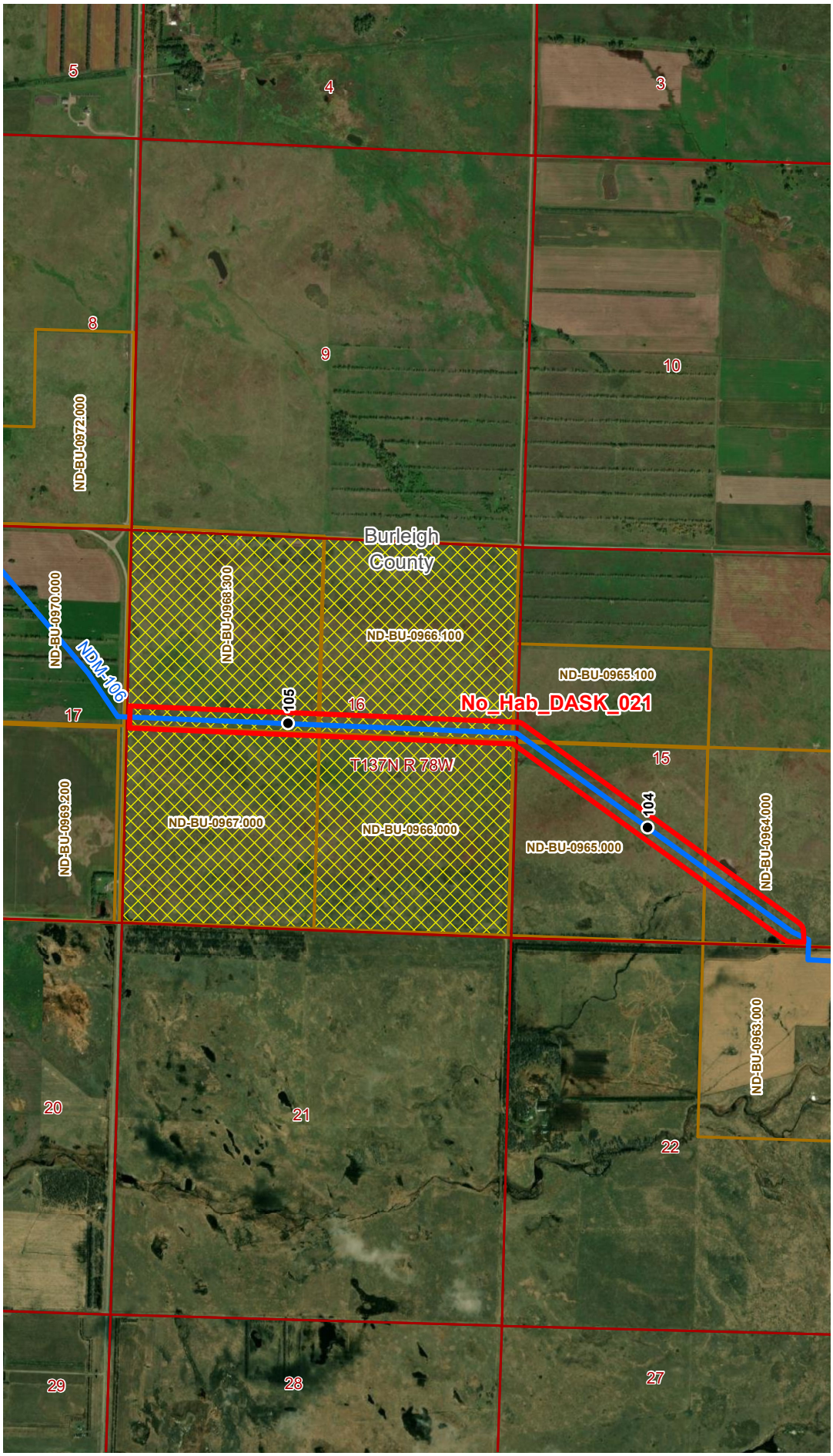
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

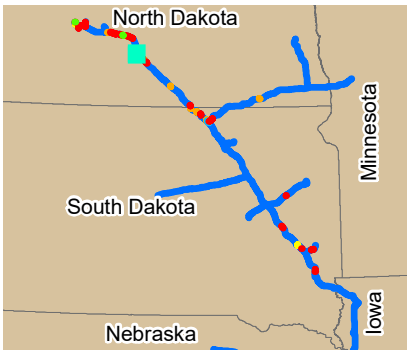
| Sheet: | Drawing Number: |
|---|---|
| B - 18<br>Sheet 18 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

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Feet

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

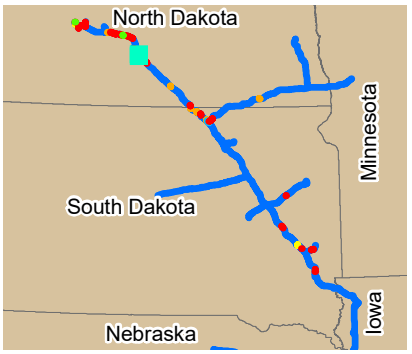
| Sheet: | Drawing Number: |
|---|---|
| B - 19<br>Sheet 19 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 20, Sheet 20 of 40 | Drawing Number: 1 |

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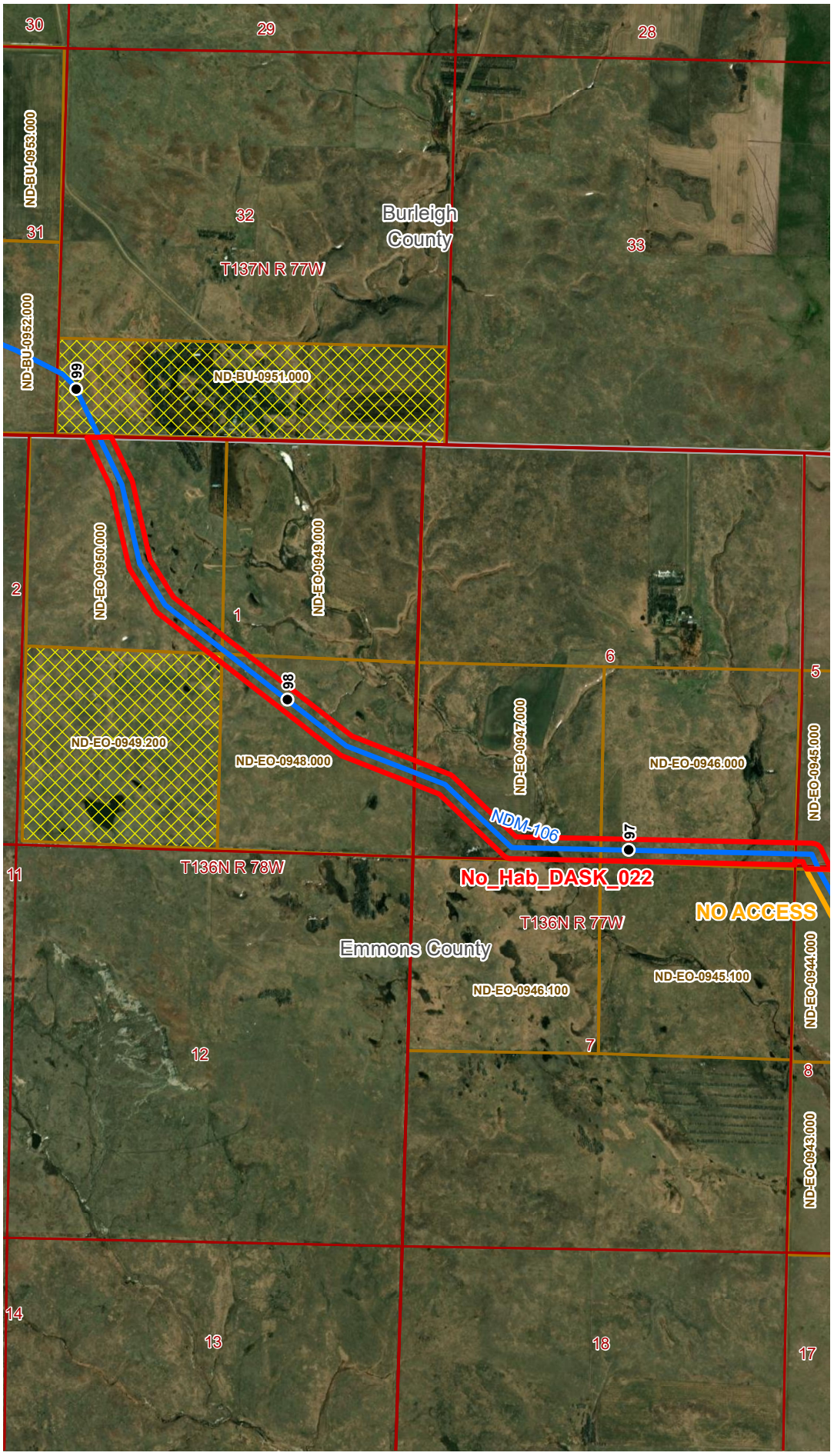
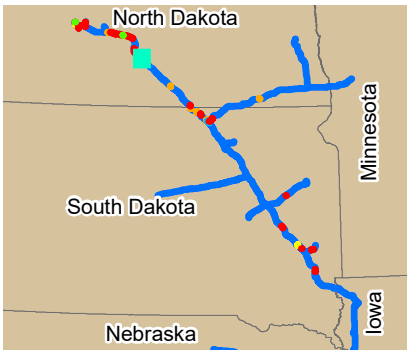
## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

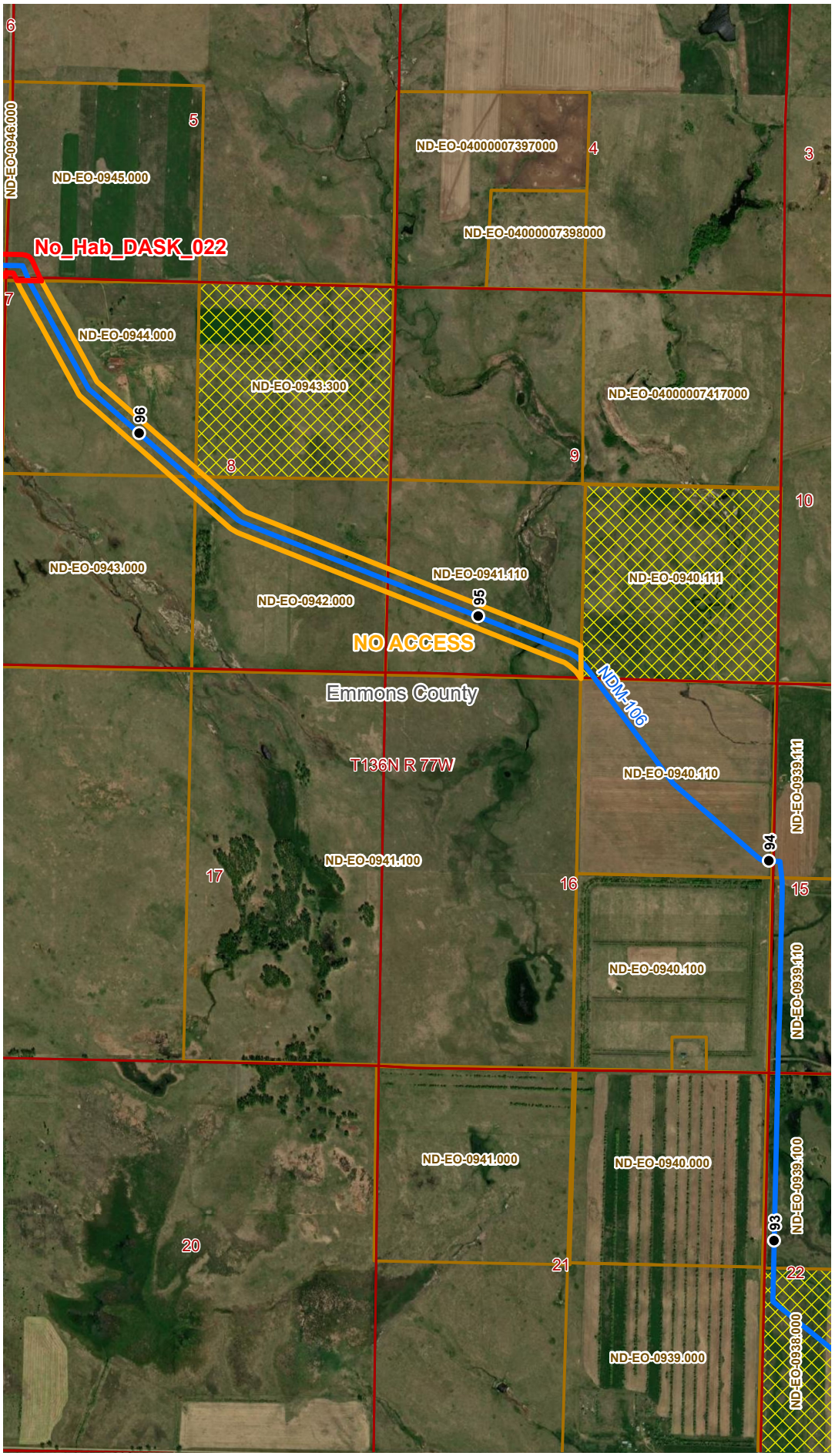
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

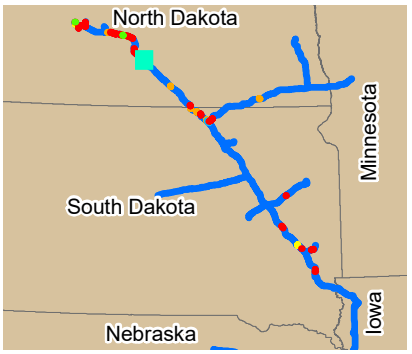
| Sheet: | Drawing Number: |
|---|---|
| B - 21<br>Sheet 21 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

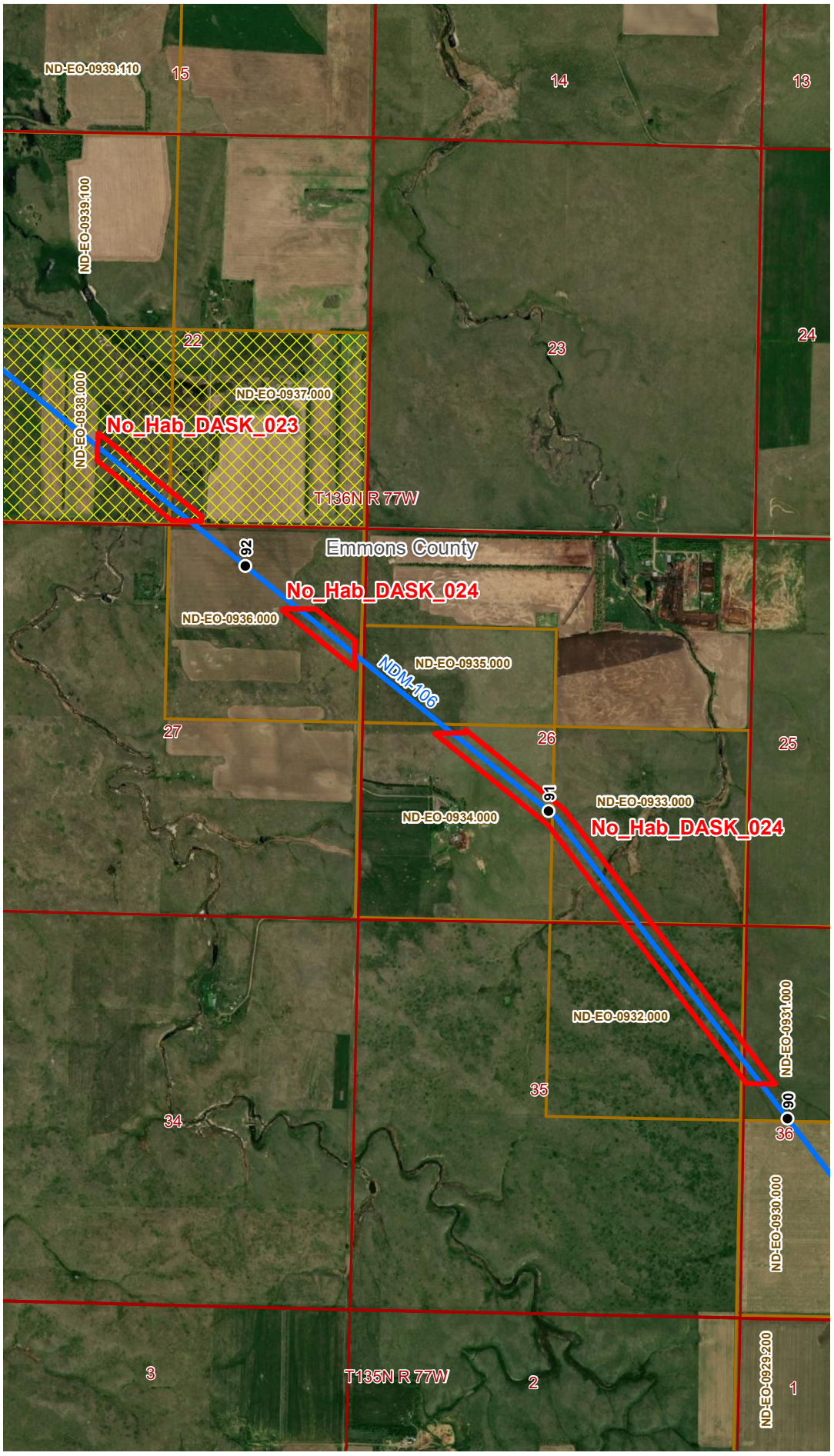
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

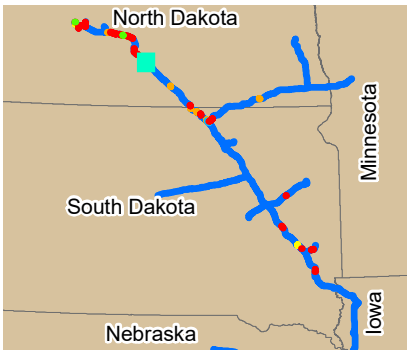
| Sheet: | Drawing Number: |
|---|---|
| B - 22<br>Sheet 22 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

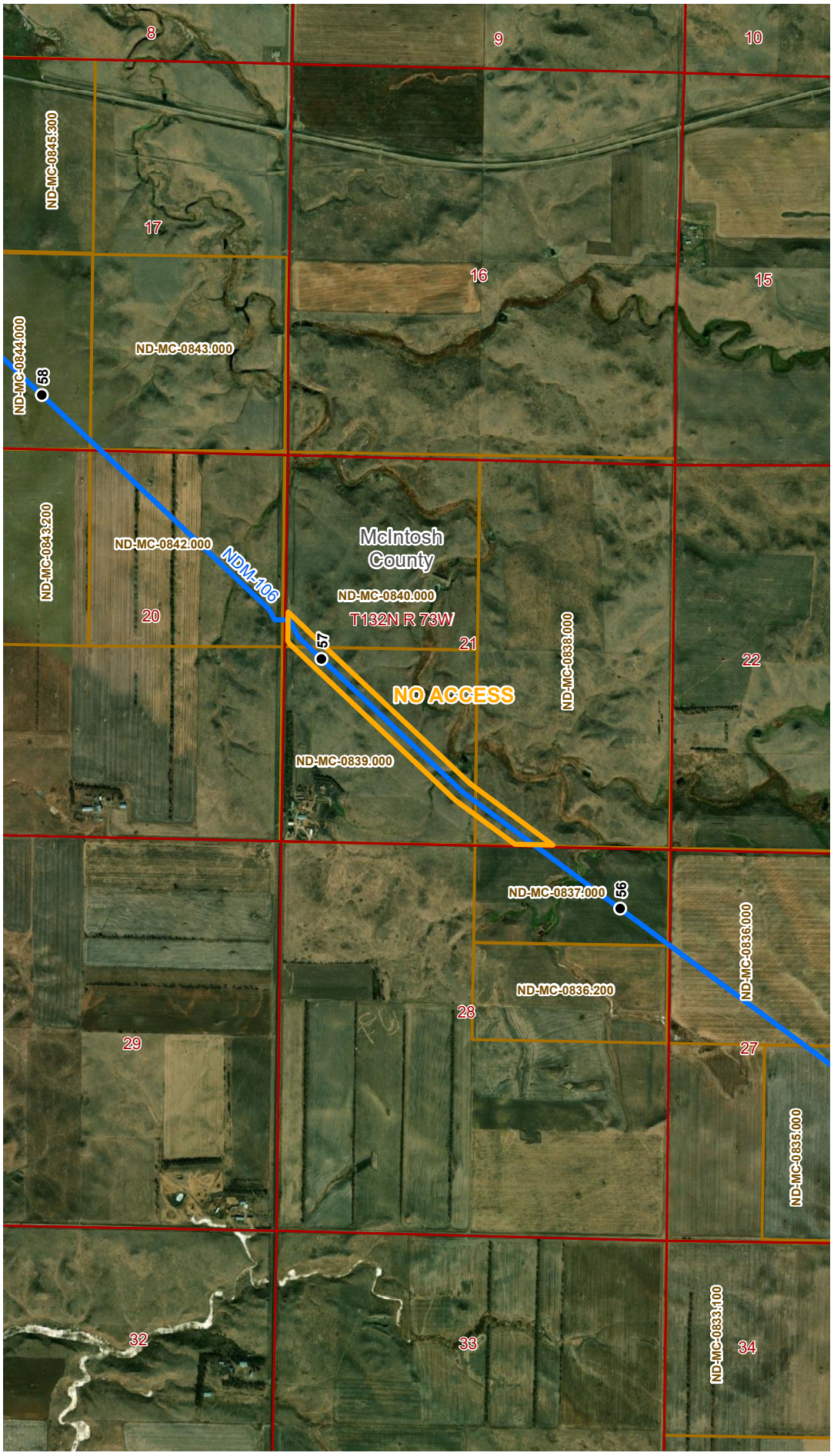
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

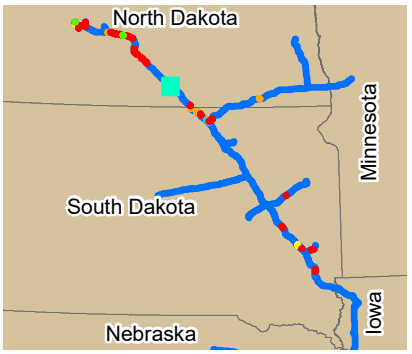
| Sheet: | Drawing Number: |
|---|---|
| B - 23<br>Sheet 23 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

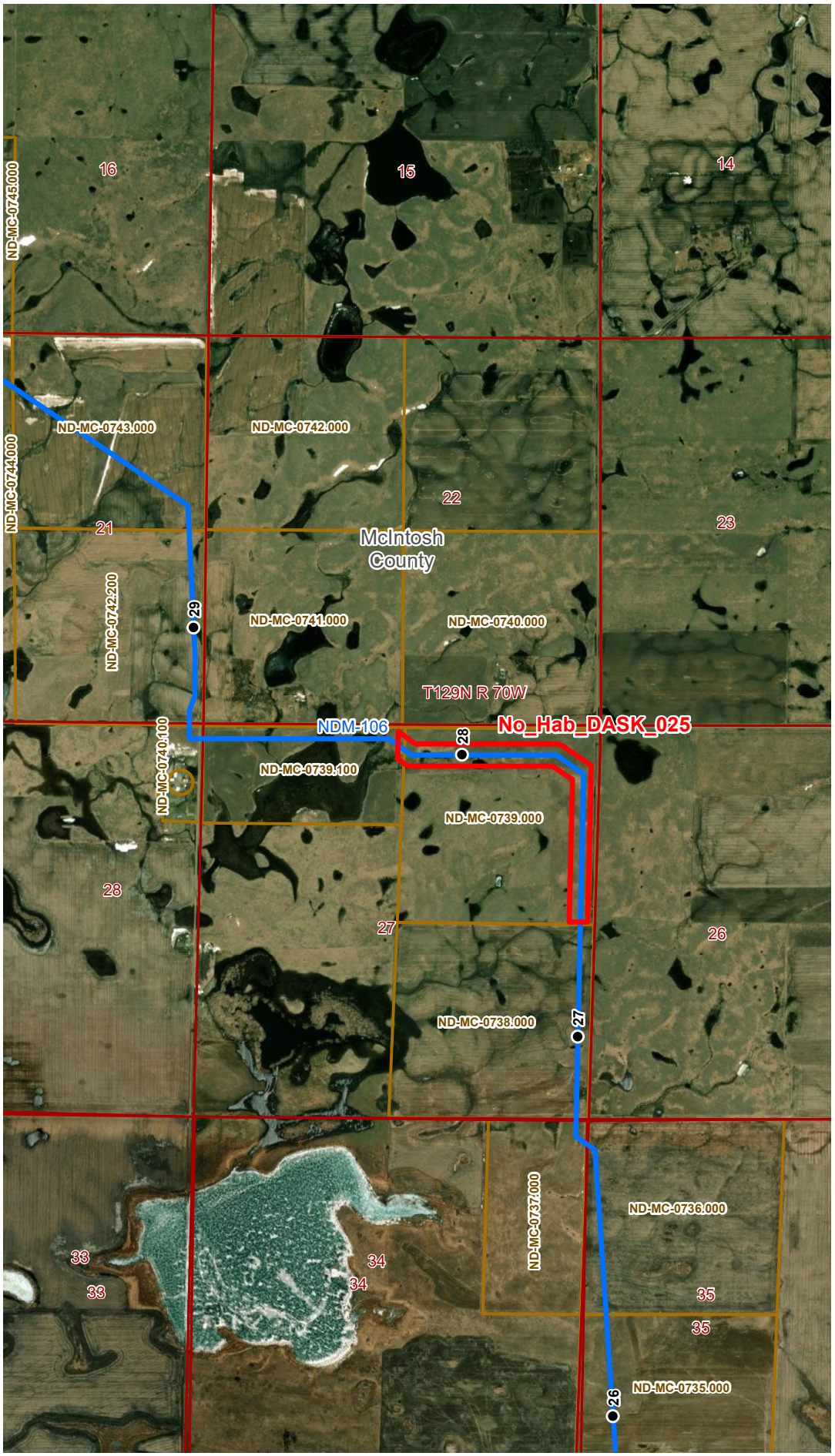
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

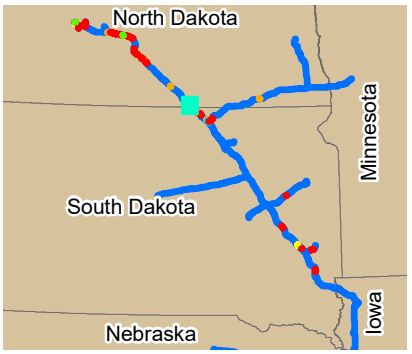
| Sheet: | Drawing Number: |
|---|---|
| B - 24<br>Sheet 24 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

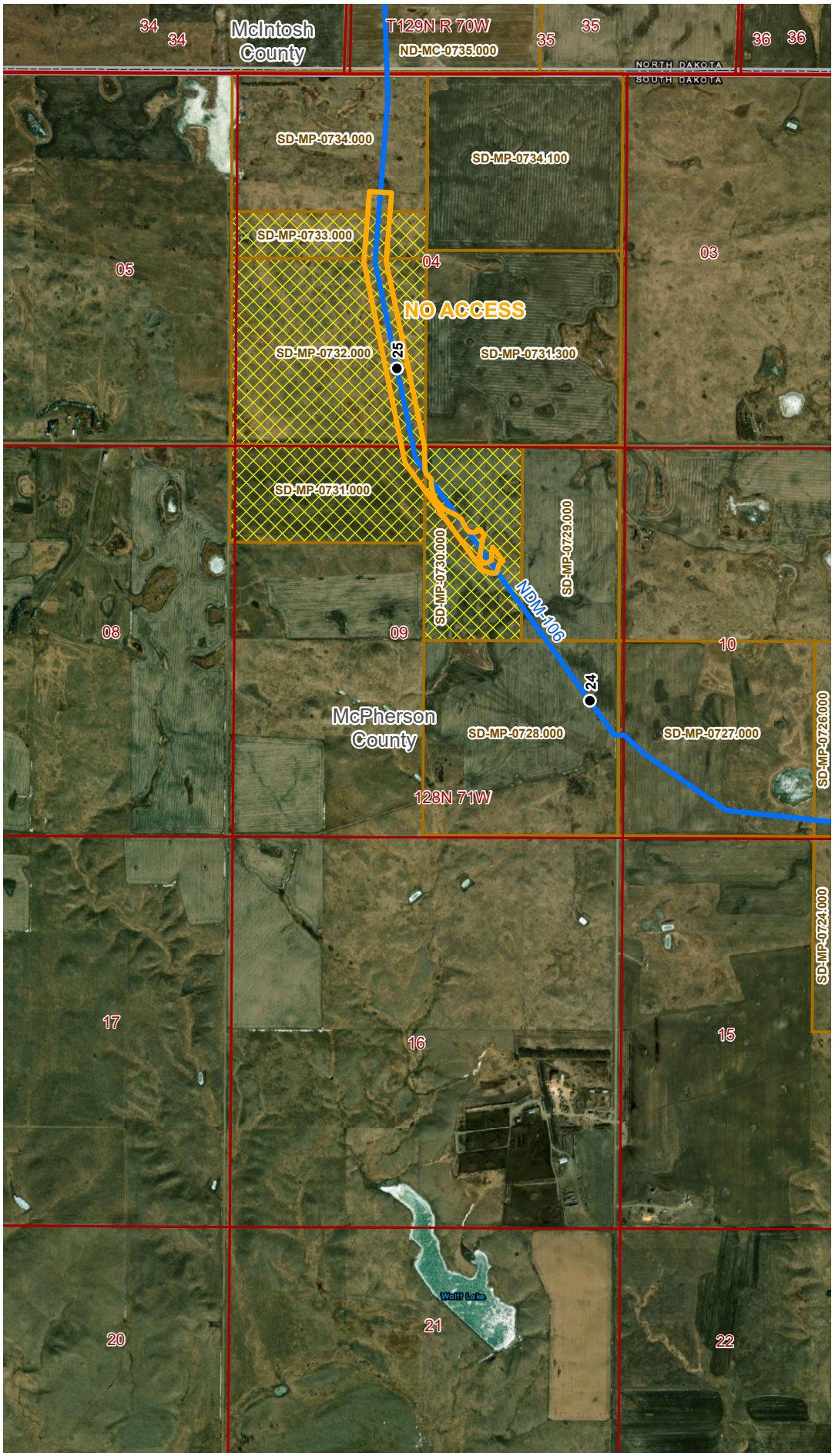
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

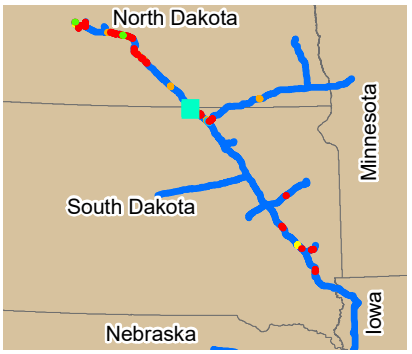
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 25 Sheet 25 of 40 | **Drawing Number:** 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

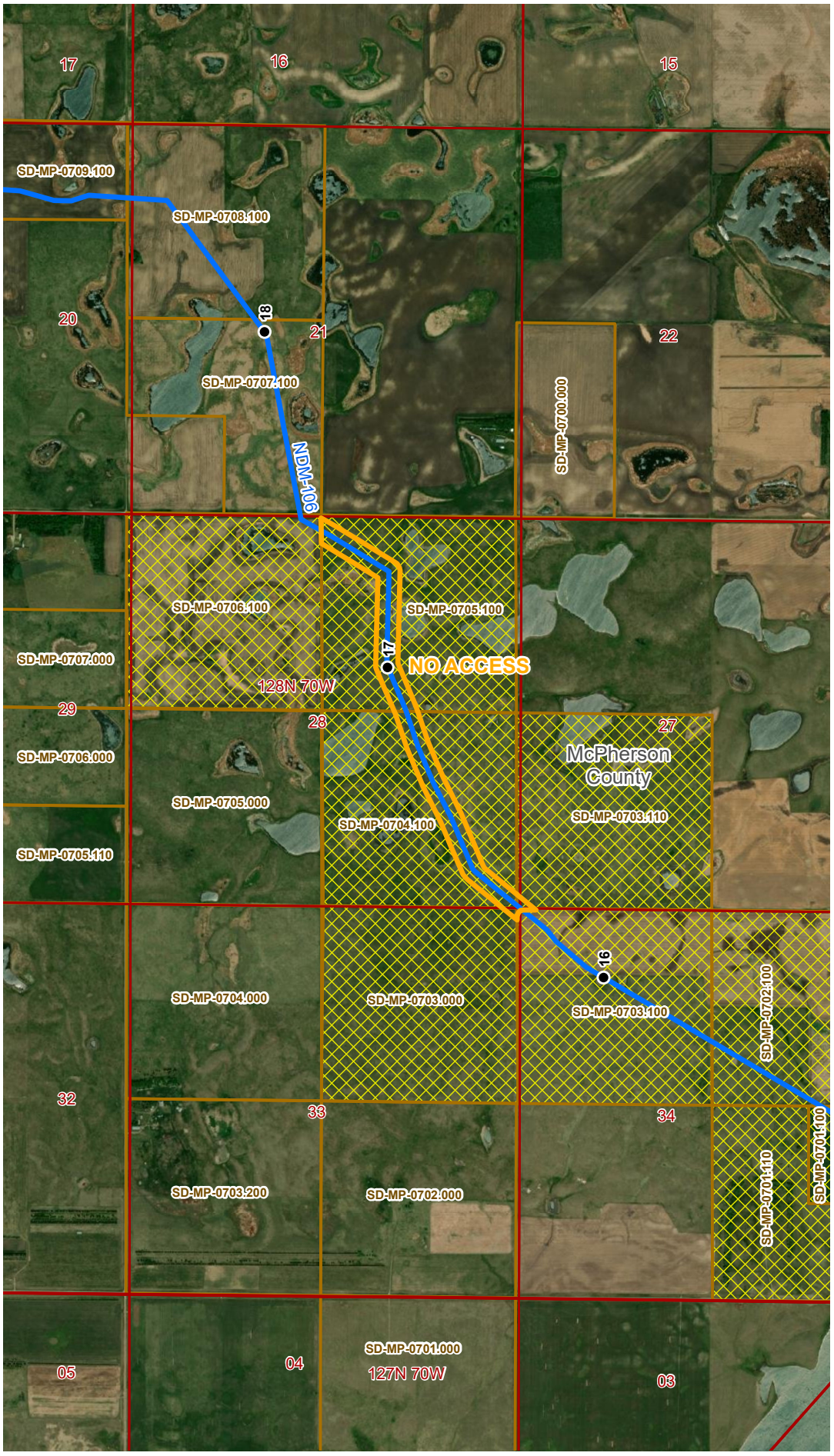
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

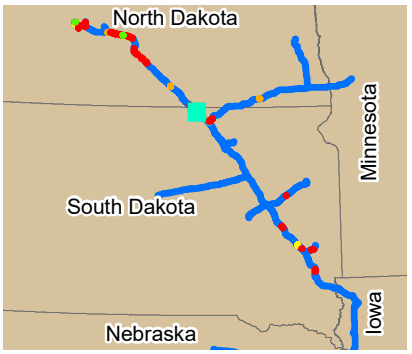
| Sheet: | Drawing Number: |
|---|---|
| B - 26<br>Sheet 26 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

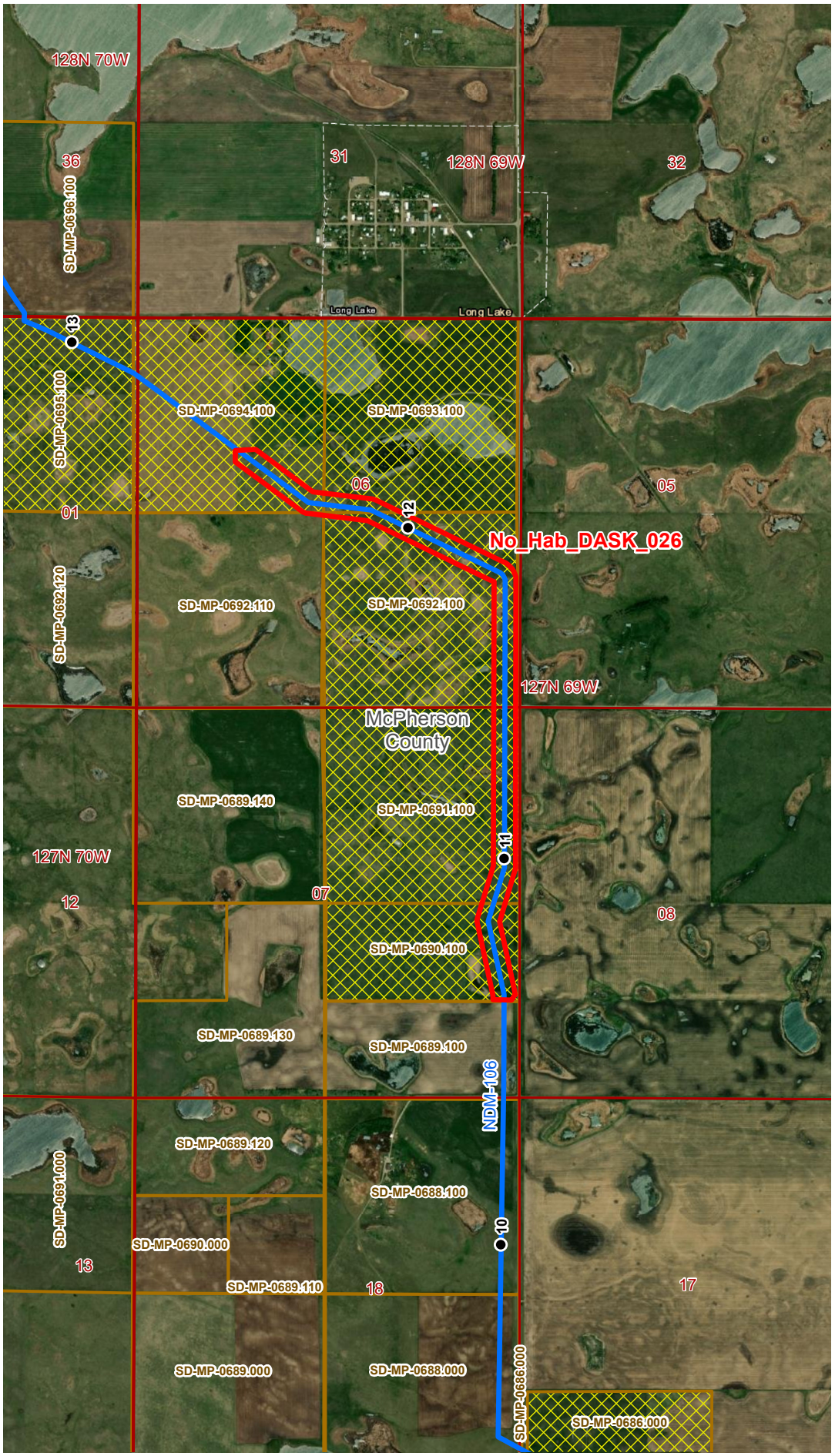
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

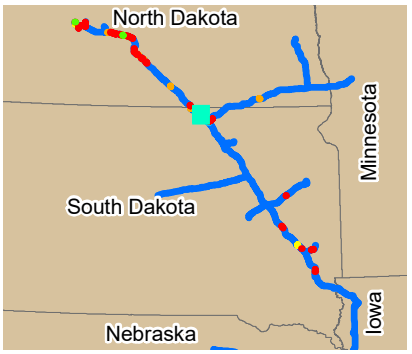
| Sheet: | Drawing Number: |
|---|---|
| B - 27<br>Sheet 27 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

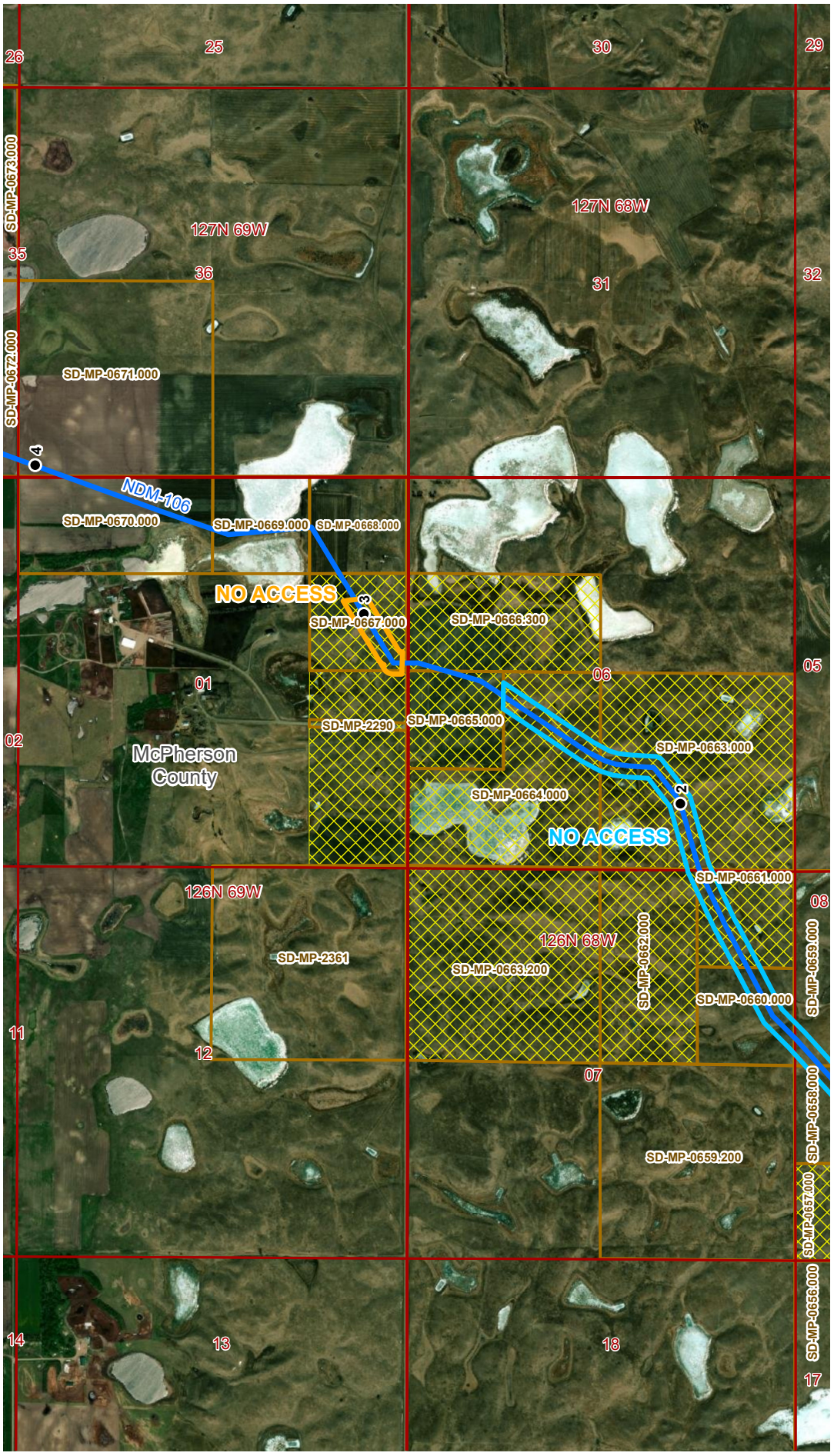
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

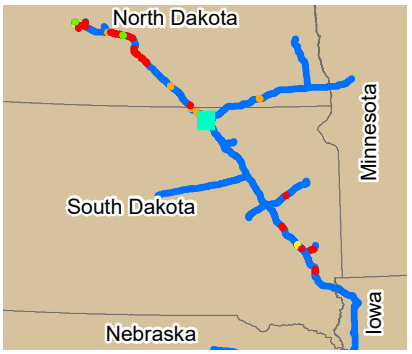
| Sheet: | Drawing Number: |
|---|---|
| B - 28<br>Sheet 28 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

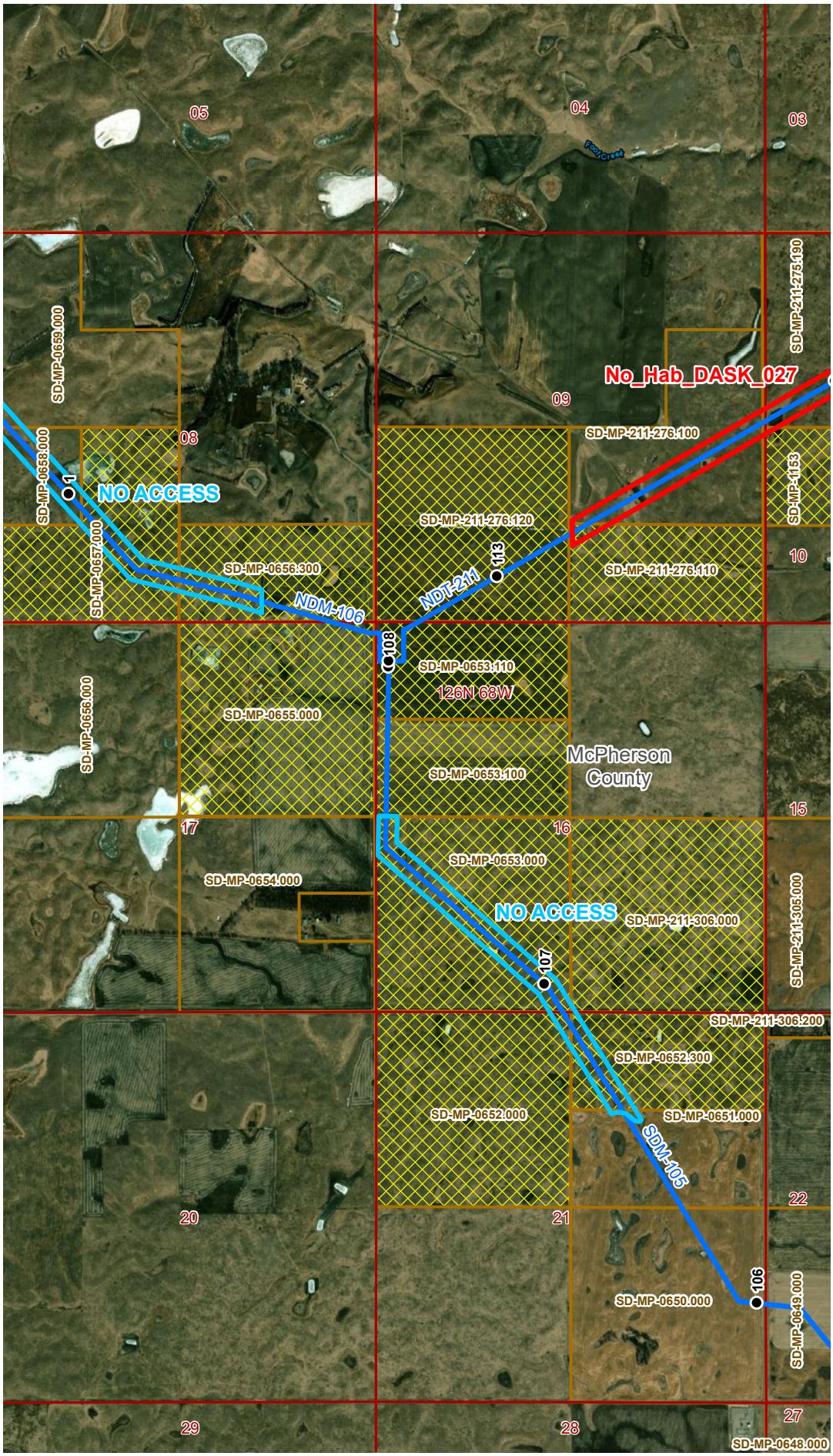
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

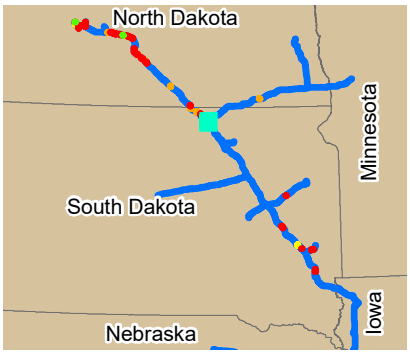
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 29, Sheet 29 of 40 | Drawing Number: 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

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| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

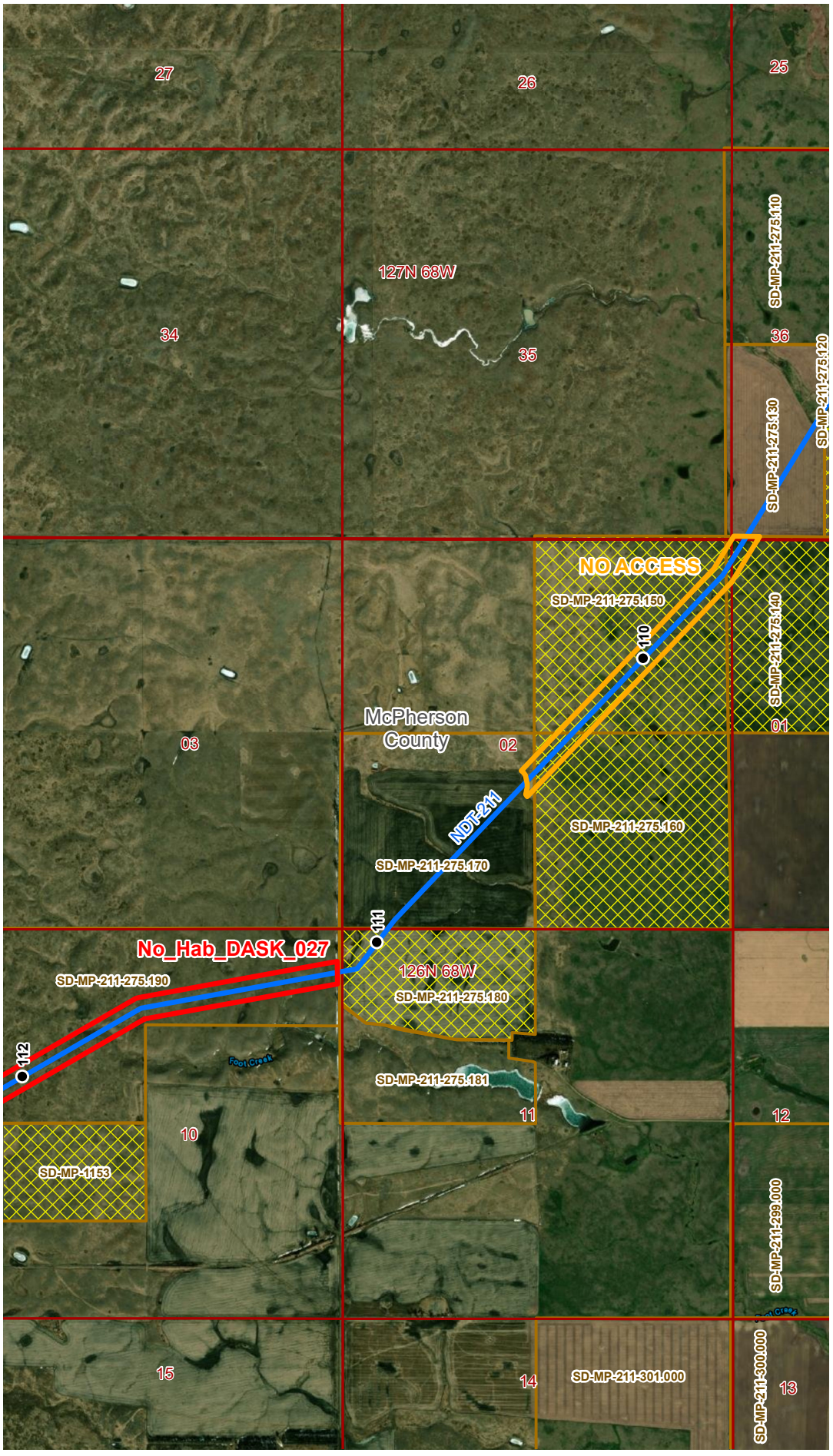
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

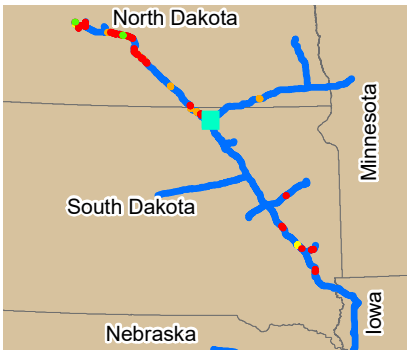
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 30 Sheet 30 of 40 | **Drawing Number:** 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

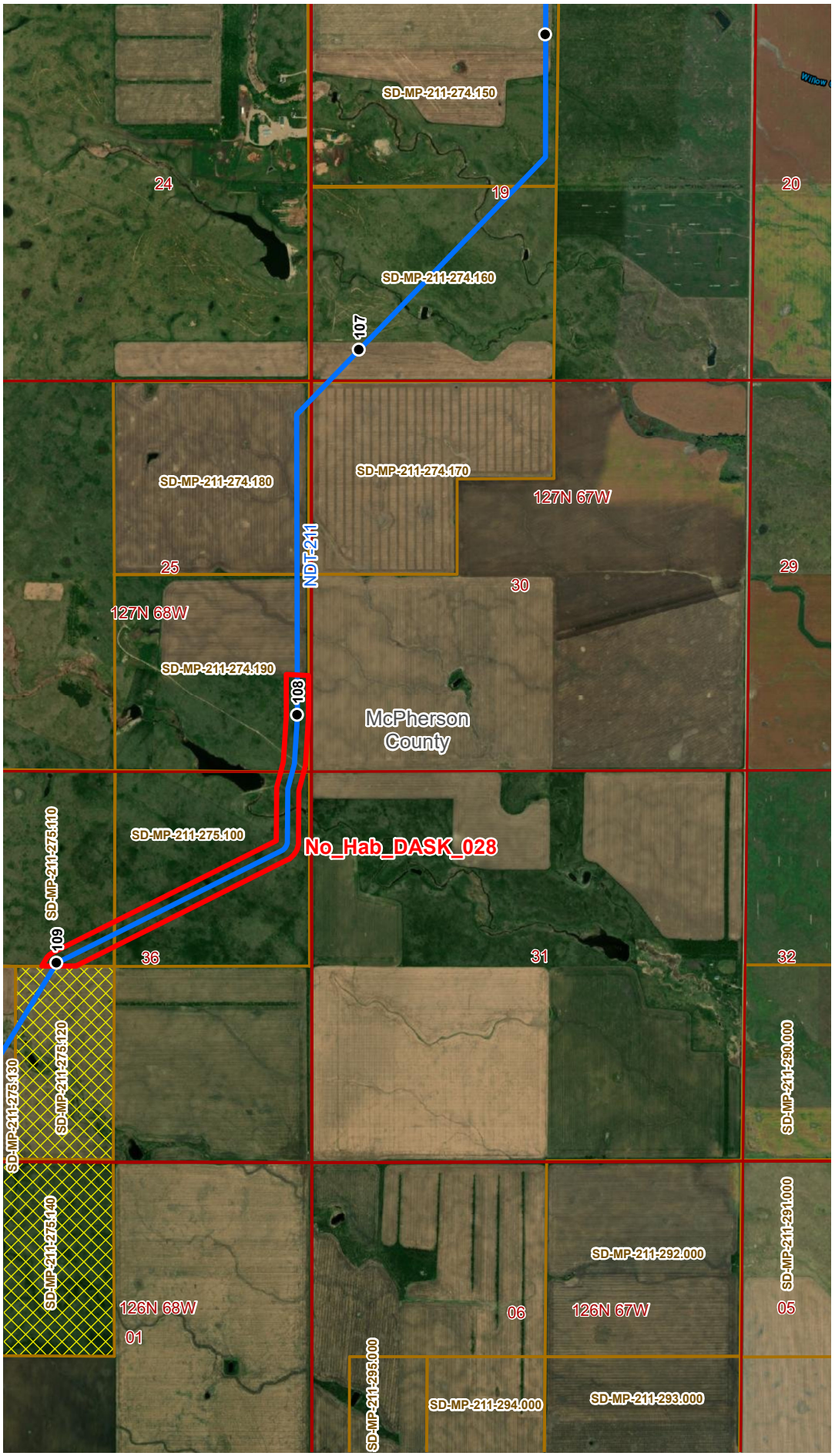
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

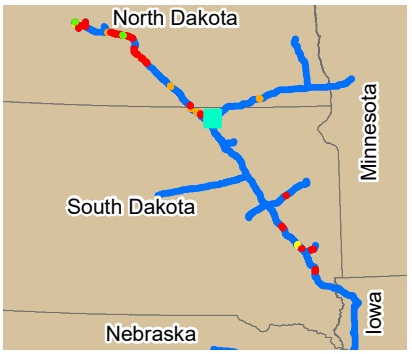
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 31, Sheet 31 of 40 | Drawing Number: 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

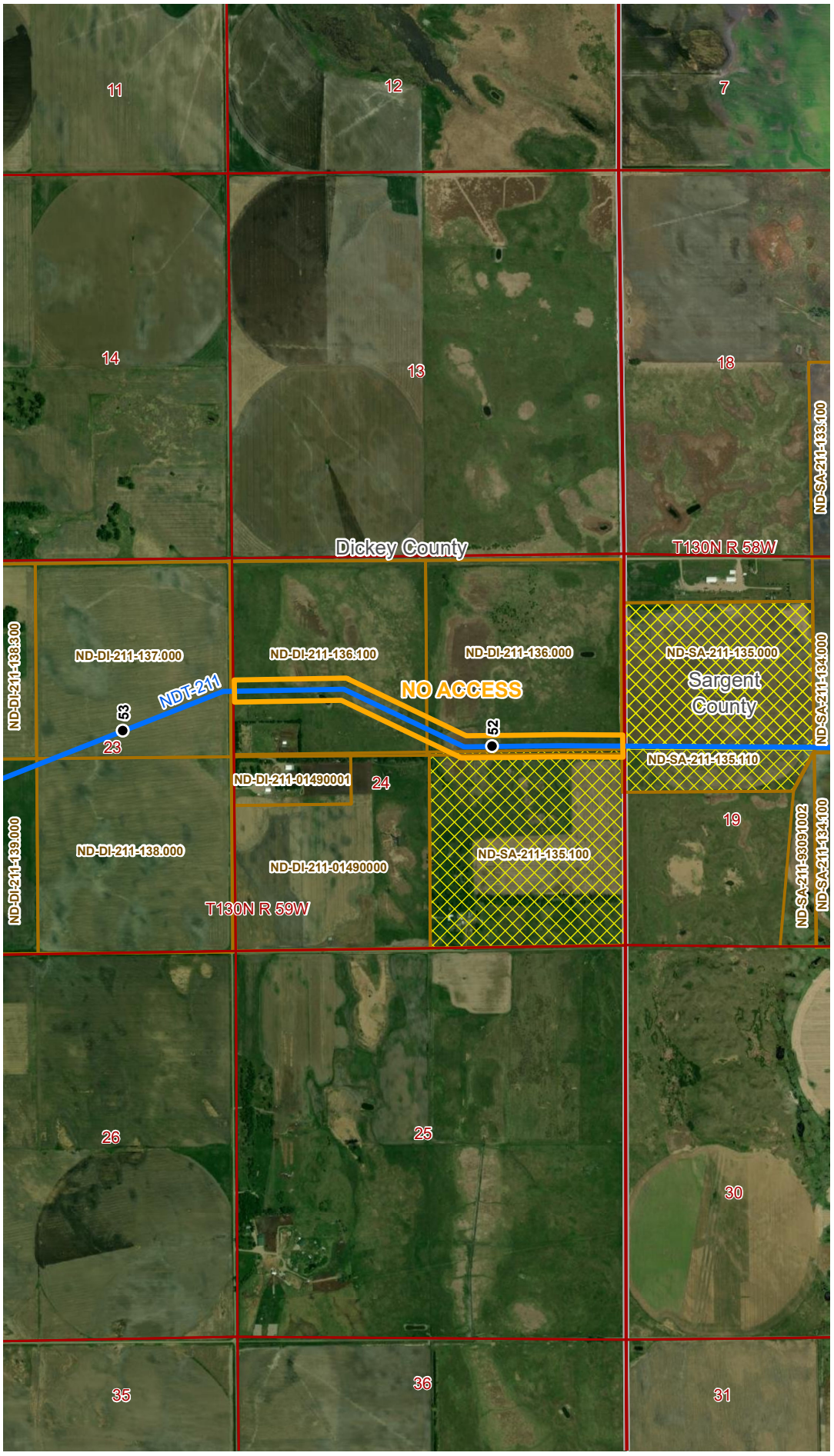
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

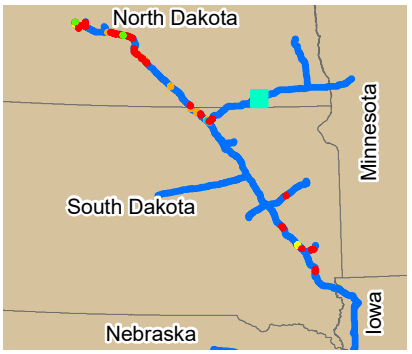
| Sheet: | Drawing Number: |
|---|---|
| B - 32<br>Sheet 32 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |
| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

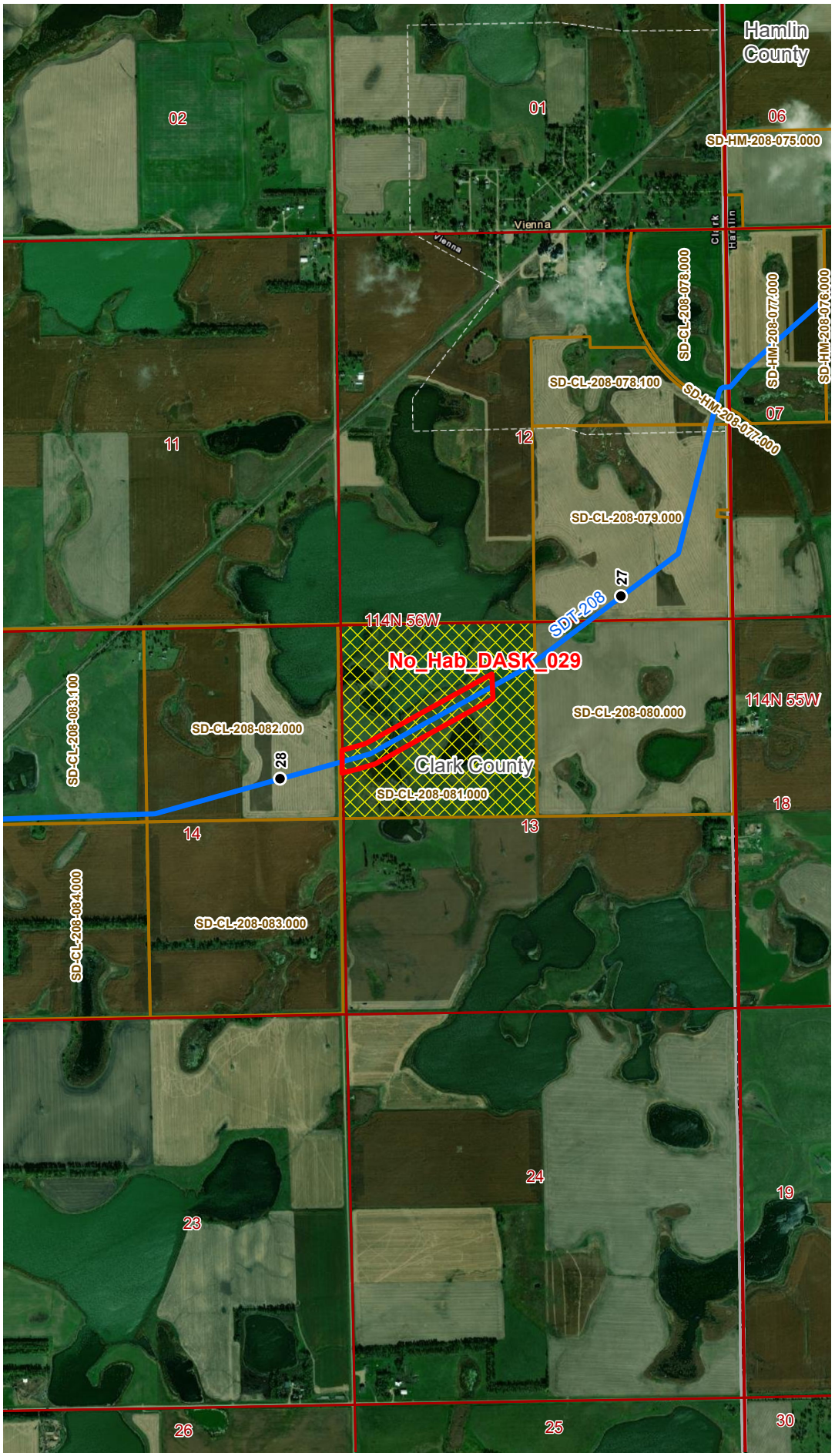
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

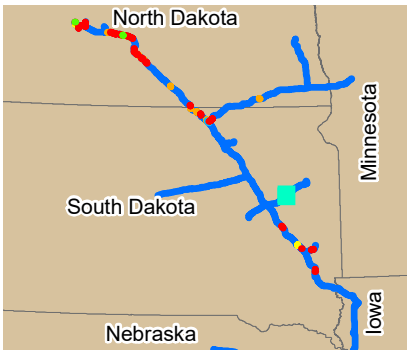
| Sheet: | Drawing Number: |
|---|---|
| B - 33<br>Sheet 33 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

0 1,000 2,000
Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |
| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

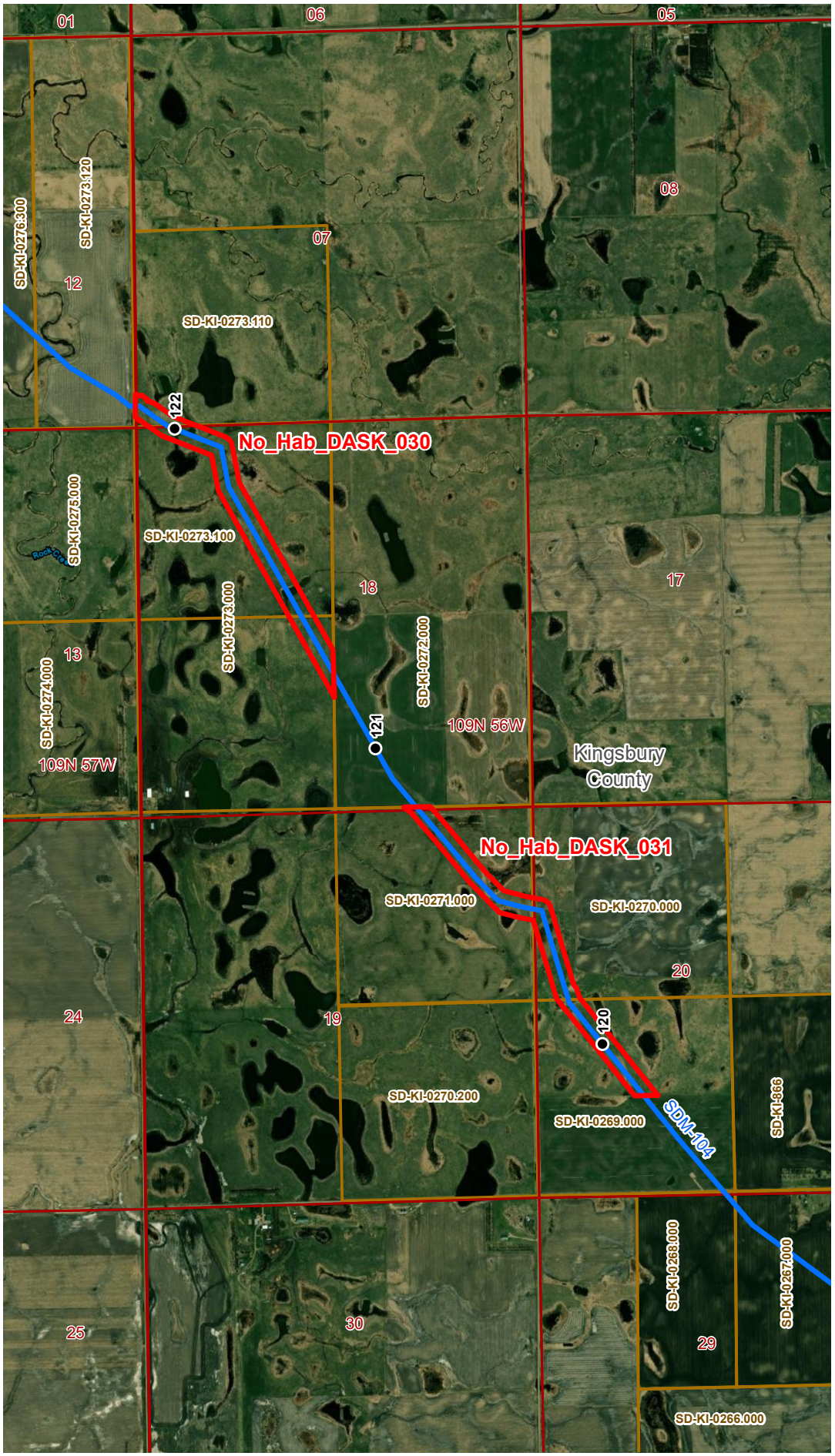
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

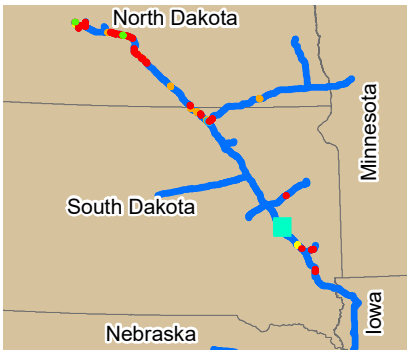
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 34 Sheet 34 of 40 | **Drawing Number:** 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

N

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

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Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
|---|---|---|
| | | |
| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

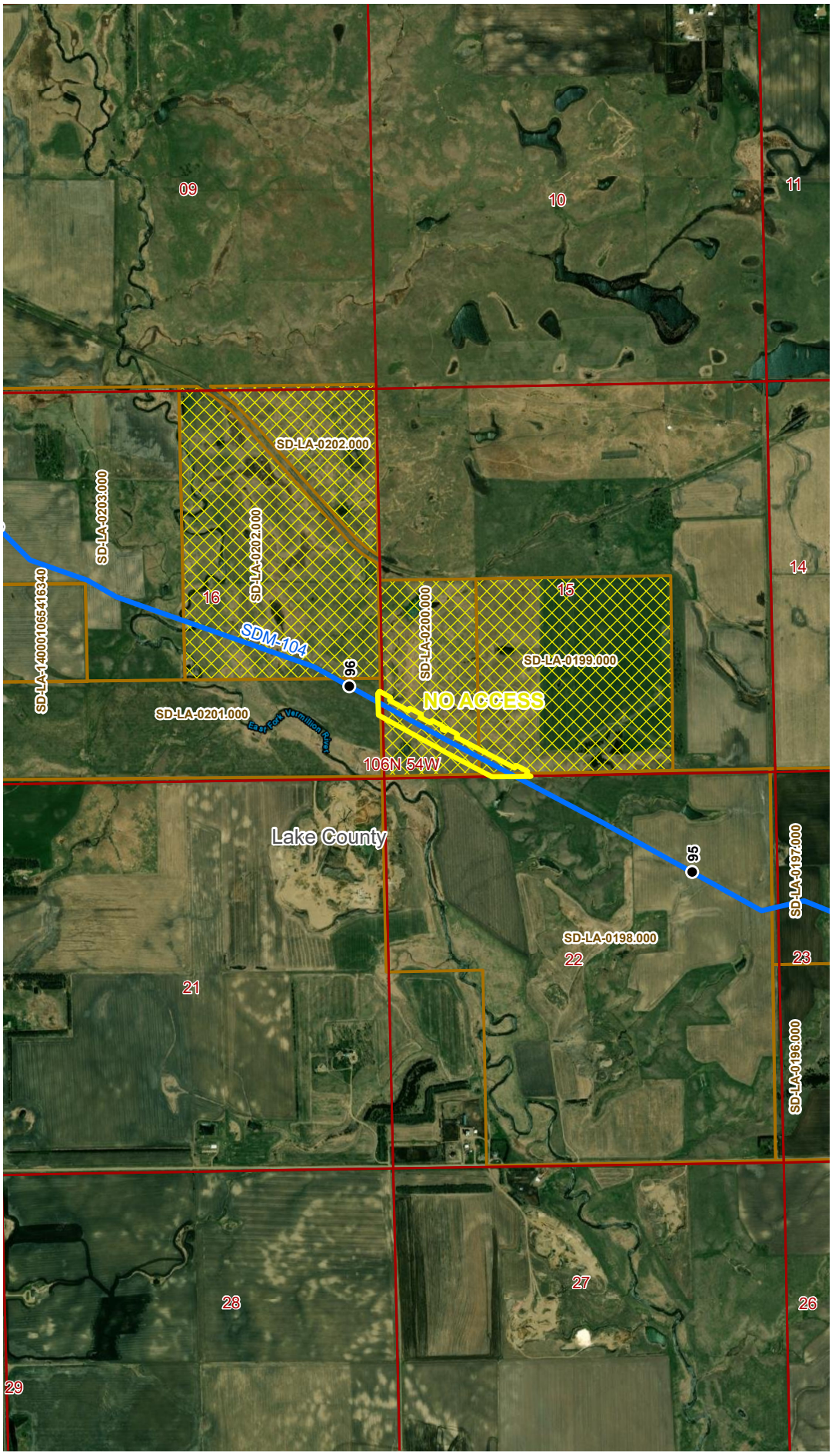
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

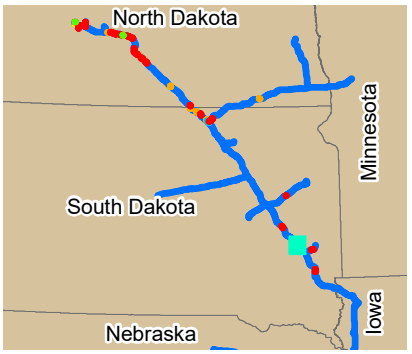
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| **Sheet:** B - 35 Sheet 35 of 40 | **Drawing Number:** 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

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Feet

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| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

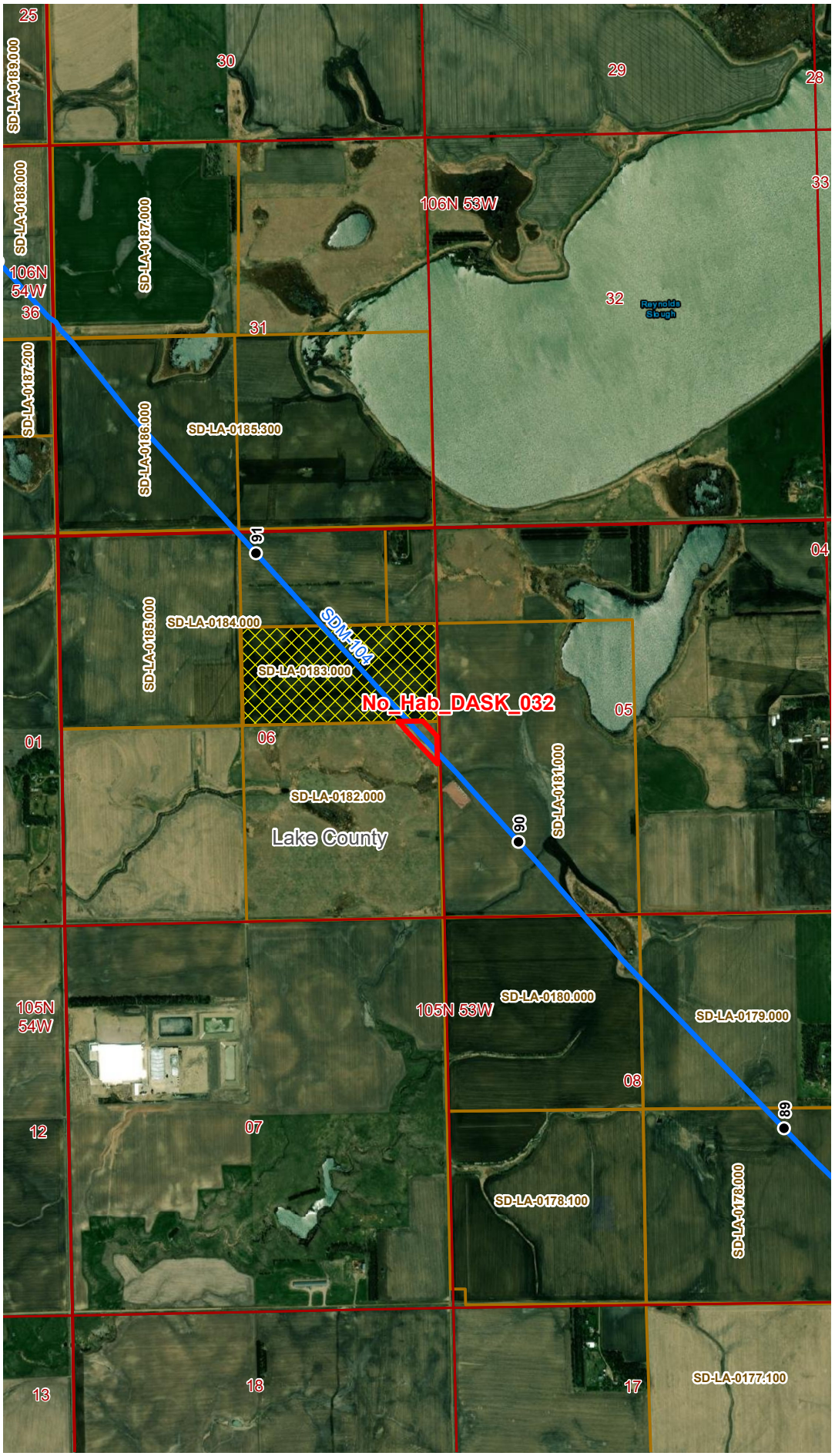
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

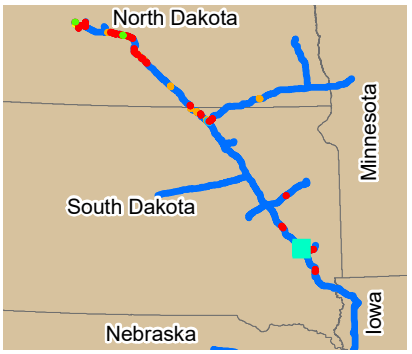
| Sheet: | Drawing Number: |
|---|---|
| B - 36<br>Sheet 36 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

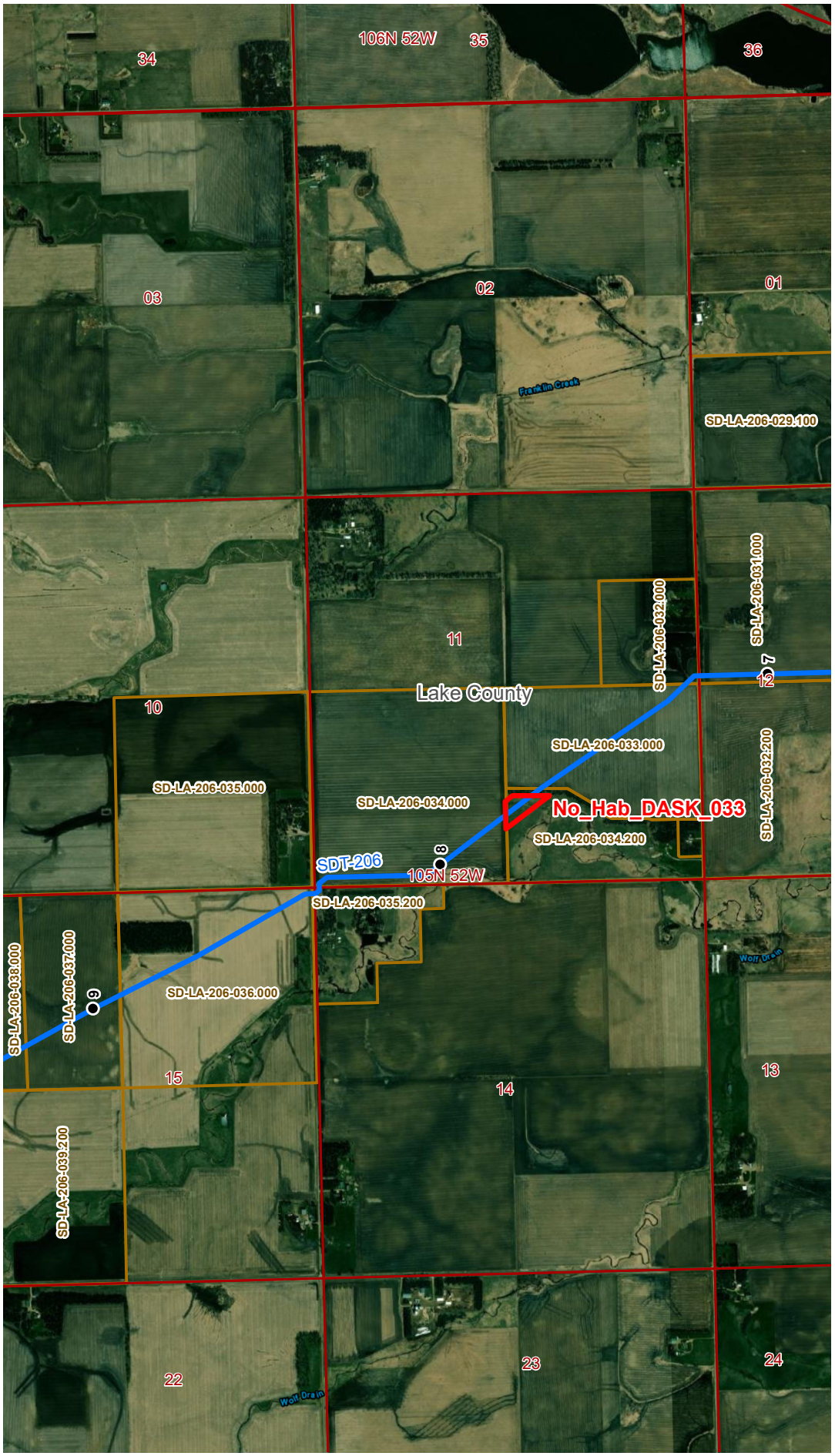
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

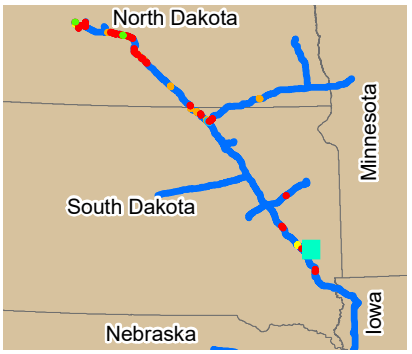
| Sheet: | Drawing Number: |
|---|---|
| B - 37<br>Sheet 37 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

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| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
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## MIDWEST CARBON EXPRESS PROJECT

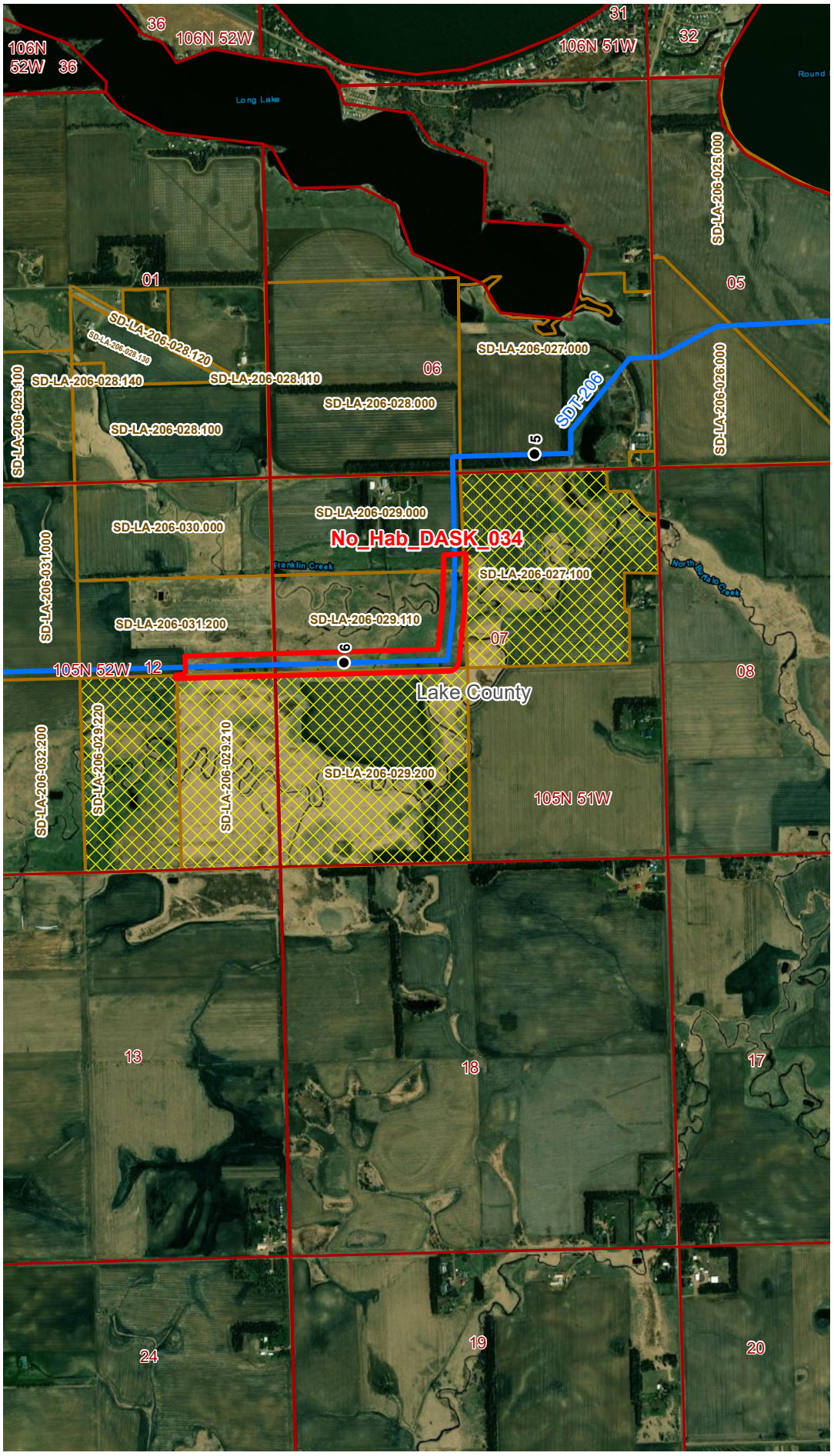
Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

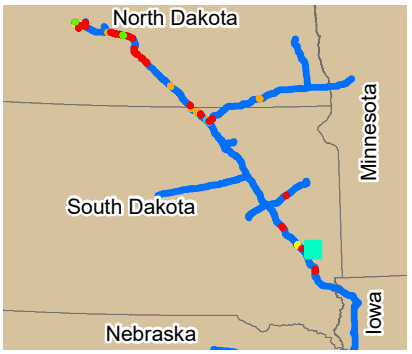
| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |
| Sheet: B - 38, Sheet 38 of 40 | Drawing Number: 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

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Feet

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| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

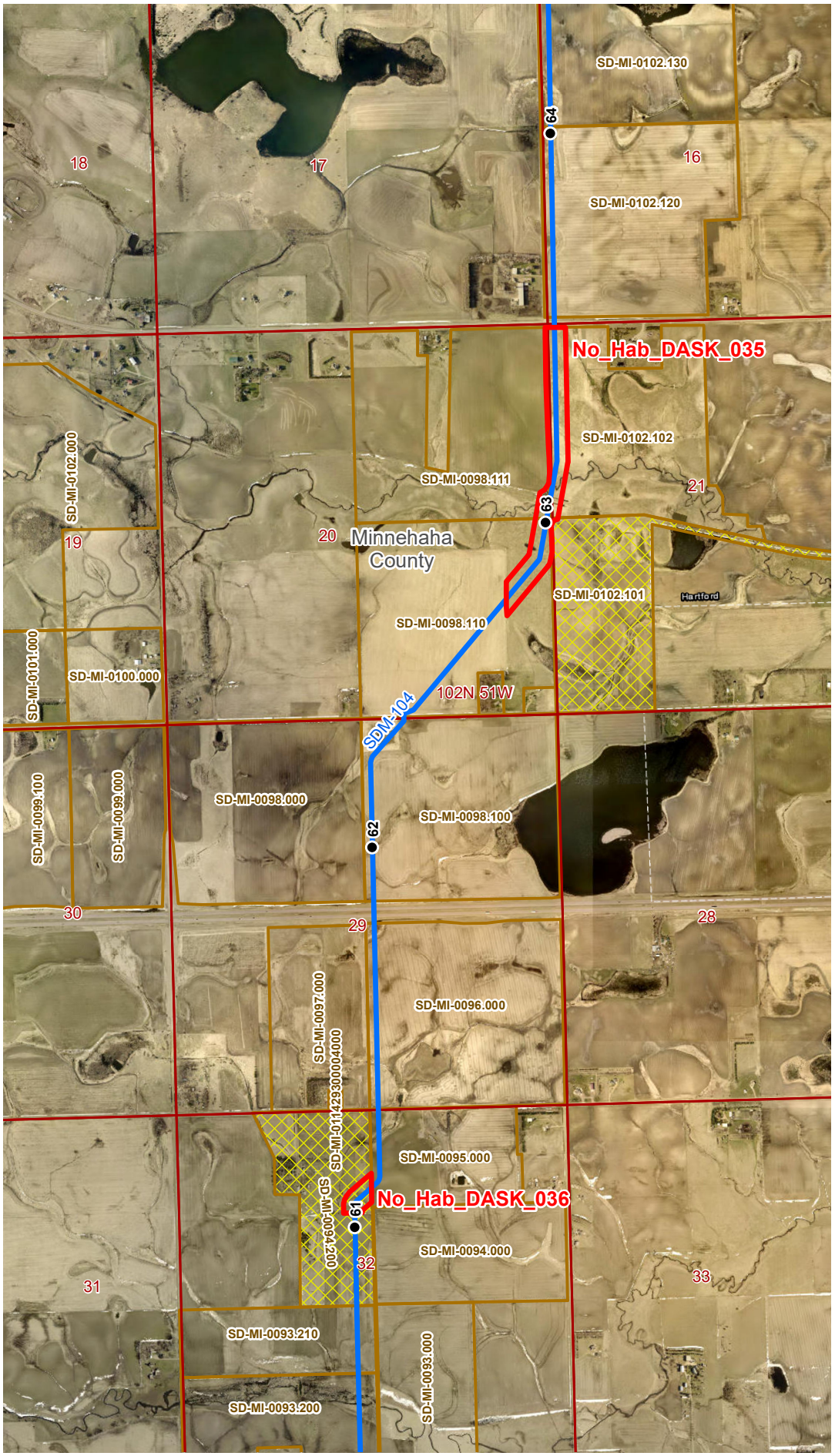
Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

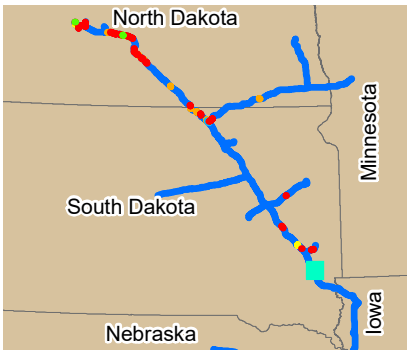
| Sheet: | Drawing Number: |
|---|---|
| B - 39<br>Sheet 39 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

## 2022 DAKOTA SKIPPER SURVEY LOCATIONS




## VICINITY MAP




## LEGEND

**Legend**

Survey Areas
- Suitable Habitat
- Unsuitable Habitat
- Likely Suitable
- Potentially Suitable
- Likely Unsuitable

- PCN Project Route 07/19/2022
- Milepost
- Property Parcel
- Survey Permission Denied
- PLSS Township Range
- PLSS Section

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Feet

## REVISIONS

| Date: | Revised by: | Checked by: |
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| Date: | Revised by: | Checked by: |
| | | |
| Date: | Revised by: | Checked by: |
| | | |

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## MIDWEST CARBON EXPRESS PROJECT

Figure Title:
**2022 Dakota Skipper Survey Sites**

Figure Number:
Appendix B

| Scale: | Projection: |
|---|---|
| 1:24,000 | NAD 1983 UTM Zone 14N |

| Sheet: | Drawing Number: |
|---|---|
| B - 40<br>Sheet 40 of 40 | 1 |

MCE22_DASK_Survey_Locations.mxd | 9/16/2022

# Appendix D –
# 2022 Dakota Skipper Survey Forms Midwest Carbon Express Project

# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH, JK, GG, MG, PC, DCII, SG, JB (2017)<br>Date: 7/2/2022, 7/3/2022, 7/6/2022 | Site ID: H2017ME001_DASK |
| Vegetation Community Type:<br>AGRSMI/STICOM | Grazing: Light | Tract #s:<br>ND-ME-325-024.000 |
| Photo #s (Initial-#) DC 0341-0344 (NESW) | | |
| DASK Habitat Type: Upland Native Prairie | | |

## CLASS/SPECIES COVER (%)

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| AGRSMI 5 | BROJAP T | ARTFRI 2 | SOLMOL 1 | LOTCOR T | SYMOCC 30 |
| POAPRA 5 | | ARTDRA 2 | ANECYL T | | |
| STICOM 20 | | ECHANG 2 | ASTFAL T | | |
| SCHSCO 10 | | PSOARG 3 | SPHCOC T | | |
| KOEMAC 3 | | PENGRA T | ARTLUD 1 | | |
| CARFIL 5 | | CIRUND 1 | POLALB T | | |
| | | CIRFLO T | ALLTEX T | | |
| | | ACHMIL 1 | GAUCOC T | | |
| | | RATCOL 1 | CERARV T | | |
| | | LIA sp. T | ERYASP T | | |
| | | POTPEN T | GAIARI T | | |
| | | | | | |

SURVEY CONDITIONS:

7/2/2022 10:15 am: 78˚, 0-3 MPH wind, 5% cloud cover

7/3/2022 11:00 am: 73˚, 0-3 MPH wind, 15% cloud cover

7/6/22022 3:30 pm: 86˚, 1-5 MPH wind, 25% cloud cover

OBSERVED BUTTERFLYS DURING ALL SURVEYS:

1 tawny-edged skipper; 5 inornate ringlet, 1 alfalfa, 1 bronze copper, several checkered and western white, several Melissa blue

NOTES (Mgmt, context, mapping, etc):

Cattle, lightly grazed. ECHANG and SCHSCO present and well represented onsite. Better habitat for DASK is outside of this 2 acre area and further uphill north and to the east and west on ridgelines where there is more SCHSCO. This is a large, native prairie pasture on the north side of the two-track road; however, most of the south side of the road is dominated by non-native grasses like BROINE.



# Dakota Skipper Flowering Plant Line Count Data Sheet

Site name/ID H2017ME001_DASK Date 7/2/22

County Mercer, North Dakota Legal:¼S,T,R SW 15, 142N, 88W

Survey 1 of 3 Observer(s) DH, PC, CG, MG, DC, JB, JK

| Species | Tally: flowering stems | n | Tally: non-flowering stems | n |
|---|---|---|---|---|
| Purple coneflower | | | 21 | 21 |
| Milkweed (all spp.) | | | | |
| Vetch (all spp.) | | | | |
| Alfalfa* | | | | |
| Thistle (all spp.) | | | 4 | 4 |
| Yellow coneflower | | | 6 | 6 |
| Prairie Violet | | | | |
| Goldenrod | | | | |
| Wild Rose | | | | |
| Curlycup gumweed | | | | |
| Blazing star | | | | |
| Penstemon spp. | | | 1 | 1 |
| Smooth fleabane | | | | |
| Western wallflower | | | 1 | 1 |
| Prairie lily | | | | |
| Purple prairie clover | | | | |
| Black-eyed Susan | | | | |
| Scarlet globemallow | 8 | 8 | 4 | 4 |
| Maximilian sunflower | | | | |
| Spiderwort | | | | |
| Harebell | | | | |
| Silverleaf scurfpea | | | 11 | 11 |
| Leadplant | | | | |
| Wild bergamot | | | | |
| R. Mtn. bee-plant | | | | |
| Blanket flower | | | | |
| Dandelion | | | | |

NOTES:
7/2/22 10:15 AM (Jim, JT, DC, DH, PC, JB)
Good ECHANG but too sparse SCHSCO and too much SYMOCC
78˚, 0-3 mph wind, 5% cloud cover.
Several Melissa blue; few inornate ringlet, alfalfa butterfly, bronze copper, and checkered white.



# Dakota Skipper Flowering Plant Line Count Data Sheet

Site name/ID H2017ME001_DASK Date 7/3/22

County Mercer, North Dakota Legal:¼S,T,R SW 15, 142N, 88W

Survey 2 of 3 Observer(s) DH, PC, CG, MG, DC, JB, JK

| Species | Tally: flowering stems | n | Tally: non-flowering stems | n |
|---|---|---|---|---|
| Purple coneflower | 19 | 19 | 2 | 2 |
| Milkweed (all spp.) | | | | |
| Vetch (all spp.) | | | | |
| Alfalfa* | | | | |
| Thistle (all spp.) | 4 | 4 | | |
| Yellow coneflower | 6 | 6 | | |
| Prairie Violet | | | | |
| Goldenrod | | | | |
| Wild Rose | | | | |
| Curlycup gumweed | | | | |
| Blazing star | | | | |
| Penstemon spp. | 1 | 1 | | |
| Smooth fleabane | | | | |
| Western wallflower | 1 | 1 | | |
| Prairie lily | | | | |
| Purple prairie clover | | | | |
| Black-eyed Susan | | | | |
| Scarlet globemallow | 8 | 8 | 4 | 4 |
| Maximilian sunflower | | | | |
| Spiderwort | | | | |
| Harebell | | | | |
| Silverleaf scurfpea | 11 | 11 | | |
| Leadplant | | | | |
| Wild bergamot | | | | |
| R. Mtn. bee-plant | | | | |
| Blanket flower | | | | |
| Dandelion | | | | |

NOTES:
7/3/22 11AM (Jim, JT, DC, DH, PC, JB)
Good ECHANG but too sparse SCHSCO and too much SYMOCC
73˚, 0-3 mph wind, 15% cloud cover.
Several Melissa blue; inornate ringlet, alfalfa butterfly, and checkered white.



# Dakota Skipper Flowering Plant Line Count Data Sheet

Site name/ID H2017ME001_DASK Date 7/6/22

County Mercer, North Dakota Legal:¼S,T,R SW 15, 142N, 88W

Survey 3 of 3 Observer(s) JB, DC

| Species | Tally: flowering stems | n | Tally: non-flowering stems | n |
|---|---|---|---|---|
| Purple coneflower | 20 | 20 | 1 | 1 |
| Milkweed (all spp.) | | | | |
| Vetch (all spp.) | | | | |
| Alfalfa* | | | | |
| Thistle (all spp.) | 4 | 4 | | |
| Yellow coneflower | 6 | 6 | | |
| Prairie Violet | | | | |
| Goldenrod | | | | |
| Wild Rose | | | | |
| Curlycup gumweed | | | | |
| Blazing star | | | | |
| Penstemon spp. | 1 | 1 | | |
| Smooth fleabane | | | | |
| Western wallflower | 1 | 1 | | |
| Prairie lily | | | | |
| Purple prairie clover | | | | |
| Black-eyed Susan | | | | |
| Scarlet globemallow | 10 | 10 | 2 | 2 |
| Maximilian sunflower | | | | |
| Spiderwort | | | | |
| Harebell | | | | |
| Silverleaf scurfpea | 11 | 11 | | |
| Leadplant | | | | |
| Wild bergamot | | | | |
| R. Mtn. bee-plant | | | | |
| Blanket flower | | | | |
| Dandelion | | | | |

NOTES:
7/6/22 3:30 PM
Good ECHANG but too sparse SCHSCO and too much SYMOCC
86˚, 1-5 mph wind, 25% cloud cover.
Western white, inornate ringlet, checkered white, Melissa blue.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: 2018 JB, JK, SG, DC, JT, JTR, DH, PC<br>Date: 7/02/2022, 7/3/2022, 7/6/2022 | Site ID: H2018BU001_DASK |
| Vegetation Community Type:<br>STICOM/CARFIL | Grazing: None | Tract #s:<br>ND-BU-1062.000<br>ND-BU-1063.000<br>ND-BU-1064.000 |
| Photo #s (Initial-#) JB 4709, 1434 (10:54am) | | |
| DASK Habitat Type: Upland Native Prairie | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| STICOM 45 | | ARTDRA 3 | SOLMOL T | LACOBL T | ROSARK 5 |
| CARFIL 15 | | PSOARG 3 | CIRFLO T | | SHEARG 1 |
| POAPRA T | | ARTFRI 2 | POLALB T | | SYMOCC 2 |
| BROINE T | | ECHANG 1 | ANECYL T | | AMEALN T |
| SCHSCO T | | ARTLUD T | | | |
| CALLON T | | CALSER T | | | |
| KOECRI T | | HETVIL 1 | | | |
| BOUGRA T | | GAUCOC T | | | |
| | | ASCVIR T | | | |
| | | LITINC T | | | |
| | | AMOCAN T | | | |
| | | | | | |

SURVEY CONDITIONS:

7/2/2022 11:00 am: 80˚, 5-10 MPH wind, 0% cloud cover

7/3/2022 2:00 pm: 84˚, 5-10 MPH wind, 20% cloud cover

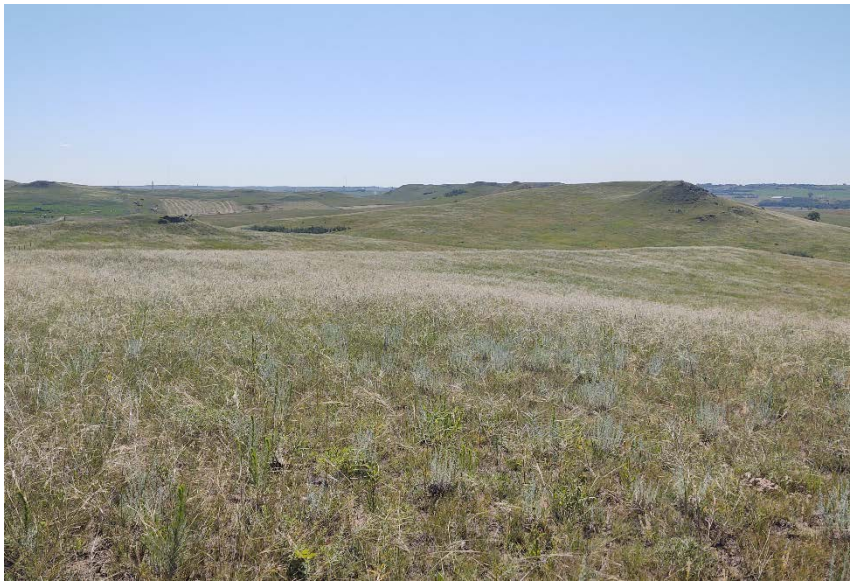
7/6/22022 11:30 am: 79˚, 1-5 MPH wind, 15% cloud cover

OBSERVED BUTTERFLYS DURING ALL SURVEYS:

| | |
|---|---|
| Checkered white – 6 | Monarch - 1 |
| Variegated fritillary – 1 | Long dash - 3 |
| Inornate ringlet – 2 | Coral hairstreak - 2 |
| Melissa blue – 2 | Acom blue – 1 |
| Regal fritillary – 1 | Silver spotted fritillary - 1 |

NOTES (Mgmt, context, mapping, etc):

Extensive and robust STICOM, some patches of substantial ECHANG; very little SCHSCO except on some knobs to west on parcel. Surrounding hills with some potential for native habitat on knobs; however, these areas either out of the ESA or on No Access tracts. Swales/coulees are dominated by BROINE, native habitat only on upper slopes.



# Dakota Skipper Flowering Plant Line Count Data Sheet

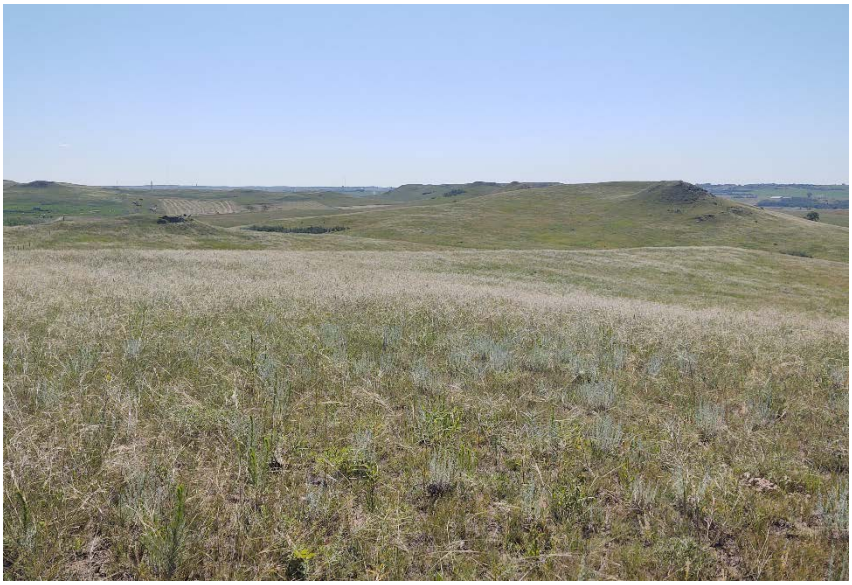
Site name/ID H2018BU001_DASK Date 7/02/22

County Burleigh, North Dakota Legal:¼S,T,R N ½ S18, T 140 N, R 80 W

Survey 1 of 3 Observer(s) Jim, JT, DH, PC, DC, JB

| Species | Tally: flowering stems | n | Tally: non-flowering stems | n |
|---|---|---|---|---|
| Purple coneflower | 11 | | 6 | |
| Milkweed (all spp.) | 2 | | 1 | |
| Vetch (all spp.) | | | | |
| Alfalfa* | | | | |
| Thistle (all spp.) | 1 | | 5 | |
| Yellow coneflower | | | | |
| Prairie Violet | | | | |
| Goldenrod | | | 5 | |
| Wild Rose | 1 | | | |
| Curlycup gumweed | | | | |
| Blazing star | | | 11 | |
| Penstemon spp. | | | | |
| Smooth fleabane | | | | |
| Western wallflower | | | | |
| Prairie lily | | | | |
| Purple prairie clover | | | | |
| Black-eyed Susan | | | | |
| Scarlet globemallow | | | 4 | |
| Maximilian sunflower | | | | |
| Spiderwort | | | | |
| Harebell | | | | |
| Silverleaf scurfpea | 1 | | 4 | |
| Leadplant | | | | |
| Wild bergamot | | | | |
| R. Mtn. bee-plant | | | | |
| Blanket flower | | | | |
| Dandelion | | | | |

NOTES: 1100 am, 80˚, 5-10 MPH wind, 0% cloud cover. Butterflies observed: Melissa blue, checkered white, silver spotted fritillary.



# Dakota Skipper Flowering Plant Line Count Data Sheet

Site name/ID H2018BU001_DASK Date 7/03/22

County Burleigh, North Dakota Legal:¼S,T,R N ½ S18, T 140 N, R 80 W

Survey 2 of 3 Observer(s) Jim, JT, DH, PC, DC, JB

| Species | Tally: flowering stems | n | Tally: non-flowering stems | n |
|---|---|---|---|---|
| Purple coneflower | 11 | | 6 | |
| Milkweed (all spp.) | 2 | | 1 | |
| Vetch (all spp.) | | | | |
| Alfalfa* | | | | |
| Thistle (all spp.) | 1 | | 5 | |
| Yellow coneflower | | | | |
| Prairie Violet | | | | |
| Goldenrod | | | 5 | |
| Wild Rose | 1 | | | |
| Curlycup gumweed | | | | |
| Blazing star | | | 11 | |
| Penstemon spp. | | | | |
| Smooth fleabane | | | | |
| Western wallflower | | | | |
| Prairie lily | | | | |
| Purple prairie clover | | | | |
| Black-eyed Susan | | | | |
| Scarlet globemallow | | | 4 | |
| Maximilian sunflower | | | | |
| Spiderwort | | | | |
| Harebell | | | | |
| Silverleaf scurfpea | 1 | | 4 | |
| Leadplant | | | | |
| Wild bergamot | | | | |
| R. Mtn. bee-plant | | | | |
| Blanket flower | | | | |
| Dandelion | | | | |

NOTES: 2:00 pm, 84˚, 5-10 MPH wind, 20% cloud cover. Butterflies observed: Melissa blue, checkered white, long dash, coral hairstreak, Acom blue.



# Dakota Skipper Flowering Plant Line Count Data Sheet

Site name/ID H2018BU001_DASK Date 7/06/22

County Burleigh, North Dakota Legal:¼S,T,R N ½ S18, T 140 N, R 80 W

Survey 3 of 3 Observer(s) Jim, JT, DH, PC, DC, JB

| Species | Tally: flowering stems | n | Tally: non-flowering stems | n |
|---|---|---|---|---|
| Purple coneflower | 16 | | 1 | |
| Milkweed (all spp.) | 2 | | 1 | |
| Vetch (all spp.) | | | | |
| Alfalfa* | | | | |
| Thistle (all spp.) | 6 | | | |
| Yellow coneflower | | | | |
| Prairie Violet | | | | |
| Goldenrod | 2 | | 3 | |
| Wild Rose | 1 | | | |
| Curlycup gumweed | | | | |
| Blazing star | | | 11 | |
| Penstemon spp. | | | | |
| Smooth fleabane | | | | |
| Western wallflower | | | | |
| Prairie lily | | | | |
| Purple prairie clover | | | | |
| Black-eyed Susan | | | | |
| Scarlet globemallow | 1 | | 3 | |
| Maximilian sunflower | | | | |
| Spiderwort | | | | |
| Harebell | | | | |
| Silverleaf scurfpea | 5 | | | |
| Leadplant | | | | |
| Wild bergamot | | | | |
| R. Mtn. bee-plant | | | | |
| Blanket flower | | | | |
| Dandelion | | | | |

NOTES: 11:30 am, 79˚, 1-5 MPH wind, 15% cloud cover. Butterflies observed: Monarch, long dash, variegated fritillary, inornate ringlet, regal fritillary.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: All<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_001 |
| Vegetation Community Type:<br>BROINE | Grazing: None | Tract #s:<br>ND-ME-325-024.000<br>ND-ME-325-021.140<br>ND-ME-325-021.030<br>ND-ME-325-023.000<br>ND-ME-325-022.000<br>ND-ME-325-021.000 |
| Photo #s (Initial-#) DC 0345 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 80 | | CONARV 10 | | | SYMOCC 1 |
| AGRCRI 1 | | CIRFLO 1 | | | |
| | | ARTFRI 1 | | | |
| | | MELOFF T | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Two-track section line road with BROINE.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: 2017<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_002 |
| Vegetation Community Type:<br>BROINE/SYMOCC | Grazing: None | Tract #s:<br>ND-OL-327-008.000<br>ND-OL-327-008.140 |
| Photo #s (Initial-#) PC 1554-1555 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 90 | | MEDSAT 1 | | | SYMOCC 0(N)-25%(S) |
| POAPRA 10(N)-75%(S) | | ARTFRI 2 | | | ROSARK 1 |
| AGRSMI 0(N)-10%(S) | | PSOARG T | | | |
| | | ARTABS 1 | | | |
| | | ACHMIL 1 | | | |
| | | CONARV 1 | | | |
| | | ARTLUD T | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Point in middle of habitat. To N. is 100% BROINE. To S, 10% BROINE with SYMOCC and a few natives. Mostly POAPRA on S side.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: 2017<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_003 |
| Vegetation Community Type:<br>POAPRA/SYMOCC | Grazing: Light | Tract #s:<br>ND-OL-327-011.200 |
| Photo #s (Initial-#) DC 346-347 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 20 | | TAROFF T | | MEDLUP 3 | SYMOCC 25 |
| POAPRA 60 | | ASTFAL T | | | |
| | | ARTLUD T | | | |
| | | CONARV T | | | |
| | | ARTABS T | | | |
| | | CIRARV T | | | |
| | | CIRFLO T | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Lightly grazed non-native pasture.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: 2017<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_004 |
| Vegetation Community Type:<br>POAPRA/BROINE | Grazing: None | Tract #s:<br>ND-OL-327-014.000 |
| Photo #s (Initial-#) DC 348-349 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 40 | | PSOARG T | | MELOFF 7 | |
| POAPRA 30 | | CONARV T | | LOTCOR T | |
| STICOM T | | ASCSPE T | | | |
| PANVIR T | | PSOESC T | | | |
| AGRSMI T | | ARTLUD T | | | |
| STIVIR T | | LIA sp. T | | | |
| CALLON T | | ECHANG T | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Butterfly Species Observed:

Blue – 2
Orange/Tan – 1 (note: blue and orange butterfly were same size)
Checkered White butterfly – 4

NOTES (Mgmt, context, mapping, etc):

Ungrazed
One small area of habitat 50ftX50ft (Knoll)



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: 2017<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_005 |
| Vegetation Community Type:<br>POAPRA/BROINE | Grazing: None | Tract #s:<br>ND-OL-325-002.000<br>ND-OL-327-003.120<br>ND-OL-327-002.120 |
| Photo #s (Initial-#) DC 350-351 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 20 | | RATCOL T | GAUCOC T | MELOFF T | SYMOCC 5 |
| BROINE 15 | | ASTCRA T | ECHANG T | MEDLUP T | ROSARK 3 |
| STICOM 1 | | PSOESC T | THERHO 1 | | SHEARG 2 |
| SCHSCO 1 | | PSOARG 2 | DALCAN T | | |
| AGRSMI T | | ARTLUD T | CHRVIL T | | |
| STIVIR 3 | | ALLTEX T | COMUMB T | | |
| CALLON 1 | | ARTDRA T | CAMROT T | | |
| BUCDAC T | | ANECYL T | ACHMIL T | | |
| | | ASTFAL T | LYGJUN T | | |
| | | SOLRIG 3 | ERI sp. T | | |
| | | CIRFLO T | OXYLAM T | | |
| | | ASCVIR T | | | |

Butterfly Species Observed:

Melissa blue – 1

NOTES (Mgmt, context, mapping, etc):

Mix of non-native grasses with high diversity of native forbs from road west to top of hill. Canada thistle observed on pasture. Little bit of wormwood observed.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: PC, DC, DH<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_006 |
| Vegetation Community Type:<br>BROINE | Grazing: Moderate | Tract #s:<br>ND-OL-325-001.000<br>ND-OL-325-001.200<br>ND-OL-1201.310<br>ND-OL-1201.200 |
| Photo #s (Initial-#) PC 1573-1576 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 60 | | CONARV 1 | | MELOFF T | ROSARK T |
| AGRCRI 10 | | ARTLUD T | | PLALAN T | |
| POAPRA 20 | | ECHANG T | | | |
| KOEMAC T | | CIRUND T | | | |
| | | ACHMIL T | | | |
| | | MEDSAT T | | | |
| | | ARTFRI 1 | | | |
| | | ANTNEG T | | | |
| | | LYGJUN T | | | |
| | | RATCOL T | | | |
| | | ARTABS T | | | |

Butterfly Species Observed:

Blue
Brown

NOTES (Mgmt, context, mapping, etc):

BROINE dominated pasture



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: 2017<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_007 |
| Vegetation Community Type:<br>BROINE | Grazing: Light | Tract #s:<br>ND-OL-1199.000<br>ND-OL-1280.000 |
| Photo #s (Initial-#) DC 352-353 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 80 | | SPHCOC T | | | SYMOCC 1 |
| POAPRA 15 | | ASTFAL T | | | |
| AGRCRI T | | ACHMIL T | | | |
| BUCDUC T | | MEDSAT T | | | |
| | | ARTABS 1 | | | |
| | | GRISQU T | | | |
| | | ANTPAR T | | | |
| | | CIRFLO T | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| Butterfly Species Observed:<br><br>NONE | NOTES (Mgmt, context, mapping, etc):<br><br>Non-native pasture |



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: PC, DC, DH<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_008 |
| Vegetation Community Type:<br>BROINE/AGRSMI | Grazing: Light | Tract #s:<br>ND-OL-1198.000 |
| Photo #s (Initial-#) PC 1577-1580 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 50 | | ACHMIL 2 | | ALYALY T | SYMOCC T |
| POAPRA 15 | | RATCOL T | | PLAPAT T | PRUVIR T |
| AGRSMI 10 | | ALLTEX T | | | |
| AGRCRI 1 | | ARTFRI 1 | | | |
| BOUDAC 5 | | PSOARG 1 | | | |
| KOEMAC T | | SPHCOC T | | | |
| STIVIR T | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Pasture with low quality native grassland on ridge between drainages.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH, DC, PC<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_009 |
| Vegetation Community Type:<br>BROINE | Grazing: Light | Tract #s:<br>ND-OL-326-006.000<br>ND-OL-326-006.300<br>ND-OL-326-007.000<br>ND-OL-326-008.000 |
| Photo #s (Initial-#) PC 1581-1584 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 40 | | ARTFRI 8 | | | SYMOCC T |
| POAPRA 5 | | ACHMIL T | | | |
| STICOM 10 | | OXISER T | | | |
| BOUDAC 3 | | GAIARI T | | | |
| AGRSMI 2 | | ERISTR T | | | |
| KOEMAC T | | SPHCOC T | | | |
| | | LUPARG T | | | |
| | | GUTSAR T | | | |
| | | ECHANG T | | | |
| | | TAROFF T | | | |
| | | | | | |

Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Lightly grazed buffalo pasture. Less BROINE and more native cover towards hilltop. Road ROW BROINE/MEDSAT dominated. South of road: sweet clover/bindweed/BROINE and ARTABS.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: 2018<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_010 |
| Vegetation Community Type:<br>POAPRA/STICOM | Grazing: Light | Tract #s:<br>ND-OL-326-003.200<br>ND-OL-326-002.000<br>ND-OL-326-001.210<br>ND-OL-326-003.000 |
| Photo #s (Initial-#) DC 354-357 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 60 | | ARTFRI 1 | ARTLUD T | ERYINC T | SYMOCC 2 |
| STICOM 15 | | RATCOL T | ACHMIL 1 | | ROSARK T |
| AGRSMI 3 | | CIRUND T | SOLRIG T | | |
| KOEMAC T | | LITINC T | ASTFAL T | | |
| STIVIR T | | GAICRI T | GAUCOC T | | |
| BOUGRA T | | PSOESC T | GALTEX T | | |
| BROINE 2 | | LIA sp. T | CIRFLO T | | |
| SCHSCO T | | ARTDRA 1 | CALSER T | | |
| | | PSOARG 1 | ANECYL T | | |
| | | ECHANG T | HELRIG T | | |
| | | ASTCRA T | POTPEN T | | |
| | | ANTPAR T | LOTCOR T | | |

Butterfly Species Observed:

Melissa blue – 1
Inornate ringlet – 2

NOTES (Mgmt, context, mapping, etc):

Very few ECHANG. Two plants of SCHSCO. Pretty high diversity but dominated by POAPRA.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH, DC, PC<br>Date: 6/30/2022 | Site ID: No_Hab_DASK_011 |
| Vegetation Community Type:<br>BROINE/POAPRA/STICOM | Grazing: Moderate | |
| Photo #s (Initial-#) PC 1585-1588 | | Tract #s:<br>ND-OL-1278.000 |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 40 | | ACHMIL 1 | GAIARI T | ALYALY T | SYMOCC 1 |
| POAPRA 40 | | ARTFRI 3 | ANTNEG T | MELOFF T | ROSARK 1 |
| AGRCRI T | | MEDSAT T | CONARV T | ERYINC T | |
| AGRSMI 2 | | TAROFF T | ANECYL T | TRADUB T | |
| STICOM 3 | | GRISQU T | | | |
| BOUDAC 2 | | SPHCOC T | | | |
| KOEMAC 2 | | PSOARG 2 | | | |
| | | ALLTEX T | | | |
| | | ARTLUD 1 | | | |
| | | OPUFRA T | | | |
| | | CIRUND T | | | |

Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Pasture varies from BROINE to POAPRA dominated community types



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, DC<br>Date: 7/06/2022 | Site ID: No_Hab_DASK_012 |
| Vegetation Community Type:<br>STICOM/POAPRI/BROINE | Grazing: Light | Tract #s:<br>ND-MO-1207.100<br>ND-OL-06136.000<br>ND-OL-1212.000<br>ND-OL-1212.200<br>ND-OL-1213.200 |
| Photo #s (Initial-#) DC 420-436 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 15 | | ACHMIL 5 | CALSER T | | ELACOM 1 |
| BROINE 10 | | ASCVER 1 | SENCAN T | | SYMOCC 1 |
| AGRSMI 20 | | ECHANG 2 | ERIFLA T | | ROSARK 1 |
| CALLON 2 | | PSOARG T | GAIARI T | | JUNHOR T |
| SCHSCO 2 | | PSOESC T | ALLTEX 1 | | |
| ANDGER 1 | | GAUCOC T | COMUMB T | | |
| BOUGRA T | | ASTGIL T | RATCOL T | | |
| CARFIL 5 | | ARTFRI T | POLALB T | | |
| STICOM 15 | | EUPESU 20 | ASTADS T | | |
| STIVIR 10 | | CAMROT T | GUTSAR T | | |
| | | LIATRIS sp. T | LITINC T | | |
| | | | | | |

Butterfly Species Observed:

Clouded sulphur w/white
Melissa blue
Coral hairstreak

NOTES (Mgmt, context, mapping, etc):

A few small patches of suitable habitat on steep slope closer to road, but less than 0.25 acres. More extensive suitable habitat off-ESA and up first valley to SW.





# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH, DC<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_013 |
| Vegetation Community Type:<br>POAPRA/AGRCRI | Grazing: Light | Tract #s:<br>ND-MO-1201.160<br>ND-MO-1201.170<br>ND-MO-1205.100<br>ND-MO-1205.110<br>ND-MO-1206.000<br>ND-MO-1207.000 |
| Photo #s (Initial-#) DH 214-215, 216-217, DC 363-364 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 40 | | EUPESU 35 | ANTNEG T | ALYALY T | SYMOCC 2 |
| AGRCRI 5 | | ARTFRI 2 | ASTCRA T | MELOFF T | ROSARK T |
| STICOM 2 | | TAROFF T | LUPINUS sp. 1 | | JUNHOR T |
| BOUDAC 1 | | CIRUND T | AMOCAN T | | |
| KOEMAC T | | PLALAN T | ARTLUD T | | |
| AGRSMI 2 | | SPHCOC T | TRADUB T | | |
| BROINE 15 | | ACHMIL T | CIRARV T | | |
| | | GUTSAR T | YUCGLA T | | |
| | | RATCOL T | ALLTEX T | | |
| | | ECHANG T | CAMROT T | | |
| | | CONARV T | | | |

Butterfly Species Observed:

Moth
Blue

NOTES (Mgmt, context, mapping, etc):

POAPRA dominated pasture with large amount of spurge. Other forbs ok in areas without spurge. Few SYMOCC in slopes and swales. Few ECHANG patches on slopes and ridge near large drainage. BROINE picks up on the west third of segment.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH, DC<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_013a |
| Vegetation Community Type:<br>POASEC/AGRCRI | Grazing: Moderate | |
| Photo #s (Initial-#) DH 201-202, 203-204, 205-206 | | Tract #s:<br>ND-MO-1201.110 |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| AGRCRI 15 | | ARTFRI 5 | TRADUB T | ALYALY T | ROSARK T |
| STICOM 5 | | PLALAN 2 | TRAOCC T | | |
| POASEC 30 | | PENGRA 1 | ECHANG T | | |
| AGRSMI 2 | | LYGJUN T | ASCSPE T | | |
| BROINE 10 | | GUTSAR T | | | |
| POAPRA 2 | | TAROFF T | | | |
| KOEMAC 2 | | ARTLUD 1 | | | |
| | | CIRUND T | | | |
| | | EUPESU 15 | | | |
| | | ARTABS T | | | |
| | | ALLTEX T | | | |

Butterfly Species Observed:

White
Caterpillars – 3

NOTES (Mgmt, context, mapping, etc):

Grazed pasture with low quality native areas mixed with introduced areas. Patchy dense leafy spurge is more in horse pasture.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH, DC<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_013b |
| Vegetation Community Type:<br>BROINE/EUPESU | Grazing: None | Tract #s:<br>ND-MO-1201.120<br>ND-MO-1201.140 |
| Photo #s (Initial-#) DH 207-208, 209-210, 211-212 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 60 | | EUPESU 60 | LUPINUS sp. T | TRADUB T | ROSARK 1 |
| POAPRA 15 | | CIRARV 2 | SPHCOC T | | SYMOCC 1 |
| STICOM 1 | | CONARV 1 | | | |
| AGRCRI 5 | | ARTLUD 1 | | | |
| | | ARTABS T | | | |
| | | ARTFRI T | | | |
| | | GUTSAR T | | | |
| | | PLALAN T | | | |
| | | ECHANG T | | | |
| | | ALLTEX T | | | |
| | | PSOTEN T | | | |

Butterfly Species Observed:

Blue
Caterpillar
Moth

NOTES (Mgmt, context, mapping, etc):

Yuck!
One area with less leafy spurge had native forbs.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, JK, SG (2018)<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_014 |
| Vegetation Community Type:<br>BROINE/AGRCRI | Grazing: Light | Tract #s:<br>ND-BU-1078.000<br>ND-BU-1078.100 |
| Photo #s (Initial-#) JB 3383, 9748 (12:01) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| AGRCRI 50 | | AMBPSI T | | MELOFF T | SYMOCC T |
| POAPRA 15 | | ARTFRI T | | CHELEP T | |
| BROINE 20 | | SPHCOC T | | DESSOP T | |
| STIVIR 3 | | ACHMIL T | | | |
| STICOM T | | ARTLUD T | | | |
| AGRSMI T | | | | | |
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|---|---|
| Butterfly Species Observed:<br><br>Western white – 4 | NOTES (Mgmt, context, mapping, etc):<br><br>Large, contiguous pasture of non-native grasses |



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, JR, SG<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_015 |
| Vegetation Community Type:<br>STICOM/BROINE | Grazing: None | Tract #s:<br>ND-BU-1070.000 (viewed from road)<br>ND-BU-1069.000<br>ND-BU-1068.000 |
| Photo #s (Initial-#) JB 5281, 0419 (11:27am) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| STICOM 25 | | AMOCAN T | | MELOFF T | ROSARK 5 |
| BROINE 60 | | ASTFAL 2 | | SALKAL T | SYMOCC 1 |
| KOECRI 3 | | ANECYL T | | | |
| CARHEL 2 | | LIATRIS sp. T | | | |
| AGRSMI 1 | | ECHANG T | | | |
| BOUGRA 1 | | ARTFRI 3 | | | |
| STIVIR T | | ARTDRA 2 | | | |
| CALLON T | | PSOARG T | | | |
| SCHSCO T | | DALCAN T | | | |
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Butterfly Species Observed:

Inornate ringlet – 3
Melissa blue – 1

NOTES (Mgmt, context, mapping, etc):

Patches of native but surrounded/invaded by extensive BROINE.
Native patches less than 1 acre.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: 2018<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_016 |
| Vegetation Community Type:<br>BROINE | Grazing: None | Tract #s:<br>ND-BU-1060.000<br>ND-BU-1059.100<br>ND-BU-0984.176<br>ND-BU-0984.175 |
| Photo #s (Initial-#) JB 0316-3792 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 85 | | ARTFRI 3 | | LEPDEN T | |
| STICOM 2 | | SPHCOC T | | | |
| AGRCRI 1 | | MEDSAT T | | | |
| | | LINRIG T | | | |
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Butterfly Species Observed:

Checkered white – 10+
Melissa blue – 2
Long dash – 2

NOTES (Mgmt, context, mapping, etc):

Small amount of potential habitat on knobs adjacent to ESA



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, JK, SG (2018)<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_017 |
| Vegetation Community Type:<br>BROINE | Grazing: None | Tract #s:<br>ND-BU-0984.163<br>ND-BU-0984.162<br>ND-BU-0984.161<br>ND-BU-0984.160<br>ND-BU-0984.159<br>ND-BU-0984.158<br>ND-BU-0984.157 |
| Photo #s (Initial-#) JB 2964, 0105 (12:58pm) / JB 7178 (12:42pm) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 75 | | CIRFLO T | | | SYMOCC 1 |
| POAPRA 10 | | ARTABS T | | | ROSARK 2 |
| | | ARTFRI 2 | | | |
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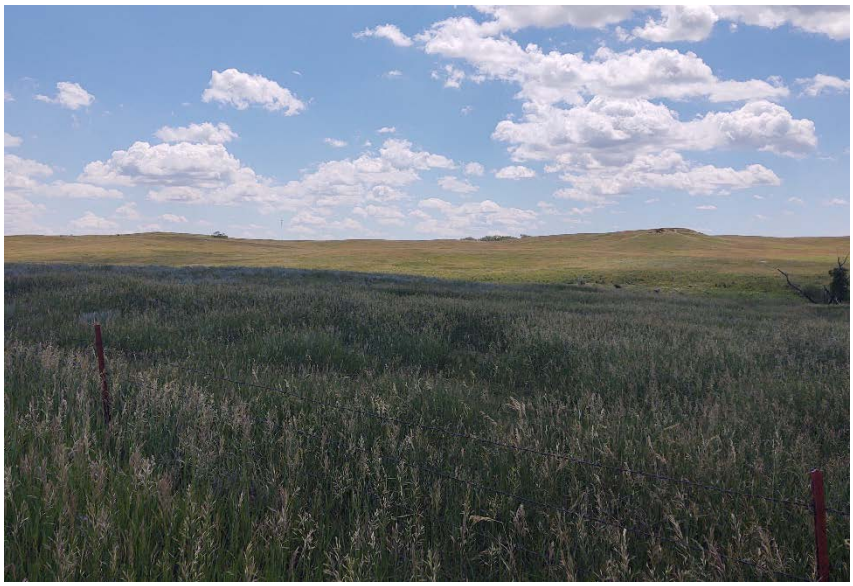
Butterfly Species Observed:
(observed from road/ditch)
Western white
Melissa blue
Hackberry
Tawny-edge skipper – 1

NOTES (Mgmt, context, mapping, etc):

Seen from road but looks consistent. No access.
76˚, 2-5 mph wind, 20% cloud cover



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, JK, SG<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_018 |
| Vegetation Community Type:<br>BROINE | Grazing: Light | Tract #s:<br>ND-BU-0984.148<br>ND-BU-0984.145 |
| Photo #s (Initial-#) JB 5656 (1:28pm) / JB 3003 (1:15pm) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 95 | | CONARV 5 | | | |
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Butterfly Species Observed:

None

NOTES (Mgmt, context, mapping, etc):

Seen from road but consistent habitat.
81˚, wind 0-1 mph, 25% cloud cover



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, JK, SG<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_019 |
| Vegetation Community Type:<br>BROINE/POAPRA | Grazing: None | Tract #s:<br>ND-BU-0984.181 |
| Photo #s (Initial-#) JB 7213 (1:57pm) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 90 | | CONARV 10 | | | ROSARK 3 |
| POAPRA 15 | | ARTLUD 1 | | | |
| AGRCRI 3 | | ARTABS 1 | | | |
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| Butterfly Species Observed:<br><br>None | NOTES (Mgmt, context, mapping, etc):<br><br>Pasture |



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, JK, SG<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_020 |
| Vegetation Community Type:<br>BROINE/POAPRA | Grazing: None | Tract #s:<br>ND-BU-0980.000 (from road)<br>ND-BU-0979.000<br>ND-BU-0978.000<br>ND-BU-0977.000 |
| Photo #s (Initial-#) JB 2497 (2:18pm) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 50 | | ARTABS 2 | | | ROSARK 1 |
| STICOM 5 | | | | | |
| POAPRA 40 | | | | | |
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Butterfly Species Observed:

Melissa blue – 2

NOTES (Mgmt, context, mapping, etc):

Non-native pasture.
81˚, 5-8 mph winds, 40% cloud cover



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, JK, SG<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_021 |
| Vegetation Community Type:<br>BROINE/POAPRA | Grazing: Moderate | Tract #s:<br>ND-BU-0968.300 (from road)<br>ND-BU-0967.000<br>ND-BU-0966.100<br>ND-BU-0966.000<br>ND-BU-0965.100<br>ND-BU-0965.000<br>ND-BU-0964.000 |
| Photo #s (Initial-#) JB 6786 (2:38pm) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 60 | | PSOARG 2 | | | ROSARK 2 |
| STICOM 2 | | RATCOL T | | | |
| POAPRA 20 | | ARTDRA 1 | | | |
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Butterfly Species Observed:
(Observed from road and road ditch)
Melissa blue – 8

NOTES (Mgmt, context, mapping, etc):

Viewed from road. Unsuitable.
82˚, 6-8 mph winds, 50% cloud cover



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, JK, SG<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_022 |
| Vegetation Community Type:<br>POAPRA/BROINE | Grazing: None | Tract #s:<br>ND-EO-0950.000<br>ND-EO-0949.000<br>ND-EO-0948.000<br>ND-EO-0947.000<br>ND-EO-0946.000<br>ND-EO-0945.000 |
| Photo #s (Initial-#) JB 3089, 9508 (3:26pm) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 65 | | AMBPSI 3 | SOLMOL T | LOTCOR 2 | SYMOCC 1 |
| BROINE 15 | | BERINC 3 | ARTABS T | TRADUB T | ROSARK 1 |
| STICOM 5 | | HETVIL T | ASCSPE T | CONCAN T | |
| ANDGER T | | ARTDRA 2 | TRAOCC T | PLAPAT T | |
| AGRSTO T | | AMOCAN T | | ERYINC T | |
| STIVIR T | | ARTFRI T | | LACOBL T | |
| KOECRI T | | CIRFLO T | | | |
| | | GAUCOC T | | | |
| | | RATCOL T | | | |
| | | LINRIG T | | | |
| | | ARTLUD T | | | |

Butterfly Species Observed:

Western white
Melissa blue
Long dash
Inornate ringlet
Silver-bordered fritillary

NOTES (Mgmt, context, mapping, etc):

Dense patches of BERINC. Some EUPESU off-ESA to south. On the aerial image, this area looks super neat; unfortunately, the entire basin area is dominated by POAPRA and BROINE with low native species.

88˚, 1-5 mph winds, 30% cloud cover.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB (2018)<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_023 |
| Vegetation Community Type:<br>POAPRA/ALOPRA | Grazing: None | Tract #s:<br>ND-EO-0938.000 (from road)<br>ND-EO-0937.000 (from road) |
| Photo #s (Initial-#) PC 1571-1572 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 70 | | ARTABS 3 | | DESSOP 1 | |
| BROINE 10 | | | | | |
| ALOPRA 15 | | | | | |
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Butterfly Species Observed:

None

NOTES (Mgmt, context, mapping, etc):

Observed from road. Wetland dominated by ALOPRA (?) in center of non-native pasture.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB<br>Date: 7/01/2022 | Site ID: No_Hab_DASK_024 |
| Vegetation Community Type:<br>POAPRA/BROINE | Grazing: None | Tract #s:<br>ND-EO-0936.000<br>ND-EO-0934.000<br>ND-EO-0933.000<br>ND-EO-0932.000<br>ND-EO-0931.000 |
| Photo #s (Initial-#) JB 5889, 7736 (4:30pm) | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 70 | | ARTLUD 3 | | MELOFF T | |
| BROINE 20 | | | | | |
| STICOM 2 | | | | | |
| STIVIR 1 | | | | | |
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| Butterfly Species Observed:<br><br>None | NOTES (Mgmt, context, mapping, etc):<br><br>Unplowed but totally invaded POAPRA |



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, DH, DL, PC, JR, JTR<br>Date: 7/03/2022 | Site ID: No_Hab_DASK_025 |
| Vegetation Community Type:<br>POAPRA/BROINE | Grazing: Light | Tract #s:<br>ND-MC-0739.000 |
| Photo #s (Initial-#) DC 378, 379 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 30 | | PSOARG 4 | RATCOL T | TRADUB T | ROSARK 1 |
| BROINE 40 | | ECHANG 1 | ARTFRI T | LOTCOR T | |
| STISPA T | | ARTLUD 2 | GAUCOC T | | |
| ARILON T | | ACHMIL 1 | MEDSAT 1 | | |
| | | SOLMOL 1 | ARTDRA T | | |
| | | ASTFAL T | TRIREP T | | |
| | | CIRFLO T | ARTABS T | | |
| | | VICAME T | ASTTEN T | | |
| | | CIRARV T | ANECAN T | | |
| | | ASCSPE T | DALCAN T | | |
| | | LITINC T | ASTCRA T | | |
| | | | | | |

Butterfly Species Observed:

Melissa blue
Alfalfa butterfly
Acmon blue
Tawny-edge skipper

NOTES (Mgmt, context, mapping, etc):

75˚, 1-3 mph winds, cloud cover 30%
Good forb diversity but almost no NPG; 2-3 groups of ECHANG in flower



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: Jim, JT, DH, DC, PC, JB<br>Date: 7/03/2022 | Site ID: No_Hab_DASK_026 |
| Vegetation Community Type:<br>AGRCRI/POAPRI/BROINE | Grazing: None | Tract #s: (viewed from road)<br>SD-MP-0695.100<br>SD-MP-0692.100<br>SD-MP-0691.100<br>SD-MP-0690.100<br>SD-MP-0694.100<br>SD-MP-0693.100 |
| Photo #s (Initial-#) DC 380 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 40 | | GYPPAN 2 | | MELOFF T | |
| AGRCRI 30 | | SPHCOC 1 | | TRADUB T | |
| BROINE 25 | | MEDSAT 5 | | | |
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Butterfly Species Observed:

None

NOTES (Mgmt, context, mapping, etc):

Observed from road. Non-native pasture.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: JB, DH, PC, DC, JR, JTR<br>Date: 7/03/2022 | Site ID: No_Hab_DASK_027 |
| Vegetation Community Type:<br>POAPRA/BROINE/forb | Grazing: None | Tract #s:<br>SD-MP-211.276.100<br>SD-MP-211.275.190 |
| Photo #s (Initial-#) DC 381-386 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 60 | SCHSCO T | ACHMIL 2 | AMOCAN T | LACOBL T | ROSARK T |
| BROINE 15 | PANVIR T | SOLMOL T | ECHANG T | MELOFF T | SYMOCC 2 |
| AGRSMI 2 | | PSOARG 1 | ANECAN T | MEDLUP T | |
| HORJUB T | | ARTABS T | ANEMONE sp. T | | |
| CARPRA T | | AMBPSI 1 | AGOSERIS sp. T | | |
| ANDGER T | | TAROFF T | GAIARI T | | |
| STISPA T | | CIRFLO T | ASTCRA T | | |
| STIVIR 5 | | ARTFRI T | ANTHOW T | | |
| CARHEL 1 | | RATCOL T | PSOESC T | | |
| CARSAR T | | EUPESA 15 | SOLCAN T | | |
| AGRTRA T | | ONOMOL T | GUTSAR T | | |

Butterfly Species Observed:

Monarchs, Cabbage, Silver-bordered fritillary, Tawny-edged skipper, Melissa blue, variegated fritillary, clouded sulphur, Acmon blue, common sooty wing, wood nymph Buckeye, Aphrodite fritillary, Tharos crescent, regal fritillary, alfalfa, inornate ringlet, long dash.

NOTES (Mgmt, context, mapping, etc):

Potholes interspersed in pasture. Highly invaded by POAPRA/BROINE/EUPESU but understory of native prairie.

2-5 mph winds, 85˚, humid, 10% cloud cover.

1 STG – tipi rings (?)

Ranchers observing survey



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DC, JB<br>Date: 7/03/2022 | Site ID: No_Hab_DASK_028 |
| Vegetation Community Type:<br>POAPRA/AGRSMI | Grazing: Light | Tract #s:<br>SD-MP-211.275.110<br>SD-MP-211.275.100<br>SD-MP-211.274.190 |
| Photo #s (Initial-#) DC 387-388 to SW | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| POAPRA 65 | | PSOARG 4 | GUTSAR 1 | LEPDEN 1 | |
| AGRSMI 15 | | SPHCOC 1 | | LOTCOR 3 | |
| BOUGRA 2 | | ARTLUD 2 | | | |
| STIVIR 1 | | ACHMIL 2 | | | |
| KOECRI T | | CIRFLO T | | | |
| STISPA T | | TAROFF T | | | |
| BROINE 1 | | AMBPSI 1 | | | |
| BUCDAC T | | ONOMOL T | | | |
| | | POTPEN T | | | |
| | | RATCOL T | | | |
| | | ARTDRA T | | | |

Butterfly Species Observed:

None

NOTES (Mgmt, context, mapping, etc):

Highly invaded prairie.
Not nearly as diverse as No_Hab_DASK_027.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH<br>Date: 7/05/2022 | Site ID: No_Hab_DASK_029 |
| Vegetation Community Type:<br>Improved Pasture | Grazing: Heavy | Tract #s:<br>SD-CL-208-081.000 (not accessed)<br>Visual survey from 435 Ave. Landowner denial. |
| Photo #s (Initial-#) DH 601 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | CIRUND | | | |
| POAPRA | | PSOTEN | | | |
| | | MEDSAT | | | |
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Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Standing water visible over part of CL. Approximately MP 27-28.
No coneflower or bluestem observed from road.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH<br>Date: 7/05/2022 | Site ID: No_Hab_DASK_030 |
| Vegetation Community Type:<br>Improved Pasture | Grazing: Light | Tract #s:<br>SD-KI-0273.110<br>SD-KI-0273.100<br>SD-KI-0273.000 |
| Photo #s (Initial-#) DH 605 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | CIRARV | | | |
| POAPRA | | PSOLAN | | | |
| | | ASCSPE | | | |
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Butterfly Species Observed:

Alfalfa
Checkered white

NOTES (Mgmt, context, mapping, etc):

Access from 430th Avenue.
Brief survey due to incoming storm.
MP 120.8-121.7
No coneflower or bluestem observed.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH<br>Date: 7/05/2022 | Site ID: No_Hab_DASK_031 |
| Vegetation Community Type:<br>Improved Pasture | Grazing: Light | Tract #s:<br>SD-KI-0271.000<br>SD-KI-0270.000<br>SD-KI-0269.000 |
| Photo #s (Initial-#) DH 603-604 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | CIRARV | | MELOFF | |
| POAPRA | | MEDSAT | | | |
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Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Access from 431st Avenue.
Brief survey due to incoming storm.
MP 119.6-120.5
No coneflower or bluestem observed.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH<br>Date: 7/06/2022 | Site ID: No_Hab_DASK_032 |
| Vegetation Community Type:<br>Improved Pasture | Grazing: None | Tract #s:<br>SD-LA-0182.000 |
| Photo #s (Initial-#) DH 701-703 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | ASCSPE | | MELOFF | |
| POAPRA | | ASCTUB | | | |
| | | MEDSAT | | | |
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Butterfly Species Observed:

Alfalfa
Monarch

NOTES (Mgmt, context, mapping, etc):

Approximately MP 90.1-90.3
No coneflower or bluestem observed.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH<br>Date: 7/06/2022 | Site ID: No_Hab_DASK_033 |
| Vegetation Community Type:<br>Improved Pasture | Grazing: Livestock present/Unknown | Tract #s:<br>SD-LA-206-034.200<br>(not accessed) |
| Photo #s (Initial-#) DH 701 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | | | | |
| POAPRA | | | | | |
| PHAARU | | | | | |
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|---|---|
| Butterfly Species Observed:<br><br>NONE | NOTES (Mgmt, context, mapping, etc):<br><br>Not accessible due to high water to S. Viewed from 240th St. |



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH<br>Date: 7/06/2022 | Site ID: No_Hab_DASK_034 |
| Vegetation Community Type:<br>Introduced Perennial Grasses | Grazing: Livestock present/Unknown grazing level | Tract #s:<br>SD-LA-206-031.200<br>SD-LA-206-029.110<br>SD-LA-206-029.000<br>(not accessed) |
| Photo #s (Initial-#) None | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE | | | | | |
| PHAARU | | | | | |
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Butterfly Species Observed:

NONE

NOTES (Mgmt, context, mapping, etc):

Not accessible. Landowner denial to S and E; flooded creek to N. Vegetation description based on nearby vegetation.

MP 5.3-6.5

# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH<br>Date: 7/06/2022 | Site ID: No_Hab_DASK_035 |
| Vegetation Community Type: Introduced Perennial Grasses | Grazing: Light | Tract #s:<br>SD-MI-0098.110<br>SD-MI-0098.111<br>SD-MI-0102.102<br>(not accessed – viewed from road through binoculars) |
| Photo #s (Initial-#) DH 704 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| BROINE 60 | | CIRARV 4 | | MELOFF 1 | |
| PHLPRA 8 | | CIRUND T | | | |
| POAPRA 25 | | ASCSPE T | | | |
| | | MEDSAT T | | | |
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Butterfly Species Observed:

Clouded Sulphur - 1
Alfalfa - 2
Tawny-edged skipper - 1

NOTES (Mgmt, context, mapping, etc):

Rolling hills.
No bluestem or coneflower observed.
Would only be accessible from the south due to flooding.



# DAKOTA SKIPPER VEGETATION INVENTORY FORM

| | | |
|---|---|---|
| Project: Midwest Carbon Express | Crew: DH<br>Date: 7/06/2022 | Site ID: No_Hab_DASK_036 |
| Vegetation Community Type: Fallow crop | Grazing: None | Tract #s:<br>SD-MI-0094.200<br>(not accessed per landowner denial;<br>Viewed from SD-MI-0095.000) |
| Photo #s (Initial-#) DH 705 | | |
| DASK Habitat Type: Unsuitable | | |

## CLASS/SPECIES COVER

**DOMINANT SPECIES BY MORPHOLOGICAL CLASS**

| PERENNIAL GRASSES | ANNUAL GRASSES | PERENNIAL FORBS | | ANNUAL/BIENNAL FORBS | SHRUBS |
|---|---|---|---|---|---|
| | | | | RUMCRI | |
| | | | | CHEALB | |
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Butterfly Species Observed:

Cabbage white
Alfalfa
Monarch

NOTES (Mgmt, context, mapping, etc):

More feral than fallow. Many annual weeds and some volunteer corn. Probably fallow more than one year.

