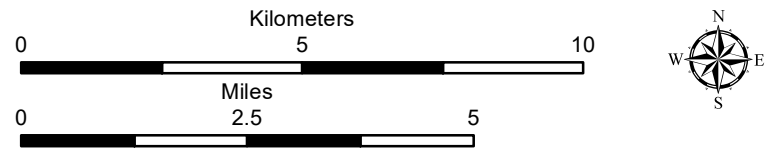


State and Federal Lands

- Federal Waterfowl Production Area
- South Dakota Game Production Area
- South Dakota Private Lands Hunting Access

Figure 2. Public Land and Facilities

- Crowned Ridge Wind Farm**
- City
 - School
 - Turbine
 - Collector Line
 - Access Road
 - Crane Path
 - Electrical Line
 - Railroad
 - Interstate Highway
 - U.S. Highway
 - State Highway
 - Project Boundary



Base Map: World Topographic Map
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
 Codington and Grant Counties, South Dakota

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Projection: NAD 1983 UTM Zone 14N

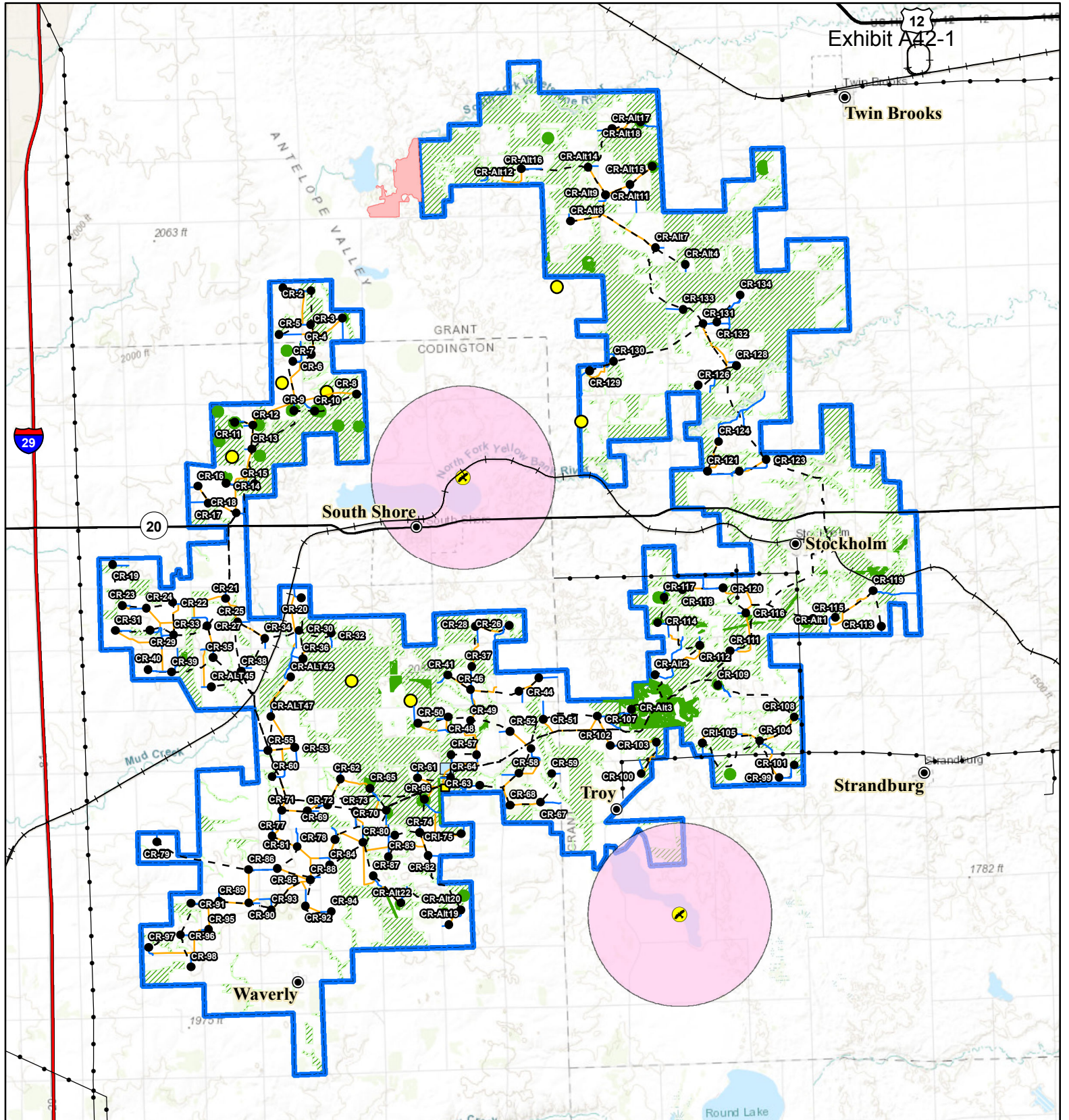
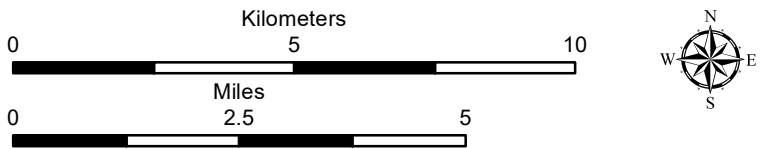


Figure 6. Environmental Constraints

Crowned Ridge Wind Farm

- | | | |
|--------------------------|-------------------------|---|
| Bald Eagle Nest Location | Electrical Line | Field Assessed Dakota Skipper Habitat |
| Turbine | Railroad | 1.5-mile Bald Eagle Nest Buffer |
| Lek Location | Interstate Highway | USFWS Critical Habitat |
| City | U.S. Highway | Undisturbed Native Grasslands (Bauman 2013) |
| Access Road | State Highway | Project Boundary |
| Collector Line | O&M Facility/Substation | |
| Crane Path | Laydown Yard | |



Base Map: World Topographic Map
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
 Codington and Grant Counties, South Dakota
 Projection: NAD 1983 UTM Zone 14N

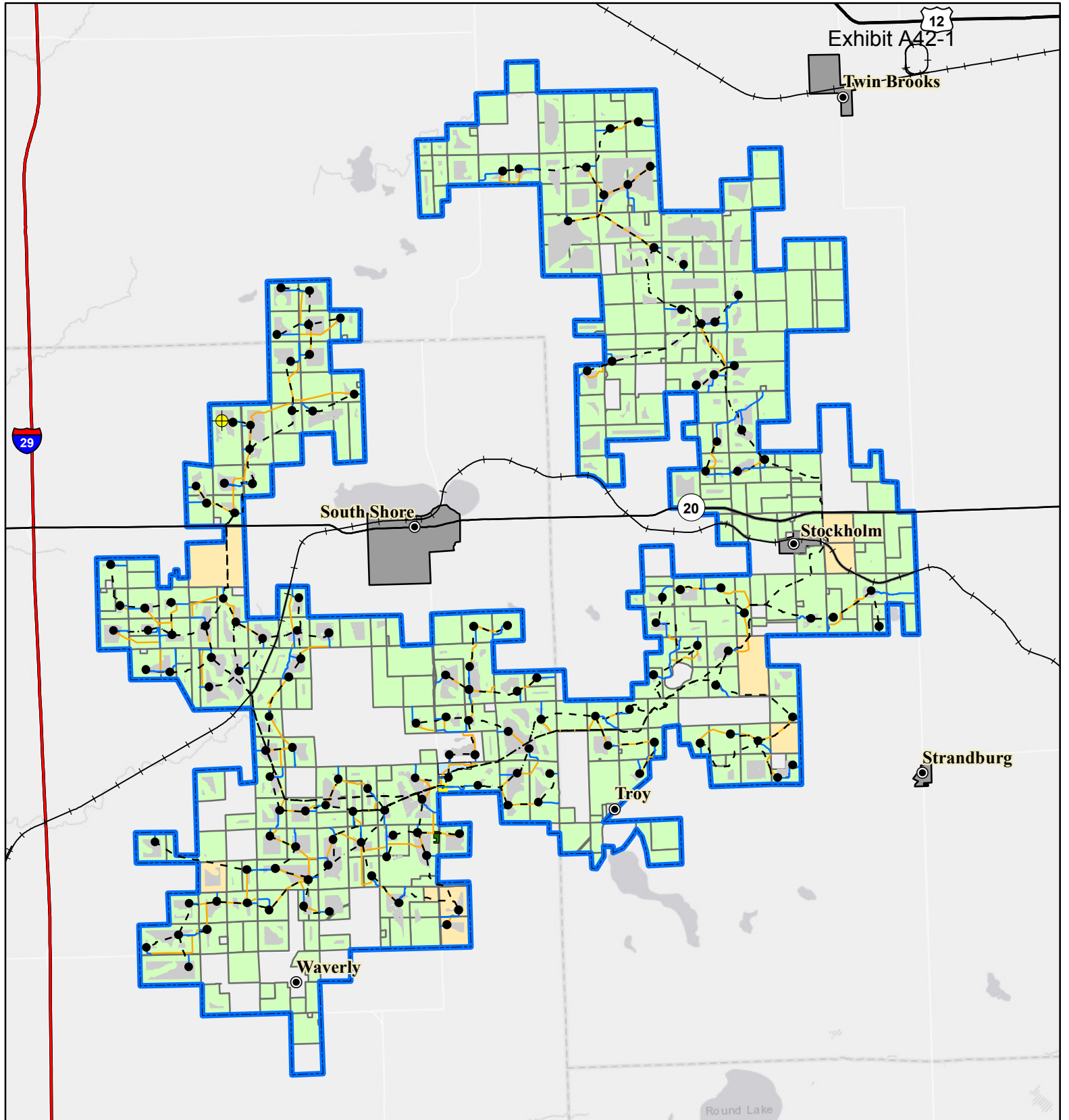
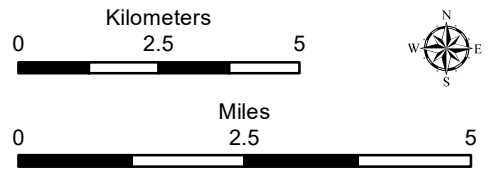
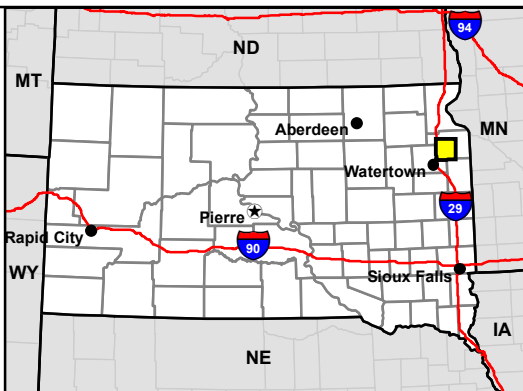


Figure 7. Constraints Map

Crowned Ridge Wind Farm

- MET Tower
- Turbine
- City
- Railroad
- Access Road
- Collector Line
- Crane Path
- Interstate Highway
- U.S. Highway
- State Highway
- Batch Plant
- Laydown Yard
- O & M Facility/
Substation
- Available Land
- Town Boundary
- Project Boundary
- Lease Status**
- Leased, Signed
- Pending Approval



Base Map: World Light Gray Canvas Base
 Sources: Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community
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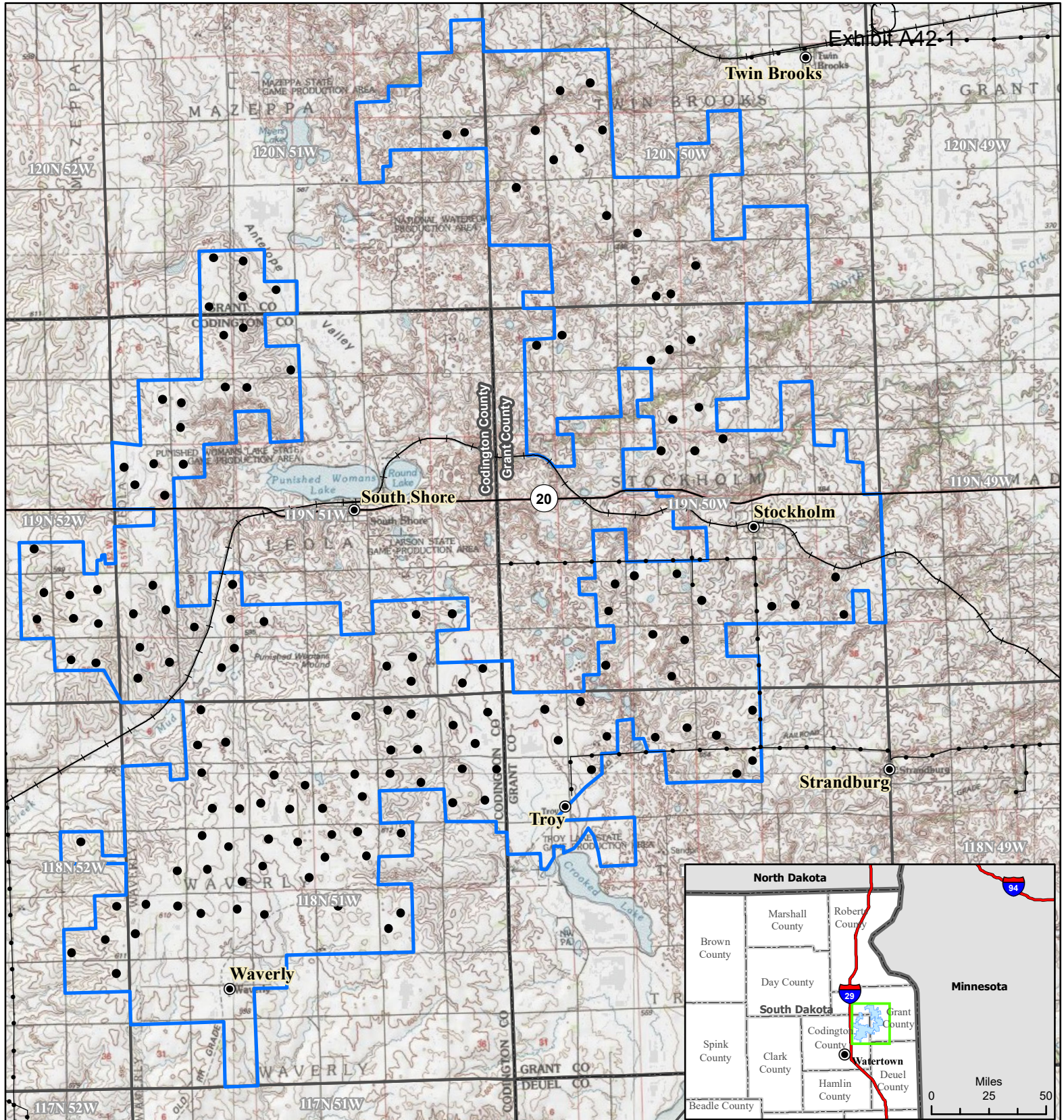
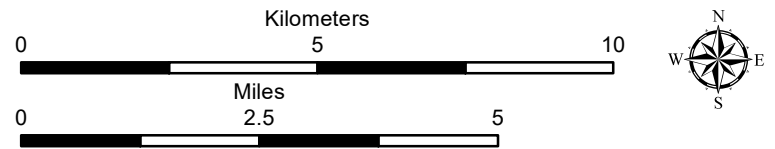


Figure 8. Topographic Map

Crowned Ridge Wind Farm

- Turbine
- City
- +— Railroad
- Electrical Line
- State Highway
- ▭ Project Boundary
- ▭ County Boundary
- ▭ Township/Range Boundary



Base Map: USGS 7.5' Topographic Map
 Source: Copyright: ©2014 National Geographic Society, i-cubed
 Codington and Grant Counties, South Dakota

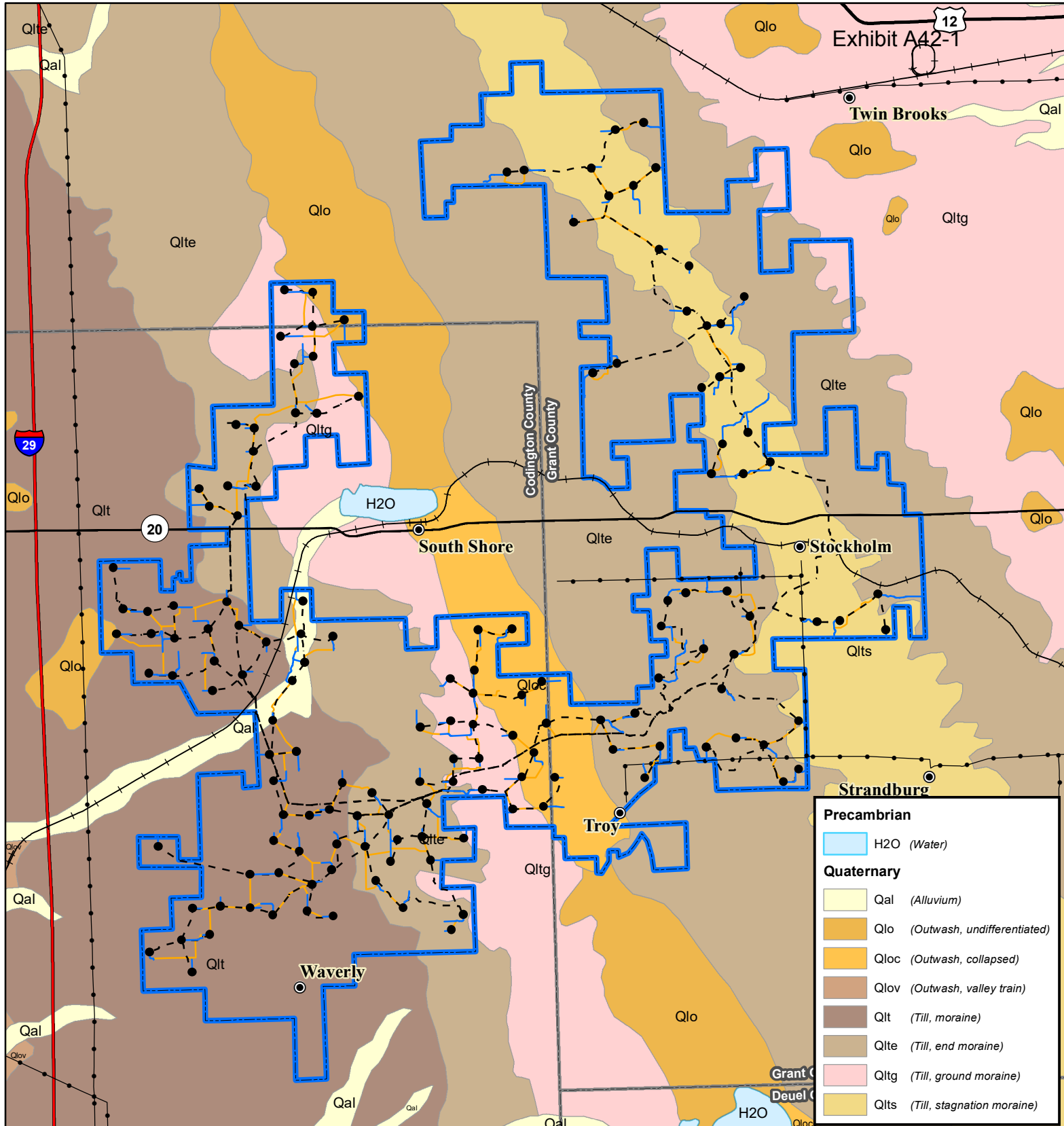
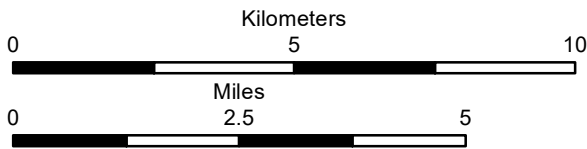


Figure 9a. Surficial Geology

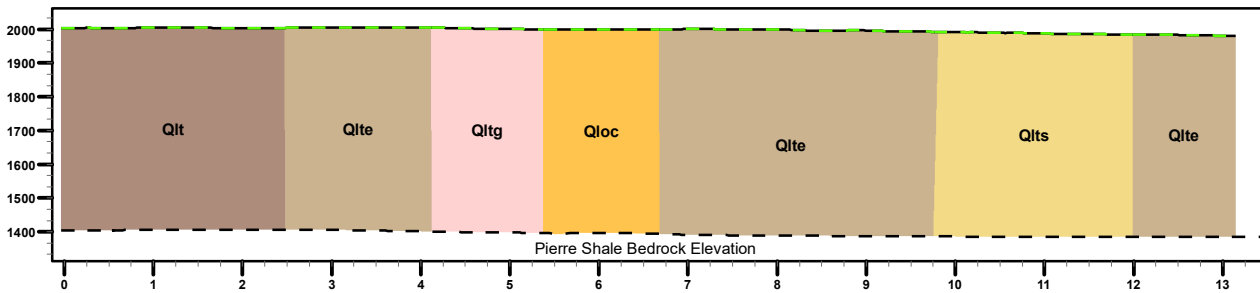
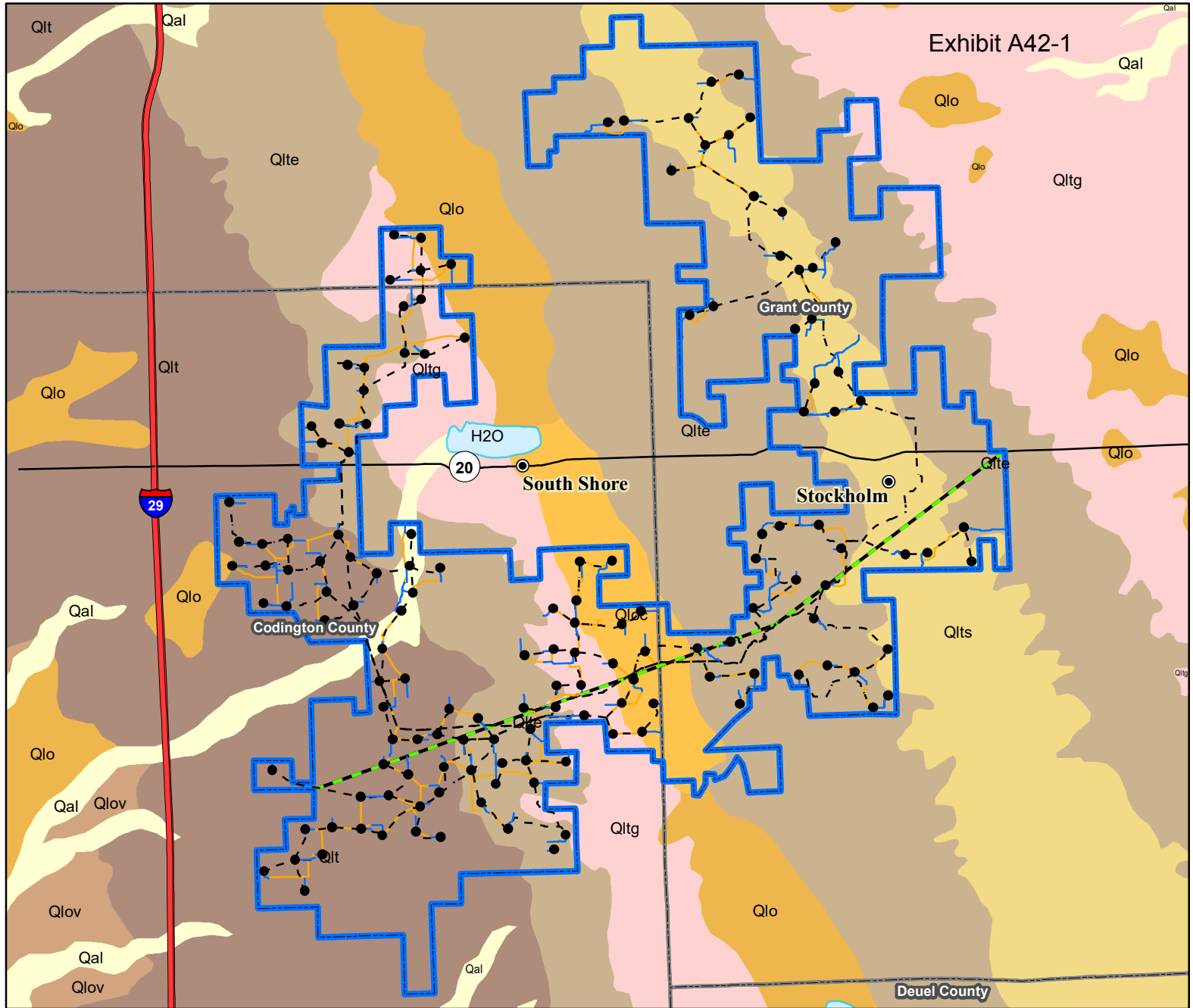
Crowned Ridge Wind Farm

- City
- Turbine
- Access Road
- - - Collector Line
- Crane Path
- Electrical Line
- +— Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- ▭ Project Boundary
- ▭ County Boundary



Base Map: Surficial Geology
 Source: South Dakota Geological Survey via
 State of South Dakota GIS
 Codington and Grant Counties, South Dakota

Projection: NAD 1983 UTM Zone 14N

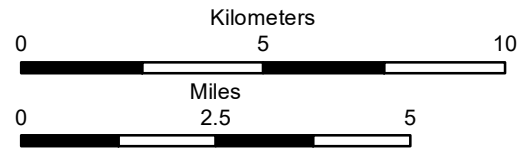


*Vertical axis in feet above sea level; Horizontal axis in miles

Figure 9b. Geology Cross Sections

Crowned Ridge Wind Farm

- City
- Turbine
- Access Road
- - Collector Line
- Crane Path
- Cross Section
- Interstate Highway
- State Highway
- ▭ Project Boundary
- ▭ County Boundary
- Surficial Geology**
- Precambrian**
- ▭ H2O (Water)
- Quaternary**
- ▭ Qal (Alluvium)
- ▭ Qlo (Outwash, undifferentiated)
- ▭ Qloc (Outwash, collapsed)
- ▭ Qlov (Outwash, valley train)
- ▭ Qlt (Till, moraine)
- ▭ Qlte (Till, end moraine)
- ▭ Qltg (Till, ground moraine)
- ▭ Qlts (Till, stagnation moraine)



Base Map: Surficial Geology
 Source: South Dakota Geological Survey via State of South Dakota GIS
 Codington and Grant Counties, South Dakota

Projection: NAD 1983 UTM Zone 14N

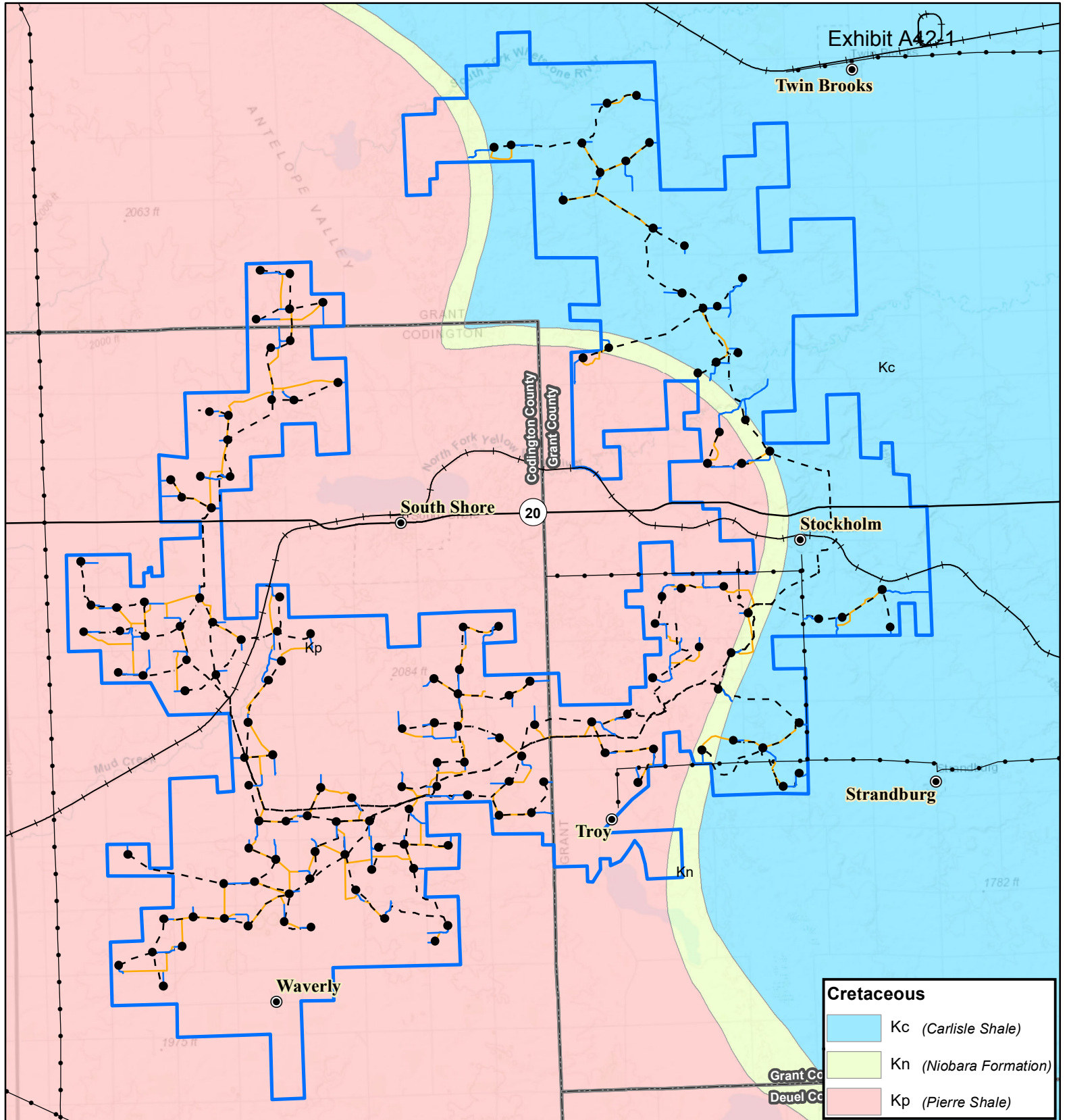
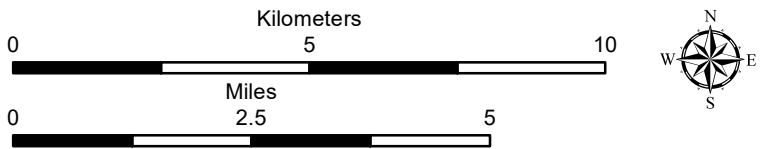


Figure 10. Bedrock Geology

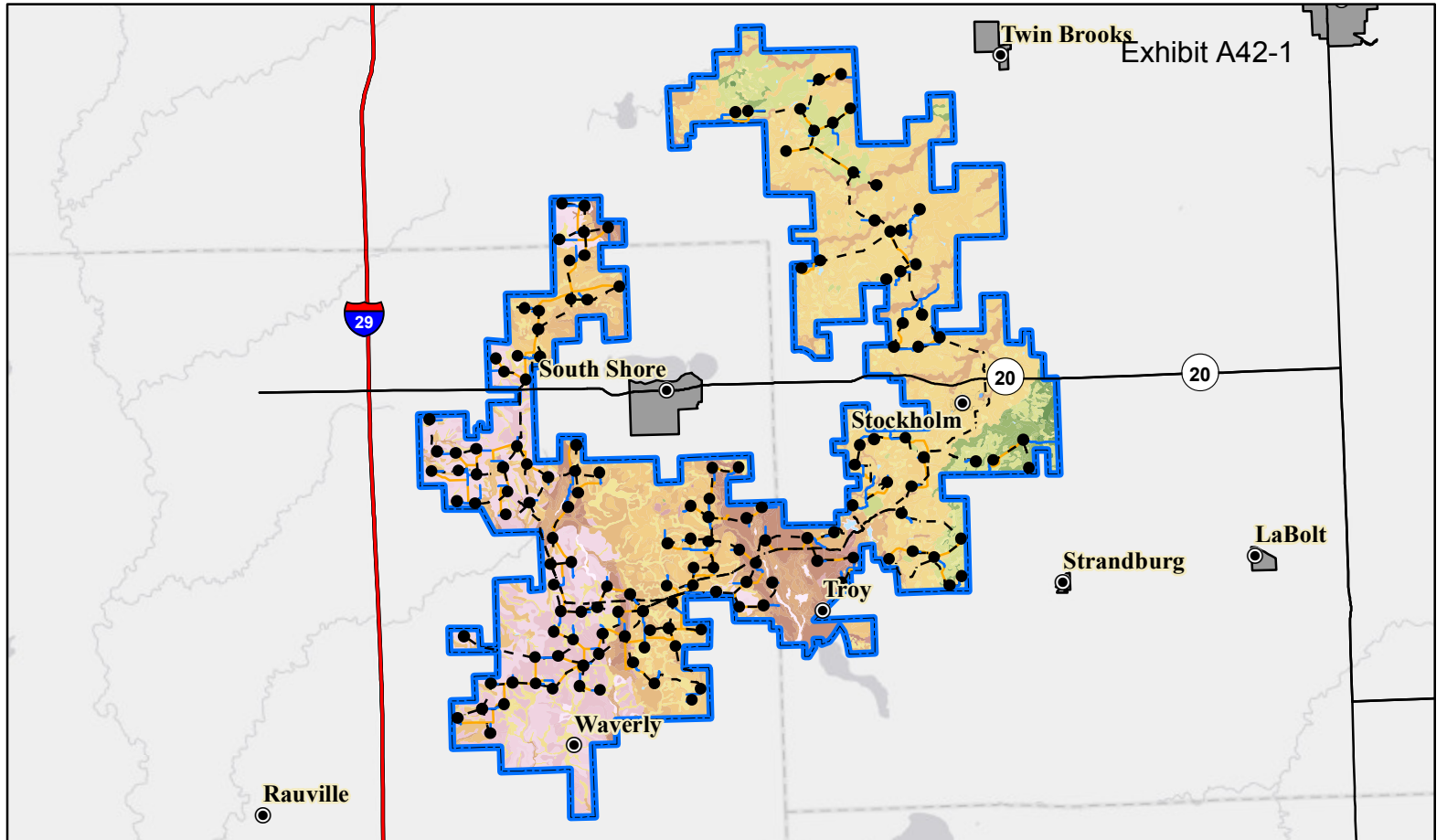
Crowned Ridge Wind Farm

- City
- Turbine
- Access Road
- - - Collector Line
- Crane Path
- +— Railroad
- Electrical Line
- State Highway
- ▭ Project Boundary
- ▭ County Boundary



Base Map: World Topographic Map
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
 Codington and Grant Counties, South Dakota

Projection: NAD 1983 UTM Zone 14N



MUSYM (Soil Type)	
BeF (Buse-Forman loams, 25-40% slopes)	PeB (Peever clay loam, 2 to 6% slopes)
BfD (Buse-Forman-Aastad loams, 4-15% slopes)	Ph (Playmoor silty clay loam)
Fa (Flom Clay loam)	Ta (Tonka silty clay loam, 0 to 1% slopes)
FdB (Forman-Aastad loams, 1-6% slopes)	Vb (Vallers-Parnell complex)
FdC (Forman-Aastad loams, 3-9% slopes)	W (Water)
FdD (Forman-Aastad loams, 4-15% slopes)	Z101A (Tonka silty clay loam, 0 to 1% slopes)
FgC (Forman-Buse loams, 6-9% slopes)	Z102A (Badger-Tonka silty clay loam, 0 to 1% slopes)
FgE (Forman-Buse loams, 15-25% slopes)	Z105A (Oldham silty clay loam, coteau, 0 to 1% slopes)
FhE (Forman-Buse extremely stony loams, 9-40% slopes)	Z106A (Southam silty clay loam, 0 to 1% slopes)
HaD (Hattie clay loam, 9 to 15% slopes)	Z107A (Parnell silty clay loam, coteau, 0 to 1% slopes)
HaE (Hattie clay loam, 15 to 40% slopes)	Z110A (Vallers loam, coteau, 0 to 1% slopes)
J119E (Buse-Sioux complex, 9 to 40% slopes)	Z112A (Vallers-Hamerly loams, coteau, 0 to 2% slopes)
J136A (Great Bend-Beotia silt loams, 0 to 2% slopes)	Z113A (Vallers-Parnell complex, coteau, 0 to 2% slopes)
J225B (Forman-Aastad complex)	Z114A (Hamerly-Tonka complex, coteau, 0 to 2% slopes)
Lb (LaDelle silt loam, channeled)	Z115A (Hamerly-Badger complex, coteau, 0 to 2% slopes)
Lc (Ludden silty clay)	Z116A (McKranz-Hidwood, frequently flooded, silty clay loams, 0 to 2% slopes)
M-W (Miscellaneous Water)	Z117A (McKranz-Badger silty clay loams, 0 to 2% slopes)
Pa (Parnell silty clay loam)	Z119A (Hamerly-Balaton loams, coteau, 0 to 3% slopes)
Pb (Southern silty clay loam, 0 to 1% slopes)	Z128B (Hettland silty clay loam, 2 to 6% slopes)
PcA (Peever clay loam, coteau, 0 to 2% slopes)	Z131A (Forman-Aastad loams, coteau, 0 to 2% slopes)
PcB (Peever clay loam, coteau, 2 to 6% slopes)	Z131B (Forman-Aastad loams, coteau, 1 to 6% slopes)
PcC (Peever clay loam, 6 to 9% slopes)	Z132B (Forman-Buse-Aastad loams, coteau, 1 to 6% slopes)
	Z132C (Forman-Buse-Aastad loams, coteau, 2 to 9% slopes)
	Z132D (Forman-Buse-Aastad loams, coteau, 2 to 15% slopes)
	Z135D (Forman-Buse loams, very stony, 2 to 15% slopes)
	Z136F (Buse-Langhei complex, very stony, 9 to 40% slopes)
	Z137F (Buse-Forman loams, very stony, 15 to 40% slopes)
	Z140F (Buse-Langhei complex, coteau, 15 to 40% slopes)
	Z141A (Barnes-Svea loams, coteau, 0 to 2% slopes)
	Z141B (Barnes-Svea loams, coteau, 1 to 6% slopes)
	Z142B (Barnes-Buse-Svea loams, coteau, 1 to 6% slopes)
	Z142C (Barnes-Buse-Svea loams, coteau, 2 to 9% slopes)
	Z143C (Barnes-Buse loams, coteau, 6 to 9% slopes)
	Z144E (Buse-Barnes loams, coteau, 9 to 20% slopes)
	Z145D (Buse-Barnes loams, coteau, very stony, 2 to 15% slopes)
	Z145F (Buse-Barnes loams, coteau, very stony, 9 to 40% slopes)
	Z146F (Buse-Lamoure, channeled, frequently flooded, complex, 0 to 40% slopes)
	Z148F (Buse very stony-Lamoure, channeled, frequently flooded, complex, 0 to 40% slopes)
	Z149F (Buse-Langhei, very stony-La Prairie, channeled, occasionally flooded, complex, 0 to 60% slopes)
	Z150A (Rauville silty clay loam, coteau, frequently flooded, 0 to 1% slopes)
	Z152A (Lamoure silty clay loam, coteau, occasionally flooded, 0 to 1% slopes)
	Z153A (Lamoure-Rauville silty clay loams, channeled, frequently flooded, 0 to 2% slopes)
	Z157A (Fairdale loam, channeled, frequently flooded, 0 to 2% slopes)
	Z158A (Marysland loam, occasionally flooded, 0 to 1% slopes)
	Z159A (Divide loam, occasionally flooded, 0 to 2% slopes)
	Z160A (Moritz, occasionally flooded-Lamoure, frequently flooded, complex, 0 to 2% slopes)
	Z161A (Spottswood loam, occasionally flooded, 0 to 2% slopes)
	Z162A (La Prairie loam, coteau, occasionally flooded, 0 to 2% slopes)
	Z166A (Forttown loam, rarely flooded, 0 to 2% slopes)
	Z167A (Renwash loam, rarely flooded, 0 to 2% slopes)
	Z171A (Renshaw-Fordville loams, coteau, 0 to 2% slopes)
	Z171B (Renshaw-Fordville loams, coteau, 2 to 6% slopes)
	Z172A (Renshaw loam, coteau, 0 to 2% slopes)
	Z172B (Renshaw loam, coteau, 2 to 6% slopes)
	Z173B (Renshaw-Sioux complex, coteau, 2 to 6% slopes)
	Z173C (Renshaw-Sioux complex, coteau, 6 to 9% slopes)
	Z174D (Sioux-Renshaw complex, coteau, 9 to 15% slopes)
	Z174F (Sioux-Renshaw complex, coteau, 15 to 40% slopes)
	Z175D (Renshaw-Sioux complex, very stony, 2 to 15% slopes)
	Z176C (Arvilla-Sandberg sandy loams, coteau, 6 to 9% slopes)
	Z177 (Udortheims, coteau (gravel pits))
	Z178A (Rentll loam, coteau, 0 to 2% slopes)
	Z179F (Sioux-Renshaw complex, very stony, 15 to 40% slopes)
	Z184E (Maddock loamy fine sand, 9 to 25% slopes)
	Z185A (Egeland-Embsden complex, coteau, 0 to 2% slopes)
	Z185B (Egeland-Embsden complex, coteau, 2 to 6% slopes)
	Z186B (Maddock-Egeland sandy loams, coteau, 2 to 6% slopes)
	Z186C (Maddock-Egeland sandy loams, coteau, 6 to 9% slopes)
	Z190A (Brookings silty clay loam, 0 to 2% slopes)
	Z192A (Vienna-Brookings complex, coteau, 0 to 2% slopes)
	Z192B (Vienna-Brookings complex, coteau, 1 to 6% slopes)
	Z193C (Vienna-Buse complex, coteau, 6 to 9% slopes)
	Z194A (Barnes clay loam, coteau, 0 to 2% slopes)
	Z194B (Barnes clay loam, coteau, 2 to 6% slopes)
	Z198A (Vienna-Forestville loams, coteau, 0 to 2% slopes)
	Z199B (Vienna-Barnes-Forestville loams, 1 to 6% slopes)
	Z205B (Mauvais clay loam, occasionally ponded, extremely stony, 2 to 6% slopes)
	Z217A (McKranz silty clay loam, 0 to 2% slopes)
	Z250A (Rauville mucky silty clay loam, ponded, frequently flooded, 0 to 1% slopes)
	Z252A (Hidewood silty clay loam, frequently flooded, 0 to 2% slopes)

Figure 11. Soil Types

Crowned Ridge Wind Farm

- City
- Turbine
- Access Road
- - - Collector Line
- Crane Path
- Interstate Highway
- State Highway
- ▭ Town Boundary
- ▭ Project Boundary



Base Map: World Light Gray Canvas Base
Sources: Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community
Codington and Grant Counties, South Dakota

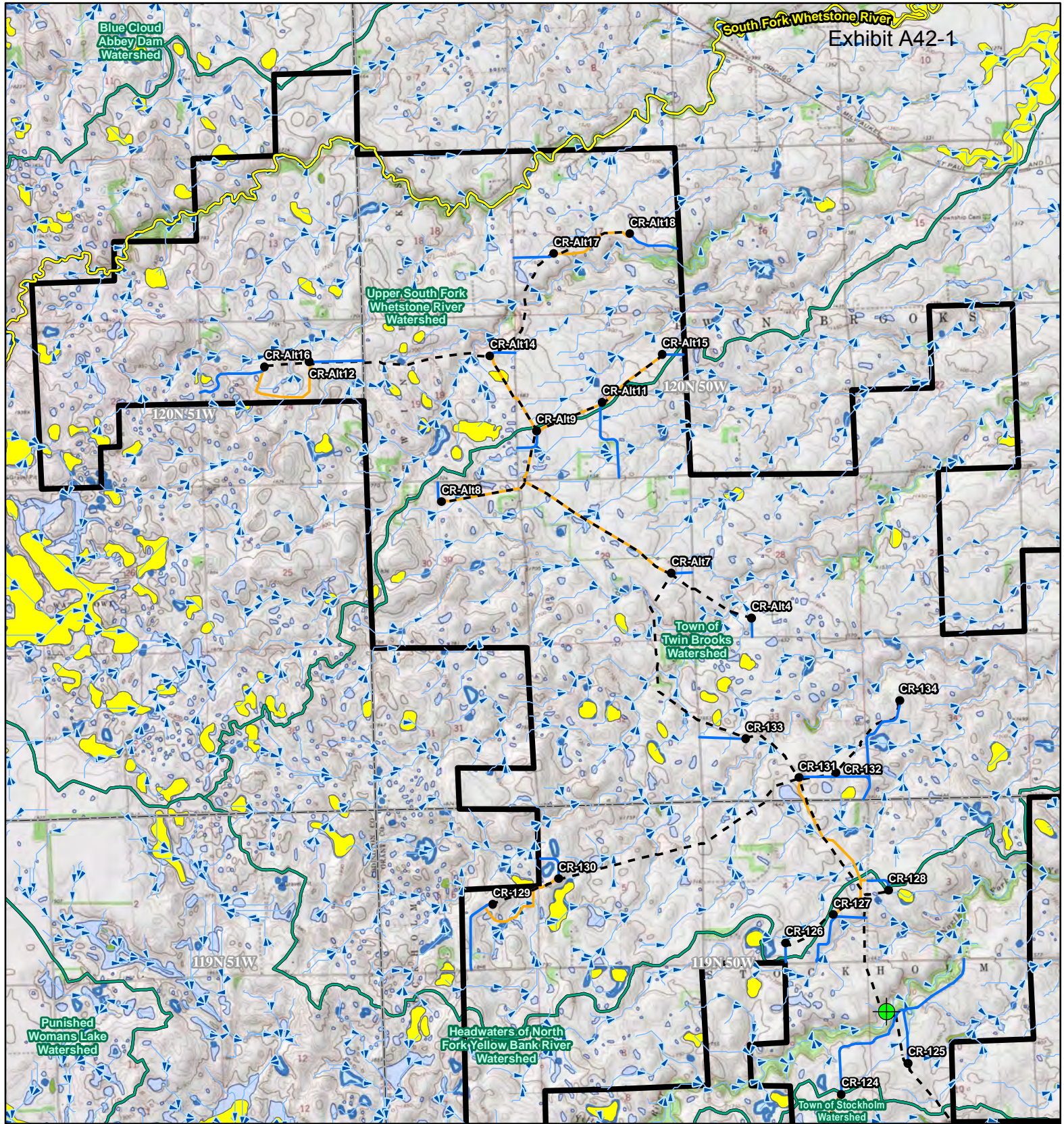
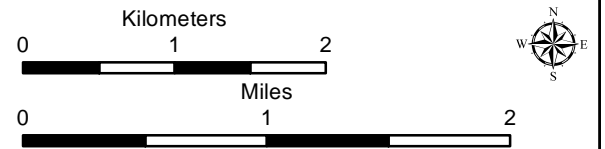
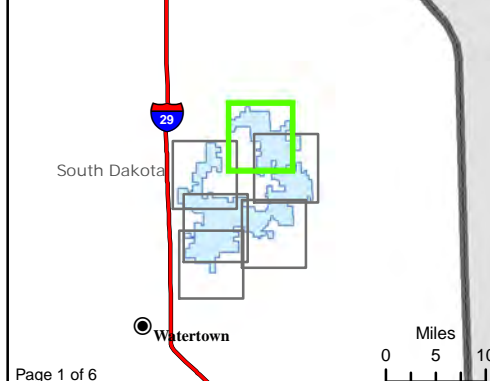


Exhibit A42-1

Figure 12. Water Resources
Crowned Ridge Wind Farm

- City
- Intersection of Floodplain and Project Infrastructure
- Turbine
- Access Road
- - Collector Line
- Crane Path
- Flow Direction
- South Dakota Beneficial Use Stream
- South Dakota Beneficial Use Lake
- Watershed Boundary (HUC12)
- Project Boundary
- County Boundary
- Township/Range Boundary
- Freshwater Wetland
- Freshwater Forested/Shrub Wetland
- Lake, Pond, or Riverine Wetland
- FEMA Flood Zone A



Base Map: USGS 7.5' Topographic Map
Source: Esri ArcGIS Online service
Quadrangle: Antelope Valley (1973),
Twin Brooks (1973), Stockholm (1973)
Township/Range: T120N, R51W &
T120N, R50W & T119N, R50W
Grant County, South Dakota

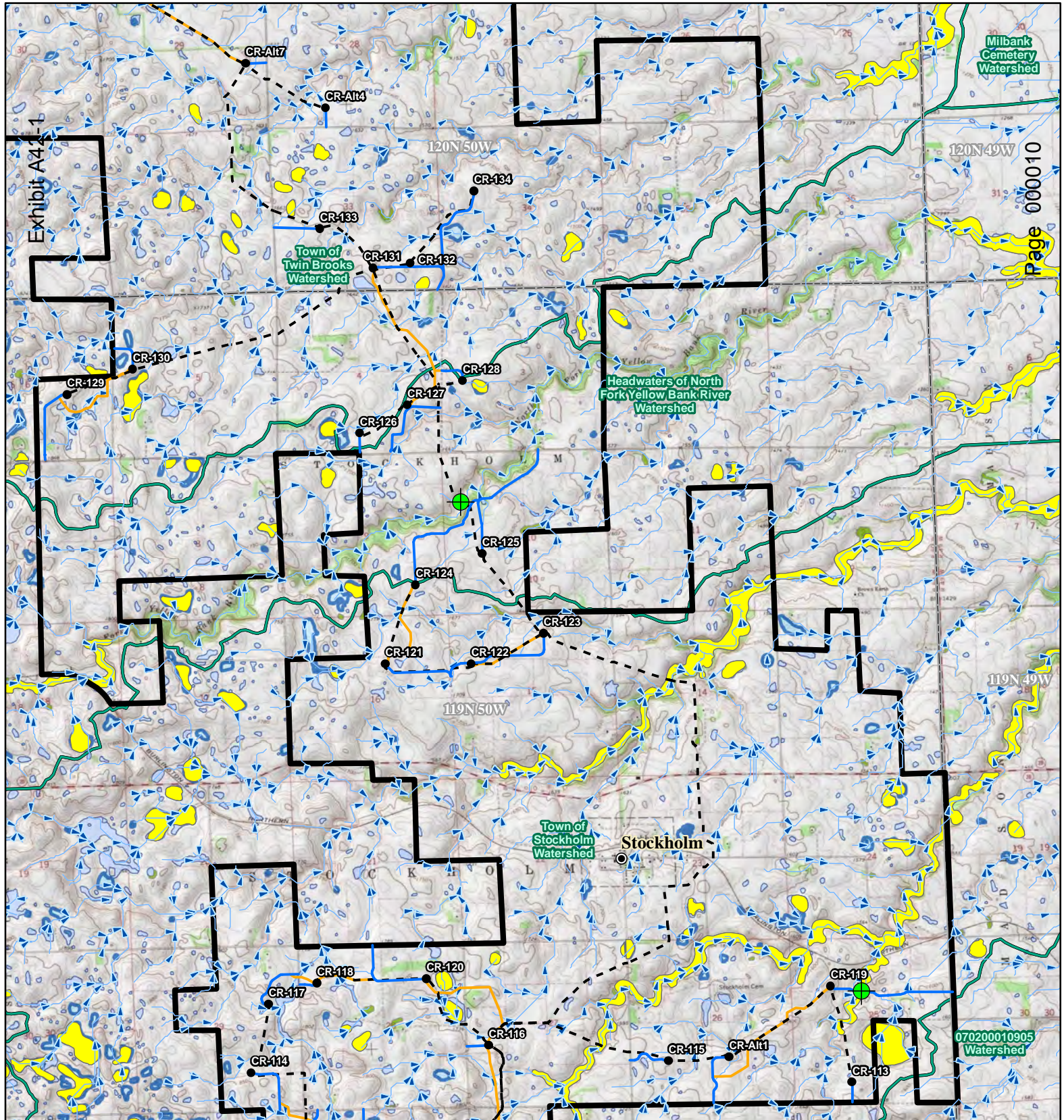
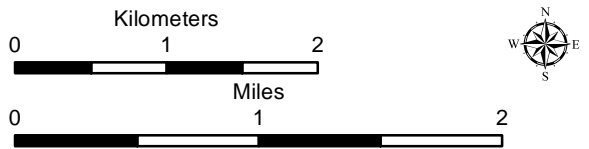
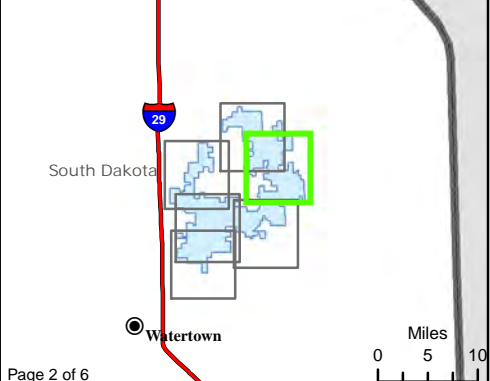


Exhibit A4-1

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Figure 12. Water Resources
Crowned Ridge Wind Farm

- City
- Intersection of Floodplain and Project Infrastructure
- Turbine
- Access Road
- - Collector Line
- Crane Path
- Flow Direction
- South Dakota Beneficial Use Stream
- South Dakota Beneficial Use Lake
- Watershed Boundary (HUC12)
- Project Boundary
- County Boundary
- Township/Range Boundary
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Lake, Pond, or Riverine Wetland
- FEMA Flood Zone A



Base Map: USGS 7.5' Topographic Map
Source: Esri ArcGIS Online service
Quadrangle: Twin Brooks (1973),
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Township/Range: T120N, R50W &
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Grant County, South Dakota

Projection: NAD 1983 UTM Zone 14N



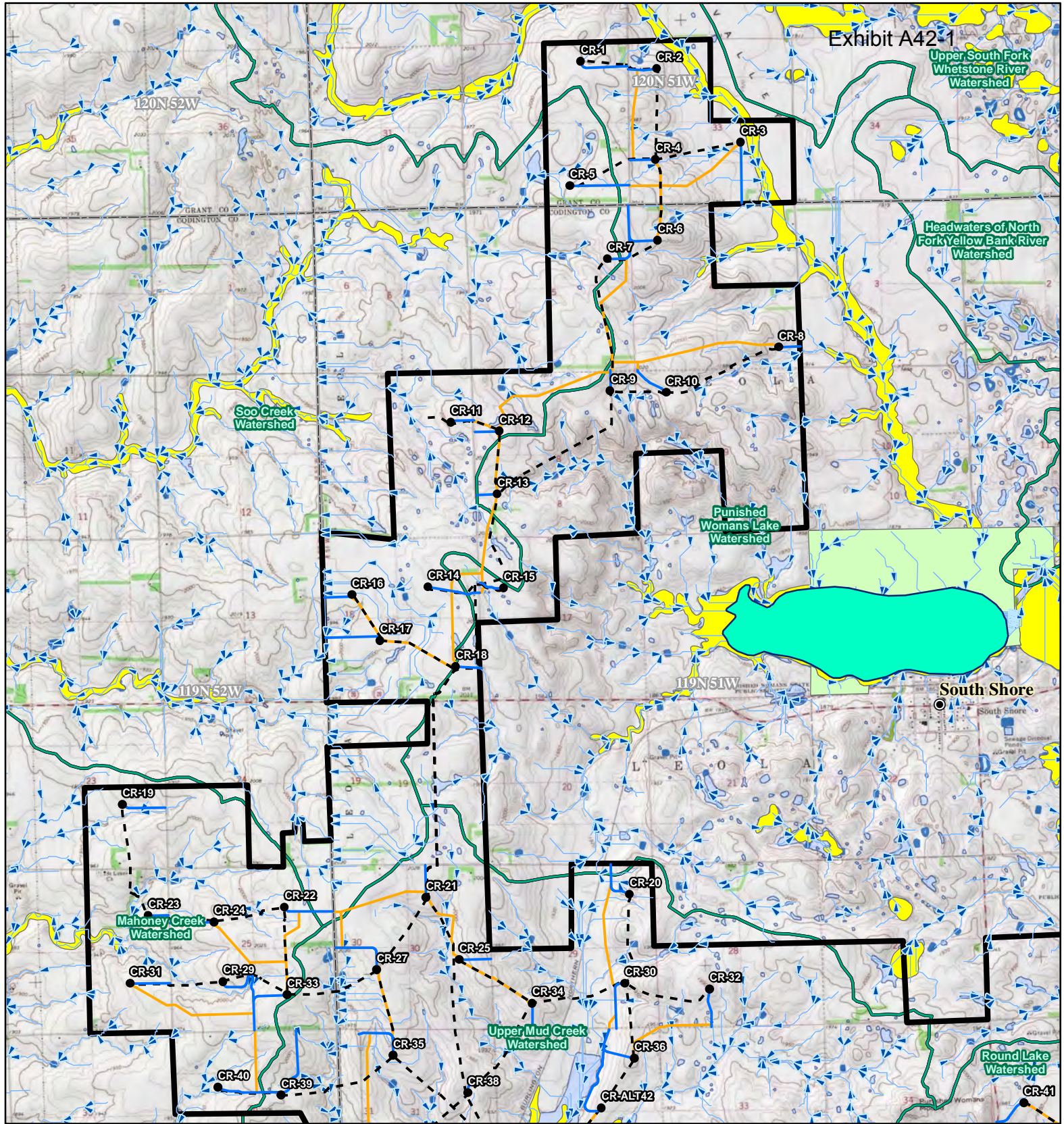
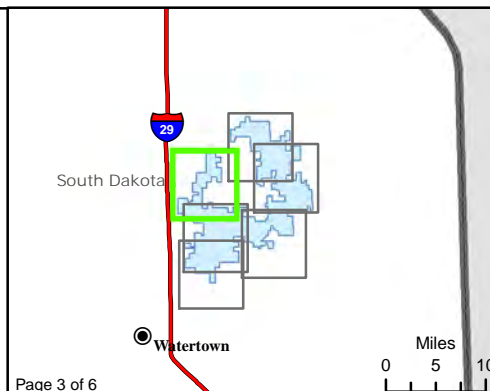


Exhibit A42-1

Figure 12. Water Resources
Crowned Ridge Wind Farm

- City
- Intersection of Floodplain and Project Infrastructure
- Turbine
- Access Road
- - Collector Line
- Crane Path
- Flow Direction
- South Dakota Beneficial Use Stream
- South Dakota Beneficial Use Lake
- Watershed Boundary (HUC12)
- Project Boundary
- County Boundary
- Township/Range Boundary
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Lake, Pond, or Riverine Wetland
- FEMA Flood Zone**
- A
- D



Base Map: USGS 7.5' Topographic Map
 Source: Esri ArcGIS Online service
 Quadrangle: Antelope Valley (1973),
 Still Lake SE (1970), South Shore (1973)
 Township/Range: T120N, R51W &
 T119N, R52W & T119N, R51W
 Codington and Grant Counties, South Dakota
 Page 000011 **SWCA**
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 Projection: NAD 1983 UTM Zone 14N

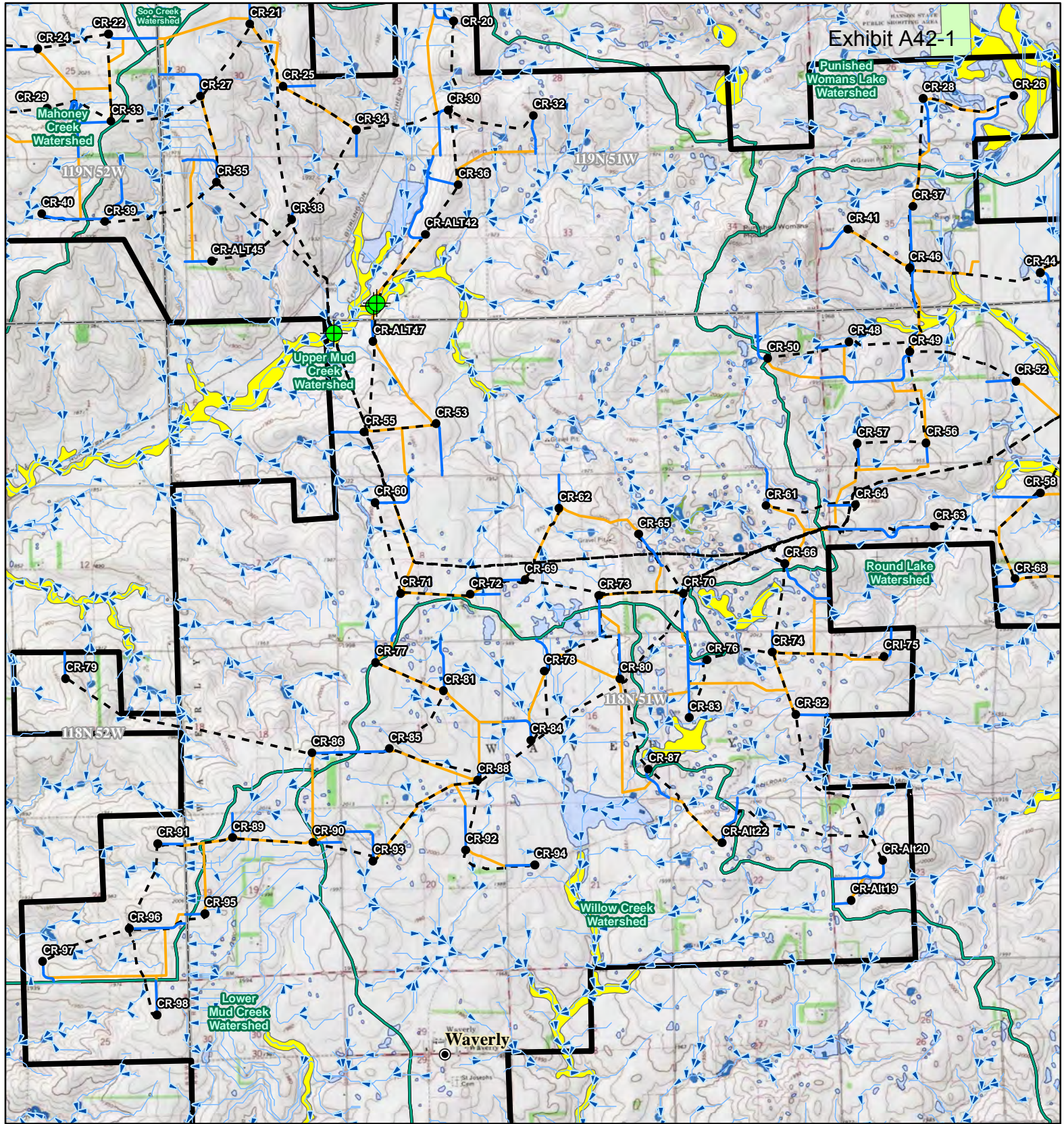
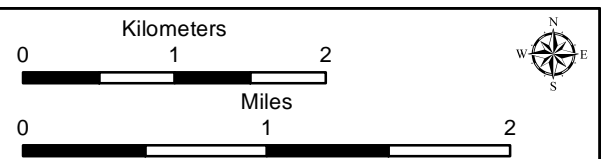
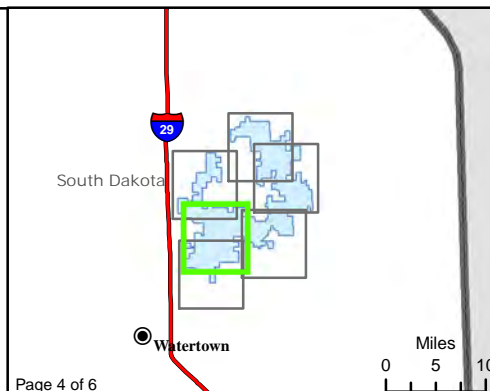


Exhibit A42-1

Figure 12. Water Resources
Crowned Ridge Wind Farm

- City
- Intersection of Floodplain and Project Infrastructure
- Turbine
- Access Road
- - Collector Line
- Crane Path
- Flow Direction
- South Dakota Beneficial Use Stream
- South Dakota Beneficial Use Lake
- Watershed Boundary (HUC12)
- ▭ Project Boundary
- ▭ County Boundary
- ▭ Township/Range Boundary
- ▭ Freshwater Emergent Wetland
- ▭ Freshwater Forested/Shrub Wetland
- ▭ Lake, Pond, or Riverine Wetland
- ▭ FEMA Flood Zone
 - A
 - D



Base Map: USGS 7.5' Topographic Map
 Source: Esri ArcGIS Online service
 Quadrangle: Still Lake SE (1970), South Shore (1973),
 Watertown East (1969), Kranzburg (1970)
 Township/Range: T119N, R52W & T119N, R51W &
 T118N, R52W & T118N, R51W
 Codington County, South Dakota
 Page 000012 **SWCA**
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 Projection: NAD 1983 UTM Zone 14N

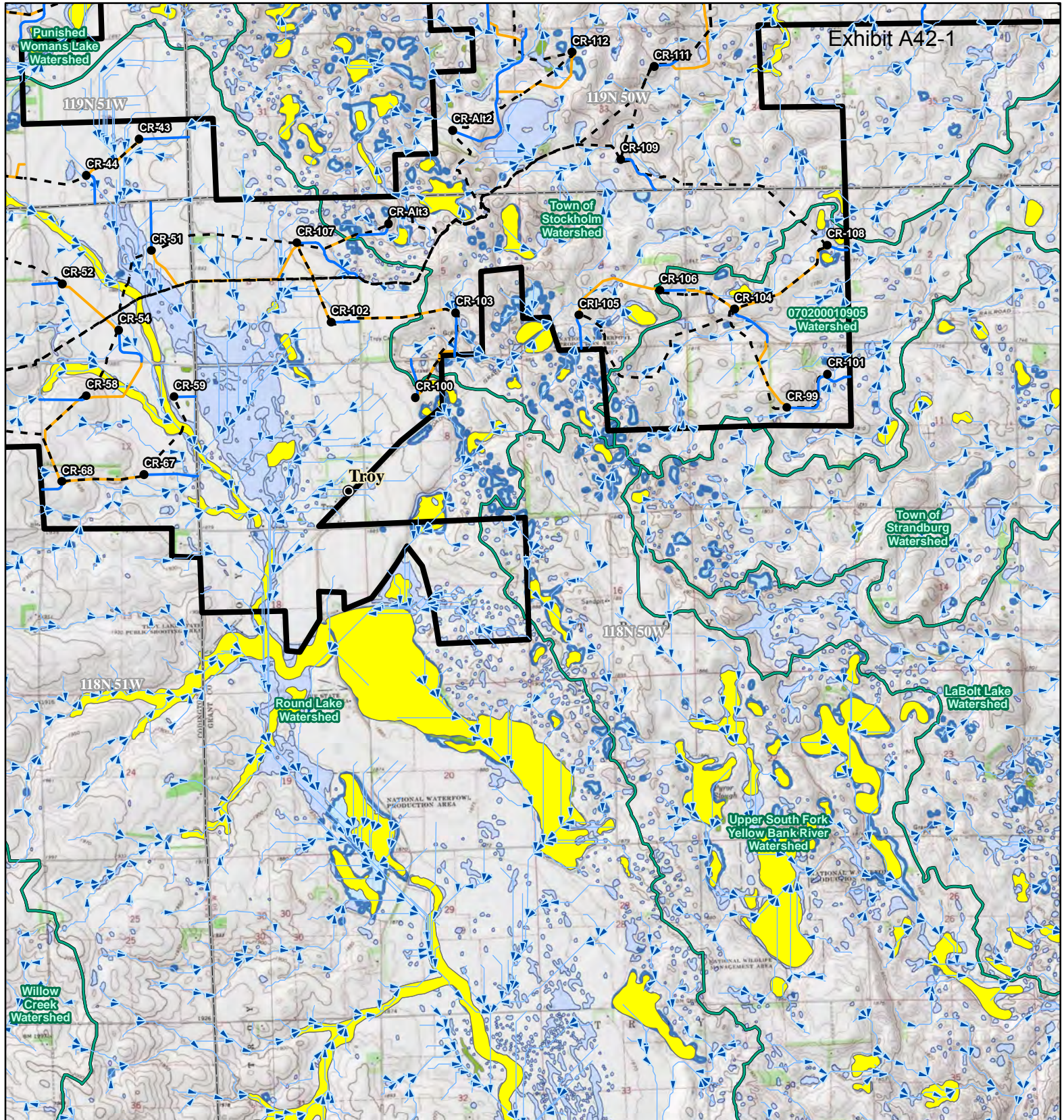
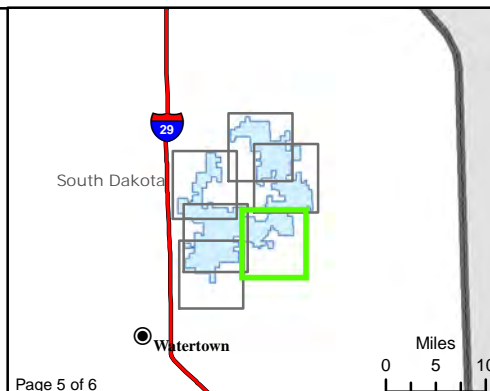


Exhibit A42-1

Figure 12. Water Resources
Crowned Ridge Wind Farm

- City
- Intersection of Floodplain and Project Infrastructure
- Turbine
- Access Road
- - Collector Line
- Crane Path
- Flow Direction
- South Dakota Beneficial Use Stream
- South Dakota Beneficial Use Lake
- Watershed Boundary (HUC12)
- ▭ Project Boundary
- ▭ County Boundary
- ▭ Township/Range Boundary
- ▭ Freshwater Emergent Wetland
- ▭ Freshwater Forested/Shrub Wetland
- ▭ Lake, Pond, or Riverine Wetland
- ▭ FEMA Flood Zone A



Kilometers

0 1 2

Miles

0 1 2

Base Map: USGS 7.5' Topographic Map
 Source: Esri ArcGIS Online service
 Quadrangle: South Shore (1973), Stockholm (1973)
 Township/Range: T119N, R51W & T119N, R50W & T118N, R51W & T118N, R50W
 Codington and Grant Counties, South Dakota

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Projection: NAD 1983 UTM Zone 14N

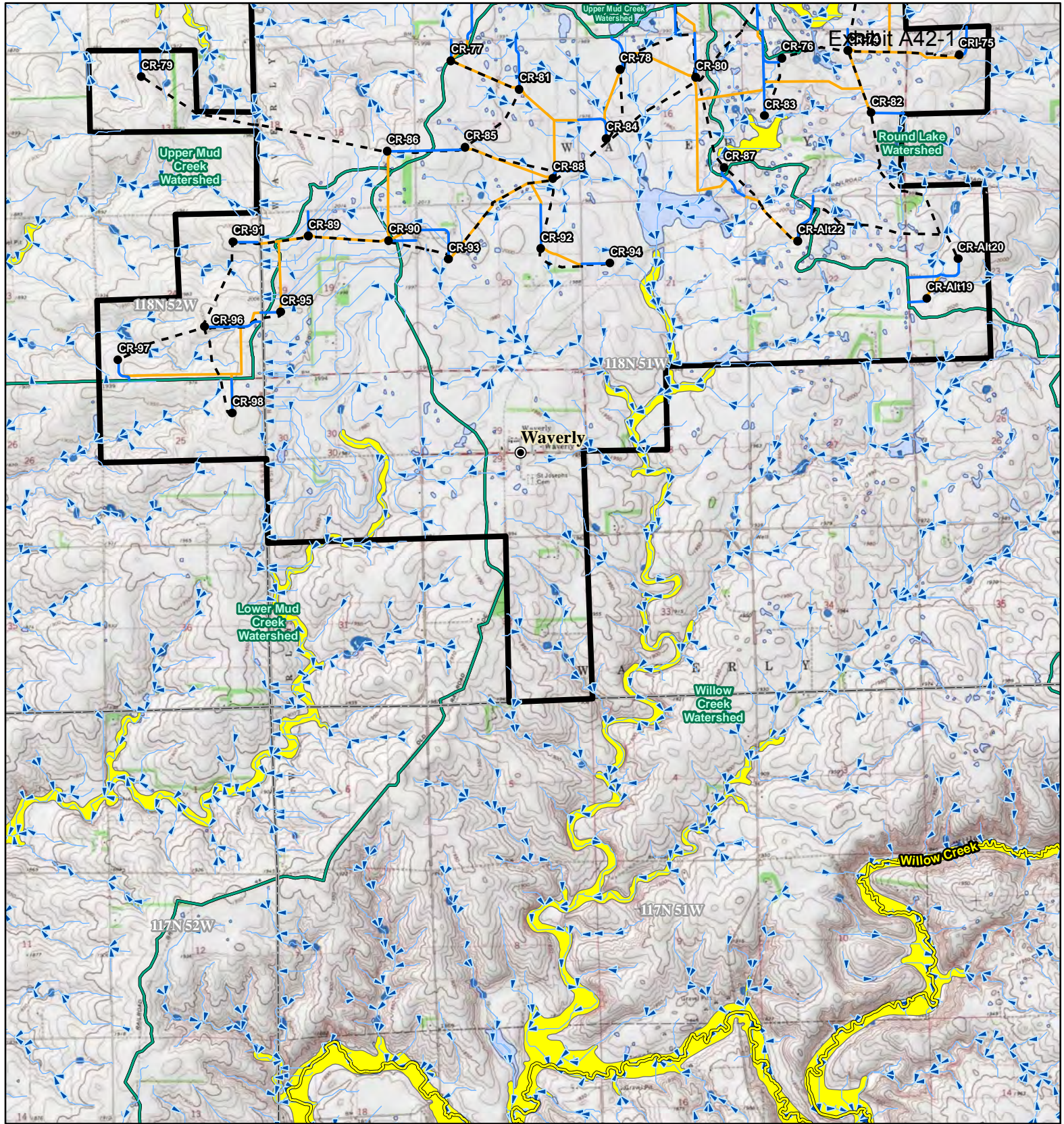
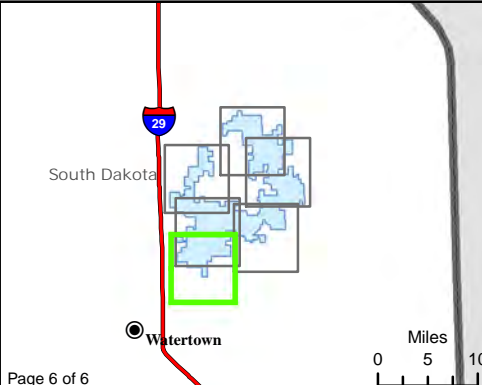


Figure 12. Water Resources
Crowned Ridge Wind Farm

- City
- Intersection of Floodplain and Project Infrastructure
- Turbine
- Access Road
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- Crane Path
- Flow Direction
- South Dakota Beneficial Use Stream
- South Dakota Beneficial Use Lake
- Watershed Boundary (HUC12)
- ▭ Project Boundary
- ▭ County Boundary
- ▭ Township/Range Boundary
- ▭ Freshwater Emergent Wetland
- ▭ Freshwater Forested/Shrub Wetland
- ▭ Lake, Pond, or Riverine Wetland
- ▭ FEMA Flood Zone A



Kilometers
0 1 2

Miles
0 1 2

Base Map: USGS 7.5' Topographic Map
Source: Esri ArcGIS Online service
Quadrangle: Still Lake SE (1970), South Shore (1973),
Watertown East (1969), Kranzburg (1970)
Township/Range: T118N, R52W &
T118N, R51W
Codington County, South Dakota
Page 000014 **SWCA**
ENVIRONMENTAL CONSULTANTS

Projection: NAD 1983 UTM Zone 14N

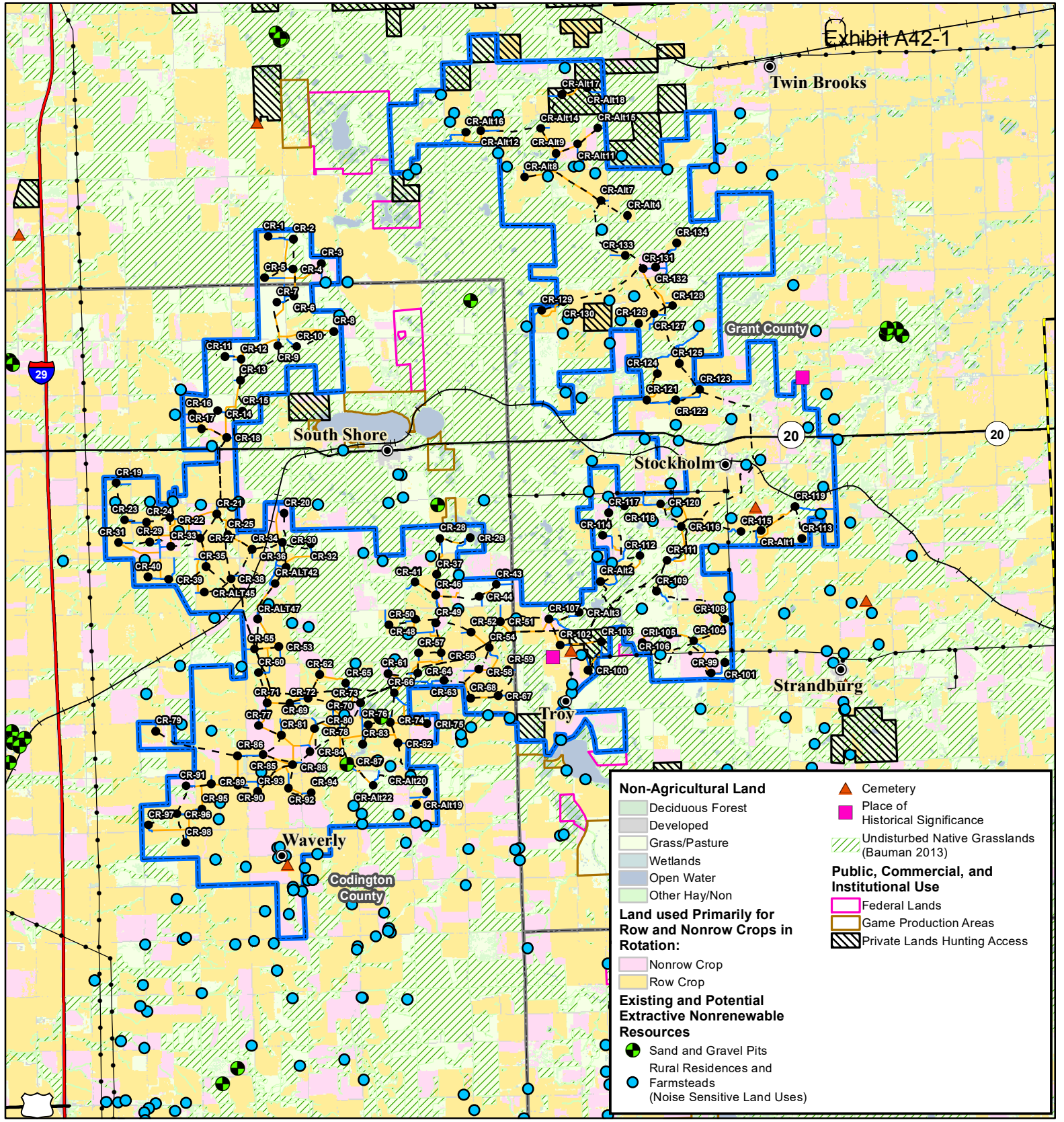
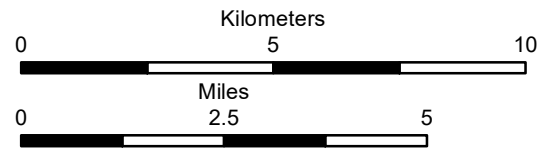


Figure 13. Land Use

Crowned Ridge Wind Farm

- City
- Turbine
- Access Road
- - - Collector Line
- Crane Path
- Electrical Line
- Natural Gas Line
- +— Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- ▭ Project Boundary
- ▭ County Boundary



Base Map: 2017 South Dakota Cropland Data Layer | NASS/USDA
 Source: United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS), Research and Development Division (RDD), Geospatial Information Branch (GIB), Spatial Analysis Research Section (SARS); 2017 Edition
 Codington, Deuel, and Grant Counties, South Dakota
 Projection: NAD 1983 UTM Zone 14N