LITERATURE SEARCH AND ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL IN TANDEM WITH PHASE I ENVIRONMENTAL TESTING FOR THE PROPOSED NORTHFIELD MNDOT TRUCK STATION, RICE COUNTY, MINNESOTA

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Minnesota Department of Transportation
Office of Environmental Stewardship
Cultural Resources Unit
395 John Ireland Blvd., Mail Stop 620
St. Paul, MN 55155-1899

Co-Principal Investigators:
Michelle M. Terrell, Ph.D., RPA
Joseph K. Pnewski, M.A., RPA

Report Authors:
Joseph K. Pnewski, M.A., RPA
Michelle M. Terrell, Ph.D., RPA

Two Pines Resource Group, LLC
17711 260th Street
Shafer, MN 55074

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MANAGEMENT SUMMARY

In May and July of 2018, Two Pines Resource Group, LLC (Two Pines) completed an assessment of archaeological potential for the Northfield MnDOT Truck Station Project in Northfield, Rice County, Minnesota. This work was performed under contract with the Minnesota Department of Transportation (MnDOT) Cultural Resources Unit (CRU). The proposed project would include the purchase of two currently undeveloped parcels of land for use as a MnDOT Truck Station. A separate report was prepared by the Antea Group for the environmental study performed for this project.

The purpose of this study was to assess whether soils with the potential to contain intact archaeological resources are present within the parcel. The study area is the extent of the parcels as indicated on a provided plan set dated November 9, 2017. The project area includes portions of the NE ¼ and NW ¼ of Section 11 of Township 111N, Range 20W. The assessment of archaeological potential included a literature review of historic documents, maps, and aerial photos, as well as field testing through soil coring and trench excavation. The project area is located within the Prairie Lakes East sub-region. Dr. Michelle Terrell and Joseph Pnewski, M.A. served as Co-Principal Investigators.

The study area is located entirely within the recorded boundary of 21RC0012, a mound group reported by in 1939 by Professor Edward Schmidt of St. Olaf College. More recently, the types of features observed by Schmidt are thought to be natural in origin. Termed "mima mounds," these low, domelike, natural mounds are formed in landscapes with a shallow basement layer such as bedrock or densely packed clay or gravel sediments, or in areas where a permanent water table impedes drainage. Both of these conditions are present within the project APE and in the greater area surrounding Northfield where Schmidt recorded his mounds.

The literature search results indicated that much of the project APE had been heavily-disturbed by past cultivation and industrial activities or was historically inundated. Of the 15 soil borings completed in May of 2018, only two cores (B2 and B5) exhibited possible intact soils that may have been suitable for occupation. Subsequent trenching near these borings revealed the "soils" to be layers of introduced fill. Trenches excavated across the project APE demonstrated that no natural soils with archaeological potential remained within the parcels.

Based on these findings, Two Pines does not recommend any additional archaeological investigations for the Northfield MnDOT Truck Station Project.

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INTRODUCTION

In May and June of 2018, Two Pines Resource Group, LLC (Two Pines) completed an assessment of archaeological potential for the Northfield MnDOT Truck Station Project in Northfield, Rice County, Minnesota (Figure 1). This work was performed under contract with the Minnesota Department of Transportation (MnDOT) Cultural Resources Unit (CRU). The purpose of this study was to assess whether intact soils with the potential to contain intact archaeological resources are present within the parcel.

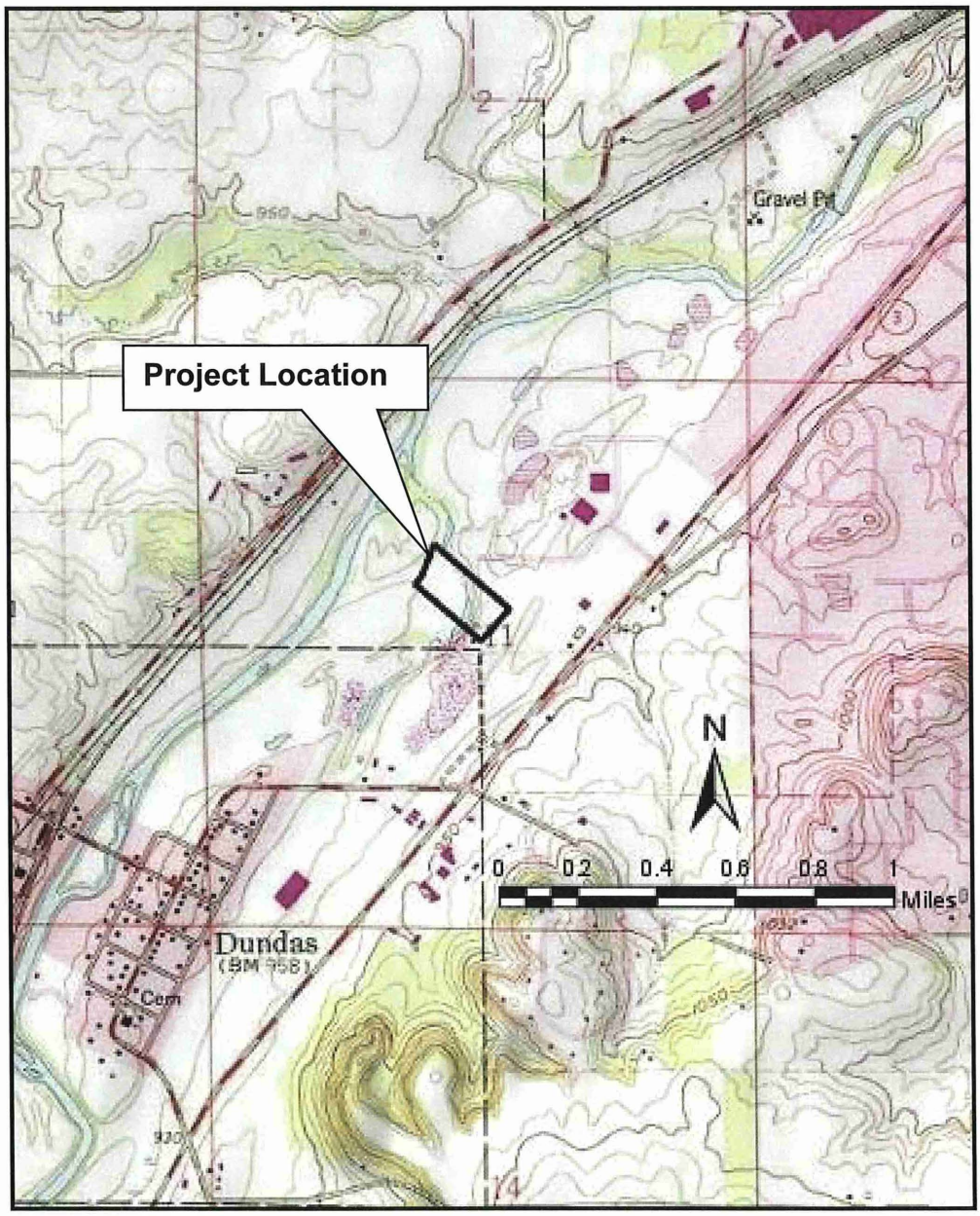

FIGURE 1. PROJECT LOCATION ON COMPOSITE USGS 7.5 MINUTE TOPOGRAPHIC MAP SERIES

PROJECT DESCRIPTION

The proposed project includes the purchase of currently undeveloped parcels of land for development as a MnDOT Truck Station.

STUDY AREA

The study area is the extent of the parcels as indicated on a plan set provided by MnDOT dated November 9, 2017.

The UTM (NAD 83, Zone 15) coordinates of the project area are as follows: the northernmost point of the parcels – 484712E 4920525N; the westernmost point of the parcels – 484640E 4920395N; southernmost point of the parcels – 484802E 4920252N; and the easternmost point of the parcels – 484894E 4920363N. These coordinates were determined electronically using ArcMap. The APE includes portions of the NE ¼ and NW ¼ of Section 11 of Township 111N, Range 20W.

RESEARCH DESIGN

All work was conducted in accordance with the *MnDOT's Cultural Resources Unit Project and Report Requirements* (MnDOT 2015), the *SHPO Manual for Archaeological Projects in Minnesota* (Anfinson 2005), the *State Archaeologist's Manual for Archaeological Projects in Minnesota* (Anfinson 2011), and the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (National Park Service 2002).

OBJECTIVES

The purpose of this study was to assess whether intact soils with the potential to contain intact archaeological resources are present within the parcel. Due to the amount of past disturbance, depth of introduced fill and its compaction, physical testing was conducted through documentation of soil cores in tandem with the environmental contractor (Antea Group). A separate report was prepared by the Antea Group for the environmental study performed for this project.

LITERATURE SEARCH

Prior to fieldwork, staff from Two Pines conducted background research in the holdings of the State Historic Preservation Office (SHPO) and Minnesota Historical Society (MNHS). Sources examined during this research included files of previously identified archaeological sites within a one-mile (1.6 km) radius of the project area, reports documenting previous surveys, and historical maps of the study area. Additional historical maps, as well as historical aerial photographs and current topographic maps were reviewed online. This research was conducted in order to identify those portions of the project area that have a higher potential for containing intact archaeological resources.

FIELDWORK

The goal of the fieldwork was to assess whether intact soils were present within the project area and, if so, whether those deposits may contain cultural material, not to identify or evaluate archaeological sites.

The archaeological assessment commenced with visual inspection of the entire project study area. The purpose of this inspection was to identify any surface features, such as extant foundations, as well as to assess those portions of the project area that have a moderate to high potential for containing potential archaeological resources. In general, areas considered to have moderate to high archaeological potential include any undisturbed portions of the project area that are:

- within 500 feet (ft.) (150 meters [m]) of an existing or former body of water of 40 acres (19 hectares) or greater in size;
- within 500 feet (ft.) (150 meters [m]) of an existing or former perennial stream;
- located on a topographically prominent landscape feature; or
- located within 300 ft. (100 m) of a previously reported site or a former or existing historic structure or feature.

Portions of the project area that are considered to have low archaeological potential include soils that are inundated; slopes of greater than 20 degrees; previously disturbed areas; and areas where the naturally occurring post-glacial soils and sediments have been removed (Anfinson 2005:29).

Due to modern aggregate activities and fill events, any soils with archaeological potential within the study area are likely to be deeply-buried and therefore not identifiable through standard archaeological survey methods. Therefore, the field assessment consisted of deep testing through soil cores and backhoe trenching in order to document the depth of any buried soils with the potential to contain cultural material. All field assessments followed methods laid out in the MnDOT deep testing protocols (Commonwealth Cultural Resource Group 2006).

Soil Borings

The borings were conducted by Bergerson Caswell Inc. in tandem with the MnDOT environmental consultant (Antea Group). Soil borings were extracted by a Geoprobe and consisted of 1.5-in. diameter individual cores measuring four feet long. Each soil boring was extended through all underlying deposits, typically until either natural strata beneath cultural deposits or bedrock was reached. If refusal was encountered before bedrock through multiple attempts, the core was abandoned due to disturbance and modern fill.

Backhoe Trenching

In areas where potential buried soils were identified, trenching was conducted in accordance with the Deep Test Protocol. The trenching was conducted by Bergerson Caswell Inc. in tandem with the MnDOT environmental consultant (Antea Group). Each trench measured approximately four-meters long by one-meter wide, and was extended through all underlying deposits, typically until either natural strata beneath cultural deposits or bedrock was reached. Sediments determined to be intact soils, or to contain cultural resources, were sampled from targeted locations along the profile within the suspect horizon to recover, or confirm the absence of, cultural material. A minimum sample volume of 20 liters (5.3 gal) was recovered and screened to establish artifact densities within the sampled strata (Commonwealth Cultural Resource Group 2006).

During the assessment, all cores and trenches were visually inspected and the depth of each strata as well as its Munsell® color and texture were documented on field forms and in the field notebook of the Principal Investigator. Any soils with archaeological potential were examined for artifacts or inclusions. Items noted included: the location of survey

areas; the location of individual soil cores and trenches; the depth of each core and its associated soil profile; the presence or absence of cultural materials within each core; and the excavated soil texture, inclusions, and Munsell® color (Commonwealth Cultural Resource Group 2006).

GEOGRAPHIC INFORMATION SYSTEM DATA

A geographic information system (GIS) data layer was created during the course of the archaeological investigations. The locations of all individual shovel tests, excavations trenches, and surface finds were recorded using a Trimble GeoXT ® GPS Unit. The data were differentially corrected using a National Geodetic Survey (NGS) continuously operating reference station (CORS).

LABORATORY ANALYSIS AND CURATION

No artifacts were recovered from within intact deposits during this survey.

LITERATURE SEARCH RESULTS

Prior to fieldwork, staff from Two Pines conducted background research that included examination of records of previously identified archaeological sites within a one-mile (1.6 km) radius of the project area and reports of previous studies within the project area. Aerial photographs and historical maps of the study area were also consulted. This research was conducted in order to identify those portions of the project area that have a higher potential to contain intact archaeological resources.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Background research conducted at the SHPO revealed that the Northfield MnDOT Truck Station study area was examined briefly in 1939 leading to the identification of a mound group by professor Edward Schmidt of St. Olaf College (Anfinson 1999:47). A subsequent systematic field investigation encompassed the east third of the study area. During this negative 1980 survey for "The Commercial/Light Industrial Corridor in Northfield walkover of the uplands revealed the area to be "severely disturbed" (Harrison 1980:3).

PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

Background research conducted at the SHPO revealed that the project is located entirely within the recorded boundary of 21RC0012, a reported mound group.

In addition, two other previously recorded sites (21RC0013 and 21RC0044) are located within one mile (1.6 km) of the project (Table 2). Site 21RC0013 is located about 0.3 miles west of the nearest portion of the project and is identified as 19 low-lying mounds in a north-south alignment away from the Cannon River. A subsequent update to the site in 1985 indicated the area contained significant agricultural disturbance (Wedding and Breakey 1985). Site 21RC0044 consists of a single lithic flake recovered near Heath Creek on the opposite side of the Cannon River and approximately 0.5 miles to the northeast of the closest potion of the project (Harrison 1979:3).

TABLE 1. PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES WITHIN ONE-MILE OF THE APE

Site No.	T	R	S	¼ Section	Site Type (Site Name)
21RC0012	111N	20W	2	S1/2	Earthwork (Mounds)
			11	N1/2	
21RC0013	111N	20W	11	SW-NW-SW	Earthwork (Mounds)
21RC0044	111N	20W	2	C-E-SE	Single Artifact

21RC0012

The site boundaries of 21RC0012 extend from the north half of Section 11 into the south half of Section 2 of Township 111N Range 20W encompassing the entirety of the Northfield MnDOT Truck Station study area. Site 21RC0012 was assigned to mound-like formations identified by Professor Edward Schmidt. Professor Schmidt taught botany and zoology at St. Olaf College, but he also had an avocational interest in the mounds of the Cannon River Valley (Anfinson 1999:42). Schmidt identified a cluster of 120 mound-like features on the east side of the Cannon River to the south of Northfield (21RC0012) and another cluster in Section 14 to the east of Dundas (21RC0013) (Winchell 1911:127) (Figure 2). While Newton Winchell, like Schmidt, thought these mounds were Native American in origin, his excavation of several of the features did not produce either human remains or artifacts (Winchell 1911:130). In May of 1939, University of Minnesota archaeologist, Lloyd Wilford, toured the area with Schmidt. Wilford observed 8 or 10 mounds of the 21RC0012 group on the farm of William Bickel. Of these mounds, Wilford wrote, "These are all low-lying mounds, where skeletal material is very doubtful. They are entirely similar to the mounds excavated by Schmidt which have all proved sterile" (Wilford 1939). More recently, the types of features observed by Schmidt are thought to be natural in origin (Arzigian and Stevenson 2003:481; Finney 2012:86). Termed "mima mounds," these low, domelike, natural mounds are formed in landscapes with a shallow basement layer such as bedrock or densely packed clay or gravel sediments, or in areas where a permanent water table impedes drainage. Both of these conditions are present in the area surrounding Northfield where Schmidt recorded his mounds.

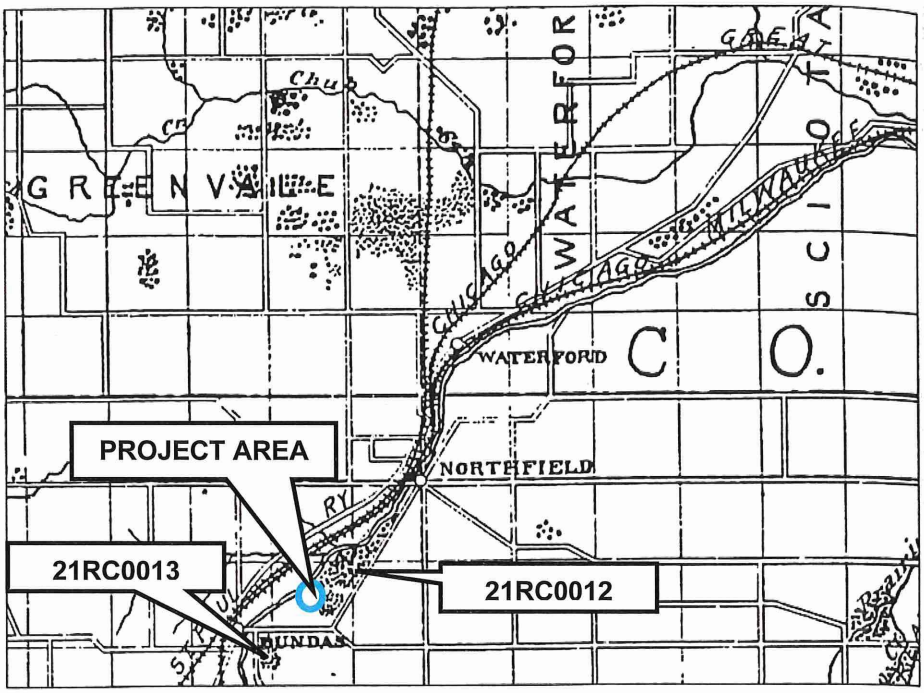

FIGURE 2. DETAIL OF SCHMIDT'S MAP OF THE MOUNDS IN THE REGION OF NORTHFIELD

During a 1980 archaeological survey for "The Commercial/Light Industrial Corridor in Northfield," it was determined that "the RC12 mounds must have been leveled by the plow, leaving no trace in the form of skeletal/artifactual material, a fact which would agree with the observations recorded by Professors Schmidt and Wilford that these low lying mounds were sterile" (Harrison 1980:4). There are no further updates to the site form on record.

ARCHAEOLOGICAL SITE POTENTIAL

The assessment of an area's potential to contain archaeological resources consists of an analysis of terrain, water sources, and other environmental and landscape conditions in and adjacent to that area as they were historically. Areas that were occupied by water, permanently or frequently inundated (e.g., wetlands, floodplains), poorly drained, or exhibited slopes of greater than 20 percent would have been inhospitable to human occupation and are therefore considered to have low potential for containing archaeological resources.

Precontact Site Potential

Generally, areas with greater potential for containing Native American heritage (precontact) archaeological resources are in proximity, typically less than 500 ft., to a water source or wetland, though the applicability of this condition varies depending on the nature of the water source (perennial versus intermittent), the size of the body of water, the extent of the floodplain, and the availability of other water sources in the vicinity, i.e., proximity to a small pond may be less indicative of archaeological potential if a large lake is nearby. Topographic prominence is also frequently indicative of high precontact archaeological potential, though relative topographic prominence as a gauge of archaeological potential often is tied to other conditions, such as proximity to water. Proximity to previously recorded precontact archaeological sites often suggests high potential for precontact resources, insomuch as previously recorded sites may not have been fully defined or as the areas around previously recorded sites are typically subject to similar environmental/landscape conditions. The absence, however, of precontact archaeological sites in an area does not necessarily point to low archaeological potential, given that that area may not have been subject to previous survey.

The previous identification of precontact archaeological sites within a one-mile (1.6 km) radius of the project area indicates a potential for sites of this type to be present within the Northfield MnDOT Truck Station Project APE. Earthworks are documented within the surrounding uplands and terrace edges along the Cannon River, though not many other previously recorded archaeological resources are present within the area. Due to the proximity of the project area to the Cannon River, undisturbed portions of the project APE have moderate potential to contain precontact archaeological resources.

Historical-Period Site Potential

Areas near former and/or existing historical-period buildings, structures, or other features are generally considered to have higher potential for containing historical-period

archaeological resources. These areas are not limited to the locations of buildings, as often the most important information comes from deposits within associated features, such as privies, cisterns, or middens, which were located away from primary buildings, usually to the rear of the dwelling or business structures.

No historical-archaeological sites have been previously recorded in, or within one mile of, the MnDOT Truck Station Project APE. While the project area is located along the Cannon River, this area to the northeast of Dundas and southwest of Northfield remained rural and largely agricultural through the mid-twentieth century. A review of historical maps and aerial photographs indicates the presence of a pre-1938 through 1964 farmstead located partially within the southwest corner of the study area. While the portion of the APE nearest the farmstead has the potential to contain historical-period archaeological deposits, the area was subsequently disturbed by industrial activities that began as early as 1951. Based on the results of the literature search, the Northfield MnDOT Truck Station project APE has low potential to contain intact archaeological deposits related to the early history of the Northfield and Dundas area.

PARCEL HISTORIES

The APE for the Northfield MnDOT Truck Station includes Lots 1 and 2 of Block 2 of the Gleason 3rd Addition to Northfield Minnesota. The history of these lots includes agriculture, industrial, and commercial development (Antea 2018). A brief history of each of the properties is provided below.

2250 Cannon Road (Area 1)

Of the two parcels that make up the study area, Area 1, which consists of the property located at 2250 Cannon Road, is the larger at 7 acres (Figure 3). The property is currently owned by Larry J Larson Trust & Raymond R Cox Trust. Prior to industrial development, the parcel's natural topography consisted of an upland within the east quarter of the lot; an intermittent stream and pond located at the base of this rise; and a low-lying floodplain covering the remaining three-quarters of the lot between the upland and the river. Over time, much of the low-lying portion of the parcel, including the pond area, was filled resulting in the stream channel being realigned further to the north and west.

The earliest available aerial photograph from 1938 indicates that at that time much of the parcel was being cultivated; wetlands were present adjacent to the stream channel and pond; and the scarp was wooded (Figure 4). A cluster of farm outbuildings was also present on the higher ground in the southwest corner of the parcel. These buildings continued to be present through the 1950s. However, by 1964 scars from aggregate mining are evident within the upland portion of the property and the farmstead buildings are no longer extant (Figure 5–Left). During the 1970s, commercial buildings, likely related to the aggregate operations, were constructed to the south of the parcel boundary. These new buildings can be seen on a 1984 aerial photograph (Figure 5–Right). The floodplain portion of the parcel, however, remained largely unchanged during this period.

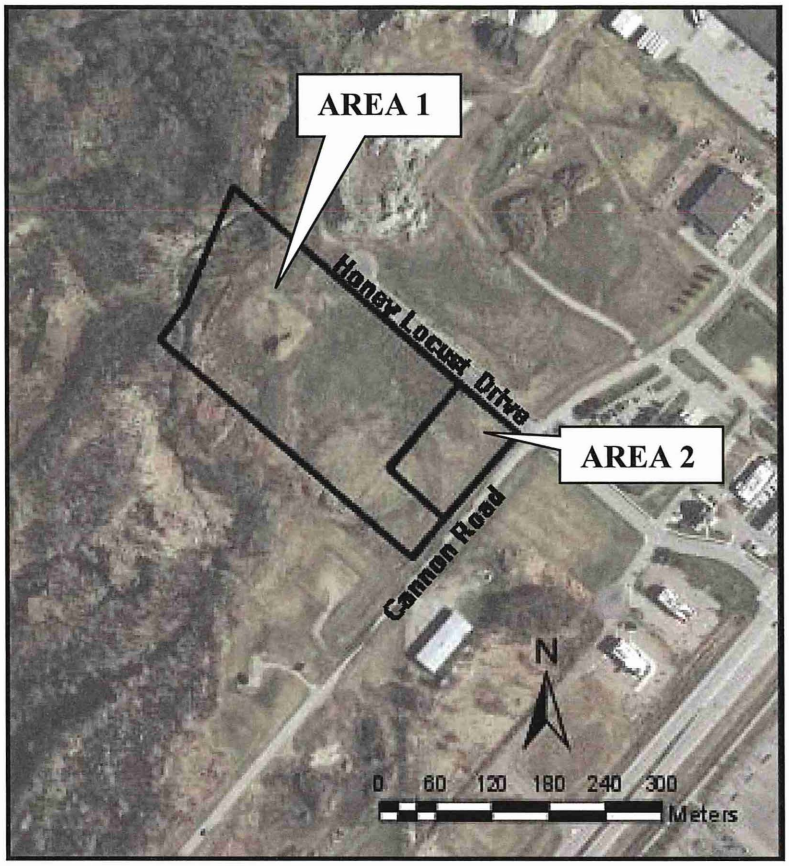

FIGURE 3. SURVEY AREAS

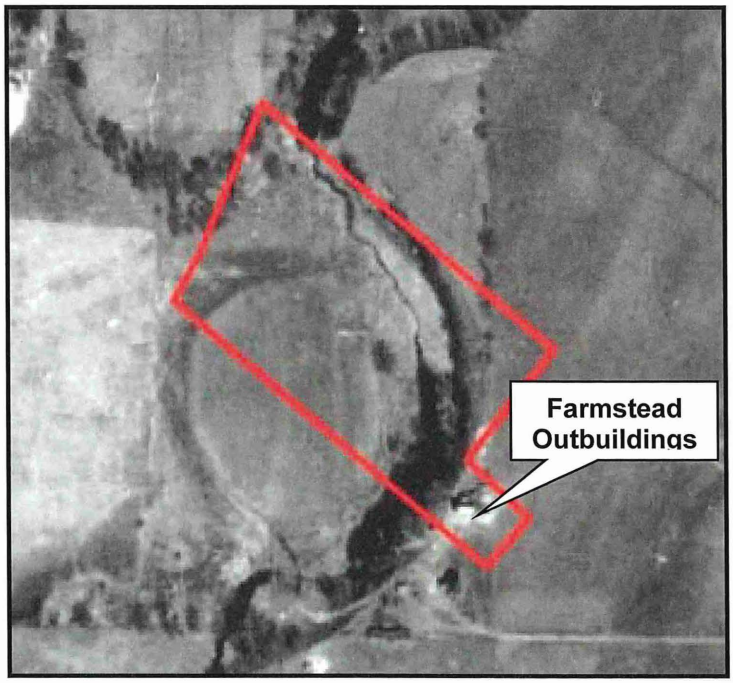

FIGURE 4. AERIAL PHOTOGRAPH OF AREA 1 - 1938

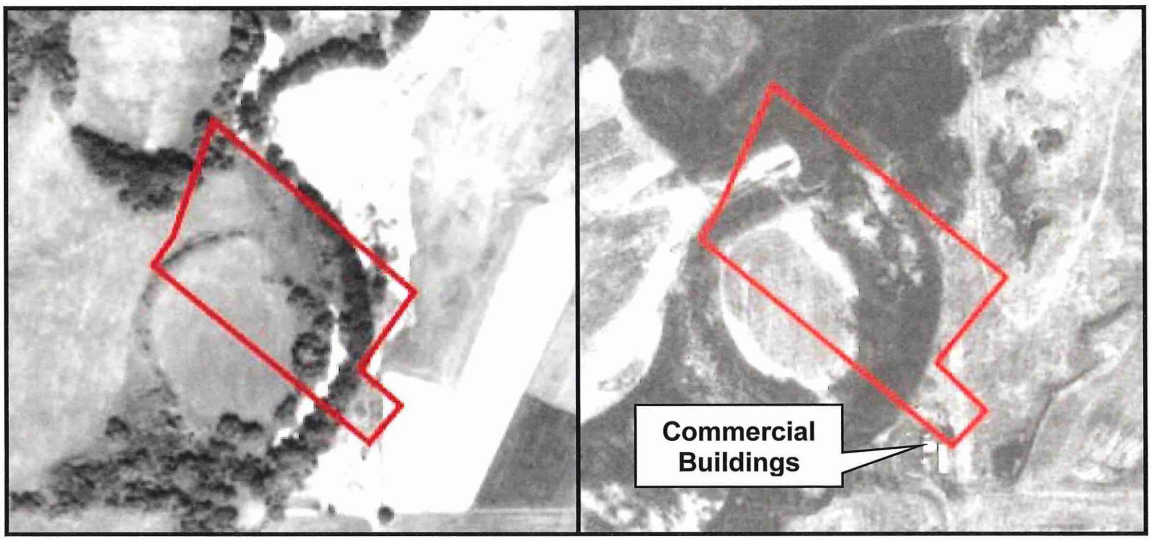

FIGURE 5. AERIAL PHOTOGRAPHS OF AREA 1 – 1964 (LEFT) AND 1984 (RIGHT)

From 1996 through 2007, Area 1 was used for the recycling of construction materials, concrete crushing, and aggregate stockpiling as part of a larger operation on the property to the northeast (Figure 6-Left). During this period, filling of the low-lying portion of the parcel began. In 2007, the property underwent initial stages of further commercial development when a compacted sand fill pad was constructed in the northern portion of the property in preparation for a movie theater (Figure 6-Right). However, the property remained vacant due to foreclosure and in 2016 additional fill from a city road project was placed over the eastern portion of the site.

FIGURE 6. AERIAL PHOTOGRAPHS OF AREA 1 – 1996 (LEFT) AND 2010 (RIGHT)

Based on the results of the literature search, the 2250 Cannon Road portion of the project's APE has been extensively modified by agricultural, industrial, and commercial activities. As a result, Area 1 has a low potential to contain intact soils or archaeological resources.

2130 Honey Locust Road (Area 2)

The property located at 2130 Honey Locust Road, is the smaller of the two parcels at 1.17 acres (see Figure 3). The property is currently owned by Gleason Real Estate Holdings. Area 2 has largely been utilized for agricultural, industrial, and commercial development. Prior to development, the parcel was a level upland along a terrace edge of the Cannon River.

The earliest available aerial photograph from 1938 indicates that at that time much of the parcel was under cultivation (Figure 7-Left). By 1964, aggregate operations had encroached on the perimeter of the property, but it otherwise appears to have remained in cultivation (Figure 7-Right). However, from 1996 through 2007, Area 2, like Area 1, was converted to use as site for recycling construction materials, concrete crushing, and aggregate stockpiling as part of a larger operation on the property to the northeast (Figure 8). Since 2007, the property has remained vacant.

Based on the results of the literature search, the 2130 Honey Locust Road portion of the Project APE has been extensively modified by agricultural and industrial activities. As a result, Area 2 has a low potential to contain intact soils or archaeological resources.

FIGURE 7. AERIAL PHOTOGRAPHS OF AREA 2 – 1938 (LEFT) AND 1964 (RIGHT)

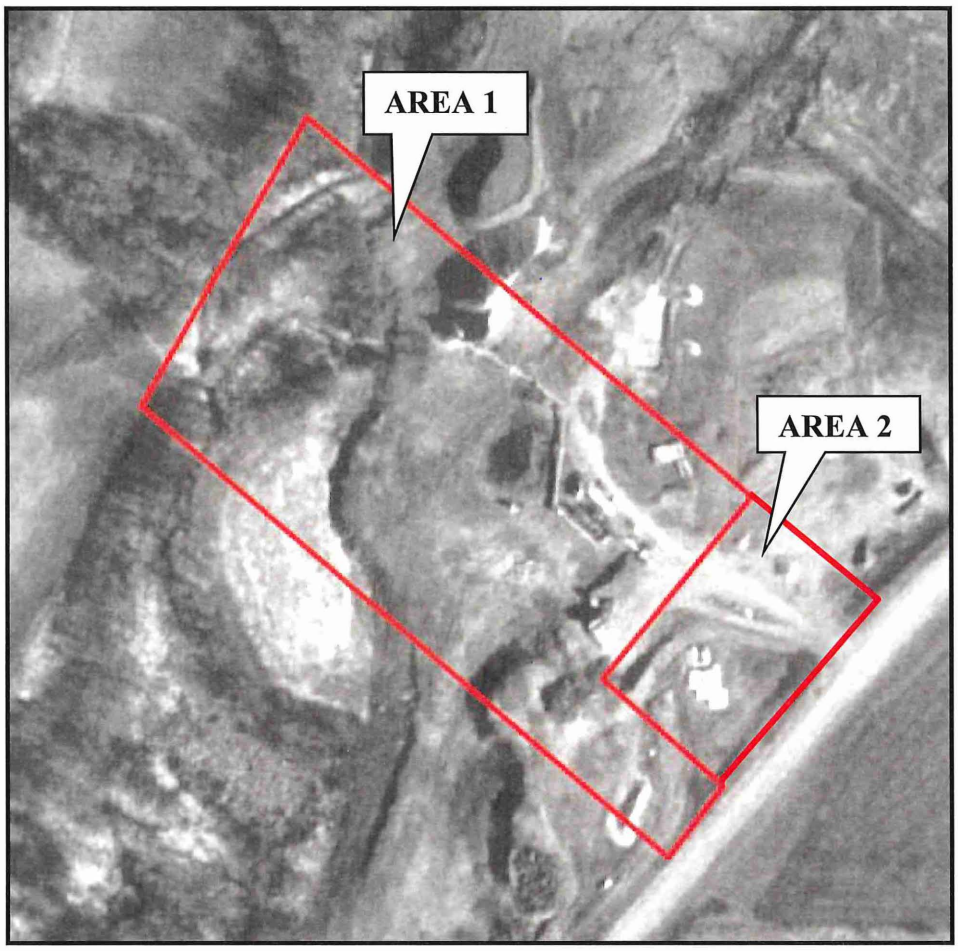

FIGURE 8. AERIAL PHOTOGRAPH OF STUDY AREA ILLUSTRATING EXTENT OF DISTURBANCE FROM AGGREGATE ACTIVITIES, 1997

ENVIRONMENTAL HISTORY

The Northfield MnDOT Truck Station Project is located within the Prairie Lakes East archaeological sub-region. The following environmental history of this sub-region is based largely on information contained in Borchert and Gustafson's (1980) *Atlas of Minnesota Resources and Settlement* and an overview entitled "Minnesota's Environment and Native American Culture History" by Gibbon et al. (2002).

The Prairie Lakes archaeological region covers most of southwest and south-central Minnesota. The topography of the Prairie Lakes archaeological region is dominated by the valley of the Minnesota River, which bisects the region southwest to northeast. The eastern sub-region comprises that portion of the Prairie Lakes region that is located to the south and east of the Minnesota River. The lakes from which this area derives its name are shallow with none within the sub-region exceeding 10 m in depth. Many of these lakes were drained during the historical period to increase land area for cultivation. The

climate within this region has an average annual precipitation range of 25 to 28 inches. January highs average 16 degrees Fahrenheit (F), while July highs average 81 degrees F. The frost-free season averages 160 days.

During the Late Holocene, tallgrass prairie dominated the region with elm, ash, and cottonwood stands lining the river lowlands and pothole lakes, while "Big Woods" forests of maple, elm, and basswood occupied the eastern edge of the region. Within the current project area, mixed grassland and hardwood forest was present at the time of initial EuroAmerican contact.

Late Holocene subsistence resources in this region consisted of bison, deer, and occasional elk herds. Mussels, fish, waterfowl, and edible aquatic plants were available in the bottomlands and within the northern and eastern lakes, while prairie turnips and acorns were present on the uplands and savannas of the region.

RESULTS OF ARCHAEOLOGICAL ASSESSMENT

The assessment of archaeological potential within the Northfield MnDOT Truck Station study area was conducted in May and July of 2018. A total of 15 borings and six (6) trenches were excavated within the project area (Figure 9)

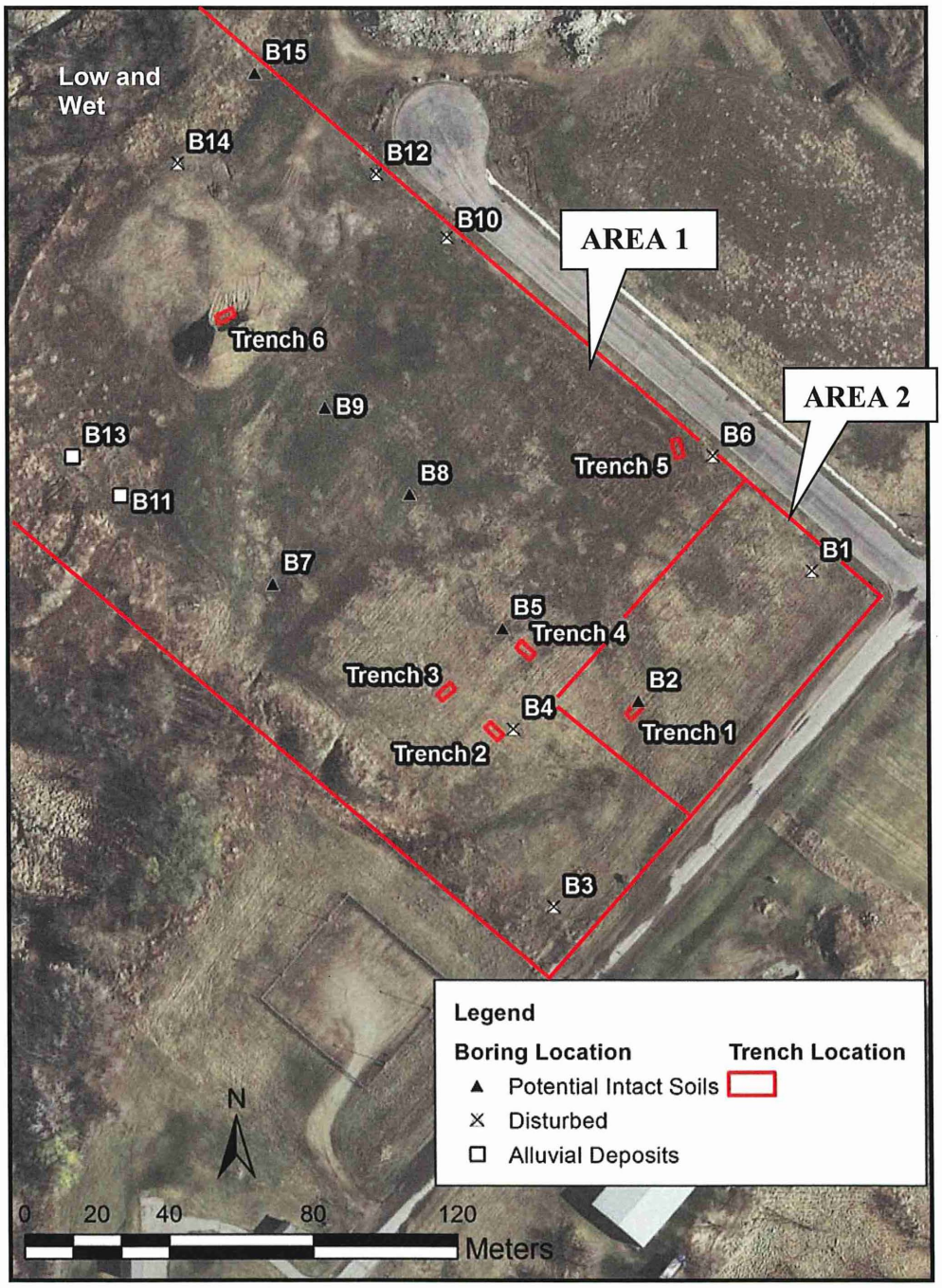

FIGURE 9. FIELDWORK RESULTS

AREA 1

Area 1 consists of the entire project APE with the exception of the southeast corner. As described in the previous chapter, Area 1 has been disturbed by past cultivation as well as industrial and commercial development. The depth of introduced fill throughout Area 1 and its compaction prohibited the use of standard archaeological field methods. At the time of the survey, the entirety of Area 1 was undeveloped mixed grassland (Figure 10). Evidence of past disturbance was evident on the surface particularly in the form of unnatural topography.

Within Area 1, thirteen (13) environmental cores were taken on a grid laid out across the entirety of the property with adjustments for utility lines (Figure 9). The cores encountered limestone bedrock at depths ranging from 3.5 feet to more than 24 feet. On average 14.5 feet of deposits overlay the bedrock. None of the borings documented mound fill or contained artifacts or bone.

Through observation of the 13 cores, it was determined that five (5) of the borings (B5; B7; B8; B9; B15) contained potentially intact soils beneath modern and historic fill events. However, of these cores, B7, B8, and B9 were in the area of the former pond and swale and the deeply-buried soils (2.75+ m) in these borings contained organics and snail shell indicative of the area having been wet or seasonally inundated in the past and therefore not inhabitable. Boring B15 was situated on a similar landform. Of the cores within Area 1, only core B5 exhibited an intact soil (55-130 cmbs) that might have been suitable for occupation.

FIGURE 10. AREA 1 OVERVIEW, VIEW TO NORTHEAST

On July 17, 2018, staff from Antea Group and Two Pines, oversaw trenching with a backhoe within portions of Area 1 (see Figure 9). The trenching was undertaken in order to better characterize the potential buried soils and to expose them for archaeological testing in tandem with the environmental study. A total of five (5) backhoe trenches (Trenches 2-6) were excavated within Area 1, including one proximate to boring B5 which had produced potential evidence for the presence of a buried soil.

Trench 4 was excavated just to the south of boring B5. The profile of Trench 4 exhibited three discrete fill events within the upper 2 m of the trench that overlay a concrete pad poured directly atop bedrock. As a result of the trenching, the potential buried soil within boring B5 was determined to be a modern fill deposit. Trenches 2, 3, 5, and 6 monitored within Area 1 further confirmed the presence of heavily-disturbed strata directly overlaying limestone bedrock.

Based on these results, it was evident that in the course of its development Area 1 had been graded down to bedrock and layers of fill subsequently introduced. As a result, Area 1 does not have the potential to contain intact, historically-significant, archaeological resources. No further archaeological investigations are recommended within Area 1.

AREA 2

Area 2 consists of the southeast corner of the project APE. As described in the previous chapter, Area 2 has been disturbed by past cultivation as well as industrial development. The depth of introduced fill throughout Area 2 and its compaction prohibited the use of standard archaeological field methods. At the time of the survey, the entirety of Area 2 was undeveloped mixed grassland (Figure 11).

Within Area 2, two (2) environmental cores were taken (B1 and B2) (see Figure 9). These cores encountered limestone bedrock at 3 feet within B1 and at 8 feet in B2. Boring B1 exhibited heavily-disturbed strata overlying shallow bedrock, while Boring B2 documented a potentially intact soil at 100-140 cm beneath the surface. Neither of the borings documented mound fill or contained artifacts or bone.

On July 17, 2018, staff from Antea Group and Two Pines oversaw trenching with a backhoe within portions of Area 2. One backhoe trench (Trench 1) was excavated proximate to boring B2 which had produced potential evidence for the presence of a buried soil.

Trench 1 was excavated just to the south of boring B2. The profile of Trench 1 revealed four discrete fill events documented to a depth of 2.2 m below the surface. What was initially identified as a potential buried soil was determined to be a band of silt overlying an historic fill event, as evidenced through limestone rubble and historic materials contained within the lower stratigraphic layer. A natural gley with degraded limestone was encountered between 2.2 to 2.6 meters below surface at which depth it gave way to limestone bedrock.

FIGURE 11. AREA 2 OVERVIEW (FOREGROUND), VIEW TO EAST

Like Area 1, the borings and trenches within Area 2 documented the removal of all natural soils having the potential to contain intact, historically-significant, archaeological resources. As a result, no further archaeological investigations are recommended within Area 2.

SUMMARY AND RECOMMENDATIONS

In May and July of 2018, Two Pines completed an assessment of archaeological potential for the Northfield MnDOT Truck Station Project in Northfield, Rice County, Minnesota. This work was performed under contract with the Minnesota Department of Transportation (MnDOT) Cultural Resources Unit. The proposed project would include the purchase of currently undeveloped parcels of land for use as a MnDOT Truck Station. A separate report was prepared by the Antea Group for the environmental study performed for this project.

The purpose of this study was to assess whether intact soils with the potential to contain intact archaeological resources are present within the parcel. The assessment of archaeological potential included a literature review of historic documents, maps, and aerial photos, as well as field testing through soil coring and trench excavation.

The study area is located entirely within the recorded boundary of 21RC0012, a mound group reported by in 1939 by Professor Edward Schmidt of St. Olaf College. More recently, the types of features observed by Schmidt are thought to be natural in origin. Termed "mima mounds," these low, domelike, natural mounds are formed in landscapes with a shallow basement layer such as bedrock or densely packed clay or gravel sediments, or in areas where a permanent water table impedes drainage. Both of these conditions are present within the project APE and in the greater area surrounding Northfield where Schmidt recorded his mounds.

The literature search results indicated that much of the project APE had been heavily disturbed by past industrial activities or was historically inundated. Of the soil borings completed in May of 2018, only two cores (B2 and B5) exhibited intact soils that may have been suitable for occupation. Subsequent trenching near these borings and at other locations across the property, demonstrated that no natural soils with archaeological potential remained within the parcels.

Based on these findings, Two Pines does not recommend any additional archaeological investigations within the proposed Northfield MnDOT Truck Station project area.

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