Appendix C

Wetland Delineation Report and Wetland Mitigation Confirmation

Wetland Delineation Report

I-29 Exit 130 (20th Street South) Interchange
EM 0295(45)130, PCN 020V
Brookings County, South Dakota

June, 2020

Authored by:

Kendall Vande Kamp, Environmental Scientist

HDR Engineering

6300 Old Village Place, STE 100

Sioux Falls, South Dakota, 57108

Contents

Tables

Figures

Appendices

1.0 Introduction

HDR was contracted by the South Dakota Department of Transportation (SDDOT) to complete a wetland delineation in support of the proposed 20th Street Interchange project in Brookings, South Dakota (the Project). The Project consists of studying a new interchange along Interstate 29 (I-29) at 20th Street South that would be approximately one mile long. The Project also considers the improvement of 20th Street South from 22nd Avenue South to 34th Avenue South, for a length of approximately one mile.

1.1 Project Location

The Project is located in southeast Brookings along 20th Street South from 22nd Avenue to 34th Avenue and north and south along I-29 (Figure 1). The Study Area comprises approximately 196 acres.

1.2 Purpose and Need

The purpose of the Project is to relieve congestion on major north/south and east/west arterials within Brookings to better connect workers and places of employment, and to provide access for planned economic development. The Project needs are to increase traffic capacity and improve system linkage.

2.0 Survey Methodology

HDR conducted a wetland delineation on May 12, 2020 to identify and document wetland boundaries and other potential waters of the U.S. (OWUS) within the Study Area.

Field delineated wetlands were delineated in accordance with guidelines provided in the Corps of Engineers Wetlands Delineation Manual (Manual) (United States Army Corps of Engineers [USACE], 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (Supplement) (USACE, 2010).

Desktop wetland boundaries were established following the field visit by utilizing Google Earth Aerial photography (12 years available), National Wetland Inventory (NWI), Natural Resource Conservation Service (NRCS) soil mapping, contours derived from Light Detection and Ranging (LiDAR) data, and the National Hydrography Dataset (NHD).

An area is considered a wetland if it meets three USACE defined requisite criteria as provided in the Manual and Supplement (USACE 1987; 2010): hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland boundaries were delineated where all three were present. A Cowardin class was also assigned to each wetland in accordance with the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979).

Sampling points and aquatic resource boundaries were collected using an EOS Arrow 100 Global Navigation Satellite System (GNSS) customized to collect data with sub-meter accuracy. The resulting GNSS data were used to generate the wetland delineation maps depicting wetlands and other Waters of the U.S. (OWUS) present within the Study Area.

2.1 Hydrology

Wetland hydrology was determined in the field using the primary and secondary hydrology indicators listed in the Manual and the Supplement (USACE, 1987; 2010). If the area displayed one or more primary hydrology indicators or two or more secondary hydrology indicators, a positive wetland hydrology determination was made.

2.2 Soils

Hydric soil determinations were made according to criteria listed in the Midwest Regional Supplement (2010) and Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 8.1 (United States Department of Agriculture [USDA], 2017). Soil pits were excavated to a depth necessary to confirm the presence or absence of hydric soil indicators, and the soil profile was described. Each horizon was evaluated for soil color, thickness, and the color, abundance, and contrast of redoximorphic features (mottles), and soil texture. Munsell soil color charts were used to determine the color of the soil matrix and redoximorphic features. The feel or ribbon test was used to determine soil texture. If the soil profile displayed one or more hydric soil indicators, a positive hydric soil determination was made. Table 1 summarizes the soils within the Study Area including which soils are classified as hydric (NRCS, 2019).

Table 1. Soils within Study Area

Map Unit Name	Map Unit Symbol	Acres	Percent Hydric	Associated Data Points
Barnes clay loam, 2 to 6 percent slopes	BbB	12.2	2	
Hamerly-Badger complex, 0 to 2 percent slopes	Hb	2.1	35	
Swenoda-Lanona sandy loams, 0 to 2 percent slopes	SwA	5.7	1	
Water	W	4.8	0	02W
Lowe loam, 0 to 1 percent slopes, occasionally flooded	Z154A	6.4	89	06W, 06U
Divide loam, 0 to 2 percent slopes, occasionally flooded	Z159A	13.3	10	08W, 08U
Moritz, occasionally flooded-Lamoure, frequently flooded, complex, 0 to 2 percent slopes	Z160A	1.0	35	07W, 07U

Map Unit Name	Map Unit Symbol	Acres	Percent Hydric	Associated Data Points
Fordtown loam, 0 to 2 percent slopes, rarely flooded	Z166A	77.9	0	01bU, 01U, 01W, 09W, 09U, 10U
Fordtown, rarely flooded-Spottswood, ocassionally flooded, loams, 0 to 2 percent slopes	Z169A	54.8	1	02U, 03W, 03U, 04W, 04U, 05W, 05U
Udorthents, coteau (gravel pits)	Z177	10.0	0	
Maddock-Egeland sandy loams, coteau, 2 to 6 percent slopes	Z186B	8.5	0	

2.3 Vegetation

Vegetation cover was recorded by stratum (USACE, 2010). The tree stratum is defined by the Regional Supplement to be a woody stemmed plant with a trunk diameter at breast height (DBH) of equal to or greater than 3 inches, regardless of height. The sapling and shrub stratum is defined by the Supplement to be composed of woody-stemmed plants with a trunk DBH of less than 3 inches, regardless of height. The herbaceous stratum includes all non-woody-stemmed plants regardless of height. Finally, the woody vine stratum includes all woody-stemmed vines, regardless of diameter.

The binomial scientific name and absolute cover of each species were recorded within a 30-foot radius for the tree stratum, 15-foot radius for the sapling and shrub stratum, 5-foot radius for the herbaceous stratum, and 30-foot radius for the woody vine stratum. The appropriate wetland indicator status was assigned to each plant species. Hydrophytic and non hydrophytic (or upland) species were differentiated by their respective indicator status per Lichvar (2016), which include obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. A plant community meeting the requisite criteria of the Rapid Test for Hydrophytic Vegetation, Dominance Test greater than 50 percent, Prevalence Index less than or equal to 3.0, Morphological Adaptations, Wetland Non-Vascular Plants, or Problematic Hydrophytic Vegetation was determined to meet the USACE criteria for hydrophytic vegetation.

3.0 Delineation Results

3.1 Field Delineated Wetlands

3.1.1 Slope Wetland

Wetland 01

Wetland 01a is a slope wetland that drains southwest through Edgebrook Golf Course. Wetland 01b is an excavated pond within the slope wetland. The wetland is conveyed south through a

culvert under a two tracked road that is an extension of 20th Street South. Wetland 01c extends through a ditch to the east and outlets into a former gravel pit.

Wetland 02

Wetland 02 is a former gravel pit with narrow of lacustrine fringe wetland surrounding open water habitat. This wetland was previously determined to be non-jurisdictional (NWO-2018-1398-PIE) and was documented to be "an artificial pond excavated in upland and used for irrigation". Recently, trees were removed from the former island and west end of the pond and fill was placed within the wetland. At the time of the delineation, surface water was discharging to the south through a culvert and into a drainage ditch.

Wetland 03

Wetland 03 is a maintained drainage ditch that was cut through either upland or a former broader slope wetland. Emergent herbaceous vegetation is growing throughout the majority of the channel. A berm of dredged fill lines the channel and is beginning to establish some young woody vegetation. Based on the available aerial imagery and the presence of small trees that are beginning to establish, it is likely the ditch has been dredged within the past decade using best professional judgment. Wetland 03 had surface flow at the time of the delineation which dissipated to the south as it drained toward the excavated pond on the southern end of the Study Area. It is likely that water drains via subsurface flow out of the excavated pond aside from abnormally large precipitation events.

Wetland 07

Wetland 07 is a sloped wetland on the eastern termini of the Study Area. It drains west through a culvert beneath 34th Avenue and then drains south within the road ditch. Wetland 07 was previously determined to be jurisdictional (NWO-2015-2427-PIE)

3.1.2 Depressional Wetland

Wetland 04

Wetland 04 is a poorly defined depressional area located in what was likely a former sloped wetland. The berm on the west side of Wetland 03 holds back water which can impound slightly prior to draining to the south and into a ditch that conveys water through a culvert into Wetland 03.

Wetland 05

Wetland 05 is an isolated prairie pothole wetland previously determined to be non-jurisdictional (NWO-2015-2427-PIE). It lacks a direct surface water (i.e., bed and bank channel) or shallow sub-surface (i.e., continuous wetland) connection to the Big Sioux River.

Wetlands 08 and 09

Wetlands 08 and 09 are ditch wetlands to the north and south of 20th Street and east of I-29. They have been constructed in upland and appear to drain only upland. No continuous surface wetland connection is present to other downstream tributaries. Consequently, these wetlands are likely to be determined preamble.

3.1.2 Riverine Wetland

Wetland 06

Wetland 06 is comprised of herbaceous fringe wetland abutting Stream 1 and was previously determined to be jurisdictional (NWO-2015-2427-PIE). The wetland has been significantly altered by dredging and its adjacent land use which is currently an active gravel mine.

3.2 Desktop Delineated Wetlands

Wetland 10

Wetland 10 is located between I-29 and Lake 01, a lacustrine system formed as a result of gravel mining. This wetland is a permittee responsible mitigation site that was constructed by converting an existing lake (Lake 01) to a seasonally flooded wetland with a 50-foot-wide buffer. This wetland mitigation was intended to offset 15.4 acres of seasonally and temporarily flooded jurisdictional wetlands associated with an authorized fill activity associated with NWO-2008-01333-PIE. Tract A & Tract B, Wetland Easement, LG Everist Addition totals 17.8 acres. The wetland area within the easement was delineated using a desktop approach since the entirety of the site, including upland buffer, is a necessary component of the site to meet permit conditions.

Wetlands 11 and 12

Wetlands 11 and 12 are located in Edgebrook Golf Course and appear to have been constructed in upland. Consequently they will likely be determined preamble.

3.3 Other Potential Waters of the U.S.

Stream 01

Stream 01 has distinguishable bed and bank features and narrow fringe wetland (Wetland 6) and was previously determined to be jurisdictional (NWO-2015-2427-PIE). During the previous jurisdictional determination it was noted to have a distinct bed and bank; however, wetland characteristics predominated within the channel. The flow of the tributary was noted to be ephemeral with subsurface flow within the previous jurisdictional determination. During the field visit for this effort, it appeared as though the channel was dredged in recent years; however, herbaceous vegetation was reclaiming itself within the channel. The apparent bed and bank features appear to be the result of dredging within what may have been a former slope wetland rather than the result of normally occurring flows. The flow regime appeared to be intermittent based on field observations at the time of the delineation as there was surface water conveyance in absence of rain in the days leading up to the field visit. However, due to the high water table that remains within the region as a result of the previous two record wet years, normal environmental conditions may not yet be present. For this reason, it is difficult to make a determination as to whether the flow regime is intermittent or ephemeral with the available data.

Lake 01

Lake 01 is a lacustrine system comprised mainly of deep water limnetic habitat with minimal amounts of littoral habitat around the edges. Lake 01 has a gravel bottom and was formed as a result of open pit gravel mining. Surface water was discharging to the south via drain under 20th Street and into Stream 01 at the time of the wetland delineation.

Table 2. Delineated Wetlands

Feature	Area (acres)	Latitude (Dec Deg)	Longitude (Dec Deg)	Cowardin Classification	Wetland Type*	Jurisdictional Status**	Associated Wetland Data Point	NWI Identifier
WL-01a	0.09	44.28305	-96.7645	R4SBC	Slope	Likely Non Jurisdictional	N/A	R4SBC
WL-01b	0.35	44.28255	-96.7633	R4SBCx	Slope	Likely Non Jurisdictional	01W	R4SBC
WL-01c	0.27	44.28230	-96.7615	PEMAx	Slope	Likely Non Jurisdictional	N/A	PEMCx
WL-02	3.29	44.28173	-96.7601	PUB1x	Depressional	Likely Non Jurisdictional	02W	PABFx
WL-03	1.63	44.27753	-96.7591	PEMAd	Slope	Likely Non Jurisdictional	03W	PEMAd
WL-04	0.71	44.27849	-96.7594	PEMAd	Slope	Likely Non Jurisdictional	04W	PEMAd
WL-05	0.14	44.27785	-96.7572	PEMAd	Depressional	Non Jurisdictional	05W	PEMAd
WL-06a	0.17	44.28201	-96.7544	RP1EM	Riverine	Likely Preamble	06W	PEMAd
WL-06b	0.12	44.28183	-96.7543	RP1EM	Riverine	Likely Preamble	N/A	L2UB
WL-07a	0.3	44.28168	-96.7476	PEMAx	Slope	Likely Jurisdictional	07W	PEMA
WL-07b	0.01	44.28144	-96.7482	PEMAx	Slope	Likely Jurisdictional	N/A	PEMA
WL-08a	0.03	44.28245	-96.7484	PEMAx	NA (Ditch)	Likely Preamble	08W	PEMCx
WL-08b	0.04	44.28228	-96.7489	PEMAx	NA (Ditch)	Likely Preamble	N/A	PEMCx
WL-08c	0.02	44.28229	-96.7509	PEMAx	NA (Ditch)	Likely Preamble	N/A	PEMCx

Feature	Area (acres)	Latitude (Dec Deg)	Longitude (Dec Deg)	Cowardin Classification	Wetland Type*	Jurisdictional Status**	Associated Wetland Data Point	NWI Identifier
WL-08d	0.16	44.28242	-96.7520	PEMAx	NA (Ditch)	Likely Preamble	N/A	PEMCx
WL-08e	0.06	44.28229	-96.7522	PEMAx	NA (Ditch)	Likely Preamble	N/A	PEMCx
WL-08f	0.02	44.28229	-96.7534	PEMAx	NA (Ditch)	Likely Preamble	N/A	PEMCx
WL-09a	0.02	44.28243	-96.757	PEMAx	NA (Ditch)	Likely Preamble	N/A	PEMCx
WL-09b	0.01	44.28244	-96.7566	PEMAx	NA (Ditch)	Likely Preamble	N/A	PEMCx
WL-09c	0.04	44.28244	-96.7557	PEMAx	NA (Ditch)	Likely Preamble	N/A	PEMCx
WL-09d	0.13	44.2823	-96.7559	PEMAx	NA (Ditch)	Likely Preamble	09W	PEMCx
WL-10	8.65	44.28672	-96.757	PUBHx	Depressional	Likely Non Jurisdictional	N/A	PEMA
WL-11	1.51	44.28389	-96.7598	PUBHx	Depressional	Likely Preamble	N/A	PEMC
WL-12	1.04	44.28307	-96.7614	PUBHx	Depressional	Likely Preamble	N/A	PEMAd
Total Wetland Acres	18.81							

*Wetland type refers to the HGM classification: depressional, riverine, or slope wetlands; **Jurisdictional Status assist SDDOT with determining whether or not the feature is under the authority of the USACE;

Table 3. Delineated Potential Other Waters of the US

Feature	Length (feet)	Area (Acres)	Latitude (Dec Deg)	Longitude (Dec Deg)	Cowardin Classification	Jurisdictional Status*	NWI Identifier
Stream 01	332	0.16	44.281870	-96.754375	R4SB5d	Likely Jurisdictional	R4SBC
Lake 01	N/A	11.60	44.283189	-96.754061	L1UBx	Likely Jurisdictional	PEMC
Total	332	11.76					

* Not an approved jurisdictional determination

4.0 Conclusion

Based on the desktop review and field survey, the wetlands within the Study Area have been delineated. Twelve wetlands totaling 18.81 acres, one stream totaling 322 linear feet (0.16 acre), and one lake totaling 11.60 acres were delineated. This report, along with the accompanying geographic information system (GIS) spatial files, can be used to identify avoidance and minimization opportunities, as well as to quantify unavoidable impacts to wetlands and streams for the Project. Discussion points regarding a wetland's likelihood of being determined as jurisdictional, non-jurisdictional, or preamble is not intended to be nor should be interpreted as a legal determination. An approved jurisdictional determination must be requested from the USACE if a legal determination is desired.

5.0 References

Cowardin, L. M.; Carter, V.; Golet, F. C.; LaRoe, E. T. (1979). *Classification of Wetlands and Deepwater Habitats of the United States.* Washington, D.C.: United States Department of Interior, Fish and Wildlife Service Report No. FWS/OBS/-79/31.

Lichvar R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. (2016). The National Wetland Plant List: 2016 Wetland ratings. *Phytoneuron*, 2016-30:1-17.

NRCS. (2020, May). *Web Soil Survey*. Retrieved from https://websoilsurvey.sc.egov.usda.gov

USACE. (1987). *Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1.* Vicksburg, MS: U.S. Army Corps of Engineers.

USACE. (2010). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).* Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USDA-NRCS. (2017). *Field Indicators of Hydric Soils in the United States, Version 8.1. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committe for Hydric Soils.*

6.0 Delineators Credentials

Kendall Vande Kamp, Environmental Scientist

Education: South Dakota State University, B.S. Env. Management
South Dakota State University, M.S. Biological Science

Training: Basic Wetland Delineation – Army Corps of Engineers
Wetland Delineation and Field Practicum

Caitlin Murphy, Environmental Scientist

Education: Minnesota State University, Mankato, B.S. Environmental Science

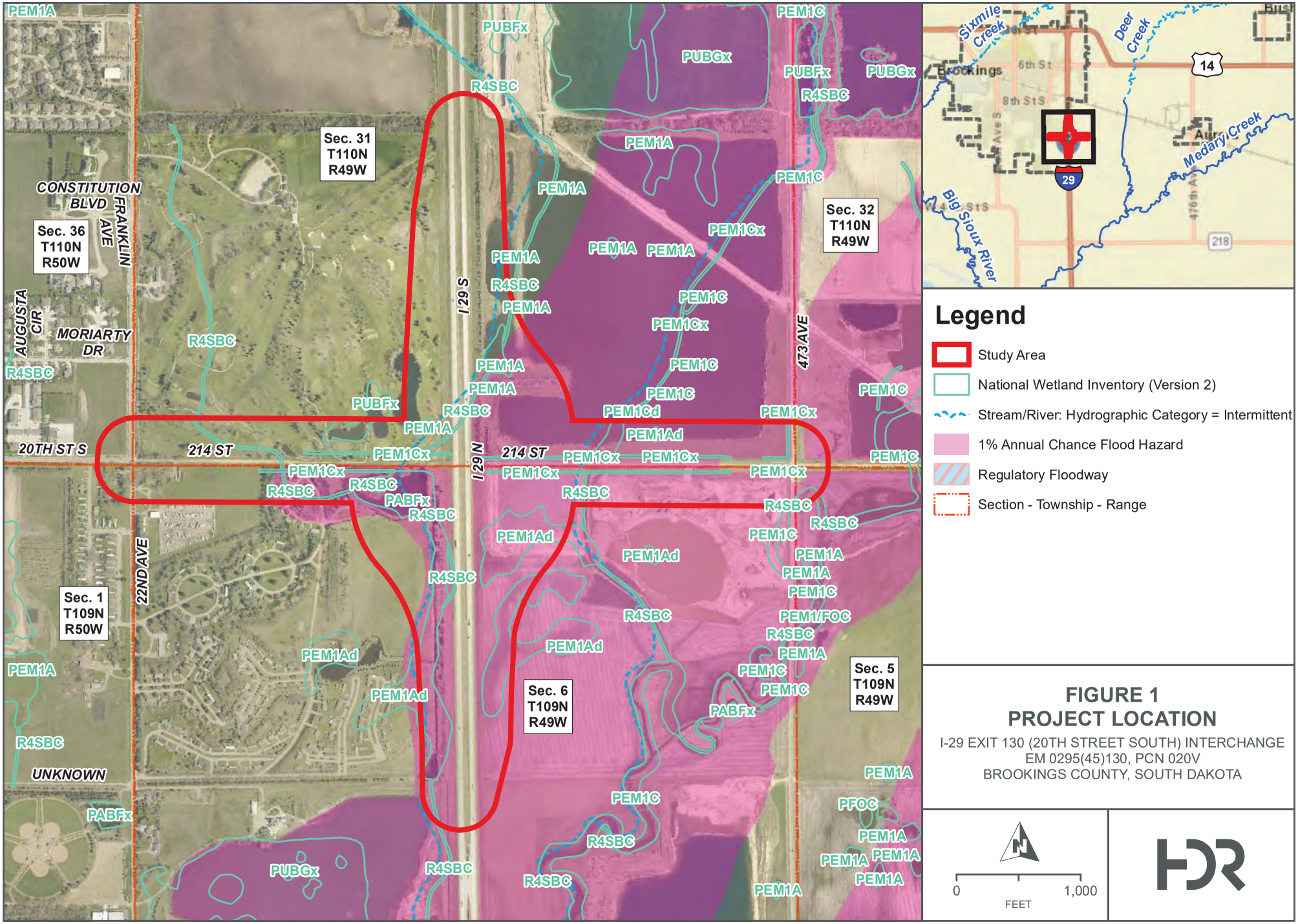
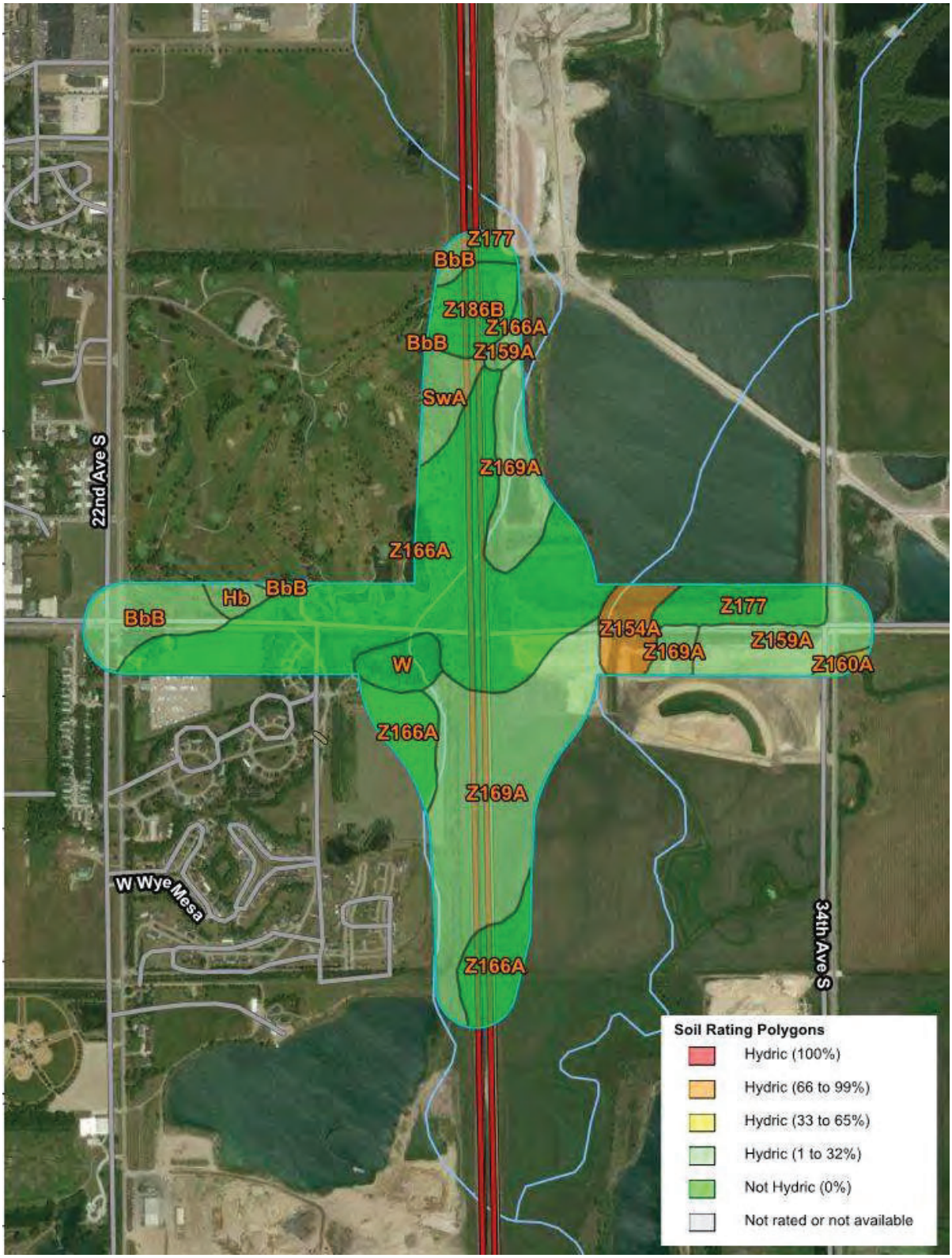


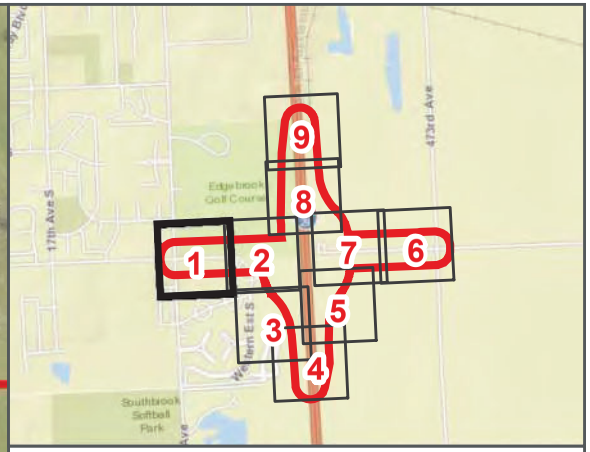
FIGURE 1
PROJECT LOCATION

I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_1_PROJECT_LOCATION_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/5/2020

Figure 2. Hydric Soil Map





Legend

- Study Area
- Wetland Sampling Point
- Upland Sampling Point
- Photo
- Miscellaneous
- Wetland (NWO-2015-2427-PIE)
- Field Delineated Wetland
- Desktop Delineated Wetland
- Potential Other Waters of the U.S.
- Wetland Mitigation Area
- Section - Township - Range

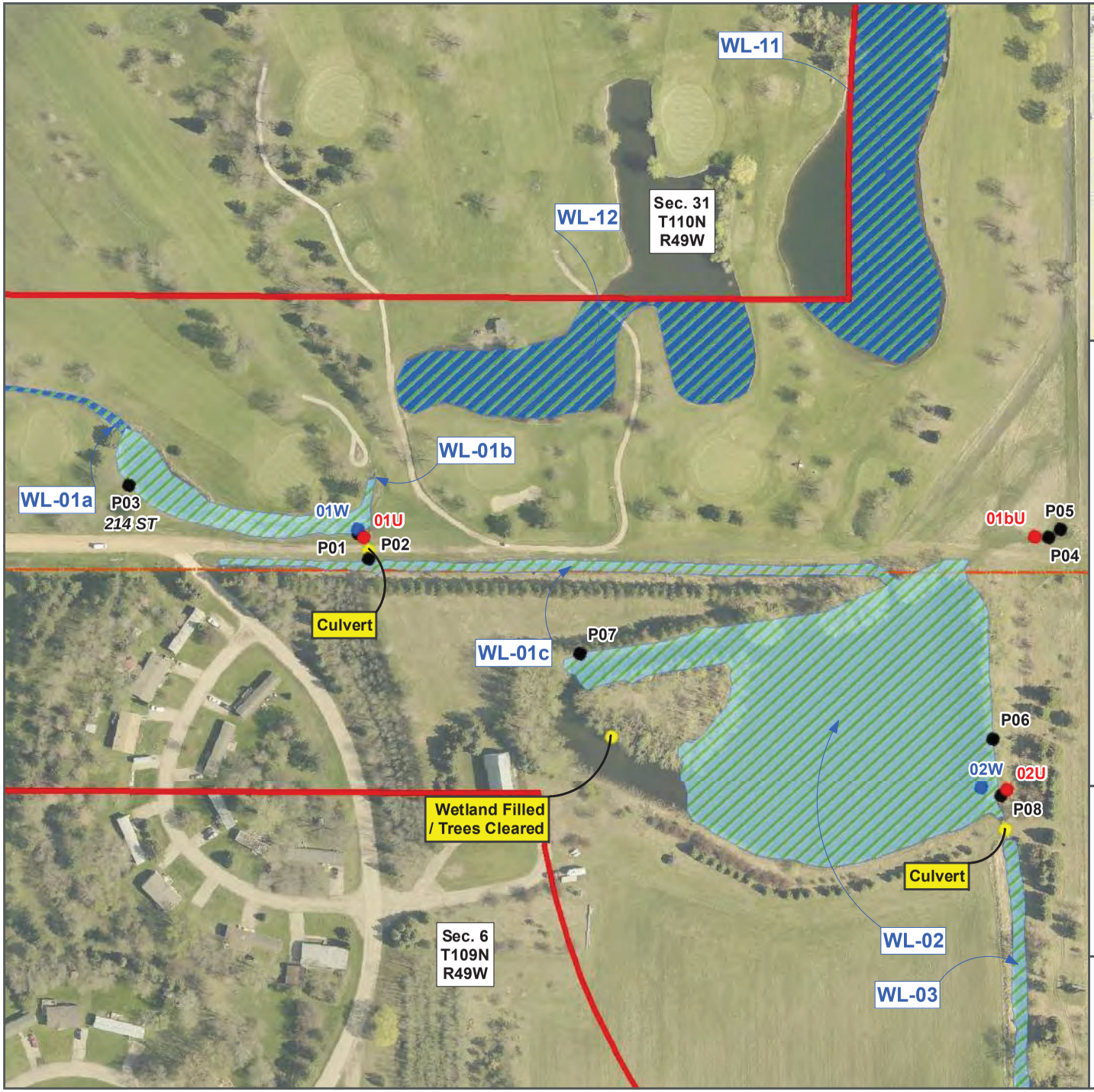
FIGURE 3-1
WETLAND MAPPING

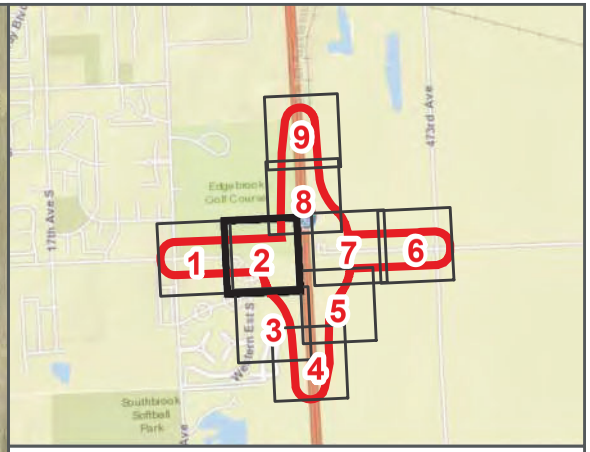
I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

0 FEET 200

HDR

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020





Legend

- Study Area
- Wetland Sampling Point
- Upland Sampling Point
- Photo
- Miscellaneous
- Wetland (NWO-2015-2427-PIE)
- Field Delineated Wetland
- Desktop Delineated Wetland
- Potential Other Waters of the U.S.
- Wetland Mitigation Area
- Section - Township - Range

FIGURE 3-2
WETLAND MAPPING

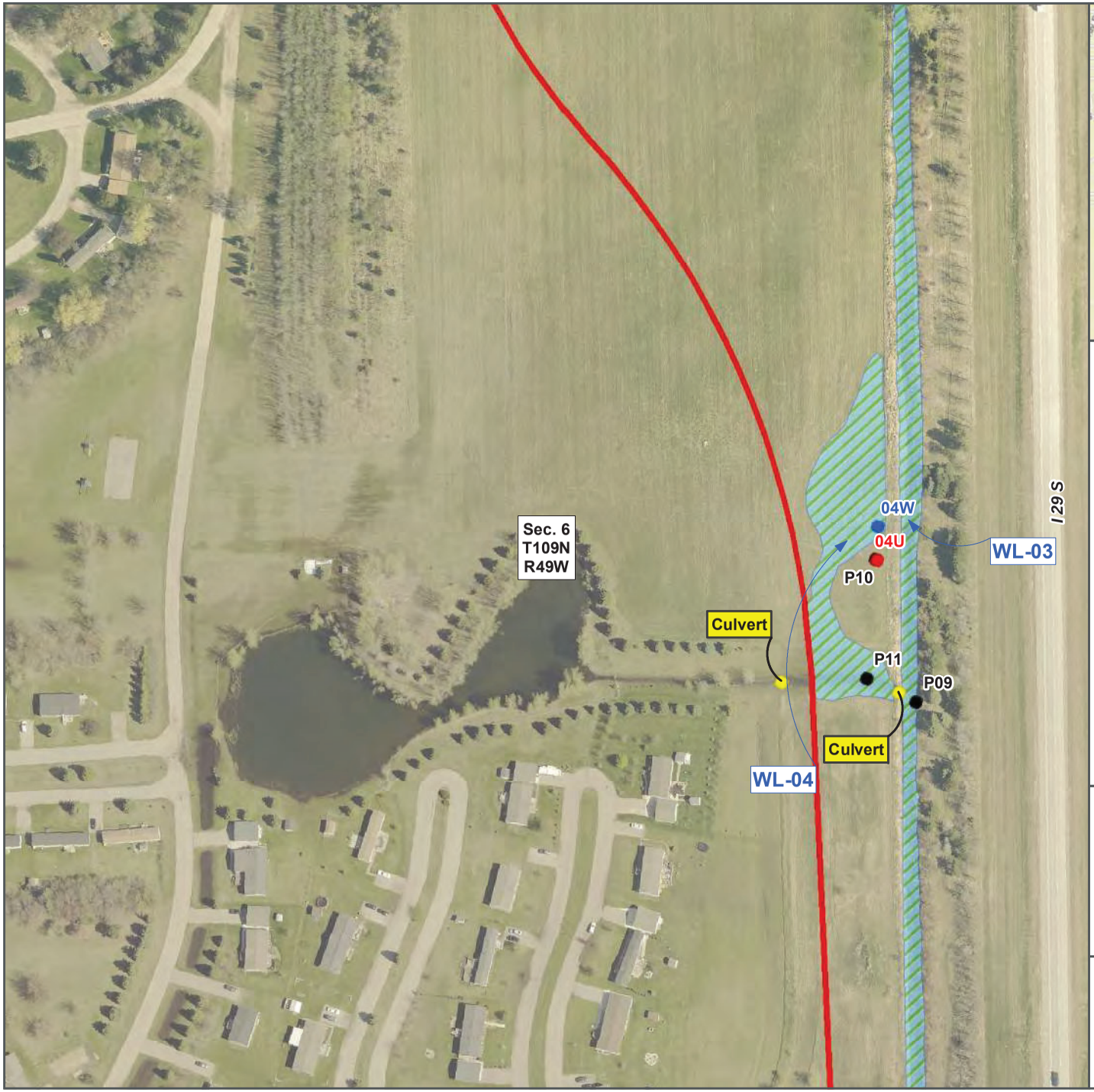
I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

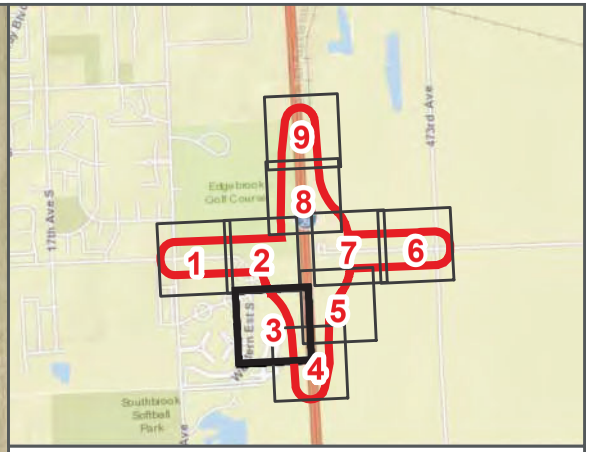
N

0 FEET 200

HDR

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020





Legend

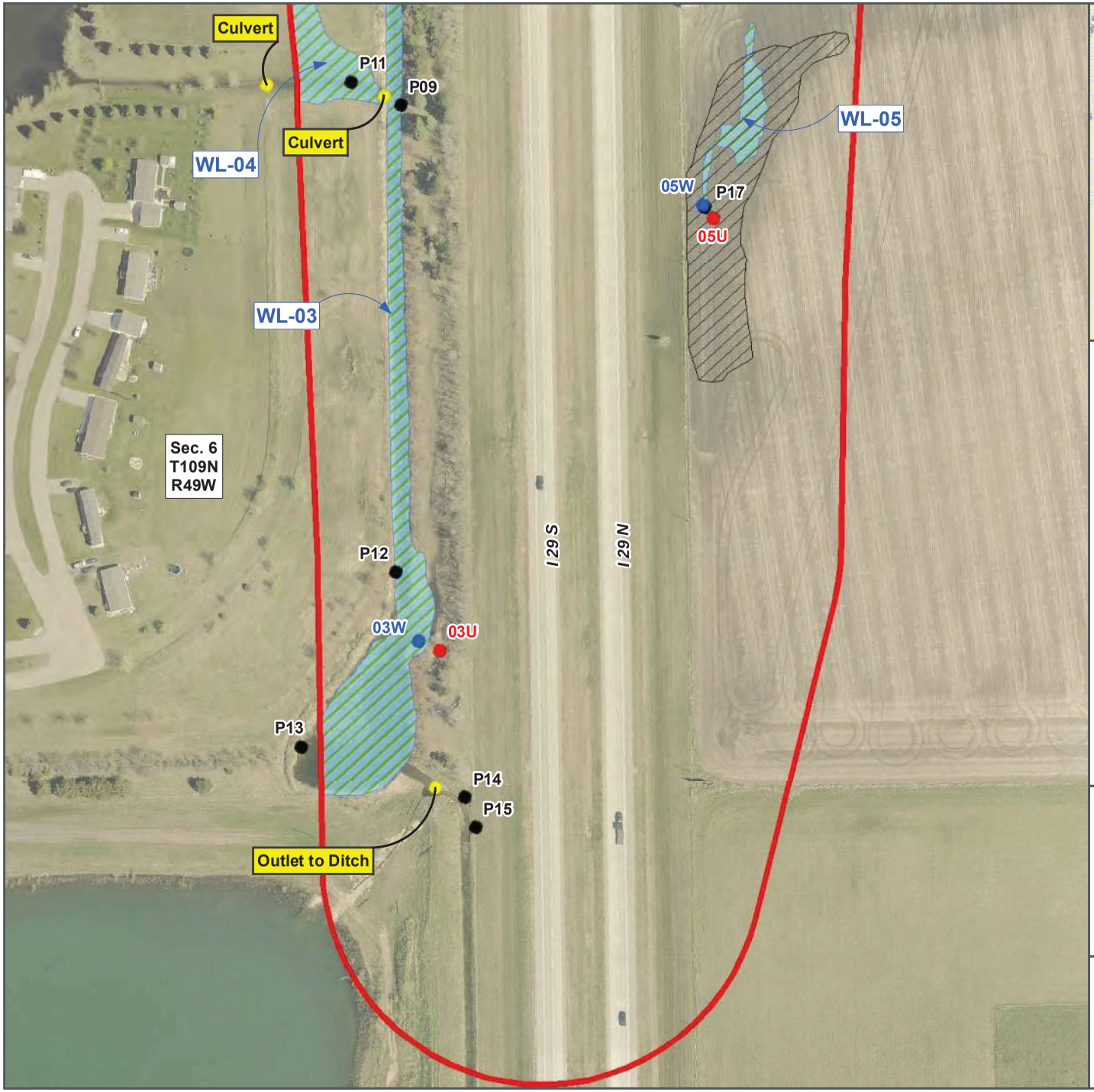
- Study Area
- Wetland Sampling Point
- Upland Sampling Point
- Photo
- Miscellaneous
- Wetland (NWO-2015-2427-PIE)
- Field Delineated Wetland
- Desktop Delineated Wetland
- Potential Other Waters of the U.S.
- Wetland Mitigation Area
- Section - Township - Range

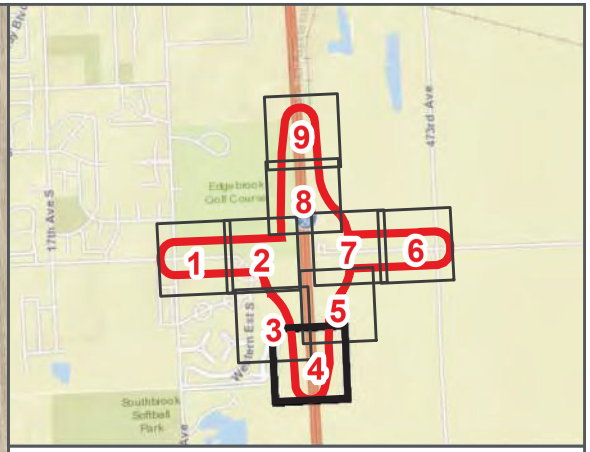
FIGURE 3-3
WETLAND MAPPING

I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

0 FEET 200

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020





Legend

- Study Area
- Wetland Sampling Point
- Upland Sampling Point
- Photo
- Miscellaneous
- Wetland (NWO-2015-2427-PIE)
- Field Delineated Wetland
- Desktop Delineated Wetland
- Potential Other Waters of the U.S.
- Wetland Mitigation Area
- Section - Township - Range

FIGURE 3-4
WETLAND MAPPING

I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

0 FEET 200

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020

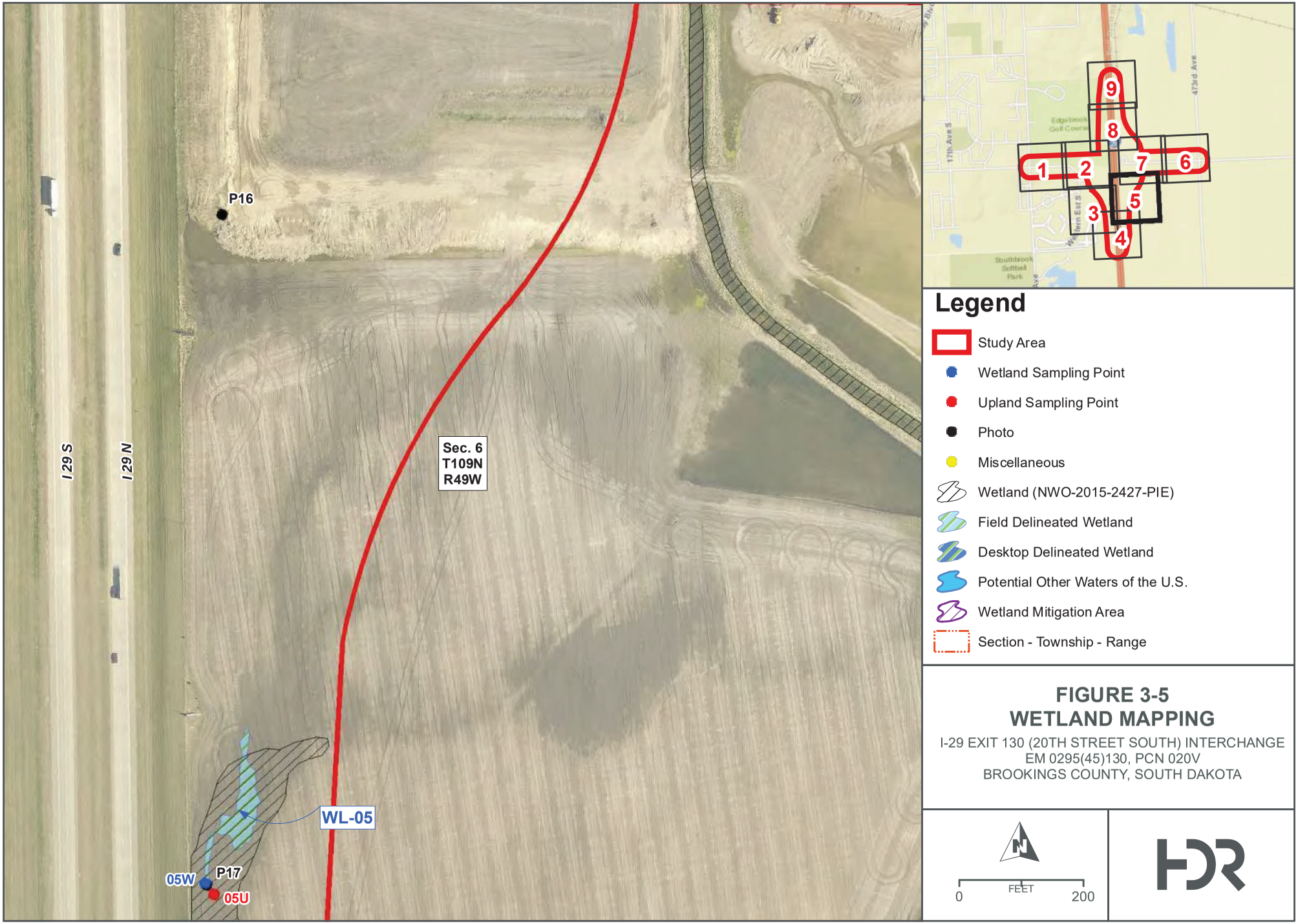
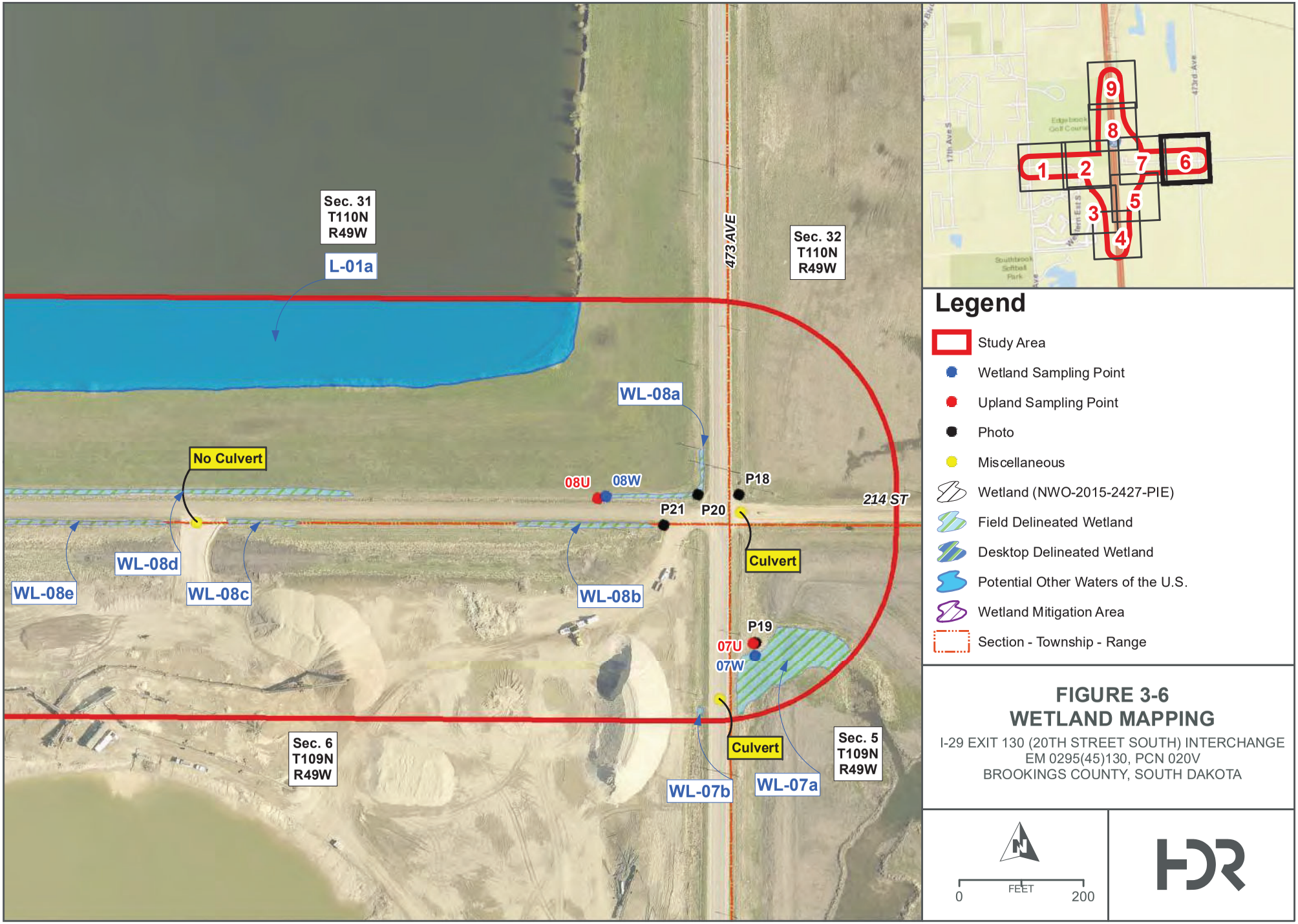


FIGURE 3-5
WETLAND MAPPING

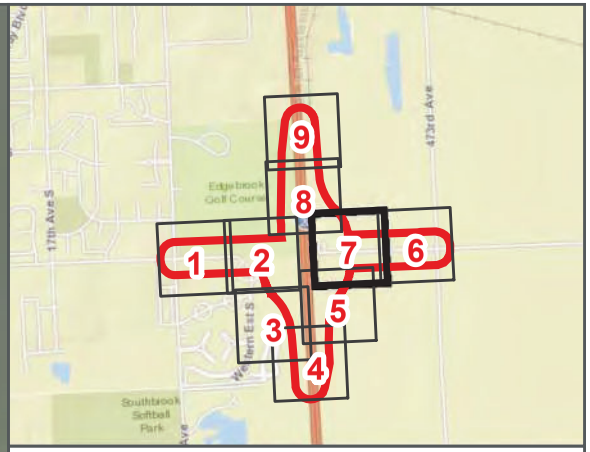
I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

0 FEET 200

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020



PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020



Legend

- Study Area
- Wetland Sampling Point
- Upland Sampling Point
- Photo
- Miscellaneous
- Wetland (NWO-2015-2427-PIE)
- Field Delineated Wetland
- Desktop Delineated Wetland
- Potential Other Waters of the U.S.
- Wetland Mitigation Area
- Section - Township - Range

FIGURE 3-7
WETLAND MAPPING

I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

0 FEET 200

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020

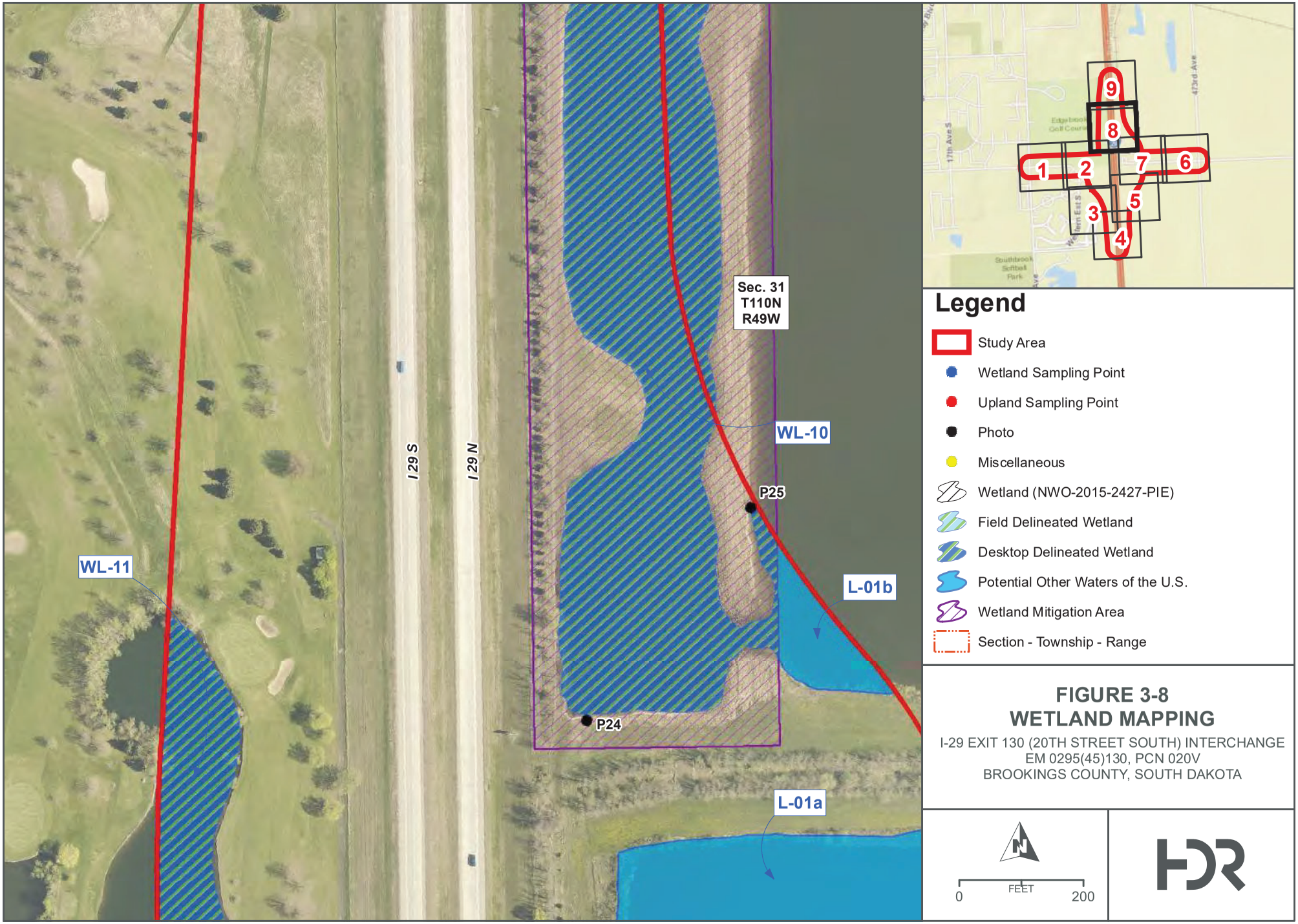
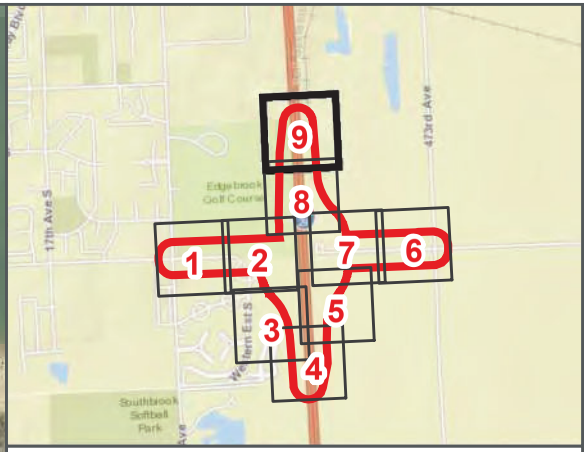


FIGURE 3-8
WETLAND MAPPING

I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020



Legend

- Study Area
- Wetland Sampling Point
- Upland Sampling Point
- Photo
- Miscellaneous
- Wetland (NWO-2015-2427-PIE)
- Field Delineated Wetland
- Desktop Delineated Wetland
- Potential Other Waters of the U.S.
- Wetland Mitigation Area
- Section - Township - Range

FIGURE 3-9
WETLAND MAPPING

I-29 EXIT 130 (20TH STREET SOUTH) INTERCHANGE
EM 0295(45)130, PCN 020V
BROOKINGS COUNTY, SOUTH DAKOTA

0 FEET 200

PATH: H:\GIS\PROJECTS\CITY_OF_BROOKINGS\I29_EXIST130_20THST_INTERCHANGE_10199125\MAP_DOCS\WETLAND_DELINEATION\FIGURE_3_WETLAND_MAPPING_BROOKINGS_INTERCHANGE.MXD - USER: KVANDEKA - DATE: 6/16/2020

Appendix A. Site Photographs

Photo 1: Facing northwest toward Wetland 01b.

Photo 3: Facing east toward Wetland 01b.

Photo 2: Facing east toward Wetland 01c

Photo 4: Facing east toward culvert under I-29.

Photo 5: Facing west toward upland drainage.

Photo 7: Facing east toward Wetland 02.

Photo 6: Facing west toward Wetland 02 (tree removal).

Photo 8: Facing south toward Wetland 02 outlet into drainage ditch.

Photo 9: Facing north toward Wetland 03.

Photo 10: Facing north toward Wetland 04.

Photo 11: Facing east toward Wetland 04 outlet (culvert is capped).

Photo 12: Facing north toward Wetland 03 at south end.

Photo 13: Facing east toward borrow pit in Wetland 03.

Photo 14: Facing north east toward surface outlet of Wetland 03.

Photo 15: Facing south toward upland ditch south of Wetland 03.

Photo 16: Facing east toward filled NWI.

Photo 17: Facing north toward Wetland 05.

Photo 18: Facing north toward upland ditch along 473rd Avenue.

Photo 19: Facing south toward Wetland 07a east of 473rd Avenue.

Photo 20: Facing west toward Wetland 08 south of 20th Street.

Photo 21: Facing west toward Wetland 08 south of 20th Street.

Photo 22: Facing north toward Stream 01 and 20th Street.

Photo 23: Facing east toward Wetland 09 south of 20th Street.

Photo 24: Facing north toward Wetland 10 (Wetland Mitigation Site).

Photo 25: Facing north toward Wetland 10 / Lake 1.

Photo 26: Soils from Data Point 01W

Photo 27: Soils from Data Point 01U

Photo 28: Soils from Data Point 02W.

Photo 29: Soils from Data Point 01bU

Photo 31: Soils from Data Point 03U.

Photo 30: Soils from Data Point 03W.

Photo 32: Soils from Data Point 04U.

Photo 33: Soils from Data Point 04W.

Photo 34: Soils from Data Point 05W.

Photo 35: Soils from Data Point 05U.

Photo 36: Soils from Data Point 06U.

Photo 37: Soils from Data Point 06W.

Photo 38: Soils from Data Point 07W.

Photo 39: Soils from Data Point 07U.

Photo 40: Soils from Data Point 10U.

Appendix B - Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 01bU

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 31 T 110N R 49W

Landform (hillslope, terrace, etc.): Swale Local Relief (concave, convex, none): Convex

Slope(%): 2 Lat: 44.28242028 Long: -96.75906206 Datum: NAD 1983

Soil Map Unit Name: Fordtown loam, 0 to 2 percent slopes, rarely flooded NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Point taken in upland swale that conveys storm runoff from I-29 and perhaps at times, flood water from east of I-29.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Bromus inermis	65	Y	FACU
Poa pratensis	35	Y	FAC
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	35	x 3 = 105
FACU species	65	x 4 = 260
UPL species	0	x 5 = 0
Column Totals:	100 (A)	365 (B)

Prevalence Index = B/A= 3.65

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is not present.

SOIL

Sampling Point: 01bU

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 2	10YR 3 / 1	100					SANDY LOAM	
2 to 8	10YR 5 / 4	100					SANDY LOAM	Gravelly

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☑ **Restrictive Layer (if observed):**

Type: Gravel

Depth (inches): 8

Hydric Soil Present? Yes ____ No X

Remarks:
No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
Wetland hydrology indicators are lacking.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 01U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 31 T 110N R 49W

Landform (hillslope, terrace, etc.): Fill Slope Local Relief (concave, convex, none): Convex

Slope(%): 2 Lat: 44.2824094 Long: -96.76255635 Datum: NAD 1983

Soil Map Unit Name: Fordtown loam, 0 to 2 percent slopes, rarely flooded NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Sampling point taken adjacent to Wetland 1b.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Poa pratensis	100	Y	FAC
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A= 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- X Prevalence Index ≤ 3.0
- ____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is present.

SOIL

Sampling Point: 01U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 3	10YR 3 / 1	100					SILTY CLAY LOAM	
3 to 18	10YR 3 / 1	70					SILTY CLAY LOAM	Gravelly - road fill
3 to 18	10YR 5 / 3	15					SILTY CLAY LOAM	Gravelly - road fill
3 to 18	10YR 4 / 3	15					SILTY CLAY LOAM	Gravelly - road fill

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 01W

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 31 T 110N R 49W

Landform (hillslope, terrace, etc.): Toe Slope Local Relief (concave, convex, none): Concave

Slope(%): 1 Lat: 44.28244001 Long: -96.76258618 Datum: NAD 1983

Soil Map Unit Name: Fordtown loam, 0 to 2 percent slopes, rarely flooded NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No ____**

Remarks:
Sampling point taken within Wetland 1b.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Typha angustifolia	60	Y	OBL
Phalaris arundinacea	40	Y	FACW
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	60	x 1 =	60
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		140 (B)

Prevalence Index = B/A= 1.40

Hydrophytic Vegetation Indicators:

X Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No ____**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 01W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 8	10YR 2/1	100					SILTY CLAY LOAM	
8 to 18	10YR 3/1	85	10YR 5/2	10	D	M	SILTY CLAY LOAM	Gravelly
8 to 18	/		10YR 4/6	5	C	M	CLAY LOAM	
18 to 24	10YR 5/1	50					CLAY LOAM	
18 to 24	10YR 5/2	45	7.5YR 3/4	5	C	M	CLAY LOAM	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:
Hydric soil present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Sufficient secondary wetland hydrology indicators met.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 02U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 2 Lat: 44.2758518 Long: -96.75881459 Datum: NAD 1983

Soil Map Unit Name: Fordtown, rarely flooded-Spottswood, ocassionally flooded, loams, 0 to 2 NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Upland sampling point taken adjacent to Wetland 2.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Populus deltoides	10	Y	FAC
	10	=Total Cover	
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Bromus inermis	35	Y	FACU
Poa pratensis	20	Y	FAC
Phalaris arundinacea	15	Y	FACW
	70	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	30	x 3 =	90
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	80 (A)		260 (B)

Prevalence Index = B/A= 3.25

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- ____ Prevalence Index ≤ 3.0
- ____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation is a weak wetland indicator due to dominance test met but not prevalence index. It appears likely that cottowood trees were planted due to spacing.

SOIL

Sampling Point: 02U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 8	10YR 3 / 1	100					SANDY LOAM	
8 to 15	10YR 4 / 3	100					SAND	gravelly

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: 15

Depth (inches): gravel

Hydric Soil Present? Yes ____ No X

Remarks:
No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):		
Water Table Present?	Yes ____	No X	Depth (inches):		
Saturation Present?	Yes ____	No X	Depth (inches):		

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 02W

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Pond Local Relief (concave, convex, none): Concave

Slope(%): 1 Lat: 44.28148112 Long: -96.75933649 Datum: NAD 1983

Soil Map Unit Name: Miscellaneous water areas NWI Classification: PABFx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No ____**

Remarks:
Sampling point taken within Wetland 02 which is a lacustrine open water wetland with an approximate 4-foot-wide fringe wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Populus deltoides	15	Y	FAC
	15	=Total Cover	
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Phalaris arundinacea	10	Y	FACW
	10	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	25 (A)		65 (B)

Prevalence Index = B/A = 2.60

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- X Prevalence Index ≤ 3.0
- ____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No ____**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 02W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 2	10YR 2/1	100						Organic
2 to 10	10YR 2/1	100					SAND	Gravel and organic muck

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☑ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
Hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches):	4	
Water Table Present?	Yes X	No	Depth (inches):	0	
Saturation Present?	Yes X	No	Depth (inches):	0	

Wetland Hydrology Present? Yes X No

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

Remarks:
Primary and secondary wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 03U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 3 Lat: 44.275859 Long: -96.758823 Datum: NAD 1983

Soil Map Unit Name: Fordtown, rarely flooded-Spottswood, ocassionally flooded, loams, 0 to 2 NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	____	No	X
Hydric Soil Present?	Yes	____	No	X
Wetland Hydrology Present?	Yes	____	No	X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Sampling point located adjacent to the southern end of Wetland 3.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Pinus Ponderosa	10	Y	UPL
Ulmus americana	10	Y	FACW
Juniperus virginiana	5	N	FACU
	25	=Total Cover	
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Bromus inermis	70	Y	FACU
Phalaris arundinacea	30	Y	FACW
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	75	x 4 =	300
UPL species	10	x 5 =	50
Column Totals:	125 (A)		430 (B)

Prevalence Index = B/A= 3.44

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is not present.

SOIL

Sampling Point: 03U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 13	10YR 2/1	100					SANDY LOAM	
13 to 22	10YR 4/2	100					SANDY LOAM	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes ____ No X

Remarks:
Ho hydric indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):		
Water Table Present?	Yes ____	No X	Depth (inches):		
Saturation Present?	Yes ____	No X	Depth (inches):		

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 03W

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 2 Lat: 44.27854478 Long: -96.75923036 Datum: NAD 1983

Soil Map Unit Name: Fordtown, rarely flooded-Spottswood, ocassionally flooded, loams, 0 to 2 NWI Classification: PEMAd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
Sampling point taken within Wetland 03 which is an apparent drainage ditch to improve drainage. Spoil piles along both sides of the ditch with small trees beginning to establish on it suggests it was likely excavated or underwent maintenance dredging within the past decade.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Acer saccharinum	10	Y	FACW
	10	=Total Cover	
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Phalaris arundinacea	70	Y	FACW
Spartina pectinata	30	Y	FACW
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	110	x 2 =	220
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		220 (B)

Prevalence Index = B/A= 2.00

Hydrophytic Vegetation Indicators:

X Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

___ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 03W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 10	10YR 2/1	100					SILT LOAM	
10 to 20	GLEY 1 5/1	100					SANDY CLAY LOAM	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes	X	No		Depth (inches): 12
Saturation Present?	Yes	X	No		Depth (inches): 8

Wetland Hydrology Present? Yes X No

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

Remarks:
Primary and secondary wetland hydrology indicators met.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 04U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 1 Lat: 44.27841962 Long: -96.75923457 Datum: NAD 1983

Soil Map Unit Name: Fordtown, rarely flooded-Spottswood, ocassionally flooded, loams, 0 to 2 NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Upland sampling point taken adjacent to Wetland 4.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Poa pratensis	90	Y	FAC
Taraxacum officinale	10	N	FACU
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	90	x 3 =	270	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	310	(B)

Prevalence Index = B/A= 3.10

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- ____ Prevalence Index ≤ 3.0
- ____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is a weak indicator since dominance test is met but prevalence is not.

SOIL

Sampling Point: 04U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 11	10YR 2/1	100					SILTY CLAY LOAM	
11 to 24	10YR 5/3	70					SILTY CLAY LOAM	
11 to 24	10YR 5/4	30					SILTY CLAY LOAM	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
Hydric soil is not present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
No wetland hydrology indicators met.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 04W

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 1 Lat: 44.27588731 Long: -96.75892796 Datum: NAD 1983

Soil Map Unit Name: Fordtown, rarely flooded-Spottswood, ocassionally flooded, loams, 0 to 2 NWI Classification: PEMAd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No ____**

Remarks:
Wetland sampling point taken within Wetland 4 which is a poorly defined depressional area that has formed wetland behind the spoil pile berm of the adjacent ditch.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Carex emoryi	60	Y	OBL
Alopecurus arundinaceus	30	Y	FACW
Typha angustifolia	10	N	OBL
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70	
FACW species	30	x 2 =	60	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	130	(B)

Prevalence Index = B/A= 1.30

Hydrophytic Vegetation Indicators:

X Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No ____**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 04W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 12	10YR 2/1	100					SILTY CLAY LOAM	
12 to 18	10YR 3/1	96	10YR 5/1	4	C	M	SILTY CLAY LOAM	
18 to 22	10YR 5/2	95	10YR 5/4	4	C	M	SANDY CLAY	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:
Hydric soil indicators are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:
Sufficient secondary wetland hydrology indicators met.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 05U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Convex

Slope(%): 1 Lat: 44.27747217 Long: -96.75740063 Datum: NAD 1983

Soil Map Unit Name: Fordtown, rarely flooded-Spottswood, ocassionally flooded, loams, 0 to 2 NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Upland sampling point taken adjacent to Wetland 5 in a disturbed upland field with ruderal vegetation. Topsoil stripping was taking place to the east at the time of the delineation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Phalaris arundinacea	15	Y	FACW
Hordeum jubatum	10	Y	FAC
Trifolium repens	5	N	FACU
	30	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	15	x 2 =	30	
FAC species	10	x 3 =	30	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	30	(A)	80	(B)

Prevalence Index = B/A= 2.67

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- X Prevalence Index ≤ 3.0
- ____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 05U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 12	10YR 2/1	100					SILTY CLAY	
12 to 20	10YR 5/4	100					SILTY CLAY	Gravelly

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 05W

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 1 Lat: 44.2775227 Long: -96.75745373 Datum: NAD 1983

Soil Map Unit Name: Fordtown, rarely flooded-Spottswood, ocassionally flooded, loams, 0 to 2 NWI Classification: PEMAd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No ____**

Remarks:
Wetland sampling point taken within Wetland 5. Wetland 5 is a poorly defined depressional area. Vegetation has been disturbed in previous years allowing ruderal species to persist.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Typha angustifolia	30	Y	OBL
Hordeum jubatum	10	Y	FAC
Phalaris arundinacea	5	N	FACW
	45	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30	
FACW species	5	x 2 =	10	
FAC species	10	x 3 =	30	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	45	(A)	70	(B)

Prevalence Index = B/A= 1.56

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- X Prevalence Index ≤ 3.0
- ____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No ____**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 05W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 4	10YR 2 / 1	100					SILTY CLAY	
4 to 8	10YR 2 / 1	70	10YR 5/2	30	D	M	SILTY CLAY	
8 to 16	10YR 5 / 2	90	10YR 5/6	10	C	M	CLAY	Gravelly

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:
Hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Sufficient secondary wetland hydrology indicators met.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 06U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Convex

Slope(%): 8 Lat: 44.28217572 Long: -96.7544853 Datum: NAD 1983

Soil Map Unit Name: Lowe loam, 0 to 1 percent slopes, occasionally flooded NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation X, Soil X, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Upland point taken adjacent to Wetland 6 on terrace next to riverine fringe wetland. Top soil has been stripped.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Trifolium repens	20	Y	FACU
Phalaris arundinacea	5	N	FACW
Taraxacum officinale	5	N	FACU
	30	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	30 (A)		110 (B)

Prevalence Index = B/A= 3.67

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is not present.

SOIL

Sampling Point: 06U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 16	10YR 4 / 3	85	10YR 5/2	10	D	M	CLAY LOAM	
0 to 16	/		10YR 4/6	5	C	M	CLAY LOAM	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
Stripped topsoil. No hydric indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 06W

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 0 Lat: 44.28214073 Long: -96.75440027 Datum: NAD 1983

Soil Map Unit Name: Lowe loam, 0 to 1 percent slopes, occasionally flooded NWI Classification: PEMCx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology X, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No ____**

Remarks:

Point located in riverine fringe Wetland 6 that abuts Stream 1. Stream has been dredged to improve drainage. Consequently, wetland hydrology has been disturbed.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Phalaris arundinacea	100	Y	FACW
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A= 2.00

Hydrophytic Vegetation Indicators:

X Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No ____**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 06W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 16	10YR 2/1	100					SILTY CLAY	
16 to 32	10YR 5/1	97	10YR	3	C	M	SILTY CLAY	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes		No	X	Depth (inches):
Saturation Present?	Yes		No	X	Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks:
Sufficient secondary wetland hydrology indicators met.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 07U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 2 Lat: 44.28176124 Long: -96.74786148 Datum: NAD 1983

Soil Map Unit Name: Moritz, occasionally flooded-Lamoure, frequently flooded, complex, 0 to 2 NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Upland sampling point taken adjacent to Wetland 7

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Bromus inermis	70	Y	FACU
Poa pratensis	10	N	FAC
Spartina pectinata	10	N	FACW
	90	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	90 (A)		330 (B)

Prevalence Index = B/A= 3.67

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is not present.

SOIL

Sampling Point: 07U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 18	10YR 2/1	100					SILTY CLAY LOAM	
18 to 24	10YR 4/2	100					SILTY CLAY LOAM	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☑ **Restrictive Layer (if observed):**

Type: Gravel

Depth (inches): 24

Hydric Soil Present? Yes ____ No X

Remarks:
Hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 07W

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 5 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave

Slope(%): 1 Lat: 44.28170708 Long: -96.74784906 Datum: NAD 1983

Soil Map Unit Name: Moritz, occasionally flooded-Lamoure, frequently flooded, complex, 0 to 2 NWI Classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No ____**

Remarks:
Wetland sampling point taken within Wetland 7.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Phalaris arundinacea	60	Y	FACW
Typha angustifolia	30	Y	OBL
Persicaria bicornis	10	N	FACW
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		170 (B)

Prevalence Index = B/A= 1.70

Hydrophytic Vegetation Indicators:

X Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No ____**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 07W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 20	10YR 2/1	100					SILTY CLAY LOAM	
20 to 30	10YR 5/1	100					SILTY CLAY LOAM	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:
Hydric soil is present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes		No	X	Depth (inches):
Saturation Present?	Yes		No	X	Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks:
Sufficient secondary wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 08U / 09U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 31 T 110N R 49W

Landform (hillslope, terrace, etc.): Ditch Local Relief (concave, convex, none): Convex

Slope(%): 12 Lat: 44.282398 Long: -96.748821 Datum: NAD 1983

Soil Map Unit Name: Divide loam, 0 to 2 percent slopes, occasionally flooded NWI Classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil X, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** **X**
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sampling points are located on road fill slopes adjacent to wetland in road ditch bottom.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Bromus inermis	50	Y	FACU
Poa pratensis	40	Y	FAC
	90	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	90 (A)		320 (B)

Prevalence Index = B/A= 3.56

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation indicators not met.

SOIL

Sampling Point: 08U / 09U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 4	10YR 3 / 1	100					LOAM	
4 to 12	10YR 4 / 3	100					SANDY LOAM	gravelly

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: 12

Depth (inches): gravel

Hydric Soil Present? Yes ____ No X

Remarks:
No hydric soil indicators are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
No wetland hydrology indicators are present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 08W / 09W

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 6 T 109N R 49W

Landform (hillslope, terrace, etc.): Ditch Local Relief (concave, convex, none): Concave

Slope(%): 0 Lat: 44.282407 Long: -96.748768 Datum: NAD 1983

Soil Map Unit Name: Divide loam, 0 to 2 percent slopes, occasionally flooded NWI Classification: PEMCx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:

Sampling points are located in reed canary grass ditch bottoms. Several approaches are present along the road that do not have culverts. Consequently, there is no surface water connectivity with the drainage that outlets from the gravel pit under normal conditions.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Phalaris arundinacea	80	Y	FACW
Bromus inermis	10	N	FACU
Poa pratensis	10	N	FAC
	100	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

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

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	80	x 2 =	160	
FAC species	10	x 3 =	30	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	230	(B)

Prevalence Index = B/A= 2.30

Hydrophytic Vegetation Indicators:

X Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0

____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 08W / 09W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 4	10YR 3 / 1	100					SILTY CLAY LOAM	
4 to 10	10YR 3 / 1	97	10YR 4/4	3	C	M	LOAM	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: 12

Depth (inches): gravel

Hydric Soil Present? Yes X No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes		No	X	Depth (inches):
Saturation Present?	Yes		No	X	Depth (inches):

Wetland Hydrology Present? Yes X No

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

aerial imagery

Remarks:

Sufficient wetland hydrology indicators are present.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-29 Exit 130 (20th Street South) Interchange City/County: Brookings / Brookings County Sampling Date: 5/12/2020

Applicant/Owner: SDDOT State: SD Sampling Point: 10U

Investigators: Kendall VandeKamp Caitlin Murphy Section, Township, Range S 5 T 109N R 49W

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): None

Slope(%): 0 Lat: 44.28293388 Long: -96.75687893 Datum: NAD 1983

Soil Map Unit Name: Fordtown loam, 0 to 2 percent slopes, rarely flooded NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation ____, Soil ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, Hydrology ____, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Upland sampling point taken adjacent to gravel pit (Lake 1) in an area that appeared to be a wetland fringe. Only 1/3 wetland indicators were present.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Ulmus americana	25	Y	FACW
Salix interior	15	Y	FACW
Cornus florida	10	Y	FACU
	50	=Total Cover	
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Phalaris arundinacea	80	Y	FACW
	80	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	120	x 2 =	240	
FAC species	0	x 3 =	0	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column Totals:	130	(A)	280	(B)

Prevalence Index = B/A= 2.15

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- X Prevalence Index ≤ 3.0
- ____ Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: 10U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 12	10YR 2/1	100					SILTY CLAY	
12 to 24	10YR 5/3	95	10YR 5/2	5	D	M	SILTY CLAY	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Dark Surface (S7)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

☑ **Restrictive Layer (if observed):**

Type: Gravel

Depth (inches): 24

Hydric Soil Present? Yes ____ No X

Remarks:
No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surf. (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
High ground water table supports hydrophytic trees and shrubs. Duration of soil saturation in the upper profile is likely brief due to lateral drainage into the gravel pit and the surface water elevation is regulated by the outlet drainage to the south.

Appendix C – Hydrogeomorphic Functional Assessment

To be completed based upon impacts determined during preliminary design using the HGM Classifications provided in Table 2 of the Wetland Delineation Report and confirmation of HGM Classifications by the USACE during their jurisdictional determination.

NORTH CENTRAL MITIGATION

Please provide all information pertinent to your Wetland Credit Purchase request.

U.S. Army Corps of Engineers Section 404 Permit Number:

TBD upon receiving AJD

PROJECT:

Name of Project (if applicable): https://www.20thstinterchange.com/

Legal description of the property to be impacted:

S6-109-49, 31-110-49, 6-109-49

County and State: Brookings, SD

Service Area: Upper Big Sioux

Number of **acres** of impacted wetlands: 0.6

Number and type of wetland **credits** requested: majority of impacts are to gravel pit - assuming no mitigation for those

roughly ≤2 Riverine Credits

Name of Corps of Engineers Project Manager: Nathan Morey

PERMIT APPLICANT:

Name & Address of Entity: SDDOT

700 E Broadway Ave.

Pierre, SD 57501

Name of primary POC: Kit Bramblee

Telephone numbers: 605.773.2428

Email: kit.bramblee@state.sd.us

PURCHASER:

Name & Address of Entity: same as applicant

Name of primary POC: _____

Telephone numbers: _____

_____

Email: _____

ENGINEER / AGENT:

Name & Address of Entity: HDR Engineering, Inc.

101 S. Phillips Avenue, Suite 401

Name of primary POC: Kendall Vande Kamp

Telephone numbers: 605.782.8115

_____

Email: kendall.vandekamp@hdrinc.com

Person completing this form: Kendall Vande Kamp

Signature _____ **Date:** 8/21/2020

Email this completed form to Lanita@EcoAssetMidwest.com

IMPORTANT: Attach a copy of your:

- **Corps of Engineers 404 Permit**
- **Wetland Mitigation Plan**

Upon receipt we will return to you, a **Draft Purchase Contract** and **Draft Letter of Credit Availability.** If you have questions, please phone our office: 605-809-7251.

Office Use Only:

Date Rec'd: _____ Service Area: _____

Name of Mitigation Bank to be drawn from: _____ Ratio: _____

Contract number: _____ Price: _____

Becky Baker

From: Rust, Jill <Jill.Rust@hdrinc.com>
Sent: Tuesday, August 25, 2020 1:24 PM
To: Becky Baker
Subject: FW: Upper Big Sioux GSA Credit Availability
Attachments: Client Intake form NCM FILLABLE.pdf

Jill Rust
D 605.782.8124 **M** 605.690.3500

hdrinc.com/follow-us

From: Vande Kamp, Kendall
Sent: Tuesday, August 25, 2020 12:38 PM
To: Rust, Jill <Jill.Rust@hdrinc.com>
Subject: FW: Upper Big Sioux GSA Credit Availability

FYI

From: Lanita Herbener [mailto:lanita@ecoassetmidwest.com]
Sent: Tuesday, August 25, 2020 12:01 PM
To: Vande Kamp, Kendall <Kendall.VandeKamp@hdrinc.com>
Subject: RE: Upper Big Sioux GSA Credit Availability

Good Morning, Kendall,

Thank you for sending the completed Client Intake form.

Thank you for your inquiry of availability of wetland mitigation credits in the Upper Big Sioux Service Area for the "20th Street Interchange Development". North Central Mitigation, LLC does have at this time wetland credits available to purchase to meet mitigation needs of up to 2 Riverine Credits. North Central Mitigation does not guarantee availability at any future date without buyer's pursuit of a binding Purchase Contract with North Central Mitigation.

Let me know if you have any further questions and if/when you wish to pursue purchasing credits.

Thank you!
Lanita Herbener for North Central Mitigation, LLC

Lanita Herbener
Office Manager

EcoAsset
MIDWEST, LLC