LINCOLN WAY INDUSTRIAL RAIL AND AIR PARK: PHASE I ARCHAEOLOGICAL INVESTIGATION

City of Clinton, Clinton County, Iowa

Iowa Economic Development Authority Site Certification Program

Project No. 015-2757

Tallgrass Historians Report No. TH15-635--3

prepared for

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CONFIDENTIALITY STATEMENT

Information contained in this report relating to the nature and location of archaeological sites is considered private and confidential and not for public disclosure in accordance with Section 304 of the National Historic Preservation Act (54 U.S.C. § 307103); 36 CFR Part 800.6 (a)(5) of the Advisory Council on Historic Preservation's rules implementing Sections 106 and 110 of the Act; Section 9(a) of the Archaeological Resource Protection Act (54 U.S.C. § 100707) and, Chapter 22.7, subsection 20 of the Iowa Code.

ABSTRACT

The Phase I archaeological investigation of the proposed Lincoln Way Industrial Rail and Air Park in the City of Clinton, Clinton County, Iowa, examined a project area totaling 433 ac (175 ha), with the area examined for a second time by intensive pedestrian surface survey and, for the current Phase I investigation, supplemented with the excavation of 83 subsurface tests. No previously unrecorded archaeological sites were encountered within the current project area, with previously recorded site 13CN141 previously recommended as not eligible for the NRHP and warranting no further archaeological investigation (Finn 2009). Therefore, as a result of the Phase IA Assessment (Rogers 2016b) and the current Phase I archaeological investigation, no further archaeological investigation is recommended in association with the currently proposed project.

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INTRODUCTION

The following is a Phase I archaeological investigation of the proposed Lincoln Way Industrial Rail and Air Park in the City of Clinton, Clinton County, Iowa (Figure 1). The project will involve development of what is currently agricultural land on two irregular-shaped parcels roughly bounded by U.S. Highway 30 (Lincoln Way) on the north, S. 54th Street on the east, 44th Avenue South on the south, and parcel boundaries on the west (Figure 2). The project parcels are being developed under the auspices of the Iowa Economic Development Authority's (IDEA) Site Certification Program. The archaeological investigation study is being undertaken under the guidelines outlined in the Memorandum of Understanding (MOU) between the IEDA and the Iowa State Historic Preservation Office (SHPO) dated February 18, 2014. The Phase I investigation was conducted by Tallgrass Historians L.C. of Iowa City, Iowa, for the Olsson Associates of Omaha, Nebraska. Prior to the Phase I investigation, Tallgrass conducted a Phase IA Archaeological Assessment and an Architectural/Historical Reconnaissance survey for this project reported in Rogers 2016a and 2016b. Based on the recommendations of those studies and review comments from the SHPO, a Phase I Archaeological Investigation and an Architectural/Historical Intensive Survey and Evaluation were undertaken. The results of the intensive architectural/historical survey are reported in Rogers 2016c, with the results of the Phase I investigation reported herein.

The study area is specifically located in the W1/4, NE1/4 and the E1/3, NW1/4 of Section 24; the N1/2, SW1/4 and part of the S1/2, SW1/4 of Section 24; part of the SE1/4 of Section 24; and part of the SE1/4 of Section 23, all in T81N-R05E, Camanche Township, Clinton County, Iowa (see Figure 2). **The two parcels covered by the Phase I Investigation study area encompass an area of 433 ac (175 ha) in size** (see Figure 2).

ENVIRONMENTAL CONTEXT

The project area is located within the general landform region known as the Iowan Surface (Prior 1991) (Figure 3). This region is characterized by slightly inclined to gently rolling hills with long slopes, low relief, and open views to the horizon. The slopes of the Iowan Surface are described as having multi-leveled or stepped surfaces. This region was last glaciated in Pre-Illinoian times and has since been exposed to various episodes of weathering, soil development, erosion, and loess deposition. Another typical feature of the Iowan Surface is the presence of glacial erratics composed of igneous and metamorphic rock from Canada, Minnesota, and Wisconsin left behind from the Pre-Illinoian glaciers. Glacial erratics are commonly found along shallow valleys and are larger in size than the glacial erratics found on the Des Moines Lobe. Elongated ridges and isolated oblong hills known as pahas are also characteristic of the Iowan Surface (Prior 1991:68-73).

The landforms within the study area consist of benches in the south half rising up to nearly level uplands in the north half. Rock Creek flows within channelized and natural channels west and south of the project area. Previous Phase I studies in the project area have noted that the project area is situated on a glacial moraine and is mapped with soils that "typically do not contain buried soils" (Peterson 2005). The current project parcels were in cultivated fields that had been harvested of corn and soybean crops last fall and weathered over the winter and early spring months (Plates 1-7). The previously Phase IA assessment of the project area included an intensive pedestrian surface survey of all the field areas in early December 2015, with the current Phase I investigation involving another intensive pedestrian surface survey of these parcels along with subsurface testing.

The mapped soil types within the two current parcels include: Colo silty clay loam (keyed as 133 on Figure 4), Dickinson fine sandy loam (175B), Klinger silt loam (184), Rockton loam (214C), Flagler sandy loam (284B), Waukegan silt loam (350B), Atterberry silt loam (351), Dinsdale silt loam (377B), Thorp silt loam (404), Ansgar silt loam (760), Garwin silty clay loam (918), and Muscatine silt loam (919) (Web Soil Survey 2016). The soil types that cover the greatest expanse of the project area are soils that are glaciofluvial

and shallow to glacial till (Artz 2005) (see Figure 4). The Colo series is alluvial sediment that is mapped in the drainageways in the southwest portion of the study area. This series conforms to the Roberts Creek Member of the DeForest Formation; however, this area is poorly drained in the current project area. Even the higher upland area in the north half of the study area is poorly drained. There is an oblong area along the east area of the cultivated field where grasses and trees have been left to grow that functions as a drain sump of sorts with the drainage from the field flowing into this grassy area (see Rogers 2016b).

HISTORIC CONTEXTS

Prehistoric Period

Detailed prehistoric contexts have been outlined for Clinton County and eastern Iowa in the following references: Alex 1980, 2000 and Benn et al. 1989. The reader is referred to those studies for greater detail concerning the prehistory of this region. Generally, one could encounter archaeological evidence of nearly the full range of known human prehistory in Iowa from Paleoindian (beginning around 11,000-11,500 years ago) through the Archaic, Woodland, Late Prehistoric and Proto-Historic periods.

The current project area is in a location where the potential for finding prehistoric occupation sites is generally moderate, with the potential increasing as the distance to a perennial water source increases. Thus, the current project area would be considered to have a moderate potential for prehistoric sites because of the intermittent drainageway that bisects the project corridor and the corridor's proximity to Rock Creek within a mile west of the project area (see Figure 1). Site types that could be expected would be small resource procurement camp sites and isolated finds. The latter likely being the result of hunting and gathering activities.

Historic Period

The historical map research for the project showed that at the time of the original land survey by the General Land Office (GLO) in 1837, the study area was in open prairie grasses, with no indication of settlement at that time (Figure 6). There was a slough holding water just to the west of the project area and extending into the area of present-day Low Moor. It was depicted on the GLO plat as a marshy area. This slough is the upper portion of Rock Creek, which today angles along the west side of the project area before turning to the east along the south side of the project area entering the Mississippi River southwest of Camanche.

By the time of the 1874 plat map, the marshy area appears to have been drained, with the town of Low Moor to the southwest of the project area now platted along the railroad line (Figure 7). The project area was subdivided into farms 80 to 320 areas in size, with houses depicted along section line roads. The rail line had been double-tracked by 1894, with the plat of Low Moor still confined to the south side of the tracks (Figure 8). The project area was now largely owned by John S. Dannatt, whose farm totaled 480 acres. Rural schools were located just southeast and northwest of the project area. One of these was recorded as archaeological site (13CN64) just southeast and outside of the current project area (see Figure 5). Farm sizes had decreased some by 1925, with H.F. Pedersen now the largest landowner of the project area having a total of 320 acres (Figure 9).

While the 1874, 1894, and 1925 maps depict a house within the project area in the SE1/4 of Section 24, the extant brick house associated with John S. Dannatt and located at 4030 S. 54th Street is a large two-story Italianate style dwelling. The Dannatt family was associated with this house from the 1860s-early 1900s and John S. Dannatt may have been responsible for its construction. Therefore, the location of the house on the Dannatt farmstead as depicted on the historical maps through the years was not precise since this house is still standing and is located just outside of the current project area boundaries (see Figures 7-9).

In 1879, John S. Dannatt was noted as a farmer living in Section 24 who had been born in Lincolnshire, England in 1834. Dannatt immigrated to America in 1851 and settled in Clinton County where it was noted in 1879 that "he has since resided on his fine farm of 560 acres" (Western Historical 1879:770). He married Emily Evison, also from the same part of England, in 1858 and they had "nine children—Johanna L., Mary A., William L., Asa, Eva, Ida, Elbert J., Nettie and Ernest" (Western Historical 1879:770).

The rural environs of Low Moor had been largely settled by English immigrants, who began arriving in 1851 (Wolfe 1911:300). These immigrant settlers included: Samuel Dannatt, and his sons Benjamin, Thomas, Samuel, and John as well as "George Hardy, George Hill, and son Thomas; also George Pearson and his sons Henry and George" (Western Historical 1879:636; Wolfe 1911:301). "A little later came Thomas B. Dannatt, John B. Dannatt, and C.B. Dannatt, John Tate, and sons William, Thomas and Charles, William Canty and George Houston; William Richardson, and sons William, Thomas and Amos" (Wolfe 1911:301).

> These nearly all came from the village of Killingholme, Lincolnshire, England, bringing capital with them. They purchased the original claimholders' interests and engaged in scientific and highly successful agricultural pursuits. The farms they developed had fine houses, barns and broad, well-tilled farm lands--models of the county (Wolfe 1911:301).

The 1879 Clinton County history also noted that this immigrant group were "thrifty and enterprising, largely engaged in stock-raising and feeding, and their broad fields and fine farm-houses and outbuildings make Eden Township a model one" (Western Historical 1879:636). John Samuel Dannatt, son of the above-noted Samuel Dannatt was historically associated with the large brick Italianate style house located at 4030 S. 54th Street just outside of the current project area in Section 24 of Camanche Township (recorded in Rogers 2016c as Iowa Site Inventory 23-01904). The above description of the Lincolnshire immigrants' farmsteads is an apt description of the Dannatt house, which reflects both the size of his family and farming operation but also the financial status and success of his farming operation.

For more detailed historic contexts concerning the project area, the reader is referred to the Intensive Survey and Evaluation report for this project. The intensive survey is reported in Rogers 2016c.

RESEARCH DESIGN AND METHODOLOGY

The primary objective of the Phase I investigation was to identify and delineate archaeological resources within the proposed project area. The purpose of this Phase I investigation was to provide information on the potential impact on archaeological resources; however, an additional objective was to add to the body of knowledge concerning the prehistory and history of this area.

The Phase I investigation was preceded by a Phase IA Archaeological Assessment reported in Rogers 2016b. That study involved a desktop assessment involving documentary research and review of previous archaeological investigations in the project area. It also involved an intensive pedestrian surface survey of the current project area conducted in early December 2015 following the fall harvest of the crops and the extraction of four soil cores to further examine landform and soil development. The current Phase I investigation was conducted based on the recommendations of the Phase IA assessment and the review comments of the Phase IA by SHPO. The current investigation involved a second intensive pedestrian surface survey conducted in parallel transects no greater than 15 meters apart but less than 15 meters in areas of reduced surface visibility. The majority of the project area was within cultivated fields that had been harvested and weathered over the winter and early spring months prior to the field survey. Surface visibility along the slopes and lower areas was poor (less than 25%); however, the higher elevations did afford some surface visibility (25-50% but primarily 25-30%). Those locations with reduced surface visibility and having archaeological potential were further examined by the excavation of shovel tests at intervals no greater than 15 meters apart. The excavated soil was screened through ¼-inch hardware cloth, with the profiles described and photographed. All of the subsurface tests were mapped using a handheld GPS unit set at the NAD83 datum. The UTM coordinates for each test were then entered into ExpertGPS

mapping software generating aerial and topographic maps for this report. Representative photographs were taken of the field conditions and survey activities. The Phase I was also accompanied by an intensive architectural/historical survey and evaluation of the standing architectural properties identified during the previous reconnaissance survey reported in Rogers 2016a.

The Phase I field investigation was conducted by Research Associates, Cindy L. Nagel, Dan McCullough, Lisa Goffstein, and Kourtney Richards under the direction of Nagel and under the oversight of the Principal Investigator, Leah D. Rogers, all of Tallgrass Historians L.C. Nagel and Rogers co-authored the Phase I report, with the Principal Investigator being solely responsible for the content and accuracy of this report with respect to site locations, descriptions, assessments, and recommendations. A National Archaeological Data Base (NADB) form was completed for this report and is included in Appendix A. No previously unrecorded archaeological sites were encountered within the project area; therefore, no archaeological site forms were completed for the Phase I study.

PREVIOUS INVESTIGATIONS

The central portion of the current project area had been previously surveyed to the Phase I level of investigation by a number of prior cultural resource investigations (Figure 5). These include the following (R&C numbers are keyed to Figure 5):

R&C Number: 090623080
MORROW, TOBY A.
2009 PHASE I INTENSIVE ARCHAEOLOGICAL SURVEY OF THE PROPOSED CLINTON RAIL PROJECT, CITY OF CLINTON, CLINTON COUNTY, IOWA. 382. WAPSI VALLEY ARCHAEOLOGY, INC., ANAMOSA, IOWA.

Area Surveyed: 36.51 ACRES
Quadrangle(s): CAMANCHE, IA-IL
Township(s): T0810N R0050E, T0810N R0060E
Site(s): no sites found

R&C Number: 090623080
FINN, MICHAEL R.
2009 PHASE I INTENSIVE ARCHAEOLOGICAL SURVEY OF THE PROPOSED EXPANSION OF THE CLINTON RAIL PROJECT, CITY OF CLINTON, IOWA. 428. WAPSI VALLEY ARCHAEOLOGY, INC., ANAMOSA, IOWA.

Area Surveyed: 188 ACRES
Quadrangle(s): CAMANCHE, IA-IL
Township(s): T0810N R0050E
Site(s): 13CN141

R&C Number: 050523126
PETERSON, CYNTHIA L.
2005 PHASE I INTENSIVE ARCHAEOLOGICAL SURVEY OF A PROPOSED BIODIESEL PRODUCTION FACILITY, SECTION 24, T81N-R5E, CLINTON COUNTY, IOWA. CCR1317. OFFICE OF THE STATE ARCHAEOLOGIST, UNIVERSITY OF IOWA, IOWA CITY, IOWA.

Area Surveyed: 10.7 ACRES
Quadrangle(s): CAMANCHE, IA-IL
Township(s): T0810N R0050E
Site(s): no sites found

R&C Number: 100623085
ANDERSON, STEPHEN R.

2010 PHASE I ARCHAEOLOGICAL INVESTIGATIONS OF THE CLINTON TO LOW MOOR WASTEWATER CONNECTION PROJECT, CITY OF CLINTON, IOWA. THE LOUIS BERGER GROUP, INC., MARION, IOWA. SUBMITTED TO IDNR, DES MOINES, IOWA.

Area Surveyed: 1 ACRES

Quadrangle(s): CAMANCHE, IA-IL

Township(s): T0810N R0050E, T0810N R0060E

Site(s): no sites found

R&C Number: 900323006

ARTZ, JOE A.

1990 A PHASE I ARCHAEOLOGICAL SURVEY OF LOCAL SYSTEMS PROJECT BRM-1621(1)--8N-23 A.K.A. FHWA 002270 CITY OF CLINTON, CLINTON COUNTY, IOWA. IDOT PCR 13(31). OFFICE OF THE STATE ARCHAEOLOGIST, UNIVERSITY OF IOWA, IOWA CITY, IA.

Area Surveyed: 9 ACRES

Quadrangle(s): CAMANCHE, IA-IL

Township(s): T0810N R0060E

Site(s): 13CN63, 13CN64

R&C Number: 091023121

DOLAN, BRENNAN J. AND THOMAS J. CHADDERDON

2009 PHASE I ARCHAEOLOGICAL INVESTIGATION FOR THE CITY OF LOW MOOR WASTEWATER SYSTEM UPGRADE, CLINTON COUNTY, IOWA. THE LOUIS BERGER GROUP, INC., MARION, IOWA. SUBMITTED TO IDNR, DES MOINES, IOWA.

Area Surveyed: 3.1 ACRES

Quadrangle(s): CAMANCHE, IA-IL

Township(s): T0210N R0050E

Site(s): no sites found

The current investigation reviewed the previous Phase I reports that included portions of the current project area for adequacy in regards to the state guidelines for Phase I investigation in Iowa. It is the opinion of the Principal Investigator that those investigations, including those reported in Finn 2009, Morrow 2009, and Peterson 2005, met the guidelines and therefore did not warrant further investigation. That said, some of the previously surveyed locations were walked over during the pedestrian surface survey for the current study because of the limitations in vehicle access to the project area and having to walk multiple times over the same ground during both the Phase IA assessment and the current Phase I investigation.

Only one archaeological site (13CN141) had been previously recorded within the boundaries of the current project area (see Figure 5). This site consists of the archaeological component of a standing farmstead, which was also within the site boundary. The standing buildings of that farmstead were deemed "to be relatively modern in age" and were not inventoried or evaluated as part of that Phase 1 study (Finn 2009:12). Since the completion of that investigation, these farmstead buildings were removed and the location has been built over by a modern rail facility. No other architectural resources had been previously recorded within the current project area, nor have there been any NRHP-listed properties within that area or the vicinity (I-Sites Pro 2016). The architectural resources that are currently still standing in the project area and its immediate vicinity were intensively surveyed and evaluated during the current investigation, with the results of that investigation reported in Rogers 2016c.

Archaeological site 13CN141 was recommended as not eligible for the NRHP and warranted no further archaeological investigation (Finn 2009). The site area as mapped on Figure 5 is much larger than the actual physical farmstead that it represents, with the wider extent of the site area so mapped to include a dispersed scatter of historic artifacts across the cultivated fields. Generally, this type of wide dispersal pattern tends to be associated with the unintentional spread of items originating at the farmstead but spreading out into

the fields often via manure spreaders. It is the opinion of the Principal Investigator for the current study that site 13CN141 had been adequately surveyed and evaluated and warranted no further investigation by the current study.

RESULTS OF THE INVESTIGATION

The landform development (Iowan Surface), land use (intensive cultivation), and the mapped soils (largely glacial in origin) all indicate a location where any archaeological sites (prehistoric and historic) will be found in a surface to near surface context. [This was also the opinion of previous Phase I studies in the project area, notably that reported in Peterson 2005.] The prehistoric potential of this location would generally be considered moderate to high given the proximity to Rock Creek; however, previous intensive surface surveys within the project area and the surrounding vicinity have not recorded any sites with prehistoric cultural affiliations. Therefore, the general expectation is that the project area has only a moderate potential for containing evidence of prehistoric occupation or utilization.

The Phase I field investigation was conducted over multiple days between May 4 and May 12, 2016 by Tallgrass Historians L.C. personnel. The investigation consisted of an intensive pedestrian surface survey of those portions of the study area that had not been previously surveyed to the Phase I level and were subdivided into four survey parcels numbered 1-4 (see Figure 2 and Plates 1-12). These parcels had been subjected to the same intensive-level pedestrian surface survey in December 2015 for the Phase IA Assessment for the current project and reported in Rogers 2016b. Because of the limited surface visibility in some areas at the time of the December survey, the current Phase I investigation involved a second intensive pedestrian surface survey of the same parcels. While visibility had improved somewhat, there were still some areas within Parcels 2 and 4 in particular where subsurface testing was warranted to supplement the surface survey. To that end, a total of 83 shovel tests were conducted across the summits of Parcels 2 and 4. Figures 12-14 shows the location of the four survey parcels examined by pedestrian surface survey and the location of each of the Phase IA soil cores (4) and Phase I shovel tests (83). The profile descriptions for the soil cores are provided in the Phase IA report (Rogers 2016b), with the descriptions for the Phase I shovel tests provided in Appendix B of this report. The parcels had the following representative profiles (see also Appendix B):

Parcel 1

0-43 cm b.s.	Ap; black (10YR 2/1) silty clay loam; sticky
43-48 cm b.s.	Bg; brown (10YR 4/3) clay loam; few small yellowish brown (10YR5/6) mottles; sticky

Parcel 2

0-29 cm b.s.	Ap; very dark brown (10YR 2/2) silty clay loam; few gravels
29-50 cm b.s.	Bw; dark yellowish brown (10YR 4/4) silty clay loam; dark yellowish brown (10YR 4/6) and very dark grayish brown (10YR 3/2) mottles; few gravels

Parcel 3

0-29 cm b.s.	Ap; very dark gray (10YR 3/1) silt loam; moist; roots
29-51 cm b.s.	Bg; dark gray (10YR 4/1) silt loam; wet; few small pebbles, mottles
51-62 cm b.s.	BC; yellowish brown (10YR 5/6) clay loam with dark gray (10YR 4/1) mottles; few small redox; wet

Parcel 4

0-29 cm b.s.	Ap; very dark grayish brown (10YR 3/2) silt loam; roots; few pebbles
29-37 cm b.s.	Bt; brown (10YR 4/3) silty clay loam; small pebbles
37-50 cm b.s.	BC; dark yellowish brown (10YR 4/6) silty clay loam; few dark grayish brown (10YR 4/2) mottles; small pebbles

The subsurface testing concentrated on the higher elevation of the bench in closest proximity to Rock Creek in Parcel 4 and the higher elevations in Parcel 2 (see Figure 12). These locations were concluded to have the highest potential for archaeological sites and had areas where surface visibility was not much improved since the December field study. The other two parcels (#1 and #3 on Figure 12) appear to have been adequately surveyed by intensive surface survey, which at this point has included the previous investigations conducted by Finn (2009) and Morrow (2009) as well as the intensive surface survey of the project area conducted during the Phase IA in December 2015 (Rogers 2016a) and the current Phase I investigation reported herein. No cultural material was observed or recovered in any of the four survey parcels during either the Phase IA study or the current Phase I intensive investigation. Some glacial cobbles and gravel, including chert, were observed but none had been culturally-modified.

MANAGEMENT SUMMARY AND RECOMMENDATIONS

The Phase I archaeological investigation of the proposed Lincoln Way Industrial Rail and Air Park in the City of Clinton, Clinton County, Iowa, examined a project area totaling 433 ac (175 ha), with the area examined for a second time by intensive pedestrian surface survey and supplemented with the excavation of 83 subsurface tests. No previously unrecorded archaeological sites were encountered within the current project area, with previously recorded site 13CN141 previously recommended as not eligible for the NRHP and warranting no further archaeological investigation (Finn 2009). Therefore, as a result of the Phase IA Assessment (Rogers 2016b) and the current Phase I archaeological investigation, no further archaeological investigation is recommended in association with the currently proposed project.

As always, it should be noted that no field technique is completely adequate to define all potential cultural resources within a given area. Therefore, should any additional cultural resources (including human remains) be detected during construction, the State Historic Preservation Office (SHPO) in Des Moines should be notified immediately. It is the responsibility of the contractor to protect cultural resources from disturbance until a professional examination can be made or until clearance to proceed is authorized by the SHPO or a designated representative.

REFERENCES CITED

Alex, Lynn M
1990 *Exploring Iowa's Past: A Guide to Prehistoric Archaeology.* University of Iowa Press, Iowa City.
2000 *Iowa's Archaeological Past.* University of Iowa Press.

Anderson, G.W.
1925 *Atlas of Clinton County, Iowa.* Anderson Publishing, Des Moines, Iowa.

Artz, Joe Alan
2005 Ackmore to Zwingle: Soil Series of Iowa. Accessed at http://www.iowaisites.com, October 2015.

Banker's Life
1894 *Plat Book of Clinton County, Iowa.* Banker's Life, Clinton, Iowa.

Benn, D.W., J.C. Anderson, R.C. Vogel, and L.A. Conrad
1989 *Archaeology and Geomorphology in Pools 17 and 18, Upper Mississippi River.* CAR 714, Center for Archaeological Research, Southwest Missouri State University, Springfield.

Finn, Michael R.
2009 *Phase I Intensive Archaeological Survey of the Proposed Expansion of the Clinton Rail Project, City of Clinton, Iowa.* 428. Wapsi Valley Archaeology, Inc., Anamosa, Iowa.

Harrison and Warner
1874 *Atlas of Clinton County, Iowa.* Harrison and Warner, Clinton, Iowa.

I-Sites Pro
2016 I-Sites: an Online GIS and Database for Iowa Archaeology maintained by the Office of the State Archaeologist, University of Iowa, Iowa City. Accessed at http://www.iowaisites.com/, January 2016

Iowa Geographic Map Server
2016 Aerials and Maps. Iowa Geographic Map Server. Accessed at http://cairo. gis.iastate.edu, January 2016.

Morrow, Toby A.
2009 *Phase I Intensive Archaeological Survey of the Proposed Clinton Rail Project, City of Clinton, Clinton County, Iowa.* 382. Wapsi Valley Archaeology, Inc., Anamosa, Iowa.

Peterson, Cynthia L.
2005 *Phase I Intensive Archaeological Survey of a Proposed Biodiesel Production Facility, Section 24, T81NR-5E, Clinton County, Iowa.* Contract Completion Report 1317. Office of the State Archaeologist, University of Iowa, Iowa City, Iowa.

Prior, Jean C.
1991 *Landforms of Iowa*. University of Iowa, Iowa City, Iowa.

Rogers, Leah D.
2016a *Lincoln Way Industrial Rail and Air Park: Reconnaissance-Level Architectural Survey, City of Clinton, Clinton County, Iowa.* TH15-635--2. Tallgrass Historians L.C., Iowa City, Iowa.
2016b *Lincoln Way Industrial Rail and Air Park: Phase IA Archaeological Assessment, City of Clinton, Clinton County, Iowa.* TH15-635--1. Tallgrass Historians L.C., Iowa City, Iowa.
2016c *Lincoln Way Industrial Rail and Air Park: Architectural/Historical Intensive Survey and Evaluation, City of Clinton, Clinton County, Iowa.* TH15-635--4. Tallgrass Historians L.C., Iowa City, Iowa.

Soil Survey Staff
2016 Official Soil Series Descriptions. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Accessed at http:// soils.usda.gov/technical/classification/osd/index.html, January 2016.

United States
1837 General Land Office original survey plat of T81N-R05E. Digitized version of original plats accessed at the Iowa Geographic Map Server 2016.

Web Soil Survey
2016 *Soil Survey of Clinton County, Iowa*. National Resources Conservation Service. United States Department of Agriculture. Accessed at www.websoilsurvey. nrcs.usda.gov.app. WebSoilSurvey.aspx, January 2016.
Western Historical
1879 *The History of Clinton County, Iowa*. Western Historical Company, Chicago.
Wolfe, P.B., Editor-in-Chief
1911 *Wolfe's History of Clinton County, Iowa.* Vol. 1. B.F. Bowne & Company, Indianapolis, Indiana.

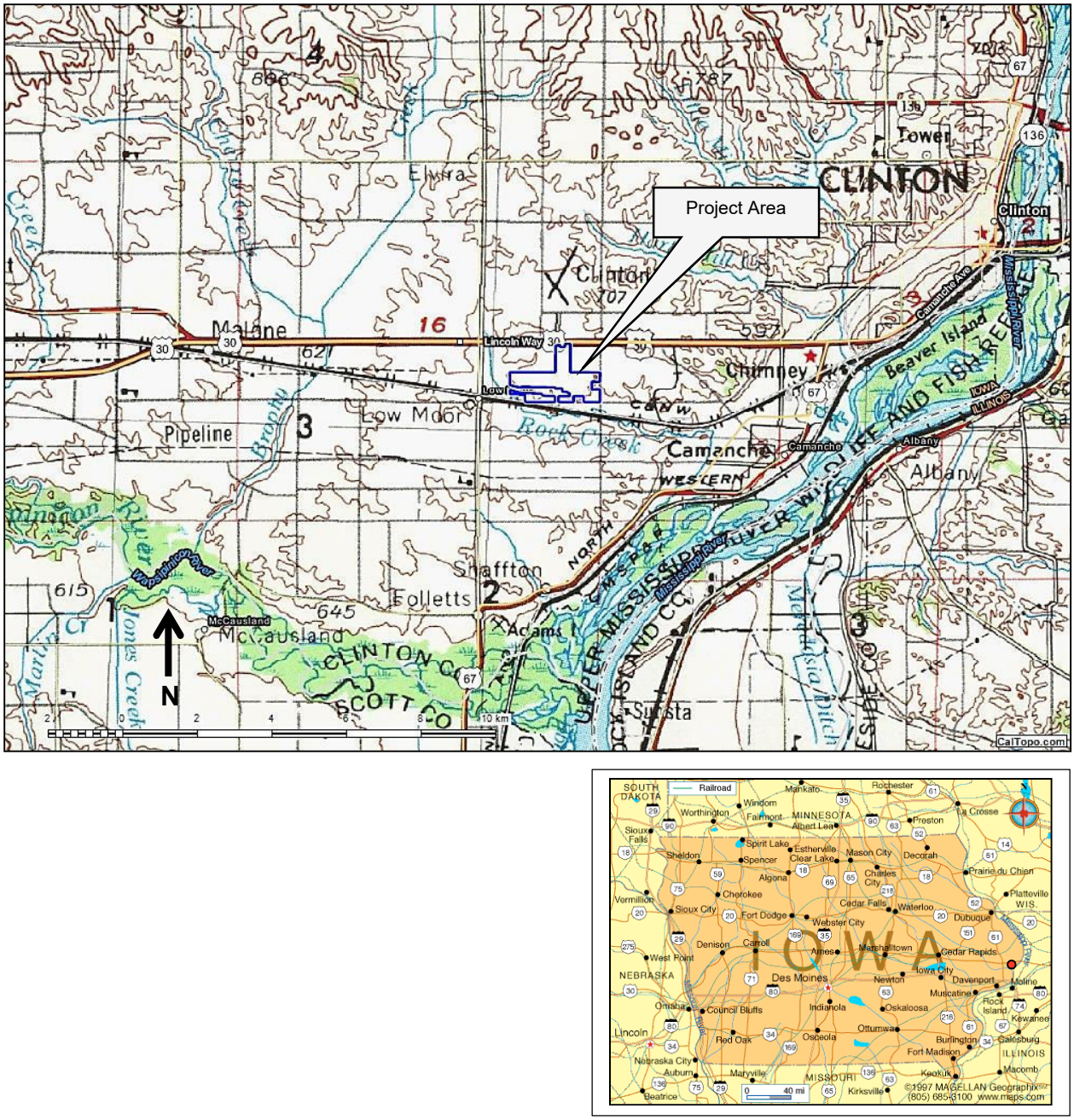


Figure 1. General topographic location of project survey areas (blue outlined) in southeast Clinton County, Iowa. Source for base map: USGS Clinton County topographic map obtained from ExpertGPS mapping software, 2016.

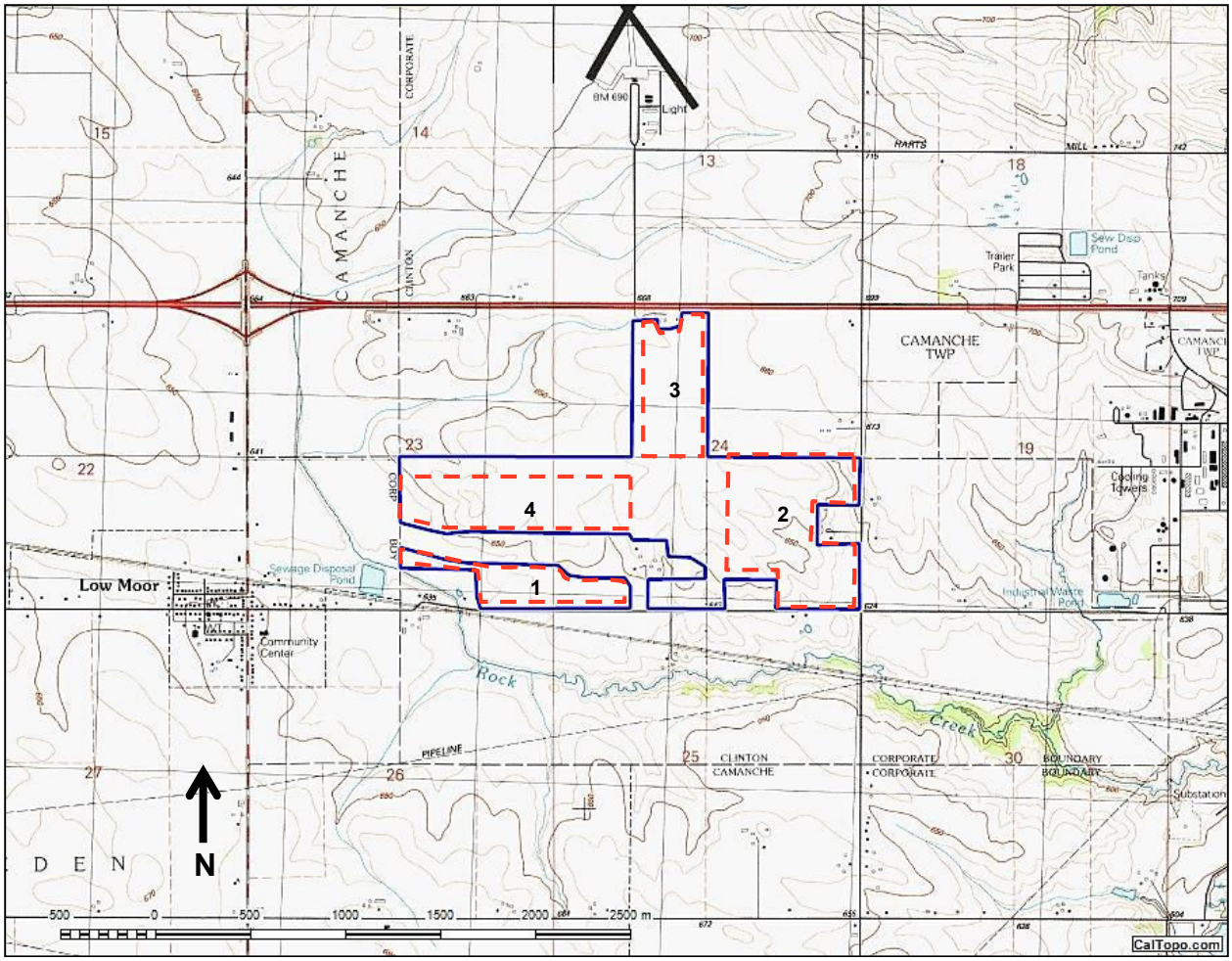


Figure 2. Topographic location of current survey areas (blue outlines) and actual survey parcels (red dashed outlines and numbered). Source: USGS Camanche Quad Map, 7.5' series, 1991 obtained from ExpertGPS mapping software, 2016.

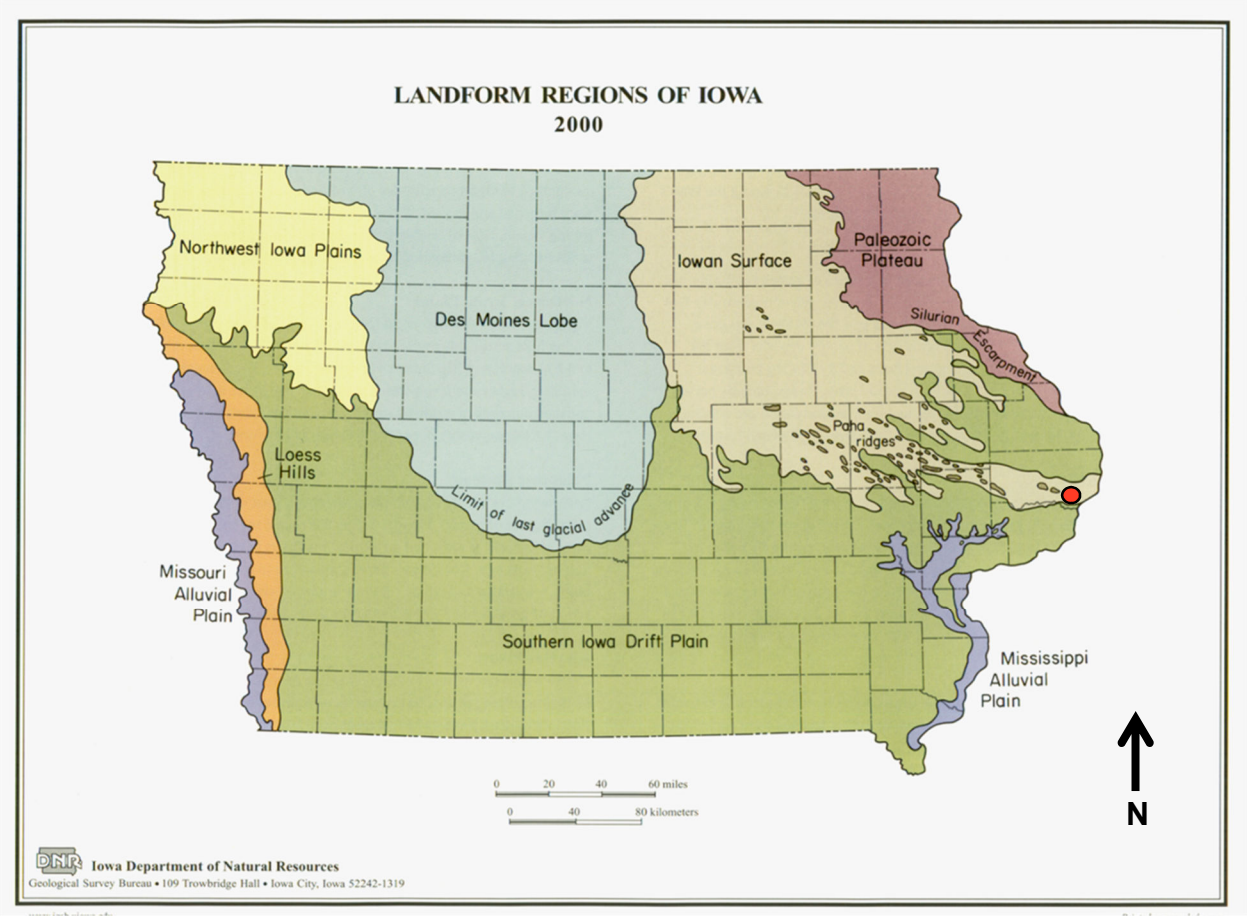
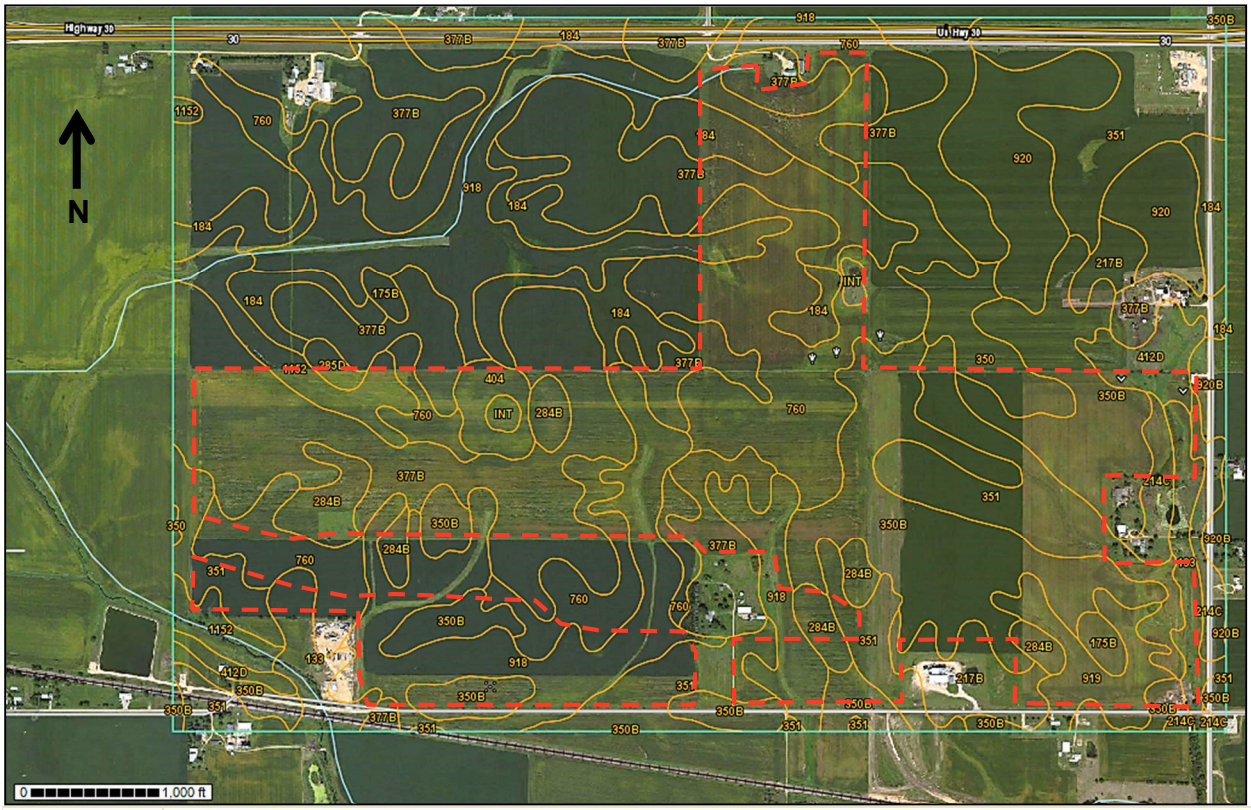


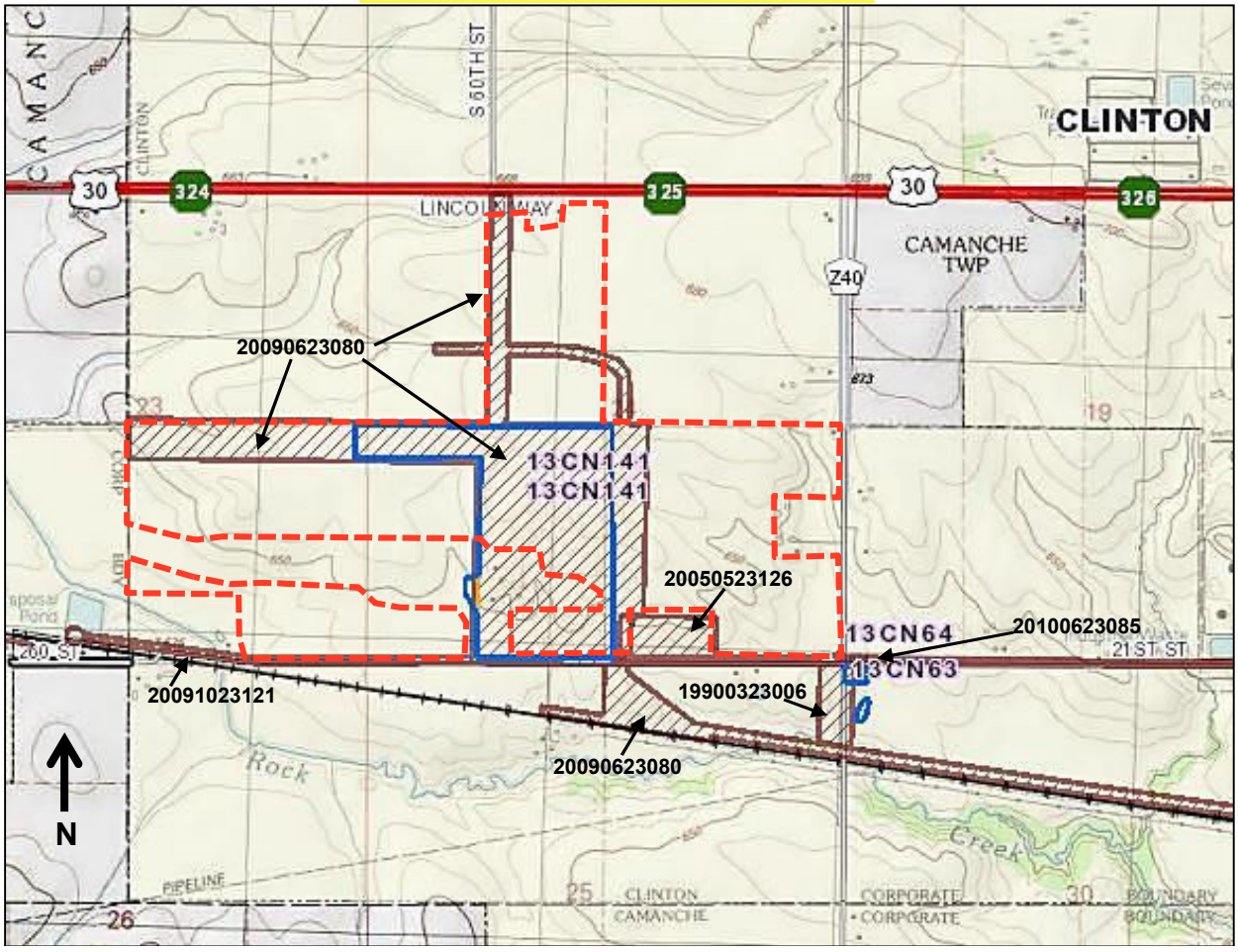
Figure 3. Landform regions of Iowa showing general project location (red dot). Map obtained from Iowa Department of Natural Resources, 2000



Map Unit Symbol	Map Unit Name
133	Colo silty clay loam, 0 to 2 percent slopes; Roberts Creek Member
175B	Dickinson fine sandy loam, 2 to 5 percent slopes; eolian sand; glaciofluvial
184	Klinger silt loam, 1 to 3 percent slopes; shallow to glacial till
214C	Rockton loam, 20 to 30 inches to limestone, 5 to 9 percent slopes; shallow to bedrock
284B	Flagler sandy loam, 1 to 5 percent slopes; glaciofluvial
350B	Waukegan silt loam, 2 to 5 percent slopes; glaciofluvial
351	Atterberry silt loam, sandy substratum, 0 to 2 percent slopes; loess-mantled terrace
377B	Dinsdale silt loam, 2 to 5 percent slopes; shallow to glacial till
404	Thorp silt loam, 0 to 2 percent slopes; glaciofluvial
760	Ansgar silt loam, 0 to 3 percent slopes; shallow to glacial till
918	Garwin silty clay loam, sandy substratum, 0 to 2 percent slopes; loess-mantled terrace
919	Muscatine silt loam, sandy substratum, 0 to 2 percent slopes; loess-mantled terrace
INT	Intermittent water

Figure 4. Soil types mapped in current survey area parcels (red dashed outlines).
Sources: Artz 2005; Soil Survey Staff 2016; Web Soil Survey 2016

ARCHAEOLOGICAL SITE LOCATIONS ARE CONFIDENTIAL
MAP NOT FOR PUBLIC DISTRIBUTION



= previous Phase I survey areas

= previously recorded archaeological sites

= current survey areas

Figure 5. Topographic map showing location of previous survey areas and previously recorded archaeological sites in relation to current survey areas. Source: I-Sites Pro 2016

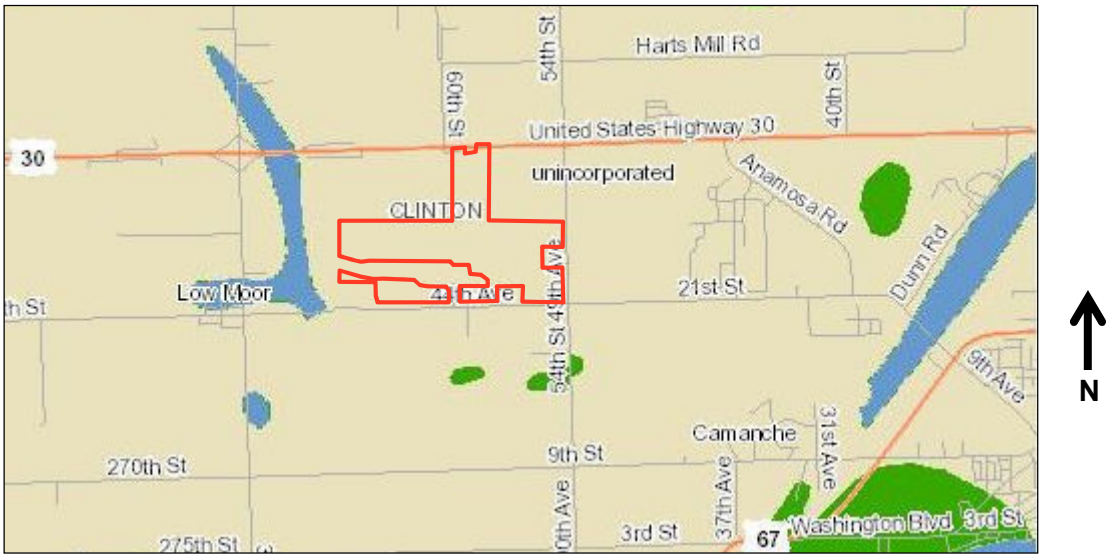


Figure 6. Map of the survey area (red outlines) showing the vegetation as mapped by the original land survey for the General Land Office in 1837. Open prairie is shaded in beige; forest is shaded in green; water is shaded in blue. Map obtained from the Iowa Geographic Map Server 2016.

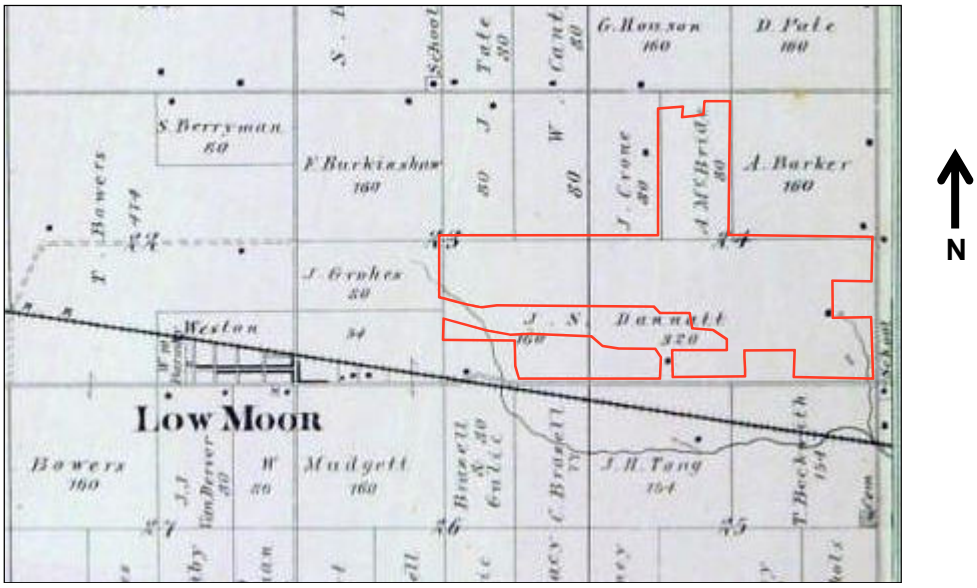


Figure 7. 1874 map of the survey area (red outlines).
Source: Harrison and Warner 1874

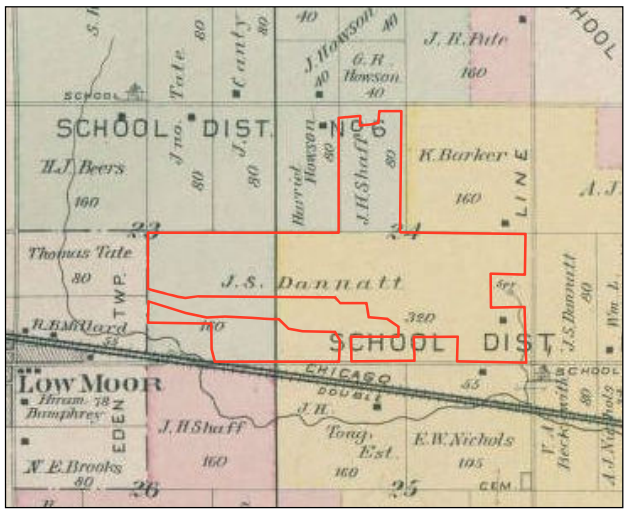


Figure 8. 1894 map of survey area (red outlines). Source: Banker's Life 1894

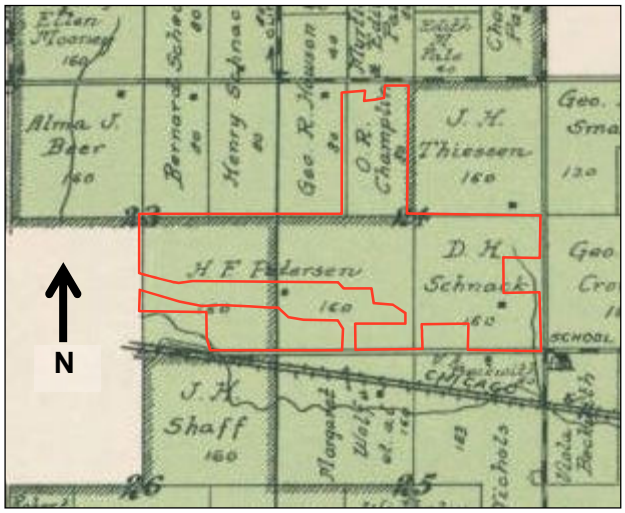
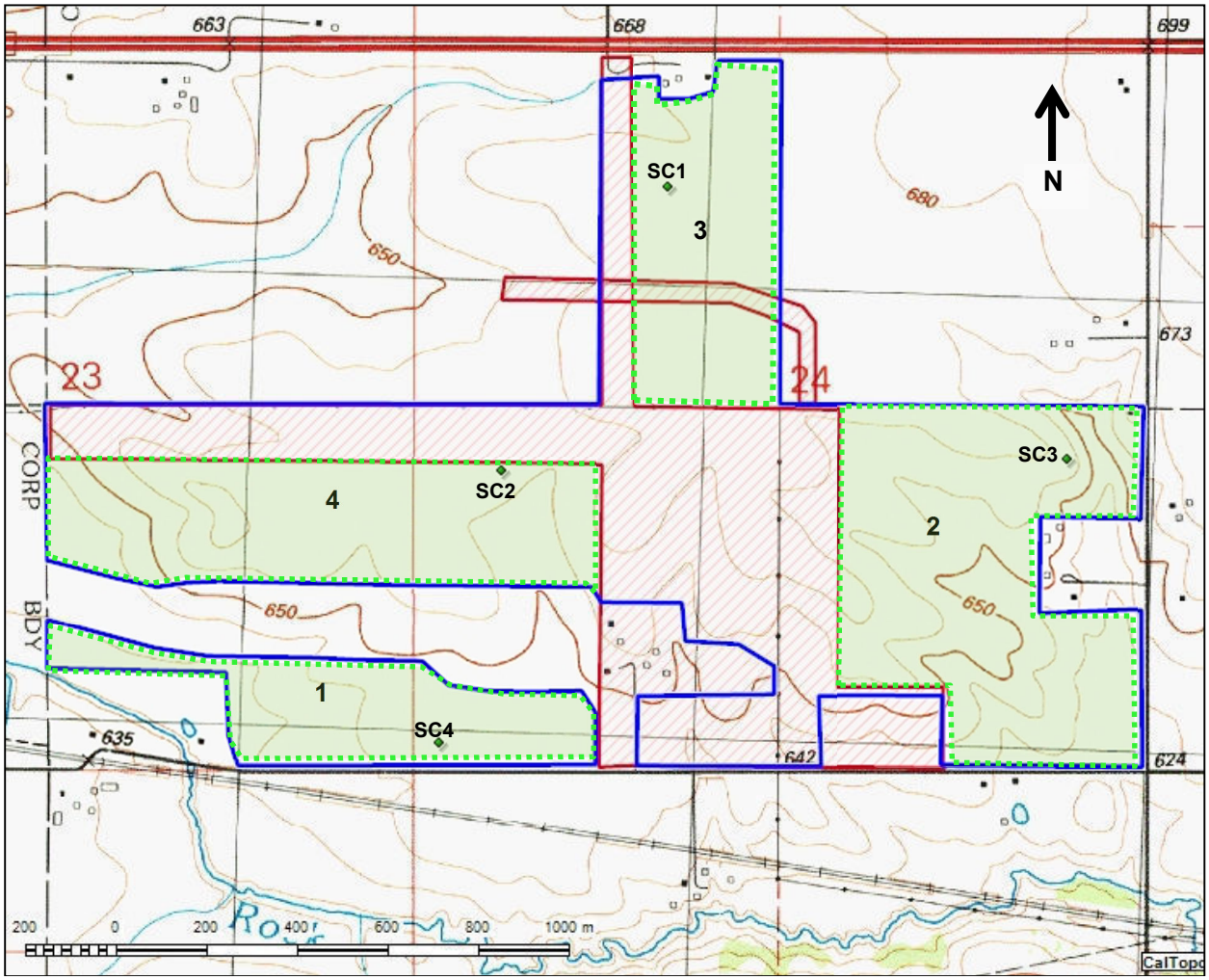


Figure 9. 1925 map of survey area (red outlines). Source: Anderson 1925

Figure 10. Current photograph of Dannatt House at 4030 S. 54th Street, Clinton, Iowa. Photograph taken by Tallgrass Historians L.C., December 3, 2015.

Figure 11. Late 1930s-early 1940s aerial photograph of project area (brown outlines) with architectural properties still extant today highlighted (yellow shading). The red-shaded farmstead was recorded in 2009 only as an archaeological site (13CN141) and the buildings have since been removed and the location built over by a rail facility. Sources: Finn 2009; Iowa Geographic Map Server 2016; Rogers 2016.



= previous Phase I survey area eliminated from current study

= current project area boundaries

= parcels examined during current Phase I survey

= Phase IA soil cores (Rogers 2016b)

Parcel 1 = harvested/weathered soybean field, 25-30% visibility; Parcel 2= harvested/weathered corn field, 25-50% visibility; Parcel 3= harvested/weathered corn, 25-30% visibility; Parcel 4= harvested/weathered corn field 0-25% visibility (best visibility on higher elevation of bench).

Figure 12. Topographic map of current survey area showing areas previously surveyed, the field conditions of the current survey parcels, and the location of soil cores conducted during Phase IA Assessment. Sources: USGS Camanche 1991 quad map obtained from ExpertGPS mapping software 2016; I-Sites Pro 2016; Rogers 2016b.

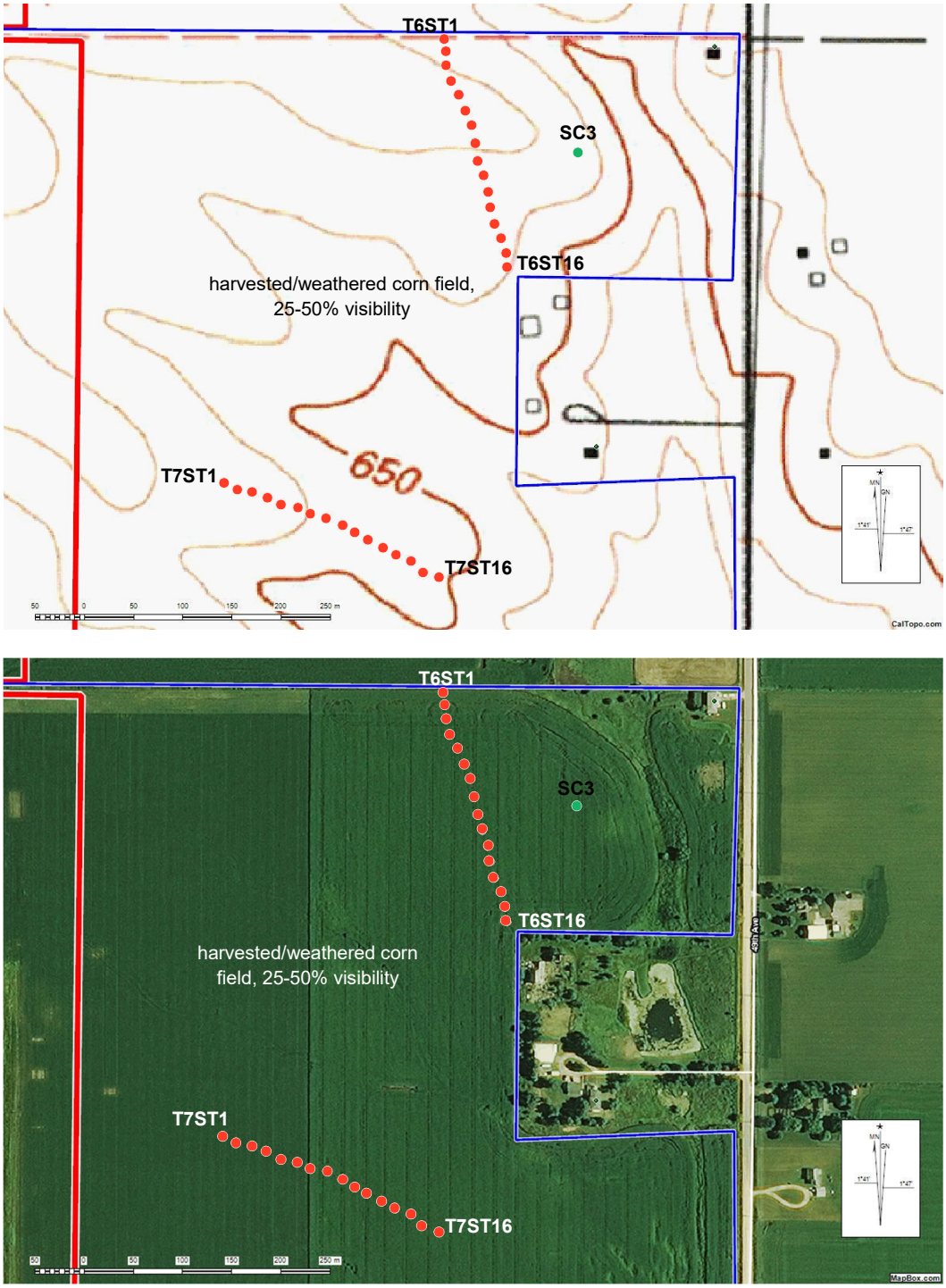


Figure 13. Topographic (top) and aerial (bottom) maps of Parcel 2 showing the field conditions and shovel test locations conducted during current survey. Sources: USGS Camanche 1991 quad map obtained from ExpertGPS mapping software 2016 and I-Sites Pro 2016. Aerial image obtained from ExpertGPS mapping software 2016.

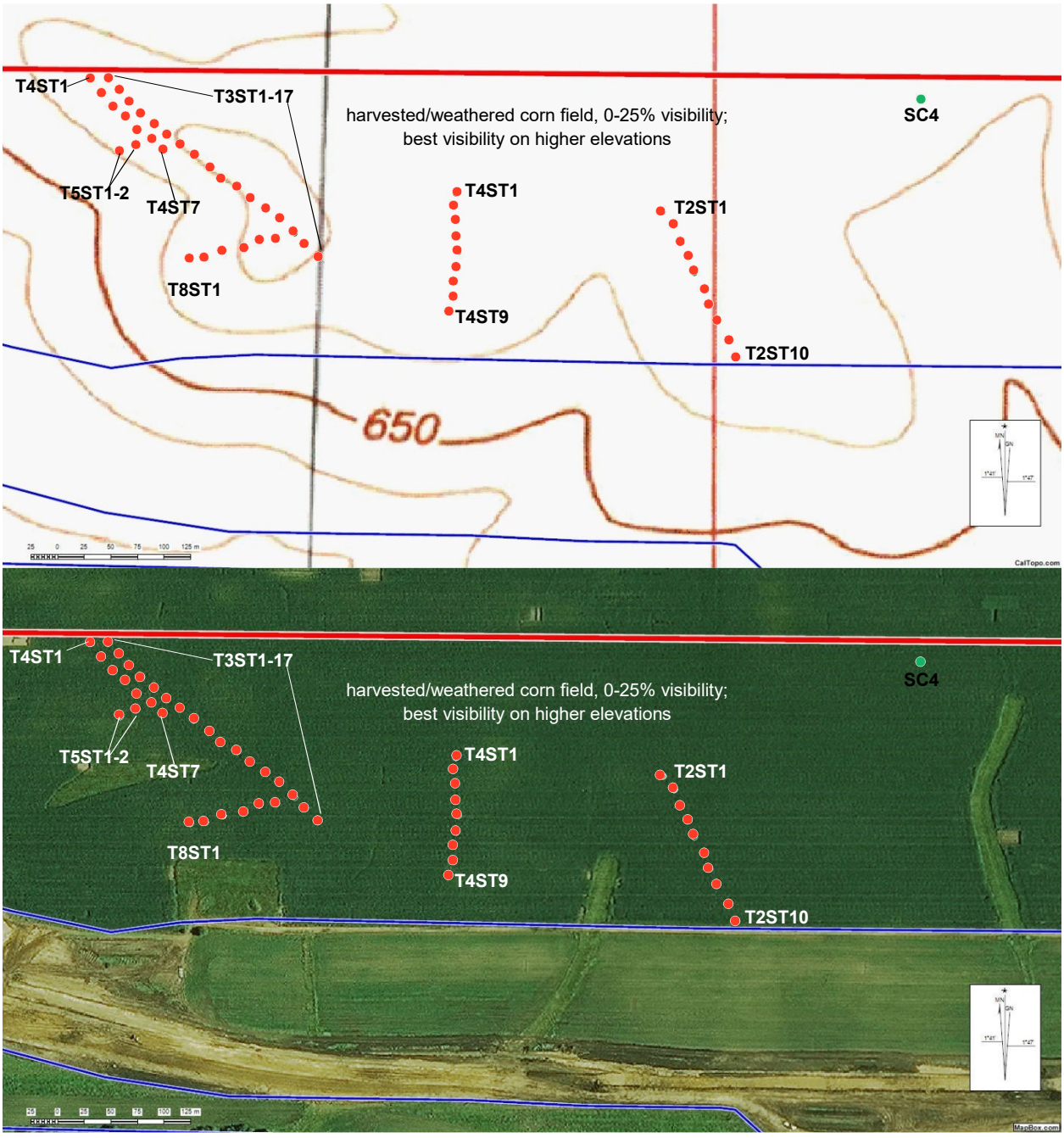


Figure 14. Topographic (top) and aerial (bottom) maps of Parcel 4 showing the field conditions and shovel test locations conducted during current survey. Sources: USGS Camanche 1991 quad map obtained from ExpertGPS mapping software 2016 and I-Sites Pro 2016. Aerial image obtained from ExpertGPS mapping software 2016.

Plate 1. Parcel 2 looking east.
Field Date for all photographs (except where indicated otherwise): May 4, 2016.

Plate 2. Parcel 2 looking south.

Plate 3. North wall profile of T6ST2.

Plate 4. Parcel 4 looking southwest.

Plate 5. Parcel 4 looking southeast.

Plate 6. Northwest wall profile of T3ST1.

Appendix A:
National Archaeological Data Base (NADB) Form

Database Doc Number:_____

National Archeological Data Base – Reports: Data Entry Form

R and C #:_____

Authors: Rogers, Leah D. and Cindy L. Nagel

_____

Publication Date: 2016

Title: Lincoln Way Industrial Rail and Air Park: Phase I Archaeological Investigation, City of Clinton, Clinton County, Iowa

======

4. Report Title:_____
Volume #:_____ Report #:_____ NTIS: _____
Publisher:_____
Place: _____

======

7. Unpublished Sent from: Tallgrass Historians L.C., Iowa City, IA
Sent to: Olsson Associates, Omaha, NE
Contract #:_____

======

Federal Agency:_____

======

State: Iowa
County: Clinton County
Town: Clinton

======

Worktype: 31 (Phase I)

======

Keyword: 0-Types of Resources/Features 1-Generic Terms/Research Questions 2-Taxonmic Names 3-Artifact Types/Material Classes 4-Geographic Names/Locations 5-Time Periods 6- Project Name/Study Unit 7-Other Keywords

433 acres	[7]	Rock Creek	[4]
Iowan Surface	[4]	glacial moraine	[4]
Mississippi River Basin	[4]	_____	[]
Eden Township	[4]	_____	[]
Camanche Township	[4]	_____	[ ]
Low Moor	[4]	_____	[ ]

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UTM Zone: 15 Easting:_____ Northing:_____
15 Easting:_____ Northing:_____
15 Easting:_____ Northing:_____
15 Easting:_____ Northing:_____

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Township: 81N _____
Range: 05E _____

Other Publication Types

1. **Monograph**
   Name:_____
   Place:_____

2. **Chapter**
   In:_____ First:_____ Last:_____

3. **Journal**
   Volume:_____ Issue #:_____ First:_____ Last:_____ ISSN: _____

5. **Dissertation**
   Degree: Ph.D. LL.D. M.A. B.A. B.S. Institute:_____

6. **Paper**
   Meeting:_____
   Place:_____

8. **Other**
   Reference Line: _____

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Site #: 13CN141

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Quad Map: Camanche 1991

Appendix B:
Subsurface Test Soil Profile Descriptions

Location	Test Number	Depth cm b.s.	Soil Description
Parcel 2	T6ST1	0-37	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam; few gravels
		37-50	very dark grayish brown (10YR 3/2) to very dark brown (10YR 3/3) silty clay loam; few gravels; friable
Parcel 2	T6ST2	0-37	very dark grayish brown (10YR 3/2) silt loam; roots
		37-60	dark yellowish brown (10YR 4/4 and 4/6) silty clay loam; few small Fe; very dark grayish brown (10YR 3/2) common mottles
Parcel 2	T6ST3	0-30	very dark grayish brown (10YR 3/2) silt loam
		30-50	dark yellowish brown (10YR 4/4) silty clay loam
Parcel 2	T6ST4	0-36	very dark grayish brown (10YR 3/2) silty clay loam; roots; few gravels
		36-50	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 2	T6ST5	0-46	very dark grayish brown (10YR 3/2) silty clay loam
		46-52	dark yellowish brown (10YR 4/4) silty clay loam; few Fe; very dark grayish brown (10YR 3/2) mottles
Parcel 2	T6ST6	0-35	very dark grayish brown (10YR 3/2) silt loam
		35-50	very dark brown (10YR 3/3) silty clay loam
Parcel 2	T6ST7	0-40	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam; few gravels
		40-52	dark yellowish brown (10YR 4/4) silty clay loam; dark yellowish brown (10YR 4/4) and very dark grayish brown (10YR 3/2) mottles; few gravels
Parcel 2	T6ST8	0-44	very dark grayish brown (10YR 3/2) silty clay loam
		44-50	dark grayish brown (10YR 4/4 to 4/6) silty clay loam; few FE; very dark grayish brown (10YR 3/2) mottles
Parcel 2	T6ST9	0-35	very dark grayish brown (10YR 3/2) silt loam
		35-50	dark brown (10YR 3/3) silty clay loam
Parcel 2	T6ST10	0-38	very dark grayish brown (10YR 3/2) silty clay loam; few gravels
		38-56	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few gravels
Parcel 2	T6ST11	0-46	very dark grayish brown (10YR 3/2) silty clay loam; roots
		46-50	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 2	T6ST12	0-30	very dark grayish brown (10YR 3/2) silt loam
		30-45	dark brown (10YR 3/3) silt loam
		45-50	dark yellowish brown (10YR 4/4) silty clay loam
Parcel 2	T6ST13	0-32	very dark grayish brown (10YR 3/2) silty loam; roots
		32-50	dark yellowish brown (10YR 4/4 and 4/6) silty clay loam; few very dark grayish brown (10YR 3/2) mottles; few small redox
Parcel 2	T6ST14	0-26	very dark grayish brown (10YR 3/2) silty clay loam; few gravels
		26-50	dark yellowish brown (10YR 4/6) silty clay loam; dark yellowish brown (10YR 4/4) and very dark grayish brown (10YR 3/2) mottles; few gravels
Parcel 2	T6ST15	0-30	very dark grayish brown (10YR 3/2) silt loam

Location	Test Number	Depth cm b.s.	Soil Description
		30-50	dark brown (10YR 3/3) silty clay loam
Parcel 2	T6ST16	0-27	very dark grayish brown (10YR 3/2) silty clay loam; roots; few small gravels
		27-47	strong brown (7.5YR 4/6) strong brown silty clay loam; large gravels
Parcel 2	T7ST1	0-31	very dark grayish brown (10YR 3/2) silty clay loam; roots; few gravels
		31-50	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 2	T7ST2	0-40	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam; glacial till (gravels and cobbles)
		40-50	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles; glacial till (gravels and cobbles)
Parcel 2	T7ST3	0-40	very dark grayish brown (10YR 3/2) silt loam
		40-50	dark brown (10YR 3/3) silty clay loam
Parcel 2	T7ST4	0-36	very dark grayish brown (10YR 3/2) silty clay loam; roots; few gravels
		36-50	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 2	T7ST5	0-29	very dark brown (10YR 2/2) silty clay loam; few gravels
		29-50	dark yellowish brown (10YR 4/4) silty clay loam; dark yellowish brown (10YR 4/6) and very dark grayish brown (10YR 3/2) mottles; few gravels
Parcel 2	T7ST6	0-39	very dark grayish brown (10YR 3/2) silty clay loam; roots; few gravels
		39-50	brown (10YR 4/3) to dark yellowish brown (10YR 4/4) silty clay loam; yellowish brown (10YR 5/6) mottles
Parcel 2	T7ST7	0-40	very dark grayish brown (10YR 3/2) silt loam
		40-50	dark brown (10YR 3/3) silty clay loam
Parcel 2	T7ST8	0-27	very dark brown (10YR 2/2) silty clay loam; few gravels
		27-42	brown (10YR 4/3) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few gravels
		42-52	dark yellowish brown (10YR 3/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few gravels
Parcel 2	T7ST9	0-40	very dark grayish brown (10YR 3/2) silt loam
		40-50	brown (10YR 4/3) silt loam
Parcel 2	T7ST10	0-41	very dark grayish brown (10YR 3/2) silty clay loam; roots
		41-50	dark yellowish brown (10YR 4/6) to yellowish brown (10YR 5/6) very dark grayish brown (10YR 3/2) mottles; few limestone
Parcel 2	T7ST11	0-28	very dark grayish brown (10YR 3/2) silty clay loam; few gravels
		28-50	dark yellowish
Parcel 2	T7ST12	0-30	very dark grayish brown (10YR 3/2) silt loam
		30-50	brown (10YR 4/3) silty clay loam
Parcel 2	T7ST13	0-36	very dark grayish brown (10YR 3/2) silty clay loam; roots

Location	Test Number	Depth cm b.s.	Soil Description
		36-50	yellowish brown (10YR 5/6) sandy clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 2	T7ST14	0-38	very dark grayish brown (10YR 3/2) silty clay loam; roots
		38-50	yellowish brown (10YR 5/6) sandy clay loam; few gravels
Parcel 2	T7ST15	0-32	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam; few gravels
		32-51	dark yellowish brown (10YR 3/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few gravels
Parcel 2	T7ST16	0-30	very dark grayish brown (10YR 3/2) silt loam
		30-50	yellowish brown (10YR 5/6) sandy clay loam; few gravels
Parcel 4	T2ST1	0-29	very dark grayish brown (10YR 3/2) silt loam; roots; few pebbles
		29-37	brown (10YR 4/3) silty clay loam; small pebbles
		37-50	dark yellowish brown (10YR 4/6) silty clay loam; few dark grayish brown (10YR 4/2) mottles; small pebbles
Parcel 4	T2ST2	0-42	very dark grayish brown (10YR 3/2) silty clay loam; roots; few gravels
		42-50	dark yellowish brown (10YR 4/4) silty clay loam; few gravels
Parcel 4	T2ST3	0-38	very dark grayish brown (10YR 3/2) silty clay loam
		38-52	yellowish brown (10YR 5/6) silty clay loam; few very dark grayish brown (10YR 3/2) mottles
Parcel 4	T2ST4	0-37	very dark grayish brown (10YR 3/2) silty clay loam
		37-50	dark yellowish brown (10YR 4/6) silty clay loam; few very dark grayish brown (10YR 3/2) mottles
Parcel 4	T2ST5	0-36	very dark grayish brown (10YR 3/2) silty clay loam; roots
		36-50	dark yellowish brown (10YR 4/4) silty clay loam; common very dark grayish brown (10YR 3/2) mottles
Parcel 4	T2ST6	0-39	very dark grayish brown (10YR 3/2) silty clay loam; roots
		39-50	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 4	T2ST7	0-39	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam; few rock
		39-50	dark brown (10YR 3/3) silty clay loam; few rock
Parcel 4	T2ST8	0-40	very dark gray (10YR 3/1) silt loam
		40-50	very dark grayish brown (10YR 3/2) silt loam
Parcel 4	T2ST9	0-41	very dark grayish brown (10YR 3/2) silty clay loam; roots
		41-50	dark yellowish brown (10YR 4/4) silty clay loam; few very dark grayish brown (10YR 3/2) and dark yellowish brown (10YR 4/6) mottles
Parcel 4	T2ST10	0-21	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam; few rock
		21-40	dark brown (10YR 3/3) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few rock
		40-49	dark yellowish brown (10YR 4/4) silty clay loam; brown (10YR 4/3) mottles; few rock

Location	Test Number	Depth cm b.s.	Soil Description
Parcel 4	T3ST1	0-36	very dark gray (10YR 3/1) silty clay loam; small yellowish brown sand mottles; roots
		35--50	dark yellowish brown (10YR 4/6) clay with very dark gray (10YR 3/1) mottles; some small
Parcel 4	T3ST2	0-39	very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) silty clay loam; roots
		39-50	dark yellowish brown (10YR 4/6) clay; very dark gray (10YR 3/1) mottles
Parcel 4	T3ST3	0-38	very dark gray (10YR 3/1) silt loam; roots
		38-50	dark yellowish brown (10YR 4/6) clay loam; very dark gray (10YR 3/1) mottles
Parcel 4	T3ST4	0-19	very dark gray (10YR 3/1) silty clay loam; roots
		19-38	dark yellowish brown (10YR 4/4) silty clay loam; many very dark gray (10YR 3/1) mottles
		38-50	dark yellowish brown (10YR 4/6) to yellowish brown (10YR 5/6) silty clay loam; common very dark gray (10YR 3/1) mottles
Parcel 4	T3ST5	0-32	very dark grayish brown (10YR 3/1) silty clay loam
		32-46	mottled very dark gray (10YR 3/1) and brown (10YR 5/3) silty clay loam
		46-50	dark yellowish brown (10YR 4/4) silty clay loam; brown (10YR 5/3) and very dark gray (10YR 3/1) mottles
Parcel 4	T3ST6	0-42	very dark grayish brown (10YR 3/2) silty clay loam; roots
		42-50	dark yellowish brown (10YR 4/4-4/6) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 4	T3ST7	0-32	very dark grayish brown (10YR 3/2) silty clay loam; roots
		32-40	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 4	T3ST8	0-36	very dark grayish brown (10YR 3/2) silty clay loam; roots
		36-50	dark yellowish brown (10YR 4/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 4	T3ST9	0-40	very dark grayish brown (10YR 3/2) silt loam
		40-50	brown (10YR 4/3) silty clay loam
Parcel 4	T3ST10	0-37	very dark grayish brown (10YR 3/2) silty clay loam;
		37-45	mottled very dark grayish brown (10YR 3/2) and dark yellowish brown (10YR 4/4) silty clay loam
		45-50	dark yellowish brown (10Y4 4/4) silty clay loam
Parcel 4	T3ST11	0-33	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam
		33-48	very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silty clay loam; very dark brown (10YR 2/2) mottles
		48-52	dark brown (10YR 3/3) silty clay loam; dark brown (10YR 3/4 and 4/4) mottles
Parcel 4	T3ST12	0-45	very dark gray (10YR 3/1) silt loam
		45-50	brown (10YR 4/3) silt loam
Parcel 4	T3ST13	0-30	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam

Location	Test Number	Depth cm b.s.	Soil Description
		30-42	very dark grayish brown (10YR 3/2) silty clay loam
		42-50	dark brown (10YR 3/3) silty clay loam; dark yellowish brown (10YR 4/4 and 4/6) mottles
Parcel 4	T3ST14	0-43	very dark grayish brown (10YR 3/2) silty clay loam; moist; roots; few small limestone
		43-50	mottled dark yellowish brown (10YR 4/4 and 4/6) silt clay loam
Parcel 4	T3ST15	0-30	very dark grayish brown (10YR 3/2) silt loam
		30-50	brown (10YR 4/3) silt loam
Parcel 4	T3ST16	0-20	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam
		20-37	dark brown (10YR 3/3) silty clay loam; brown (10YR 4/3) mottles
		37-50	dark yellowish brown (10YR 3/4) silty clay loam; dark brown (10YR 3/3) and very dark grayish brown (10YR 3/2) mottles
Parcel 4	T3ST17	0-40	very dark grayish brown (10YR 3/2) silt loam
		40-50	dark brown (10YR 3/3) silty clay loam
Parcel 4	T4ST1	0-28	very dark grayish brown (10YR 3/2) silt loam; few water worn pebbles
		28-40	dark brown (10YR 3/3) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few water worn pebbles
		40-49	dark yellowish brown (10YR 3/4) silty clay loam; very dark grayish brown (10YR 3/2) and very dark brown (10YR 2/2) mottles
Parcel 4	T4ST2	0-27	very dark brown (10YR 2/2) silt loam; few water worn pebbles
		27-40	very dark grayish brown (10YR 3/2) clay loam; few water worn pebbles; dark grayish brown (10YR 4/2) mottles
		40-50	dark yellowish brown (10YR 4/4) clay loam; very dark brown (10YR 2/2) mottles
Parcel 4	T4ST3	0-30	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silt loam; few pebbles
		30-40	dark brown (10YR 3/3) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few pebbles
		40-50	brown (10YR 4/3) silty clay loam; very dark grayish brown (10YR 3/2) and very dark brown (10YR 2/2) mottles; few pebbles
Parcel 4	T4ST4	0-20	very dark grayish brown (10YR 3/2) silty clay loam; few pebbles
		20-50	dark brown (10YR 3/3) silty clay loam; dark yellowish brown (10YR 4/4) and very dark grayish brown (10YR 3/2) mottles; few pebbles
Parcel 4	T4ST5	0-24	very dark grayish brown (10YR 3/2) silt loam
		24-40	very dark grayish brown (10YR 3/2) silty clay loam; dark brown (10YR 3/3) mottles
		40-48	dark yellowish brown (10YR 3/4) silty clay loam; dark brown (10YR 3/3) mottles
Parcel 4	T4ST6	0-29	very dark grayish brown (10YR 3/2) silt loam
		29-42	very dark grayish brown (10YR 3/2) silty clay loam; dark brown (10YR 3/3) and dark yellowish brown (10YR 3/4) mottles

Location	Test Number	Depth cm b.s.	Soil Description
		42-50	dark yellowish brown (10YR 3/4) sandy clay loam
Parcel 4	T4ST7	0-30	very dark grayish brown (10YR 3/2) silt loam
		30-45	brown (10YR 4/3) silty clay loam
Parcel 4	T5ST1	0-28	very dark grayish brown (10YR 3/2) silty clay loam; few rock
		28-40	very dark grayish brown (10YR 3/2); dark yellowish brown (10YR 3/4) mottles; few rock
		40-48	dark yellowish brown (10YR 4/6) clay loam; very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) mottles; Fe
Parcel 4	T5ST2	0-28	very dark grayish brown (10YR 3/2) silty clay loam; few rock
		28-38	very dark grayish brown (10YR 3/2) silty clay loam; dark yellowish brown (10YR 4/4) mottles
		38-49	dark yellowish brown (10YR 4/4) clay loam; dark yellowish brown (10YR 4/6) and very dark grayish brown (10YR 3/2) mottles; Fe
Parcel 4	T8ST1	0-39	very dark grayish brown (10YR 3/2) silty clay loam; roots; few small limestone
		39-50	dark yellowish brown (10YR 4/6) silty clay loam; very dark grayish brown (10YR 3/2) mottles
Parcel 4	T8ST2	0-28	very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam; few rock
		28-40	dark brown (10YR 3/3) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few rock
		40-50	dark yellowish brown (10YR 4/4) sandy clay loam; dark yellowish brown (10YR 4/6) mottles; very dark grayish brown (10YR 3/2) mottles; few rock
Parcel 4	T8ST3	0-42	very dark grayish brown (10YR 3/2) silty clay loam; moist; few small rock- not limestone
		42-50	dark yellowish brown (10YR 4/4 and 4/6) silty clay loam; few very dark grayish brown (10YR 3/2) mottles
Parcel 4	T8ST4	0-30	very dark grayish brown (10YR 3/2) silt loam
		30-50	dark yellowish brown (10YR 4/4) sandy clay loam
Parcel 4	T8ST5	0-32	very dark grayish brown (10YR 3/2) silty clay loam; rock
		32-50	dark yellowish brown (10YR 3/6) sandy clay loam; very dark grayish brown (10YR 3/2) mottles; rock
Parcel 4	T8ST6	0-23	very dark grayish brown (10YR 3/2) sandy loam; gravels
		23-38	dark yellowish brown (10YR 4/6) loamy clay sand; many large gravels
		38-50	strong brown (7.5YR 4/6) coarse sand; many large gravels
Parcel 4	T9ST1	0-40	very dark grayish brown (10YR 3/2) silt loam
		40-50	brown (10YR 4/3) silt loam
Parcel 4	T9ST2	0-27	very dark grayish brown (10YR 3/2) silty clay loam; few rock
		27-42	dark brown (10YR 3/3) silty clay loam; few rock
		42-49	dark yellowish brown (10YR 3/4) silty clay loam; very dark grayish brown (10YR 3/2) mottles; few rock
Parcel 4	T9ST3	0-30	very dark grayish brown (10YR 3/2) silt loam

Location	Test Number	Depth cm b.s.	Soil Description
		30-50	brown (7.5YR 4/3) sandy clay; river rock
Parcel 4	T9ST4	0-27	very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silty clay loam; gravels
		27-49	brown (10YR 4/4) to strong brown (10YR 4/6) sandy clay loam; gravels increase with depth
Parcel 4	T9ST5	0-29	very dark gray (10YR 3/1) silt loam
		29-50	brown (10YR 4/4) silty clay loam
Parcel 4	T9ST6	0-28	very dark grayish brown (10YR 3/2) silty clay loam; few rock
		28-41	dark brown (10YR 3/3) silty clay loam; few rock; very dark grayish brown (10YR 3/2) mottles
		41-50	dark yellowish brown (10YR 3/4) silty clay loam; few rock; very dark grayish brown (10YR 3/2) and dark yellowish brown (10YR 4/4) mottles
Parcel 4	T9ST7	0-35	very dark grayish brown (10YR 3/2) silt loam
		35-50	dark grayish brown (10RY 4/2) silt loam
Parcel 4	T9ST8	0-30	very dark grayish brown (10YR 3/2) silty clay loam; gravels (glacial)
		30-48	brown (7.5YR 4/4) sandy (medium to coarse) clay loam; cobbles; glacial gravels; cobbles plentiful at 35 cm b.s.
Parcel 4	T9ST9	0-25	very dark grayish brown (10YR 3/2) silt loam
		25-50	brown (10YR 4/3) medium sandy loam; river rock