

Appendix E – Cultural Resource Report



CLASS I LITERATURE REVIEW

LANGDON RE-POWER WIND FARM PROJECT CAVALIER COUNTY, NORTH DAKOTA

Prepared for

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Submitted by Atwell, LLC

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EXECUTIVE SUMMARY

In November of 2022, Atwell, LLC (Atwell) was contracted by Otter Tail Power Company (OTP) to conduct a Class I literature review for the proposed Langdon Wind Re-Power Project (Project) located in Cavalier County, North Dakota (Figure 1). The Project includes replacing current wind turbine technology with longer blades and new hub and gearbox with turbine generators being refurbished at 27 wind turbine locations. The existing Langdon Wind turbines are GE 1.5 megawatt [MW] turbines with a 77-meter rotor diameter and a total height of 118.5 meters, and these will be replaced with new wind turbine technology (GE 1.5 MW turbines with 97-meter rotor diameter and a total height of 128.5 meters). The existing 27 turbine locations remain the same and OTP plans to use the existing turbine structural steel towers, turbine foundations, collection/communication systems, permanent access roads, and other associated facilities whose locations will not change.

During installation of the repowering technology, existing access roads and the gravel ring around the turbines may be temporarily widened to accommodate delivery and staging of components and equipment. The areas where temporary access roads and construction easements will occur were previously surveyed and/or previously disturbed during initial project construction.

Currently, no federal trigger has been identified for this Project; therefore, Section 106 regulations do not apply. Should Section 106 be triggered, methods for archaeological and aboveground architectural investigations should be determined through consultation with the lead federal agency and the State Historical Society of North Dakota (SHSND).

The SHSND files were reviewed and rendered the following information:

- One previously identified archaeological site lead is in the Project Area.
- No previously documented architectural resources are in the Project Area.
- No architectural or archaeological resources listed on the National Register of Historic Places are in the Project Area.

Based on a review of the data presented above in conjunction with the fact that 40.05 acres of the 71.7-acre Project Area have been previously surveyed and all 71.7 acres of the Project Area have been previously disturbed by the original construction of the wind farm, Atwell makes the following recommendations:

- The Project proceed as planned without additional cultural resource work prior to the re-power project.

PUBLIC DOCUMENT - NON-PUBLIC DATA HAS BEEN EXCISED

- An Unanticipated Discovery Plan be developed to establish procedures and relevant contact information in the event that human remains or archaeological deposits are discovered during the construction, operational, and decommission phases of the Project.
 - If buried archaeological resources are encountered, all activity should cease in the immediate area and within a 100-foot buffer area, and the artifacts should be left in place. The Client's archaeologist should be contacted immediately, and unanticipated discovery procedures should be initiated.
 - If human remains are encountered, construction should stop in the immediate area of discovery and within a 100-foot buffer area, and law enforcement should be notified immediately. Law enforcement officials should determine whether the discovery is a crime scene and whether the remains are prehistoric or historic Native American remains. The SHSND should be contacted immediately if the human remains are determined to be prehistoric or historic in nature and/or Native American remains.

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1 INTRODUCTION

1.1 BACKGROUND

Atwell, LLC (Atwell) was contracted by Otter Tail Power Company (OTP) to conduct a Class I literature review for the proposed Langdon Wind Re-Power Project (Project) located in Cavalier County, North Dakota (Figure 1). The Project Area consists of 71.7 acres of mixed-use agricultural land in the following townships: Manilla Township (Township 161 North, Range 59 West; Sections 26, 27 and 34); Easby Township (Township 160 North, Range 59 West; Sections 2, 3, 4, 9, and 10).

The Project involves replacing current wind turbine technology with longer blades and new hub and gearbox with turbine generators being refurbished at 27 wind turbine locations. The existing Langdon Wind turbines are GE 1.5 megawatt [MW] turbines with a 77-meter rotor diameter and a total height of 118.5 meters, and these will be replaced with new wind turbine technology (GE 1.5 MW turbines with 97-meter rotor diameter and a total height of 128.5 meters). The existing 27 turbine locations remain the same and OTP plans to use the existing turbine structural steel towers, turbine foundations, collection/communication systems, permanent access roads, and other associated facilities whose locations will not change.

During installation of the repowering technology, existing access roads and the gravel ring around the turbines may be temporarily widened to accommodate delivery and staging of components and equipment. The areas where temporary access roads and construction easements will occur were previously surveyed and/or previously disturbed during initial project construction.

1.2 APPLICABLE REGULATIONS

North Dakota does not have laws that mandate cultural resources surveys for private projects lacking characteristics that would trigger Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108), and its implementing regulations (36 CFR 800). The exception to this is human remains. Human remains are protected under the North Dakota Century Code 23-06-27 (Protection of Human Burial Sites, Human Remains, and Burial Goods).

The North Dakota Public Service Commission has siting authority over the Project, and requires analysis of potential impacts to cultural resources pursuant to its siting criteria (NDAC § 69-06-08-01).

Currently, no federal trigger has been identified for this project; therefore, Section 106 regulations do not apply. Should Section 106 be triggered, methods for archaeological pedestrian survey and aboveground architectural survey should be determined through

consultation with the lead federal agency and the State Historical Society of North Dakota (SHSND).

An Unanticipated Discovery Plan is being developed to establish procedures and relevant contact information in the event that human remains or archaeological deposits are discovered during the construction, operational, and decommission phases of the Project.

2 METHODS

In November of 2022, staff from Atwell conducted background research at the SHSND for information on previously identified archaeological sites and architectural properties within one mile (1.6 km) of the Project Area and on surveys previously conducted within the Project Area.

3 ENVIRONMENT

The Project Area is located in Cavalier County, North Dakota in a primarily rural agricultural area that is sparsely populated and supports a mix of grasslands, cultivated cropland, hayfields, and pasturelands. Agricultural use (cultivated crops, hay, and pasture) is the primary land use within the Project Area. The Project Area is bisected by State Highway 66 and is located predominantly east of State Highway 1. Small farmsteads are in the Project Area as well as small tracts of forested areas, wetlands, and natural stream corridors; however, these natural features are of limited size. Small isolated woodlots, generally associated with wind breaks for farmsteads, are also scattered within the Project Area. Public roads are generally situated in a grid-like arrangement.

The Project Area is located within the Northern Black Prairie ecoregion of the Northern Glaciated Plains (Bryce et al. 1996). According to the United States Geological Service (USGS) ecoregion mapping data, this ecoregion is characterized by the following:

The Northern Black Prairie represents a broad phenological transition zone marking the introduction from the north of a boreal influence in climate. Aspen and birch appear in wooded areas, willows grow on wetland perimeters, and rough fescue, common to the Rocky Mountain foothills, becomes evident in grassland associations. This ecoregion has the shortest growing season and the lowest January temperatures of any Level IV Ecoregion in the Dakotas. Most of the area is used for growing small grains, with durum wheat being a major crop (Bryce et al. 1996).

The surficial geology in the region is relatively flat with little visual relief. The surface soil texture is primarily loam that is well drained (USDA 2017). Within the Project Area, the topography is generally flat, with approximate elevations between 1,594 and 1,684 feet above mean sea level (amsl).

Natural Resource Conservation Service (NRCS) Soil Survey data for Cavalier County identified 17 different types of soils within the Project Area. These soils vary greatly in texture, natural drainage, slope, and other characteristics. The Project Area is dominated by a variety of loam texture soils. Approximately 80 percent of the Project Area is mapped as the following soil types:

- Hamerly-Tonka complex, 0 to 3 percent slopes (F100A);
- Svea-Buse loams, 3 to 6 percent slopes (F154B);
- Barnes-Svea loams, 0 to 3 percent slopes (F143A);
- Vallers-Hamerly loams, saline, 0 to 3 percent slopes (F119A); and
- Hamerly-Cresbard loams, 0 to 3 percent slopes (F135A).

4 LITERATURE SEARCH

4.1 PREVIOUS CULTURAL RESOURCES STUDIES

Research indicated that two archaeological surveys have been conducted within the current Project Area (Figure 2 Map Set).

Table 1. Previously Conducted Cultural Resources Surveys

Survey Number	Authors	Year	Title
010328	Ed Stine and Aaron Barth	2007	Langdon Wind Energy Center Phase II: A Class II and III Cultural Resources Inventory in Cavalier County, North Dakota.
017894	Atwell	2018	Class II and III Cultural Resources Inventory for the Langdon Wind Energy Center Repower Project, Cavalier County, North Dakota.

In 2007, a Class II and Class III cultural resources inventory was conducted by Metcalf Archaeological Consultants, Inc., on behalf of Langdon Wind, LLC to document cultural resources within the footprint of a proposed wind farm expansion in Cavalier County, North Dakota (Figure 2 Map Set; Stine and Barth 2007). The investigation identified two isolated finds, 32CVX68 and 32CVX69, neither of which fall within the current Project Area.

In 2018, a Class II and Class III cultural resources inventory was conducted by Atwell, LLC, on behalf of Langdon Wind, LLC as part of the proposed repowering of the existing Langdon Wind Energy Center in Cavalier County, North Dakota (Figure 2 Map Set; Atwell 2018). The

investigation identified two historical site leads, 32CVX87 and 32CVX89, and one isolated find, 32CVX88, none of which fall within the current Project Area.

4.2 PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

One archaeological site lead, 32CVX15, has been previously recorded within the current Project Area (see Figure 2 Map Set; Table 2). There is very little information recorded on the site form, but it appears that the Easby Post Office was once located somewhere within the general vicinity of the Project Area. Previous survey within the site lead boundary, in the vicinity of the Project Area, did not reveal any archaeological deposits (Stine and Barth 2007).

Table 2. Previously Documented Archaeological Resources within the Project Area

Site Number	Description	Status
32CVX15	Easby Post Office	Unevaluated

One additional sites has been previously identified within one mile of the Project Area (Figure 2 Map Set; Table 3).

Table 3. Previously Documented Archaeological Resources within One Mile

Site Number	Description	Status
32CV121	BNSF Railroad	Unevaluated

4.3 PREVIOUSLY RECORDED ARCHITECTURAL HISTORY PROPERTIES

No historical architectural properties have been recorded within the Project Area or within one mile of the Project Area.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

As a result of the literature review, Atwell has reached the following conclusions:

- One previously identified archaeological site lead is in the Project Area.
- No previously documented architectural resources are within the Project Area.

- No architectural or archaeological resources listed on the NRHP are within the Project Area.
- No cemeteries are located within the Project Area.

Currently, no federal trigger has been identified for this project; therefore, Section 106 regulations do not apply. Should Section 106 be triggered, methods for archaeological pedestrian survey and aboveground architectural survey should be determined through consultation with the lead federal agency and the SHSND.

5.2 RECOMMENDATIONS

Based on a review of the data presented above in conjunction with the fact that 40.05 acres of the 71.7-acre Project Area have been previously surveyed and all 71.7 acres of the Project Area have been previously disturbed by the original construction of the wind farm, Atwell makes the following recommendations:

- The Project proceed as planned without additional cultural resource work prior to the re-power project.
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6 REFERENCES

Atwell 2018 *Class I Cultural Resources Inventory for the Langdon Wind Energy Center Repower Project Cavalier County, North Dakota*. Atwell, LLC, Southfield, Michigan.

Bryce, S.A., J.M. Omernik, D.A. Pater, M. Ulmer, J. Schaar, J. Freeouf, P. Johnson, P. Kuck, and S.H. Azevedo 1996 *Ecoregions of North Dakota and South Dakota*. U.S. Geological Survey, Reston, Virginia.

Stine, Ed, and Aaron Barth 2007a *Langdon Wind Energy Center: A Class II and Class III Cultural Resource Inventory in Cavalier County, North Dakota*. NDSHPO Number 07-400. Metcalf Archaeological Consultants, Inc., Bismarck, North Dakota.

USDA 2017 Web Soil Survey. *U.S. Department of Agriculture, Natural Resources Conservation Service*. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

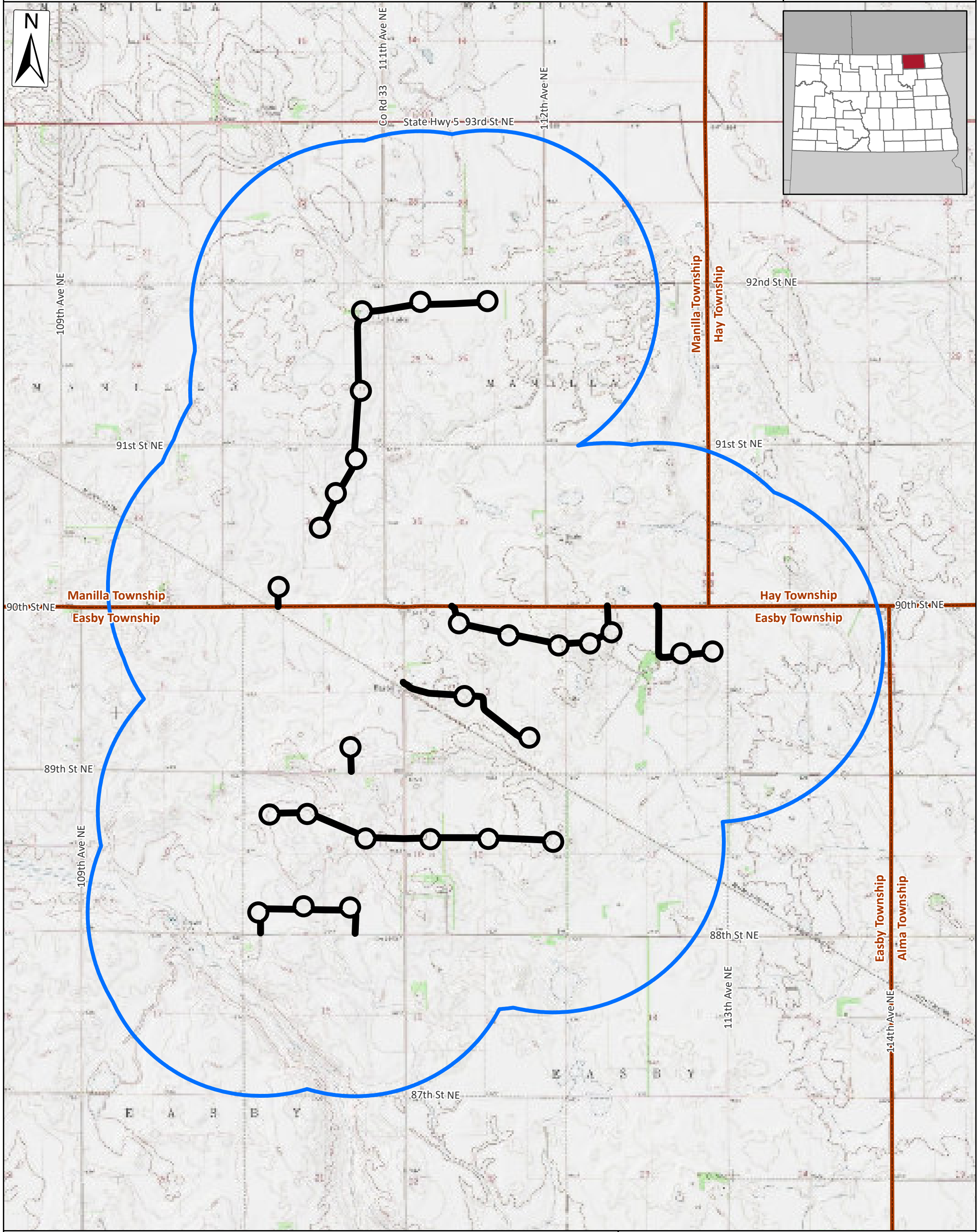
FIGURES

Langdon Re-Power Wind Farm

Issue Date:
1/24/2023

Figure 1 – Site Location

Cavalier County, North Dakota



-  Study Area
-  1 mile Buffer
-  Township

SOURCE: USGS Topo Map

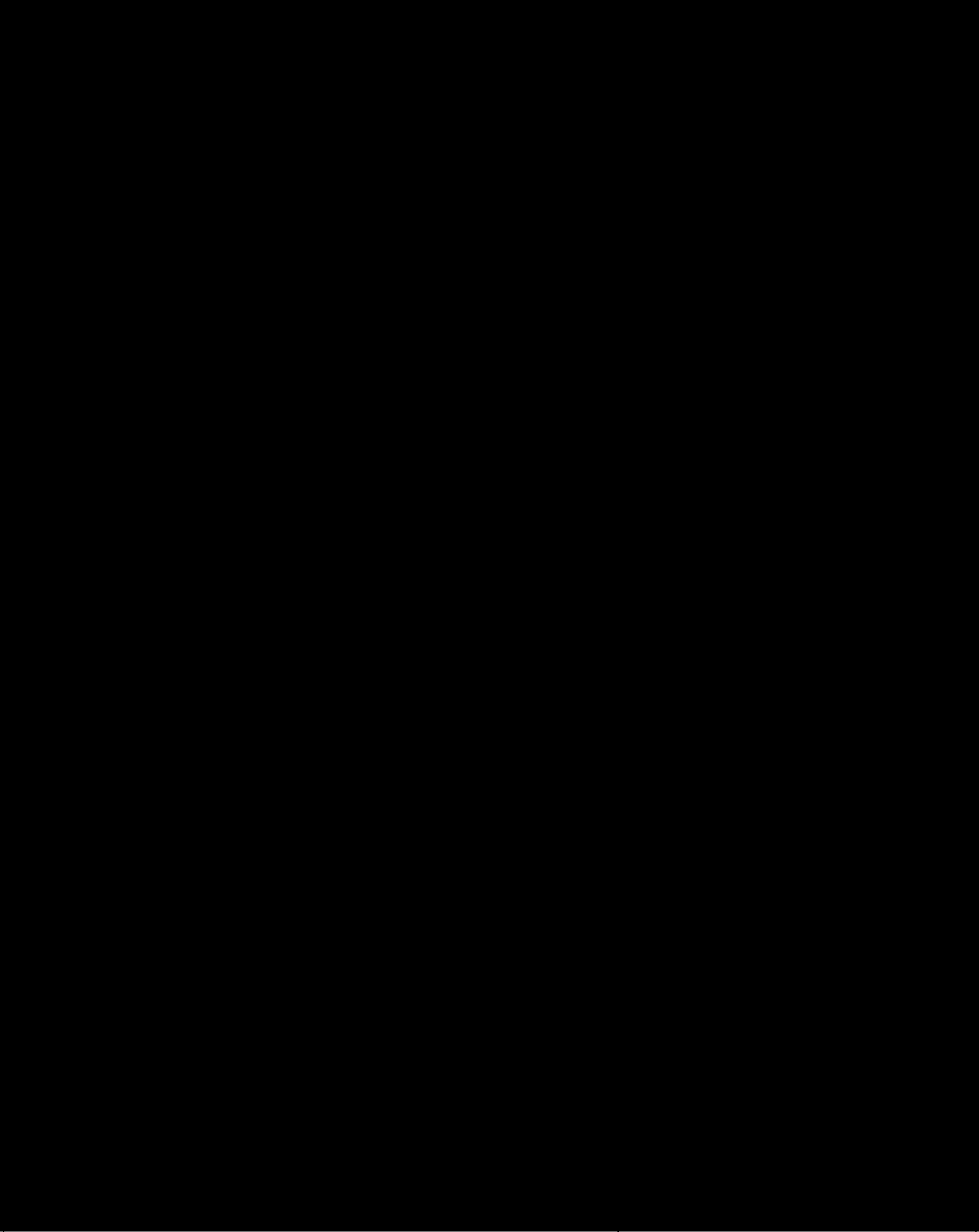


Langdon Re-Power Wind Farm

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Figure 2 – Known Cultural Resources Index

Cavalier County, North Dakota



▲ Architectural Sites	✈ Existing Turbine Locations	1 mile Buffer	<small>SOURCE: USGS Topo Map</small>
Archaeological Site	Existing Access Roads	Mapbook Page	
Archaeological Site Lead	Disturbance Area (~72 acres)	Township	
Archeological Survey	Study Area		
Survey Corridor (Metcalf, 2007)			



0 0.75 1.5 Miles



Langdon Re-Power Wind Farm

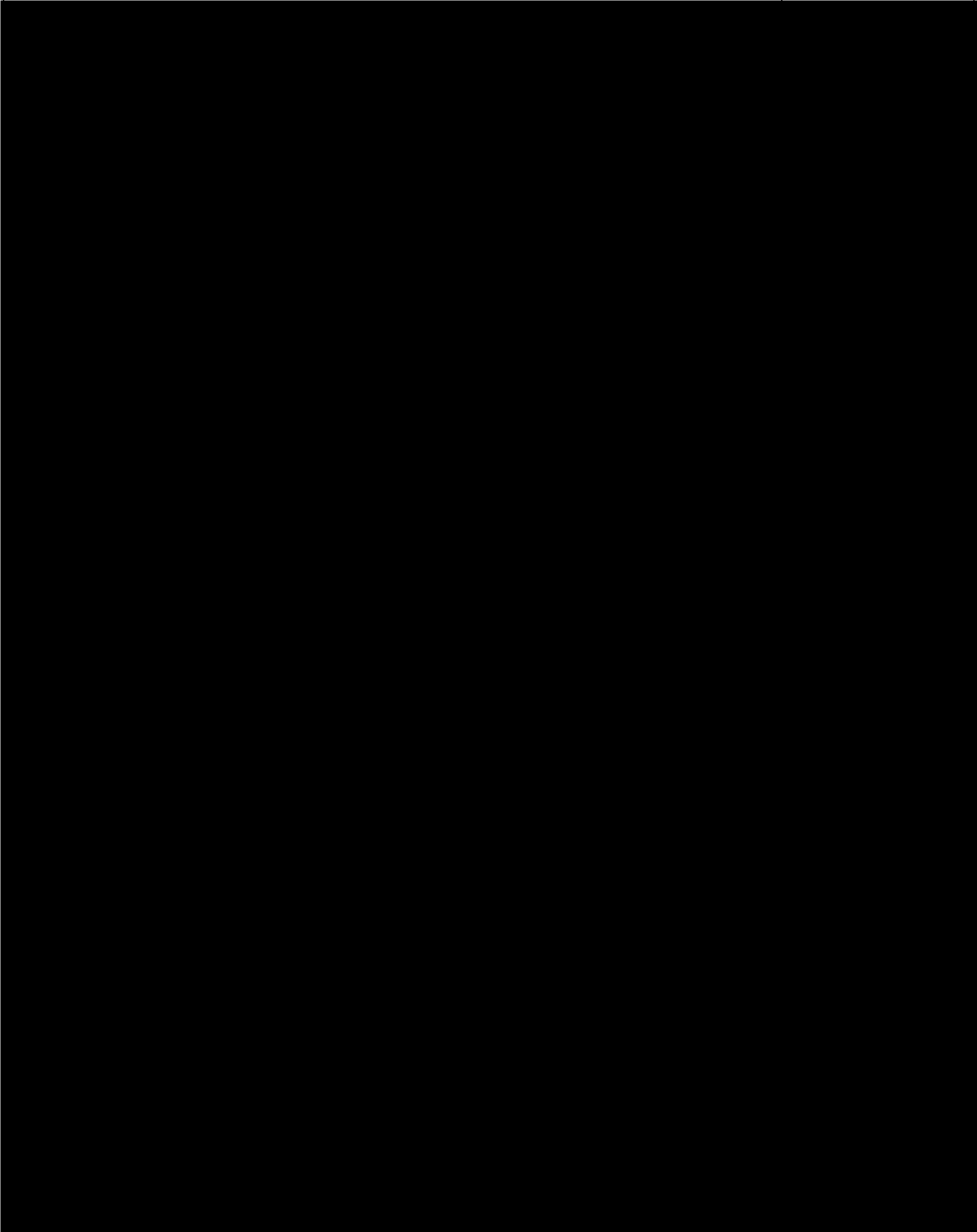
Figure 2 – Known Cultural Resources

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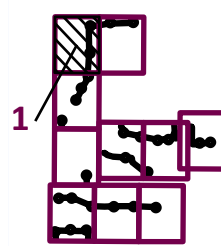
Cavalier County, North Dakota

Issue Date:

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- ▲ Architectural Sites
- ▣ Archaeological Site (SHPO)
- ▤ Archaeological Site Lead
- ▥ Survey Corridor (Metcalf, 2007)
- ▦ Archeological Survey (SHPO)
- ✈ Existing Turbine Locations
- Existing Access Roads
- Disturbance Area (~72 acres)
- ▭ Study Area
- ▭ Township



0 0.1 Miles

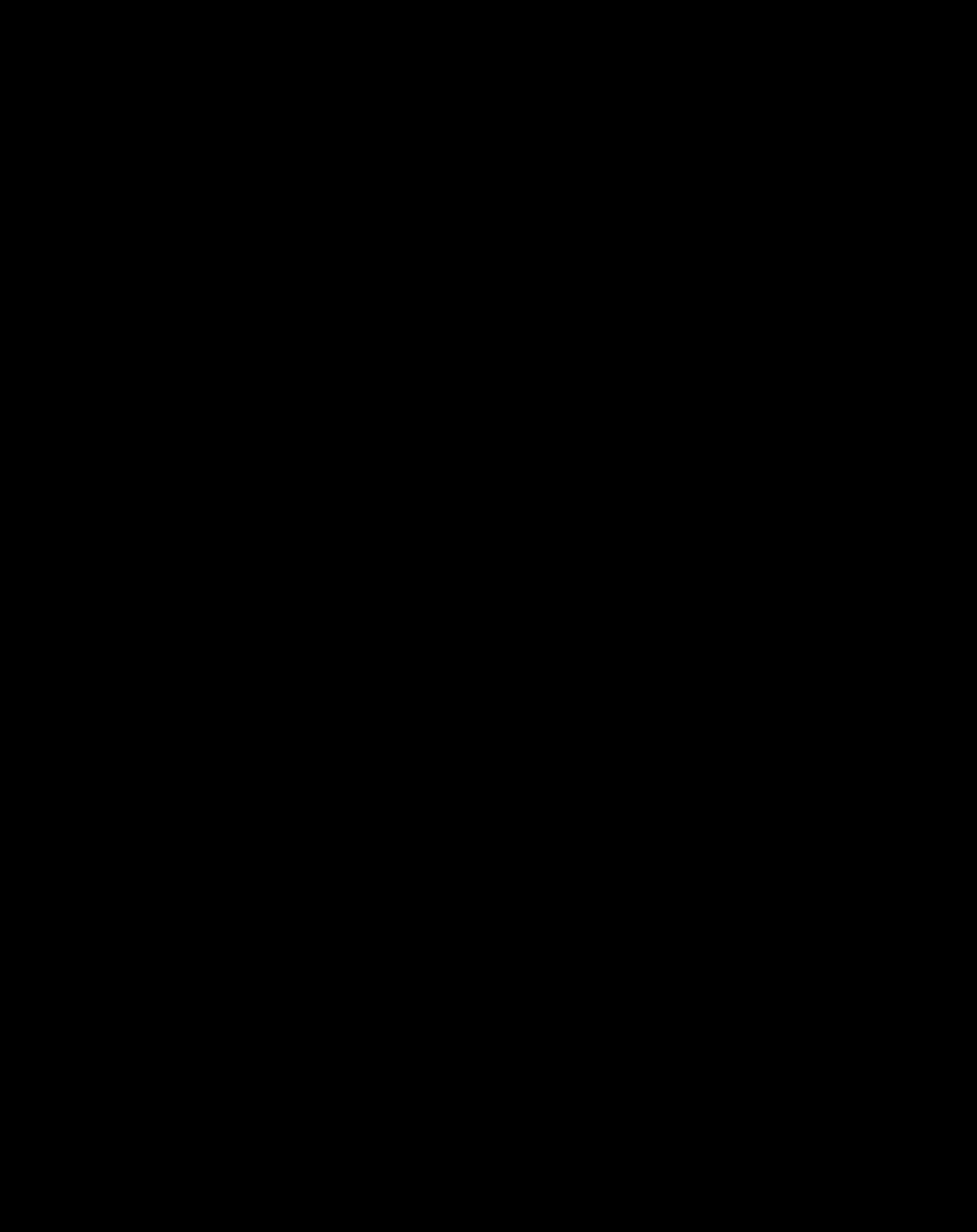
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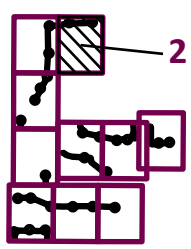
Figure 2 – Known Cultural Resources

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Cavalier County, North Dakota



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0 0.1 Miles

SOURCE: 1965 Topo Map

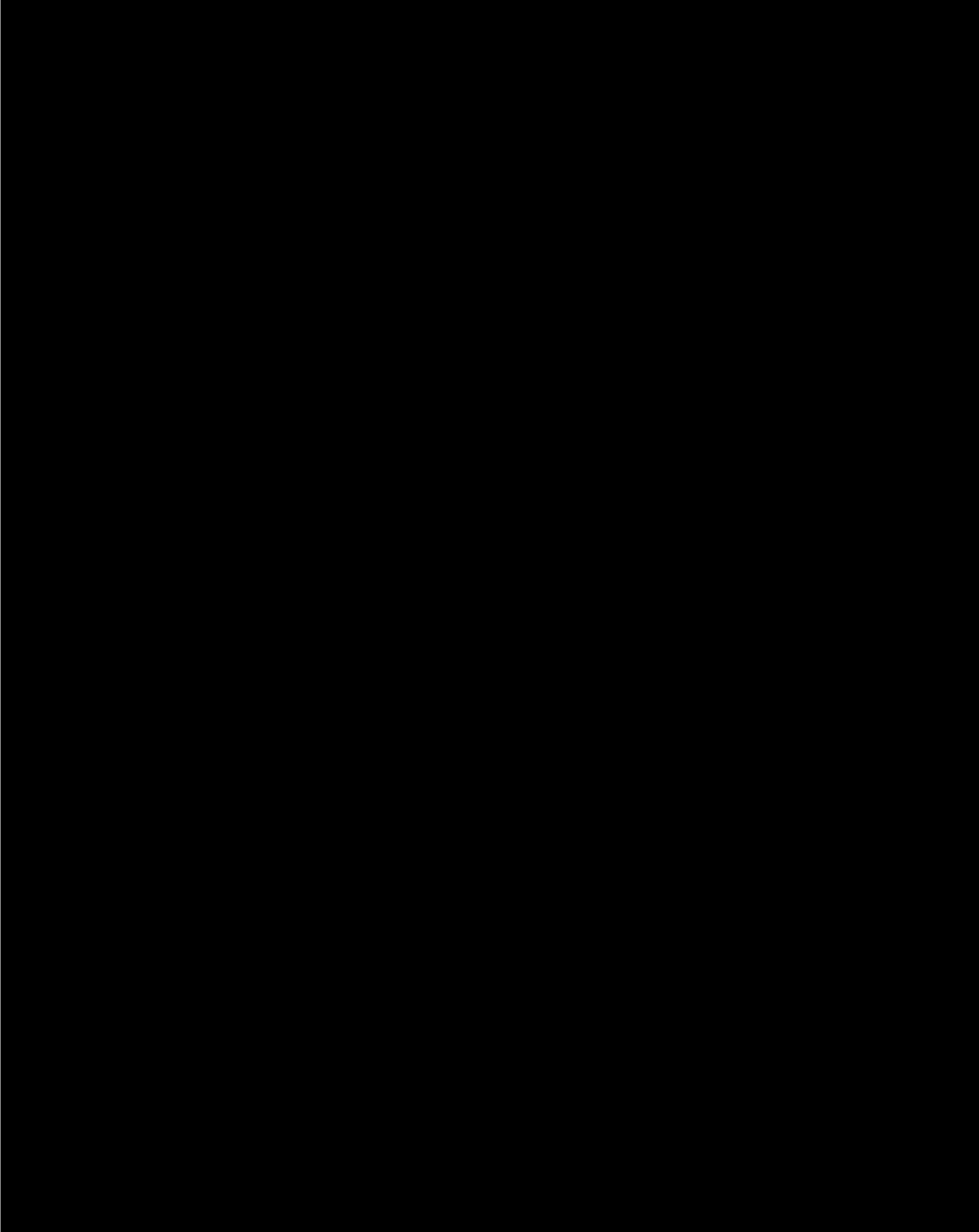
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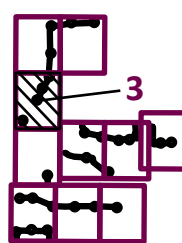
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0 0.1 Miles

SOURCE: 1965 Topo Map

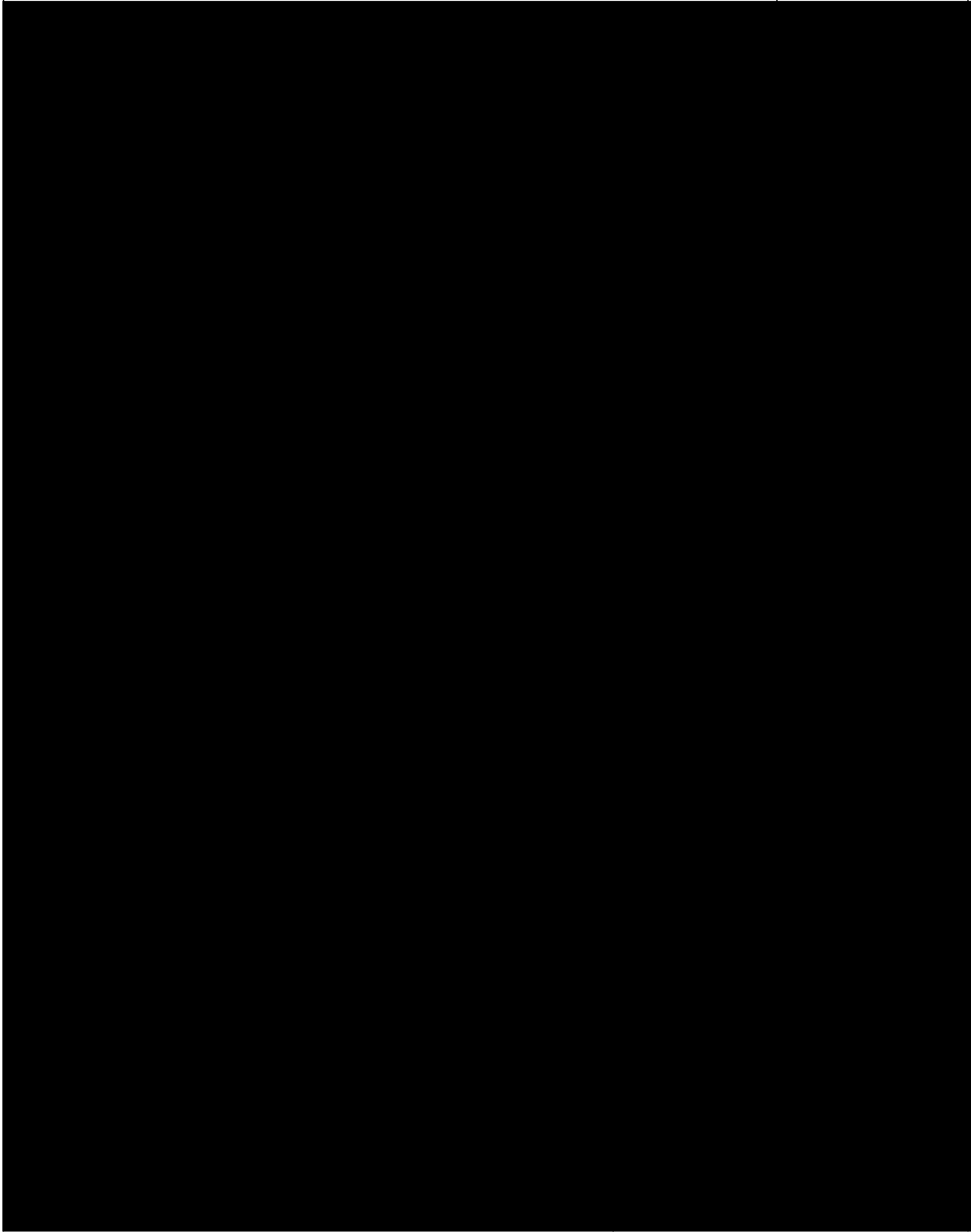
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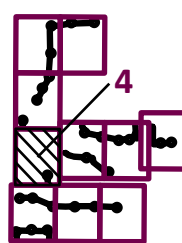
Figure 2 – Known Cultural Resources

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Cavalier County, North Dakota



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0 0.1 Miles

SOURCE: 1965 Topo Map

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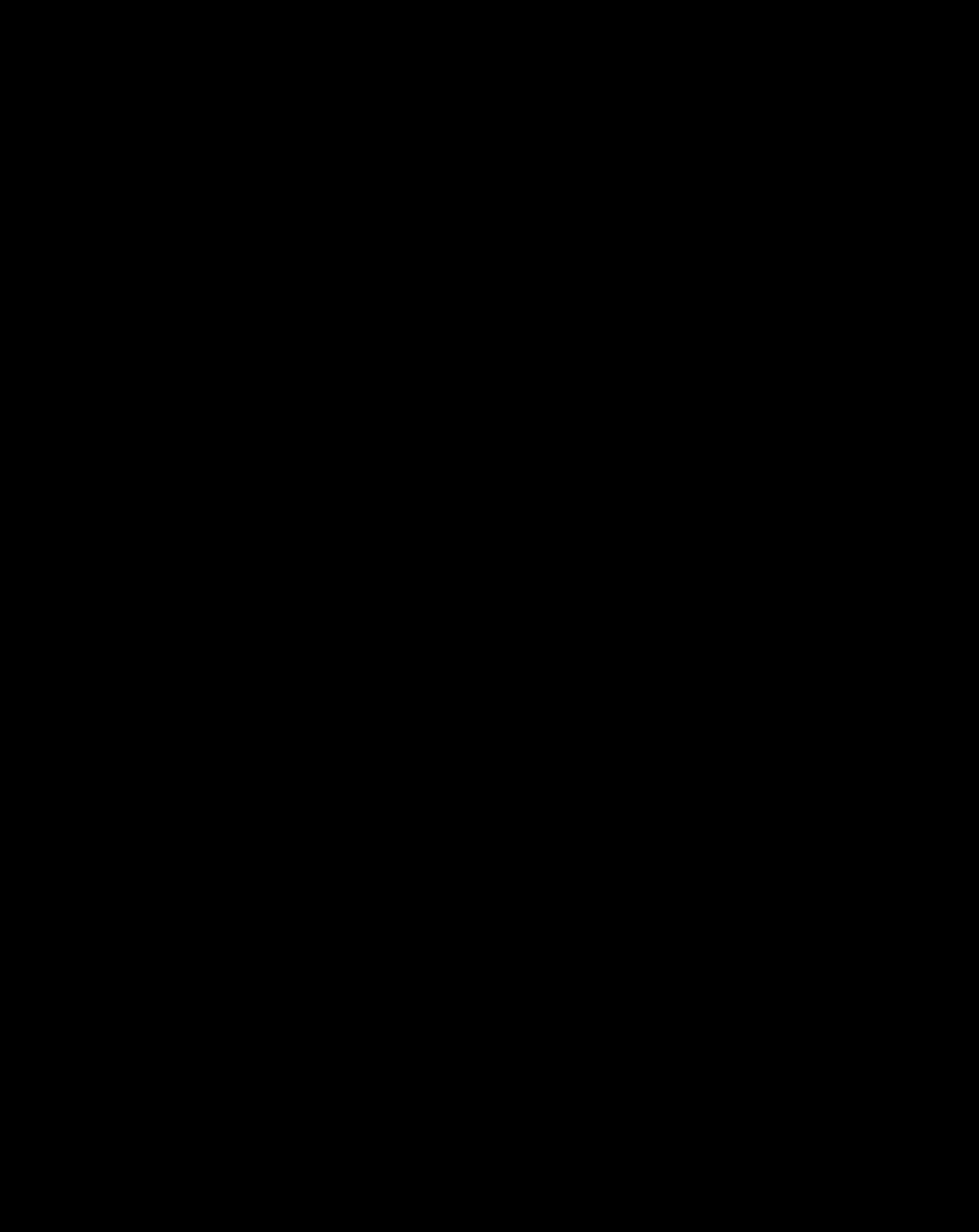
Figure 2 – Known Cultural Resources

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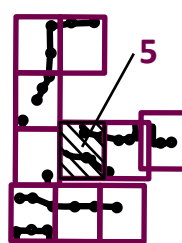
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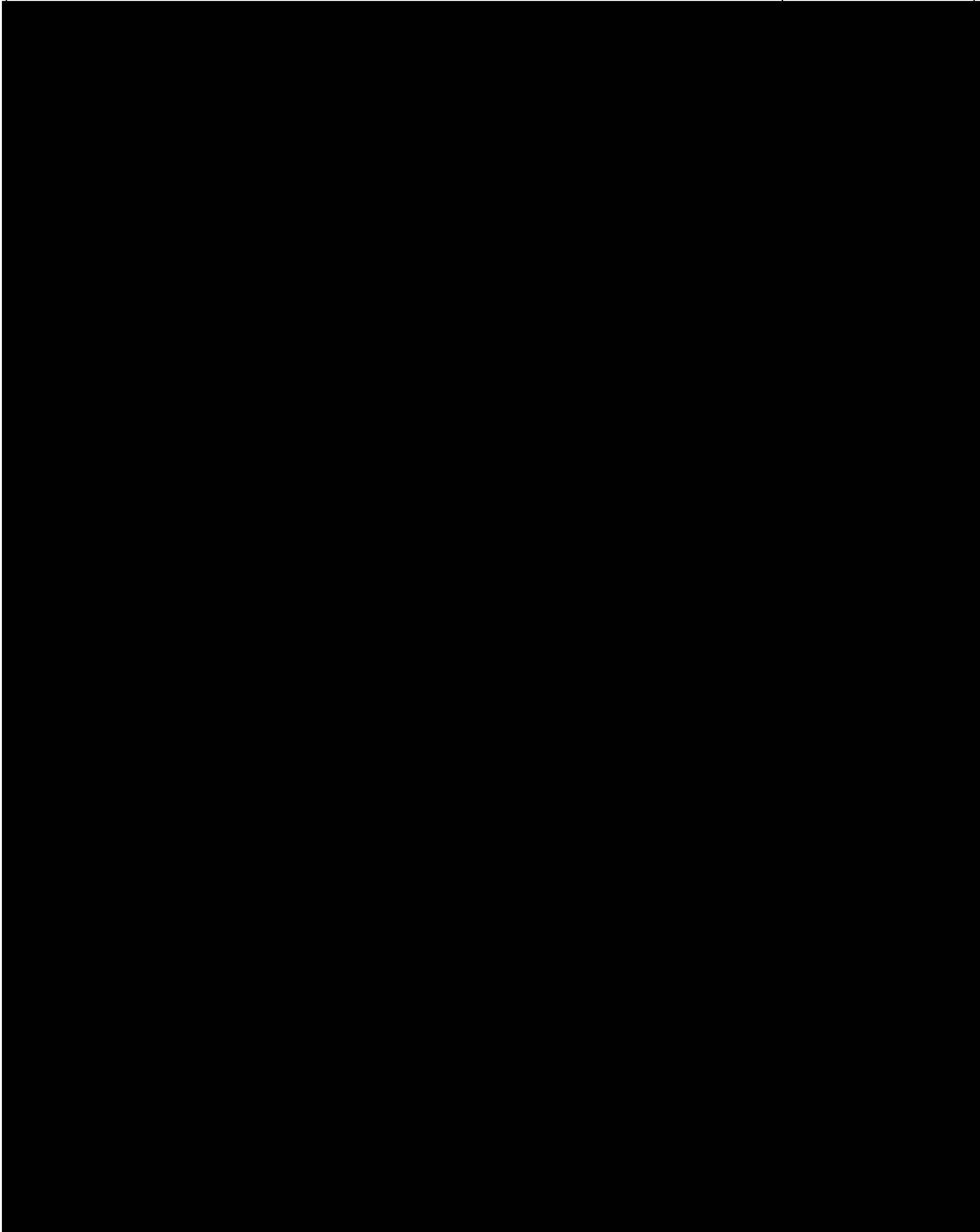
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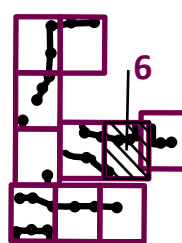
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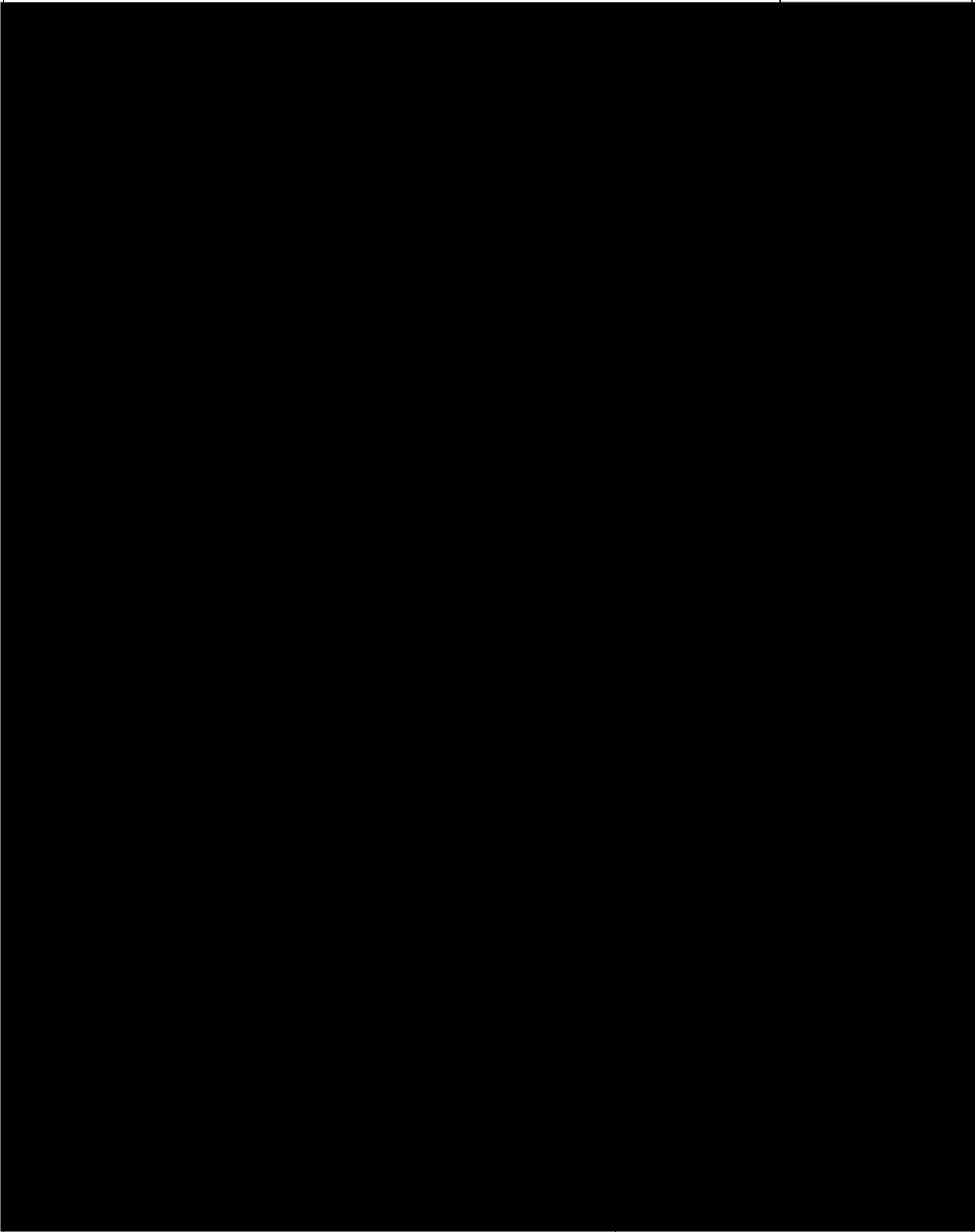
Langdon Re-Power Wind Farm











Figure 2 – Known Cultural Resources

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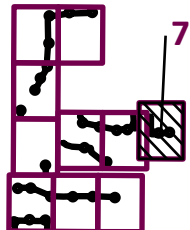
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 Architectural Sites	 Existing Turbine Locations
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 Archeological Survey (SHPO)	 Township

SOURCE: 1965 Topo Map






Langdon Re-Power Wind Farm

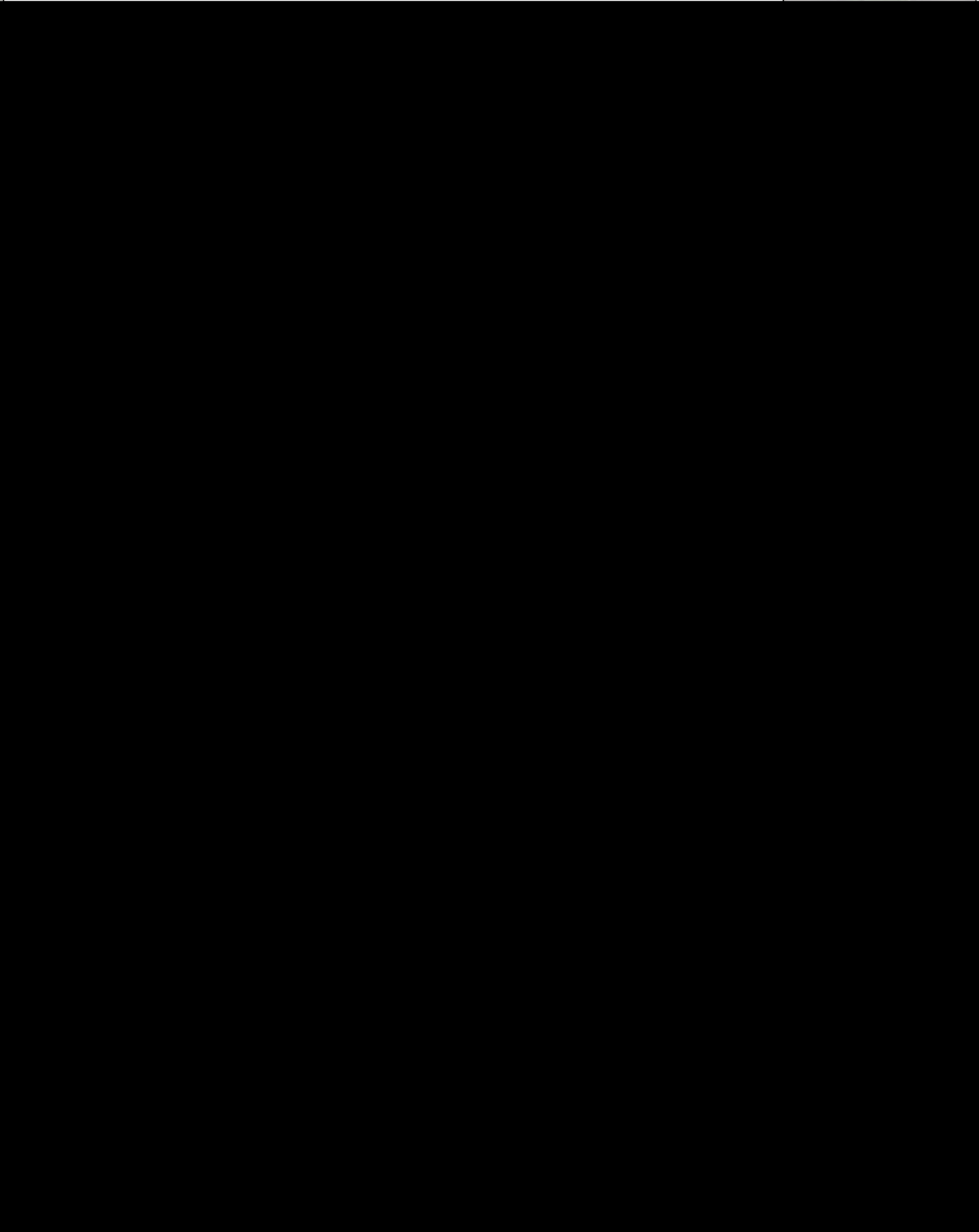
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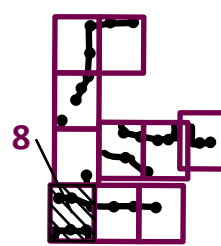
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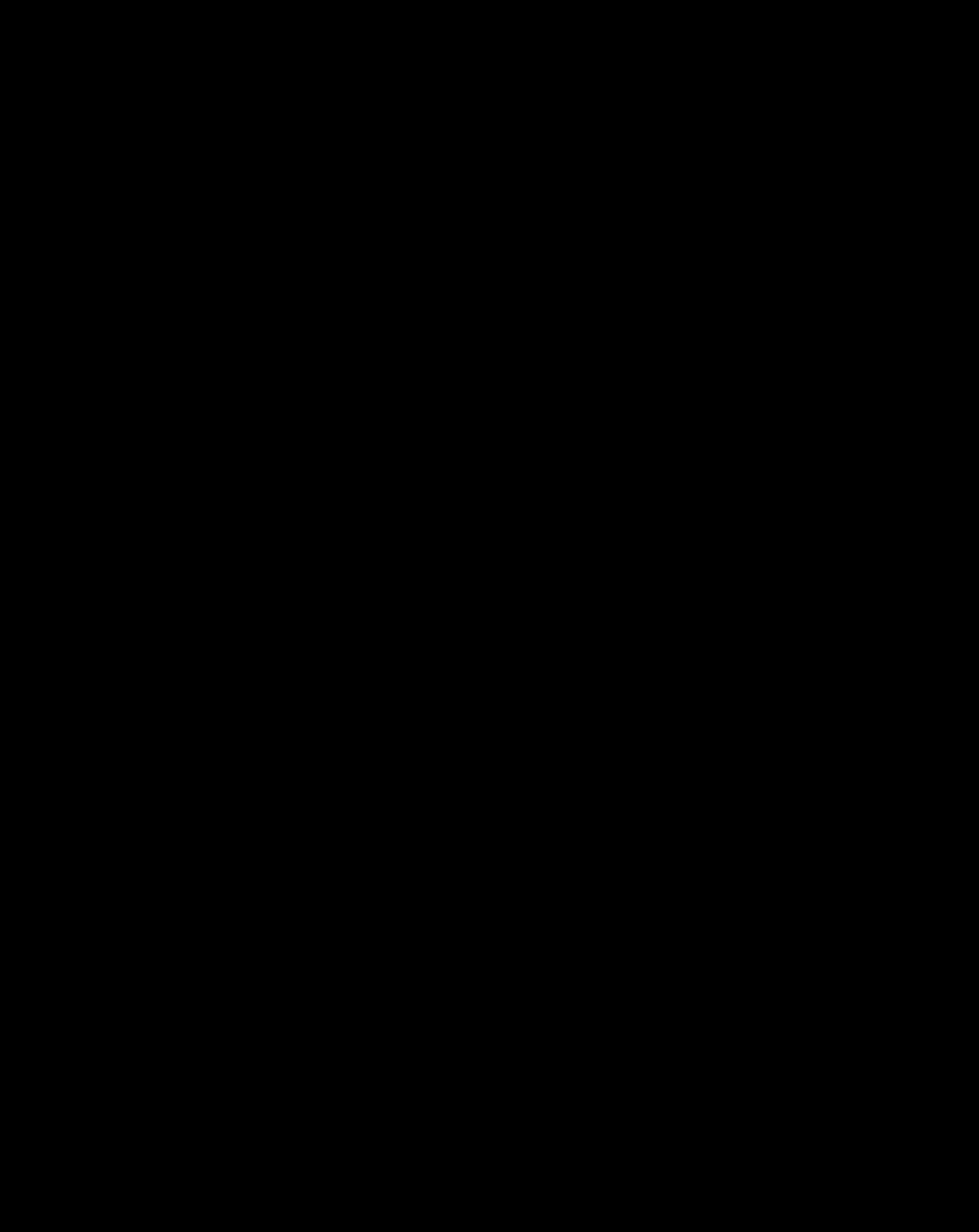
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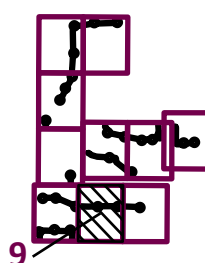
Figure 2 – Known Cultural Resources

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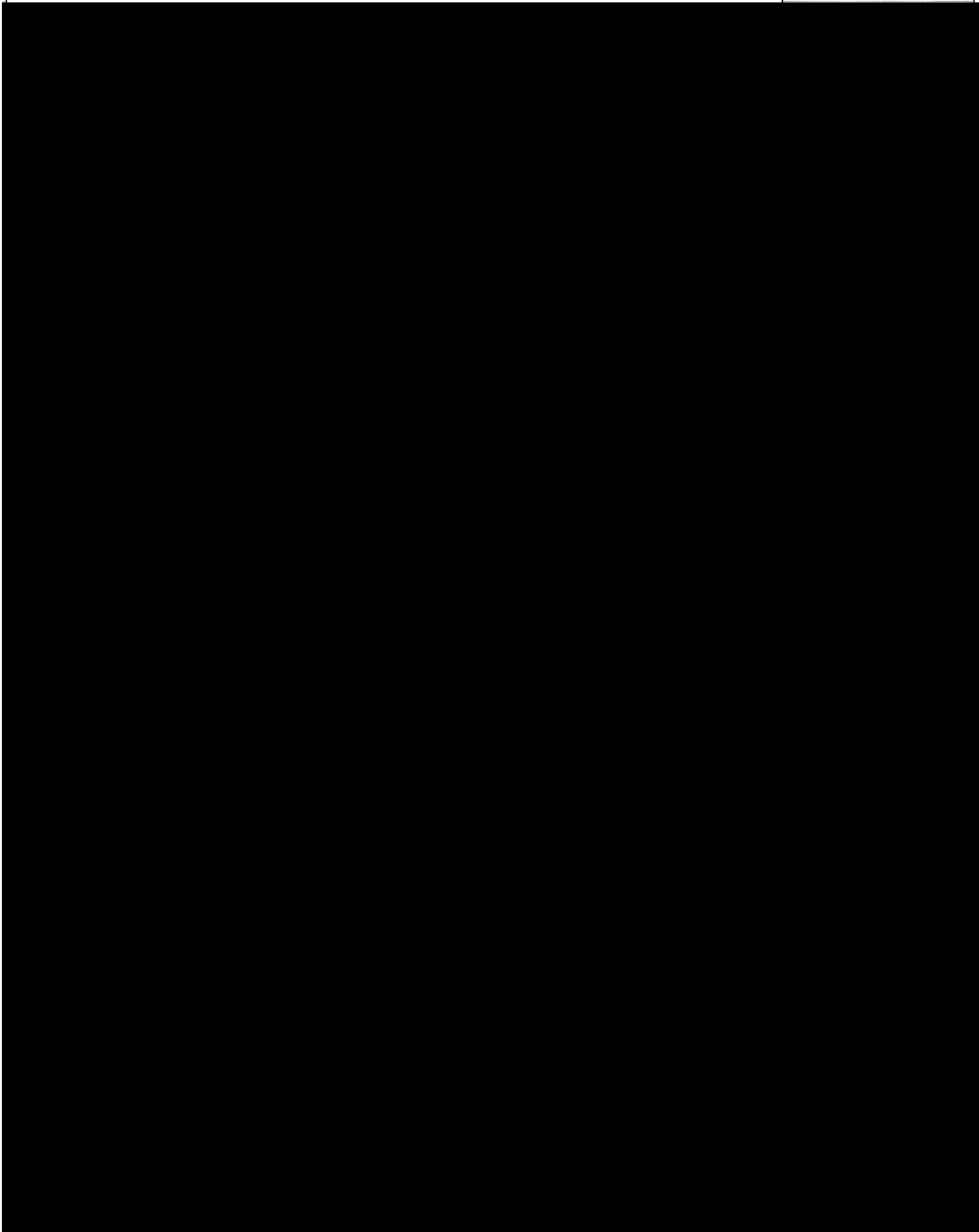
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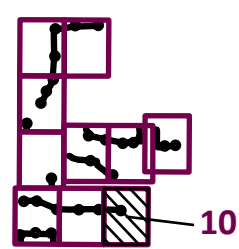
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Cavalier County, North Dakota



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