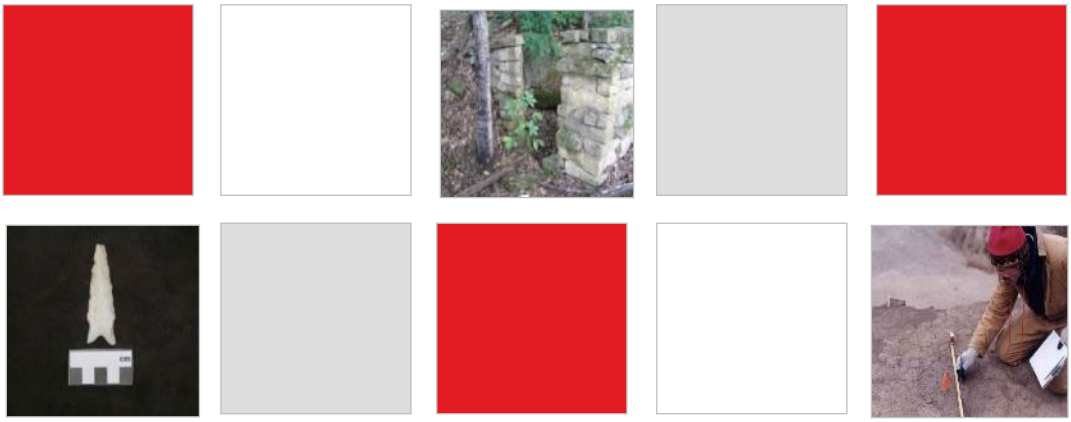

# Lemon Hill Solar, LLC

## Phase I Archaeological Survey Report for the Lemon Hill Solar Project, Addendum 1

**Olmsted County, Minnesota**

PREPARED BY

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**SHPO Project Number 2024-1718**

July 2025

## EXECUTIVE SUMMARY

Lemon Hill Solar, LLC (Lemon Hill Solar) is proposing to build a solar farm in Olmsted County referred to as the Lemon Hill Solar Project (Project). The Project will require a Site Permit from the Minnesota Public Utilities Commission pursuant to the Minnesota Power Plant Siting Act (Minnesota Statutes Chapter 216E) and Minnesota Administrative Rules Chapter 7850.

Merjent, Inc. (Merjent) completed a survey of the initial Project footprint on November 2, 2024. A report titled *Phase I Archaeological Survey Report for the Lemon Hill Solar Project, Olmsted County, Minnesota* (Amstrong-Duarte and Mieras 2024) was submitted to the State Historic Preservation Office (SHPO) in January 2025 (SHPO Project Number 2024-1718). In a letter dated March 3, 2025, the SHPO concurred with Merjent's assessment that, "no significant archaeological sites will be affected by the Project and that there are no properties listed in the National or State Registers of Historic Places, or within the Historic Sites Network, that will be affected by the Project."

In April 2025, several Project areas were surveyed that were not surveyed during the initial survey effort (referred to as Areas 1 to 6 or April 2025 Survey Areas), see Figure 1 in Appendix A. The acreage of the April 2025 Survey Areas totals 128.22 acres; locations and acreages of these areas are provided in the table below.

**[NONPUBLIC DATA BEGINS...**

| April 2025 Survey Areas | | | | | |
|---|---|---|---|---|---|
| Location | Description | Township | Range | Section(s) | Acres |
| Area 1 | Parcel: Southwest corner of the intersection of 70th Avenue NE and 65th Street NE | 107N | 13W | 11 | 76.24 |
| Area 2 | Collector Line: Adjacent to and west of 70th Avenue NE | 107N | 13W | 11, 14 | 1.80 |
| Area 3 | Road Access: Southwest corner of the intersection of 70th Avenue NE and Viola Road NE (Co. Rd. 2 NE) | 107N | 13W | 23 | 0.04 |
| Area 4 | Road Access: Northeast corner of the intersection of County Road 24 NE and 48th Street NE | 107N | 12W | 18 | 0.05 |
| Area 5 | Collector Line: Adjacent to and west of County Road 102 NE | 107N | 12W | 19 | 0.42 |
| Area 6 | Parcel: Northwest of the corner of 100th Avenue NE and Silver Creek Road NE | 107N | 12W | [redacted] | 49.67 |
| **TOTAL** | | | | | **128.22** |

**...NONPUBLIC DATA ENDS]**

In March and April 2025, Merjent updated the literature review of cultural resources within a 1.0-mile buffer of the April 2025 Survey Areas (Study Area). There were no additional State or National Register of Historic Places listed or eligible resources identified within the Study Area. On April 17, 2025, Merjent conducted a Phase I archaeological survey of the April 2025 Survey Areas. The survey followed the methods described in the Project's original Survey Plan and Methods which were approved by SHPO in July 2024. A total of 80.6 acres were surveyed during the current investigation.

Two precontact archaeological sites (21OL0078 and 21OL0079), each consisting of a precontact single chert tertiary flake, were identified during the survey. Merjent recommends that the sites are not eligible for listing in the National Register of Historic Places. Merjent recommends that no historic properties will be affected by the Project as proposed. No further archaeological work is recommended for the Project as planned.

# TABLE OF CONTENTS



...NONPUBLIC DATA ENDS]

# LIST OF TABLES

## LIST OF PHOTOS



## LIST OF APPENDICES

# TERMS AND ABBREVIATIONS

| | |
|---|---|
| BLM | Bureau of Land Management |
| CFR | Code of Federal Regulations |
| cm | centimeters |
| cmbs | Centimeters below surface |
| GLO | General Land Office |
| Lemon Hill Solar | Lemon Hill Solar, LLC |
| Merjent | Merjent, Inc. |
| MnSHIP | Minnesota's Statewide Historic Inventory Portal |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| OSA | Office of the State Archaeologist |
| Project | Lemon Hill Solar Project |
| Areas 1–6 | the six areas that were surveyed on April 17, 2025 |
| SHPO | Minnesota State Historic Preservation Office |
| Study Area | 1.0-mile buffer around the six areas that were surveyed on April 17, 2025 |
| NWI | National Wetlands Inventory |

## 1.0 PROJECT DESCRIPTION

Lemon Hill Solar, LLC (Lemon Hill Solar) is proposing to build a solar farm that will have a generating capacity of up to 180 megawatts referred to as the Lemon Hill Solar Project (Project). The Project is located in rural Olmsted County (see Figure 1 in Appendix A). Locational information is provided below in Table 1.0-1.

**[NONPUBLIC DATA BEGINS...**

TABLE 1.0-1

**Sections Included in the Project Footprint**

| County | Township | Range | Sections |
|---|---|---|---|
| Olmsted | 107N | 12W | 7, 17, 18, 19, 20, [redacted] |
| Olmsted | 107N | 13W | 11, 12, 13, 14, 23, 24 |

Merjent, Inc. (Merjent) completed a survey of the initial Project footprint totaling 1,906 acres on November 2, 2024. A report titled *Phase I Archaeological Survey Report for the Lemon Hill Solar Project, Olmsted County, Minnesota* (Amstrong-Duarte and Mieras 2024) was submitted to the State Historic Preservation Office (SHPO) on January 8, 2025 (SHPO Project Number 2024-1718). In a letter dated March 3, 2025, the SHPO concurred with Merjent's assessment that, "no significant archaeological sites will be affected by the Project and that there are no properties listed in the National or State Registers of Historic Places, or within the Historic Sites Network, that will be affected by the Project."

In April 2025, several Project areas were surveyed that were not surveyed during the initial survey effort (referred to as Areas 1 to 6 or April 2025 Survey Areas); see Figure 1 in Appendix A. The total acreage of the six areas is 128.22 acres, of which 80.6 acres were surveyed following the Project's previously approved Phase I Survey Plan and Methods; locations and acreages of these new areas are provided below in Table 1.0-2.

TABLE 1.0-2

**April 2025 Survey Areas**

| Location | Description | Township | Range | Section(s) | Acres |
|---|---|---|---|---|---|
| Area 1 | Parcel: Southwest corner of the intersection of 70th Avenue NE and 65th Street NE | 107N | 13W | 11 | 76.24 |
| Area 2 | Collector Line: Adjacent to and west of 70th Avenue NE | 107N | 13W | 11, 14 | 1.80 |
| Area 3 | Road Access: Southwest corner of the intersection of 70th Avenue NE and Viola Road NE (Co. Rd. 2 NE) | 107N | 13W | 23 | 0.04 |
| Area 4 | Road Access: Northeast corner of the intersection of County Road 24 NE and 48th Street NE | 107N | 12W | 18 | 0.05 |
| Area 5 | Collector Line: Adjacent to and west of County Road 102 NE | 107N | 12W | 19 | 0.42 |
| Area 6 | Parcel: Northwest of the corner of 100th Avenue NE and Silver Creek Road NE | 107N | 12W | [redacted] | 49.67 |
| **TOTAL** | | | | | **128.22** |

**...NONPUBLIC DATA ENDS]**

This report describes the literature search results, field objectives and methods, survey results, and recommendations concerning the April 2025 Survey Areas. For Project environmental and cultural background information, please see Amstrong-Duarte and Mieras (2024). The literature review results described in this report pertain only to the April 2025 Survey Areas and the identified resources not previously described in Amstrong-Duarte and Mieras (2024).

## 1.1 REGULATORY FRAMEWORK

The Project will require a Site Permit from the Minnesota Public Utilities Commission pursuant to the Minnesota Power Plant Siting Act (Minnesota Statutes Chapter 216I) and Minnesota Administrative Rules Chapter 7850. Minnesota Public Utilities Commission permitting requires consideration of impacts to cultural resources by following relevant state historic preservation laws, notably the Field Archaeology Act (MS 138.31-42), Minnesota Historic Sites Act (MS 138.661-138.669), and the Private Cemeteries Act (MS 307.08).

## 2.0 SOILS OF THE APRIL 2025 SURVEY AREAS

According to NRCS soils data, there are a total of 14 different soil units anticipated within the April 2025 Survey Areas (NCRS 2025a; see Table 2.0-1). Within the April 2025 Survey Areas are Alfisols, which are soils developed in forest ecosystems; Mollisols, which are soils developed under grassland ecosystems; and Entisols, which are soils of recent origin developed in unconsolidated parent material, usually no genetic horizons except an A horizon, and found on steep slopes and young geomorphic surfaces (NRCS 2025b). Soils in the April 2025 Survey Areas tend to exhibit depth and are well drained, which suggests potential for buried archaeological deposits (Fanning and Fanning 1989; Jenny 1941). Although there is potential to encounter archaeological deposits within the Project footprint, Holliday (2004) states that soil series mapped by the NRCS potentially provide clues but should be recognized as having considerable limitations in archaeological applications. Descriptions of the soil types expected to be encountered within the April 2025 Survey Areas are provided below.

TABLE 2.0-1

**Soil Types Present in Survey Areas 1–6**

| Soil Type | Soil Order | Landform | Typical Soil Profile | Percentage of Footprint |
|---|---|---|---|---|
| **Area 1 –- Parcel: Southwest corner of the intersection of 70th Avenue NE and 65th Street NE** | | | | |
| Racine silt loam | Alfisols | Interfluves and side slopes on dissected till plains on the Iowan Erosion Surface | A-E-Bt1-2Bt2-2Bt3-2Bt4-2BC1-2BC2 | 1.5 |
| Garwin silty clay loam | Mollisols | Drainageways, till plains, and stream terraces | Ap-A1-A2-Bg1-Bg2-Bg3-Bg4-BCg1-BCg2 | 15.2 |
| Joy silt loam | Mollisols | Ridges and terraces | Ap-A1-A2-Bt1-Bt2-Bt3-Btg-Cg | 25.3 |
| Waubeek silt loam | Alfisols | Summits and side slopes | Ap-E-Bt1-Bt2-2Bt3-2Bt4-2BC1-2BC2 | 6.9 |
| Otter silt loam | Mollisols | Flood plains | A1-A2-A3-A4-Bg-BCg-Cg | 1.0 |
| Downs silt loam | Alfisols | Hillslopes | Ap-E-BE-Bt1-Bt2-Bt3-BC1-BC2 | 50.1 |
| **Area 2 –- Collector Line: Adjacent to and west of 70th Avenue NE** | | | | |
| Joy silt loam | Mollisols | Ridges and terraces | Ap-A1-A2-Bt1-Bt2-Bt3-Btg-Cg | 27.7 |
| Waubeek silt loam | Alfisols | Summits and side slopes | Ap-E-Bt1-Bt2-2Bt3-2Bt4-2BC1-2BC2 | 18.8 |
| Otter silt loam | Mollisols | Flood plains | A1-A2-A3-A4-Bg-BCg-Cg | 2.8 |
| Elbaville silt loam | Alfisols | Upper back slopes, shoulders, and foot slopes in dissected uplands | Oe-A-E1-E2-BE-Bt1-2Bt2-3Bt2-3C | <0.1 |
| Downs silt loam | Alfisols | Hillslopes | Ap-E-BE-Bt1-Bt2-Bt3-BC1-BC2 | 50.7 |
| **Area 3 –- Road Access: Southwest corner of intersection of 70th Avenue NE and Viola Road NE** | | | | |
| Atkinson loam | Mollisols | Ridges of narrow interfluves, crests and side slopes on uplands, high structural benches, and strath terraces | Ap-A-BA-Bt1-Bt2-Bt3-2Bt4-3R | 100 |

**[NONPUBLIC DATA BEGINS...**

TABLE 2.0-1

**Soil Types Present in Survey Areas 1–6**

| Soil Type | Soil Order | Landform | Typical Soil Profile | Percentage of Footprint |
|---|---|---|---|---|
| **Area 4 –- Road Access: Northeast corner of the intersection of County Road 24 NE and 48th Street NE** | | | | |
| Joy silt loam | Mollisols | Ridges and terraces | Ap-A1-A2-Bt1-Bt2-Bt3-Btg-Cg | 100 |
| **Area 5 –- Collector Line: Adjacent to and west of County Road 102 NE** | | | | |
| Chaseburg silt loam | Entisols | Flood plains, hills, and alluvial fans | A-C1-C2-C3-C4 | 14.2 |
| Frankville silt loam | Alfisols | Crests of interfluves, side slopes, and high structural benches | Ap-BE-Bt1-Bt2-2Bt3-2R | 28.0 |
| Oronoco loam | Mollisols | Summits of rolling or hilly uplands | Ap-E-Bt1-Bt2-Bt3-Bt4-BC-2C | 38.4 |
| Downs silt loam | Alfisols | Hillslopes | Ap-E-BE-Bt1-Bt2-Bt3-BC1-BC2 | 19.4 |
| **Area 6 –- Parcel:** [redacted] | | | | |
| Chaseburg silt loam | Entisols | Flood plains, hills, and alluvial fans | A-C1-C2-C3-C4 | 4.5 |
| Vasa silt loam | Alfisols | Interfluves on dissected till plains | Ap-Bt1-Bt2-Bt3-2Bt4 | 2.8 |
| Nasset silt loam | Alfisols | Interfluves, benches, and dissected uplands | Ap-BE-Bt1-Bt2-Bt3-2Bt4-3R | 0.1 |
| Oronoco loam | Mollisols | Summits of rolling or hilly uplands | Ap-E-Bt1-Bt2-Bt3-Bt4-BC-2C | 9.9 |
| Downs silt loam | Alfisols | Hillslopes | Ap-E-BE-Bt1-Bt2-Bt3-BC1-BC2 | 47.2 |
| Tama silt loam | Mollisols | Ridges | Ap-A1-A2-BA-Bt1-Bt2-BC | 35.5 |

**...NONPUBLIC DATA ENDS]**

## 3.0 LITERATURE REVIEW RESULTS

In February and March 2024, Merjent conducted a literature review of the original Project footprint (Armstrong-Duarte and Mieras 2024) that included archaeological survey reports, recorded archaeological sites, and historic architectural sites within a 1.0-mile buffer of the original Project footprint using data provided by the SHPO and the Minnesota Office of the State Archaeologist (OSA). The literature review included an analysis of protected datasets on file at the SHPO, the State Register of Historic Places, the Minnesota State Historic Site Network, information regarding National Register of Historic Places (NRHP) listed properties, Minnesota's Statewide Historic Inventory Portal (MnSHIP), and National Historic Landmarks from databases maintained by the National Parks Service. The OSA maintains a secure online dataset of known and suspected archaeological sites, which is regularly updated and referenced (OSA Portal). In March and April 2025, Merjent conducted an expanded literature review of the above-mentioned resources that included a 1.0-mile buffer of the April 2025 Survey Areas (Study Area). Merjent also reviewed nineteenth-century General Land Office (GLO) maps (Bureau of Land Management [BLM] 2025), historical atlases, and historical aerial photography from 1940 to present (NETRonline 2025; OSA 2025). The literature review results of the expanded Study Area are provided below.

### 3.1 PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Since the initial Project literature review was conducted in 2024, one previous archaeological investigation that intersects the Study Area was identified (see Table 3.1-1 below and Figure 2 in Appendix A). This is the Armstrong-Duarte and Mieras (2024) Phase I archaeological survey conducted for the Project in 2024. The Armstrong-Duarte and Mieras (2024) survey identified one precontact archaeological site (21OL0077); the site consists of a single chert tertiary flake found on the ground surface.

Table 3.1-1

**Previously Reported Cultural Resources Surveys Within the Study Area**

| SHPO Project Number | Title | Author | Year |
|---|---|---|---|
| 2024-1718 | Phase I Archaeological Survey Report for the Lemon Hill Solar Project, Olmsted County, Minnesota. | Armstrong-Duarte & Mieras | 2024 |

## 3.2 PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

**[NONPUBLIC DATA BEGINS...**

Since the initial Project literature review was conducted in 2024, one archaeological site has been recorded within the Study Area (see Table 3.2-1 below and Figure 2 in Appendix A). Site 21OL0077 consists of a single chert tertiary flake found on the ground surface and that was recorded by Armstrong-Duarte and Mieras (2024). Site 21OL0077 is nearest to [redacted] Armstrong-Duarte and Mieras (2024) recommended the site as not eligible for listing in the NRHP and the SHPO concurred with this recommendation in their Project correspondence letter dated March 3, 2025.

**...NONPUBLIC DATA ENDS]**

Table 3.2-1

**Previously Reported Cultural Resources Surveys Within the Study Area**

| Site Number | Site Name | Period | Site Type | SHPO NRHP Status |
|---|---|---|---|---|
| 21OL0077 | None | Precontact | Single surface find, lithic debitage | Not Eligible |

## 3.3 HISTORICAL CEMETERIES

Since the initial Project literature review was conducted in 2024, no additional historical cemeteries have been identified.

## 3.4 PREVIOUSLY RECORDED ARCHITECTURAL RESOURCES

Since the initial Project literature review was conducted in 2024, four additional architectural resources were identified within the Study Area (see Table 3.4-1 below and Figure 2 in Appendix A). None of the architectural resources intersect the April 2025 Survey Areas; architectural resource OL-VIO-00032 is nearest to the April 2025 Survey Areas, located 0.9 mile to the east. According to MnSHIP, two of the resources have been determined not eligible for listing, and two are unevaluated for listing in the NRHP.

TABLE 3.4-1

**Previously Reported Historic Architectural Resources within the Study Area**

| Historic Inventory Number | Property Name | Property Type | SHPO NRHP Status |
|---|---|---|---|
| OL-VIO-00002 | Viola Community Church | Structure | Unevaluated |
| OL-VIO-00003 | Abandoned Railroad Boxcar | Rail/Transit | Unevaluated |
| OL-VIO-00032 | Culvert 93914 | Structure | Determined not eligible |
| OL-VIO-00040 | Bridge 55J16 | Rail/Transit | Determined not eligible |

## 3.5 HISTORICAL MAP REVIEW

Merjent reviewed nineteenth-century GLO maps and notes on file with the BLM (2025), aerial photographs taken between 1940 to present (OSA 2025; NETRonline 2025; Google 2025), modern aerial imagery from Google Earth, and historical plat maps from 1874 to 1916 (Andreas 1874, Warner and Foote 1878, Geo A. Ogle 1896, Webb Publishing Company 1914, Anderson Publishing Company 1928, W.W. Hixson & Company 1916). The 1853 GLO maps depict no historic features within the Study Area (see Figure 3 in Appendix A). No improvements or cultural features are mentioned in the associated survey notes (BLM 2025).

Review of aerial photographs from 1940 to present show the Study Area as primarily dedicated to agriculture (OSA 2025; NETRonline 2025, Google 2025). Other than a slight increase in structures—presumably farmsteads—over time, the Study Area is agricultural and rural and has remained relatively unchanged between 1940 and present. One notable change is the road improvement overtime. By about 1980, the roads within the Study Area had mostly been paved and the right-of-way spaces expanded. However, many roads within the Study Area remain unpaved to this day. There were no structures or improvements identified within the April 2025 Survey Areas.

Review of historical atlases from 1874 through 1916 (Andreas 1874, Warner and Foote 1878, Geo A. Ogle 1896, Webb Publishing Company 1914, Anderson Publishing Company 1928, W.W. Hixson & Company 1916) shows the area as entirely parceled out with several roads and structures, presumably farmsteads, within the Study Area. There were no structures or improvements identified within the April 2025 Survey Areas.

## 3.6 IMPLICATIONS FOR SITE POTENTIAL

The environmental setting and modern land use patterns suggest that archaeological resources may be present in the April 2025 Survey Areas. However, the lack of documented archaeological sites and the paucity of large water bodies and rivers suggests that the April 2025 Survey Areas may have only modest potential to contain precontact archaeological sites. Further, the likelihood of encountering intact cultural resources within the April 2025 Survey Areas is somewhat diminished due to modern disturbance by road and utilities construction and from mechanical alteration of the soils related to agricultural plowing. Regarding the prevalence of Alfisols in the Project footprint, Alfisols typically have a thin A horizon rich in organic matter and nutrients, a clay-enriched subsoil, and are fertile as they are usually only moderately leached (Soil Survey Staff 1999). Archaeological deposits within Alfisols are often near the ground surface and not deeply buried given their temporal and geospatial formation histories (Holliday 2004); sustained agricultural plowing would both incorporate exposed artifacts within the A horizon and disrupt the geospatial integrity of archaeological deposits. Historic-period artifact scatters are possible in the April 2025 Survey Areas due to the presence of the farmsteads within the Study Area since the end of the nineteenth century. Conversely, remnants of historical occupation have likely been affected by the same ground-disturbing activities discussed previously, likely hindering the integrity of potential sites.

# 4.0 OBJECTIVES AND METHODS

The objective of the Phase I archaeological survey was to identify conventional archaeological sites within the April 2025 Survey Areas that are at least 45 years of age. Archaeological resource types considered for this investigation included precontact, contact, and postcontact archaeological sites and earthworks that could provide information about past human occupation.

Such sites could be evident in artifacts or features on or below the current ground surface. The focus of this field survey was to identify potentially affected cultural resources within the April 2025 Survey Areas.

Throughout all stages of this investigation Merjent applied industry best practices and adhered to the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 Federal Register 44716), the *SHPO Manual for Archaeological Projects in Minnesota* (Anfinson 2005), and the *State Archaeologist's Manual for Archaeological Projects in Minnesota* (Anfinson 2011). The April 2025 Survey Areas were based on files provided by Lemon Hill Solar in April 2025.

On May 28, 2024, Merjent, on behalf of Lemon Hill Solar, submitted the Project's Phase I Survey Plan and Methods to the SHPO for review. In a letter dated July 19, 2024, SHPO concurred that the Phase I Survey Plan and Methods were appropriate for the undertaking. The Phase I Survey Plan and Methods defined portions of the Project as areas of high, medium, or low probability of containing archaeological resources and proposed to survey 100 percent of the high and medium probability areas, and 5 percent of the low probability areas. The same Phase I Survey Plan and Methods that received the SHPO's approval was used for the April 2025 Survey Areas.

The pedestrian survey visually inspected for surface features, foundations, densities of surface artifacts, and other surface indications of archaeological sites while considering the safety of the field team. Pedestrian survey was conducted to the exclusion of systematic shovel testing in plowed areas where ground surface visibility (GSV) was greater than 25 percent. Pedestrian survey transects were spaced between 5 and 15 meters based on GSV. An average survey rate of 40 acres per person, per day was expected. Shovel testing was conducted in areas that have not been plowed or that had potential to contain buried cultural material regardless of GSV. Areas determined unsafe to shovel test that is, in areas featuring buried utilities) were photographed and documented.

Shovel tests were excavated per SHPO and OSA guidelines; that is, each shovel test measured 30 to 40 centimeters (cm) in diameter and extended no less than 35 cm deep and at least 10 cm into sterile subsoil. Shovel tests were excavated in 10-cm levels. Soils from each stratum were screened separately through 0.25-inch wire mesh onto a tarp. Data from all shovel tests were recorded on standardized forms and located by GPS. Soil profiles were recorded using the Munsell color system and standard texture classifications as well as additional notes and comments (for example, "disturbed matrix," "heavily compacted," "inundated at 20 cm below the surface"). Once completed, each shovel test was immediately backfilled.

If an artifact or artifacts were found on the ground surface, a formal surface collection commenced. Surface collection included all historic, potentially historic, non-diagnostic, and precontact artifacts per SHPO and OSA guidelines. When an artifact or artifacts were encountered on the surface or in a shovel test, additional shovel testing was conducted in the four cardinal directions, spaced at 5-meter intervals, to delineate the site boundary.

The location of all shovel tests, surface artifacts, and features were mapped and recorded with a Trimble R1 Integrated Global Navigation Satellite System receiver and Esri Field Maps at sub-meter accuracy. Digital photography was used to record surface conditions of all Project areas, select excavation profiles, cultural features, and identified archaeological sites. Overview photographs were taken of the areas surveyed and landforms. Additional photographs were taken to document specific disturbances, archaeological sites, artifacts, land use patterns, landforms, and anything else that would contribute to describing the survey and Project footprint.

## 4.1 NRHP SITE EVALUATION CRITERIA

Merjent evaluates sites and their significance, as defined by criteria set forth in Title 36 Code of Federal Regulations (CFR) 60.4 (National Park Service 1997), which state:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history;
>
> B. that are associated with the lives of persons significant in our past;
>
> 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.

Sites that are not eligible are unlikely to contribute further data significant to our knowledge of prehistory or history and/or may no longer possess integrity.

### 4.1.1 Precontact Archaeological Sites

Precontact lithic scatters/open camps (sites without any structures or association with known significant events or persons) usually do not merit discussion of Criteria A, B, and C. Rather, for NRHP recommendation purposes, these property types are discussed for their potential to yield information significant to the precontact period or the archaeological record under NRHP Criterion D. Special cases generally relate to Criterion A, where a precontact site type (such as a stone circle site) may not be recommended eligible for the NRHP from an archaeological perspective but may be considered important to cultures of Native American Tribes (Parker and King 1998).

Evaluation of the significance of archaeological sites under Criterion D involves considering general characteristics such as the nature, size, and diversity of the site assemblage; the potential presence or absence of intact subsurface cultural deposits; the depth that the deposits are buried; the nature of any features within the site (construction techniques, building materials, structural integrity); and the age range reflected by the site assemblage. Sites considered to be significant usually contain an assemblage of cultural artifacts and/or features that indicate sufficient diversity to permit identification of activities and allow confirmation of the period of site use. The integrity of archaeological sites is addressed using the guidelines presented in National Register Bulletin 15 (National Park Service 1997), which defines the seven elements of integrity as location, design, setting, materials, workmanship, feeling, and association and occasionally evaluated using the guidelines presented in Little et al. (2000). Sites with the most potential to address research questions about human lifeways contain associated features, structures, and/or relatively intact and dateable artifacts.

## 5.0 SURVEY RESULTS

The Phase I archaeological survey of the April 2025 Survey Areas totaling 80.6 acres (this acreage is composed of 100 percent of the high and medium probability areas and at least 5 percent of the low probability areas) was conducted on April 17 by Merjent archaeologists Aaron Armstrong-Duarte (principal investigator) and Fred Sutherland. Drs. Armstrong-Duarte and Sutherland meet the Secretary of the Interior's Professional Qualification Standards for Archaeology as published in 36 CFR 61.

The Project is set in a rural area of Olmsted County (see Figure 1 in Appendix A). The April 2025 Survey Areas are composed largely of plowed agricultural fields; roads; road borrows; utilities rights-of-way; and National Wetland Inventory (NWI)-defined wetlands (see Figure 4 in Appendix A). Of the 128.22-acre total in the April 2025 Survey Areas, there were 29.65 acres of high, 37.52 acres of medium, and 61.05 acres of land defined as having low probability of containing archaeological sites based on the Project's Phase I Survey Plan and Methods. As the April 2025 Survey Areas are sprawled across a wide landscape, the survey results are organized and summarized below by individual areas.

The 26 shovel tests excavated on April 17, 2025, as well as the 498 excavated in 2024, and the soil profiles of the April 2025 Survey Areas as indicated by the NRCS (2025), indicate that the A horizons in the April 2025 Survey Areas were relatively shallow and did not extend deeper than 30 cm below the ground surface (cmbs). All shovel tests were excavated to at least 10 centimeters into subsoil; the average shovel test depth was 46.5 cmbs; and multiple shovel tests were excavated to at least 50 cmbs. There was no evidence of deep or buried A-horizon soils. Therefore, within the plowed agricultural fields, the A horizon has been habitually turned, and pedestrian survey is an effective method of sampling the landscape for archaeological deposits.

### 5.1 AREA 1 – PARCEL: TOWNSHIP 107N, RANGE 13W, SECTION 11

Area 1 is composed of a harvested and plowed agricultural field (see Photos 4.1-1 and 4.1-2 below and Figure 4 in Appendix A) and an NWI-defined wetland (see Photo 4.1-3 below and Figure 4 in Appendix A). GSV in the agricultural field varied between 70 and 90 percent (see Photo 4.1-4 below).

**Photo 4.1-1. Overview of agricultural field in Area 1, facing north.**

**Photo 4.1-2. Overview of agricultural field in Area 1, facing south.**

**Photo 4.1-3. Example of NWI-defined wetland in Area 1, facing west.**

**Photo 4.1-4. Example of 80 percent GSV in Area 1, facing ground.**

The high, medium, and a portion of the low probability areas were walked in survey transects spaced between 10 and 15 meters (see Table 4.1-1 below for acres surveyed). Throughout the agricultural field, there were chunks of B- and C-horizon clay loams and clays incorporated in the A-horizon till, indicating that the A horizon was deflated and was thoroughly turned over by habitual plowing. Therefore, no shovel tests were excavated, and pedestrian walkover survey was an effective way to sample Area 1 for cultural resources. No cultural materials or features were identified during the survey of Area 1.

TABLE 4.1-1

**Area 1 Survey Coverage**

| Probability Model | Acres in Area | Acres Surveyed |
|---|---|---|
| High | 8.26 | 8.26 |
| Medium | 17.68 | 17.68 |
| Low | 50.30 | 10.29 |
| **TOTAL ACREAGE** | **76.24** | **36.23** |

## 5.2 AREA 2 – COLLECTOR LINE: TOWNSHIP 107N, RANGE 13W, SECTIONS 11 & 14

Area 2 is a north-south oriented, 5.25-meter-wide corridor that runs adjacent to 70th Avenue NE. The area is composed of the road, road borrow, and utilities right-of-way (see Photos 4.2-1 to 4.2-3 below and Figure 4 in Appendix A).

**Photo 4.2-1. Overview of Area 2, facing south.**

**Photo 4.2-2. Overview of Area 2, facing north.**

**Photo 4.2-3. Example of buried utility in Area 2, facing west.**

The high, medium, and a portion of the low probability areas were walked in one north-south oriented survey transect (see Table 4.1-1 below for acres surveyed). The area is a constructed landscape, having been heavily transformed by road and borrow construction, and featured buried utilities. Therefore, no shovel tests were excavated. No cultural materials or features were identified during the survey of Area 2.

TABLE 4.2-1

**Area 2 Survey Coverage**

| Probability Model | Acres in Area | Acres Surveyed |
|---|---|---|
| High | 0.66 | 0.66 |
| Medium | 0.49 | 0.49 |
| Low | 0.65 | 0.04 |
| **TOTAL ACREAGE** | **1.80** | **1.19** |

## 5.3 AREA 3 – ROAD ACCESS: TOWNSHIP 107N, RANGE 13W, SECTION 23

Area 3 is a field entry point that articulates with Viola Road NE (County Road 2 NE). The area is composed of an existing field entry point, road borrow, and utilities right-of-way (see Photos 4.3-1 below and Figure 4 in Appendix A).

**Photo 4.3-1. Overview of Area 3, facing west.**

Area 3 is composed entirely of low probability space (see Table 4.3-1 below for acres surveyed); a single east-west oriented survey transect was walked down the center of the area. Area 3 is a constructed landscape, having been heavily transformed by road and borrow construction. Therefore, no shovel tests were excavated. No cultural materials or features were identified during the survey of Area 3.

TABLE 4.3-1

**Area 3 Survey Coverage**

| Probability Model | Acres in Area | Acres Surveyed |
|---|---|---|
| High | 0.00 | 0.00 |
| Medium | 0.00 | 0.00 |
| Low | 0.04 | 0.04 |
| **TOTAL ACREAGE** | **0.00** | **0.04** |

## 5.4 AREA 4 – ROAD ACCESS: TOWNSHIP 107N, RANGE 12W, SECTION 18

Area 4 is a proposed field entry point that articulates with County Road 24 NE. The area is composed of a road borrow and utilities right-of-way (see Photos 4.4-1 below and Figure 4 in Appendix A).

**Photo 4.4-1. Overview of Area 4, facing north.**

Area 4 is composed entirely of low probability space (see Table 4.4-1 below for acres surveyed); a single north-south oriented survey transect was walked down the center of the area. Area 4 is a constructed landscape, having been heavily transformed by road and borrow construction. Therefore, no shovel tests were excavated. No cultural materials or features were identified during the survey of Area 4.

TABLE 4.4-1

**Area 4 Survey Coverage**

| Probability Model | Acres in Area | Acres Surveyed |
|---|---|---|
| High | 0.00 | 0.00 |
| Medium | 0.00 | 0.00 |
| Low | 0.04 | 0.04 |
| **TOTAL ACREAGE** | **0.00** | **0.04** |

## 5.5 AREA 5 – COLLECTOR LINE: TOWNSHIP 107N, RANGE 12W, SECTION 19

Area 5 is a north-south oriented, 6.15-meter-wide corridor that runs adjacent to County Road 102 NE. The area is composed of the road, road borrow, and utilities right-of-way (see Photos 4.5-1 and 4.5-2 below and Figure 4 in Appendix A).

**Photo 4.5-1. Overview of Area 5, facing south.**

**Photo 4.5-2. Overview of Area 5, facing north.**

Area 5 is composed of high probability area; a single pedestrian transect was walked in a north-south oriented survey transect (see Table 4.5-1 below for acres surveyed). The area is a constructed landscape, having been heavily transformed by road and borrow construction and featured buried utilities. Therefore, no shovel tests were excavated. No cultural materials or features were identified during the survey of Area 5.

TABLE 4.5-1

**Area 5 Survey Coverage**

| Probability Model | Acres in Area | Acres Surveyed |
|---|---|---|
| High | 0.42 | 0.42 |
| Medium | 0.00 | 0.00 |
| Low | 0.00 | 0.00 |
| **TOTAL ACREAGE** | **0.42** | **0.42** |

**[NONPUBLIC DATA BEGINS...**

## 5.6 AREA 6 – PARCEL: TOWNSHIP 107N, RANGE 12W, [redacted]

**...NONPUBLIC DATA ENDS]**

Area 6 is composed of a harvested and plowed agricultural field (see Photos 4.6-1 and 4.6-2 below and Figure 4 in Appendix A) and an NWI-defined wetland flanked by marsh (see Photo 4.6-3 below and Figure 4 in Appendix A). GSV in the agricultural field varied between 70 and 90 percent (see Photo 4.6-4 below).

**Photo 4.6-1. Overview of agricultural field in Area 6, facing north.**

**Photo 4.6-2. Overview of agricultural field in Area 6, facing east.**

**Photo 4.6-3. Example of NWI-defined wetland in Area 6, facing north.**

**Photo 4.6-4. Example of 80 percent GSV in Area 6, facing ground.**

The high, medium, and a portion of the low probability areas were walked in survey transects spaced between 10 and 15 meters (see Table 4.6-1 below for acres surveyed). Seven shovel tests were excavated along the north and south sides of the NWI-delineated wetland and marsh area (see Photo 4.6-5 below for example of shovel test profile and Figure 4 in Appendix A). The eastern and western portions of the NWI-delineated wetland and marsh area were sloped from the northeast to the southwest (there were no field photos taken which capture the landscape feature). The soil profiles of the seven shovel tests were similar and exhibited an A horizon of loam or sandy loam (10YR 2/2 to 10YR 3/1) extending to depths of 0–$21.5^{\pm 6.5}$ cmbs; followed by an AB horizon of sandy loam and clay loam (10YR 3/1 mixed with 10YR 5/1) extending to depths of $21.5^{\pm 6.5}$–$26^{\pm 4}$ cmbs; followed by a B horizon of clay loam extending to depths of $26^{\pm 4}$– $46.5^{\pm 5.5}$ cmbs. There were no cultural resources or features discovered in the shovel tests.

TABLE 4.6-1

**Area 6 Survey Coverage**

| Probability Model | Acres in Area | Acres Surveyed |
|---|---|---|
| High | 20.31 | 20.31 |
| Medium | 19.35 | 19.35 |

TABLE 4.6-1

**Area 6 Survey Coverage**

| Probability Model | Acres in Area | Acres Surveyed |
|---|---|---|
| Low | 10.02 | 3.01 |
| **TOTAL ACREAGE** | **49.67** | **42.67** |

**Photo 4.6-5. Shovel test 2 excavated in Area 6, facing ground.**

### 5.6.1 Archaeological Sites 21OL0078 and 21OL0079

Two precontact surface artifacts were discovered in the western portion of the agricultural field during the pedestrian walkover survey (see Figure 4.8 in Appendix A). The two finds were documented as sites 21OL0078 and 21OL0079.

Site 21OL0078 (field number MJNT-02) consists of a single blade-like Swan River chert tertiary flake that was discovered on the ground surface (see Photo 4.6.1-2 below for overview of the find locale and Appendix B for the OSA site form). Eight shovel tests were excavated in 5- and 10-meter intervals in the cardinal directions centered on the find locale (see Photo 4.6.1-4 for example of shovel test profile and Figure 4 in Appendix A). The soil profiles of the eight shovel tests were similar and exhibited an A horizon of loam (10YR 3/1) extending to depths of 0–$19.5^{\pm 2.5}$ cmbs; followed by an AB horizon of loam and clay loam (10YR 3/1 mixed with 10YR 4/4) extending to depths of $19.5^{\pm 2.5}$–$25^{\pm 2}$ cmbs; followed by a B horizon of clay loam extending to depths of $25^{\pm 2}$–$45.5^{\pm 8.5}$ cmbs. There were no cultural resources or features discovered in the shovel tests.

Site 21OL0079 (field number MJNT-01) consists of a single Prairie du Chien tertiary flake that was discovered on the ground surface (see Photo 4.6.1-1 below for overview of the find locale and Appendix B for the OSA site form). Eight shovel tests were excavated in 5- and 10-meter intervals in the cardinal directions centered on the find locale (see Photo 4.6.1-3 below for example of shovel test profile and Figure 4 in Appendix A). The soil profiles of the eight shovel tests were similar and exhibited an A horizon of loam (10YR 3/1) extending to depths of 0–$17.5^{\pm 3.5}$ cmbs; followed by an AB horizon of loam and clay loam (10YR 3/1 mixed with 10YR 4/4) extending to depths of $17.5^{\pm 3.5}$–$24.5^{\pm 2.5}$ cmbs; followed by a B horizon of clay loam extending to depths of $24.5^{\pm 2.5}$– $44.5^{\pm 6.5}$ cmbs. There were no cultural resources or features discovered in the shovel tests.

Three additional shovel tests were excavated between the 21OL0078 and 21OL0079 locales (see Photo 4.6.1-3 to 4.6.1-5 below for examples of shovel test profile and Figure 4 in Appendix A). The soil profiles of the three shovel tests were similar and exhibited an A horizon of loam (10YR 3/1) extending to depths of 0–$25^{\pm 2}$ cmbs; followed by an AB horizon of loam and clay loam (10YR 3/1 mixed with 10YR 4/4) extending to depths of $25^{\pm 2}$–$28.5^{\pm 2.5}$ cmbs; followed by a B horizon of clay loam extending to depths of $28.5^{\pm 2.5}$– $43.5^{\pm 1.5}$ cmbs. There were no cultural resources or features discovered in the shovel tests.

**Photo 4.6.1-1. Overview of the 21OL0079 locale, facing south.**

**Photo 4.6.1-2. Overview of the 21OL0078 locale, facing north.**

**Photo 4.6.1-3. Shovel test 12 excavated in Area 6, facing ground.**

**Photo 4.6.1-4. Shovel test 14 excavated in Area 6, facing ground.**

**Photo 4.6.1-5. Shovel test 22 excavated in Area 6, facing ground**

**[NONPUBLIC DATA BEGINS...**

## 6.0 EVALUATION OF SITES 21OL0078 AND 21OL0079

Merjent-documented precontact single artifact site 21OL0079 (field number MJNT-01) and precontact single artifact site 21OL0078 (field number MJNT-02) were both found in an agricultural field in [redacted] of Township 107 North and Range 12 West. Site forms were submitted to OSA on May 4, 2025 (see site forms in Appendix B). The artifacts were found on the ground surface and consist of a Prairie du Chien tertiary flake (21OL0079) and blade-like Swan River chert tertiary flake. The artifact discovery locales were surveyed in 5-meter-spaced transects, and eight shovel tests spaced at 5- and 10-meter intervals were excavated in the cardinal directions centered on each of the discovery locales. There were no additional artifacts discovered in the pedestrian survey or shovel tests. The new discovery locales were assessed for physical integrity, associative value, and archaeological merit using the NRHP Evaluation Criteria described in section 3.1 and 3.1.1.

**...NONPUBLIC DATA ENDS]**

## 6.1 NRHP RECOMMENDATIONS – SIGNIFICANCE AND ASSESSMENT OF INTEGRITY

The integrity of sites 21OL0078 and 21OL0079 are somewhat diminished by decades of mechanical alteration of the soil related to agricultural activity. The eight shovel tests excavated in the vicinity of the new artifact locales as well as the shovel tests excavated between the locales demonstrate that the upper 30 cm of soil display evidence of agricultural disturbance; the deepest shovel test was excavated to 54 cmbs. In addition, there is little integrity of design or workmanship present in the tertiary flakes; the artifacts do not exhibit exceptional artistry nor are they clearly indicative of a temporal phase or sequence. Each site consists of only one surface-recovered artifact, the integrity of which has been reduced by plowing, which undoubtably affected the in situ spatial integrity of the artifacts. Further, the artifact material types, Prairie du Chien and Swan River cherts, are commonplace for precontact archaeological sites in Minnesota. In terms of setting, the sites are situated in a gradual upland within a landscape of gently rolling hills and are not near a lake or river or another documented precontact archaeological site. In addition, the Historic Lakes and Rivers (MM4) and Prehistoric Hydrography (MM4) models on the OSA Portal show no historic lakes, shores, or rivers near to the sites; the Prehistoric Hydrography (MM4) model shows a prehistoric floodplain north of and adjacent to the sites, and additional prehistoric floodplains and wetlands between 0.3 and 0.5 mile to the north, east, south, and west of the sites.

Sites 21OL0078 and 21OL0079 do not meet criteria established in Title 36 CFR 60.4 (National Park Service 1997).

Due to the factors described above, sites 21OL0078 and 21OL0079 do not retain sufficient integrity or importance to be recommended eligible for the NRHP. Merjent recommends that sites 21OL0078 and 21OL0079 are not eligible for inclusion on the NRHP. If the SHPO concurs with this recommendation, then no Project avoidance of sites 21OL0078 and 21OL0079 is necessary.

## 7.0 SUMMARY AND CONCLUSIONS

On April 17, Merjent returned to the Lemon Hill Solar Project to conduct a Phase I archaeological survey of six areas that were not surveyed in the 2024 survey effort (Armstrong-Duarte and Mieras 2024). Survey of the April 2025 Survey Areas followed the Project's SHPO-approved Phase I Survey Plan and Methods and covered 80.6 acres. There are no determined eligible or NRHP-listed cultural resources within the April 2025 Survey Areas. There were two precontact, single artifact sites discovered during the archaeological field survey, 21OL0078 and 21OL0079. Merjent recommends that 21OL0078 and 21OL0079 are not eligible for listing in the NRHP. Merjent recommends that no historic properties will be affected by the proposed Project. No further archaeological work is recommended for the Project as planned.

## 8.0 REFERENCES CITED

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# APPENDIX A

## Project Figures

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PUBLIC DOCUMENT - NOT PUBLIC DATA HAS BEEN EXCISED

T107N, R13W, Sec. 2

T107N, R13W, Sec. 1

65th St

Area 1

Co Hwy 124

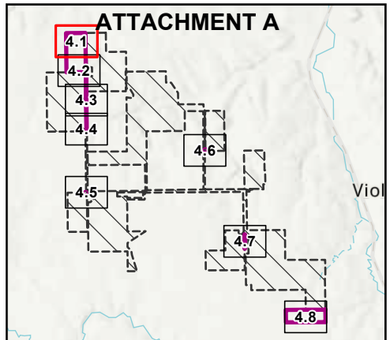
T107N, R13W, Sec. 12

T107N, R13W, Sec. 11

70th Ave NE

2024-1718

ATTACHMENT A

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1 inch = 200 feet

N
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- 2025 Project Area (Addendum Survey)
- 2024 Project Area (Previously Surveyed)
- High Probability Survey Area
- Medium Probability Survey Area
- Section Boundary
- Previous Survey
- NWI Wetland
- Marsh

**Figure 4.1:**
**Survey Results**
**Lemon Hill Solar, LLC**
**Lemon Hill Solar**
**Olmsted County, Minnesota**

merjent

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Date: (7/31/2025)

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Area 1

T107N, R13W,
Sec. 11

70th Ave NE

T107N, R13W,
Sec. 12

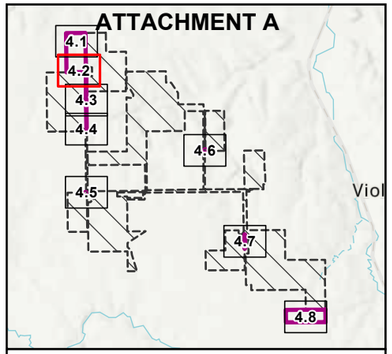
2024-1718

Area 2

2024-1718

2024-1718

## ATTACHMENT A

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1 inch = 200 feet

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- 2025 Project Area (Addendum Survey)
- 2024 Project Area (Previously Surveyed)
- High Probability Survey Area
- Medium Probability Survey Area
- Section Boundary
- Previous Survey
- NWI Wetland
- Marsh

**Figure 4.2:**
**Survey Results**
**Lemon Hill Solar, LLC**
**Lemon Hill Solar**
**Olmsted County, Minnesota**

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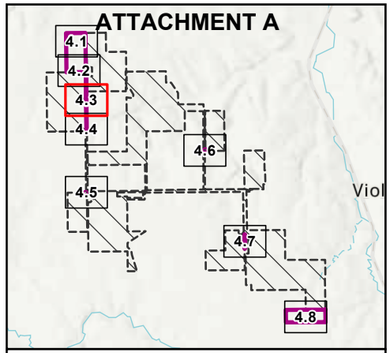


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1 inch = 200 feet

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- 2025 Project Area (Addendum Survey)
- 2024 Project Area (Previously Surveyed)
- High Probability Survey Area
- Medium Probability Survey Area
- Section Boundary
- Previous Survey
- NWI Wetland

**Figure 4.3:**
**Survey Results**
**Lemon Hill Solar, LLC**
**Lemon Hill Solar**
**Olmsted County, Minnesota**

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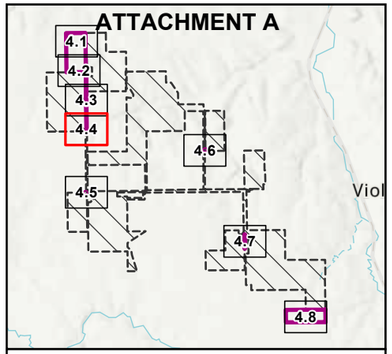


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1 inch = 200 feet

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- 2025 Project Area (Addendum Survey)
- 2024 Project Area (Previously Surveyed)
- High Probability Survey Area
- Medium Probability Survey Area
- Section Boundary
- Previous Survey
- NWI Wetland

**Figure 4.4:**
**Survey Results**
**Lemon Hill Solar, LLC**
**Lemon Hill Solar**
**Olmsted County, Minnesota**

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T107N, R13W,
Sec. 14

70th Ave NE

T107N, R13W,
Sec. 13

Area 3

Co Rd 2 NE

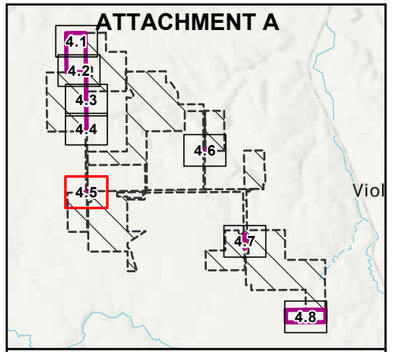
T107N, R13W,
Sec. 23

T107N, R13W,
Sec. 24

Co Rd 119

2024-1718

## ATTACHMENT A

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1 inch = 200 feet

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- 2025 Project Area (Addendum Survey)
- 2024 Project Area (Previously Surveyed)
- High Probability Survey Area
- Medium Probability Survey Area
- Section Boundary
- Previous Survey
- NWI Wetland

**Figure 4.5:**
**Survey Results**
**Lemon Hill Solar, LLC**
**Lemon Hill Solar**
**Olmsted County, Minnesota**

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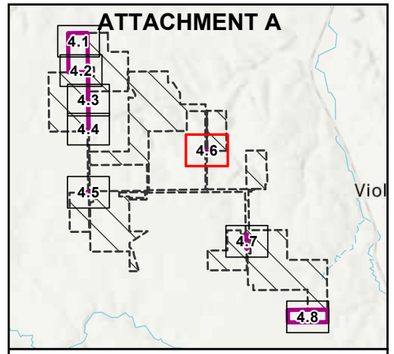


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1 inch = 200 feet

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- 2025 Project Area (Addendum Survey)
- 2024 Project Area (Previously Surveyed)
- High Probability Survey Area
- Medium Probability Survey Area
- Section Boundary
- Previous Survey

**Figure 4.6:**
**Survey Results**
**Lemon Hill Solar, LLC**
**Lemon Hill Solar**
**Olmsted County, Minnesota**

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Area 5

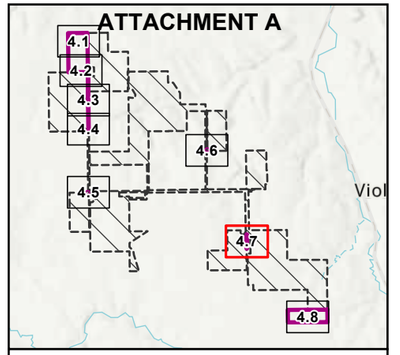
Co Rd 102 NE

T107N, R12W,
Sec. 19

T107N, R12W,
Sec. 20

2024-1718

ATTACHMENT A

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1 inch = 200 feet

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- 2025 Project Area (Addendum Survey)
- 2024 Project Area (Previously Surveyed)
- High Probability Survey Area
- Medium Probability Survey Area
- Section Boundary
- Previous Survey
- NWI Wetland

**Figure 4.7:**
**Survey Results**
**Lemon Hill Solar, LLC**
**Lemon Hill Solar**
**Olmsted County, Minnesota**

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# APPENDIX B

## Site Forms

**PUBLIC DOCUMENT - NOT PUBLIC DATA HAS BEEN EXCISED** **ATTACHMENT A**

Rev.: 7/1/09

# MINNESOTA ARCHAEOLOGICAL SITE FORM

**OFFICE OF THE STATE ARCHAEOLOGIST**
Fort Snelling History Center, St. Paul, MN 55111 (612) 725-2729

**SITE #: 21-OL-0079** *(OSA assigns if New Site)* Site Name: None Agency/Field #: MJNT-01

_X_ New Site __ Site Update OSA License #: SHPO RC #: 2024-1718

Type of Fieldwork: _X__ Reconnaissance/Phase I Date(s) of This Fieldwork: April 17, 2025
___ Evaluation/Phase II
___ Excavation/Phase III

NRHP Status: __ Listed __ Determined Eligible __ CEF(106) __ CNEF(106) _X_ Undetermined

## LOCATIONAL INFORMATION

**[NONPUBLIC DATA BEGINS...**

County: Olmsted City/Twp. Name: Viola SHPO Sub-Region: 3W
*(see map in instructions)*

USGS 7.5' Quadrangle Map *(name and year):*

Township: 107 North Range: 12 West Section: [redacted] ¼ Sections (at least [redacted]
Township: Range: Section: ¼ Sections (at least 2):
Township: Range: Section: ¼ Sections (at least 2):

UTM Coordinates: (*less than 10 acres use center; over 10 acres define polygon around site; draw points on USGS*)
Zone: 15T____ Datum: ___ 1927 __X_ 1983 Method: ___ USGS Map _X__ GPS ___ Other
Point 1: Easting [redacted] Northing [redacted]
Point 2: Easting Northing
Point 3: Easting Northing
Point 4: Easting Northing
Point 5: Easting Northing

**...NONPUBLIC DATA ENDS]**

## SITE CHARACTERISTICS

Acreage: Site Dimensions: N-S 5 meters E-W 5 meters Maximum Cultural Depth (if known) surface find

Site Description *(√all that apply, but only one check per line):*
X single artifact __ lithic scatter __ artifact scatter
__ burial mound (number of mounds _____) __ non-mound lone grave __ non-mound cemetery
__ petroglyph __ pictograph __ petroform
__ surface features (list below)
__ other: _____

Surface Features (*√all that apply*): __ earthwork __ pit/depression __ foundation/ruin __ other: _____

Inferred Site Function (*√all that apply*): __ habitation __ mortuary __ farm __ industrial __ transportation
__ Other (*list*): _____ X unknown

Current Land Use (*list approximate % for all that apply):*
X cultivated ___ fallow ___ commercial ___ recreational ___ industrial ___ residential
___ woodland ___ grassland ____ water-covered ___ other: _____

Surface Visibility (*list approximate % for all that apply):*
__ excellent 50–75% good ___ fair ___ poor/none

Degree of Disturbance (*list approximate % for all that apply or √ unassessed):*
___ minimal X moderate___ heavy ___ completely destroyed ___ unassessed

Current Threats to Site: (*√all that apply or √ none known)*
__ erosion X development X agricultural __ other: _____ __ none known

# MINNESOTA ARCHAEOLOGICAL SITE FORM

**SITE #:** 21- Site Name: none Agency/Field #: MJNT-01

## CULTURAL/TEMPORAL AFFILIATION

*(list all that apply by level of certainty: 1 = confirmed; 2 = probable or √"not determined"):*

**Period:**
__ not determined
X Precontact (9500 BC - 1650 AD)
__ Contact (1650-1837)
__ Post-Contact (1837-1945)

**Precontact Context:** *(list all that apply by level of certainty; if unable to discern specific context, √here X)*

*Paleoindian Tradition* __ not determined __ Folsom __ Lanceolate Point/Plano
__ Clovis __ Eastern Fluted __ other: _____

*Archaic Tradition* __ not determined __ Prairie __ Riverine
__ Shield __ Lake-Forest __ other: _____

*Woodland Tradition* __ not determined __ Fox Lake __ Laurel
__ SE Mn Early __ C Mn Transitional __ Lake Benton
__ Brainerd __ Blackduck-Kathio __ Psinomani/Sandy Lake
__ Havana-Related __ SE Mn Late __ Rainy River Late
__ other: _____

*Plains Village Tradition* __ not determined __ Cambria __ Great Oasis __ Big Stone
__ other: _____

*Mississippian Tradition* __ not determined __ Silvernale __ other: _____

*Oneota Tradition* __ not determined __ Blue Earth __ Orr __ other: _____

**Contact Context:** *(list all that apply by level of certainty; if unable to discern specific context, √here __ )*

*American Indian* X not determined __ Dakota __ Ojibwe __ other: _____

*Euro-American* __ not determined __ British __ other: _____
__ French __ Initial US

**Post-Contact Context:** *(list all that apply by level of certainty; if unable to discern specific context, √here __ )*

__ Indian Communities & Reservations (1837-1934)
__ Early Agriculture & River Settlement (1840-1870)
__ Northern MN Lumbering (1870-1930s)
__ Tourism & Recreation (1870-1945)
__ St. Croix Triangle Lumbering (1830s-1900s)
__ Railroads & Agricultural Development (1870-1940)
__ Iron Ore Industry (1880s-1945)
__ Urban Centers (1870-1940)

Approximate Post-Contact Occupation/Site Formation Date(s): _____

**Context Assignment/Dating Methods** *(√all that apply):*

__ artifact type/style __ feature type __ radiometric __ relative stratigraphy __ geomorphology
__ historic accounts (list) _____
__ historic maps (list) _____
__ other(s) (*specify*): _____

*(For radiometric dates, attach photocopies of laboratory sheets if available.)*

## MATERIALS PRESENT *(√all that apply):*

**Basic Artifact Categories**

| *Ceramics* | *Lithics* | *Biological Remains* | *Historic Materials* |
|---|---|---|---|
| __ Aboriginal | __ projectile points | __ animal | __ glass |
| __ Euro-American | __ other chipped stone tools | __ human | __ metal |
| | X debitage | __ unidentified bone | __ brick |
| | __ ground/pecked stone | __ seeds/nuts | __ other: _____ |
| | __ FCR | __ charcoal | |
| | __ aboriginal copper | __ wood | |

**SITE #:** 21- Site Name: none Agency/Field #: MJNT-01

**Major Exotic Materials** *(√all that apply):*

__ catlinite __ native copper __ Hixton orthoquartzite
__ Knife River Flint __ obsidian X other: Prairie du Chien chert

**Diagnostic Artifacts**:

Ceramics: Prehistoric Types/Wares/Temper _____
Historic _____
Prehistoric Lithics: none
Glass: _____
Metal: _____
Other: _____

**ENVIRONMENTAL DATA** **Current Topographic Setting** *(√all that apply):*

| *Away from Water* | *Riverine* | *Lacustrine* |
|---|---|---|
| X general upland | __ fan | __ inlet/outlet |
| __ terrace edge | __ terrace/bluff top | __ peninsula |
| __ hilltop | __ stream-stream junction | __ island |
| __ glacial beach ridge | __ bluff-base | __ isthmus |
| __ rock outcrop | __ cave/rockshelter | __ general shoreline |
| __ other: _____ | __ floodplain | __ bog/slough/lake bottom |
| | __ other: _____ | __ other: _____ |

Topographic Feature Name from USGS Map: _____

**OWNERSHIP INFORMATION**

Source and Date of Ownership Information *(e.g., plat map, county recorder's office, personal communication, etc.):*

Ownership Type (*list approximate % for all that apply; if unknown √here __ ):*

___ Federal ___ State ___ Local (public) ___ Tribal X Private

Land Owner *(name and address if known):*

**CURRENT INVESTIGATION INFORMATION**

Methods/Techniques Employed *(√all that apply):*

__ informant report __ small diameter soil coring (≈ 1" diameter) X surface survey
X shovel testing __ formal test units __ mechanical testing max. test depth _____
__ geomorphological survey *(specify)*: _____
__ geophysical survey *(specify)*: _____
__ other: _____

Informant Name and Address (if known):

Known Collectors/Collections:

Artifact Repository *(name and accession numbers or repository agreement number):*

Most Recent Survey Report – Title, Author, Date:

Major Previous Bibliographic Reference(s) to Site:

Principal Investigator *(name and affiliation): Aaron Armstrong-Duarte*

**Form Completed By** *(name and date):* Aaron Armstrong-Duarte May 4, 2025

**MAPS:** *Attach/include original scale copy of 7.5' USGS map with site location clearly outlined or designated. Attach a sketch map if surface features present, if sub-surface testing done, or if complicated boundaries/setting. Sketch map must have re-locatable datum, scale, north arrow, and legend if symbols are used.*

[NONPUBLIC DATA BEGINS HERE. .

...NONPUBLIC DATA ENDS HERE]

**SITE #:** 21- Site Name: none Agency/Field #: MJNT-01

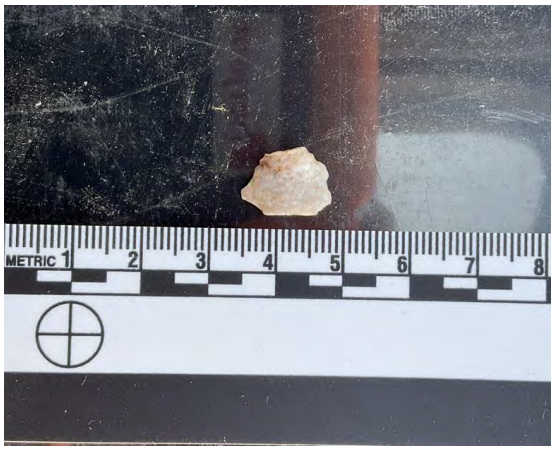
**ADDITIONAL INFORMATION** *(Reason for Update or Survey, Location, Site Characteristics, Materials Present, Setting, Archaeological Methods, etc.; attach extra sheets as needed.)*

**[NONPUBLIC DATA BEGINS...**

On April 17, 2025, Merjent conducted a Phase I survey of an agricultural field located [redacted] in Viola Township, Olmsted County. The Phase I survey was conducted in association with the Lemon Hill Solar Project. A single Prairie du Chien tertiary flake (artifact number SF-01) was discovered on the ground surface during pedestrian survey. Additional 5-meter spaced pedestrian survey transects were walked around the find locale. No additional artifacts were discovered. Eight shovel tests were excavated at 5-meter and 10-meter intervals in the cardinal directions centered on the find locale. All shovel tests were negative. The locale's setting is general upland set above marshy drainages located to the north, east, and southeast of the find locale. The find locale is within a plowed agricultural field that afforded ground surface visibility of 50–75 percent and that is set within a wider landscape of gently rolling hills.

**...NONPUBLIC DATA ENDS]**

Artifact: Teritary flake, Prairie du Chien chert
Maximum length: 10 mm
Maximum width: 13 mm
Maximum thickness: 2 mm




View of the ventral side


View of the dorsal side

Overview of MJNT-01 find locale, view to the north

Overview of MJNT-01 find locale, view to the northeast

**PUBLIC DOCUMENT - NOT PUBLIC DATA HAS BEEN EXCISED** **ATTACHMENT A**

Rev.: 7/1/09

# MINNESOTA ARCHAEOLOGICAL SITE FORM

**OFFICE OF THE STATE ARCHAEOLOGIST**
Fort Snelling History Center, St. Paul, MN 55111 (612) 725-2729

**SITE #: 21-OL-0078** *(OSA assigns if New Site)* Site Name: None Agency/Field #: MJNT-02

_X_ New Site __ Site Update OSA License #: SHPO RC #: 2024-1718

Type of Fieldwork: _X__ Reconnaissance/Phase I Date(s) of This Fieldwork: April 17, 2025
___ Evaluation/Phase II
___ Excavation/Phase III

NRHP Status: __ Listed __ Determined Eligible __ CEF(106) __ CNEF(106) _X_ Undetermined

## LOCATIONAL INFORMATION

County: Olmsted City/Twp. Name: Viola SHPO Sub-Region: 3W
*(see map in instructions)*

USGS 7.5' Quadrangle Map *(name and year):*

**[NONPUBLIC DATA BEGINS...**

Township: 107 North Range: 12 West Section: [redacted] ¼ Sections (at least 2): [redacted]
Township: Range: Section: ¼ Sections (at least 2):
Township: Range: Section: ¼ Sections (at least 2):

UTM Coordinates: (*less than 10 acres use center; over 10 acres define polygon around site; draw points on USGS*)
Zone: 15T____ Datum: ___ 1927 __X_ 1983 Method: ___ USGS Map _X__ GPS ___ Other
Point 1: Easting [redacted] Northing [redacted]
Point 2: Easting Northing
Point 3: Easting Northing
Point 4: Easting Northing
Point 5: Easting Northing

**...NONPUBLIC DATA ENDS]**

## SITE CHARACTERISTICS

Acreage: Site Dimensions: N-S 5 meters E-W 5 meters Maximum Cultural Depth (if known) surface find

Site Description *(√all that apply, but only one check per line):*
X single artifact __ lithic scatter __ artifact scatter
__ burial mound (number of mounds _____) __ non-mound lone grave __ non-mound cemetery
__ petroglyph __ pictograph __ petroform
__ surface features (list below)
__ other: _____

Surface Features (*√all that apply*): __ earthwork __ pit/depression __ foundation/ruin __ other: _____

Inferred Site Function (*√all that apply*): __ habitation __ mortuary __ farm __ industrial __ transportation
__ Other (*list*): _____ X unknown

Current Land Use (*list approximate % for all that apply):*
X cultivated ___ fallow ___ commercial ___ recreational ___ industrial ___ residential
___ woodland ___ grassland ____ water-covered ___ other: _____

Surface Visibility (*list approximate % for all that apply):*
__ excellent 50–75% good ___ fair ___ poor/none

Degree of Disturbance (*list approximate % for all that apply or √ unassessed):*
___ minimal X moderate___ heavy ___ completely destroyed ___ unassessed

Current Threats to Site: (*√all that apply or √ none known)*
__ erosion X development X agricultural __ other: _____ __ none known

# MINNESOTA ARCHAEOLOGICAL SITE FORM

**SITE #:** 21- Site Name: none Agency/Field #: MJNT-02

## CULTURAL/TEMPORAL AFFILIATION

*(list all that apply by level of certainty: 1 = confirmed; 2 = probable or √"not determined"):*

**Period:**
__ not determined
X Precontact (9500 BC - 1650 AD)
__ Contact (1650-1837)
__ Post-Contact (1837-1945)

**Precontact Context:** *(list all that apply by level of certainty; if unable to discern specific context, √here X)*

*Paleoindian Tradition* __ not determined __ Folsom __ Lanceolate Point/Plano
__ Clovis __ Eastern Fluted __ other: _____

*Archaic Tradition* __ not determined __ Prairie __ Riverine
__ Shield __ Lake-Forest __ other: _____

*Woodland Tradition* __ not determined __ Fox Lake __ Laurel
__ SE Mn Early __ C Mn Transitional __ Lake Benton
__ Brainerd __ Blackduck-Kathio __ Psinomani/Sandy Lake
__ Havana-Related __ SE Mn Late __ Rainy River Late
__ other: _____

*Plains Village Tradition* __ not determined __ Cambria __ Great Oasis __ Big Stone
__ other: _____

*Mississippian Tradition* __ not determined __ Silvernale __ other: _____

*Oneota Tradition* __ not determined __ Blue Earth __ Orr __ other: _____

**Contact Context:** *(list all that apply by level of certainty; if unable to discern specific context, √here __ )*

*American Indian* X not determined __ Dakota __ Ojibwe __ other: _____

*Euro-American* __ not determined __ British __ other: _____
__ French __ Initial US

**Post-Contact Context:** *(list all that apply by level of certainty; if unable to discern specific context, √here __ )*

__ Indian Communities & Reservations (1837-1934)
__ Early Agriculture & River Settlement (1840-1870)
__ Northern MN Lumbering (1870-1930s)
__ Tourism & Recreation (1870-1945)
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__ Iron Ore Industry (1880s-1945)
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Approximate Post-Contact Occupation/Site Formation Date(s): _____

**Context Assignment/Dating Methods** *(√all that apply):*

__ artifact type/style __ feature type __ radiometric __ relative stratigraphy __ geomorphology
__ historic accounts (list) _____
__ historic maps (list) _____
__ other(s) (*specify*): _____

*(For radiometric dates, attach photocopies of laboratory sheets if available.)*

## MATERIALS PRESENT *(√all that apply):*

**Basic Artifact Categories**

| *Ceramics* | *Lithics* | *Biological Remains* | *Historic Materials* |
|---|---|---|---|
| __ Aboriginal | __ projectile points | __ animal | __ glass |
| __ Euro-American | __ other chipped stone tools | __ human | __ metal |
| | X debitage | __ unidentified bone | __ brick |
| | __ ground/pecked stone | __ seeds/nuts | __ other: _____ |
| | __ FCR | __ charcoal | |
| | __ aboriginal copper | __ wood | |

**SITE #:** 21- Site Name: none Agency/Field #: MJNT-02

**Major Exotic Materials** *(√all that apply):*

__ catlinite __ native copper __ Hixton orthoquartzite
__ Knife River Flint __ obsidian X other: Swan River chert

**Diagnostic Artifacts**:

Ceramics: Prehistoric Types/Wares/Temper _____
Historic _____
Prehistoric Lithics: none
Glass: _____
Metal: _____
Other: _____

**ENVIRONMENTAL DATA** **Current Topographic Setting** *(√all that apply):*

| *Away from Water* | *Riverine* | *Lacustrine* |
|---|---|---|
| X general upland | __ fan | __ inlet/outlet |
| __ terrace edge | __ terrace/bluff top | __ peninsula |
| __ hilltop | __ stream-stream junction | __ island |
| __ glacial beach ridge | __ bluff-base | __ isthmus |
| __ rock outcrop | __ cave/rockshelter | __ general shoreline |
| __ other: _____ | __ floodplain | __ bog/slough/lake bottom |
| | __ other: _____ | __ other: _____ |

Topographic Feature Name from USGS Map: _____

**OWNERSHIP INFORMATION**

Source and Date of Ownership Information *(e.g., plat map, county recorder's office, personal communication, etc.):*

Ownership Type (*list approximate % for all that apply; if unknown √here __ ):*

___ Federal ___ State ___ Local (public) ___ Tribal X Private

Land Owner *(name and address if known):*

**CURRENT INVESTIGATION INFORMATION**

Methods/Techniques Employed *(√all that apply):*

__ informant report __ small diameter soil coring (≈ 1" diameter) X surface survey
X shovel testing __ formal test units __ mechanical testing max. test depth _____
__ geomorphological survey *(specify)*: _____
__ geophysical survey *(specify)*: _____
__ other: _____

Informant Name and Address (if known):

Known Collectors/Collections:

Artifact Repository *(name and accession numbers or repository agreement number):*

Most Recent Survey Report – Title, Author, Date:

Major Previous Bibliographic Reference(s) to Site:

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**Form Completed By** *(name and date):* Aaron Armstrong-Duarte May 4, 2025

**MAPS:** *Attach/include original scale copy of 7.5' USGS map with site location clearly outlined or designated. Attach a sketch map if surface features present, if sub-surface testing done, or if complicated boundaries/setting. Sketch map must have re-locatable datum, scale, north arrow, and legend if symbols are used.*

**[NONPUBLIC DATA BEGINS HERE...**

...NONPUBLIC DATA ENDS HERE]

**SITE #:** 21- Site Name: none Agency/Field #: MJNT-02

**ADDITIONAL INFORMATION** *(Reason for Update or Survey, Location, Site Characteristics, Materials Present, Setting, Archaeological Methods, etc.; attach extra sheets as needed.)*

**[NONPUBLIC DATA BEGINS...**

On April 17, 2025, Merjent conducted a Phase I survey of an agricultural field located [redacted] in Viola Township, Olmsted County. The Phase I survey was conducted in association with the Lemon Hill Solar Project. A single blade-like Swan River chert tertiary flake (artifact number SF-02) was discovered on the ground surface during pedestrian survey. Additional 5-meter spaced pedestrian survey transects were walked around the find locale. No additional artifacts were discovered. Eight shovel tests were excavated at 5-meter and 10-meter intervals in the cardinal directions centered on the find locale. All shovel tests were negative. The locale's setting is general upland set above marshy drainages located to the north, east, and southeast of the find locale. The find locale is within a plowed agricultural field that afforded ground surface visibility of 50–75 percent and that is set within a wider landscape of gently rolling hills.

**...NONPUBLIC DATA ENDS]**

Artifact: Blade-like Swan River chert, tertiary flake
Maximum length: 43 mm
Maximum width: 19 mm
Maximum thickness: 4.5 mm


View of the ventral side


View of the dorsal side

Overview of MJNT-02 find locale, view to the north

Overview of MJNT-02 find locale, view to the northeast