

**PHASE II INTENSIVE ARCHEOLOGICAL SURVEY
CIMARRON WIND ENERGY PROJECT – PHASE 1
GRAY COUNTY, KANSAS**

KSR&C No. 09-12-054

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August 2011



EXECUTIVE SUMMARY

CPV Cimarron Renewable Energy Company, LLC (CPV) has proposed construction of the Cimarron Wind Energy Project – Phase 1 (the Project) in Gray County, Kansas. The Project is proposed within an area of approximately 21.7 square miles (13,883 acres) of leased private land (Project Area), located approximately two miles northeast of the City of Cimarron. The proposed Project will include up to 72 wind turbine generators and associated facilities. The area of potential effects (APE) has been defined as the construction footprint plus a buffer, approximately 654 acres. The Tennessee Valley Authority (TVA) will purchase power generated by the Project and will serve as the Lead Agency during environmental review under Section 106 of the National Historic Preservation Act (NHPA) and under the National Environmental Policy Act. TVA will also consult with the Kansas State Historic Preservation Office (SHPO) and consulting Federally Recognized Indian Tribes. The SHPO project review number is Kansas State Review and Compliance No. 09-12-054. In addition, this Project is subject to the *Kansas Unmarked Burial Sites Preservation Act* which protects human remains and associated objects.

This Phase II Intensive Archeological Survey was conducted in compliance with Section 106 of the NHPA. The APE for archeological investigations includes the construction footprint plus a conservative buffer around proposed turbines, access roads, buried collection lines, substation, batch plant, operations and maintenance building and laydown, and other facilities. Phase II field investigations included pedestrian surveys and shovel testing to identify prehistoric and historic period cultural remains in the APE. The APE was divided into 161 segments for investigation during the pedestrian survey. Ground visibility was 40 percent, or greater, in portions of 121 APE segments. Soils were mostly silt loam and clay loam with rare (scarce) gravel, and no cobbles were observed. Ground disturbances were observed from pivot irrigation systems, field terracing, berms, and damming and filling drainages in many areas of the APE. During the pedestrian survey, one historic period archeological site (Site 1) was identified. Site 1 (14GY100) contained twentieth-century well drilling equipment, metal cans, drums and other items. The site is not recommended eligible for the National Register of Historic Places. A brick scatter was observed along a proposed buried collection line near a modern artificial pond and pivot irrigation system. The brick scatter was not associated with other historic-period artifacts, and is not considered an archeological site. No additional isolated historic artifacts and no prehistoric artifacts were observed during the pedestrian survey. No cobbles were observed along the entire APE that might have indicated prehistoric hearths or other cultural features.

Shovel tests were excavated at 28 APE segments that were close to possible water sources (100 meter wetland buffers) and in areas of poor ground visibility (less than 40 percent). In total, 514 shovel tests and 4 radial shovel tests were excavated. Shovel testing encountered only one prehistoric artifact at Shovel Test 123, a small translucent brown chalcedony flake. Four supplemental shovel tests were dug around Shovel Test 123. This one chalcedony flake is classified as an isolated find likely related to stone tool use or repair, rather than an archeological site associated with denser artifact distributions such as stone tool manufacturing or domestic activities. A modern wire nail was recovered, probably associated with fence construction or repair, and is not considered a potentially significant historic artifact.

In conclusion, no potentially significant archeological sites were discovered as a result of the Phase II Intensive Archeological Survey. Much of the APE has been disturbed by agricultural plowing, irrigation and erosion controls. The APE avoids substantial playas, wetlands and streams, when possible, likely reducing potential impacts on areas sensitive for prehistoric archeological sites. APE setbacks from roads and existing dwellings also reduce impacts on



possible historic-period archeological sites. No additional archeological investigations are recommended for this Project.

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1.0 INTRODUCTION

CPV Cimarron Renewable Energy Company, LLC (CPV) has proposed construction of the Cimarron Wind Energy Project – Phase 1 (the Project) in Gray County, Kansas. The Project is proposed within an area of approximately 21.7 square miles (13,883 acres) on leased private land (Project Area), located approximately two miles northeast of the City of Cimarron (Figure 1). The Project Area extends into portions of Foote and Cimarron Townships within Township (T) 25S Range (R) 27W, including all or parts of Sections (S) 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28 and 29, and T25S R28W and portions of Sections 12, 13 and 24.

The Project will be designed to generate up to 165.6 megawatts (MW) of electrical power from approximately 72 Siemens 2.3-MW (or equivalent) wind turbine generators. The Project will also require crane paths, new access roads, improved existing county roads, buried electrical collection lines, permanent meteorological (met) towers, a substation, equipment laydown area, temporary batch plant, and an operation and maintenance (O&M) building (Figure 2). The area of potential effect (APE) has been defined as the construction footprint plus a conservative buffer. For example, turbine construction will occur within a 150-foot radius but an additional 100-foot buffer was applied for the study area to create the 250-foot radius APE around each turbine. The currently proposed APE includes the following Project components along with the assumed construction layout and buffer areas:

- 72 turbines (250-foot radii) = 324 acres;
- Access roads, 98,672 feet in length (100-foot width) = 227 acres;
- Access road/county road intersections (turning radii for 4 intersections) = 7 acres;
- County road improvements, 26,353 feet in length (40-foot width) = 24 acres;
- Homerun collection lines, 34,077 feet in length (30-foot width) = 51 acres;
- Alternative homerun collection lines¹, 117,572 feet in length (30-foot width) = 80 acres;
- Crane paths, 16,418 feet in length (40-foot width) = 15 acres;
- Permanent met towers (3) = 3 acres;
- Met tower spur roads, 1,440 feet in length (20-foot width) = 1 acre;
- Temporary batch plant = 5 acres;
- Substation = 10 acres; and
- Laydown and O&M building = 10 acres.

The total APE, excluding areas of overlap and any non-leased land, equals 654 acres.

Tetra Tech EC, Inc. (Tetra Tech) is assisting CPV in permitting the proposed Project. The Tennessee Valley Authority (TVA or the Lead Agency) will purchase power generated by the Project. Therefore, this Project will require environmental review under Section 106 of the National Historic Preservation Act (NHPA) and under the National Environmental Policy Act (NEPA). TVA will consult with the Kansas State Historical Society (KSHS), which serves as the State Historic Preservation Office (SHPO),

¹ Layout v3 presented in this report contains both homerun collection lines to the substation as well as alternative homerun collection line routes under consideration by CPV, however only one set of homerun collection lines will ultimately be constructed for the Project. Currently, there are 14 acres of alternative homerun collection lines proposed on non-leased land; therefore, these 14 acres are not within the Project Area and therefore not part of the current APE.

and consulting Federally Recognized Indian Tribes. The SHPO project review number is Kansas State Review and Compliance (KSR&C) No. 09-12-054. In addition, this Project will be subject to the Kansas Unmarked Burial Sites Preservation Act (Kansas Statutes Annotated [K.S.A.] 75-2741-75-2754), which protects disturbance of human remains and associated objects.

This Survey was conducted to identify possible Project effects on archeological sites that are listed in or potentially eligible for the National Register of Historic Places (NRHP) and/or Register of Historic Kansas Places (RHKP). The APE for archeological resources includes locations of possible ground disturbances resulting from construction, operation, and decommissioning of Project facilities. This Survey included three principal tasks: field investigations; laboratory analysis; and report preparation. Tetra Tech conducted field investigations between April 7 and 30, 2011. Tetra Tech previously conducted a Phase I Reconnaissance Survey describing environmental and cultural contexts in detail, and an historic architectural survey (Tetra Tech 2011a, 2011b).

Following this Introduction, Section 2.0 describes important environmental and cultural contexts within the Project Area that guided the Phase II archeological survey. Section 3.0 describes field and laboratory methods and results of field investigations. Section 4.0 presents a Project summary and recommendations resulting from investigations. Section 5.0 lists references cited in the report. Figures, Tables, and Photographs follow the report. Appendix A provides detailed maps of the Project APE and locations of shovel tests. Appendix B presents soil and artifact descriptions from shovel tests conducted during the Survey. Appendix C provides a Kansas archeological site form for Site 1. Agency and tribal correspondence relating to this Project is presented in Appendix D. Appendix E provides professional qualifications for Dr. Stuart A. Reeve, who lead field investigations and authored this report. Survey archeologists included Stuart A. Reeve, Ph.D. (39 years of experience), Christopher Borstel, Ph.D. (30 years of experience), Robert Jacoby, MA (27 years of experience), John Crump, BA (12 years of experience) and Jason Kindinger, BA (8 years of experience).

2.0 ENVIRONMENTAL AND CULTURAL CONTEXTS

2.1 Environmental Setting

The Project Area is within the Central Great Plains physiographic region, formed under shallow seas during the Mesozoic Era. The topography is very flat uplands ranging in elevation between approximately 2,700 to 2,800 feet above mean sea level. Most of the Project Area drains gently north and east to Buckner Creek, an intermittent tributary of the Pawnee River. Southern portions of the Project Area drain to the Arkansas River approximately 1.5 miles to the south.

Most soils are variations of silty loam and silty clay loam or clay loam formed from loess, with undifferentiated alluvium along stream drainages and scattered upland intermittent playa deposits (Tetra Tech 2008). Cobbles and pebbles are extremely rare and when found potentially result from human transport. Hydric soils have been described across approximately 93 percent of the Project Area (Figure 3). However, despite the presence of hydric soils, recent National Wetlands Inventory (NWI) data indicate that only a small percentage of the Project Area is covered by wetlands (Figure 4). NWI maps show scattered small (less than 1,000 square meters [m²]) to medium-sized (~80,000 m²) palustrine wetlands and seasonally wet playa lakes in the Project Area. Most playa lakes form from ponding of precipitation on compacted soils, rather than from perched water tables (Ladner 2011). Playas have been important to wildlife since the Late Pleistocene. Many playas have been drained, plowed, terraced, ditched, or diked (United States Department of Interior 1990; Tetra Tech 2008). Modern playas in the Project Area are associated with Spearville silty clay loam, Ness clay and Harney silt loam (Tetra Tech 2011c).

During the last 12,000 years of possible human occupations, the Project Area has maintained grasslands associated with the High Plains (Chapman et al. 2001). Grasslands are sensitive to climatic trends, especially periodic droughts. Although most of the Project has been cultivated, areas of native and managed grasslands remain in areas with rolling terrain, especially marginal to stream channels (Figure 5). General Land Office surveys in 1872 (Everts 1887) mapped expansive “wet prairies” in upland headwater sections of the Project Area and large playas in T25S R27W Sections 18, 19 and 20 (Figure 6). Surveys in 1890 by the United States Geological Survey (USGS) (USGS 1892) mapped playas in T25S R27W Sections 18, 19, 20 and 24 and in T25S R28W Section 13 and 24 (Figure 7).

The Arkansas River and tributaries provided a natural thoroughfare for movements of animals and people. Water was a critical resource on the arid Plains and was most predicable along the Arkansas River or at springs along creeks. Bison were the predominant herbivores on the prairies and were a major food resource for Native Americans through most of the last 12,000 years. However, bison populations also were tied to climatic variations and grassland productivity. Wet climatic phases led to lush grasses that supported increases in bison populations. Subsequent droughts withered grasses and led to declines of bison herds (Wilson 1978).

2.2 Native American Cultural Contexts

Archeologists divide Native American cultures of Kansas into four major periods: Paleoindian (ca. 10,000-6000 B.C.); Archaic (ca. 6000 B.C.-A.D. 1); Early-Middle Ceramic Period (ca. A.D. 1-1541); and Late Ceramic or Protohistoric Period (A.D. 1541-1820) (Reynolds et al. 2004; Hoard and Banks 2006). Research shows that Gray County and the Project Area might have been exploited by Native American hunters and gatherers during most periods of prehistory. However, few archeological surveys have been conducted in Gray County. SHPO files include reports for only seven prehistoric Native American sites and two paleontological sites in Gray County (Table 1). Most sites were described near streams or playa lakes. None of the known sites occur in the Project Area.

Throughout the prehistoric era, since 12,000 years ago, Native Americans occupying the High Plains of western Kansas hunted and gathered naturally occurring animal and plant resources. Climatic changes led to shifts in subsistence and land use among prehistoric peoples. Late Pleistocene environments were rich in diverse herbivores, including mammoths, large bison, camels, horses, and other animals. Many taxa became extinct between 10,000 and 8000 B.C., coinciding with warming climates and the appearance of Paleoindian hunters, the earliest documented human populations in western Kansas (e.g., Morlan 2001; Hoard and Banks 2006). Site 14GY501, approximately 2 miles southwest of the Project Area, contained mammoth and bison bones along bluffs north of the Arkansas River, suggesting the possible presence of Paleoindian hunters (KSHS 2010a). The warm, dry conditions of the Altithermal climatic episode (ca. 6000 to 3000 B.C.) reduced game populations across the High Plains and probably resulted in low human population densities (Reynolds et al. 2004; Kay 1998a). Archaic Period sites are rare in western Kansas, and no Archaic Period sites have been reported in Gray County. After A.D. 1, agricultural production supported large village sites of the Pratt Complex and Great Bend Aspect along the Arkansas River downstream (east) of Gray County (Kay 1998b). Two Middle and Late Ceramic Period sites have been identified in Gray County, far south of the Project Area, suggesting periodic movements up the Arkansas River and major streams for hunting on the High Plains (KSHS 2010a).

Increasing bison herds, trade with Europeans and the diffusion of horses during the A.D 1600s and 1700s brought successive waves of tribes from the Northern and Central Plains into western Kansas, including Apache, Kiowa, Comanche, Cheyenne and Arapaho. The Medicine Lodge Creek Treaty of 1867 assigned a reservation to these groups south of the Arkansas River and far to the east of the Project Area (Fowler 2001).

2.3 Euro-American Cultural Contexts

European explorers and traders rarely visited western Kansas from the A.D. 1500s through the 1700s (Thomas 1928). The Santa Fe Trail was established in 1821, following the Arkansas River from expanding American settlements along the Missouri River westward to Spanish settlements at Santa Fe and the Rocky Mountains. Uplands around the Santa Fe Trail, including perhaps the Project Area, could have been scouted and hunted regularly by the wagon trains, and by Native Americans who often monitored the emigrants (Barry 1973). Travelers and traders used the Santa Fe Trail through Gray County until the 1870s, when the Atchison, Topeka and Santa Fe Railroad (AT&SFRR) reached western Kansas. Dodge City was founded in 1872 along the AT&SFRR and quickly became the destination for Texas cattle drives up the Great Western Cattle trail. Buffalo hunters also shipped millions of bison skins, meat, and bones from Dodge City. The AT&SFRR was completed to Santa Fe, New Mexico in 1880, and most of the Santa Fe Trail was abandoned (Connelley 1918; Barry 1973; Gallagher et al. 1993).

In 1872, the General Land Office (GLO) surveyed Township, Range and Section lines in the Project Area as a prelude to settlement. Figure 6 is an 1887 map of Gray County with environmental information from GLO surveys. The City of Cimarron was founded along the railroad line in 1878. In 1879 Foote County was established by the Kansas legislature encompassing today's Gray County. Agriculture has been a key element of the county's economy since its inception, with its principal products today including beef cattle, corn, wheat, sorghum, and sunflower seed (KSHS 2010c). The 1880 United States (U.S.) census reported only 411 people living in Foote County. There were 27 farms and 1,318 acres had been improved for agriculture (University of Virginia 2007). Most early homesteads were dugouts or constructed of sod (Luther 1955:2-3). None of these pioneer dwellings have survived to the present. However, archeological remains might be located in the Project Area.

In 1887, Foote County changed its name to Gray County, and a local government was established. This was one of the last areas in Kansas where a local government was created. That year, a county census listed 4,896 people and 912 households (Blackmor 1912 1:782). The northeastern corner of the county was named Foote Township, an area of approximately 120 square miles that included most of the Project Area (Figures 6 and 7). Blizzards, droughts, dust storms, and insect pests drove many early settlers away from Gray County (Luther 1955:2-3; Malin 1946). By 1890, Gray County had declined to 2,415 people and in 1900 to 1,264 people, a loss of more than two-thirds of the population and households since the founding of Gray County 13 years earlier. Only 123 people and 31 farms remained in Foote Township by 1900 (Ancestry.com 2010).

From 1900 to 1930, populations increased in Gray County and Foote Township, driven by expanding farms and croplands. New settlers continued to file claims on quarter-section (160 acres) homesteads and tree claims. The Great Depression of the 1920s and 1930s and droughts of the Dust Bowl were hard times in Gray County (University of Kansas 2009). Landscape changes probably occurred in the Project Area from dust storms, wind erosion, dune deposits, and field reclamation efforts during the 1930s. However, the area of agricultural land increased during the 1940s in Gray County, aided by programs by the United States Department of Agriculture (USDA) Soil Conservation Service. Figure 8 provides a 1952 aerial photograph mosaic showing intensive farming in the Project Area, as well as playas, grasslands and soil conservation features (Kansas State University Library 1952).

The 1969 Gray County, Kansas Farm & Ranch Directory (Anonymous 1969) provided detailed information about Project Area settlements, including locations of 16 dwellings (Figure 9). In 2000, there were 126 people and 57 households/farms in Foote Township. Records of the Gray County Appraiser provide possible dates of construction for 13 existing dwellings in the Project Area (Gray County Appraiser 2010). None of these structures are within the proposed APE for Project construction.

A native grassland survey determined that approximately 88 percent of the Project Area is plowed for crops, including winter wheat and sorghum, while 12 percent of the Project Area is in grassland² (Tetra Tech 2010). Only approximately 3.5 percent¹ of the Project Area is dominated by native grasses, suggesting only limited areas without ground disturbances from historic agricultural practices. Major ground disturbances include draining and grading of playa lakes, field leveling for construction of pivot irrigation systems, and field terracing and berm construction to reduce water runoff and soil erosion (Ladner 2011).

2.4 Cultural Resources Reported Within and Near the Project Area

Cultural resources include archeological sites, standing structures, objects, districts, traditional cultural properties, and other properties that illustrate aspects of prehistory or history or have long-standing cultural associations with established communities or social groups. Research results are briefly summarized below:

- **NRHP Properties.** The NRHP and KSHS list no archeological sites, historic trails or historic structures within the proposed Project Area (KSHS 2010b; National Register of Historic Places 2011). The nearest NRHP listed properties are the Cimarron Hotel and Gray County Courthouse (Old), both located approximately 2 miles southwest of the Project Area in the City of Cimarron. The Santa Fe Trail National Historic Landmark is approximately 5 miles southeast of the Project Area along U.S. Route 50, near the Gray and Ford County line. In addition, the Barton House is situated approximately 9 miles to the west of the Project Area in the town of Ingalls. Unrecorded archeological sites, architectural resources, and Traditional cultural properties (TCPs), might be located in the Project Area and might meet the criteria for listing on the NRHP and RHP.
- **Archeological Sites.** SHPO site files contain no references to prehistoric or historic archeological sites in the Project Area. In 2009, SHPO reviewed preliminary Project maps of the Project Area and most of Foote Township, observing (Weston 2009):

Our concern is with those areas where lines of turbines and access roads are situated near playa lakes and the upper reaches of the Buckner Creek drainage. Such features provide a major water source in a relatively arid portion of the state, and known archeological sites are situated around similar features in nearby areas.

An accompanying map identified areas where SHPO recommended archeological field investigations (Appendix D). Only APE segments in the southwest corner of the Project Area were identified by SHPO as requiring archeological survey, due to former playas.

In 2010, Tetra Tech (2011a) conducted a Phase I Reconnaissance Survey of the Project Area, including background research and roadside observations to identify areas that were possibly sensitive for archeological sites. Remnant landscape and aboveground architectural remains of seven former farmsteads were observed from roadsides at seven locations. None of these possible archeological sites are within the APE for proposed Project construction. Consistent with SHPO observations (Weston 2009), areas adjacent to streams and mapped NWI playas and wetlands were considered possibly sensitive for Native American archeological sites (Figure 10). SHPO recommended that a Phase II Intensive Archeological Survey should be conducted in areas of proposed construction and ground disturbances (Weston 2011b; Zollner 2011).

² Percentages are based on the Project Area presented in Tetra Tech 2010 which was approximately 12,000 acres and therefore slightly smaller than the current Project Area in this report of 13,883 acres of leased land.

- **Architectural Resources.** Tetra Tech (2011b) conducted an historic architectural survey of standing structure properties within one mile of proposed Project turbines and aboveground features, and recorded 21 structures that were 50 years old or older. SHPO recommended that a farm complex (TTCW8) at T25S R27W Section 22 and a barn (TTCW20) at T25S R27W Section 27 undergo additional analysis as they were potentially eligible for the NRHP (Zollner 2011). These properties are not within the APE for archeological testing.
- **Traditional Cultural Properties.** TVA will consult with Federally Recognized Indian Tribes regarding properties within the APE that may have religious and cultural significance to them and eligible for listing in the NRHP. In a letter to TVA dated June 2, 2011, the Osage Nation Historic Preservation Office recommended that a Phase II archeological reconnaissance survey should be conducted in the APE (Munkres 2011). Agency and tribal correspondence relating to this Project is presented in Appendix D.

3.0 FIELD OBSERVATIONS

3.1 Field and Laboratory Methods

The Survey field investigations included pedestrian surveys and shovel testing to identify prehistoric and historic period cultural remains in the APE. Prior to developing a work plan for archeological testing, an informal telephone call was made to Timothy Weston, compliance archeologist at SHPO, to discuss SHPO review letters, archeological guidelines (KSHS 2010d), and fieldwork strategies (Weston 2011a). Mr. Weston stated that few prehistoric archeological sites were likely on the flat plains of the Project Area. All areas with poor ground visibility did not require subsurface testing. Prehistoric archeological sites, if present, should be close to water sources. Buffers of 100 meters (330 feet) around drainages, mapped wetlands and playas were considered sufficient distances for subsurface testing within the APE.

Appendix A shows APE segments on large-scale aerial photographs. Survey areas in the APE were named by turbine strings (A to D) and turbine numbers assigned by Project engineers. Segments were noted in field records by affixes for turbines (T), access roads east of turbines (A), crane paths (CP); buried collection lines (C), homerun collection lines (named for turbines of origin or combined collection lines) (HC), or other facilities such as substation (SS), batch plant (BP), O&M building and laydown (OM), and four met towers (Met). In total, there were 161 APE segments (Table 2). Segments were described in field notes for local landforms, wetlands, ground disturbances, vegetation (crops or grasslands), and percentages of ground visibility (Table 2). Landscape photographs were taken at each proposed turbine location. Locations of archeological sites were recorded utilizing geographic positioning system (GPS) technology, described in field records, mapped and photographed.

Pedestrian surveys were conducted along the entire Project APE, following maps loaded onto Trimble handheld GPS units. The APE was walked along transects at 15-meter (50-foot) widths. Therefore, turbine circles were examined by 10 surface transects, access roads were examined by two transects, and crane paths homerun collection lines, county road improvements and met tower spur roads were walked in one transect. Other proposed facilities (substation, laydown and O&M building, batch plant and meteorological towers) were examined appropriately for varying acreages. Ground surfaces were searched for prehistoric-period and historic-period artifacts, rock alignments and scatters, and for landscape features indicating cultural activities and/or ground disturbances.

The APE crosses upland flats that tend to be erosional landforms, rather than depositional environments. Stream channels have probably deepened through the Holocene, and do not demonstrate patterns of migration across narrow valleys. Playa lakes might have expanded and contracted in association with

moister or drier climates. However, no well defined playas or beach formations were observed in the Project Area. Therefore, modern drainages and mapped playas provide the best indications for possible prehistoric landscapes. Shovel testing was conducted within 100-meter (330-foot) wetland buffers in areas with less than 40 percent ground visibility. Shovel tests were generally dug at 15 meter (50-foot) intervals along transects staggered 15 meters apart. Shovel tests were 35 centimeters (14 inches) or greater in diameter, excavated in 15 centimeter (8-inch) levels, to 10 centimeters (2.5 inches) or greater below plow zones, where practical. Field records described shovel test locations by survey areas and segments, and were numbered consecutively from 1 to 514. The location of each shovel test was recorded on GPS units. All excavated soils were screened through 0.6 centimeter (1/4-inch) hardware cloth on shaker screens for recovery of artifacts. Soil strata were described by soil texture, Munsell soil colors, gravel and cobble inclusions and artifact contents, if any. When artifacts were recovered that possibly indicated an archeological site, supplemental shovel tests were excavated at 5-meter (18-foot) intervals to observe if additional artifacts were present. Radial shovel tests were identified by affixes a = north, b = east, c = south and d = west on tests around the numbered find spot. All shovel tests were backfilled.

Following fieldwork, field photographs and other field records were reviewed in relation to archeological finds. GPS locations for shovel test locations and identified archeological sites were converted into Project geographic information systems (GIS) shape files and placed on Project maps (Appendix A). Notes from the pedestrian survey were tabulated (Table 2). Soils were described from shovel testing (Appendix B). Recovered artifacts were cleaned and analyzed. KSHS site forms were prepared for identified sites (Appendix C).

3.2 Survey Results

Field investigations were conducted of approximately 654 acres of APE between April 7 and 30, 2011 by a team of five Tetra Tech archeologists. The APE was divided into 161 segments for data investigation. Field conditions for the survey were excellent. Most of the APE is on formerly or actively plowed uplands. Gray County was experiencing a drought, so planted grass and winter wheat growth had been delayed, assuring good visibility for pedestrian surveys (Photograph 1). In unplowed fields, wheat and Milo leaf-litter was greatly reduced by winter winds, providing adequate ground visibility over most of the APE. Soils were relatively dry for pedestrian survey and shovel testing.

3.2.1 Pedestrian Survey Results

The pedestrian survey investigated all 161 APE segments (Table 2). Ground visibility was 40 percent, or greater, in most of 121 segments. Crops were observed on 105 segments, crops and grasslands were observed on 22 segments, and 34 segments were covered by grasslands. Soils were mostly silt loam and clay. Gravel or pebbles were rarely observed, and no cobbles were observed. Cobbles, if present, might have resulted from human transport.

Ground disturbances relating to agricultural practices were observed in many areas of the APE. Stream drainages are more common in northern and eastern parts of the Project Area. Most streams appear to have been dammed and stream grades modified to prevent runoff and soil erosion. Only shallow arroyos, less than a meter (3 feet) in depth, were observed along upper Buckner Creek in eastern portions of the APE (Photograph 2). Many slopes and stream valleys appeared to have been smoothed as a result of agricultural plowing. Grasslands and berm terracing were common around streams to prevent soil erosion. Ground disturbances resulted from machine excavation and mounding of soils onto long sinuous berms that follow contours (Photograph 3). Berm terraces were observed on 35 project segments (Table 2).

Historic maps suggest that much of the southern and western parts of the Project Area were formerly wet upland prairies (Figure 6). Most recently mapped wetlands and playas are found on western and southern

portions of the APE. In total, wetlands or wetland buffers were identified along 61 APE segments. Most of these wetlands have been plowed and often modified. Pivot irrigation systems are most common on upland flats including on former playa lakes in the southern and western parts of the Project Area (Photograph 4). Pivot irrigation systems were observed on 12 APE segments (Table 2). Ground disturbances might have destroyed archeological sites.

During the pedestrian survey, one historic period archeological site (Site 1) was identified in segment C37A-A (Figure 11). Site 1 contained twentieth-century agricultural equipment, metal cans, drums and other items, and is described in greater detail in Section 3.2.3, below.

A brick scatter was observed near a modern artificial pond and pivot irrigation system along the Combined-HC homerun collection line along the northeastern edge of T25S R26W Section 19 (Appendix A, Map 5). No former structures were located in this area (Figure 9). The brick scatter probably came from fill used for recent construction of irrigation systems in the vicinity (Photograph 5). The brick scatter was not associated with other historic-period artifacts, and is not considered an archeological site.

No additional isolated historic artifacts and no prehistoric artifacts were observed during the pedestrian survey. No cobbles were observed along the entire APE that might have indicated prehistoric hearths or other cultural features. Given the extensive ground visibility over most of the APE, it seems likely that few, if any, archeological sites were obscured by crops or grass cover. This conclusion was consistent with SHPO observations about the rarity of Native American sites in this portion of the High Plains (Weston 2011a). Results from the pedestrian survey were further confirmed by shovel testing.

3.2.2 Shovel Test Results

Shovel tests were excavated at 28 APE segments (Appendix B). In total, 514 shovel tests and 4 radial shovel tests were excavated. Shovel testing was conducted in linear transects, examining landform diversity and soil profile variability, and providing the best opportunities for encountering buried archeological sites. All shovel tests were dug in areas of poor (less than 40 percent) visibility within 100-meter (330-foot) wetland buffers. Shovel test locations are shown on maps in Appendix A.

On plowed uplands and grasslands, topsoils and plowzones were dark grayish brown to dark brown silt loam extending from 25 to 35 centimeters (10 to 14 inches) below ground surfaces. Subsoils ranged from grayish brown, brown, to yellowish brown silt loam to silty clay loam. Gravel was absent to very rare and cobbles were absent. When encountered, gravel was small limestone pebbles or caliche, usually associated with local outcrops.

Wetland soils were black, very dark grayish brown or dark brown clay loam to silty clay loam. Subsoils ranged from pale brown to dark yellowish brown clay to silty clay loam (Appendix B). No gravel or cobbles were observed. These dark clay and silty clay loam soils were very widespread in eastern and southern portions of the Project Area, probably reflecting seasonal expansion and contraction of wet prairies in shallow depressions. No playa terraces were observed that might have attracted Native American settlements.

Excavations in wetland and non-wetland settings were often halted by a dense layer of compacted silt, usually found between 35 and 45 centimeters (14 to 18 inches) below ground surfaces. This compacted layer can result from soil drying and machine activity, but is also characteristic of hydric soils in this region. Penetration of this compacted layer can adversely impact wetland habitats (Ladner 2011).

Shovel testing encountered only one prehistoric artifact, a small translucent brown chalcedony flake found immediately beneath the sod (approximately 15 centimeters deep) in Shovel Test 123 in Segment C41-A, on a valley bench west of upper Buckner Creek (Photograph 6). Four supplemental shovel tests

were dug around Shovel Test 123. No additional artifacts were observed in radial shovel tests, or in shovel test transects within Segments C41-A and C41-T. Therefore, this one chalcedony flake is classified as an isolated find, likely related to stone tool use or repair, rather than an archeological site associated with denser artifact distributions such as stone tool manufacturing or domestic activities (KSHS 2010d). No additional testing is recommended.

A modern wire nail was recovered in Shovel Test 168 in Segment C42A-A, near an existing fence line. This modern nail probably resulted from fence construction or repair and is not considered a potentially significant historic artifact. No radial shovel tests were dug, and this find is not considered an archeological site. No additional testing is recommended.

Given the extremely low incidents of prehistoric and historic artifacts in shovel tests and pedestrian surveys, additional shovel testing within wetland buffers and in other locations of the APE was not considered justified. Wetland buffers with low ground visibility (less than 40 percent) were not shovel tested along narrow homerun collection lines A1R-HC, A16R-HC, and B5-HC, within and around the proposed substation, and in turbines C25B-T and C26A-T (Appendix A, Maps 5, 6, 10 and 11). Similarly, field terracing crossed many turbine circles in grasslands marginal to Buckner Creek, including C39-T, D36-T, D37-T and D-38-T (Appendix A, Maps 13 and 19). All turbines within wetland buffers were examined through pedestrian survey and by two lines of shovel tests in areas of low ground visibility. Consistent with SHPO predictions (Weston 2009), no sites or artifact concentrations were observed in areas shovel tested near possible water sources.

3.2.3 Site 1 (14GY100)

During the pedestrian survey, Site 1 was identified in Segment C37A-A, in the northwest quarter of T25S R26S (Figure 11). The site contained collapsed remains of a possible wood-framed well derrick and platform, metal cans, drums, and other items (Figure 12). Cultural materials are distributed over an area approximately 20 meters (65 feet) east-west and 7 meters (23 feet) north-south. The triangular derrick and rectangular platform were constructed from large 5 x 30 centimeter (2 x 12 inch) timbers, reinforced by metal and wooden braces (Photograph 7). The presumed well platform retained flywheels and pipe clamp (Photograph 8). A possible pump with hand-crank handle, metal drums, cans, bottles and wood were distributed around the derrick structure (Photograph 9). The derrick and drilling equipment appear to have been fabricated from materials available on farms, rather than a commercial outfit. No artifacts were collected at Site 1. It is likely that the site dates to the first half of the twentieth century, and probably is related to well drilling for field irrigation. Several former farmsteads were located along County Road 23, northwest and southeast of Site 1. However no farms were located in the immediate vicinity of Site 1. It is Tetra Tech's opinion that the site has little integrity or research significance, and it is not recommended as potentially eligible for the NRHP. No additional investigations are recommended at Site 1. The KSHS has assigned Site 1 the state site number of 14GY100. The Kansas archeological site form is presented in Appendix C.

4.0 SUMMARY AND RECOMMENDATIONS

This Survey was conducted in compliance with Section 106 of the NHPA. The APE for archeological investigations includes the construction footprint plus a conservative buffer around proposed turbines, access roads, buried collection lines, substation, batch plant, O&M building and laydown, and other facilities. The APE, excluding areas of overlap and non-leased land, totals approximately 654 acres.

Phase II field investigations included pedestrian surveys and shovel testing to identify prehistoric and historic period cultural remains in the APE. In total, the 654-acre APE was investigated during the pedestrian survey, including 161 segments. Ground visibility was 40 percent or greater in most of 121 segments in the APE. Soils were mostly silt loam and clay loam with rare (scarce) gravel, and no cobbles

were observed. Ground disturbances were observed from pivot irrigation systems, field terracing, berms and damming and filling drainages in many areas of the APE. During the pedestrian survey, one historic period archeological site (Site 1) was identified in Segment C37A-A. Site 1 contained twentieth-century well-drilling equipment, metal cans, drums, and other items. The site is not recommended as potentially eligible for the NRHP. No additional investigations are recommended. A brick scatter was observed along the Combined-HC homerun collection line near a modern artificial pond and pivot irrigation system along the northeastern edge of T25S R26W Section 19. The brick scatter was not associated with other historic period artifacts, and is not considered an archeological site. No additional isolated historic artifacts and no prehistoric artifacts were observed during the pedestrian survey. No cobbles were observed along the entire APE that might have indicated prehistoric hearths or other cultural features.

Shovel tests were excavated at 28 APE segments within 100-meter (330-foot) wetland buffers in areas of poor (less than 40 percent) ground visibility. In total, 514 shovel tests and 4 radial shovel tests were excavated. Shovel testing was conducted in parallel linear transects, examining landform diversity and soil profile variability, and providing the best opportunities for encountering buried archeological sites. Shovel testing encountered only one prehistoric artifact, a small translucent brown chalcedony flake in Shovel Test 123 in Segment C41-A. Four supplemental shovel tests were dug around Shovel Test 123. This one chalcedony chip is classified as an isolated find, rather than an archeological site. No additional testing is recommended. A modern wire nail was recovered in Shovel Test 168 in Segment C42A-A. This modern nail probably resulted from fence construction or repair and is not considered a potentially significant historic artifact. No additional testing is recommended.

In conclusion, no potentially significant archeological sites were discovered the Survey. SHPO's 2009 assessment appears to be substantiated, that the Project Area has low sensitivity for prehistoric sites (Weston 2009). Much of the APE has been effected by agricultural disturbances from plowing, irrigation, and erosion controls. The APE also avoids playas, wetlands and streams, when possible, probably reducing potential impacts on areas sensitive for prehistoric archeological sites. APE setbacks from roads and existing dwellings also reduce impacts on possible historic-period archeological sites, including perhaps unmarked family cemeteries. No additional archeological investigations are recommended for this Project APE. However, if the Project layout is modified such that new APE are created, these changes will be reviewed to determine if additional archeological investigations are warranted.

TVA as federal Lead Agency has been consulting with SHPO in compliance with Section 106 of the NHPA and NEPA. TVA will also continue consultations with interested Native American tribes.

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TABLES

Table 1. Recorded Archeological Sites in Gray County, Kansas

Site	Culture	Period	Site Type	Setting	T	R	S
14GY301	Prehistoric	Unknown	Camp	Ridge crest near playa	27	30	19
14GY302	Prehistoric	Middle Ceramic	Camp	Ridge crest south of Crooked Creek	29	29	22
14GY303	Prehistoric	Unknown	Lithic scatter	Stream bank	29	28	32
14GY304	Prehistoric	Middle-Late Ceramic	Camp	Steep bluff south of Crooked Creek	29	29	36
14GY401	Paleontological	Unknown	Animal bones	Bluff slope north of Arkansas River	26	28	12
14GY402	Prehistoric	Unknown	Isolated find	Unknown	29	29	22
14GY403	Prehistoric	Unknown	Isolated find	Unknown	29	28	6
14GY404	Prehistoric	Unknown	Isolated find	Unknown	29	29	23
14GY501	Paleontological	Pleistocene	Mammoth, bison	Stream bank	25	28	32

Notes: T = township, R = range, S = section. Source KSHS 2010a.

Table 2. Survey Areas, Pedestrian Survey, and Shovel Testing

Appendix A Maps	Survey Areas	Layout Segments	Landforms	Wetlands	Disturbances	Vegetation Cover	Visibility (%)	Shovel Tests	Archeological Sensitivity
2	A1R	T	upland flat	none	none	crop	80	0	not sensitive
2	A1R	A	upland flat	none	none	crop	80	0	not sensitive
2	A1R	Met	upland flat	buffer	none	crop	80	0	not sensitive
2, 5-6, 10	A1R	HC	upland flat	variable	pivot irrigation	crop, grass	variable	0	not sensitive
2	A2R	T	upland flat	none	none	crop	80	0	not sensitive
2	A2R	A	upland flat	none	none	crop	65-80	0	not sensitive
2, 6, 11	Crane Path	CP	upland	variable	variable	crop, grass	variable	0	not sensitive
2	A15BR	T	upland flat	buffer	pivot irrigation	crop	60	0	not sensitive
2	A15BR	A	upland flat	stream	pivot irrigation	crop	40-60	0	not sensitive
2	A16R	T	upland flat	none	pivot irrigation	crop	30	0	not sensitive
2	A16R	A	upland flat	none	none	crop	60	0	not sensitive
2, 5-6	A16R	HC	upland flat	variable	pivot irrigation	crop, grass	variable	0	not sensitive
2	A17AR	T	upland flat	none	none	crop	70	0	not sensitive
2-3	A17AR	A	upland flat	buffer	none	crop	70	0	not sensitive
3	A18RA	T	upland flat	buffer	none	crop	70	0	not sensitive
3	A18RA	A	upland flat	playa	none	crop	55	0	not sensitive
3	A3RB	T	upland flat	playa	none	crop	45	0	not sensitive
3	A3RB	A	upland flat	none	none	crop	65	0	not sensitive
3	A4R	T	upland flat	none	none	crop	60	0	not sensitive
3	A4R	A	upland flat	none	none	crop	60	0	not sensitive
3	A4R	Met	upland flat	none	none	crop	40	0	not sensitive
3	A5	T	upland flat	none	pivot irrigation	crop	65	0	not sensitive
3-4	A5	A	upland flat	stream	pivot irrigation	crop	75-85	0	not sensitive
4	A7A	T	upland flat	none	pivot irrigation	crop	80	0	not sensitive
4	A7A	A	stream valley	buffer	none	crop, grass	1-55	6	not sensitive
4	A8A	T	stream valley	stream	none	grassland	1	19	not sensitive
4	A8A	A	upland flat	stream	berm	crop, grass	1-45	18	not sensitive
4	A9	T	upland flat	none	berm	crop	45	0	not sensitive
4	A9	A	upland flat	none	none	crop	45	0	not sensitive
4	A9	Met	upland flat	none	none	crop	55	0	not sensitive
4	A10A	T	upland flat	none	none	crop	45	0	not sensitive
6	B5	T	upland flat	buffer	none	grassland	0	15	not sensitive
6	B5	A	upland flat	buffer	none	grassland	0	39	not sensitive
5-6, 10	B5	HC	upland flat	stream	pivot irrigation	crop, grass	variable	0	not sensitive
6	B6	T	upland flat	buffer	none	grassland	0	15	not sensitive
6	B6	A	upland flat	none	none	crop	40	0	not sensitive
6	B7B	T	upland flat	none	none	crop	70	0	not sensitive
6	B7B	A	upland flat	none	none	crop	70	0	not sensitive
6	B8C	T	upland flat	none	none	crop	70	0	not sensitive
6-7	B8C	A	upland flat	none	none	crop	70	0	not sensitive
7	B9	T	upland flat	none	none	grassland	0	0	not sensitive

Notes: Layout Segments, T = turbine, A = access road, C = collection line, HC = homerun collection line, CP = crane path, BP = batch plant, Met = permanent met tower, OM = operations and maintenance building, SS = substation.

Table 2. Survey Areas, Pedestrian Survey, and Shovel Testing

Appendix A Maps	Survey Areas	Layout Segments	Landforms	Wetlands	Disturbances	Vegetation Cover	Visibility (%)	Shovel Tests	Archeological Sensitivity
7	B9	A	upland flat	stream	none	grassland	0	20	not sensitive
7	B10	T	upland flat	buffer	none	grassland	0	14	not sensitive
7	B10	A	upland flat	none	none	crop, grass	0-70	0	not sensitive
7	B11	T	upland flat	none	none	crop	40	0	not sensitive
7	B11	A	upland flat	none	none	crop	70	0	not sensitive
7	B12A	T	upland flat	buffer	none	crop	70	0	not sensitive
7	B12A	A	upland flat	stream	none	crop	60	0	not sensitive
7	B13A	T	upland flat	buffer	none	crop	75	0	not sensitive
7	B13A	A	upland flat	none	none	crop	70	0	not sensitive
7	B14A	T	upland flat	none	none	crop	50	0	not sensitive
7-8	B14A	A	upland flat	none	none	crop	60	0	not sensitive
8	B15	T	upland flat	stream	none	crop, grass	5-50	0	not sensitive
8	B15	A	upland flat	none	none	crop	50	0	not sensitive
6-8, 10-11	B15	HC	upland flat	variable	none	crop, grass	variable	0	not sensitive
8	B16	T	upland flat	stream	none	crop	40	0	not sensitive
8	B16	A	upland flat	none	none	crop	40-60	0	not sensitive
8	B17A	T	upland flat	none	none	crop	60	0	not sensitive
8	B17	A	upland flat	none	none	crop	60	0	not sensitive
8	B18	T	upland flat	none	none	crop	60	0	not sensitive
8	B18	A	upland flat	none	none	crop	70	0	not sensitive
8	B19A	T	upland flat	none	none	crop, grass	0-70	14	not sensitive
8-9	B19A	A	stream valley	stream	none	crop, grass	0-40	19	not sensitive
9	B20	T	upland slope	none	none	crop	40	0	not sensitive
9	B20	A	upland slope	none	none	crop	40-80	0	not sensitive
9	B21	T	upland slope	none	berms	crop	85	0	not sensitive
9	B21	A	upland slope	stream	berms	crop	85	0	not sensitive
9	B22	T	upland slope	buffer	none	crop	85	0	not sensitive
9	B22	A	upland slope	none	none	crop	80	0	not sensitive
9	B23	T	upland slope	none	pivot irrigation	crop	80	0	not sensitive
9	B23	A	upland slope	none	pivot irrigation	crop	90	0	not sensitive
9	B24	T	upland slope	none	pivot irrigation	crop	90	0	not sensitive
10	Sub Stat.	SS	upland flat	playa	berms	crop	5	36	not sensitive
8, 10-11	Combined	HC	upland flat	variable	variable	crop, grass	variable	0	not sensitive
10	Combined	HC	upland flat	variable	none	crop, grass	variable	31	not sensitive
15	Combined	HC	upland flat	variable	none	crop, grass	variable	11	not sensitive
16	Combined	HC	stream valley	stream	none	crop, grass	variable	16	not sensitive
11	Batch	BP	upland flat	none	none	crop	50	0	not sensitive
8, 13	Laydown	OM	upland flat	none	none	crop	80	0	not sensitive
10	C23A	T	upland flat	none	none	crop	70	0	not sensitive
10-11	C23A	A	upland flat	none	none	crop	70	0	not sensitive
11	C24	T	upland flat	buffer	none	crop	70	0	not sensitive

Notes: Layout Segments, T = turbine, A = access road, C = collection line, HC = homerun collection line, CP = crane path, BP = batch plant, Met = permanent met tower, OM = operations and maintenance building, SS = substation.

Table 2. Survey Areas, Pedestrian Survey, and Shovel Testing

Appendix A Maps	Survey Areas	Layout Segments	Landforms	Wetlands	Disturbances	Vegetation Cover	Visibility (%)	Shovel Tests	Archeological Sensitivity
11	C24	A	upland flat	stream	none	grassland	0	3	not sensitive
11	C25B	T	upland flat	wetland	none	grassland	0	19	not sensitive
11	C25B	A	upland flat	buffer	none	grassland	0	3	not sensitive
10, 11	C25B	HC	upland flat	stream	none	crop, grass	variable	0	not sensitive
11	C26A	T	upland flat	playa	none	grassland	0	19	not sensitive
11	C26A	A	upland flat	none	none	crop, grass	0-65	7	not sensitive
11	C27	T	upland flat	none	berms	crop	70	0	not sensitive
11	C27	A	upland flat	stream	berms	crop	70	0	not sensitive
11	C28	T	upland flat	buffer	berms	crop	70	0	not sensitive
11	C28	A	upland flat	none	berms	crop	25-70	0	not sensitive
12	C29A	T	upland flat	none	berms	crop	25	0	not sensitive
12	C29A	A	upland flat	none	berms	crop	40	0	not sensitive
12	C30	T	upland flat	none	berms	crop	70	0	not sensitive
12	C30	A	upland flat	none	berms	crop	70	0	not sensitive
12	C31	T	upland flat	buffer	berms	crop	75	0	not sensitive
12	C31	A	upland flat	stream	berms	crop	65	0	not sensitive
12	C32	T	upland flat	none	none	crop	75	0	not sensitive
12	C32	A	upland flat	none	none	crop	70	0	not sensitive
12	C33	T	upland flat	none	berms	crop	70	0	not sensitive
12	C33	A	upland flat	none	berms	crop	65	0	not sensitive
12	C34A	T	upland flat	stream	berms	crop	65	0	not sensitive
12-13	C34A	A	upland flat	none	none	crop	70	0	not sensitive
10-12	C34A	HC	upland flat	variable	variable	crop, grass	variable	0	not sensitive
13	C35	T	upland flat	none	none	crop	70	0	not sensitive
13	C35	A	upland flat	none	berms	crop	75	0	not sensitive
13	C36	T	upland flat	none	berms	crop	75	0	not sensitive
13	C36	A	upland flat	none	berms	crop	40-75	0	not sensitive
13	C37A	T	upland flat	none	none	crop	5-40	0	not sensitive
13	C37A	A	upland flat	none	none	crop	40	0	Site 1, farm midden
13	C38	T	upland flat	none	none	crop	5-40	0	not sensitive
13	C38	A	upland flat	stream	berms	crop, grass	0-40	20	not sensitive
13	C39	T	upland flat	buffer	berms	grassland	0	0	not sensitive
13-14	C39	A	upland flat	none	berms	grassland	0	0	not sensitive
14	C40	T	upland flat	none	berms	grassland	0	0	not sensitive
14	C40	A	upland flat	none	none	grassland	0	0	not sensitive
14	C41	T	upland flat	buffer	none	grassland	0	19	not sensitive
14	C41	A	stream valley	stream	none	grassland	0	32	Isolated find, 1 chalcedony flake
14	C42A	T	upland slope	none	none	grassland	0	0	not sensitive
14	C42A	A	upland slope	stream	none	grassland	0	21	Isolated find, 1 wire nail
14	C43B	T	upland slope	buffer	none	grassland	0	19	not sensitive

Notes: Layout Segments, T = turbine, A = access road, C = collection line, HC = homerun collection line, CP = crane path, BP = batch plant, Met = permanent met tower, OM = operations and maintenance building, SS = substation.

Table 2. Survey Areas, Pedestrian Survey, and Shovel Testing

Appendix A Maps	Survey Areas	Layout Segments	Landforms	Wetlands	Disturbances	Vegetation Cover	Visibility (%)	Shovel Tests	Archeological Sensitivity
14	C43B	A	upland flat	none	none	grassland	0	0	not sensitive
14	C44B	T	upland flat	none	none	grassland	0	0	not sensitive
14, 19	C44B	C	upland flat	none	none	grassland	0	0	not sensitive
16	D23A	T	upland flat	none	none	crop	60	0	not sensitive
16-17	D23A	A	upland flat	none	none	crop	40-65	0	not sensitive
10, 16	D23A	HC	upland flat	variable	variable	crop, grass	variable	0	not sensitive
17	D24	T	upland flat	none	none	crop	40	0	not sensitive
17	D24	A	upland flat	none	none	crop	40	0	not sensitive
17	D25A	T	upland flat	none	none	crop	45	0	not sensitive
17	D25A	A	upland flat	none	none	crop	50	0	not sensitive
17	D25A	Met	upland flat	none	none	crop	40	0	not sensitive
17	D26	T	upland flat	none	none	crop	50	0	not sensitive
17	D26	A	upland flat	none	none	crop	50	0	not sensitive
17	D27	T	upland flat	buffer	none	crop	50	0	not sensitive
17	D27	A	upland flat	buffer	none	crop	50	0	not sensitive
17	D28	T	upland flat	none	none	crop	45	0	not sensitive
17	D28	A	upland flat	none	none	crop	45	0	not sensitive
17-18	D29	T	upland flat	none	none	crop	50	0	not sensitive
18	D29	A	upland flat	none	none	crop	0	0	not sensitive
18	D30	T	upland flat	none	none	crop	0	0	not sensitive
18	D30	A	upland flat	none	none	crop	0	0	not sensitive
11, 17-18	D30	HC	upland flat	variable	variable	crop, grass	variable	0	not sensitive
18	D31	T	upland flat	none	none	crop	40	0	not sensitive
18	D31	A	upland flat	none	none	crop	40	0	not sensitive
18	D32	T	upland flat	none	none	crop	50	0	not sensitive
18	D32	A	upland flat	none	none	crop	50	0	not sensitive
18	D33	T	upland flat	none	none	crop	50	0	not sensitive
18	D33	A	upland flat	none	none	crop, grass	0-50	0	not sensitive
18	D34	T	upland flat	none	berms	grassland	0	0	not sensitive
18-19	D34	A	upland flat	none	berms	grassland	0	0	not sensitive
19	D35	T	upland flat	none	berms	grassland	0	0	not sensitive
19	D35	A	upland flat	none	berms	grassland	0	0	not sensitive
19	D36	T	upland slope	buffer	berms	grassland	0	6	not sensitive
19	D36	A	stream valley	stream	berms	grassland	0	10	not sensitive
19	D37A	T	stream valley	buffer	berms	grassland	0	16	not sensitive
19	D37A	A	stream valley	stream	none	grassland	0	51	not sensitive
19	D38	T	upland flat	buffer	berms	grassland	0	0	not sensitive
19	D38	A	upland slope	none	berms	grassland	0	0	not sensitive
19	D39A	T	upland flat	none	berms	grassland	0	0	not sensitive

Notes: Layout Segments, T = turbine, A = access road, C = collection line, HC = homerun collection line, CP = crane path, BP = batch plant, Met = permanent met tower, OM = operations and maintenance building, SS = substation.

FIGURES

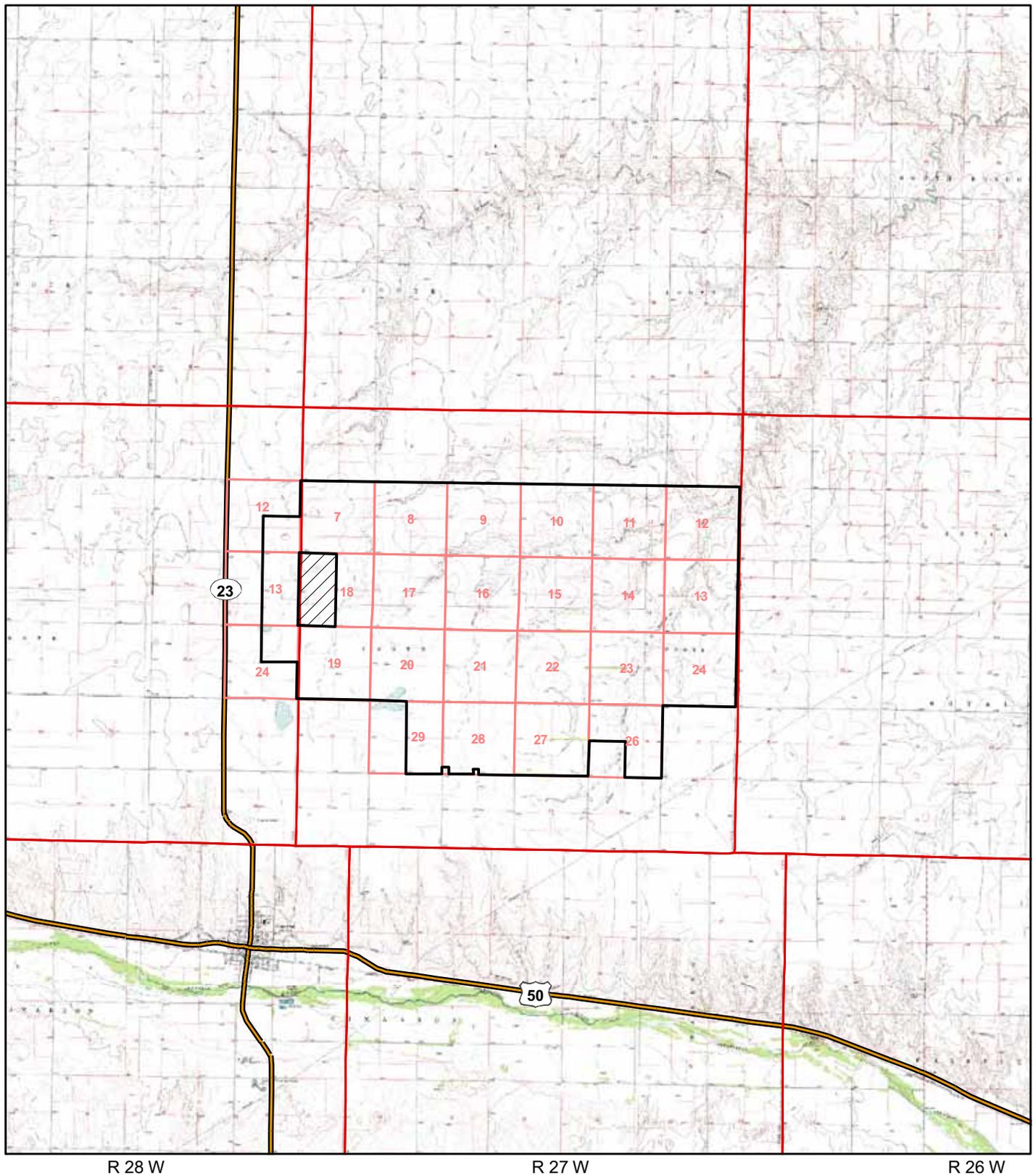


Figure 1
Project Area Location

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

Legend

-  Project Area
-  Non-Leased Area
-  Township/Range
-  Sections
-  Major Road



Source: USGS 100k Quad, 1985.

Figure 2
Proposed Project Layout

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas



Legend

- Project Area
- Non-Leased Area
- Sections
- Proposed Turbine
- Proposed Permanent Met Tower
- 5-foot Contours
- Proposed Collection Lines
- Proposed Access Road
- Proposed Crane Path
- Proposed Substation
- Proposed Batch Plant
- Proposed Laydown

Source: v3 Layout

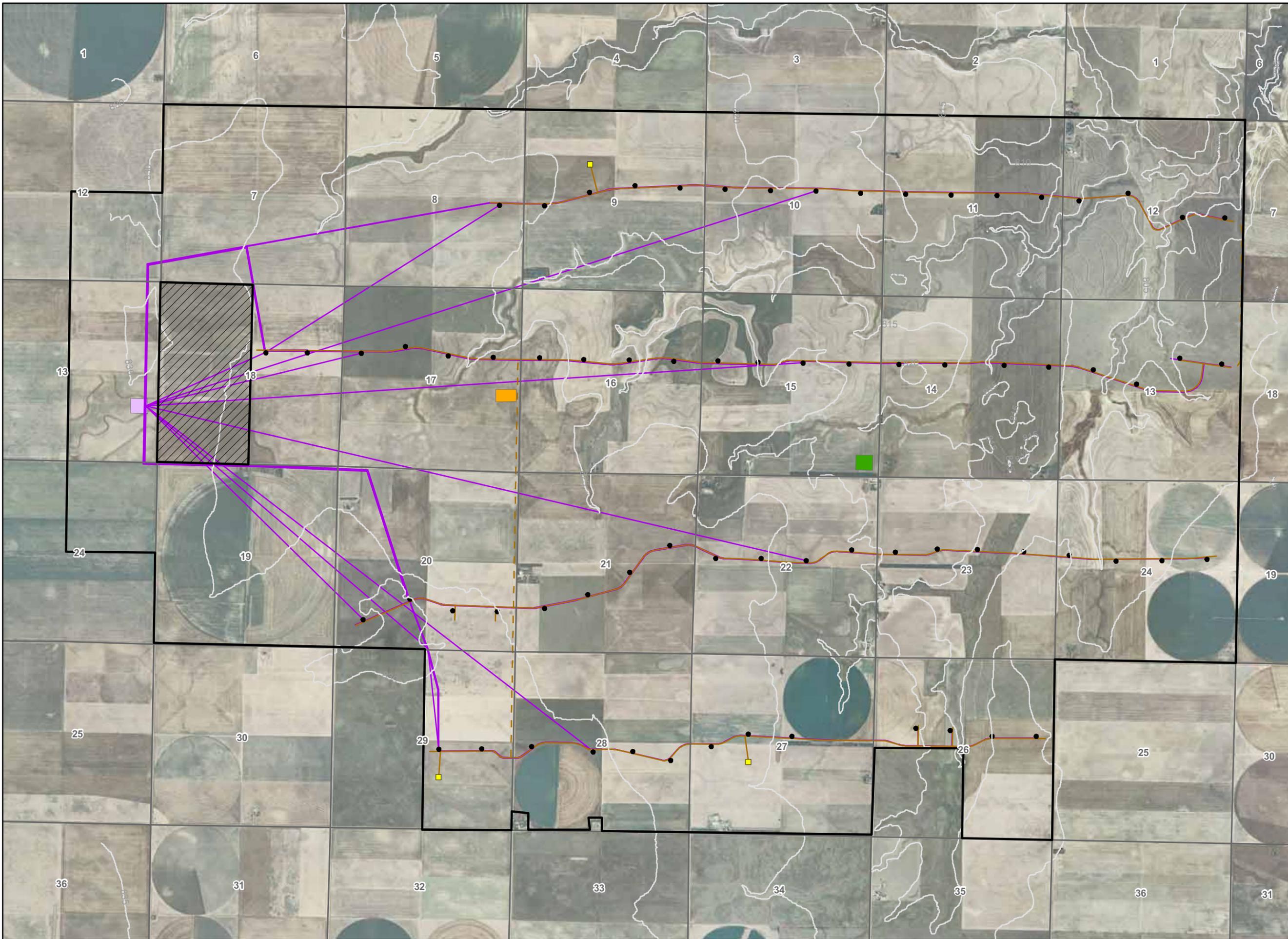
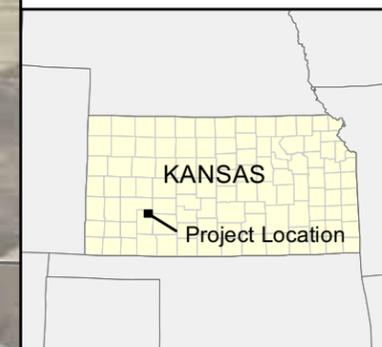
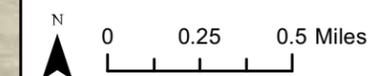


Figure 3
Soils

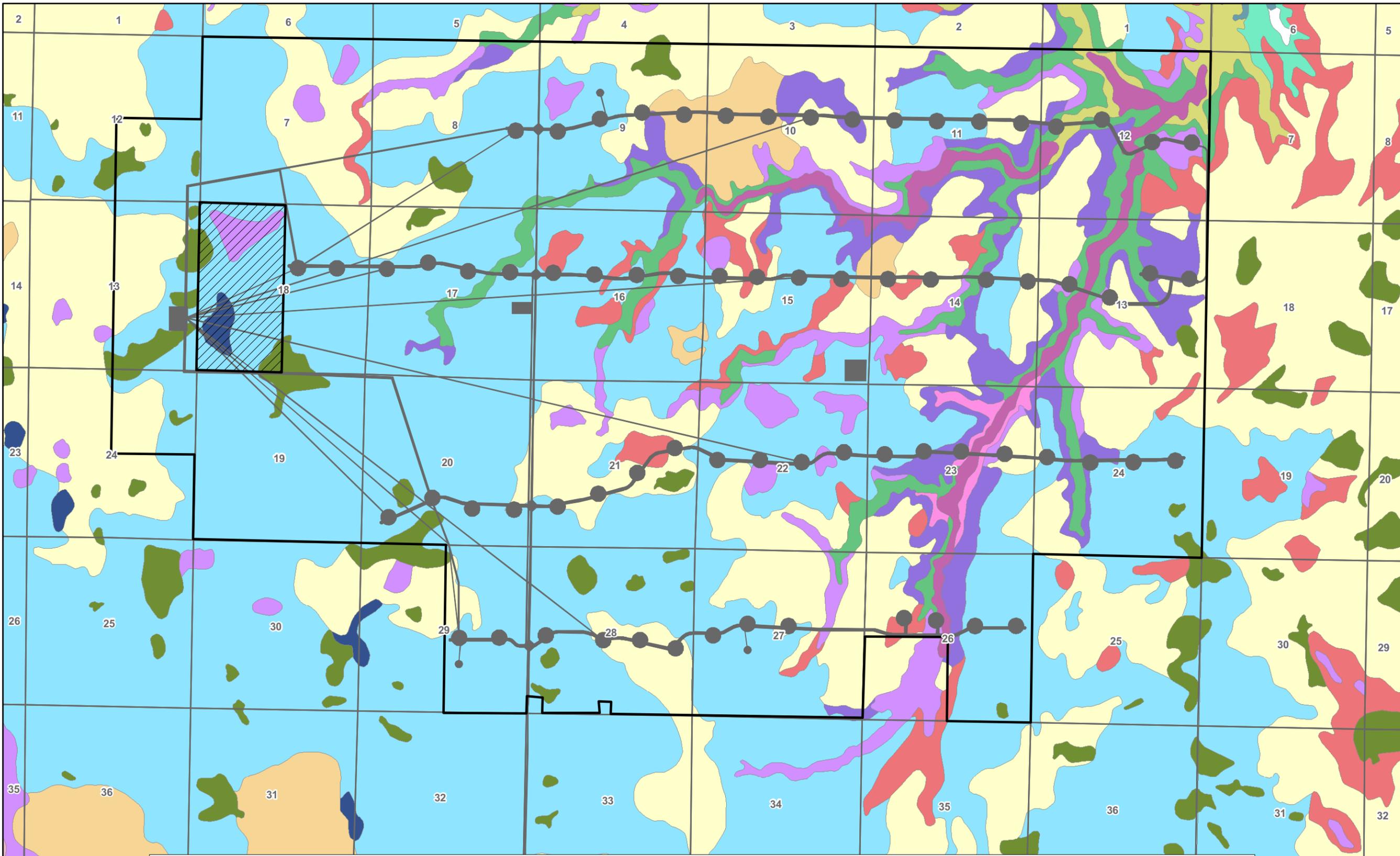
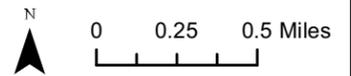
Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas



Legend

- Project Area
- Non-Leased Area
- Archeological Survey APE
- Sections

Source: v3 Layout, USDA SSURGO database for Gray County, KS. 2008



Bridgeport silt loam, channeled	Las clay loam, deep, occasionally flooded	Penden complex, 7 to 15 percent slopes, eroded	Spearville silty clay loam, 0 to 1 percent slopes
Bridgeport silty clay loam, 1 to 3 percent slopes	Lesho-Sweetwater complex, occasionally flooded	Pratt loamy fine sand, gravel substratum, 0 to 1 percent slopes	Uly silt loam, 0 to 1 percent slopes
Bridgeport silty clay loam, rarely flooded	Lincoln soils, frequently flooded	Richfield silt loam, 0 to 1 percent slopes	Uly silt loam, 1 to 3 percent slopes
Campus-Canlon complex, 3 to 30 percent slopes	Lofton silty clay loam, 0 to 1 percent slopes *	Richfield silt loam, 1 to 3 percent slopes	Uly silt loam, 3 to 6 percent slopes
Dale silt loam, rarely flooded	Ness clay *	Richfield silty clay loam, 1 to 5 percent slopes, eroded	Uly-Coly silt loams, 3 to 6 percent slopes, eroded
Harney silt loam, 0 to 1 percent slopes	Penden clay loam, 3 to 7 percent slopes	Rivers	Ulysses silt loam, 3 to 6 percent slopes
Las Animas sandy loam, occasionally flooded	Penden clay loam, 3 to 7 percent slopes, eroded	Schamber gravelly sandy loam, 5 to 25 percent slopes	Valent fine sand, 5 to 20 percent slopes
Las Animas soils, occasionally flooded	Penden clay loam, 7 to 15 percent slopes	Spearville complex, 1 to 3 percent slopes, eroded	

* Denotes Hydric Soil

Figure 4
Wetlands

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas



Legend

- Project Area
- Non-Leased Area
- Archeological Survey APE
- Sections
- NHD Flowline
- NHD Waterbody
- Playa Lakes
- NWI Wetlands

Note: Digital NWI wetlands data supplemented with digitized polygons from scanned and georeferenced NWI hardcopy maps.

Sources: v3 Layout, Kansas Data Access and Support Center (<http://gisdatac.kgs.ukans.edu/kgcc/kgcc.cfm>), NWI Wetlands (www.nwi.fws.gov), National Hydrography Dataset (nhd.usgs.gov)

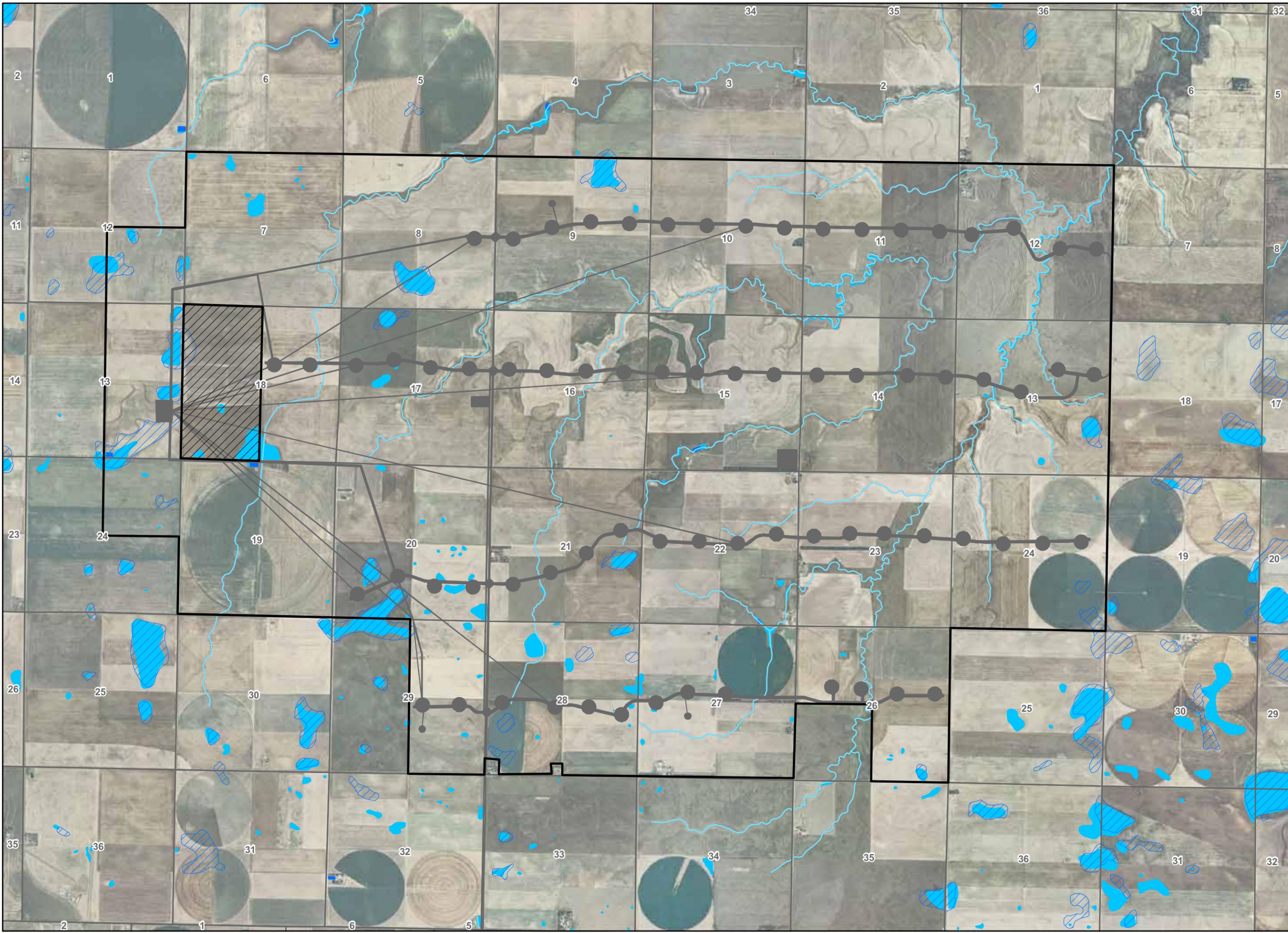
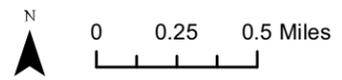


Figure 5
Grasslands

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

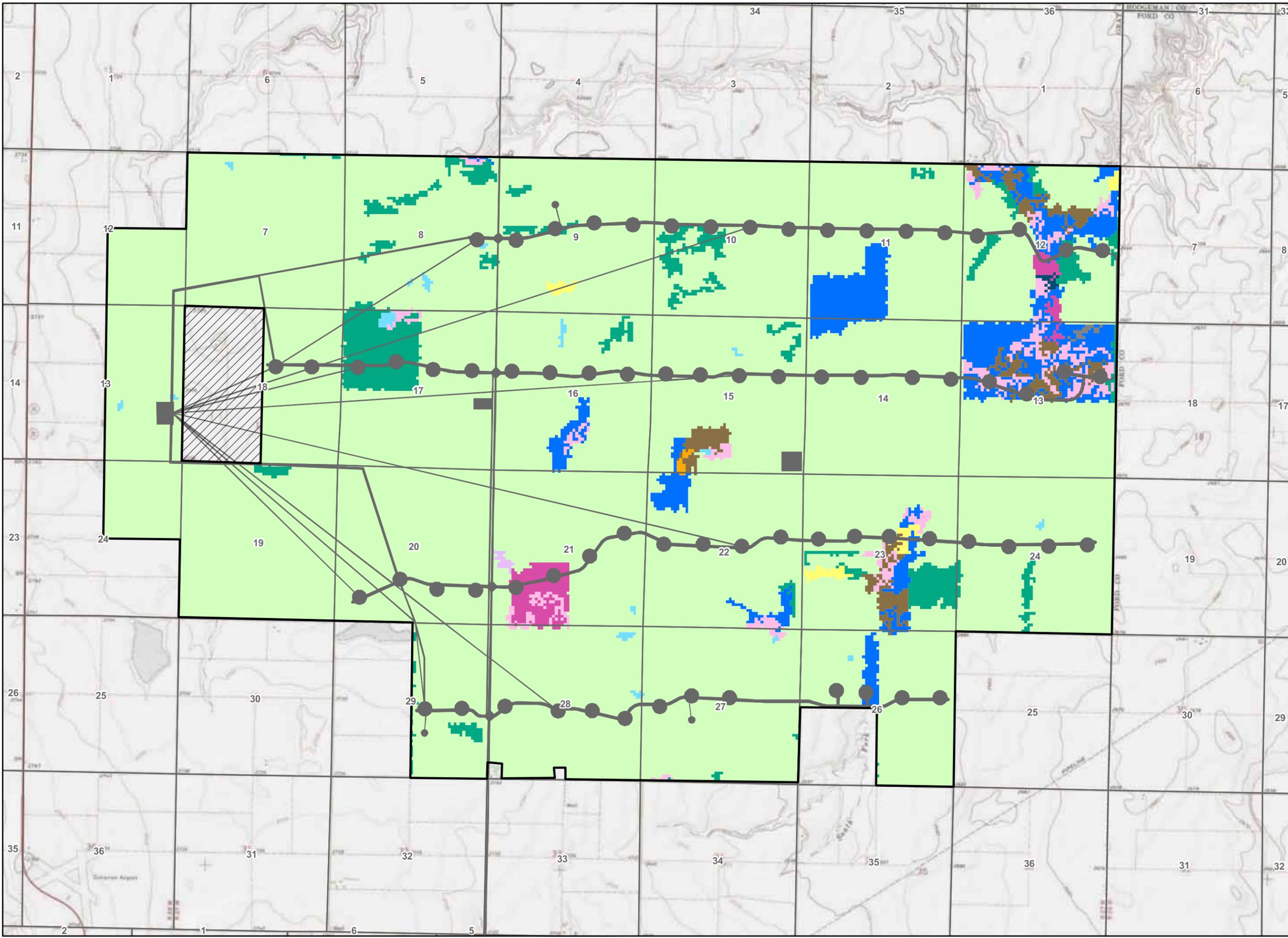
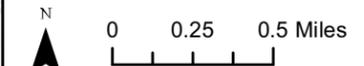


Legend

-  Project Area
-  Non-Leased Area
-  Archeological Survey APE
-  Sections
- GAP Vegetation**
-  Alkali Sacaton Prairie
-  Bulrush Marsh
-  Cattail Marsh
-  Conservation Reserve Program (CRP) Lands *
-  Cottonwood Floodplain/Woodland
-  Cultivated Land
-  Mixed Prairie
-  Salt Marsh/Prairie
-  Sandsage Shrubland
-  Shortgrass Prairie
-  Water
-  Western Wheatgrass Prairie

*CRP Land estimated by GAP has not been verified by the Natural Resources Conservation Service.

Source: v3 Layout, GAP-Vegetation is mapped from satellite imagery, using the National Vegetation Classification System, 2001. (<http://www.KansasGIS.org>), Platts Powermap 2009.



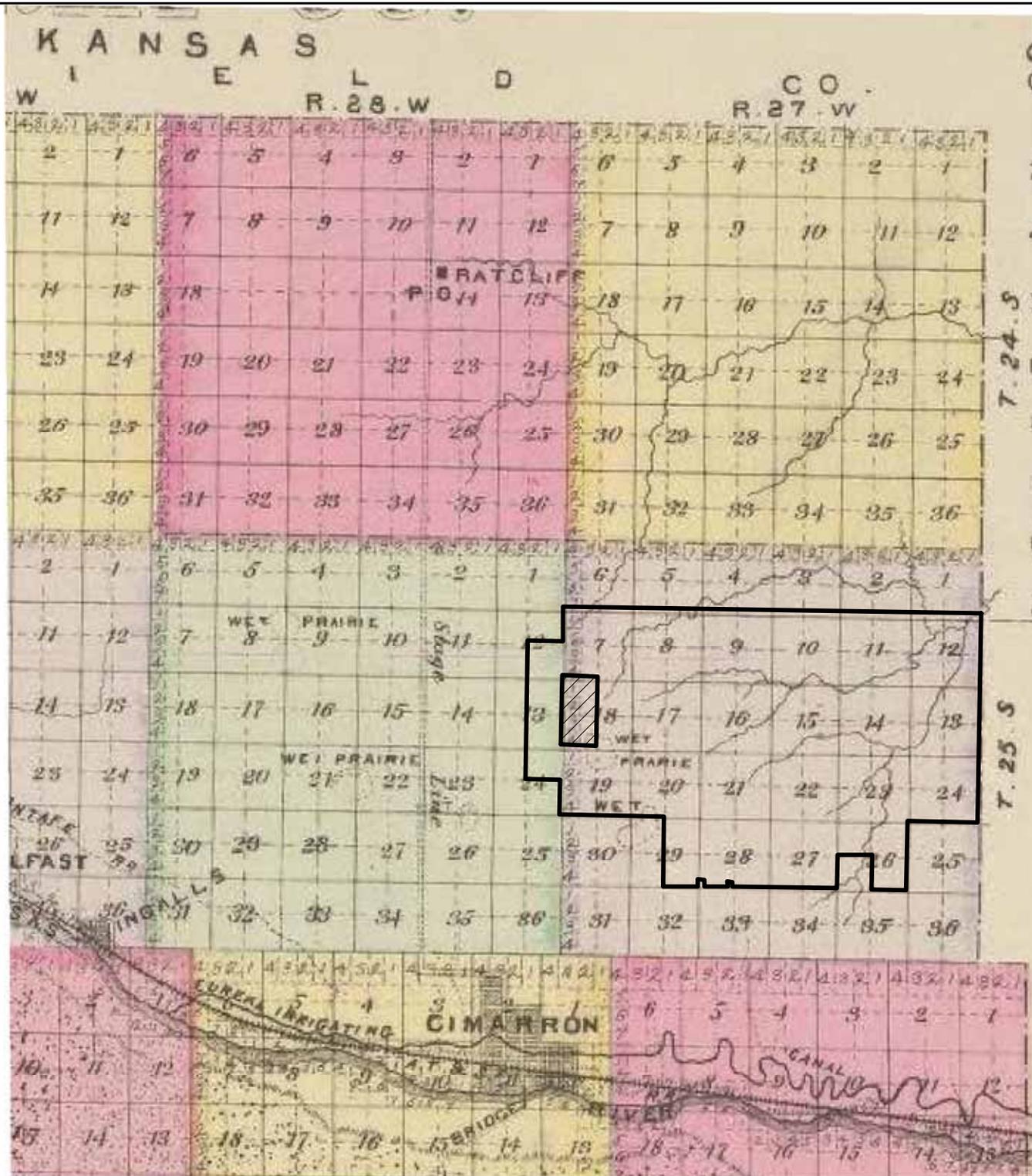


Figure 6
1887 Gray County Map

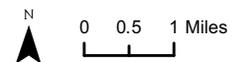
Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas



Legend

-  Project Area
-  Non-Leased Area

Source: Everts 1887



CAL SURVEY
MITH. DIRECTOR.

F. G. ORR'S BOOK STORE
327 EAST DOUGLAS AVE.
WICHITA. KANSAS.
RECONNAISSANCE MAP

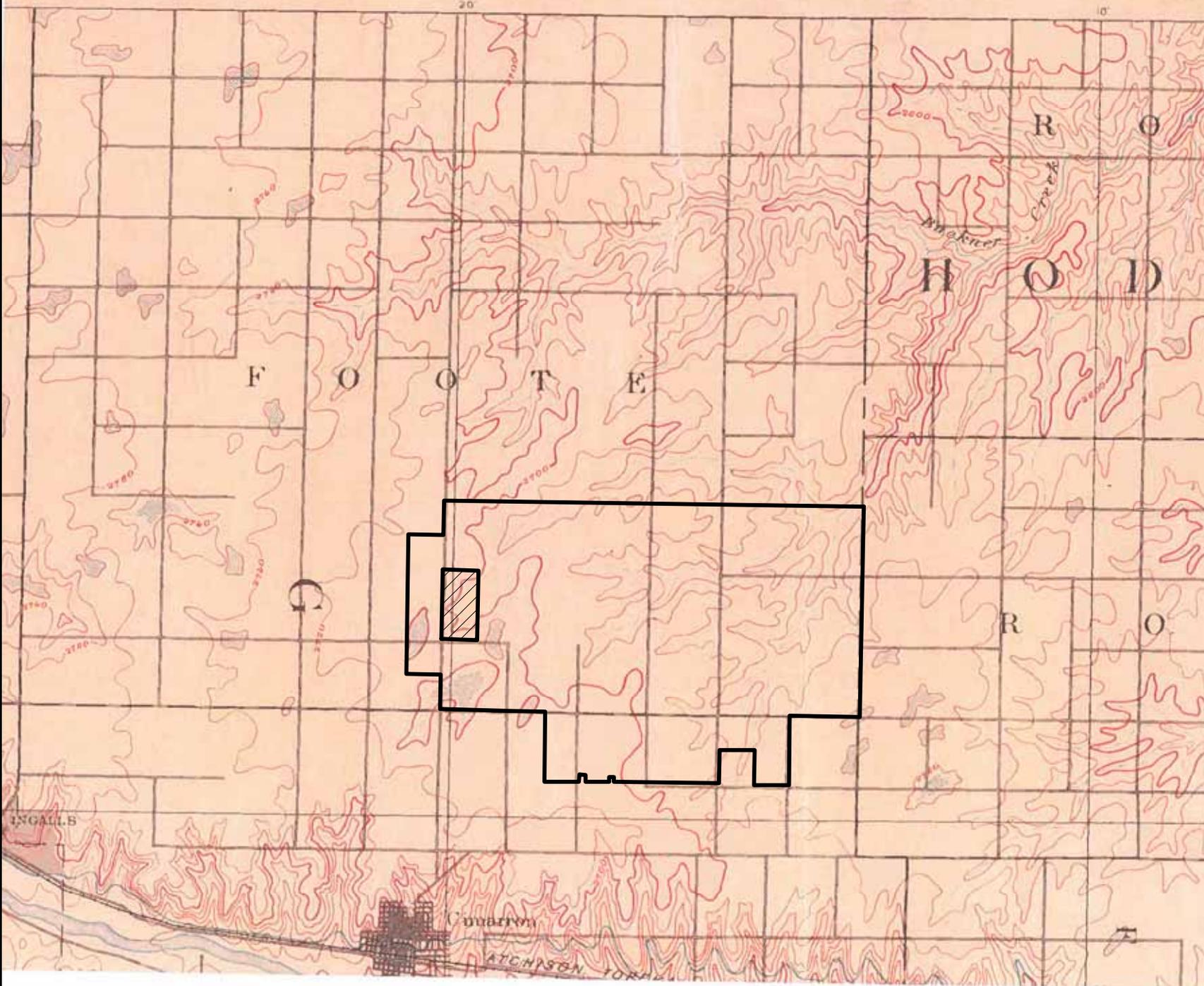


Figure 7
1892 USGS quadrangle

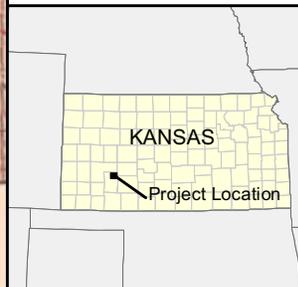
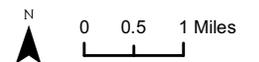
Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas



Legend

-  Project Area
-  Non-Leased Area

Source: USGS 1892



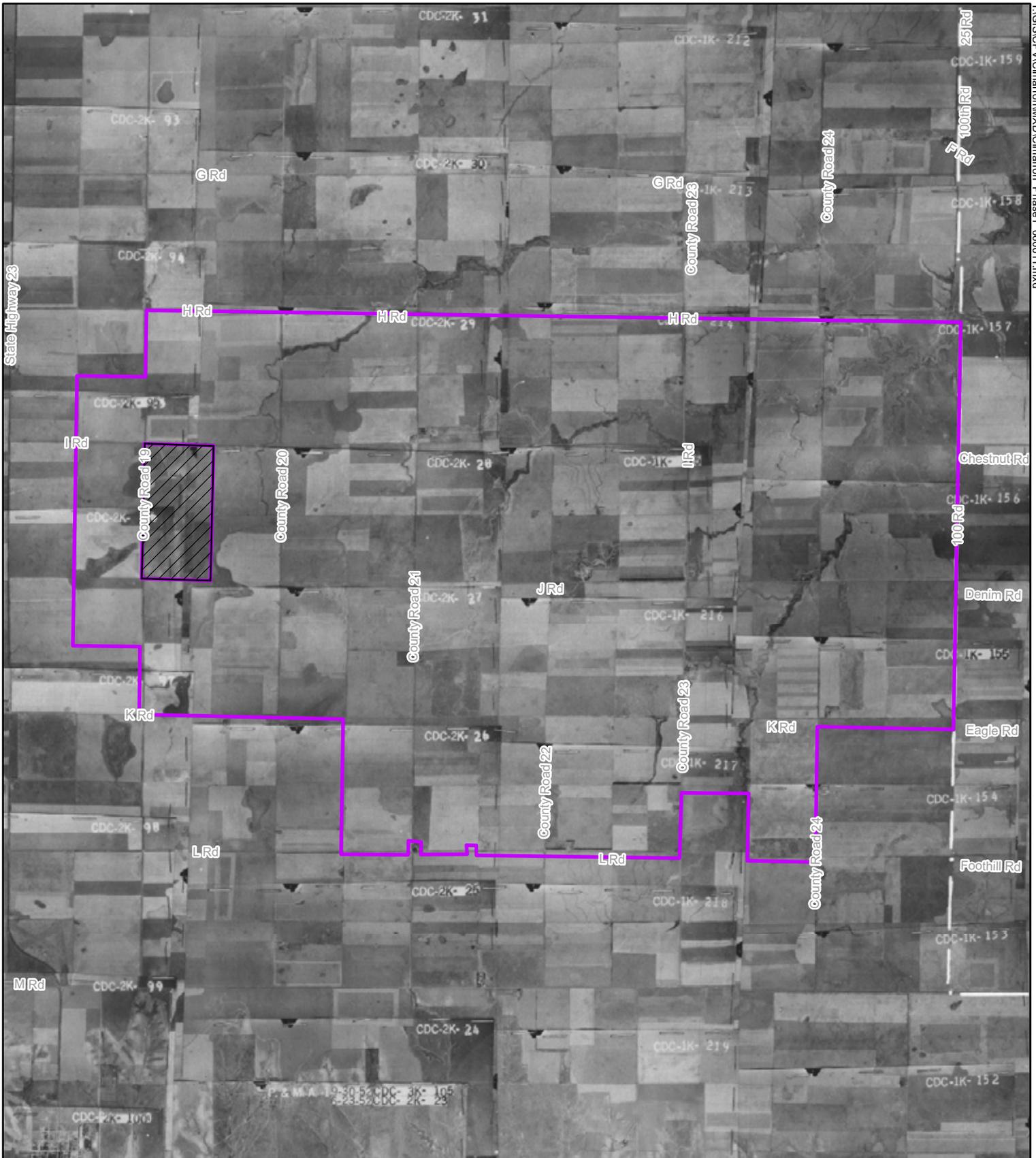


Figure 8
1952 Aerial Photo Mosaic

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas



Legend

-  Non-Leased Area
-  Project area



0 0.25 0.5
Miles

Source:
1952 Aerial Photography, Kansas State University

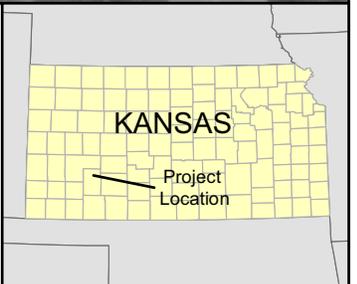


Figure 9
1969 Structures in
the Project Area

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas



Legend

- Project Area
- Non-Leased Area
- Township/Range

Source: Anonymous 1969

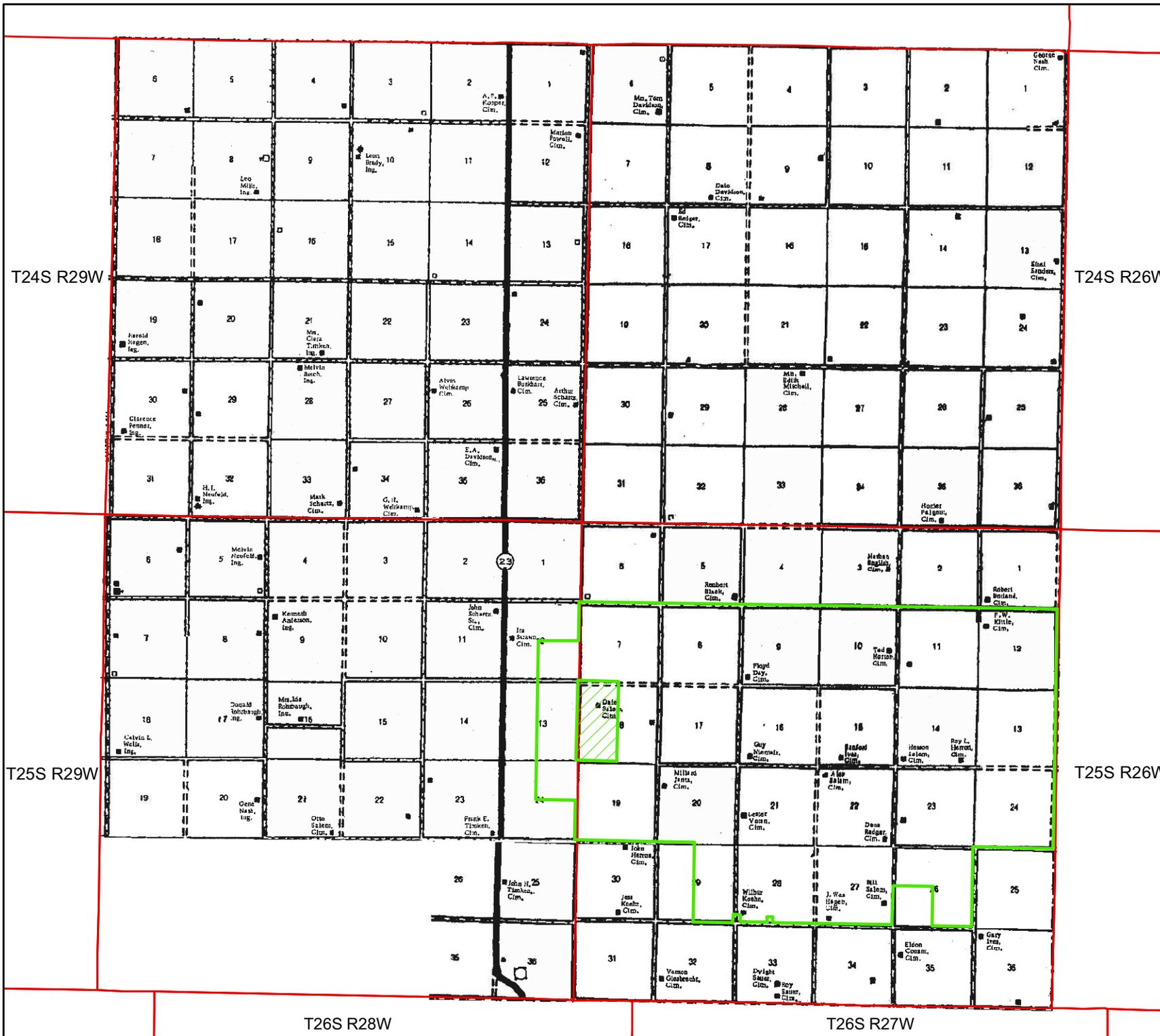
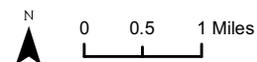
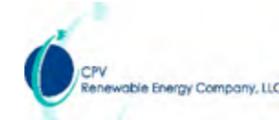


Figure 10
Archeological Sensitivity

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

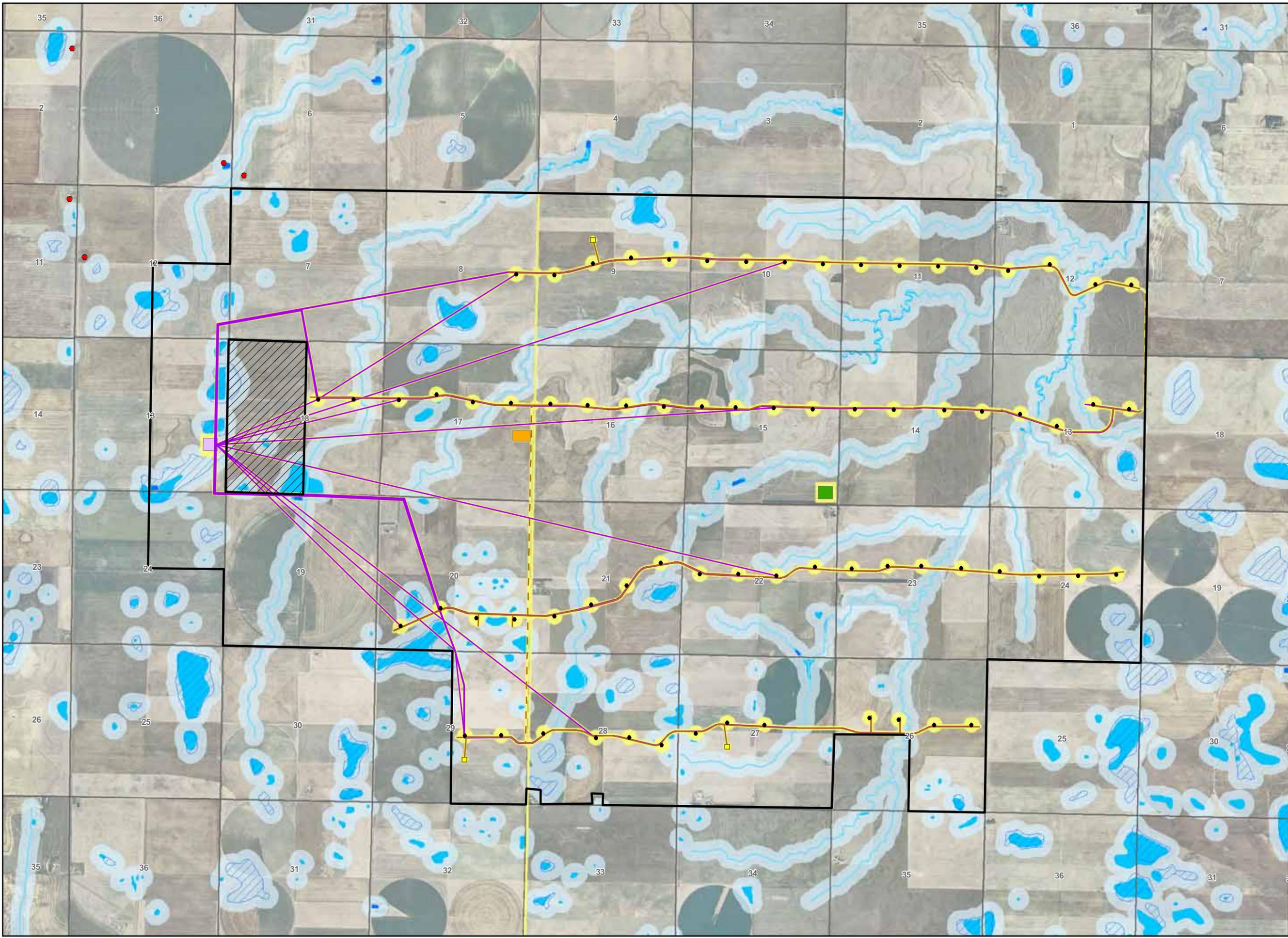
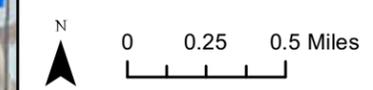


Legend

- Project Area
- Non-Leased Area
- Proposed Substation
- Proposed Batch Plant
- Proposed Laydown
- Archeological Survey APE
- Proposed Turbine
- Proposed Permanent Met Tower
- Proposed Collection Line
- Proposed Access Road
- Proposed Crane Path
- 4 Sections
- NHD Flowline
- NHD Waterbody
- Playa Lakes
- NWI Wetlands
- Prehistoric Sensitivity
- Historic Sensitivity

Note: Digital NWI wetlands data supplemented with digitized polygons from scanned and georeferenced NWI hardcopy maps.

Sources: v3 Layout, Kansas Data Access and Support Center (<http://gisdatac.kgs.ukans.edu/kgcc/kgcc.cfm>), NWI Wetlands (www.nwi.fws.gov), National Hydrography Dataset (nhd.usgs.gov)



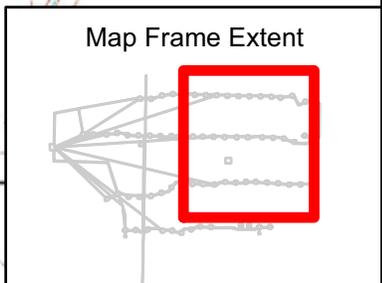
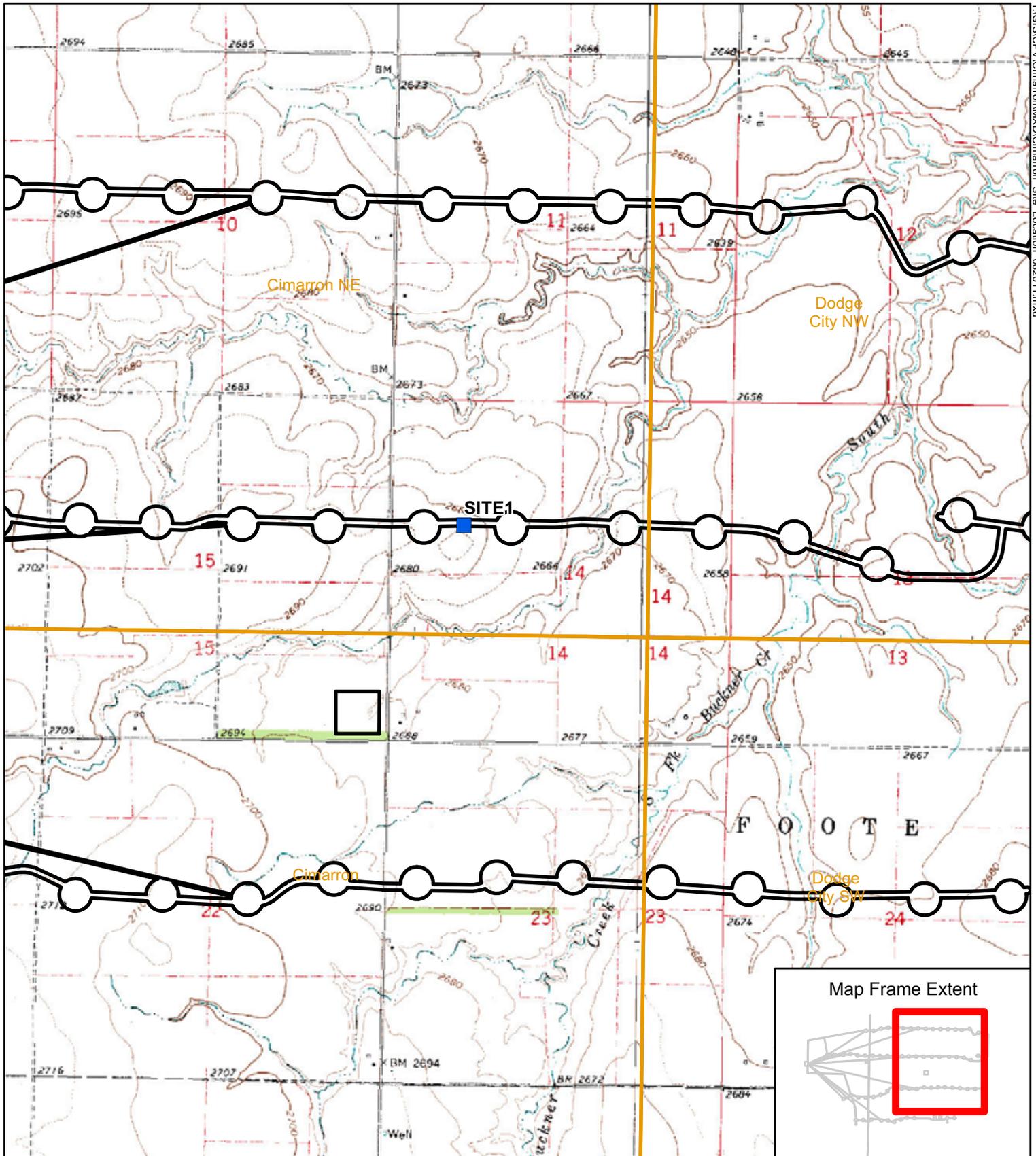


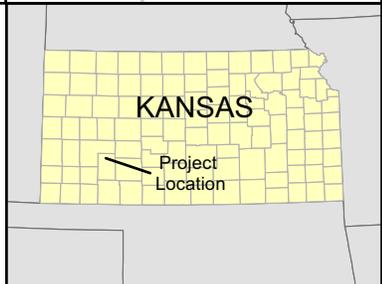
Figure 11
Site 1 Location

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

Legend

- Site Location
- Quad Sheet Boundary
- Archeological Survey APE

Source:
v3 Layout
USGS 7.5 Minute Topographic Quadrangle:
Cimarron NE KS 1970, PR 1980
Cimarron NW KS 1982, PR 1985
Cimarron KS 1969, PR 1981
Dodge City SW KS 1982, PR 1984



0 500 1,000 2,000 Feet

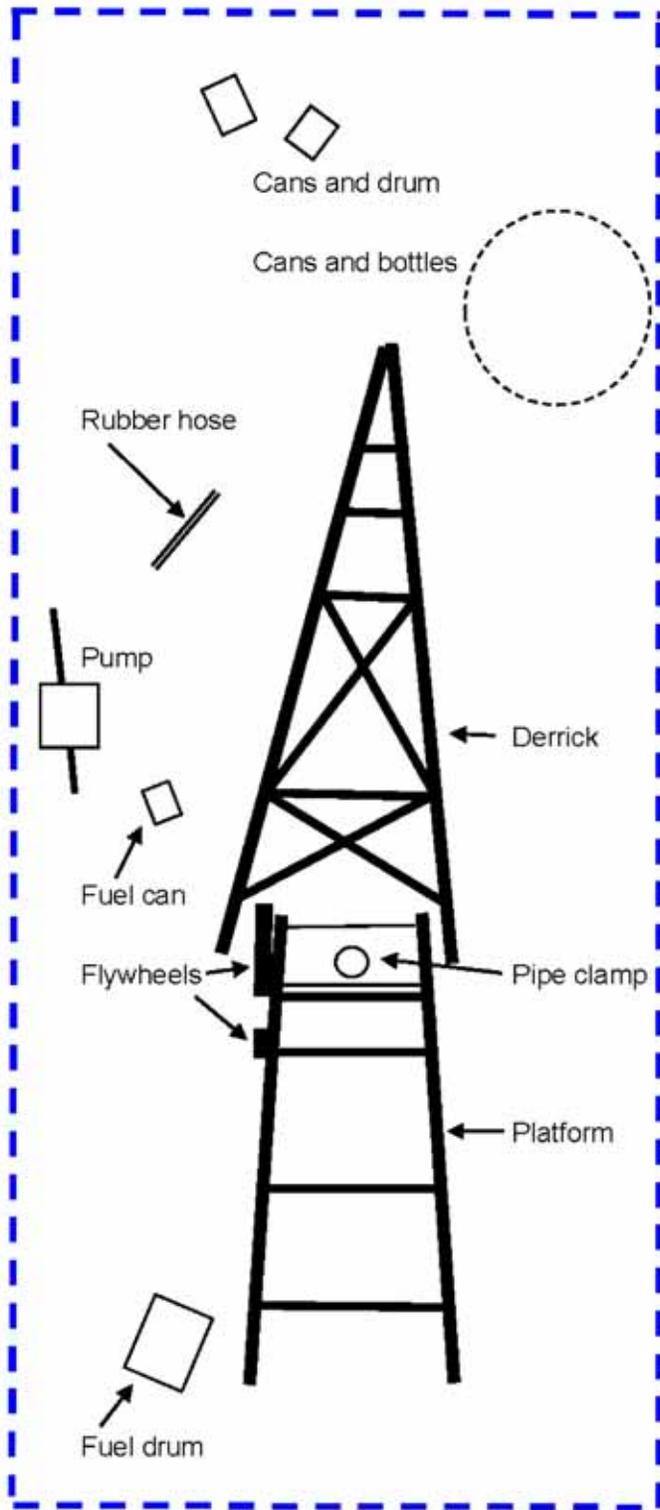


Figure 12
Site 1 Sketch Map, Plan View

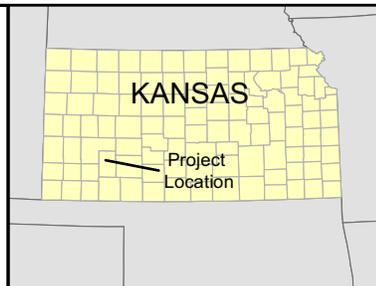
Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas



--- Site Boundry

← North

1 meter



PHOTOGRAPHS



Photograph 1. Excellent ground visibility for pedestrian survey in winter wheat field along Segment A18RA-T. View to the east (Photographer Chris Borstel, April 10, 2011).



Photograph 2. Grassland marginal to upper Buckner Creek along Segment C41-A View to the north (Photographer Chris Borstel, April 17, 2011).



Photograph 3. Berm terracing in Turbine C35-T. View to the south
(Photographer Stuart A. Reeve, April 9, 2011).



Photograph 4. Pivot irrigation at Turbine A5-T. View to the east
(Photographer Chris Borstel April 10, 2011).



Photograph 5. Brick scatter along the Combined-HC collector line east of County Road 19. View to the east (Photographer Chris Borstel, April 20, 2011).



Photograph 6. Excavating radial units around shovel test 123, an isolated chalcedony flake at Segment C41-A. View to the southeast (Photographer Chris Borstel, April 16, 2011).



Photograph 7. Site 1, collapsed wood-framed well derrick (right) and platform (left) along Access Road C37A-A. View to the east (Photographer Stuart A. Reeve, April 10, 2011).



Photograph 8. Site 1, drilling platform with pipe clamp (center) and flywheels (bottom). View to the south (Photographer Stuart A. Reeve, April 10, 2011).

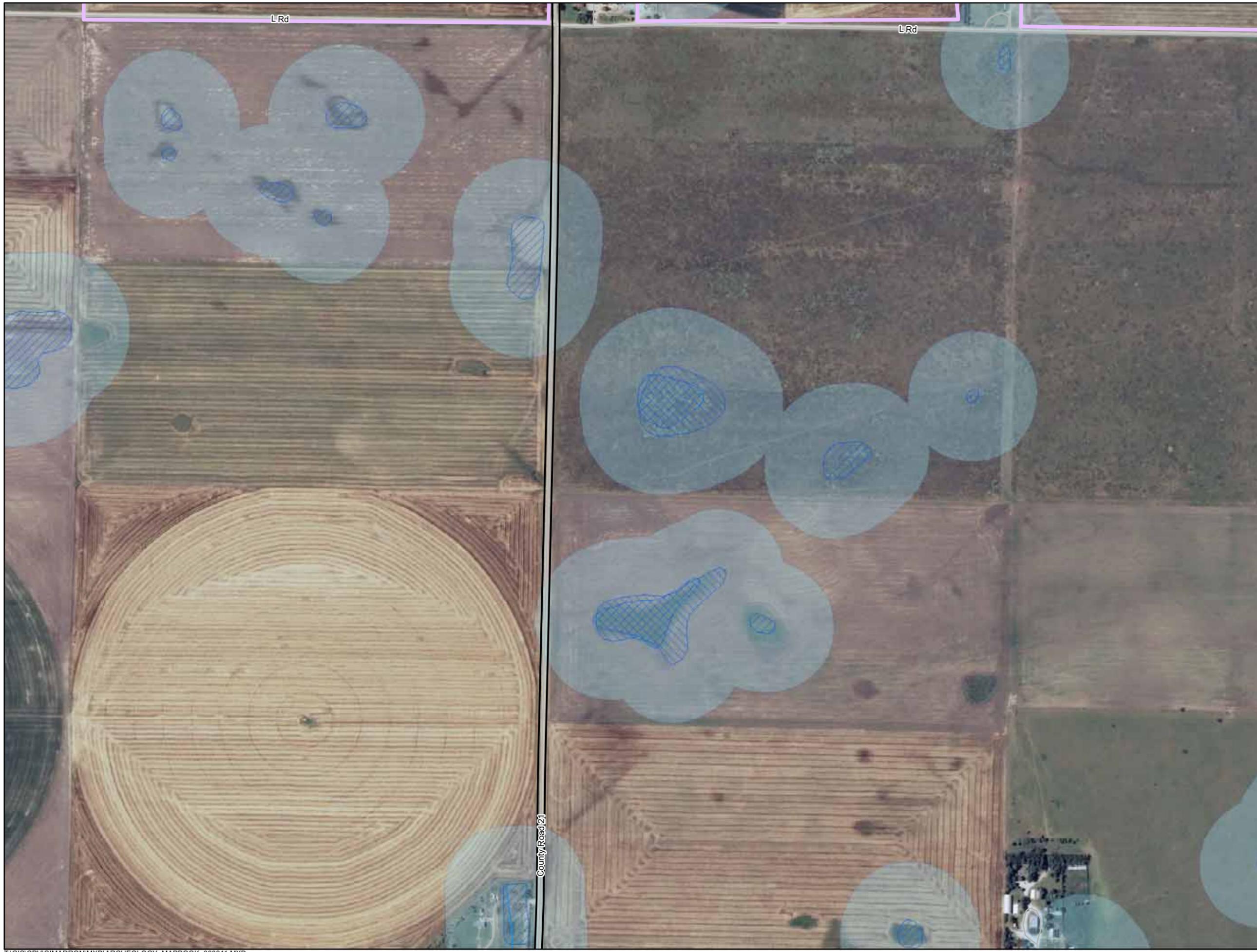


Photograph 9. Site 1, hand-cranked pump, metal can and wood scatter. View to the northeast (Photographer Stuart A. Reeve, April 10, 2011).

APPENDICES

APPENDIX A

PHASE II INTENSIVE ARCHEOLOGICAL SURVEY MAPS



Appendix A
Phase II Intensive
Archeological Survey Maps

MAP 1 OF 19

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

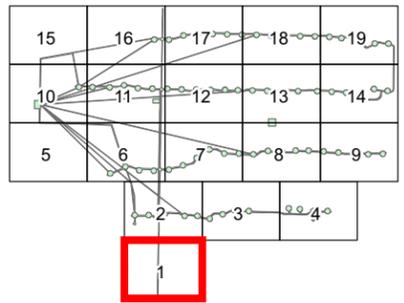
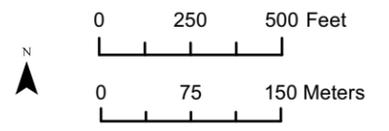


Legend

- C23A-T Project Layout Segment**
- Site Location
 - APE Pedestrian Survey
 - Non-Leased Area *
 - Project Area
 - Roads
 - Streams
 - NWI
 - Waterbody/Playa
 - 100m Buffer of Hydrography
- Shovel Test (#)**
- Prehistoric
 - Historic
 - No Artifact

Source: v3 Layout

Note:
* Unable to conduct Phase II survey of proposed APE within non-leased area.





Legend

C23A-T Project Layout Segment

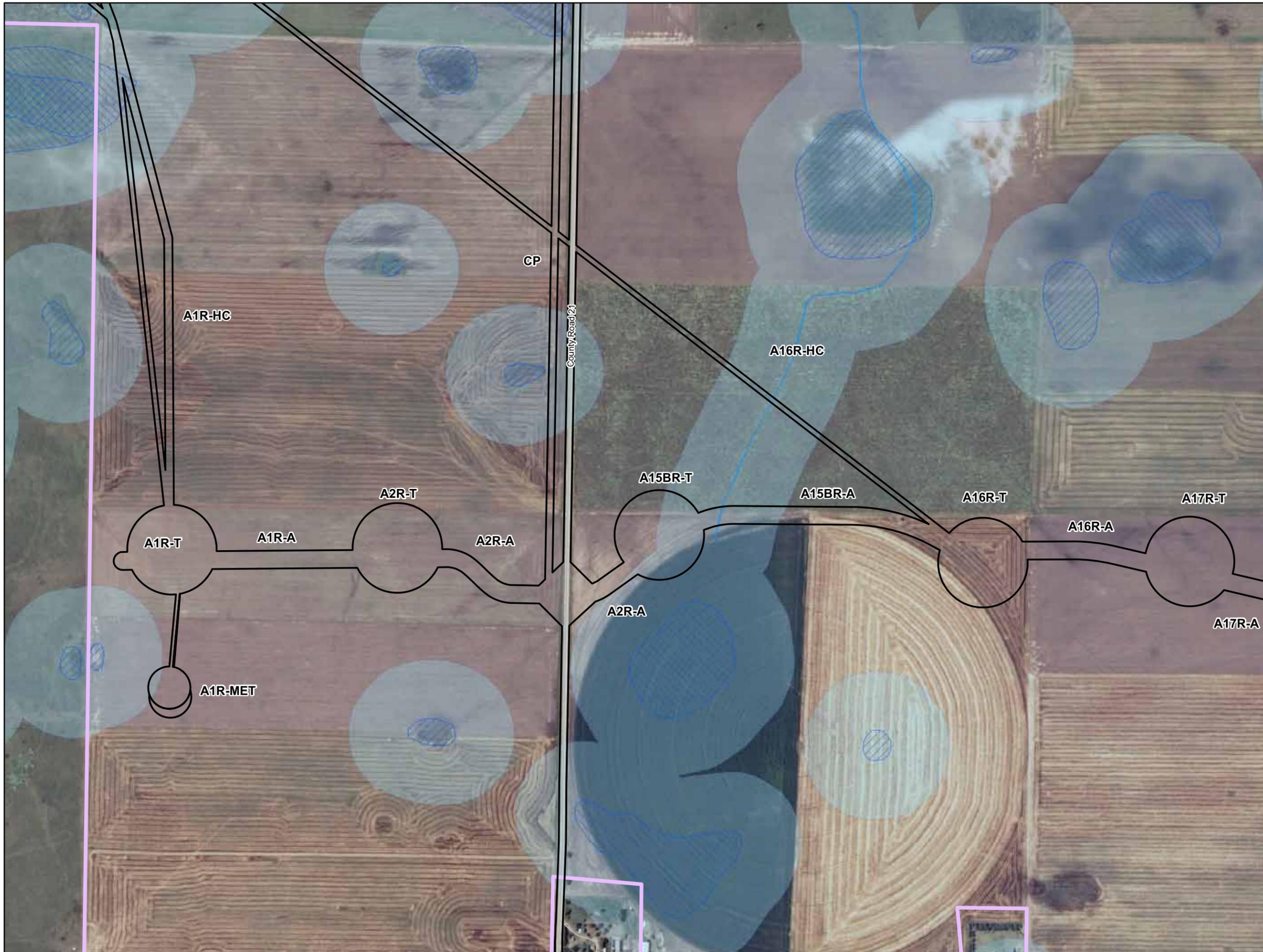
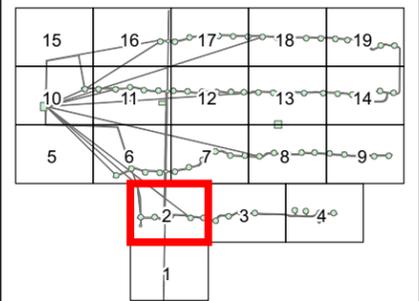
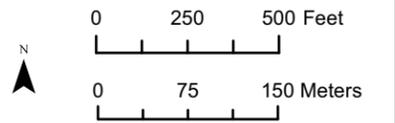
- Site Location
- APE Pedestrian Survey
- Non-Leased Area *
- Project Area
- Roads
- Streams
- NWI
- Waterbody/Playa
- 100m Buffer of Hydrography

Shovel Test (#)

- Prehistoric
- Historic
- No Artifact

Source: v3 Layout

Note:
* Unable to conduct Phase II survey of proposed APE within non-leased area.





Legend

C23A-T Project Layout Segment

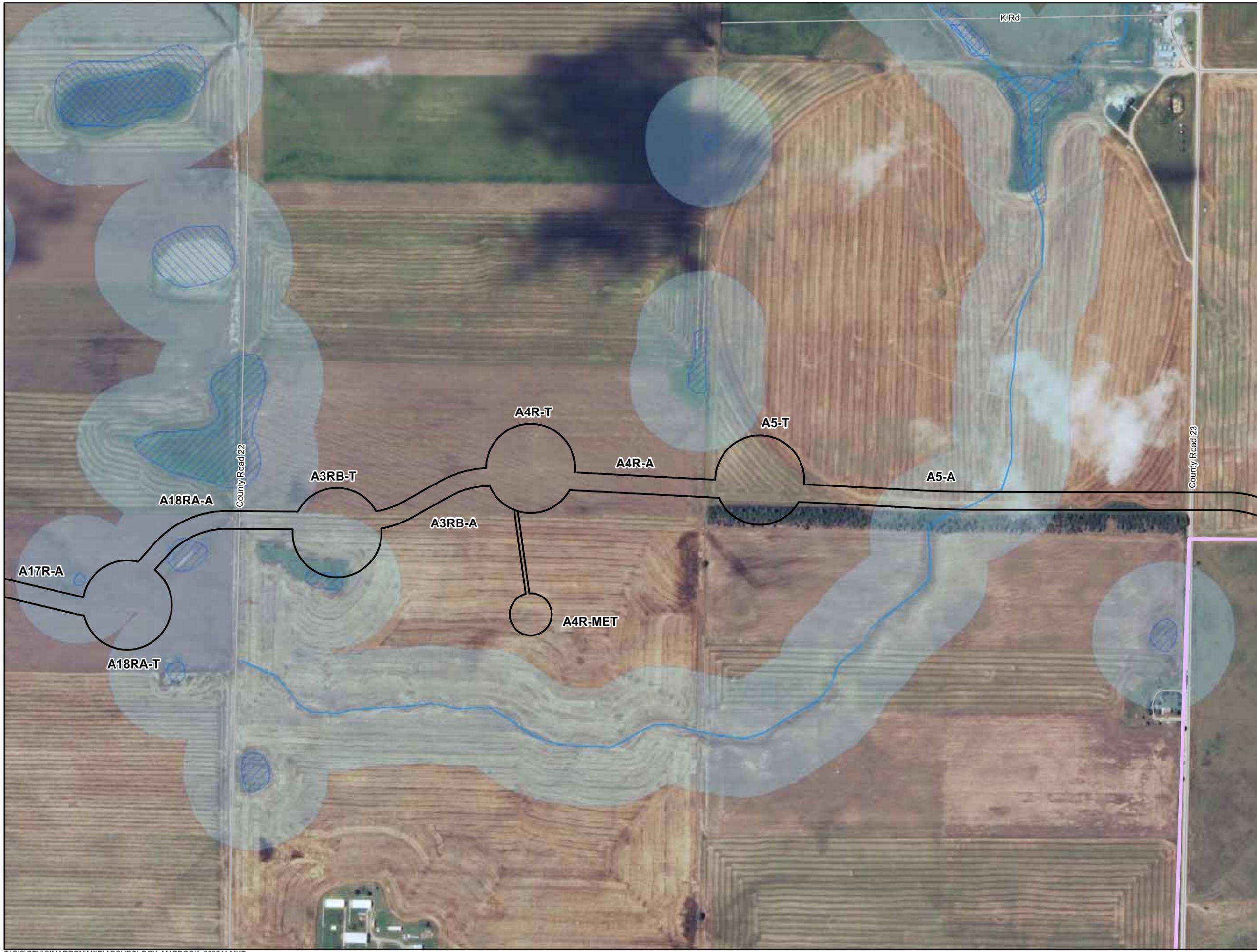
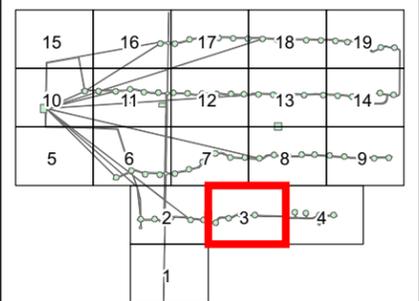
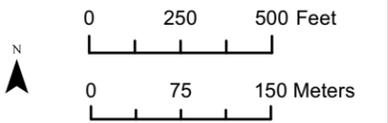
- Site Location
- APE Pedestrian Survey
- Non-Leased Area *
- Project Area
- Roads
- Streams
- NWI
- Waterbody/Playa
- 100m Buffer of Hydrography

Shovel Test (#)

- Prehistoric
- Historic
- No Artifact

Source: v3 Layout

Note:
* Unable to conduct Phase II survey of proposed APE within non-leased area.





Legend

C23A-T Project Layout Segment

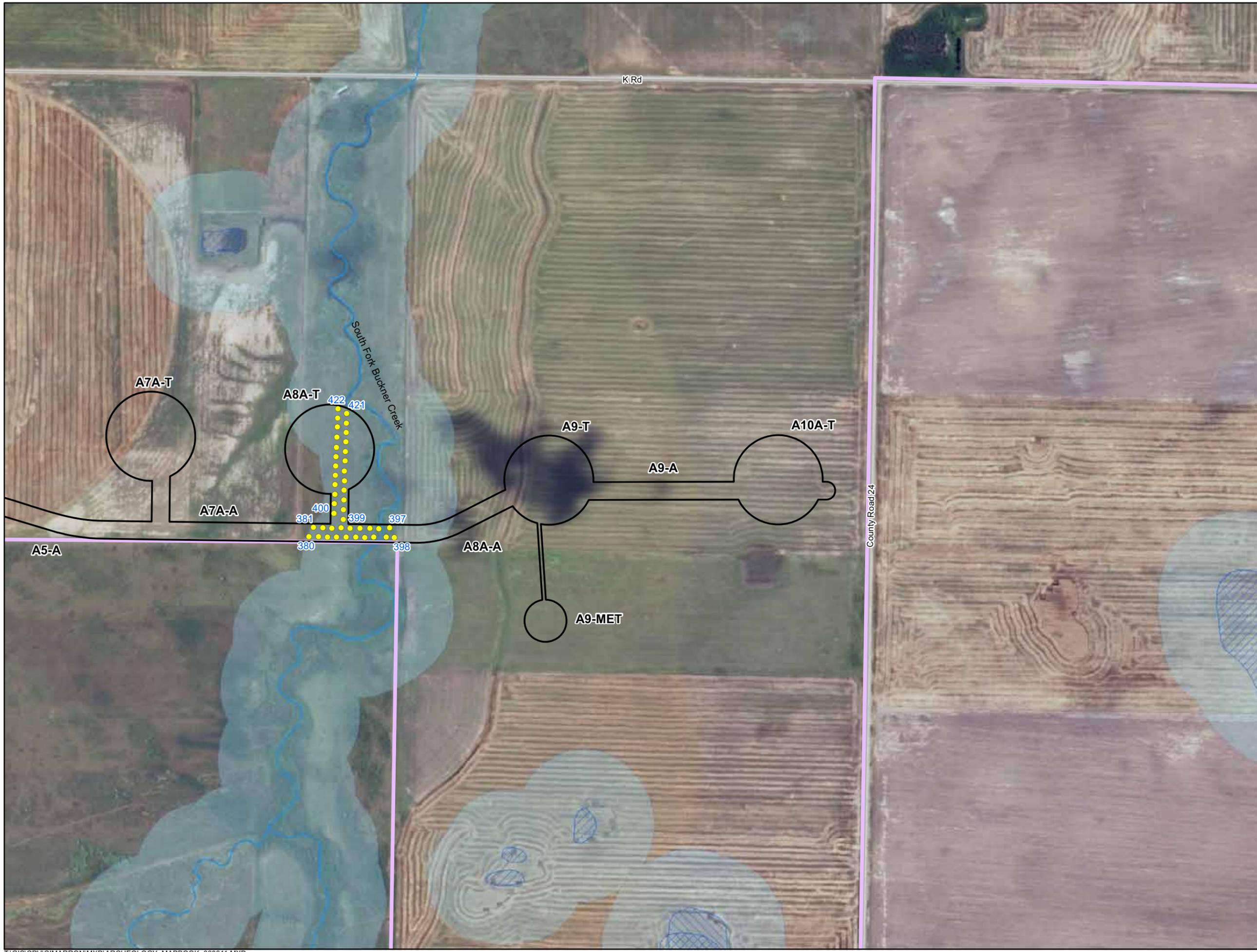
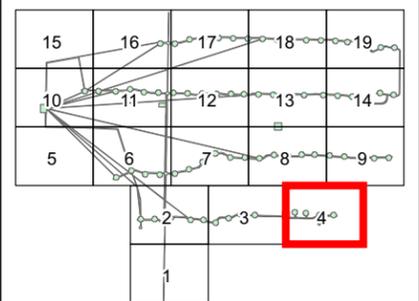
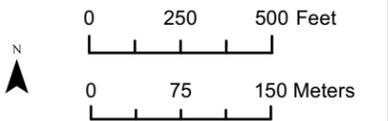
- Site Location
- APE Pedestrian Survey
- Non-Leased Area *
- Project Area
- Roads
- Streams
- NWI
- Waterbody/Playa
- 100m Buffer of Hydrography

Shovel Test (#)

- Prehistoric
- Historic
- No Artifact

Source: v3 Layout

Note:
* Unable to conduct Phase II survey of proposed APE within non-leased area.



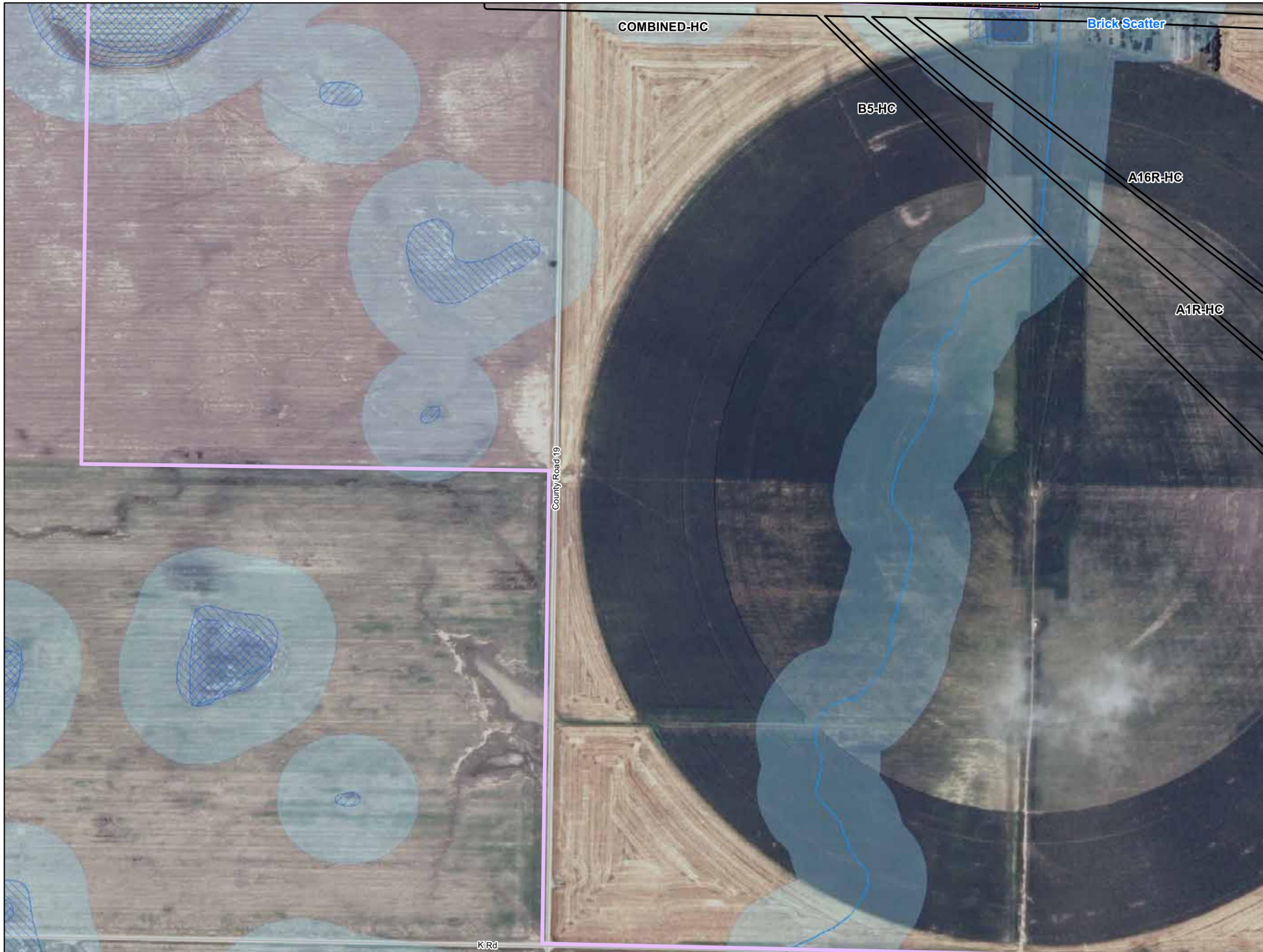
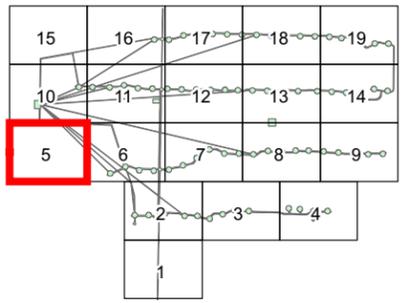
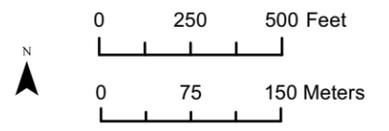


Legend

- C23A-T Project Layout Segment**
- Site Location
 - APE Pedestrian Survey
 - Non-Leased Area *
 - Project Area
 - Roads
 - Streams
 - NWI
 - Waterbody/Playa
 - 100m Buffer of Hydrography
- Shovel Test (#)**
- Prehistoric
 - Historic
 - No Artifact

Source: v3 Layout

Note:
* Unable to conduct Phase II survey of proposed APE within non-leased area.





Legend

C23A-T Project Layout Segment

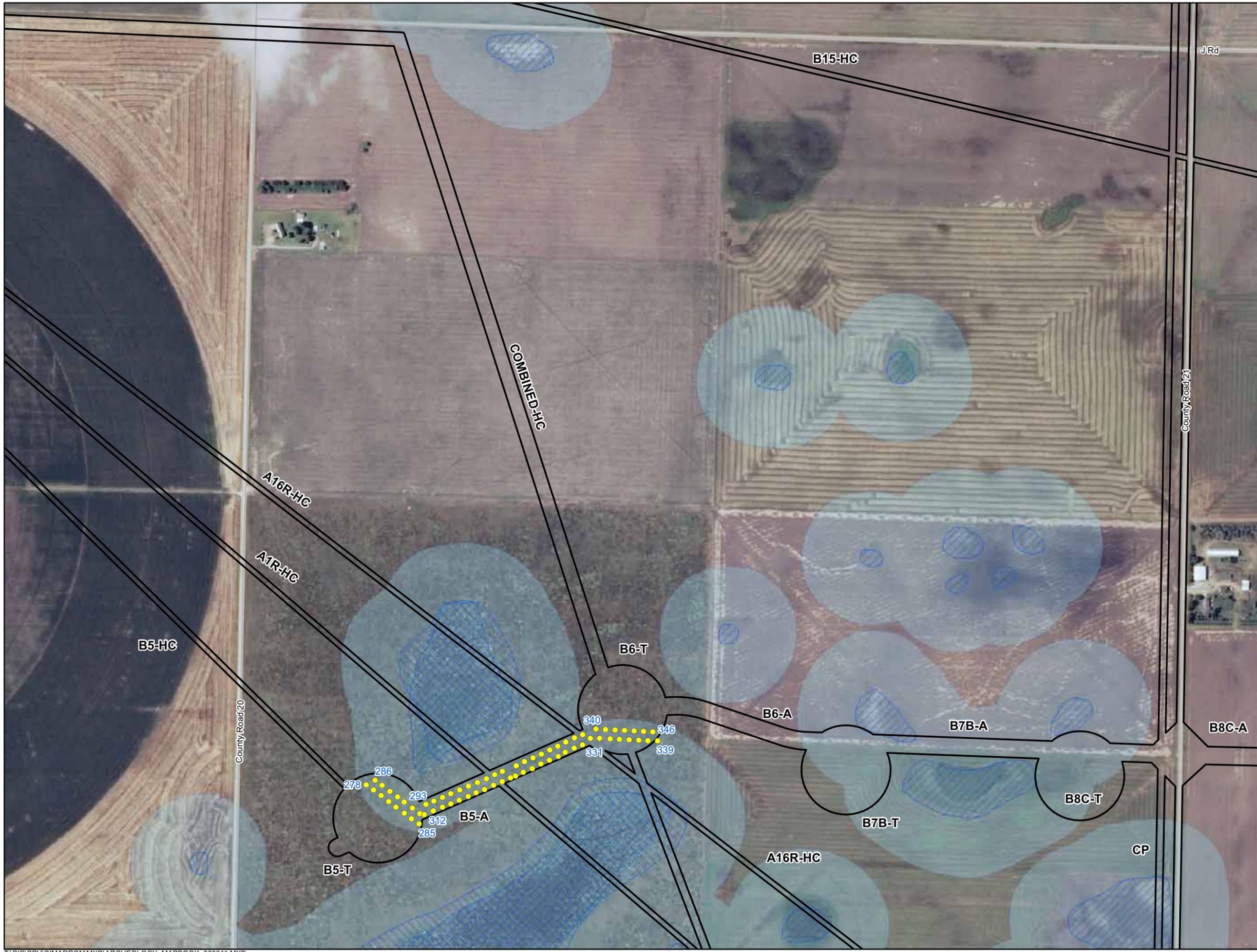
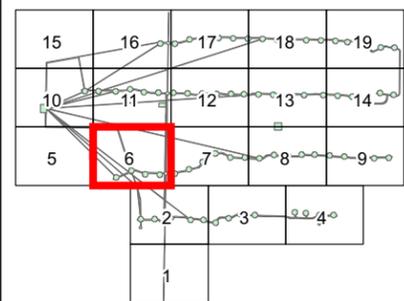
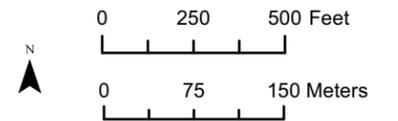
- Site Location
- APE Pedestrian Survey
- Non-Leased Area *
- Project Area
- Roads
- Streams
- NWI
- Waterbody/Playa
- 100m Buffer of Hydrography

Shovel Test (#)

- Prehistoric
- Historic
- No Artifact

Source: v3 Layout

Note:
* Unable to conduct Phase II survey of proposed APE within non-leased area.





Legend

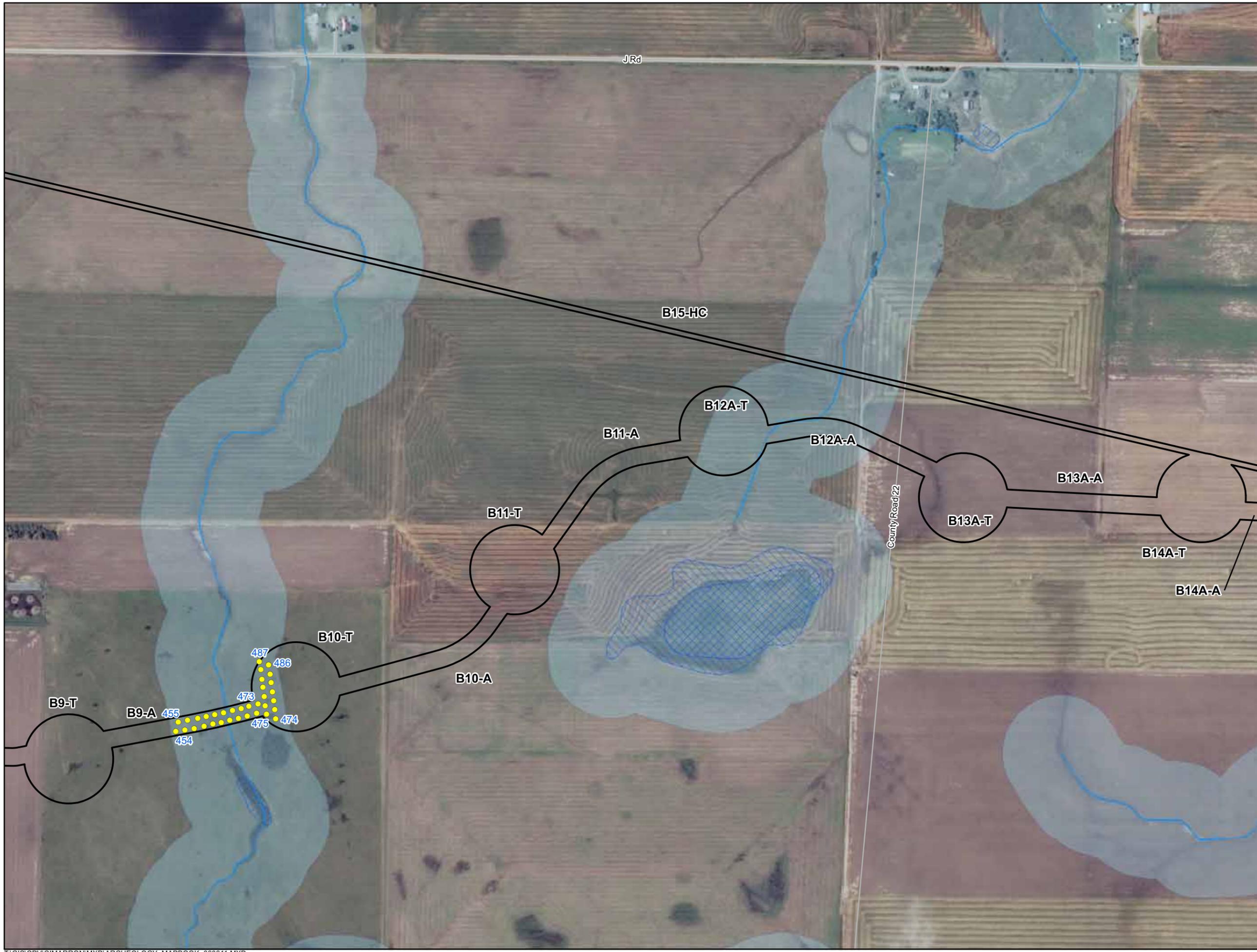
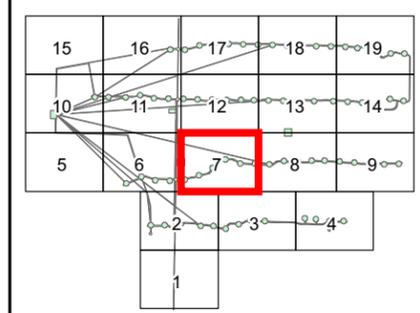
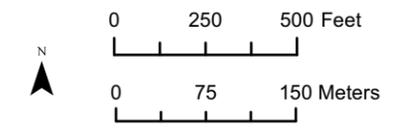
- C23A-T Project Layout Segment**
- Site Location
- APE Pedestrian Survey
- Non-Leased Area *
- Project Area
- Roads
- Streams
- NWI
- Waterbody/Playa
- 100m Buffer of Hydrography

Shovel Test (#)

- Prehistoric
- Historic
- No Artifact

Source: v3 Layout

Note:
* Unable to conduct Phase II survey of proposed APE within non-leased area.





Legend

C23A-T Project Layout Segment

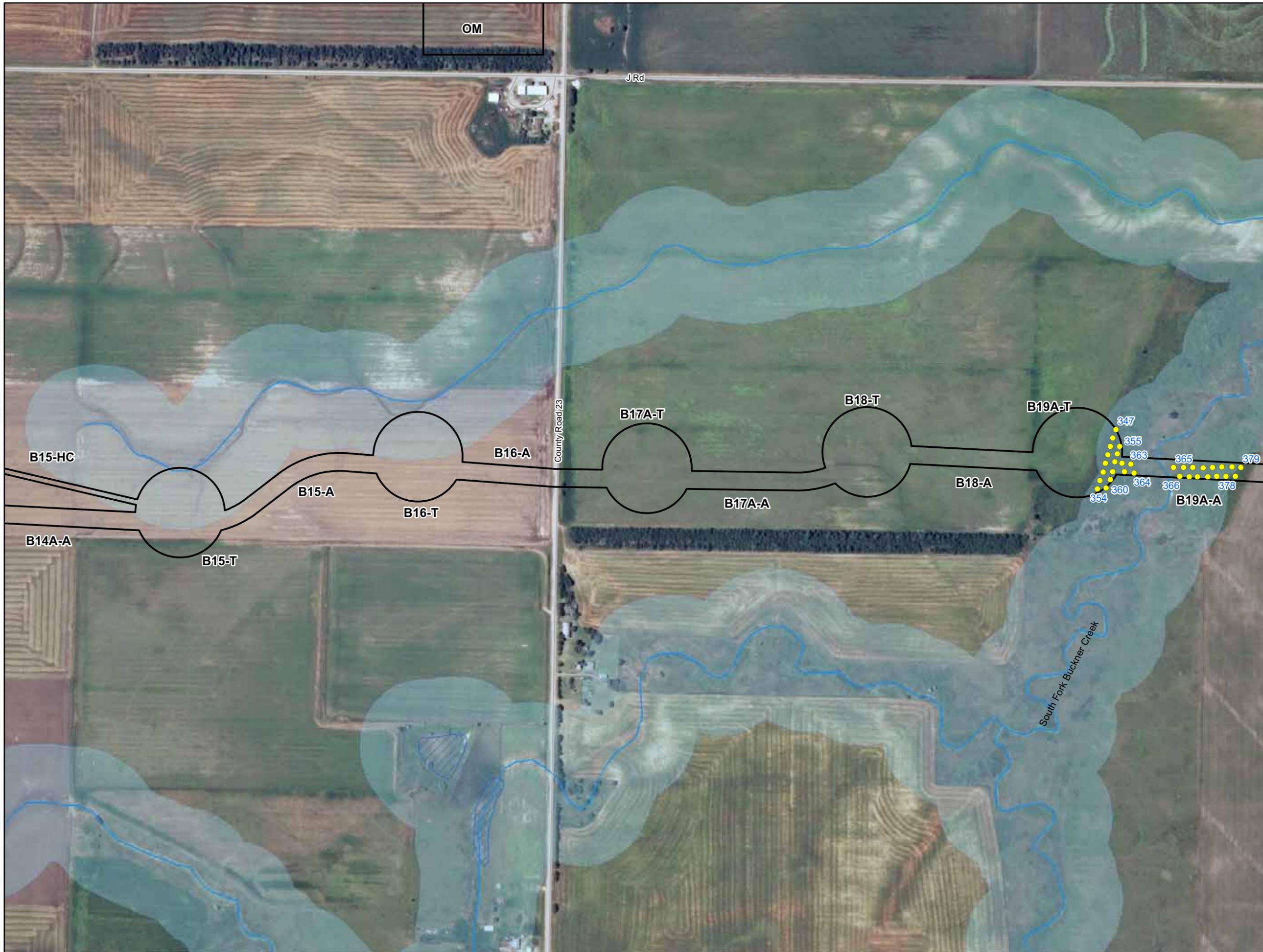
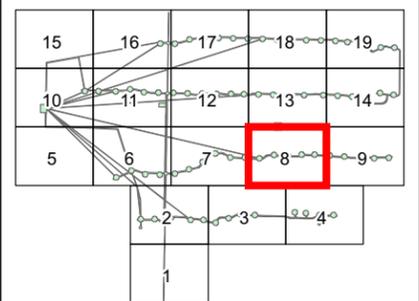
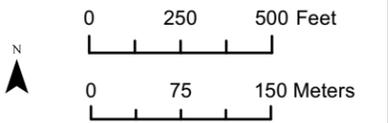
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Legend

C23A-T Project Layout Segment

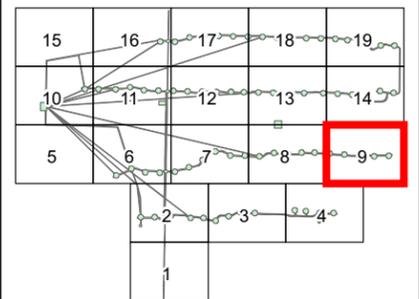
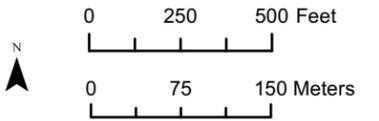
- Site Location
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Source: v3 Layout

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Legend

C23A-T Project Layout Segment

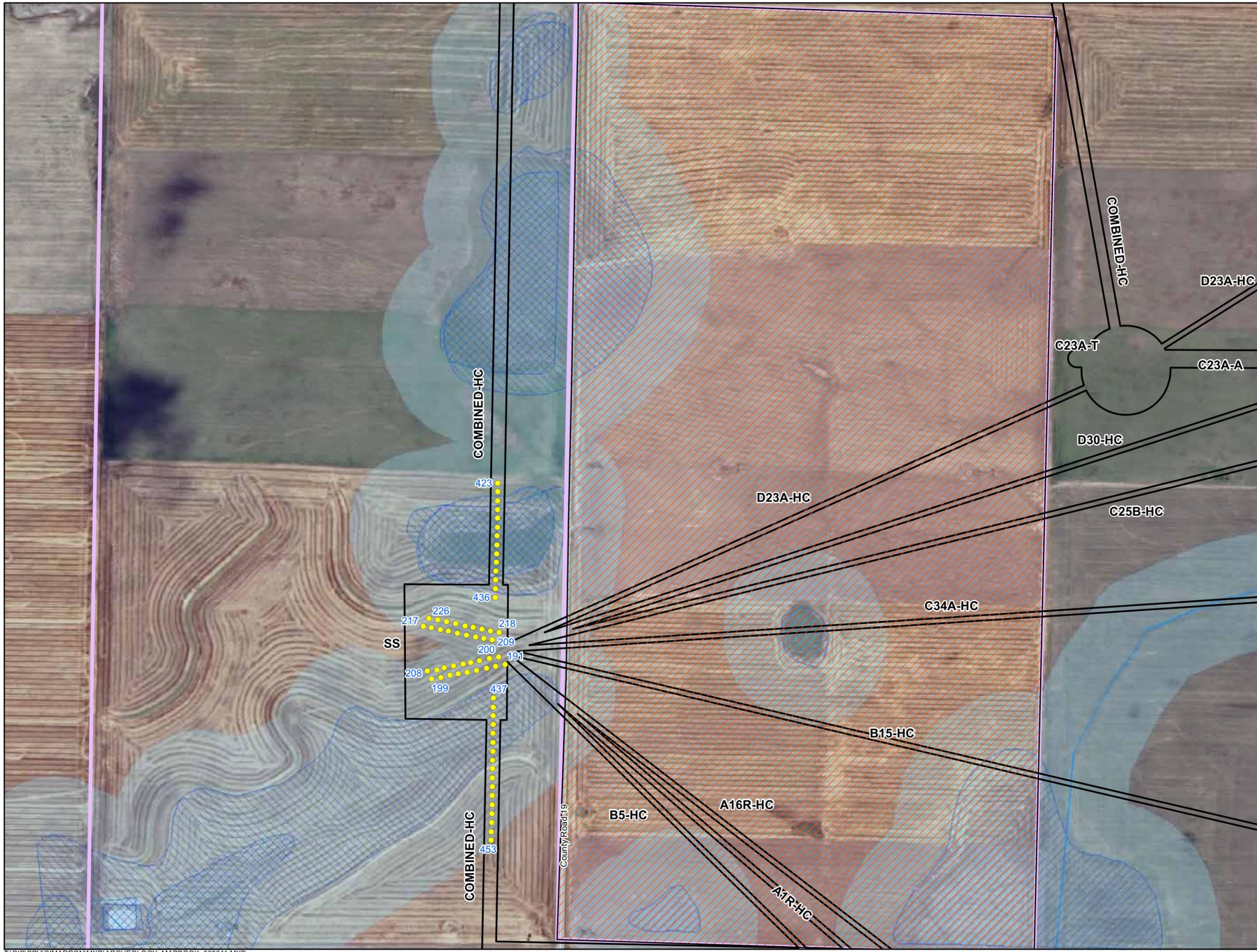
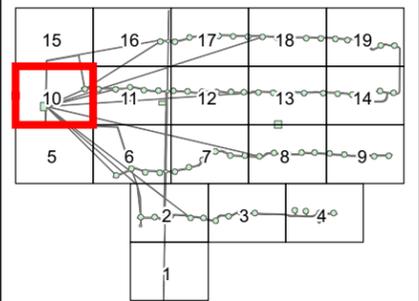
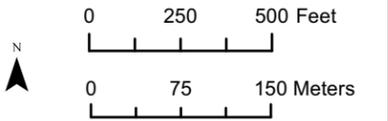
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Source: v3 Layout

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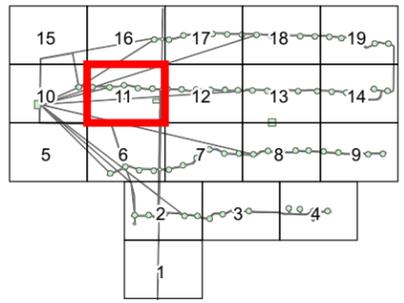
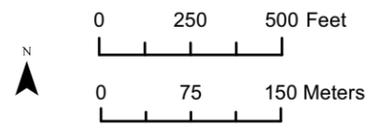


Legend

- C23A-T Project Layout Segment**
- Site Location
- APE Pedestrian Survey
- Non-Leased Area *
- Project Area
- Roads
- Streams
- NWI
- Waterbody/Playa
- 100m Buffer of Hydrography
- Shovel Test (#)**
- Prehistoric
- Historic
- No Artifact

Source: v3 Layout

Note:
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Legend

C23A-T Project Layout Segment

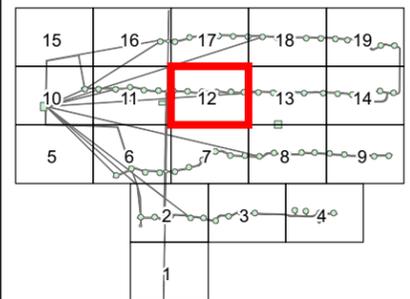
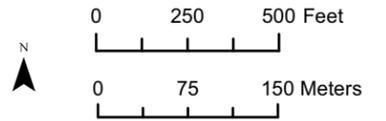
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- Waterbody/Playa
- 100m Buffer of Hydrography

Shovel Test (#)

- Prehistoric
- Historic
- No Artifact

Source: v3 Layout

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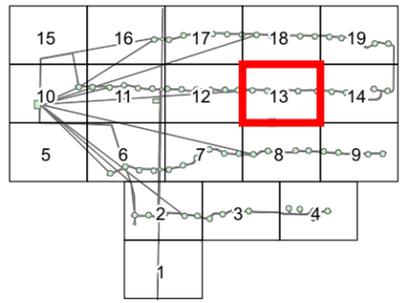
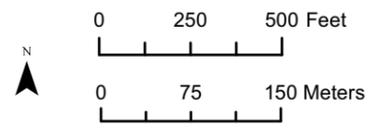


Legend

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- Historic
- No Artifact

Source: v3 Layout

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OM



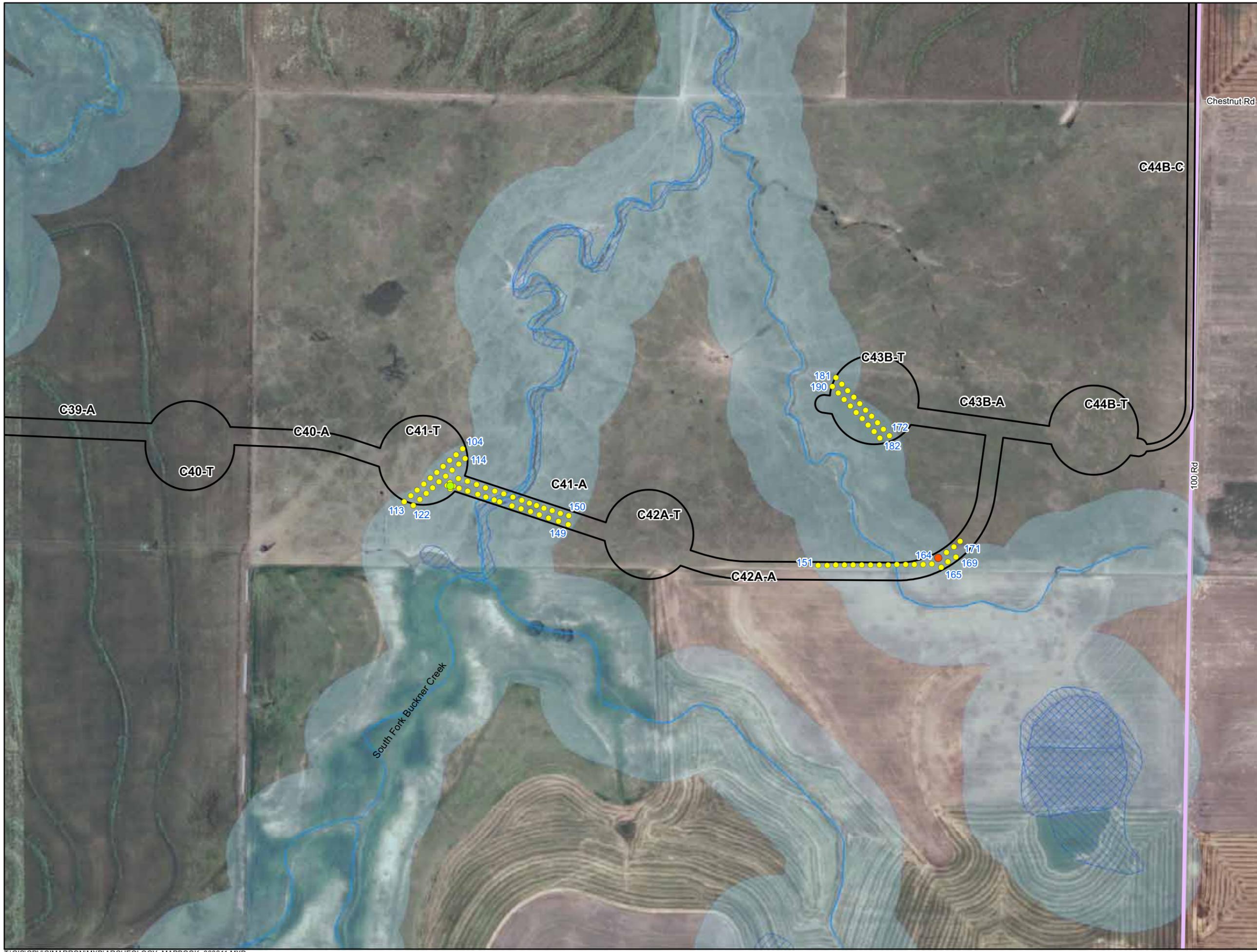
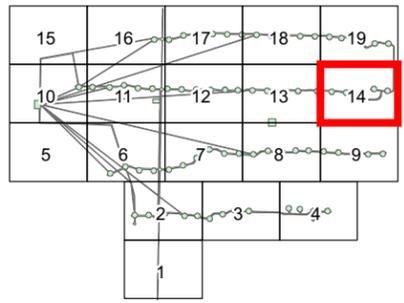
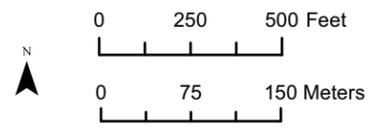


Legend

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Legend

C23A-T Project Layout Segment

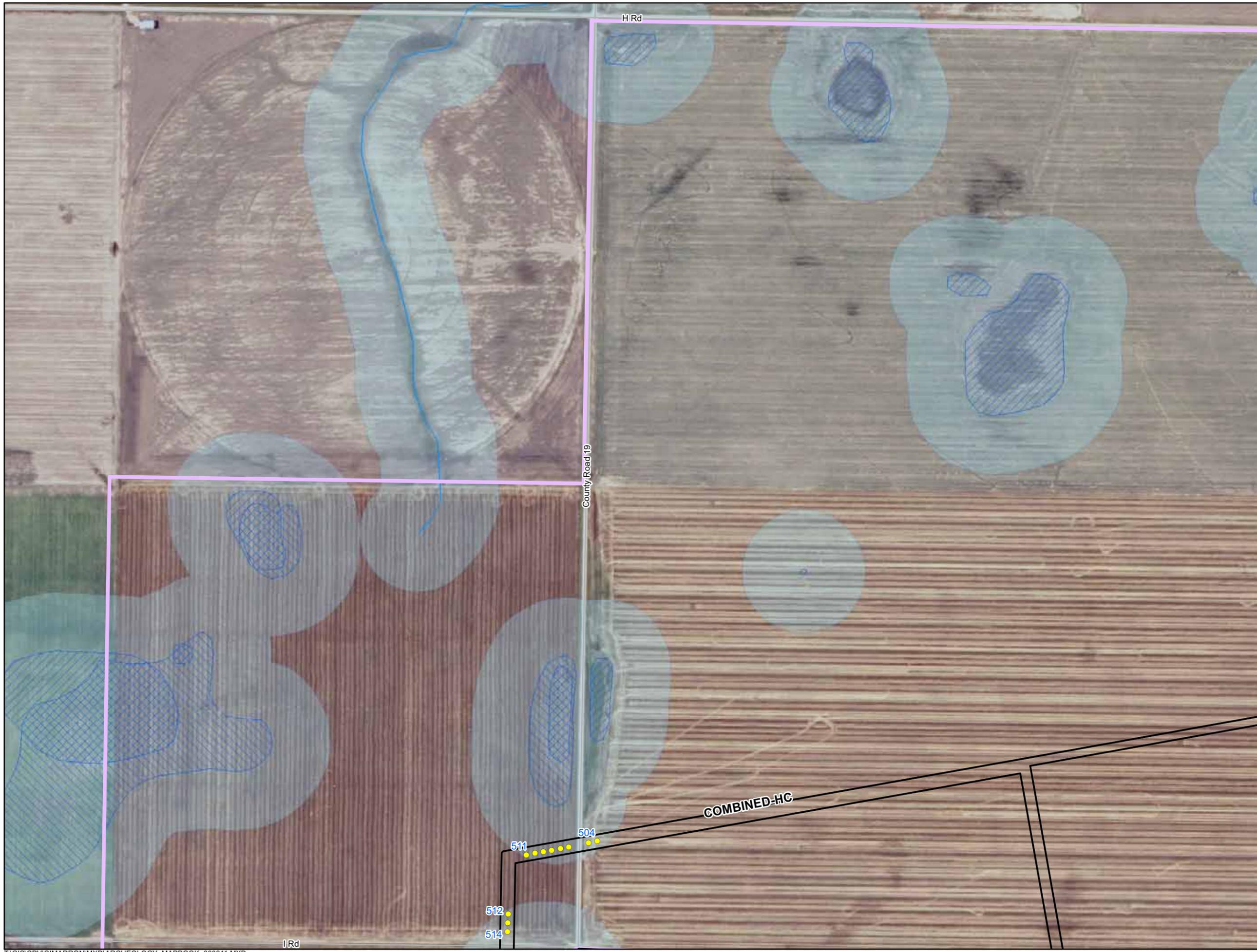
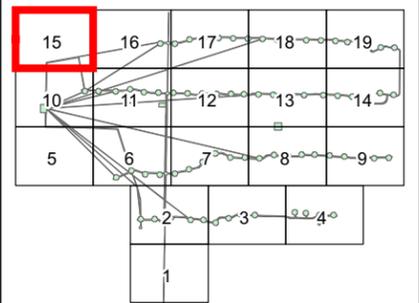
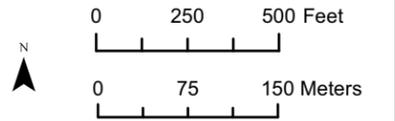
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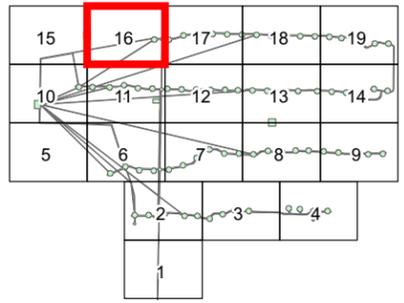
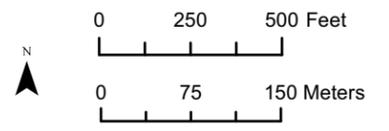


Legend

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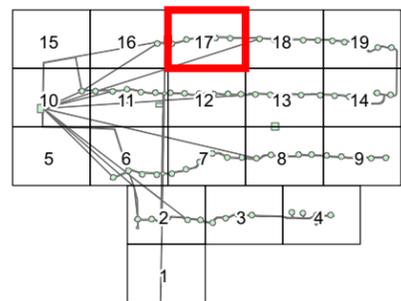
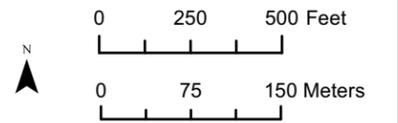


Legend

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- Project Area
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Legend

c23A-T Project Layout Segment

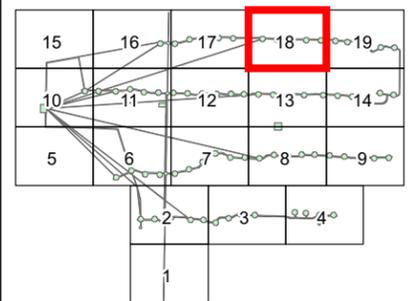
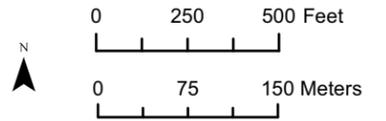
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C23A-T Project Layout Segment

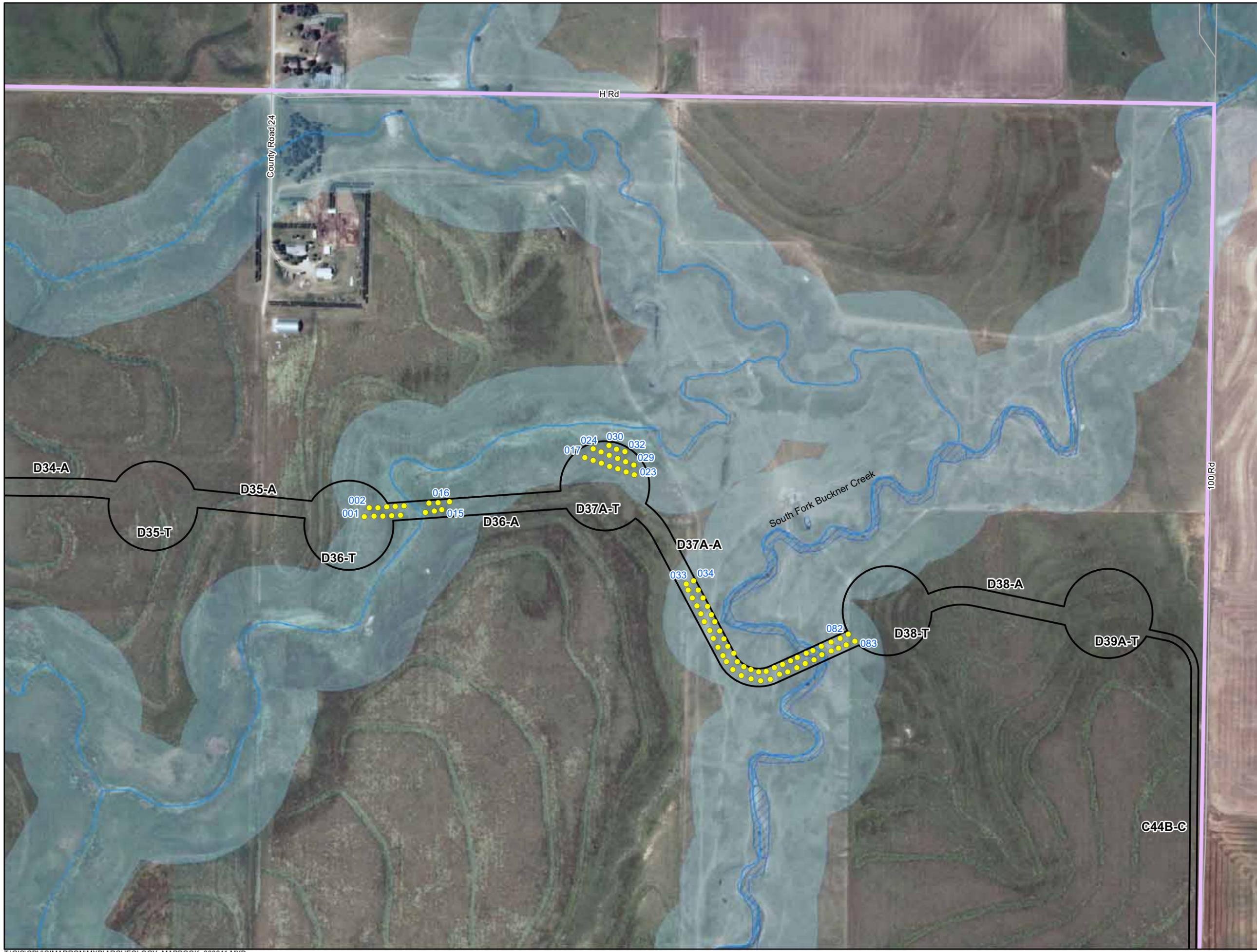
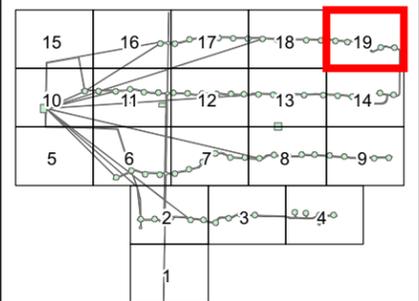
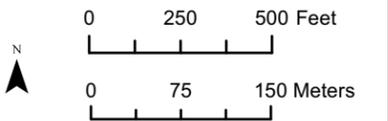
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Shovel Test (#)

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Source: v3 Layout

Note:
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APPENDIX B

SHOVEL TEST SOIL DESCRIPTIONS

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
A7A	A	380	A	0-35	10YR4/3	silty clay loam	compact	none
A7A	A	381	A	0-40	10YR4/3	silty clay loam	compact	none
A7A	A	382	A	0-25	10YR4/3	silty clay loam	compact	none
A7A	A	382	B	25-38	10YR3/3	clay loam	compact	none
A7A	A	383	A	0-22	10YR4/3	silty clay loam		none
A7A	A	383	B	22-38	10YR3/3	clay loam	compact	none
A7A	A	384	A	0-25	10YR4/3	silty clay loam		none
A7A	A	384	B	25-40	10YR3/3	clay loam	compact	none
A7A	A	385	A	0-30	10YR4/3	silty clay loam		none
A7A	A	385	B	30-44	10YR6/4	clay loam	rare gravel; compact	none
A8A	A	386	A	0-27	10YR4/3	silty clay loam		none
A8A	A	386	B	27-37	10YR6/4	clay loam	rare gravel; compact	none
A8A	A	387	A	0-27	10YR4/3	silty clay loam		none
A8A	A	387	B	27-40	10YR6/4	clay loam	rare gravel; compact	none
A8A	A	388	A	0-35	10YR4/3	silty clay loam		none
A8A	A	388	B	35-43	10YR5/4	clay loam	compact	none
A8A	A	389	A	0-30	10YR4/3	silt loam		none
A8A	A	389	B	30-40	10YR5/4	silt loam		none
A8A	A	390	A	0-32	10YR4/3	silt loam		none
A8A	A	390	B	32-46	10YR5/3	silt loam	caliche	none
A8A	A	391	A	0-27	10YR3/3	silt loam		none
A8A	A	391	B	27-41	10YR5/3	silt loam		none
A8A	A	392	A	0-35	10YR3/3	silt loam		none
A8A	A	392	B	35-52	10YR5/3	silt loam		none
A8A	A	393	A	0-28	10YR3/3	silt loam		none
A8A	A	393	B	28-40	10YR5/3	silt loam		none
A8A	A	394	A	0-38	10YR3/3	silt loam		none
A8A	A	394	B	38-50	10YR4/2	silt loam		none
A8A	A	395	A	0-31	10YR3/3	silt loam		none
A8A	A	395	B	31-41	10YR4/2	silt loam		none
A8A	A	396	A	0-45	10YR3/3	silt loam		none
A8A	A	396	B	45-58	10YR4/2	silt loam		none
A8A	A	397	A	0-18	10YR4/2	silt loam		none
A8A	A	397	B	18-38	10YR3/3	silt loam		none
A8A	A	397	C	38-48	10YR4/4	silt loam		none
A8A	A	398	A	0-40	10YR4/4	silt loam		none
A8A	A	398	B	40-51	10YR4/2	silt loam		none
A8A	A	399	A	0-34	10YR4/3	silty clay loam		none
A8A	A	399	B	34-44	10YR5/4	silt loam	compact	none
A8A	A	400	A	0-28	10YR4/3	silty clay loam		none
A8A	A	400	B	28-40	10YR6/3	clay loam	compact	none
A8A	A	401	A	0-30	10YR4/3	silt loam		none
A8A	A	401	B	30-41	10YR6/3	clay loam	compact	none
A8A	A	402	A	0-30	10YR4/3	silt loam		none
A8A	A	402	B	30-40	10YR6/3	clay loam	compact	none
A8A	A	403	A	0-30	10YR4/3	silt loam		none
A8A	A	403	B	30-42	10YR6/3	clay loam	compact	none
A8A	T	404	A	0-30	10YR4/3	silty clay loam		none
A8A	T	404	B	30-40	10YR6/3	clay loam	compact	none
A8A	T	405	A	0-40	10YR4/3	silty clay loam		none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
A8A	T	405	B	40-50	10YR6/3	clay loam	compact	none
A8A	T	406	A	0-30	10YR4/3	silty clay loam		none
A8A	T	406	B	30-40	10YR6/3	clay loam	compact	none
A8A	T	407	A	0-35	10YR4/3	silty clay loam		none
A8A	T	407	B	35-45	10YR6/3	clay loam	compact	none
A8A	T	408	A	0-30	10YR4/3	silty clay loam		none
A8A	T	408	B	30-40	10YR6/3	clay loam	compact	none
A8A	T	409	A	0-26	10YR4/3	silty clay loam		none
A8A	T	409	B	26-38	10YR6/3	clay loam	rare limestone gravel, compact	none
A8A	T	410	A	0-29	10YR4/3	silt loam		none
A8A	T	410	B	29-40	10YR5/4	silt loam		none
A8A	T	411	A	0-28	10YR4/3	silt loam		none
A8A	T	411	B	28-38	10YR5/4	silt loam		none
A8A	T	412	A	0-41	10YR4/3	silt loam		none
A8A	T	412	B	41-52	10YR5/4	silt loam		none
A8A	T	413	A	0-28	10YR4/3	silt loam		none
A8A	T	413	B	28-40	10YR5/4	silt loam		none
A8A	T	414	A	0-31	10YR4/3	silt loam		none
A8A	T	414	B	31-42	10YR5/4	silt loam		none
A8A	T	415	A	0-30	10YR4/3	silt loam	caliche	none
A8A	T	415	B	30-40	10YR5/4	silt loam	caliche	none
A8A	T	416	A	0-27	10YR4/2	silt loam		none
A8A	T	416	B	27-39	10YR5/3	silt loam		none
A8A	T	417	A	0-25	10YR4/2	silt loam		none
A8A	T	417	B	25-40	10YR5/3	silt loam		none
A8A	T	418	A	0-32	10YR4/2	silt loam		none
A8A	T	418	B	32-43	10YR5/3	silt loam		none
A8A	T	419	A	0-27	10YR4/2	silt loam		none
A8A	T	419	B	27-39	10YR5/3	silt loam		none
A8A	T	420	A	0-24	10YR4/2	silt loam		none
A8A	T	420	B	24-40	10YR5/3	silt loam		none
A8A	T	421	A	0-48	10YR4/2	silt loam		none
A8A	T	421	B	48-60	10YR5/3	silt loam		none
A8A	T	422	A	0-28	10YR4/2	silt loam		none
A8A	T	422	B	28-39	10YR5/3	silt loam		none
B5	A	293	A	0-24	10YR4/3	silt loam		none
B5	A	293	B	24-30	10YR3/2	clay loam	compact	none
B5	A	294	A	0-23	10YR4/3	silt loam		none
B5	A	294	B	23-36	10YR3/2	clay loam	compact	none
B5	A	295	A	0-19	10YR4/3	silt loam		none
B5	A	295	B	19-31	10YR3/2	clay loam	rodent burrow	none
B5	A	296	A	0-21	10YR4/3	silt loam		none
B5	A	296	B	21-32	10YR3/2	clay loam	compact	none
B5	A	297	A	0-22	10YR4/3	silt loam		none
B5	A	297	B	22-30	10YR5/3	clay loam	compact	none
B5	A	298	A	0-21	10YR4/3	silt loam		none
B5	A	298	B	21-32	10YR5/3	clay loam	compact	none
B5	A	299	A	0-20	10YR4/3	silt loam		none
B5	A	299	B	20-34	10YR3/2	clay loam	compact	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
B5	A	300	A	0-21	10YR4/3	silt loam		none
B5	A	300	B	21-31	10YR3/2	clay loam	compact	none
B5	A	301	A	0-24	10YR4/3	silt loam		none
B5	A	301	B	24-34	10YR3/2	clay loam	compact	none
B5	A	302	A	0-20	10YR4/3	silt loam		none
B5	A	302	B	20-31	10YR3/2	clay loam	compact	none
B5	A	303	A	0-25	10YR4/3	silt loam		none
B5	A	303	B	25-33	10YR3/2	clay loam		none
B5	A	304	A	0-23	10YR3/2	silt loam		none
B5	A	304	B	23-35	10YR4/3	clay loam	compact	none
B5	A	305	A	0-23	10YR3/2	silt loam		none
B5	A	305	B	23-34	10YR4/3	clay loam		none
B5	A	306	A	0-22	10YR3/2	silt loam		none
B5	A	306	B	22-35	10YR4/3	clay loam	compact	none
B5	A	307	A	0-25	10YR3/2	silt loam		none
B5	A	307	B	25-45	10YR4/3	clay loam		none
B5	A	308	A	0-24	10YR3/2	silt loam		none
B5	A	308	B	24-36	10YR4/3	clay loam		none
B5	A	309	A	0-34	10YR3/2	silt loam		none
B5	A	309	B	34-40	10YR5/4	silt loam		none
B5	A	310	A	0-23	10YR3/2	silt loam		none
B5	A	310	B	23-37	10YR4/2	silt loam		none
B5	A	310	C	37-46	10YR5/3	silt loam		none
B5	A	311	A	0-12	10YR3/3	silt loam		none
B5	A	311	B	12-27	10YR4/2	clay loam		none
B5	A	312	A	0-24	10YR4/2	silt loam		none
B5	A	312	B	24-41	10YR3/2	clay loam	very compact	none
B5	A	313	A	0-23	10YR4/2	silt loam		none
B5	A	313	B	23-34	10YR3/2	clay loam	very compact	none
B5	A	314	A	0-26	10YR4/2	silt loam		none
B5	A	314	B	26-42	10YR3/2	clay loam	very compact	none
B5	A	315	A	0-23	10YR4/2	silt loam		none
B5	A	315	B	23-40	10YR3/2	clay loam	very compact	none
B5	A	316	A	0-22	10YR4/2	silt loam		none
B5	A	316	B	22-34	10YR3/2	clay loam	very compact	none
B5	A	317	A	0-24	10YR4/2	silt loam		none
B5	A	317	B	24-36	10YR3/2	clay loam	very compact	none
B5	A	318	A	0-20	10YR4/2	silt loam		none
B5	A	318	B	20-30	10YR3/2	clay loam	very compact	none
B5	A	319	A	0-24	10YR4/2	silt loam		none
B5	A	319	B	24-38	10YR3/2	clay loam	very compact	none
B5	A	320	A	0-23	10YR4/2	silt loam		none
B5	A	320	B	23-36	10YR3/2	clay loam	compact	none
B5	A	321	A	0-20	10YR4/2	silt loam		none
B5	A	321	B	20-30	10YR3/2	clay loam	compact	none
B5	A	322	A	0-23	10YR4/2	silt loam		none
B5	A	322	B	23-42	10YR3/2	clay loam		none
B5	A	323	A	0-22	10YR4/2	silt loam		none
B5	A	323	B	22-35	10YR3/2	clay loam	very compact	none
B5	A	324	A	0-21	10YR4/2	silt loam		none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
B5	A	324	B	21-35	10YR3/2	clay loam	very compact	none
B5	A	325	A	0-23	10YR4/2	silty clay loam		none
B5	A	325	B	23-40	10YR3/2	clay loam	very compact	none
B5	A	326	A	0-20	10YR4/2	silty clay loam		none
B5	A	326	B	20-35	10YR3/2	clay loam	very compact	none
B5	A	327	A	0-23	10YR4/2	silty clay loam		none
B5	A	327	B	23-37	10YR3/2	clay loam	very compact	none
B5	A	328	A	0-20	10YR4/2	silty clay loam		none
B5	A	328	B	20-35	10YR3/2	clay loam	very compact	none
B5	A	329	A	0-27	10YR4/2	silty clay loam		none
B5	A	329	B	27-40	10YR3/2	clay loam	very compact	none
B5	A	330	A	0-26	10YR4/2	silty clay loam		none
B5	A	330	B	26-40	10YR3/2	clay loam	very compact	none
B5	A	331	A	0-30	10YR4/2	silty clay loam		none
B5	A	331	B	30-42	10YR3/2	clay loam	very compact	none
B5	T	278	A	0-20	10YR4/3	silt loam		none
B5	T	278	B	20-30	10YR3/2	clay loam	compact	none
B5	T	279	A	0-25	10YR4/3	silt loam		none
B5	T	279	B	25-40	10YR3/2	clay loam	compact	none
B5	T	280	A	0-20	10YR3/3	silt loam		none
B5	T	280	B	20-30	10YR3/2	clay loam	compact	none
B5	T	281	A	0-32	10YR4/3	silt loam		none
B5	T	282	A	0-20	10YR4/3	silt loam		none
B5	T	282	B	20-30	10YR3/2	clay loam	compact	none
B5	T	283	A	0-23	10YR4/3	clay loam		none
B5	T	283	B	23-34	10YR3/2	clay loam	compact	none
B5	T	284	A	0-22	10YR4/3	silty clay loam		none
B5	T	284	B	22-36	10YR3/2	clay loam	compact	none
B5	T	285	A	0-22	10YR4/3	silty clay loam		none
B5	T	285	B	22-33	10YR3/2	clay loam	compact	none
B5	T	286	A	0-20	10YR4/2	silt loam		none
B5	T	286	B	20-30	10YR3/2	clay loam	very compact	none
B5	T	287	A	0-25	10YR4/2	silt loam		none
B5	T	287	B	25-36	10YR3/2	clay loam	very compact	none
B5	T	288	A	0-13	10YR4/2	silt loam		none
B5	T	288	B	13-30	10YR3/2	clay loam	very compact	none
B5	T	289	A	0-27	10YR4/2	silt loam		none
B5	T	289	B	27-47	10YR3/2	clay loam	very compact	none
B5	T	290	A	0-23	10YR4/2	silt loam		none
B5	T	290	B	23-26	10YR3/2	clay loam	very compact	none
B5	T	291	A	0-18	10YR4/2	silty clay loam		none
B5	T	291	B	18-30	10YR3/2	clay loam	very compact	none
B5	T	292	-	-	-	-	not excavated	none
B6	T	332	A	0-12	10YR4/3	silty clay loam		none
B6	T	332	B	12-30	10YR3/2	clay loam	very compact	none
B6	T	333	A	0-21	10YR4/3	silty clay loam		none
B6	T	333	B	21-34	10YR3/2	clay loam	very compact	none
B6	T	334	A	0-20	10YR4/3	silty clay loam		none
B6	T	334	B	20-36	10YR3/2	clay loam	very compact	none
B6	T	335	A	0-23	10YR4/3	silty clay loam		none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
B6	T	335	B	23-36	10YR3/2	clay loam	very compact	none
B6	T	336	A	0-22	10YR4/3	silty clay loam		none
B6	T	336	B	22-35	10YR3/2	clay loam	very compact	none
B6	T	337	A	0-21	10YR4/3	silty clay loam		none
B6	T	337	B	21-35	10YR3/2	clay loam	very compact	none
B6	T	338	A	0-20	10YR4/3	silty clay loam		none
B6	T	338	B	20-35	10YR3/2	clay loam	very compact	none
B6	T	339	A	0-23	10YR4/2	silty clay loam		none
B6	T	339	B	23-35	10YR3/1	clay loam	very compact	none
B6	T	340	A	0-24	10YR4/2	silt loam		none
B6	T	340	B	24-36	10YR3/3	clay loam	compact	none
B6	T	341	A	0-33	10YR4/2	silt loam		none
B6	T	341	B	33-38	10YR3/3	clay loam	compact	none
B6	T	342	A	0-23	10YR4/2	silt loam		none
B6	T	342	B	23-35	10YR3/3	clay loam	compact	none
B6	T	343	A	0-23	10YR4/2	silt loam		none
B6	T	343	B	23-36	10YR3/3	clay loam	compact	none
B6	T	344	A	0-22	10YR4/2	silt loam		none
B6	T	344	B	22-39	10YR3/2	clay loam	very compact	none
B6	T	345	A	0-20	10YR4/2	silt loam		none
B6	T	345	B	20-32	10YR3/2	clay loam	compact	none
B6	T	346	A	0-23	10YR4/2	silt loam		none
B6	T	346	B	23-37	10YR3/2	clay loam	compact	none
B9	A	454	A	0-33	10YR3/3	silt loam		none
B9	A	454	B	33-50	2.5Y3/3	silty clay loam	compact	none
B9	A	455	A	0-30	10YR3/3	silt loam		none
B9	A	455	B	30-45	10YR2/3	silty clay loam	compact	none
B9	A	456	A	0-28	10YR3/3	silt loam		none
B9	A	456	B	28-41	10YR2/3	silty clay loam	compact	none
B9	A	457	A	0-30	10YR3/3	silt loam		none
B9	A	457	B	30-40	10YR3/3	silty clay loam	compact	none
B9	A	458	A	0-30	10YR3/3	silt loam		none
B9	A	458	B	30-43	10YR5/3	silty clay loam	compact	none
B9	A	459	A	0-33	10YR3/3	silt loam		none
B9	A	459	B	33-44	10YR5/3	silty clay loam	compact	none
B9	A	460	A	0-26	10YR3/3	silt loam		none
B9	A	460	B	26-37	10YR5/3	silty clay loam	compact	none
B9	A	461	A	0-35	10YR3/3	silt loam		none
B9	A	461	B	35-42	10YR3/3	silty clay loam	compact	none
B9	A	462	A	0-26	10YR3/3	silt loam		none
B9	A	462	B	26-38	10YR3/2	silty clay loam	compact	none
B9	A	463	A	0-36	10YR3/3	silt loam		none
B9	A	463	B	36-44	10YR3/2	silty clay loam	compact	none
B9	A	464	A	0-28	10YR4/2	silt loam		none
B9	A	464	B	28-40	10YR3/2	silt loam	compact	none
B9	A	465	A	0-18	10YR4/2	silt loam	compact	none
B9	A	465	B	18-31	10YR3/2	silt loam	compact	none
B9	A	466	A	0-30	10YR4/2	silt loam	compact	none
B9	A	466	B	30-43	10YR3/2	silt loam	compact	none
B9	A	467	A	0-26	10YR4/2	silt loam		none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
B9	A	467	B	26-37	10YR3/2	silt loam	compact	none
B9	A	468	A	0-40	10YR3/2	silt loam	compact	none
B9	A	469	A	0-31	10YR4/2	silt loam	compact	none
B9	A	469	B	31-43	10YR3/2	silt loam	compact	none
B9	A	470	A	0-32	10YR4/2	silt loam	compact	none
B9	A	470	B	32-41	10YR3/2	silt loam	compact	none
B9	A	471	A	0-28	10YR4/2	silt loam	compact	none
B9	A	471	B	28-40	10YR3/2	silt loam	compact	none
B9	A	472	A	0-35	10YR4/2	silt loam	compact	none
B9	A	472	B	35-40	10YR3/2	silt loam	compact	none
B9	A	473	A	0-32	10YR4/2	silt loam	compact	none
B10A	T	474	A	0-40	10YR3/3	silt loam		none
B10A	T	474	B	40-45	10YR3/3	silty clay loam	compact	none
B10A	T	475	A	0-37	10YR3/2	clay loam	compact depression	none
B10A	T	476	A	0-33	10YR3/3	silt loam		none
B10A	T	476	B	33-43	10YR3/3	silty clay loam	compact	none
B10A	T	477	A	0-31	10YR3/3	silty clay loam	compact	none
B10A	T	477	B	31-42	10YR3/3	clay loam	compact	none
B10A	T	478	A	0-25	10YR3/3	silty clay loam		none
B10A	T	478	B	25-36	10YR3/3	silty clay loam	compact	none
B10A	T	479	A	0-34	10YR3/3	silty clay loam	compact	none
B10A	T	479	B	34-44	10YR3/2	clay loam	compact	none
B10A	T	480	A	0-30	10YR3/3	silty clay loam		none
B10A	T	480	B	30-40	10YR3/2	clay loam	compact	none
B10A	T	481	A	0-27	10YR3/3	silty clay loam	compact	none
B10A	T	481	B	27-41	10YR3/2	clay loam	compact	none
B10A	T	482	A	0-25	10YR4/2	silt loam	compact	none
B10A	T	482	B	25-38	10YR3/2	silt loam	compact	none
B10A	T	483	A	0-24	10YR4/2	silt loam	compact	none
B10A	T	483	B	24-37	10YR3/2	silt loam	compact	none
B10A	T	484	A	0-23	10YR4/2	silt loam	compact	none
B10A	T	484	B	23-36	10YR3/2	silt loam	compact	none
B10A	T	485	A	0-31	10YR4/2	silt loam	compact	none
B10A	T	485	B	31-43	10YR3/2	silt loam	compact	none
B10A	T	486	A	0-23	10YR4/2	silt loam	compact	none
B10A	T	486	B	23-37	10YR3/2	silt loam	compact	none
B10A	T	487	A	0-33	10YR4/2	silt loam		none
B10A	T	487	B	33-60	10YR3/2	silt loam	compact	none
B19A	A	361	A	0-27	10YR3/3	silt loam		none
B19A	A	361	B	27-40	10YR5/4	silt loam		none
B19A	A	362	A	0-27	10YR3/3	silt loam		none
B19A	A	362	B	27-40	10YR5/4	silt loam		none
B19A	A	363	A	0-28	10YR4/3	silt loam		none
B19A	A	363	B	28-39	7.5YR4/4	silt loam		none
B19A	A	364	A	0-27	10YR3/3	silt loam		none
B19A	A	364	B	27-37	10YR5/4	silt loam	compact	none
B19A	A	365	A	0-32	10YR3/3	silt loam		none
B19A	A	365	B	32-44	10YR5/4	silt loam		none
B19A	A	366	A	0-38	10YR3/3	silt loam		none
B19A	A	366	B	38-60	10YR4/2	silt loam	rare gravel	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
B19A	A	367	A	0-42	10YR3/3	silt loam		none
B19A	A	367	B	42-55	10YR4/2	silt loam		none
B19A	A	368	A	0-33	10YR3/3	silt loam		none
B19A	A	368	B	33-45	10YR5/3	silt loam		none
B19A	A	369	A	0-37	10YR3/3	silt loam		none
B19A	A	369	B	37-48	10YR5/3	silt loam	caliche; compact	none
B19A	A	370	A	0-28	10YR4/4	silt loam		none
B19A	A	370	B	28-40	10YR5/4	silty clay loam		none
B19A	A	371	A	0-15	10YR4/4	silt loam	eroded	none
B19A	A	371	B	15-34	10YR6/3	silty clay loam		none
B19A	A	372	A	0-16	10YR4/4	silt loam	eroded	none
B19A	A	372	B	16-28	10YR6/3	silty clay loam		none
B19A	A	373	A	0-21	10YR4/4	silt loam	eroded	none
B19A	A	373	B	21-36	10YR6/3	silty clay loam		none
B19A	A	374	A	0-30	10YR3/3	silt loam		none
B19A	A	374	B	30-40	10YR5/4	silty clay loam		none
B19A	A	375	A	0-30	10YR3/3	silt loam		none
B19A	A	375	B	30-40	10YR5/3	silty clay loam		none
B19A	A	376	A	0-30	10YR3/3	silt loam		none
B19A	A	376	B	30-40	10YR5/3	silty clay loam		none
B19A	A	377	A	0-32	10YR3/3	silt loam		none
B19A	A	377	B	32-44	10YR5/4	silty clay loam		none
B19A	A	378	A	0-36	10YR3/3	silt loam		none
B19A	A	378	B	36-47	10YR5/4	silty clay loam		none
B19A	A	379	A	0-40	10YR3/3	silt loam		none
B19A	A	379	B	40-50	10YR5/3	silty clay loam		none
B19A	T	347	A	0-26	10YR3/3	silt loam		none
B19A	T	347	B	26-42	10YR5/4	silty clay loam		none
B19A	T	348	A	0-40	10YR3/3	silt loam		none
B19A	T	348	B	40-50	10YR5/4	silty clay loam		none
B19A	T	349	A	0-28	10YR3/3	silt loam		none
B19A	T	349	B	28-41	10YR5/4	silty clay loam		none
B19A	T	350	A	0-27	10YR3/3	silt loam		none
B19A	T	350	B	27-38	10YR5/4	silty clay loam		none
B19A	T	351	A	0-30	10YR3/3	silt loam		none
B19A	T	351	B	30-40	10YR5/4	silty clay loam	compact	none
B19A	T	352	A	0-32	10YR3/3	silt loam		none
B19A	T	352	B	32-42	10YR5/4	silt loam		none
B19A	T	353	A	0-23	10YR3/3	silt loam		none
B19A	T	353	B	23-33	10YR4/4	silty clay loam		none
B19A	T	353	C	33-43	10YR5/4	silty clay loam	rare gravel	none
B19A	T	354	A	0-30	10YR3/3	silt loam		none
B19A	T	354	B	30-43	10YR5/4	silty clay loam	rare gravel	none
B19A	T	355	A	0-23	10YR4/4	silt loam		none
B19A	T	355	B	23-34	10YR4/6	silt loam		none
B19A	T	356	A	0-26	10YR3/3	silt loam		none
B19A	T	356	B	26-37	10YR4/4	silt loam		none
B19A	T	357	A	0-27	10YR3/3	silt loam		none
B19A	T	357	B	27-42	10YR5/4	silt loam		none
B19A	T	358	A	0-31	10YR3/3	silt loam		none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
B19A	T	358	B	31-44	10YR5/4	silt loam		none
B19A	T	359	A	0-29	10YR3/3	silt loam		none
B19A	T	359	B	29-39	10YR5/4	silt loam		none
B19A	T	360	A	0-30	10YR3/3	silt loam		none
B19A	T	360	B	30-41	10YR5/4	silt loam		none
C24	A	265	A	0-37	10YR3/3	silty clay	compact	none
C24	A	276	A	0-44	10YR3/3	clay loam	blocky clay	none
C24	A	277	A	0-36	10YR3/3	clay loam	blocky clay	none
C25B	T	255	A	0-31	10YR3/1	clay loam		none
C25B	T	255	B	31-41	10YR4/3	clay loam		none
C25B	T	256	A	0-30	10YR3/1	clay loam		none
C25B	T	256	B	30-42	10YR4/3	clay loam		none
C25B	T	257	A	0-31	10YR3/1	clay loam		none
C25B	T	257	B	31-41	10YR4/3	clay loam		none
C25B	T	258	A	0-38	10YR3/3	silty clay	compact	none
C25B	T	259	A	0-39	10YR3/3	silty clay	compact	none
C25B	T	260	A	0-30	10YR3/3	silty clay	compact	none
C25B	T	260	B	30-41	10YR4/4	silty clay	compact	none
C25B	T	261	A	0-41	10YR3/3	silty clay	compact	none
C25B	T	262	A	0-40	10YR3/3	silty clay	compact	none
C25B	T	263	A	0-38	10YR3/3	silty clay	compact	none
C25B	T	264	A	0-39	10YR3/3	silty clay	compact	none
C25B	T	267	A	0-30	10YR3/3	silty clay loam		none
C25B	T	267	B	30-38	10YR5/3	silty clay	compact	none
C25B	T	268	A	0-22	10YR3/3	silty clay loam		none
C25B	T	268	B	22-32	10YR5/3	silty clay	compact	none
C25B	T	269	A	0-27	19YR4/3	silt loam		none
C25B	T	269	B	27-35	10YR5/3	silty clay	compact	none
C25B	T	270	A	0-37	10YR3/3	clay loam	blocky clay	none
C25B	T	271	A	0-36	10YR3/3	clay loam	blocky clay	none
C25B	T	272	A	0-33	10YR3/3	clay loam	blocky clay	none
C25B	T	272	B	33-42	10YR4/3	clay loam	blocky clay	none
C25B	T	273	A	0-35	10YR3/3	clay loam	blocky clay	none
C25B	T	274	A	0-40	10YR3/3	clay loam	blocky clay	none
C25B	T	275	A	0-35	10YR3/3	clay loam	blocky clay	none
C25B	A	254	A	0-32	10YR3/1	clay loam		none
C25B	A	254	B	32-43	10YR4/3	clay loam		none
C25B	A	266	A	0-23	10YR4/3	silty clay loam		none
C25B	A	266	B	23-37	10YR4/3	silty clay loam	compact	none
C25B	A	253	A	0-24	10YR3/3	silt loam		none
C25B	A	253	B	24-32	10YR5/4	silty clay loam	compact	none
C26A	T	230	A	0-40	10YR3/1	clay loam	very compact	none
C26A	T	231	A	0-31	10YR3/2	silt loam	very compact	none
C26A	T	232	A	0-35	10YR3/2	silt loam	very compact	none
C26A	T	233	A	0-23	10YR3/2	silt loam		none
C26A	T	233	B	23-40	10YR4/4	clay loam		none
C26A	T	234	A	0-28	10YR3/2	silt loam		none
C26A	T	234	B	28-40	10YR4/4	clay loam	compact	none
C26A	T	235	A	0-30	10YR3/2	silt loam	very compact	none
C26A	T	236	A	0-33	10YR3/2	silt loam	very compact	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
C26A	T	237	A	0-33	10YR3/1	silt loam	very compact	none
C26A	T	238	A	0-34	10YR3/2	silt loam		none
C26A	T	238	B	34-44	10YR4/4	silt loam		none
C26A	T	239	A	0-27	10YR3/2	silt loam		none
C26A	T	239	B	27-37	10YR4/4	clay loam		none
C26A	T	244	A	0-30	10YR3/3	silty clay loam		none
C26A	T	244	B	30-40	10YR3/3	silty clay	compact	none
C26A	T	245	A	0-40	10YR3/3	silty clay loam	compact	none
C26A	T	246	A	0-36	10YR3/3	silty clay loam	compact	none
C26A	T	247	A	0-36	10YR3/2	clay loam	compact	none
C26A	T	248	A	0-32	10YR3/3	clay loam	compact	none
C26A	T	249	A	0-45	10YR3/3	clay loam		none
C26A	T	250	A	0-42	10YR3/3	silty clay loam		none
C26A	T	251	A	0-38	10YR3/3	silt loam		none
C26A	T	251	B	38-43	10YR4/3	silty clay loam		none
C26A	T	252	A	0-23	10YR3/3	silt loam		none
C26A	T	252	B	23-35	10YR5/4	silty clay loam	compact	none
C26A	A	227	A	0-41	10YR3/1	clay loam		none
C26A	A	228	A	0-44	10YR3/1	clay loam	compact	none
C26A	A	229	A	0-44	10YR3/1	clay loam		none
C26A	A	240	A	0-44	10YR3/3	silty clay loam		none
C26A	A	241	A	0-36	10YR3/3	silty clay loam	compact	none
C26A	A	242	A	0-27	10YR3/3	silty clay loam		none
C26A	A	242	B	27-29	10YR3/3	silty clay loam	compact	none
C26A	A	243	A	0-20	10YR3/3	silty clay loam		none
C26A	A	243	B	20-36	10YR3/2	silty clay	compact	none
C38	A	84	A	0-24	10YR4/3	silt loam		none
C38	A	84	B	24-32	10YR6/3	silt loam	rare gravel	none
C38	A	85	A	0-17	10YR4/3	silt loam		none
C38	A	85	B	17-29	10YR5/4	loam	caliche	none
C38	A	86	A	0-20	10YR4/4	silt loam		none
C38	A	86	B	20-33	10YR6/3	sandy loam	rare gravel; compact	none
C38	A	87	A	0-20	10YR4/3	silt loam		none
C38	A	87	B	20-32	10YR5/4	loam	caliche	none
C38	A	88	A	0-35	10YR4/4	silt loam		none
C38	A	88	B	35-40	10YR5/4	silt loam	rare gravel; compact	none
C38	A	89	A	0-36	10YR4/3	silt loam	compact	none
C38	A	90	A	0-32	10YR4/4	silt loam		none
C38	A	90	B	32-40	10YR5/4	silt loam	compact	none
C38	A	91	A	0-22	10YR4/3	silt loam	compact	none
C38	A	91	B	22-44	10YR4/3	silt loam	10YR3/2 mottled; compact	none
C38	A	92	A	0-40	10YR4/4	silt loam	compact	none
C38	A	93	A	0-40	10YR4/3	silt loam	compact	none
C38	A	94	A	0-34	10YR4/4	silt loam	compact	none
C38	A	94	B	34-46	10YR4/4	sandy loam	compact	none
C38	A	95	A	0-38	10YR4/4	silt loam	compact	none
C38	A	96	A	0-44	10YR4/4	silt loam	compact	none
C38	A	97	A	0-34	10YR4/4	silt loam	compact	none
C38	A	98	A	0-40	10YR4/4	silt loam		none
C38	A	98	B	40-52	10YR5/4	silt loam	compact	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
C38	A	99	A	0-37	10YR4/4	silt loam	compact	none
C38	A	100	A	0-15	10YR4/4	silt loam		none
C38	A	100	B	15-35	10YR6/4	silty clay loam	caliche	none
C38	A	101	A	0-20	10YR4/4	silt loam		none
C38	A	101	B	20-30	10YR6/4	silty clay loam	compact	none
C38	A	102	A	0-14	10YR4/4	silt loam		none
C38	A	102	B	14-30	10YR6/4	silty clay	compact	none
C38	A	103	A	0-20	10YR4/4, 10YR6/2	silt loam	disturbed, near berm	none
C38	A	103	B	20-30	10YR6/3	silty clay	compact	none
C41	A	123	A	0-28	10YR4/4	silt loam		1 chalcedony flake
C41	A	123	B	28-42	10YR5/4	silt loam		none
C41	A	123a	A	0-46	10YR4/4	silt loam		none
C41	A	123a	B	46-56	10YR6/3	silt loam	rare gravel	none
C41	A	123b	A	0-40	10YR4/4	silt loam		none
C41	A	123b	B	40-49	10YR6/3	silt loam		none
C41	A	123c	A	0-38	10YR4/4	silt loam		none
C41	A	123c	B	38-50	10YR6/3	silt loam		none
C41	A	123d	A	0-40	10YR4/4	silt loam		none
C41	A	123d	B	40-50	10YR6/3	silt loam	common gravel	none
C41	A	124	A	0-28	10YR4/3	silt loam		none
C41	A	124	B	28-51	10YR5/4	silt		none
C41	A	125	A	0-37	10YR4/4	silt loam		none
C41	A	125	B	37-44	10YR6/3	silt loam		none
C41	A	126	A	0-47	10YR4/3	silt loam	compact	none
C41	A	127	A	0-50	10YR4/3	silt loam	floodplain; compact	none
C41	A	128	A	0-37	10YR4/2	silt loam	compact	none
C41	A	129	A	0-44	10YR4/3	silt loam	floodplain; compact	none
C41	A	130	A	0-36	10YR4/2	silt loam	compact	none
C41	A	131	A	0-43	10YR4/3	silt loam	floodplain; compact	none
C41	A	132	A	0-50	10YR4/2	silt loam	compact	none
C41	A	133	A	0-43	10YR4/3	silt loam	floodplain; compact	none
C41	A	134	A	0-36	10YR4/3	silt loam		none
C41	A	134	B	36-48	10YR5/2	silt		none
C41	A	135	A	0-30	10YR4/4	silt loam	creek bank; compact	none
C41	A	136	A	0-19	10YR5/2	silt	very compact	none
C41	A	136	B	19-33	10YR6/2	silt	very compact	none
C41	A	137	A	0-45	10YR4/3	silt loam	rare gravel	none
C41	A	137	B	45-56	10YR5/3	silt	rare gravel	none
C41	A	138	A	0-33	10YR4/4	silt loam		none
C41	A	138	B	33-44	10YR6/3	silt loam	common gravel	none
C41	A	139	A	0-18	10YR4/3	silt loam	rare gravel; compact	none
C41	A	139	B	18-35	10YR5/3	silt	common gravel; compact	none
C41	A	140	A	0-28	10YR4/4	silt loam		none
C41	A	140	B	28-40	10YR6/3	silt loam	common gravel	none
C41	A	141	A	0-22	10YR4/3	silt loam	rare gravel	none
C41	A	141	B	22-33	7.5YR6/4	silt	rare gravel	none
C41	A	142	A	0-25	10YR4/4	silt loam		none
C41	A	142	B	25-40	10YR6/3	silt loam	common gravel	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
C41	A	143	A	0-33	10YR4/3	silt loam	rare gravel	none
C41	A	143	B	33-48	10YR5/3	silt	rare gravel; compact	none
C41	A	144	A	0-30	10YR4/4	silt loam		none
C41	A	144	B	30-40	10YR6/3	silt loam	rare gravel; compact	none
C41	A	145	A	0-52	10YR4/3	silt loam	very compact	none
C41	A	146	A	0-18	10YR4/4	silt loam		none
C41	A	146	B	18-35	10YR6/3	silt loam	rare gravel	none
C41	A	147	A	0-24	10YR4/3	silt loam		none
C41	A	147	B	24-46	10YR5/3	silt	caliche	none
C41	A	148	A	0-30	10YR4/4	silt loam		none
C41	A	148	B	30-40	10YR6/3	silt loam	rare gravel	none
C41	A	149	A	0-42	10YR4/3	silt loam	compact	none
C41	A	150	A	0-33	10YR4/4	silt loam		none
C41	A	150	B	33-43	10YR6/3	silt loam	rare gravel	none
C41	T	104	A	0-34	10YR3/3	silt loam	very compact	none
C41	T	104	B	34-39	10YR3/3	loam		none
C41	T	105	A	0-28	10YR4/3	silt loam		none
C41	T	105	B	28-39	10YR5/3	loam		none
C41	T	106	A	0-30	10YR4/2	silt loam		none
C41	T	106	B	30-42	10YR5/3	loam		none
C41	T	107	A	0-24	10YR4/3	silt loam		none
C41	T	107	B	24-36	10YR5/3	loam		none
C41	T	108	A	0-30	10YR4/3	silt loam		none
C41	T	108	B	30-41	10YR5/3	loam		none
C41	T	109	A	0-31	10YR4/3	silt loam		none
C41	T	109	B	31-53	10YR5/3	loam	caliche	none
C41	T	110	A	0-20	10YR4/3	silt loam	rare gravel	none
C41	T	110	B	20-36	7.5YR5/4	loam	common gravel	none
C41	T	111	A	0-23	10YR4/3	silt loam		none
C41	T	111	B	23-40	7.5YR5/4	loam		none
C41	T	112	A	0-25	10YR4/3	silt loam		none
C41	T	112	B	25-39	7.5YR5/4	loam	caliche	none
C41	T	113	A	0-23	10YR4/3	silt		none
C41	T	113	B	23-35	7.5YR5/4	loam		none
C41	T	114	A	0-32	10YR4/4	silt loam		none
C41	T	114	B	32-46	10YR5/4	silt loam	compact	none
C41	T	115	A	0-28	10YR4/4	loam		none
C41	T	115	B	28-30	10YR6/3	silt loam	compact	none
C41	T	116	A	0-23	10YR4/4	loam		none
C41	T	116	B	23-40	10YR6/3	silty clay loam		none
C41	T	117	A	0-30	10YR4/4	loam		none
C41	T	117	B	30-40	10YR6/3	silty clay loam		none
C41	T	118	A	0-32	10YR4/4	loam		none
C41	T	118	B	32-40	10YR4/6	silt loam		none
C41	T	119	A	0-32	10YR4/4	silt loam		none
C41	T	119	B	32-40	10YR4/6	silt loam		none
C41	T	120	A	0-34	10YR4/4	silt loam		none
C41	T	120	B	34-44	10YR6/3	silt loam	rare pebbles	none
C41	T	121	A	0-27	10YR4/4	silt loam		none
C41	T	121	B	27-38	10YR4/6	silt loam		none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
C41	T	122	A	0-30	10YR4/4	silt loam		none
C41	T	122	B	30-37	10YR6/3	silt loam		none
C42A	A	151	A	0-42	10YR4/4	silt loam	compact	none
C42A	A	152	A	0-35	10YR4/4	silt loam	compact	none
C42A	A	153	A	0-40	10YR4/4	silt loam		none
C42A	A	153	B	40-50	10YR6/3	silt loam	rare gravel; compact	none
C42A	A	154	A	0-32	10YR4/4	silt loam		none
C42A	A	154	B	32-43	10YR6/3	silt loam	rare gravel; compact	none
C42A	A	155	A	0-35	10YR4/4	silt loam		none
C42A	A	155	B	35-45	10YR6/3	silt loam	compact	none
C42A	A	156	A	0-26	10YR4/4	silt loam		none
C42A	A	156	B	26-38	10YR6/3	silt loam	compact	none
C42A	A	157	A	0-30	10YR4/4	silt loam		none
C42A	A	157	B	30-40	10YR6/3	silt loam	compact	none
C42A	A	158	A	0-45	10YR4/4	silt loam	compact	none
C42A	A	159	A	0-51	10YR4/3	silt loam	compact	none
C42A	A	160	A	0-36	10YR4/3	silt loam	compact	none
C42A	A	161	A	0-27	10YR4/4	silt loam		none
C42A	A	161	B	27-39	10YR5/4	silt loam	very compact	none
C42A	A	162	A	0-44	10YR4/4	silt loam	compact	none
C42A	A	163	A	0-39	10YR4/4	silt loam	compact	none
C42A	A	164	A	0-40	10YR4/4	silt loam	compact	none
C42A	A	165	A	0-44	10YR4/3	silt loam	compact	none
C42A	A	166	A	0-43	10YR4/3	silt loam	compact	none
C42A	A	167	A	0-41	10YR4/4	silt loam	compact	none
C42A	A	168	A	0-44	10YR4/4	silt loam		1 wire nail
C42A	A	168	B	44-50	10YR6/3	silt loam		none
C42A	A	169	A	0-42	10YR4/4	silt loam	compact	none
C42A	A	170	A	0-44	10YR4/4	silt loam	compact	none
C42A	A	171	A	0-40	10YR4/4	silt loam	compact	none
C43B	T	172	A	0-38	10YR4/4	silt loam	compact	none
C43B	T	173	A	0-40	10YR4/3	silt loam	compact	none
C43B	T	174	A	0-43	10YR4/3	silt loam	compact	none
C43B	T	175	A	0-37	10YR4/3	silt loam	compact	none
C43B	T	176	A	0-41	10YR4/3	silt loam	compact	none
C43B	T	177	A	0-43	10YR4/4	silt loam	compact	none
C43B	T	178	A	0-38	10YR4/3	silt loam	compact	none
C43B	T	179	A	0-44	10YR4/4	silt loam	compact	none
C43B	T	180	A	0-40	10YR4/4	silt loam	compact	none
C43B	T	181	A	0-42	10YR4/4	silt loam	compact	none
C43B	T	182	A	0-36	10YR4/3	silt loam	compact	none
C43B	T	183	A	0-40	10YR4/3	silt loam	compact	none
C43B	T	184	A	0-39	10YR4/3	silt loam	compact	none
C43B	T	185	A	0-40	10YR4/3	silt loam	compact	none
C43B	T	186	A	0-36	10YR4/3	silt loam	compact	none
C43B	T	187	A	0-44	10YR4/3	silt loam	compact	none
C43B	T	188	A	0-40	10YR4/4	silt loam	compact	none
C43B	T	189	A	0-35	10YR4/4	silt loam	compact	none
C43B	T	189	B	35-46	10YR5/4	silt loam	compact	none
C43B	T	190	A	0-39	10YR4/4	silt loam	compact	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
D36	T	1	A	0-40	10YR3/2	silt loam	compact	none
D36	T	2	A	0-40	10YR4/3	silt loam		none
D36	T	2	B	40-50	10YR4/3	sandy loam	compact	none
D36	T	3	A	0-39	10YR3/2	silt loam	compact	none
D36	T	4	A	0-15	10YR5/3	silty clay	compact	none
D36	T	4	B	15-30	10YR5/4	clay	compact	none
D36	T	5	A	0-42	10YR4/2	silt loam	very compact	none
D36	T	6	A	0-44	10YR4/4	silt	caliche; compact	none
D36	T	6	B	44-50	10YR4/4	silt	compact	none
D36	A	7	A	0-34	10YR4/2	silt loam	very compact	none
D36	A	8	A	0-37	10YR4/3	silt	caliche; compact	none
D36	A	9	A	0-43	10YR4/2	silt loam	very compact	none
D36	A	10	A	0-40	10YR4/4	silt	caliche; compact	none
D36	A	11	A	0-56	10YR4/3	silt loam	compact	none
D36	A	12	A	0-33	10YR4/3	silt loam		none
D36	A	12	B	33-40	10YR6/3	sandy loam	compact	none
D36	A	13	A	0-36	10YR4/3	silt loam	compact	none
D36	A	14	A	0-38	10YR4/3	silt loam		none
D36	A	14	B	38-46	10YR5/3	sandy loam	compact	none
D36	A	15	A	0-38	10YR4/3	silt loam	compact	none
D36	A	16	A	0-36	10YR5/2	sandy loam	compact	none
D37A	A	33	A	0-30	10YR4/3	silt loam	compact	none
D37A	A	34	A	0-20	10YR4/4	silt loam	compact	none
D37A	A	34	B	20-34	10YR5/4	silt loam	compact	none
D37A	A	35	A	0-45	10YR4/3	silt loam	compact	none
D37A	A	36	A	0-36	10YR5/3	silt loam		none
D37A	A	36	B	36-40	10YR5/4	silt loam		none
D37A	A	37	A	0-26	10YR4/3	silt loam		none
D37A	A	37	B	26-38	10YR5/4	silt loam	very compact	none
D37A	A	38	A	0-23	10YR4/4	silt loam		none
D37A	A	38	B	23-38	10YR4/6	sandy loam	caliche; compact	none
D37A	A	39	A	0-32	10YR4/3	silt loam		none
D37A	A	39	B	32-42	10YR5/4	silt loam	very compact	none
D37A	A	40	A	0-38	10YR4/2	silt loam	compact	none
D37A	A	41	A	0-34	10YR4/3	silt loam		none
D37A	A	41	B	34-45	10YR5/4	silt loam	compact	none
D37A	A	42	A	0-36	10YR4/4	silt loam	compact	none
D37A	A	43	A	0-25	10YR4/3	silt loam	compact	none
D37A	A	44	A	0-28	10YR3/4	silt loam	slope	none
D37A	A	44	B	28-38	10YR4/4	silt loam	compact	none
D37A	A	45	A	0-36	10YR4/3	silt loam	compact	none
D37A	A	46	A	0-22	10YR4/4	silt loam	slope	none
D37A	A	46	B	22-39	10YR5/4	silt loam	compact	none
D37A	A	47	A	0-32	10YR4/3	silt loam	compact	none
D37A	A	48	A	0-36	10YR4/4	silt loam	slope	none
D37A	A	48	B	36-40	10YR5/4	silt loam	compact	none
D37A	A	49	A	0-30	10YR4/3	silt loam		none
D37A	A	49	B	30-42	10YR5/4	silt loam	very compact	none
D37A	A	50	A	0-25	10YR4/4	silt loam	slope	none
D37A	A	50	B	25-37	10YR5/4	silt loam	compact	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
D37A	A	51	A	0-33	10YR4/2	silt loam	compact	none
D37A	A	52	A	0-40	10YR4/4	silt loam	compact	none
D37A	A	53	A	0-45	10YR4/2	silt loam	compact	none
D37A	A	54	A	0-30	10YR4/4	silt loam		none
D37A	A	54	B	30-35	10YR5/3	silt loam	compact	none
D37A	A	55	A	0-43	10YR4/2	silt loam	compact	none
D37A	A	56	A	0-30	10YR4/4	silt loam	compact	none
D37A	A	57	A	0-39	10YR4/2	silt loam	compact	none
D37A	A	58	A	0-30	10YR4/4	silt loam		none
D37A	A	58	B	30-35	10YR5/3	silt loam	compact	none
D37A	A	59	A	0-36	10YR4/2	silt loam	compact	none
D37A	A	60	A	0-28	10YR4/4	silt loam	compact	none
D37A	A	61	A	0-41	10YR4/2	silt loam	compact	none
D37A	A	62	A	0-33	10YR4/4	silt loam	compact	none
D37A	A	63	A	0-40	10YR4/2	silt loam	compact	none
D37A	A	64	A	0-35	10YR4/4	silt loam	compact	none
D37A	A	65	A	0-41	10YR4/2	silt loam	compact	none
D37A	A	66	A	0-30	10YR4/4	silt loam	caliche; compact	none
D37A	A	67	A	0-32	10YR4/2	silt loam	rare pebbles; compact	none
D37A	A	68	A	0-30	10YR4/3	silt loam	floodplain	none
D37A	A	68	B	30-36	10YR5/4	silt loam	compact	none
D37A	A	69	A	0-39	10YR4/2	silt loam	compact	none
D37A	A	70	A	0-30	10YR4/4	silt loam	floodplain	none
D37A	A	70	B	30-48	10YR5/4	silt loam		none
D37A	A	71	A	0-41	10YR4/2	silt loam	compact	none
D37A	A	72	A	0-36	10YR4/4	silt loam	floodplain; rare gravel	none
D37A	A	72	B	36-43	10YR5/3	silt loam		none
D37A	A	73	A	0-43	10YR4/2	silt loam	compact	none
D37A	A	74	A	0-34	10YR5/4	silt loam	creek bank	none
D37A	A	74	B	34-45	10YR5/3	silt loam		none
D37A	A	75	A	0-40	10YR4/2	silt loam	very compact	none
D37A	A	75	B	40-46	10YR4/2	silt loam	rare pebbles; compact	none
D37A	A	76	A	0-20	10YR4/3	silt loam	floodplain; common gravel	none
D37A	A	76	B	20-27	10YR8/1	sand	bedrock	none
D37A	A	77	A	0-1	-	-	bedrock	none
D37A	A	78	A	0-2	10YR4/4	silt loam	bedrock	none
D37A	A	79	A	0-30	10YR4/2	silt loam		none
D37A	A	79	B	30-42	10YR5/4	silt loam	bedrock	none
D37A	A	80	A	0-30	10YR4/4	silt loam	rare gravel	none
D37A	A	80	B	30-38	10YR8/1	sand	bedrock	none
D37A	A	81	A	0-25	10YR4/4	silt loam		none
D37A	A	81	B	25-28	10YR8/1	sand	bedrock	none
D37A	A	82	A	0-30	10YR4/4	silt loam		none
D37A	A	82	B	30-40	10YR8/1	sand	bedrock	none
D37A	A	83	A	0-18	10YR4/4	sandy loam	rare gravel	none
D37A	A	83	B	18-30	10YR7/2	sand	bedrock	none
D37A	T	17	A	0-30	10YR4/3	silt loam	compact	none
D37A	T	18	A	0-36	10YR4/3	silt loam	compact	none
D37A	T	19	A	15-38	10YR3/3	silt loam	compact	none
D37A	T	19	Fill	0-15	10YR5/3	sandy loam	berm fill	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
D37A	T	20	A	0-38	10YR3/3	silt loam	compact	none
D37A	T	21	A	0-40	10YR3/3	silt loam	compact	none
D37A	T	22	A	0-33	10YR3/3	silt loam	compact	none
D37A	T	23	A	0-40	10YR3/3	silt loam	compact	none
D37A	T	24	A	0-34	10YR4/3	silt loam	very compact	none
D37A	T	25	A	0-37	10YR4/3	silt loam	compact	none
D37A	T	26	A	0-37	10YR4/3	silt loam	compact	none
D37A	T	27	A	0-27	10YR4/3	silt loam	compact	none
D37A	T	28	A	0-38	10YR4/2	silt loam	compact	none
D37A	T	29	A	0-28	10YR4/2	silt loam	very compact	none
D37A	T	30	A	0-28	10YR4/3	silt loam	compact	none
D37A	T	30	B	28-32	10YR5/4	silt loam	caliche; compact	none
D37A	T	31	A	0-25	10YR4/3	silt loam	compact	none
D37A	T	32	A	0-36	10YR4/3	silt loam	caliche; compact	none
D23A	HC	504	A	0-23	10YR3/2	silty clay loam		none
D23A	HC	504	B	23-38	10YR4/3	clay loam		none
D23A	HC	505	A	0-20	10YR3/3	silty clay loam		none
D23A	HC	505	B	20-38	10YR3/2	clay loam	compact	none
D23A	HC	506	A	0-24	10YR4/4	silty clay loam		none
D23A	HC	506	B	24-35	10YR3/2	clay loam		none
D23A	HC	507	A	0-20	10YR3/3	silty clay loam		none
D23A	HC	507	B	20-35	10YR3/2	clay loam	compact	none
D23A	HC	508	A	0-26	10YR3/3	silty clay loam		none
D23A	HC	508	B	26-38	10YR3/2	clay loam	compact	none
D23A	HC	509	A	0-18	10YR3/3	silty clay loam		none
D23A	HC	509	B	18-35	10YR3/2	clay loam	compact	none
D23A	HC	510	A	0-13	10YR3/3	silty clay loam		none
D23A	HC	510	B	13-30	10YR3/2	clay loam	compact	none
D23A	HC	511	A	0-13	10YR3/3	silty clay loam		none
D23A	HC	511	B	13-32	10YR3/2	clay loam	compact	none
D23A	HC	512	A	0-22	10YR3/3	silty clay loam	mixed with road sand	none
D23A	HC	512	B	22-32	10YR3/2	clay loam	compact	none
D23A	HC	513	A	0-20	10YR4/4	silty clay loam	mixed with road sand	none
D23A	HC	513	B	20-35	10YR3/2	clay loam	compact	none
D23A	HC	514	A	0-12	10YR4/4	silty clay loam	mixed with road sand	none
D23A	HC	514	B	12-24	10YR3/2	clay loam	compact	none
D23A	HC	488	A	0-24	10YR4/4	silty clay loam		none
D23A	HC	488	B	24-36	10YR6/4	silt loam		none
D23A	HC	489	A	0-24	10YR4/4	silty clay loam		none
D23A	HC	489	B	24-37	10YR6/4	silt loam		none
D23A	HC	490	A	0-30	10YR4/4	silty clay loam		none
D23A	HC	490	B	30-42	10YR6/4	silt loam		none
D23A	HC	491	A	0-28	10YR3/3	silty clay loam		none
D23A	HC	491	B	28-38	10YR6/4	silt loam		none
D23A	HC	492	A	0-23	10YR3/3	silty clay loam		none
D23A	HC	492	B	23-36	10YR6/4	silt loam		none
D23A	HC	493	A	0-15	10YR3/3	silty clay loam		none
D23A	HC	493	B	15-35	10YR6/4	silt loam		none
D23A	HC	494	A	0-52	10YR3/3	silt loam	wet	none
D23A	HC	495	A	0-35	10YR3/3	clay loam		none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
D23A	HC	495	B	35-45	10YR3/2	clay loam	stream bottom	none
D23A	HC	496	A	0-37	10YR3/3	sandy loam	stream bottom	none
D23A	HC	496	B	37-47	10YR5/4	clay loam		none
D23A	HC	497	A	0-27	10YR3/3	sandy loam		none
D23A	HC	497	B	27-38	10YR5/4	clay loam		none
D23A	HC	498	A	0-20	10YR3/3	sandy loam		none
D23A	HC	498	B	20-38	10YR5/4	clay loam		none
D23A	HC	499	A	0-30	10YR3/3	sandy loam		none
D23A	HC	499	B	30-38	10YR5/4	clay loam		none
D23A	HC	500	A	0-33	10YR3/3	sandy loam		none
D23A	HC	500	B	33-45	10YR5/4	clay loam		none
D23A	HC	501	A	0-30	10YR3/3	sandy loam		none
D23A	HC	501	B	30-40	10YR5/4	clay loam		none
D23A	HC	502	A	0-20	10YR3/3	sandy loam		none
D23A	HC	502	B	20-38	10YR5/4	clay loam		none
D23A	HC	503	A	0-26	10YR3/3	sandy loam		none
D23A	HC	503	B	26-38	10YR5/4	clay loam		none
Substation	SS	191	A	0-37	10YR3/2	silty clay loam	very compact	none
Substation	SS	192	A	0-36	10YR3/2	silty clay loam	compact	none
Substation	SS	193	A	0-31	10YR3/2	silty clay loam	compact	none
Substation	SS	194	A	0-36	10YR3/2	silty clay loam	compact	none
Substation	SS	195	A	0-38	10YR3/2	silty clay loam	compact	none
Substation	SS	196	A	0-33	10YR3/2	silty clay loam		none
Substation	SS	196	B	33-43	10YR5/3	silty clay loam	compact	none
Substation	SS	197	A	0-37	10YR3/2	silty clay loam	compact	none
Substation	SS	198	A	0-33	10YR3/2	silty clay loam		none
Substation	SS	198	B	33-44	10YR5/3	silty clay loam	compact	none
Substation	SS	199	A	0-30	10YR3/2	silty clay loam	compact	none
Substation	SS	199	B	30-41	10YR6/3	silty clay loam	compact	none
Substation	SS	200	A	0-30	10YR3/2	silty clay loam	compact	none
Substation	SS	201	A	0-15	10YR3/2	silty clay loam		none
Substation	SS	201	B	15-38	10YR3/2	silty clay	compact	none
Substation	SS	202	A	0-30	10YR3/2	silty clay loam		none
Substation	SS	202	B	30-37	10YR3/2	silty clay loam	compact	none
Substation	SS	203	A	0-18	10YR3/2	silty clay loam		none
Substation	SS	203	B	18-36	10YR3/2	silty clay loam	compact	none
Substation	SS	204	A	0-30	10YR3/2	silty clay loam		none
Substation	SS	204	B	30-40	10YR5/3	clay loam	compact	none
Substation	SS	205	A	0-35	10YR4/3	silty clay loam	compact	none
Substation	SS	206	A	0-25	10YR3/2	silty clay loam		none
Substation	SS	206	B	25-40	10YR5/4	clay loam	compact	none
Substation	SS	207	A	0-30	10YR3/2	silty clay loam		none
Substation	SS	207	B	30-40	10YR6/3	silty clay loam	compact	none
Substation	SS	208	A	0-23	10YR3/3	silty clay loam		none
Substation	SS	208	B	23-38	10YR6/3	silty clay	compact	none
Substation	SS	209	A	0-38	10YR3/2	silty clay loam	compact	none
Substation	SS	210	A	0-30	10YR3/2	silty clay loam	compact	none
Substation	SS	210	B	30-40	10YR6/3	silty clay loam	compact	none
Substation	SS	211	A	0-34	10YR3/2	silty clay loam	compact	none
Substation	SS	211	B	34-45	10YR6/3	silty clay loam	compact	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
Substation	SS	212	A	0-28	10YR3/2	silty clay loam	compact	none
Substation	SS	212	B	28-40	10YR5/3	silty clay loam	compact	none
Substation	SS	213	A	0-30	10YR3/2	silty clay loam	compact	none
Substation	SS	213	B	30-41	10YR5/3	silty clay loam	compact	none
Substation	SS	214	A	0-27	10YR3/2	silty clay loam	compact	none
Substation	SS	214	B	27-40	10YR5/3	silty clay loam	compact	none
Substation	SS	215	A	0-26	10YR3/2	silty clay loam	compact	none
Substation	SS	215	A	26-38	10YR6/3	silty clay loam	compact	none
Substation	SS	216	A	0-28	10YR3/2	silty clay loam	compact	none
Substation	SS	216	B	28-30	10YR6/3	silty clay loam	compact	none
Substation	SS	217	A	0-38	10YR3/2	silty clay loam	compact	none
Substation	SS	218	A	0-25	10YR3/3	silty clay loam		none
Substation	SS	218	B	25-35	10YR3/2	silty clay	compact	none
Substation	SS	219	A	0-22	10YR4/3	silt loam		none
Substation	SS	219	B	22-38	10YR3/3	silty clay loam	compact	none
Substation	SS	220	A	0-15	10YR4/3	silty clay loam		none
Substation	SS	220	B	15-26	10YR3/2	silty clay	compact	none
Substation	SS	220	C	26-37	10YR4/2	silty clay	compact	none
Substation	SS	221	A	0-16	10YR4/3	silty clay loam		none
Substation	SS	221	B	16-27	10YR3/2	silty clay loam		none
Substation	SS	221	C	27-40	10YR5/3	silty clay	compact	none
Substation	SS	222	A	0-28	10YR4/3	silt loam		none
Substation	SS	222	B	28-36	10YR6/4	silty clay	compact	none
Substation	SS	223	A	0-23	10YR4/3	silt loam		none
Substation	SS	223	B	23-35	10YR6/4	silty clay	compact	none
Substation	SS	224	A	0-33	10YR4/3	silt loam		none
Substation	SS	224	B	33-40	10YR6/4	silty clay	compact	none
Substation	SS	225	A	0-26	10YR4/3	silt loam		none
Substation	SS	225	B	26-38	10YR6/3	silty clay	compact	none
Substation	SS	226	A	0-32	10YR4/3	silt loam		none
Substation	SS	226	B	32-40	10YR6/3	silty clay	compact	none
Combined	HC	423	A	0-20	10YR3/3	silty clay loam		none
Combined	HC	423	B	20-36	10YR3/2	clay loam	compact	none
Combined	HC	424	A	0-20	10YR3/3	silty clay loam		none
Combined	HC	424	B	20-33	10YR3/2	clay loam	compact	none
Combined	HC	425	A	0-20	10YR3/3	silty clay loam		none
Combined	HC	425	B	20-38	10YR3/2	clay loam	compact	none
Combined	HC	426	A	0-20	10YR3/3	silty clay loam		none
Combined	HC	426	B	20-30	10YR3/2	clay loam	compact	none
Combined	HC	427	A	0-16	10YR3/3	silty clay loam		none
Combined	HC	427	B	16-32	10YR2/2	clay loam	compact	none
Combined	HC	428	A	0-20	10YR3/3	silt loam		none
Combined	HC	428	B	20-30	10YR3/2	clay loam	compact	none
Combined	HC	429	A	0-16	10YR3/3	silty clay loam		none
Combined	HC	429	B	16-32	10YR3/2	clay loam	compact	none
Combined	HC	430	A	0-15	10YR3/3	silt loam		none
Combined	HC	430	B	15-27	10YR3/2	clay loam	compact	none
Combined	HC	431	A	0-10	10YR3/3	silty clay loam		none
Combined	HC	432	A	0-18	10YR3/3	silty clay loam		none
Combined	HC	432	B	10-30	10YR3/2	clay loam	compact	none

Appendix B. Shovel Test Soil Descriptions

Survey Area	Seg.	Shovel Test	Strata	Depth (cm)	Soil Color	Soil Texture	Comments	Artifacts
Combined	HC	432	B	18-30	10YR3/2	clay loam	compact	none
Combined	HC	433	A	0-12	10YR3/3	silty clay loam		none
Combined	HC	433	B	12-30	10YR3/2	clay loam	compact	none
Combined	HC	434	A	0-24	10YR3/3	silt loam		none
Combined	HC	434	B	24-40	10YR3/2	clay loam		none
Combined	HC	435	A	0-20	10YR3/3	silt loam		none
Combined	HC	435	B	20-36	10YR3/2	clay loam	compact	none
Combined	HC	436	A	0-30	10YR3/3	silty clay loam	berm disturbance, mottled	none
Combined	HC	437	A	0-35	10YR3/3	silty clay loam	berm disturbance, mottled	none
Combined	HC	438	A	0-20	10YR3/3	silt loam		none
Combined	HC	438	B	20-37	10YR3/3	clay loam		none
Combined	HC	439	A	0-12	10YR3/3	silty clay loam		none
Combined	HC	439	B	12-30	10YR3/2	clay loam		none
Combined	HC	440	A	0-20	10YR3/3	silty clay loam		none
Combined	HC	440	B	20-33	10YR3/3	clay loam		none
Combined	HC	441	A	0-35	10YR3/3	silt loam		none
Combined	HC	441	B	35-46	10YR5/4	clay loam		none
Combined	HC	442	A	0-31	10YR3/3	silt loam		none
Combined	HC	442	B	31-43	10YR5/4	clay loam		none
Combined	HC	443	A	0-31	10YR3/3	silt loam		none
Combined	HC	443	B	31-42	10YR5/4	clay loam		none
Combined	HC	444	A	0-37	10YR3/3	silt loam		none
Combined	HC	444	B	37-47	10YR5/4	clay loam		none
Combined	HC	445	A	0-25	10YR3/3	silt loam		none
Combined	HC	445	B	25-37	10YR5/4	clay loam		none
Combined	HC	446	A	0-34	10YR3/3	silt loam		none
Combined	HC	446	B	34-44	10YR5/4	clay loam		none
Combined	HC	447	A	0-32	10YR3/3	silt loam		none
Combined	HC	447	B	32-43	10YR5/4	clay loam		none
Combined	HC	448	A	0-30	10YR3/3	silt loam		none
Combined	HC	448	B	30-40	10YR5/4	clay loam		none
Combined	HC	449	A	0-41	10YR3/3	silt loam		none
Combined	HC	449	B	41-54	10YR5/4	clay loam		none
Combined	HC	450	A	0-32	10YR3/3	silt loam		none
Combined	HC	450	B	32-45	10YR4/4	clay loam		none
Combined	HC	451	A	0-33	10YR3/3	silt loam		none
Combined	HC	451	B	33-45	10YR4/4	clay loam		none
Combined	HC	452	A	0-32	10YR3/3	silt loam		none
Combined	HC	452	B	32-42	10YR4/2	clay loam		none
Combined	HC	453	A	0-30	10YR3/3	silt loam		none
Combined	HC	453	B	30-40	10YR4/2	clay loam		none

APPENDIX C
KANSAS ARCHEOLOGICAL SITE FORM



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Revision: *First* Status: *NEW*
 Site Number: 14GY00100 County: Gray
 Site Name: Site 1
 Unmarked Burial Site Number:

Owner or Tenant: First Name: Not available Last Name: Not available
 Company: Cecil and Catherine Davis Trust
 Address: 102 Windsor Court
Maximum length: 150 characters. You have 133 left
 City: Garden City
 State: Kansas Zip: 67846
 Telephone: Not available

Author: First Name: Stuart Last Name: Reeve
 Affiliation: Archeological Contractor
 Agency/Company: Tetra Tech EC, Inc.
 Address: 1000 The American Road
Maximum length: 150 characters. You have 128 left
 City: Morris Plains
 State: New Jersey Zip: 07950
 Telephone: 973 630 8131
 Email: stuart.reeve@ttech.com

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USGS 7.5' Map: Cimarron NE

Map Year: 1968

Legal Location Description Complete one or more quarter sections OR provide UTM coordinates. (Check here if you don't have this information.)

	Section	Township		Range	
Quarter 1: SE 1/4 of SW 1/4 of NW 1/4 of	14	25	South	27	West
Quarter 2: 1/4 of 1/4 of 1/4 of					
Quarter 3: 1/4 of 1/4 of 1/4 of					
Quarter 4: 1/4 of 1/4 of 1/4 of					

OR

Datum *: NAD83 Zone: 14

UTM 1: Easting: 389204 Northing: 4193211

UTM 2: Easting: Northing:

UTM 3: Easting: Northing:

UTM 4: Easting: Northing:

* When entering UTM values, you must supply the datum and the zone as well as Easting and Northing values.

Topographical Alluvial Fan Bluff Draw/Arroyo Cave/Rock Shelter Dune

Location: Hill Top Playa Ridge Top Slope Stream/Cut Bank

(check all that apply) Terrace (T1, T2, ...) Toe Upland Valley Floor

Additional information may be entered in the Site Description.

Drainage: Buckner Creek

Maximum length: 1000 characters. You have 987 left.

Total Area: 140 Square Meters Component: Single

Site Description: Early 20th century farm midden and hand-fabricated portable well derrick within an area of approximately 7 meters north-south and 20 meters east-west. The derrick includes a V-shaped wooden frame made out of 2x12 inch planks, with fly wheels and a drill-bit clamp, associated pump parts, fuel drums, metal cans, hose, and cans and bottles from farm refuse.

Maximum length: 4000 characters. You have 3644 left.

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Describe Any Disturbance to the Site: The site has been extensively weathered, metal is rusted, wood is rotting

Maximum length: 2000 characters. You have 1927 left

Historic Maps, References or Informants: Gray County Register of Deeds 21:261; 1969 Gray County Plat. On file Gray County Register of Deeds, Cimarron, KS;

Maximum length: 2000 characters. You have 1778 left

Comments: US sold on 11/26/1902 to William B Ferrel; 1969 owned by Bland Harris, no dwelling indicated in 1969

Maximum length: 4000 characters. You have 3899 left

Key Words (for research): Gray County; agriculture; midden

Maximum length: 250 characters. You have 218 left

Recommendations for Further Work: Not recommended as potentially significant archeological site, no further work recommended

Maximum length: 2000 characters. You have 1910 left

Has the Site been Tested? Yes No

Has the Site been Excavated? Yes No

*Please only click the **Finish** button when you are ready to submit the site form for approval by KHS staff.*
Clicking **Previous**, **Next** or **Finish** saves the changes made on this page. You can edit sites from the [View My Sites](#) page.

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Kansas Historical Society Archeological Inventory

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Step 1: Site Definition >> **Step 2: Location Information** >> **Step 3: Archeological Details** >> **Step 4: Additional information** >> **Step 5: Upload Files**

These files are already associated with this report. To remove a file, mark the check box next to the file name.

Delete?	Type	Title	File Name
<input type="checkbox"/>	MAP,MAP	Figure 1 Site 1 Location, Figure 2 Site 1 Sketch Map Plan View	<u>20110713_1_APPENDIXCFigure1.PDF, 20110713_2_APPENDIXCFigure2.PDF</u>

Upload up to 5 supporting maps, documents or images.

Valid file types are GIF, PNG, BMP, JPG or JPEG, TIF or TIFF, *Word* DOC, and *Adobe* PDF.

Type	Title	File
<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="button" value="Browse..."/>
<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="button" value="Browse..."/>
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<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="button" value="Browse..."/>

If you have more than 5 files, click the "Upload Files" to upload the first 5. This form will return and you will be able to upload more.

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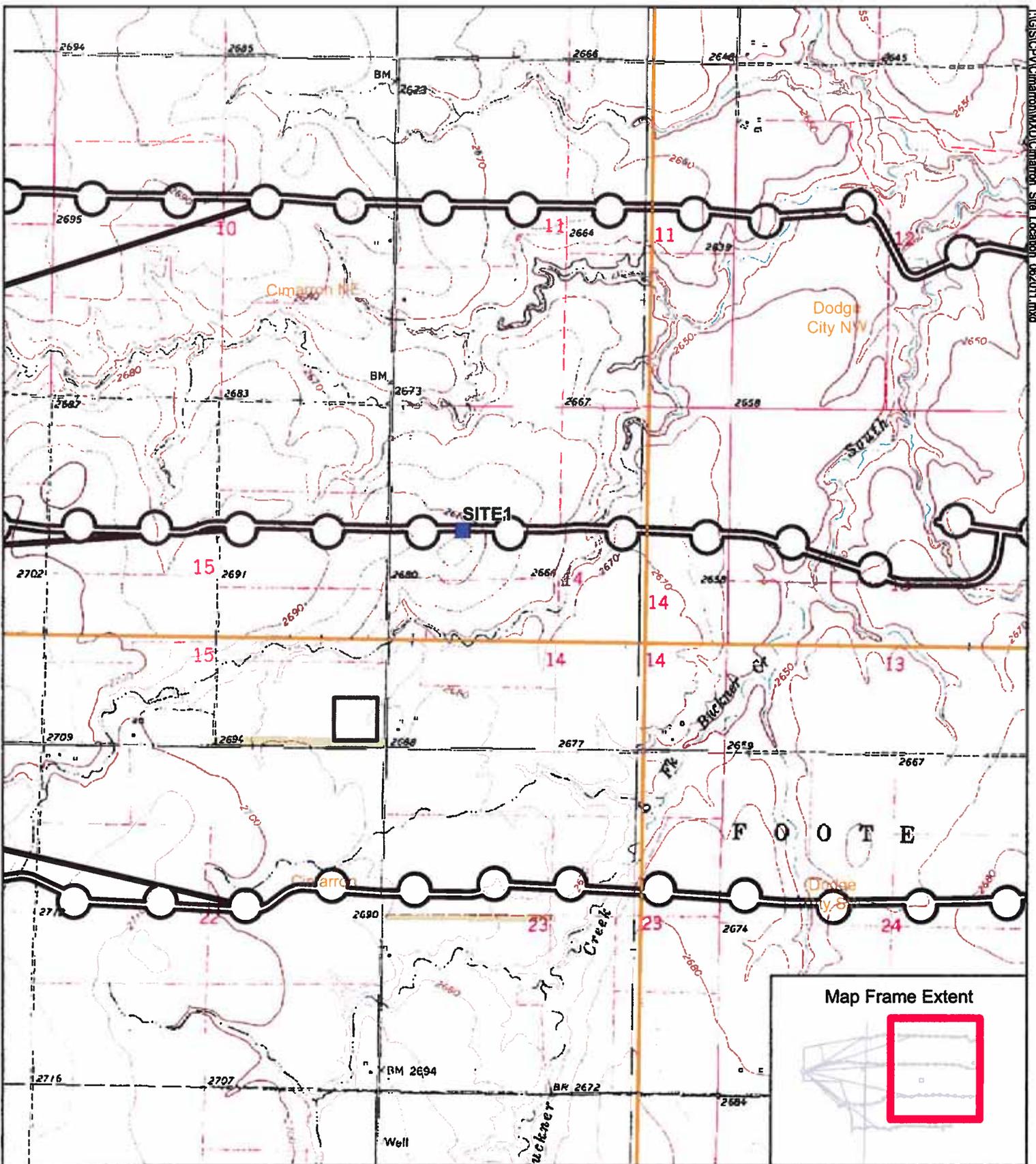


Figure 1
Site 1 Location

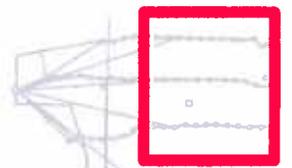
Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

Legend

- Site Location
- Quad Sheet Boundary
- Archeological Survey APE

Source:
v3 Layout
USGS 7.5 Minute Topographic Quadrange:
Cimarron NE KS 1970, PR 1980
Cimarron NW KS 1982, PR 1985
Cimarron KS 1959, PR 1981
Dodg City SW KS 1982, PR 1984

Map Frame Extent



KANSAS

Project Location



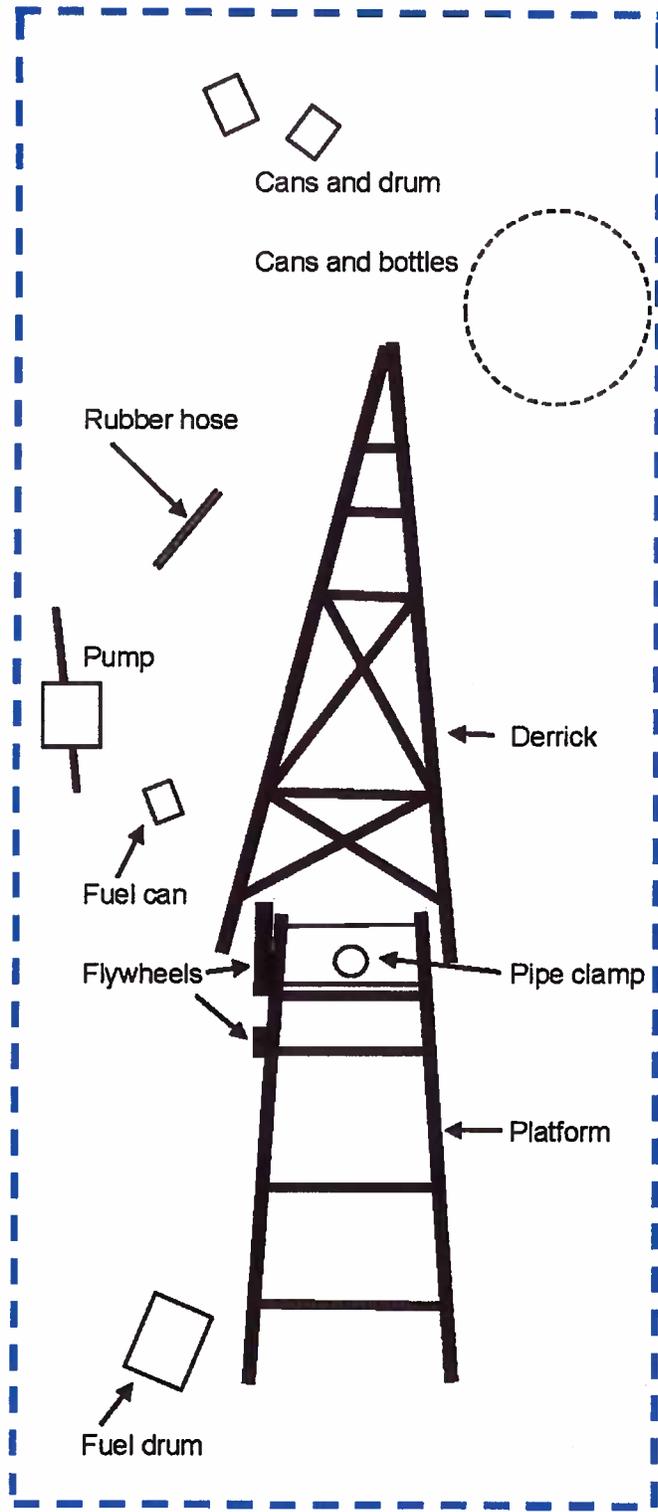


Figure 2
Site 1 Sketch Map, Plan View

Phase II Intensive Archeological Survey
Cimarron Wind Energy Project - Phase 1
Gray County, Kansas

--- Site Boundary

← North

1 meter





Photograph 1. Site 1, wood-framed well derrick (right) and platform (left) along access road C37A-A. View to the east (Photographer Stuart A. Reeve, April 10, 2011).



Photograph 2. Site 1, drilling platform with pipe clamp (center) and flywheels (bottom). View to the south (Photographer Stuart A. Reeve, April 10, 2011).



Photograph 3. Site 1, hand-cranked pump, metal can and wood scatter. View to the northeast
(Photographer Stuart A. Reeve, April 10, 2011).

APPENDIX D

AGENCY AND TRIBAL CORRESPONDENCE

KANSAS

KSR&C No. 09-12-054

Kansas Historical Society
Jennie Chinn, *Executive Director*

MARK PARKINSON, GOVERNOR

December 8, 2009

Erika Roberts
Project Manager
Tetra Tech EC, Inc.
133 Federal Street, 6th Floor
Boston, MA 02110

RE: Wind Farm Project
Gray County

Dear Ms. Roberts:

The Kansas State Historic Preservation Office has received your letter and attached documentation dated December 1, 2009 showing the proposed location of a wind farm project north of Cimarron in Gray County. We appreciate the willingness of the project developer to take cultural resources into consideration during the design process in what appears to be a non-Section 106 case. However, we do have a few concerns as outlined below.

As noted in your report, there are no recorded archeological sites or properties listed on the State or National registers within the proposed project area. Nevertheless, our office requests that a portion of the project area be surveyed by a professional archeologist prior to beginning construction, as it is in an area of high and/or moderate archeological potential. Our concern is with those areas where lines of turbines and access roads are situated near playa lakes and the upper reaches of the Buckner Creek drainage. Such features provide a major water source in a relatively arid portion of the state, and known archeological sites are situated around similar features in nearby areas. We therefore request that turbine locations and access roads in those portions of the project, as illustrated on the attached map, be surveyed. We also request that structures/farmsteads older than 50 years within the project area, of which there are likely very few, be photographed so that their historic significance (if any) may be assessed.

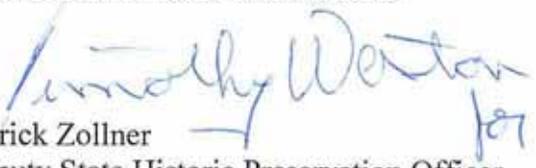
As noted in your letter, since this project will require only state and/or county level permits our agency has no legal authority to compel your firm to fund an archeological survey. If, as you pointed out, any federal funds are to be used or if any federal permits (such as a Section 404 permit from the Corps of Engineers) might ultimately be required, then Section 106 of the National Historic Preservation Act will apply and this recommendation will become a requirement.

Any archeologist meeting the Minimum Professional Qualifications of this office as outlined in *The State Historic Preservation Officer's Guide For Archeological Survey, Assessment, and Reports* (SHPO's Guide), is eligible to perform the requested work. A list of archeological contractors meeting these standards is available from our web site at <http://www.kshs.org/resource/section106home.htm>.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 ext. 225. Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
Executive Director and
State Historic Preservation Officer


Patrick Zollner
Deputy State Historic Preservation Officer

Site Location Map

Cimarron Wind Energy Project
Gray County, Kansas

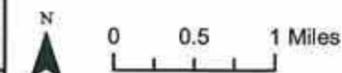


Legend

- Proposed Substation
- ▲ Proposed Permanent Met Tower
- Approximate Turbine String Locations
- Existing Transmission Line
- County Line
- Existing Roads
- Leased Parcel

**REQUESTED
SURVEY AREAS
HIGHLIGHTED
IN YELLOW**

Source: USGS 24k Quad, 1985,
Platts Powermap 2009



6425 SW 6th Avenue
Topeka, KS 66615



phone: 785-272-8681
fax: 785-272-8682
email@kshs.org

Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

March 16, 2011

Eric Howard
Manager, Cultural Compliance
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

Date Rec'd.: _____
Saved: _____
Sent to: _____
File: _____

RE: Cimarron Wind Energy Project
Tennessee Valley Authority (TVA)
Gray County

Dear Mr. Howard:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed a report entitled *Phase I Reconnaissance Survey Cimarron Wind Energy Project – Phase I Gray County, Kansas*, prepared by Tetra Tech, EC, Inc. We find the report to be acceptable and concur with its recommendation that a Phase II archeological survey of the project APE be conducted.

We have also reviewed the *Historic Architecture Reconnaissance Survey – Cimarron Wind Energy Project – Phase I Gray County, Kansas*, prepared by Tetra Tech, EC, Inc. We do not concur with the finding that no historic properties are present. The SHPO has determined that TTCW8 (farmstead) and TTCW20 (barn) are potentially eligible for the National Register of Historic Places under the *Historic Agriculture Related Resources of Kansas* Multiple Property Documentation Form. We recommend that a Phase II study be conducted for these properties.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 (ext. 225). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
Executive Director and
State Historic Preservation Officer

Patrick Zollner
Deputy State Historic Preservation Officer

6425 SW 6th Avenue
Topeka, KS 66615



phone: 785-272-8681
fax: 785-272-8682
email@kshs.org

Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

March 16, 2011

Eric Howard
Manager, Cultural Compliance
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

Date Rec'd.: _____
Saved: _____
Sent to: _____
File: _____

RE: Cimarron Wind Energy Project
Tennessee Valley Authority (TVA)
Gray County

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In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed a report entitled *Phase I Reconnaissance Survey Cimarron Wind Energy Project – Phase I Gray County, Kansas*, prepared by Tetra Tech, EC, Inc. We find the report to be acceptable and concur with its recommendation that a Phase II archeological survey of the project APE be conducted.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 (ext. 225). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
Executive Director and
State Historic Preservation Officer

Patrick Zollner
Deputy State Historic Preservation Officer



TRIBAL HISTORIC PRESERVATION OFFICE

Date: June 2, 2011

File: 1011-280KS-10

RE: Tennessee Valley Authority (TVA), Cimarron Wind Energy Project, Gray County, Kansas

Pat Bernard Ezzell
Tribal Liaison and Corporate Historian
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902-1499

Dear Ms. Ezzell,

The Osage Nation Historic Preservation Office has received the initial report and accompanying materials for the proposed project listed as Tennessee Valley Authority (TVA), Cimarron Wind Energy Project, Gray County, Kansas.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation requests that a pedestrian cultural resources survey (Phase II) be conducted for the entire APE for the proposed Tennessee Valley Authority (TVA), Cimarron Wind Energy Project, Gray County, Kansas.**

Please contact the Osage Nation Historic Preservation Office with your response to this request. The Osage Nation looks forward to receiving and reviewing the cultural resource survey report for the Tennessee Valley Authority (TVA), Cimarron Wind Energy Project, Gray County, Kansas. The Osage Nation requires that cultural resource survey personnel and reports follow the Secretary of Interior's standards and guidelines. Please provide a detailed topographic map depicting the locations of the shovel tests and test units excavated during the survey along with a table indicating their depth, soils, the amount and type of material found, and reason for termination.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

James Munkres
Archaeologist I

APPENDIX E

PROFESSIONAL QUALIFICATIONS

EXPERIENCE SUMMARY

Stuart Reeve has more than 35 years experience in professional archeology, including prehistoric and historic archeological studies with federal and state agencies, and cultural resources consulting in the New England, Middle Atlantic, Southeast, Rocky Mountains, Midwest, Northwest and Southwest regions. Dr. Reeve has been responsible for all aspects of cultural resource management plans, cultural resources sensitivity analyses, archeological field investigations, collection analyses and curation, technical and scientific report preparation, and coordination of multi-disciplinary environmental teams.

Dr. Reeve maintains project management duties, and assists senior personnel in planning and directing field investigations, preparing reports and proposals, providing technical support, and reviewing cultural resource phases of projects and reports.

EDUCATION

PhD (Doctor of Philosophy), Anthropology/Archeology, State University of New York, 1986
BA (Bachelor of Arts), Anthropology, State University of New York, 1971

CORPORATION PROJECT EXPERIENCE

Archeologist/ Cultural Resources Principal Investigator, 2011 Ridgeline Energy, LLC, Lewis Ranch Wind Project, Albany County WY

Conducted a Phase I archeological investigation, initiating compliance with Section 106 of the National Historic Preservation Act under direction from the Western Area Power Administration, the lead federal agency. Reviewed SHPO site files, historic maps, deeds and environmental studies to developed historic contexts and an archeological sensitivity model for prehistoric and historic period archeological sites. A site visit assessed local environments and disturbances in areas of proposed construction. Phase II archeological field investigations have been recommended.

Archeologist/ Cultural Resources Principal Investigator, 2011 CPV Ashley Renewable Energy Company, LLC, Ashley Wind Energy Project, McIntosh County, ND

Conducted a Class I Cultural Resources Survey for SHPO site file research, conducting SHPO site file research for archeological sites, survey reports and properties listed on the National Register of Historic Places, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Conducted Class III archeological field investigations of over 990 acres, identifying 6 archeological sites. Five (5) sites were avoided through project redesigns. A sixth site, a twentieth-century farmstead, was recommended as not eligible for the National Register. The project complied with Section 106 of the National Historic Preservation Act, and SHPO and the Tennessee Valley Administration (TVA), the lead federal agency, concluded that the proposed project would have no adverse effects on cultural resources.

Assisted in a Traditional Cultural Properties Survey with interested Native American Tribes, compiled cultural resources sections for and Environmental Assessment, and submitted a draft Unanticipated Discoveries Plan for procedures relating to cultural resources during facility construction and operation.

Archeologist/ Cultural Resources Principal Investigator, 2008 - 2011 CPV Cimarron Renewable Energy Company, LLC, Cimarron Wind Energy Project, Gray County, KS

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database SHOP site files, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.



Conducted a Phase I archeological reconnaissance survey and Phase II intensive archeological investigation in compliance with Section 106 of the National Historic Preservation Act under direction from TVA, the lead federal agency. Reviewed historic maps, deeds, census information and environmental studies to developed an archeological sensitivity model for prehistoric and historic period archeological sites and historic contexts and conducted a site visit to assess environments and disturbances in areas of proposed construction. Conducted a pedestrian survey of areas of proposed construction and shovel testing in areas with poor surface visibility and near possible water sources. One historic-period archeological site and one isolated prehistoric flake were recovered. Archeological resources were not recommended as eligible for listing in the National Register of Historic Places. Compiled cultural resources sections for and Environmental Assessment, and submitted a draft Unanticipated Discoveries Plan for procedures relating to cultural resources during facility construction and operation. No additional archeological investigations were recommended for the project.

**Archeologist/ Cultural Resources Principal Investigator, 2009
OwnEnergy, Blackwell Wind Energy Project, Kay County, OK**

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Completed an archeological sensitivity model for prehistoric and historic period archeological sites, and an unanticipated discoveries plan in order to reduce possible project impacts on cultural resources. Submitted a Unanticipated Discoveries Plan for procedures relating to cultural resources during facility construction and operation.

**Archeologist/ Cultural Resources Principal Investigator, 2010
Confidential Client, Wind Energy Project, Edgar County, IL**

Conducted background research of National Register site files, SHPO archeological and architectural site files, historic maps and online historic resources for an area of over 12,000 acres as part of a Critical Issues Analysis for a proposed wind farm.

**Archeologist/ Cultural Resources Principal Investigator, 2010
Confidential Client, Wind Energy Project, Pratt County, KS**

Conducted background research of National Register site files, SHPO archeological and architectural site files, historic maps and online historic resources for an area of over as part of a Critical Issues Analysis for a proposed wind farm. At least 38 homesteads or other structures formerly stood within the lease area. These may survive as archaeological sites. Many homesteads were associated with unmarked family cemeteries that are protected by state statutes.

**Archeologist/ Cultural Resources Principal Investigator, 2010
Confidential Client, Wind Energy Project, Audubon and Guthrie Counties, IA**

Conducted background research of National Register site files, SHPO archeological and architectural site files, historic maps and online historic resources for an area of over as part of a Critical Issues Analysis for a proposed wind farm. In total, 49 architectural sites and 21 archeological sites have been recorded by SHPO within the Study Area.

**Archeologist/ Cultural Resources Principal Investigator, 2009
US Army, Fort Dix, NJ. Joint Base Personnel Training Course, Burlington County, NJ.**

Prepared a base-wide online cultural resources training course defining cultural resources, identifying Federal and State laws protecting cultural resources, base standard operating procedures.



**Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Ford County, KS**

Conducted archeological and National Register site file research and BIA and SHPO consultations for a Kansas NPDES permit as part of a Critical Issues Analysis for a proposed wind farm.

**Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Thomas Co., KS**

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

**Archeologist/ Cultural Resources Principal Investigator, 2008-2009
Horizon-Alabama Ledge Wind Farm, LLC, Alabama Ledge Wind Farm, Town of Alabama,
Genesee County, NY**

Supervised and conducted a Phase 1B archeological investigation of a wind farm that included 40 turbines and 152,138 feet of linear construction involving excavation of 1,597 shovel tests and 75,188 feet of pedestrian surveys. In total one historic-period and 14 prehistoric-period archeological sites, and 9 isolated finds were identified. SHPO consultations are continuing concerning possible requirements for additional archeological investigations.

**Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Mercer and Rock Island Counties IL.**

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

**Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Schuylkill County, PA**

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

**Archeologist/ Cultural Resources Principal Investigator, 2009
Lucent Technologies Inc., Baseline Ecological Risk Assessment, Morris County, NJ**

Conducted SHPO consultations concerning soil remediation plans. Based on documentation of disturbance, no archeological investigations were required

**Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Schuylkill County, PA**

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

**Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Barton and Ellsworth Counties, KS**



Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2009
Confidential Client, Wind Energy Project, Summerset County, PA

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
Confidential Client, Wind Energy Project, Trago, Ellis, Ness, Rush and Pawnee Counties, KS

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
Horizon Wind Energy, Jericho Rise Wind Farm, Franklin County, NY

Supervised Phase 1B archeological fieldwork, including excavations of nearly 3,500 shovel tests. Conducted environmental analyses and contributed fieldwork summaries for the final report.

Archeologist/ Cultural Resources Principal Investigator, 2008
FPL, Horse Hollow and Blue Summit Transmission Lines, TX and OK

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
Confidential Client, Wind Energy Project, Yuma County, CO

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, historic cemeteries, local histories, historic trails, ethnographic data, interested Native American Tribes and paleontological finds in order to avoid impacts on historic, archeological resources and paleontological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
Confidential Client, Wind Energy Project, Roosevelt County, NM

Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, archeological sites, historic maps, local histories, historic trails, historic cemeteries, ethnographic data, and interested Native American tribes in order to avoid impacts on historic, archeological resources.

Archeologist/ Cultural Resources Principal Investigator, 2008
CPV Renewable Energy Company, LLC, Keenan Wind Farm, Woodward County, OK



Contributed cultural resources sections for a Critical Issues Analysis, including desk-top background research of properties listed on the National Register of Historic Places, National Archeological Database references, historic maps, local histories, historic trails, ethnographic data and interested Native American tribes, in order to avoid impact on historic and archeological resources. Procured supplemental funding for sensitivity modeling and an Unanticipated Finds Plan, submitted to SHPO.

Archeologist/ Cultural Resources Principal Investigator, 2008
Montana Construction Corp. Charlotte Circle Siphon, Northeast Interceptor Improvements, City of Jersey City, Hudson County, NJ

Conducted archeological monitoring, field mapping and photograph documentation of National Register-listed water pipelines during new siphon installation. Compiled an archeological letter report for the New Jersey Department of Environmental Protection.

Archeologist/ Cultural Resources Principal Investigator, 2007-2008
BP Alternative Energy Cultural Resources Inventory for the Golden Hills Wind Energy Development, Sherman County, OR

Conducted SHPO consultations and supervised Phase 1 archeological surveys, sensitivity modeling, and report preparation for over 7,000 acres for turbine strings, crane paths, underground collector lines and other components in satisfaction of Oregon Department of Energy, Oregon Energy Facility Siting Council Site Certification Application and SHPO requirements. In total, nine archeological sites and seven isolated finds were identified during the Phase 1 fieldwork. Assisted the client in avoiding impacts to identified sites including the Oregon Trail.

Archeologist/ Cultural Resources Principal Investigator, 2007
FLP Cultural Resource Investigation, Oliver II Wind Energy Center, Oliver County, ND

Conducted surface investigations of proposed wind turbine relocations and identified one rock-cache prehistoric site. Coordinated field results for an amended Phase 1B archeological report.

Archeologist/Cultural Resource Specialist, 2006-2010
Alabama Ledge Wind Farm, LLC. Cultural Resources Investigations at the Alabama Ledge Wind Farm Project, Town of Alabama, Genesee County, ND

Conducted environmental modeling and historical background research and completed a Phase 1A archeological survey report for a proposed wind energy project that included 56 proposed turbines, 16 miles of gravel access roads, 22 miles of buried electrical interconnect lines, a 0.6 mile transmission line and other facilities. The Project is located along post-glacial shorelines south of Lake Ontario, and straddles the Onondaga Escarpment, an area important to Prehistoric Native Americans for quarrying high quality chert. Several large Paleo-Indian camp sites and mastodon remains have been identified in the Project vicinity. Phase 1B archeological testing included surface collections and shovel testing at more than 2,700 locations.

Archeologist/Cultural Resource Specialist, 2005-2008
U.S. Department of the Army, TACOM-ARDC-Picatinny, Phase 1 Cultural Resources Investigation, Picatinny Applied Research Center, NJ

Conducted background research, shovel testing and compiled an archeological report for 40 acres at Picatinny Arsenal. Archeologists were accompanied by UXO technicians to scan for unexploded ordinance. More than 350 shovel test units were excavated at three project areas. Historic landscape features were recorded, including one historic cistern archeological site. One prehistoric archeological site was identified. Conducted Phase 2 excavations at the Current Ballfield Prehistoric Site (28Mr314), including 62 shovel tests and nine one-meter test units were excavated. The site contained limited spatial and stratigraphic integrity and low artifact densities. No additional archeological investigations were recommended. Artifact collections were accepted by the US Army for curation.



Archeologist/Cultural Resource Specialist, 2006-2008

Central Hudson Electric and Gas, Phase 1A and Phase 1B Cultural Resources Investigations of the WL Line, Towns of Montgomery, Hamptonburg and New Windsor, Villages of Waldon, Montgomery and Maybrook, Orange County, NY

Compiled a Phase 1A report describing background research and field walkover for over 25 miles of alternate rights-of-way, compiled prehistoric and historic sensitivity models (including local mastodon finds) for alternate route selection, and recommendations for Phase 1B archeological testing. Conducted Phase 1B testing including excavation of 362 shovel tests at replacement pole locations and along new rights of way, identified two prehistoric isolated finds, one prehistoric site and one historic site. Assembled information for project review by the local Historic District Commission.

Archeologist/Cultural Resource Specialist, 2006-2009

St. Lawrence Windpower, LLC. Cultural Resources Investigations at the St. Lawrence Wind Energy Project, Towns of Cape Vincent and Lyme, Jefferson County, NY

Conducted environmental modeling and historical background research and completed a Phase 1A archeological survey report for a proposed wind energy project that included 96 proposed turbines, 30 miles of gravel access roads, 44 miles of buried electrical interconnect lines, an 8 mile transmission line and other facilities. The Project is at the outlet of Lake Ontario and south of the St. Lawrence River. Prehistoric sites in the project vicinity range from Paleo-Indian fluted points to Late Woodland Iroquoian villages. Historic sites include nineteenth-century farms from French expatriates fleeing the French Revolution and Napoleon Bonaparte's defeat in Europe. Assembled cultural resource sections for the DEIS.

Archeologist/Cultural Resource Specialist, 2006-2008

U.S. Environmental Protection Agency, Crown Cleaners of Watertown, Inc. Remediation Investigation/Feasibility Study

Conducted background research and field walkover for prehistoric and historic archeological sites for a six-acre Superfund site along the Black River at the Village of Herrings, Jefferson County, New York. The property formerly contained a nineteenth-century sawmill and paper mill. Compiled a Phase 1A cultural resources report, integrating results of a preliminary architectural and archeological assessment.

Archeologist/Cultural Resource Specialist, 2006-2008

Central Hudson Electric and Gas, Phase 1A and Phase 1B Cultural Resources Investigations of the CL Line, Town of Catskill and Village of Catskill, Greene County, NY

Conducted background research and field walkover for prehistoric and historic archeological sites over more than 15 miles of right-of-way. Prepared a cultural resources report describing environmental contexts, and cultural and historical contexts, areas of archeological sensitivity, and recommendations for Phase 1B testing. Conducted shovel testing at replacement pole locations and identified one prehistoric site. Phase 2 testing determined that the site was not eligible for the National Register of Historic Places.

Archeologist/Cultural Resource Specialist, 2006-2008

West Hill Windpower, LLC, Cultural Resource Investigations of the West Hill Wind Farm, Towns of Stockbridge, Smithfield and Lincoln, Madison County, NY

Completed background research, Phase 1 fieldwork at 25 wind turbine locations and more than 12 miles of roads, interconnects and transmission lines, identified prehistoric and historic archeological sites including historic Oneida Nation villages, on West Hill and Cowaselon Creek. Completed Phase 1A and Phase 1B archeological reports, including sensitivity modeling for field investigations. Field director for Phase 1B field investigations, including more than 1,840 shovel test units, identified seven prehistoric sites and three historic archeological sites.



Archeologist/Cultural Resource Specialist, 2006

Atlantic Energy, Phase 1A Cultural Resources Letter Report for the Atlantic Energy LNG Facility, Chesapeake, VA

Conducted background research for archeological sites, architectural resources and properties listed on the national Register of Historic Places in the vicinity of a proposed liquid natural gas (LNG) facility. Conducted a site visit to document the Glimerton Canal National Register-listed property and prior land disturbances in the area of proposed construction.

Archeologist/Cultural Resource Specialist, 2005

New York Power Authority, Phase 1A Cultural Resources Investigation Tri-Lakes Reliability Project, St. Lawrence County, NY

Compiled environmental archeological and historic data for more than 55 miles of proposed alternative transmission line upgrades through Adirondack State Park in New York. Supervised a pedestrian survey leading to discovery of 40 historic archeological sites. Compiled models for Phase 1B archeological testing for satisfying compliance with the New York State Environmental Quality Review Act. Compiled architectural survey study background research and compiled architectural inventory forms.

Archeologist/Cultural Resource Specialist, 2005

PSEG, Historic Documentary Research, PSEG New Brunswick MPG Site in the Vicinity of the Delaware and Raritan Canal and Washington Street, New Brunswick, NY

Compiled historic maps and photographs for residential and industrial land use along the Delaware and Raritan Canal from 1840 to 1980 in New Brunswick, New Jersey.

Archeologist/Cultural Resource Specialist, 2005

Invenergy Wind LLC. Cultural Resources Background Literature Review-Stamford Wind Project, Stamford and Roxbury Townships, Delaware County, NY

Compiled environmental archeological and historic data for state permitting of proposed wind energy-generating facilities in the western Catskill Mountain region or southern New York.

Archeologist/Cultural Resource Specialist, 2005

Invenergy Wind LLC. Cultural Resources Background Literature Review High Sheldon Wind Farm Project, Wyoming County, NY

Compiled environmental archeological and historic data for state permitting of proposed wind energy-generating facilities in the Allegheny Plateau region or western New York.

Archeologist/Cultural Resource Specialist, 2004-2005

NASA, Marshall Space Flight Center Huntsville, Alabama NASA Contract No. NAS8-00149, Task Order No. 0105. Letter Report Cultural Resources Pedestrian Survey, Marshall Space Flight Center, Madison County, AL

Compiled environmental archeological and historic data for prehistoric and historic landuse on the Marshall Space Flight Center. Developed a statistical predictive model for prehistoric site locations and graphic models for historic sites. Conducted a pedestrian survey of 700 acres within 30 separate areas to document past ground disturbances and evidence for archeological sites. Seven new historic archeological sites were identified. Recommended priorities for future cultural resource investigations to comply with Section 110 of the National Historic Preservation Act and other federal laws and executive orders.

Archeologist/Cultural Resource Specialist, 2004

US Fish and Wildlife Service, Region 5. Archeological, Historical and Geomorphic Study Prime Hook National Wildlife Refuge, Sussex County, DE

A TtEC team conducted a coordinated geomorphological study, a historic records study and oral history related to historic minority communities. The geomorphological study included extraction of six

vibracores from wetlands near archeological sites to study soil formation and pollen evidence. The historic records study assembled information pertaining to prehistoric and historic archeological sites, historic maps, deeds, census data and other records reflecting past land use. The oral history involved documentary research and informant interviews concerning Native Americans and African Americans living in the vicinity of the refuge.

Archeologist/Cultural Resource Specialist, 2003

Anderson-Mulholland & Associates, Inc. Supplemental Intensive Archeological Investigations at the Flat Swamp Cemetery #2 (413-9), Newtown, CT

Investigated an historic graveyard before well drilling and groundwater testing.

Archeologist/Cultural Resources Specialist, October 2002-2004

Department of the Navy Engineering Field Activities-Northeast, Jamaica Island Landfill, Portsmouth Naval Shipyard, Kittery, ME

Compiled environmental, archeological and historic data for an archeological sensitivity model of pre-landfill landforms and conducted archeological testing at sensitive areas. Monitored landfill excavations for historic landforms and possibly preserved archeological sites. Documented an 1871 schooner shipwreck beneath the landfill. Compiled cultural resource reports detailing environmental and cultural contexts and results of field investigations.

Archeologist/Cultural Resources Specialist, February-May 2003

U.S. Environmental Protection Agency Region 2, Cornell-Dubilier Electronics Superfund Site, South Plainfield Borough, Middlesex County, NJ

Compiled environmental, archeological and historic information for an archeological sensitivity model of industrial development and landscape modification. Compiled a descriptive cultural resources report.

Archeologist/Cultural Resources Specialist, August to November 2002-2004

U.S. Environmental Protection Agency Region 2, Rockaway Borough Wellfield Superfund Site, Rockaway Borough, Morris County, NJ

Compiled historic and land-use data for 62 properties within Rockaway Borough Wellfield Superfund Site, including industrial sites and portion of the Morris Canal. Completed a cultural resources report detailing historic and archeological sensitivity of an urban community.

Archeologist/Cultural Resources Specialist, November 2002-2003

Niagara Mohawk, Historic Manufactured Gas Plants, NY

Conducted historic and documentary research at seven historic manufactured gas plants in New York State. Compiled historic maps, and industrial data concerning industrial designs, preserved architectural features and environmental residues.

Archeologist/Cultural Resources Specialist, October 2002

Bay Energy LLC, Generating Station, Gowanus Canal, Brooklyn, NY

Compiled a cultural resources sensitivity model and report for a draft EIS for a proposed generating station, submitted to the New York State Department of Environmental Conservation. Contributed sections to the EIS describing cultural resources.

Archeologist/Cultural Resources Specialist, June 2002

Pennsylvania Department of Environmental Protection, Valley Forge National Park, PA

Conducted archeological monitoring for environmental testing in historic industrial areas of Valley Forge National Park. Completed sections for the final environmental report that described results of cultural resources monitoring.



Archeologist/Cultural Resources Specialist, May 2002

Royal D'Iberville Casino and Marina, Draft EIS, Cultural Resources. Biloxi and D'Iberville, MI

Conducted background research and prepared a technical cultural resources report describing sensitivity for prehistoric and historic archeological sites, and architectural resources at three alternative development sites along the Mississippi Gulf Coast.

Archeologist/Cultural Resources Specialist, February 2002

Florida Light and Power; Tesla Power Project, Alameda and San Joaquin Counties, CA

Senior historical archeologist for cultural resources issues pertaining to California Energy Commission (CEC) power plant licensing, conducted archeological testing at an early 20th-Century ranch, completed professional cultural survey report for the power plant site and lateral facilities, a Phase 1 archeological report for the Walter Gorman ranch (Site A), and compiled CEC data requests for cultural resources.

Archeologist/Cultural Resources Specialist, October 2001-2004

Department of the Navy Engineering Field Activities-Northeast, Naval Weapons Industrial Reserve Plant, Site 1-Northeast Disposal Area

Conducted environmental and archeological sensitivity modeling at glacial kettles in Long Island. Conducted Phase 1 and Phase 2 archeological testing and monitoring of machine access and debris storage area, and conducted monitoring for buried archeological sites during land fill remediation. Completed a technical archeological survey reports for prehistoric Native American occupations.

Archeologist/Cultural Resources Specialist, December 2001-February 2002

Calpine, Chippokes Energy Center, Surry County, VA

Conducted background research and archeological sensitivity modeling for prehistoric Native American sites, 17th-Century English settlements, and historic Euro-American and African American sites for a project area along the lower James River in Virginia. Completed a technical cultural resources report.

Archeologist/Cultural Resources Specialist, November 2001

Niagara Mohawk. Gravestone Documentation and Preliminary Recommendations for Preservation at the Johnstown Colonial Cemetery, Johnstown, NY

Photographed and analyzed 359 historic gravestones for effects from remediation activities planned at the adjacent Niagara Mohawk property. Prepared a preliminary technical report and protection plan for historic Johnstown Colonial Cemetery listed on the National Register of Historic Places.

Archeologist/Cultural Resources Specialist, November 2001

Texas Eastern Transmission LP. Phase 1 Cultural Resources Investigation, TIME Project, Lambertville Compressor Station, Hunterdon County, NJ

Conducted archeological and historical investigations for proposed natural gas compressor upgrades. Prepared a final cultural resources technical report.

Archeologist/Cultural Resources Specialist, November 2001

Texas Eastern Transmission LP. TIME Project, PA, NJ, and NY

Conducted consultations for a FERC application, including SHPO consultations, Native American consultations, and reviews of archeological reports. Prepared Resource Report 4 and an Unanticipated Discovery Plan for the FERC application.

Archeologist/Cultural Resources Specialist, October 2001

Niagara Mohawk. Stone Retaining Wall Documentation, Niagara Mohawk Johnstown (N. Market Street) Site, Johnstown, NY

Photo-documented a stone retaining wall before and after interim remedial measures at a former manufactured gas plant. Prepared a final cultural resources technical report.

Archeologist/Cultural Resources Specialist, October 2001-2004
National Aeronautics and Space Administration, Marshall Space Flight Center. Environmental Resource Document and Environmental Assessment, Huntsville, AL

Assembled archeological, architectural, historical and environmental information about Marshall Space Flight Center. Developed a predictive archeological model for prehistoric and prehistoric sites. Prepared a final cultural resources technical report. Assembled archeological, architectural, historical and environmental information about the proposed site of the Propulsion Research Laboratory. Prepared a final cultural resources technical report.

Cultural Resources Specialist, October 2001-2004
Department of the Navy. Archeological Test Pit Monitoring at the Debris Area, Nomans Land Island, MA

Monitored machine test pitting at a former Navy debris areas in conjunction with waste removal and UXO-remediation, activities not defined as federal actions under Section 106 of the National Historic Preservation Act. Prepared a final cultural resources technical report.

Archeologist/Cultural Resources Specialist, September 2001
U.S. Army Corps of Engineers, Philadelphia, Airport Apron Environmental Assessment; Cultural Resources, Fort Dix, NJ

Reviewed archeological, historical and environmental information for Fort Dix, New Jersey. Prepared the final cultural resources technical report.

Consultant, August 2001
Trunkline LNG Company, Lake Charles Terminal, Calcasieu Parish, LA

Conducted consultations for a FERC application, including SHPO consultations, Native American consultations, and reviews of archeological reports. Prepared Resource Report 4 and an Unanticipated Discovery Plan for the FERC application.

Cultural Resources Specialist, June 2001
U.S. Army Engineering and Support Center, Huntsville, Delivery Order 0015, Contract No. DACA 87-94-D-0020, Savannah Army Depot Activity Engineering Evaluation/Cost Analysis, Savannah, IL

Analyzed cultural resources identified during geophysical magnetometer and unexploded-ordnance investigations at the Savannah Army Depot Activity. Prepared a cultural resources technical report.

PREVIOUS EXPERIENCE

Archeological Consultant, December 1995 – Present
Town of Redding Board of Selectmen and Redding Planning Commission, Redding, Connecticut

Major tasks included conducting a town-wide historical and archeological survey documenting 106 archeological sites, 852 historic structures, and archeological sensitivity modeling for more than 20,000 acres. Conducted Phase 1-3 excavations at archeological sites on town lands, including preparing 17 cultural resources reports. Procured funding for compiling a town history in cooperation with the Redding Historical Society. Developed a town-wide volunteer archeology program. Reviewed all subdivision applications for impacts of historic and archeological sites for the Redding Planning Commission. Developing a National Register Nomination for the Poverty Hollow Historic District.

Archeological Consultant, October 2000 - January 2001
Friends and Neighbors of Putnam Memorial State Park, Redding, Connecticut

Nominated Putnam State Park as Connecticut's First State Archeological Preserve for the protection of 1778-1779 Revolutionary War encampments.



Archeological Consultant, June 1998 - April 2000
Florence Griswold Museum and Connecticut College

Conducted an archeological field school for Phase 1-3 excavations at the Lyme Art Colony, Old Lyme, Connecticut, including specialized analyses of 18,000 historic artifacts from studios and other features, prepared a detailed archeological report and museum cultural resources management plan.

Environmental Specialist, GS-12, January 2000 - May 2001
Federal Emergency Management Agency, Region 1, Boston, Massachusetts

On-call disaster assistance for cultural resources, certified training in federal cultural resource and environmental regulations.

Project Archeologist, September 1992 - May 1995
John Milner Associates, Inc., Danbury, Connecticut

Conducted sensitivity modeling for diverse utilities, pipelines and transmission lines, Phase 1-3 archeological investigations for state and private clients, and completed 17 cultural resources technical reports, from the Southeast, Middle Atlantic and New England regions.

Assistant Administer of Research, January 1987 - September 1992
Maryland Historical Trust, Jefferson Patterson Park and Museum, St. Leonard, Maryland

Museum duties included conducting archeological surveys and excavations at prehistoric and Colonial archeological sites in Southern Maryland, exhibit development and Maryland Archeological Curation and Conservation Laboratory design, reviewed development projects and CRM reports for compliance with federal and state regulations, conducted volunteer training and education programs, compiled 7 technical reports, presented 3 professional papers and 2 publications, series editor for Jefferson Patterson Park and Museum Occasional Papers No 1-5.

Archeologist GS5-7, 1976 - 1989 (intermittent)
National Park Service, Midwest Archeological Center, Lincoln, Nebraska

Environmental modeling and Phase 1-3 archeological investigations in Grand Teton and Yellowstone National Parks, Wyoming, and Glen Canyon National Recreation Area, Utah, authored or co-authored 19 technical cultural resources reports, professional papers and publications.

PUBLICATIONS & PRESENTATIONS

Reeve, S.A. in preparation Before the Age of Reason: A Conspiracy against Orthodoxy and the Secret Affair of Young Benjamin Franklin. Under editorial review.

Reeve, S.A. 1999. An Historical and Archeological Assessment Survey of Redding, Connecticut. Office of the First Selectman, Town of Redding, Connecticut.

Reeve, S.A. 1992. Changes in Time: A Seriation Chronology for Southern Maryland Projectile Points. *Journal of Middle Atlantic Archaeology*. 8:107-138.

Reeve, S.A. 1986. Root Crops and Prehistoric Social Process in the Snake River Headwaters, Northwestern Wyoming. Ph.D. dissertation. SUNY Albany, University Microfilms, Ann Arbor.

Reeve, S.A. 1978. Ethnobotany and Archeology in Yellowstone and Grand Teton National Parks. In: Proceedings of the Conference on Scientific Research in the National Parks (2nd). 1:362-380. National Technical Information Service, Springfield, Ohio.

Reeve, S.A., L. Bradt, H.D. Juli and R. Gradie. 2000. The Archeology of the Lyme Art Colony, Florence Griswold Museum, Old Lyme, Connecticut. *Connecticut College Archaeology Laboratory Report* No. 11, New London, Connecticut.

Reeve, S.A. and K. Forgacs. 1999. Connecticut Radiocarbon Dates: A Study of Prehistoric Cultural Chronologies and Population Trends. *Bulletin of the Archaeological Society of Connecticut*. 62:19-66.

Reeve, S.A., J.C. Russo, D.J. Pogue and J.M. Herbert. 1991. Myrtle Point: The Changing Land and People of a Lower Patuxent River Community. Jefferson Patterson Park and Museum, Occasional Papers 3, St. Leonard, Maryland.

Reeve, S.A., and P. Siegel. 1996. Phase III Data Recovery at the Aud Site (Site 18ST634), St. Mary's County, Maryland. *Maryland State Highway Administration Archeological Report* 111. John Milner Associates, Inc., West Chester, New York.

Reeve, S.A., D. Silverglade, and K. von Jena, In Press. The Archeology and Ethnohistory of Frontiers and Cultural Brokers, Examples from Easton and Redding, Connecticut. In L. Weinstein, ed., *Bulletin of the Archeological Society of Connecticut*.

Von Jena, K., and S.A. Reeve. 2005. Poverty Hollow: The Preservation of and Evolving Historic Landscape in Redding, Connecticut. *Bulletin of the Archaeological Society of Connecticut* 67:49-76.

Wright, G.A., S.J. Bender and S.A. Reeve. 1980. High Country Adaptations. *Plains Anthropologist*. 25:191-207.

Wright, G.A and S.A. Reeve. 1981. Prehistoric Resource Procurement and Climatic Change in Northwestern Wyoming, pp. 423-448. In: Quaternary Paleoclimate, W.C. Mahaney (ed.). Geo Abstracts Ltd. Norwich, UK.

Presentations

Reeve, S.A. 1997. Redding Archeology, New Appreciation for Old Places. Lecture presented at the Institute for American Indian Studies, Washington, Connecticut.

Reeve, S.A. 1997. Mitigating Environmental Disaster: Archeological Investigations at the Flat Swamp Cemeteries, Newtown. Presented to the Archaeological Society of Connecticut Meeting, Connecticut River Museum, Essex, Connecticut.

Reeve, S.A. 1997. Connecticut Radiocarbon Dates: Compilation and Comparisons. Presented to the Archeological Society of Connecticut Meeting, Fairfield Historical Society, Fairfield, Connecticut.

Reeve, S.A. 1991. The Material Relationships of Prehistoric Territoriality: PIXE Trace-Element Characterizations of Middle Woodland Rhyolite in Southern Maryland. Presented to the Conference of Middle Atlantic Archeology, Ocean City, Maryland.

Reeve, S.A. 1989. New Data on the Prehistoric Cultural Sequence for Southern Maryland. Presented to the Conference for Middle Atlantic Archeology, Rehoboth Beach, Delaware.

Reeve, S.A. 1988. A Middle Woodland Shell-Pit Burial along the Patuxent River, Maryland. Presented to the Archeology Society of Maryland Annual Meeting, Elkton, Maryland.

Reeve, S.A. 1978. Ethnobotany and Archeology in Yellowstone and Grand Teton National Parks. Presented to the Conference on Scientific Research in the National Parks (2nd), San Francisco, California.

Reeve, S.A. 1976. Plant Resources and Prehistoric Transhumance in Jackson Hole, Wyoming. Presented to the 23rd Plains Conference, Minneapolis, Minnesota.

Reeve, S.A., and A. Burger. 1998. Redding: Archeological Modeling and Historic Preservation in an Old Connecticut Town. Presented to the Archeological Society of Connecticut Meeting, Central Connecticut State University, Bristol, Connecticut.

Reeve, S.A., and K. Forgacs. 1999. Connecticut Radiocarbon Dates: A Study of Prehistoric Cultural Chronology and Population Trends. Presented to the Archeological Society of Connecticut Meeting for



Connecticut Archeology Today, Peabody Museum of Natural History, Yale University, New Haven, Connecticut.

Reeve, S.A., S.B. Marshall, J.C.Sexton, M.A. Carper, and C.L. Borstel, 2009. Assessing the Past to Secure the Future: Cultural Resources and Wind Energy. Poster presentation American Wind Energy Association Conference, Chicago, IL.

Reeve, S.A., and P. Siegel. 1996. Estuarine Habitats and Plant Gathering During the Woodland Period in Southern Maryland. Presented to the Conference on Archeobotany in the Northeast, New York State Museum, Albany, New York.

Reeve, S.A., and P. Siegel. 1995. Woodland Period Activity Organization in Southern Maryland: A View from the Aud Site. Presented to the 62nd Annual Meeting of the Eastern States Archeological Federation, Wilmington, Delaware.

Reeve, S.A, D. Silverglade and K. von Jena. 2010. The Archeology and Ethnohistory of Frontiers and Cultural Brokers, Examples from Easton and Redding, CT. Presented to the Archaeology Society of Connecticut, Danbury, CT

OTHER CULTURAL RESOURCES EXPERIENCE (NON-TETRA TECH)

2009 *Stage 1A Documentation and Survey Development Report, Germany Flats Water Pump Station, Township of Sparta, Sussex County, New Jersey*. Prepared for the Township of Sparta. Prepared by Aspetuck Landways, Budd Lake, NJ

2009 *Historical and Archeological Assessment Survey of Easton, Connecticut* (senior author). Prepared for the Town of Easton and the Connecticut Trust For Historic Preservation, with funding from the Connecticut Humanities Council. Prepared by Aspetuck Landways, Budd Lake, NJ, Redding, CT and Easton, CT

2007 *Historical and Archeological Assessment of Easton, Connecticut, Interim Report* (senior author). Prepared for the Town of Easton Planning and Zoning Commission and the Connecticut Trust for Historic Preservation. Prepared by Aspetuck Landways, Redding, CT

2006 *South Richmond Drainage: Conference House Park Watershed, Archeological Reconnaissance, Monitoring, and Mitigation, Satterlee Street and Massachusetts Street, Richmond County, New York* (senior author). Prepared for Cruz Construction and NYC Department of Design and Construction. Prepared by Historical Perspectives, Inc., Westport, CT

2005 *Phase 3 Archaeological Investigations at Area 11 Locus 1 Seven Springs Farms, North Castle, New Castle, Bedford, Westchester County, New York*. Prepared for Trump Partners, Seven Springs, LLC. Prepared by Historical Perspectives, Inc., Westport, CT

2004 *Seven Springs Phase 2 Archeological Evaluations: Area 2, Locus 2; Area 2 Locus 3; Area 6, Locus 1; Area 14 and Area 15, Bedford, North Castle and New Castle, NY* (senior author). Prepared for Seven Springs, LLC. Prepared by Historical Perspectives, Inc., Westport, CT

2004 *Stage 1A Archaeological Assessment, The Ridge At Winchester, Town of Winchester, Litchfield County, Connecticut*. Prepared for Mitchandrew Development, LLC. Prepared by Historical Perspectives, Inc., Westport

2003 *Stage 1A Archaeological Assessment, Proposed Javdan Project, Town of Wallkill, Orange County, New York* (senior author). Prepared for the Kushner Companies. Prepared by Historical Perspectives,

Inc., Westport, CT

- 2002 *Archeological Reconnaissance Survey of the Sunset Revival Subdivision, 65 Sunset Hill Road, Redding, CT* (coauthor). Prepared for Redding Open Lands, Inc. Prepared by K. von Jena and S. A. Reeve, Consultants for the Redding Planning Commission, Redding, CT
- 2001 *Archeological Monitoring, Empire-Fulton Ferry State Park, Brooklyn, NY*. Prepared for New York State Office of Parks, Recreation and Historic Preservation. Prepared by Historical Perspectives, Inc., Westport, CT
- 2001 *Archeological Reconnaissance Survey of the Home Depot Property, Old Saybrook, Connecticut* (senior author). Prepared for TPA Design Group. Prepared by Historical Perspectives, Inc., Westport, CT
- 2001 *Putnam Park State Archaeological Preserve Nomination*. Prepared for the Friends and Neighbors of Putnam Memorial State Park. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *Phase 1 Archaeological Survey Report of the Crown Atlantic Telecommunications Facility in the Town of Guilford, Connecticut* (senior author). Prepared for Crown Atlantic Company, LLC. Prepared by Archaeological Consulting Services, Guilford, CT
- 2001 *Phase 1 Archaeological Survey Report of Three Crown Atlantic Telecommunications Facilities in the Town of Old Lyme, Connecticut* (senior author). Prepared for Crown Atlantic Company, LLC. Prepared by Archaeological Consulting Services, Guilford, CT
- 2001 *Archeological Reconnaissance Survey (Phase 1B) Of Lots 3, 4, and 5 Old Stagecoach Estates, Redding, Connecticut* (senior author). Prepared for Arrowhead Hills LLP. Prepared by Archaeological Consulting Services, Guilford, CT
- 2001 *Archeological Reconnaissance Survey of the Nevas Property, Post Road West, Westport, Connecticut*. Prepared for Alan Senie, Attorney at Law. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 2000 *Archeological Reconnaissance Survey at AT&T Wireless Tower Site L16, New Hartford, Litchfield County, CT, Docket No.184*. Prepared for URS Greiner Woodward Clyde. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 2000 *Archeological Reconnaissance Survey of the Proposed Yard Waste Facility, Sherwood Island Connector, Westport, Connecticut*. Prepared for the Town of Westport, Department of Public Works. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 2000 *Archeological Investigations Beneath the Old Town House (117-30), Redding, Connecticut*. Prepared for the Office of the First Selectman, Town of Redding. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *Archeological Investigations (Phase 3) of the Telephone Line at the Lonetown Manor Site (117-24), Redding, CT*. Prepared for the Redding Planning Comm. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT



- 1999 *Intensive Archeological Survey for Proposed Swimming Pool Construction within the Lonetown Manor Site (117-24), Redding, Connecticut.* Prepared for the Redding Planning Commission. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *Archeological Assessment Survey of the Krueger/Jarkow Property, Gallows Hill Road and Old Stagecoach Road, Redding, Connecticut.* Prepared for the Redding Planning Commission. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *An Historical and Archeological Assessment Survey of Redding, Connecticut.* Prepared for the Office of the First Selectman, Town of Redding. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1999 *Archeological Reconnaissance Surveys at Great Pond and Rippowam Road, Ridgefield, Connecticut.* Prepared for the Federal Emergency Management Agency, Boston. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Intensive Archeological Survey (Phase 2) of Portions of Lot 1 (Sites 117-23 and 117-24) and Lot 4 (Site 117-29), Lonetown Manor, Redding, CT.* Prepared for the Redding Planning Commission. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Assessment Survey, Fort Trumbull MPD Area, New London, Connecticut* (senior author). Prepared for Milone & MacBroom, Inc. and New London Development Corporation. Prepared by S.A. Reeve, Archeological Consultant, West Redding and Keegans Associates LLC, Willington, CT
- 1998 *Native American Uses for Redding Plant Communities.* Prepared for the Office of the First Selectman, Town of Redding. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Investigations at the Burritt Property, Redding, CT* (senior author). Prepared for the Office of the First Selectman, Town of Redding. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Reconnaissance Survey, AT&T Wireless Tower Site L18, Colebrook, Litchfield County, CT.* Prepared for Land-Tech Consultants, Inc. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Reconnaissance Survey, AT&T Wireless Tower Site L16A, New Hartford, Litchfield County, CT.* Prepared for Land-Tech Consultants, Inc. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Investigations at Three Sites in Redding Center Historic District, Redding, Connecticut.* Prepared for the Town of Redding, Office of the First Selectmen. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1998 *Archeological Reconnaissance Survey of Lonetown Manor, Redding, Connecticut.* Prepared for the Redding Planning Commission. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Archeological Assessment Survey of Lonetown Manor, Redding CT.* Prepared for Alfred and Sharon Dietzel, and Cohn and Wolf, P.C. Attorneys at Law. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT



- 1997 *Preliminary Report, Archeological Reconnaissance Survey of Lots 1 and 4, Dietzel Subdivision, Redding, Connecticut.* Prepared for Alfred and Sharon Dietzel, and Cohen and Wolf, P.C. Attorneys at Law. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Intensive Archeological Survey at Flat Swamp Cemetery #2 (413-9), Newtown, CT.* Prepared for Holahan, Gumper & Dowling, Attorneys at Law, and Island Transportation Corporation. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Archeological Assessment Survey, Harbor Brook Flood Control Project (MMI #621-4), Meriden, Connecticut.* Prepared for Milone and MacBroom, Inc. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Phase 1 Archaeological Reconnaissance Survey, Proposed Facilities Expansion, First Church of Christ, Congregational, Redding, Connecticut* (coauthor). Prepared for the First Church of Christ, Congregational. Prepared by Ernest Wiegand, III, Consultants in Archaeology, Wilton, CT
- 1997 *Archeological Reconnaissance Survey of the Flat Swamp #2 (413-9) Cemetery, Newtown, CT.* Prepared for Holahan, Gumper & Dowling, Attorneys at Law, and Island Transportation Corporation. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1997 *Archeological Reconnaissance Survey of the Flat Swamp #1 (413-8) Cemetery, Newtown, CT.* Prepared for Holahan, Gumper & Dowling, Attorneys at Law, and Island Transportation Corporation. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1996 *Archeological Assessment/Reconnaissance Survey, Silver Brook Stream Improvement Project (Project No. 93-2), Westport, Connecticut.* Prepared for Milone & MacBroom, Inc., and Westport Department of Public Works. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1996 *Archeological Reconnaissance Survey of the Raymond Family Burial Ground, Darien, Connecticut.* Prepared for Mrs. Joanne Hart and Rucci, Burnham, Carta & Edelberg, Attorneys At Law. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1996 *Archeological Assessment Survey of the Lampitelli Subdivision, PL #466, Whortleberry Hill Road, Redding, CT.* Prepared for the Redding Planning Comm. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1996 *Luzerne County, S.R. 1018, Section 370, Dallas Township Bridge Replacement Phase I Archeological Survey and Historic Resources Investigation, E.R.#92-1690-079* (coauthor). Prepared for the Pennsylvania Department of Transportation. Prepared by John Milner Associates, Inc., West Chester, PA
- 1995 *Cliffdale Road Bridge (No. 0516) Replacement, Greenwich DPW No. 93-44, CT.* Letter report to the Office of the State Archeologist, Storrs, CT, August 26, 1995. Prepared for the Cliffdale Road Homeowners Association. Prepared by S.A. Reeve, Archeological Consultant, West Redding, CT
- 1995 *Cultural Resources Contribution to the U.S. Forest Service DEIS for the Appalachian Power Company 750 kV Transmission Line from Oceana, West Virginia to Cloverdale, Virginia* (coauthor). Prepared for Woodward Clyde Consultants, Inc. and Jefferson National Forest. Prepared by John Milner Associates, Inc., Alexandria, VA



- 1995 *A Phase IB Archeological Survey in Association with the Upgrade of Segment 3 of the Cady's Falls to Johnson Transmission Line Facility, Johnson and Hyde Park, Vermont* (senior author). Prepared for the Village of Morrisville Water and Light Department. Prepared by John Milner Associates, Inc., Danbury, CT
- 1995 *Wyoming County S.R. 0292, Section 770, Bowman's Creek Bridge Replacement, Phase I Archeological Survey, E.R. No. 93-0454-131-D* (senior author). Prepared for the Pennsylvania Department of Transportation. Prepared by John Milner Ass., Inc., West Chester, PA
- 1995 *Archeological Reconnaissance Survey, State Receiving Home, East Windsor, Connecticut, DPW Project No. BI-YS-105-1, DTC No. 92-129-120* (coauthor). Prepared for Diversified Technologies Corporation. Prepared by John Milner Associates, Inc., Danbury, CT
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