## Appendix F – Wetland Delineation Report



# Wetland Boundary Verification

I-229 Exit 3 Reconstruction Project

Minnehaha County, SD

 $IM2292(83)3 \; N, \; PCN \; 000S, \; 08DN \; - \; Sioux \; Falls \; \; CIP \; \#11099 \; - \; Sioux \; Falls \; \#11 \; (2023 \; Bike \; Plan)$ 

October 30, 2023





July 11, 2024

RE: I-229 Exit 3 Interchange Reconstruction

Sioux Falls, Minnehaha County, SD Wetland Boundary Verification IM2292(83)3 N, PCN 000S, 08DN

Sioux Falls CIP #11099

Sioux Falls #11 (2023 Bike Plan)

SDDOT – Environmental Office Attn: Chad Babcock 700 East Broadway Pierre, South Dakota 57501-2586

South Dakota Regulatory Office:

Initial wetland delineation took place for the referenced project in September, 2018. An AJD was received for the project on April 1, 2022.

While the initial wetland delineation type and boundary concurrence has expired, a reevaluation of the wetland boundaries was made by Luke Menden, an SEH Wetland Biologist, in September 2023. This reevaluation included a site visit to each of the previously delineated wetlands and an updated desktop review. The desktop review included digital elevation models (DEM), aerial imagery, soil maps, hydrology data, land use/land cover information, and review of the existing wetland delineations. All wetlands were visited in the field to compare conditions and determine if any significant changes were observed to either the wetland boundary or type. The wetland boundaries were field verified by comparing the previously recorded GPS lines with current site conditions. Most wetland sites were bounded by roads, trails, or rises in elevation significant enough to restrict the expansion of wetland conditions.

Based on the above review, the previous wetland boundaries were found to match the current extent of wetland vegetation. No newly formed wetlands were found during this investigation.

Please contact me directly with any questions regarding this investigation at 651.470.6027 or via e-mail at rbeduhn@sehinc.com.

Sincerely,

Rebecca Beduhn

Professional Wetland Scientist Certified Professional Soil Scientist

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#### **MEMORANDUM**

TO: US Army Corps of Engineers

FROM: Rebecca Beduhn, SEH

DATE: August 5, 2021

RE: Interstate 229 Exit 3 Reconstruction Wetland Delineation

SDDOT PCN 000S SEH No. SDDOT 147016

Please find the enclosed wetland delineation report and Approved Jurisdictional Determination (AJD) request for the Interstate 229 Exit 3 Reconstruction project. An AJD is requested for Wetlands 3, 5, 6, 7, 8, and 9.

If there are any questions, please contact Rebecca Beduhn at rebduhn@sehinc.com or 651.470.6027.

#### BN

#### U.S. ARMY CORPS OF ENGINEERS REQUEST FOR CORPS JURISDICTIONAL DETERMINATION CORPS USE ONLY: Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for DATE RECEIVED: 33 CFR Parts 320-332. Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website. Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be PROJECT NO .: 2.REQUESTOR CONTACT INFORMATION: 1. PROPERTY LOCATION: Street Address: Exit 3 (I-229 and Minnesota Ave) Typed or Printed Name: Steve Gramm City/Township/Parish: Sioux Falls Company Name: SDDOT County: Minnehaha County State: SD Street Address: 700 East Broadway Avenue Acreage of Parcel/Review Area for JD: 120 City: Pierre State: SD ZIP: 77501 Section: 28 Township: 101 Range: 49 Phone Number: (605) 773-6641 Latitude: 43.51015 Longitude: -96.731234 E-mail: steve.gramm@state.sd.us (For linear projects, please include the center point of the proposed alignment.) MAP: Please attach a survey/plat map and vicinity map identifying location and review area for the JD. REASON FOR REQUEST (check as many as applicable): I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources. I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority. I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process. I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process. I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide. □ A Corps JD is required in order to obtain my local/state authorization. I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel. ☐ I believe that the site may be comprised entirely of dry land. Other: 5. TYPE OF DETERMINATION BEING REQUESTED: 6. OWNERSHIP DETAILS: ☐ I am requesting an approved JD. I currently own this property. ☐ I am requesting a preliminary JD. I plan to purchase this property. I am an agent/consultant acting on behalf of the I am requesting a "no permit required" letter as I believe my proposed activity is not regulated. requestor. I am unclear as to which JD I would like to request Other (please explain:) and require additional information to inform my

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

Signature: Bailey Nelson

Digitally signed by Bailey Nelson Date: 2021.08.05 14:22:19 -05'00'

Date:



October 20, 2021

RE: Interstate 229 Exit 3 Reconstruction

Sioux Falls, Minnehaha County, South

Dakota

Wetland Delineation Report

SDDOT PCN: 000S

SEH Project Number:. SDDOT 147016

Steve Gramm, PE SDDOT - Project Development 700 East Broadway Avenue Pierre, SD, 75501-2589

Dear Mr. Steve Gramm, PE:

Please find enclosed the Wetland Delineation Report for Interstate 229 Exit 3 Reconstruction in the City of Sioux Falls, South Dakota. This Report presents the results of the field delineation for wetlands performed on September 25, 2018 completed by Rebecca Beduhn (CWD #1243, PWS #2758). The field delineation included on-site identification, classification, and boundary determinations of wetland basins following the 1987 U.S. Army Corps of Engineers *Wetlands Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010).

Thank you for the opportunity to provide wetland services to the South Dakota Department of Transportation (SDDOT). Short Elliott Hendrickson Inc. (SEH®) is pleased to provide you with this information for your records and review. If you have any questions, please contact me directly at 651.490.2146 or via e-mail at rbeduhn@sehinc.com.

Sincerely,

Rebecca Beduhn

Professional Wetland Scientist Certified Professional Soil Scientist

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## Wetland Delineation Report

South Dakota Department of Transportation (SDDOT) Interstate 229 Exit 3 Reconstruction

Sioux Falls, Minnehaha County, South Dakota

SDDOT Number: PCN 000S | SEH Number: SDDOT 147016

October 2021



### Wetland Delineation Report

Interstate 229 Exit 3 Reconstruction PCN 000S
Minnehaha County, South Dakota

Prepared for: South Dakota Department of Transportation (SDDOT) 700 East Broadway Avenue Pierre, SD, 75501-2589

> Prepared by: Short Elliott Hendrickson Inc. 3535 Vadnais Center Drive St. Paul, MN 55110-5196 651,490,2000

The procedures described in this report and the field methods used constitute an official wetland delineation in accordance with the 1987 U.S. Army Corps of Engineers *Wetlands Delineation Manual* and applicable *Regional Supplement*.

The field delineation was completed by Rebecca Beduhn. The methodology meets the standards and criteria described in the manual, and conforms to the applicable standards and regulations in force at the time the fieldwork was completed. The results reflect conditions present at the time of the delineation.

I hereby certify that this report was prepared by me or under my direct supervision.

Certified Professional Soil Scientist, No. 333315

1/20/2019
Date
10/20/2021
_
Date





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### 1 Introduction

The purpose of this study was to investigate the project area, identify areas meeting the technical criteria for wetlands, delineate the jurisdictional extent of the wetland basins, and classify the wetland habitat for reconstruction. This field delineation will be the basis on which wetland impacts from the proposed project will be determined.

This report describes the methodology and results of the field delineation performed on September 12<sup>th</sup> and 13<sup>th</sup>, 2018. Figures referred to in the text are included at the end of the report.

#### 1.1 Site Description

The project site is located in Sections 28, 29, and 33 in Township 101 North, Range 49 West in Sioux Falls, Minnehaha County, South Dakota as shown on **Figure 1**. The approximately 120-acre site is bounded on the north by W 37<sup>th</sup> Street, on the east by S Cliff Avenue, on the south by W 57<sup>th</sup> Street, and on the west by S Western Avenue. The site is located in the Lower Big Sioux watershed.

The project site consists of a variety of upland and wetland plant communities. The wetland and upland communities onsite are described in more detail in the following sections.

### 2 Wetland Delineation

#### 2.1 Wetlands Definition

Wetlands are defined in federal Executive Order 11990 as follows:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

According to U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010), one positive indicator (except in certain situations) from each of three elements must be present in order to make a positive wetland determination, which are as follows:

- Greater than 50 percent dominance of hydrophytic plant species.
- Presence of hydric soil.
- The area is either permanently or periodically inundated, or soil is saturated to the surface during the growing season of the dominant vegetation.

#### 2.2 Methodology

#### 2.2.1 Resource Review

Topographic maps, the U. S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) map, and the Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2019) for Minnehaha County, the Minnehaha County hydric soils list were reviewed prior to visiting the site to locate potential wetland habitats. **Figure 2** is a copy of the NWI map, and **Figure 3** is a copy of the NRCS Web Soil Survey map. These sources showed a number wetland areas that were investigated in greater detail during the field delineation.

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WETLAND DELINEATION REPORT

#### 2.2.2 Field Procedures

The project site was examined on September 12<sup>th</sup> and 13<sup>th</sup>, 2018 for areas meeting the technical wetland criteria in accordance with the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010).

The delineation procedures in the Corps *Manual* (*i.e.*, the Routine Onsite Determination Method), in combination with wetland indicators and guidance provided in the *Regional Supplement* were applied for this delineation. Where differences in the two documents occur, the *Regional Supplement* takes precedence over the Corps *Manual* for applications in the *Midwest Region* (USACE 2010).

Field notes, samples, and photographs were taken at representative locations in each wetland basin, with data transect locations following spacing guidelines in the *Regional Supplement*. The respective wetland and upland plots for each wetland were documented on Wetland Determination Data Forms (**Appendix A**). Relevant photographs of the site and representative sample locations are included in **Appendix B**; all other photographs will be retained on file at SEH.

Wetland boundaries were located and marked with pin flags and/or flagging labeled with "WETLAND BOUNDARY" to allow for field review. The locations of the delineated wetland boundaries were collected with a sub-meter accuracy Global Positioning System (GPS) unit and mapped. The results of the delineation are shown on **Figures 4-1** and **4-2**. The sample points noted identify where data was collected.

#### 2.3 Hydrophytic/Wetland Vegetation

Wetland plant species nomenclature follows the *National Wetland Plant List* (USACE 2016). Identification was aided when necessary with field guides for the region. Vegetation was sampled in nested circular plots: 5-ft radius for herbaceous species, 15-ft radius for shrubs, and 30-ft radius for trees and vines.

#### 2.4 | Hydric/Wetland Soils

Soils were observed for hydric soil characteristics. Soils were examined in cores taken with a Dutch auger. Soil profiles were observed at a depth necessary to confirm hydric soil characteristics. Typical soil profile depths are typically within 18-24 inches below ground surface to allow for: (1) observation of an adequate portion of the soil profile to determine presence/absence of hydric soil characteristics; (2) observation of hydrology including depth to the water table and saturated soils; and, (3) identification of disturbances (e.g., buried horizon, plow line, etc.). Soil color determinations were made using Munsell Soil Color Charts (Gretag-Macbeth 1994). Site soil characteristics were compared to those mapped and described in the Soil Survey for Minnehaha County (USDA 2019). Hydric soil characteristics were compared to those identified in the *Midwest Regional Supplement* (USACE 2010) and the most recent version of the NRCS publication *Field Indicators of Hydric Soils in the United States, Version 8.1* (USDA 2017).

#### 2.5 Hydrology

Primary and secondary indicators of hydrology were identified in the field to determine the presence or absence of wetland hydrology, as described in the *Midwest Regional Supplement* (USACE

2010), and are listed in each wetland description. Subsurface wetland hydrology indicators were examined using the soil cores and/or soil pits as deep as 24 inches.

### 3 Results

The field delineation was conducted under temperature conditions that were higher than normal and precipitation conditions that were wetter than normal as compared to the historical average for the region according to Midwest Regional Climate Center (**Appendix C**). Most of the vegetation was identifiable, including all dominant species.

11 wetland basins were identified, delineated, and classified (**Figures 4-1** and **4-2**). The Wetland Determination Data Forms (**Appendix A**) indicate the dominant species of vegetation and the soil and hydrologic characteristics at representative locations around each basin. **Table 1** is a summary of the size and classification of each wetland basin.

The wetlands are grouped by wetland habitat classification and described below Table 1.

Table 1 – Wetland and Aquatic Resource Characteristics

Wetland ID	Size (acres) <sup>1</sup>	HGM Classification	Cowardin Classification	Location (Decimal Degrees)	Jurisdictional Status
1	0.06706	Prairie Pothole	PUBH	43.5083, -96.731	Jurisdictional, Culverts provide connection to river
2	0.05952	Riverine	PEMB	43.5085, -96.730	Jurisdictional, Adjacent to river
3	0.14251	Prairie Pothole	PEMB	43.5094, -96.731	Jurisdictional, Culverts provide connection to river
4	0.04776	Prairie Pothole	PEMC	43.5089, -96.730	Jurisdictional, Culverts provide connection to river
5	0.34224	Prairie Pothole	PEMC	43.5097, -96.730	Jurisdictional, Culverts provide connection to river
6	0.89335	Prairie Pothole	PEMC	43.5112, -96.730	Jurisdictional, Culverts provide connection to river
7	0.29862	Prairie Pothole	PEMB	43.5109, -96.730	Not Jurisdictional, No Surficial Connection observed
8	0.26041	Prairie Pothole	PEMB	43.5104, -96.731	Not Jurisdictional, No Surficial Connection
9	0.90768	Prairie Pothole	PEMC	43.5100, -96.733	Not Jurisdictional, No Surficial Connection
10	0.04097	Prairie Pothole	РЕМВ	43.5088, -96.731	Not Jurisdictional, No Surficial Connection
11	0.62692	Riverine	PEMC	43.5075, -96.731	Jurisdictional, Adjacent to river
TOTAL	3.6870				

<sup>&</sup>lt;sup>1</sup> Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

#### 3.1 Prairie Pothole Wetlands

The following sections describe wetlands within the project area that are classified as Prairie Pothole Wetland Communities based on the Hydrogeomophic Approach.

#### 3.1.1 PUBH Wetlands

Table 2 - Summary of PUBH Prairie Potholes

Wetland ID	Size (acres)	Cowardin
1	0.06706	PUBH
Total acreage	0.06706	

One (1) Wetland within the project limits is classified utilizing the Prairie Pothole Classification, and is described as a Shallow Open Water wetland community. This included Wetland 1 (**Figure 4-1** and **4-2**). It is located west of S Minnesota Avenue and south of Interstate 229.

Vegetation was not present in this shallow open water wetland community.

A typical soil profile in the shallow open water community met the technical hydric soil indicator A11 – Depleted Below Dark Surface. The Minnehaha County soil survey identifies soils in this wetland as predominantly hydric, consistent with field observations.

The primary wetland hydrology indicators observed included A3 – Saturation, A2 – High Water Table, A1 – Surface Water, and B7 – Inundation Visible on Aerial Imagery. Inundation of approximately two inches was present.

The wetland boundary placement was primarily based upon a slight topographic rise and a presence of vegetation. The surrounding upland areas were dominated by American elm (*Ulmus americana* – FACW) in the tree stratum; European buckthorn (*Rhamnus cathartica* – FAC) in the shrub stratum; and common dandelion (*Taraxacum officinale* – FACU), groundivy (*Glechoma hederacea* – FACU), Pennsylvania sedge (*Carex pensylvanica* – UPL), Allegheny blackberry (*Rubus allegheniensis* – FACU), and European buckthorn in the herbaceous stratum. Upland soils did not meet for hydric soils criteria. Primary indicator A3 – Saturation was present at the upland sample point.

#### 3.1.2 PEMB Wetlands

Table 3 - Summary of PEMB Prairie Potholes

Wetland ID	Size (acres)	Cowardin
3	0.1425	PEMC
7	0.29862	PEMC
8	0.26041	PEMC
10	0.04097	PEMC
Total acreage	0.7425	

There are four (4) wetlands within the project limits is classified utilizing the Prairie Pothole Classification that are described as Fresh (wet) Meadow wetland communities. They include Wetlands 3, 7, 8, and 10 (**Figure 4-1** and **4-2**). Wetlands 3, and 10 are located south of Interstate 229, while Wetlands 7 and 8 are located north of Interstate 229.

Dominant vegetation in the fresh (wet) meadow communities included reed canary grass (*Phalaris arundinacea* – FACW), dock-leaf smartweed (*Persicaria lapathifolia* – FACW), and/or large barnyard grass (*Echinochloa crus-galli* – FACW) in the herbaceous stratum.

A typical soil profile in the fresh (wet) meadow community met the technical hydric soil indicator A11 – Depleted Below Dark Suface. The Minnehaha County soil survey identifies soils in this wetland as predominantly hydric and predominantly nonhydric.

The primary wetland hydrology indicators observed included A2 – High Water Table and A3 – Saturation. A water table was encountered at 0-6 below soil surface, while saturation was observed 0-2 inches below the ground surface.

The wetland boundary placement was primarily based upon a slight topographic rise and a change in vegetation dominance. The surrounding upland areas were dominated by European buckthorn in the tree stratum, and/or stinging needle (*Urtica dioica* – FACW), eastern daisy fleabane (*Erigeron annuus* – FACU), Pensylvania sedge, saw-tooth sunflower (*Helianthus grosseserratus* – FACW), yellow bristle grass (*Setaria pumila* – FACU), Canadian thistle (*Cirsium arvense* - FACU), and/or smooth brome (*Bromus inermis* – FACU) in the herbaceous stratum. Upland soils did not meet for hydric soils criteria. Primary indicator A3 – Saturation was present at the upland sample point for Wetland 10, but was not present at the other upland sample points.

#### 3.1.3 PEMC Wetlands

Table 4 – Summary of PEMC Prairie Potholes

Wetland ID	Size (acres)	Cowardin
4	0.04776	PEMC
5	0.34224	PEMC
6	0.89335	PEMC
9	0.90768	PEMC
Total acreage	2.19103	

There are four (4) wetlands within the project limits is classified utilizing the Prairie Pothole Classification that are described as Shallow Marsh wetland communities. These wetlands included Wetlands 4-6, and 9 (**Figure 4-1** and **4-2**). Wetlands 4 and 5 are located south of Interstate 229, while Wetlands 6 and 9 are located north of Interstate 229.

Dominant vegetation in the shallow marsh communities included quaking aspen (*Populus tremuloides* – FAC) and/or silver maple (*Acer saccharinum* – FACW) in the tree stratum; quaking aspen, European buckthorn, and/or meadow willow (*Salix petiolaris* – OBL) in the shrub stratum; and/or narrow-leaf cat-tail (*Typha angustifolia* – OBL), pointed broom sedge (*Carex scoparia* – FACW), reed canary grass, blunt spike rush (*Eleocharis obtuse* – OBL), broad-leaf cat-tail (*Typha latifolia* – OBL), curly dock (*Rumex crispus* – FAC), and/or spotted touch-me-not (*Impatiens capensis* – FACW) in the herbaceous stratum.

A typical soil profile in these communities met the technical hydric soil indicator A11 – Depleted Below Dark Surface. The Minnehaha County soil survey identifies soils in this wetland as predominantly hydric and predominantly nonhydric.

The primary wetland hydrology indicators observed included A3 – Saturation, A2 – High Water Table, and/or A1 – Surface Water. A water table was encountered at 0-6 below soil surface, while saturation was observed 0-2 inches below the ground surface. At the wetland sample point for Wetland 6, there was 3 inches of inundation.

The wetland boundary placement was primarily based upon a slight topographic rise and a change in vegetation dominance. The surrounding upland areas were dominated by European buckthorn in the shrub stratum; and/or yellow bristle grass, Japanese bristle grass (Setaria faberi – FACU), Siberian elm (Ulmus pumila – UPL), horseweed (Conyza canadensis – UPL), and/or smooth brome in the herbaceous stratum. Upland soils did not meet for hydric soils criteria. Hydrology indicators were not observed in the upland.

#### 3.2 | Riverine Wetlands

Wetlands 2 and 11 are associated with the Big Sioux River, and are directly adjacent to the main river channel, located along the riverbanks. These wetlands are categorized as Riverine Wetland Communities based on the Hydrogeomophic Approach and are described below.

#### 3.2.1 PEMB Wetlands

Table 5 – Summary of PEMB Riverine Wetlands

Wetland ID	Size (acres)	Cowardin
2	0.0595	PEMB
Total acreage	0.0595	

Wetland 2, within the project limits, is classified utilizing the Riverine Classification and can be best described as a Fresh (wet) Meadow wetland community. It is located along the riverbanks of the Big Sioux River (**Figure 4-1** and **4-2**).

Dominant vegetation in the fresh (wet) meadow communities included reed canary grass (*Phalaris arundinacea* – FACW), dock-leaf smartweed (*Persicaria lapathifolia* – FACW), and/or large barnyard grass (*Echinochloa crus-galli* – FACW) in the herbaceous stratum.

A typical soil profile in the fresh (wet) meadow community met the technical hydric soil indicator A11 – Depleted Below Dark Suface. The Minnehaha County soil survey identifies soils in this wetland as predominantly hydric and predominantly nonhydric.

The primary wetland hydrology indicators observed included A2 – High Water Table and A3 – Saturation. A water table was encountered at 0-6 below soil surface, while saturation was observed 0-2 inches below the ground surface.

The wetland boundary placement was primarily based upon a slight topographic rise and a change in vegetation dominance. The surrounding upland areas were dominated by European buckthorn in the tree stratum, and/or stinging needle (Urtica dioica – FACW), eastern daisy

fleabane (Erigeron annuus – FACU), Pensylvania sedge, saw-tooth sunflower (Helianthus grosseserratus – FACW), yellow bristle grass (Setaria pumila – FACU), Canadian thistle (Cirsium arvense - FACU), and/or smooth brome (Bromus inermis – FACU) in the herbaceous stratum. Upland soils did not meet for hydric soils criteria. Primary indicator A3 – Saturation was present at the upland sample point for Wetland 10, but was not present at the other upland sample points.

#### 3.2.2 PFMC Wetlands

Table 6 – Summary of PEMC Riverine Wetlands

Wetland ID	Size (acres)	Cowardin
11	0.6269	PEMC
Total acreage	0.6269	

Wetland 11, within the project limits, is classified utilizing the Riverine Classification and can be best described as a Shallow Marsh wetland community. It is located along the riverbanks of the Big Sioux River (**Figure 4-1** and **4-2**).

Dominant vegetation in the shallow marsh communities included quaking aspen (*Populus tremuloides* – FAC) and/or silver maple (*Acer saccharinum* – FACW) in the tree stratum; quaking aspen, European buckthorn, and/or meadow willow (*Salix petiolaris* – OBL) in the shrub stratum; and/or narrow-leaf cat-tail (*Typha angustifolia* – OBL), pointed broom sedge (*Carex scoparia* – FACW), reed canary grass, blunt spike rush (*Eleocharis obtuse* – OBL), broad-leaf cat-tail (*Typha latifolia* – OBL), curly dock (*Rumex crispus* – FAC), and/or spotted touch-me-not (*Impatiens capensis* – FACW) in the herbaceous stratum.

A typical soil profile in these communities met the technical hydric soil indicator A11 – Depleted Below Dark Surface. The Minnehaha County soil survey identifies soils in this wetland as predominantly hydric and predominantly nonhydric.

The primary wetland hydrology indicators observed included A3 – Saturation, A2 – High Water Table, and/or A1 – Surface Water. A water table was encountered at 0-6 below soil surface, while saturation was observed 0-2 inches below the ground surface. At the wetland sample point for Wetland 6, there was 3 inches of inundation.

The wetland boundary placement was primarily based upon a slight topographic rise and a change in vegetation dominance. The surrounding upland areas were dominated by European buckthorn in the shrub stratum; and/or yellow bristle grass, Japanese bristle grass (*Setaria faberi* – FACU), Siberian elm (*Ulmus pumila* – UPL), horseweed (*Conyza canadensis* – UPL), and/or smooth brome in the herbaceous stratum. Upland soils did not meet for hydric soils criteria. Hydrology indicators were not observed in the upland.

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### 4 Hydrogeomorphic (HGM) Assessment

The Hydrogeomophic (HGM) Approach is a method to assess the functional condition of wetlands by using data from a range of physical characteristics of the wetland collected during the field delineation. The HGM Approach incorporates data collected from the wetlands by using mathematic models to provide a level of wetland condition for each function. When combined in an aggregation equation, these functions produce a functional capacity index (FCI), a measure of the functional capacity of a wetland relative to reference standard wetlands on a scale of 0.0-1.0. A low FCI indicates that the wetland is performing a function at a level that is below that characteristic of reference standard. While the FCI scores alone define relationships between variables of the wetland, when they are combined with the area of the wetland, a Functional Capacity Unit (FCU) score is generated. The FCU provides a basis for determination of impact and mitigation.

The HGM Approach was utilized on the 11 delineated wetland basin described above. A summary table of the HGM scores is included in Table 7. Full calculations for HGM can be found in the Hydrogeomophic Model Worksheets in **Appendix D**. The total HGM score for the site is **7.79 FCUs**.

Table 7 – HGM Workbook Functions and Values

**HGM Functions** 1, 2

			_										
Basin ID	Wetland Size (acres)	HGM Method	1	2	3	4	5	6 (Riverine) 6a (Prairie Pothole)	7 (Riverine) 6b (Prairie Pothole)	8	9	To tal FC I <sup>3</sup>	To tal FC U <sup>4</sup>
1	0.07	Prairie Pothole	0.36	0.37	0.28	0.26	0.26	0.29	0.21	N/ A	N/ A	2.0	0. 14
2	0.06	Riverine	N/A	0.34	0.52	0	0.15	0.15	0	0. 1	0. 24	1.5	0. 09
3	0.14	Prairie Pothole	0.34	0.37	0.51	0.35	0.31	0.31	0.17	N/ A	N/ A	2.3 6	0. 33
4	0.05	Prairie Pothole	0.56	0.58	0.66	0.49	0.51	0.55	0.42	N/ A	N/ A	3.7 7	0. 18
5	0.34	Prairie Pothole	0.51	0.7	0.4	0.69	0.59	0.64	0.3	N/ A	N/ A	3.8	1. 31
6	0.89	Prairie Pothole	0.17	0.17	0.47	0.14	0.14	0.16	0.11	N/ A	N/ A	1.3 6	1. 22
7	0.3	Prairie Pothole	0.51	0.73	0.39	0.68	0.56	0.61	0.21	N/ A	N/ A	3.6 9	1. 1
8	0.26	Prairie Pothole	0.25	0.37	0.32	0.34	0.29	0.31	0.13	N/ A	N/ A	2.0	0. 52
9	0.91	Prairie Pothole	0.25	0.35	0.33	0.34	0.29	0.32	0.16	N/ A	N/ A	2.0 4	1. 86
10	0.04	Prairie Pothole	0.16	0.19	0.53	0.16	0.14	0.15	0.08	N/ A	N/ A	1.4 1	0. 06
11	0.63	Riverine	N/A	0.37	0.52	0	0.16	0.19	0	0. 08	0. 24	1.5 6	0. 98

<sup>&</sup>lt;sup>1</sup> Prairie Pothole Functions are: 1. Water storage, 2. groundwater recharge, 3. particulate retention, 4. dissolved substances, 5. plant community and carbon sequestration, 6a. Faunal habitat, 6b. Faunal habitat (alternate formula)

#### 4.1 | Conclusion

11 wetland basins were identified, delineated, and classified (**Figures 4-1** and **4-2**) with in the project limits. A total of 3.6780 acres of wetland habitat was delineated within the project limits for a total of 7.79 FCUs, as calculated utilizing the HGM. Two (2) of the wetlands are classified as Riverine under the HGM assessments, and the remaining nine (9) are classified as Prairie Pothole. In general, wetlands south of the center of I-229 are assumed connected to the Big Sioux River via culverts or direct surface flow. Because of these seven (7) wetlands (1,2,3, 4, 5, 6, and 11) are

<sup>&</sup>lt;sup>2</sup> Riverine Functions are: 2. Velocity Reduction of Surface Water Flow, 3. Storage and Release of Subsurface Water, 4. Removal of Imported Elements and Compounds, Retention of Particulates and Organic Materials, 6. Organic Carbon Export, 7/ Maintains Characteristic Plant Community, 8. Maintains Habitat Structure Within Wetland, 9. Maintains Hab. Str. And Connect. Among Wetlands

<sup>3.</sup> FCI = Functional Capacity Index

<sup>&</sup>lt;sup>4.</sup> FCU = Functional Capacity Units

presumed to be jurisdictional by the USACE. The remaining four (4) wetlands (7, 8, 9, and 10) have no apparent connection to the river and are presumed to be not jurisdictional by the USACE.

Wetlands in the project area are regulated by agencies at the local, regional, state, and federal levels including the USACE and the EPA at the federal level. It is presumed that the USACE has jurisdiction over all the wetlands in the project are due to their and connectivity proximity to the River. The primary state agencies in involved in wetlands protection include the South Dakota Department of Environment and Natural Resources (SDDENR), South Dakota Department of Game, Fish, and Parks (SDGFP), and the South Dakota Department of Agriculture (SDDA). These agencies may require a field review of the wetland delineation.

Construction plans that propose any direct alteration or indirect impact to wetlands or watercourses within the project area will require permits from the appropriate regulatory agencies. Violation of wetland regulations can result in substantial civil and/or criminal penalties.

### 5 | Bibliography

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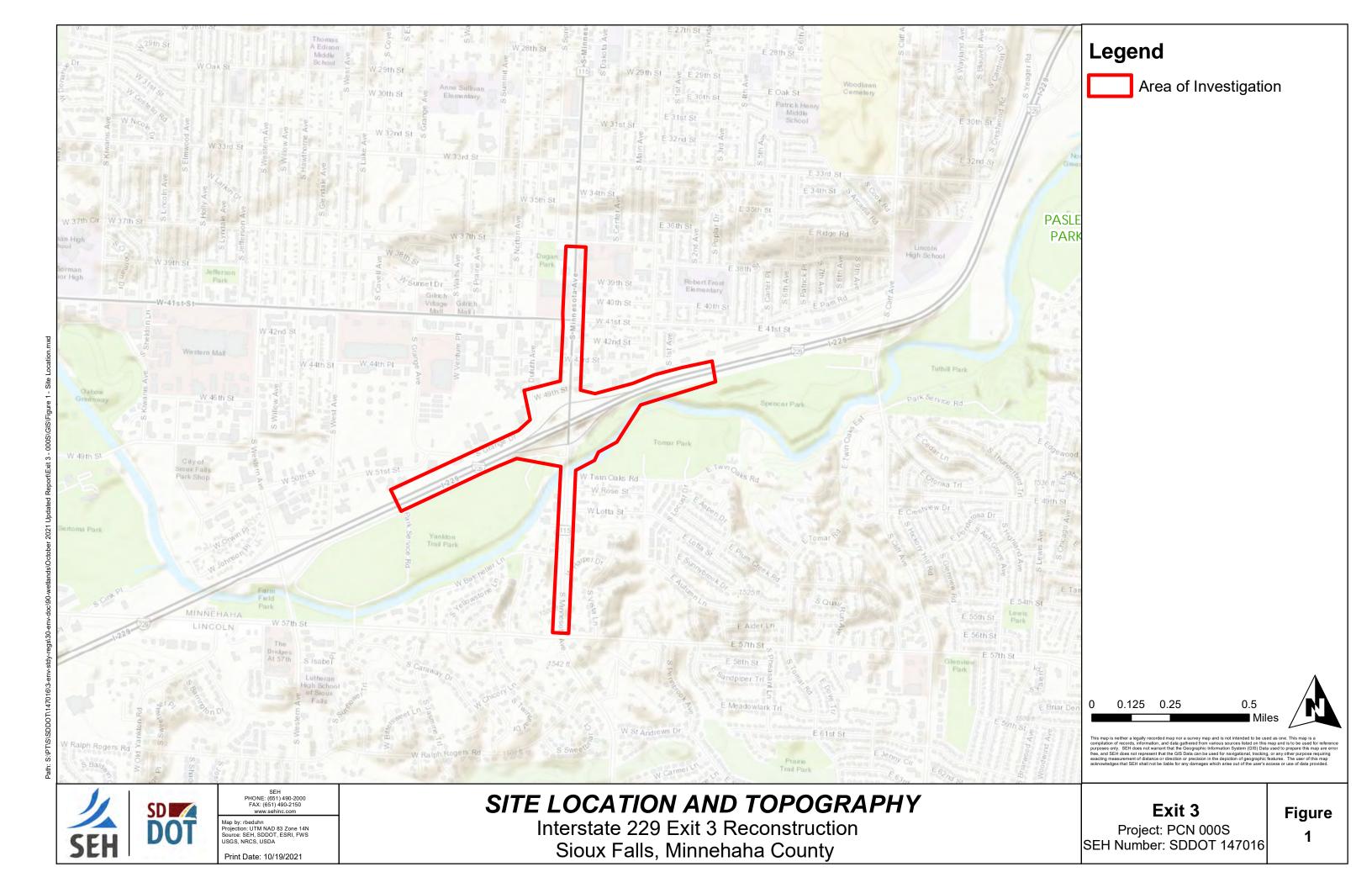
  National Cooperative Soil Survey On-line Database.

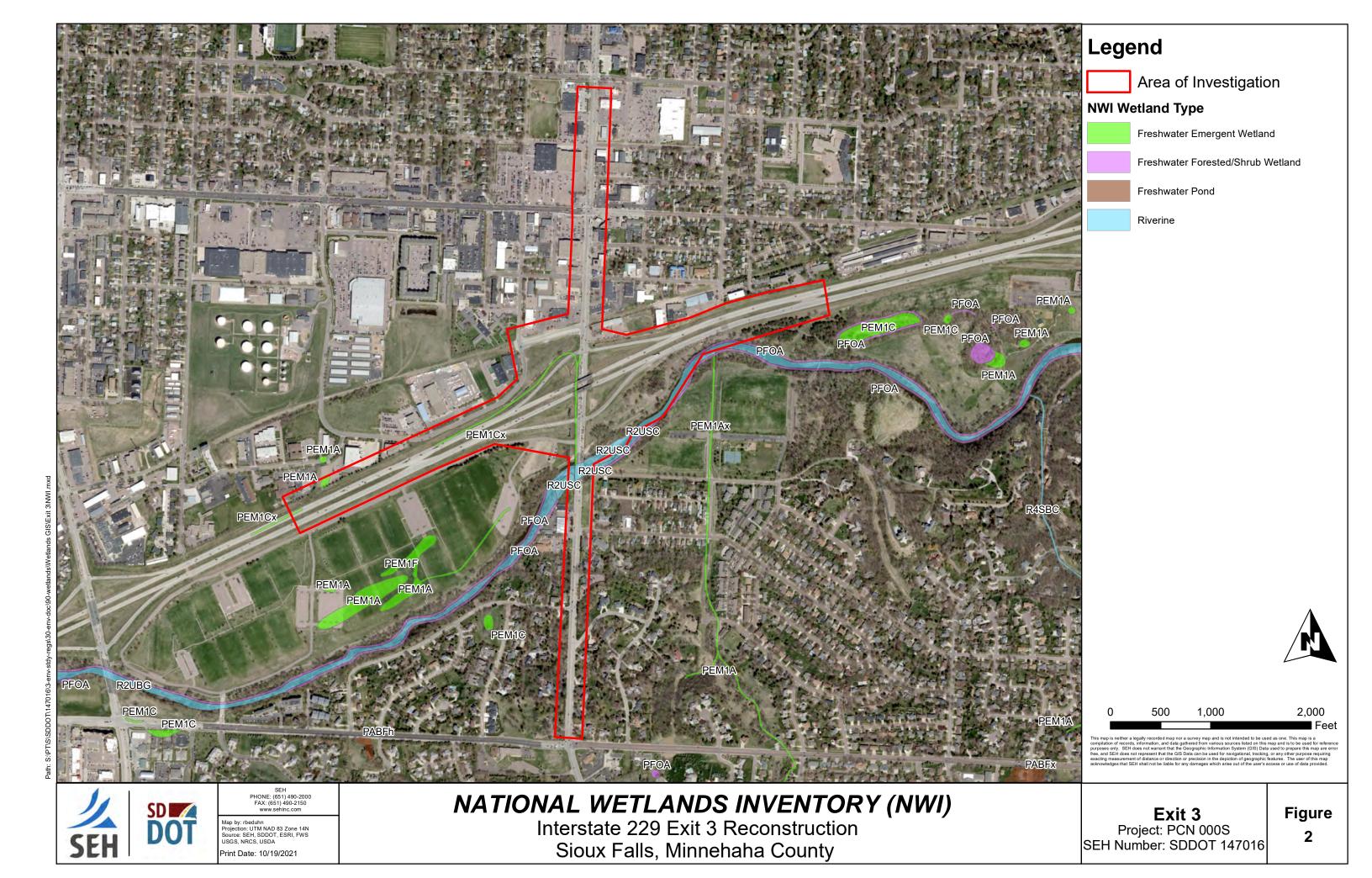
  http://websoilsurvey.nrcs.usda.gov/app/.
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- U.S. Geological Survey 7.5' Quadrangle Map, Sioux Falls East, South Dakota Quadrangle, 2019. Scale: 1:24000.

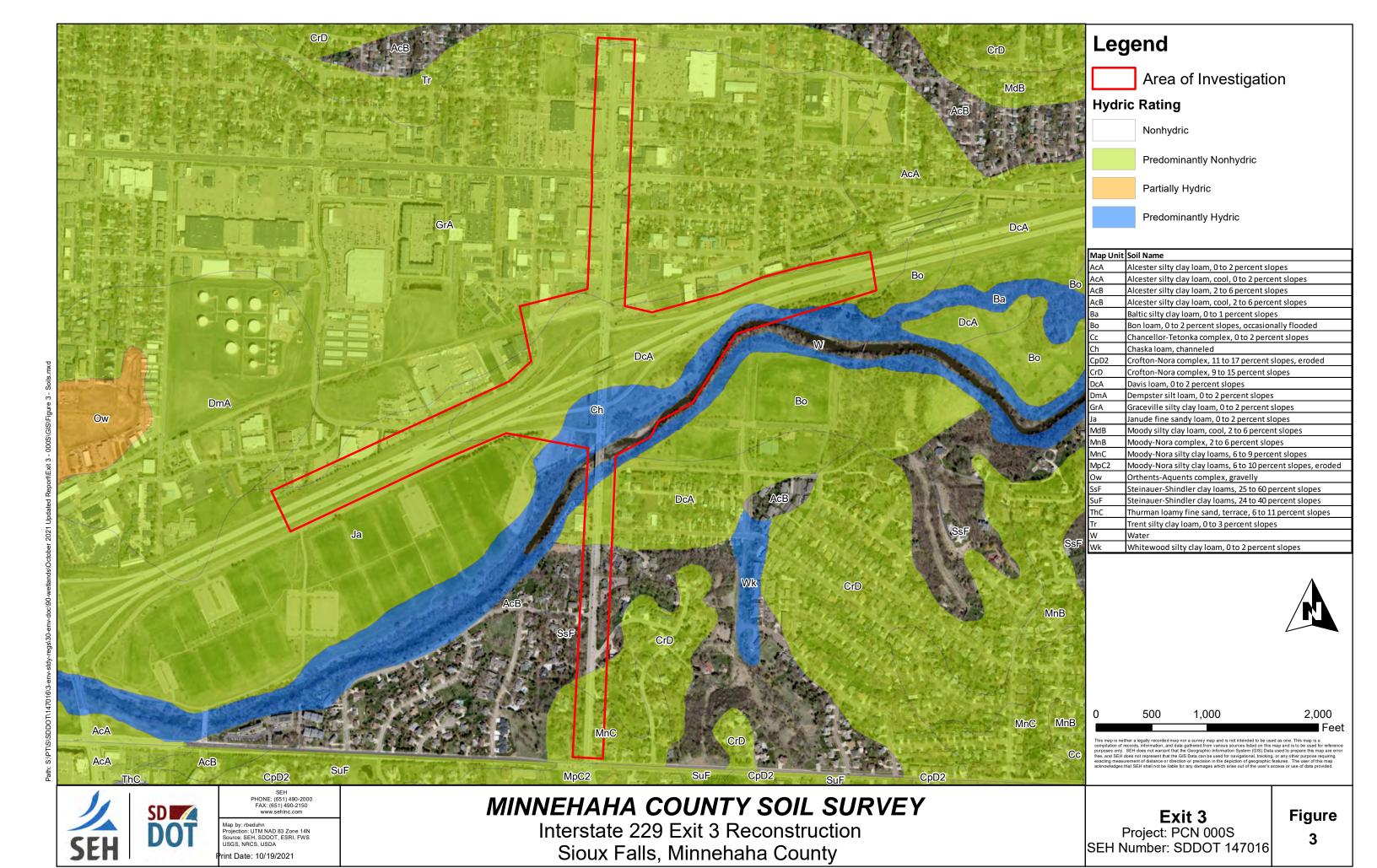


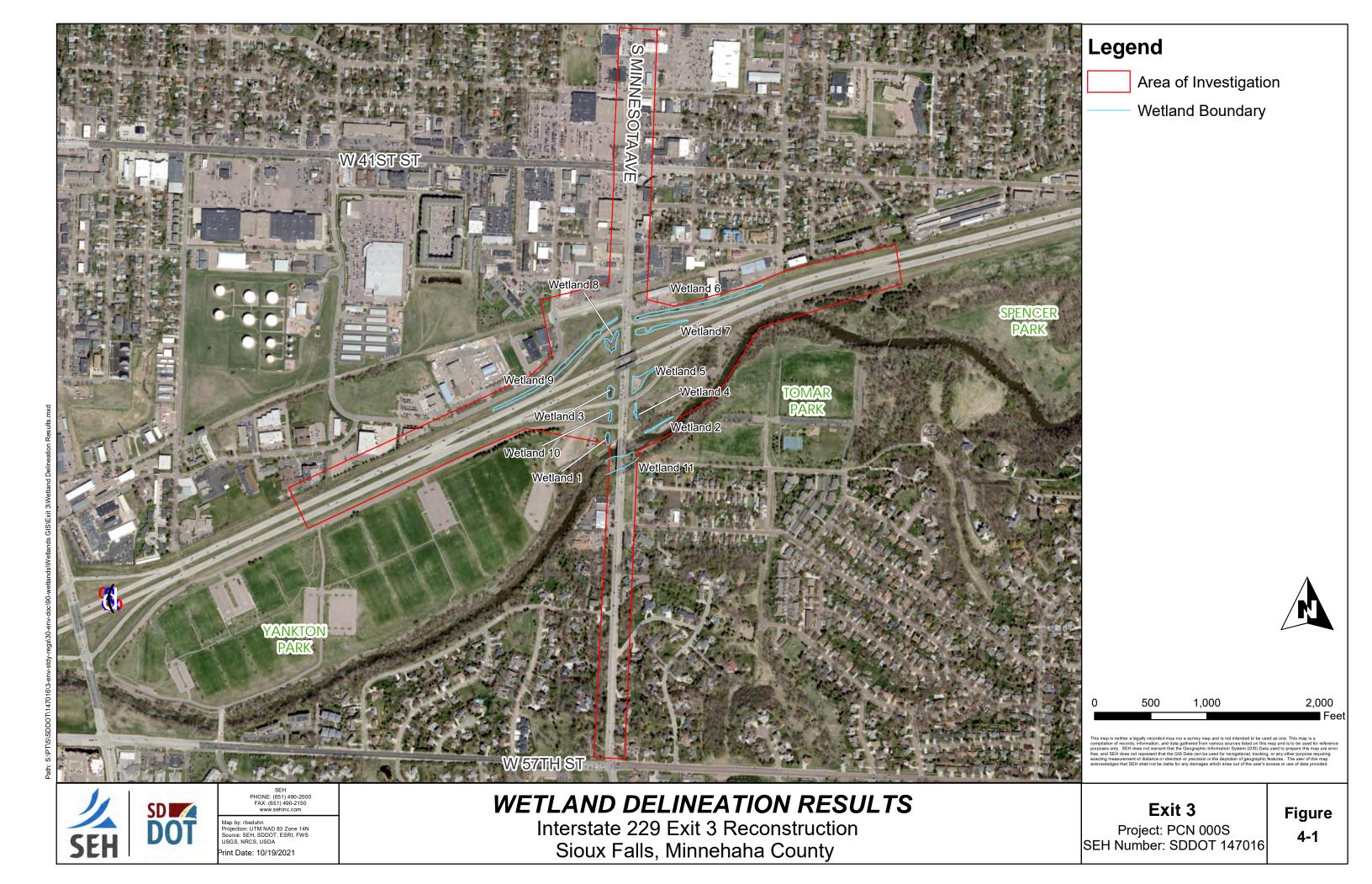
## Figures

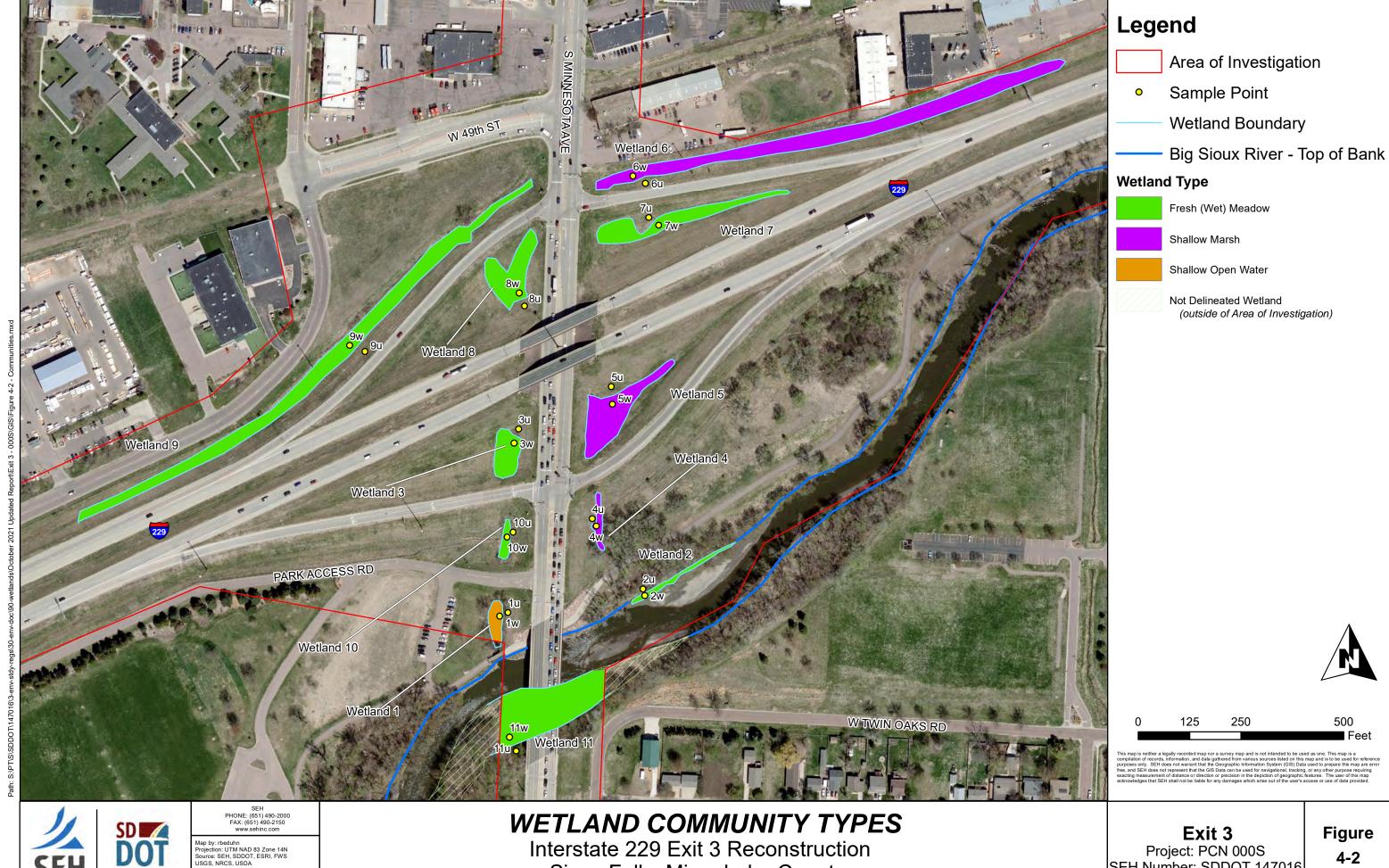
Figure 1 – Site Location and Topography
Figure 2 – National Wetlands Inventory (NWI)
Figure 3 – Minnehaha County Web Soil Survey
Figures 4-1 and 4-2 – Wetland Delineation Results











Sioux Falls, Minnehaha County

Print Date: 10/19/2021

4-2

SEH Number: SDDOT 147016

Appendix A Wetland Delineation Data Forms	

WETLAND DETERMII  Project/Site PCN 000S: I-229 Exit 3 Reconstruction		OATA FORM County: Sid		•		Date:	9/25/201	8
Applicant/Owner: South Dakota Department of Transportation		State:	South D		Sampling P		1U	
Investigator(s): Rebecca Beduhn			ion, Townsh			32 T101N		
Landform (hillslope, terrace, etc.):  Backslope			relief (conc				ncave	
Slope (%): 8 Lat: 43° 30' 30.053" N			96° 43' 53.6		· · · · ·	UTM NAD		14N
Soil Map Unit Name: Chaska loam, channeled				l Classifica		PEN		
Are climatic/hydrologic conditions of the site typical for this time of	of the year?				in in remark		***	
Are vegetation , soil , or hydrology	-	ly disturbed?		-		•	"	
Are vegetation , soil , or hydrology	-	roblematic?			Are "norma			'es
SUMMARY OF FINDINGS	riatarany p	robiomano.		(If neede	ed, explain a	•		
Hydrophytic vegetation present? N				(	-,,	<b>y</b>		
Hydric soil present?		Is the sa	ampled are	a within a	wetland?	ı	N	
Indicators of wetland hydrology present?			otional wetla				<del>`</del>	
		300, 0	onorial World					
Remarks: (Explain alternative procedures here or in a separate re	eport.)							
Sample Point collected adjacent to Wetland 1.								
<b>VEGETATION</b> Use scientific names of plants.				T _				
To Otal and (DL) in a COLD live	Absolute	Dominant	Indicator		nce Test W			
<u>Tree Stratum</u> (Plot size: <u>30' Radius</u> ) 1 <i>Ulmus americana American Elm</i>	% Cover 10	Species Y	Status FACW		of Dominant OBL, FACW,		3	<b>(\</b> \)
2 American Emi			FACVV		Number of E	_		_(A)
3					number of L cies Across a		7	(B)
					of Dominant	_		-` ′
5					OBL, FACW,		42.86%	(A/B)
	10	= Total Cover						
Sapling/Shrub stratun (Plot size: 15' Radius )				Prevale	nce Index W	Vorksheet		
1 Rhamnus cathartica European Buckthorn	20	<u>Y</u>	FAC		Cover of:			
2				OBL spe		0 x 1 =	0	_
3		· ——		FACW s	·	10 x 2 =	20	_
5				FAC spe		$\frac{30}{35}$ x 3 =	90	_
<u> </u>	20	= Total Cover		UPL spe		10 x 5 =	50	-
Herb stratum (Plot size: 5' Radius )		,		Column		85 (A)	300	(B)
1 Taraxacum officinale Common Dandelion	15	Υ	FACU	Prevaler	nce Index = E		3.53	_` ′
2 Glechoma hederacea Groundivy	10	<u> </u>	FACU					_
3 Carex pensylvanica Pennsylvania sedge	10	Υ	UPL	Hydroph	nytic Vegeta	ation Indic	ators:	
4 Rubus allegheniensis Allegheny Blackberry	10	Υ	FACU	Rapi	d test for hy	drophytic v	egetation/	1
5 Rhamnus cathartica European Buckthorn	10	Υ	FAC	Dom	inance test i	is >50%		
6				Prev	alence index	x is ≤3.0*		
7					phological ad			
8					oorting data i arate sheet)	in Remarks	or on a	
9 10		· ——		<u> </u>	•	rophyticyc	actation*	
	55	= Total Cover		(exp	lematic hydı lain)	ropnytic ve	getation	
Woody vine stratum (Plot size: 30' Radius )  1					rs of hydric soil resent, unless		, ,,	
2				-	rophytic			
	0	= Total Cover		_	etation ent?	N		
Remarks: (Include photo numbers here or on a separate sheet)								

Note: This data sheet has been adapted to use the 2016 National Wetland Plant List:

Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland\_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2016)

SOIL Sampling Point: 1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	<u>Matrix</u>		Re	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	cture	Remarks
0-10	10YR 4/3	100					Sand		
10-20	10YR 4/2	100					Sand		
10-20	10111 4/2	100					Odrid		
± <b>T</b> 0 0		D 1 11	DM D 1				10 :	441 (*	DI D. III II I
	oncentration, D =	Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix
-	il Indicators:		0		1.84 . 6 . 5 .	(0.4)			ematic Hydric Soils:
	osol (A1)				d Matrix	(54)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo				k Surface (S7	
	ck Histic (A3)	,		pped Mai					or Peat (S3) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	•		-	y Minera	. ,		-	Masses (F12) (LRR K, L, R)
	tified Layers (A5)				ed Matrix	(F2)		-	k Surface (TF12)
	n Muck (A10)			oleted Ma		(=0)	Oth	er (explain in	remarks)
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)									
	k Dark Surface (	•			rk Surfac				ophytic vegetation and wetland
San	dy Mucky Minera	I (S1)	Red	lox Depre	essions (	F8)	hyd	lrology must b	e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydri	c soil presen	t? N
Depth (inche	s):				•				<del></del>
Remarks:	<u> </u>								
rtemants.									
HYDROLO	nc v								
1	drology Indicato								
_	cators (minimum o	of one is	required; check a	-			<u>.</u>		<u>licators (minimum of two required)</u>
	Water (A1)				Fauna (B				Soil Cracks (B6)
	ter Table (A2)				uatic Plan		_		Patterns (B10)
X Saturation	, ,				n Sulfide	-			on Water Table (C2)
	arks (B1)				Rhizospl	neres on l	Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)			(O.1)		n Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu				or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in Ti	lled Soils		hic Position (D2)
	osits (B5) on Visible on Aeria	Ilmagany	(D7)	(C6)	-l. Cf	- (07)		FAC-Net	tral Test (D5)
	Vegetated Conca		· · ·	=	ck Surfac r Well Da	. ,			
	ained Leaves (B9)			-	xplain in I				
	` '			Other (L	λριαιτί τι τ	(Ciliaiks)			
Field Obser		Voc	Ma	~	Depth /:	nchos).			
Surface wate Water table	•	Yes Yes	No No	X	Depth (in			- In-	licators of wetland
		Yes	X No				6	_	drology present?
Saturation present? Yes X No Depth (inches): 6 hydrology present? Y (includes capillary fringe)									
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									
	t precipitation o	condition	ne were datara	nined "\/	Vatter +	an nor	mal" (Anno	ndiv (C)	
Allecedell	r bi coibirarioti (	JOI IUILIO	is well detelli	mi <del>c</del> u V	v CitCi li	iaii IIUII	nai (Appe	11uix 0).	

#### WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sic		_	ng Date:	9/25/2018	8
Applicant/Owner: South Dakota Department of Transportation	<del></del>	State:	South Da	akota Samplir	ng Point:	1W	
Investigator(s): Rebecca Beduhn		Secti	ion, Townshi	p, Range:	S32 T101N	R49W	
Landform (hillslope, terrace, etc.): Toeslope		Local	relief (conca	ive, convex, none):	: Co	ncave	
Slope (%): 1 Lat: 43° 30' 30.053" N		_ Long:	96° 43' 53.61	11" W Datum:	: UTM NAD	83 Zone <i>*</i>	14N
Soil Map Unit Name: Chaska loam, channeled			NWI	Classification:	PEI	MA	
Are climatic/hydrologic conditions of the site typical for this time o	of the year?		N (If	f no, explain in rem	narks)		
Are vegetation , soil , or hydrology		ly disturbed?		•	rmal circumsta	ances"	
Are vegetation X , soil , or hydrology	naturally p	roblematic?		7410 110		esent? Y	'es
SUMMARY OF FINDINGS				(If needed, expla	ain any answer	s in remar	rks.)
Hydrophytic vegetation present? N							
Hydric soil present?		Is the sa	ampled area	within a wetland	l?`	Υ	
Indicators of wetland hydrology present? Y		If yes, op	otional wetlar	nd site ID:\	Wetland 1		
Remarks: (Explain alternative procedures here or in a separate re	eport.)						
Sample Point collected in Wetland 1.							
VEGETATION Use scientific names of plants.							
	Absolute	Dominant	Indicator	Dominance Tes	t Worksheet		
<u>Tree Stratum</u> (Plot size: 30' Radius )	% Cover	Species	Status	Number of Domi	inant Species		
1				that are OBL, FA		0	(A)
2					r of Dominant		_
3				-	oss all Strata: _	0	_(B)
				Percent of Domi	•	2 220/	(1/0)
5	0 :	= Total Cover		that are OBL, FA	CW, or FAC:	0.00%	_(A/B)
Sapling/Shrub stratun (Plot size: 15' Radius )		= 10lai Covei	ŀ	Prevalence Inde	ov Worksheet		
Saping/Strub straturi (Plot size: 13 Radius )				Total % Cover of			
2			——	OBL species	0 x1=	0	
3				FACW species	0 x 2 =		-
4				FAC species	0 x 3 =		_
5				FACU species	0 x 4 =	0	_
	0 :	= Total Cover		UPL species	0 x 5 =	0	_
Herb stratum (Plot size: 5' Radius )				Column totals	0 (A)	0	(B)
1				Prevalence Index	x = B/A =		_
2							_
3				Hydrophytic Ve	_		
					or hydrophytic v	/egetation	1
5				Dominance t			
				<del></del>	index is ≤3.0*		
					al adaptations*		
9			<del></del>	supporting d separate she	lata in Remarks eet)	s or on a	
10			<del></del>		hydrophytic ve	actation*	
	0 :	= Total Cover		(explain)	Hydrophytic vo	getation	
Woody vine stratum (Plot size: 30' Radius )				*Indicators of hydric	c soil and wetland	hvdrology n	must be
1				_	less disturbed or p		
2				Hydrophytic			
	0 :	= Total Cover		vegetation	NI.		
Remarks: (Include photo numbers here or on a separate sheet)			l	present?	N		
This wetland has no vegetation- likely from stormwater i	inputs						
Note: This data sheet has been adapted to use the 2016 National	Wetland Pl	lant List:					
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: Nati Engineers, Engineer Research and Development Center, Cold Regions Researc						rmy Corps o	of

SOIL Sampling Point: 1W

Profile Desci Depth	Matrix			Re	dox Feat	<u>ure</u> s				
(Inches)	Color (moist)	%	Color (m		%	Type*	Loc**	Tex	ture	Remarks
0-6	10YR 2/1	100						Sand		
6-10	10YR 4/2	90	7.5YR	4/6	10	С	PL	Sand		
10-20	10YR 6/1	85	7.5YR	4/6	15	С	М	Sand		
10 20	101110/1		7.0110	-1/ 0	10	<del>                                     </del>	141	Curia		
ype: C = Co	oncentration, D =	Depletion	on, RM = R	educe	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Locatio	n: PL = Pore Lining, M = Matrix
Hydric Soil	I Indicators:							Indicate	ors for Prob	lematic Hydric Soils:
	osol (A1)		_			ed Matrix	(S4)			edox (A16) ( <b>LRR K, L, R</b> )
	c Epipedon (A2)				ndy Redo					67) ( <b>LRR K, L)</b>
	k Histic (A3)				pped Ma	, ,			•	at or Peat (S3) ( <b>LRR K, L, R</b> )
	ogen Sulfide (A4	-			-	ky Minera				e Masses (F12) ( <b>LRR K, L, R</b> )
	ified Layers (A5)	)	_			ed Matrix	(F2)		-	ark Surface (TF12)
	Muck (A10)		<u> </u>		oleted Ma	, ,		Oth	er (explain i	n remarks)
	eted Below Dark		(A11)			Surface	. ,			
	k Dark Surface (/	•	_			rk Surfac	` ,			drophytic vegetation and wetland
Sand	dy Mucky Minera	I (S1)	_	Red	dox Depr	essions (	(F8)	hyd	rology must	be present, unless disturbed or problematic
										problematic
estrictive L	ayer (if observe	ed):								
										n+2 V
						_		Hydri	c soil prese	nt? Y
epth (inches	s):					<del>-</del> -		Hydri	c soil prese	<u> </u>
epth (inches						-		Hydri	c soil prese	iit! <u> </u>
epth (inchesemarks:	GY					-		Hydri	c soil prese	<u> </u>
epth (inches emarks: YDROLO /etland Hyd	GY Irology Indicato					-				
epth (inches emarks: IYDROLO /etland Hyd	GY		required; c	heck a	all that ap	- - pply)				ndicators (minimum of two require
epth (inches emarks: IYDROLO /etland Hyd rimary Indica X Surface V	GY Irology Indicato ators (minimum o		required; c	heck a	Aquatic	Fauna (B	,		Secondary I	ndicators (minimum of two require Soil Cracks (B6)
epth (inches emarks: IYDROLO /etland Hyd rimary Indica K Surface V K High Water	GY Irology Indicato ators (minimum o Vater (A1) er Table (A2)		required; c	heck a	Aquatic True Aq	Fauna (B uatic Plar	rts (B14)	:	Secondary II Surface Drainaç	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10)
YDROLO /etland Hyd rimary Indica X Surface V X High Wate X Saturation	GY Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3)		required; c	heck a	Aquatic True Aq Hydroge	Fauna (B uatic Plar n Sulfide	nts (B14) Odor (C1	:	Secondary II Surface Drainaç Dry-Se	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2)
PYDROLO  Vetland Hydrimary Indicator  X Surface V  High Wate  X Saturation  Water Ma	GY Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) irks (B1)		required; c	heck a	Aquatic True Aq Hydroge Oxidized	Fauna (B uatic Plar n Sulfide	nts (B14) Odor (C1	:	Secondary II Surface Drainaç Dry-Se: Crayfis	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8)
epth (inches emarks: VPDROLO Vetland Hydrimary Indica X Surface V X High Water X Saturation Water Ma Sediment	GY Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2)		required; c	heck a	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B uatic Plar n Sulfide I Rhizosp	nts (B14) Odor (C1 heres on l	) _iving Roots	Secondary II Surface Drainage Dry-See Crayfis	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9)
YDROLO /etland Hydrimary Indica X Surface V X High Wate X Saturation Water Ma Sediment Drift Depo	GY Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) osits (B3)		required; c	heck a	Aquatic True Aquatic Hydroge Oxidized (C3) Presence	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu	nts (B14) Odor (C1 heres on l	) Living Roots (C4)	Secondary II Surface Drainaç Dry-Sea Crayfisi Saturat	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
epth (inches emarks: IYDROLO /etland Hyd rimary Indica X Surface V X High Wate X Saturation Water Ma Sediment Drift Depo	GY Irology Indicato ators (minimum of Vater (A1) er Table (A2) in (A3) in (A3) in (A5) Deposits (B2) in (B3) or Crust (B4)		required; c	heck a	Aquatic True Aquatic Hydroge Oxidized (C3) Presence	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu	nts (B14) Odor (C1 heres on l	) Living Roots (C4)	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9)
epth (inches emarks: IYDROLO /etland Hyd rimary Indica X Surface V X High Water X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo	GY Irology Indicato ators (minimum of Vater (A1) er Table (A2) in (A3) in (A3) in (A5) Deposits (B2) in (B3) or Crust (B4)	of one is		heck a	Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent I (C6)	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu	ots (B14) Odor (C1 heres on laced Iron (action in Ti	) Living Roots (C4)	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
YDROLO /etland Hyd rimary Indic / Surface V / High Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation	GY Irology Indicato ators (minimum of Vater (A1) er Table (A2) in (A3) irks (B1) Deposits (B2) osits (B3) or Crust (B4) isits (B5)	<u>of one is</u>	v (B7)	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu	Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu	odor (C1 heres on laction in Ti	) Living Roots (C4)	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
Pydrolo  Wetland Hydrimary Indica  Surface William Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) irks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aeria	of one is I Imagery ve Surfac	v (B7)	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge C	Fauna (B uatic Plar en Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da	odor (C1 heres on laction in Ti	) Living Roots (C4) Iled Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
epth (inches emarks: IYDROLO /etland Hyd rimary Indica X Surface V X High Wate X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely Water-Sta	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aeria Vegetated Conca	of one is I Imagery ve Surfac	v (B7)	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge C	Fauna (B uatic Plar en Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da	odor (C1 heres on laction in Tiese (C7) ata (D9)	) Living Roots (C4) Iled Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
epth (inches emarks: IYDROLO /etland Hyd rimary Indica X Surface V X High Water X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely Water-Statield Observ urface water	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9) rations: r present?	I Imagery ve Surfac )	y (B7) te (B8)	No	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge C	Fauna (Buatic Plar n Sulfide d Rhizospee of Reduron Reduck sor Well Dates pr Well Dates pr Well Dates pr Depth (i	nts (B14) Odor (C1 heres on laction in Tiee (C7) ata (D9) Remarks)	) Living Roots (C4) Iled Soils	Secondary II Surface Drainag Dry-Se: Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) rphic Position (D2) eutral Test (D5)
x Surface V X High Water X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely Water-Sta ield Observ urface water Vater table p	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9) rations: r present? resent?	I Imagery ve Surfac ) Yes Yes	(B7) the (B8)  X X	No No	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge C	Fauna (Buatic Plar on Sulfide d Rhizospee of Reduron Reduck or Well Data explain in	nts (B14) Odor (C1 heres on laction in Tiese (C7) hata (D9) Remarks) nches):	) Living Roots (C4) Iled Soils	Secondary II Surface Drainag Dry-Se: Crayfis Saturat Stunted X Geomo	ndicators (minimum of two requires a Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
epth (inches emarks:  IYDROLO  /etland Hydrimary Indica  X Surface V X High Water X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely Water-State ield Observ urface water /ater table paturation preserved.	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9) rations: r present? resent?	I Imagery ve Surfac )	y (B7) te (B8)	No	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge C	Fauna (Buatic Plar n Sulfide d Rhizospee of Reduron Reduck surfactor Well Dates explain in	nts (B14) Odor (C1 heres on laction in Tiese (C7) hata (D9) Remarks) nches):	) Living Roots (C4) Iled Soils	Secondary II Surface Drainag Dry-Se: Crayfis Saturat Stunted X Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) rphic Position (D2) eutral Test (D5)
IYDROLO Vetland Hyd Vetland Hy	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) in (A3) in (A3) in (A3) or Crust (B4) in (B5) in Visible on Aeria Vegetated Conca ained Leaves (B9) rations: in present? ir present? esent? esent? elilary fringe)	I Imagery ve Surfac ) Yes Yes Yes	(B7) (e) (B8) (X) (X) (X)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge of Other (E	Fauna (Bruatic Plans Sulfide Reduced Surface Face Face Face Face Face Face Face F	nts (B14) Odor (C1 heres on laction in Ti e (C7) hata (D9) Remarks) nches): nches):	) Living Roots (C4) Illed Soils	Secondary II Surface Drainag Dry-Sea Crayfisi Saturat Stunted X Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
IYDROLO Vetland Hyd Vetland Hy	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) Deposits (B2) osits (B3) or Crust (B4) osits (B5) n Visible on Aeria Vegetated Conca ained Leaves (B9) rations: r present? resent?	I Imagery ve Surfac ) Yes Yes Yes	(B7) (e) (B8) (X) (X) (X)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge of Other (E	Fauna (Bruatic Plans Sulfide Reduced Surface Face Face Face Face Face Face Face F	nts (B14) Odor (C1 heres on laction in Ti e (C7) hata (D9) Remarks) nches): nches):	) Living Roots (C4) Illed Soils	Secondary II Surface Drainag Dry-Sea Crayfisi Saturat Stunted X Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
IYDROLO  Vetland Hyd rimary Indica X Surface V X High Water X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely Water-Sta ield Observ urface water Vater table p aturation pre ncludes cap lescribe reco	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) in (A3) in (A3) in (A3) or Crust (B4) in (B5) in Visible on Aeria Vegetated Conca ained Leaves (B9) rations: in present? ir present? esent? esent? elilary fringe)	I Imagery ve Surfac ) Yes Yes Yes	(B7) (e) (B8) (X) (X) (X)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge of Other (E	Fauna (Bruatic Plans Sulfide Reduced Surface Face Face Face Face Face Face Face F	nts (B14) Odor (C1 heres on laction in Ti e (C7) hata (D9) Remarks) nches): nches):	) Living Roots (C4) Illed Soils	Secondary II Surface Drainag Dry-Sea Crayfisi Saturat Stunted X Geomo	ndicators (minimum of two requires a Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
Water Massely Water-State Vater table paturation prescribe recommends.	GY  Irology Indicato ators (minimum of Vater (A1) er Table (A2) in (A3) in (A3) in (A3) or Crust (B4) in (B5) in Visible on Aeria Vegetated Conca ained Leaves (B9) rations: in present? ir present? esent? esent? elilary fringe)	I Imagery ve Surfac ) Yes Yes Yes	y (B7) the (B8)  X X X  A monitorin	No No No g well,	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge d Other (E	Fauna (Buatic Plaren Sulfide Reduced Reduced Face)  Explain in Depth (in Dep	nts (B14) Odor (C1 heres on laction in Tiee (C7) hata (D9) Remarks) nches): nches):	) Living Roots (C4) Illed Soils  2 0 0	Secondary II Surface Drainag Dry-Se: Crayfisi Saturat Stunted X Geomo FAC-No	ndicators (minimum of two requires Soil Cracks (B6)) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)

WEILAND DETERMIN Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Si		•	<b>1</b> Sampling	Date:	9/25/201	18
Applicant/Owner: South Dakota Department of Transportation		State:	South D		Sampling		2U	
Investigator(s): Rebecca Beduhn			ion, Townsh			S33 T101N	R49W	
Landform (hillslope, terrace, etc.): Footslope			relief (conca	•			oncave	
Slope (%): 4 Lat: 43° 30' 30.768" N		_	96° 43' 49.1		Datum:		D83 Zone	14N
Soil Map Unit Name: Chaska loam, channeled				l Classifica	_		one	
Are climatic/hydrologic conditions of the site typical for this time of	of the year?			If no, explai				
Are vegetation , soil , or hydrology	-	ly disturbed?		-		ial circumst	onooo"	
Are vegetation , soil , or hydrology	_	roblematic?			Are norm		esent? \	⁄es
SUMMARY OF FINDINGS	, p			(If neede	d. explain	any answe		
Hydrophytic vegetation present?								
Hydric soil present?		Is the s	ampled area	a within a	wetland?		N	
Indicators of wetland hydrology present? N			ptional wetla					
<u> </u>		,, -,						
Remarks: (Explain alternative procedures here or in a separate r	ероп.)							
Sample Point collected adjacent to Wetland 2.								
<b>VEGETATION</b> Use scientific names of plants.				Γ				
<u>Tree Stratum</u> (Plot size: 30' Radius )	Absolute % Cover	Dominant Species	Indicator Status			Vorksheet		
1 Rhamnus cathartica European Buckthorn	50	Y	FAC		of Domina OBL, FACV	•	3	(A)
2			- 710			f Dominant		_('')
3					cies Across		5	(B)
				Percent	of Domina	nt Species		_
5				that are	OBL, FACV	W, or FAC:	60.00%	(A/B)
	50	= Total Cover	•					
Sapling/Shrub stratun (Plot size: 15' Radius )						Worksheet	t	
1				Total % (		0 v1-	. 0	
3				OBL spe FACW s	_	0 x1= 25 x2=		_
4				FAC spe	_	50 x 3 =		_
5				FACU sp		10 x 4 =		_
	0	= Total Cover		UPL spe	cies	10 x 5 =	50	_
Herb stratum (Plot size: 5' Radius )				Column	otals	95 (A)	290	(B)
1 Urtica dioica Stinging Nettle	15	Υ	FACW	Prevalen	ice Index =	= B/A =	3.05	
2 Erigeron annuus Eastern Daisy Fleabane	10	Υ	FACU			_		
3 Carex pensylvanica Pennsylvania sedge	10	<u> </u>	UPL		-	tation Indi		
4 Helianthus grosseserratus Saw-Tooth Sunflower	10	<u> </u>	FACW	l —		nydrophytic	vegetatio	n
5				l —	inance tes	ex is ≤3.0*		
6 7				l ——				
8						adaptations a in Remark		<b>;</b>
9					rate sheet		S OI OII A	
10						, drophytic v	egetation*	
	45	= Total Cover		(expl	_	, ,		
Woody vine stratum (Plot size: 30' Radius )						oil and wetland		
1						s disturbed or	problemation	;
2				_	rophytic etation			
	0	= Total Cover	•	pres		Υ		
Remarks: (Include photo numbers here or on a separate sheet)						-		

Note: This data sheet has been adapted to use the 2016 National Wetland Plant List:

Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland\_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2016)

SOIL Sampling Point: 2U

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	kture	Remarks
0-10	10YR 3/2	100					Silt Loam		
10-18	10YR 3/3	95	7.5YR 4/4	5	С	М	Sandy Loa	am	
					_				
*Type: C = 0	Concentration D =	: Depletio	on, RM = Reduce	d Matrix	MS = Ma	asked Sa	nd Grains.	**Location	: PL = Pore Lining, M = Matrix
	il Indicators:	Ворюш	511, 1 1111 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a main,		aonou ou			ematic Hydric Soils:
_	osol (A1)		San	dv Gleve	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo		(0.)		rk Surface (S7	
	ck Histic (A3)			oped Ma				-	t or Peat (S3) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	.)			ky Minera	al (F1)		-	Masses (F12) (LRR K, L, R)
	tified Layers (A5)	-		-	ed Matrix			_	k Surface (TF12)
	n Muck (A10)			leted Ma		,		er (explain in	· · · · · · · · · · · · · · · · · · ·
	leted Below Dark	Surface			Surface	(F6)			,
	k Dark Surface (				rk Surfac	, ,	*Indi	cators of hydr	ophytic vegetation and wetland
	dy Mucky Minera	•			essions (				e present, unless disturbed or
					,	,	,	0,7	problematic
Restrictive	Layer (if observe	м).							
Type:	Layer (II Observe	uj.					Hydri	c soil presen	t? N
Depth (inche	<i>ie).</i>						Hydri	c son presen	
					•				
Remarks:									
HYDROLO									
1	drology Indicato								
Primary Indic	cators (minimum o	of one is	required; check a	ll that ap	ply)		<u> </u>		licators (minimum of two required)
Surface	Water (A1)				Fauna (B				Soil Cracks (B6)
	ter Table (A2)				uatic Plan				Patterns (B10)
Saturatio						Odor (C1			son Water Table (C2)
	arks (B1)				Rhizosp	heres on	Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)	(5)		(0.4)		n Visible on Aerial Imagery (C9)
	osits (B3)					iced Iron			or Stressed Plants (D1)
	t or Crust (B4)			(C6)	ron Redu	ction in 1	illed Soils		ohic Position (D2) utral Test (D5)
	osits (B5) on Visible on Aeria	l Imagery	(B7)		ck Surfac	o (C7)		FAC-Net	ilirai Test (D5)
	Vegetated Conca		· · ·		ck Surfac r Well Da				
	tained Leaves (B9)					Remarks)			
Field Obser		'			, p				
Surface water		Yes	No	Х	Depth (i	nches).			
Water table	•	Yes	No No	$\frac{\lambda}{X}$	Depth (i			- Inc	licators of wetland
Saturation p		Yes	No	$\frac{X}{X}$	Depth (i			_	/drology present?
(includes ca					. ' `	,		-	
		m gauge	e, monitoring well,	aerial nh	notos, pre	evious ins	spections), if	available:	
		. 3-490	,,	PI	, pi	22 1110	,,, 11		
Remarks:									
Antocodon	1								
Anteceden	t precipitation o	conditio	ns were determ	nined "V	Vetter th	nan nori	mal" (Appe	ndix C).	

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sid		•	npling Date:	9/25/20	)18
Applicant/Owner: South Dakota Department of Transportation		State:	South D		npling Point:	2W	-
Investigator(s): Rebecca Beduhn			ion, Townsh		· · -	)1N R49W	
Landform (hillslope, terrace, etc.):  Toeslope				ave, convex, no		Concave	
Slope (%): 2 Lat: 43° 30' 30.611" N		_	° 96° 43' 49.1			NAD83 Zone	e 14N
Soil Map Unit Name: Chaska loam, channeled		J		I Classification:		None	
Are climatic/hydrologic conditions of the site typical for this time	e of the vear?			If no, explain in			
Are vegetation , soil , or hydrology	-	ly disturbed?			"normal circur	matanasa"	
Are vegetation , soil , or hydrology	_	roblematic?		Are	nomial circui	present?	Yes
SUMMARY OF FINDINGS				(If needed, e	xplain any ans	· –	
Hydrophytic vegetation present?				,	, ,		,
Hydric soil present?		Is the sa	ampled are	a within a wetl	and?	Υ	
Indicators of wetland hydrology present?			otional wetla		Wetland 2		
		, 555, 51					
Remarks: (Explain alternative procedures here or in a separate	e report.)						
Sample Point collected in Wetland 2.							
<b>VEGETATION</b> Use scientific names of plants.				T			
Trace Otractions (Diet sines, 201 Dedices)	Absolute % Cover	Dominant	Indicator Status		Test Workshe		
Tree Stratum (Plot size: 30' Radius )	% Cover	Species	Status		ominant Specie , FACW, or FA		(A)
2					nber of Domina		(^)
3					Across all Strat		(B)
4				Percent of D	ominant Specie	es	``
5	_				, FACW, or FA		6 (A/B)
	0	= Total Cover					<u></u>
Sapling/Shrub stratun (Plot size: 15' Radius )					Index Worksh	eet	
1				Total % Cov			
2				OBL species		1 = 30	
3				FACW species		2 = 150 3 = 0	<u> </u>
5	_			FACU species		4 = 0	
<u> </u>		= Total Cover		UPL species		5 = 0	_
Herb stratum (Plot size: 5' Radius )		,		Column total		A) 180	(B)
1 Phalaris arundinacea Reed Canary Grass	35	Υ	FACW	Prevalence I	ndex = B/A =	1.71	_` ′
2 Persicaria lapathifolia Dock-Leaf Smartweed		Y	FACW				
3 Eleocharis obtusa Blunt Spike-Rush	20	N	OBL	Hydrophytic	Vegetation I	ndicators:	
4 Impatiens capensis Spotted Touch-Me-Not	t 15	N	FACW	X Rapid te	st for hydrophy	tic vegetatio	on
5 Schoenoplectus tabernaemontani Soft-Stem Club-Rush	10	N	OBL	X Dominar	nce test is >50°	%	
6				X Prevalen	ice index is ≤3.	.0*	
7					ogical adaptati	**	
8					ng data in Rem	arks or on a	3
9				separate	•	4 _ 4:	.*
10	105	= Total Cover		(explain)	atic hydrophyti	c vegetation	1"
Woody vine stratum (Plot size: 30' Radius )		Total Gover		<del></del>			
1					nydric soil and we nt, unless disturbe		•
2				Hydroph	-		
	0	= Total Cover		vegetati			
Remarks: (Include photo numbers here or on a separate sheet	+)			present	? Y		
internanta. (moidue prioto numbera nere or on a aeparate sheet	·)						

Note: This data sheet has been adapted to use the 2016 National Wetland Plant List:

Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland\_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2016)

SOIL Sampling Point: 2W

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	<u>ıres</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-6	10YR 3/2	100					Silt Loam		
6-12	10YR 2/1	80	10YR 5/8	20	С	М	Sandy Loa	am	
12-18	10YR 6/2	80	10YR 5/6	20	С	PL	Sandy Loa		
12-10	10111 0/2	00	10111 3/0	20		1 L	Oarluy Loa	3111	
*Type: C = C	oncentration, D =	Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location	: PL = Pore Lining, M = Matrix
	il Indicators:								ematic Hydric Soils:
Hist	osol (A1)		San	dy Gleye	d Matrix	(S4)	Coa	ast Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )
—— Hist	ic Epipedon (A2)		San	dy Redo	x (S5)		Dar	k Surface (S7	() (LRR K, L)
Blac	ck Histic (A3)		Stri	oped Mat	trix (S6)		5 cr	m Mucky Peat	or Peat (S3) ( <b>LRR K, L, R</b> )
Hyd	rogen Sulfide (A4	.)	Loa	my Muck	y Minera	ıl (F1)	Iron	n-Manganese	Masses (F12) ( <b>LRR K, L, R</b> )
Stra	tified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)	Ver	y Shallow Dai	k Surface (TF12)
	n Muck (A10)			leted Ma			Oth	er (explain in	remarks)
	leted Below Dark		· · · · · · · · · · · · · · · · · · ·		Surface				
	k Dark Surface (/	•			rk Surfac				ophytic vegetation and wetland
San	dy Mucky Minera	l (S1)	Rec	lox Depre	essions (	F8)	hyd	rology must b	e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydri	c soil presen	t? Y
Depth (inche	es):								
Remarks:									
HYDROLO	OGY								
	drology Indicato	rs:							
1			required; check a	ll that an	nlv)		9	Secondary Inc	dicators (minimum of two required)
-	Water (A1)	or oric is	required, crieck a	-	<del>נייט</del> Fauna (B	13)	<u> </u>		Soil Cracks (B6)
	ter Table (A2)				uatic Plan				Patterns (B10)
X Saturation			-			Odor (C1	)		son Water Table (C2)
	arks (B1)					-	Living Roots	Crayfish	Burrows (C8)
Sedimen	t Deposits (B2)			(C3)			-	Saturation	n Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)		·	Presence	e of Redu	iced Iron	(C4)	Stunted	or Stressed Plants (D1)
Algal Ma	t or Crust (B4)		<u> </u>		ron Redu	ction in T	lled Soils		phic Position (D2)
	osits (B5)			(C6)				X FAC-Neu	ıtral Test (D5)
	on Visible on Aeria		· ·	i	ck Surfac				
	Vegetated Conca		e (B8)	_	r Well Da				
	tained Leaves (B9)			Other (E	xpıaın ın ı	Remarks)			
Field Obser		V	NI-	V	D =4l= /:				
Surface water	•	Yes	X No	Х	Depth (i		6	. l	licators of wetland
Water table   Saturation pi		Yes Yes	X No		Depth (i Depth (i	-	6 2	_	/drology present?
(includes car		103	<u> </u>		Dopui (i	1101103).		-   '''	, are logy present:
		m dalido	, monitoring well,	aerial nh	notoe pro	vioue inc	nections) if	available:	
Pescine ied	orueu uata (Stied	yauye	, monitoring well,	αστιαί μι	ioios, pre	vious IIIS	pecuona), II	avaliable.	
Remarks:									
	t precipitation of	condition	ns were determ	nined "V	Vetter th	nan nori	nal" (Appe	ndix C).	
	- p p. (callott)		40.0111				(, , , , , , , ,	· · · · · · · · · · · · · · · · · · ·	

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sid		•	<b>n</b> Sampling	g Date:	9/25/201	18
Applicant/Owner: South Dakota Department of Transportation	<del></del>	State:	South D	akota	Sampling	Point:	3U	
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh	ip, Range:	•	S32 T101	N R49W	
Landform (hillslope, terrace, etc.): Footslope			relief (conca			(	Concave	
Slope (%): 3 Lat: 43° 30' 34.465" N		_	96° 43' 53.5		Datum:	UTM NA	D83 Zone	14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes			NW	l Classifica	tion:	Р	EMA	
Are climatic/hydrologic conditions of the site typical for this time of	of the year?		N (I	If no, expla	in in rema	arks)		
Are vegetation , soil , or hydrology	-	ly disturbed?		, ,		nal circums	tances"	
Are vegetation , soil , or hydrology	_	roblematic?			Ale Hon		resent? \	Yes
SUMMARY OF FINDINGS	71			(If neede	ed, explair	n any answ		
Hydrophytic vegetation present? N				`				
Hydric soil present?		Is the sa	ampled area	a within a	wetland?	•	N	
Indicators of wetland hydrology present?			otional wetla					
		,, -,						
Remarks: (Explain alternative procedures here or in a separate re	eport.)							
Sample Point collected adjacent to Wetland 3.								
<b>VEGETATION</b> Use scientific names of plants.								
Tree Charters (Diet size, 201 Dedice	Absolute % Cover	Dominant	Indicator Status			Workshee	i	
Tree Stratum (Plot size: 30' Radius )	% Cover	Species	Status			ant Species CW, or FAC:	1	(A)
2						of Dominant		_('')
3						s all Strata:	2	(B)
				Percent	of Domin	ant Species		<b>-</b> ` ′
5						W, or FAC:	50.00%	(A/B)
	0	= Total Cover						
Sapling/Shrub stratun (Plot size: 15' Radius )						k Workshee	≱t	
1					Cover of:			
2				OBL spe	-	0 x 1		_
3				FACW s	· -	0 x 2 50 x 3		_
5				FACU s	-	50 x 4		_
	0	= Total Cover		UPL spe	· _	0 x 5		_
<u>Herb stratum</u> (Plot size: 5' Radius )				Column	totals	100 (A)	350	(B)
1 Setaria pumila Yellow Bristle Grass	50	Υ	FAC	Prevaler	nce Index	= B/A =	3.50	_
2 Cirsium arvense Canadian Thistle	35	Υ	FACU					_
3 Asclepias syriaca Common Milkweed	15	N	FACU	Hydrop	nytic Veg	etation Ind	icators:	
4				Rap	id test for	hydrophytic	: vegetatio	n
5						st is >50%		
6				Pre\	alence in	dex is ≤3.0 <sup>*</sup>		
						l adaptation		
9					oorting da arate shee	ta in Remar	ks or on a	
						•	voqetation;	*
	100	= Total Cover				yuropriyuc	/egetation	
Woody vine stratum (Plot size: 30' Radius )				<del></del>	·	soil and wotla	nd hydrology	must bo
1 -					•	son and wenan ess disturbed o	, ,,	
2				-	rophytic			
	0	= Total Cover		_	etation			
Remarks: (Include photo numbers here or on a separate shoot)				pres	ent ?	N		
Woody vine stratum (Plot size: 30' Radius )  1		= Total Cover		Prob (exp *Indicato p <b>Hyd</b> vege	olematic h lain) rs of hydric : resent, unle rophytic	ydrophytic v	nd hydrology	m

SOIL Sampling Point: 3U

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	kture	Remarks
0-6	10YR 2/2	100					Silt Loam		
6-12	10YR 3/3	100					Silt Loam		
12-20	10YR 4/4	100					Silt Loam		
12-20	10111 4/4	100					Olit Loaili		
*Type: C = C	oncentration, D =	Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	: PL = Pore Lining, M = Matrix
	il Indicators:							ors for Proble	ematic Hydric Soils:
Hist	osol (A1)		San	dy Gleye	ed Matrix	(S4)	Coa	ast Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )
Hist	ic Epipedon (A2)		San	dy Redo	x (S5)		Dar	rk Surface (S7	) (LRR K, L)
Blad	ck Histic (A3)		Stri	oped Mat	trix (S6)		5 cı	m Mucky Peat	or Peat (S3) ( <b>LRR K, L, R</b> )
Hyd	rogen Sulfide (A4	.)	Loa	my Muck	xy Minera	l (F1)	Iror	n-Manganese	Masses (F12) ( <b>LRR K, L, R</b> )
	tified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)	Ver	y Shallow Dar	k Surface (TF12)
	n Muck (A10)			leted Ma			Oth	er (explain in	remarks)
	leted Below Dark		· · · · · · · · · · · · · · · · · · ·		Surface	` '			
	k Dark Surface (/				rk Surfac				ophytic vegetation and wetland
San	dy Mucky Minera	l (S1)	Rec	lox Depre	essions (	F8)	hyd	Irology must b	e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydri	c soil presen	t? N
Depth (inche	es):				-				
Remarks:									
HYDROLO	)GY								
	drology Indicato	rs:							
1			required; check a	ll that an	nlv)			Secondary Inc	dicators (minimum of two required)
_	Water (A1)	<u> </u>	roquirou, oricon u	-	Fauna (B	13)	· ·		Soil Cracks (B6)
	ter Table (A2)		-		uatic Plan				Patterns (B10)
Saturatio						Odor (C1	)		son Water Table (C2)
	arks (B1)					-	Living Roots		Burrows (C8)
Sedimen	t Deposits (B2)			(C3)				Saturatio	n Visible on Aerial Imagery (C9)
	osits (B3)			Presence	e of Redu	ced Iron	(C4)	Stunted of	or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in Ti	lled Soils		phic Position (D2)
	osits (B5)		(57)	(C6)				FAC-Neu	ıtral Test (D5)
	on Visible on Aeria		· ·		ck Surfac				
	Vegetated Conca		е (ва)		r Well Da				
	tained Leaves (B9)			Other (E	хріаін ін і	Remarks)			
Field Obser		Voc	Na	~	Donth /	nobos):			
Surface wate Water table	•	Yes Yes	No No	X	Depth (in			Inc	licators of wetland
Saturation p		Yes	No	X	Depth (i			_	/drology present?
(includes cap		. 55			VIII (III			-  ,	
		m dalide	, monitoring well,	aerial ph	notos pre	evious ins	spections) if	available <sup>.</sup>	
20001100 100	data (3116a	gaage	,ormornig woll,	acriai pi	.5.55, pre		. r 00010110 <i>j</i> , 11	aranabio.	
Remarks:									
Anteceden	t precipitation o	conditio	ns were determ	nined "V	Vetter th	nan norr	mal" (Appe	ndix C).	
	•						` ' '	,	

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sid		•	<b>n</b> Sampling [	Date:	9/25/201	8
Applicant/Owner: South Dakota Department of Transportation		State:	South D		Sampling F		3W	
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh	ip, Range:		32 T101N	R49W	
Landform (hillslope, terrace, etc.):  Toeslope	)		relief (conc			Co	oncave	
Slope (%): 3 Lat: 43° 30' 34.121" N		_	° 43' 53.6		Datum:	UTM NAI	D83 Zone	14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes				l Classifica	tion:	PE	MA	
Are climatic/hydrologic conditions of the site typical for this time	e of the vear?				in in remark			
Are vegetation , soil , or hydrology	•	ly disturbed?		, ,	Are "norma	•	anasa"	
Are vegetation , soil , or hydrology	_	roblematic?			Ale Hollia		esent? Y	⁄es
SUMMARY OF FINDINGS				(If neede	ed, explain a	•		
Hydrophytic vegetation present?					<u>, , , , , , , , , , , , , , , , , , , </u>			
Hydric soil present?		Is the sa	ampled are	a within a	wetland?		Υ	
Indicators of wetland hydrology present?			otional wetla			land 3	<del></del>	
		, 500, 51	ononai wone					
Remarks: (Explain alternative procedures here or in a separate	report.)							
Sample Point collected in Wetland 3.								
<b>VEGETATION</b> Use scientific names of plants.				1				
To Ottobar (DL) in a COLD (in a )	Absolute	Dominant	Indicator		nce Test W			
Tree Stratum (Plot size: 30' Radius )	% Cover	Species	Status		of Dominan OBL, FACW		2	<b>(</b>
2						_		_(A)
3					Number of I		2	(B)
4					of Dominan	_		_(_)
5					OBL, FACW	•	100.00%	(A/B)
	0	= Total Cover						_
Sapling/Shrub stratun (Plot size: 15' Radius )				Prevale	nce Index V	Vorksheet	t	
1					Cover of:			
2				OBL spe		0 x 1 =		_
3				FACW s	·	100 x 2 =		_
5				FAC spe		0 x 3 = 0 x 4 =		_
		= Total Cover		UPL spe		0 x5=		_
Herb stratum (Plot size: 5' Radius )				Column		100 (A)	200	(B)
1 Echinochloa crus-galli Large Barnyard Grass	45	Υ	FACW	Prevaler	nce Index =		2.00	_` ′
2 Persicaria lapathifolia Dock-Leaf Smartweed	40	<u> </u>	FACW					_
3 Phalaris arundinacea Reed Canary Grass	15	N	FACW	Hydrop	hytic Veget	ation Indi	cators:	
				X Rap	id test for hy	/drophytic	vegetation	1
5				l ——	ninance test			
6	_			X Prev	alence inde	x is ≤3.0*		
7				Mor	ohological a	daptations	* (provide	
8					oorting data		s or on a	
9					arate sheet)			
10	100	= Total Cover			olematic hyd lain)	rophytic ve	egetation*	
Woody vine stratum (Plot size: 30' Radius )					rs of hydric soi resent, unless			
2					rophytic			
<del>-</del>	0	= Total Cover		veg	etation sent?	Y		
Remarks: (Include photo numbers here or on a separate sheet)	)							

SOIL Sampling Point: 3W

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-5	10YR 2/2	100					Silt Loam		
5-15	10YR 4/1	80	10YR 5/8	20	С	М	Silt Loam		
15-20	10YR 6/2	80	10YR 5/6	20	С	PL	Silt Loam		
13-20	10111 0/2	00	10111 3/0	20		FL	OIIL LUAITI		
*Type: C = C	Concentration D =	: Depletic	on, RM = Reduce	d Matrix	MS = Ma	asked Sa	nd Grains.	**Location	: PL = Pore Lining, M = Matrix
	il Indicators:	Dopiotio	Troduce.	a matrix,		acitod od			ematic Hydric Soils:
	osol (A1)		San	dv Gleve	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo		(0.)		k Surface (S7	
	k Histic (A3)			oped Mat				•	t or Peat (S3) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	.)		•	xy Minera	ıl (F1)		-	Masses (F12) (LRR K, L, R)
	tified Layers (A5)	-		-	, ed Matrix			•	k Surface (TF12)
	n Muck (A10)			leted Ma		,		er (explain in	` ,
	leted Below Dark	Surface			Surface	(F6)		` '	,
	k Dark Surface (		· · · · · · · · · · · · · · · · · · ·		rk Surfac	. ,	*Indi	cators of hydr	ophytic vegetation and wetland
	dy Mucky Minera	•			essions (				e present, unless disturbed or
		, ,			•	•	,	0,7	problematic
Restrictive	Layer (if observe	м).							
Type:	Layer (II Observe	uj.					Hydrid	c soil presen	t? Y
Depth (inche	·e).				•		Hydri	o son presen	··· <u> </u>
					•				
Remarks:									
HYDROLO									
Wetland Hy	drology Indicato	rs:							
Primary Indic	cators (minimum o	of one is	required; check a	ll that ap	ply)		<u> </u>	Secondary Inc	dicators (minimum of two required)
Surface '	Water (A1)				Fauna (B				Soil Cracks (B6)
X High Wa	ter Table (A2)		·		uatic Plan				Patterns (B10)
X Saturation	on (A3)			Hydroge	n Sulfide	Odor (C1	)	Dry-Seas	son Water Table (C2)
	arks (B1)				Rhizosp	heres on l	Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)
	osits (B3)					iced Iron			or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in Ti	lled Soils		phic Position (D2)
	osits (B5)	llmaaan	(D7)	(C6)		- (07)		X FAC-Net	ıtral Test (D5)
	on Visible on Aeria		· ·		ck Surfac				
	Vegetated Conca tained Leaves (B9)		<u> </u>	_	r Well Da volain in l				
	` '			Other (E	хріані ін	Remarks)		•	
Field Obser		V	N.I =	V	Donth /	nobes\:			
Surface wate Water table	•	Yes Yes	X No	Х	Depth (i Depth (i		6	In a	licators of wetland
Saturation p		Yes	X No		Depth (i		6	_	/drology present?
(includes car		103	<u> </u>		. Dobui (i	1101103).		-   "'	, are logy present:
		m dalido	, monitoring well,	aerial nh	notoe pro	avioue inc	enections) if	available:	
Describe 160	orucu uata (Sifea	iii yauge	, mornioring well,	acııaı pi	iotos, pre	vious iils	ppecuons), II	avaliable.	
Remarks:									
	t precipitation o	condition	ns were determ	nined "\/	Vetter th	nan norr	nal" (Anne	ndix C.)	
,	. proorpitation (	o i iditiO	HOIO GOLOIII	GG V		11011	a. (Appe		

Applicant/Owner:   South Dakota   Department of Transportation   State:   South Dakota   Sampling Point:   4U	WEILAN Project/Site PCN 000S: I-229 Exit 3 Reconstruction	on City/	/County: Siou		•	ling Date:	9/25/2018	8
Investigator(s):   Rebecca Beduth   Section, Township, Range:   S33 T101N R49W   Landform (fillislope, terrace, etc.):   Footslope   Local relief (concave, convex, none):   Concave   Solitope (%):   Concave   Solitope (%):   Concave   Solitope (%):   Section, Township, Range:   S33 T101N R49W   Concave   Solitope (%):   Solitope (%):   Section, Township, Range:   S33 T101N R49W   Concave   Solitope (%):   Sol	·							
Concave   Conc	· · · · · · · · · · · · · · · · · · ·					_		
Slope (%): 6		Footslope						
None		·	_	•				14N
Are climatic/hydrologic conditions of the site typical for this time of the year? Nere vegetation soil or hydrology significantly disturbed? naturally problematic? Prevalence in the site typical for this time of the year? Nere vegetation soil or hydrology naturally problematic? Nere vegetation present? Indicators of wetland hydrology present? Nere or in a separate report.)  SumMARY OF FINDINGS  Hydrophytic vegetation present? Nere or in a separate report.)  Hydrocomplete or wetland hydrology present? Nere or in a separate report.)  Sample Point collected adjacent to Wetland 4.  VEGETATION Use scientific names of plants.  Absolute Dominant Spacies or Status  Number of Dominant Spacies that are OBL, FACW, or FAC: 1  Tree Stratum (Plot size: 30' Radius) Absolute Species or Status  1	· · · · · ———	<u> </u>						
Are vegetation  , soil  , or hydrology		al for this time of the year?						
Are vegetation soil or hydrology naturally problematic? present? (If needed, explain any answers in reme (If needed, explain any answers in reme (If needed, explain any answers in reme (If yes, optional wetland? Needed, explain any answers in reme (If yes, optional wetland site ID:    Remarks: (Explain alternative procedures here or in a separate report.)		•	_		•	•	atanaca"	
Summary OF FINDINGS			=		Ale II			es
Hydrophytic vegetation present?   N   N   N   N     Is the sampled area within a wetland?   N   If yes, optional wetland site ID:					(If needed, expl	-	-	
Name					, , ,			
Remarks: (Explain alternative procedures here or in a separate report.)   Sample Point collected adjacent to Wetland 4.   VEGETATION - Use scientific names of plants.			Is the san	npled area	within a wetlan	d?	N	
Remarks: (Explain alternative procedures here or in a separate report.)   Sample Point collected adjacent to Wetland 4.		 N		•				
Sample Point collected adjacent to Wetland 4.			,,					
VEGETATION Use scientific names of plants.           Tree Stratum         (Plot size: 30' Radius )         Absolute % Cover Species         Dominant Species Status         Indicator Species Nature of Dominant Species that are OBL, FACW, or FAC: 1         Number of Dominant Species that are OBL, FACW, or FAC: 1         Total Number of Dominant Species that are OBL, FACW, or FAC: 1         1         Total Number of Dominant Species that are OBL, FACW, or FAC: 1         1         Percent of Dominant Species that are OBL, FACW, or FAC: 33.33%         3.33%         Percent of Dominant Species that are OBL, FACW, or FAC: 33.33%         Percent of Dominant Species that are OBL, FACW, or FAC: 33.33%         Percent of Dominant Species that are OBL, FACW, or FAC: 33.33%         Percent of Dominant Species that are OBL, FACW, or FAC: 33.33%         Percent of Dominant Species that are OBL, FACW, or FAC: 1         Percent of Dominant Species that are OBL, FACW, or FAC: 1         Percent of Dominant Species that are OBL, FACW, or FAC: 1         Percent of Dominant Species that are OBL, FACW, or FAC: 1         Percent of Dominant Species that are OBL, FACW, or FAC: 33.33%         Percent of Dominant Species that are OBL, FACW, or FAC: 1         Percent of Dominant Species that are OBL, FACW, or FAC: 1         Percent of Dominant Species that are OBL, FACW, or FAC: 1         Total Number of Dominant Species that are OBL, FACW, or FAC: 1         Percent of Dominant Species that are OBL, FACW, or FAC: 1         Prevalence Index Worksheet         Total Number of Dominant Species that are OBL, FACW, or FAC: 1         Prevalence Index Worksheet         Total Number of Dominant Species that are OBL, FACW, or FA								
Name								
Tree Stratum	VEGETATION Use scientific names of p							
Total Number of Dominant   Species Across all Strata: 3   Percent of Dominant   Species Across all Strata: 3   Percent of Dominant   Species Across all Strata: 3   Percent of Dominant   Species   Species Across all Strata: 3   Percent of Dominant   Species   Species Across all Strata: 3   Percent of Dominant Species   Spec	Troe Stratum (Diet size: 20! Bedius )							
Total Number of Dominant   Species Across all Strata:   3	1 (Flot size. 30 Radius )	70 COVE	Opecies	Status				(A)
Species Across all Strata: 3   Percent of Dominant Species that are OBL, FACW, or FAC: 33.33%	2						-	- (7 1)
Sapling/Shrub stratun (Plot size: 15' Radius )	3							(B)
Sapling/Shrub stratun (Plot size: 15' Radius )	4				Percent of Dom	ninant Species	;	•
Prevalence Index Worksheet	5				that are OBL, F	ACW, or FAC:	33.33%	(A/B)
Total % Cover of:   OBL species   O   x 1 =   O		0	= Total Cover					
OBL species   O x 1 =   O	Sapling/Shrub stratun (Plot size: 15' Radius	_)					et	
FACW species   O x 2 = 0	1	<del></del>					- 0	
FAC species   55 x 3 = 165	3		<del></del>		•			-
FACU species   20	<u> </u>				•			-
Herb stratum	5				•			-
1 Setaria pumila Yellow Bristle Grass 50 Y FAC 2 Setaria faberi Japanese Bristle Grass 20 Y FACU 3 Ulmus pumila Siberian Elm 20 Y UPL 4 Andropogon gerardii Big Bluestem 5 N FAC 5 Euphorbia esula Leafy Spurge 5 N UPL 6			= Total Cover			25 x 5	= 125	•
2     Setaria faberi     Japanese Bristle Grass     20     Y     FACU       3     Ulmus pumila     Siberian Elm     20     Y     UPL     Hydrophytic Vegetation Indicators:       4     Andropogon gerardii     Big Bluestem     5     N     FAC     Rapid test for hydrophytic vegetation       5     Euphorbia esula     Leafy Spurge     5     N     UPL     Dominance test is >50%       6      Prevalence index is ≤3.0*       7      Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)       9      separate sheet)       10      Problematic hydrophytic vegetation*	Herb stratum (Plot size: 5' Radius	)	•		Column totals	100 (A)	370	(B)
3     Ulmus pumila     Siberian Elm     20     Y     UPL     Hydrophytic Vegetation Indicators:       4     Andropogon gerardii     Big Bluestem     5     N     FAC     Rapid test for hydrophytic vegetation       5     Euphorbia esula     Leafy Spurge     5     N     UPL     Dominance test is >50%       6      Prevalence index is ≤3.0*       7      Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)       9      separate sheet)       10      Problematic hydrophytic vegetation*	1 Setaria pumila Yellow Bri	stle Grass 50	Υ	FAC	Prevalence Inde	ex = B/A =	3.70	
4 Andropogon gerardii Big Bluestem 5 N FAC  5 Euphorbia esula Leafy Spurge 5 N UPL  6 Prevalence index is ≤3.0*  7 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  10 Problematic hydrophytic vegetation and supporting data in Remarks or on a separate sheet)	<u> </u>		Y	FACU				•
5 Euphorbia esula Leafy Spurge 5 N UPL Dominance test is >50% 6 Prevalence index is ≤3.0* 7 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) 10 Problematic hydrophytic vegetation*	<u> </u>					_		
6 Prevalence index is ≤3.0*  7 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  10 Problematic hydrophytic vegetation*							•	
Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  10 Problematic hydrophytic vegetation*		<u>rge</u> 5	N	UPL				
8 supporting data in Remarks or on a separate sheet) 10 Problematic hydrophytic vegetation					—			
9 separate sheet) 10 Problematic hydrophytic vegetation			· —— –			•	**	
10 Problematic hydrophytic vegetation							iks of off a	
	10					-	vegetation*	
		100	= Total Cover			, , ,	J	
Woody vine stratum (Plot size: 30' Radius ) *Indicators of hydric soil and wetland hydrology	Woody vine stratum (Plot size: 30' Radius	)	-		*Indicators of hyd	ric soil and wetla	nd hydrology m	nust be
1 present, unless disturbed or problemation	1						or problematic	
2 Hydrophytic vegetation	2	<del></del>						
0 = Total Cover vegetation present? N		0	= Lotal Cover		_			
Remarks: (Include photo numbers here or on a separate sheet)	Remarks: (Include photo numbers here or on a se	parate sheet)		L	• •			

SOIL Sampling Point: 4U

Depth	cription: (Descri	10 111	acptii net		dox Feat					1
(Inches)	Color (moist)	%	Color (m	oist)	%	Type*	Loc**	Tex	ture	Remarks
0-8	10YR 2/2	100						Sandy Loa	m	
8-18	10YR 3/2	100						Silt Loam		
										+
vne: C = C	Concentration, D :	= Depletio	on RM = Ro	educe	d Matrix	MS = M	asked Sa	nd Grains	**Locatio	on: PL = Pore Lining, M = Matrix
	il Indicators:	Dopioti	J.1, 1 (1)	- Guuco	a man,	1110 1111	aonoa oa			plematic Hydric Soils:
-	osol (A1)			Sar	ndv Gleve	ed Matrix	(S4)			ledox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)				ndy Redo		()			S7) ( <b>LRR K, L)</b>
	ck Histic (A3)		_		pped Ma				-	eat or Peat (S3) (LRR K, L, R)
	rogen Sulfide (A	1)	_			ky Minera	al (F1)			e Masses (F12) (LRR K, L, R)
	tified Layers (A5	•	_		-	ed Matrix				eark Surface (TF12)
	n Muck (A10)	,	_			atrix (F3)	` '			n remarks)
	leted Below Dark	Surface	(A11)			Surface	(F6)		` '	,
	k Dark Surface (		` ' _	 Dep	oleted Da	ark Surfac	ce (F7)	*Indio	ators of hy	drophytic vegetation and wetland
San	dy Mucky Minera	ıl (S1)		Red	dox Depr	essions (	(F8)		,	be present, unless disturbed or
								•	0,	problematic
estrictive l	Layer (if observe	eq).					1			
pe:	-ayo. ( oboo	ou).						Hvdrid	soil prese	ent? N
epui (iliche	es):					-		,		
	s):					-				
	s):					-				
emarks:						-				
emarks:		ors:				-				
emarks:  YDROLC	OGY		required; cl	heck a	all that ap	- - - - - - - - -				ndicators (minimum of two requir
YDROLO etland Hydrimary Indic	OGY drology Indicate		required; cl	heck a		pply) Fauna (B	13)		Secondary I	ndicators (minimum of two requires Soil Cracks (B6)
YDROLO  etland Hydrimary Indic  Surface N	OGY drology Indicato cators (minimum		required; cl	heck a	Aquatic		,		Secondary I Surfac	
YDROLO  etland Hydrimary Indic  Surface N	DGY drology Indicate cators (minimum Water (A1) ter Table (A2)		required; cl	heck a	Aquatic True Aq	Fauna (B uatic Plar	,	<u>\$</u>	Secondary I Surfac Draina	e Soil Cracks (B6)
YDROLC Vetland Hydrimary Indic Surface V High War Saturatio Water Mi	drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1)		required; cl	heck a	Aquatic True Aq Hydroge Oxidized	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1	<u>\$</u>	Secondary I Surfac Draina Dry-Se Crayfis	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8)
YDROLC Vetland Hydrimary Indic Surface V High Wa Saturatio Water Mi	drology Indicated cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2)		required; cl	heck a	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B uatic Plar en Sulfide d Rhizosp	nts (B14) Odor (C1 heres on	) Living Roots	Secondary I Surfac Draina Dry-Se Crayfis Satura	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9)
YDROLO  YDROLO  Yetland Hydrimary Indic  Surface N  High War  Saturatio  Water Mar  Sedimen  Drift Dep	drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3)		required; cl	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presend	Fauna (B uatic Plar en Sulfide d Rhizosp	nts (B14) Odor (C1 heres on	) Living Roots (C4)	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
YDROLO  Yetland Hydrimary India Surface N High Wa' Saturatio Water Ma Sedimen Drift Dep Algal Ma	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)		required; cl	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent	Fauna (B uatic Plar en Sulfide d Rhizosp	nts (B14) Odor (C1 heres on	) Living Roots (C4)	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLO  Yetland Hydrimary India Surface N High Wa' Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Depo	drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	of one is	·	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6)	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu	ots (B14) Odor (C1 heres on uced Iron uction in T	) Living Roots (C4)	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
YDROLO Vetland Hydrimary Indic Surface V High Wa' Saturatio Water M: Sedimen Drift Dep Algal Ma Iron Depi Inundatio	drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) osits (B3) tt or Crust (B4) osits (B5) on Visible on Aeria	of one is	v (B7)	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu	onts (B14) Odor (C1 heres on uced Iron uction in T	) Living Roots	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLO  etland Hydrimary Indic Surface V High Water Ma Sedimen Drift Dep Algal Ma Iron Depe Inundatic Sparsely	drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aeria	of one is al Imagery ave Surface	v (B7)	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (C3)	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ack Surfac or Well Da	odor (C1) heres on uced Iron uction in Ti ee (C7) ata (D9)	) Living Roots (C4) illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLC Vetland Hydrimary Indic Surface V High War Saturatio Water Mar Sedimen Drift Dep Algal Mar Iron Depi Inundatic Sparsely Water-St	drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concatained Leaves (B9	of one is al Imagery ave Surface	v (B7)	heck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (C3)	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ack Surfac or Well Da	onts (B14) Odor (C1 heres on uced Iron uction in T	) Living Roots (C4) illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLC Yetland Hydrimary Indic Surface V High War Saturatio Water Marical Sedimen Drift Dep Algal Mar Iron Dep Inundatical Sparsely Water-St eld Observir	drology Indicated eators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) to Deposits (B2) exits (B3) to or Crust (B4) exits (B5) exits (B5) exits (B5) exits (B5) exits (B9) exits (B9	of one is al Imagery ave Surfac )	v (B7)		Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of	Fauna (Buatic Plaren Sulfided Rhizospece of Reduler Reduction Redu	nts (B14) Odor (C1 heres on uced Iron action in The (C7) ata (D9) Remarks)	) Living Roots (C4) illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
rimary Indic Surface \ High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-St ield Observ	drology Indicated eators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) to Deposits (B2) exits (B3) to or Crust (B4) exits (B5) on Visible on Aeria Vegetated Concatained Leaves (B9) vations: er present?	of one is  Il Imagery  ive Surface  )	v (B7)	No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of Other (E	Fauna (Buatic Plaren Sulfided Rhizospece of Reduler Reduced Surfacer Well Das Explain in	nts (B14) Odor (C1 heres on uced Iron uction in The (C7) ata (D9) Remarks) nches):	) Living Roots (C4) illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
IYDROLO  /etland Hydromary Indica Surface North High Ware Mare Mare Mare Mare Mare Mare Mare M	drology Indicated cators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) osits (B3) tt or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concatained Leaves (B9) vations: er present? present?	of one is  Il Imagery ave Surface )  Yes Yes	v (B7)	No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge o Other (E	Fauna (Buatic Plaren Sulfided Rhizospee of Redulron Reduck Surfacer Well Das Explain in Depth (in Depth (in Paul Poper Reduck Surfacer Well Das Explain in Depth (in Paul Poper Reduck Surfacer Well Das Explain in Paul Poper Reduck Surfacer Well Das Explain in Paul Poper Reduck Surfacer Well Das Explain in Paul Poper Reduck Surfacer R	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches):	) Living Roots (C4) illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
YDROLO  Yetland Hydrimary Indic Surface N High War Saturatio Water M Sedimen Drift Dep Algal Ma Iron Depo Inundatic Sparsely Water-St eld Observ urface water fater table paturation pr	drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concatained Leaves (B9) vations: er present? present?	of one is  Il Imagery  ive Surface  )	v (B7)	No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of Other (E	Fauna (Buatic Plaren Sulfided Rhizospece of Reduler Reduced Surfacer Well Das Explain in	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches):	) Living Roots (C4) illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
YDROLO Vetland Hydrimary Indice Surface Vertiand Hydrimary Indice Surface Vertiand High Water Manager Manager Manager Manager Manager Manager Mater-Steld Observariace water table paturation procludes cap	drology Indicated cators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) osits (B3) tt or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concatained Leaves (B9) vations: er present? present?	of one is  Il Imagery  ive Surface  Yes  Yes  Yes	v (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (Buatic Plaren Sulfide de Rhizospece of Reduck Surface or Well Das Explain in Depth (in De	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks) nches): nches):	) Living Roots (C4) Illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
emarks:  IYDROLC  /etland Hydrimary Indic Surface \ High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Depi Inundatic Sparsely Water-St ield Observater table paturation princludes capescribe rec	drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria vegetated Concatained Leaves (B9 vations: er present? present? present? present?	of one is  Il Imagery  ive Surface  Yes  Yes  Yes	v (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (Buatic Plaren Sulfide de Rhizospece of Reduck Surface or Well Das Explain in Depth (in De	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks) nches): nches):	) Living Roots (C4) Illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
emarks:  IYDROLC  /etland Hydromary Indice Surface Note of the second of	drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria vegetated Concatained Leaves (B9 vations: er present? present? present? present?	al Imagery nve Surfac ) Yes Yes Yes	v (B7) ce (B8)	No No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge d Other (E	Fauna (Buatic Plaren Sulfided Rhizospee of Redularen Red	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches): nches):	) Living Roots (C4) Illed Soils	Secondary I Surfac Draina Dry-Se Crayfis Satura Stunte X Geomo FAC-N	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)

Project/Site PCN 000S: I-229 Exit 3 Reconstruction  Applicant/Owner: South Dakota Department of Transportation  Investigator(s): Rebecca Beduhn		County: Sid			Sampling Date: _		8
· · · · · · · · · · · · · · · · · · ·		State:	South D	akota S	ampling Point:	4W	
myesiidalons); kedecca Bedunn			on, Townsh			01N R49W	
Landform (hillslope, terrace, etc.):  Toeslope	e			ave, convex,		Concave	
Slope (%): 3 Lat: 43° 30' 32.218" N		_	96° 43' 50.8			NAD83 Zone 1	14N
Soil Map Unit Name: Chaska loam, channeled	<u>`</u>			l Classification		None	
Are climatic/hydrologic conditions of the site typical for this tim	ne of the year?			lf no, explain			
Are vegetation , soil , or hydrology	-	ly disturbed?		•	re "normal circu	matanaaa"	
Are vegetation , soil , or hydrology	_	roblematic?		F	ire normai circui	present? Y	'es
SUMMARY OF FINDINGS				(If needed	, explain any ans	<u> </u>	
Hydrophytic vegetation present?					, 1		
Hydric soil present?		Is the sa	ampled area	a within a w	etland?	Υ	
Indicators of wetland hydrology present?			tional wetla		Wetland 4		
		,, -,		<u> </u>			
Remarks: (Explain alternative procedures here or in a separate	e report.)						
Sample Point collected in Wetland 4.							
<b>VEGETATION</b> Use scientific names of plants.				<u> </u>			
Tree Stratum (Plot size: 30' Radius )	Absolute % Cover	Dominant Species	Indicator Status		ce Test Worksh		
1 (Flot Size. 30 Radius )	70 COVE	Opecies	Status		f Dominant Speci BL, FACW, or FA		(A)
2					lumber of Domina	-	_(''')
3					es Across all Stra		(B)
4				Percent of	f Dominant Speci	es	<b>-</b> ` ′
5				that are O	BL, FACW, or FA	C: 100.00%	(A/B)
	0	= Total Cover					
Sapling/Shrub stratun (Plot size: 15' Radius )					e Index Worksh	neet	
1 Salix petiolaris Meadow Willow	10	<u> </u>	OBL	Total % C		.4	
3				OBL spec FACW sp		1 = 55 $2 = 110$	-
4				FAC spec		3 = 0	-
5	_			FACU spe		4 = 0	-
	10	= Total Cover		UPL spec		5 = 0	-
Herb stratum (Plot size: 5' Radius )				Column to	tals 110 (	A) 165	(B)
1 Typha angustifolia Narrow-Leaf Cat-Tail	45	Υ	OBL	Prevalenc	e Index = B/A =	1.50	
2 Carex scoparia Pointed Broom Sedge	25	Υ	FACW				_
3 Phalaris arundinacea Reed Canary Grass	20	Υ	FACW		tic Vegetation I		
4 Verbena hastata Simpler's-Joy	10	N	FACW		test for hydrophy	_	i
5				l ——	ance test is >50 ence index is ≤3		
7							
8					ological adaptati rting data in Ren		
9	_				ate sheet)	iaiks of off a	
10				— ·	matic hydrophyt	ic vegetation*	
	100	= Total Cover		(expla		ŭ	
Woody vine stratum (Plot size: 30' Radius )				*Indicators	of hydric soil and we	tland hydrology m	nust be
1					sent, unless disturbe	d or problematic	
2				Hydro veget	phytic		
	0	= Total Cover		prese			
					<u> </u>		

SOIL Sampling Point: 4W

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-8	10YR 2/1	100					Loam		
8-16	10YR 4/1	80	7.5YR 5/6	20	С	М	Silt Loam		
16-20	10YR 6/1	90	10YR 5/6	10	С	PL	Silt Loam		
10-20	10111 0/1	90	10111 3/0	10		FL	OIIL LUAITI		
*Tvpe: C = C	concentration, D =	Depletion	on. RM = Reduce	d Matrix.	MS = Ma	asked Sa	nd Grains.	**Location:	PL = Pore Lining, M = Matrix
	il Indicators:		,						ematic Hydric Soils:
-	osol (A1)		San	dy Gleye	ed Matrix	(S4)			dox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)			dy Redo		` ,		k Surface (S7	
	ck Histic (A3)			pped Mat				•	or Peat (S3) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	.)		-	ky Minera	l (F1)	Iron	-Manganese	Masses (F12) ( <b>LRR K, L, R</b> )
Stra	tified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)	Ver	y Shallow Dar	k Surface (TF12)
2 cr	n Muck (A10)		Dep	leted Ma	atrix (F3)		Oth	er (explain in	remarks)
X Dep	leted Below Dark	Surface	(A11) Rec	lox Dark	Surface	(F6)			
Thic	k Dark Surface (/	<del>1</del> 12)	Dep	leted Da	rk Surfac	e (F7)	*Indi	cators of hydr	ophytic vegetation and wetland
San	dy Mucky Minera	l (S1)	Rec	lox Depre	essions (	F8)	hyd	rology must b	e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Type:	• •	•					Hydrid	c soil presen	t? Y
Depth (inche	es):				•				
Remarks:					•				
rtemants.									
HYDROLO	GY								
	drology Indicato	re·							
1			roquirod; obook o	ll that an	nlu)			Coopedom: Inc	diagtors (mainime) as the required)
-	cators (minimum o	or one is	required; check a	-		10\	<u> </u>		dicators (minimum of two required)
	Water (A1) ter Table (A2)				Fauna (B <sup>.</sup> uatic Plan				Soil Cracks (B6) Patterns (B10)
X Saturation			-			Odor (C1	`		son Water Table (C2)
	arks (B1)		-			-	) Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)	т чигдоорі	10100 011	Living reduc		n Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu	ced Iron	(C4)		or Stressed Plants (D1)
	t or Crust (B4)						lled Soils		phic Position (D2)
Iron Dep	osits (B5)			(C6)				X FAC-Neu	ıtral Test (D5)
Inundation	on Visible on Aeria	l Imagery	(B7)	Thin Mu	ck Surfac	e (C7)			
	Vegetated Conca		e (B8)	Gauge o	r Well Da	ta (D9)			
Water-S	tained Leaves (B9)	)		Other (E	xplain in l	Remarks)			
Field Obser									
Surface water	•	Yes	No	Х	Depth (i				
Water table		Yes	X No		Depth (i		1	_	licators of wetland
Saturation p		Yes	X No		Depth (i	nches):	0	hy	/drology present? Y
(includes cap									
Describe rec	orded data (strea	m gauge	, monitoring well,	aerial ph	notos, pre	evious ins	spections), if	available:	
Domarko									
Remarks:	t procinitation	on ditie	oo wore determ	sincd III	Vottor ti	on nam	mal" / A == -	ndiv C\	
Anteceden	t precipitation o	JOHUITIO	is were determ	iiried "V	veller tr	iaii ii0ff	паг (Арреі	nuix C).	

## WETLAND DETERMINATION DATA FORM - Midwest Pegion

Project/Site PCN 000S: I-229 Exit 3 Reconstruction			oux Falls/Mi	<del>-</del>	9/25/2018
Applicant/Owner: South Dakota Department of Transportation		State:	South D		5U
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh	nip, Range: S33 T101N F	
Landform (hillslope, terrace, etc.): Footslope				· · · · · · · · · · · · · · · · · · ·	ıcave
Slope (%): 6 Lat: 43° 30' 35.585" N		_	° 43' 50.5	· ———	33 Zone 14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes				I Classification: Non-	
Are climatic/hydrologic conditions of the site typical for this time of	of the year?			If no, explain in remarks)	
Are vegetation, soil, or hydrology	significantl	ly disturbed?		Are "normal circumstan	
Are vegetation, soil, or hydrology	naturally p	roblematic?		'	sent? Yes
SUMMARY OF FINDINGS				(If needed, explain any answers	in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? N			-	a within a wetland? N	
Indicators of wetland hydrology present? N		If yes, or	otional wetla	ınd site ID:	_
Remarks: (Explain alternative procedures here or in a separate re	eport.)				
Sample Point collected adjacent to Wetland 5.					
VEGETATION Use scientific names of plants.				-	
	Absolute	Dominant	Indicator	Dominance Test Worksheet	
<u>Tree Stratum</u> (Plot size: 30' Radius )	% Cover	Species	Status	Number of Dominant Species	
1				that are OBL, FACW, or FAC:	1 (A)
2	-			Total Number of Dominant	
3				Species Across all Strata:	1 (B)
				Percent of Dominant Species	
5				that are OBL, FACW, or FAC: 1	00.00% (A/B)
	0	= Total Cover			
Sapling/Shrub stratun (Plot size: 15' Radius )				Prevalence Index Worksheet	
1				Total % Cover of:	
2				OBL species 0 x 1 =	0
3				FACW species 5 x 2 =	10
5				FAC species 70 x 3 = FACU species 25 x 4 =	100
<u></u>	0	= Total Cover		UPL species 0 x 5 =	0
Herb stratum (Plot size: 5' Radius )		- Total Gover		Column totals $\frac{0}{100}$ (A)	320 (B)
1 Setaria pumila Yellow Bristle Grass	70	Υ	FAC	Prevalence Index = B/A =	3.20
2 Cirsium arvense Canadian Thistle	10		FACU	- Trevalence index - B/A -	3.20
3 Medicago sativa Alfalfa	10		FACU	Hydrophytic Vegetation Indica	
4 Persicaria lapathifolia Dock-Leaf Smartweed	5	N	FACW	Rapid test for hydrophytic ve	
5 Setaria faberi Japanese Bristle Grass	5	N	FACU	X Dominance test is >50%	· ·
6				Prevalence index is ≤3.0*	
7				Morphological adaptations*	(provide
8				supporting data in Remarks	
9				separate sheet)	
10	100	= Total Cover		Problematic hydrophytic veg (explain)	etation*
Woody vine stratum (Plot size: 30' Radius )  1				*Indicators of hydric soil and wetland h present, unless disturbed or pr	
2				Hydrophytic	
	0	= Total Cover		vegetation present? Y	
Remarks: (Include photo numbers here or on a separate sheet)					

**SOIL** Sampling Point: 5U

Depth	cription: (Descr Matrix			Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (mo	oist)	%	Type*	Loc**	Tex	ture	Remarks
0-8	10YR 2/2	100						Sandy Loa	m	
8-20	10YR 3/3	100						Sandy Loa	m	
								,		
										<u> </u>
						1				_
vpe: C = C	Concentration, D :	= Depletion	on. RM = Re	educe	d Matrix.	MS = Ma	asked Sa	nd Grains.	**Locatio	n: PL = Pore Lining, M = Matrix
	il Indicators:		,		,	,				plematic Hydric Soils:
-	tosol (A1)			San	dy Gleye	ed Matrix	(S4)			edox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)			_	dy Redo		,			67) ( <b>LRR K, L)</b>
	ck Histic (A3)			_	-	trix (S6)			-	at or Peat (S3) (LRR K, L, R)
Hyd	lrogen Sulfide (A	1)		_ Loa	my Mucl	ky Minera	al (F1)	Iron-	-Manganes	e Masses (F12) ( <b>LRR K, L, R</b> )
	atified Layers (A5			_	-	ed Matrix				ark Surface (TF12)
2 cn	n Muck (A10)			_ Dep	leted Ma	atrix (F3)		Othe	er (explain i	n remarks)
Dep	leted Below Dark	Surface	(A11)	Red	lox Dark	Surface	(F6)			
Thic	ck Dark Surface (	A12)		_ Dep	leted Da	ark Surfac	ce (F7)	*Indic	ators of hy	drophytic vegetation and wetland
San	dy Mucky Minera	ıl (S1)		Red	lox Depr	essions (	(F8)			be present, unless disturbed or
				_						problematic
estrictive	Layer (if observe	ed):								
	, (									
vpe:								Hvdrid	soil prese	ent? N
	es):					_		Hydric	soil prese	ent? N
epth (inche	es):					- -		Hydric	soil prese	ent? <u>N</u>
epth (inche emarks:						-		Hydric	soil prese	nt? <u>N</u>
epth (inche emarks:						- -		Hydric	soil prese	nt? <u>N</u>
epth (inche emarks:		ors:				-		Hydric	soil prese	nt? <u>N</u>
epth (inche emarks: IYDROLC	DGY		required; ch	neck a	III that ap	- - - pply)				ndicators (minimum of two require
epth (inche emarks: IYDROLC /etland Hydrimary Indic	OGY drology Indicate		required; ch	neck a		pply) Fauna (B	13)		Secondary I	
epth (inche emarks: YDROLC /etland Hydrimary India Surface	OGY drology Indicato cators (minimum		required; ch	neck a	Aquatic		,		Secondary II Surface	ndicators (minimum of two require
YDROLO /etland Hydrimary India Surface High Wa Saturatio	DGY drology Indicato cators (minimum Water (A1) iter Table (A2) on (A3)		required; ch	neck a	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1	<u>\$</u>	Secondary I Surface Drainao Dry-Se	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2)
epth (inche emarks: IYDROLO /etland Hy rimary India Surface ' High Wa Saturatic Water M	drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1)		required; ch	neck a	Aquatic True Aq Hydroge Oxidized	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1	<u>\$</u>	Secondary II Surface Drainae Dry-Se Crayfis	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8)
IYDROLO Jetland Hydrimary India Surface Surface Water M Sedimen	drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2)		required; ch	neck a	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B luatic Plar en Sulfide d Rhizosp	nts (B14) Odor (C1 heres on	<u>S</u> Living Roots	Secondary II Surface Drainae Dry-Se Crayfis Saturat	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9)
epth (inche emarks: IYDROLO /etland Hydrimary India Surface by High Wa Saturation Water M Sediment Drift Dep	drology Indicated cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3)		required; ch	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presence	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu	nts (B14) Odor (C1 heres on	S ) Living Roots (C4)	Secondary II Surface Draina Dry-Se Crayfis Saturat Stunted	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
IYDROLO Vetland Hydrimary India Surface Migh Wa Saturatic Water M Sedimen Drift Dep Algal Ma	drology Indicators (minimum) Water (A1) Iter Table (A2) In (A3) Iter (B1) It Deposits (B2) Iter (B3) Iter (B4)		required; ch	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu	nts (B14) Odor (C1 heres on	S ) Living Roots (C4)	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
rimary Indic Surface High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep	drology Indicators (minimum) Water (A1) Iter Table (A2) In (A3) In Deposits (B1) In Deposits (B2) In Or Crust (B4) In Or Crust (B4) In Or Crust (B5)	of one is		neck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6)	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	ots (B14) Odor (C1 heres on uced Iron uction in T	S ) Living Roots (C4)	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
IYDROLO  Vetland Hydrimary India Surface High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio	drology Indicator cators (minimum Water (A1) tter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) osits (B5) on Visible on Aeria	<u>of one is</u> al Imagery	ı (B7)	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	onts (B14) Odor (C1 heres on uced Iron uction in T	S ) Living Roots (C4)	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
epth (inche emarks: IYDROLO /etland Hydrimary India Surface Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely	drology Indicators (minimum) Water (A1) Iter Table (A2) In (A3) In Deposits (B2) In Deposits (B3) It or Crust (B4) It or Crust (B4) It or Visible on Aeria	of one is al Imagery ave Surface	ı (B7)	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ack Surfac or Well Da	odor (C1) heres on uced Iron uction in Ti ee (C7) ata (D9)	) Living Roots (C4) illed Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
IYDROLO Vetland Hyd Yrimary Indio Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Si	drology Indicators (minimum) Water (A1) Iter Table (A2) On (A3) arks (B1) In Deposits (B2) Oosits (B3) It or Crust (B4) Oosits (B5) On Visible on Aeria It Vegetated Concatained Leaves (B9	of one is al Imagery ave Surface	ı (B7)	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ack Surfac or Well Da	onts (B14) Odor (C1 heres on uced Iron uction in T	) Living Roots (C4) illed Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
IYDROLO Vetland Hydrimary Indic Surface Vetland Hydrimary Indic Surface Vetland High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Stield Obser	drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aeria or Vegetated Concatained Leaves (B9) vations:	of one is al Imagery ave Surfac )	v (B7) ce (B8)		Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge of Other (E	Fauna (B luatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu lick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron action in The (C7) ata (D9) Remarks)	) Living Roots (C4) illed Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
IYDROLO Vetland Hydrimary Indic Surface Vetland Hydrimary Indic Surface Vetland High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Si ield Obser	drology Indicators (minimum Water (A1) water Table (A2) on (A3) arks (B1) arks (B3) water Crust (B4) cosits (B5) on Visible on Aeria vegetated Concatained Leaves (B9) vations: er present?	of one is  Il Imagery  ive Surface  )	v (B7) ce (B8)	No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge o Other (E	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu lron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron uction in The (C7) ata (D9) Remarks) nches):	) Living Roots (C4) illed Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two require e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
Water-Si ield Obser urface water table	drology Indicators (minimum) Water (A1) Ater Table (A2) Ater Table (A3) Ater T	of one is  Il Imagery ave Surface )  Yes Yes	v (B7) ce (B8)	No No	Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent (C6) Thin Mu Gauge c Other (E	Fauna (B Iuatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu lck Surfac or Well Da Explain in Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches):	) Living Roots (C4) illed Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) cion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
emarks:  IYDROLO  /etland Hydrimary India  Surface ' High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-Stield Obser urface water /ater table   aturation pi	drology Indicated cators (minimum) Water (A1) Iter Table (A2) In (A3) In Deposits (B2) In Occits (B3) In Occits (B4) In Occits (B5) In Visible on Aeria In Vegetated Concatained Leaves (B9 Vations: Iter present? Iter present? Iter present? Iter present?	of one is  Il Imagery  ive Surface  )	v (B7) ce (B8)	No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge o Other (E	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu lron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches):	) Living Roots (C4) illed Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
IYDROLO Vetland Hydrimary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-St ield Obser surface wate Vater table paturation procludes cap	drology Indicators (minimum) Water (A1) Ater Table (A2) Ater Table (A3) Ater T	of one is  Il Imagery eve Surface  Yes Yes Yes	v (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge o Other (E  X X	Fauna (B Juatic Plar en Sulfide d Rhizosp ce of Redu lron Redu lck Surfac or Well Da Explain in  Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks) nches): nches):	) Living Roots (C4) Illed Soils	Secondary II Surface Drainae Dry-Se Crayfis Saturat Stuntee X Geome FAC-No	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) cion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
IYDROLO Vetland Hydrimary Indio Surface Vetland Hydrimary Indio Surface Vetland High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Si ield Obser Jurface water Vater table Inaturation princludes cap Jescribe recommended	drology Indicators (minimum) Water (A1) Iter Table (A2) In (A3) In Deposits (B2) It or Crust (B4) It or Crust (B4) In Visible on Aeria It Vegetated Concatained Leaves (B9 Vations: Iter present? Iter present. Iter	of one is  Il Imagery eve Surface  Yes Yes Yes	v (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge o Other (E  X X	Fauna (B Juatic Plar en Sulfide d Rhizosp ce of Redu lron Redu lck Surfac or Well Da Explain in  Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks) nches): nches):	) Living Roots (C4) Illed Soils	Secondary II Surface Drainae Dry-Se Crayfis Saturat Stuntee X Geome FAC-No	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) cion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
IYDROLO Vetland Hydrimary Indic Surface Vetland Hydrimary Indic Surface Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-St Vetland Observator table staturation procludes cap describe recommended.	drology Indicators (minimum) Water (A1) Iter Table (A2) In (A3) In Deposits (B2) It or Crust (B4) It or Crust (B4) In Visible on Aeria It Vegetated Concatained Leaves (B9 Vations: Iter present? Iter present. Iter	al Imagery nve Surfac ) Yes Yes Yes	v (B7) ce (B8)	No No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge o Other (E  X X X	Fauna (B uatic Plar en Sulfide d Rhizospote of Redular	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches): nches):	) Living Roots (C4) Illed Soils	Secondary II Surface Drainag Dry-Se Crayfis Saturat Stunted X Geomo FAC-No	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) cion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Si		•	<b>າ</b> Sampling	g Date:	9/25/20	18
Applicant/Owner: South Dakota Department of Transportation		State:	South D		Sampling		5W	
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh		, ,	S33 T101I	N R49W	
Landform (hillslope, terrace, etc.): footslope			relief (conca	•	. none):		Concave	
Slope (%): 1 Lat: 43° 30' 35.161" N		_	96° 43' 50.4		Datum:		D83 Zone	14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes		20119.		l Classificat	_		lone	
Are climatic/hydrologic conditions of the site typical for this time	of the year?			lf no, explai			0110	
Are vegetation , soil , or hydrology	-	ly disturbed?		-				
		problematic?			Are "norn	nal circums	tances" resent? `	Voc
Are vegetation, soil, or hydrology SUMMARY OF FINDINGS	i iaturany p	orobiernatio?		(If poods	d ovoloir	ף any answe		
				(II Heede	u, expiaii	i ally allowe	315 111 161116	3185.)
Hydrophytic vegetation present?  Y		la tha a			0 ام سمالامین		V	
Hydric soil present? Y			ampled are				<u>Y</u>	
Indicators of wetland hydrology present? Y		If yes, o	otional wetla	ind site ID:	VV	etland 5		
Remarks: (Explain alternative procedures here or in a separate r	report.)							
Sample Point collected in Wetland 5.								
<b>VEGETATION</b> Use scientific names of plants.								
	Absolute	Dominant	Indicator	Domina	nce Test	Worksheet	t	
<u>Tree Stratum</u> (Plot size: <u>30' Radius</u> )	% Cover	Species	Status	Number	of Domina	ant Species		
1				that are	OBL, FAC	W, or FAC:	2	(A)
2						of Dominant		
3	· <del></del>			·		s all Strata:	2	(B)
						ant Species	400.000/	/ /A/D\
5	0	= Total Cover		that are t	JBL, FAC	W, or FAC:	100.00%	(A/B)
<u>Sapling/Shrub stratun</u> (Plot size: 15' Radius )		- Total Cover		Prevaler	ce Index	Workshee		
1				Total % (		· · · · · · · · · · · · · · · · · · ·		
2	-			OBL spe		65 x 1	= 65	
3				FACW s	pecies -	30 x 2	= 60	_
4				FAC spe	cies	5 x 3	= 15	_
5				FACU sp	ecies	0 x 4	= 0	_
	0	= Total Cover		UPL spe	cies	0 x 5	= 0	_
Herb stratum (Plot size: 5' Radius )				Column t	otals _	100 (A)	140	(B)
1 Typha angustifolia Narrow-Leaf Cat-Tail	40	<u> </u>	OBL	Prevalen	ice Index	= B/A =	1.40	
2 Eleocharis obtusa Blunt Spike-Rush	20	Υ	OBL					
3 Persicaria lapathifolia Dock-Leaf Smartweed	10	N	FACW		-	etation Ind		
4 Cyperus esculentus Chufa	10	N	FACW	l ——		hydrophytic	: vegetatio	'n
5 Phalaris arundinacea Reed Canary Grass 6 Schoenoplectus tabernaemontani Soft-Stem Club-Rush		N	FACW			st is >50% dex is ≤3.0*	•	
6 Schoenoplectus tabernaemontani Soft-Stem Club-Rush 7 Hordeum jubatum Fox-Tail Barley	5 5	- <u>N</u>	OBL FAC					
8			170			adaptation		
9					rate shee	ta in Remar et)	ks or on a	i
10		· ——		l — ·		ydrophytic v	vegetation	*
	100	= Total Cover		(expl				
Woody vine stratum (Plot size: 30' Radius )		•				soil and wetlar		
1						ss disturbed o	r problemati	С
2				_	rophytic etation			
	0	= Total Cover	•	pres		Υ		
Remarks: (Include photo numbers here or on a separate sheet)						•		

SOIL Sampling Point: 5W

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-2	10YR 2/1	100					Silt Loam		
2-10	10YR 4/1	80	10YR 5/8	20	С	М	Silt Loam		
10-20	10YR 5/1	80	10YR 5/6	20	С	PL	Silt Loam		
10-20	1011(3/1	00	10111 3/0	20	U	1 L	Oilt Loain		
*Tvpe: C = C	Concentration, D =	Depletion	on. RM = Reduce	d Matrix.	MS = Ma	asked Sa	nd Grains.	**Location:	PL = Pore Lining, M = Matrix
	il Indicators:		,						ematic Hydric Soils:
	tosol (A1)		Sar	dy Gleye	ed Matrix	(S4)			dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo		( )		k Surface (S7	
	ck Histic (A3)			pped Mat				•	or Peat (S3) (LRR K, L, R)
	lrogen Sulfide (A4	.)			ky Minera	ıl (F1)	Iron	-Manganese	Masses (F12) ( <b>LRR K, L, R</b> )
	atified Layers (A5)	-		-	ed Matrix		Ver	y Shallow Dar	k Surface (TF12)
2 cr	m Muck (A10)		—— Dep	leted Ma	trix (F3)		Oth	er (explain in	remarks)
X Dep	oleted Below Dark	Surface	(A11) Red	lox Dark	Surface	(F6)			
Thic	ck Dark Surface ( <i>i</i>	<b>412</b> )	— Dep	leted Da	rk Surfac	e (F7)	*Indi	cators of hydr	ophytic vegetation and wetland
San	ndy Mucky Minera	l (S1)	Red	lox Depre	essions (	F8)			e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Type:		,-					Hvdri	c soil presen	t? Y
Depth (inche	es):				•		,		·
	<u> </u>				•				
Remarks:									
	20V								
HYDROLO									
1	drology Indicato								
_	cators (minimum o	of one is	required; check a	-			<u> </u>		dicators (minimum of two required)
	Water (A1)				Fauna (B				Soil Cracks (B6)
	ater Table (A2)			_	uatic Plan				Patterns (B10)
X Saturation	, ,					Odor (C1			son Water Table (C2)
	larks (B1)				Rnizospi	neres on I	Living Roots		Burrows (C8)
	nt Deposits (B2) posits (B3)			(C3)	o of Podu	ced Iron	(C4)		n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
	at or Crust (B4)						illed Soils		ohic Position (D2)
	osits (B5)			(C6)	ion Redu	Clion III 11	illed Solls		utral Test (D5)
	on Visible on Aeria	l Imagery	(B7)		ck Surfac	e (C7)		<u> </u>	attal Test (De)
	Vegetated Conca			•	r Well Da				
	tained Leaves (B9)					Remarks)			
Field Obser	vations:	•		• `	•	,			
Surface water		Yes	No	Х	Depth (i	nches):			
Water table		Yes	X No	-	Depth (i		6	Inc	licators of wetland
Saturation p	resent?	Yes	X No		Depth (i		2	hy	/drology present? Y
(includes ca	pillary fringe)				•	•		-	<del></del>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Describe red	corded data (strea	m gauge	i, monitoring well,	acriai pi	iotoo, pi c	VIOUS IIIS	pecuons, n		
Describe red	corded data (strea	m gauge	, monitoring weii,	aonai pi	iotoo, pro	VIOUS IIIC	spections), ii		
Describe red Remarks:	corded data (strea	m gauge	e, monitoring well,	donar pr	.o.oo, pro	VIOUS IIIC			
Remarks:	nt precipitation o								

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sid		•	<b>I</b> Sampling	Date:	9/25/201	8
Applicant/Owner: South Dakota Department of Transportation		State:	South D		Sampling l		6U	
Investigator(s): Rebecca Beduhn			ion, Townsh			S33 T101N	R49W	
Landform (hillslope, terrace, etc.):  Backslope			relief (conca	•			oncave	
Slope (%): 6 Lat: 43° 30' 40.497" N		_	96° 43' 49.7		Datum:		D83 Zone	14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes		<u> </u>		l Classificat	_		one	
Are climatic/hydrologic conditions of the site typical for this time	of the vear?			If no, explai				
Are vegetation , soil , or hydrology	•	ly disturbed?		-		/ al circumst	ancos"	
Are vegetation , soil , or hydrology		roblematic?			Ale Holli		esent? Y	es/
SUMMARY OF FINDINGS	. , , , ,			(If neede	d, explain	any answe		
Hydrophytic vegetation present? Y					· · ·			,
Hydric soil present?		Is the sa	ampled area	a within a v	wetland?		N	
Indicators of wetland hydrology present? N			tional wetla					
<u> </u>	conort )	, , ,		•				
Remarks: (Explain alternative procedures here or in a separate r	eport.)							
Sample Point collected adjacent to Wetland 6.								
<b>VEGETATION</b> Use scientific names of plants.				Damina.	T+ V			
Tree Stratum (Plot size: 30' Radius )	Absolute % Cover	Dominant Species	Indicator Status			Vorksheet		
1	70 OOVC1	Ороско	Otatus		of Dominar OBL, FACV		2	(A)
2					Number of	_		_(' ')
3		· <del></del>			ies Across		2	(B)
4				Percent	of Dominar	nt Species		
5				that are (	OBL, FACV	V, or FAC:	100.00%	_(A/B)
	0	= Total Cover						
Sapling/Shrub stratun (Plot size: 15' Radius )	F	V	E40			Worksheet	t	
1 Rhamnus cathartica European Buckthorn 2	5	<u> </u>	FAC	Total % ( OBL spe		0 x 1 =	= 0	
3				FACW s		0 x1=		_
4				FAC spe	_	65 x 3 =		_
5			_	FACU sp	_	35 x 4 =		_
	5	= Total Cover		UPL spe	cies	5 x 5 =	25	_
Herb stratum (Plot size: 5' Radius )				Column t	otals	105 (A)	360	(B)
1 Setaria pumila Yellow Bristle Grass	50	Y	FAC	Prevalen	ce Index =	B/A =	3.43	_
2 Cirsium arvense Canadian Thistle	15	N	FACU					
3 Medicago lupulina Black Medick	10	<u>N</u>	FACU			tation Indi		
4 Alliaria petiolata Garlic-Mustard	10		FAC	I ——		ydrophytic	vegetation	ו
5 Asclepias syriaca Common Milkweed 6 Fallopia convolvulus Black-Bindweed	5 5	. <u>N</u> N	FACU FACU	l ——	inance tes	t is >50% ex is ≤3.0*		
7 Linaria vulgaris Yellow Toadflax	5		UPL	l —			<b>.</b>	
8		<del></del>				adaptations a in Remark		
9					rate sheet)		.o or on a	
		·		Prob	lematic hy	drophytic v	egetation*	
	100	= Total Cover		(expl	ain)			
Woody vine stratum (Plot size: 30' Radius )				*Indicator	s of hydric so	oil and wetland	d hydrology i	must be
1	·					s disturbed or	problematic	;
2		T		_	ophytic tation			
	0	= Total Cover		pres		Υ		
Remarks: (Include photo numbers here or on a separate sheet)								

SOIL Sampling Point: 6U

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	cture	Remarks
0-9	10YR 4/3	100					Sandy Loa	am	
9-18	10YR 4/3	100					Sandy Loa	am	
*Type: C = 0	Concentration, D =	: Depletio	on. RM = Reduce	d Matrix	MS = Ma	asked Sa	nd Grains.	**Location	PL = Pore Lining, M = Matrix
	il Indicators:	Ворюш	Troduce.	a matrix,	1110 1110	acked ea			ematic Hydric Soils:
_	osol (A1)		San	dv Gleve	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo		(0.)		k Surface (S7	
	ck Histic (A3)			oped Mat					or Peat (S3) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	.)			xy Minera	l (F1)			Masses (F12) (LRR K, L, R)
	tified Layers (A5)	•		-	, ed Matrix	. ,		-	k Surface (TF12)
	n Muck (A10)			leted Ma		. ,		er (explain in	
	leted Below Dark	Surface			Surface	(F6)		` '	,
	k Dark Surface (		· · · · · · · · · · · · · · · · · · ·		rk Surfac	. ,	*Indi	cators of hydr	ophytic vegetation and wetland
San	dy Mucky Minera	(S1)			essions (				e present, unless disturbed or
				·	,	•	,	0,7	problematic
Restrictive	Layer (if observe	м).							
Type:	Layer (II observe	ω,.					Hydri	c soil presen	t? N
Depth (inche	:s):				•		i i y wi i	o oon procen	·· <del>_                                  </del>
					•				
Remarks:									
HYDROLO									
Wetland Hy	drology Indicato	rs:							
Primary India	cators (minimum o	of one is	required; check a	II that ap	ply)		<u>;</u>	Secondary Inc	licators (minimum of two required)
Surface	Water (A1)				Fauna (B				Soil Cracks (B6)
High Wa	ter Table (A2)				uatic Plan				Patterns (B10)
Saturation						Odor (C1			son Water Table (C2)
	arks (B1)				Rhizospl	neres on	Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)			( <b>0</b> .1)		n Visible on Aerial Imagery (C9)
	osits (B3)					ced Iron			or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in T	illed Soils		phic Position (D2)
	osits (B5) on Visible on Aeria	Ilmagery	(B7)	(C6)	ok Surfoo	o (C7)		FAC-Net	ıtral Test (D5)
	Vegetated Conca		· ·		ck Surfac r Well Da				
	tained Leaves (B9)					Remarks)			
			-	Other (E	лріант ін і	(Ciliants)			
Field Obser Surface water		Yes	No	Χ	Depth (i	nches).			
Water table	•	Yes	No	X	Depth (in	-		- Inc	licators of wetland
Saturation p		Yes	No	X	Depth (i	-		_	drology present?
(includes ca					(	,.		-   1	
	orded data (strea	m gauge	monitoring well	aerial nh	notos pre	evious ins	spections) if	available:	
20001100 100	data (3116a	gaage	,ormornig woll,	acriai pi	.5.55, pre		. p 00010110 <i>j</i> , 11	aranabio.	
Remarks:									
	t precipitation o	conditio	ns were determ	nined "V	Vetter th	nan nori	mal" (Appe	ndix C).	
							\ 11	,	

WETLAND DETERMIN Project/Site PCN 000S: I-229 Exit 3 Reconstruction		ATA FORN County: Sid		•		Data	9/25/2018
· ·		· · ·			Sampling		
Applicant/Owner: South Dakota Department of Transportation		State:	South Da		Sampling		6W
Investigator(s): Rebecca Beduhn			ion, Townshi	-		S33 T101N I	
Landform (hillslope, terrace, etc.): Toeslope		-	relief (conca		· · · · ·		ncave
Slope (%): 2 Lat: 43° 30' 40.658" N		Long:	96° 43' 50.14		Datum:		83 Zone 14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes	.f. 41 O			Classifica		Nor	1e
Are climatic/hydrologic conditions of the site typical for this time of	•		N (I	-	in in remar	•	
Are vegetation, soil, or hydrology		y disturbed?			Are "norm	al circumsta	
Are vegetation, soil, or hydrology SUMMARY OF FINDINGS	naturally pr	roblematic?		(If poods	d ovelein	'	sent? Yes
Hydrophytic vegetation present?				(II Heede	u, explain	ally allswers	in remarks.)
Hydric soil present?		le the er	ampled area	within a	wotland?	,	,
			•			etland 6	<u>'</u>
Indicators of wetland hydrology present? Y		ii yes, op	otional wetlar	id site iD.		elianu o	_
Remarks: (Explain alternative procedures here or in a separate re	eport.)						
Sample Point collected in Wetland 6.							
<b>VEGETATION</b> Use scientific names of plants.							
T 01 1 (D) 1 (D) 1	Absolute	Dominant	Indicator			Vorksheet	
Tree Stratum (Plot size: 30' Radius )	% Cover 10	Species	Status FAC		of Domina	•	6 (4)
1 Populus tremuloides Quaking Aspen 2		<u> </u>	FAC		OBL, FACV		6 (A)
3					Number of cies Across		6 (B)
4				·	of Domina	_	(-/
5						•	100.00% (A/B)
	10 :	Total Cover					
Sapling/Shrub stratun (Plot size: 15' Radius )						Worksheet	
1 Populus tremuloides Quaking Aspen	10	<u>Y</u>	FAC		Cover of:		
2 Rhamnus cathartica European Buckthorn	10	<u>Y</u>	FAC	OBL spe	_	60 x 1 =	60
3 Salix petiolaris Meadow Willow	5	<u> </u>	OBL	FACW s FAC spe	_	45 x 2 = 30 x 3 =	90
5				FACU sp	_	0 x 4 =	0
	25 :	Total Cover		UPL spe	_	0 x 5 =	0
<u>Herb stratum</u> (Plot size: 5' Radius )				Column	_	135 (A)	240 (B)
1 Typha latifolia Broad-Leaf Cat-Tail	55	Υ	OBL	Prevalen	nce Index =	= B/A =	1.78
2 Phalaris arundinacea Reed Canary Grass	25	<u>Y</u>	FACW				
3 Persicaria lapathifolia Dock-Leaf Smartweed	10	N	FACW	Hydroph	ytic Vege	tation Indic	ators:
4 Persicaria pensylvanica Pinkweed	10	N	FACW			nydrophytic v	egetation
5					inance tes		
6				X Prev	alence ind	ex is ≤3.0*	
						adaptations*	
9					oorting data arate sheet	a in Remarks	or on a
10						. <i>)</i> drophytic ve	getation*
	100 :	Total Cover		(expl	-	diopriyac ve	getation
Woody vine stratum (Plot size: 30' Radius )						oil and wetland	hydrology must be
1					-	s disturbed or p	
2				-	rophytic		
	0 :	Total Cover		_	etation	V	
Remarks: (Include photo numbers here or on a separate sheet)				pres	sent?	Y	

SOIL Sampling Point: 6W

Profile Desc	ription: (Descri	be to the	e depth neede	ed to docur	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>			Redox Feat	ures				
(Inches)	Color (moist)	%	Color (mois	t) %	Type*	Loc**	Tex	ture	Remarks
0-7	10YR 2/1	100					Loam		
7-14	10YR 4/2	90	7.5YR 4/6	10	С	PL	Sandy Loa	am	
14-20	10YR 5/2	85	7.5YR 4/6		С	М	Sandy Loa		
14-20	10111 3/2	00	7.511( 4/0	10		IVI	Oandy Loa	3111	
*Type: C = C	concentration, D =	Depletion	on, RM = Redu	ıced Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicate	ors for Proble	ematic Hydric Soils:
Hist	osol (A1)			Sandy Gley	ed Matrix	(S4)	Coa	ast Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )
Hist	ic Epipedon (A2)		<del></del> ;	Sandy Redo	ox (S5)		Dar	k Surface (S7	) (LRR K, L <b>)</b>
	ck Histic (A3)			Stripped Ma				=	t or Peat (S3) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	•		₋oamy Muc	-			-	Masses (F12) ( <b>LRR K, L, R</b> )
	tified Layers (A5)			₋oamy Gley		(F2)		-	k Surface (TF12)
	n Muck (A10)			Depleted Ma			Oth	er (explain in	remarks)
	leted Below Dark			Redox Dark					
	ck Dark Surface (A	•		Depleted Da					ophytic vegetation and wetland
San	dy Mucky Minera	(S1)	'	Redox Depr	essions (	F8)	hyd	rology must b	e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Туре:					_		Hydri	c soil presen	t? <u>Y</u>
Depth (inche	es):				_				
Remarks:									
HYDROLO	GY								
Wetland Hy	drology Indicato	rs:							
Primary India	cators (minimum o	of one is	required; chec	k all that ap	oply)		;	Secondary Inc	dicators (minimum of two required)
X Surface	•			-	Fauna (B	13)	-		Soil Cracks (B6)
	ter Table (A2)		_		uatic Plar				Patterns (B10)
Saturation	on (A3)		_	Hydroge	en Sulfide	Odor (C1	)	Dry-Seas	son Water Table (C2)
Water M	arks (B1)		_	Oxidized	d Rhizosp	heres on	Living Roots		Burrows (C8)
	t Deposits (B2)		_	(C3)					n Visible on Aerial Imagery (C9)
	osits (B3)		_		e of Redu				or Stressed Plants (D1)
	t or Crust (B4)				Iron Redu	ction in T	illed Soils		phic Position (D2)
	osits (B5) on Visible on Aeria	Imagory	(B7)	(C6)	ak Curfaa	o (C7)		X FAC-Net	ıtral Test (D5)
	Vegetated Conca		· · ·		ick Surfac or Well Da				
	tained Leaves (B9)		_		Explain in		1		
Field Obser	. ,				- April 111		'		
Surface water		Yes	X No	<b>1</b>	Depth (i	nches).	3		
Water table	•	Yes	No		Depth (i			- Inc	licators of wetland
Saturation p		Yes	No		Depth (i			_	/drology present?
(includes ca					<u> </u>	•		<u>-</u>	
Describe rec	orded data (strea	m gauge	, monitoring w	ell, aerial p	hotos, pre	evious ins	spections), if	available:	
	`	, <b>.</b>	ŭ	·	•		,.		
Remarks:									
Anteceden	t precipitation o	onditio	ns were dete	ermined "\	Vetter th	nan nori	mal" (Appe	ndix C).	

## WETLAND DETERMINATION DATA FORM - Midwest Pegion

Project/Site PCN 000S: I-229 Exit 3 Reconstruction			oux Falls/Mi	_	g Date: 9/25/2018
Applicant/Owner: South Dakota Department of Transportation		State:	South D		
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh	ip, Range:	S33 T101N R49W
Landform (hillslope, terrace, etc.): Footslope				ave, convex, none):	Concave
Slope (%): 4 Lat: 43° 30' 39.679" N		_	° 43' 49.5	· · · · · · · · · · · · · · · · · · ·	UTM NAD83 Zone 14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes				I Classification:	None
Are climatic/hydrologic conditions of the site typical for this time of	of the vear?			If no, explain in rema	
Are vegetation, soil, or hydrology Are vegetation, soil, or hydrology	significant	ly disturbed?	(	-	nal circumstances"  present? Yes
SUMMARY OF FINDINGS				(If needed, explain	n any answers in remarks.)
Hydrophytic vegetation present? N					
Hydric soil present? N		Is the sa	ampled are	a within a wetland?	N
Indicators of wetland hydrology present?		If yes, or	otional wetla	and site ID:	
Remarks: (Explain alternative procedures here or in a separate r	eport.)				
Sample Point collected adjacent to Wetland 7.					
VEGETATION Use scientific names of plants.					
	Absolute	Dominant	Indicator	Dominance Test	Worksheet
Tree Stratum (Plot size: 30' Radius )	% Cover	Species	Status	Number of Domina	
1				that are OBL, FAC	W, or FAC: 1 (A)
2				Total Number of	
3				Species Acros	<del></del> ` ' '
5				Percent of Domina	-
5	0	= Total Cover		that are OBL, FAC	W, or FAC: 33.33% (A/B)
<u>Sapling/Shrub stratun</u> (Plot size: 15' Radius )		- Total Gover		Prevalence Index	Worksheet
1				Total % Cover of:	. Workshoot
2				OBL species	0 x 1 = 0
3				FACW species	0 x 2 = 0
4				FAC species	30 x 3 = 90
5				FACU species	65 x 4 = 260
	0	= Total Cover	,	UPL species	5 x 5 = 25
Herb stratum (Plot size: 5' Radius )				Column totals	100 (A) 375 (B)
1 Bromus inermis Smooth Brome	30	Υ	FACU	Prevalence Index	= B/A = 3.75
2 Setaria pumila Yellow Bristle Grass	30	Υ	FAC		
3 Cirsium arvense Canadian Thistle	20	<u> </u>	FACU	Hydrophytic Veg	etation Indicators:
4 Amaranthus retroflexus Red-Root	10	N	FACU	I ——	hydrophytic vegetation
5 Asclepias syriaca Common Milkweed	5	N	FACU	Dominance tes	
6 Euphorbia esula Leafy Spurge	5	N	UPL	Prevalence inc	dex is ≤3.0*
7					adaptations* (provide
9				supporting dat separate shee	ta in Remarks or on a et)
	100	= Total Cover		Problematic hy (explain)	ydrophytic vegetation*
Woody vine stratum (Plot size: 30' Radius ) 1				*Indicators of hydric s	soil and wetland hydrology must be ss disturbed or problematic
2				Hydrophytic	
	0	= Total Cover		vegetation present?	N
Remarks: (Include photo numbers here or on a separate sheet)					

SOIL Sampling Point: 7U

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-5	10YR 2/2	100					Silt Loam		
5-15	10YR 4/1	80	10YR 5/8	20	С	М	Silt Loam		
15-20	10YR 6/2	80	10YR 5/6	20	С	PL	Silt Loam		
13-20	10111 0/2	00	10111 3/0	20		FL	OIIL LOAITI		
*Type: C = C	Concentration D =	: Depletio	on, RM = Reduce	d Matrix	MS = Ma	asked Sa	nd Grains.	**I ocation	: PL = Pore Lining, M = Matrix
	il Indicators:	Ворюш	Troduce.	a matrix,	1110 1110	acitod Ca			ematic Hydric Soils:
	osol (A1)		San	dv Gleve	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo		(0.)		k Surface (S7	
	ck Histic (A3)			oped Mat				-	t or Peat (S3) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	.)		•	xy Minera	ıl (F1)		=	Masses (F12) (LRR K, L, R)
	tified Layers (A5)			-	, ed Matrix			-	k Surface (TF12)
	n Muck (A10)			leted Ma		,		er (explain in	· · · · · · · · · · · · · · · · · · ·
	leted Below Dark	Surface			Surface	(F6)		` '	,
	k Dark Surface (		· · · —		rk Surfac	. ,	*Indi	cators of hydr	ophytic vegetation and wetland
	dy Mucky Minera	•			essions (				e present, unless disturbed or
				·	,	,	,	0,7	problematic
Restrictive	Layer (if observe	м).							
Type:	Layer (II Observe	uj.					Hydrid	c soil presen	t? N
Depth (inche	·e).				•		ilyan	c son presen	
					•				
Remarks:									
LIVERGLE	201/								
HYDROLO									
1	drology Indicato								
Primary India	cators (minimum o	of one is	required; check a	II that ap	<u>ply)</u>		<u> </u>		licators (minimum of two required)
Surface '	Water (A1)				Fauna (B				Soil Cracks (B6)
	ter Table (A2)				uatic Plan				Patterns (B10)
Saturatio						Odor (C1			son Water Table (C2)
	arks (B1)				Rhizospl	heres on	Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)	(5)		(0.1)		n Visible on Aerial Imagery (C9)
	osits (B3)					ced Iron			or Stressed Plants (D1)
	t or Crust (B4)			(C6)	ron Redu	ction in T	illed Soils		ohic Position (D2) utral Test (D5)
	osits (B5) on Visible on Aeria	l Imagery	(B7)		ok Surfac	o (C7)		FAC-Net	iliai Test (D5)
	Vegetated Conca		· ·		ck Surfac r Well Da				
	tained Leaves (B9)					Remarks)	1		
Field Obser				011101 (2	хрічії ії і	(torrianto)	'		
Surface water		Yes	No	Χ	Depth (i	nches).			
Water table	•	Yes	No	X	Depth (i			- Inc	licators of wetland
Saturation pr		Yes	No	X	Depth (i			_	/drology present?
(includes car					. ' `	,		-   '	
		m gauge	, monitoring well,	aerial nh	notos, pre	evious ins	spections), if	available:	
		. 3-490	,	pi	, p. c		,, 11		
Remarks:									
Anteceden	t precipitation of	conditio	ns were determ	nined "V	Vetter th	nan nori	mal" (Appe	ndix C).	
	•						` ' '	,	

## WETLAND DETERMINATION DATA FORM - Midwest Pegion

Project/Site PCN 000S: I-229 Exit 3 Reconstruction			oux Falls/Mi	_
Applicant/Owner: South Dakota Department of Transportation		State:	South D	
Investigator(s): Rebecca Beduhn		Secti	ion, Townsh	nip, Range: S33 T101N R49W
Landform (hillslope, terrace, etc.): footslope				ave, convex, none): Concave
Slope (%): 2 Lat: 43° 30' 39.505" N			° 43' 49.2	· · · · · · · · · · · · · · · · · · ·
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes				I Classification: None
Are climatic/hydrologic conditions of the site typical for this time of	of the year?			If no, explain in remarks)
Are vegetation , soil , or hydrology	•	ly disturbed?		•
Are vegetation , soil , or hydrology	J	roblematic?		Are "normal circumstances" present? Yes
SUMMARY OF FINDINGS	riaturally p	iobiematic:		(If needed, explain any answers in remarks.)
Hydrophytic vegetation present?				(If fleeded, explain any answers in remarks.)
		lo the or	ampled are	a within a watland?
Hydric soil present? Y			-	a within a wetland?
Indicators of wetland hydrology present? Y		if yes, of	otional wetia	and site ID: Wetland 7
Remarks: (Explain alternative procedures here or in a separate re	eport.)			
Sample Point collected in Wetland 7.				
<b>VEGETATION</b> Use scientific names of plants.				
	Absolute	Dominant	Indicator	Dominance Test Worksheet
<u>Tree Stratum</u> (Plot size: <u>30' Radius</u> )	% Cover	Species	Status	Number of Dominant Species
1				that are OBL, FACW, or FAC: 1 (A)
2				Total Number of Dominant
3				Species Across all Strata: 1 (B)
				Percent of Dominant Species
5	0	= Total Cover		that are OBL, FACW, or FAC: 100.00% (A/B)
<u>Sapling/Shrub stratun</u> (Plot size: 15' Radius )		- Total Cover		Prevalence Index Worksheet
1				Total % Cover of:
2				OBL species 0 x 1 = 0
3				FACW species 90 x 2 = 180
4				FAC species 10 x 3 = 30
5				FACU species 0 x 4 = 0
	0	= Total Cover		UPL species 0 x 5 = 0
Herb stratum (Plot size: 5' Radius )				Column totals 100 (A) 210 (B)
1 Persicaria lapathifolia Dock-Leaf Smartweed	50	<u> </u>	FACW	Prevalence Index = B/A = 2.10
2 Cyperus esculentus Chufa	15	N	FACW	
3 Phalaris arundinacea Reed Canary Grass	15	N	FACW	Hydrophytic Vegetation Indicators:
4 Setaria pumila Yellow Bristle Grass	10	N	FAC	X Rapid test for hydrophytic vegetation
5 Echinochloa crus-galli Large Barnyard Grass	10	N	FACW	X Dominance test is >50% X Prevalence index is ≤3.0*
6 7				<del></del>
8				Morphological adaptations* (provide supporting data in Remarks or on a
9				supporting data in Remarks of on a separate sheet)
10				Problematic hydrophytic vegetation*
	100	= Total Cover		(explain)
Woody vine stratum (Plot size: 30' Radius )				*Indicators of hydric soil and wetland hydrology must be
1				present, unless disturbed or problematic
2				Hydrophytic
	0	= Total Cover		vegetation present? Y
Remarks: (Include photo numbers here or on a separate sheet)				hieseiit:

SOIL Sampling Point: 7W

Depth	<u>Matrix</u>			dox Feat					
Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Text	ure	Remarks
0-2	10YR 2/1	95	7.5YR 4/6	5	С	PL	Sandy Loar	n	
2-10	10YR 4/1	80	10YR 5/8	20	С	М	Silt Loam		
10-20	10YR 5/1	80	10YR 5/6	20	С	PL	Silt Loam		
pe: C = C	Concentration, D =	= Depleti	on, RM = Reduce	d Matrix,	, MS = Ma	asked Sa	nd Grains.	**Location	: PL = Pore Lining, M = Matrix
ydric So	il Indicators:						Indicator	s for Proble	ematic Hydric Soils:
	tosol (A1)		Sai	ndy Gleye	ed Matrix	(S4)	Coas	st Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)		Sai	ndy Redo	ox (S5)			•	() (LRR K, L)
Blad	ck Histic (A3)		Str	pped Ma	trix (S6)				or Peat (S3) (LRR K, L, R)
	lrogen Sulfide (A4	-		-	ky Minera			-	Masses (F12) (LRR K, L, R)
	atified Layers (A5)	)			ed Matrix				k Surface (TF12)
	m Muck (A10)				atrix (F3)		Othe	r (explain in	remarks)
	oleted Below Dark				Surface	. ,			
	ck Dark Surface (				ark Surfac	. ,	*Indica	ators of hydr	ophytic vegetation and wetlar
San	ndy Mucky Minera	I (S1)	Re	dox Depr	essions (	(F8)	hydro	ology must b	e present, unless disturbed o
									problematic
oth (inche	es):				= -		Hydric	soil presen	t? <u>Y</u>
pth (inche	es):				-		Hydric	soil presen	<u> </u>
pth (inche marks:					-		Hydric	soil presen	<u> </u>
pth (inche marks:		rs:			-		Hydric	soil presen	<u> </u>
pth (inche marks: DROLC	OGY drology Indicato		required; check a	all that ap	- - ylqc				
pth (inche marks: 'DROLC etland Hy mary India	DGY		required; check a		pply) Fauna (B	13)		econdary Inc	
oth (inche marks: DROLO tland Hy mary India Surface	DGY drology Indicato cators (minimum o		required; check a	Aquatic		,		econdary Ind	dicators (minimum of two requ
DROLO tland Hy mary India Surface High Wa	DGY drology Indicato cators (minimum of Water (A1) iter Table (A2)		required; check a	Aquatic True Aq	Fauna (B uatic Plar	,	<u>S</u>	econdary Ind Surface S Drainage	dicators (minimum of two requ Soil Cracks (B6)
DROLO tland Hy mary Indic Surface High Wa Saturatio	DGY drology Indicato cators (minimum of Water (A1) iter Table (A2)		required; check a	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1	<u>S</u>	econdary Ind Surface S Drainage Dry-Seas	dicators (minimum of two requ Soil Cracks (B6) Patterns (B10)
DROLO tland Hy mary India Surface High Wa Saturatic Water M Sedimen	drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2)		required; check a	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B luatic Plar en Sulfide d Rhizosp	nts (B14) Odor (C1 heres on	Si - - ) Living Roots	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio	dicators (minimum of two requescible Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) N Visible on Aerial Imagery (C9
DROLO tland Hy mary India Surface High Wa Saturatic Water M Sedimen	drology Indicato cators (minimum of Water (A1) ster Table (A2) on (A3) larks (B1) ot Deposits (B2) posits (B3)		required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu	nts (B14) Odor (C1 heres on uced Iron	Since 1	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio	dicators (minimum of two requescible (Soil Cracks (B6)) Patterns (B10) Son Water Table (C2) Burrows (C8) N Visible on Aerial Imagery (C9) Or Stressed Plants (D1)
TDROLO TOROLO TITLE TOROLO	drology Indicato cators (minimum of Water (A1) ter Table (A2) on (A3) larks (B1) of Deposits (B2) posits (B3) at or Crust (B4)		required; check a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu	nts (B14) Odor (C1 heres on	Since 1	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted G X Geomory	dicators (minimum of two requesoil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1)
Pth (inches marks: Ptland Hymary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep	drology Indicato cators (minimum of Water (A1) ter Table (A2) on (A3) larks (B1) of Deposits (B2) posits (B3) at or Crust (B4)	of one is		Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6)	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	nts (B14) Odor (C1 heres on uced Iron uction in T	Since 1	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted G X Geomory	dicators (minimum of two requescible (Soil Cracks (B6)) Patterns (B10) Son Water Table (C2) Burrows (C8) N Visible on Aerial Imagery (C9) Or Stressed Plants (D1)
TDROLC  TDROLC  TELLIANDER  TOROLO  TELLIANDER  TOROLO  TELLIANDER  TOROLO  TELLIANDER  TOROLO  TELLIANDER  TOROLO  TO	drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	<u>of one is</u>	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	onts (B14) Odor (C1 heres on uced Iron uction in T	Since 1	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted G X Geomory	dicators (minimum of two requesoil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1)
rth (inchest marks:  TDROLO  Stland Hymary India Surface High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely	drology Indicato cators (minimum of Water (A1) hter Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3) ht or Crust (B4) posits (B5) on Visible on Aeria	of one is I Imagery ve Surfac	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ack Surfac or Well Da	odor (C1) heres on uced Iron uction in T ee (C7) hata (D9)	S - ) Living Roots - (C4) - illed Soils	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted G X Geomory	dicators (minimum of two requesoil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1)
TDROLC  Surface High War Saturation Water M Sedimen Drift Dep Algal Ma Iron Dep Inundation Sparsely Water-Si	drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) losits (B5) on Visible on Aeria of Vegetated Conca	of one is I Imagery ve Surfac	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ack Surfac or Well Da	onts (B14) Odor (C1 heres on uced Iron uction in T	S - ) Living Roots - (C4) - illed Soils	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted G X Geomory	dicators (minimum of two requesoil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1)
DROLO tland Hy mary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-Si Id Obser	drology Indicators (minimum of Water (A1) ater Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria of Vegetated Concatained Leaves (B9) vations:	of one is I Imagery ve Surfac	/ (B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks)	S - ) Living Roots - (C4) - illed Soils	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted G X Geomory	dicators (minimum of two requesoil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1)
pth (inche marks: /DROLC etland Hy mary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Si	drology Indicators (minimum of Water (A1) ater Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria of Vegetated Concatained Leaves (B9) vations:	I Imagery ve Surfac )	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu lron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks)	Silving Roots [C4]	econdary Inc Surface 3 Drainage Dry-Seas Crayfish Saturatio Stunted 0 X Geomory X FAC-Neu	dicators (minimum of two requestions) Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Shic Position (D2) Itral Test (D5)
pth (inche marks: /DROLC etland Hymary India Surface High Wa Saturation Water M Sediment Drift Dep Algal Ma Iron Dep Inundation Sparsely Water-Sield Obser	drology Indicators (minimum of Water (A1) after Table (A2) on (A3) arks (B1) arks (B3) at or Crust (B4) cosits (B5) on Visible on Aeria of Vegetated Concatained Leaves (B9) vations: er present? present?	I Imagery ve Surfac ) Yes Yes	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B Iuatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu lck Surfac or Well Da Explain in Depth (i	nts (B14) Odor (C1) heres on uced Iron uction in T ee (C7) ata (D9) Remarks) inches):	Silving Roots [C4]	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted of X Geomory X FAC-Neu	dicators (minimum of two requescoil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Inchic Position (D2) Itral Test (D5)
pth (inche marks: //DROLC etland Hymary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Signed Obser rface water ater table	drology Indicators (minimum of Water (A1) water (A1) water Table (A2) on (A3) warks (B1) on to Deposits (B2) water Toust (B4) water Toust (B4) water Toust (B5) on Visible on Aeria of Vegetated Concatained Leaves (B9) wations: er present? present?	I Imagery ve Surfac )	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu lron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1) heres on uced Iron uction in T ee (C7) ata (D9) Remarks) inches):	Silving Roots [C4]	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted of X Geomory X FAC-Neu	dicators (minimum of two requescible of two requesc
mary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-Si eld Obser rface wate ater table turation procludes car	drology Indicators (minimum of water (A1) after Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria of Vegetated Concatained Leaves (B9) vations:  er present? present? present? pillary fringe)	I Imagery ve Surface ) Yes Yes Yes	(B7) ce (B8)  No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (B juatic Plar en Sulfide d Rhizosp de of Redu lron Redu lck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C1) heres on uced Iron uction in T ee (C7) ata (D9) Remarks) inches): inches):	Silving Roots  (C4)  illed Soils  0 0	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted G X Geomory X FAC-Neu	dicators (minimum of two requesciol Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 or Stressed Plants (D1) Inchic Position (D2) Itral Test (D5)
pth (inche marks:  TDROLC etland Hymary India Surface High Wales Saturation Drift Dep Algal Males Iron Dep Inundation Sparsely Water-Sield Obser rface water table turation piccludes cales scribe received.	drology Indicators (minimum of Water (A1) water (A1) water Table (A2) on (A3) warks (B1) on to Deposits (B2) water Toust (B4) water Toust (B4) water Toust (B5) on Visible on Aeria of Vegetated Concatained Leaves (B9) wations: er present? present?	I Imagery ve Surface ) Yes Yes Yes	(B7) ce (B8)  No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (B juatic Plar en Sulfide d Rhizosp de of Redu lron Redu lck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C1) heres on uced Iron uction in T ee (C7) ata (D9) Remarks) inches): inches):	Silving Roots  (C4)  illed Soils  0 0	econdary Inc Surface S Drainage Dry-Seas Crayfish Saturatio Stunted G X Geomory X FAC-Neu	dicators (minimum of two requesciol Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C8) Or Stressed Plants (D1) Inchic Position (D2) Itral Test (D5)
pth (inche marks:  PTOROLO etland Hymary India Surface High Wa Saturatio Water M Sedimen Drift Dep Inundatic Sparsely Water-Sield Obser rface water table turation procludes capascribe recommarks:	drology Indicators (minimum of water (A1) after Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria of Vegetated Concatained Leaves (B9) vations:  er present? present? present? pillary fringe)	I Imagery ve Surfac ) Yes Yes Yes	(B7) ce (B8)  X No X No No e, monitoring well	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge d Other (E	Fauna (B uatic Plar en Sulfide d Rhizospote of Redular	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) inches): inches): evious ins	Silving Roots  (C4)  illed Soils  0 0 0 spections), if a	econdary Inc Surface 3 Drainage Dry-Seas Crayfish Saturatio Stunted 0 X Geomory X FAC-Neu Inc hy	dicators (minimum of two requestions) Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C8) Or Stressed Plants (D1) Shic Position (D2) Itral Test (D5)

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sid		•	<b>n</b> Sampling	g Date:	9/25/201	18
Applicant/Owner: South Dakota Department of Transportation		State:	South D	akota	Sampling		8U	
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh	ip, Range:	. · ·	S32 T101I	N R49W	
Landform (hillslope, terrace, etc.): Footslope			relief (conca			C	Concave	
Slope (%): 3 Lat: 43° 30' 37.419" N		_	° 43' 53.5		Datum:	UTM NA	D83 Zone	14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes		<u> </u>		l Classifica	tion:	PI	EMA	
Are climatic/hydrologic conditions of the site typical for this time of	of the vear?			If no, expla				
Are vegetation , soil , or hydrology	•	ly disturbed?		,,		nal circums	tanasa"	
Are vegetation , soil , or hydrology	_	roblematic?			Are nom		resent?	Yes
SUMMARY OF FINDINGS				(If neede	ed. explair	n any answe		
Hydrophytic vegetation present? Y								,
Hydric soil present?		Is the sa	ampled are	a within a	wetland?		N	
Indicators of wetland hydrology present?			otional wetla				<del></del>	
		300, 0	Juonal Would					
Remarks: (Explain alternative procedures here or in a separate r	eport.)							
Sample Point collected adjacent to Wetland 8.								
<b>VEGETATION</b> Use scientific names of plants.								
To Otal and (DL) in OOLD live	Absolute	Dominant	Indicator			Worksheet		
Tree Stratum (Plot size: 30' Radius )	% Cover	Species	Status			ant Species W, or FAC:	4	<b>(\</b> \)
2		· ——						_ <sup>(A)</sup>
3						of Dominant s all Strata:	1	(B)
4				•		ant Species		_(-/
5						W, or FAC:	100.00%	(A/B)
	0	= Total Cover				,		
Sapling/Shrub stratun (Plot size: 15' Radius )				Prevale	nce Index	Workshee	et .	
1					Cover of:			
2				OBL spe	_	0 x 1		_
3		· ——		FACW s	· _	0 x 2		_
5				FAC spe	_	80 x 3 0 x 4		_
<u> </u>	0	= Total Cover		UPL spe	_	20 x 5		_
Herb stratum (Plot size: 5' Radius )		10101 00101		Column	_	100 (A)	340	(B)
1 Setaria pumila Yellow Bristle Grass	80	Υ	FAC	Prevaler	nce Index		3.40	_` ′
2 Euphorbia esula Leafy Spurge	10		UPL			•		_
3 Physalis pubescens Husk-Tomato	10	N	UPL	Hydrop	nytic Veg	etation Ind	icators:	
4				Rap	id test for	hydrophytic	vegetation	n
5				X Dom	inance te	st is >50%		
6				Prev	alence inc	dex is ≤3.0*		
7						adaptation	**	)
8		<del></del> .			porting dat arate shee	ta in Remar	ks or on a	
9 10				l — ·		•	4 . 4: 4	
	100	= Total Cover			olematic ny Ilain)	ydrophytic v	regetation*	•
Woody vine stratum (Plot size: 30' Radius )		- Total Gover		l — ` ` `	-			
1					•	soil and wetlar ss disturbed o	, ,,	
2		· <del></del> ·		Hyd	rophytic			
	0	= Total Cover		_	etation			
Remarks: (Include photo numbers here or on a separate sheet)				pres	sent?	Y		
Tremains, (include prioto flumbers fiere of off a separate sfieet)								

SOIL Sampling Point: 8U

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	cture	Remarks
0-10	10YR 3/2	100					Silt Loam		
10-18	10YR 3/3	95	7.5YR 4/4	5	С	М	Sandy Loa	am	
*Type: C = 0	Concentration, D =	: Depletio	on. RM = Reduce	d Matrix	MS = Ma	asked Sa	nd Grains	**Location	: PL = Pore Lining, M = Matrix
	oil Indicators:	Ворющ	on, raw raddoo	a main,	IVIO IVIO	aonou ou			ematic Hydric Soils:
	tosol (A1)		Sar	dv Gleve	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			idy Redo		(0.)		k Surface (S7	
	ck Histic (A3)			pped Ma					t or Peat (S3) ( <b>LRR K, L, R</b> )
	drogen Sulfide (A4	.)			ky Minera	ıl (F1)		=	Masses (F12) (LRR K, L, R)
	atified Layers (A5)			-	ed Matrix			-	k Surface (TF12)
	m Muck (A10)			leted Ma		. ,		er (explain in	· · · · · · · · · · · · · · · · · · ·
	oleted Below Dark	Surface			Surface	(F6)		` '	,
	ck Dark Surface (		· · · —		rk Surfac	. ,	*Indi	cators of hydr	ophytic vegetation and wetland
	ndy Mucky Minera	•			essions (				e present, unless disturbed or
_					,	,	,	0,7	problematic
Restrictive	Layer (if observe	м).							
Type:	Layer (II Observe	uj.					Hydri	c soil presen	t? N
Depth (inche	56).						Hydri	c son presen	
					•				
Remarks:									
HYDROLO									
1	drology Indicato								
Primary Indi	<u>cators (minimum c</u>	of one is	required; check a	ll that ap	ply)		<u> </u>		licators (minimum of two required)
Surface	Water (A1)				Fauna (B				Soil Cracks (B6)
	ater Table (A2)				uatic Plan				Patterns (B10)
Saturatio					n Sulfide	-	-		son Water Table (C2)
	larks (B1)				Rhizospl	heres on	Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)			(O.1)		n Visible on Aerial Imagery (C9)
	posits (B3)				e of Redu				or Stressed Plants (D1)
	at or Crust (B4)				ron Redu	ction in T	illed Soils		phic Position (D2)
	oosits (B5) on Visible on Aeria	Ilmagery	(B7)	(C6)	ok Surfac	o (C7)		FAC-Net	ıtral Test (D5)
	/ Vegetated Conca		· · ·		ck Surfac r Well Da				
	tained Leaves (B9)				xplain in I		1		
	` '			Other (E	лріант ін і	(Ciliants)			
Field Obser Surface water		Yes	No	Х	Depth (i	nches).			
		Yes	No	$\frac{\lambda}{X}$	Depth (i			- Inc	licators of wetland
ivvater table	nresent?		110					_	
	present? resent?		No.	Х	Deoin (i	nches):			varology bresent? IN I
Saturation p	resent?	Yes	No	X	Depth (ii	nches):		-   '''	/drology present? N
Saturation p (includes ca	resent? pillary fringe)	Yes			•		spections) if	-	varology present? N
Saturation p (includes ca	resent?	Yes			•		spections), if	-	varology present? N
Saturation p (includes ca	resent? pillary fringe)	Yes			•		spections), if	-	varology present? N
Saturation p (includes ca Describe red Remarks:	resent? pillary fringe)	Yes m gauge	, monitoring well,	aerial ph	notos, pre	evious ins		available:	varology present? N

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sid		_	<b>n</b> Sampling	Date:	9/25/2018	8
Applicant/Owner: South Dakota Department of Transportation		State:	South D	akota	Sampling I		W8	
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh	ip, Range:		S32 T101N	R49W	
Landform (hillslope, terrace, etc.): footslope			relief (conca			C	oncave	
Slope (%): 1 Lat: 43° 30' 37.732" N		_	° 43' 53.7		Datum:	UTM NAI	D83 Zone 1	14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes		<u> </u>		l Classifica	tion:	PE	MA .	
Are climatic/hydrologic conditions of the site typical for this time	of the vear?				in in remar			
Are vegetation , soil , or hydrology	•	ly disturbed?		, ,		al circumst	anasa"	
Are vegetation , soil , or hydrology	-	roblematic?			Are norm		esent? Y	'es
SUMMARY OF FINDINGS				(If neede	ed, explain	-		
Hydrophytic vegetation present?					<del>, , ,</del>			
Hydric soil present?		Is the sa	ampled are	a within a	wetland?		Υ	
Indicators of wetland hydrology present?			ptional wetla			tland 8	<del></del>	
		,00, 0	- Tronai Would					
Remarks: (Explain alternative procedures here or in a separate	report.)							
Sample Point collected in Wetland 8.								
<b>VEGETATION</b> Use scientific names of plants.				1				
T 0(-1	Absolute	Dominant	Indicator		nce Test V			
Tree Stratum (Plot size: 30' Radius )	% Cover	Species	Status		of Dominar OBL, FACV		4	<b>(\</b> \)
	_					_		_(A)
3	_				l Number of cies Across		1	(B)
4					of Dominar	_		_(_)
5					OBL, FACV		100.00%	(A/B)
	0	= Total Cover						-
Sapling/Shrub stratun (Plot size: 15' Radius )				Prevale	nce Index \	Worksheet	t	
1					Cover of:			
2	_			OBL spe	_	0 x 1 =		_
3	_			FACW s	_	90 x 2 =		_
5				FAC spe	_	10 x 3 =		_
	0	= Total Cover		UPL spe	·	0 x5=		_
Herb stratum (Plot size: 5' Radius )		10101 00101		Column	_	100 (A)	210	(B)
1 Phalaris arundinacea Reed Canary Grass	50	Υ	FACW	Prevaler	nce Index =		2.10	-` ′
2 Cyperus esculentus Chufa	15		FACW					_
3 Echinochloa crus-galli Large Barnyard Grass	15	N	FACW	Hydrop	hytic Vege	tation Indi	cators:	
4 Setaria pumila Yellow Bristle Grass	10	N	FAC	X Rap	id test for h	ydrophytic	vegetation	1
5 Persicaria pensylvanica Pinkweed	10	N	FACW	X Don	ninance test	t is >50%		
6				X Prev	alence inde	ex is ≤3.0*		
7					phological a			
8					oorting data		s or on a	
9	_				arate sheet)	-		
10	100	= Total Cover			olematic hyd Iain)	drophytic ve	egetation <sup>*</sup>	
Woody vine stratum (Plot size: 30' Radius )	100	- TOLAI COVEI		<u>  —                                   </u>	•			
1					rs of hydric so resent, unless			
2	_				rophytic			
_	0	= Total Cover		veg	etation			
Demonitor (Include what were have				pres	sent?	Y		
Remarks: (Include photo numbers here or on a separate sheet)								

SOIL Sampling Point: 8W

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	ent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featu	<u>ıres</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-2	10YR 2/1	100					Silt Loam		
2-10	10YR 4/1	80	10YR 5/8	20	С	М	Silt Loam		
10-20	10YR 5/1	80	10YR 5/6	20	С	PL	Silt Loam		
10-20	10111 3/1	00	10111 3/0	20	C	1 L	Oilt Loain		
*Type: C = C	oncentration, D =	Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	: PL = Pore Lining, M = Matrix
	il Indicators:								ematic Hydric Soils:
Hist	osol (A1)		San	dy Gleye	d Matrix	(S4)	Coa	ast Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )
—— Hist	ic Epipedon (A2)		San	dy Redo	x (S5)		Dar	k Surface (S7	() (LRR K, L)
Blac	ck Histic (A3)		Stri	oped Mat	rix (S6)		5 cr	m Mucky Peat	or Peat (S3) ( <b>LRR K, L, R</b> )
Hyd	rogen Sulfide (A4	.)	Loa	my Muck	y Minera	ıl (F1)	Iron	-Manganese	Masses (F12) ( <b>LRR K, L, R</b> )
Stra	tified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)	Ver	y Shallow Dar	k Surface (TF12)
	n Muck (A10)			leted Ma			Oth	er (explain in	remarks)
	leted Below Dark		· · · · · · · · · · · · · · · · · · ·		Surface	. ,			
	k Dark Surface (/	•			rk Surfac				ophytic vegetation and wetland
San	dy Mucky Minera	l (S1)	Rec	lox Depre	essions (	F8)	hyd	rology must b	e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydrid	c soil presen	t? Y
Depth (inche	es):								
Remarks:									
HYDROLO	OGY								
	drology Indicato	rs:							
1	cators (minimum		required: check a	ll that an	nlv)		(	Secondary Inc	dicators (minimum of two required)
	Water (A1)	or oric is	required, crieck a	•	Fauna (B	13)	<u> </u>		Soil Cracks (B6)
	ter Table (A2)				uatic Plan				Patterns (B10)
X Saturation			-			Odor (C1	)		son Water Table (C2)
	arks (B1)					-	Living Roots		Burrows (C8)
Sedimen	t Deposits (B2)			(C3)			•	Saturatio	n Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)		·	Presence	e of Redu	iced Iron	(C4)	Stunted	or Stressed Plants (D1)
Algal Ma	t or Crust (B4)		<u> </u>		ron Redu	ction in Ti	illed Soils		phic Position (D2)
	osits (B5)			(C6)				X FAC-Neu	ıtral Test (D5)
	on Visible on Aeria		· ·		ck Surfac				
	Vegetated Conca		e (B8)	i	r Well Da				
	tained Leaves (B9)			Other (E	xpıaın ın ı	Remarks)			
Field Obser		V	NI_	V	Donth /	h \·			
Surface water	•	Yes	X No	Х	Depth (in		5	In a	licators of wetland
Water table   Saturation pi		Yes Yes	X No		Depth (ii		5 0	_	/drology present?
(includes car		103			Dopui (II		<u> </u>	·   '''	
	orded data (strea	m dalido	monitoring well	aerial nh	notoe pro	avioue inc	enections) if	available:	
Pescine ied	orueu uata (Stied	yauye	, monitoring well,	αστιαί μί	ioios, pre	vious IIIS	, pecuons <i>)</i> , 11	a valiabic.	
Remarks:									
	t precipitation o	condition	ns were determ	nined "V	Vetter th	nan norr	nal" (Appe	ndix C).	
	- p p. (callott)		40.0111				(, , , , , , , ,	· · · · · · · · · · · · · · · · · · ·	

## WETLAND DETERMINATION DATA FORM - Midwest Pegion

Project/Site PCN 000S: I-229 Exit 3 Reconstruction			oux Falls/Mi	_	g Date: 9/25/2018
Applicant/Owner: South Dakota Department of Transportation		State:	South D		
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh	ip, Range:	S32 T101N R49W
Landform (hillslope, terrace, etc.):  Backslope				ave, convex, none):	Concave
Slope (%): 6 Lat: 43° 30' 36.159" N		_	96° 43' 58.7	· · · · · · · · · · · · · · · · · · ·	UTM NAD83 Zone 14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes				I Classification:	PEMA
Are climatic/hydrologic conditions of the site typical for this time of	of the year?			If no, explain in rema	
Are vegetation , soil , or hydrology Are vegetation , soil , or hydrology SUMMARY OF FINDINGS	significantl	ly disturbed? roblematic?		Are "norm	mal circumstances"  present? Yes
				(II fleeded, explair	n any answers in remarks.)
Hydrophytic vegetation present?  N		1-41			N.
Hydric soil present? N			-	a within a wetland?	N
Indicators of wetland hydrology present? N		If yes, or	otional wetla	ınd site ID:	
Remarks: (Explain alternative procedures here or in a separate r	eport.)				
Sample Point collected adjacent to Wetland 9.					
<b>VEGETATION</b> Use scientific names of plants.					
	Absolute	Dominant	Indicator	Dominance Test	Worksheet
<u>Tree Stratum</u> (Plot size: <u>30' Radius</u> ) 1	% Cover	Species	Status	Number of Domina that are OBL, FAC	
2				Total Number of	of Dominant
3				Species Acros	<del></del> ` ' '
5				Percent of Domina that are OBL, FAC	·
5	0	= Total Cover		that are OBL, FAC	W, or FAC: 50.00% (A/B)
Sapling/Shrub stratun     (Plot size: 15' Radius )       1        2        3        4        5				Prevalence Index Total % Cover of: OBL species FACW species FAC species FACU species	0 x 1 = 0 0 x 2 = 0 50 x 3 = 150 30 x 4 = 120
3	0	= Total Cover		UPL species	$\frac{30}{20} \times 5 = \frac{120}{100}$
Herb stratum       (Plot size: 5' Radius )         1 Setaria pumila       Yellow Bristle Grass	50	Y	FAC	Column totals Prevalence Index	100 (A) 370 (B)
2 Conyza canadensis Horeseweed	20	<u>Y</u>	UPL		
3 Humulus japonicus Japanese Hop	15	N	FACU	' ' '	etation Indicators:
4 Arctium minus Lesser Burrdock 5 Cirsium arvense Canadian Thistle	<u>5</u>	N	FACU FACU	Dominance tes	hydrophytic vegetation
5 Cirsium arvense Canadian Thistle 6 Bromus inermis Smooth Brome	5	N	FACU	Prevalence in	
7			17100	<del></del>	
8					adaptations* (provide ta in Remarks or on a et)
10	100	= Total Cover		I —	ydrophytic vegetation*
Woody vine stratum (Plot size: 30' Radius )  1				*Indicators of hydric s	soil and wetland hydrology must be ss disturbed or problematic
2	0	= Total Cover		Hydrophytic vegetation	
	v	. 5.0. 50101		present?	N
Remarks: (Include photo numbers here or on a separate sheet)					

SOIL Sampling Point: 9U

Depth (Inches)     Matrix (Inches)     Redox Features       Color (moist)     %     Color (moist)     %       Type*     Loc**     Texture     Remarks	
	1
0-10 10YR 4/3 100     Sand	
10-20 10YR 4/2 100 Sandy Loam	
10 20 10 11 11 11 11 11 11 11 11 11 11 11 11	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M	= Matrix
Hydric Soil Indicators: Indicators for Problematic Hydric Soils:	Wattix
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) (LRR K, L, I	R)
Histic Epipedon (A2)  Sandy Redox (S5)  Dark Surface (S7) (LRR K, L)	,
Black Histic (A3)  Stripped Matrix (S6)  5 cm Mucky Peat or Peat (S3) (LRR K,	. L. R)
Hydrogen Sulfide (A4)  Loamy Mucky Mineral (F1)  Iron-Manganese Masses (F12) (LRR K	
Stratified Layers (A5)  Loamy Gleyed Matrix (F2)  Very Shallow Dark Surface (TF12)	, , ,
2 cm Muck (A10) Depleted Matrix (F3) Other (explain in remarks)	
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	
Thick Dark Surface (A12)  Depleted Dark Surface (F7)  *Indicators of hydrophytic vegetation and	d wetland
Sandy Mucky Mineral (S1)  Redox Depressions (F8)  hydrology must be present, unless distu	
problematic	
Restrictive Layer (if observed):	
Type: Hydric soil present? N	
Depth (inches):	
Remarks:	
LIVEROLOGY	
HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)  Secondary Indicators (minimum of the secondary (min	
Confee Mater (A4)	wo required)
Surface Water (A1) Aquatic Fauna (B13) Surface Soil Cracks (B6)	wo required)
High Water Table (A2)  True Aquatic Plants (B14)  Drainage Patterns (B10)	wo required)
High Water Table (A2)  Saturation (A3)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Drainage Patterns (B10)  Dry-Season Water Table (C2)	wo required)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots	
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots  (C3)  Saturation Visible on Aerial Image	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Drift Deposits (B3)  True Aquatic Plants (B14)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Image Patterns (B10)  Presence of Reduced Iron (C4)  Stunted or Stressed Plants (D1)	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Drainage Patterns (B10)  Drainage Patterns (B10)  Crayfish Burrows (C8)  Saturation Visible on Aerial Image Patterns (B10)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Geomorphic Position (D2)	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Drainage Patterns (B10)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  True Aquatic Plants (B14)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Image Patterns (B10)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils  Geomorphic Position (D2)  FAC-Neutral Test (D5)	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Oxidized Rhizospheres on Living Roots  (C3)  Saturation Visible on Aerial Imagery (B7)  True Aquatic Plants (B14)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Saturation Visible on Living Roots  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  FAC-Neutral Test (D5)  Thin Muck Surface (C7)	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Oxidized Rhizospheres on Living Roots  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Recent Iron Reduction in Tilled Soils  (C6)  Thin Muck Surface (C7)  Gauge or Well Data (D9)	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Dry-Season Water Table (C2)  Oxidized Rhizospheres on Living Roots  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Saturation Visible on Aerial Imagery (C3)  Saturation Visible on Aerial Imagery (B7)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water Aguatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Saturation Visible on Aerial Imagery (B7)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  True Aquatic Plants (B14)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  FAC-Neutral Test (D5)  Gauge or Well Data (D9)  Other (Explain in Remarks)	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water Aguatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots  (C3)  Sediment Deposits (B2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Recent Iron Reduction in Tilled Soils  (C6)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water Stained Leaves (B9)  Field Observations:  Surface water present?  Water Marks (B1)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Stunted or Stressed Plants (D1)  Recent Iron Reduction in Tilled Soils  (C6)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):  Indicators of wetland	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water Able (B8)  Field Observations:  Surface water present?  Water Table (A2)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Stunted or Stressed Plants (D1)  Recent Iron Reduction in Tilled Soils  (C6)  FAC-Neutral Test (D5)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):  Indicators of wetland	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface water present?  Water table (A2)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Recent Iron Reduced Iron (C4)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  (C6)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):  Indicators of wetland Saturation present?  Yes  No  X  Depth (inches):  Indicators of wetland hydrology present?  (includes capillary fringe)	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):  Water Idable (A2)  True Aquatic Plants (B14)  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Crayfish Burrows (C8)  Saturation Visible on Aerial Image  Crayfish Burrows (C8)  Saturation Visible on Aerial Image  Saturation Visible on Aerial Image  Geomorphic Position (D2)  FAC-Neutral Test (D5)  FAC-Neutral Test (D5)  Indicators of wetland hydrology present?	gery (C9)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface water present?  Water table (A2)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (B7)  Recent Iron Reduced Iron (C4)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  (C6)  Thin Muck Surface (C7)  Gauge or Well Data (D9)  Other (Explain in Remarks)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):  Indicators of wetland Saturation present?  Yes  No  X  Depth (inches):  Indicators of wetland hydrology present?  (includes capillary fringe)	gery (C9)
High Water Table (A2) Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water-Stained Leaves (B9)  Field Observations: Surface water present? Water table present? Yes No X Depth (inches): Water Table (A2) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (B7) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)  Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water-Stained Leaves (B9) Other (Explain in Remarks)  Field Observations: Surface water present? Yes No X Depth (inches): Indicators of wetland hydrology present? (includes capillary fringe)  Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	gery (C9)

Project/Site Interstate 229 Exit 3 Reconstruction		County: Si		•	<b>n</b> Sampling	ı Date:	9/25/201	18
Applicant/Owner: SDDOT		State:	South D		Sampling		9W	
Investigator(s): Rebecca Beduhn			ion, Townsh			S32 T101N		
Landform (hillslope, terrace, etc.):  Toeslope	•		relief (conc		. none):		oncave	
Slope (%): 2 Lat: 43° 30' 36.286" N		_	96° 43' 59.2		Datum:		D83 Zone	14N
Soil Map Unit Name: Davis loam, 0 to 2 percent slopes	•			l Classifica	-		MA	
Are climatic/hydrologic conditions of the site typical for this time	e of the year?			If no, expla			1417 (	
Are vegetation , soil , or hydrology	•	ly disturbed?		-		•		
Are vegetation , soil , or hydrology	_	roblematic?			Are morm	nal circumst pr	ances" esent? \	Yes
SUMMARY OF FINDINGS		robiomano.		(If neede	ed explain	any answe		
Hydrophytic vegetation present?				(	-a, ->-pa	a, a		
Hydric soil present?		Is the s	ampled are	a within a	wetland?		Υ	
Indicators of wetland hydrology present?			ptional wetla			etland 9	<del></del>	
		11 you, o	phonai would	ind one ib.		Stiding 0		
Remarks: (Explain alternative procedures here or in a separate	e report.)							
Sample Point collected in Wetland 9.								
<b>VEGETATION</b> Use scientific names of plants.				1				
To Otto Lorenza (DLA size and De livera)	Absolute	Dominant	Indicator			Worksheet		
<u>Tree Stratum</u> (Plot size: <u>30' Radius</u> ) 1 <i>Acer saccharinum Silver Maple</i>	% Cover 10	Species Y	Status FACW			nt Species W, or FAC:	5	<b>(\</b> \)
2 Silver Maple			FACW			-		_(A)
3						f Dominant s all Strata:	5	(B)
4						nt Species		_(-/
5						W, or FAC:	100.00%	(A/B)
	10	= Total Cover				-		
Sapling/Shrub stratun (Plot size: 15' Radius )						Workshee	į	
1					Cover of:			
2				OBL spe	_	15 x 1 =		_
3				FACW s	_	80 x 2 =		_
5				FAC spe		0 x4=		_
<u> </u>		= Total Cover		UPL spe	_	0 x 5 =		_
<u>Herb stratum</u> (Plot size: 5' Radius )				Column	_	110 (A)	220	(B)
1 Phalaris arundinacea Reed Canary Grass	40	Υ	FACW	Prevaler	 		2.00	_` `
2 Typha latifolia Broad-Leaf Cat-Tail	15	Υ	OBL			-		_
3 Rumex crispus Curly Dock	15	Y	FAC	Hydroph	ytic Vege	etation Indi	cators:	
4 Urtica dioica Stinging Nettle	15	Υ	FACW			nydrophytic	vegetation	n
5 Persicaria lapathifolia Dock-Leaf Smartweed	10	N	FACW	I		st is >50%		
6 Acer saccharinum Silver Maple	5	N	FACW	X Prev	alence ind	lex is ≤3.0*		
7						adaptations		
9					oorting data arate sheet	a in Remarl •\	s or on a	
10						را drophytic v	egetation'	*
	100	= Total Cover		(exp	-	rdiopriytic v	sgetation	
Woody vine stratum (Plot size: 30' Radius )				<u> </u>	,	oil and watlan	d hydrology	must bo
1					•	oil and wetlan ss disturbed or	, ,,	
2				_	rophytic			
	0	= Total Cover		_	etation	V		
Remarks: (Include photo numbers here or on a separate sheet	.)			pres	ent?	Y		
,	,							

SOIL Sampling Point: 9W

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-2	10YR 2/1	100					Silt Loam		
2-10	10YR 4/1	80	10YR 5/8	20	С	М	Silt Loam		
10-20	10YR 5/1	80	10YR 5/6	20	С	PL	Silt Loam		
10-20	10111 3/1	00	10111 3/0	20		1 L	Oilt Loain		
*Type: C = C	oncentration, D =	Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	: PL = Pore Lining, M = Matrix
	il Indicators:	<u> </u>	,	,					ematic Hydric Soils:
Hist	osol (A1)		San	dy Gleye	ed Matrix	(S4)	Coa	ast Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )
— Hist	ic Epipedon (A2)		San	dy Redo	x (S5)		Dar	k Surface (S7	) (LRR K, L)
Blac	ck Histic (A3)		Stri	oped Mat	trix (S6)		5 cr	m Mucky Peat	or Peat (S3) ( <b>LRR K, L, R</b> )
Hyd	rogen Sulfide (A4	.)	Loa	my Muck	y Minera	ıl (F1)	Iron	-Manganese	Masses (F12) ( <b>LRR K, L, R</b> )
Stra	tified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)	Ver	y Shallow Dar	k Surface (TF12)
	n Muck (A10)			leted Ma			Oth	er (explain in	remarks)
	leted Below Dark		· · · · · · · · · · · · · · · · · · ·		Surface	. ,			
	k Dark Surface (/	•			rk Surfac				ophytic vegetation and wetland
San	dy Mucky Minera	l (S1)	Rec	lox Depre	essions (	F8)	hyd	rology must b	e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydrid	c soil presen	t? Y
Depth (inche	es):								
Remarks:									
HYDROLO	OGY								
	drology Indicato	rs:							
1			required; check a	ll that an	nlv)		g	Secondary Inc	dicators (minimum of two required)
	Water (A1)	or oric is	required, crieck a	-	<del>נייט</del> Fauna (B	13)	<u> </u>		Soil Cracks (B6)
	ter Table (A2)				uatic Plan				Patterns (B10)
X Saturation			-			Odor (C1	)		son Water Table (C2)
	arks (B1)					-	Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)	•		Ü		n Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)		-	Presence	e of Redu	ced Iron	(C4)	Stunted of	or Stressed Plants (D1)
Algal Ma	t or Crust (B4)		·	Recent I	ron Redu	ction in T	lled Soils		phic Position (D2)
	osits (B5)			(C6)				X FAC-Neu	ıtral Test (D5)
	on Visible on Aeria		· ·		ck Surfac				
	Vegetated Conca		e (B8)	i	r Well Da				
	tained Leaves (B9)		-	Other (E	xplain in i	Remarks)			
Field Obser		.,		.,	<b>5</b>				
Surface water	•	Yes	No No	Х	Depth (i		4		liantary of westerned
Water table		Yes	X No		Depth (i		1 0	_	dicators of wetland
Saturation procession (includes care		Yes	X No		Depth (i	1101165).	U	-   '''	/drology present? Y
		m gougo	monitoring well	aerial nh	otos pro	vious iss	nections) if	available:	
Describe rec	อเน <del>ะ</del> น นสเส (Stiea	ııı yauge	, monitoring well,	аспатрг	iotos, pre	vious ins	pecions), II	avalidDI <del>C</del> .	
Remarks:									
	t precipitation o	condition	ns were determ	nined "\/	Vetter th	nan nori	nal" (Anne	ndix C.)	
,	. proorpitation	Januaria	is note determ	V	. 5 11	.311 11011	a. (/ ippo		

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sid		•	Sampling	Date:	9/25/201	18
Applicant/Owner: South Dakota Department of Transportation		State:	South D		Sampling I		10U	
Investigator(s): Rebecca Beduhn		Sect	ion, Townsh	ip, Range:		S32 T101N	R49W	
Landform (hillslope, terrace, etc.):  Backslope			relief (conca		k. none):	Co	oncave	
Slope (%): 3 Lat: 43° 30' 31.986" N		_	96° 43' 53.5		Datum:		D83 Zone	14N
Soil Map Unit Name: Chaska loam, channeled		<u> </u>		l Classifica	· —		MA	
Are climatic/hydrologic conditions of the site typical for this time of	of the year?				in in remar			
Are vegetation , soil , or hydrology	•	ly disturbed?		-		al circumst	"	
Are vegetation , soil , or hydrology	_	roblematic?			Are norm		esent? \	⁄es
SUMMARY OF FINDINGS				(If neede	ed. explain	any answei		
Hydrophytic vegetation present?					· ·	<u>,                                      </u>		
Hydric soil present?		Is the sa	ampled area	a within a	wetland?		N	
Indicators of wetland hydrology present?			otional wetla				<u></u> -	
		500, 0	onona wona	ind one ib.				
Remarks: (Explain alternative procedures here or in a separate re	eport.)							
Sample Point collected adjacent to Wetland 1.								
<b>VEGETATION</b> Use scientific names of plants.				1				
T- 0(-1 (D) 1 00(D) (5 )	Absolute	Dominant	Indicator		nce Test V			
Tree Stratum (Plot size: 30' Radius )	% Cover	Species	Status		of Dominar OBL, FACV		2	<b>(\</b> \)
2						_		_(A)
3					Number of cies Across		3	(B)
4					of Dominar	_		_(_/
5					OBL, FACV	•	66.67%	(A/B)
	0	= Total Cover						
Sapling/Shrub stratun (Plot size: 15' Radius )				Prevale	nce Index	Worksheet	:	
1 Rhamnus cathartica European Buckthorn	20	Υ	FAC		Cover of:			
2				OBL spe		0 x 1 =		_
3				FACW s	_	0 x 2 =		_
5				FAC spe		60 x 3 =		_
<u> </u>	20	= Total Cover		UPL spe		10 x 5 =		_
Herb stratum (Plot size: 5' Radius )				Column	_	120 (A)	430	(B)
1 Setaria pumila Yellow Bristle Grass	30	Υ	FAC	Prevaler	ce Index =		3.58	_` ′
2 Bromus inermis Smooth Brome	20	<u> </u>	FACU				0.00	_
3 Carex pensylvanica Pennsylvania sedge	10	N	UPL	Hydropl	nytic Vege	tation Indi	cators:	
4 Rubus allegheniensis Allegheny Blackberry	10	N	FACU	Rapi	d test for h	ydrophytic	vegetation	า
5 Rhamnus cathartica European Buckthorn	10	N	FAC	X Dom	inance test	t is >50%		
6 Taraxacum officinale Common Dandelion	10	N	FACU	Prev	alence inde	ex is ≤3.0*		
7 Glechoma hederacea Groundivy	10	N	FACU			adaptations		
8						in Remark	s or on a	
9					rate sheet)			
10	100	= Total Cover		exp	-	drophytic ve	egetation <sup>*</sup>	
Woody vine stratum (Plot size: 30' Radius )						il and wetland		
1						s disturbed or	problemation	;
2		-T-4-1 O		_	rophytic etation			
	0	= Total Cover		_	ent?	Υ		
Remarks: (Include photo numbers here or on a separate sheet)								

SOIL Sampling Point: 10U

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Re	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	kture	Remarks
0-9	10YR 4/2	100					Sandy loa	m	
9-18	10YR 4/3	100					Sand		
0.0	101111110								
*Type: C = C	Concentration, D =	: Depletic	on. RM = Reduce	d Matrix	MS = Ma	asked Sa	nd Grains	**Location	: PL = Pore Lining, M = Matrix
	il Indicators:	Doplotic	711, 1111 1104400	a mann,	1110 1110	aonoa oa			ematic Hydric Soils:
	osol (A1)		Sar	dv Gleve	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			idy Redo		(0.)		rk Surface (S7	
	ck Histic (A3)			pped Ma					t or Peat (S3) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	.)			xy Minera	l (F1)			Masses (F12) (LRR K, L, R)
	tified Layers (A5)	-		-	, ed Matrix	. ,		_	k Surface (TF12)
	n Muck (A10)			leted Ma		• ,		er (explain in	· · · · · · · · · · · · · · · · · · ·
	leted Below Dark	Surface			Surface	(F6)			,
	k Dark Surface (		· · · · —		rk Surfac		*Indi	cators of hydr	ophytic vegetation and wetland
San	dy Mucky Minera	(S1)			essions (				e present, unless disturbed or
		, ,			,	•	,	0,7	problematic
Restrictive	Layer (if observe	м).							
Type:	Layer (II Observe	uj.					Hydri	c soil presen	t? N
Depth (inche	·e).				•		ilyan	c son presen	
Remarks:									
HYDROLO									
Wetland Hy	drology Indicato	rs:							
Primary India	cators (minimum o	of one is	required; check a	ll that ap	ply)		<u>;</u>	Secondary Inc	dicators (minimum of two required)
Surface '	Water (A1)				Fauna (B				Soil Cracks (B6)
	ter Table (A2)				uatic Plan				Patterns (B10)
X Saturation	` '				n Sulfide	-			son Water Table (C2)
	arks (B1)				Rhizospl	neres on l	Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)			( <b>0</b> .1)		n Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu				or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in Ti	lled Soils		phic Position (D2)
	osits (B5) on Visible on Aeria	l Imagery	(B7)	(C6)	ok Surfoo	o (C7)		FAC-Net	ıtral Test (D5)
	Vegetated Conca		· · ·		ck Surfac r Well Da				
	tained Leaves (B9)				xplain in I				
				Other (E	лріант ін і	(Ciliants)			
Field Obser Surface water		Yes	No	Х	Depth (i	nchee).			
Water table	•	Yes	No	$\frac{\lambda}{X}$	Depth (i			- Inc	licators of wetland
Saturation pr		Yes	X No		Depth (i		6	_	/drology present?
(includes car		. 55						-	
	orded data (strea	m dalide	monitoring well	aerial nh	notos pre	evious ins	spections) if	available:	
20001100 100	2.404 data (5116a	gaage	,ororg well,	acriai pi	.5.55, pre		. r 00010110 <i>j</i> , 11	aranabio.	
Remarks:									
	t precipitation o	conditio	ns were detern	nined "V	Vetter th	nan norr	nal" (Appe	ndix C).	
	, , ,			- •	<b>-</b> -		(. 1-13 °	- /·	

WETLAND DETERMIN  Project/Site PCN 000S: I-229 Exit 3 Reconstruction				•	<b>າ</b> Sampling Dat	e: 9	/25/2018	8
Applicant/Owner: South Dakota Department of Transportation		State:	South D		Sampling Poir		10W	
Investigator(s): Rebecca Beduhn			on, Townsh			 T101N R		
Landform (hillslope, terrace, etc.): Toeslope			relief (conc	-		Cond		
Slope (%): 2 Lat: 43° 30' 31.865" N		_	96° 43' 53.7			TM NAD8:		14N
Soil Map Unit Name: Chaska loam, channeled		Long.		l Classifica		PEMA		
Are climatic/hydrologic conditions of the site typical for this time of	of the year?				in in remarks)	1 = 1017	`	
Are vegetation , soil , or hydrology		ly disturbed?		-	·			
Are vegetation , soil , or hydrology	-	roblematic?			Are "normal c		ces" ent? Y	'es
SUMMARY OF FINDINGS	riatarany p	robiomatio.		(If neede	ed, explain any	•		
Hydrophytic vegetation present?				(	<u> </u>			,
Hydric soil present?		Is the sa	mpled are	a within a	wetland?	Υ		
Indicators of wetland hydrology present?			tional wetla			110		
		11 900, 01	Alonai Wolle	ind one ib.	- VVOIGIN	10		
Remarks: (Explain alternative procedures here or in a separate re	eport.)							
Sample Point collected in Wetland 10.								
<b>VEGETATION</b> Use scientific names of plants.				1				
T- 0(-1 (D) 1 00(D) (1 )	Absolute	Dominant	Indicator		nce Test Wor			
Tree Stratum (Plot size: 30' Radius ) 1	% Cover	Species	Status		of Dominant S OBL, FACW, o	•	1	(A)
2					Number of Do		-	_(^)
3					cies Across all		1	(B)
				Percent	of Dominant S	pecies		-` ′
5					OBL, FACW, o		00.00%	(A/B)
	0	= Total Cover						_
Sapling/Shrub stratun (Plot size: 15' Radius )					nce Index Wo	rksheet		
1					Cover of:		_	
				OBL spe			0	_
3				FACW s	·	x 2 = x 3 =	200	-
5				FACU sp			0	-
	0	= Total Cover		UPL spe		x 5 =	0	-
Herb stratum (Plot size: 5' Radius )				Column		(A)	200	(B)
1 Phalaris arundinacea Reed Canary Grass	75	Υ	FACW	Prevaler	ice Index = B/A	<del>\</del> =	2.00	-
2 Echinochloa crus-galli Large Barnyard Grass	15	N	FACW					-
3 Cyperus esculentus Chufa	10	N	FACW	Hydroph	nytic Vegetati	on Indicat	tors:	
4				I — ·	d test for hydre		getation	1
5					inance test is			
6				X Prev	alence index is	s ≤3.0°		
8					ohological ada			
9					oorting data in arate sheet)	Remarks	or on a	
10	100	- Total Cayor		Prob	lematic hydror	ohytic vege	etation*	
Woody vine stratum (Plot size: 30' Radius )	100	= Total Cover		(exp				
1					rs of hydric soil an resent, unless dis			nust be
2					rophytic			
	0	= Total Cover		vege	etation			
Describe (festal al festal a la completa de la completa del completa de la completa de la completa del completa de la completa del completa de la completa del completa de la completa del com				pres	ent?	Υ		
Remarks: (Include photo numbers here or on a separate sheet)								

SOIL Sampling Point: 10W

rofile Desci Depth	Matrix		R	edox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Text	ure	Remarks
0-6	10YR 2/1	100					Sand		
6-10	10YR 4/2	90	7.5YR 4/6	10	С	PL	Sand		
10-20	10YR 6/1	85	7.5YR 4/6	15	С	M	Sand		
10-20	1011071	00	7.511( 4/0	13		IVI	Janu		
-									
ype: C = C	oncentration, D =	Depletion	on, RM = Reduc	ed Matrix,	, MS = Ma	asked Sa	nd Grains.	**Location	: PL = Pore Lining, M = Matrix
	I Indicators:								ematic Hydric Soils:
Histo	osol (A1)		Sa	andy Gley	ed Matrix	(S4)	Coas	st Prairie Re	dox (A16) ( <b>LRR K, L, R</b> )
Histi	c Epipedon (A2)		Sa	andy Redo	ox (S5)		Dark	Surface (S	7) ( <b>LRR K, L)</b>
Blac	k Histic (A3)		St	ripped Ma	trix (S6)		5 cm	Mucky Pea	it or Peat (S3) ( <b>LRR K, L, R</b> )
Hydr	rogen Sulfide (A4	<b>!</b> )	Lo	amy Mucl	ky Minera	al (F1)	Iron-	Manganese	Masses (F12) (LRR K, L, R)
Strat	tified Layers (A5)	)	Lo	amy Gley	ed Matrix	(F2)	Very	Shallow Da	rk Surface (TF12)
	n Muck (A10)			epleted Ma	, ,		Othe	er (explain in	remarks)
	leted Below Dark		· · ·	edox Dark		. ,			
	k Dark Surface ( <i>i</i>			epleted Da		, ,			rophytic vegetation and wetland
Sand	dy Mucky Minera	I (S1)	R	edox Depr	essions (	(F8)	hydro	ology must l	pe present, unless disturbed or
									problematic
epth (inches	s):				- -		Hydric	soil presei	nt? Y
epth (inches	s):				- -		Hydric	soil presei	nt? <u>Y</u>
epth (inches					- -		Hydric	soil presei	nt? <u>Y</u>
epth (inchesemarks:	GY	rs:			-		Hydric	soil presei	nt? <u>Y</u>
epth (inchesemarks:  YDROLO	GY drology Indicato		required; check	all that ar	- -				
epth (inchesemarks:  YDROLO  etland Hydrimary Indic	GY drology Indicato ators (minimum o		required; check			13)		econdary In	dicators (minimum of two requi
YDROLO etland Hydrimary Indic	GY drology Indicato eators (minimum o		required; check	Aquatic	Fauna (B	,		econdary In Surface	dicators (minimum of two requi Soil Cracks (B6)
YDROLO etland Hydrimary Indic Surface V High Wat	drology Indicato sators (minimum ovater (A1) er Table (A2)		required; check	Aquatic True Aq	Fauna (B uatic Plar	,	<u>S</u>	econdary In Surface Drainag	dicators (minimum of two requi
YDROLO etland Hyd imary Indic Surface V High Wat	drology Indicato eators (minimum of Water (A1) der Table (A2) n (A3)		required; check	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1	<u>S</u>	econdary In Surface Drainag Dry-Sea	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10)
YDROLO etland Hydrimary Indic Surface V High Wate Saturation Water Ma Sediment	PGY Irology Indicato eators (minimum of Water (A1) erer Table (A2) n (A3) arks (B1) t Deposits (B2)		required; check	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1	<u>S</u>	econdary In Surface Drainag Dry-Sea Crayfish Saturati	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9)
YDROLO YDROLO Yetland Hydrimary Indic Surface V High Wate Saturation Water Ma Sediment Drift Depo	Arks (B1) t Deposits (B3)		required; check	Aquatic True Aq Hydroge Oxidized (C3) Presence	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu	nts (B14) Odor (C1 heres on	S - ) _iving Roots _ (C4)	econdary In Surface Drainag Dry-Sea Crayfish Saturati	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
YDROLO Yetland Hydrimary Indica Surface V High Water Ma Sediment Drift Depo	PGY  Arology Indicato Eators (minimum of Water (A1) For Table (A2) In (A3) For (B1) It Deposits (B2) It Deposits (B3) It or Crust (B4)		required; check	Aquatic True Aq Hydroge Oxidized (C3) Presend	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu	nts (B14) Odor (C1 heres on	S - ) _iving Roots _ (C4)	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
YDROLO Yetland Hydrimary Indica Surface V High Water Ma Sediment Drift Depo	PGY  Arology Indicato Eators (minimum of Water (A1) For Table (A2) In (A3) For (B1) It Deposits (B2) For (B3) It or Crust (B4) For (B5)	of one is	- - - -	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6)	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	ots (B14) Odor (C1 heres on uced Iron uction in T	S - ) _iving Roots _ (C4)	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
YDROLO Yetland Hyd Commary Indication Water Mater Mate	drology Indicato sators (minimum of Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aeria	<u>of one is</u>	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	onts (B14) Odor (C1 heres on uced Iron uction in T	S - ) _iving Roots _ (C4)	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
YDROLO etland Hyd imary Indic Surface V High Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely	drology Indicato eators (minimum of Vater (A1) eer Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) e or Crust (B4) osits (B5) in Visible on Aeria Vegetated Conca	of one is I Imagery ve Surfac	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ack Surfac or Well Da	odor (C1) heres on uced Iron uction in Ti ee (C7) ata (D9)	S  ) Living Roots (C4) Illed Soils	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
YDROLO Yetland Hydrimary Indication Surface V C High Wate C Saturation Water Mater M	PGY  Irology Indicato eators (minimum of Mater (A1) er Table (A2) en (A3) earks (B1) et Deposits (B2) eosits (B3) et or Crust (B4) eosits (B5) en Visible on Aeria Vegetated Conca eained Leaves (B9)	of one is I Imagery ve Surfac	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ack Surfac or Well Da	onts (B14) Odor (C1 heres on uced Iron uction in T	S  ) Living Roots (C4) Illed Soils	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
YDROLO  YDROLO  YDROLO  YDROLO  YDROLO  YDROLO  YDROLO  YDROLO  YOUR HIGH  Surface V  High Water  Sediment  Drift Depo  Algal Mat  Iron Depo  Inundation  Sparsely  Water-Sta  Eld Observ	drology Indicators (minimum of Water (A1) ter Table (A2) in (A3) to Deposits (B2) to Crust (B4) to Crust (B4) to Crust (B5) in Visible on Aeria Vegetated Conca ained Leaves (B9) vations:	of one is I Imagery ve Surfac	(B7) — — — — — — — — — — — — — — — — — — —	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron action in To ee (C7) ata (D9) Remarks)	S  ) Living Roots (C4) Illed Soils	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
YDROLO Vetland Hydrimary Indication Surface V High Water Mater Mat	drology Indicators (minimum of Water (A1) ser Table (A2) in (A3) arks (B1) it Deposits (B2) osits (B3) it or Crust (B4) osits (B5) in Visible on Aeria Vegetated Conca ained Leaves (B9) vations:	of one is I Imagery ve Surfac	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu lron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron uction in The (C7) hata (D9) Remarks) nches):	S  ) Living Roots (C4) Illed Soils	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor X FAC-Ne	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
Surface V X High Wat X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely	PGY  Irology Indicato Eators (minimum of Water (A1) For Table (A2) In (A3) For Arks (B1) It Deposits (B2) For Crust (B4) For Sits (B5) For Visible on Aeria Vegetated Conca For Arian Vegetated Conca For Arian Vegetated Conca For Arian Vegetated Conca For Arian Vegetated Conca For For Arian Vegetated Conca For For For Earl Present?	I Imagery ve Surfac )	(B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B juatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches):	S 	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor X FAC-Ne	dicators (minimum of two requi Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2) utral Test (D5)
YDROLO  etland Hydrimary Indica Surface Volument Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely Water-Sta eld Observ urface water fater table posturation pre	PGY  Irology Indicato Eators (minimum of Water (A1) For Table (A2) In (A3) For Arks (B1) It Deposits (B2) For Crust (B4) For Sits (B5) For Visible on Aeria Vegetated Conca For Arian Vegetated Conca For Arian Vegetated Conca For Arian Vegetated Conca For Arian Vegetated Conca For For Arian Vegetated Conca For For For Earl Present?	I Imagery ve Surfac ) Yes Yes	(B7) ce (B8) No XNo	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B Iuatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu lck Surfac or Well Da Explain in Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches):	S 	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor X FAC-Ne	dicators (minimum of two requisions) Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Phic Position (D2) utral Test (D5)  dicators of wetland
YDROLO  YDROLO  YDROLO  YETANA Hydrimary Indication Surface V  High Water Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely Water-Sta  Yetled Observ Urface water Yetled Cap	PGY  Irology Indicato Eators (minimum of Water (A1) For Table (A2) In (A3) In (A3) It Deposits (B2) It or Crust (B4) It or Crust (B4) It or Crust (B4) It or Crust (B5) In Visible on Aeria Ivegetated Conca Indicate Leaves (B9) Irologous (B9) Irolo	I Imagery ve Surface) Yes Yes Yes	(B7) ce (B8)  X No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (Buatic Plaren Sulfide de Rhizospece of Reduler Reduced Surface or Well Das Explain in Depth (in Dep	nts (B14) Odor (C1 heres on uced Iron action in Ti ee (C7) hata (D9) Remarks) nches): nches): nches):	S Living Roots (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4)	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor X FAC-Ne	dicators (minimum of two requisor Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9 or Stressed Plants (D1) phic Position (D2) utral Test (D5)
YDROLO etland Hyd imary Indic Surface V High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely Water-Sta eld Observ urface water facter table procludes cap	drology Indicators (minimum of Nater (A1) ter Table (A2) in (A3) to Crust (B4) to Crust (B4) to Crust (B5) in Visible on Aeria Vegetated Concalained Leaves (B9) vations: in present? present? present?	I Imagery ve Surface) Yes Yes Yes	(B7) ce (B8)  X No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (Buatic Plaren Sulfide de Rhizospece of Reduler Reduced Surface or Well Das Explain in Depth (in Dep	nts (B14) Odor (C1 heres on uced Iron action in Ti ee (C7) hata (D9) Remarks) nches): nches): nches):	S Living Roots (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4)	econdary In Surface Drainag Dry-Sea Crayfish Saturati Stunted X Geomor X FAC-Ne	dicators (minimum of two requisions) Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Phic Position (D2) utral Test (D5)  dicators of wetland

# **WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sic		_	g Date: 9	9/25/2018	
Applicant/Owner: South Dakota Department of Transportation	<del></del>	State:	South Da	akota Sampling	Point:	11U	
Investigator(s): Rebecca Beduhn		Secti	on, Townshi	ip, Range:	S33 T101N R	49W	
Landform (hillslope, terrace, etc.): Footslope		Local	relief (conca	ive, convex, none):	Con	cave	
Slope (%): 4 Lat: 43° 30' 26.737" N		Long:	96° 43' 53.13	35" W Datum:	UTM NAD8	3 Zone 14N	
Soil Map Unit Name: Chaska loam, channeled			NWI	Classification:	R2UB	G	
Are climatic/hydrologic conditions of the site typical for this time of	of the year?		N (l	f no, explain in rema	urks)		
Are vegetation , soil , or hydrology	significantl	y disturbed?		Are "norr	nal circumstan	ces"	
Are vegetation , soil , or hydrology	naturally pi	roblematic?		,		ent? Yes	
SUMMARY OF FINDINGS				(If needed, explain	n any answers	in remarks.)	
Hydrophytic vegetation present? N							
Hydric soil present?		Is the sa	mpled area	a within a wetland?	N		
Indicators of wetland hydrology present?		If yes, op	tional wetla	nd site ID:			
Remarks: (Explain alternative procedures here or in a separate re	eport.)				<del>,</del>		
Sample Point collected adjacent to Wetland 11.							
VEGETATION Use scientific names of plants.							
·	Absolute	Dominant	Indicator	Dominance Test	Worksheet		
<u>Tree Stratum</u> (Plot size:30' Radius)	% Cover	Species	Status	Number of Domina	ant Species		
1				that are OBL, FAC	W, or FAC:	1 (A)	
2				Total Number o			
3				Species Acros		(B)	
5				Percent of Domina that are OBL, FAC	•	50.00% (A/E	D/
	0	= Total Cover		triat are ODL, I AC	W, 01 FAC	60.00% (A/E	رد
Sapling/Shrub stratun (Plot size: 15' Radius )		10101 00101		Prevalence Index	Worksheet		
1				Total % Cover of:			
2				OBL species	0 x 1 =	0	
3				FACW species	0 x 2 =	0	
4				FAC species	20 x 3 =	60	
5				FACU species	45 x 4 =	180	
(5)	0	= Total Cover		UPL species	0 x 5 =	0 (B)	
Herb stratum (Plot size: 5' Radius )				Column totals	65 (A)	240 (B)	
1 Bromus inermis Smooth Brome	45	<u>Y</u>	FACU	Prevalence Index	= B/A =	3.69	
2 Setaria pumila Yellow Bristle Grass	20	<u> </u>	FAC	Hydrophytic Vege	etation Indica	tors:	_
4				' ' '	hydrophytic ve		
5				Dominance tes		gotation	
6				Prevalence inc	dex is ≤3.0*		
7				Morphological	adaptations* (	provide	
8				supporting dat		••	
9				separate shee	et)		
10		- Total Carra		Problematic hy	ydrophytic veg	etation*	
Woody vine stratum (Plot size: 30' Radius )	65	= Total Cover		(explain)			
Woody vine stratum (Plot size: 30' Radius )				*Indicators of hydric s	soil and wetland hy ss disturbed or pro		е
2				Hydrophytic	25 alotarboa or pro	22.01110110	
	0 :	= Total Cover		vegetation			
Demontos (Include whate sometimes have				present?	N		
Remarks: (Include photo numbers here or on a separate sheet) 35%	% rock (rip	-rap) cover					
Note: This data sheet has been adapted to use the 2016 National							$\dashv$
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: Nati	ional Wetland I	Plant List, versio				y Corps of	
Engineers, Engineer Research and Development Center, Cold Regions Research	aria ⊑nginee	enny Laboratory,	nanover, NH,	and bowar, Chapei Hil	1, NO. (2016)		ļ

US Army Corps of Engineers

SOIL Sampling Point: 11U

Depth Desc	ription: (Descri	~0 tO tH	<u> </u>	Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (mo	oist)	%	Type*	Loc**	Text	ure	Remarks
0-4	10YR 3/2	100	•					Sandy Loar	m	
4+								ROCKS		
-										
						1				
vpe: C = C	oncentration, D =	Depletion	on, RM = Re	educe	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Locatio	n: PL = Pore Lining, M = Matrix
	il Indicators:	•	•			<u> </u>				lematic Hydric Soils:
-	osol (A1)			San	ndy Gleye	ed Matrix	(S4)			edox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)			_	ndy Redo		` '	— Dark	Surface (S	67) (LRR K, L)
	k Histic (A3)			Stri	pped Ma	trix (S6)		5 cm	Mucky Pea	at or Peat (S3) ( <b>LRR K, L, R</b> )
Hyd	rogen Sulfide (A	<b>!</b> )		Loa	my Mucl	ky Minera	al (F1)	Iron-	Manganese	e Masses (F12) ( <b>LRR K, L, R</b> )
Stra	tified Layers (A5)	)		Loa	my Gley	ed Matrix	(F2)	Very	Shallow Da	ark Surface (TF12)
2 cm	n Muck (A10)			Dep	oleted Ma	atrix (F3)		Othe	er (explain ir	n remarks)
Dep	leted Below Dark	Surface	(A11)	Rec	dox Dark	Surface	(F6)			
Thic	k Dark Surface (	A12)		Dep	oleted Da	ark Surfac	ce (F7)	*Indic	ators of hyd	drophytic vegetation and wetland
San	dy Mucky Minera	l (S1)		Rec	dox Depr	essions (	(F8)			be present, unless disturbed or
										problematic
estrictive I	Layer (if observe	ed):								
rpe: Ro	ocks	,						Hydric	soil prese	nt? N
epth (inche						- -		Hydric	soil prese	nt? <u>N</u>
epth (inche						-		Hydric	soil prese	nt? <u>N</u>
epth (inche emarks:	s): <u>4"</u>					-		Hydric	soil prese	nt? <u>N</u>
epth (inche emarks:	s): <u>4"</u>					-		Hydric	soil prese	nt? N
epth (inche emarks: YDROLO etland Hyd	s): 4"  OGY drology Indicato	rs:	required: ch	neck a	all that ar	- -				
epth (inche emarks: YDROLO etland Hyd imary Indic	s): 4"  OGY  drology Indicato cators (minimum	rs:	required; ch	neck a			13)		econdary Ir	ndicators (minimum of two requi
YDROLO etland Hyd imary Indic Surface \( \)	OGY drology Indicatorators (minimum Water (A1)	rs:	required; ch	neck a	Aquatic	Fauna (B	,		econdary Ir Surface	ndicators (minimum of two requi
YDROLO etland Hyd imary Indic Surface \( \)	OGY  drology Indicator cators (minimum Water (A1) ter Table (A2)	rs:	required; ch	neck a	Aquatic True Aq		nts (B14)	<u>S</u>	econdary Ir Surface Drainag	ndicators (minimum of two requi
YDROLO etland Hydimary Indic Surface \ High Wat	OGY drology Indicato cators (minimum Water (A1) ter Table (A2) in (A3)	rs:	required; ch	neck a	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1	<u>S</u>	econdary Ir Surface Drainag Dry-Sea	ndicators (minimum of two requies Soil Cracks (B6) Je Patterns (B10)
YDROLO etland Hyd imary Indic Surface \ High Wat Saturatio Water Ma	OGY drology Indicato cators (minimum Water (A1) ter Table (A2) in (A3)	rs:	required; ch	neck a	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1	<u>S</u>	econdary Ir Surface Drainag Dry-Sea Crayfish	ndicators (minimum of two requi e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) n Burrows (C8)
YDROLO etland Hyd imary Indic Surface \ High Wat Saturatio Water Ma Sedimen	OGY drology Indicato cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1)	rs:	required; ch	neck a	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C1 heres on	S - - ) Living Roots	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) n Burrows (C8) ion Visible on Aerial Imagery (C9) I or Stressed Plants (D1)
YDROLO etland Hyd imary Indic Surface \ High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat	oGY drology Indicator eators (minimum Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)	rs:	required; ch	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent	Fauna (B luatic Plar en Sulfide d Rhizosp	nts (B14) Odor (C1 heres on	S - ) Living Roots - (C4)	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) gason Water Table (C2) gason Water Table (C2) gason Visible on Aerial Imagery (C9)
YDROLO Yetland Hyo imary Indic Surface \ High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Depo	oGY drology Indicator eators (minimum Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	rs: of one is	·	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6)	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	ots (B14) Odor (C1 heres on uced Iron uction in T	S - ) Living Roots - (C4)	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) n Burrows (C8) ion Visible on Aerial Imagery (C9) I or Stressed Plants (D1)
YDROLO etland Hyd imary Indic Surface \ High Water Ma Sedimen Drift Dep Algal Ma' Iron Depo Inundatio	DGY drology Indicator cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria	rs: of one is	ı (B7)	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	onts (B14) Odor (C1 heres on uced Iron uction in T	S - ) Living Roots - (C4)	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requies Soil Cracks (B6) ge Patterns (B10) gason Water Table (C2) gason Water Table (C2) gason Visible on Aerial Imagery (C9)
YDROLO etland Hyd imary Indic Surface \( \) High Water Ma Sedimen Drift Dep Algal Mai Iron Depo Inundatic Sparsely	OGY  drology Indicators (minimum) Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conca	rs: of one is I Imagery ve Surface	ı (B7)	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ack Surfac or Well Da	odor (C1) heres on uced Iron uction in Ti ee (C7) ata (D9)	S  ) Living Roots (C4) illed Soils	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requies Soil Cracks (B6) ge Patterns (B10) gason Water Table (C2) gason Water Table (C2) gason Visible on Aerial Imagery (C9)
YDROLO etland Hyd imary Indio Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Depo Inundatio Sparsely Water-St	DGY  drology Indicator cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conca	rs: of one is I Imagery ve Surface	ı (B7)	neck a	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	Fauna (B quatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu	odor (C1) heres on uced Iron uction in Ti ee (C7) ata (D9)	S  ) Living Roots (C4) illed Soils	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) gason Water Table (C2) gason Water Table (C2) gason Visible on Aerial Imagery (C9)
YDROLO YDROLO Yetland Hydrimary Indic Surface \ High Wat Saturatio Water Ma Sedimen Drift Dep Algal Ma' Iron Dept Inundatic Sparsely Water-St eld Observ	DGY  drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concarained Leaves (B9) vations:	rs: of one is	/ (B7) ce (B8)		Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (B luatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron action in To ee (C7) ata (D9) Remarks)	S  ) Living Roots (C4) illed Soils	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) gason Water Table (C2) gason Water Table (C2) gason Visible on Aerial Imagery (C9)
YDROLO Yetland Hydrimary Indic Surface \ High Wat Saturatio Water Ma Sedimen Drift Dep Algal Ma' Iron Dept Inundatic Sparsely Water-St eld Observurface water	DGY  drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concarained Leaves (B9) vations: er present?	rs: of one is I Imagery ve Surface)	v (B7) ce (B8)	No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (B luatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron uction in The (C7) hata (D9) Remarks) nches):	S  ) Living Roots (C4) illed Soils	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) in Burrows (C8) ion Visible on Aerial Imagery (C9) I or Stressed Plants (D1) rphic Position (D2) eutral Test (D5)
YDROLO Yetland Hydrimary Indic Surface \ High Wat Saturatio Water Ma Sedimen Drift Dep Algal Ma' Iron Dept Inundatic Sparsely Water-St ield Observ urface water //ater table p	DGY drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concarained Leaves (B9 vations: er present?	rs: of one is I Imagery ve Surface) Yes Yes	v (B7) ce (B8)	No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (B Fauna (B)))))))))))))))	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches):	S  ) Living Roots (C4) illed Soils	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo FAC-Ne	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) in Burrows (C8) ion Visible on Aerial Imagery (C9) I or Stressed Plants (D1) rphic Position (D2) eutral Test (D5)
YDROLO etland Hydrimary Indic Surface \ High Water Ma Sedimen Drift Dep Algal Ma' Iron Depr Inundatic Sparsely Water-St eld Observ urface water atter table paturation pr	DGY drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concarained Leaves (B9 vations: er present? present?	rs: of one is I Imagery ve Surface)	v (B7) ce (B8)	No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	Fauna (B luatic Plar en Sulfide d Rhizosp ce of Redu Iron Redu ick Surfac or Well Da Explain in	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) hata (D9) Remarks) nches): nches):	S  ) Living Roots (C4) illed Soils	econdary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo FAC-Ne	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) in Burrows (C8) ion Visible on Aerial Imagery (C9) I or Stressed Plants (D1) rphic Position (D2) eutral Test (D5)
YDROLO  YDROLO  YDROLO  YDROLO  YELIAND Hydro  Surface N  High Water  Sedimen  Drift Dep  Algal Mater  Iron Depot Inundation  Sparsely  Water-St  Yeld Observ  Water table paturation princludes cap	DGY drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concarained Leaves (B9 vations: er present?	I Imagery ve Surface Yes Yes Yes	v (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge C Other (E	Fauna (B luatic Plar en Sulfide d Rhizosp ce of Redu lron Redu lck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks) nches): nches):	S Living Roots (C4)	Secondary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) in Burrows (C8) ion Visible on Aerial Imagery (C9) I or Stressed Plants (D1) rphic Position (D2) eutral Test (D5)
YDROLO etland Hyd imary Indic Surface \( \) High Water Ma Sedimen Drift Dep Algal Mai Iron Depo Inundatic Sparsely Water-St eld Observ urface water table paturation princludes cap	oGY drology Indicators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Concar cained Leaves (B9 vations: er present? oresent? oresent?	I Imagery ve Surface Yes Yes Yes	v (B7) ce (B8)	No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6) Thin Mu Gauge C Other (E	Fauna (B luatic Plar en Sulfide d Rhizosp ce of Redu lron Redu lck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks) nches): nches):	S Living Roots (C4)	Secondary Ir Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomo	ndicators (minimum of two requires Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) in Burrows (C8) ion Visible on Aerial Imagery (C9) I or Stressed Plants (D1) rphic Position (D2) eutral Test (D5)

Project/Site PCN 000S: I-229 Exit 3 Reconstruction		County: Sid		_	<b>n</b> Sampling Date:	9/25/20	)18
Applicant/Owner: South Dakota Department of Transportation		State:	South D	akota	Sampling Point:	11W	1
Investigator(s): Rebecca Beduhn		Secti	ion, Townsh	ip, Range:		101N R49W	
Landform (hillslope, terrace, etc.):  Toeslope			relief (conca			Concave	
Slope (%): 2 Lat: 43° 30' 27.069" N		_	° 43' 53.3			/ NAD83 Zone	e 14N
Soil Map Unit Name: Chaska loam, channeled		<u> </u>		l Classifica	tion:	R2UBG	
Are climatic/hydrologic conditions of the site typical for this time	of the vear?				in in remarks)		
Are vegetation , soil , or hydrology	•	ly disturbed?		,	Are "normal circ	umotonooo"	
Are vegetation , soil , or hydrology		roblematic?			Ale normal circ	present?	Yes
SUMMARY OF FINDINGS	, ,,,			(If neede	ed, explain any ar	· -	
Hydrophytic vegetation present? Y							· · ·
Hydric soil present?		Is the sa	ampled are	a within a	wetland?	Υ	
Indicators of wetland hydrology present?			tional wetla			1	
Remarks: (Explain alternative procedures here or in a separate r	coport )	3 / 1					
	ероп.)						
Sample Point collected in Wetland 11.							
<b>VEGETATION</b> Use scientific names of plants.				I 5	T W	1	
Tree Stratum (Plot size: 30' Radius )	Absolute % Cover	Dominant Species	Indicator Status		nce Test Works		
1	70 COVE	Орсоюз	Otatus		of Dominant Spe OBL, FACW, or F		(A)
2					Number of Domir	-	(','
3					cies Across all Str		(B)
				Percent	of Dominant Spe	cies	
5				that are	OBL, FACW, or F	AC: 100.00%	<u>%</u> (A/B)
	0	= Total Cover					
Sapling/Shrub stratun (Plot size: 15' Radius )					nce Index Works	sheet	
1					Cover of:	x 1 = 0	
3				OBL spe		x 1 = 0 x 2 = 200	<u> </u>
4				FAC spe		x3 = 0	<u></u>
5				FACU s		x 4 = 0	
	0	= Total Cover		UPL spe	ecies 0	x 5 = 0	
Herb stratum (Plot size: 5' Radius )				Column	totals 100	(A) 200	(B)
1 Phalaris arundinacea Reed Canary Grass	80	Υ	FACW	Prevaler	nce Index = B/A =	2.00	
2 Impatiens capensis Spotted Touch-Me-Not	20	Υ	FACW				
3					hytic Vegetation		
4				I — ·	id test for hydrop		on
5				l ——	ninance test is >5 ⁄alence index is ≤		
7				l —			
8					phological adapta porting data in Re		
9					arate sheet)	illaiks of off e	a
					plematic hydrophy	ytic vegetation	ı*
Woody vino stratum /Diot size: 20/ Dading	100	= Total Cover		(exp	lain)		
Woody vine stratum (Plot size: 30' Radius )					rs of hydric soil and v resent, unless disturl		•
2					rophytic	sed or broblemat	lio
<u></u>	0	= Total Cover			etation		
	·	. 5.3. 50101		pres	sent?	Y	
Remarks: (Include photo numbers here or on a separate sheet)							

SOIL Sampling Point: 11W

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix		Red	dox Featı	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0-6	10YR 2/2	100					Sandy Loa	am	
6-12	10YR 2/1	80	10YR 5/8	20	С	М	Sandy Loa	am	
12-18	10YR 6/2	80	10YR 5/6	20	С	PL	Sandy Loa		
12-10	10111 0/2	00	10110 3/0	20		1 -	Oandy Loa	3111	
*Type: C = C	oncentration, D =	Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	: PL = Pore Lining, M = Matrix
	il Indicators:		<u> </u>						ematic Hydric Soils:
Hist	osol (A1)		San	dy Gleye	ed Matrix	(S4)	Coa	ast Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )
—— Hist	ic Epipedon (A2)		San	dy Redo	x (S5)		Dar	k Surface (S7	) (LRR K, L)
Blac	k Histic (A3)		Stri	pped Mat	trix (S6)		5 cr	m Mucky Peat	or Peat (S3) ( <b>LRR K, L, R</b> )
Hyd	rogen Sulfide (A4	.)	Loa	my Muck	ky Minera	al (F1)	Iron	ı-Manganese	Masses (F12) ( <b>LRR K, L, R</b> )
Stra	tified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)	Ver	y Shallow Dar	k Surface (TF12)
2 cn	n Muck (A10)			leted Ma			Oth	er (explain in	remarks)
	leted Below Dark		(A11) Red	lox Dark	Surface	(F6)			
	k Dark Surface (	,			rk Surfac		*Indi	cators of hydr	ophytic vegetation and wetland
San	dy Mucky Minera	l (S1)	Red	lox Depre	essions (	F8)	hyd	rology must b	e present, unless disturbed or
									problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydrid	c soil presen	t? Y
Depth (inche	s):				•				<del></del>
Remarks:	•				-	l			
rtomanto.									
HYDROLO	)GY								
	drology Indicato	re.							
1			required; check a	ll that an	nh()			Socondon, Inc	diagtors (minimum of two required)
-	Water (A1)	one is	required, check a	-	<u>ріу)</u> Fauna (B	12)	<u> </u>		dicators (minimum of two required) Soil Cracks (B6)
	ter Table (A2)				uatic Plan				Patterns (B10)
X Saturation						Odor (C1	)		son Water Table (C2)
	arks (B1)					-	, Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)			g		n Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu	iced Iron	(C4)		or Stressed Plants (D1)
	t or Crust (B4)						illed Soils		phic Position (D2)
Iron Dep	osits (B5)			(C6)				X FAC-Neu	ıtral Test (D5)
Inundatio	on Visible on Aeria	l Imagery	(B7)	Thin Mu	ck Surfac	e (C7)			
Sparsely	Vegetated Conca	ve Surfac	e (B8)	Gauge o	r Well Da	ita (D9)			
Water-St	ained Leaves (B9)	)		Other (E	xplain in l	Remarks)			
Field Obser	vations:								
Surface water	•	Yes	No	Х	Depth (i		_		
Water table		Yes	X No		Depth (i		6	_	licators of wetland
Saturation pr		Yes	X No		Depth (i	nches):	0	hy	/drology present? Y
(includes cap									
Describe rec	orded data (strea	m gauge	, monitoring well,	aerial ph	notos, pre	evious ins	spections), if	available:	
Domarko									
Remarks:	t propiniteties	onditie:	no wore determine	since III	Vottor H	200 55	mal" / ^ == =	ndiv C\	
Anteceden	t precipitation (	JOHUITIO!	ns were determ	iiried "V	veller tr	ian nofi	nai (Appel	nuix C).	



WETLAND DELINEATION REPORT SDDOT 147016



Photo 1 Wetland 1 – Shallow Open Water



Photo 2 Wetland 1 – Shallow Open Water



Photo 3 Wetland 2 – Fresh (Wet) Meadow



Photo 4 Wetland 2 – Fresh (Wet) Meadow



Photo 5 Wetland 3 – Fresh (Wet) Meadow



Photo 6 Wetland 3 – Fresh (Wet) Meadow



Photo 7 Wetland 4 – Shallow Marsh



Photo 8 Wetland 4 – Shallow Marsh



Photo 9 Wetland 5 – Shallow Marsh



Photo 10 Wetland 5 – Shallow Marsh



Photo 11 Wetland 6 – Shallow Marsh



Photo 12 Wetland 6 – Shallow Marsh



Photo 13 Wetland 7 – Fresh (Wet) Meadow



Photo 14 Wetland 7 – Fresh (Wet) Meadow



Photo 15 Wetland 8 – Fresh (Wet) Meadow



Photo 16 Wetland 8 – Fresh (Wet) Meadow



Photo 17 Wetland 9 – Fresh (Wet) Meadow



Photo 18 Wetland 9 – Fresh (Wet) Meadow



Photo 19 Wetland 10 - Fresh (Wet) Meadow



Photo 20 Wetland 11 (view from across the river) - Fresh (Wet) Meadow



WETLAND DELINEATION REPORT SDDOT 147016

Field Visit Date: August 25, 2018

		Long-te	rm rainfall r	ecords					
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition: dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	September	1.84	2.93	3.54	7.32	3	Dry	3	9
2nd prior month*	August	1.86	3.01	3.64	5.33	3	Wet	2	6
3rd prior month*	July	1.46	2.58	3.15	4.94	3	Wet	1	3

Sum	18
	"Wet"

Note: If sum is

6-9 then prior period has been drier than normal

10-14 then prior period has been

normal

15-18 then prior period has been

wetter than normal

Condition value:

Dry =1 Normal =2 Wet =3

<sup>\*</sup>Monthly data prior to field date



Proi	iect	Name	/Loca	tion
1 I U	CCL	1 (ullic)	Locu	UUUII

Interstate Exit 3 Reconstruction
Sioux Falls/Minnehaha County
Wetland #1

	Variable	Data entered		Subindex	
		wetland perimeter (feet):	260.00		
	V <sub>GRASSCONT</sub>	grassland along perimeter (feet):	0.00	0.00	
		percent continuity:	0.00		
		grassland width (feet) at 12 points:			
	L	Point 1:	0.00		
	L	Point 2:	0.00		
	<u></u>	Point 3:	0.00		
	<u></u>	Point 4:	0.00		
Ħ	<u></u>	Point 5:	0.00	0.00	
tio	V <sub>GRASSWIDTH</sub>	Point 6:	0.00		
Vegetation	V GRASSWIDTH	Point 7:	0.00	0.00	
gel	<u></u>	Point 8:	0.00		
	<u></u>	Point 9:	0.00		
	<u></u>	Point 10:	0.00		
	<u></u>	Point 11:	0.00		
	<u></u>	Point 12:	0.00		
		mean width (feet):	0.00		
	<u></u>	(see vegetation worksheet for species entered)			
	<u></u>	sum of species:	3.00		
	$ m V_{VEGCOMP}$	sum of C values:	5.00	0.15	
		mean coefficient of conservatism:	1.67		
		FQI:	2.89		

	V <sub>RECHARGE</sub>	Soil Recharge Potential Subindex:	0.10	0.10
		Eastern Prairie Potholes		
	<b>X</b> 7	mean depth to B horizon (inches):		0.00
	$V_{SED}$	Western Prairie Potholes		0.80
		mean depth to B horizon (inches):	6.00	
		SQI scores for 4 samples:		
		sample 1:	2.50	
	V	sample 2:	2.50	0.13
	V <sub>SQI</sub>	sample 3:	3.00	0.13
		sample 4:	2.50	
		average SQI score:	2.63	
		Indirect Measurements		
		Litter Depth for 4 samples:		
		sample 1:	1.00	
		sample 2:	2.00	
		sample 3:	3.00	
		sample 4:	2.00	
		Average Litter Depth (inches):		
		ADI for 4 samples:		
		Sample 1 hue:	10.00	
Soil		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 2 hue:	10.00	
		value:	2.00	
	V <sub>SOM</sub>	chroma:	1.00	0.58
	V SOM	ADI:	6.00	0.36
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		average ADI:	6.25	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	2.60	

		<b>=</b>				
		historic invert elevation in relation to wetland maximum depth:	1395.00			
		present (or constructed) invert elevation:	1395.00			
		elevation of the edge of the historic wetland:	1395.00			
	$ m V_{OUT}$	elevation of a representative deepest portion of the wetland:	1394.50	1.00		
၁		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00			
rphi		ratio of the constructed elevation to the natural outlet elevation:	1.00			
Hydrogeomorphic		depth of surface drainage invert:				
	$ m V_{SUBOUT}$	distance from WAA edge:		0.25		
ge	ЗОВООТ	location/spacing of subsurface tile within the WAA:		0.20		
ro		type & effect of surface alteration(s):				
yd	<b>T</b> 7	% of historic catchment area still contributing runoff:		0.50		
Ħ	$\mathbf{V}_{ ext{SOURCE}}$	additions of water from other sources:		0.50		
		change in wetland regime class?				
		wetland perimeter (feet):	260.00			
	$\mathbf{V_{EDGE}}$	wetland area (acres):	0.07	0.84		
		Shoreline Development Index:	1.33			
	$V_{CATCHWET}$	wetland area (acres):				
		catchment area (acres):	0.80	1.00		
		ratio of catchment size to wetland size:	11.43			
		total acre size of the present day catchment:	0.80			
		acres of catchment for each curve number:				
		98	0.80			
		90				
		79				
		77				
		72				
		75		_		
ıse	$\mathbf{V}_{\mathbf{UPUSE}}$	73		0.00		
du	CTCGE	71				
Landuse		72				
L		74				
8		69				
Landscape &		79 74				
ap		69				
SC		61				
nd		weighted average score for upland land use:	98.00			
,a		distance to nearest wetland(feet):	101.00			
Ι		distance to hearest wetland(reet).  distance to 2nd nearest wetland:	117.00			
		distance to 2nd nearest wetland:	271.00			
	$\mathbf{V}_{\mathbf{WETPROX}}$	distance to 4th nearest wetland:	297.00	1.00		
		distance to 5th nearest wetland:	335.00			
		mean distance (feet):	224.20			
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	21.00	0.03		
	V <sub>BASINS</sub>	number of palustrine wetlands within a 1-mile radius:	24.00	0.09		
	V <sub>HABFRAG</sub>	miles of roads and linear attributes within a 1-mile radius:	42.50	0.00		
	▼ HABFRAG	inics of roads and inical attitudes within a 1-inic facility.	72.30	0.00		

Function	FCI	FCU
1. Water Storage	0.36	0.03
2. Groundwater Recharge	0.37	0.03
3. Retain Particlulates	0.28	0.02
4. Remove, Convert, and Sequester Dissolved Substances	0.26	0.02
5. Plant Community Resilience and Carbon Cycling	0.26	0.02
6a. Provide Faunal Habitat	0.29	0.02
6b. Provide Faunal Habitat (Alternate Formula)	0.21	0.01

		South I				odel, Version 1.1		
TH			Vari	iable Sco				
	e					at Area ID. (if more than		2
			ha County			cres (Pre-project)	0.	06
Date		9/25/2013				cres (Post-project)	l .	
	andowner	South Da	kota DOT			Type of wetland (fring		
	g? (Y/N)		If Y, what			channel, or depression	al or linear o	n flood
Red flag?	(Y/N)		If Y, what	4		plain)?		
						Discussion/		le Score
Variable				dition Resu	ılts	Rationale	Pre-proj.	Post-proj.
		hydrology (						
		ns present (	Y/N)?		N			
	If Y, wha							
		e-project			1			
$V_{hydalt}$		ost-project -					1.00	0.00
,		drology (H <sub>w</sub>						
		ns present (			N			
		it?						
		e-project			1			
	_	ost-project			Y			
V		alterations p			-		0.50	0.00
V <sub>source</sub>				Stormwater f			0.50	0.00
		ershed area			80			
		pography (T			3.7			
		ns present? (	(1/N)		N			
	If Y, wha			(T.)-	-1			
$\mathbf{V}_{ ext{topog}}$		(pre)	0	(T <sub>w</sub> ) pre =	1			
		(post)	(T.)	(Tw) post =			0.20	0.00
		topography ns present? (			Y			
				ile perke	Y			
		t? (pre)	Rip rap, tra 40		0.5			
		(pre)	40	$(T_{fp})$ pre = $(T_{fp})$ post =	0.3			
		pland uses (	(3 mavim					
	Dominant U	<sub>pranu</sub> uses (	(2 maximul	11)				
	pro	1 Index	0.1	% area	40			
		2 Index	1	% area	30			
V <sub>upuse</sub>	_	3 Index	0.75	% area	30		0.57	#DIV/0!
	_	st1 Index	0.73	% area	30			
		st2 Index		% area				
		st3 Index		% area				
<b>X</b> 7				70 arca	0			
V <sub>detritus</sub>	Detritus thi				0			
		l sediment ii	n wetland?	(Y/N)	N			
$V_{sed}$	If Y, evider	nce?	<u> </u>					
		nickness (in.	<u> </u>		0			
$V_{som}$		oil texture i			Silt Loam			
		oil color (va	nue) upper		10YR 3/2			
<b>V</b> 7	Soil structu		Cul- A ·····	Fine				
$V_{soil}$	Soil structu	istance	Sub Angul	Firm				
	rapture res		Pre-project				+	
	Ruffercort	inuity (%) -						
		ffer width (		42				
		uity/width ra			0.4		0.45	
	Buffer cond		<sub>6</sub> ( <b>D</b> 1) -		0.4			
		ion rating (E	32)		0.5			#DIV/0!
$V_{buffer}$	Conditi		Post-projec	t	0.5			
	Buffer cont	inuity (%) -						
		ffer width (1						
		uity/width ra						0.00
	Buffer cond		3 ( 17					
		ion rating (E	32)					
		cies present		Y/N)	Y			
**	* 1			nerbaceous p				
$V_{denhw}$		ous density (			60%			
		ensity (%, if			10%			
X/		ies present i						
$\mathbf{V}_{ ext{pratio}}$	dominant				100%			
		canopy cove	erage (%)		10			
		vegetative s	trata preser	ıt	2			
<b>V</b> /				0 1 1	and the		1	
$\mathbf{V}_{ ext{veg}}$	Deviation	from norm		of strata beli				
$\mathbf{V}_{ ext{veg}}$	Deviation be abse	nt)			0			
$f V_{ m veg}$	Deviation be abse							

	S.D. RIV	ERINE HO	GM MODI	EL WORK	SHEET 1,	<b>VER. 1.1</b>						
Use this work							the ability to					
	Use this worksheet for depressional or linear wetlands that are disconnected from the channel and that have the ability to store surface water. For wetlands adjacent to the channel and that lack this ability, use worksheet 2.											
DATE		09/25/18		OWNER/OPE		South Dakota I						
WETLAND ID	)	2			Г ТҮРЕ							
OBSERVERS -		Rebecca Bedul	n		YPE (NWI)							
CONDITIONS					YPE (FSA)							
PROJECT NAI		PCN 000S (I-2	29 Exit 3)	REMARKS	(= (= (= (= (= (= (= (= (= (= (= (= (= (							
PLANNED AC		Roadway impro										
YELLOW FLA		rioud way mipi		RED FLAG (Y	/N)							
WETLAND AG		NG)	0.06	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	CRES (PREDIC	TED)	0					
						<u> </u>						
	FUNCTIONAL INDICES (VARIABLE) SCORING  Variable Existing Predicted											
V <sub>hydalf</sub> - Flood	l Plain/Wetlan	d Hydrology	Alterations		1.00		0.00					
		ogy Alterations			0.50		0.00					
V <sub>topog</sub> - Flood	Plain/Wetland	d Topographic	Complexity		0.20		0.00					
V <sub>upuse</sub> - Uplan	nd Use		<u> </u>		0.57		#DIV/0!					
V <sub>detritus</sub> - Detr	itus				0.00		0.00					
V <sub>sed</sub> - Sedime	ntation Withir	the Wetland			0.00		0.00					
$\overline{\mathbf{V}_{\mathbf{som}}}$ - Soil Or					0.00		0.00					
V <sub>soil</sub> - Soil Poi					0.00		0.00					
		Continuity, and	l Width		0.45		0.00					
V <sub>denby</sub> - Dens	ity of Perennia	al Herbaceous	and Woody V	egetation	0.00		0.00					
V <sub>pratia</sub> - Ratio	of Native to N	Non-Native Pla	ant Species	-B-1441311	0.00		0.00					
V <sub></sub> - Vegetat	tive Strata and	Canopy Cove	erage		0.00		0.00					
V <sub>wetuse</sub> - Wetl	and Use	Canopy Cove	ruge		0.00		0.00					
wetuse			1	1			2002					
				Fyi	sting	Pred	icted					
	Fun	ction		FCI	FCU	FCI	FCU					
1.0 Storage of	Surface Water			0.00	0.00	0.00	0.00					
		face Water Flow	X/	0.34	0.02	#DIV/0!	#DIV/0!					
3.0 Storage and			*	0.52	0.03	#DIV/0!	#DIV/0!					
4.0 Removal o			ounds	0.00	0.00	#DIV/0!	#DIV/0!					
		and Organic Mat		0.15	0.01	#DIV/0!	#DIV/0!					
6.0 Organic Ca				0.15	0.01	0.00	0.00					
7.0 Maintains		Plant Community	V	0.00	0.00	#DIV/0!	#DIV/0!					
		re Within Wetla		0.10	0.01	0.00	0.00					
		onnect. Among		0.24	0.01	#DIV/0!	#DIV/0!					
		E IN FCU's	MINIMAL EFFECT		ON OF MINIM							
FUNCTION	NUMERICAL		(Y or N)		CTIONAL LOS							
1.0	0.00	#DIV/0!	#DIV/0!	11211011	211011112 200	<u> </u>	LICEIVI					
2.0	#DIV/0!	#DIV/0!	#DIV/0!									
3.0	#DIV/0!	#DIV/0!	#DIV/0!									
4.0	#DIV/0!	#DIV/0!	#DIV/0!									
5.0	#DIV/0!	#DIV/0!	#DIV/0!									
6.0	-0.01	-100.00%	No									
7.0	#DIV/0!	#DIV/0!	#DIV/0!									
8.0	-0.01	-100.00%	πDIV/0:									
9.0	#DIV/0!	#DIV/0!	#DIV/0!									
7.0	11DI 1/0:	11DI 1/0:	11211/01									

P	roi	iect	Name	/Lo	catio	n:
•	I U	CCL	1 Juille		Cau	11.

Interstate 229 Exit 3 Reconstruction
Sioux Falls/Minnehaha County
Wetland #3

	Variable	Data entered		Subindex
		wetland perimeter (feet):	314.82	
	V <sub>GRASSCONT</sub>	grassland along perimeter (feet):	314.82	1.00
		percent continuity:	100.00	
	<u> </u>	grassland width (feet) at 12 points:		
	<u> </u>	Point 1:	50.00	
		Point 2:	50.00	
		Point 3:	50.00	
		Point 4:	42.00	
u		Point 5:	45.00	
ioi	V <sub>GRASSWIDTH</sub>	Point 6:	25.00	0.01
at		Point 7:	26.00	0.91
et	Г	Point 8:	48.00	
Vegetation		Point 9:	50.00	
>		Point 10:	50.00	
		Point 11:	50.00	
		Point 12:	50.00	
		mean width (feet):	44.67	
		(see vegetation worksheet for species entered)		
		sum of species:	7.00	
	$ m V_{VEGCOMP}$	sum of C values:	2.00	0.02
	,2000	mean coefficient of conservatism:	0.29	
		FQI:	0.76	

	V <sub>RECHARGE</sub>	Soil Recharge Potential Subindex:	0.75	0.75
		Eastern Prairie Potholes		
	V	mean depth to B horizon (inches):		0.67
	V <sub>SED</sub>	Western Prairie Potholes		0.67
		mean depth to B horizon (inches):	5.00	
		SQI scores for 4 samples:		
		sample 1:	1.50	
	<b>V</b> 7	sample 2:	1.50	0.04
	V <sub>SQI</sub>	sample 3:	2.00	0.04
		sample 4:	2.00	
		average SQI score:	1.75	
		Indirect Measurements		
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
=		Sample 1 hue:	10.00	
Soil		value:	2.00	
<b>9</b> 1		chroma:	2.00	
		ADI:	7.00	
		Sample 2 hue:	10.00	
		value:	2.00	
	V <sub>SOM</sub>	chroma:	1.00	0.30
	▼ SOM	ADI:	6.00	0.50
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
			6.00	
		average ADI:	6.50	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.68	

		<b>=</b>		
		historic invert elevation in relation to wetland maximum depth:	1395.00	
		present (or constructed) invert elevation:	1407.00	
		elevation of the edge of the historic wetland:	1395.00	
	$\mathbf{V}_{\mathbf{OUT}}$	elevation of a representative deepest portion of the wetland:	1397.00	1.00
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland	0.00	
iic		(ex. 25%=25), otherwise enter 0:	0.00	
Hydrogeomorphic		ratio of the constructed elevation to the natural outlet elevation:	1.00	
Ŭ		depth of surface drainage invert:		
<b>[</b> 0	$\mathbf{V}_{ ext{SUBOUT}}$	distance from WAA edge:		0.25
80		location/spacing of subsurface tile within the WAA:		
lrc		type & effect of surface alteration(s):		
N N	$ m V_{SOURCE}$	% of historic catchment area still contributing runoff:		0.50
<b>=</b>	SOURCE	additions of water from other sources:		
		change in wetland regime class?	21.4.02	
	₩7	wetland perimeter (feet):	314.82	0.41
	$\mathbf{V_{EDGE}}$	wetland area (acres):	0.14	0.41
		Shoreline Development Index:	1.14	
	<b>T</b> 7	wetland area (acres):	0.14	1.00
	$\mathbf{V}_{CATCHWET}$	catchment area (acres):	2.25	1.00
		ratio of catchment size to wetland size:	16.07	
		total acre size of the present day catchment:	2.25	
		acres of catchment for each curve number:  98	2.25	
		98	2.25	
		79		
		77		
		72		
		75		
e		73		
ns	$\mathbf{V}_{\mathbf{UPUSE}}$	71		0.00
pu		72		
Landuse		74		
		69		
Landscape &		79		
pe		74		
Ca		69		
qs		61		
an		weighted average score for upland land use:	98.00	
Ľ		distance to nearest wetland(feet):	100.00	
		distance to 2nd nearest wetland:	156.00	
	$\mathbf{V}_{ ext{WETPROX}}$	distance to 3rd nearest wetland:	225.00	1.00
	WEITROA	distance to 4th nearest wetland:	290.00	
		distance to 5th nearest wetland:	297.00	
	<b>T</b> 7	mean distance (feet):	213.60	0.02
	V <sub>WETAREA</sub>	acres of palustrine wetlands within a 1-mile radius:	21.00	0.03
	V <sub>BASINS</sub>	number of palustrine wetlands within a 1-mile radius:	24.00	0.09
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	42.50	0.00

Function	FCI	FCU
1. Water Storage	0.34	0.05
2. Groundwater Recharge	0.37	0.05
3. Retain Particlulates	0.51	0.07
4. Remove, Convert, and Sequester Dissolved Substances	0.35	0.05
5. Plant Community Resilience and Carbon Cycling	0.31	0.04
6a. Provide Faunal Habitat	0.31	0.04
6b. Provide Faunal Habitat (Alternate Formula)	0.17	0.02

Proi	iect	Name	/Loca	tion
1 I U	CCL	1 (ullic)	Locu	UUUII

Interstate 229 Exit 3 Reconstruction
Sioux Falls/Minnehaha County
Wetland #4

	Variable	Data entered		Subindex
		wetland perimeter (feet):	316.70	
	V <sub>GRASSCONT</sub>	grassland along perimeter (feet):	158.40	0.50
		percent continuity:	50.02	
		grassland width (feet) at 12 points:		
		Point 1:	0.00	
		Point 2:	50.00	
		Point 3:	50.00	
		Point 4:	0.00	
Ħ		Point 5:	0.00	
Vegetation	V <sub>GRASSWIDTH</sub>	Point 6:	0.00	0.51
:at	▼ GRASSWIDTH	Point 7:	0.00	0.51
zel		Point 8:	0.00	
e e		Point 9:	50.00	
		Point 10:	50.00	
		Point 11:	50.00	
		Point 12:	50.00	
		mean width (feet):	25.00	
		(see vegetation worksheet for species entered)		
		sum of species:	5.00	
	$\mathbf{V}_{ ext{VEGCOMP}}$	sum of C values:	21.00	0.54
		mean coefficient of conservatism:	4.20	
		FQI:	9.39	

	V <sub>RECHARGE</sub>	Soil Recharge Potential Subindex:	0.50	0.50
		Eastern Prairie Potholes		
	V	mean depth to B horizon (inches):		1.00
	V <sub>SED</sub>	Western Prairie Potholes		1.00
		mean depth to B horizon (inches):	8.00	
		SQI scores for 4 samples:		
		sample 1:	2.00	
	V	sample 2:	2.00	0.05
	V <sub>SQI</sub>	sample 3:	2.00	0.03
		sample 4:	1.50	
		average SQI score:	1.88	
		Indirect Measurements		
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	1.00	
		sample 3:	0.00	
		sample 4:	1.00	
		Average Litter Depth (inches):	0.50	
		ADI for 4 samples:		
=		Sample 1 hue:	10.00	
Soil		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 2 hue:	10.00	
		value:	2.00	
	V <sub>SOM</sub>	chroma:	1.00	0.38
	▼ SOM	ADI:	6.00	0.56
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		average ADI:	6.25	
		Direct Measurements	·	
		% organic carbon for 0-15cm depth:	·	
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.93	

		=		
		historic invert elevation in relation to wetland maximum depth:	1395.00	
		present (or constructed) invert elevation:	1399.00	
		elevation of the edge of the historic wetland:	1395.00	
	$ m V_{OUT}$	elevation of a representative deepest portion of the wetland:	1400.00	1.00
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland	0.00	
iic		(ex. 25%=25), otherwise enter 0:	0.00	
Hydrogeomorphic		ratio of the constructed elevation to the natural outlet elevation:	1.00	
m		depth of surface drainage invert:		
<b>60</b>	$ m V_{SUBOUT}$	distance from WAA edge:		0.50
80		location/spacing of subsurface tile within the WAA:		
dr		type & effect of surface alteration(s):		
N N	$\mathbf{V}_{\mathbf{SOURCE}}$	% of historic catchment area still contributing runoff:		0.50
Ħ	Socie	additions of water from other sources:		
		change in wetland regime class?	21670	
	₹7	wetland perimeter (feet):	316.70	1.00
	$ m V_{EDGE}$	wetland area (acres):	0.05	1.00
		Shoreline Development Index:	1.95 0.05	
	<b>T</b> 7	wetland area (acres):	7.50	1.00
	$\mathbf{V}_{\mathrm{CATCHWET}}$	ratio of catchment size to wetland size:	156.25	1.00
		total acre size of the present day catchment:  acres of catchment for each curve number:	7.50	
		98	7.50	
		90	7.50	
		79		
		77		
		72		
		75		
و		73		
sn	$\mathbf{V_{UPUSE}}$	71		0.00
pu		72		
Landuse		74		
		69		
8		79		
pe		74		
ca		69		
qs		61		
Landscape &		weighted average score for upland land use:	98.00	
L		distance to nearest wetland(feet):	87.00	
		distance to 2nd nearest wetland:	141.00	
	$\mathbf{V}_{ ext{WETPROX}}$	distance to 3rd nearest wetland:	198.00	1.00
	WEIIROA	distance to 4th nearest wetland:	274.00	. 0 0
		distance to 5th nearest wetland:	495.00	
	<b>T</b> 7	mean distance (feet):	239.00	0.02
	V <sub>WETAREA</sub>	acres of palustrine wetlands within a 1-mile radius:	21.00	0.03
	V <sub>BASINS</sub>	number of palustrine wetlands within a 1-mile radius:	24.00	0.09
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	42.50	0.00

Function	FCI	FCU
1. Water Storage	0.56	0.03
2. Groundwater Recharge	0.58	0.03
3. Retain Particlulates	0.66	0.03
4. Remove, Convert, and Sequester Dissolved Substances	0.49	0.02
5. Plant Community Resilience and Carbon Cycling	0.51	0.02
6a. Provide Faunal Habitat	0.55	0.03
6b. Provide Faunal Habitat (Alternate Formula)	0.42	0.02

Project Name/Location:		
	Interstate 229 Exit 3 Reconstruction	
	Sioux Falls Minnehaha County	

Sioux Falls, Minnehaha County
Wetland #5

	Variable	Data entered		Subindex
		wetland perimeter (feet):	728.60	
	V <sub>GRASSCONT</sub>	grassland along perimeter (feet):	728.60	1.00
		percent continuity:	100.00	
		grassland width (feet) at 12 points:		
		Point 1:	50.00	
		Point 2:	50.00	
		Point 3:	50.00	
		Point 4:	50.00	
<b>E</b>		Point 5:	50.00	
tio	V <sub>GRASSWIDTH</sub>	Point 6:	50.00	0.91
ta (		Point 7:	45.00	
Vegetation		Point 8:	32.00	
<b>. . . . . . . . . .</b>		Point 9:	33.00	
<b>&gt;</b>		Point 10:	37.00	
		Point 11:	39.00	
		Point 12:	50.00	
		mean width (feet):	44.67	
		(see vegetation worksheet for species entered)		
		sum of species:	7.00	
	V <sub>VEGCOMP</sub>	sum of C values:	7.00	0.13
		mean coefficient of conservatism:	1.00	
		FQI:	2.65	

	V <sub>RECHARGE</sub>	Soil Recharge Potential Subindex:	0.50	0.50	
		Eastern Prairie Potholes			
	V	mean depth to B horizon (inches):		0.27	
	V <sub>SED</sub>	Western Prairie Potholes		0.27	
		mean depth to B horizon (inches):	2.00		
		SQI scores for 4 samples:			
		sample 1:	1.50		
	<b>T</b> 7	sample 2:	1.50	0.04	
	V <sub>SQI</sub>	sample 3:	2.00	0.04	
		sample 4:	2.00		
		average SQI score:	1.75		
		Indirect Measurements			
		Litter Depth for 4 samples:			
		sample 1:	0.00		
		sample 2:	0.00		
		sample 3:	0.00		
		sample 4:	0.00		
		Average Litter Depth (inches):	0.00		
		ADI for 4 samples:			
$\overline{}$		Sample 1 hue:	10.00		
Soil		value:	2.00		
		chroma:	1.00		
		ADI:	6.00		
		Sample 2 hue:	10.00		
		value:	2.00		
	V <sub>SOM</sub>	chroma:	1.00	0.32	
	* SOM	ADI:	6.00	0.32	
		Sample 3 hue:	10.00		
		value:	2.00		
		chroma:	2.00		
		ADI:	7.00		
		Sample 4 hue:	10.00		
		value:	2.00		
		chroma:	1.00		
		ADI:	6.00		
		average ADI:	6.25		
		Direct Measurements			
		% organic carbon for 0-15cm depth:			
		% organic carbon for 15-30cm depth:			
		mean percentage:			
		% organic carbon:	1.74		

Nout   Present (or constructed) invert elevation:   1401.00	)
Pour elevation of the edge of the historic wetland: 1395.00    elevation of a representative deepest portion of the wetland: 1400.50     if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:     ratio of the constructed elevation to the natural outlet elevation: 1.00     depth of surface drainage invert:     distance from WAA edge:   1.00     location/spacing of subsurface tile within the WAA:   type & effect of surface alteration(s):     wetland area (atreation):   728.60     wetland area (acres): 0.34     Vedation of the edge of the historic wetland:   1.00     vedation of the edge of the historic wetland:   1.00     vedation of the edge of the historic wetland:   1.00     vedation of the vedation:   1.00     vedation of the vedation:   1.00     vedation of the edge of the historic wetland:   1.00     vedation of the edge of the historic wetland:   1.00     vedation of the vedation:   1.00     vedation of the ved	)
Property Pro	)
if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:  ratio of the constructed elevation to the natural outlet elevation:  1.00    Description of the constructed elevation to the natural outlet elevation:	)
Tatio of the constructed elevation to the natural outlet elevation:    Value   Constructed   Constru	)
ratio of the constructed elevation to the natural outlet elevation:    Value   Constructed elevation to the natural outlet elevation:   1.00	)
Change in wetland regime class?  Wetland perimeter (feet): 728.60  Wetland area (acres): 0.34  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  VCATCHWET  VCATCHWET  Catchment area (acres): 2.00  ratio of catchment size to wetland size: 5.88  total acres size of the present day catchment: 2.00  acres of catchment for each curve number:	)
Change in wetland regime class?  Wetland perimeter (feet): 728.60  Wetland area (acres): 0.34  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  VCATCHWET  Wetland area (acres): 0.34  Tatio of catchment area (acres): 2.00  Tatio of catchment size to wetland size: 5.88  total acres of catchment for each curve number:	)
Change in wetland regime class?  Wetland perimeter (feet): 728.60  Wetland area (acres): 0.34  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  VCATCHWET  Wetland area (acres): 0.34  Tatio of catchment area (acres): 2.00  Tatio of catchment size to wetland size: 5.88  total acres of catchment for each curve number:	)
Change in wetland regime class?  Wetland perimeter (feet): 728.60  Wetland area (acres): 0.34  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  Wetland area (acres): 0.34  VCATCHWET  Catchment area (acres): 2.00  ratio of catchment size to wetland size: 5.88  total acres of catchment for each curve number:	
Change in wetland regime class?  Wetland perimeter (feet): 728.60  Wetland area (acres): 0.34  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  VCATCHWET  Wetland area (acres): 0.34  Tatio of catchment area (acres): 2.00  Tatio of catchment size to wetland size: 5.88  total acres of catchment for each curve number:	
Change in wetland regime class?  Wetland perimeter (feet): 728.60  Wetland area (acres): 0.34  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  Wetland area (acres): 0.34  VCATCHWET  Catchment area (acres): 2.00  ratio of catchment size to wetland size: 5.88  total acres of catchment for each curve number:	
Change in wetland regime class?  Wetland perimeter (feet): 728.60  Wetland area (acres): 0.34  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  VCATCHWET  Wetland area (acres): 0.34  Tatio of catchment area (acres): 2.00  Tatio of catchment size to wetland size: 5.88  total acres of catchment for each curve number:	
VEDGE  Wetland perimeter (feet): 728.60  Wetland area (acres): 0.34  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  Wetland area (acres): 0.34  VCATCHWET  Catchment area (acres): 2.00  ratio of catchment size to wetland size: 5.88  total acres size of the present day catchment: 2.00  acres of catchment for each curve number:	
VEDGE  Wetland area (acres): 0.34 1.00  Shoreline Development Index: 1.69  Wetland area (acres): 0.34  VCATCHWET  Catchment area (acres): 2.00 1.00  ratio of catchment size to wetland size: 5.88  total acre size of the present day catchment: 2.00  acres of catchment for each curve number:	)
Shoreline Development Index: 1.69  Wetland area (acres): 0.34  VCATCHWET  Catchment area (acres): 2.00  ratio of catchment size to wetland size: 5.88  total acre size of the present day catchment: 2.00  acres of catchment for each curve number:	
VCATCHWET  wetland area (acres): 0.34  catchment area (acres): 2.00  ratio of catchment size to wetland size: 5.88  total acre size of the present day catchment: 2.00  acres of catchment for each curve number:	
V <sub>CATCHWET</sub> catchment area (acres): 2.00  ratio of catchment size to wetland size: 5.88  total acre size of the present day catchment: 2.00  acres of catchment for each curve number:	
ratio of catchment size to wetland size: 5.88  total acre size of the present day catchment: 2.00 acres of catchment for each curve number:	
total acre size of the present day catchment: 2.00 acres of catchment for each curve number:	
acres of catchment for each curve number:	
701 2.00	
90	
79	
77	
72	
75	
$\mathbf{v}_{\text{UPUSE}}$ 73 0.00	)
71 71	
V <sub>UPUSE</sub>   V <sub>UPUSE</sub>   73   0.000   72   74   74   75   75   75   75   75   75	
74	
69 79	
Total Content of the Content of th	
69 69	
61	
weighted average score for upland land use: 98.00	
distance to nearest wetland(feet): 91.00	
distance to 2nd nearest wetland: 156.00	
distance to 3rd pagget watland: 2/3 00	
V <sub>WETPROX</sub> distance to 4th nearest wetland: 243.00  1.00	
distance to 5th nearest wetland: 360.00	
mean distance (feet): 236.00	
V <sub>WETAREA</sub> acres of palustrine wetlands within a 1-mile radius: 21.25 0.03	,
V <sub>BASINS</sub> number of palustrine wetlands within a 1-mile radius: 24.00 0.09	
V <sub>HABFRAG</sub> miles of roads and linear attributes within a 1-mile radius: 42.50 0.00	

Function	FCI	FCU
1. Water Storage	0.51	0.17
2. Groundwater Recharge	0.70	0.24
3. Retain Particlulates	0.40	0.14
4. Remove, Convert, and Sequester Dissolved Substances	0.69	0.24
5. Plant Community Resilience and Carbon Cycling	0.59	0.20
6a. Provide Faunal Habitat	0.64	0.22
6b. Provide Faunal Habitat (Alternate Formula)	0.30	0.10

USER NOTE: Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.

Wetland #6

Project Name/Location:		
	Interstate 229 Exit 3 Reconstruction	
	Sioux Falls, Minnehaha County	

	Variable	Data entered		Subindex
		wetland perimeter (feet):	2404.00	
	V <sub>GRASSCONT</sub>	grassland along perimeter (feet):	1200.00	0.50
		percent continuity:	49.92	
		grassland width (feet) at 12 points:		
		Point 1:	0.00	
		Point 2:	0.00	
		Point 3:	0.00	
		Point 4:	50.00	
Ę.		Point 5:	40.00	
tio	V <sub>GRASSWIDTH</sub>	Point 6:	40.00	0.43
Vegetation		Point 7:	34.00	0.43
gel		Point 8:	29.00	
e Se		Point 9:	28.00	
<b>&gt;</b>		Point 10:	30.00	
		Point 11:	0.00	
		Point 12:	0.00	
		mean width (feet):	20.92	
		(see vegetation worksheet for species entered)		
		sum of species:	9.00	
	$ m V_{VEGCOMP}$	sum of C values:	16.00	0.30
		mean coefficient of conservatism:	1.78	
		FQI:	5.33	

	V <sub>RECHARGE</sub>	Soil Recharge Potential Subindex:	0.50	0.50
		Eastern Prairie Potholes		
	V	mean depth to B horizon (inches):		0.94
	V <sub>SED</sub>	Western Prairie Potholes		0.94
		mean depth to B horizon (inches):	7.00	
-		SQI scores for 4 samples:		
		sample 1:	1.50	
	V <sub>SQI</sub>	sample 2:	1.50	0.03
	* SQI	sample 3:	2.00	0.03
		sample 4:	1.50	
		average SQI score:	1.63	
		Indirect Measurements		
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
=		Sample 1 hue:	10.00	
Soil		value:	2.00	
• •	V <sub>SOM</sub>	chroma:	1.00	
		ADI:	6.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	2.00	0.28
		ADI:	7.00	
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	7.00	
		ADI:	10.00	
		Sample 4 hue:		
		value:	2.00	
		chroma: ADI:	7.00	
		average ADI:    Direct Measurements	6.75	
	<del>                                     </del>	% organic carbon for 0-15cm depth:		
	<del>                                     </del>	% organic carbon for 0-13cm depth:		
	<del>                                     </del>	mean percentage:		
	<del>                                     </del>	% organic carbon:	1.60	
		% organic carbon:	1.00	

		historic invert elevation in relation to wetland maximum depth:	1395.00	
		present (or constructed) invert elevation:	1397.00	
ic	$\mathbf{V}_{\mathbf{OUT}}$	elevation of the edge of the historic wetland:	1395.00	
		elevation of a representative deepest portion of the wetland:	1397.00	0.05
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland	0.00	
		(ex. 25%=25), otherwise enter 0:	0.00	
Hydrogeomorphic		ratio of the constructed elevation to the natural outlet elevation:	0.00	
Ŭ		depth of surface drainage invert:		
<b>[</b> 0	$\mathbf{V}_{ ext{SUBOUT}}$	distance from WAA edge:		0.25
80		location/spacing of subsurface tile within the WAA:		
lrc		type & effect of surface alteration(s):		
	$ m V_{SOURCE}$	% of historic catchment area still contributing runoff:		0.50
<b>=</b>	SOURCE	additions of water from other sources:		
		change in wetland regime class?	0.40.4.00	
	₩7	wetland perimeter (feet):	2404.00	1.00
	$ m V_{EDGE}$	wetland area (acres):	0.89	1.00
		Shoreline Development Index:	3.44	
	V <sub>CATCHWET</sub>	wetland area (acres):	0.89	0.20
		catchment area (acres):	2.50	0.38
		ratio of catchment size to wetland size:	2.81	
		total acre size of the present day catchment:	2.50	
		acres of catchment for each curve number:  98	2.50	
		98	2.50	
		79		
		77		
		72		
		75		
e		73		
ns	$\mathbf{V}_{\mathbf{UPUSE}}$	71		0.00
pu		72		
Landuse		74		
		69		
Landscape &		79		
pe		74		
Ca		69		
qs		61		
an		weighted average score for upland land use:	98.00	
Ľ		distance to nearest wetland(feet):	86.00	
		distance to 2nd nearest wetland:	154.00	
	$V_{WETPROX}$	distance to 3rd nearest wetland:	181.00	0.95
	WEITROA	distance to 4th nearest wetland:	450.00	
		distance to 5th nearest wetland:	623.00	-
	<b>T</b> 7	mean distance (feet):	298.80	0.02
	V <sub>WETAREA</sub>	acres of palustrine wetlands within a 1-mile radius:	21.00	0.03
	$V_{BASINS}$	number of palustrine wetlands within a 1-mile radius:	24.00	0.09
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	42.50	0.00

Function	FCI	FCU
1. Water Storage	0.17	0.15
2. Groundwater Recharge	0.17	0.15
3. Retain Particlulates	0.47	0.42
4. Remove, Convert, and Sequester Dissolved Substances	0.14	0.13
5. Plant Community Resilience and Carbon Cycling	0.14	0.13
6a. Provide Faunal Habitat	0.16	0.14
6b. Provide Faunal Habitat (Alternate Formula)	0.11	0.10

USER NOTE: Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.

Project Nai	me/Location:
	Interstate 229 Exit 3 Reconstruction
	Sioux Falls, Minnehaha County
	Wetland #7

	Variable	Data entered		Subindex
		wetland perimeter (feet):	1045.00	
	V <sub>GRASSCONT</sub>	grassland along perimeter (feet):	1045.00	1.00
		percent continuity:	100.00	
		grassland width (feet) at 12 points:		
		Point 1:	39.00	
		Point 2:	35.00	
		Point 3:	32.00	
		Point 4:	50.00	
Ę.		Point 5:	50.00	0.90
tio	V <sub>GRASSWIDTH</sub>	Point 6:	50.00	
Vegetation		Point 7:	50.00	0.90
gel		Point 8:	50.00	
e e		Point 9:	50.00	
		Point 10:	43.00	
		Point 11:	35.00	
		Point 12:	50.00	
		mean width (feet):	44.50	
		(see vegetation worksheet for species entered)		
		sum of species:	5.00	
	$ m V_{VEGCOMP}$	sum of C values:	1.00	0.00
		mean coefficient of conservatism:	0.20	
		FQI:	0.45	

	V <sub>RECHARGE</sub>	Soil Recharge Potential Subindex:	0.75	0.75
		Eastern Prairie Potholes		
	<b>X</b> 7	mean depth to B horizon (inches):		
	$V_{SED}$	Western Prairie Potholes		0.27
		mean depth to B horizon (inches):	2.00	
		SQI scores for 4 samples:		
		sample 1:	2.00	
	V	sample 2:	2.00	0.04
	V <sub>SQI</sub>	sample 3:	1.50	0.04
		sample 4:	1.50	
		average SQI score:	1.75	
		Indirect Measurements		
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
	V <sub>SOM</sub>	ADI for 4 samples:		
		Sample 1 hue:	10.00	
Soil		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	1.00	0.34
	▼ SOM	ADI:	6.00	0.54
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		average ADI:	6.00	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.79	

		<b>=</b>		
	historic invert elevation in relation to wetland m	historic invert elevation in relation to wetland maximum depth:	1395.00	
		present (or constructed) invert elevation:	1401.00	
		elevation of the edge of the historic wetland:	1395.00	
	$\mathbf{V}_{\mathbf{OUT}}$	elevation of a representative deepest portion of the wetland:	1399.00	1.00
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland	0.00	
iic		(ex. 25%=25), otherwise enter 0:	0.00	
Hydrogeomorphic		ratio of the constructed elevation to the natural outlet elevation:	1.00	
m		depth of surface drainage invert:		
<b>60</b> ]	$\mathbf{V}_{ ext{SUBOUT}}$	distance from WAA edge:		1.00
60		location/spacing of subsurface tile within the WAA:		
dr		type & effect of surface alteration(s):		
- X	$\mathbf{V}_{\mathbf{SOURCE}}$	% of historic catchment area still contributing runoff:		0.50
	Socres	additions of water from other sources:		
		change in wetland regime class?	1045.00	
	V	wetland perimeter (feet):  wetland area (acres):	1045.00 0.30	1.00
	$\mathbf{V_{EDGE}}$	Shoreline Development Index:	2.58	1.00
		wetland area (acres):	0.30	
	$V_{CATCHWET}$	catchment area (acres):	2.20	1.00
	CATCHWET	ratio of catchment size to wetland size:	7.33	1.00
	V <sub>UPUSE</sub>	total acre size of the present day catchment:	2.20	
		acres of catchment for each curve number:		
		98	2.20	
		90		
		79		
		77		
		72		
		75		
se		73		0.00
du	· OF USE	71		0.00
in		72		
Landuse		74		
8		69		
96		79 74		
ар		69		
SC		61		
Landscape &		weighted average score for upland land use:	98.00	
a		distance to nearest wetland(feet):	85.00	
Ι		distance to 2nd nearest wetland:	145.00	
	₹7	distance to 3rd nearest wetland:	191.00	1.00
	$\mathbf{V}_{\mathbf{WETPROX}}$	distance to 4th nearest wetland:	370.00	1.00
		distance to 5th nearest wetland:	507.00	
		mean distance (feet):	259.60	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	21.00	0.03
	V <sub>BASINS</sub>	number of palustrine wetlands within a 1-mile radius:	24.00	0.09
	$ m V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	42.50	0.00
	' HABFRAG	miles of rouge and initial autitudes within a 1-fillic faulus.	12.50	0.00

Function	FCI	FCU
1. Water Storage	0.51	0.15
2. Groundwater Recharge	0.73	0.22
3. Retain Particlulates	0.39	0.12
4. Remove, Convert, and Sequester Dissolved Substances	0.68	0.20
5. Plant Community Resilience and Carbon Cycling	0.56	0.17
6a. Provide Faunal Habitat	0.61	0.18
6b. Provide Faunal Habitat (Alternate Formula)	0.21	0.06

USER NOTE: Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.

Wetland #8

Project Name/Location:		
	Interstate 229 Exit 3 Reconstruction	
·	Sioux Falls, Minnehaha County	

	Variable	Data entered		Subindex
		wetland perimeter (feet):	569.40	
	$\mathbf{V}_{\mathbf{GRASSCONT}}$	grassland along perimeter (feet):	569.40	1.00
		percent continuity:	100.00	
		grassland width (feet) at 12 points:		
		Point 1:	50.00	
		Point 2:	36.00	
		Point 3:	18.00	
		Point 4:	35.00	
n		Point 5:	44.00	0.85
jo	V <sub>GRASSWIDTH</sub>	Point 6:	46.00	
Vegetation		Point 7:	50.00	0.65
get		Point 8:	50.00	
e Se		Point 9:	50.00	
<b>&gt;</b>		Point 10:	50.00	
		Point 11:	50.00	
		Point 12:	21.00	
		mean width (feet):	41.67	
		(see vegetation worksheet for species entered)		
		sum of species:	8.00	
	$ m V_{VEGCOMP}$	sum of C values:	5.00	0.08
		mean coefficient of conservatism:	0.63	
		FQI:	1.77	

	V <sub>RECHARGE</sub>	Soil Recharge Potential Subindex:	0.75	0.75	
		Eastern Prairie Potholes			
	<b>V</b> 7	mean depth to B horizon (inches):	0.27		
	V <sub>SED</sub>	Western Prairie Potholes		0.27	
		mean depth to B horizon (inches):			
		SQI scores for 4 samples:			
		sample 1:	1.50		
	V	sample 2:	1.50	0.04	
	V <sub>SQI</sub>	sample 3:	2.00	0.04	
		sample 4:	2.00		
		average SQI score:	1.75		
		Indirect Measurements			
		Litter Depth for 4 samples:			
		sample 1:	0.00		
		sample 2:	0.00		
		sample 3:	0.00		
		sample 4:	0.00		
		Average Litter Depth (inches):	0.00		
	V <sub>SOM</sub>	ADI for 4 samples:			
=		Sample 1 hue:	10.00		
Soil		value:	2.00		
<b>9</b> 2		chroma:	1.00		
		ADI:	6.00		
		Sample 2 hue:	10.00		
		value:	2.00		
		chroma:	1.00	0.30	
	· SOM	ADI:	6.00	0.50	
		Sample 3 hue:	10.00		
		value:	2.00		
		chroma:	2.00		
		ADI:	7.00		
		Sample 4 hue:	10.00		
		value:	2.00		
		chroma:	2.00		
		ADI:	7.00		
		average ADI:	6.50		
		Direct Measurements			
		% organic carbon for 0-15cm depth:			
		% organic carbon for 15-30cm depth:			
	<b>I</b>	mean percentage:			
		% organic carbon:	1.68		

		=			
		historic invert elevation in relation to wetland maximum depth:	1395.00		
		present (or constructed) invert elevation:	1402.00		
		elevation of the edge of the historic wetland:	1395.00		
	$\mathbf{V}_{\mathbf{OUT}}$	elevation of a representative deepest portion of the wetland:	1399.00	1.00	
6)		if evaluating pit or fill, enter % volume of pit/fill vs. wetland	0.00		
hic		(ex. 25%=25), otherwise enter 0:			
Hydrogeomorphic		ratio of the constructed elevation to the natural outlet elevation:	1.00		
m		depth of surface drainage invert:			
<b>60</b>	$\mathbf{V}_{ ext{SUBOUT}}$	distance from WAA edge:		0.25	
080		location/spacing of subsurface tile within the WAA:			
dr		type & effect of surface alteration(s):			
, i	$\mathbf{V}_{\mathbf{SOURCE}}$	% of historic catchment area still contributing runoff:		0.50	
1		additions of water from other sources:			
		change in wetland regime class?	560.40		
	V	wetland perimeter (feet):  wetland area (acres):	569.40 0.26	1.00	
	$ m V_{EDGE}$	` /	1.51	1.00	
		Shoreline Development Index:	0.26		
	V	wetland area (acres): catchment area (acres):	2.10	1.00	
	$\mathbf{V}_{ ext{CATCHWET}}$	ratio of catchment size to wetland size:	8.08	1.00	
		total acre size of the present day catchment:	2.10		
		acres of catchment for each curve number:	2.10		
		98	2.10		
		90	2.10		
		79			
		77			
		72			
		75			
e		73		0.00	
ns	$\mathbf{V}_{\mathbf{UPUSE}}$	71		0.00	
pu		72			
Landuse		74			
		69			
<b>~</b>		79			
be.		74			
ငဒ		69			
qs		61			
Landscape &		weighted average score for upland land use:	98.00		
L		distance to nearest wetland(feet):	57.00		
		distance to 2nd nearest wetland:	161.00		
	$\mathbf{V}_{\mathbf{WETPROX}}$	distance to 3rd nearest wetland:	184.00	1.00	
	EII ROA	distance to 4th nearest wetland:	280.00		
		distance to 5th nearest wetland:	289.00	-	
	<b>X</b> 7	mean distance (feet):	194.20	0.02	
	V <sub>WETAREA</sub>	acres of palustrine wetlands within a 1-mile radius:	21.00	0.03	
	$V_{BASINS}$	number of palustrine wetlands within a 1-mile radius:	24.00	0.09	
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	42.50	0.00	

Function	FCI	FCU
1. Water Storage	0.25	0.07
2. Groundwater Recharge	0.37	0.10
3. Retain Particlulates	0.32	0.08
4. Remove, Convert, and Sequester Dissolved Substances	0.34	0.09
5. Plant Community Resilience and Carbon Cycling	0.29	0.07
6a. Provide Faunal Habitat	0.31	0.08
6b. Provide Faunal Habitat (Alternate Formula)	0.13	0.03

USER NOTE: Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.

Project N	ame/Location:		
•			
•			

	Variable	Data entered		Subindex
		wetland perimeter (feet):	2832.40	
	V <sub>GRASSCONT</sub>	grassland along perimeter (feet):	2832.40	1.00
		percent continuity:	100.00	
		grassland width (feet) at 12 points:		
		Point 1:	36.00	
		Point 2:	50.00	
		Point 3:	50.00	
		Point 4:	39.00	
<b>=</b>		Point 5	24.00	
<u>.</u> [0]	*7	Point 6:	36.00	0.75
at	V <sub>GRASSWIDTH</sub>	Point 7:	42.00	0.75
et		Point 8:	39.00	
Vegetation		Point 9:	30.00	
		Point 10:	50.00	
		Point 11:	31.00	
		Point 12:	18.00	
		mean width (feet):	37.08	
		(see vegetation worksheet for species entered)		
		sum of species:	8.00	
	V <sub>VEGCOMP</sub>	sum of C values:	9.00	0.16
		mean coefficient of conservatism:	1.13	
		FQI:	3.18	

	V <sub>RECHARGE</sub>	Soil Recharge Potential Subindex:	0.50	0.50
		Eastern Prairie Potholes		
	V/	mean depth to B horizon (inches):		0.27
	V <sub>SED</sub>	Western Prairie Potholes		0.27
		mean depth to B horizon (inches):	2.00	
		SQI scores for 4 samples:		
		sample 1:	2.00	
	V <sub>SQI</sub>	sample 2:	1.50	0.03
	▼ SQI	sample 3:	1.50	0.03
		sample 4:	1.50	
		average SQI score:	1.63	
		Indirect Measurements		
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):		
	V <sub>SOM</sub>	ADI for 4 samples:		
il		Sample 1 hue:	10.00	
Soil		value:	2.00	
01		chroma:	1.00	
		ADI:	6.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	1.00	0.31
	5011	ADI:	6.00	
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
	 	Sample 4 hue: value:	2.00	
			chroma: 2.00	
	<u> </u>	ADI: average ADI:	7.00 6.25	
		Direct Measurements	0.23	
	<del>                                     </del>	% organic carbon for 0-15cm depth:		
		% organic carbon for 0-13cm depth:		
		mean percentage:		
		% organic carbon:	1.71	
		% organic carbon:	1./1	

		<b>=</b>					
		historic invert elevation in relation to wetland maximum depth:	1395.00				
		present (or constructed) invert elevation:	1400.00				
		elevation of the edge of the historic wetland:	1395.00				
	$\mathbf{V}_{\mathbf{OUT}}$	elevation of a representative deepest portion of the wetland:	1401.00	1.00			
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland	0.00				
iic		(ex. 25%=25), otherwise enter 0:	0.00				
Hydrogeomorphic		ratio of the constructed elevation to the natural outlet elevation:					
<u> </u>		depth of surface drainage invert:					
<b>e0</b> ]	$\mathbf{V}_{ ext{SUBOUT}}$	distance from WAA edge:					
80		location/spacing of subsurface tile within the WAA:					
dre		type & effect of surface alteration(s):					
	$V_{SOURCE}$	% of historic catchment area still contributing runoff:		0.50			
H	SOURCE	additions of water from other sources:					
		change in wetland regime class?	2022 40				
	V	wetland perimeter (feet):	2832.40	1.00			
	$ m V_{EDGE}$	wetland area (acres):	0.91 4.01	1.00			
-		Shoreline Development Index: wetland area (acres):	0.91				
	$\mathbf{V}_{ ext{CATCHWET}}$	catchment area (acres):	7.00	1.00			
		ratio of catchment size to wetland size:	7.69	1.00			
		total acre size of the present day catchment:	7.00				
		acres of catchment for each curve number:	7.00				
	$ m V_{UPUSE}$	98	7.00				
		90					
		79					
		77					
		72					
		75					
se		73		0.00			
du		71		0.00			
Landuse		72					
Lí		74					
8		69 79					
Landscape &		79					
ар		69					
SC		61					
nd		weighted average score for upland land use:	98.00				
ြရ		distance to nearest wetland(feet):	56.00				
		distance to 2nd nearest wetland:	155.00				
	<b>T</b> 7	distance to 3rd nearest wetland:	191.00	0.00			
	$V_{WETPROX}$	distance to 4th nearest wetland:	463.00	0.99			
		distance to 5th nearest wetland:	470.00				
		mean distance (feet):	267.00				
	$\mathbf{V}_{\mathbf{WETAREA}}$	acres of palustrine wetlands within a 1-mile radius:	21.00	0.03			
	$V_{BASINS}$	number of palustrine wetlands within a 1-mile radius:	24.00	0.09			
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	42.50	0.00			

Function	FCI	FCU
1. Water Storage	0.25	0.23
2. Groundwater Recharge	0.35	0.32
3. Retain Particlulates	0.33	0.30
4. Remove, Convert, and Sequester Dissolved Substances	0.34	0.31
5. Plant Community Resilience and Carbon Cycling	0.29	0.27
6a. Provide Faunal Habitat	0.32	0.29
6b. Provide Faunal Habitat (Alternate Formula)	0.16	0.14

USER NOTE: Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.

<b>Project</b>	Name/L	Location:
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Interstate 229 Exit 3 Reconstruction
Sioux Falls, Minnehaha County
Wetland #10

	Variable	Variable Data entered			
		wetland perimeter (feet):	219.30		
	V <sub>GRASSCONT</sub>	grassland along perimeter (feet):	219.30	1.00	
		percent continuity:	100.00		
	<u> </u>	grassland width (feet) at 12 points:			
	<u> </u>	Point 1:	50.00		
		Point 2:	50.00		
		Point 3:	50.00		
		Point 4:	50.00		
n		Point 5	50.00		
io	V	Point 6:	50.00	0.99	
at	V <sub>GRASSWIDTH</sub>	Point 7:	35.00	0.99	
, set		Point 8:	50.00		
Vegetation		Point 9:	50.00		
	Г	Point 10:	50.00		
		Point 11:	50.00		
		Point 12:	50.00		
		mean width (feet):	48.75		
		(see vegetation worksheet for species entered)			
	Г	sum of species:	3.00		
	$ m V_{VEGCOMP}$	sum of C values:	0.00	0.00	
	F	mean coefficient of conservatism:	0.00		
		FQI:	0.00		

	$ m V_{RECHARGE}$	Soil Recharge Potential Subindex:	0.75	0.75
		Eastern Prairie Potholes		
	V	mean depth to B horizon (inches):		0.80
	V <sub>SED</sub>	Western Prairie Potholes		0.80
		mean depth to B horizon (inches):	6.00	
		SQI scores for 4 samples:		
		sample 1:	2.50	
	V	sample 2:	2.50	0.12
	V <sub>SQI</sub>	sample 3:	2.50	0.13
		sample 4:	3.00	
		average SQI score:	2.63	
		Indirect Measurements		
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
	<u> </u>	ADI for 4 samples:		
		Sample 1 hue:	10.00	
Soil	V <sub>SOM</sub>	value:	2.00	
<b>9</b> 2		chroma:	2.00	
		ADI:	7.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	2.00	0.35
	SOM	ADI:	7.00	0.33
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		average ADI:	6.75	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.83	

		=					
		historic invert elevation in relation to wetland maximum depth:	1395.00				
		present (or constructed) invert elevation:	1396.00				
		elevation of the edge of the historic wetland:	1395.00				
	$ m V_{OUT}$	elevation of a representative deepest portion of the wetland:	1396.00	0.05			
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland	0.00				
iic		(ex. 25%=25), otherwise enter 0:	0.00				
Hydrogeomorphic		ratio of the constructed elevation to the natural outlet elevation:					
mc		depth of surface drainage invert:					
<b>e0</b> ]	$\mathbf{V}_{ ext{SUBOUT}}$	distance from WAA edge:		0.25			
) <b>8</b> 0		location/spacing of subsurface tile within the WAA:					
lre		type & effect of surface alteration(s):					
[yc	$ m V_{SOURCE}$	% of historic catchment area still contributing runoff:		0.50			
T T	SOURCE	additions of water from other sources:					
		change in wetland regime class?	210.20				
	v	wetland perimeter (feet):  wetland area (acres):	219.30 0.04	1.00			
	$\mathbf{V}_{ ext{EDGE}}$	` /	1.48	1.00			
		Shoreline Development Index: wetland area (acres):	0.04				
	$\mathbf{V}_{ ext{CATCHWET}}$	catchment area (acres):	4.38	1.00			
		ratio of catchment size to wetland size:	109.50	1.00			
		total acre size of the present day catchment:	4.38				
		, ,	acres of catchment for each curve number:				
	$ m V_{UPUSE}$	98	4.38				
		90					
		79					
		77					
		72					
		75					
se		73		0.00			
du		71					
Landuse		72					
L		74					
8		69 79					
Landscape &		79					
ap		69					
Sc		61					
nd		weighted average score for upland land use:	98.00				
[a		distance to nearest wetland(feet):	100.00				
		distance to 2nd nearest wetland:	101.00				
	V	distance to 3rd nearest wetland:	198.00	1.00			
	$\mathbf{V}_{\mathbf{WETPROX}}$	distance to 4th nearest wetland:	243.00	1.00			
		distance to 5th nearest wetland:	318.00				
		mean distance (feet):	192.00				
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	21.00	0.03			
	$V_{BASINS}$	number of palustrine wetlands within a 1-mile radius:	24.00	0.09			
	$ m V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	42.50	0.00			

Function	FCI	FCU
1. Water Storage	0.16	0.01
2. Groundwater Recharge	0.19	0.01
3. Retain Particlulates	0.53	0.02
4. Remove, Convert, and Sequester Dissolved Substances	0.16	0.01
5. Plant Community Resilience and Carbon Cycling	0.14	0.01
6a. Provide Faunal Habitat	0.15	0.01
6b. Provide Faunal Habitat (Alternate Formula)	0.08	0.00

		South I		Riverine I		odel, Version 1.1 Form		
Field Office	e					nt Area ID. (if more than	n one)	11
County		Minneha	ha County			cres (Pre-project)		63
Date		9/25/201				cres (Post-project)		
Producer/L	andowner	South Da	kota DOT			Type of wetland (fring	e adjacent to	stream
Yellow flag			If Y, what	?		channel, or depression		
Red flag? (	Y/N)		If Y, what	?		plain)?		
						Discussion/	Variab	le Score
Variable	Me	asureme	nt or Con	dition Resu	ılts	Rationale		Post-proj
	Flood plain h							
	Alterations	present (	Y/N)?		N			
	If Y, what?	?						
	(H <sub>fp</sub> ) pre-	-project			1			
$\mathbf{V}_{ ext{hydalt}}$		t-project -					1.00	0.00
* nydait	Wetland hydi						1.00	0.00
	Alterations				N			
	If Y, what?							
					1			
					¥7			
V	Watershed al				Y		0.50	0.00
V <sub>source</sub>	If Y, what?						0.50	0.00
			``		80			
	Wetland topo				Y			
	If Y, what?		Y/N)		Y			
	% of area (		rip rap 30	(T <sub>w</sub> ) pre =	1			
	% of area (		30	(Tw) post =	1			
$V_{topog}$	Flood plain to	* -	(T <sub>6</sub> )	(1 11) post =			0.50	0.00
			Y/N)		Y			
	If Y, what?				•			
	% of area (		40	$(T_{fp})$ pre =	0.5	1		
	% of area (			(T <sub>fp</sub> ) post =		1		
	Dominant up		(3 maximur	n)				
	pre1	Index	0.1	% area	40			
$V_{upuse}$	pre2	Index	1	% area	30		0.57	#DIV/0!
' upuse	pre3	Index	0.75	% area	30		0.57	"DI 170.
		1 Index		% area				
		2 Index		% area				
		3 Index		% area				
V <sub>detritus</sub>	Detritus thick	kness (in.)			0			
	Accelerated s		wetland?	(Y/N)	N			
$\mathbf{V}_{\mathrm{sed}}$	If Y, evidenc	e?	<u> </u>					
	Sediment this				0			
$V_{som}$	Dominant soi				Sand Loam			
	Dominant soil				10YR 2/2			
$\mathbf{V}_{\mathrm{soil}}$	Soil pores ob Soil structure			Fine				
	Rupture resis			Firm				
	Jure 10313		Pre-project					
	Buffer contin							
	Average buff			22				
	-		ating (B <sub>1</sub> )		0.2	1	0.14	
	Buffer condit	tion				1		
V	Conditio	n rating (E	32)		0.1			
$\mathbf{V}_{ ext{buffer}}$			Post-projec	t				
	Buffer contin	nuity (%) -						
	Average buff			•				0.00
			nting (B <sub>1</sub> )					0.00
	Buffer condit		<u> </u>					
	Conditio	n rating (E	27					
	*** .	Woody species present in WAA? (Y/N)			Y			
	* 1		(If N, score variable based on the herbaceous pa			1	1	1
	(If N, score v	ariable ba			000:			
	(If N, score v	variable ba s density (	%)		90%			
$\mathbf{V}_{ ext{denhw}}$	(If N, score v Herbaceou Woody der	variable bass density (	%) applicable	)	90% 10%			
$ m V_{denhw}$	(If N, score v Herbaceou Woody der Native specie	variable ba s density ( nsity (%, if	%) applicable	)	10%			
$ m V_{denhw}$	(If N, score v Herbaceou Woody der Native specie dominants)	variable ba s density ( nsity (%, it es present	%) applicable in wetland (	) (% of total	10%			
$oldsymbol{V_{denhw}}$	(If N, score v Herbaceou Woody der Native specie dominants) Vegetative ca	variable based strain s	%) applicable in wetland ( erage (%)	% of total	10%			
$ m V_{denhw}$	(If N, score v Herbaceou Woody der Native specie dominants) Vegetative ca Number of ve	variable based ensity (%, if the state of th	%) applicable in wetland ( erage (%) trata presen	% of total	10% 100% 10 3			
$egin{array}{c} V_{ m denhw} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	(If N, score v Herbaceou Woody der Native specie dominants) Vegetative ca Number of va Deviation 1	variable ba s density (%, if es present :) 	%)	% of total  tt of strata bel	10% 100% 10 3			

S.D. RIVERINE HGM MODEL WORKSHEET 1, VER. 1.1									
Use this work				are disconnected			the ability to		
				nd that lack this			, , , , , , , , , , , , , , , , , , ,		
DATE		09/25/18		OWNER/OPE		South Dakota I	OOT		
WETLAND ID		11		ASSESSMENT TYPE Field					
OBSERVERS -		Rebecca Bedul	n	•	YPE (NWI)				
CONDITIONS		110000000			YPE (FSA)	112000			
PROJECT NAI		PCN 000S (I-2	29 Exit 3)	REMARKS	( 2 2 3 )				
PLANNED AC		Roadway impr							
YELLOW FLA		read way mipr	5 ( CITICITES	RED FLAG (Y	//N)				
WETLAND AG		NG)	0.63		CRES (PREDIC	TED)	0		
				(VARIABLI	<u> </u>	<u> </u>			
Variable Existing Predicted									
V <sub>hydalf</sub> - Flood	l Plain/Wetlan	d Hydrology	Alterations		1.00		0.00		
		ogy Alterations			0.50		0.00		
V <sub>topog</sub> - Flood	Plain/Wetland	d Topographic	Complexity		0.50		0.00		
$\mathbf{V}_{ ext{upuse}}$ - Uplan	nd Use		<u> </u>		0.57		#DIV/0!		
V <sub>detritus</sub> - Detr	itus				0.00		0.00		
V <sub>sed</sub> - Sedime	ntation Withir	the Wetland			0.00		0.00		
$\overline{\mathbf{V}_{\mathbf{som}}}$ - Soil Or					0.00		0.00		
V <sub>soil</sub> - Soil Poi					0.00		0.00		
		Continuity, and	l Width		0.14		0.00		
V <sub>denby</sub> - Dens	ity of Perennia	al Herbaceous	and Woody V	egetation	0.00		0.00		
V <sub>pratia</sub> - Ratio	of Native to N	Non-Native Pla	ant Species	-B-1441311	0.00		0.00		
V <sub></sub> - Vegetat	tive Strata and	Canopy Cove	erage		0.00		0.00		
V <sub>wetuse</sub> - Wetl	and Use	Canopy Cove	ruge		0.00		0.00		
wetuse			1	1					
			J	Fyi	sting	Pred	icted		
	Fun	ction		FCI	FCU	FCI	FCU		
1.0 Storage of	Surface Water			0.00	0.00	0.00	0.00		
2.0 Velocity R		face Water Floy	V.	0.37	0.23	#DIV/0!	#DIV/0!		
3.0 Storage and			*	0.52	0.33	#DIV/0!	#DIV/0!		
4.0 Removal o			ounds	0.00	0.00	#DIV/0!	#DIV/0!		
5.0 Retention of				0.16	0.10	#DIV/0!	#DIV/0!		
6.0 Organic Ca		in organic in		0.19	0.12	0.00	0.00		
7.0 Maintains		lant Community	V	0.00	0.00	#DIV/0!	#DIV/0!		
8.0 Maintains				0.08	0.05	0.00	0.00		
9.0 Maintains				0.24	0.15	#DIV/0!	#DIV/0!		
		E IN FCU's	MINIMAL EFFECT		ON OF MINIM				
FUNCTION	NUMERICAL	%	(Y or N)		CTIONAL LOS				
1.0	0.00	#DIV/0!	#DIV/0!	11211011	CIIOIWE EOD	5 01 10 10 20	LICLIVI		
2.0	#DIV/0!	#DIV/0!	#DIV/0!						
3.0	#DIV/0!	#DIV/0!	#DIV/0!						
4.0	#DIV/0!	#DIV/0!	#DIV/0!						
5.0	#DIV/0!	#DIV/0!	#DIV/0!						
6.0	-0.12	-100.00%	No						
7.0	#DIV/0!	#DIV/0!	#DIV/0!						
8.0	-0.05	-100.00%	πDIV/0:						
9.0	#DIV/0!	#DIV/0!	#DIV/0!						
7.0	11211/01	11211/01	11211/01						



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