

## **Appendix E**

# **Phase I Cultural Resources Inventory and Natural Heritage Information System Request**

A summary of findings is available in Sections 4.4 and 4.5.8 of the Application.

**PHASE I**  
**CULTURAL RESOURCES INVENTORY**  
**OF THE**  
**RED ROCK**  
**SOLAR PROJECT**

Cottonwood County, Minnesota

T106N, R34W, Sections 1, 2, 11-12, 14, 22-23

by

Mark Carpenter, M.A. and Jana Morehouse M.S.

*Quality Services, Inc. Project #MN2120001RRA*

October 26, 2020



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**Abstract**

A Phase Ia cultural resources records search and Phase I cultural resources survey were conducted for the proposed Red Rock Solar Project (project), located approximately four miles northeast of Mountain Lake, in Cottonwood County, Minnesota.

The cultural resources records search documented no known cultural resources within one mile of the solar project area, and one not eligible bridge within one mile of the collector line and substation.

A Phase I was conducted within the 844 acre direct area of potential effect which included the 782-acre solar panel siting area, the 3.1 mi. collector line and inventory buffer, and the 5.4 acre substation area. Subsurface testing was not conducted because of the excellent ground surface visibility and the limited possibility for buried cultural materials to be present due to soils type, as well as because the majority of the inventory area has been previously disturbed by the construction of tiling, earthen berms, drainage ditching, other water control and drainage measures, and leveling for agricultural production.

**No cultural resources were documented. A determination of “no historic properties affected” is recommended.**

If any cultural resources are located during project construction, Red Rock Solar, LLC. should follow the steps outlined in the Unanticipated Discoveries Plan.

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**Introduction**

***Quality Services, Inc. (QSI)*** was contracted to conduct a cultural resource record search and field inventory for the proposed Red Rock Solar Project (project) in Cottonwood County, Minnesota (Figure 1). The proposed project area includes approximately 844 acres, which contains a solar panel siting area, 3.1 mi. of collector lines, and the proposed substation. It is located entirely upon agricultural fields, on private land. The purpose of the record search and Phase I survey was to identify and record all archaeological resources that could be affected by the proposed project as outlined in Minnesota Statute 216E of the Minnesota Power Plant Siting Act (PPSA).

Red Rock Solar, LLC. is proposing the development of a 60-megawatt (MW) solar project in Cottonwood County, MN. The project will consist of solar photovoltaic panels, mounted on a tracking rack system. Inverters and transformers will be distributed across the site, and the energy output of each of the transformers will be transferred via underground cables to a centralized substation. The solar facility will be surrounded by a security fence. Gravel roads will be constructed to provide vehicle access throughout the project. The electricity generated will be injected into the electrical transmission grid.

**Area of Potential Effect**

The direct Area of Potential Effect (APE) for archaeological resources is where any proposed project infrastructure could be constructed within the 844 acre project area, and includes the solar panel siting area, a 3.1 mi. long collector line, and a substation location. In this report, the entire project area is considered the direct APE. The records search was conducted within a one-mile buffer of the project area.

**Project Research Design**

To determine if cultural resources could potentially be affected by the proposed project, QSI implemented the following survey methodology in accordance with the with the Office of State Archaeologist's (OSA) Manual for Archeological Projects in Minnesota (MAPM):

1. Phase Ia archeological and historical records search of the indirect APE using information from the with Minnesota State Historic Preservation Office (SHPO), National Register of Historic Places (NRHP), National Historic Landmarks, local historic societies, and other appropriate sources.
2. Phase I cultural resources field survey of areas within the direct APE.
3. If needed, recording of cultural resources located and subsurface testing to determine potential site horizontal and vertical extent, and significance.

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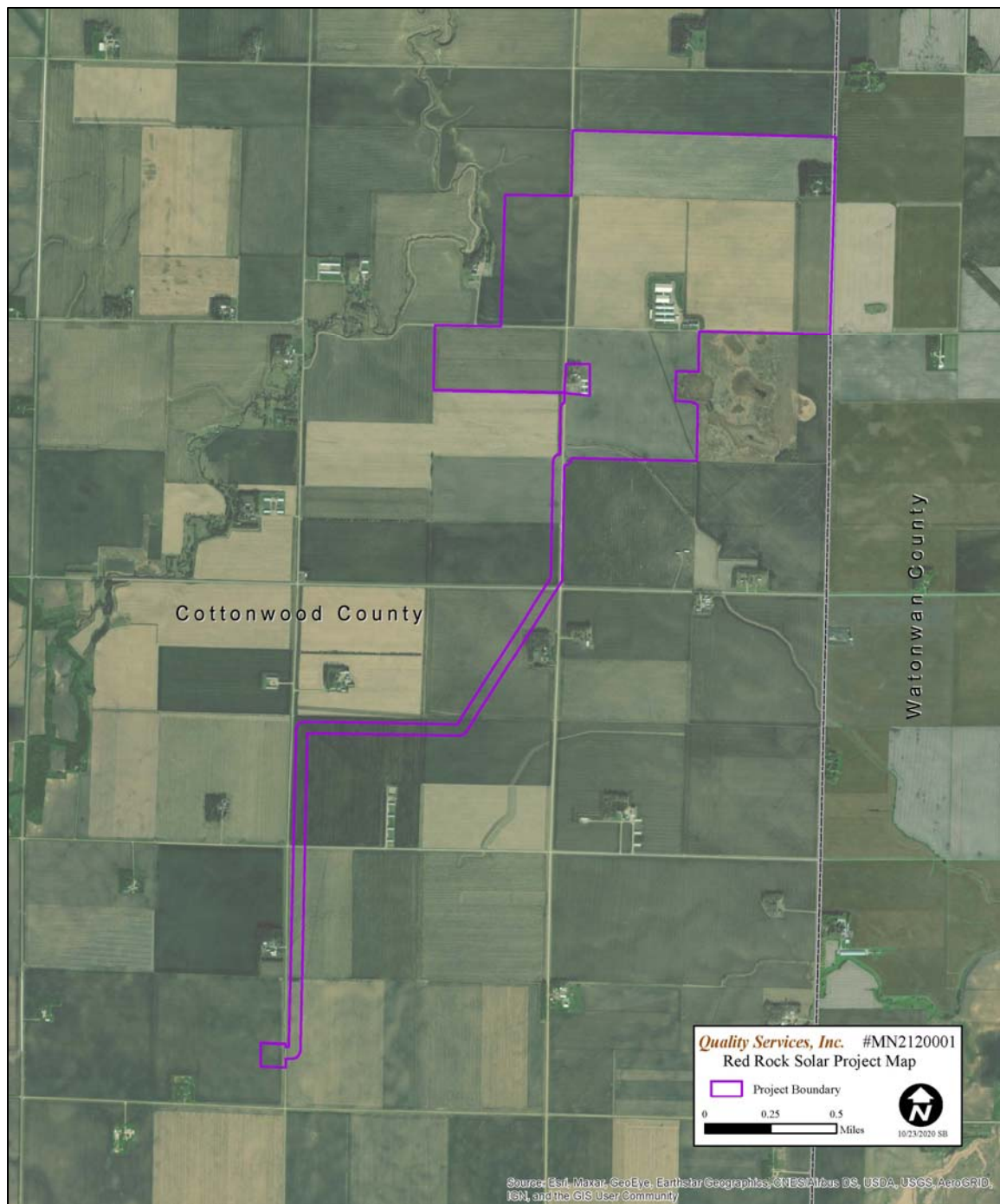


Figure 1. Proposed project area in Cottonwood County, Minnesota.

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**Environmental Setting**

Located in southwestern Minnesota, Cottonwood County is in the Coteau des Prairies physiographic region. In general, the terrain consists of lowland plains and plateaus formed by glaciers, resulting in moraines and till derived soils. The lowland plain, in the northeast part of the county, is a level to slightly sloping ground moraine with a northeast facing slope that drops approximately 30 ft. per mile. The plateau is also nearly flat to gently sloping, and is made up of ground moraines, glacial lake plains and river terraces, and undulating and steep lateral moraines. The plateau area has several Sioux quartzite exposures, and this bedrock tends to be near the surface, especially in central areas or the landform (Rolling 1979).

The Watonwan River is 0.1 mi. west of the project area. Streams in the county are part of the Minnesota River watershed, and therefore flow northeast into the Minnesota River, which, in turn, flows east into the Mississippi River. The region is also dotted with numerous small lakes and associated wetlands (Rolling 1979).

Cottonwood County is in the great interior climate region, where temperatures can reach below 0° Fahrenheit (°F) but average around 17°F in winter, while the summer months are mild to occasionally warm and humid with temperatures around 71°F. The area averages approximately 20 inches of precipitation annually (Rolling 1979). The vegetation cover in the project area is mainly agricultural row crops. Road and field edges have a combination of mixed forage grasses and deciduous trees and shrubs.



Figure 2. North portion of solar panel project area looking east.  
M. Carpenter 05/07/2020.

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Figure 3. Collector line corridor inventory area, facing south.  
C. Newton 10/15/2020.

**Soils and the Potential for Buried Cultural Resource Sites**

Project area soils are typically very deep, well to moderately well drained loams forming in calcareous glacial till from the Wisconsin glacial episode (Soil Survey Staff 2018; Minnesota DNR 2018). The most prevalent soils within the project area are Canisteo-Glencoe Complex, Coland Clay, Clarion-Storden Complex, Clarion Loam, Webster Clay Loam, Glencoe Clay Loam, Nicollet Clay Loam, and Germantown Clay Loam. These soil types are used for agriculture where water drains adequately.

The project area is not prone to episodes of flooding (see Soil Survey Staff 2018) which means that recent soil deposits are uncommon if they occur at all. Therefore, cultural resources in areas of undisturbed soils are likely to be on or just below the ground surface. In areas closer to streams, ponds, and lakes where flooding has occurred in the past, the likelihood of finding buried archeological sites increases. However, this is limited to the southeastern part of the project area, which has been modified with heavy equipment to reduce flood risk through construction of subsurface drainage systems, steep sided canals over 15 ft. deep, flood control berms, and land leveling.



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## **Cultural Setting**

The written history of Native American occupation in and around Cottonwood and Watonwan Counties is varied and general in nature. The earliest evidence is derived from archeological finds in the region, some from the Jeffers Petroglyphs site, northwest of the project area. Clovis and Folsom archeological tradition projectile points are reported to have been found in the region (Sanders 2019). However, because there are no known temporally diagnostic artifacts associated with specific petroglyphs, attempts are being made to estimate the ages of the carvings through what they depict, Native American oral history, and carbon dating of charcoal near the carvings (Roefler et al. 1973, Sanders 2019).

Historic and modern Arapaho, Arikara, Cheyenne, Ojibwe, Dakota/Lakota/Nakota, Ioway, Mandan, Meskwaki, Omaha, Oto, Ponca, and Sauk oral history accounts show that these tribes were in the region, and using the pipestone quarries west of the counties. The later archeological evidence in the region, starting circa A.D. 1,000 is attributed to the Oneota culture which is believed to have been the ancestors of many of the tribes recorded by the Europeans when they came to the area. Tribes that have been connected to the Oneota through artifactual evidence include the Cheyenne, Dakota/Nakota/Lakota, Ioway, Kansa, Missouriia, Omaha, Osage, Oto, Ponca, and Winnebago. Of these, the Cheyenne, Dakota/Nakota/Lakota, Ioway, Omaha, Oto, and Ponca have been recorded by Europeans as having historic connections to the Jeffers Petroglyph Site (Anfinson 1997, Gibbon 2003, Sanders 2014, Sanders 2019).

Archeologically, the evidence for who lived nearby is based on attributes found in the remnants of the items used by the peoples who lived and traveled through the area. Often, it is limited to stone tools, pottery and or features with charcoal or other biological material that can be carbon dated. For the stone tools and pottery, their attributes can be compared with those from other regions to infer connections between groups, such as similar decorations or tool styles, and carbon dating can give a date range of occupation. However, the uses and associations of artifacts can only provide a partial picture, as their uses and the people who made them can only be inferred. Therefore, artifacts can be used to learn information about the tribes in an area, but would need further information, such as oral or written history to make the picture clearer (Gibbon 2003).

The most detailed early description of the Native American settlements in the region was given circa 1834 (republished in 1986) by Samuel Pond, a Euro-American missionary. Pond reported that the Dakota lived in an area along the Mississippi and Minnesota rivers, with their western extent at Lake Traverse and Big Stone Lake. They also had settlements on the Cannon River, Lake Calhoun (now part of Minneapolis), and around the trading post at Two Woods, which was southwest of Lac qui Parle in what is now the northwest corner of Deuel County, South Dakota (Pond 1986).

Pond's experience was mostly with the Mdewakanton, whom he knew well enough to estimate that they had a population of about 2,000, and that they had seven villages between Winona and Shakopee, Minnesota. Next, the Wahpekute had two villages, one on the Cannon River and the second at Traverse des Sioux, about 70 miles east of the Jeffers Petroglyphs. The Wahpeton were next to the west, with villages from Shakopee to Big Stone Lake and Lake Traverse. Village locations included at the trading posts in Carver (a.k.a. Little Rapids), Bell Plaine, Traverse des Sioux, Swan Lake and Lac qui Parle.

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Finally, Pond reported that both the Sisseton and Yankton were also living at Lake Traverse and Big Stone Lake (Pond 1986).

As time passed, Tribes were forced out of the area and into surrounding locations to reservations. In March 1857 Wahpekute Chief Inkpaduta and his band attacked and surrounded the settlement of Springfield (renamed Jackson in May 1857), in Jackson County, Minnesota, thirty miles south of the Jeffers Petroglyphs. This was part of a series of attacks on white settlers. The attacks were revenge for Inkpaduta losing his home and possessions to settlers and the poor treatment he received from those settlers during the previous winter, which led to starvation and the death of his son. The final straw was when he went to Lake Okoboji, a sacred location, and found that settlers had taken it as well (Clodfelter 2006, Michno 2003, 2011).

During the attack on Springfield eight settlers were killed and three wounded. Afterward Inkpaduta moved west to Dakota Territory. In response to the attacks the U.S. government told the Dakota that they would not receive annuities until those responsible were caught and punished. The Dakota bands searched for Inkpaduta but did not catch him. Roaring Cloud and three others who were believed to be involved were found but resisted capture and were killed. The U.S. relented and gave out the annuities because the Dakota tried to capture Inkpaduta, even though they failed. Releasing the annuities for this reason was seen by the Dakota as a sign that the U.S. did not have the will or courage to follow through on their threats and that the settlers' laws were weak (Folwell 1956, Michno 2003).

By 1862 the Dakota War was in full swing. Tensions at the administrative centers of the Upper and Lower Sioux Reservations were high; however, no battles were recorded in Cottonwood County. Minnesota State Records indicate that circa 644 settlers and soldiers were killed, virtually depopulating 23 counties (Folwell 1956). Because of this, 38 warriors were sentenced to death by the U.S. Government, and executed in Mankato in December 1862. It remains the largest mass execution in U.S. history.

In April 1863, the remaining Dakota people were expelled from Minnesota and sent to Nebraska and South Dakota. Congress abolished their reservations in the area.

### **Phase Ia Cultural Resource Records Review**

The cultural resource records search for this project was done in stages, as the initial project area evolved. *QSI* submitted an initial data request to Minnesota SHPO on November 17, 2017, to attain information on known cultural resources within the direct and indirect APEs for an initial area of interest. The NRHP and National Historic Landmarks web sites were also checked. The SHPO office was visited in January 2018, July 2019, and May 2019 to obtain additional data on structures and previous inventories. On March 13, 2020, prior to beginning Phase I field surveys, the cultural resources records search was updated by requesting additional information from the SHPO for a 1-mile area surrounding the revised project boundary.

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Results of the Phase Ia indicated that two field surveys had previously been completed within the survey area, neither of which occurred within the direct APE (Table 1, Figure 3). One cultural resource, a not eligible bridge, was recorded within a mile of the project (Table 2).

Table 1. Previous inventories within one mile of the project.

Inventory #	Author	Year	Title
CO-11-002	Stemper, C.	2011	Phase Ia Archaeological Resources Assessment of Cottonwood County, MN.
CO-94-01	Bodoczy, G.	1994	Report on Phase I Cultural Resources of Proposed Re-channeling of Watonwan River & Bridge 1499 Replacement of Twp Rd. 62 over Watonwan River, Cottonwood County.

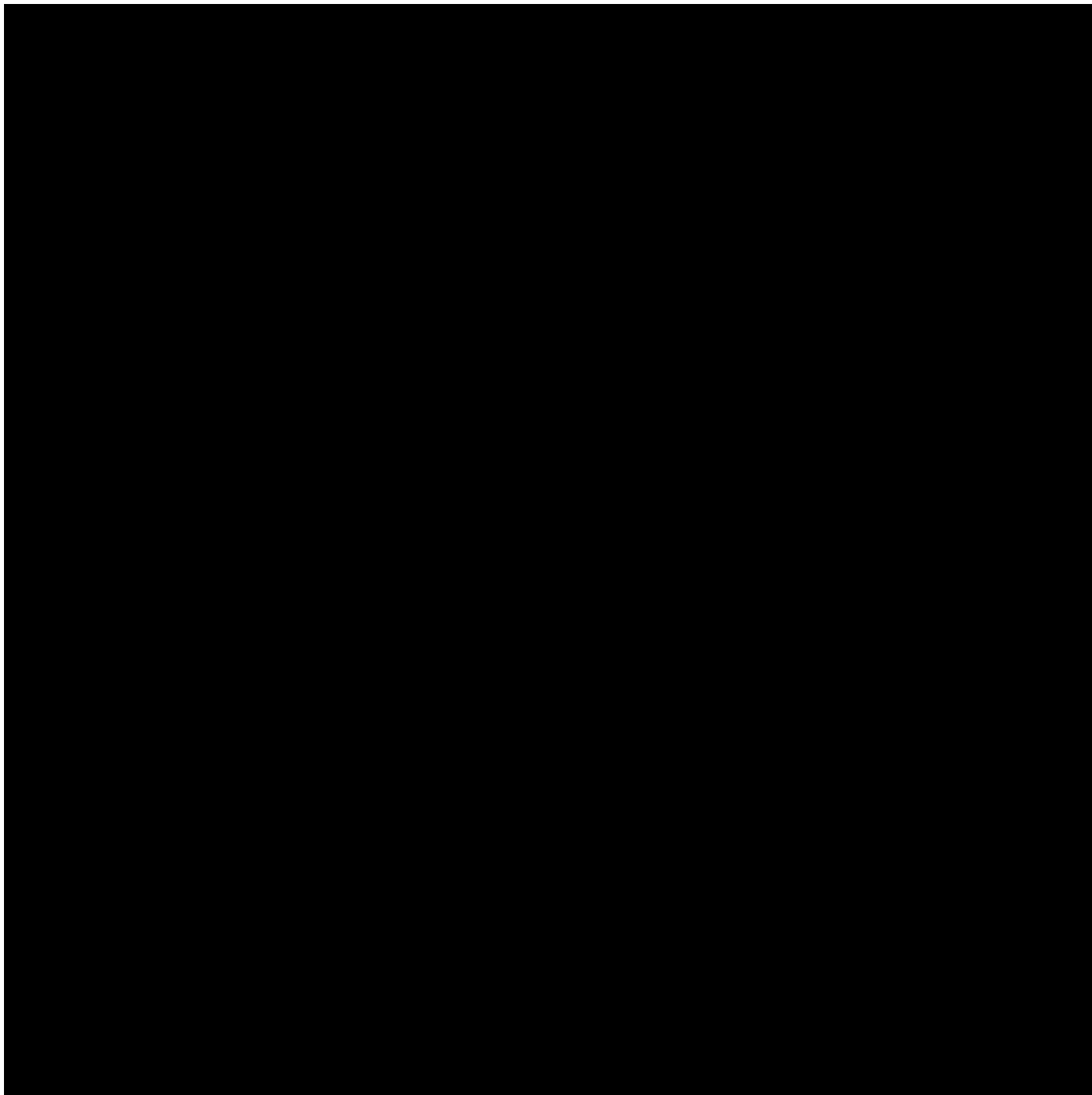
Table 2. Cultural resources within one mile of the project area.

SHPO #	Resource Type/Info	NRHP	Relation to APE
CO-MID-002	Bridge No. 89504	<i>Not Eligible</i>	0.9 mi. northwest

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**[NONPUBLIC DATA HAS BEEN EXCISED...]**



**...NONPUBLIC DATA HAS BEEN EXCISED]**

Figure 4. Red Rock Solar Project Phase Ia and Phase I Inventory Results.  
1:24000 scale map included as appendix

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**Phase I Field Survey Methods and Results**

From May 6 to 8, 2020, **QSI** conducted a Phase I surface inventory for cultural resources in the solar panel siting area portion of the project area. The field crew consisted of **QSI** senior principal investigator for archeology and history, Mark Carpenter, archeological technicians Loni Weston and Luke Cavallaris, Upper Sioux Tribe traditional cultural specialist (TCS) Drew Brockman, and Otoe/Missouria Tribe of Oklahoma TCS Jessica Arkeketa. An additional Phase I surface inventory was conducted on October 15, 2020, after the fall harvest, for the collector line and substation area by Cody Newton, **QSI** senior principal investigator for archeology. Dr. Newton was assisted by **QSI** archeologists Logan Bullard and Mandy Woods, **QSI** cultural resource technicians Edward Kersteins and Bennett Yellow Hawk, Upper Sioux Tribe TCS Drew Brockman, and Rosebud Sioux Tribe TCS Philip Little Thunder.

The inventory covered 844 acres, conducted in pedestrian transects 15m (50ft.) or less apart. Ground surface visibility ranged from 0% in unplowed, previously disturbed road right-of way shoulders and ditches to 100% in the plowed and planted fields, with an overall visibility average of 90% or more. The topography was flat.

No subsurface testing was conducted due to the excellent ground surface visibility, the limited possibility for buried cultural materials to be present as discussed above, and because the majority of the inventory area has been previously disturbed by the construction of tiling, earthen berms, drainage ditching, other water control and drainage measures, and leveling for agricultural production.

Most of the soils in the area were sandy, silty loams, with more clay being present in the soils near the creek. They ranged in color from almost black in the lower areas to dark reddish brown on the ridge top and upper slopes. In several of the fields, lime and or calcium had been added to help replenish nutrients in the soil. Pig bone fragments were also observed to have been used as fertilizer in the fields.

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Figure 5. Typical ground surface visibility within the solar panel project area. M. Carpenter 05/08/2020.



Figure 6. Solar panel siting area facing west. Note grassy area, and road and modern infrastructure in background. M. Carpenter 05/08/2020.

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Figure 7. Collector line inventory location, facing north.  
C. Newton 10/15/2020.



Figure 8. Substation inventory location, facing north.  
C. Newton 10/15/2020.

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No recordable cultural resources were present during the pedestrian inventories. Isolated materials were found such as unidentifiable metal pieces, agricultural machinery parts, a few fragments of plain whiteware dishes, broken beverage modern bottles, aluminum cans, and pieces of discarded plastic. These are the result of trash being flung off a manure spreader, other agricultural practices, or thrown from passing vehicles, and do not constitute archeological sites.

No cultural resources are present in the project area.

### **Conclusions**

**A determination of “no historic properties affected” is recommended for the project.**

If any cultural resources are located during project construction, Red Rock Solar, LLC. should follow the steps outlined in the Unanticipated Discoveries Plan.

### **Bibliography and References Cited**

Anfinson, S.

1997 *Southwest Minnesota Archeology: 12,000 Years in the Prairie Lake Region*. Minnesota Historical Society Press, St. Paul, MN.

Brown, J. A.

1916 *History of Cottonwood and Watonwan Counties Minnesota: Their People, Industries, and Institutions*. Vol. I. B. F. Bowen & Company, Inc. Indianapolis, IN.

Clodfelter, M.

2006 *The Dakota War: The United States Army Versus the Sioux, 1862-1865*. McFarland Publishing, Jefferson, NC.

Folwell, W. W.

1956 *A History of Minnesota Vol. 1 & 2*. Minnesota Historical Society Press, St. Paul, MN.

Gibbon, G. E.

2003 *The Sioux: The Dakota and Lakota Nations*. Blackwell Publishing, Malden, MA.

Michno, G. F.

2003 *Encyclopedia of Indian Wars: Western Battles and Skirmishes 1850-1890*. Mountain Press Publishing Company, Missoula, MT.



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2011 *Dakota Dawn: The Decisive First Week of the Sioux Uprising, August 1862*. Savas Beatie, El Dorado Hills, CA.

Minnesota Department of Natural Resources (DNR)

2018 *Minnesota Prairie Subsection*. Electronic document, <https://www.dnr.state.mn.us/ecs/251Ba/index.html>, accessed July 19, 2018.

Minnesota Historical Society (MNHS)

2019 *Jeffers Petroglyphs, Archeology*. Electronic document <http://www.mnhs.org/jefferspetroglyphs/learn/archaeology> Accessed 12/12/2019.

Office of the State Archaeologist, Minnesota

2011 *State Archaeologist's Manual for Archaeological Projects in Minnesota*. Office of the State Archaeologist, Ft. Snelling, Minnesota.

Pond, S. W.

1986 *The Dakota or Sioux in Minnesota as They Were in 1834*. Minnesota Historical Society Press, St. Paul, MN.

Roefer, F., M. English and G. Lothson

1973 *The Jeffers Petroglyphs: A Cultural-Ecological Study*, Minnesota Historical Society, Minneapolis, MN.

Rolling, R. E.

1979 *Soil Survey of Cottonwood County Minnesota*. USDA, Natural Resources Conservation Service. Electronic document, [https://www.nrcs.usda.gov/Internet/FSE\\_MANUSCRIPTS/minnesota/Minnesota/MN033/0/0Cottonwood\\_MN.pdf](https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/minnesota/Minnesota/MN033/0/0Cottonwood_MN.pdf), accessed July 9, 2020.

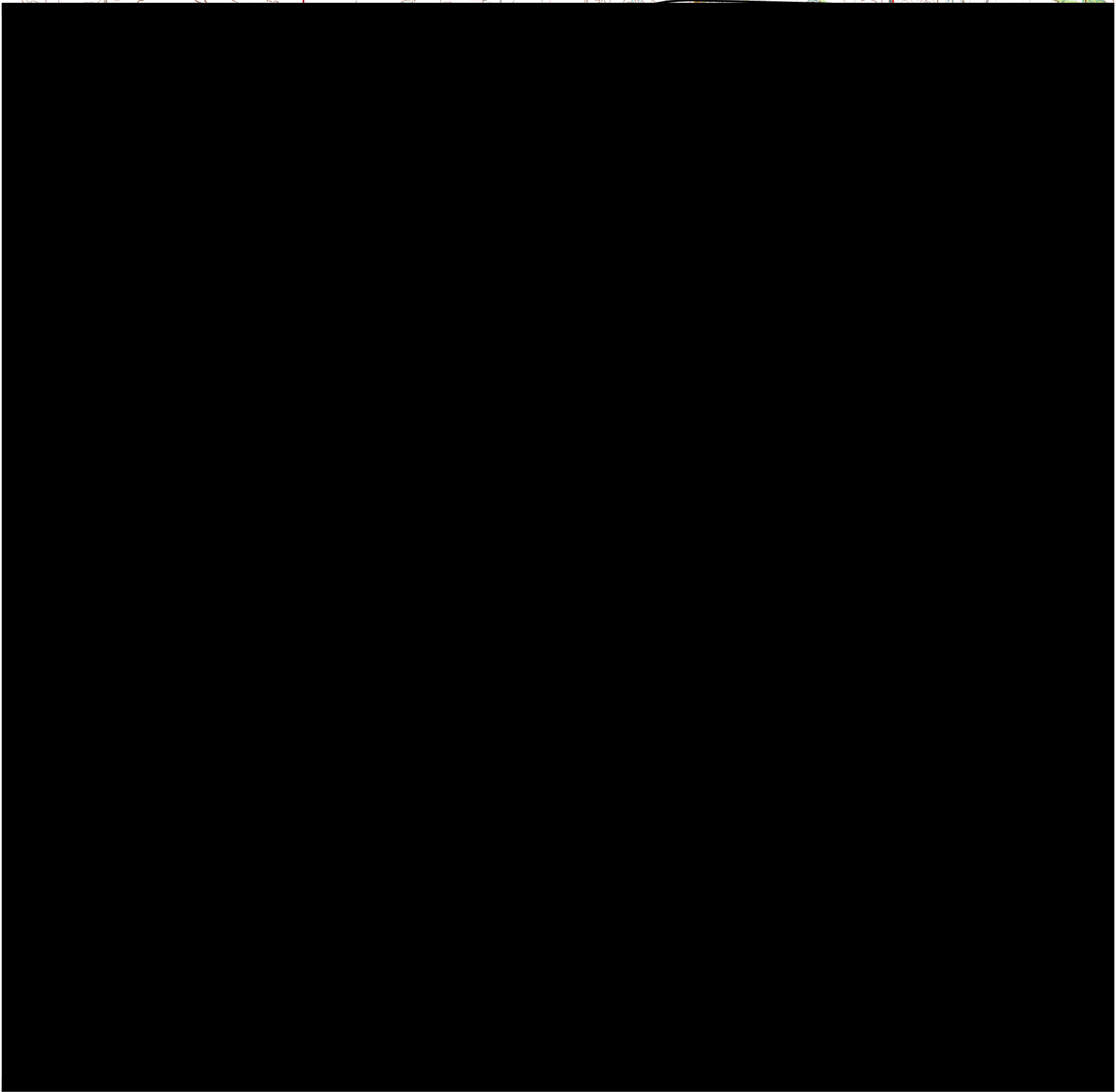
Sanders, T.

2014 *Jeffers Petroglyphs: A Recording of 7,000 Years of North American History*. Electronic document, <http://www.mnopedia.org/place/jeffers-petroglyphs>, accessed January 3, 2020.

2019 *Jeffers Petroglyphs*. Electronic document, <http://www.mnopedia.org/place/jeffers-petroglyphs>, accessed January 3, 2020.

Soil Survey Staff

2018 *Soil Survey Geographic (SSURGO) Database for Cottonwood, Martin and Watonwan Counties, Minnesota*. USDS Natural Resources Conservation Service. [www.websoilsurvey.sc.egov.usda.gov](http://www.websoilsurvey.sc.egov.usda.gov), accessed July 18, 2018.



**From:** [Angela Durand](#)  
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**Subject:** Red Rock Solar Project - Natural Heritage Review Request  
**Date:** Monday, September 28, 2020 8:12:00 PM  
**Attachments:** [image001.png](#)  
[Red Rock Solar MnDNR Natural Heritage Review Request 09282020.pdf](#)  
[Red Rock Solar Project Boundary.zip](#)

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Lisa,

On behalf of Red Rock Solar, LLC, Merjent submits the attached Natural Heritage Data Review for the proposed Red Rock Solar Project, for your review and concurrence. A shapefile of the Red Rock Solar Project Boundary is also attached to assist you with your review.

Please let me know if you have any questions regarding the attached request.

Sincerely,

**Angela Durand**  
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***Via Email***

September 28, 2020

Ms. Lisa Joyal  
Endangered Species Review Coordinator  
NHIS Data Distribution Coordinator  
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**Re: Natural Heritage Data Review of the Proposed Red Rock Solar Project  
Cottonwood County, Minnesota**

Dear Ms. Joyal:

On behalf of Red Rock Solar, LLC (Red Rock), an affiliate of Apex Clean Energy Holdings, LLC (Apex), Merjent, Inc. (Merjent) queried the Minnesota Natural Heritage Information System (NHIS) to conduct a natural heritage data review for the proposed Red Rock Solar Project (Project).

Merjent holds a license agreement with the Minnesota Department of Natural Resources (MnDNR) to access electronic NHIS data. On April 22, 2020, Merjent requested from the MnDNR its annual NHIS data update per its license agreement which was provided on May 8, 2020. This updated MnDNR data was used for this Natural Heritage Data Review by a trained and experienced Merjent biologist. The following provides a brief description of the Project, results of the NHIS query, and an assessment of potential impacts to rare natural features and state-listed species. Based upon this information and review, Merjent respectfully requests that the MnDNR review and concur with this Natural Heritage Data Review for the Project.

**Project Description**

Red Rock is proposing to build its solar facility in Sections 1, 2, 11, 12, 14, 22, and 23, Township 106 North, Range 34 West, Cottonwood County, Minnesota (Figure 1 – Project Location). Red Rock has obtained leases for 852.1 acres of privately-owned land (Figure 2 – Project Boundary). Based on preliminary design, Project facilities will cover approximately 483.3 acres of the Project Boundary (Figure 2 – Project Footprint). The layout under consideration is within the Project Footprint and is subject to final micro-siting, but will not extend beyond the outer boundaries of the Project Boundary. The Project's facilities are currently anticipated to be located within the Project Footprint and include solar panels and

racking, inverters, security fencing, a Solar Project Substation, electrical collection and communication lines, stormwater basins, laydown areas, and up to three weather stations (up to 10 feet tall).

Based on data from the National Land Cover Database (2016), land uses in the Project Boundary are primarily agricultural (95.1 percent), with some small amounts of developed areas (4.5 percent), forested land (0.2 percent), hay/pasture (0.1 percent), and barren land (0.1 percent). The forested land that is present is limited to windbreaks around residences. There are limited water resources in the Project Boundary; the wetland delineation completed for the Project identified one water course within the Project Boundary and no wetlands.

### **Natural Heritage Review**

Merjent reviewed the Project Boundary for sites that have been specially designated as having notable natural resources. Natural resource sites designated by the State of Minnesota include Minnesota Biological Survey (MBS) Sites of Biodiversity Significance (SOBS) and Native Plant Communities (NPC). The Project Boundary avoids permanent and temporary impacts from all Project components on MBS SOBS and NPCs.

Merjent reviewed the MnDNR NHIS data for state-listed species that are known to occur within 1 mile of the proposed Project. Within 1 mile of the Project Boundary, there is one record of the abbreviated underwing (*Catocala abbreviatella*), a state species of concern. There were no records of state-listed threatened or endangered species. The abbreviated underwing occurs in dry to mesic prairies and savanna communities where leadplant occurs; sites in western counties are relatively level to gently hilly mesic to dry prairies. Suitable prairie habitat is not present in the Project Boundary, and thus, the abbreviated underwing is not expected to be present.

We believe the Project will not impact MN DNR high value areas and state-listed species. On behalf of Red Rock, Merjent respectfully requests that the MnDNR review and concur with this Natural Heritage Data Review for the Project within 30 days of receipt of this submittal.

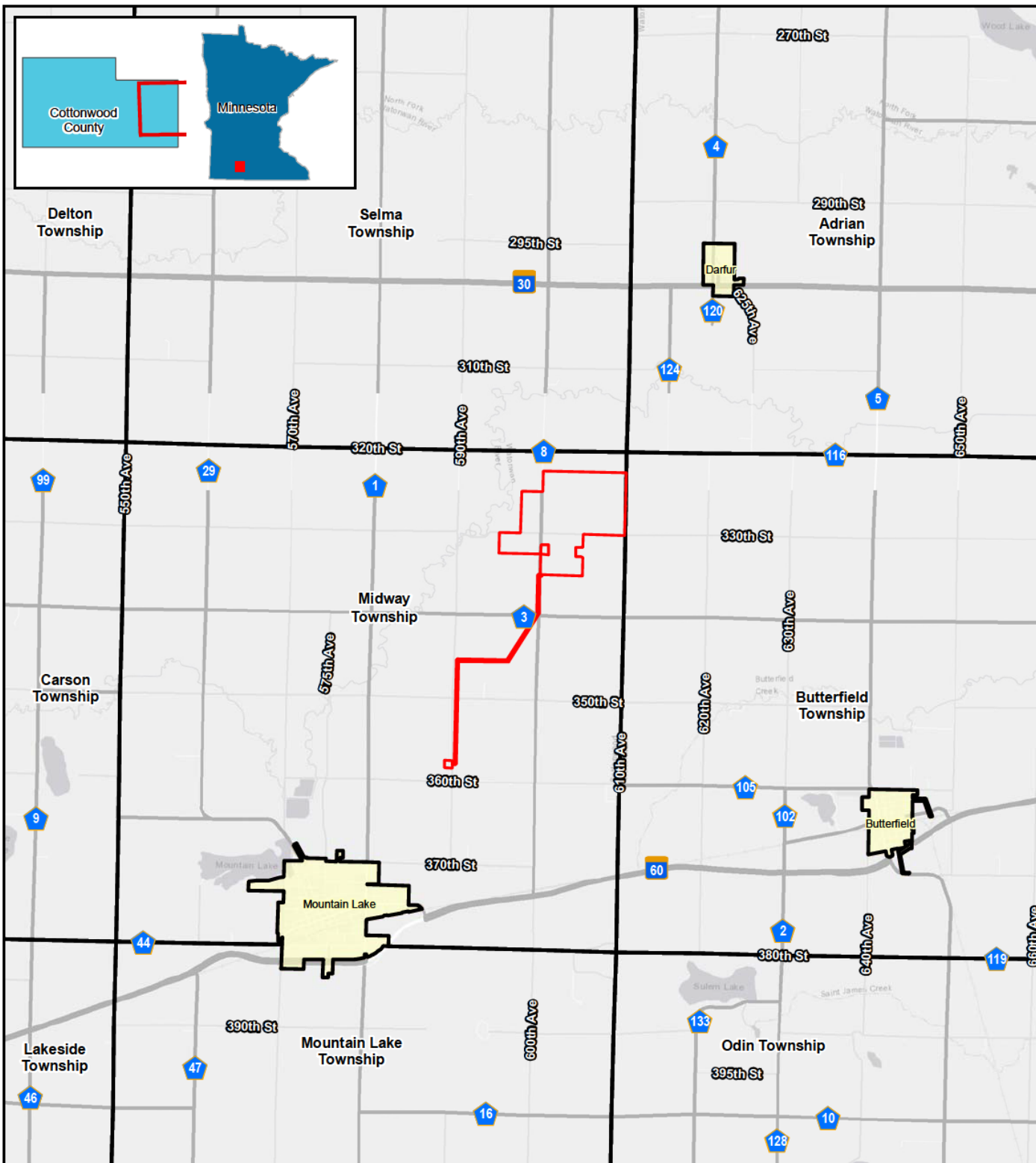
Should you have any questions or comments regarding this matter, please contact me at 612-746-3666, or at [angela.durand@merjent.com](mailto:angela.durand@merjent.com).

Sincerely,



Angela Durand  
Senior Environmental Analyst  
**Merjent, Inc.**

Enclosure:      Figure 1 – Project Location  
                      Figure 2 – Project Boundary



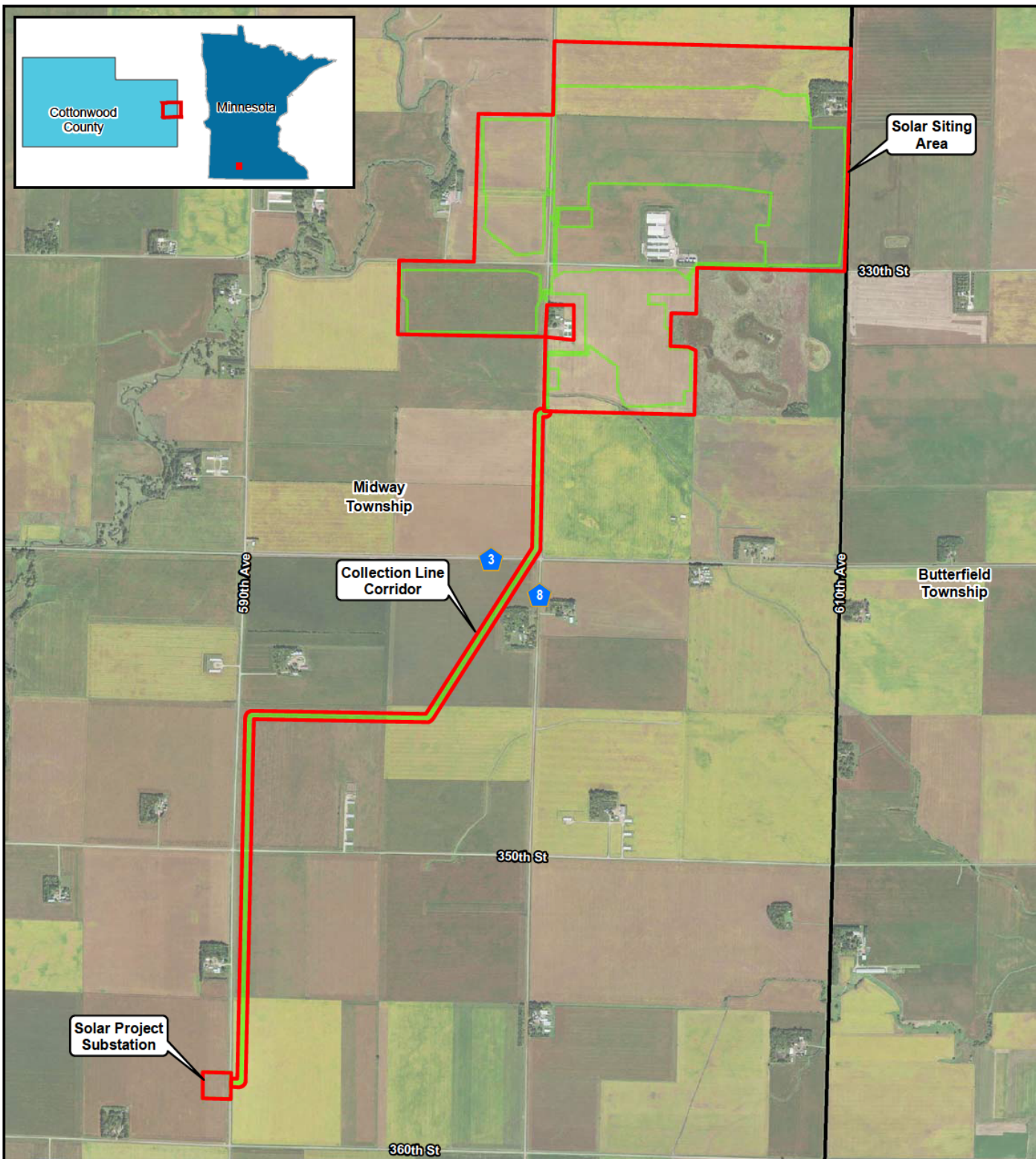
0 1 2 Miles  
1:100,000

For Environmental Review Purposes Only

**Figure 1**  
**Project Location**  
**Red Rock Solar Project**  
**Cottonwood County, Minnesota**

- Project Boundary
- City/Town
- Civil Township
- MN Highway
- County Road
- Local Road

Data: (9/10/2020) Source: Z:\Clients\A\04\pax\Red\_Rock\Permitting\Figures\Fig\_1\_RR\_CProject\_Location.mxd



**RED ROCK SOLAR**

0 0.3 0.6 Miles

1:28,000

**merjent.**

For Environmental Review Purposes Only

**Figure 2**  
**Project Boundary and Project Footprint**  
**Red Rock Solar Project**  
**Cottonwood County, Minnesota**

- Project Boundary
- Project Footprint
- Civil Township