Appendix C

Desktop Aquatic Resource Delineation Report

Memorandum

To: Xcel Energy, Tim Rogers
From: Barr Engineering Co., Tyler Conley
Subject: Desktop Wetland Determination Summary
Date: July 23, 2026
Project: PowerOn: Midwest: Big Stone South to Brookings County to South Dakota/Minnesota Border
c: Aaron Miekle, and Sarah Johnson

On behalf of Xcel Energy, Barr Engineering Co. (Barr) completed a Level 1 Desktop Wetland Determination Review for the proposed PowerOn Midwest: Big Stone South to Brookings County to South Dakota/Minnesota Border Project (Project). The desktop review area evaluated a 250-foot-wide corridor based on the center line of the Proposed Route as well as the associated Substation Siting Areas located within Grant, Deuel, and Brookings counties, South Dakota (Map 1).

The Proposed Route includes: (1) an approximately 90-mile 765-kilovolt (kV) transmission line extending from the existing Big Stone South Substation in Grant County to the Brookings area and continuing to the South Dakota/Minnesota state line, and (2) an approximately five-mile 345-kV transmission line in Brookings County connecting the existing Brookings 345-kV Substation to the proposed expanded Brookings 765-kV Substation. The desktop review evaluated the three Substation Siting Areas: Big Stone South Substation (approximately 39 acres), expanded Brookings 765-kV Substation (approximately 238 acres), and Brookings 345-kV Substation (approximately 26 acres).

This desktop review was completed to support the South Dakota Public Utilities Commission Facility Permit Application by identifying potential wetlands and other aquatic resources that may occur within the Proposed Route and Substation Siting Areas.

This technical memorandum summarizes wetland presence within the desktop review area based on the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (reference (1)).

1 Desktop Wetland Determination Methods

Potential wetlands within the desktop review area were identified using a standardized desktop wetland determination methodology adapted from the USACE and Minnesota Board of Water and Soil Resources (BWSR) Guidance for Offsite Hydrology/Wetland Determinations (reference (2)), the USACE Wetlands Delineation Manual (reference (1)), and the Regional Supplement to the USACE Wetland Delineation Manual: Midwest Region (reference (3)). Although the BWSR Guidance for Offsite Hydrology/Wetland Determinations was originally developed for agricultural landscapes in Minnesota, the methodology provides a repeatable framework for evaluating wetland hydrology using remotely sensed information and multiple independent lines of evidence, and is suitable for the Project setting.

1.1 Desktop Review Process

The desktop review consisted of a systematic evaluation of the desktop review area using multiple geospatial datasets and aerial imagery. Each potential wetland was evaluated and assigned a unique identification number for evaluation. The review incorporated:

- National Wetlands Inventory (NWI) mapping (reference (4));
- United States Department of Agriculture (USDA) Web Soil Survey (reference (5)) hydric soil ratings;
- United States Geological Survey (USGS) National Hydrography Dataset (NHD) (reference (6));
- High-resolution aerial imagery from multiple years;
- Light Detection and Ranging (LiDAR)-derived topography;
- Surface drainage patterns and local depressional features; and
- Existing mapped water resources.

Potential wetlands were initially identified based on topographic position, mapped hydric soils, existing wetland inventories, drainage characteristics, and observable wetland signatures visible on aerial imagery. Each potential wetland polygon was then evaluated individually using all available datasets before a desktop wetland determination was made.

1.2 Evaluation of Aerial Imagery

Because no single aerial photograph represents long-term hydrologic conditions, multiple years of aerial imagery were reviewed for each potential wetland. Consistent with the USACE methodology, imagery from multiple years provides greater confidence in identifying areas that exhibit recurring wetland hydrology rather than temporary flooding associated with isolated precipitation events.

For each year of imagery, reviewers evaluated the presence or absence of recognizable wetland hydrology signatures, including:

- Standing water;
- Drowned-out vegetation;
- Crop stress;
- Soil wetness;
- Altered planting patterns;
- Persistent non-cropped areas; and
- Other recurring landscape characteristics indicative of prolonged soil saturation.

For each potential wetland, the number of years in which wetland hydrology indicators were observed on aerial imagery provided greater confidence that wetland hydrology was present.

1.3 Antecedent Precipitation Evaluation

Interpretation of aerial imagery was completed in conjunction with an evaluation of antecedent precipitation conditions. Hydrologic signatures visible on aerial photography are strongly influenced by rainfall accumulations preceding the date of the image.

For each aerial image reviewed, precipitation during the three months preceding image acquisition was evaluated using the Applied Climate Information System (reference (7)). Based on precipitation relative to long-term climate normals, each year was classified as Wet, Normal, or Dry antecedent conditions.

Evaluating imagery under varying climatic conditions provides important context when interpreting wetland signatures. Wet conditions may temporarily inundate upland depressions, while dry years may reduce or eliminate visible standing water even within jurisdictional wetlands. Areas that consistently exhibited wetland signatures under both normal and dry climatic conditions were considered to have stronger evidence of persistent wetland hydrology than areas displaying hydrologic indicators only during unusually wet years. Likewise, areas lacking hydrologic indicators during normal precipitation years were considered less likely to support wetland hydrology (Table 1).

Table 1 Aerial Imagery Reviewed and Antecedent Precipitation Conditions

Imagery Year	Imagery Source	Approximate Image Date	Antecedent Precipitation
2025	NAIP	15-Aug	Wet
2023	NAIP	10-Oct	Normal
2022	NAIP	3-Aug	Normal
2020	NAIP	17-Aug	Normal
2018	NAIP	22-Aug	Normal
2016	NAIP	14-Aug	Dry
2014	NAIP	22-Sep	Normal
2012	NAIP	14-Jul	Normal
2010	NAIP	15-Jul	Normal
2008	NAIP	8-Jul	Normal
2006	NAIP	1-Aug	N/A
2005	NAIP	1-Aug	N/A
2004	NAIP	19-Aug	N/A
2003	NAIP	1-Aug	N/A

Notes: National Agriculture Imagery Program (NAIP);
Not Available (N/A) antecedent precipitation was not calculated due to insufficient data

1.4 Hydric Soil Evaluation

Hydric soils were evaluated using the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS). The WSS provides the Hydric Rating by Map Unit, which estimates the proportion of each mapped soil unit that meets the definition of a hydric soil.

Hydric soils are soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper portion of the soil profile[1]. Because hydric soils are one of the three mandatory parameters used to identify wetlands under the USACE Wetlands Delineation Manual, mapped hydric soils provide an important line of evidence when conducting desktop wetland determinations. The USDA NRCS Hydric Rating categories used during this evaluation are summarized in Table 2 and shown on Map 2.

Table 2 USDA Hydric Soil Rating Categories

Hydric Rating	Description	Interpretation for Desktop Review
All Hydric (100%)	All components of the mapped soil unit are hydric soils	Strong evidence supporting wetland occurrence
Predominantly Hydric (67–99%)	Most components within the mapped unit are hydric soils	Strong evidence supporting wetland occurrence
Partially Hydric (33–66%)	Approximately one-third to two-thirds of the mapped unit consists of hydric soils	Moderate evidence supporting wetland occurrence; additional evidence from aerial imagery and topography considered
Predominantly Nonhydric (1–32%)	Only a small proportion of the mapped unit consists of hydric soils	Limited evidence of wetland occurrence; additional indicators evaluated
Not Hydric (0%)	No hydric soils are mapped within the soil unit	Does not support wetland occurrence, although wetlands may still occur due to mapping scale limitations or local site conditions

For purposes of the desktop wetland determination, soil map units classified as All Hydric, Predominantly Hydric, or Partially Hydric were considered to have hydric soils present. Soil map units classified as Predominantly Nonhydric or Not Hydric were considered to lack mapped hydric soils. This classification was incorporated into the project-specific decision matrix, together with the NWI mapping and observed wetland hydrology signatures, to determine whether a desktop wetland was identified and whether field verification was recommended.

1.5 Decision Matrix

Following completion of the desktop review, each potential wetland was evaluated using a decision matrix developed specifically for this project. The matrix integrated three primary indicators:

- Presence of mapped NWI wetlands;

[1] NRCS Hydric Soils

- Presence of hydric soils; and
- Frequency of observed wetland hydrology signatures across multiple years of aerial imagery.

These three lines of evidence were used to determine whether:

- Sufficient evidence existed to identify a desktop wetland;
- Additional field verification would be recommended; or
- Available information indicated the feature was unlikely to represent a wetland.

This repeatable process allowed for all potential wetlands to be evaluated consistently throughout the desktop review area.

2 Desktop Wetland Determination Results

Approximately 576 acres of wetlands were identified within the desktop review area (Table 3, Table 4, and Table 5) including freshwater emergent, freshwater forested/shrub, freshwater pond, riverine, and lake communities (Map 1).

Table 3 Desktop Identified Wetlands within the 765-kV Route

Wetland Community Classification	Acres
Freshwater Emergent	430.3
Freshwater Forested/Shrub	21.9
Freshwater Pond	37.7
Lake	29.9
Riverine	20.5
Total	540.3

Table 4 Desktop Identified Wetlands within the 345 kV Route

Wetland Community Classification	Acres
Freshwater Emergent	23.2
Freshwater Pond	2.5
Total	25.7

Table 5 Desktop Identified Wetlands within the Substation Siting Areas

Substation	Wetland Community Classification	Acres
Big Stone South Substation	Freshwater Emergent	7.2
Expanded Brookings 765 kV Substation	Freshwater Emergent	0.7
Brookings 345 kV Substation	Freshwater Emergent	2.6
Total		10.5

3 Conclusions

The findings of the desktop wetland determination effort help the project determine areas where wetland avoidance needs to be considered. It also helps provide the project plan if there are areas of the wetland that may be too large to feasibly span. As a next step, a field wetland verification will be conducted for each wetland type identified along the Proposed Route and within the Substation Siting Areas. The field verification is anticipated to occur in 2027 to support permitting efforts and will be completed in coordination with the USACE.

4 References

1. U.S. ARMY CORPS OF ENGINEERS. *Corps of Engineers Wetlands Delineation Manual*. January 1987. Vicksburg, MS : U.S. Army Corps of Engineers Waterways Experiment Station. Wetlands Research Program Technical Report Y-87-1

2. U.S. ARMY CORPS OF ENGINEERS and MINNESOTA BOARD OF WATER AND SOIL RESOURCES. *Guidance for Offsite Hydrology/Wetland Determinations*. 1 July 2016.

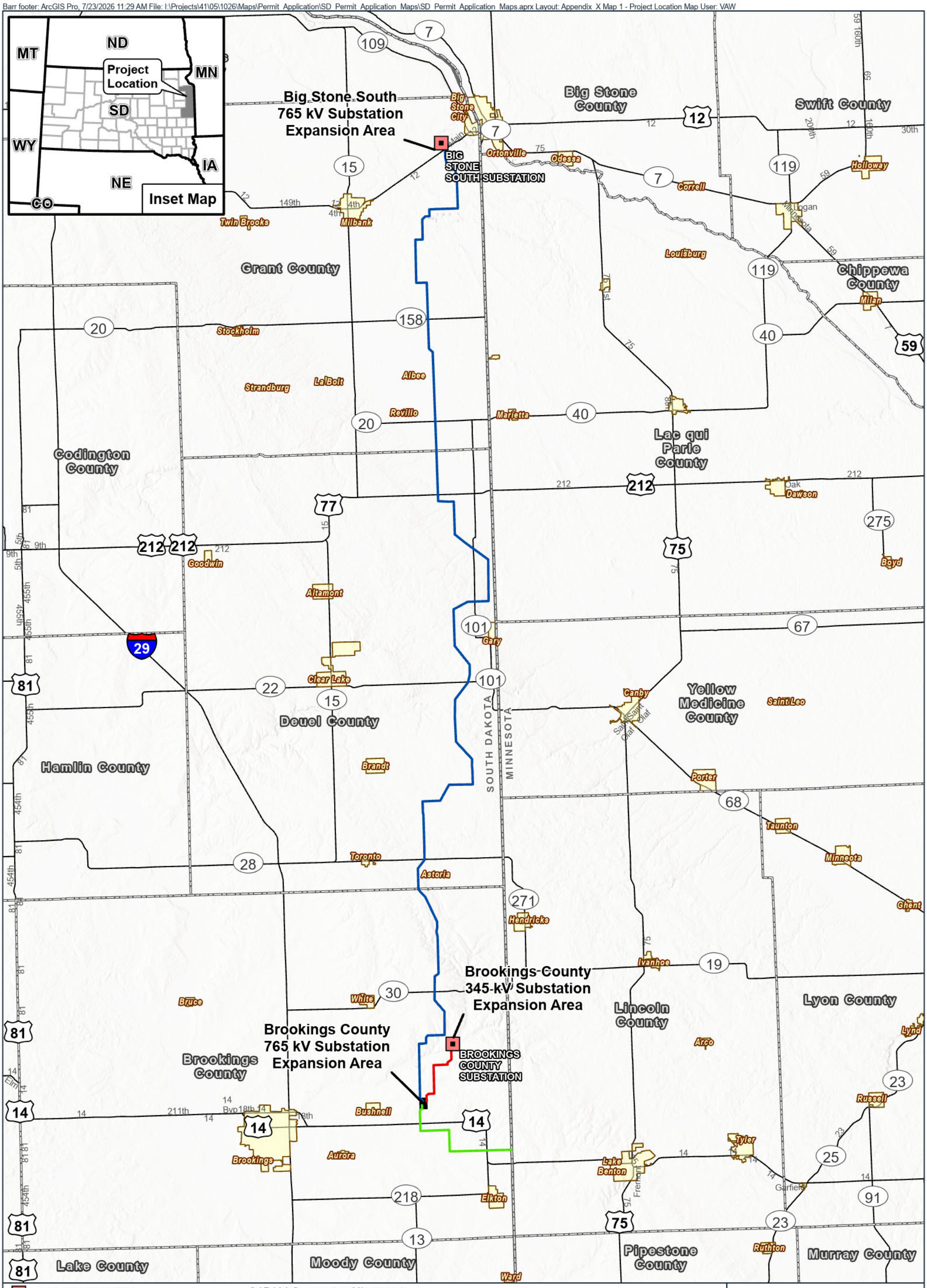
3. U.S. ARMY CORPS OF ENGINEERS. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*. Vicksburg, MS : U.S. Army Engineering Research and Development Center, 2010. ERDC/EL TR-10-16.

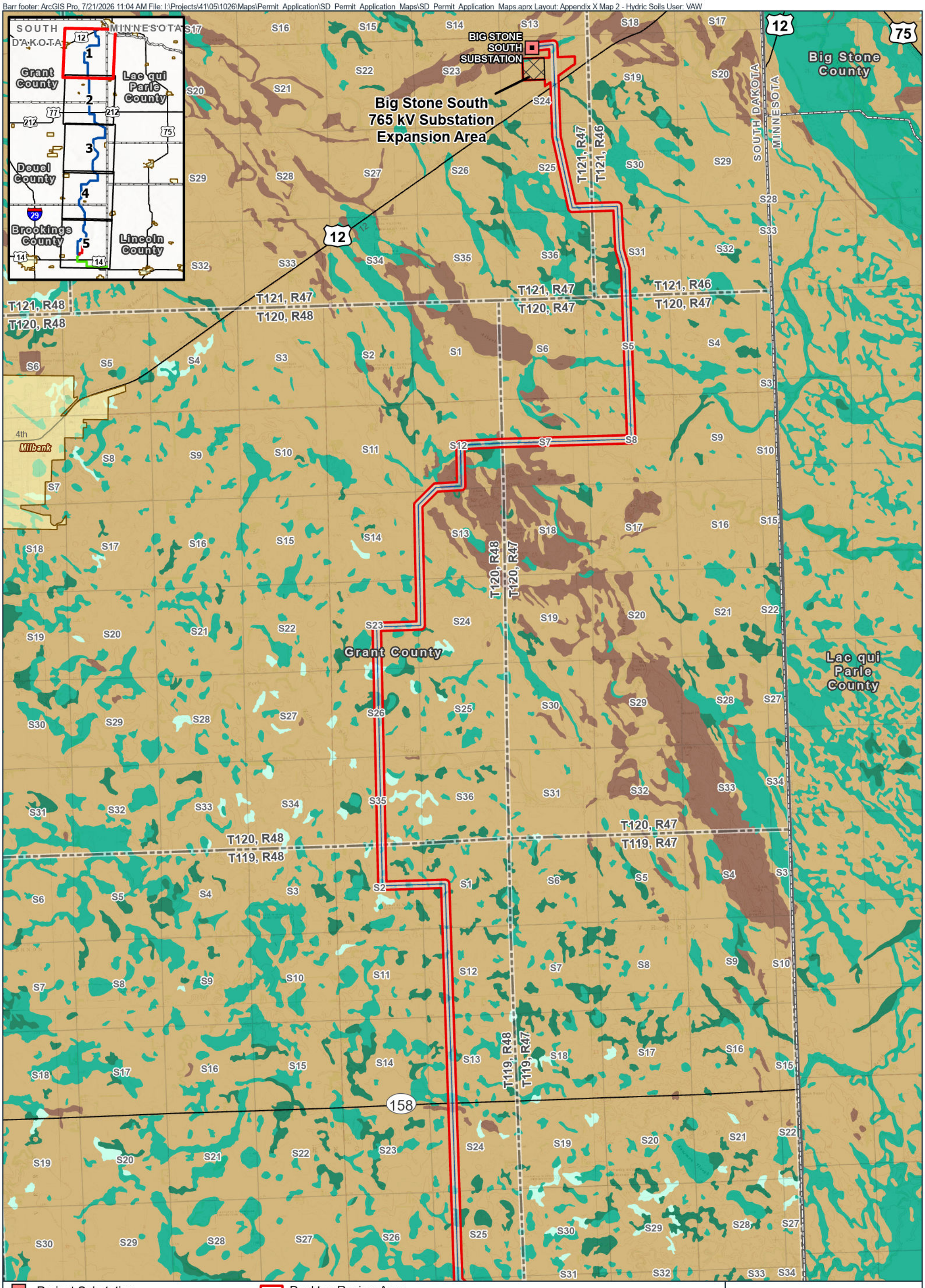
4. U.S. FISH AND WILDLIFE SERVICE. Wetlands Mapper. Online. [Accessed 3 August 2026]. Available from: https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper

5. U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. Web Soil Survey. Online. [Accessed 31 July 2026]. Available from: https://websoilsurvey.nrcs.usda.gov/app/

6. U.S. GEOLOGICAL SURVEY. National Hydrography Dataset. Online. [Accessed 3 August 2026]. Available from: https://www.usgs.gov/national-hydrography/national-hydrography-dataset

7. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION. Applied Climate Information System (AgACIS). Online. [Accessed 3 August 2026]. Available from: https://agacis.rcc-acis.org/


Inset Map
MT
ND
MN
SD
WY
IA
NE
CO
Project Location
Big Stone South
765 kV Substation
Expansion Area
BIG STONE SOUTH SUBSTATION
Big Stone City
Ortonville
Odessa
Correll
Big Stone County
Swift County
Holloway
Logan
Louisburg
Chippewa County
Milan
Grant County
Twin Brooks
Milbank
Stockholm
Strandburg
LaBolt
Albee
Revillo
Marietta
Codington County
Lac qui Parle County
Dawson
Goodwin
Altamont
Clear Lake
Deuel County
Hamlin County
Brandt
Toronto
Astoria
Gary
Canby
Saint Leo
Yellow Medicine County
Porter
Taunton
Minneota
Ghent
Hendricks
Ivanhoe
Boyd
Lyon County
Lincoln County
Arco
Lynd
Russell
Tyler
Lake Benton
Garfield
Pipestone County
Murray County
Ruthton
Ward
Elkton
Aurora
Brookings
Bushnell
Bruce
White
Brookings County
Brookings County
765 kV Substation
Expansion Area
BROOKINGS COUNTY SUBSTATION
Brookings-County
345-kV Substation
Expansion Area
Lake County
Moody County
SOUTH DAKOTA
MINNESOTA
Project Substation
Big Stone South to Brookings
765 kV Alignment
Brookings to Minnesota
Border765 kV Alignment
345 kV Connector Alignment
Substation Expansion Areas
Municipal Boundary
County Boundary
0
6
12
Miles
PROJECT LOCATION
South Dakota
MAP 1
PowerOn Midwest
Big Stone South to Brookings



Project Substation
Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Substation Expansion Area
Municipal Boundary
Public Land Survey Township
County Boundary

Desktop Review Area

Hydric Rating

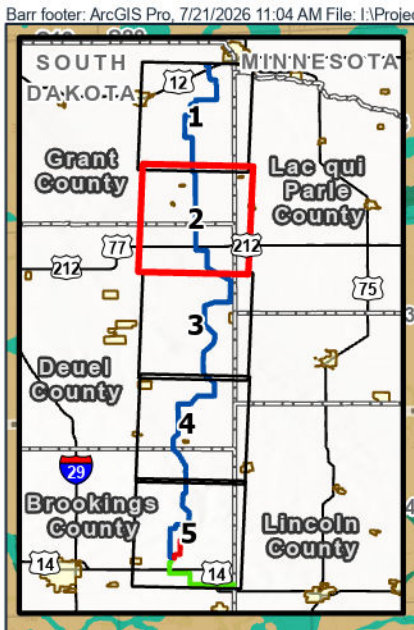
Not Hydric (0%)
Predominantly non-hydric (1% - 32%)
Partially Hydric (33% - 65%)
Predominantly Hydric (66% - 99%)
All Hydric (100%)

0 1 2
Miles

HYDRIC SOILS
South Dakota

MAP 2-1

PowerOn Midwest
Big Stone South to Brookings



Albee
Revillo
Grant County
Deuel County
Lac qui Parle County
SOUTH DAKOTA
MINNESOTA
T119, R48
T118, R48
T119, R47
T118, R47
T118, R48
T117, R48
T118, R47
T117, R47
T117, R48
T116, R48
T117, R47
T116, R47
20
40
101
212

Project Substation
Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Municipal Boundary
Public Land Survey Township
County Boundary
Desktop Review Area

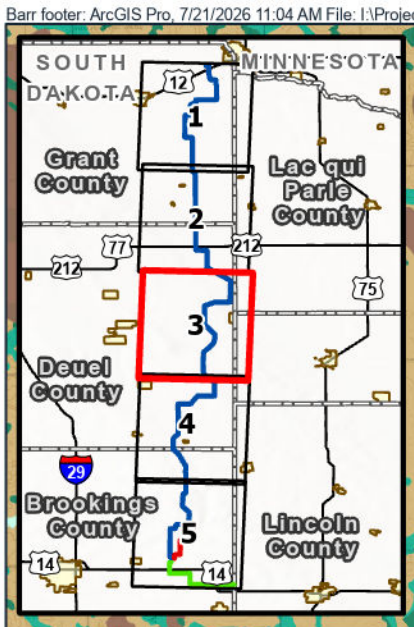
Hydric Rating
- Not Hydric (0%)
- Predominantly non-hydric (1% - 32%)
- Partially Hydric (33% - 65%)
- Predominantly Hydric (66% - 99%)
- All Hydric (100%)

N
0 1 2
Miles

HYDRIC SOILS
South Dakota

MAP 2-2

PowerOn Midwest
Big Stone South to Brookings



Deuel County

Lac qui Parle County

Yellow Medicine County

Gary

SOUTH DAKOTA

MINNESOTA

T116, R48
T115, R48
T114, R48
T116, R47
T115, R47
T114, R47

101
22
68

Project Substation
Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Municipal Boundary
Public Land Survey Township
County Boundary
Desktop Review Area

Hydric Rating

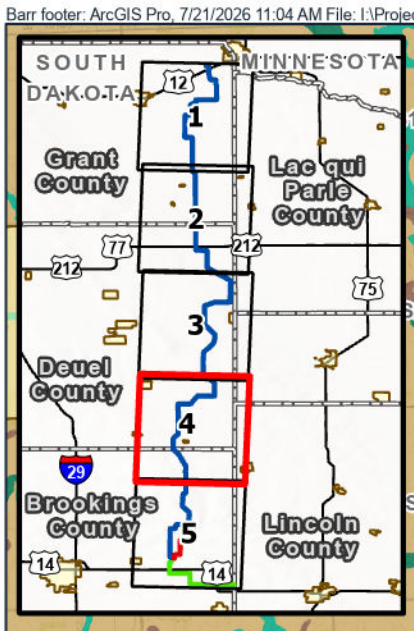
- Not Hydric (0%)
- Predominantly non-hydric (1% - 32%)
- Partially Hydric (33% - 65%)
- Predominantly Hydric (66% - 99%)
- All Hydric (100%)

0 1 2
Miles

HYDRIC SOILS
South Dakota

MAP 2-3

PowerOn Midwest
Big Stone South to Brookings



Project Substation
Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Municipal Boundary
Public Land Survey Township
County Boundary
Desktop Review Area

Hydric Rating

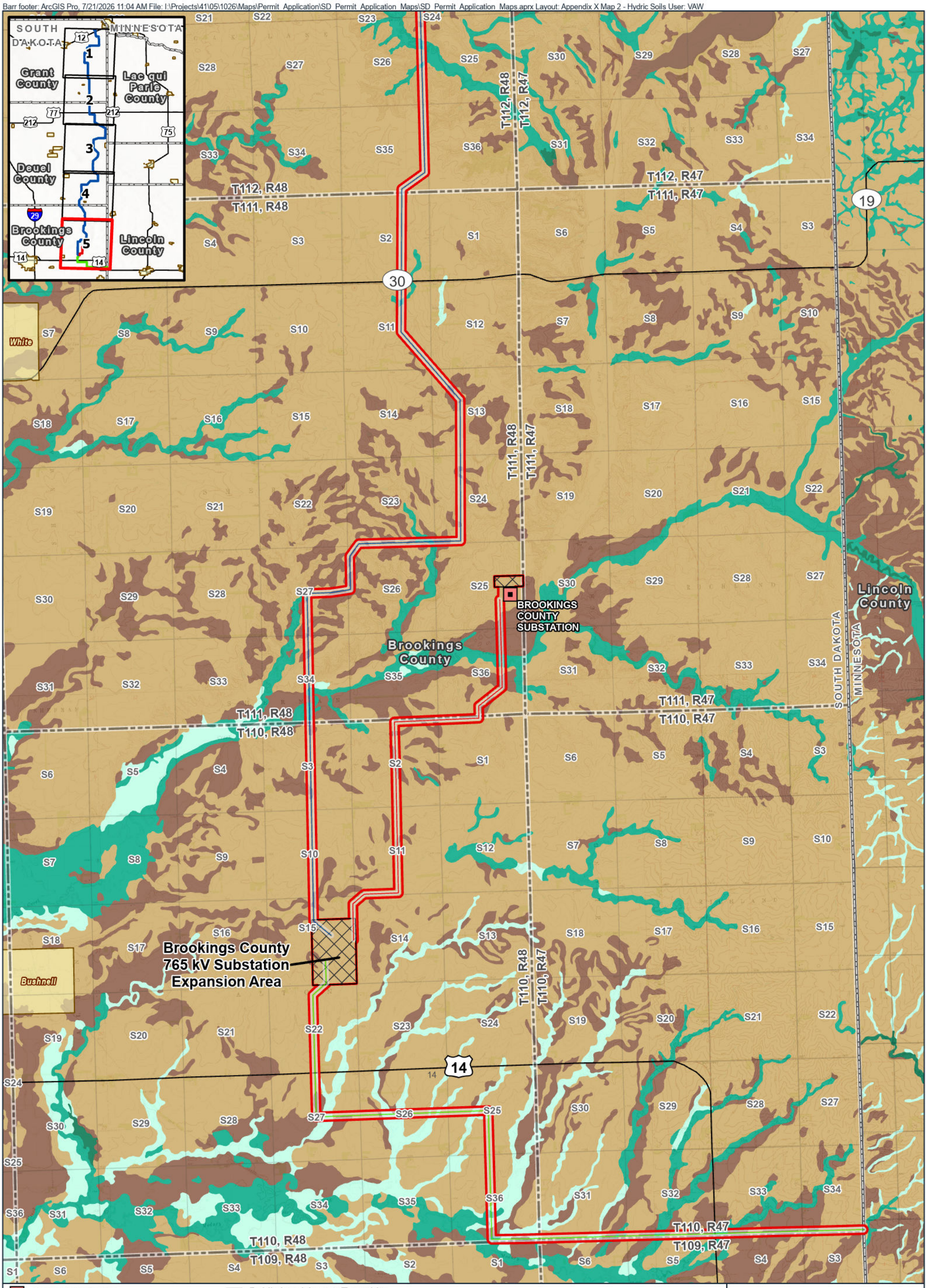
Not Hydric (0%)
Predominantly non-hydric (1% - 32%)
Partially Hydric (33% - 65%)
Predominantly Hydric (66% - 99%)
All Hydric (100%)

0 1 2
Miles

HYDRIC SOILS
South Dakota

MAP 2-4

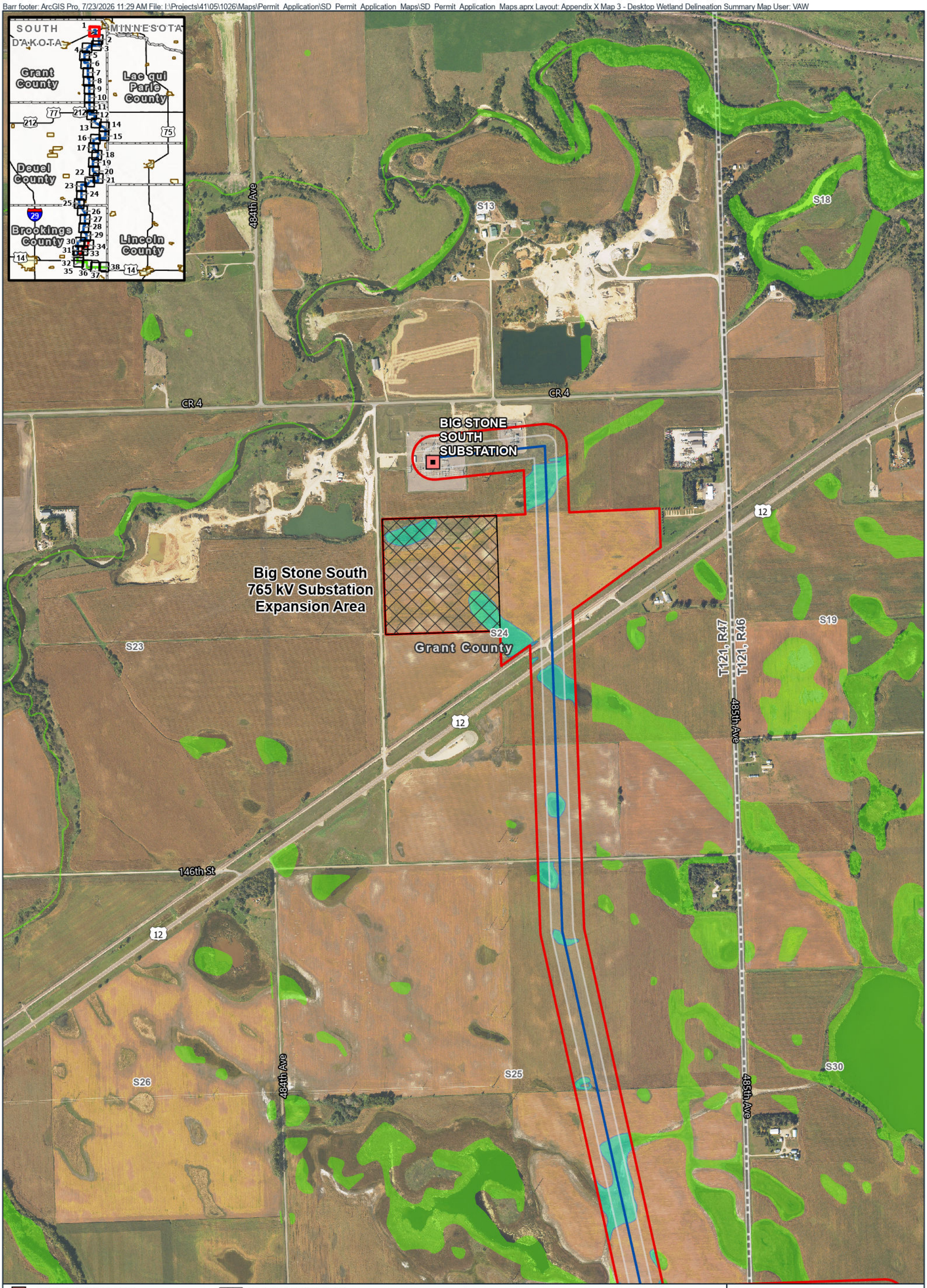
PowerOn Midwest
Big Stone South to Brookings



HYDRIC SOILS
South Dakota

MAP 2-5

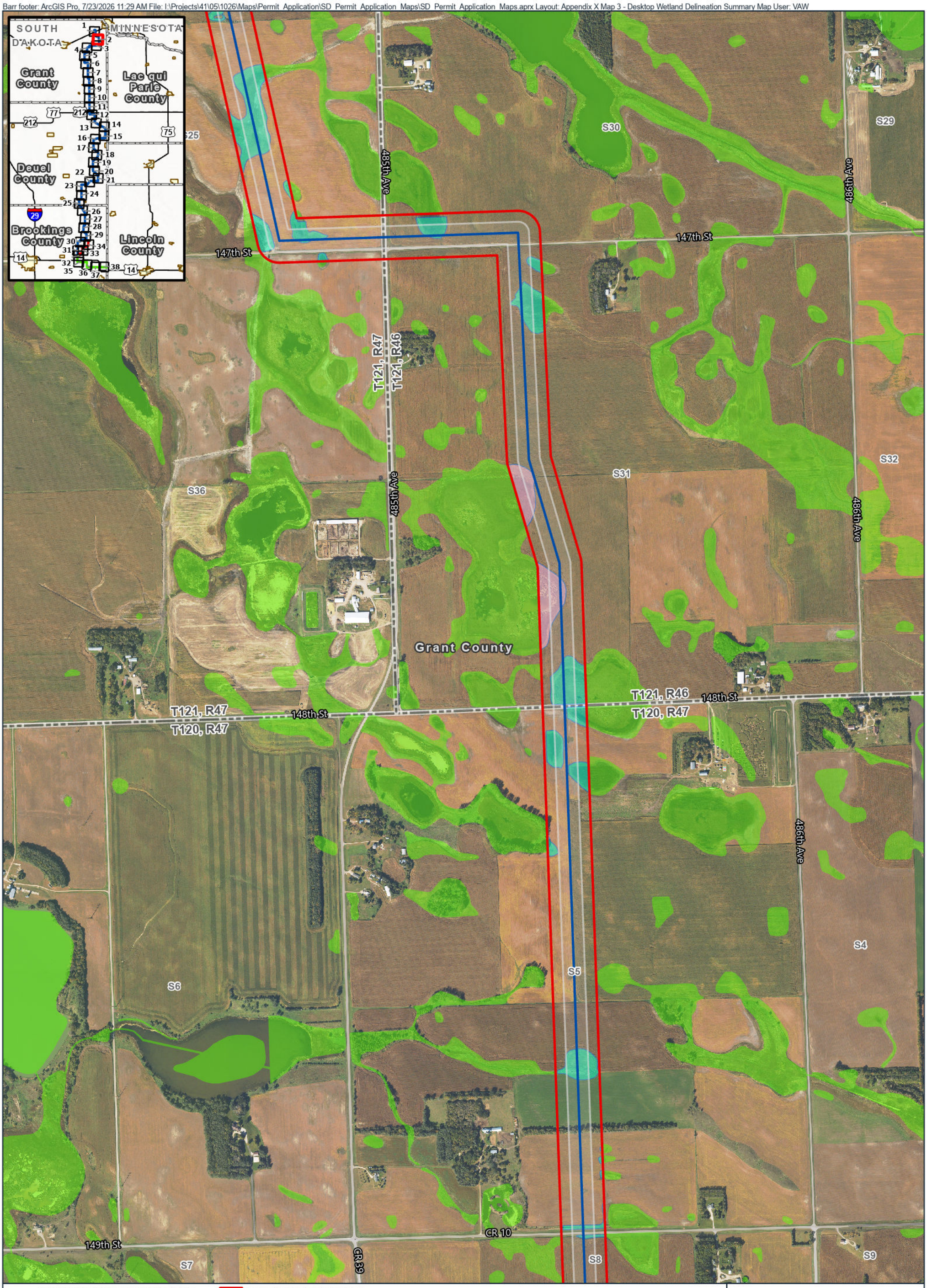
PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-1

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory

Wetland Community Classification

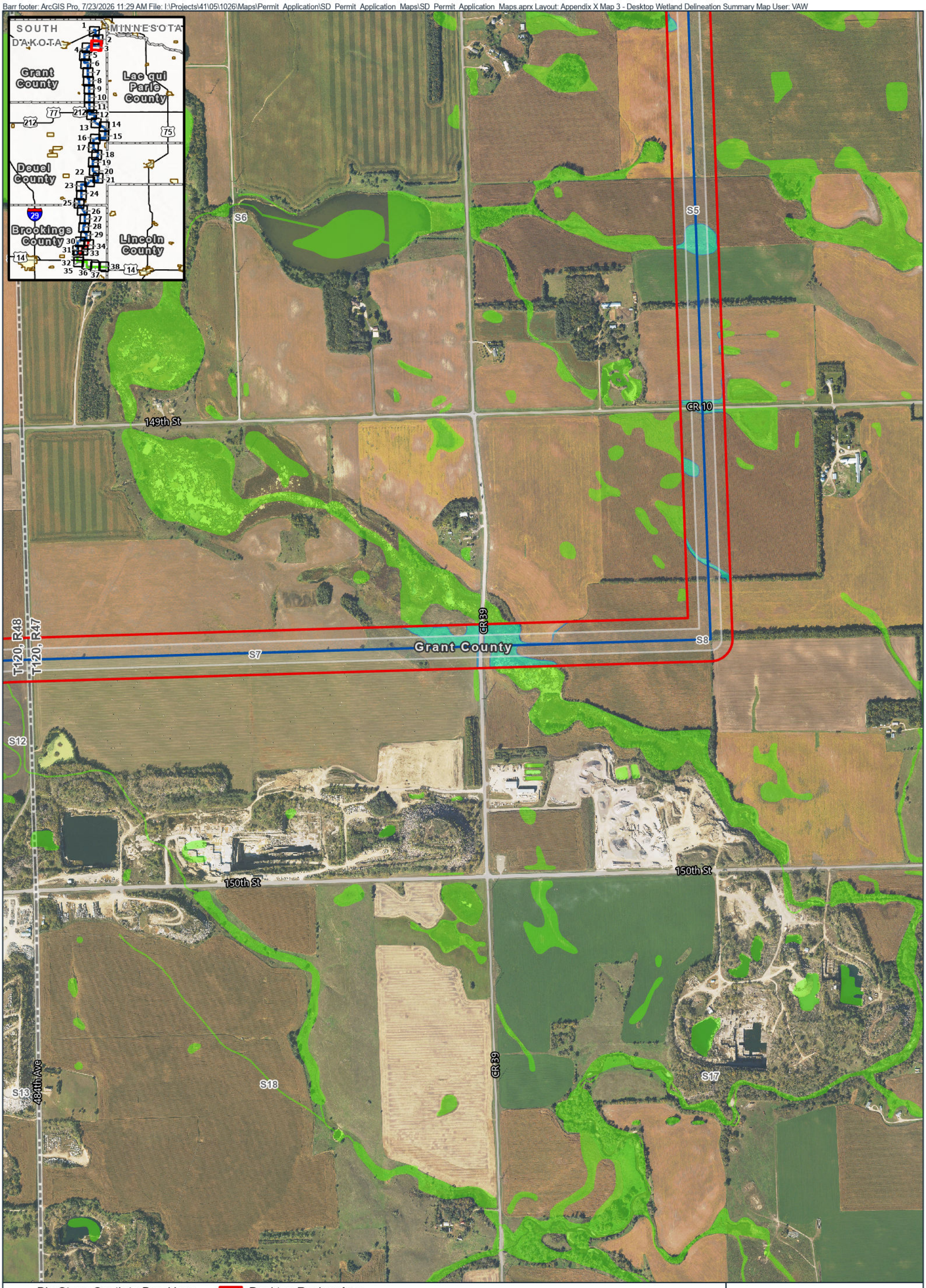
Freshwater Emergent Wetland
Freshwater Pond

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-2

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory

Wetland Community Classification

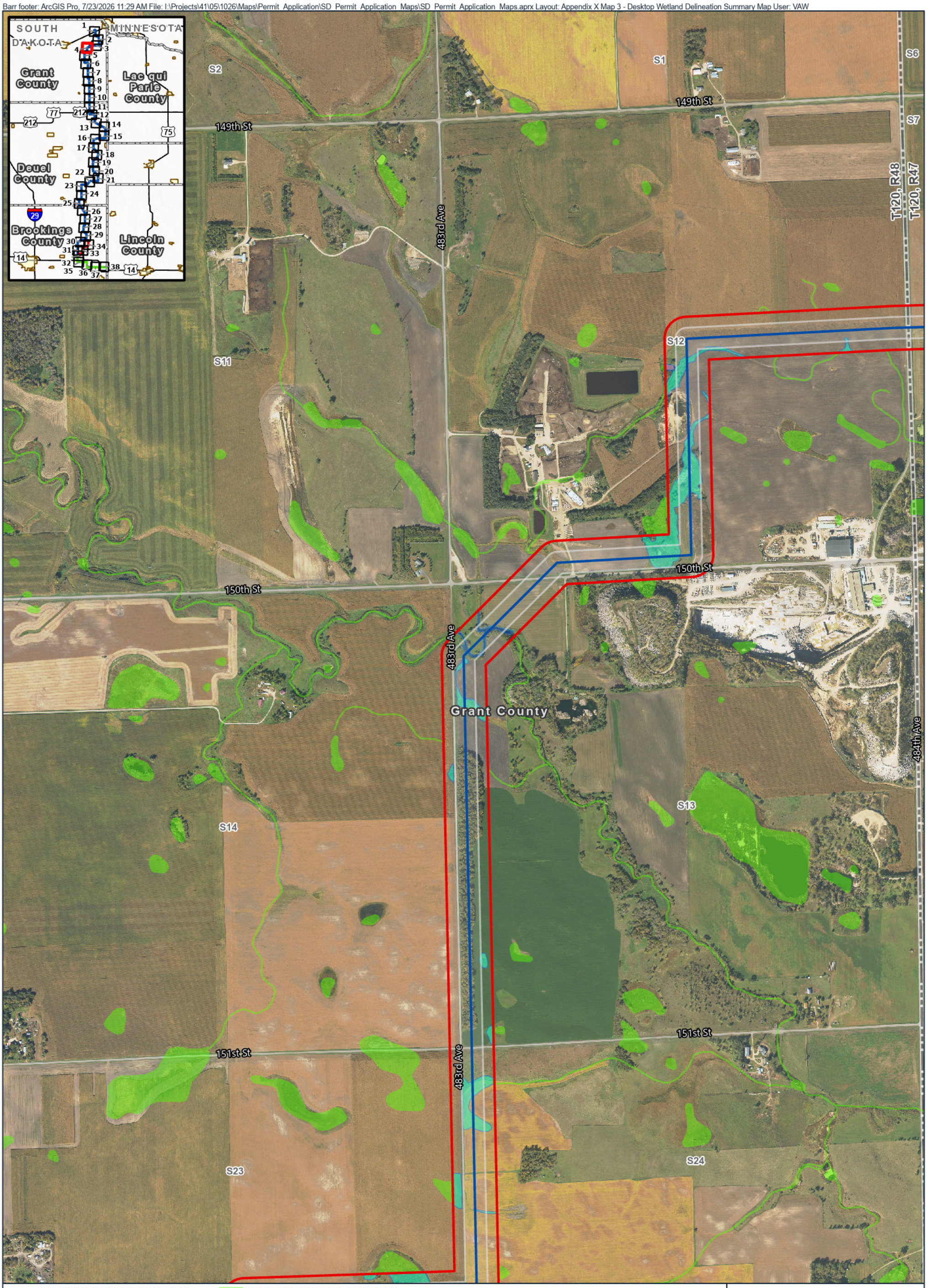
Freshwater Emergent Wetland

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-3

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area

National Wetland Inventory

Wetland Community Classification

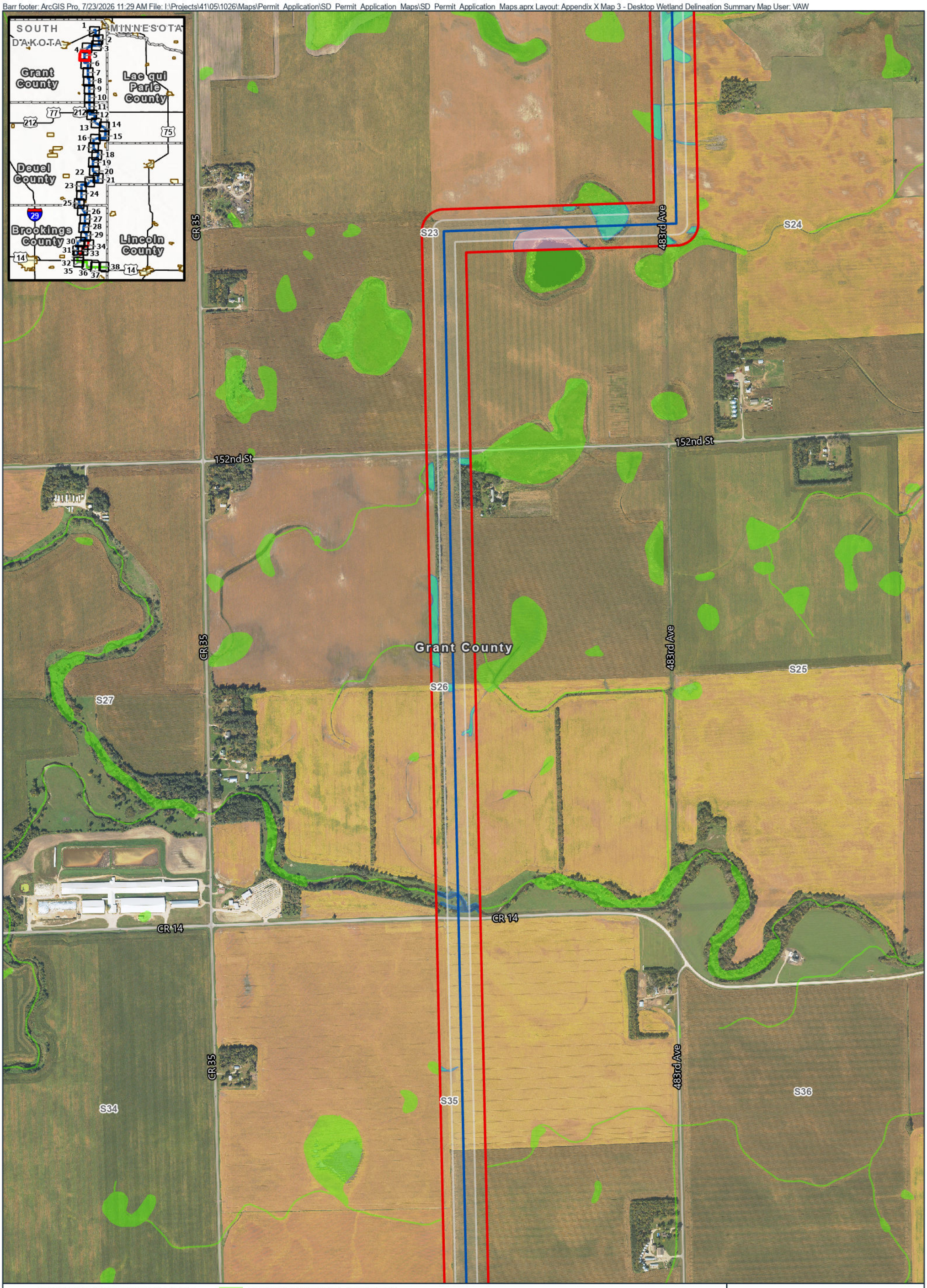
Freshwater Emergent Wetland
Freshwater Pond
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-4

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area

National Wetland Inventory

Wetland Community Classification

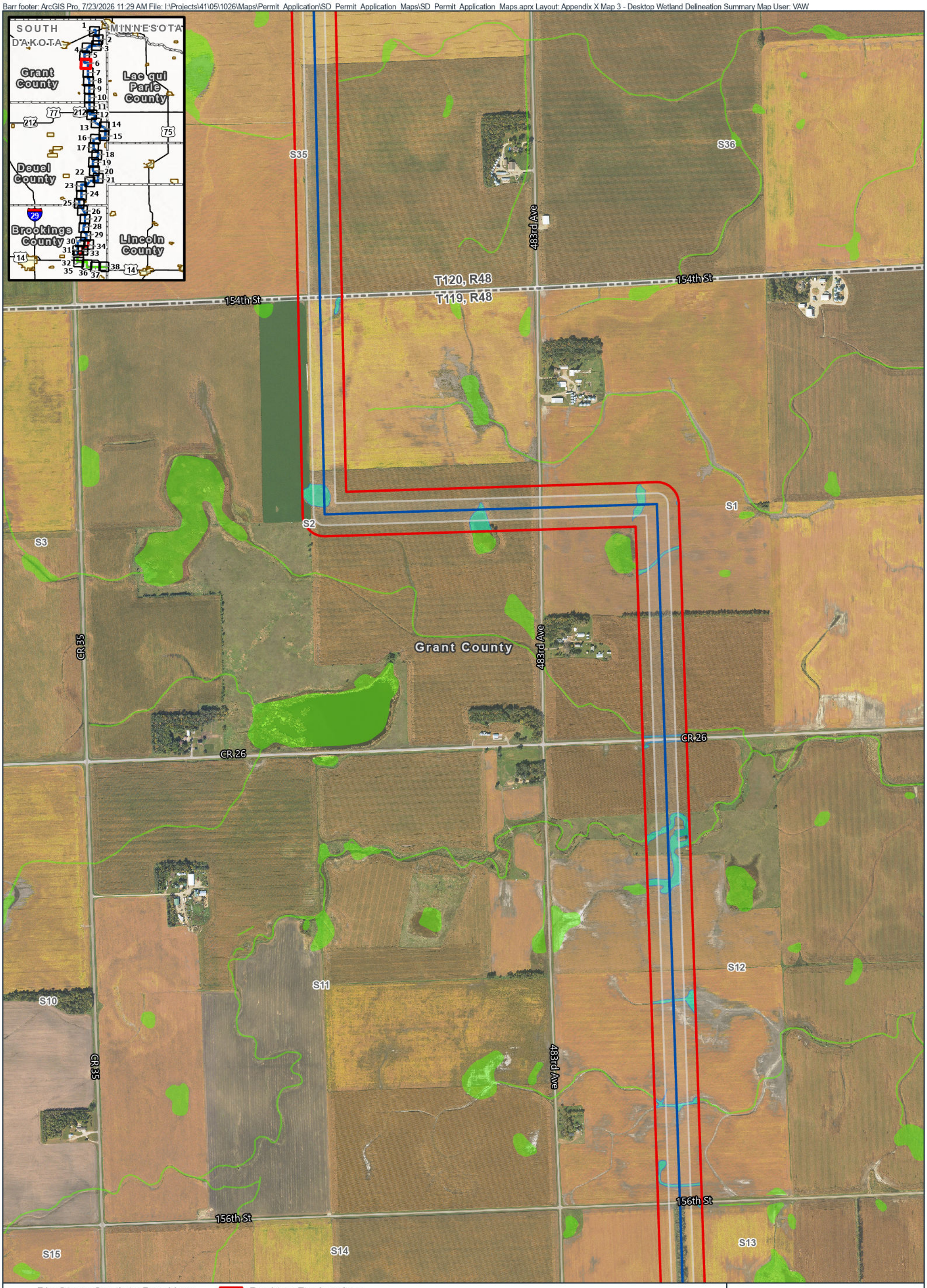
Freshwater Emergent Wetland
Freshwater Pond
Riverine

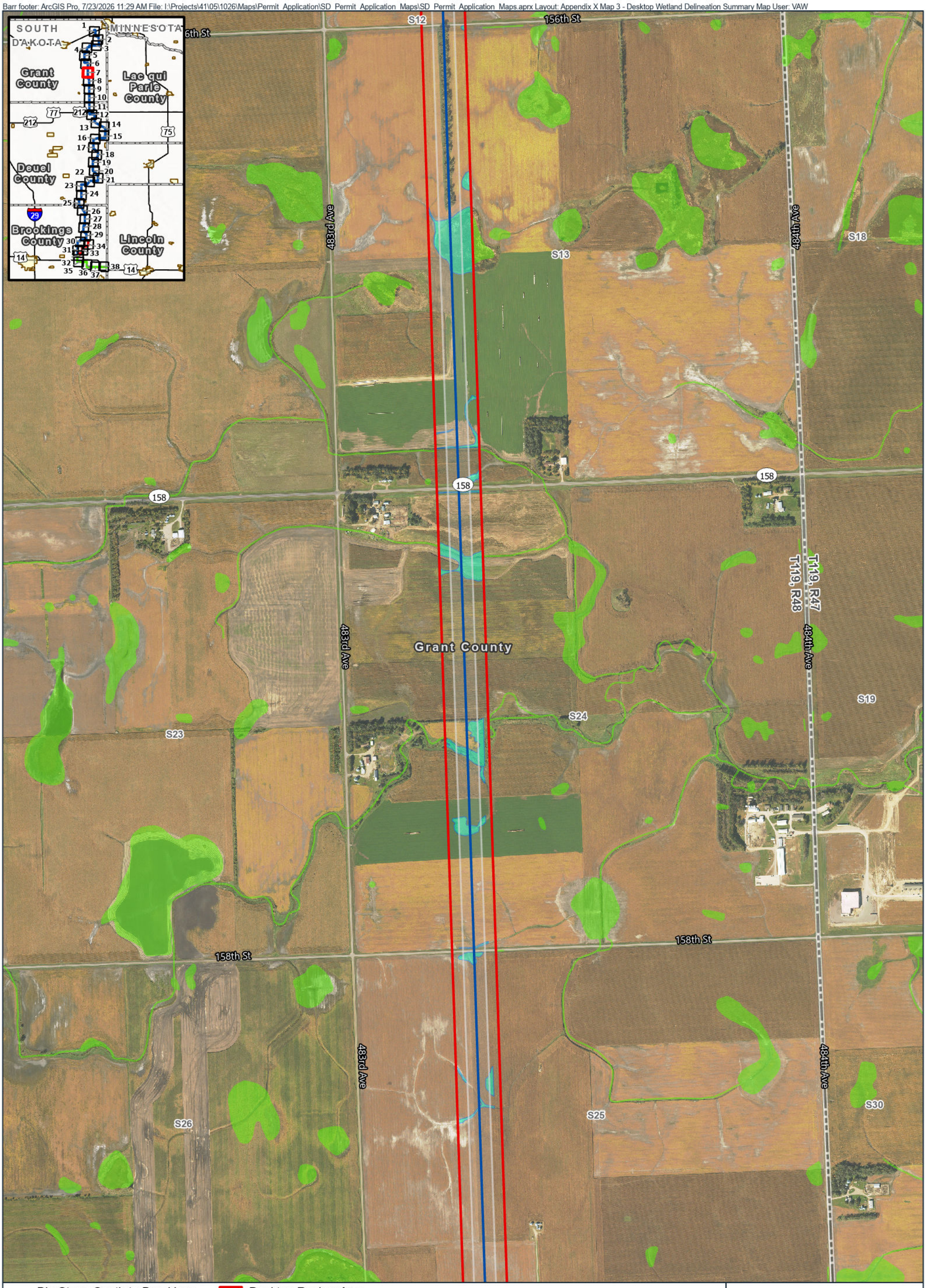
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Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-5

PowerOn Midwest
Big Stone South to Brookings


SOUTH DAKOTA
MINNESOTA
Grant County
Lac qui Parle County
Deuel County
Brookings County
Lincoln County
S35
S36
T120, R48
T119, R48
154th St
483rd Ave
S1
S2
S3
Grant County
CR 26
CR 35
S10
S11
S12
S13
S14
S15
156th St
Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory
Wetland Community Classification
Freshwater Emergent Wetland
0
500
1,000
Feet
DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota
MAP 3-6
PowerOn Midwest
Big Stone South to Brookings



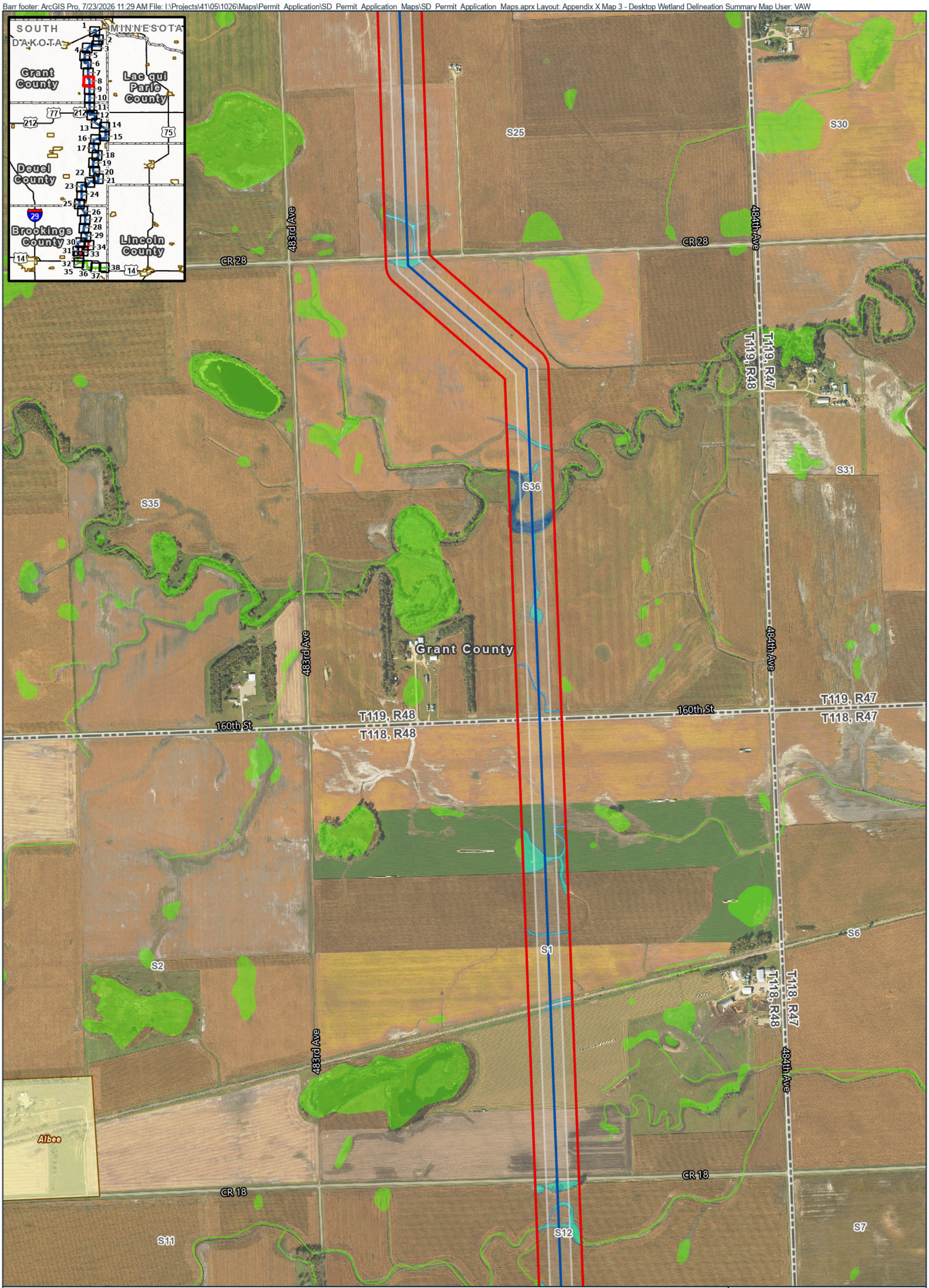
Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory
Wetland Community Classification
Freshwater Emergent Wetland

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-7

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Municipal Boundary
Public Land Survey Township
County Boundary

Desktop Review Area
National Wetland Inventory

Wetland Community Classification

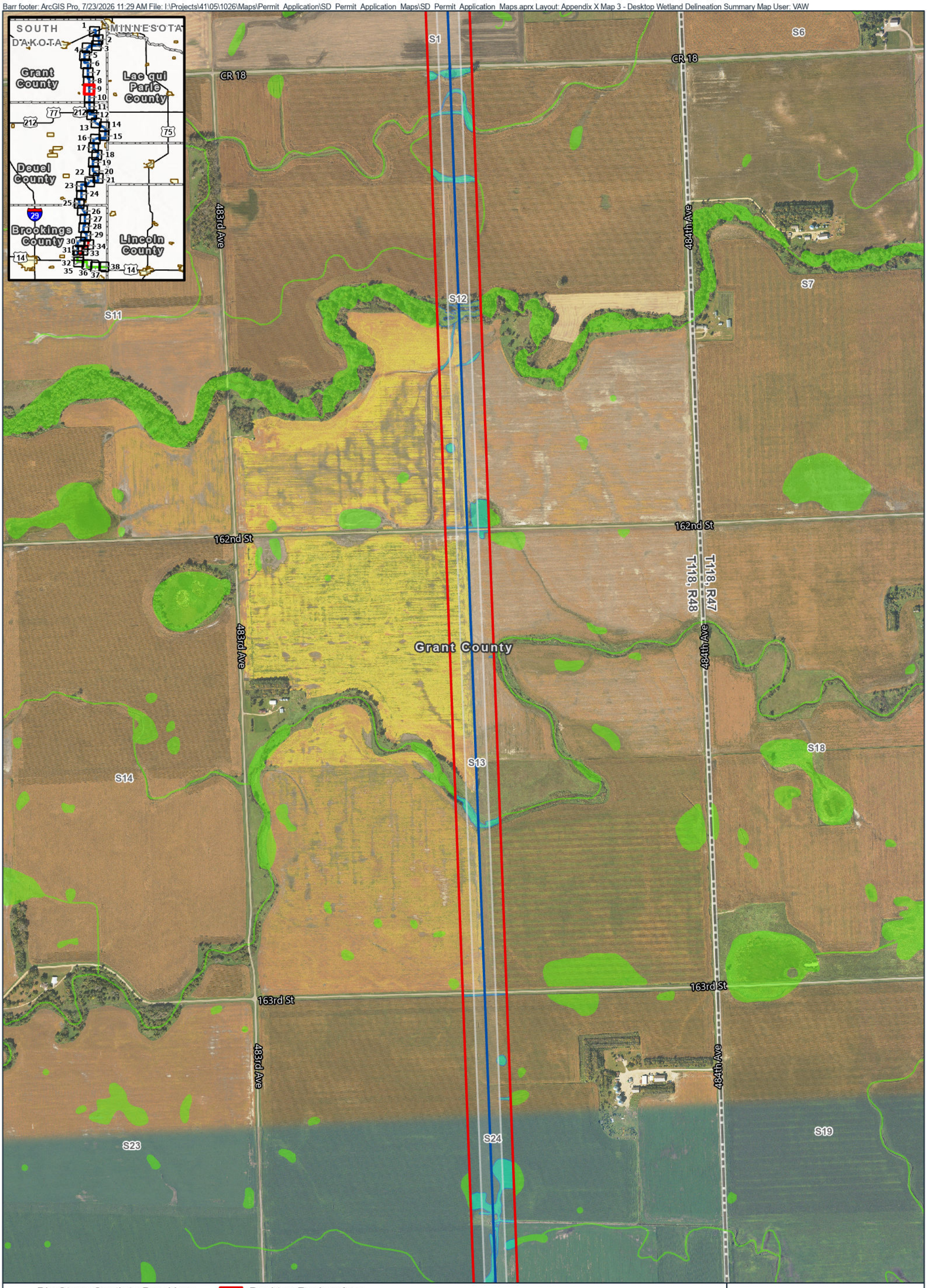
Freshwater Emergent Wetland
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-8

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment

Right-of-Way

Public Land Survey Township

County Boundary

Desktop Review Area

National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland

Freshwater Forested/Shrub

0 500 1,000

Feet

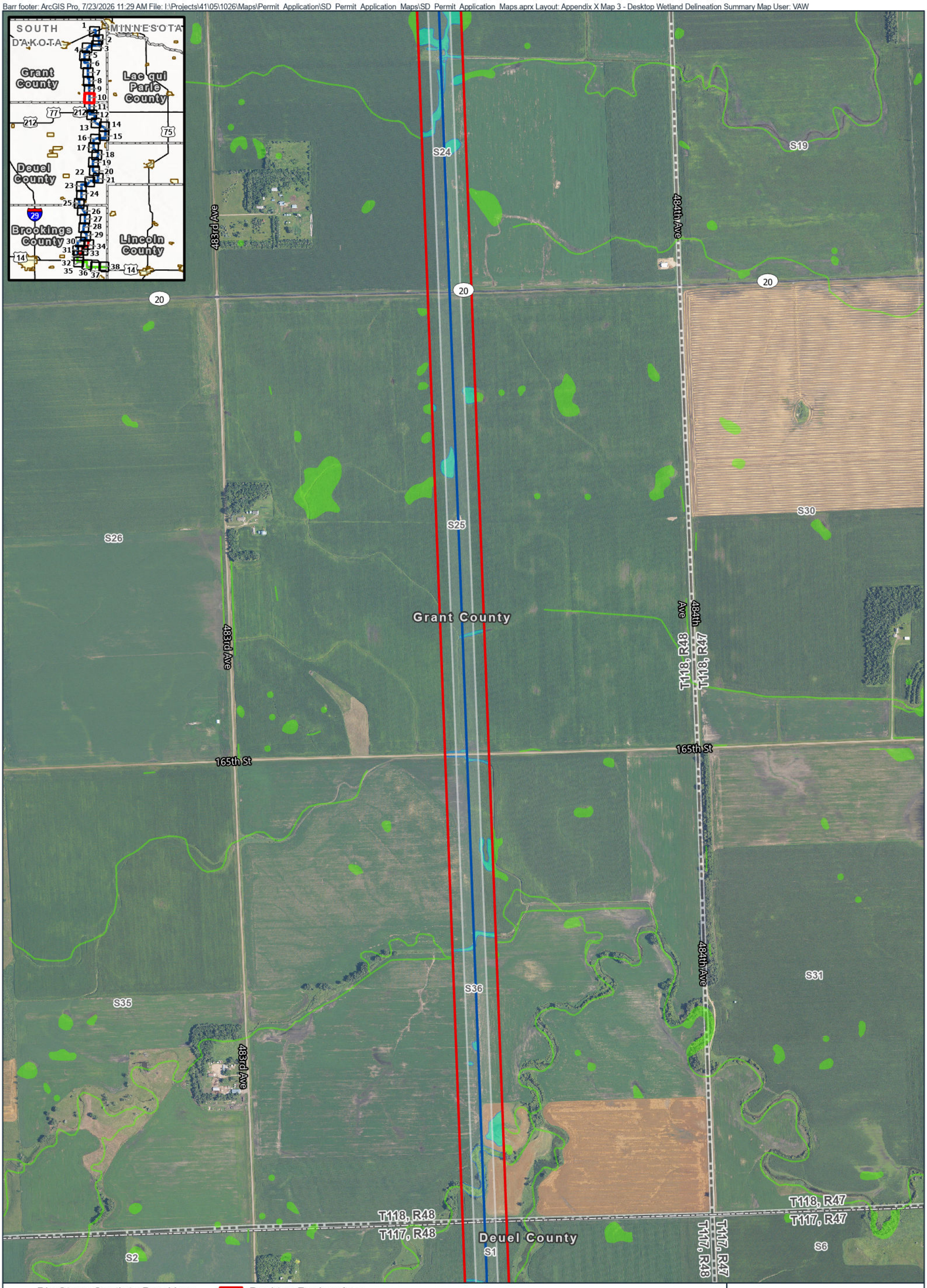
DESKTOP WETLAND DELINEATION SUMMARY MAP

South Dakota

MAP 3-9

PowerOn Midwest

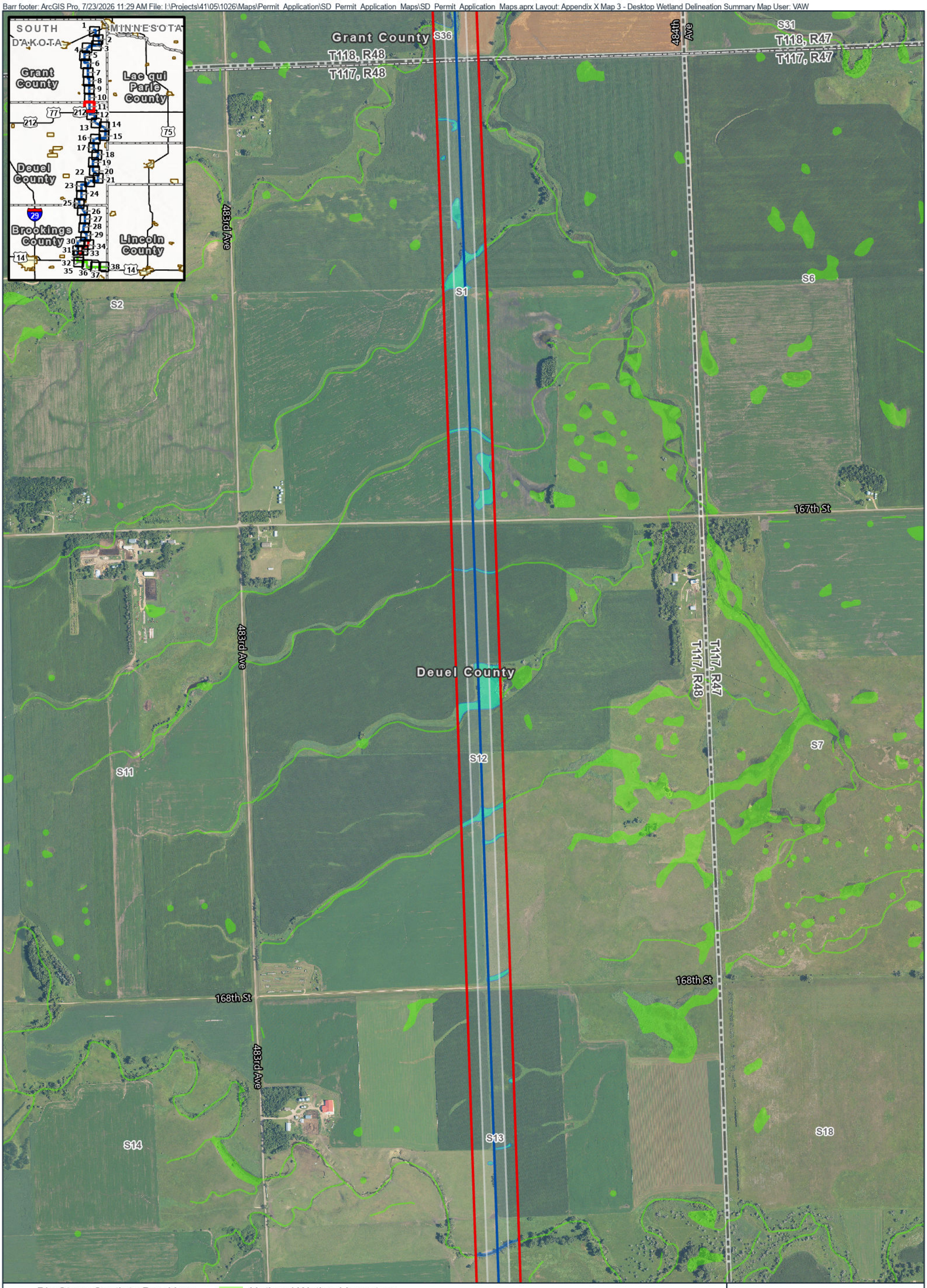
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-10

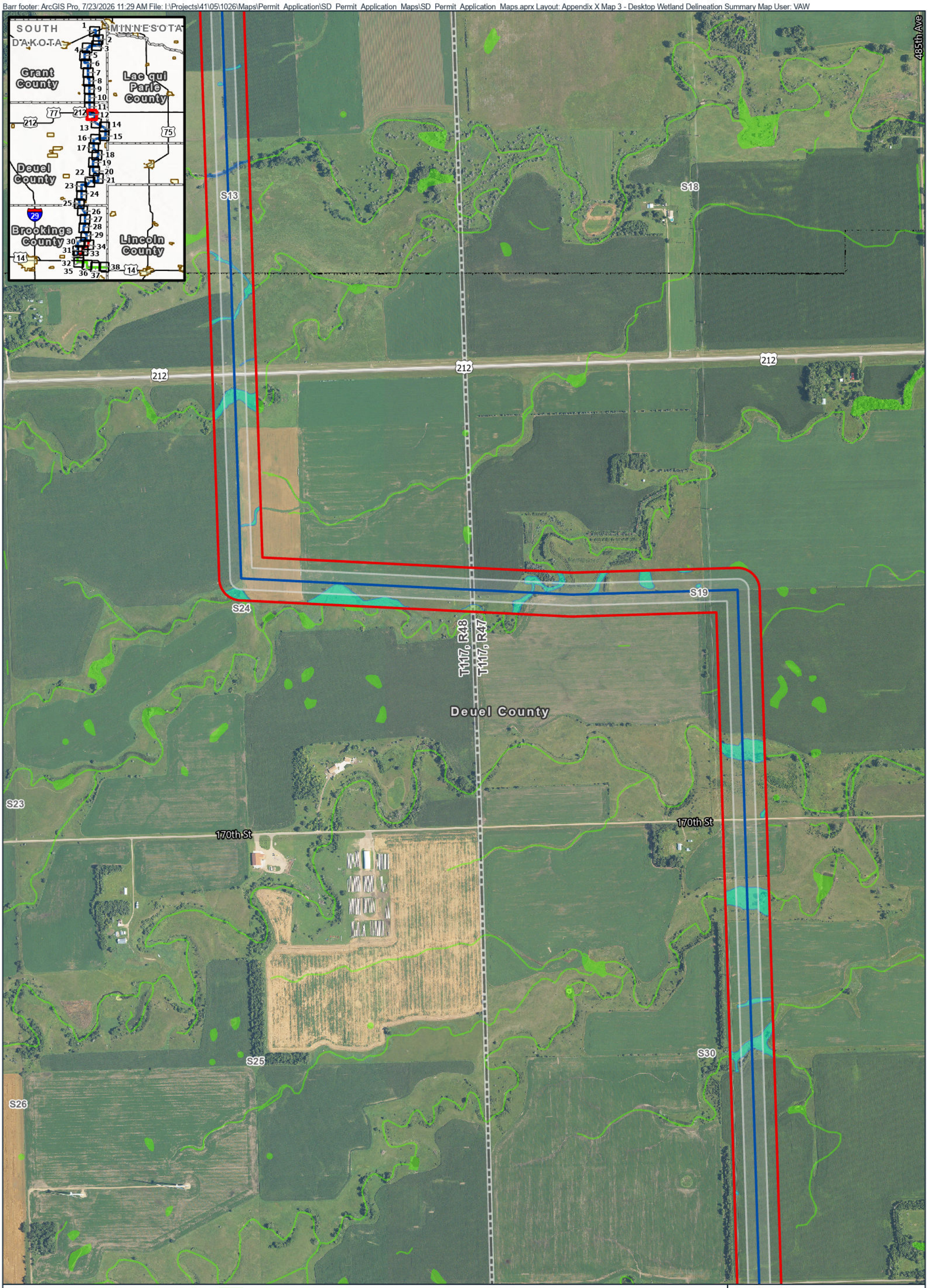
PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-11

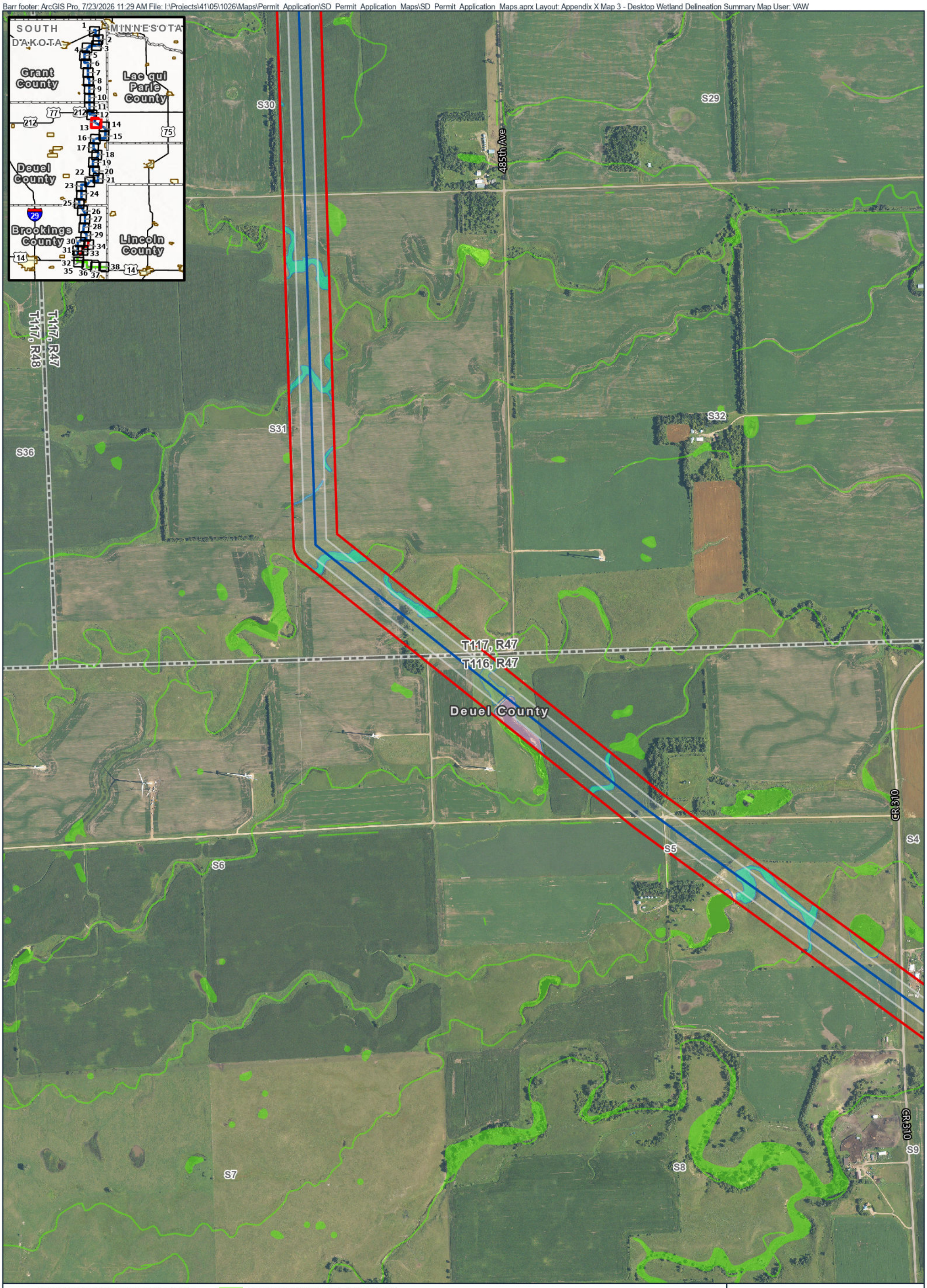
PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-12

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area

National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland
Freshwater Forested/Shrub
Freshwater Pond

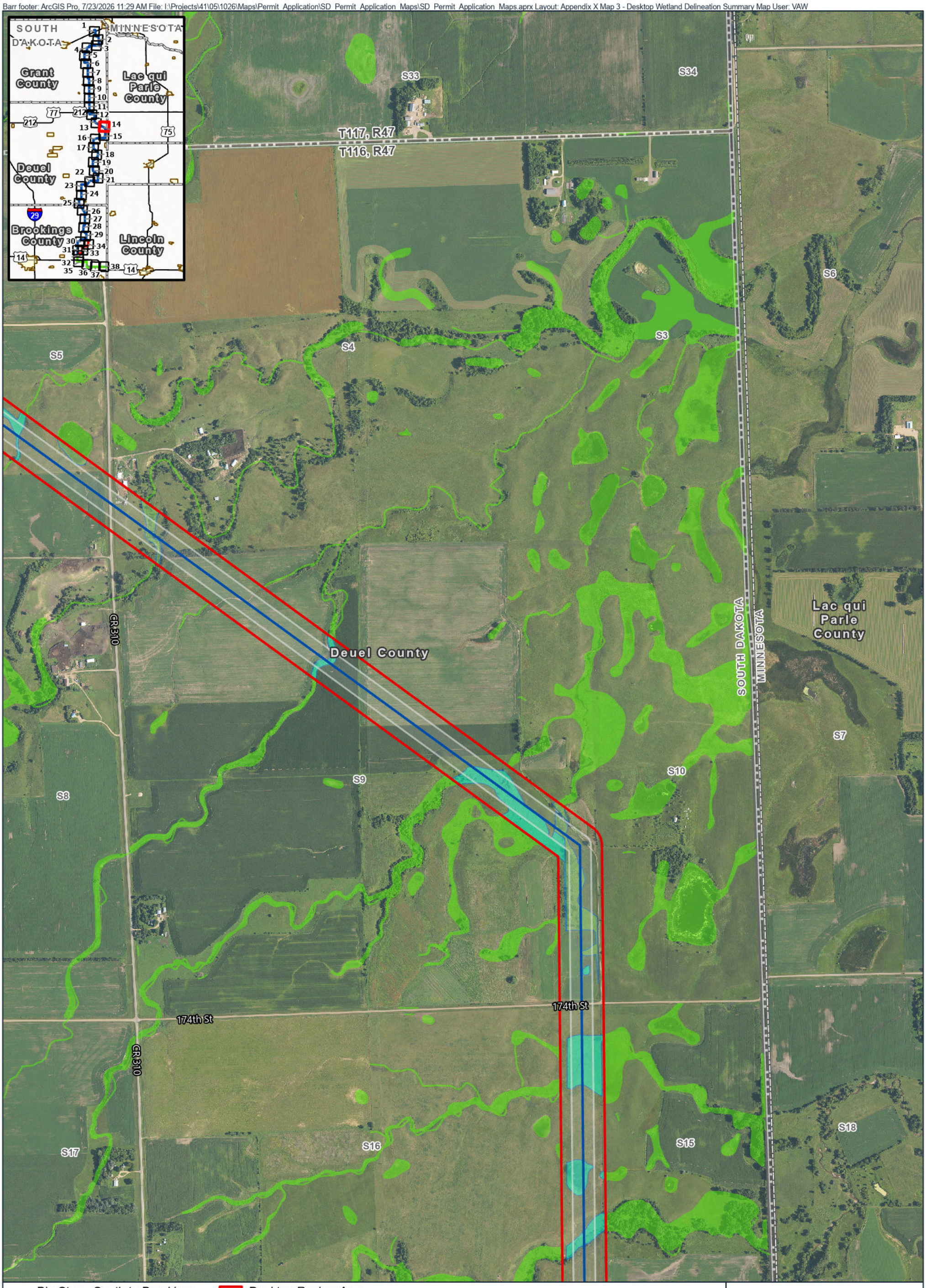
N

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-13

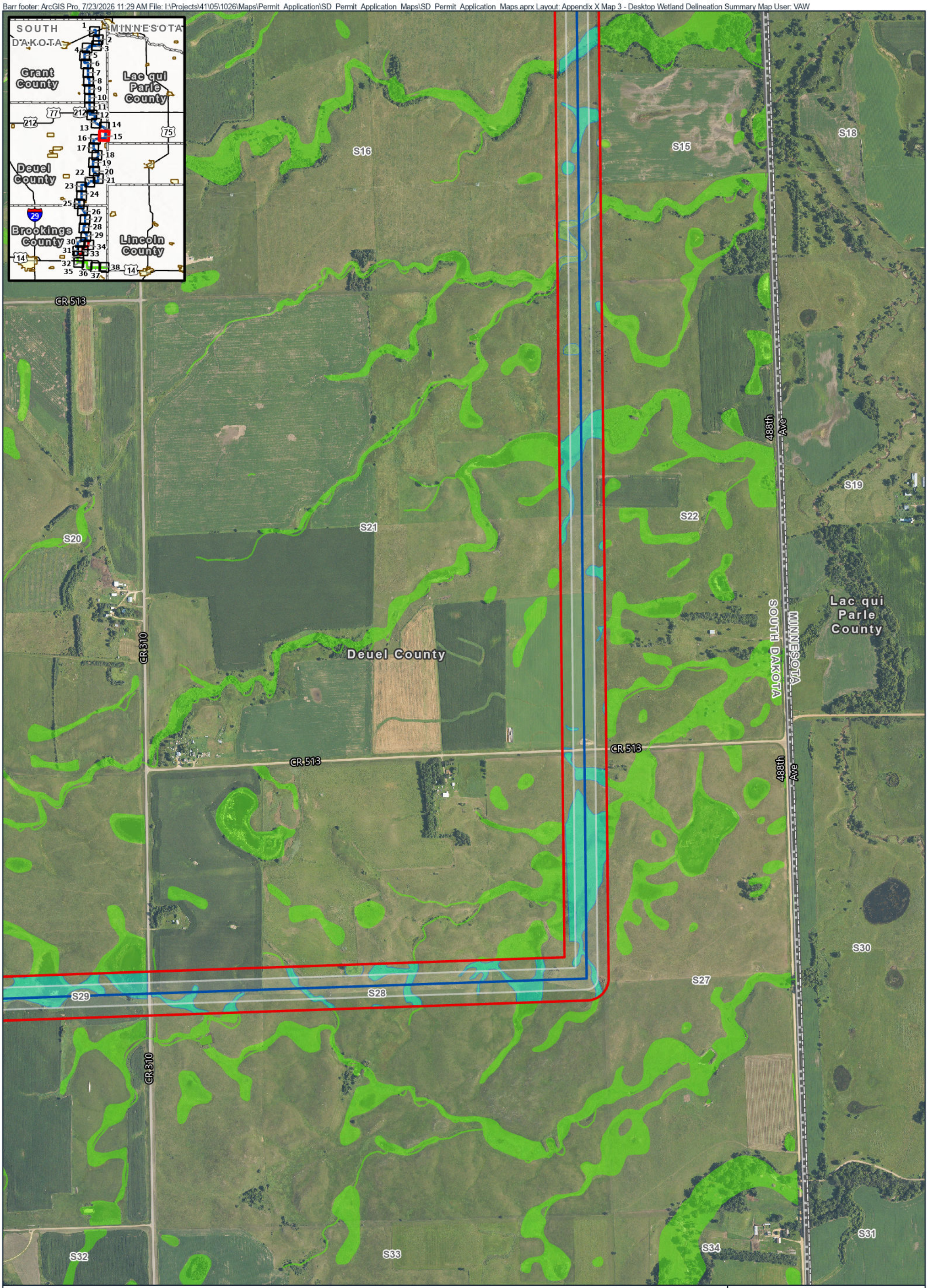
PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-14

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area

National Wetland Inventory

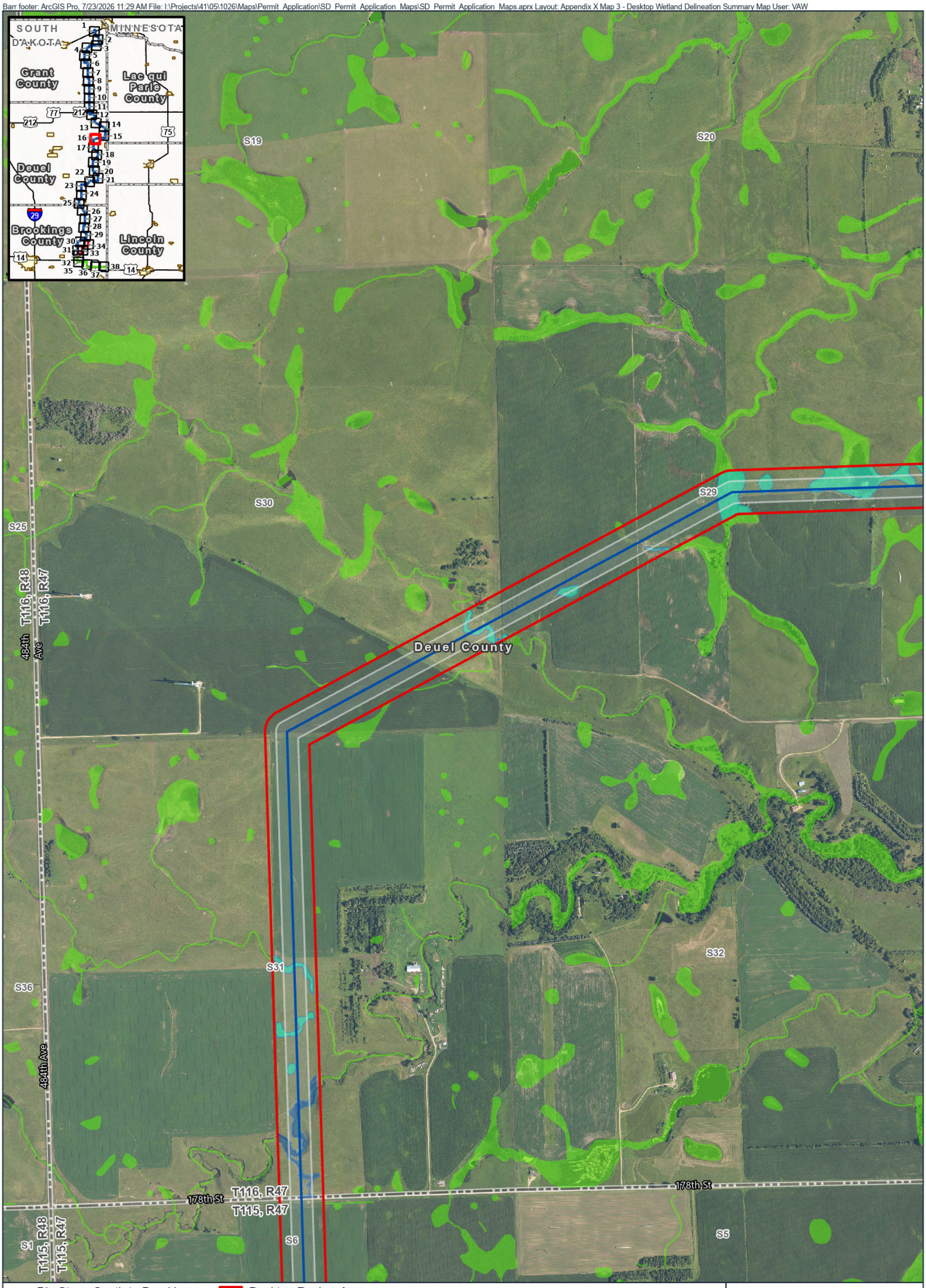
Wetland Community Classification

Freshwater Emergent Wetland
Freshwater Forested/Shrub
Freshwater Pond

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-15

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory

Wetland Community Classification

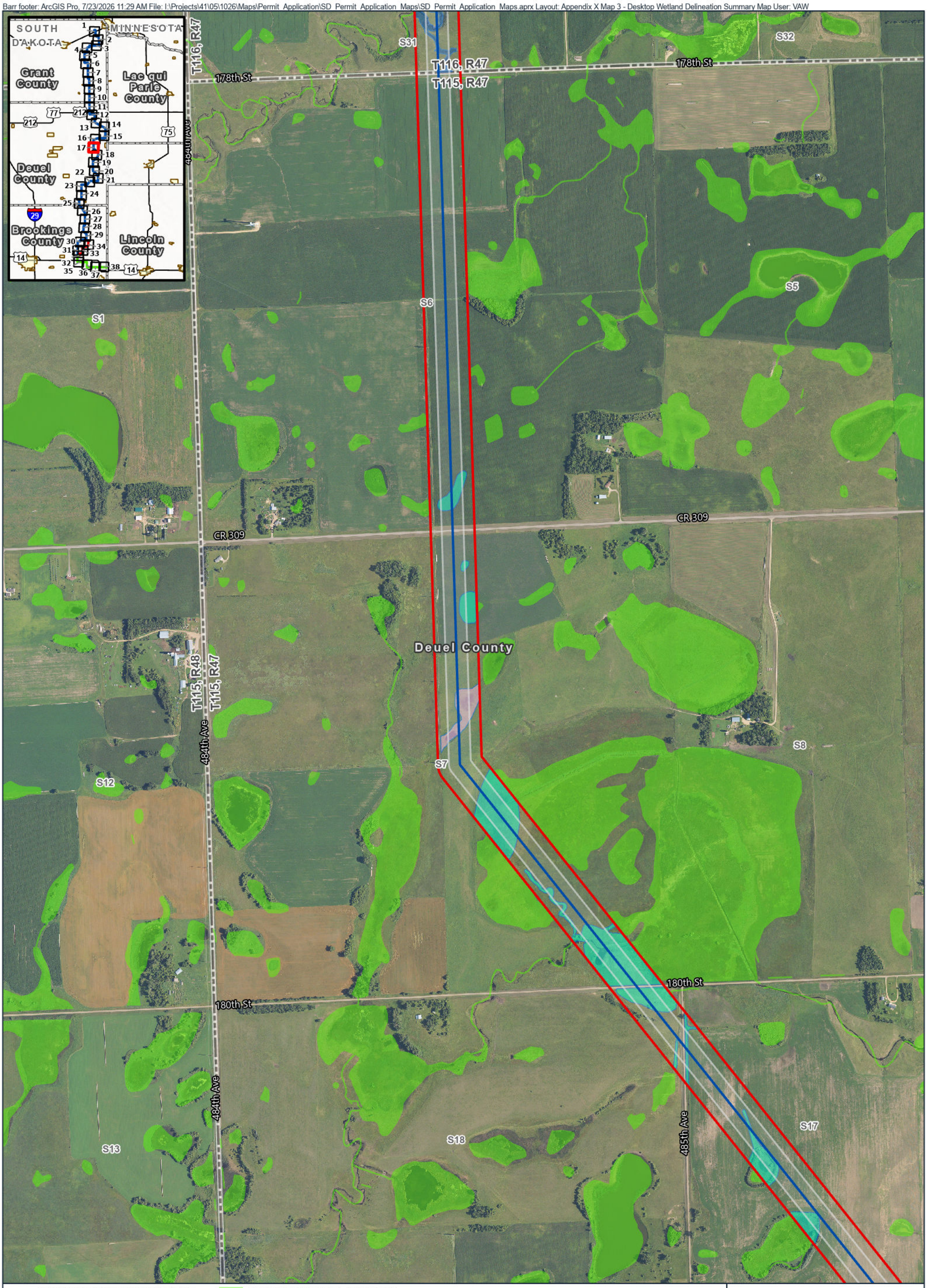
Freshwater Emergent Wetland
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-16

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area

National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland
Freshwater Pond
Riverine

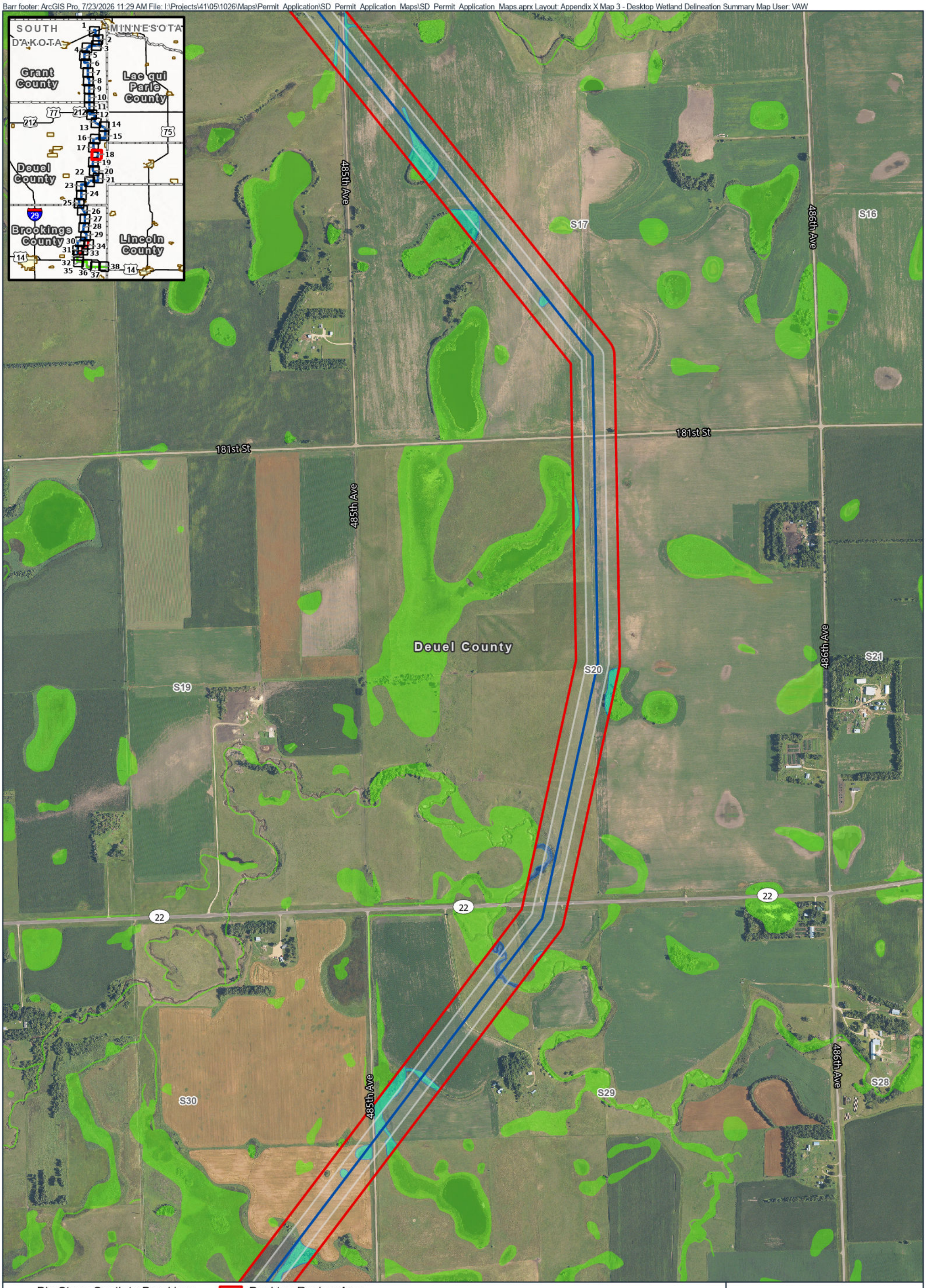
N

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-17

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary

Desktop Review Area
National Wetland Inventory

Wetland Community Classification

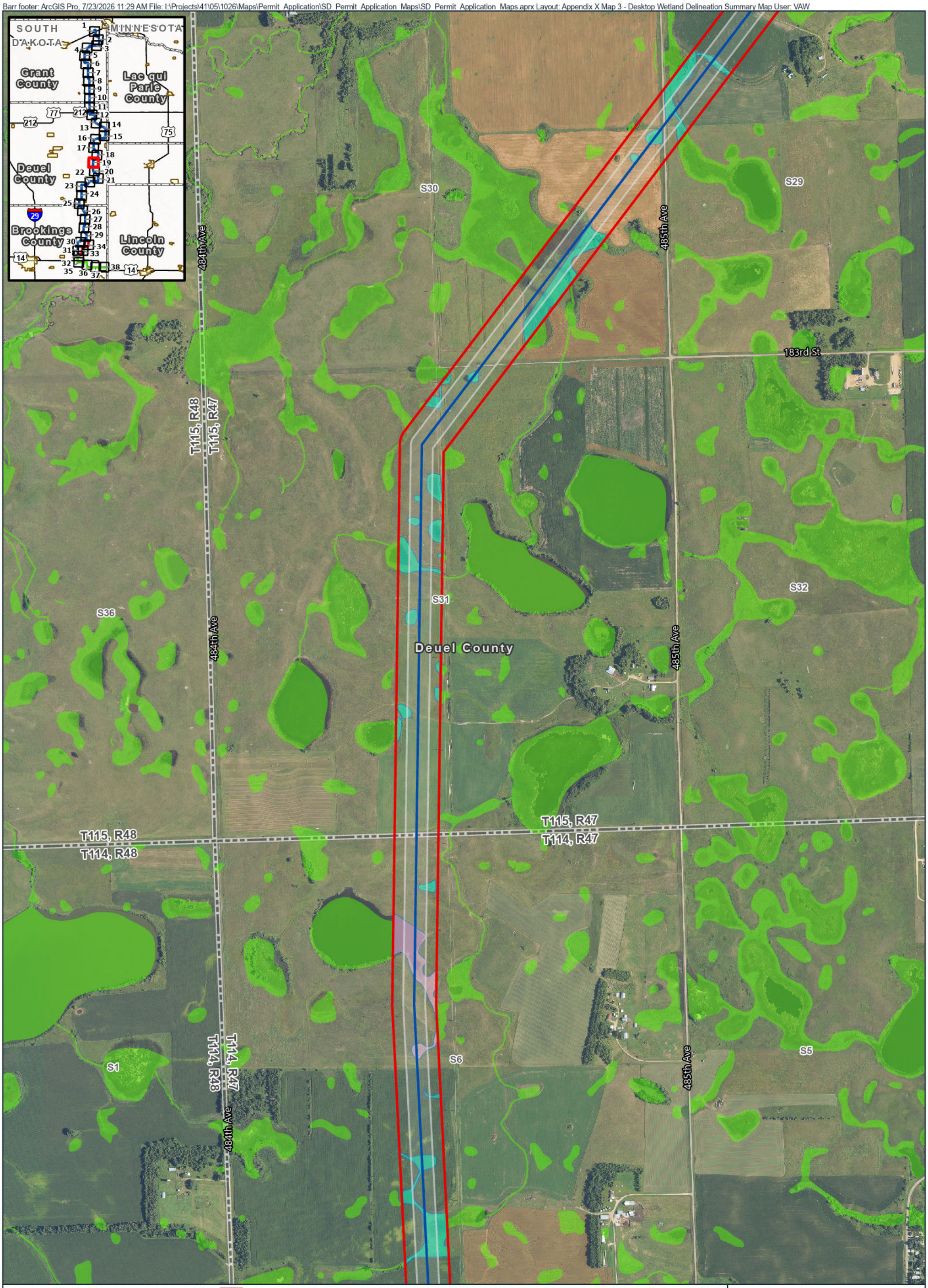
Freshwater Emergent Wetland
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-18

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory

Wetland Community Classification

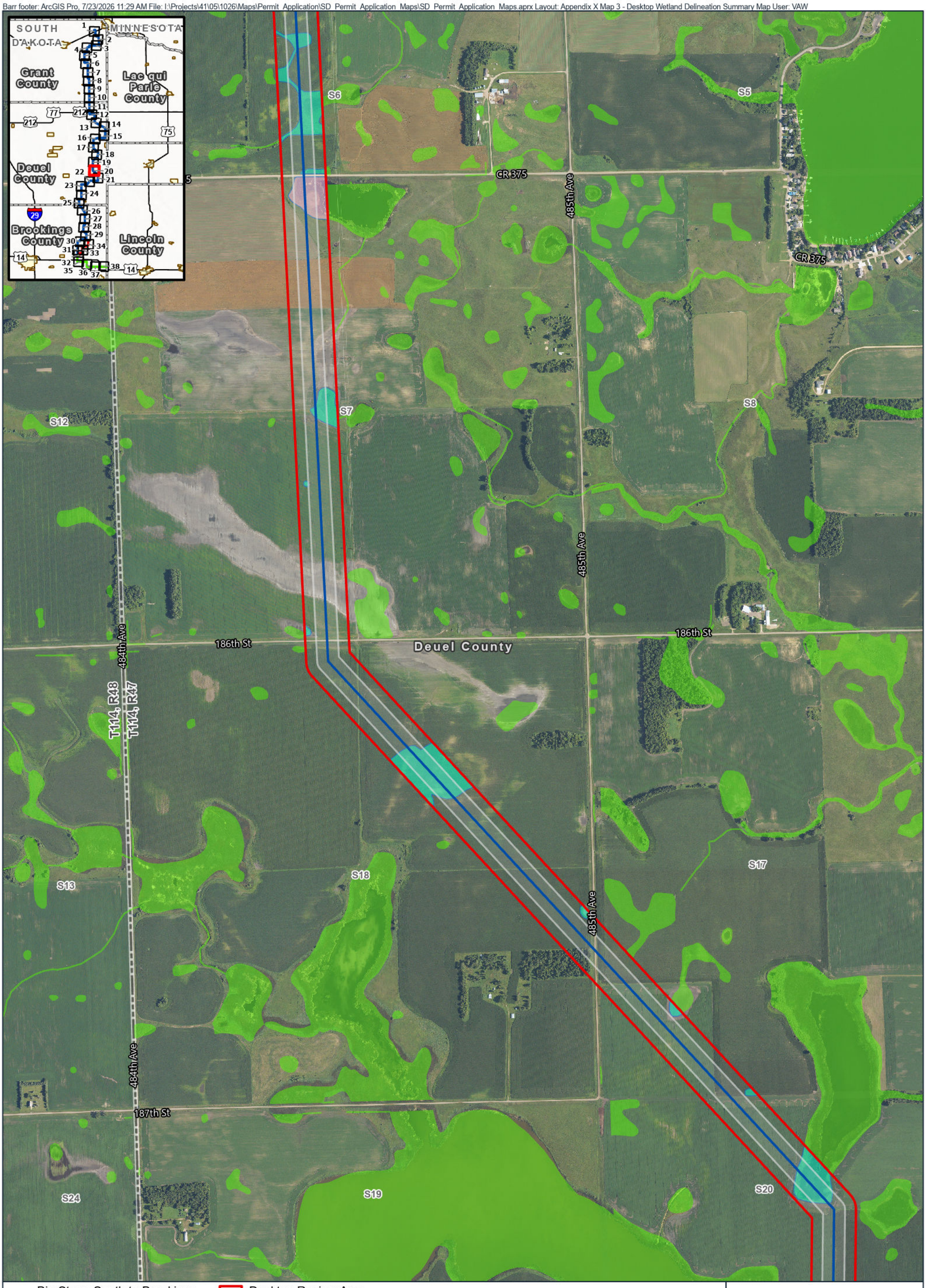
Freshwater Emergent Wetland
Freshwater Pond

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-19

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary

Desktop Review Area
National Wetland Inventory

Wetland Community Classification

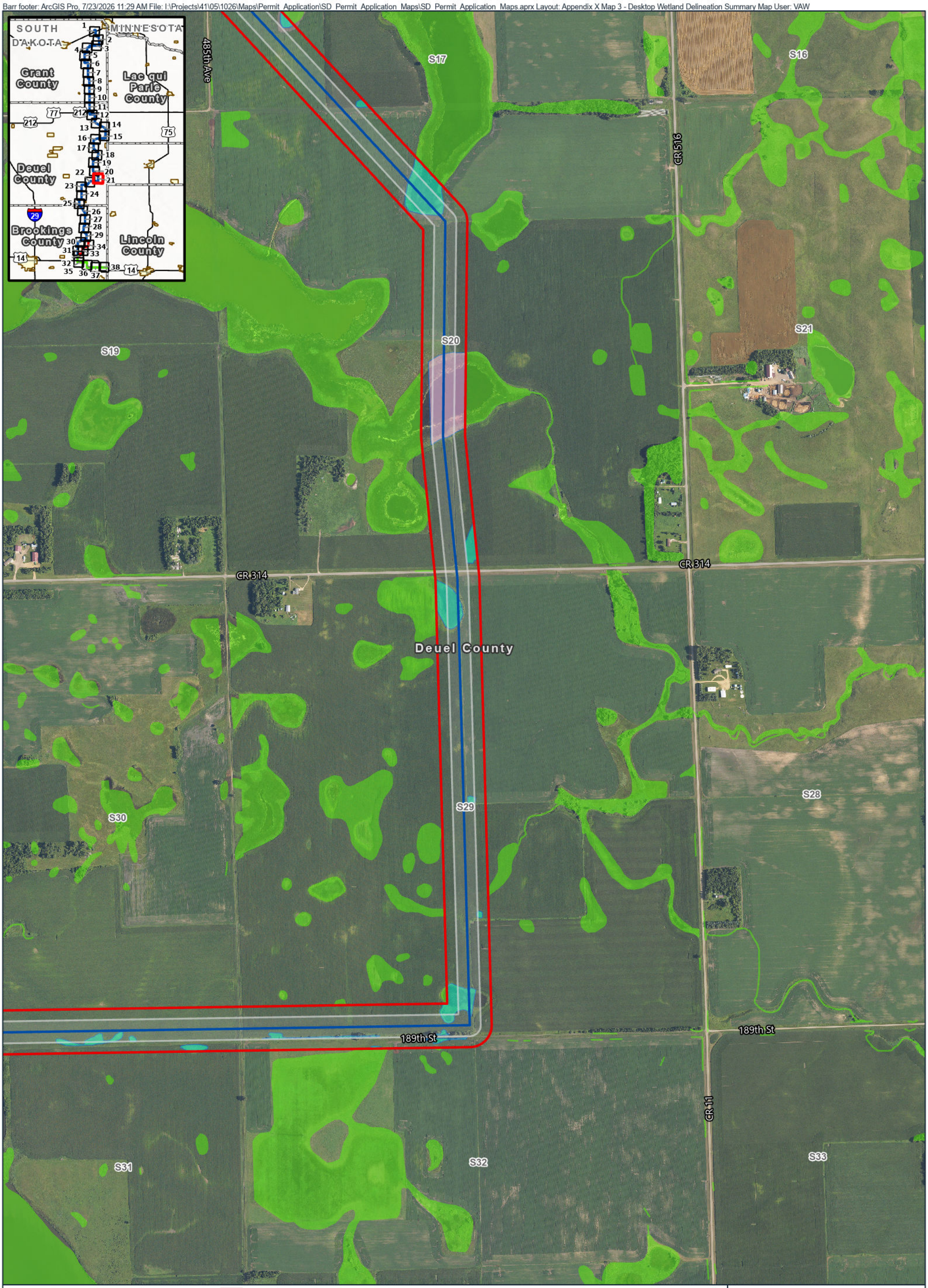
Freshwater Emergent Wetland
Freshwater Pond

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-20

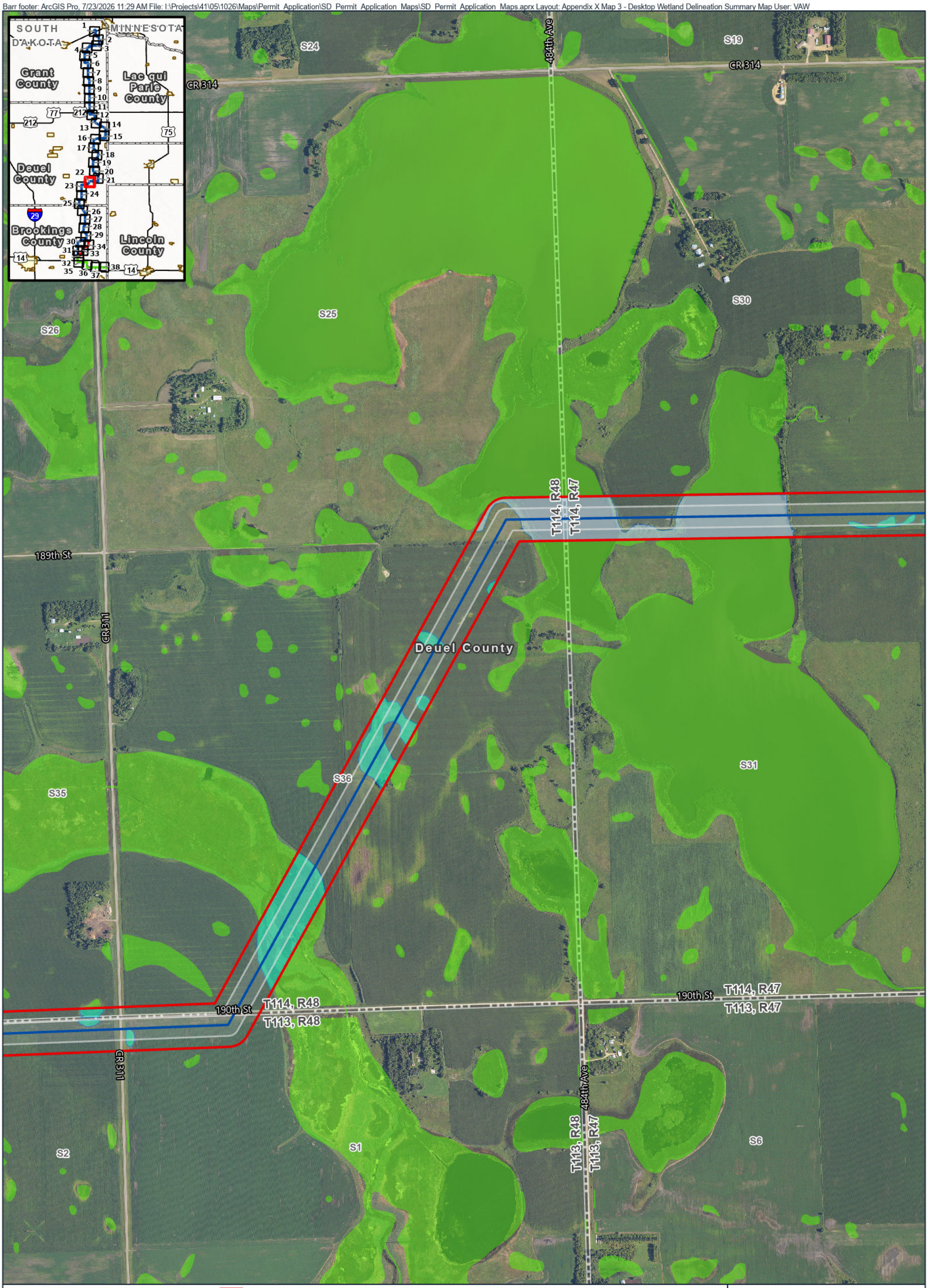
PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-21

PowerOn Midwest
Big Stone South to Brookings



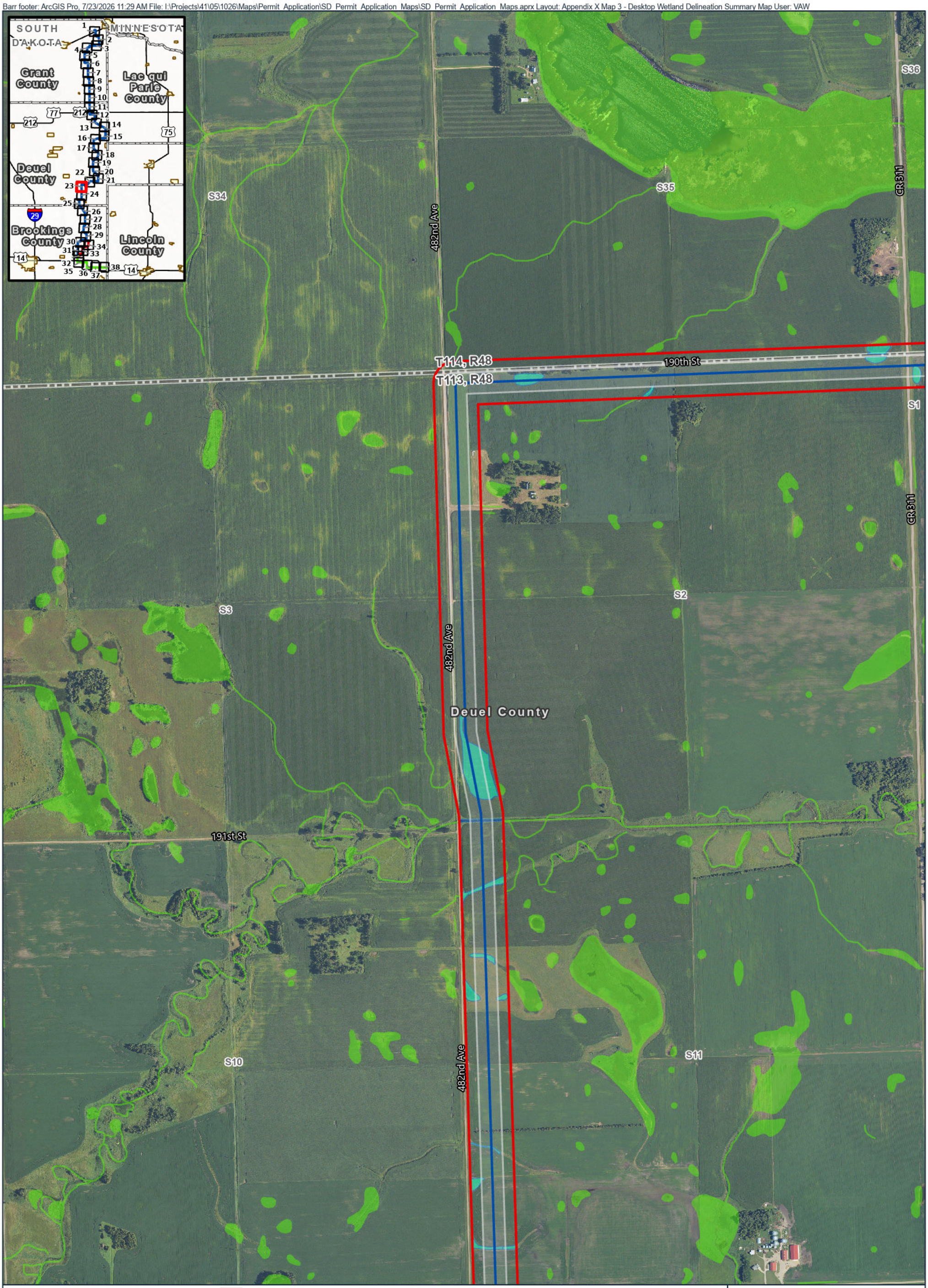
Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory
Wetland Community Classification
Freshwater Emergent Wetland
Lake

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-22

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary

Desktop Review Area
National Wetland Inventory

Wetland Community Classification

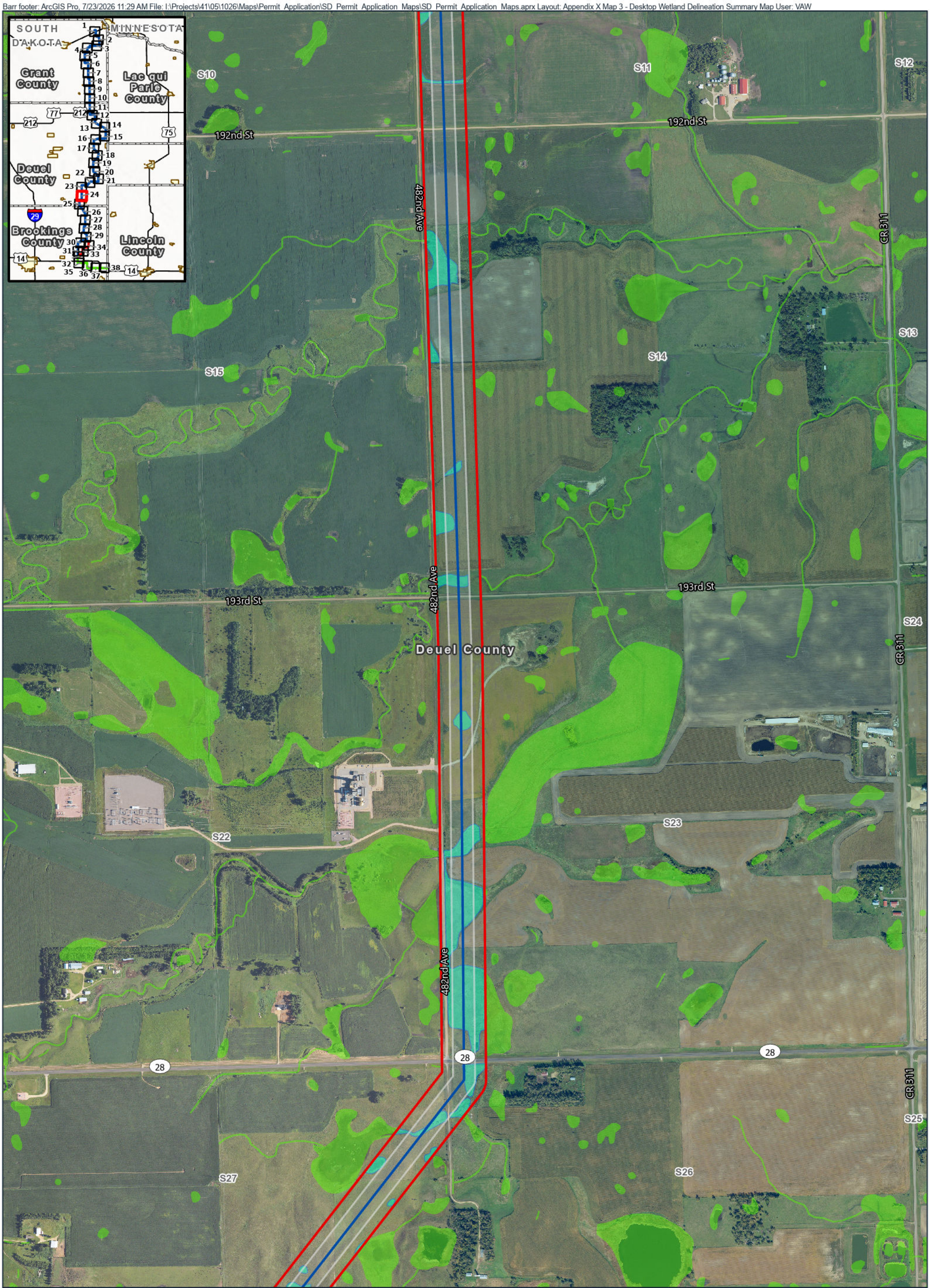
Freshwater Emergent Wetland
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-23

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment

Right-of-Way

Public Land Survey Township

County Boundary

Desktop Review Area

National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland

0 500 1,000

Feet

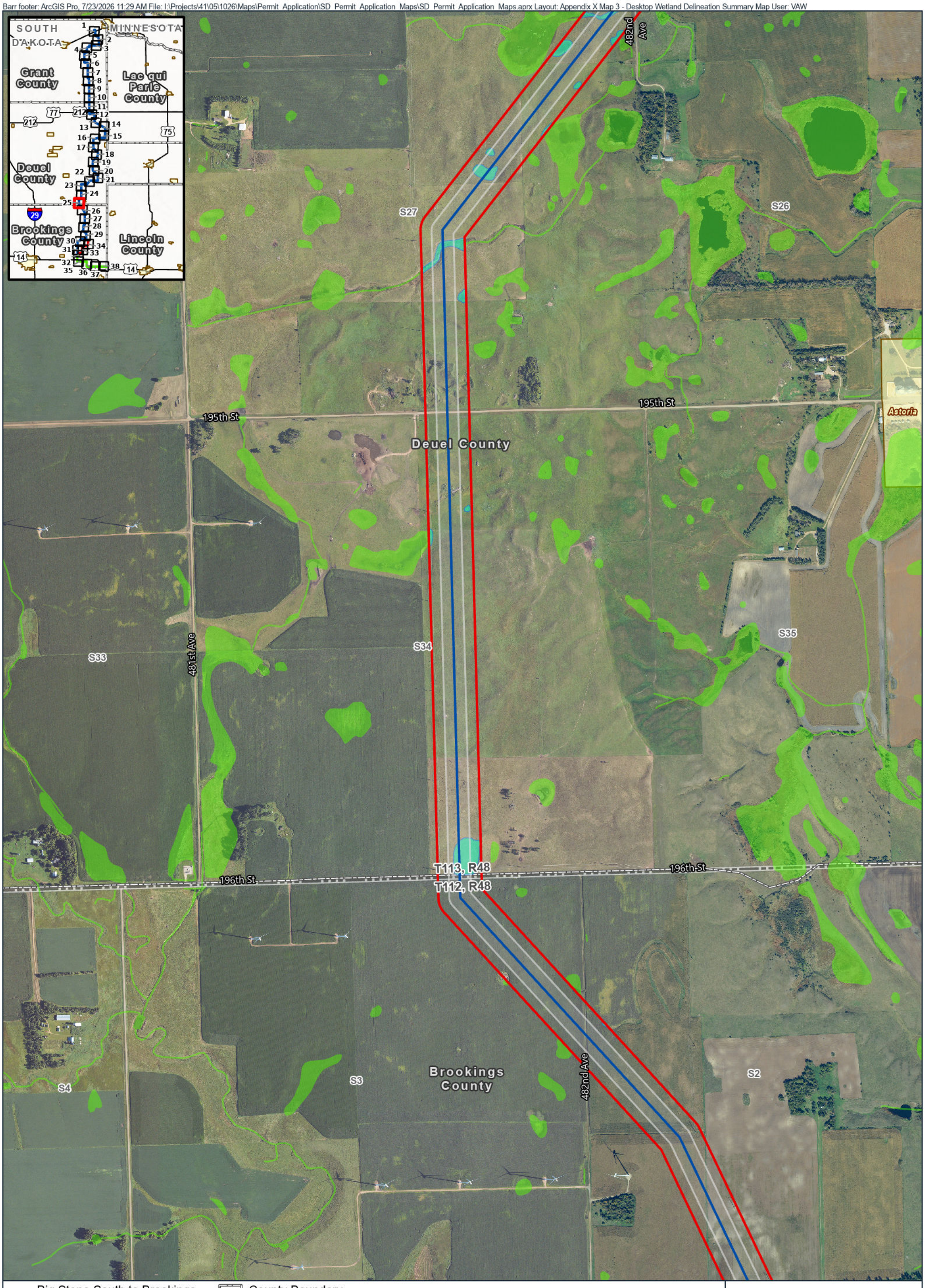
DESKTOP WETLAND DELINEATION SUMMARY MAP

South Dakota

MAP 3-24

PowerOn Midwest

Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Municipal Boundary
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory

Wetland Community Classification

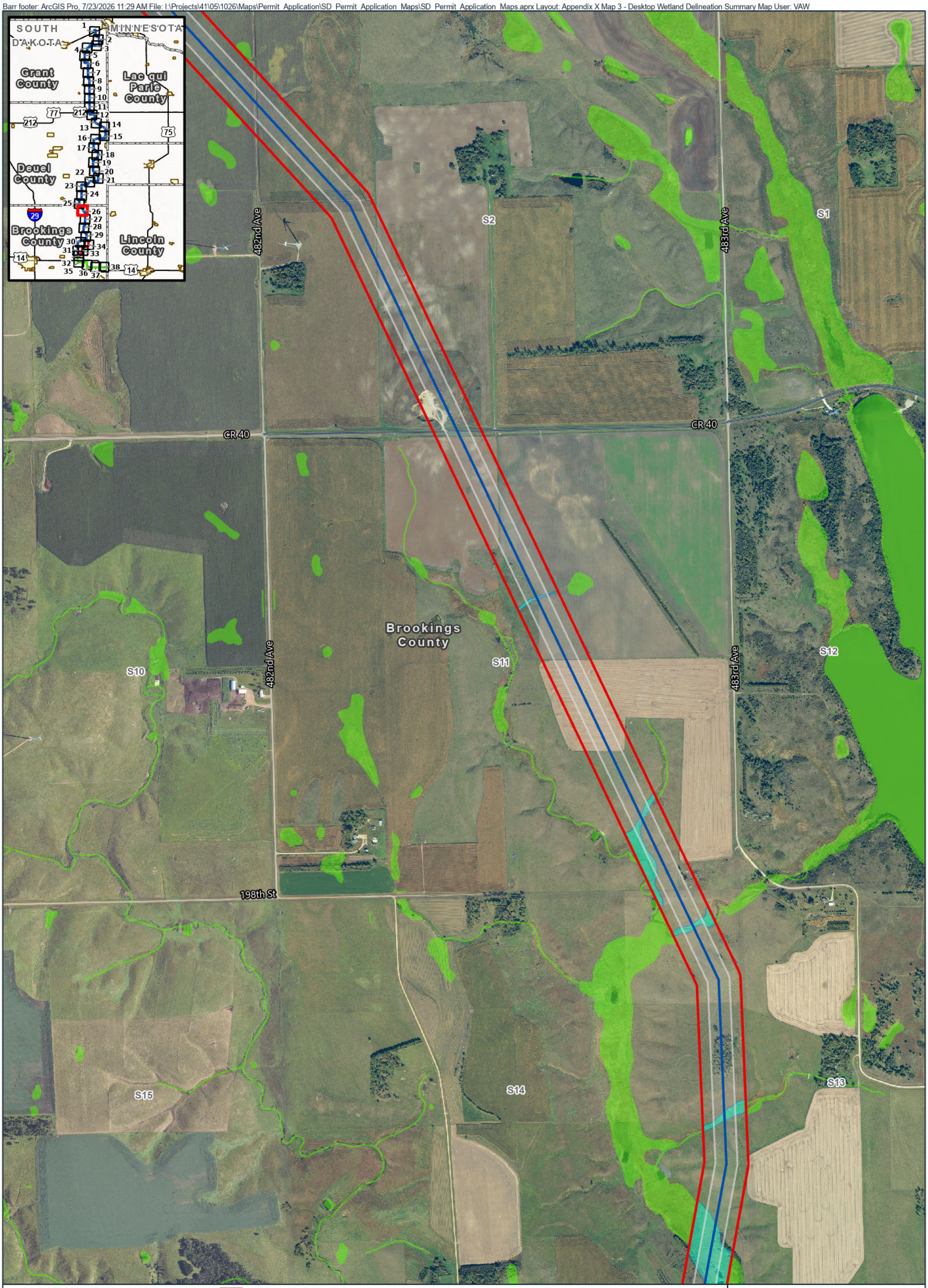
Freshwater Emergent Wetland

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-25

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment

Right-of-Way

Public Land Survey Township

County Boundary

Desktop Review Area

National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland

0 500 1,000

Feet

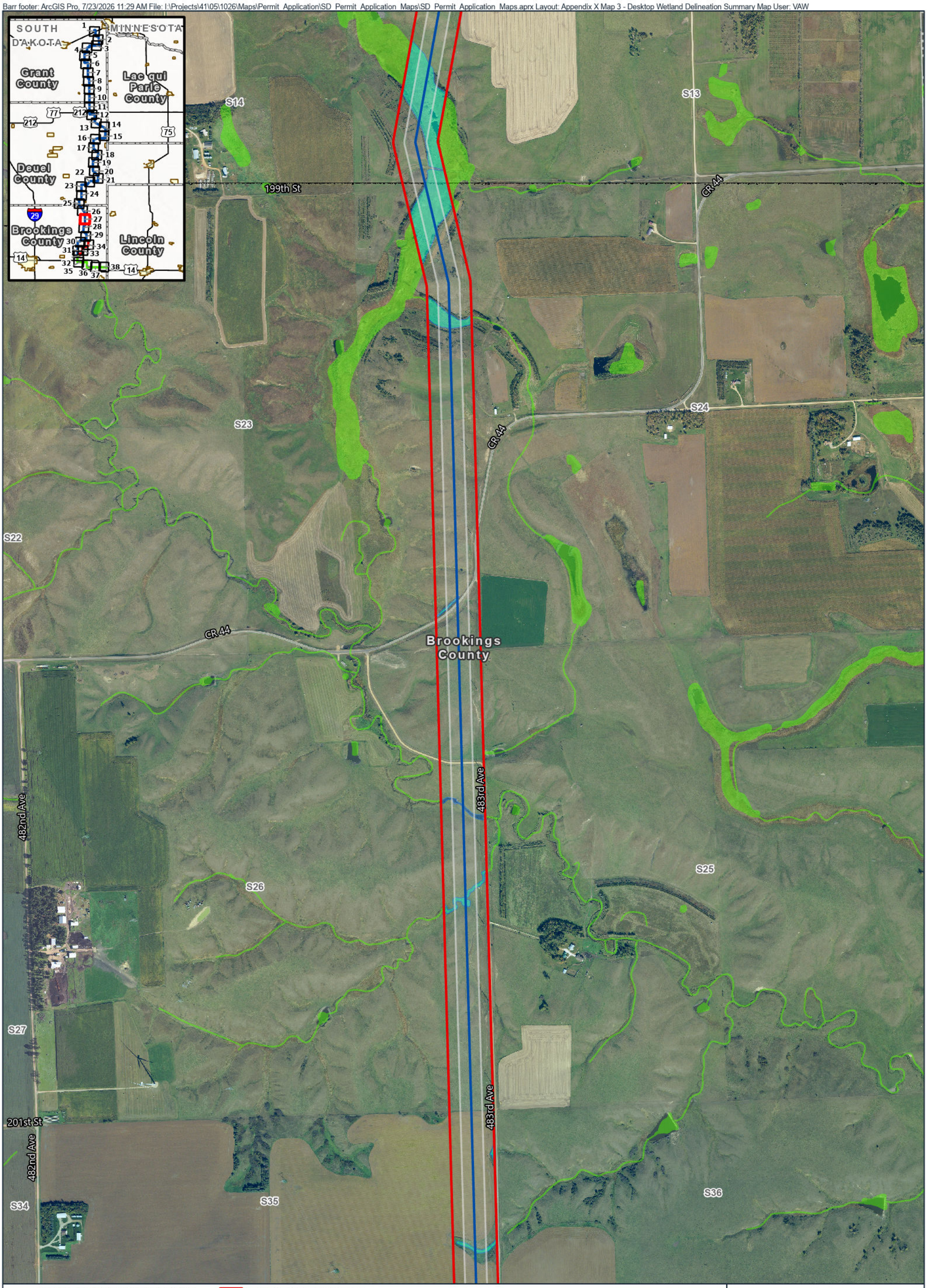
DESKTOP WETLAND DELINEATION SUMMARY MAP

South Dakota

MAP 3-26

PowerOn Midwest

Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory

Wetland Community Classification

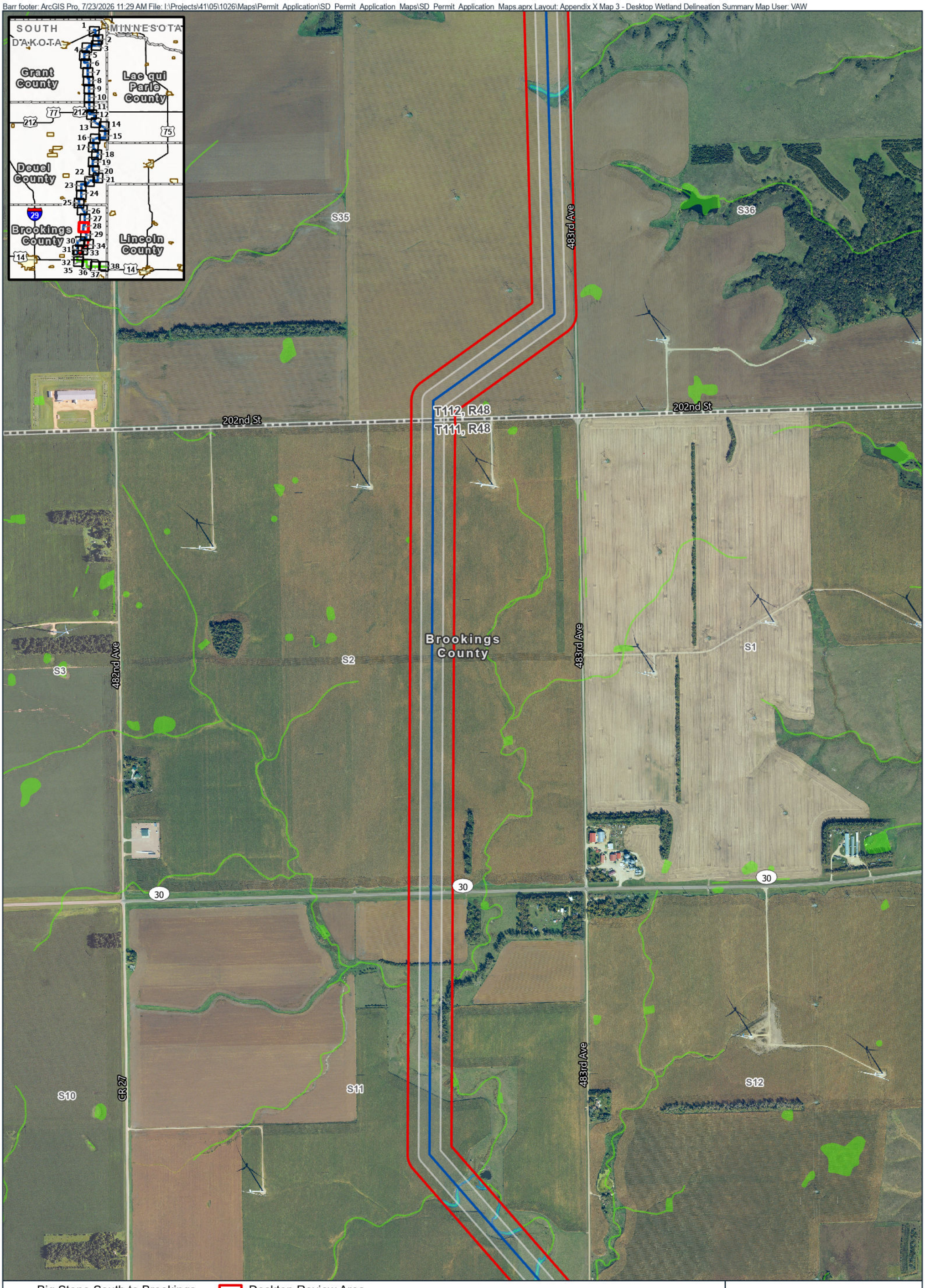
Freshwater Emergent Wetland
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-27

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment

Right-of-Way

Public Land Survey Township

County Boundary

Desktop Review Area

National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland

0 500 1,000

Feet

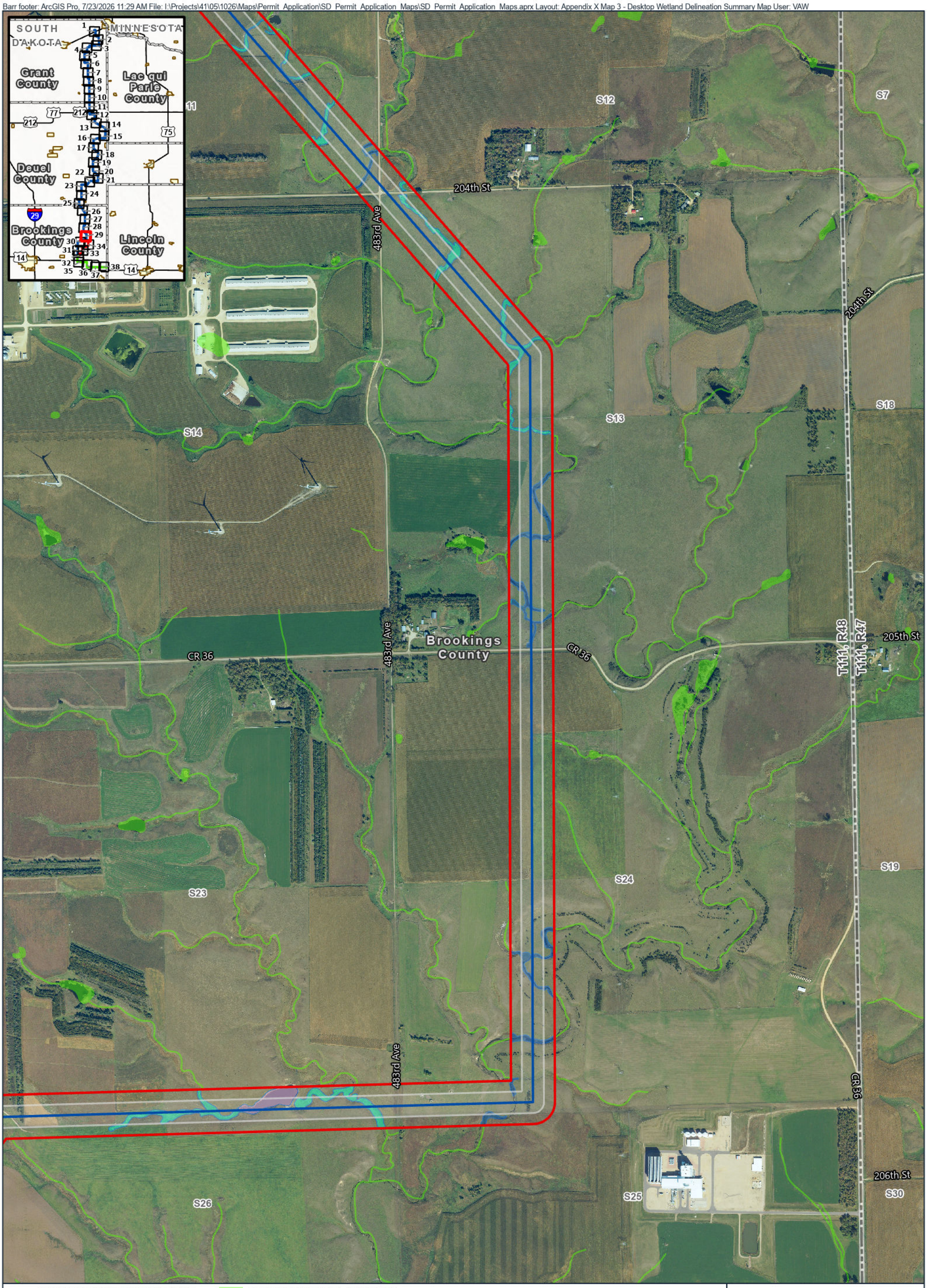
DESKTOP WETLAND DELINEATION SUMMARY MAP

South Dakota

MAP 3-28

PowerOn Midwest

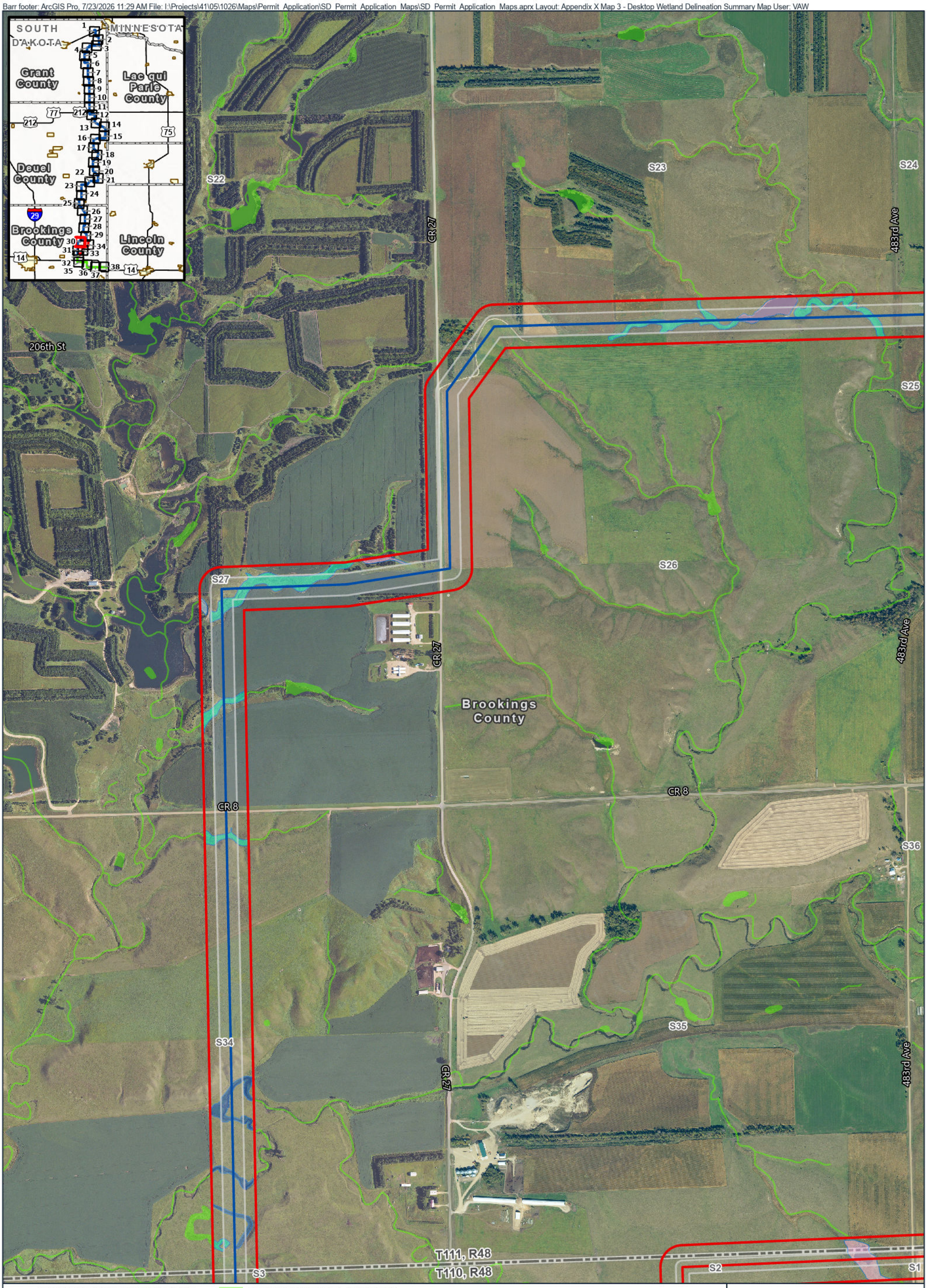
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-29

PowerOn Midwest
Big Stone South to Brookings



Big Stone South to Brookings 765 kV Alignment
345 kV Connector Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area

National Wetland Inventory

Wetland Community Classification

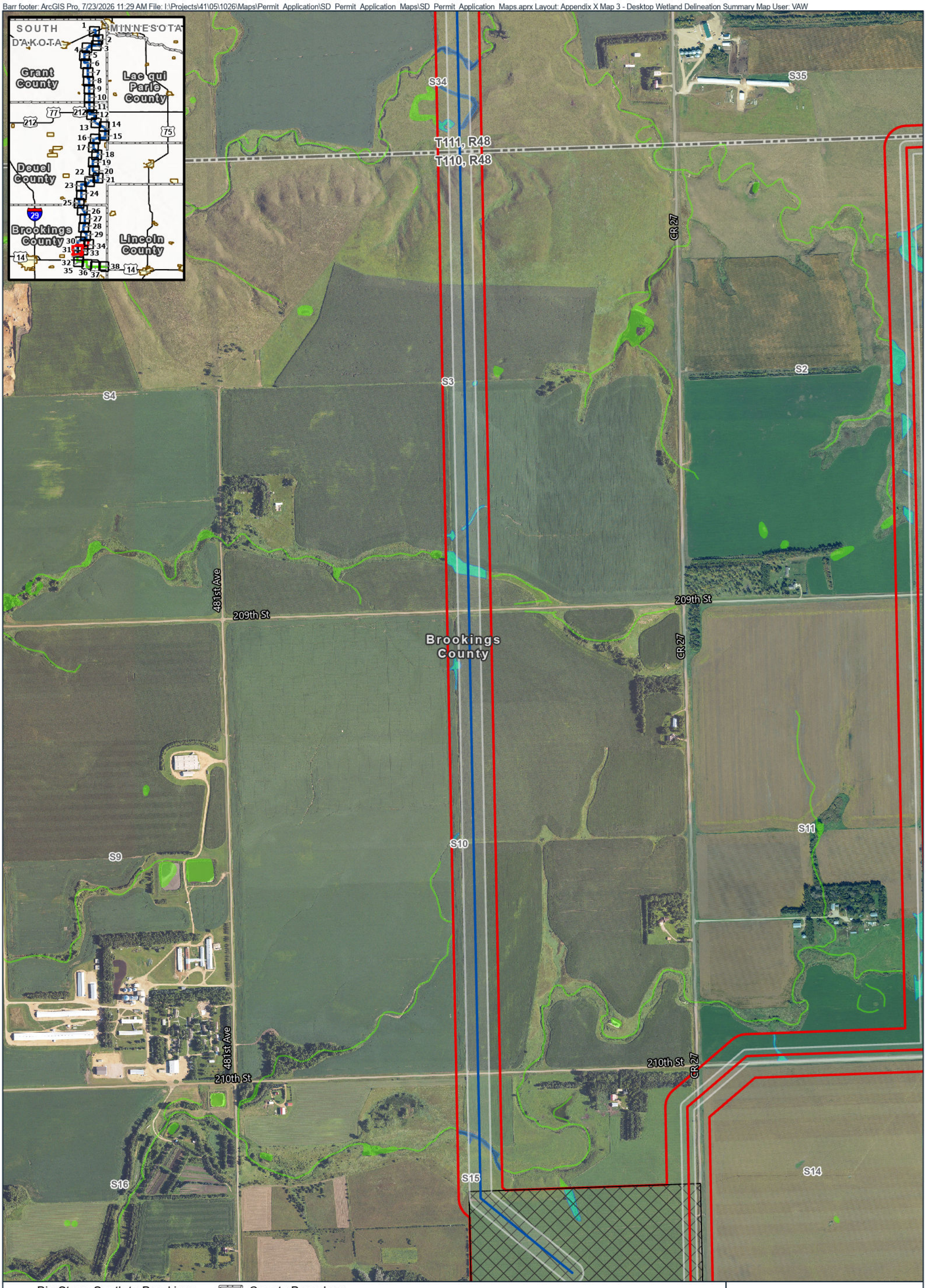
Freshwater Emergent Wetland
Freshwater Pond
Lake
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-30

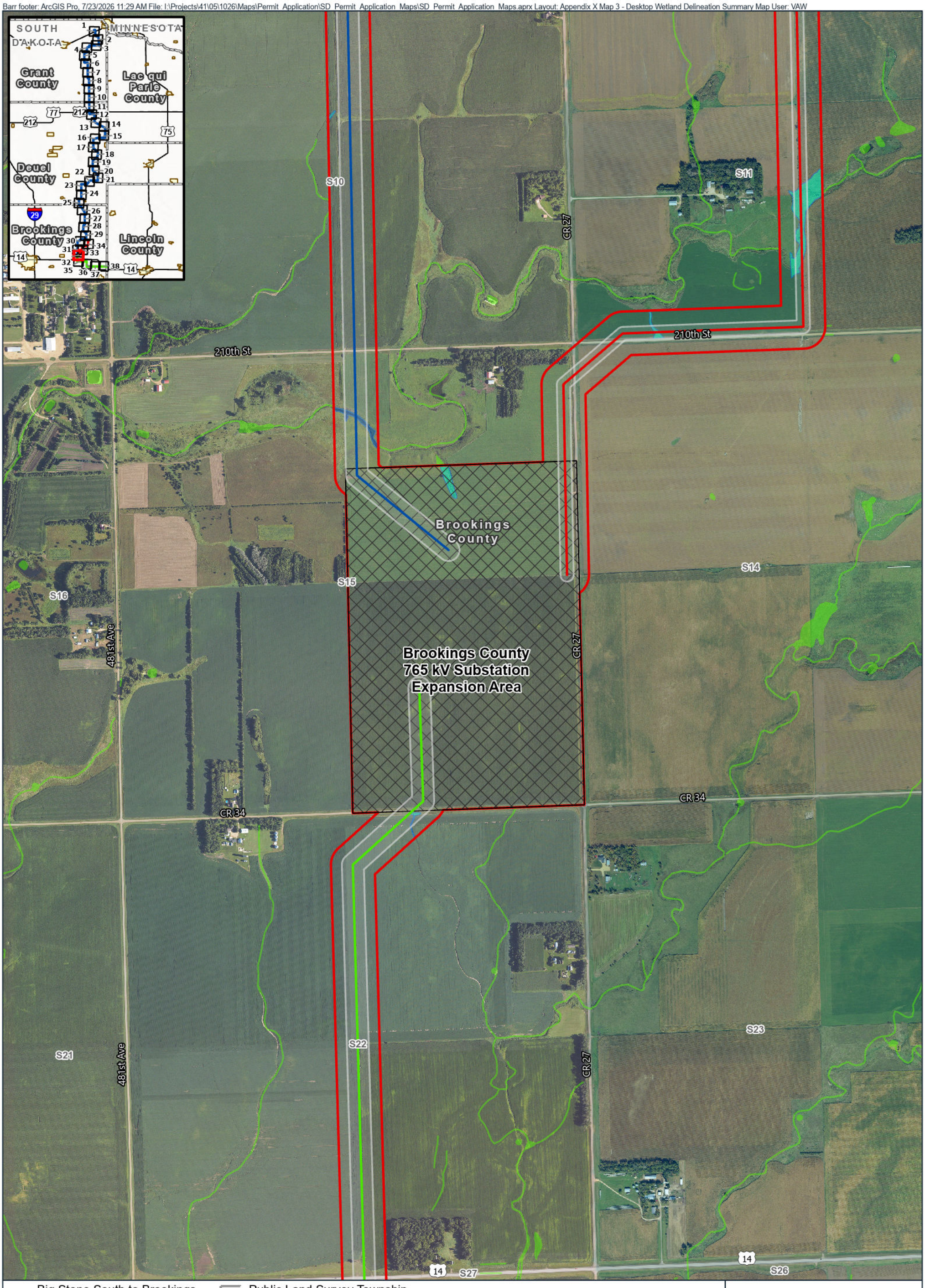
PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-31

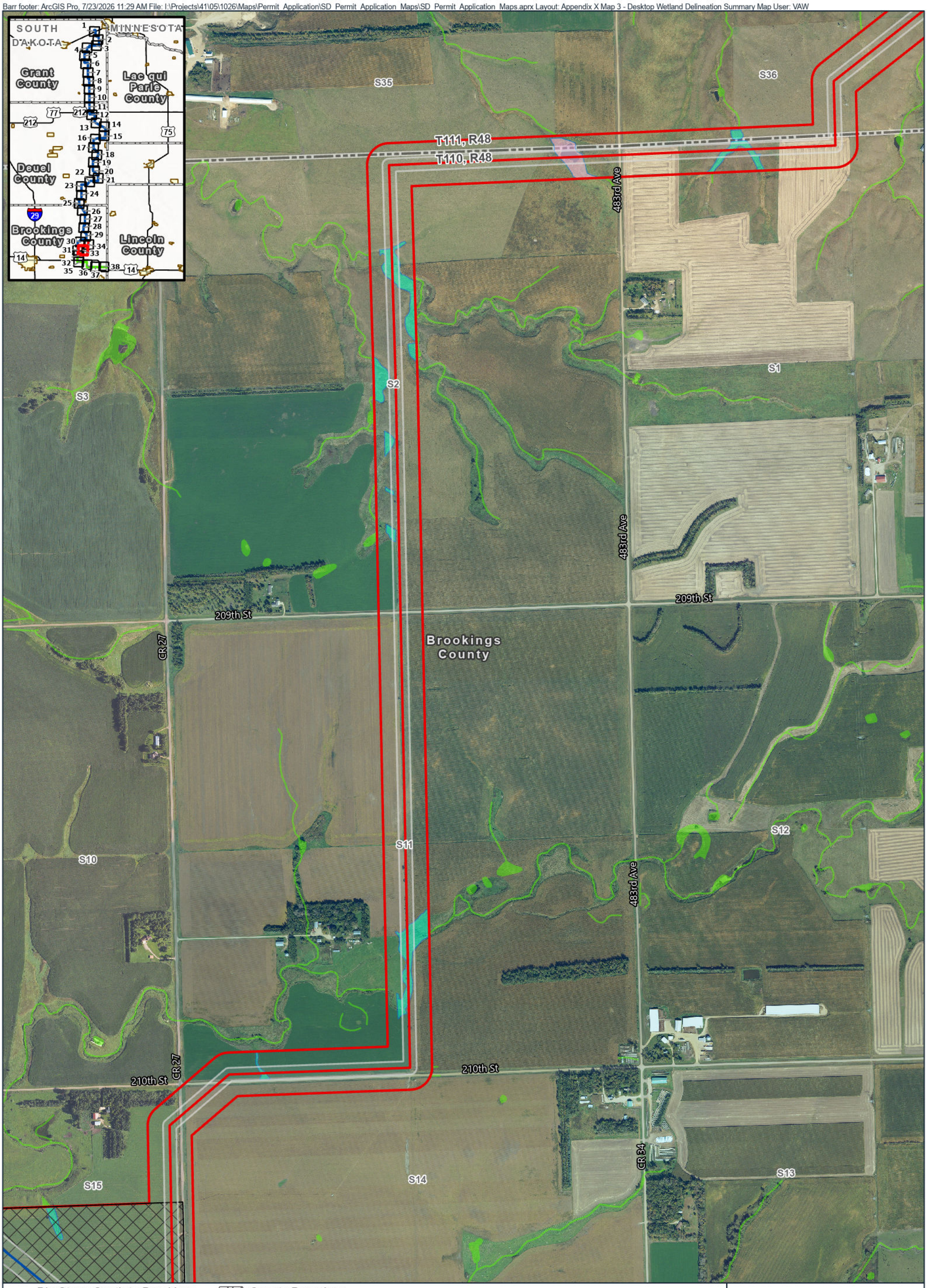
PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-32

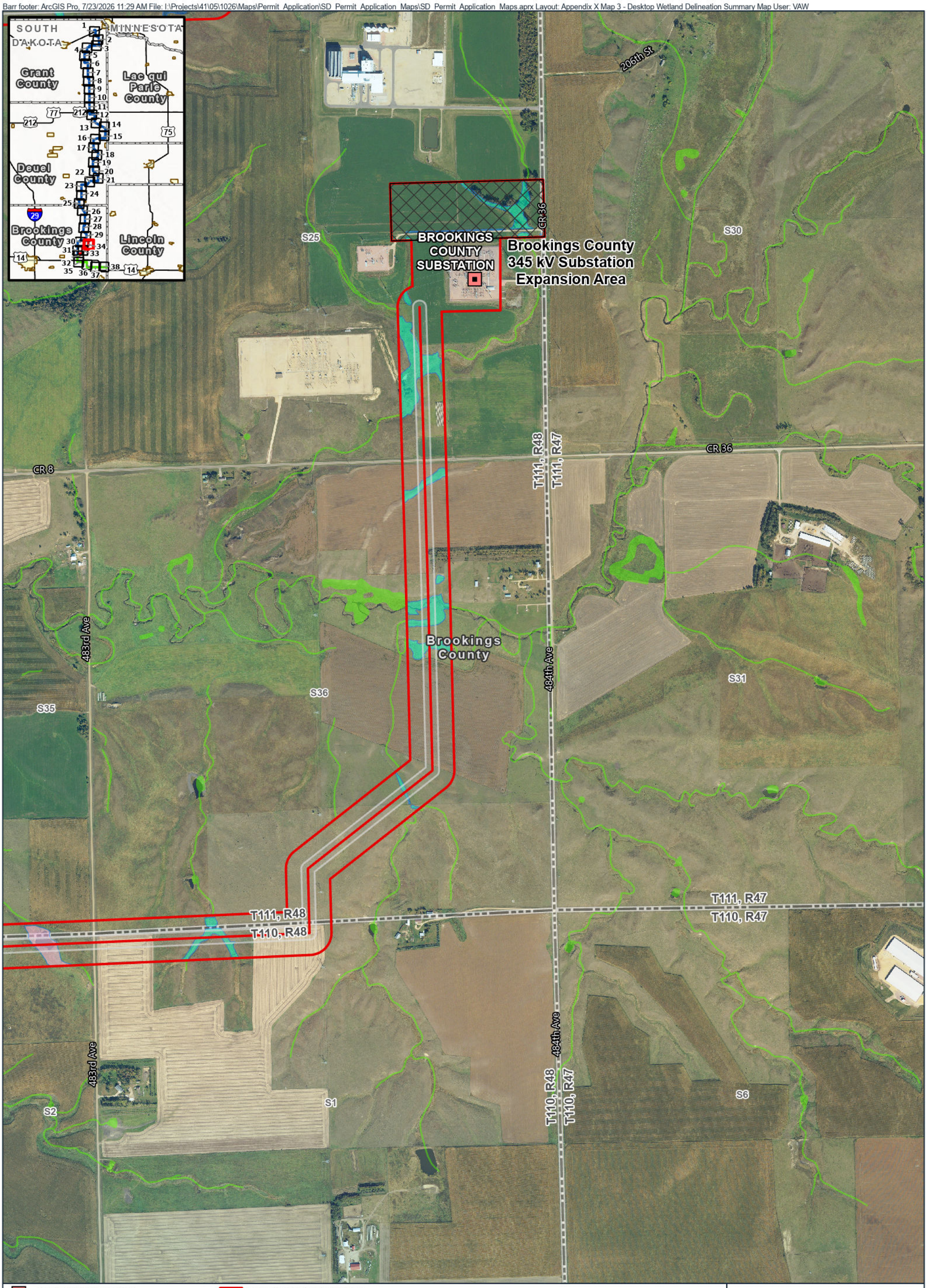
PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-33

PowerOn Midwest
Big Stone South to Brookings



Project Substation
345 kV Connector Alignment
Right-of-Way
Substation Expansion Area
Public Land Survey Township
County Boundary

Desktop Review Area
National Wetland Inventory

Wetland Community Classification

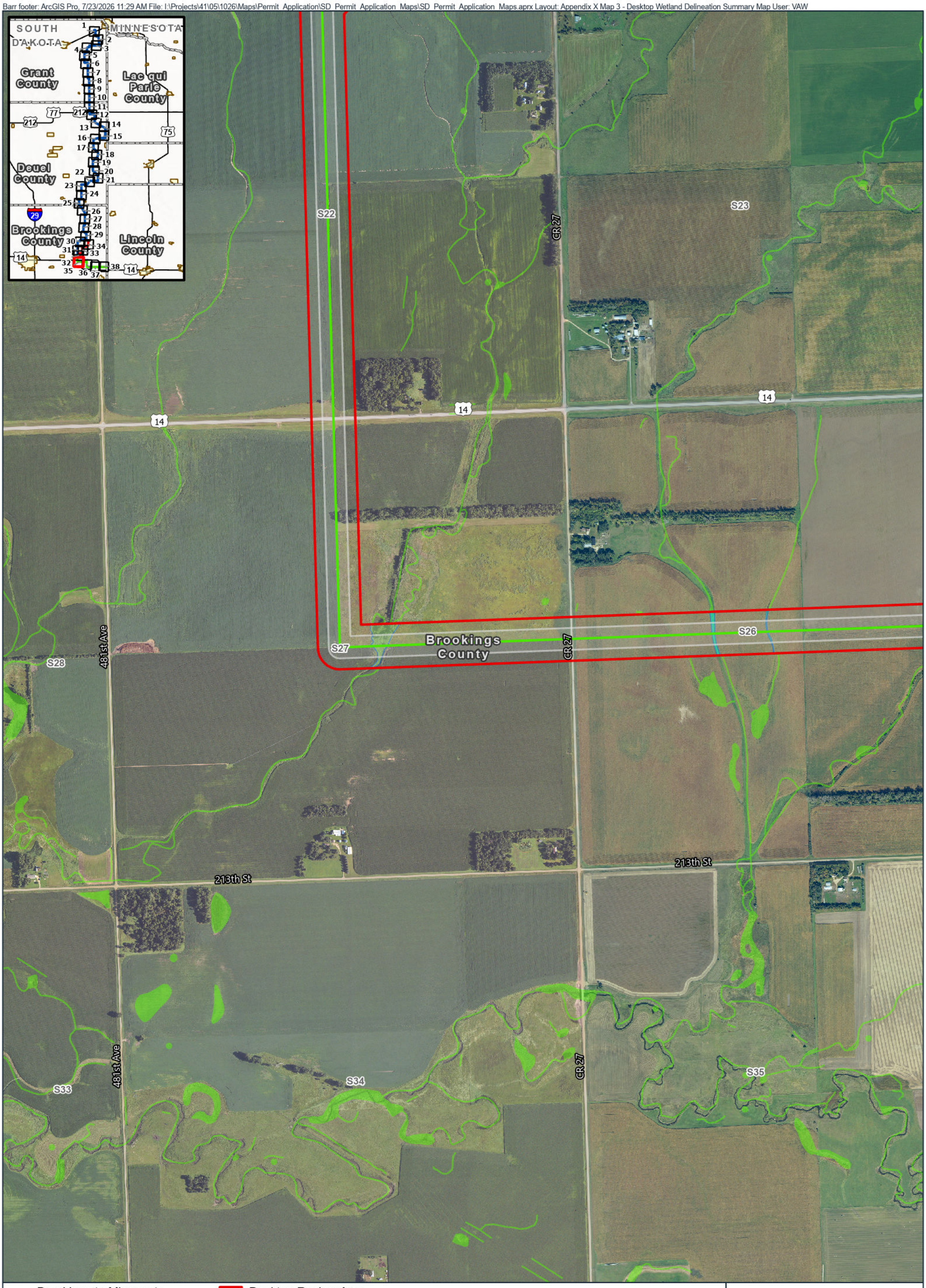
Freshwater Emergent Wetland
Freshwater Pond
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-34

PowerOn Midwest
Big Stone South to Brookings



Brookings to Minnesota Border765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary

Desktop Review Area
National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland
Freshwater Forested/Shrub

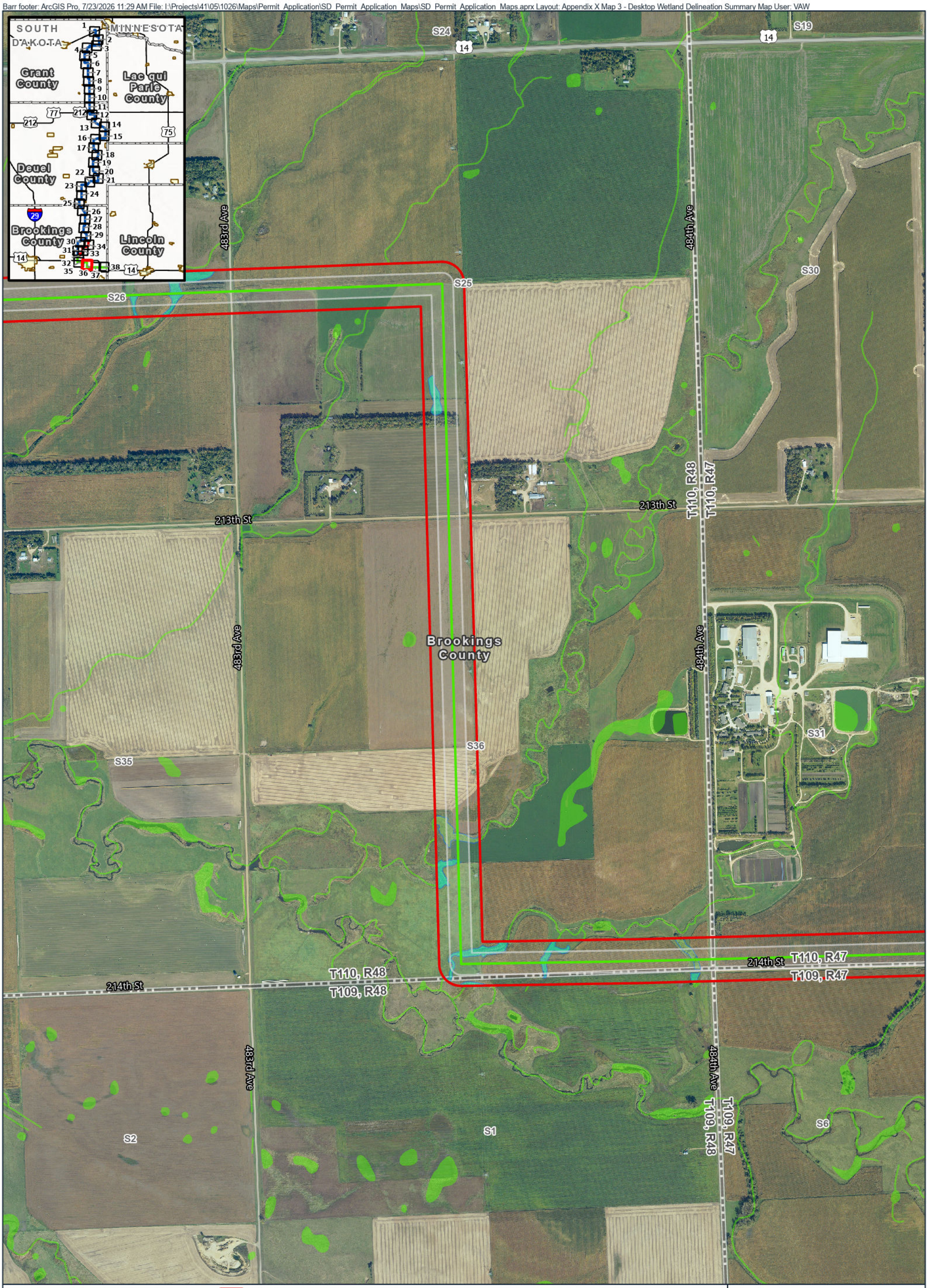
N

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-35

PowerOn Midwest
Big Stone South to Brookings



Brookings to Minnesota Border765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area
National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland
Freshwater Forested/Shrub

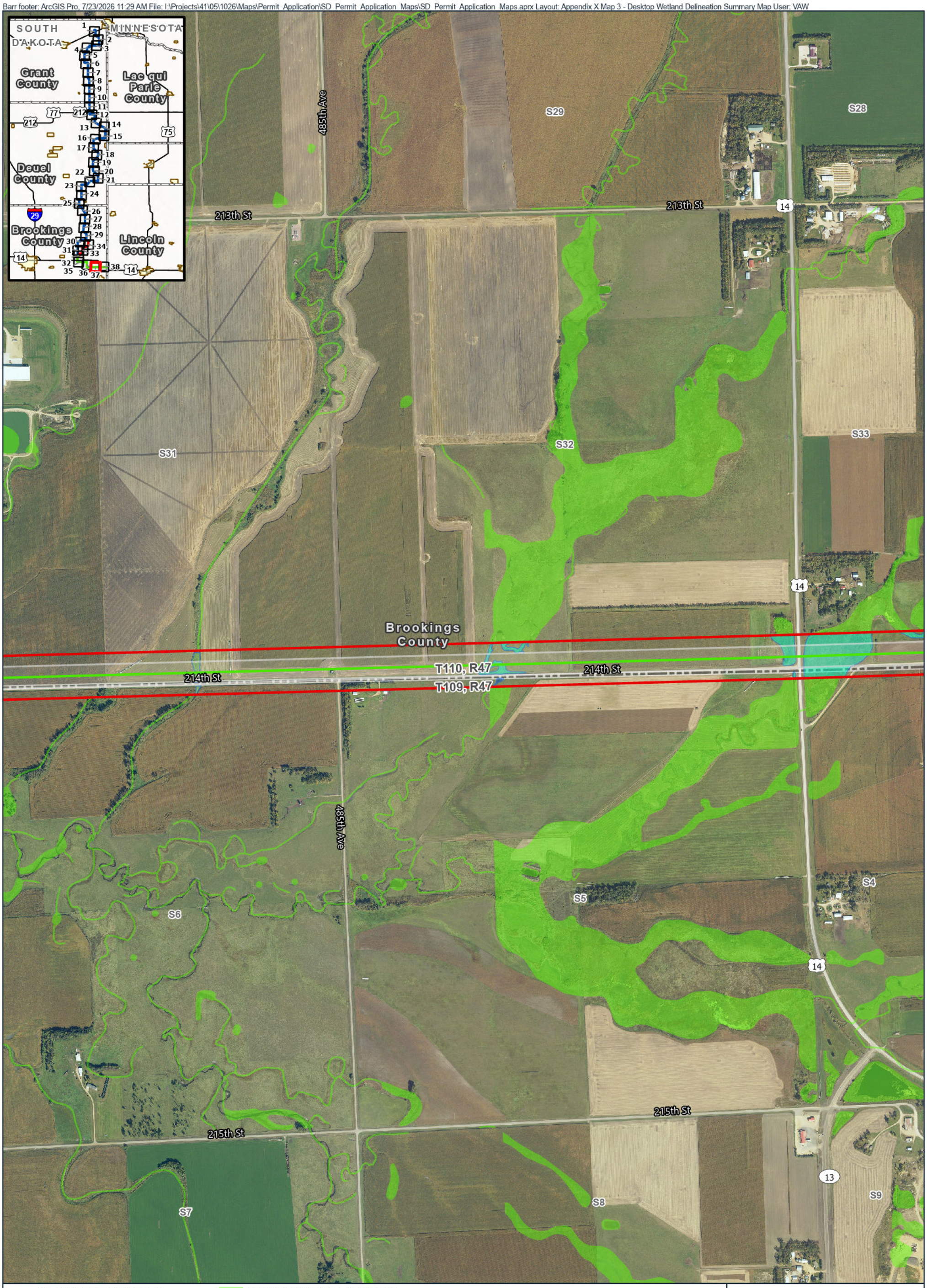
N

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-36

PowerOn Midwest
Big Stone South to Brookings



Brookings to Minnesota Border765 kV Alignment
Right-of-Way
Public Land Survey Township
County Boundary
Desktop Review Area

National Wetland Inventory

Wetland Community Classification

Freshwater Emergent Wetland
Freshwater Forested/Shrub
Riverine

0 500 1,000
Feet

DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-37

PowerOn Midwest
Big Stone South to Brookings



DESKTOP WETLAND DELINEATION SUMMARY MAP
South Dakota

MAP 3-38

PowerOn Midwest
Big Stone South to Brookings

Attachment 1

Antecedent Precipitation Worksheets

Aerial photograph or site visit date: 8/15/2025	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**July**	**June**	**May**
estimated precipitation total for this location:	**4.16**	**9.66**	**3.4**
there is a 30% chance this location will have less than:	2.43	2.26	1.95
there is a 30% chance this location will have more than:	4.1	5.23	3.77
type of month: dry normal wet	**wet**	**wet**	**normal**
monthly score	**3 * 3 = 9**	**2 * 3 = 6**	**1 * 2 = 2**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**17 (wet)**		

Aerial photograph or site visit date: 10/10/2023	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**September-23**	**August-23**	**July-23**
estimated precipitation total for this location:	**1.63**	**3.73**	**1.36**
there is a 30% chance this location will have less than:	1.44	2.31	2.43
there is a 30% chance this location will have more than:	2.99	3.76	4.1
type of month: dry normal wet	**normal**	**normal**	**dry**
monthly score	**3 * 2 = 6**	**2 * 2 = 4**	**1 * 1 = 1**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**11 (normal)**		

Aerial photograph or site visit date: 8/3/2022	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**July**	**June**	**May**
estimated precipitation total for this location:	**3.84**	**2.4**	**7.65**
there is a 30% chance this location will have less than:	2.43	2.26	1.95
there is a 30% chance this location will have more than:	4.1	5.23	3.77
type of month: dry normal wet	**normal**	**normal**	**wet**
monthly score	**3 * 2 = 6**	**2 * 2 = 4**	**1 * 3 = 3**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**13 (normal)**		

Aerial photograph or site visit date: 8/17/2020	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**July**	**June**	**May**
estimated precipitation total for this location:	**3.5**	**1.53**	**2.85**
there is a 30% chance this location will have less than:	2.43	2.26	1.95
there is a 30% chance this location will have more than:	4.1	5.23	3.77
type of month: dry normal wet	**normal**	**dry**	**normal**
monthly score	**3 * 2 = 6**	**2 * 1 = 2**	**1 * 2 = 2**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**10 (normal)**		

Aerial photograph or site visit date: 8/22/2018	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**July**	**June**	**May**
estimated precipitation total for this location:	**2.51**	**5.2**	**1.06**
there is a 30% chance this location will have less than:	2.43	2.26	1.95
there is a 30% chance this location will have more than:	4.1	5.23	3.77
type of month: dry normal wet	**normal**	**normal**	**dry**
monthly score	**3 * 2 = 6**	**2 * 2 = 4**	**1 * 1 = 1**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**11 (normal)**		

Aerial photograph or site visit date: 8/14/2026	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**July**	**June**	**May**
estimated precipitation total for this location:	**3.13**	**2.02**	**1.87**
there is a 30% chance this location will have less than:	2.43	2.26	1.95
there is a 30% chance this location will have more than:	4.1	5.23	3.77
type of month: dry normal wet	**normal**	**dry**	**dry**
monthly score	**3 * 2 = 6**	**2 * 1 = 2**	**1 * 1 = 1**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**9 (dry)**		

Aerial photograph or site visit date: 9/22/2014	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**August**	**July**	**June**
estimated precipitation total for this location:	**6.05**	**0.68**	**6.41**
there is a 30% chance this location will have less than:	2.31	2.43	2.26
there is a 30% chance this location will have more than:	3.76	4.1	5.23
type of month: dry normal wet	**wet**	**dry**	**wet**
monthly score	**3 * 3 = 9**	**2 * 1 = 2**	**1 * 3 = 3**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**14 (normal)**		

Aerial photograph or site visit date: 7/14/2012	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**June**	**May**	**April**
estimated precipitation total for this location:	**2.7**	**0.82**	**3.82**
there is a 30% chance this location will have less than:	2.26	1.95	1.34
there is a 30% chance this location will have more than:	5.23	3.77	2.74
type of month: dry normal wet	**normal**	**dry**	**wet**
monthly score	**3 * 2 = 6**	**2 * 1 = 2**	**1 * 3 = 3**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**11 (normal)**		

Aerial photograph or site visit date: 7/8/2008	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**June**	**May**	**April**
estimated precipitation total for this location:	**4.27**	**3.49**	**3.35**
there is a 30% chance this location will have less than:	2.26	1.95	1.34
there is a 30% chance this location will have more than:	5.23	3.77	2.74
type of month: dry normal wet	**normal**	**normal**	**wet**
monthly score	**3 * 2 = 6**	**2 * 2 = 4**	**1 * 3 = 3**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**13 (normal)**		

Aerial photograph or site visit date: 7/15/2010	Score using 1991-2020 normal period		
Values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	**June**	**May**	**April**
estimated precipitation total for this location:	**6.69**	**3.17**	**1.11**
there is a 30% chance this location will have less than:	2.26	1.95	1.34
there is a 30% chance this location will have more than:	5.23	3.77	2.74
type of month: dry normal wet	**wet**	**normal**	**dry**
monthly score	**3 * 3 = 9**	**2 * 2 = 4**	**1 * 1 = 1**
multi-month score:			
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**14 (normal)**		