

**Field Site 19**

PN-KRV-00030

House

Circa 1978

7997 Park Drive

Willow River, MN 55795

46.309614, -92.830033



**Plate 41.** House, looking northwest.

*Description:*

This 67.9-acre property includes a residence, a gazebo, an equipment shed, three large workshops, a detached garage, a log outbuilding, a gambrel-roof shed, and numerous open-air carport structures. None of the buildings are known to be 45 years old or older.

The one-story, frame residence has an asymmetrical, side-gable roof covered with asphalt shingles. The roof is steeply pitched above the building's façade, while the remainder of the roof has a relatively shallow pitch towards the building's northern elevation. An earthen berm presses up against the western elevation of the house, leaving only the gable end of the roof visible above ground here. Proceeding eastward from the berm, the residence has a set of glass doors, two window openings (each fitted with three casement windows), a door with sidelight, a polygonal bay window, another set of three casement windows, and another door near the western edge of the attached garage. The exterior of this portion of the residence has a brick veneer below stained wooden siding, with piers of brick veneer extending vertically to the soffit on either side of each doorway.

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The attached, three-bay garage is a later addition to the house. The garage portion of the house has a matching roof form, but the southern elevation of the garage extends slightly beyond that of the main body of the house, requiring a slightly larger roof here. As with the main body of the house, the attached garage is clad with stained wooden siding above brick veneer, but no vertical piers of brick veneer are present.

A wooden, polygonal gazebo is located a short distance to the southwest of the house. This twelve-sided gazebo is enclosed with large windows and screens.

To the west of the house and gazebo is a metal-clad equipment shed. The southern elevation is open, showing the eight vehicle bays present within the frame equipment shed.

A group of three workshops are located to the southwest of the house and equipment shed. Of these three front-gable workshops, the eastern-most is the largest. The gabled northern elevation is clad with stained wooden siding. A gabled porch roof telescopes from the northern elevation, sheltering a rolling garage door at the center flanked by a pedestrian door to the east and a sliding window to the west. The eastern elevation has seven similar sliding windows and a pedestrian door. With the exception of the door, these openings are spaced evenly across the eastern elevation. The remainder of the building, as viewed from the public right-of-way, is clad with metal, including the roof.

The other two workshop buildings are roughly the same size, although the middle building has an open-air, lean-to shed roof on its western elevation. These two workshops are clad with metal and have metal roofs.

A detached automobile garage is located just north of the three workshops. This one-story, front-gable, frame garage is clad with wooden clapboard siding and has a rolling door in its gabled eastern elevation.

A painted log outbuilding is located just to the east of the three workshops. This one-story building has a shallow-pitch gambrel roof clad with asphalt shingles. The center ridge of the roof is oriented on an east-west axis. A plywood door is located in the western elevation, facing the workshops, and a wooden four-pane window is mounted in the northern elevation. A 'Texaco' pedestal sign is mounted to a ground foundation just north of the building. Two open-sided carport structures are located to the south of this log outbuilding—one is a wood-frame structure with an asphalt shingle roof, the other is a prefabricated, metal-frame structure with a metal roof.

A small, front-gambrel shed is located a short distance north of the detached automobile garage, to the west of the metal-clad equipment shed. This small shed has an asphalt shingle roof and metal panel siding. A door is flanked by a small one-over-one vinyl window to either side in the western elevation.

A handful of small, carport buildings are located south of the three workshops, but these buildings are largely hidden from view and were not investigated.



**Plate 42.** Equipment Shed, House, and Gazebo, looking northeast.



**Plate 43.** Workshops, looking southwest.



**Plate 44.** Log Outbuilding and Carports, looking southeast.

*NRHP Eligibility: Not Eligible*

This property is recommended *Not Eligible* for the NRHP. Historic aerial images clearly show that none of these buildings were present here prior to 1981. It is possible that the painted log outbuilding is older and was re-located to its current site; however, this is unknown and any such move has likely diminished its integrity of location. These buildings are not notable examples of late-twentieth century architecture in Pine County. They do not display the distinctive characteristics of a type of building design that is rare or innovative in the region or state, nor are they examples of an important common type. As a result, these buildings are not eligible for the NRHP under Criterion C. This property does not have an association with a significant person; therefore, it is not eligible for the NRHP under Criterion B. Finally, the property does not have an association significant to the history of Pine County, and is therefore not eligible under Criterion A.

*Effects Assessment: Not Applicable*

**Field Site 20**

PN-KRV-00031

Quarry

Circa 1930/1960

78865 County Highway 61

Willow River, MN 55795

46.301919, -92.851925



**Plate 45.** House, looking west

*Description*

This 72.73-acre property is the site of a sand and gravel quarry and cement manufacturing facility. Buildings here include a residence that now serves as an office, a large cement manufacturing building, and two workshops.

Historic aerial photography taken in 1952 shows a very small-scale quarrying operation north of and adjacent to the house site, almost entirely on the north side of present-day Gravel Drive. It appears that the property was primarily residential in use at that time. The quarry area expanded at a steady rate through subsequent years, as documented through later aerial photography. That expansion first occurred north of the house site (north and south of Gravel Drive) by the 1970s, during which time it appears that the property was no longer primarily in residential use. During subsequent aerial views, beginning in 1991, areas west of the house site, and ultimately large areas southwest of the house site were utilized as quarry sites. The company that currently operates here was incorporated in 2008.

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The one-story, frame house present has a central, front-gable core, situated between a side-gable wing that extends to the south and a lean-to addition that extends to the north. That lean-to addition has its own attached garage addition that extends to the east. It is unclear if the central portion of the house pre-dates the southern wing (as suggested by the 1930 property assessor construction date) or if these two sections represent the building's original form—a form more typical of similar houses built circa 1960. The house has an asphalt shingle roof and metal siding. One-over-one and picture windows are present.

The largest building on the property is the cement manufacturing building. This roughly two-story, front-gable, metal-clad building has a pair of large, rolling, vehicular doors, suitable for tall trucks, at the building's gabled north end and an integral, metal 'cement silo' at the building's south end. The eastern elevation includes four additional large rolling doors as well as one smaller rolling door of a scale typically found on residential garages. The roof is covered with metal panels.

A roughly one-and-one-half story, front-gable workshop is located east of the cement manufacturing building. This metal-clad building has a pedestrian door and horizontal-muntin, two-over-two window fitted in the center of its gabled northern elevation. A lean-to addition on the building's east side has an open end at the northern elevation. A fully enclosed lean-to addition on the west side has a rolling garage door. An interior, cement block chimney extends above the central roof ridge just south of the building's northern envelope. The roof is covered with metal panels.

Another roughly one-and-a-half story, front-gable workshop, similar in size and scale to that previously described, is located near the southwest corner of the cement manufacturing building. As with the other buildings, this one is metal-clad and has a metal roof. A rolling garage door is located in the building's gabled eastern façade.



**Plate 46.** Workshop and Cement Manufacturing Hall, looking southwest.

*NRHP Eligibility: Not Eligible*

This property is recommended *Not Eligible* for the NRHP. None of the buildings present are not notable examples of late-twentieth century architecture in Pine County, nor is the quarry an important part (or sufficiently old part) of Pine County or Kettle River Township. Only a very small portion of the quarry, north of the house, is of sufficient age for NRHP eligibility and listing. The quarry as a whole and the associated buildings do not display the distinctive characteristics of a type of building design that is rare or innovative in the region or state, nor are they examples of an important common type. As a result, the property and buildings are not eligible for the NRHP under Criterion C. This property does not have an association with a significant person; therefore, it is not eligible for the NRHP under Criterion B. Finally, the property does not have an association significant to the history of Pine County or Kettle River Township, and is therefore not eligible under Criterion A.

*Effects Assessment: Not Applicable*

**Field Site 21**

PN-KRV-00032

Farmstead

Circa 1930

79327 Bonk Road

Willow River, MN 55795

46.305268, -92.852888



**Plate 47.** House and Barn, looking northwest.

*Description*

This 40-acre property includes the ruin of a small residence and a nearly ruined gambrel barn. The roof of the one-story, frame house has partially collapsed, and a chimney atop that roof is approaching incipient collapse. The exterior of the house is covered with asphalt siding that approximates the appearance of brickwork. Windows and doors have been removed from their associated openings.

The one-and-one-half story, gambrel-roof barn remains largely intact, if not structurally sound, despite the absence of significant sections of its exterior wooden siding. Where siding remains, traces of red paint can be seen. The metal roof is well-weathered.

*NRHP Eligibility: Not Eligible*

This property is recommended *Not Eligible* for the NRHP. This farmstead remains is also not a notable example of a twentieth century farmstead in Pine County, it does not display the distinctive characteristics of a type of farm design that is rare or innovative in the region or state, nor is it an

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example of an important common type; therefore, it is not eligible for the NRHP under Criterion C. This property does not have an association with a significant person; therefore, it is not eligible for the NRHP under Criterion B. Finally, the property does not have an association significant to the history of Pine County, and is therefore not eligible under Criterion A.

*Effects Assessment: Not Applicable*

**Field Site 22**

Trunk Highway 61

XX-ROD-00019/XX-ROD-00012

Circa 1921-1928; Circa 1924-1928

County Highway 61 between Swanson Road and Long Lake Road

Willow River, MN 55795

46.289665, -92.851264



**Plate 48.** Trunk Highway 61, looking north from FS11.

*Description*

Trunk Highway 61/County Highway 61 between Swanson and Long Lake Roads is a two-lane asphalt road that runs approximately 2.58 mi in a northeasterly direction between the communities of Rutledge and Willow River. It is 24 feet wide with six feet wide shoulders. Turn lanes have been added at its intersections with Swanson Road and Long Lake Road. Additionally, the highway has been widened near communities and turn lanes added within these communities and at intersections with county roads. The land surrounding the highway is primarily forested or agricultural. Once I-35 was completed in 1976, MnDOT decommissioned Trunk Highway 61 from Wyoming to Duluth. The original highway alignment is now part of County Roads 18, 23 and 61 in Pine County.<sup>55</sup>

<sup>55</sup> Mead & Hunt, Inc. Trunk Highway 61 – Wyoming to Duluth Minnesota Architecture/History Multiple Property Inventory Form, 2018.



**Plate 49.** Intersection of Trunk Highway 61 and Long Lake Road, looking north by northeast.



**Plate 50.** Intersection of Trunk Highway 61 and Long Lake Road, looking south by southwest.



**Plate 51.** Trunk Highway 61 and Long Lake Road, looking north near FS14.



**Plate 52.** Trunk Highway 61 and Long Lake Road, looking south near 76388 County Highway 61.



**Plate 53.** Trunk Highway 61 and Long Lake Road, looking north near 74826 County Highway 61.



**Plate 54.** Trunk Highway 61 and Long Lake Road, looking south near 74826 County Highway 61.

*NRHP Eligibility: Not Eligible*

Trunk Highway 61 was previously evaluated in 2013 as part of the *Evaluation Report and Historic Context: Minnesota Bridges, 1955-1970 (including Trunk Highway Evaluations)* and as part of the *Minnesota Trunk Highways (1921-1954): Historic Context and National Register Evaluation and Integrity Considerations* and as part of the *Minnesota Trunk Highways (1955-1970): Historic Context and National Register Evaluation and Integrity Considerations*, both completed in 2018. A Phase II Evaluation of the entire line (XX-ROD-006) was completed as part of the *Minnesota Trunk Highways* historic context. The Minnesota Department of Highways (MHD) provided concrete surfacing on its most heavily traveled routes, and it was not until 1928 that Minnesota's Trunk Highway System was hard-surfaced. Beginning in the early 1920s, the MHD improved the most heavily traveled portions of the highway with an 18-foot-wide concrete road. Between 1924 and 1928 the MHD improved this 134-mile stretch of TH 61 between Wyoming and Duluth was improved including the portion of the highway in Pine County.<sup>56</sup> The trunk line within Pine County was given two historic inventory numbers, XX-ROD-00019 for the segment from La Crescent to Duluth and XX-ROD-00012 for the portion that was decommissioned.

While this section of TH 61 from Wyoming to Duluth was found to possess significance under Criterion C in the area of Engineering because it represents an important variation on construction practices through the early use of concrete pavement, it no longer retains sufficient integrity due to asphalt resurfacing and widening to its current 24-ft width. It was recommended Not Eligible for listing in the NRHP in 2018 with MnSHPO concurrence, also in 2018. Stantec agrees with this assessment and has no new information to provide concerning its NRHP eligibility.

*Effects Assessment: Not Applicable*

<sup>56</sup> Ibid.

**Field Site 23**

Willard Munger State Trail/Lake Superior and Mississippi Railroad

XX-RRD-036

Circa 1868-1870 and Circa 1985 (trail)

Willard Munger State Trail between Swanson and Long Lake Roads

Willow River, MN 55795

46.289515, -92.851608



**Plate 55.** Willard Munger Trail, looking north-northeast from the south end of the APE.

*Description:*

The Willard Munger State Trail is located along the former railroad grade of the Lake Superior and Mississippi Railroad Company (LS&M) that was constructed between Duluth and St. Paul from 1868-1870. It runs roughly parallel to TL 61, traveling through Duluth, Riverside, Carlton, Mahtowa, Otter Creek, Barnam, Moose Creek, Willow River, Rutledge, Finlayson, Hinckley, Pine City, Rush City, Harris, North Branch, Wyoming, Forest Lake, Hugo, White Bear Lake, Gloster and St. Paul.

The portion of the LS&M railroad that is now the Willard Munger State Trail runs from Hinckley to Duluth. The railroad was a single set of tracks. The ballast, ties and rails have been removed and rail bed has been paved. The railroad corridor passes through primarily rural areas and is primarily lined by trees north of Hinckley before entering the Duluth metropolitan area. As the trail passes through the APE, the northern two-thirds run between County Highway and Bonk Road. The southern third runs parallel to County Highway 61 before crossing the Kettle River just south of the APE. The right-of-way is approximately 30 ft wide with the asphalt path approximately 5 ft wide. The path is laid on a shallow

berm, with ditches filled with grasses on either side of the tracks. Scattered trees line both sides of the trail, interspersed with agricultural fields in the southern portion and wooded areas and development in the northern portion. Several gravel access roads lead from County Highway 61 to Bonk Road along the path within the APE. An additional gravel path at the southern end of the APE leads to the intersection of County Highway 61 and Swanson Road. Stop signs are located along the path at the intersection of the trail and Long Lake Road and at the paved access to Bonk Road.

As noted in the Historic Context of this report, the Minnesota Department of Natural Resources opened the Hinkley Fire Trail in 1985. When it first opened, the Hinkley Fire Trail was 32 miles long and included this portion in Pine County. The trail was renamed the Willard Munger State Trail in 1988.<sup>57</sup> Today, the trail spans over 70 miles and connects St. Paul and Duluth, just as the LS&M's Skally line did when trains traveled the route.



**Plate 56.** Willard Munger Trail from the middle of the APE, looking south.

<sup>57</sup> No author, "Munger Trail," *Star Tribune*, April 4, 1988, page 4, accessed November 2023 online at <https://www.newspapers.com/image/195227042/>.



**Plate 57.** Willard Munger Trail from the middle of the APE, looking north by northeast.



**Plate 58.** Willard Munger Trail from its intersection with Long Lake Road, looking south by southwest.



**Plate 59.** Project Area from the Willard Munger Trail near the southern end of the APE, looking east.



**Plate 60.** Project Area from the Willard Munger Trail near the northern end of the APE, looking east.

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### *NRHP Eligibility: Eligible*

According to the NRHP multiple property documentation form (MPDF) *Railroads in Minnesota, 1862-1956*, the most important of the seven aspects of integrity is integrity of location.<sup>58</sup> While no longer for railroad traffic, the Willard Munger State Trail/LS&M Railroad corridor retains integrity of location as a pedestrian trail. It also retains integrity of feeling and association because of its continued use for transportation. The Willard Munger State Trail corridor was previously determined eligible for listing in the NRHP under Criterion A within the statewide historical contexts *Railroads and Agricultural Development (1870-1940)* and *Railroad Development in Minnesota (1862-1956)*. As the first railroad to connect the Twin Cities to the Great Lakes port of Duluth, it created a cheaper route to the east coast and beyond. It has statewide significance in the areas of industry, transportation, commerce and agriculture. MnSHPO concurred with this assessment in 2009.<sup>59</sup> Stantec agrees with this recommendation and has no new information to add to this assessment.

### *Effects Assessment: No Adverse Effect*

The proposed project will have No Adverse Effect on the railroad corridor, due to its location at the western edge of the APE. The majority of the project area is located behind developed and/or wooded parcels, which further obscure the view from the corridor. Furthermore, in the locations where the project are is near the corridor, the line-of-sight is mostly obscured by the large amount of vegetation along the corridor in these locations. Due to this obscuring vegetation, the construction of the proposed project will not affect the railroad's setting, association or feeling as a transportation corridor.

<sup>58</sup> Andrew Schmidt, Andrea Vermeer and Betsy Bradley, *Railroads in Minnesota, 1862-1956* National Register of Historic Places Multiple Property Documentation Form, 2013.

<sup>59</sup> Miranda Van Fleet, *Willard Munger State Trail Architecture/History Inventory Form*, 2014.

**Field Site 24**

Bridge 58809 CSAH 33 over I35

PN-KRV-00006

Circa 1964/1965

Swanson Road over I35

Askov, MN 55704

46.259154, -92.825268



**Plate 61.** Bridge 58809, looking northwest.

*Description*

Bridge 58809 is a four-span, prestressed concrete beam bridge that carries Swanson Road over I35. The four concrete beams are set upon concrete abutments and supported by three concrete piles, one at the center of the bridge and two at either end, near the abutments. A concrete embankment is located beneath the approach spans on either end of the bridge. The decking is constructed of cast-in-place concrete that carries the roadway with concrete parapet walls lining the north and south sides of the deck. The entire length of the bridge is 209.5 ft, with the main span comprising 67 ft. The deck is 33.4 ft wide. The bridge was constructed in 1964 and opened to traffic on January 1, 1965.<sup>60</sup>

<sup>60</sup> Bridge 58809 CSAH 33 over I35 Minnesota Structure Inventory Report, May 17, 2022.



**Plate 62.** Bridge 58809 from Swanson Road, looking west-northwest.



**Plate 63.** Bridge 58809 superstructure, looking west-northwest.

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### *NRHP Eligibility: Not Eligible*

Bridge 58809 CSAH over I35 was previously recorded on an unknown date and its current NRHP status is Undetermined. However, Stantec recommends that the bridge is *Not Eligible* for the NRHP. It is not a notable example of a mid-twentieth century bridge in Pine County. It does not display the distinctive characteristics of a type of bridge design that is rare or innovative in the region or state, nor is it an example of an important common type; therefore, it is not eligible for the NRHP under Criterion C. This bridge does not have an association with a significant person; therefore, it is not eligible for the NRHP under Criterion B. Finally, the bridge does not have an association significant to the history of Pine County, and is therefore not eligible under Criterion A.

### *Effects Assessment: Not Applicable*

# 5

## SUMMARY AND RECOMMENDATIONS

Based on the historic context developed and the field survey results, Stantec recommends that one of the twenty-four properties, the Willard Munger State Trail (FS 23/XX-RRD-00036), inventoried within the APE for this undertaking has sufficient historic integrity or significance to be eligible for listing in the NRHP. There are no recommended NRHP districts within the APE.

A **No Adverse Effect** finding is recommended for this project, due to the location of the Willard Munger State Trail (FS 23/XX-RRD-00036) at the western edge of the APE and the large amount of vegetation along the trail/railroad corridor. These results are further detailed in the Site Description and Results Section of this report.

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**Cultural Resources Desktop Assessment  
of Iron Pine Solar Project, Pine County,  
Minnesota**

January 17, 2024

Prepared for:  
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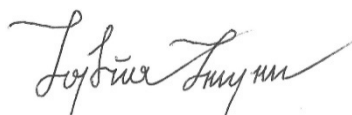
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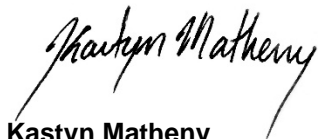
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## Executive Summary

On behalf of Iron Pine Solar Power, LLC (Iron Pine), Stantec Consulting Services Inc. (Stantec) completed a cultural resource desktop assessment for approximately 2,288 acres associated with the proposed Iron Pine Solar Project (Project) in Pine County, Minnesota. The proposed Project involves the construction and operation of a photovoltaic (PV) electricity-generating facility and associated infrastructure on approximately 2,288 acres of land for a total of 325 megawatts (MW) alternating current (AC). The associated facilities include a Project substation, a short generator tie in line to connect the solar facility to the Project substation, access roads, underground electrical collection system, and potentially an operations and maintenance (O&M) building. This energy generation facility meets the Minnesota Public Utilities Commission (MPUC) definition of a large electric power generating plant and a high voltage transmission line (HVTL), thereby necessitating MPUC permitting. The Project area is defined as the entire proposed solar site that comprises 28 contiguous tax parcels. The current land cover consists of cultivated croplands, wood lots, emergent herbaceous wetlands, and rural residential development. The Project is located in a rural agricultural area in Kettle River Township in Pine County, Minnesota. The Project area is located in Sections 13, 14, 15, 22, 23, 24, 25, 26, and 27 of Township 44 North, Range 20 West.

This desktop assessment was conducted for Iron Pine in preparation for MPUC Site and Route Permit applications, and to support infrastructure siting. The cultural resources assessment followed federal and state guidelines for conducting cultural resources investigations, including the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation [48 Federal Register 44716-44740] (National Park Service [NPS] 1983), Minnesota State Historic Preservation Office (MnSHPO) Manual for Archaeological Projects in Minnesota (Anfinson 2005), and Guidelines for History/Architecture Projects in Minnesota (MnSHPO 2005).

As a result of this desktop assessment, Stantec identified 300 acres with medium to high potential for unrecorded archaeological sites, and Phase I archaeological field investigations are recommended for these areas. Phase I historic architecture investigations are recommended to assess the potential for visual impacts.



# 1 Introduction

Stantec Consulting Services Inc. (Stantec) conducted a cultural resources desktop assessment of the proposed Iron Pine Solar Project (Project) in Pine County, Minnesota, on behalf of Iron Pine Solar Power, LLC (Iron Pine). The proposed Project involves the construction and operation of a photovoltaic (PV) electricity-generating facility and associated infrastructure on approximately 2,288 acres of land for a total of 325 megawatts (MW) alternating current (AC). The associated facilities include a Project collector substation, switchyard, a short generator tie in line to connect the solar facility to the switchyard, access roads, underground electrical collection system, and an operations and maintenance (O&M) building. This energy generation facility meets the definition of the MPUC large electric power generating plant and a high voltage transmission line (HVTL), thereby necessitating MPUC permitting. Current plans locate the PV electric-generating facilities covering most of the project area, excepting areas in the southern Project area that are wooded, wetland, or used for the substation and tie-in. The substation and tie-in is planned. The Project area is displayed in Figure 1 of Appendix A.

The Project area is roughly located between County Highway 61 on the west to U.S. Interstate Highway 35 on the east and between Swanson Road on the south to Gravel Road/Countryside Loop on the north. A small part of the Project area also extends from the east side of U.S. Interstate Highway 35 to County Road 152, north of Swanson Road and south of an unnamed creek in Section 25 of Township 44 North, Range 20 West. The Project boundary generally follows private property lines, section lines, and roads. The Project area is primarily rural with agricultural fields, and with forested tracts present along streams, drainages, and wetlands.

Records maintained as part of the Minnesota Office of State Archaeologist (MnOSA) database were examined using the MnOSA online portal to identify archaeological sites and historic structures. These online databases and files were examined, and information was reviewed on all sites or structures located within the Project area and a surrounding 1-mile study area. Background research also focused on historical maps and relevant sources of local historical information, which were examined to provide a historical context for the Project area and to identify the potential for historic period archaeological sites or other cultural features within the Project area. Review of existing prehistoric Native American cultural histories for East Central Minnesota was used to determine the most likely locations for prehistoric archaeological sites.

Currently the State of Minnesota has no requirements for consideration of impacts to cultural resources resulting from privately (i.e., non-public) funded projects on privately owned lands. With the current lack of state or federal requirements for cultural resources review, this cultural resource assessment was conducted on behalf of the client to support project planning. The cultural resources assessment followed federal and state guidelines for conducting cultural resources investigations, including the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* [48 Federal Register 44716-44740] (National Park Service [NPS] 1983), Minnesota State Historic Preservation Office (MnSHPO) Manual for Archaeological Projects in Minnesota (Anfinson 2005), and Guidelines for History/Architecture Projects in Minnesota (MnSHPO 2005).



**1 Introduction**

Archaeologists Joshua Jensen and Rikka Bakken oversaw the desktop assessment and high probability modeling. Joshua Jensen and Rikka Bakken authored the report. GIS Analyst Jordan Marty prepared the report graphics and project maps. Copies of all historical research materials are on file at Stantec's offices in Green Bay, Wisconsin.



## 2 Physical and Environmental Context

### 2.1 Introduction

The Project area comprises approximately 2,288 acres in Pine County, Minnesota and is situated on a flat to gently rolling plateau. The Project area is primarily rural with industrial row-crop agricultural fields, with wooded areas in the northeast, southeast, and southwest. Tributaries of the Kettle River to the west drain the Project area, which drains into the St. Croix River to the south.

### 2.2 Topography and Hydrology

The Project area is located within the Environmental Protection Agency (EPA) Minnesota/Wisconsin Upland Till Plain Level 4 Ecoregion of the of the Northern Lakes and Forests Level 3 Ecoregion (EPA 2023). The Northern Lakes and Forest covers an area of east central Minnesota and consists of a mix of drumlins and peatlands in the western lobe, and northeast and south of Lake Mille Lacs. Till plains, sand plains, and moraines are prominent throughout the rest of the region (EPA 2023). A sharp change in elevation (~60m) occurs along a relatively straight line running from the northeast to the southwest of the region and may be associated with the Mid-Continent Rift. Natural vegetation is a mosaic of conifer bogs and swamps, aspen and birch, mixed white and red pine, hardwoods, and jack pine barrens. In 2013 the Ecoregion was recorded as being 40% deciduous forest, 40% wetland and 8% open water (EPA 2023).

The Project area is characteristic of the undulating or gently rolling plains found in Pine County (Simmons *et al.* 1941). The Project area contains multiple small areas of wetland and is drained by tributaries of the Kettle River located just west of the Project area. The Kettle River drains into the St Croix River which subsequently drains into the Mississippi River.

### 2.3 Geology and Soil Morphology

The Project area is composed of Hinckley Sandstone, Fond du Lac and Solar Church Formation bedrock geology units of the Keweenawan Supergroup, and Midcontinent Rift Intrusive Supersuite. These groups are made up of Mesoproterozoic age sandstone, siltstone, and local conglomerate (Jirsa et al. 2011). The soils in the Project area range from very poorly drained to excessively drained. Table 1 presents the soil types found within the Project area (NRCS 2023). A graphic depiction of the soil types across the Project area is included in Figure 4 of Appendix A. The vast majority (98.3%) of the soils in the Project area do not have data listed on the online Web Soil Survey (NRCS 2023). Soils along the outside edge of the Project area consist of a mix of well drained sands in the higher areas and peat soils in the lower areas. Of the nine identified soil types present within the Project area, none are eroded and four are hydric.



## 2.4 Natural Resources

Prior to Euro-American settlement, vegetation within the Project area consisted of a mixture of conifer bogs and swamps, aspen and birch, and mixed white and red pine (EPA 2023). Well established drainage networks are present within the Project area and would have supported a variety of fauna including bison, elk, and deer, as well as smaller mammals, fish, and migratory waterfowl, among others (MN State Archaeologist 2023).

**Table 1. Soils within the Project area.**

Symbol	Map Unit Name	Drainage Class	Description	Hydric
C153	Grayling sand, 0-7%	Excessively drained	No ponding, no flooding	Non-Hydric
C154	Grayling sand, 2-17%	Excessively drained	No ponding, no flooding	Non-Hydric
DA	Denied Access	N/A	N/A	N/A
NOTCOM	No Digital Data Available	N/A	N/A	N/A



### 3 Cultural Context

This section presents a general outline of precontact Native American and Historic period cultural development in Minnesota and the Midwest as well as Pine County. Limited archaeological work has been conducted in Pine County, and few written records exist documenting the area's prehistory. Archaeological research in East Central Minnesota (Central Lakes Coniferous Region) has largely been focused along major rivers and their tributaries. This section provides an interpretive framework for evaluating both Native American and Historic period archaeological resources that could be present within the Project area. Cultural contexts, as defined by the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (NPS 1983), provide the historic, social, and environmental background required to evaluate archaeological resources within the Project area.

#### 3.1 Native American Period

Minnesota's Native American prehistory is divided into four main periods: Paleoindian, Archaic, Woodland, and Late Prehistoric. These periods are based on changes in material culture, subsistence systems, and settlement systems.

##### 3.1.1 PRE-CLOVIS (PRE-12,000 BC)

The discovery of a fluted point in the ribs of an extinct species of bison in 1927 at Folsom, New Mexico, proved that ancient North Americans had immigrated to the New World during the Pleistocene epoch. It did not, however, establish the precise timing of the arrival of humans in the Americas, nor did it adequately resolve questions about the lifestyle of those societies (Meltzer 1988). Both the stratigraphic record and the radiocarbon assays from several sites, including the more recently excavated Cactus Hill site in Sussex County, Virginia, have yielded radiocarbon dates of 15,000 years ago from strata below levels containing fluted points (McAvoy and McAvoy 1997). The dating of footprints found in White Sands National Park (New Mexico) suggest possible dates as early as 23,000 to 21,000 years ago (Bennet *et al.* 2021). Most evidence for Pre-Clovis sites in the Americas is from coastal regions or offshore finds. There is little indisputable evidence for this occupation in Minnesota or the Midwest in general.

##### 3.1.2 PALEOINDIAN PERIOD (12,000–7500 BC)

The Paleoindian period reflects a pattern of cultural adaptation based on environmental conditions that marked the shift from the Late Pleistocene to the Early Holocene epoch. The climate was considerably wetter and colder than the present and hosted many large species of megafauna such as mammoths, caribou, and extinct species of bison (Schermer *et al.* 1995). In the Midwest, the period is characterized by glacial retreat and draining of glacial lakes. Native American groups entered what is now Minnesota at least 12,000 years ago. These early inhabitants, along with those that settled elsewhere in North America, were nomadic hunters. As nomadic hunters, they followed migrating animal herds into the region as the glaciers of the last Ice Age retreated.



### **3 Cultural Context**

A shared set of lithic tools found at sites throughout North America characterizes this period. The earliest identified culture, the Clovis complex, includes distinctive fluted projectile points of the same name. Clovis points have been found throughout North America and as far north as Nova Scotia. These large spear points have been found in direct association with the butchered bones of mammoths and extinct bison. Following the Clovis complex was the Folsom complex, which appears to have developed from the earlier Clovis complex. Other lithic tool types associated with the Paleoindian period are bifaces, blades, prepared blade cores, end scrapers, side scrapers, and gravers/perforators (J. Morrow 1996).

Traditional characterizations suggest that Paleoindian settlements consisted of small hunting camps associated with sources of high-quality lithic raw materials. Paleoindian groups consisted of hunters and collectors with a subsistence system based on hunting of wild animals and gathering of plants; no evidence for plant cultivation and/or animal husbandry exists in the archaeological record for this period. Paleoindian groups ranged across large hunting territories, following the seasons and availability of plants and animals. Radiocarbon analysis of organic materials from Clovis sites indicates that they generally date from between 9500 BC and 8500 BC (Hofman and Graham 1998).

The warming climate at the end of the Pleistocene and beginning of the Holocene drove most large mammals to extinction. The Dalton projectile point, the characteristic projectile point of the Dalton phase, began to replace the Clovis point throughout the Midwestern United States. Early dates for the Dalton phase are typically reported between 8000 BC and 8500 BC (Justice 2009) with end dates at 7900 BC (O'Brien and Wood 1998). Excavations from Dalton sites show that the subsistence system included more animal species than did that of Clovis groups. These species included forest, forest-edge, and streamside fauna such as deer, elk, turkey, coyote, eastern cottontail, raccoon, squirrel, plains pocket gopher, beaver, woodchuck, eastern wood rat, muskrat, trumpeter swan, crow, turtles, snakes, and fish (O'Brien and Wood 1998).

#### **3.1.3 ARCHAIC PERIOD (7500–500 BC)**

The Archaic period in Minnesota corresponds to the warming post-glacial environment of the region. Megafauna such as mammoths, horses, and camels become extinct, and the flora and fauna of this period begin to resemble the environment of today (Benchley et al. 1997). The large spearpoints of the Paleoindian period were eventually replaced by smaller dart points with stems and notches that were used with atlatls to hunt game. Other new types of artifacts, such as ground and pecked stone tools, grooved axes, and atlatl weights, also begin to appear in the artifact assemblages from this period. Atlatl weights were attached to throwing sticks to allow for better balance and increased throwing distance (T. Morrow 1996a).

Early and Middle Archaic sites are rare in the upper Midwest, and it appears that population levels stayed much the same as during the preceding Paleoindian period (Mason 2002). What little information is available is known through lithic types. Most information comes from surface and private collections with only a handful of excavations completed primarily in the northern portion of the state. The changing position of biomes and emerging continental drainage systems (Missouri, Mississippi, Hudson's Bay) make research of this period difficult (Benchley et al. 1997).



### **3 Cultural Context**

The environment of the Late Archaic period included a warmer and drier climate, a continued rise in sea level, the expansion of oak-hickory forests onto valley floors and hillsides, and the reappearance of grasslands (Alex 2000). Population expanded in the Midwest with more sites known for this portion of the Archaic period than the preceding middle and early portions. Settlement also appears to have been more sedentary. Subsistence data indicate that during this period a broader and more adaptable subsistence base was utilized, and this varied between ecological niches across the Midwest (Mason 2002). These groups “mapped unto” the landscape meaning that specific resources were predictable and were able to be exploited systematically (Simon 2009). The earliest evidence of plant domestication appeared during this period with the cultivation of goosefoot, squash, and little barley (Dunne and Green 1998; Schermer et al. 1995; Whittaker et al. 2000). Population expansion led to increased contact between different groups. Cultural changes associated with this contact include increased territoriality, differential expression of artifact styles, and development of trading networks. The increased population sizes and appearance of communal cemeteries suggest that groups were becoming more sedentary (Schermer et al. 1995).

The Project area lies within the Lake Forest Archaic area of Central Minnesota. The Lake Forest Archaic is not well researched and few excavated sites have well defined Archaic horizons. This region of the state would have had more surviving lakes and woodland than further west, though still mostly prairie. This would have led to more animal diversity and a broader exploitation of foodways in the Lake Forest Archaic than the focal bison hunting of the Prairie Archaic in western Minnesota (Minnesota State Archaeologist 2023).

#### **3.1.4 WOODLAND PERIOD (500 BC– AD 1000)**

While various aspects of Archaic culture continued (e.g., subsistence strategies and lithic technology), the Woodland period is noted for several major changes including introduction of the bow and arrow, pottery manufacture, corn and squash agriculture, and burial mound construction (Perry 1996). The Woodland period is further divided into early, middle, and late periods. The transition from Archaic to Early Woodland exhibits considerable overlap in projectile point styles and settlement patterns with different groups adapting new technologies at different times and forming regional identities (Benchley et al. 1997).

The Early Woodland period generally coincides with the Sub-Boreal climatic episode, which approximated modern conditions although attenuated cycles of climatic change have been identified. The landscape began to stabilize with a mix of prairie and small swaths of forest similar to that described by early Euro-American settlers (Perry 1996). Distinguishing between Late Archaic and Early Woodland sites can be difficult since the transition between the two was not abrupt. Over time, though, larger sites with earthen burial mounds appeared as did a more sedentary settlement system. Associated with these changes is the presence of ceramic vessels, constructed burial mounds, and intentional cultivation of several native plants such as gourds, goosefoot, and sunflower (Perry 1996; Mason 2002). Early Woodland pottery types in southern and eastern Minnesota include La Moille Thick and Fox Lake Trilled (Gibbon 1986).

The Early Woodland is one of the least known periods in the region (Heartfield, Price and Greene 1980). Evidence from other areas of the Midwest Region, including Illinois, indicates that the more sedentary lifestyle of the Early Woodland may have been caused by a variety of factors: increased population



### **3 Cultural Context**

pressure; diminishing reserves of previously utilized food sources; climatic changes; and a new reliance on domesticated crops. This period marked the beginning of the shift from hunting and gathering to food production.

The Middle Woodland period is not generally regarded as a distinct phase in Minnesota archaeology. The initial reason for dividing the Early from Middle Woodland was arbitrary in nature to accommodate a growing body of data, however the scarcity of sites in Minnesota never warranted this division (Benchley et al. 1997).

The Late Woodland period is characterized by a growing population, increased sedentism, and a heavier reliance on agricultural crops. These factors resulted in an increase of Late Woodland camp, village, and cemetery sites found throughout the Midwest (Mason 2002). Maize is known from Late Woodland sites in Minnesota such as the Nelson site (21BE0024) (Benchley et al. 1997). Maize became an important food source for many Midwestern groups by AD 800 but was likely known much earlier than AD 750 (O'Brien and Wood 1998). There are strong similarities to artifact types in Iowa, Wisconsin, and Minnesota including Nininger Cord-wrapped Stick Impressed and Bremer Triangular Punctate ceramics and small triangular lithics and scrapers. These lithics are presumed to be associated with the introduction of the bow and arrow during this time (Benchley et al. 1997).

#### **3.1.5 THE MISSISSIPPIAN PERIOD (AD 1000–HISTORIC CONTACT)**

Beginning around AD 1000, Middle Mississippian influences from the American Bottom began to appear in Minnesota groups. A direct link has never been established between these groups and the precise nature is not currently known (Benchley et al. 1997). Similar to the transition from Archaic to Early Woodland, the transition from Late Woodland to Mississippian periods exhibits considerable overlap in projectile point styles and settlement patterns with different groups adapting new technologies at different times. Some of the most recognizable changes included the shift to shell-tempered pottery and the appearance of fortified villages. Archaeologically, in the upper Midwest these changes form the basis of the Oneota complex.

The Oneota complex is known for its characteristic ceramics. Oneota ceramics typically consist of shell-tempered, globular jars with rounded bases, constricted necks and vertical or flaring rims. Often there are two or four loop or strap handles joining the upper and lower rim on opposing sides of the vessels. Lugs are present on some vessels that lack handles. Common pottery decorations include punctations, finger impressions, diagonal or vertical lines, triangles, chevrons, and scrolls and concentric circles. Common chipped stone tools include small triangular projectile points of the Madison type, end scrapers, side scrapers, graters, drills, bifaces, and a variety of flake tools. Oneota commonly produced artifacts from Catlinite, which was quarried in southwestern Minnesota and was prominent in the Oneota exchange network after about AD 1350 (Logan 1976; O'Brien and Wood 1998). Subsistence changes including a heavier reliance on maize and wild rice facilitated an energy surplus that produced major changes to social organization, gender roles, and settlement patterns (Benchley et al. 1997).

Oneota in southeastern Minnesota prominently include the Silvernale phase of the Red Wing locality. Red Wing phase sites are located between the confluence of the Cannon and Trimble Rivers with the Mississippi River. This area encompasses approximately 58 acres and 2,000 mounds/earthworks, eight



### 3 Cultural Context

village sites, and dozens of other secondary sites. Within the Red Wing locality is the distinctive Silvernale phase lasting from AD 1050–1300 and includes four major sites. These sites are situated on glacial outwash terraces and are surrounded by earthen mounds (Benchley et al. 1997). Oneota groups involve a large time span and several sub-groups, including Winnebago, Missouri, Ioway, Oto, Kansa, Osage, Quapaw, and Omaha-Ponca. As a result, there is little consistency in architecture from one site to another and architectural form is more reliant on the subgroup that populated the site at the time (O'Brien and Wood 1998).

## 3.2 Historic Period

While some Native American groups faced direct encounters with early European explorers by the early sixteenth century, most groups' first interactions involved "down the line" trade of European goods from other Native Americans and exposure to European diseases that decimated populations well before first contact. The Historic period, which varies in date across North America, is generally defined as beginning with initial European exploration and settlement of an area (Lass 1998; Neill and Williams 1881).

The French were the first European explorers in what is now Minnesota. Beginning in the mid-17th century, French traders traveled the Mississippi and Missouri Rivers from Canadian posts to trade with the Ioway, Oto, Eastern Dakota, Teton, Yanktonai, and Assiniboine groups (Benchley et al. 1997). In 1762, France transferred control of the area west of the Mississippi River to Spain prior to France's defeat by the British in the French and Indian War. Spain viewed this area as a buffer protecting its western silver mines from Britain. With little direct administration from Spain, French trading and settlement continued. In 1800, Spain and France negotiated a trade where Spain would receive Tuscany in Italy in exchange for French control over the Louisiana Territory, which included Minnesota (Tanner and Pinther 1987). In 1803, the United States purchased the Louisiana Territory from France for 15 million dollars. President Thomas Jefferson then tasked Meriwether Lewis and William Clark with leading an expedition up the Missouri River to its headwaters and then to the Pacific Ocean. Though the European ownership of the territory exchanged hands numerous times, the native peoples of the territory remained its primary inhabitants.

At the time of European contact in the mid-1600's, the Santee or Eastern Dakota comprised of four bands (Mdewakanton, Sisseton, Wahpeton, Whpakute) lived in what would become East Central Minnesota centered around Lake Mille Lacs. While other Lakota/Dakota peoples occupied the majority of what would become Minnesota (Minnesota State Archaeologist 2023).

In the mid-1700's Ojibwe peoples began to move west as changes in the fur trade causing conflict and warfare with the Dakota in East Central Minnesota. As a result, the Lakota/Dakota peoples were pushed west and south, giving up their homelands around Lake Mille Lacs (Minnesota State Archaeologist 2023).

The first Euro-American settlers in Minnesota entered in 1812. In 1819, on what is now Picnic Island on the south bank of the Minnesota River, Colonel Henry Leavenworth built a stockade fort called St. Peter's Cantonment or New Hope, where materials were assembled for the construction of Fort Snelling to be built on the bluff on the north bank. Long term settlement on the island was impossible due to annual flooding. Alexis Bailey constructed log buildings nearby to trade in furs in 1826. Considerable fur trade



### **3 Cultural Context**

occurred at Mendota due to the accessibility of the confluence. Henry Hastings Sibley, a partner in the American Fur Company, built the first stone house in Minnesota in 1836, overlooking Fort Snelling (Neill and Williams 1881). The Minnesota Territory was established in 1849 under Governor Alexander Ramsey (Benchley et al. 1997).

Continuing United States expansion into the then "Northwest Territory" led to government purchase of land from the Dakota people (the Mdewakanton, Wahpekute, Wahpeton, and Sisseton bands) via the Treaty of St. Peters, the Treaty of Traverse des Sioux, and the Treaty of Mendota in 1851 (Carley 1976; Meyer 1993). After the Minnesota Territory was established in 1849, the area that would become Pine County was first part of Chisago and Ramsey Counties, before being established as a county in 1856 (Minnesota Historical Society 2014).

Non-indigenous settlement in Pine County began in the 1850's. The county was named for the abundance of white and red pine, much of which was cut for lumber (Minnesota Historical Society 2014, Simmons et al. 1941). The primary railroads were the Great Northern Railroad, Soo Line Railroad, St. Paul & Duluth Railroad, and the Northern Pacific Railroad (MNGenWeb 2023). The County seat, Pine City, was named after both the county and the nearby Ojibwe village Chenqwatana. The county was rapidly settled for agriculture between 1890 and 1930. By the 1940's agricultural production of the county included pasture of alfalfa, wild and tame hay, and Aliske and Dutch white clover for dairy. Cattle were kept primarily for dairy. The primary crops grown in the county consisted of rutabaga, potatoes, corn, oats, and barley (Simmons et al. 1941) Today, Pine County remains primarily agricultural.

While there are no indigenous reservations in Pine County, tribal presence can still be found in the nearby Fond du Lac Band of Lake Superior Chippewa and the Mille Lacs Band of Ojibwe. Additionally, culturally significant places continue to hold significance to Tribal Nations found throughout Minnesota and surrounding states.



## 4 Research Design

### 4.1 Objectives

This cultural resource assessment is intended to serve as a planning tool for placement of Project facilities, access roads, and staging areas and to provide baseline information for any cultural resource field investigations that may be required as part of the Project permitting process. This assessment is intended to provide information on previously identified cultural resources located within the Project area. As part of this assessment an archaeological site predictive model has been developed to identify areas of high, moderate, and low cultural archaeological site potential within the Project area. A review of available information concerning architectural surveys was also included in this assessment to identify historic structures within the Project area, and to determine if any cultural resources within the Project area have been listed in the National Register of Historic Places (NRHP).

While a desktop cultural resources assessment does not satisfy federal requirements under Section 106 of the National Historic Preservation Act (NHPA) for a Phase I cultural resource identification survey, it does allow the Client to better understand the nature and scope of potential cultural resources within the Project area, such as the likelihood and nature of archaeological and above-ground historical structure resources. In the event that the Project requires federal permits, fieldwork investigations to identify and evaluate cultural resources (archaeological sites and above-ground, standing historical resources) within the Area of Potential Effects (APE) for permitted areas will likely be required by the federal permitting agencies and the State Historic Preservation Office (SHPO). The exact APE utilized for these investigations should be developed in coordination with the lead federal agency and the SHPO, but typically includes areas planned for federally permitted ground disturbing activities or within the viewshed of the Project area for standing historical resources.

### 4.2 State Regulations

In Minnesota, the SHPO in conjunction with the Minnesota Office of the State Archaeologist (OSA) provides technical assistance to identify, evaluate, designate, interpret, and protect Minnesota's historic above and below-ground resources. Section 106 of the NHPA requires consideration of historic preservation for projects with federal involvement (i.e., through a federal permit). Projects that fall under state jurisdiction (i.e., those projects that require a state permit, license, or authorization, non-federal public lands, or state funds) are also required to evaluate whether the project will involve any properties recorded in the Minnesota State Register of Historic Places and NRHP. The cultural resource work conducted for the Project complied with Minnesota Statutes, Chapter 138 (MS 138.31-138.42 & MS 138.661-138.669).



## **4 Research Design**

### **Minnesota Historic Sites Act (MS 138.661-138.669)**

The Minnesota Historic Sites Act was enacted in 1965 and established the State Register of Historic Places. This act further protects all State Historic sites and State Register sites by requiring state and local agencies to protect these properties.

### **Minnesota Field Archaeology Act (MS 138.31-138.42)**

The Minnesota Field Archaeology Act was enacted in 1963. It is intended to protect and preserve archaeological sites on public land by establishing the State Archaeologist, prohibiting unlicensed archaeology, and defining penalties.

### **Private Cemeteries Act (MS 307.08)**

In 1976, the Private Cemeteries Act was amended, and the State Archaeologist was given additional duties including the authentication and protection of unrecorded cemeteries and burials.

## **4.3 NRHP Evaluation Framework**

The significance of cultural resources (archaeological sites and above-ground, standing historical resources) can be based on various factors depending upon regulatory framework, but is typically based upon eligibility requirements for listing in the NRHP. The guidelines for NRHP eligibility are established by the National Park Service (36 CFR 60.1). Within this framework cultural resources can be eligible for inclusion in the NRHP if they meet the following criteria for evaluation (36 CFR 60.4):

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history.

Cultural resources must also retain sufficient integrity for listing in the NRHP. The seven aspects of integrity include: location, design, setting, materials, workmanship, feeling, and association. Typically, cultural resources must be a minimum of 50 years old for inclusion in the NRHP unless they have achieved historic significance of exceptional importance.

## **4.4 Desktop Cultural Resources Review**

The Minnesota OSA database and MnSHPO files were examined in May of 2023 using the online OSA portal available to qualified researchers and by the SHPO online data request. Information was obtained on archaeological sites within the Project area as well as within a 1-mile study area surrounding the



**4 Research Design**

Project area. The NRHP database was also reviewed to determine whether any NRHP-listed historic properties were present within the Project area and study area. Other background research focused on relevant sources of local historical information and General Land Office (GLO) plats and historical maps available online, which were examined to provide a historical context for the Project area and study area. Online sources for topics such as soils, hydrology, physiography, and the natural environment were also consulted. Finally, a high probability model of the Project area was created to determine high, medium, and low prehistoric cultural resources potential within the Project area.



## **5 Background Research Results**

### **5.1 National Historic Landmark List**

There are no National Historic Landmarks within the Project area or within the 1-mile study area.

### **5.2 National Register of Historic Places**

There are no resources listed in or eligible for listing in the NRHP within the Project area. One previously listed structure, PN-KRV-001 (NRHP #98001107) is located within the study area but has subsequently been demolished. Commonly known as Bridge No. 1811, this structure was a Pratt through Truss steel bridge built in 1916 spanning County Road 33 over the Kettle River. This structure was entered into the NRHP in 1998 but was demolished in 2004. It was removed from the NRHP the following year.

### **5.3 Previously Recorded Archaeological Surveys**

No previous archaeological surveys have been recorded within the Project area, and two surveys have been recorded within the study area. The first survey was conducted as part of the Municipal-County Highway Archaeology Study which included many areas along roadways/proposed roadways with Minnesota. Within the 1-mile study area, one archaeological site (Site 21PN78) is recorded as part of the 1980 survey. In 2005 the Duluth Archaeological Center investigated areas along the west side Long Lake in Township 44N Range 22W Section 21 SE. Sites 21PN87, 21PN88, and 21PN89 were recorded. No archaeological report was located at the time of the desktop review, and information on the 2005 survey was collected from site forms. In summary, the Project area and most of the study area has not been surveyed.

**Table 2. Previously Recorded Archaeological Surveys within the 1-mile Study Area**

<b>Year</b>	<b>Author</b>	<b>Report Name</b>	<b>Report Number</b>
1980	Anfinson, Scott	1980 Annual Report Minnesota Municipal and County Highway Archaeological Reconnaissance Study	MCH-81-01
2005	Mulholland, S. L and R. Donahue	Phase I Archaeological Survey for the Long Lake Development, Pine County, Minnesota, Unpublished Report	N/A

### **5.4 Previously Recorded Archaeological Sites**

No previously recorded archaeological sites are listed within the proposed Project area, but ten sites are recorded within one mile of the proposed Project area. This low density of archaeological sites is likely



## 5 Background Research Results

due to the general lack of survey in this area. The known sites are 21PNz, 21PNaa, 21PNy, 21PN87, 21PN88, 21PN89, 21PN78, 21PNav, 21PNaf, and 21PNaw.

Sites 21PNz, 21PNaa, and 21PNy are all alpha sites located within/near the city of Willow River. An alpha site is a site for which the location has not been field verified by a qualified archaeologist. Site 21PNz, otherwise known as the Willow River Indian Village, is recorded in the SE ¼ of Section 3 and along the North edge of Section 10 in Township 44N Range 20W. Site 21PNaa, otherwise known as the Willow River Indian Burial Ground is recorded just to the east of Site 21PNz, in the SW ¼ of Section 2. Site 21PNy, otherwise known as the Willow River Mill, is recorded in the NW ¼ of the NW ¼ of the NW ¼ of Section 11 in Township 44N Range 20W.

Sites 21PN87, 21PN88, and 21PN89, otherwise known as Long Lake Sites 1, 2, and 3 respectively, are all located along the southeast shore of Long Lake, approximately 1.2 miles north of the city of Rutledge. These sites consist of small lithic scatters with no diagnostic materials recorded.

Site 21PN78, also known as the Borrow Pit site, is located on the east side of the Kettle River approximately 300 ft from the river and 1 mile north of the city of Rutledge. One projectile point was recovered from the surface of a plowed field. The site description also includes a small scatter of historic artifacts, likely dating to the 20th century and associated with a burned structure.

Sites 21PNav, 21PNaf, and 21PNaw are located south of the project area and are all listed as alpha sites. Site 21PNav, or the Kettle River site, is recorded as a ghost town located in the SW ¼ of the NE ¼ of Section 27 and the SE ¼ of the NW ¼ of Section 28 in Township 44N Range 22W. It is marked on the 1874 Andreas Atlas for Pine, Kanabec, Isanti and Chisago Counties. Site 21PNaf, also known as the Rutledge Lumber and Manufacturing Co. Site, is located within the city of Rutledge, Township 44N Range 33W Section 33 NW NE. Site 21PNaw is also known as the Point Douglas-St. Louis River Road. The roadway stretches from a point in Township 44N Range 22W Section 36 NE ¼ SW ¼ (approximately 2.5 miles southeast of Rutledge, north of Jackson Road and east of I-35) and travels south and southwest to a point in Township 39N Range 21W Section 13 NW NW (approximately 3 miles northeast of Pine City) for a distance of approximately 28 miles.

**Table 3. Previously Recorded Archaeological Sites within the 1-Mile Study Area**

Site Number	Site Type	Cultural Affiliation	Distance from Project Area
21PNz	Village/Settlement	Post-Contact, American Indian	1.00 mile
21PNaa	Burial	Post-Contact, American Indian	1.00 mile
21PNy	Saw Mill	Historic, EuroAmerican	0.85 mile
21PN87	Lithic Scatter	Unidentified Precontact	0.75 mile
21PN88	Isolated Find	Unidentified Precontact	0.76 mile
21PN89	Isolated Find	Unidentified Precontact	0.78 mile
21PN78	Isolated Find	Unidentified Precontact	0.09 mile
21PNav	Village/Settlement	Historic, Unidentified	0.06 mile
21PNaf	Manufacturing/Lumber	Historic, EuroAmerican	0.80 mile
21PNaw	Road	Historic, EuroAmerican	0.88 mile



## 5.5 Previously Recorded Architectural Structures

No previously recorded historic structures are recorded within the Project area, but seven historic structures are recorded within the study area. These are PN-KRV-002, PN-KRV-003, PN-RTC-001, PN-KRV-001, XX-ROD-006, XX-ROD-012, and XX-ROD-019. As previously stated, PN-KRV-001 was previously listed on the NRHP but the 1916 bridge was demolished in 2004 and removed from the register in 2005. PN-KRV-002, otherwise known as Bridge No. L2730 is a steel truss bridge which carries Township Rd 605 over the Kettle River. PN-KRV-003, otherwise known as the John Walta farmstead is located approximately 0.6 miles south of Hwy 43 along the east side of Weeping Willow Rd. PN-RTC-001, known as the Rutledge Village Hall is located on 2<sup>nd</sup> avenue in Rutledge. The exact location and status of the Rutledge Village Hall could not be verified during the desktop review. XX-ROD-006, XX-ROD-012, and XX-ROD-019 are all sections of the U.S. Trunk Highway 61, formally known as State Road/Trunk Highway 1 and 3.

**Table 4. Previously Recorded Historic Structures within the 1-Mile Study Area**

Structure Number	Present Name/Other Name	Function	Location	Eligibility Status
XX-ROD-006	U.S. Trunk Highway 61	Transportation/Highway	Outside Project Area	Unevaluated
XX-ROD-012	U.S. Trunk Highway 61	Transportation/Highway	Outside Project Area	Unevaluated
XX-ROD-019	U.S. Trunk Highway 61	Transportation/Highway	Outside Project Area	Unevaluated
PN-KRV-002	Bridge No. L2730	Transportation/Bridge	Outside Project Area	Unevaluated
PN-KRV-003	John Walta Farmstead	Agriculture/Farmstead	Outside Project Area	Unevaluated
PN-RTC001	Rutledge Village Hall	Government/City Hall	Outside Project Area	Unevaluated
PN-KRV-001	Bridge No. 1811	Transportation/Bridge	Outside Project Area	Previously Listed/Demolished

## 5.6 Previously Recorded Cemeteries

There are no previously identified cemetery/burial sites located within the Project area. Two cemetery/burial sites are located along the north edge of the study area. Site 21PNaa, the Willow River Indian Burial Ground, is recorded in Township 44N Range 22W Section 2 SW, within the present-day boundaries of Willow River. The St. Mary's Catholic Cemetery is located along the north side of Hwy 43 in Willow River (Township 44N Range 22W Section 2 SE SE SW and SW SW SE).



**Table 5. Previously Recorded Cemeteries/Burials within the 1-Mile Study Area**

Site Number	Name	Cultural Affiliation	Location
21PNaa	Willow River Indian Burial Ground	Historic, American Indian	Outside Project Area
N/A	St. Mary's Catholic Cemetery	Historic, Euro-American	Outside Project Area

## 5.7 Historic Map Review

Historic maps and aerial imagery were reviewed as part of the background research conducted for this assessment. Online map repositories, including the Library of Congress, the United States Geological Survey (USGS) Historical Topographic Map Explorer (ESRI 2023), University of Minnesota Libraries, and others were examined to identify historic maps depicting the Project area and the 1-mile study area. The earliest map found dates to 1863. One structure is depicted within the Project area on the 1916 plat. Unfortunately, very few maps were found that could aid in an understanding of the location of potentially early settlement within the Project area.

The 1863 GLO map indicates possible wetlands in the project area. The State of Minnesota Plat Book (UMN 1916) shows the location of one structure in the Project area, near the location of a second structure in a 1939 aerial photograph (UMN 2015). The two structures were located in the SE¼ of the SE¼ of Section 26 in Township 44 North, Range 20 West. These two structures are no longer standing and present potential for historic archaeological sites. The 1916 owner of the parcel is depicted as Ino Losch. The plat book also depicts parcel ownership, roads railways and rivers/creeks in the area. A tributary draining into the Kettle River can be seen in the southern part of the Project area.

Mid-to late-twentieth-century topographic maps dated 1953, 1961, and 1981 (USGS 2023) depict the Project area and the study area as predominantly rural, with farmsteads and outbuildings, schools, churches, with the communities of Willow River and Rutledge illustrated to the north and the west-southwest respectively. The Project area is depicted as predominately wetland with a creek draining the area southwest into the Kettle River.

## 5.8 Cultural Resources Probability Model

Upon completion of the cultural resources database review, Stantec developed a model of prehistoric Native American archaeological site probability. The archaeological site probability model utilized general tendencies of prehistoric Native American site locations and divided these tendencies into high, medium, and low probability areas. In short, large sites with dense concentrations of artifacts, as well as small sites with low densities of artifacts, tend to be located near sources of water such as streams, rivers, and marshes. In contrast, at greater distances from water, sites tend to be small with low densities of artifacts or isolated artifacts. Also factored into the site probability model is suitability of specific landforms for habitation. The parameters for the archaeological high, medium, and low probabilities are detailed below:

### High Probability



## **5 Background Research Results**

In general, areas considered to have a greater probability of containing intact and significant archaeological resources include, but are not limited to, undisturbed soils located:

- within 150 meters (m) [450 feet (ft)] of an existing or former water source of 40 acres or greater in extent;
- within 150 m (450 ft) of a former or existing perennial stream;
- within 150 m (450 ft) of a former or existing wetland;
- on topographically prominent landscape features;
- within 100 m (300 ft) of a previously reported site;
- within 100 m (300 ft) of an NRHP-eligible and/or listed architectural resource; or
- within 100 m (300 ft) of a former cemetery; or
- within 50 m (164 ft) of an existing cemetery.

### **Moderate Probability**

Areas considered to have moderate probability of containing archaeological resources include, but are not limited to, undisturbed soils located:

- within 100 m (300 ft) of a former or existing historic structure or feature (this includes historic railroads, historic roads, building or building foundation over 100 years old, and privies or on-site refuse deposits);
- within 100 m (300 ft) of a historical trail; or
- within 150 m (450 ft) of intermittent and identifiable remnant streams.

### **Low Probability**

Areas assessed as possessing relatively low probability of containing archaeological resources include:

- areas previously covered by archaeological survey;
- inundated areas;
- former or existing wetlands;
- areas with poorly drained soil;
- areas with clearly disturbed soils; or
- areas with a 20 degree or greater slope.

Due to the general lack of soil data and former wetland recorded on multiple maps, high probability areas were estimated using elevation and historic wetland data from MnModel. The results of the archaeological site probability modeling effort are depicted in Figure 6 of Appendix A. Approximately 300 acres of the approximately 2,288-acre Project area were defined as having a medium to high probability for archaeological sites. High probability areas for prehistoric Native American sites are situated on the higher areas surrounding what is hypothesized as being former wetland. The former wetland was estimated to cover a large portion of the Project area. The minimal data available limits the accuracy of the probability modeling and caution should be exercised when applying this model to estimate the likelihood of archaeological sites within the Project area.



## **6 Conclusions and Recommendations**

Overall, very little cultural resource investigations have been undertaken in the Project area or in the 1-mile study area. Review of the Minnesota OSA database identified no previously recorded archaeological sites within the Project area and ten archaeological sites (21PNz, 21PNaa, 21PNy, 21PN87, 21PN88, 21PN89, 21PN78, 21PNav, 21PNaf, and 21PNaw) located within the surrounding 1-mile study area. None of these sites have been evaluated for listing in the NRHP.

There are no previously identified cemetery/burial sites within the Project area, and two within the study area. These include the Willow River Indian Burial Ground (21PNaa) and the St. Mary's Catholic Cemetery, both located in Township 44N Range 22W Section 2.

Three previously recorded historic structures were identified within the Project area (XX-ROD-006, XX-ROD-012, and XX-ROD-019) and four additional historic structures were identified within the study area (PN-KRV-001, PN-KNV-002, PN-KNV-003, PN-RTC-001). Of these, PN-KRV-001 was previously listed in the NRHP but was demolished in 2004 and has since been removed. The other six structures have not been evaluated for listing in the NRHP.

A review of historic atlases, topographic maps, and aerial images provides information on the probable locations of historic archaeological sites, generally adjacent to existing roadways, and potential historic architectural resources. These maps illustrate two no longer standing structures within the Project area.

A probability model for archaeological sites was created for this Project and indicates that 300 acres have medium to high potential to yield archaeological sites.

A desktop cultural resources assessment does not satisfy federal requirements under Section 106 of the NHPA for a Phase I cultural resource identification survey. However, it does allow the Client to better understand the nature and scope of potential cultural resources within the Project area, such as the likelihood and nature of archaeological and above-ground historical structure resources. In the event that the Project requires federal permits, investigations to identify and evaluate cultural resources (archaeological sites and above-ground, standing historical resources) within the APE for permitted areas will likely be required by the federal permitting agencies and the SHPO. The exact APE utilized for these investigations should be developed in coordination with the lead federal agency and the SHPO, but typically include areas planned for federally permitted ground disturbing activities or within the viewshed of the Project area for standing historical resources.

Given the lack of previous cultural resource survey, minimal available soil information, and 300 acres of medium to high probability areas for archaeological sites, further field investigations are recommended to determine if any cultural resources will be impacted by the proposed Project.



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# APPENDICES



## Appendix A FIGURES



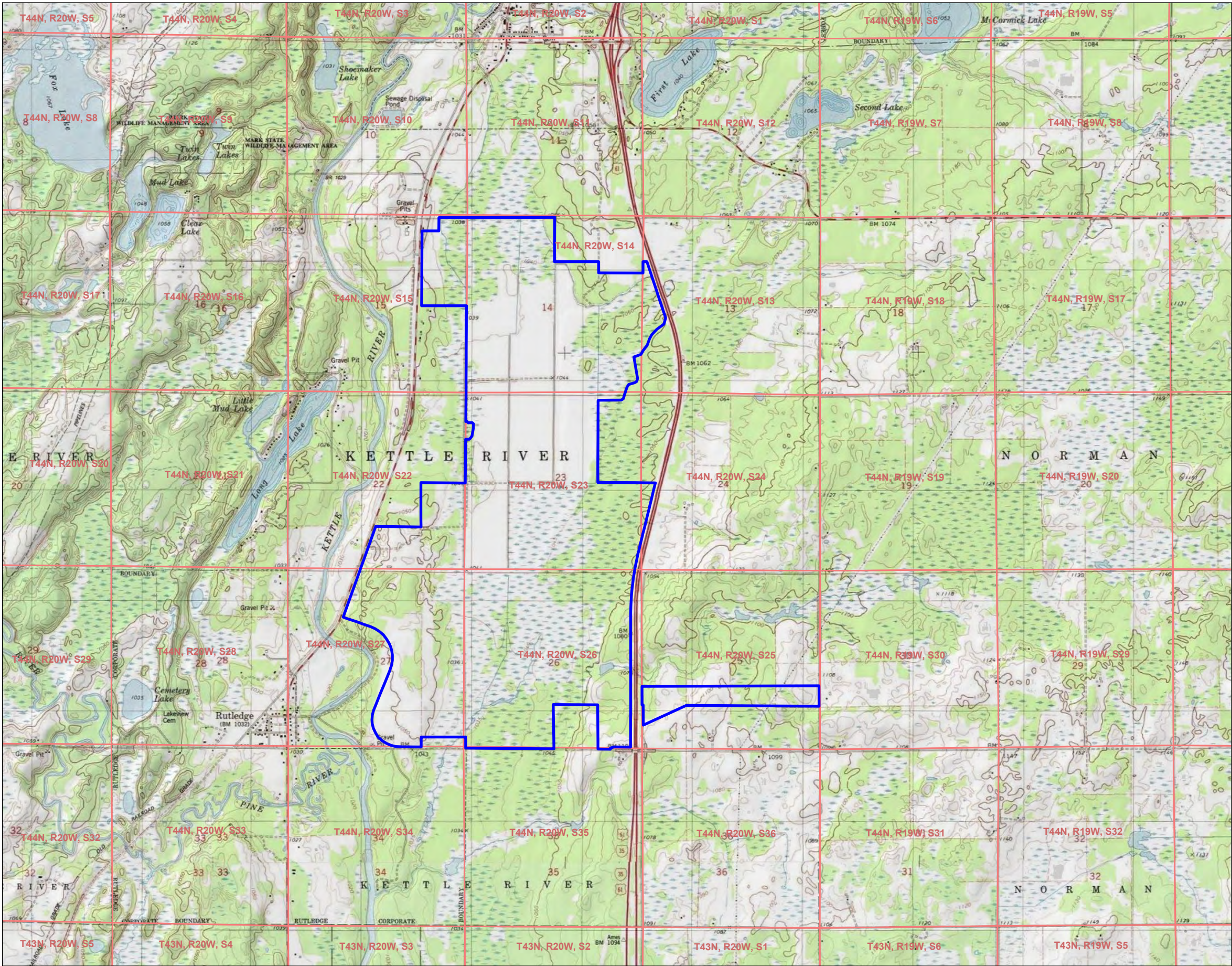


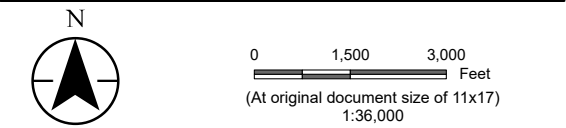
Figure No. 1

Title Project Location

Client/Project Iron Pine Solar Power, LLC 193708962

Project Location Kettle River Township, Pine County, Minnesota

Prepared by JM on 2023-06-02  
TR by JJ on 2023-09-18  
IR by JK on 2023-09-18



Legend

Property Boundary



Notes

1. Coordinate System: NAD 1983 UTM Zone 15N

2. Data Sources: Stantec, USGS, NADS, Pine County

3. Background: USGS 7.5' Topographic Quadrangles



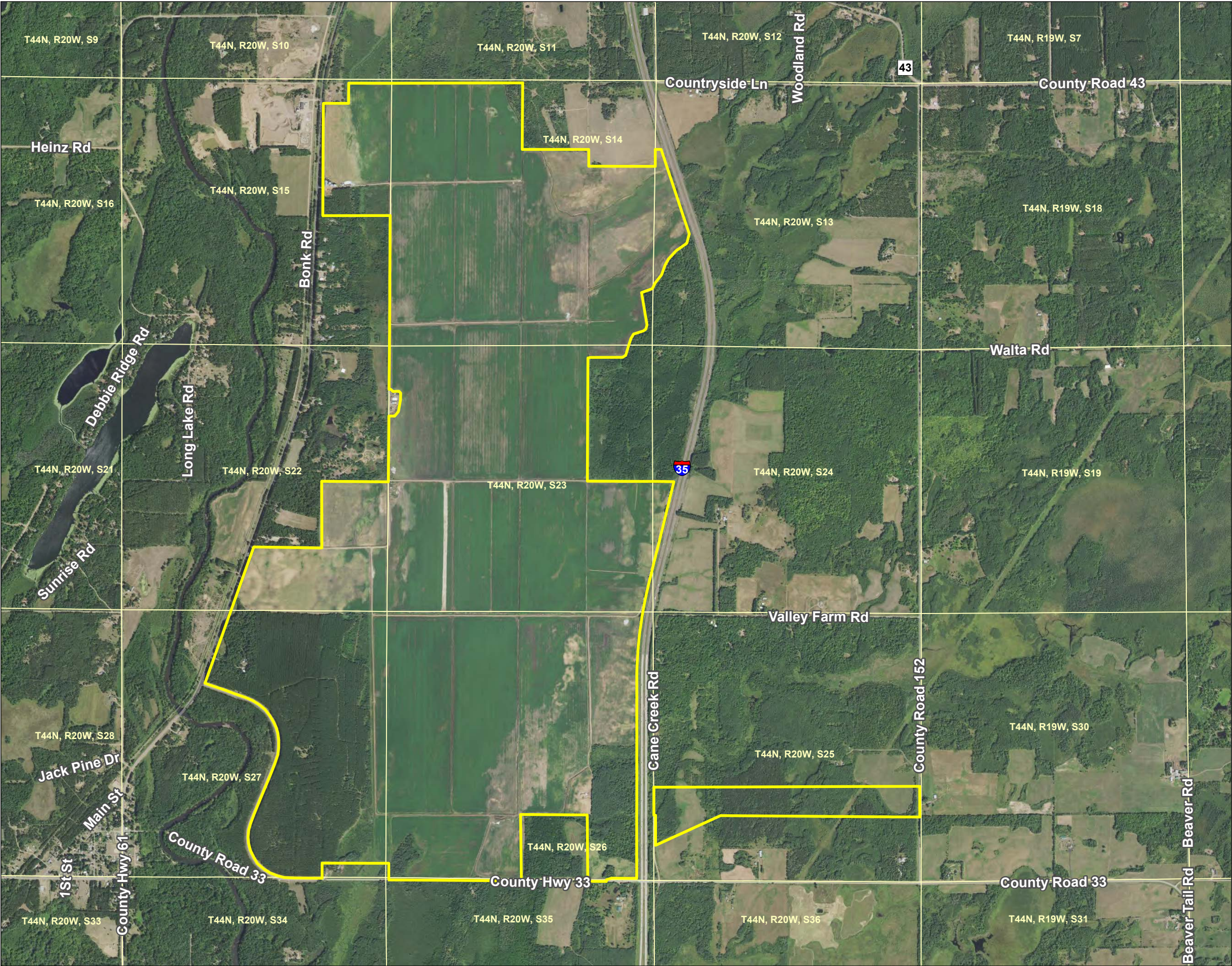
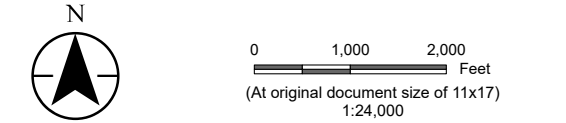
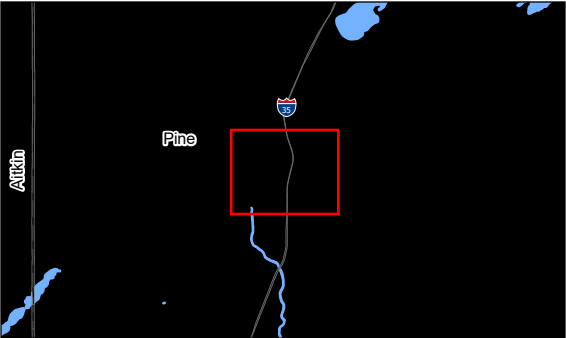


Figure No. 2  
Title Project Overview

Client/Project Iron Pine Solar Power, LLC 193708962  
Iron Pine Solar  
Cultural Resource Desktop Assessment  
Project Location Kettle River Township, Pine County, Minnesota Prepared by JM on 2023-06-02  
TR by JJ on 2023-09-18  
IR by JK on 2023-09-18



Legend  
Property Boundary



Notes  
1. Coordinate System: NAD 1983 UTM Zone 15N  
2. Data Sources: Stantec, USGS, NADS, Pine County  
3. Background: NAIP 2021



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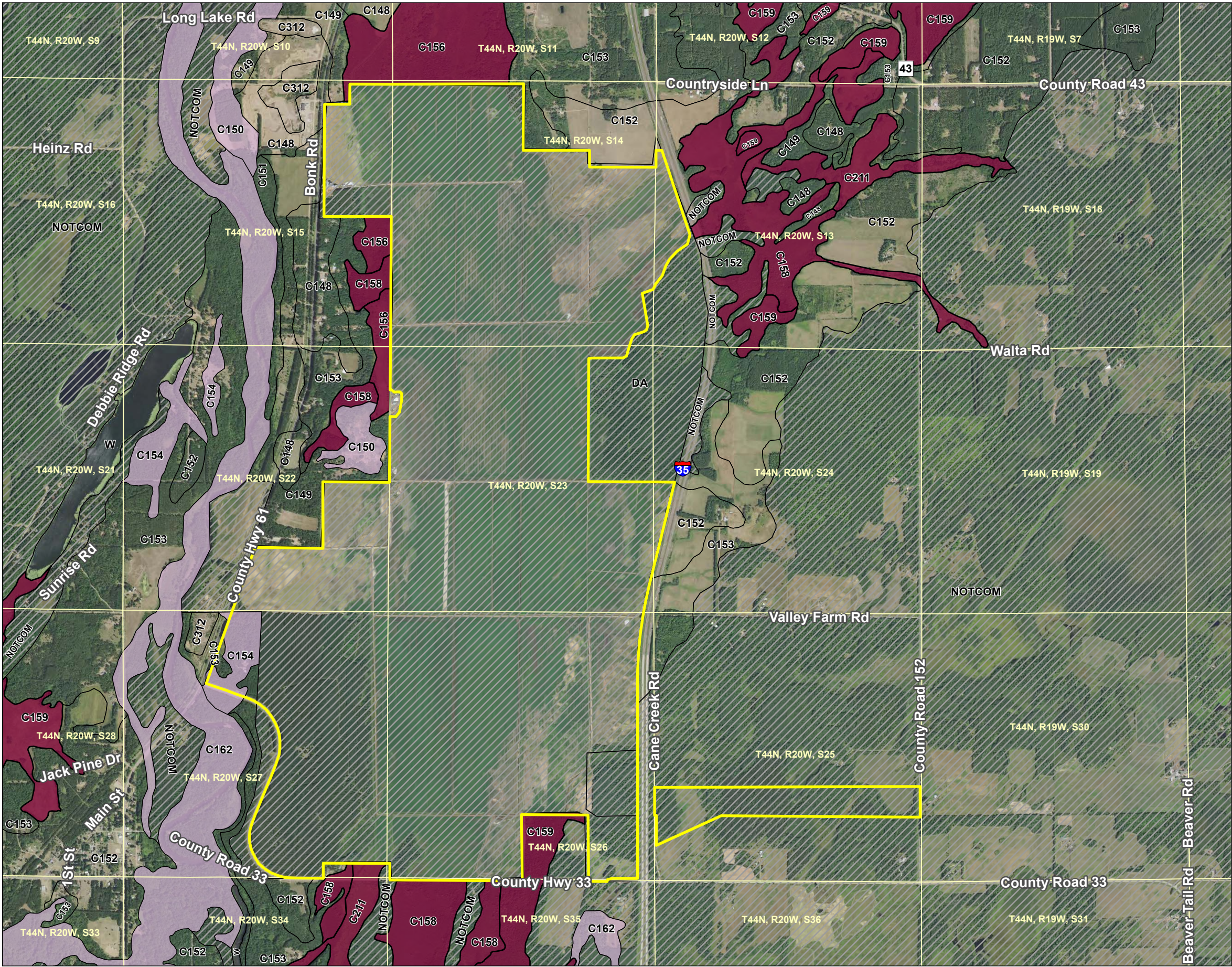
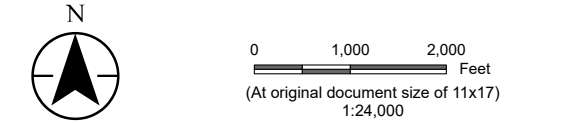


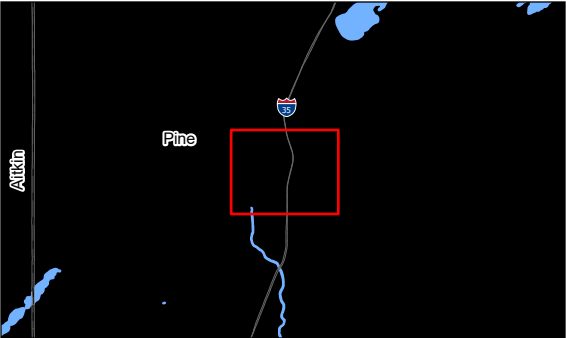
Figure No. 4  
Title Project Area Soils

Client/Project Iron Pine Solar Power, LLC  
Iron Pine Solar  
Cultural Resource Desktop Assessment  
Project Location Kettle River Township, Pine County, Minnesota  
Prepared by JM on 2023-06-02  
TR by JJ on 2023-09-18  
IR by JK on 2023-09-18



- Legend
- Property Boundary
  - NRCS Soil Survey Data\*
  - Hydric Soil Rating
    - Hydric
    - Predominantly Hydric
    - Partially Hydric
    - Predominantly Non-Hydric
    - Non-Hydric
    - Denied Access / No Digital Data Available

\*Available NRCS data incomplete for significant portion of project area.



Notes  
1. Coordinate System: NAD 1983 UTM Zone 15N  
2. Data Sources: Stantec, USGS, NADS, Pine County, NRCS  
3. Background: NAIP 2021



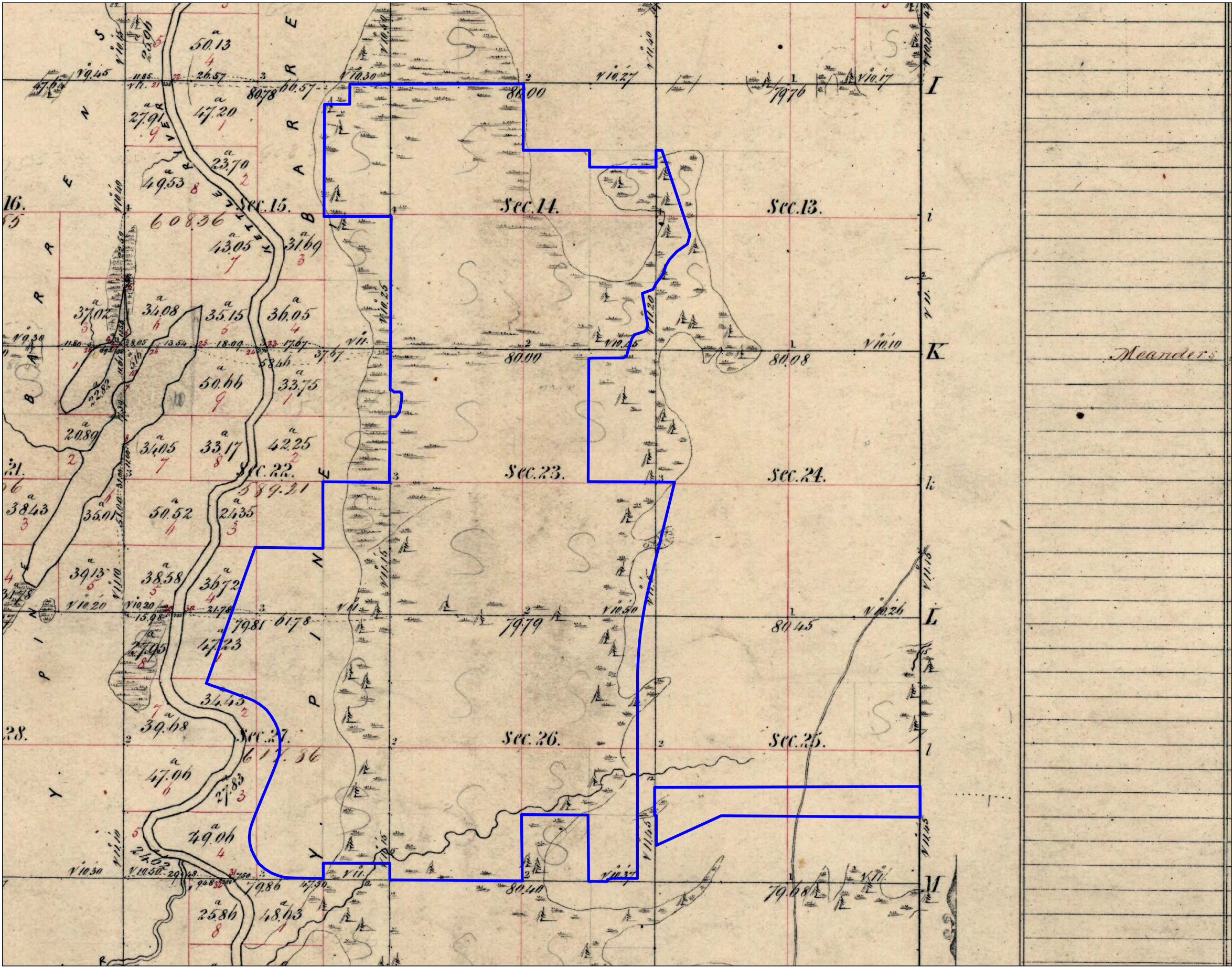
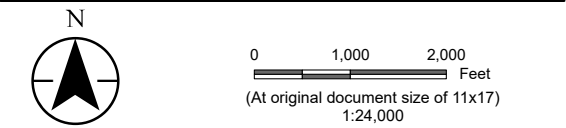


Figure No.  
**5**  
Title  
**Project Area on 1863 BLM Plat**

Client/Project  
Iron Pine Solar Power, LLC  
Iron Pine Solar  
Cultural Resource Desktop Assessment  
193708962

Project Location  
Kettle River Township,  
Pine County, Minnesota

Prepared by JM on 2023-06-02  
TR by JJ on 2023-09-18  
IR by JK on 2023-09-18



Legend  
 Property Boundary



Notes  
1. Coordinate System: NAD 1983 UTM Zone 15N  
2. Data Sources: Stantec, USGS, NADS, Pine County  
3. Background: BLM Plat Map



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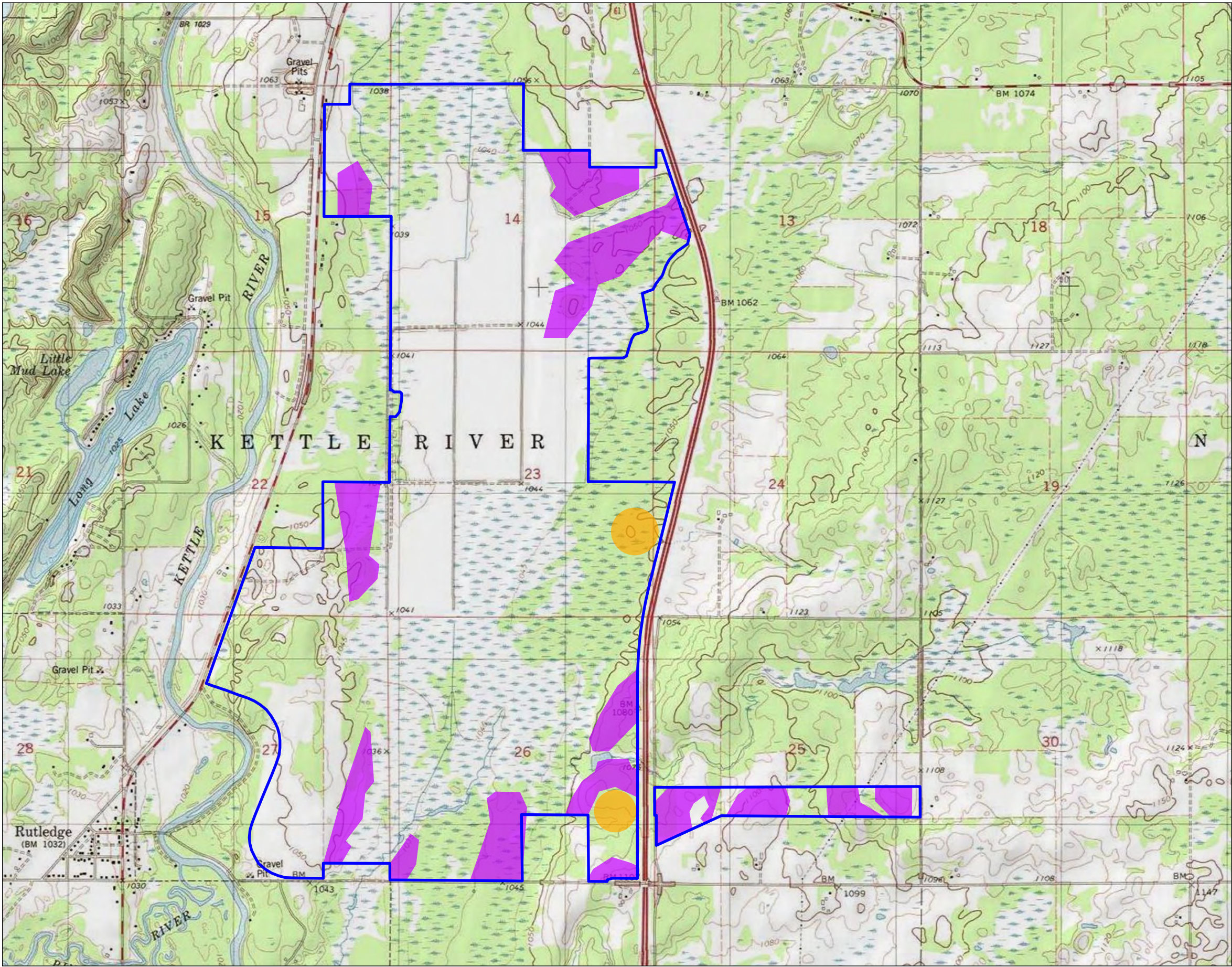
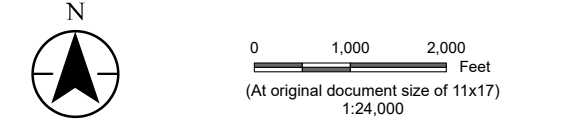


Figure No. 6  
Title Cultural Resources Probability Model

Client/Project Iron Pine Solar Power, LLC  
Iron Pine Solar  
Cultural Resource Desktop Assessment  
Project Location Kettle River Township, Pine County, Minnesota  
Prepared by JM on 2023-06-02  
TR by JJ on 2023-09-18  
IR by JK on 2023-09-18



- Legend
- Property Boundary
  - High Probability Area
  - Medium Probability Area



Notes  
1. Coordinate System: NAD 1983 UTM Zone 15N  
2. Data Sources: Stantec, USGS, NADS, Pine County, OSA  
3. Background: USGS 7.5' Topographic Quadrangles



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