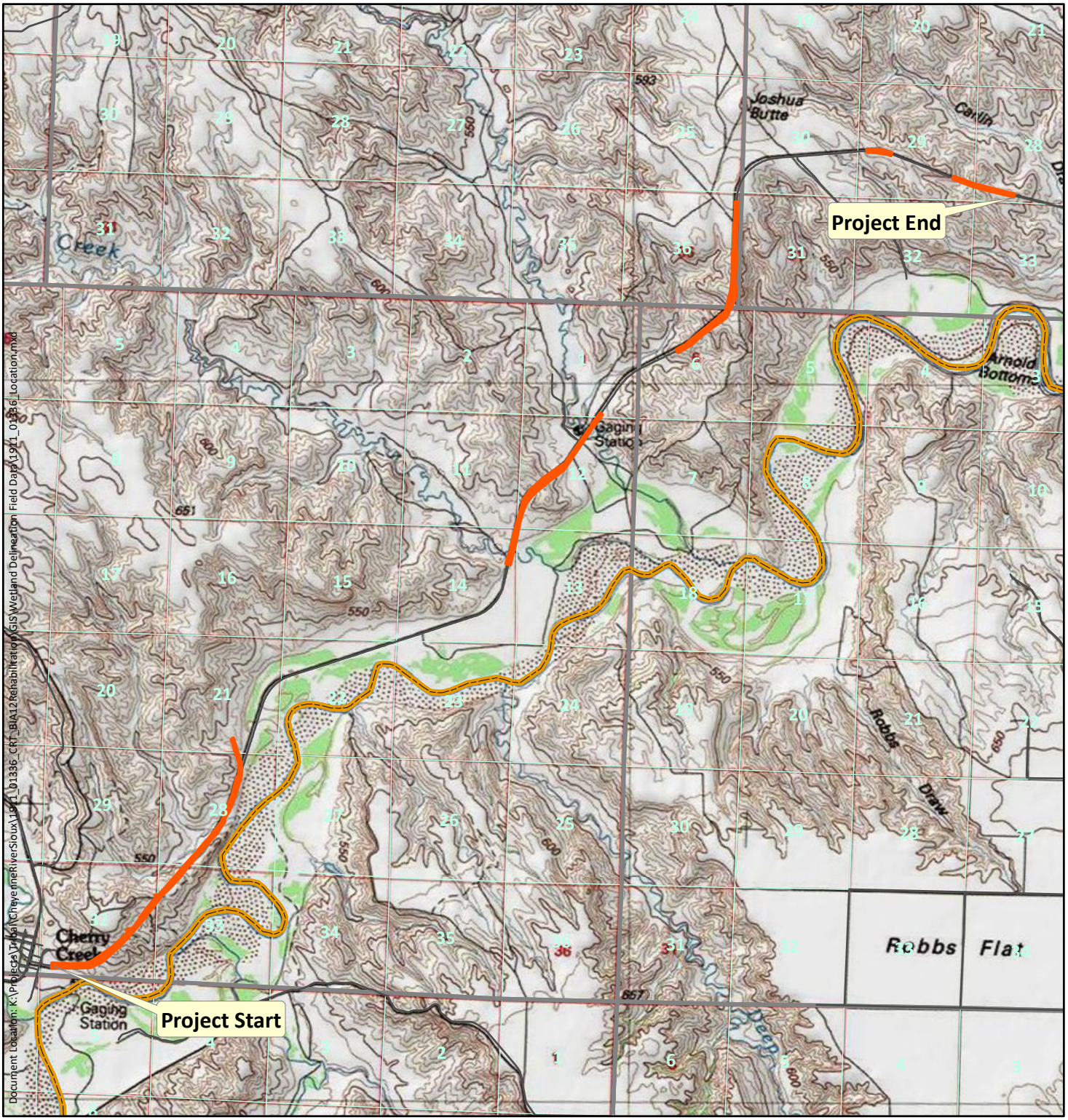
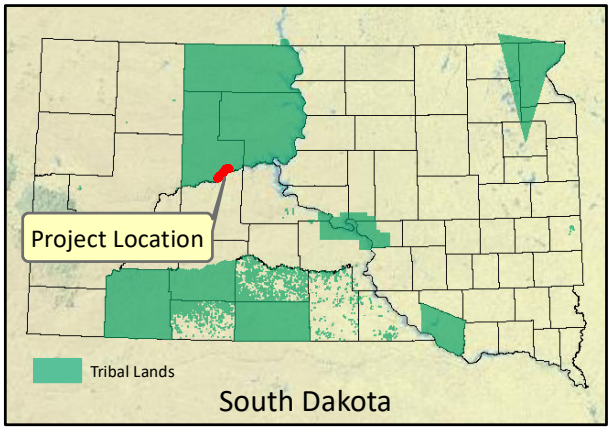
Supporting Documentation

- Project Location Map
- THPO Concurrence Letter
- Wetland Information
- FEMA Floodplain Maps
- USFWS IPaC Species List
- USDA Web Soil Survey Maps and Prime Farmland Information





Project Location Map

BIA12 Rehabilitation

Ziebach County, South Dakota

Survey Area

0 0.5 1 2 Miles

0 0.5 1 2 Kilometers

N W E S

KLJ

KLJ Project Number: 1911-01336
Date Created: 9/1/2020
Created By: katherynemcgee

Mnicoujou Itazipco

CHEYENNE RIVER SIOUX TRIBE
Tribal Historic Preservation Office
PO BOX 590 98 S. Willow St.
Eagle Butte, South Dakota 57625
Telephone: (605) 964-7554
Fax: (605) 964-7552

Steven Vance
Tribal Historic Preservation Officer
stevev.crstpres@outlook.com

Siha Sapa Oohenumpa

Date: September 29, 2020

Dakota Longbrake, Director
CRST Department of Transportation
PO Box 590
24395 US Hwy 212
Eagle Butte, SD 57625

Re: CRST Department of Transportation (DOT), Project: BIA Highway 12 (Slide Repair/Guard Rail).

Section 106 Determination
The CRST – Tribal Historic Preservation Officer (THPO) concurs that consultation was initiated under the National Historic Preservation Act (NHPA), with regards to the CRST DOT Slide Repair/Guard Rail project. Based on the information that was submitted to this office, that with the comments and recommendations being adhered to, we conclude a determination of **"no historic property effected"**.

Section 106 Consultation
Concurrence of the THPO does not relieve the project official from consulting with other appropriate parties, as described in 36 CFR Part 800.2 (c).

CRST Ordinance 57 Cultural Resource Protection Act
We request onsite Cultural Resource Survey Monitor(s) during any ground disturbance. The Cultural Preservation Office has a list of qualified individuals.

Confidentiality of Sensitive Cultural Resources/Sacred Sites
All field books/notes, photographs, GPS points, or other information gathered must be submitted for review by the THPO, prior to distribution.

It is illegal for collecting or digging of artifacts within the exterior boundaries of the Cheyenne River Sioux reservation.

Archeological Resource Protection Act (ARPA)
In the unlikely event that cultural resources are encountered within the project during ground-disturbing activities, all work will cease. Notification of any discovery will be made to the Cultural Preservation Office. A qualified archaeologist, who meets the

Secretary of Interior Standards, will documented and evaluated the resources for eligibility on the National Register of Historic Places, in compliance with Section 106 of the NHPA.

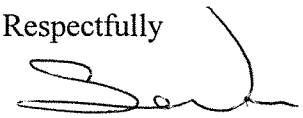
Native American Graves Protection and Repatriation Act (NAGPRA)
According to Section 3 of NAGPRA and its implementing regulations (43 CFR PART 10), CRST DOT will be responsible for compliance with the provisions on Federal land.

Inadvertent Discovery (NAGPRA)
In the event human remains, associated funerary objects, or Native American sacred objects are discovered, all work will cease and the provisions of NAGPRA will be implemented immediately. These procedures include but are not limited to:

- Within 24 hours contact the Cheyenne River Law Enforcement
- Contact the Cheyenne River THPO
- Determination of the nature of the remains by a qualified archaeologist (crime scene, prehistoric/Native American remains)
- Contact the South Dakota State Historic Preservation Officer (SHPO) if the remains are determined to be part of a larger archaeological site.

Should you need further information contact our office.

Respectfully



Cc; file

WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	1	12
Plotting Date: 12/14/2020			

Cheyenne River Sioux Tribe
Ziebach County, South Dakota

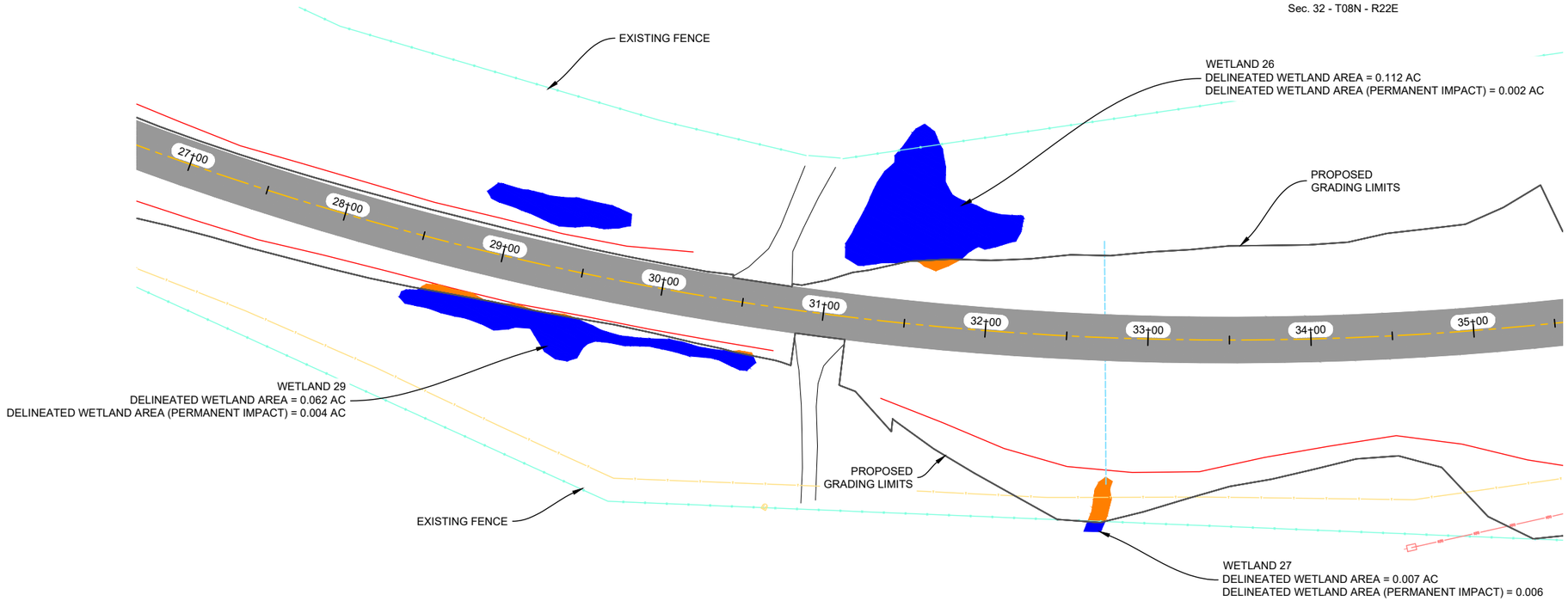
LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

N

0 40 80 FT

Sec. 32 - T08N - R22E



FILE: Wetland Impacts.dwg

WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	2	12

Plotting Date: 12/14/2020

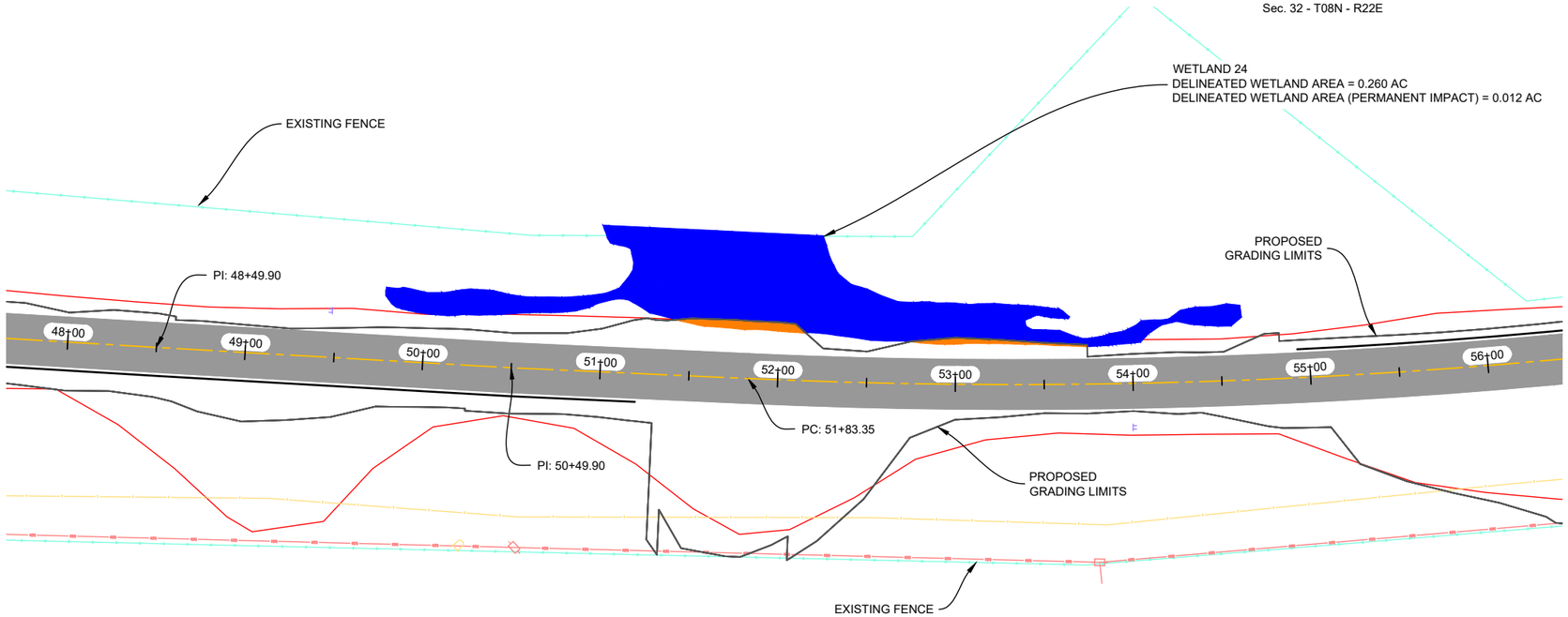
Cheyenne River Sioux Tribe
Ziebach County, South Dakota

LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

N

0 40 80 FT



FILE: Wetland Impacts.dwg

WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	3	12
Plotting Date: 12/14/2020			

Cheyenne River Sioux Tribe
Ziebach County, South Dakota

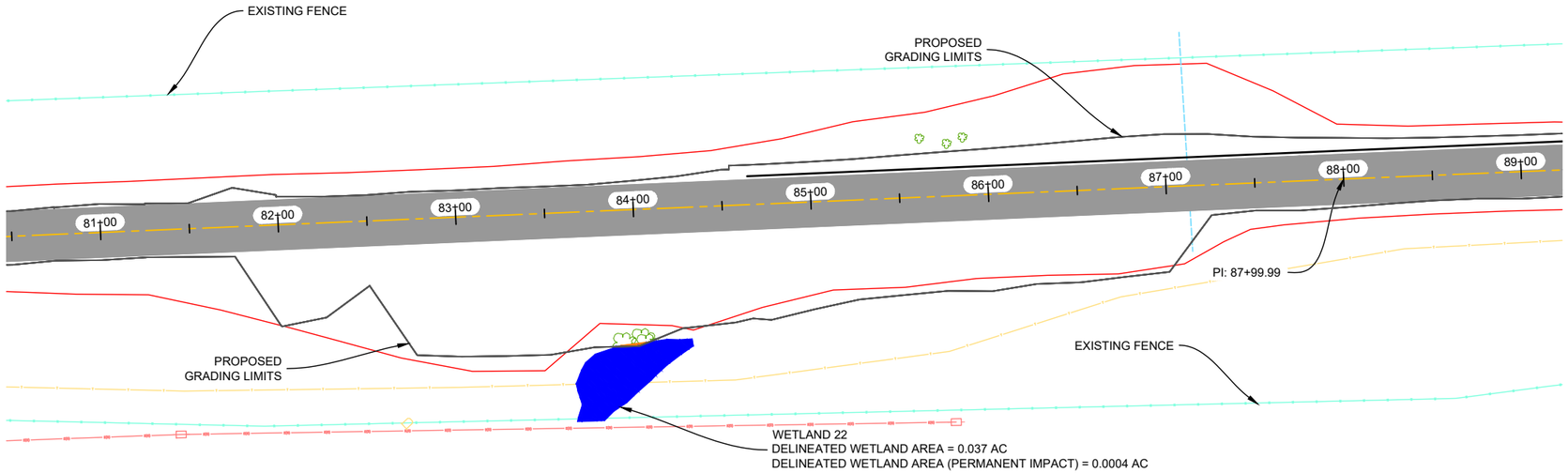
LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

N

0 40 80 FT

Sec. 33 - T08N - R22E



FILE: Wetland Impacts.dwg

WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	4	12
Plotting Date: 12/14/2020			

Cheyenne River Sioux Tribe
Ziebach County, South Dakota

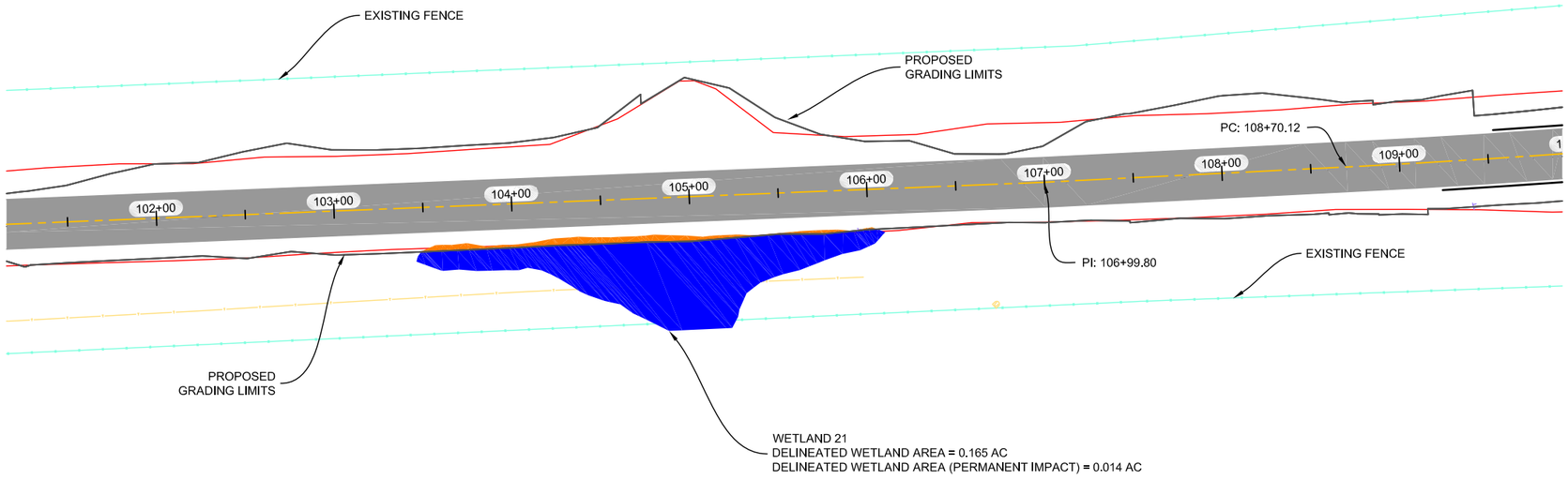
LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

N

0 40 80 FT

Sec. 28 - T08N - R22E



FILE: Wetland Impacts.dwg

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	5	12
Plotting Date: 12/14/2020			

WETLAND EXHIBIT

Cheyenne River Sioux Tribe
Ziebach County, South Dakota

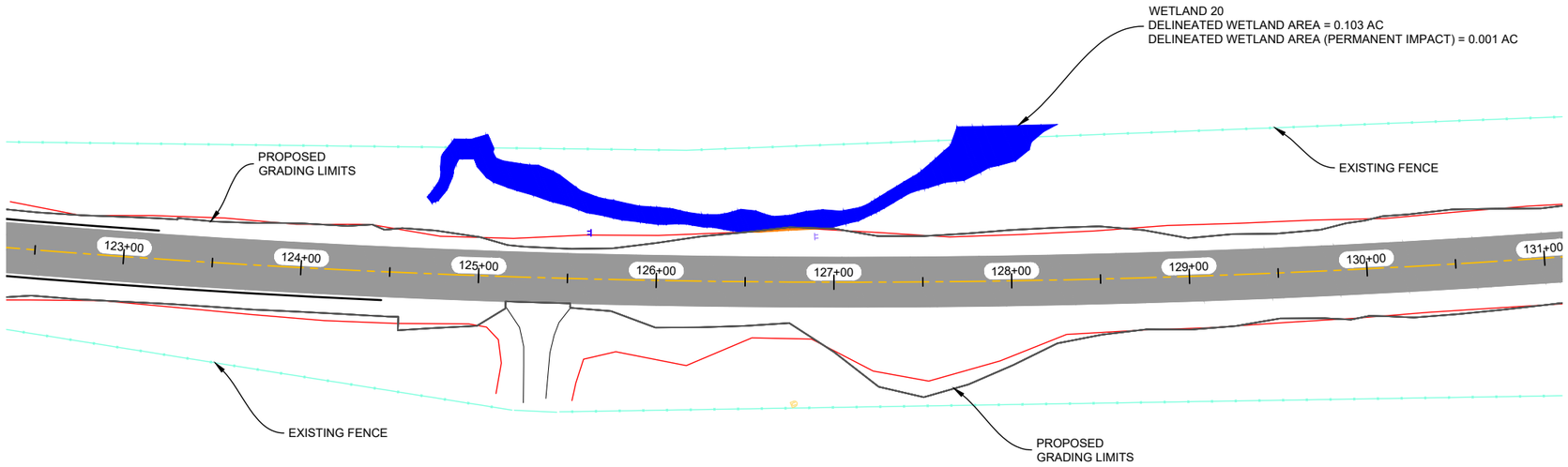
LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

N

0 40 80 FT

Sec. 28 - T08N - R22E



FILE: Wetland Impacts.dwg

WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	6	12

Plotting Date: 12/14/2020

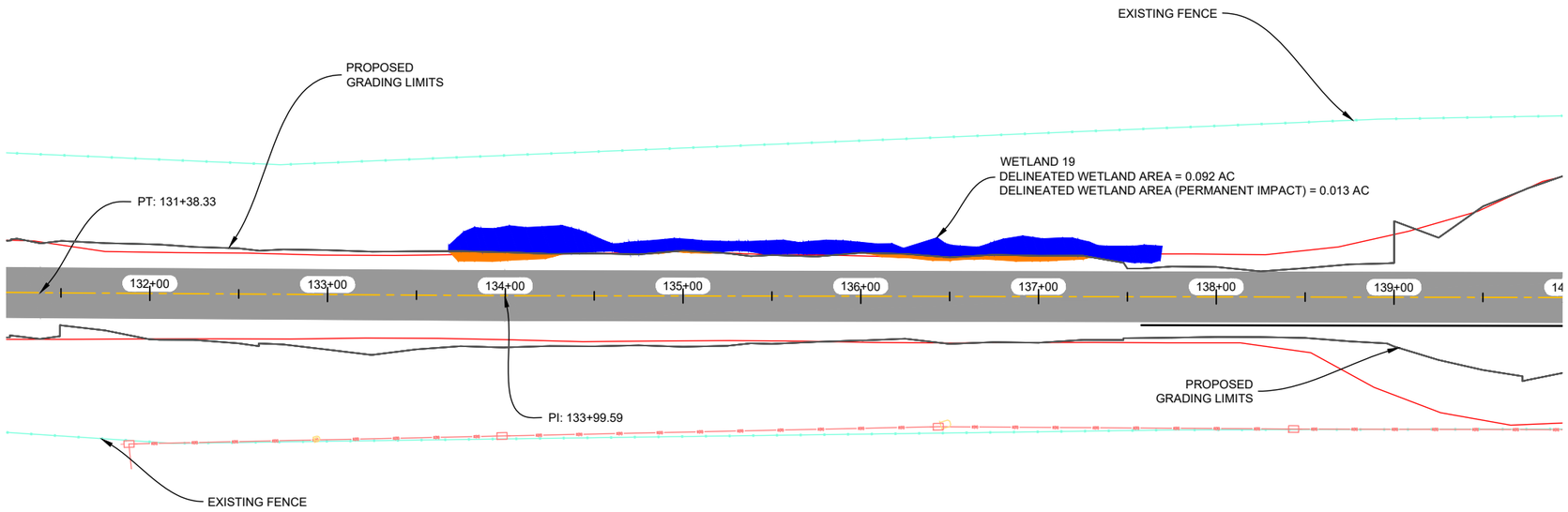
Cheyenne River Sioux Tribe
Ziebach County, South Dakota

LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

0 40 80 FT

Sec. 28 - T08N - R22E



FILE: Wetland Impacts.dwg

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	7	12

Plotting Date: 12/14/2020

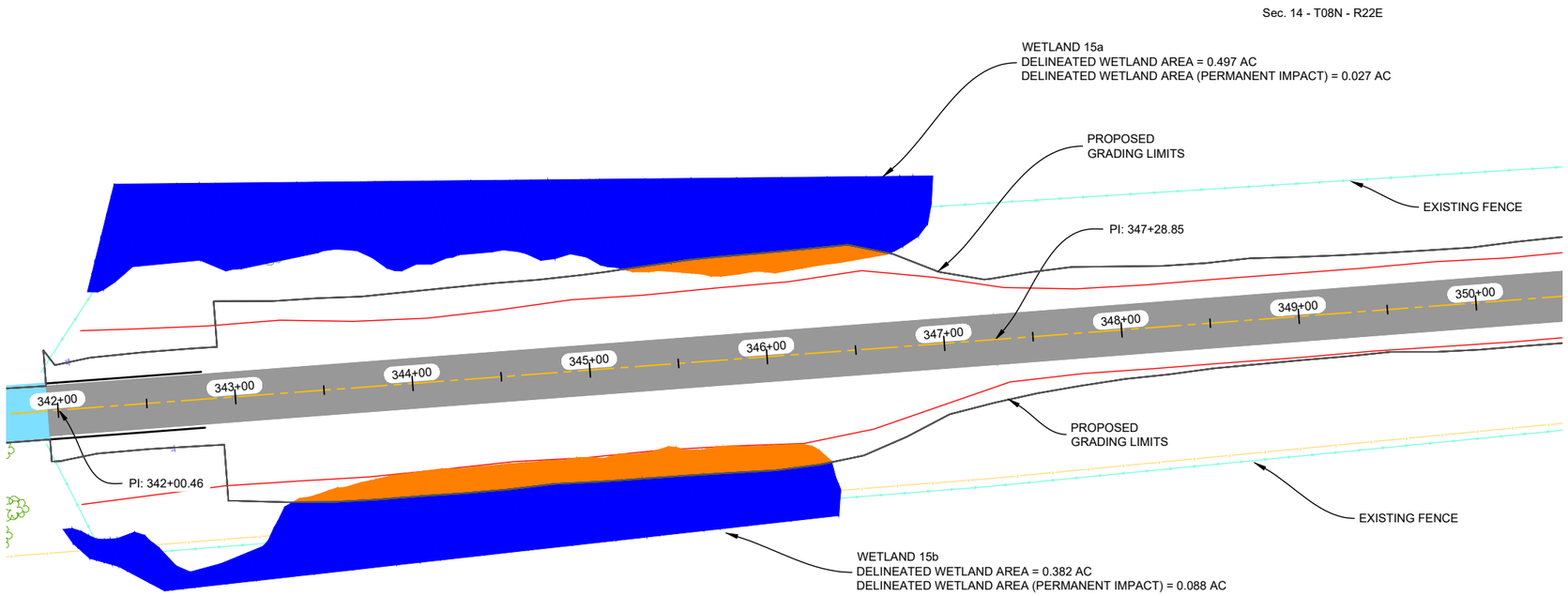
Cheyenne River Sioux Tribe
Ziebach County, South Dakota

WETLAND EXHIBIT

LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

0 40 80 FT



FILE: Wetland Impacts.dwg

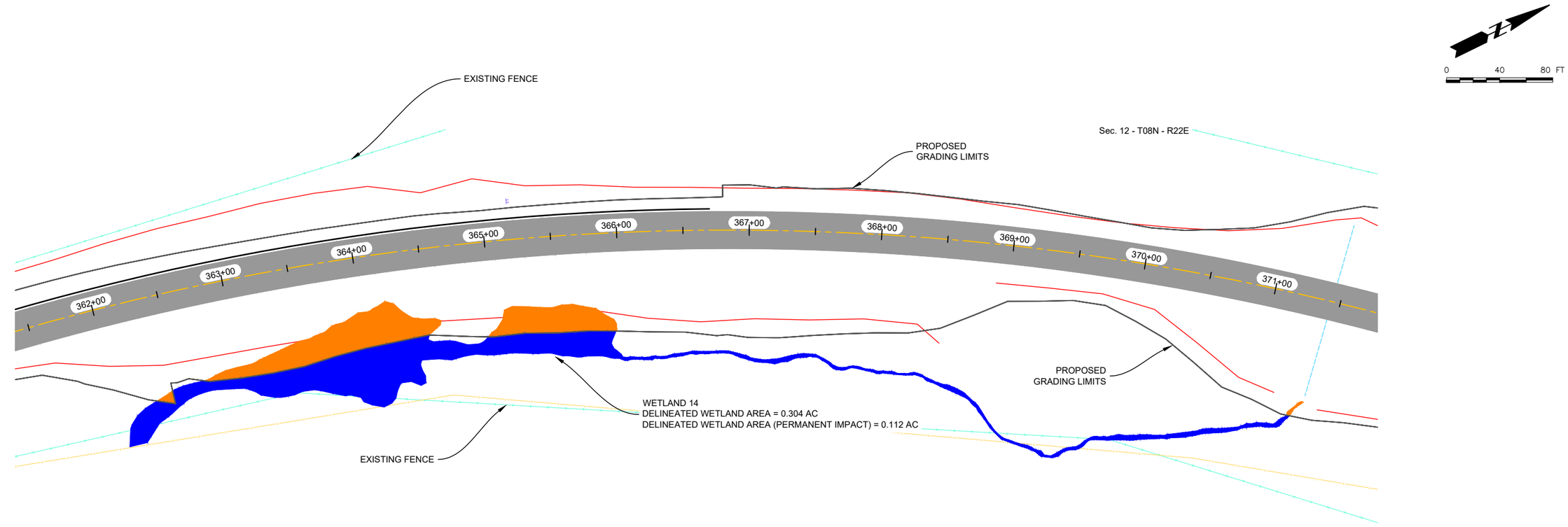
KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	8	12
Plotting Date: 12/14/2020			

Cheyenne River Sioux Tribe
Ziebach County, South Dakota

WETLAND EXHIBIT

LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)



FILE: Wetland Impacts.dwg

WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	9	12

Plotting Date: 12/14/2020

Cheyenne River Sioux Tribe
Ziebach County, South Dakota

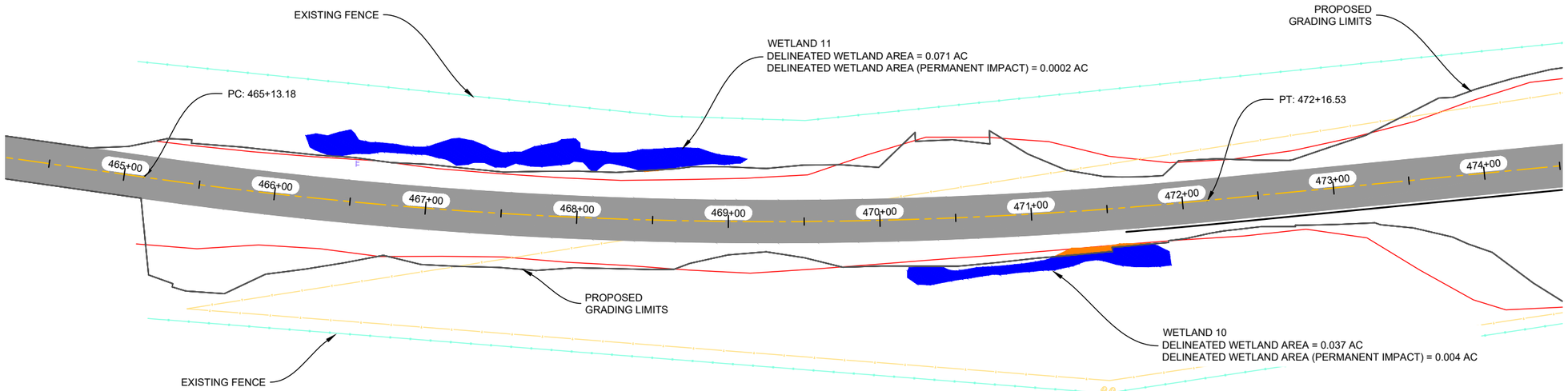
LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

N

0 40 80 FT

Sec. 06 - T08N - R23E



FILE: Wetland Impacts.dwg

WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	10	12

Plotting Date: 12/14/2020

Cheyenne River Sioux Tribe
Ziebach County, South Dakota

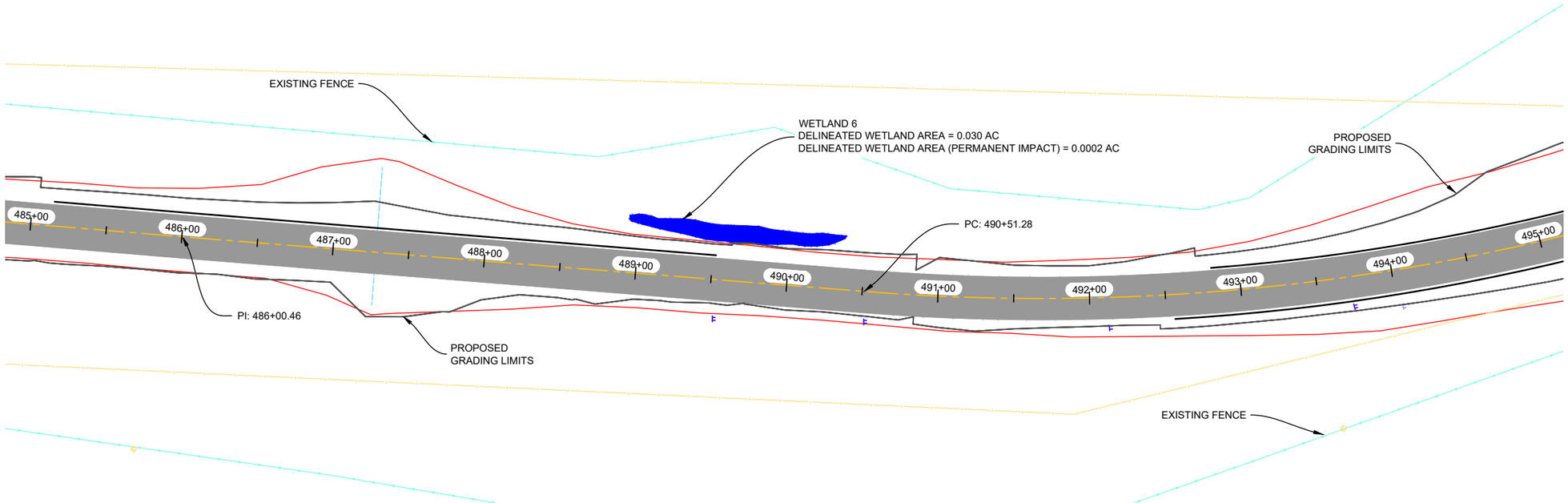
LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

N

0 40 80 FT

Sec. 06 - T08N - R23E



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WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	11	12

Plotting Date: 12/14/2020

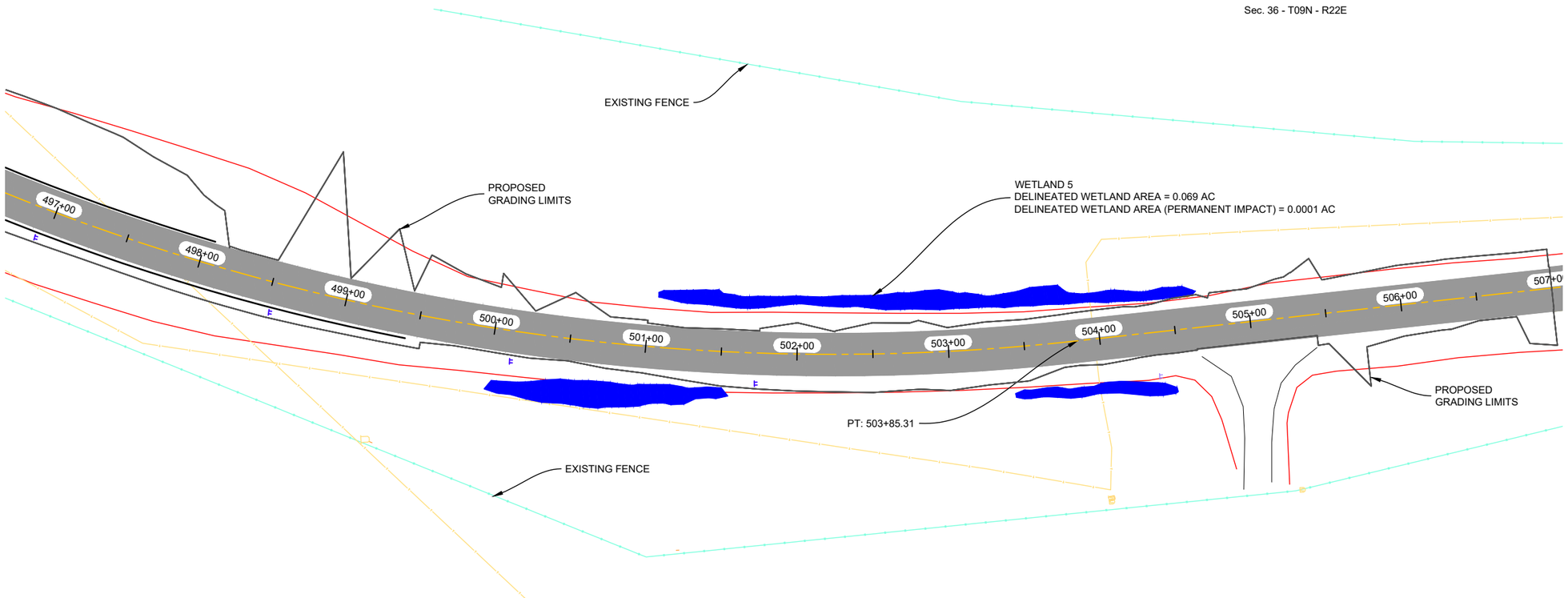
Cheyenne River Sioux Tribe
Ziebach County, South Dakota

LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

0 40 80 FT

Sec. 36 - T09N - R22E



FILE: Wetland Impacts.dwg

WETLAND EXHIBIT

KLJ	PROJECT	SHEET NO.	TOTAL SHEETS
	1911-01336 BIA 12 REHABILITATION	12	12

Plotting Date: 12/14/2020

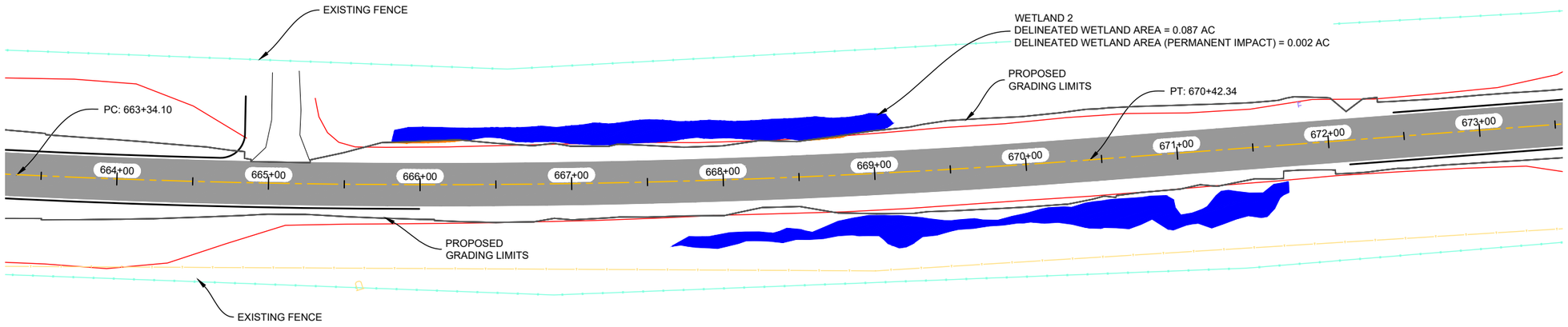
Cheyenne River Sioux Tribe
Ziebach County, South Dakota

LEGEND

- DELINEATED WETLAND AREA
- DELINEATED WETLAND AREA (PERMANENT IMPACT)

0 40 80 FT

Sec. 28 - T09N - R23E



FILE: Wetland Impacts.dwg

National Flood Hazard Layer FIRMette

FEMA

101°25'23"W 44°39'44"N

101°24'46"W 44°39'18"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/15/2020 at 12:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
Phone: (605) 224-8693 Fax: (605) 224-1416
http://www.fws.gov/southdakotafieldoffice/

In Reply Refer To: July 22, 2020
Consultation Code: 06E14000-2020-SLI-0997
Event Code: 06E14000-2020-E-02580
Project Name: BIA 12 Resurfacing

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. 703-712, as amended), as well as the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may benefit from the development of an Eagle Conservation Plan (ECP), see guidance at this website (http://www.fws.gov/windenergy/eagle_guidance.html). An ECP can assist developers in achieving compliance with regulatory requirements, help avoid “take” of eagles at project sites, and provide biological support for eagle permit applications. Additionally, we recommend wind energy developments adhere to our Land-based Wind Energy Guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

We have recently updated our guidelines for minimizing impacts to migratory birds at projects that have communication towers (including meteorological, cellular, digital television, radio, and emergency broadcast towers). These guidelines can be found at:

http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm
http://www.towerkill.com

According to National Wetlands Inventory maps, (available online at http://wetlands.fws.gov/) wetlands exist adjacent to the proposed construction corridor. If a project may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible. If this is not possible, attempts should be made to minimize adverse impacts. Finally if adverse impacts are unavoidable, measures should be undertaken to replace the impacted areas. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted, and the methods of replacement should be prepared and submitted to the resource agencies for review.

Please check with your local wetland management district to determine whether Service interest lands exist at the proposed project site, the exact locations of these properties, and any additional restrictions that may apply regarding these sites. The Offices are listed below. If you are not sure which office to contact, we can help you make that decision.

U.S. Fish and Wildlife Service, Huron Wetland Management District, Federal Building, Room 309, 200 4th Street SW, Huron, SD 57350; telephone (605) 352-5894. Counties in the Huron WMD: Beadle, Buffalo, Hand, Hughes, Hyde, Jerauld, Sanborn, Sully.

U.S. Fish and Wildlife Service, Lake Andes Wetland Management District, 38672 291st Street, Lake Andes, South Dakota; telephone (605) 487-7603. Counties in the Lake Andes WMD: Aurora, Bon Homme, Brule, Charles Mix, Clay, Davison, Douglas, Hanson, Hutchinson, Lincoln, Turner, Union, Yankton.

U.S. Fish and Wildlife Service, Madison Wetland Management District, P.O. Box 48, Madison, South Dakota, 57042, telephone (605) 256-2974. Counties in the Madison WMD: Brookings, Deuel, Hamlin, Kingsury, Lake, McCook, Miner, Minnehaha, Moody.

U.S. Fish and Wildlife Service, Sand Lake Wetland Management District, 39650 Sand Lake Drive, Columbia, South Dakota, 57433; telephone (605) 885-6320. Counties in the Sand Lake WMD: Brown, Campbell, Edmunds, Faulk, McPherson, Potter, Spink, Walworth.

U.S. Fish and Wildlife Service, Waubay Wetland Management District, 44401 134A Street, Waubay, South Dakota, 57273; telephone (605) 947-4521. Counties in the Waubay WMD: Clark, Codington, Day, Grant, Marshall, Roberts.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

You are welcome to contact our office at the address or phone number above for more information.

Thank you.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
(605) 224-8693

Project Summary

Consultation Code: 06E14000-2020-SLI-0997

Event Code: 06E14000-2020-E-02580

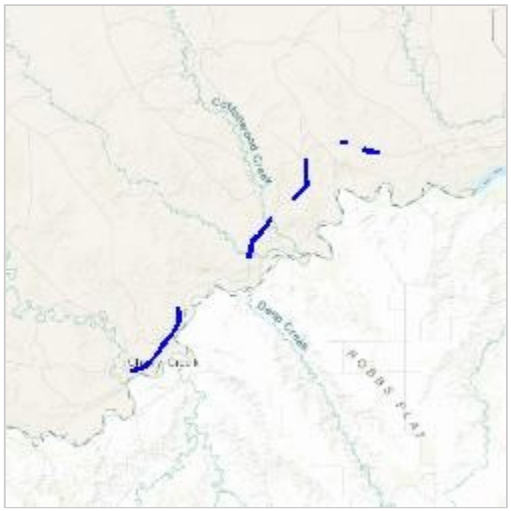
Project Name: BIA 12 Resurfacing

Project Type: TRANSPORTATION

Project Description: Cherry Creek Rehabilitation

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.71000031580294N101.35597644176974W



Counties: Ziebach, SD

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Black-footed Ferret *Mustela nigripes* Population: U.S.A. (WY and specified portions of AZ, CO, MT, SD, and UT, see 17.84(g)(9)) No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Experimental, non-essential population of black-footed ferrets established pursuant to Section 10(j) of the ESA. Section 7 consultation not required except on lands administered by the U.S. Fish and Wildlife Service or the National Park Service. Species profile: https://ecos.fws.gov/ecp/species/6953	Experimental Population, Non-Essential
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- PEM1Ch
- PEM1Cx

FRESHWATER FORESTED/SHRUB WETLAND

- PFOA

FRESHWATER POND

- PABKx

RIVERINE

- R4SBC
- R4SBCx
- R5UBH

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Ziebach County, South Dakota

December 15, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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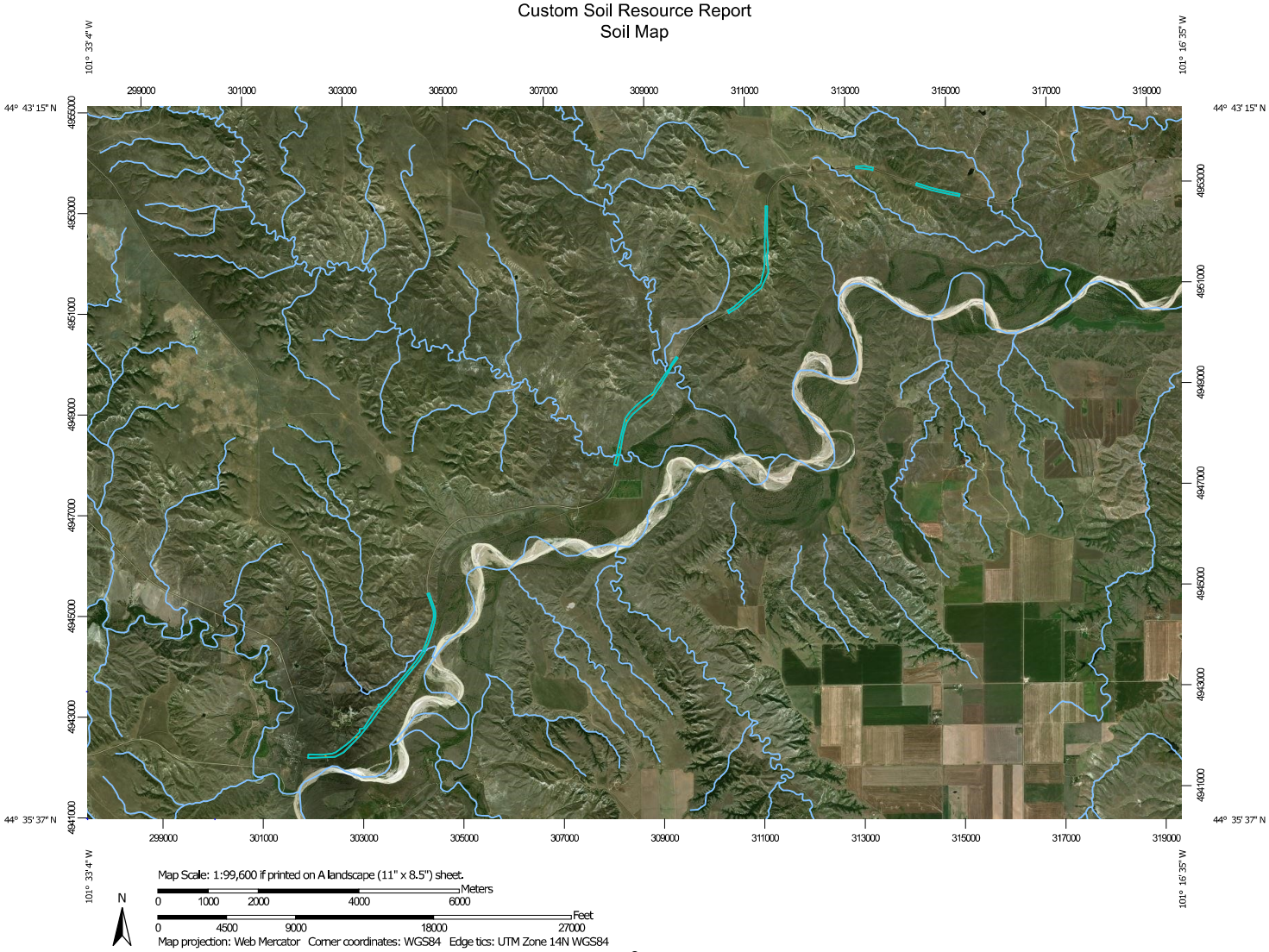
Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


101° 33' 4" W
101° 16' 35" W
44° 43' 15" N
44° 35' 37" N
299000
301000
303000
305000
307000
309000
311000
313000
315000
317000
319000
4955000
4953000
4951000
4949000
4947000
4945000
4943000
4941000
Map Scale: 1:99,600 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0
1000
2000
4000
6000
Feet
0
4500
9000
18000
27000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ziebach County, South Dakota
Survey Area Data: Version 23, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 19, 2015—Sep 10, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PeB	Pierre clay, 2 to 6 percent slopes	5.5	3.8%
R507E	Sansarc-Opal clays, 9 to 25 percent slopes	70.5	48.7%
SaF	Samsil clay, 15 to 45 percent slopes	13.6	9.4%
ShE	Schamber-Samsil complex, 9 to 40 percent slopes	24.3	16.8%
SwB	Swanboy clay, 0 to 6 percent slopes	5.4	3.7%
SxC	Swanboy-Kyle clays, 2 to 15 percent slopes	1.3	0.9%
SyB	Swanboy-Slickspots complex, 0 to 6 percent slopes	20.5	14.1%
Wt	Wendte silty clay, channeled, occasionally flooded	3.7	2.6%
Totals for Area of Interest		**144.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Ziebach County, South Dakota

PeB—Pierre clay, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: cy9d
Elevation: 1,300 to 1,640 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Pierre and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pierre

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Clayey residuum weathered from shale

Typical profile

H1 - 0 to 5 inches: clay
H2 - 5 to 32 inches: clay
Cr - 32 to 60 inches: weathered bedrock

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: R063AY011SD - Clayey
Forage suitability group: Clayey Subsoil (G063AY210SD)
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Minor Components

Hisle

Percent of map unit: 8 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear
Ecological site: R063AY015SD - Thin Claypan
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Swanboy

Percent of map unit: 7 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R063AY018SD - Dense Clay
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

R507E—Sansarc-Opal clays, 9 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2v670
Elevation: 1,340 to 2,390 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 100 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Sansarc and similar soils: 50 percent
Opal and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sansarc

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Residuum weathered from shale

Typical profile

A - 0 to 4 inches: clay

AC - 4 to 10 inches: parachannery clay
C - 10 to 14 inches: very parachannery clay
Cr - 14 to 34 inches: bedrock

Properties and qualities

Slope: 9 to 25 percent
Depth to restrictive feature: 11 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 6 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R063AY017SD - Shallow Clay
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Description of Opal

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from shale

Typical profile

A - 0 to 5 inches: clay
Bss - 5 to 15 inches: clay
Bkss - 15 to 24 inches: clay
Cyz - 24 to 33 inches: clay
Cr - 33 to 53 inches: bedrock

Properties and qualities

Slope: 9 to 25 percent
Depth to restrictive feature: 26 to 39 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 7 percent

Gypsum, maximum content: 9 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 9.0
Available water capacity: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R063AY011SD - Clayey
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Minor Components

Promise

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Dupree, acid

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: R063AY025SD - Shallow Porous Clay
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Bullcreek

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R063AY018SD - Dense Clay
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Capa

Percent of map unit: 3 percent
Landform: Swales
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R063AY015SD - Thin Claypan

Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Badland

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: R063AY999SD - Non-site
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

SaF—Samsil clay, 15 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2xbnp
Elevation: 1,610 to 2,790 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 100 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Samsil and similar soils: 65 percent
Minor components: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Samsil

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Clayey residuum weathered from shale

Typical profile

A - 0 to 2 inches: clay
AC - 2 to 7 inches: parachannery clay
C - 7 to 13 inches: very parachannery clay
Cr - 13 to 79 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 11 to 17 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R060AY017SD - Shallow Clay
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Minor Components

Bullcreek

Percent of map unit: 10 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R063AY018SD - Dense Clay
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Kyle

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R060AY040SD - Clayey 16-18" P.Z.
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Opal

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Schamber

Percent of map unit: 2 percent

Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R063AY016SD - Very Shallow
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Hisle

Percent of map unit: 2 percent
Landform: Swales
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R063AY015SD - Thin Claypan
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Badland

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: R063AY999SD - Non-site
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

ShE—Schamber-Samsil complex, 9 to 40 percent slopes

Map Unit Setting

National map unit symbol: cybb
Elevation: 1,300 to 1,640 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Schamber and similar soils: 50 percent
Samsil and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Schamber

Setting

Landform: Terraces
Landform position (two-dimensional): Summit, shoulder
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Sandy and gravelly alluvium

Typical profile

H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 60 inches: very gravelly sand

Properties and qualities

Slope: 25 to 40 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R063AY016SD - Very Shallow
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Description of Samsil

Setting

Landform: Terraces
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Residuum weathered from clayey shale

Typical profile

H1 - 0 to 3 inches: clay
H2 - 3 to 12 inches: clay
Cr - 12 to 60 inches: weathered bedrock

Properties and qualities

Slope: 25 to 40 percent
Depth to restrictive feature: 4 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R063AY017SD - Shallow Clay
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Minor Components

Pierre

Percent of map unit: 4 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Ree

Percent of map unit: 3 percent
Landform: Terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY010SD - Loamy
Other vegetative classification: Loam (G063AY100SD)
Hydric soil rating: No

Reliance

Percent of map unit: 3 percent
Landform: Terraces
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY010SD - Loamy
Other vegetative classification: Loam (G063AY100SD)
Hydric soil rating: No

SwB—Swanboy clay, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: cybh
Elevation: 1,300 to 1,640 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Swanboy and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swanboy

Setting

Landform: Terraces, fans
Landform position (two-dimensional): Footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear
Parent material: Clayey slope alluvium and/or clayey alluvium

Typical profile

H1 - 0 to 6 inches: clay
H2 - 6 to 60 inches: clay

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R063AY018SD - Dense Clay
Forage suitability group: Not suited (G063AY000SD)

Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Minor Components

Kyle
Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Hisle
Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear
Ecological site: R063AY015SD - Thin Claypan
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Lohmiller
Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY022SD - Loamy Terrace
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Slickspots, dry
Percent of map unit: 2 percent
Landform: Terraces, fans
Landform position (two-dimensional): Summit, backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: R063AY999SD - Non-site
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Pierre
Percent of map unit: 2 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Promise
Percent of map unit: 2 percent

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

SxC—Swanboy-Kyle clays, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: cybj
Elevation: 1,300 to 1,640 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Swanboy and similar soils: 50 percent
Kyle and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swanboy

Setting

Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey slope alluvium and/or clayey alluvium

Typical profile

H1 - 0 to 6 inches: clay
H2 - 6 to 60 inches: clay

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0

Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R063AY018SD - Dense Clay
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Description of Kyle

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from shale and/or clayey slope alluvium derived from shale

Typical profile

H1 - 0 to 3 inches: clay
H2 - 3 to 23 inches: clay
H3 - 23 to 60 inches: clay

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 10 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 16.0
Available water capacity: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R063AY011SD - Clayey
Forage suitability group: Clayey Subsoil (G063AY210SD)
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Minor Components

Hisle

Percent of map unit: 10 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear, concave

Across-slope shape: Linear
Ecological site: R063AY015SD - Thin Claypan
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Samsil

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: R063AY017SD - Shallow Clay
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

SyB—Swanboy-Slickspots complex, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: cybk
Elevation: 1,300 to 1,640 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Swanboy and similar soils: 55 percent
Slickspots, dry: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swanboy

Setting

Landform: Terraces, fans
Landform position (two-dimensional): Footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear
Parent material: Clayey slope alluvium and/or clayey alluvium

Typical profile

H1 - 0 to 6 inches: clay
H2 - 6 to 60 inches: clay

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R063AY018SD - Dense Clay
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Description of Slickspots, Dry

Setting

Landform: Terraces, fans
Landform position (two-dimensional): Summit, backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave

Typical profile

H1 - 0 to 60 inches: clay

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Strongly saline (16.0 to 32.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water capacity: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: R063AY999SD - Non-site
Forage suitability group: Not suited (G063AY000SD)
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Minor Components

Hisle

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear, concave

Across-slope shape: Linear
Ecological site: R063AY015SD - Thin Claypan
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Dupree

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: R063AY018SD - Dense Clay
Other vegetative classification: Not suited (G063AY000SD)
Hydric soil rating: No

Pierre

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: R063AY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063AY210SD)
Hydric soil rating: No

Wendte

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063AY021SD - Clayey Overflow
Other vegetative classification: Overflow (G063AY500SD)
Hydric soil rating: No

Wt—Wendte silty clay, channeled, occasionally flooded

Map Unit Setting

National map unit symbol: 2ynt9
Elevation: 1,250 to 2,330 feet
Mean annual precipitation: 19 to 28 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 100 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Wendte, channeled, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wendte, Channeled

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium

Typical profile

A - 0 to 6 inches: silty clay
C - 6 to 79 inches: clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): 6w
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: D
Ecological site: R063BY021SD - Clayey Overflow
Forage suitability group: Overflow (G063BY500SD)
Other vegetative classification: Overflow (G063BY500SD)
Hydric soil rating: No

Minor Components

Promise

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063BY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063BY210SD)
Hydric soil rating: No

Capa

Percent of map unit: 4 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R063BY015SD - Thin Claypan
Other vegetative classification: Not suited (G063BY000SD)

Hydric soil rating: No

Opal

Percent of map unit: 4 percent
Landform: Terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R063BY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G063BY210SD)
Hydric soil rating: No

Bullcreek

Percent of map unit: 4 percent
Landform: Terraces
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R063BY018SD - Dense Clay
Other vegetative classification: Not suited (G063BY000SD)
Hydric soil rating: No

Witten

Percent of map unit: 3 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R063BY021SD - Clayey Overflow
Other vegetative classification: Overflow (G063BY500SD)
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

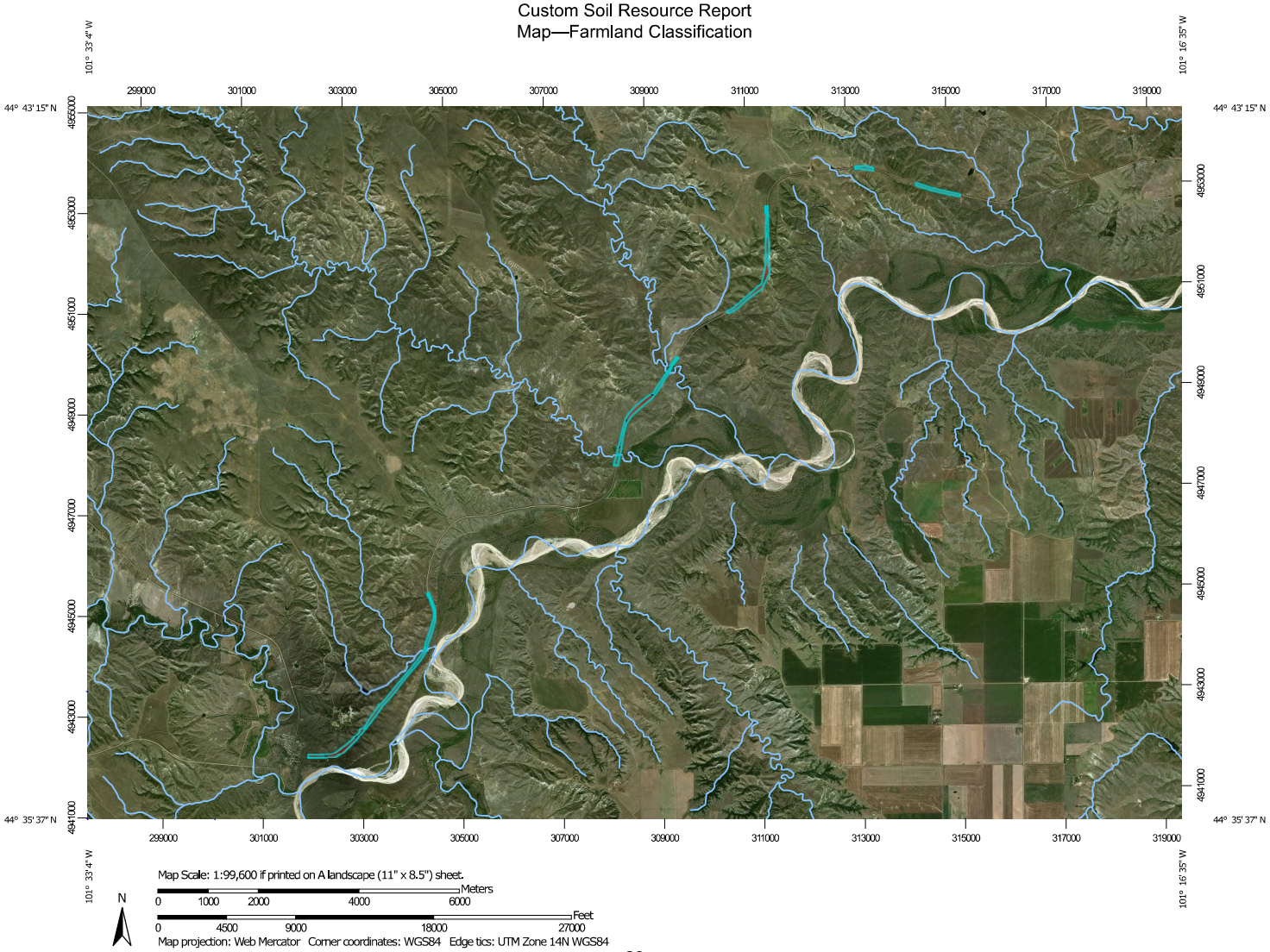
The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.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44° 43' 15" N
44° 35' 37" N
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Map Scale: 1:99,600 if printed on A landscape (11" x 8.5") sheet.
N
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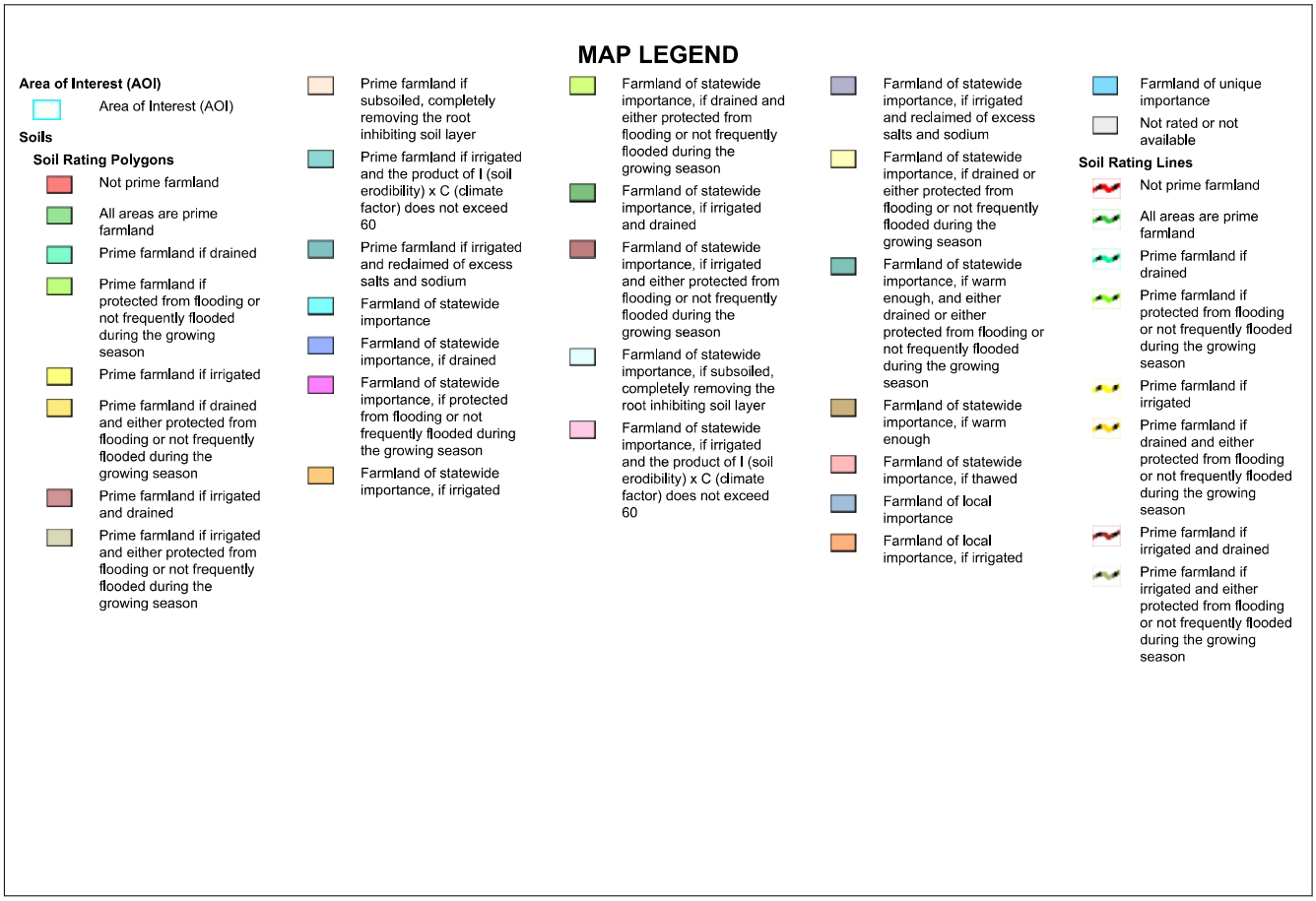
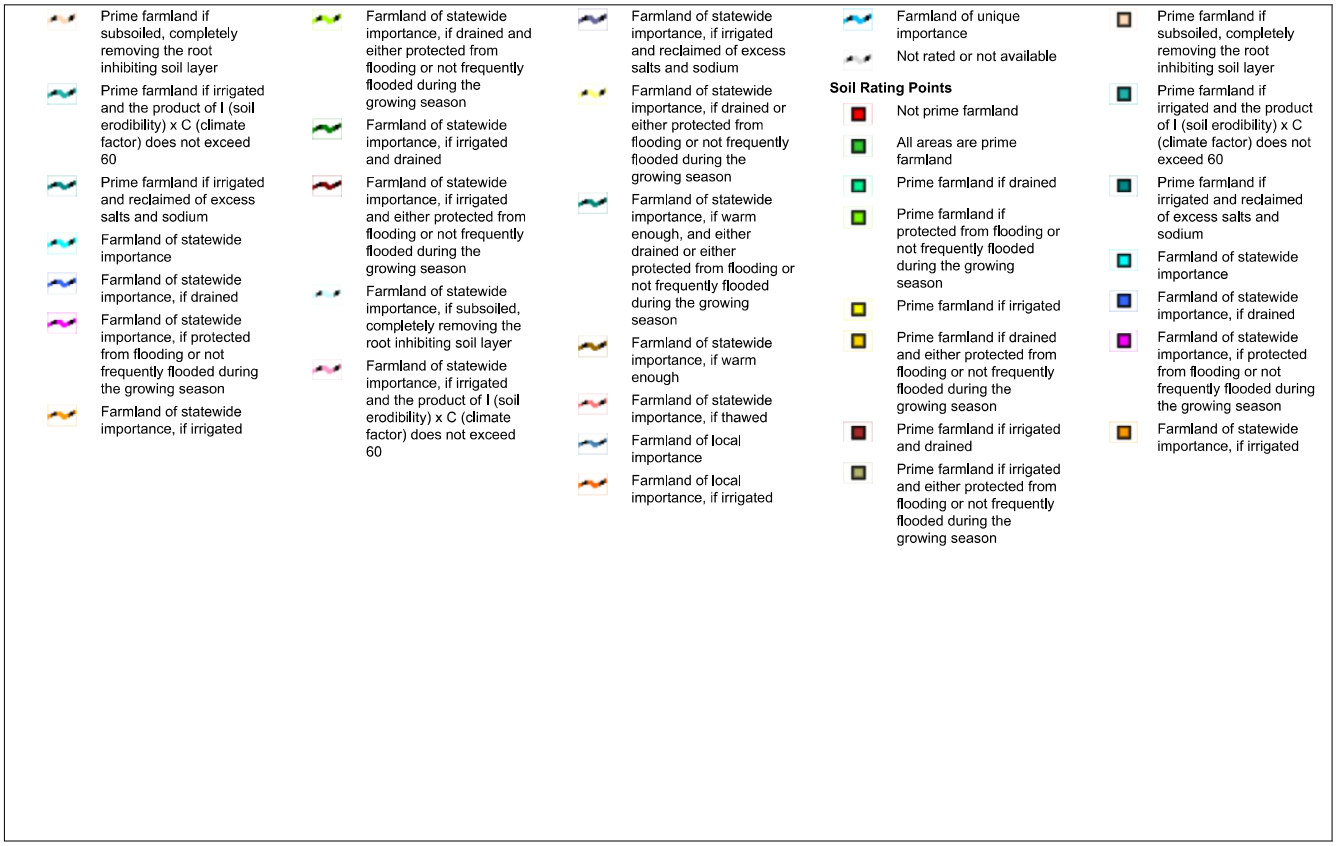
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84


MAP LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Rating Polygons
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Lines
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ziebach County, South Dakota
Survey Area Data: Version 23, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 19, 2015—Sep 10, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
PeB	Pierre clay, 2 to 6 percent slopes	Not prime farmland	5.5	3.8%
R507E	Sansarc-Opal clays, 9 to 25 percent slopes	Not prime farmland	70.5	48.7%
SaF	Samsil clay, 15 to 45 percent slopes	Not prime farmland	13.6	9.4%
ShE	Schamber-Samsil complex, 9 to 40 percent slopes	Not prime farmland	24.3	16.8%
SwB	Swanboy clay, 0 to 6 percent slopes	Not prime farmland	5.4	3.7%
SxC	Swanboy-Kyle clays, 2 to 15 percent slopes	Not prime farmland	1.3	0.9%
SyB	Swanboy-Slickspots complex, 0 to 6 percent slopes	Not prime farmland	20.5	14.1%
Wt	Wendte silty clay, channeled, occasionally flooded	Not prime farmland	3.7	2.6%
Totals for Area of Interest			**144.9**	**100.0%**

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

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