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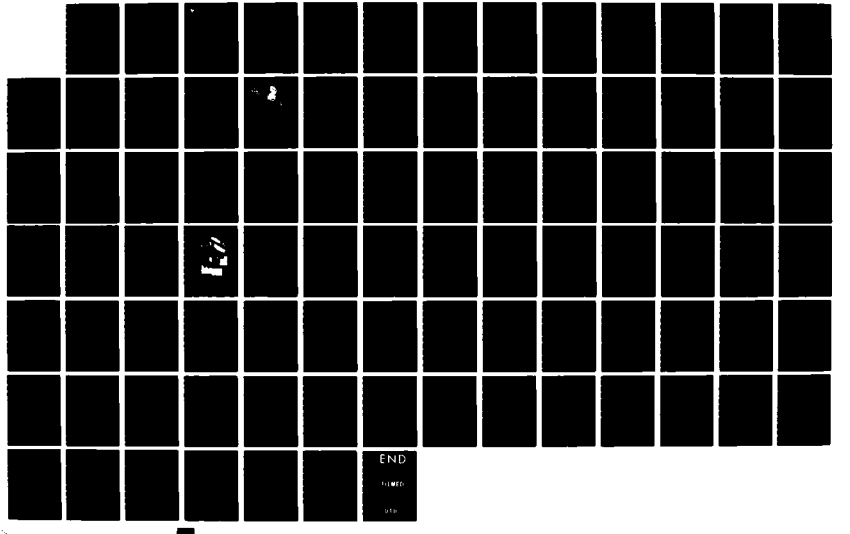

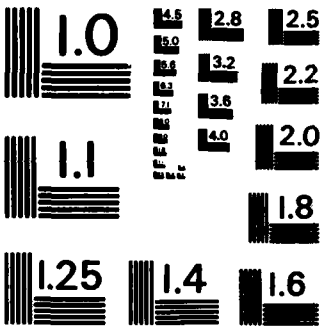

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Final
Report No. 23
March 4, 1985

An Archeological Overview and Management Plan for the Joliet Army Ammunition Plant, Will County, Illinois

Under Contract CX-5000-3-0771
with the

National Park Service
U.S. Department of Interior
Atlanta, Georgia 30303

for the
U.S. Army Materiel Development and
Readiness Command

by

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United States Department of the Interior

NATIONAL PARK SERVICE
SOUTHEAST REGIONAL OFFICE
75 Spring Street, S.W.
Atlanta, Georgia 30303

IN REPLY REFER TO

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SEP 11 1986

Mr. Cundiff
Cameron Station
Building 5
Alexandria, Virginia 22314

Dear Mr. Cundiff:

Enclosed is one copy each of the following reports:

(See enclosed list)

The reports were produced under the terms of Contract No. CX 5000-3-0771 between the National Park Service and the U.S. Army, with funding provided by DARCOM. For information regarding these reports contact Dr. Mark R. Barnes (404) 221-2654.

Sincerely,

John E. Ehrenhard
Chief, Archeological
Services Division

Enclosures

The appended resource locational data in these reports should be deleted per Dr. Mark R. Barnes.

Final DARCOM Reports

Report No. 23, An Archeological Overview and Management Plan for the Joliet Army Ammunition Plant, Will County, Illinois, by the Center for American Archeology, and Woodward-Clyde Consultants.

Report No. 24, An Archeological Overview and Management Plan for the Rock Island Arsenal, Rock Island County, Illinois, by the Center for American Archeology, and Woodward-Clyde Consultants.

Report No. 25, An Archeological Overview and Management Plan for the Volunteer Army Ammunition Plant, Hamilton County, Tennessee, by Memphis State University, and Woodward-Clyde Consultants.

Report No. 33, An Archeological Overview and Management Plan for the Lexington-Blue Grass Depot Activity, Fayette, Bourbon, and Madison Counties, Kentucky, by the Center for American Archeology and Woodward-Clyde Consultants.

Report No. 35, An Archeological Overview and Management Plan for the St. Louis Area Support Center, Madison County, Illinois, by the Center for American Archeology, and Woodward-Clyde Consultants.

Report No. 36, An Archeological Overview and Management Plan for the St. Louis Army Ammunition Plant, St. Louis County, Missouri, by the Center for American Archeology, and Woodward-Clyde Consultants.

Report No. 38, An Archeological Overview and Management Plan for the Redstone Arsenal, Madison County, Alabama, by Memphis State University, and Woodward-Clyde Consultants.

Report No. 39, An Archeological Overview and Management Plan for the Lima Army Tank Plant, Allen County, Ohio, by the Center for American Archeology, and Woodward-Clyde Consultants.

Report No. 40, An Archeological Overview and Management Plan for the Detroit Arsenal, the Pontiac Storage Facility, and the Keweenaw Field Station, Macomb, Oakland, and Houghton Counties, Michigan, by the Center for American Archeology, and Woodward-Clyde Consultants.

Report No. 28, An Archeological Overview and Management Plan for the Pine Bluff Arsenal, Jefferson County, Arkansas, by Heartfield, Price, and Greene, Inc., and Woodward-Clyde Consultants. (Corrected Copy)

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15. Supplementary Notes This report was prepared as part pf the DARCOM Historical/Archeological Survey (DHAS), an inter-agency technical services program to develop facility-specific archeological overviews and management plans for the U. S. Army Materiel Development and Readiness Command (DARCOM).

16. Abstract (Limit: 200 words)

As part of a general program in the Joliet Army Ammunition Plant's historic preservation planning, this report documents the existence of three known archeological sites (two prehistoric and one historic), at least two and possibly five potential prehistoric sites, and 250 potential historic resources on the facility. Only a very limited reconnaissance survey (later deemed "inadequate" by the Illinois SHPO) has been conducted on the Joliet facility. In compliance with Army Regulation 420-40, it is recommended that a reconnaissance survey of undisturbed lands be initiated. In addition, archival and oral historical research are recommended to further document the 250 potential historic resources. A field check may be necessary on those resources having high research potential and those evaluated as unique and/or significant. Archeological inventory data, together with historic architectural information, would then serve to help develop a facility historic preservation plan.

17. Document Analysis a. Descriptors
Archeological Management
Army Installation Management
Environmental Assessment

Reference: Thesaurus of Engineering and Scientific Terms

b. Identifiers/Open-Ended Terms
Illinois Paleoenvironment
Illinois Prehistory
Illinois History

c. COSATI Field/Group 5f

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(See ANSI-Z39.18) See Instructions on Reverse OPTIONAL FORM 272 (4-77) (Formerly NTIS-35) Department of Commerce

MANAGEMENT SUMMARY

The Joliet Army Ammunition Plant is a facility of the U. S. Department of the Army DARCOM (Materiel Development and Readiness Command), with responsibilities for the management of the prehistoric and historic archeological resources on installation lands. This report is a summary of the archeological resources presently identified on the installation, the culture history of the area that provides a context for the interpretation and evaluation of those resources, an assessment of the total archeological resource base likely to be found on installation lands, and recommendations for the future management of those resources within the overall context of DARCOM missions and public responsibilities.

Compliance with the National Historic Preservation Act, the Archeological and Historic Preservation Act, 36 CFR 800, and Army Regulation 420-40 requires the identification, evaluation, and, where feasible, affirmative management of significant archeological resources. These also require that federal undertakings (e.g., new construction, new leases, or lease renewals of public lands) take into consideration the effects of their proposed activities on these significant materials.

One reconnaissance level survey investigated the extreme northern portion of the Joliet AAP (Holien, Hancock, and Hobson 1978a, 1978b). Two prehistoric sites are recorded on the facility, and at least two potential prehistoric sites and 250 potential historic sites are documented within facility boundaries.

It is recommended that a comprehensive records search be undertaken to compile data needed to evaluate the potential historic sites and a

reconnaissance level survey of currently undisturbed facility lands be completed. This work would include archival research, field verification of the integrity of the 252 potential sites, field survey to locate any remaining sites, National Register evaluation, SHPO consultation, and report preparation. Such investigation needs to be coordinated with state preservation planning processes, and should provide information that supports the conduct of a cultural resource management program appropriate to the protection of heritage values in the context of a military installation.

PREPARERS AND QUALIFICATIONS

Barbara D. Stafford is the principal author of this report. She holds a BS summa cum laude in Sociology (minors, Anthropology, Psychology), and an MA and PhD in Anthropology. She has participated in archeological investigations across the United States and in Europe. Presently, she is a Research Archeologist with the Center for American Archeology, serving as a Principal Investigator.

Harold Hassen is a contributing author and Project Director. He holds a BA, MA, and PhD in Anthropology. He has participated in archeological investigations in the midwestern U. S. and currently holds the position of Research Archeologist with the Center for American Archeology, serving as a Principal Investigator. He has been directing projects in cultural resource management for the past five years, and is certified by the Society of Professional Archeologists in field and archival research.

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ACKNOWLEDGEMENTS

A number of people have been extremely generous with their time and effort in the preparation of this management report. Among these are Mr. Tom Erdman at the Joliet facility; Ms. Bonnie Styles at the Illinois State Museum; Ms. Marjorie Schroeder, Mr. James Batura, Ms. Lucie Morgan, and Ms. Frieda Vereecken-Odell of the Center for American Archeology; and Mr. Joseph Phillippe of the Midwestern Archeological Research Center. Ms. Ruth Sperry, Ms. Ruth Kissell and Ms. Beverly Sexauer typed and edited the manuscript draft.

Additional thanks go to Dr. Mark R. Barnes, NPS, SERO; Mr. Jack Rudy, NPS, RMRO; Mr. William G. Farrar, Deputy SHPO, Ilinois; and Ms. Susan Cleveland, Contracting Officer, NPS, SERO.

Final report production, including graphics, has been completed by Woodward-Clyde Consultants, with editorial review (particularly of management recommendations) and text preparation completed by Dr. Ruthann Knudson, Ms. Betty Schmucker, and Mr. Charles McNutt Jr.

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FOREWORD

As a federal agency with large public land holdings, the U. S. Army is responsible for the stewardship of a variety of natural and cultural resources that are part of its installations' landscapes. The Army's Materiel Development and Readiness Command (DARCOM) presently manages a nationwide network of 65 installations and 101 subinstallations and separate units, which range in size from one acre to over one million acres. As part of its programs of environmental and property management, DARCOM has requested that the U. S. Department of the Interior's National Park Service provide technical guidance to develop programs for managing installation cultural resources.

NPS is thus conducting the DARCOM Historical/Archeological Survey (DHAS), which has two major disciplinary elements. The architectural review and planning function is being directed by the Service's Historic American Buildings Survey (HABS), while the prehistoric and historic archeological resource assessment and planning function is the responsibility of the Service's Interagency Resource Division (IRD). IRD has contracted with Woodward-Clyde Consultants (WCC) for the development of guidelines for the DARCOM archeological management planning effort, and for the completion of 41 overviews and plans throughout the central United States. WCC has in turn subcontracted the technical studies to several regional subcontractors, with final editorial review of reports and preparation of text and illustrations handled by WCC.

This overview and recommended management plan for the archeological resources of the Joliet Army Ammunition Plant was prepared by the Center

for American Archeology, Kampsville, Illinois, under subcontract to WCC. It follows the guidance of "A Work Plan for the Development of Archeological Overviews and Management Plans for Selected U. S. Department of the Army DARCOM Facilities," prepared by Ruthann Knudson, David J. Fee, and Steven E. James as Report No. 1 under the WCC DARCOM contract. A complete list of DHAS project reports is available from the National Park Service, Washington, DC.

The DHAS program marks a significant threshold in American cultural resource management. It provides guidance that is nationally applicable, is appropriately directed to meeting DARCOM resource management needs within the context of the Army's military mission, and is developed in complement to state Resource Protection Planning Process (the RP3 process, through State Historic Preservation Offices). All of us participating in this effort, particularly in the development of this report, are pleased to have had this opportunity. Woodward-Clyde Consultants appreciates the technical and contractual guidance provided by the National Park Service in this effort, from the Atlanta and Washington, DC offices and also from other specialists in NPS regional offices in Philadelphia, Denver, and San Francisco.

Woodward-Clyde Consultants

Ruthann Knudson

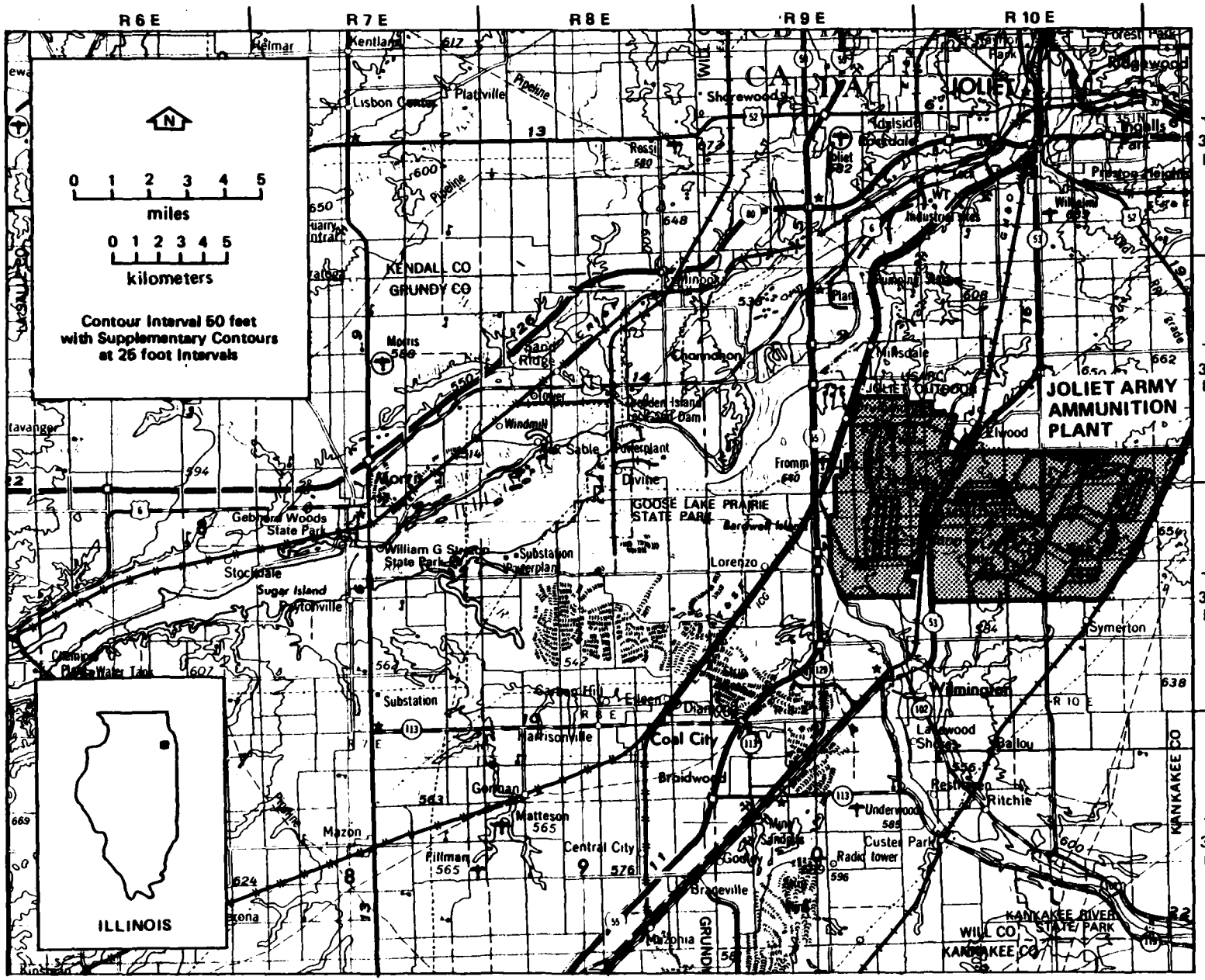
1.0 INTRODUCTION

The following report is an overview of and recommended management plan for the prehistoric and historic archeological resources that are presently known or likely to occur on the Joliet Army Ammunition Plant in Will County, Illinois (Figure 1-1). This facility is an installation of the U. S. Department of the Army DARCOM (Materiel Development and Readiness Command), which, as a reservation of public land, has responsibilities for the stewardship of the cultural resources that are located on it. The assessments and recommendations reported here are part of a larger command-wide cultural resource management program, the DARCOM Historical/Archeological Survey, or DHAS, which is being conducted for DARCOM by the U. S. Department of the Interior's National Park Service. The following is that portion of the facility-specific survey that is focused on the prehistoric and historic cultural resource base of the Joliet Army Ammunition Plant (AAP), and was developed in accordance with the Level B requirements as set forth in the DARCOM work plan (Knudson, Fee, and James 1983). A companion historic architectural study is in preparation by NPS's Historic American Building Survey (HABS), but it is not yet available (William Brenner, personal communication 1983).

1.1 PURPOSE AND NEED

A corpus of Federal laws and regulations mandate cultural resources management on DARCOM facilities. Briefly these are:

- The National Historic Preservation Act of 1966 as amended (80 Stat. 915, 94 Stat. 2987; 16 USC 470), with requirements to,



Note: Base map is the Aurora, IL, 1:250,000 topographic quad (1958, revised 1980)

Figure 1-1. MAP OF THE GENERAL VICINITY OF THE JOLIET AAP

- inventory, evaluate, and where appropriate nominate to the National Register of Historic Places all archeological properties under agency ownership or control (Sec. 110(a)(2))

- prior to the approval of any ground-disturbing undertaking, take into account the project's effect on any National Register-listed or eligible property; afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the proposed project (Sec. 106)

- complete an appropriate data recovery program on an eligible or listed National Register archeological site prior to its being heavily damaged or destroyed (Sec. 110(b), as reported by the House Committee on Interior and Insular Affairs [96th Congress, 2nd Session, House Report No. 96-1457, p. 36-37])

• Executive Order 11593 (36 FR 8921), whose requirements for inventory, evaluation, and nomination, and for the recovery of property information before site demolition, are codified in the 1980 amended National Historic Preservation Act

• The Archeological and Historic Preservation Act of 1974 (88 Stat. 174, 16 USC 469), which requires that notice of an agency project that will destroy a significant archeological site be provided to the Secretary of the Interior; either the Secretary or the notifying agency may support survey or data recovery programs to preserve the resource's information values

• The Archeological Resources Protection Act of 1979 (93 Stat. 721, 16 USC 470aa; this supersedes the Antiquities Act of 1906 [93 Stat. 225, 16 USC 432-43]), with provisions that effectively mean that

- The Secretary of the Army may issue excavation permits for archeological resources on DARCOM lands (Sec. 4)

- No one can damage an archeological resource on DARCOM lands without a permit, or suffer criminal (Sec. 6) or civil (Sec. 7) penalties

- 36 CFR 800, "Protection of Historic and Cultural Properties" (44 FR 6068, as amended in May 1982); these regulations from the Advisory Council on Historic Preservation set forth procedures for compliance with Section 106 of the National Historic Preservation Act

- Regulations from the Department of the Interior setting forth procedures for determining site eligibility for the National Register of Historic Places (36 CFR 60, 36 CFR 63), and standards for data recovery (proposed 36 CFR 66)

- United States Department of the Army procedures and standards for preserving historic properties (32 CFR 650.181-650.193; Technical Manual 5-801-1; Technical Note 78-17; Army Regulation 420-40); and procedures for implementing the Archaeological Resources Protection Act (32 CFR 229).

These procedures should be integrated with planning and management to insure continuous compliance during operations and management at each facility. This can best be achieved by an understanding of the procedures implied by the regulations and an awareness of the cultural resources potential at each facility.

1.2 THE JOLIET ARMY AMMUNITION PLANT

The 23,543 acre (9528 ha) Joliet Army Ammunition Plant is located in Will County, Illinois, 45 miles (72.3 km) south of Chicago, Illinois, and nine miles (14.5 km) south of Joliet, Illinois (Figure 1-1 and 1-2). The Joliet AAP, authorized by General Order No. 11 on October 14, 1941, is currently operated under the following mission: manufacture of explosive

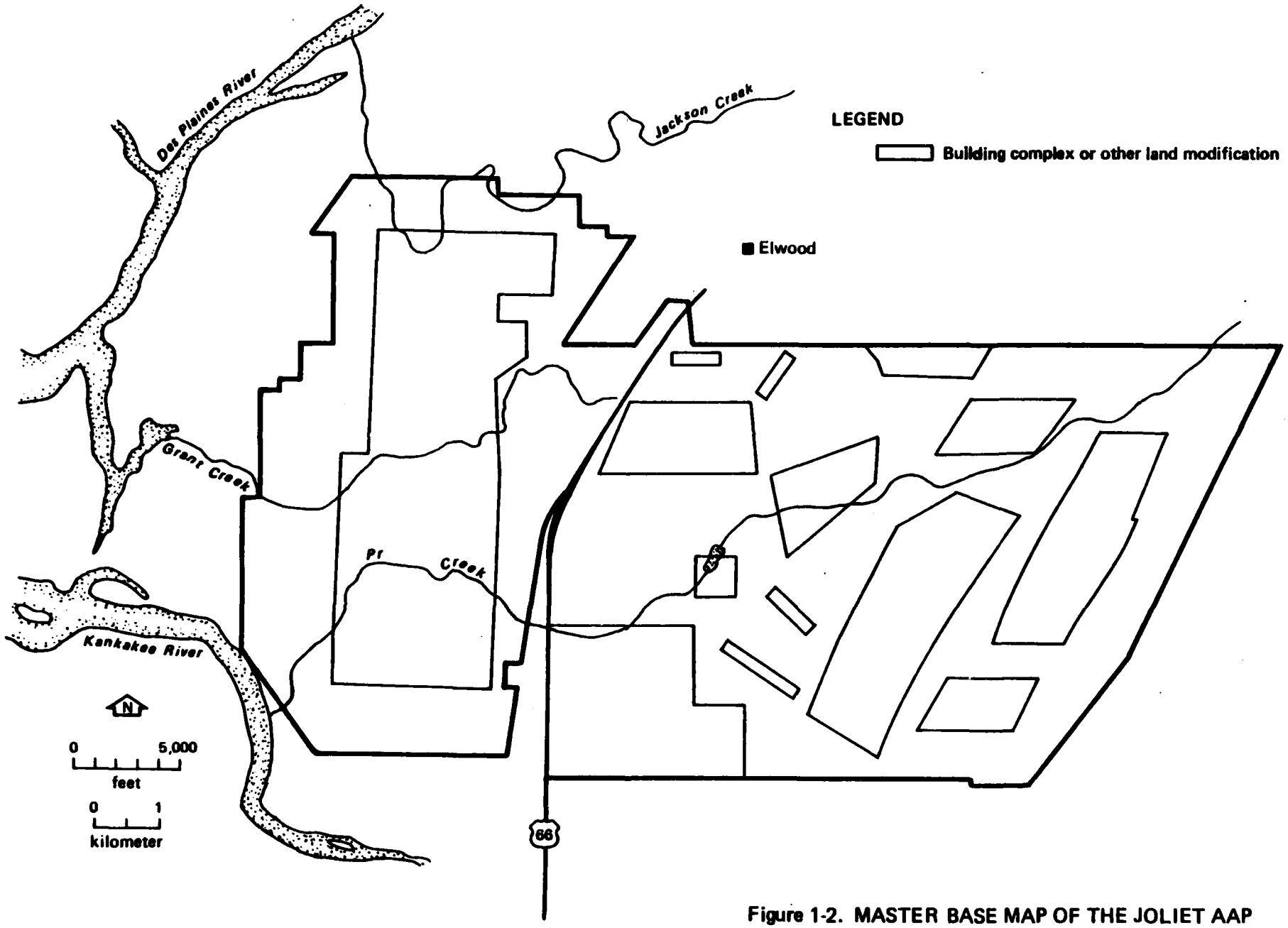


Figure 1-2. MASTER BASE MAP OF THE JOLIET AAP

and chemical materials; loading, assembly, and packing of ammunition items when the facility is in active status; and maintenance of standby facilities already in layaway. The facility is operated by Uniroyal, Inc. of Naugatuck, Connecticutt.

Except for land adjacent to Kemery Lake and the extreme western and southwestern portion of the AAP, the majority of the facility has been impacted by some sort of construction. Approximately 45 percent of the landscape has been modified to some extent by construction. Finally, approximately 14,000 acres are leased for grazing and agriculture. This acreage is scattered throughout the 23,543-acre facility.

1.3 SUMMARY OF PREVIOUS ARCHEOLOGICAL WORK CONDUCTED ON THE JOLIET AAP

Only a small portion (approximately six acres of a 660-acre study area) of the northern part of the Joliet AAP has been investigated for the presence of archeological resources (Holien, Hancock, and Hobson 1978a, 1978b). Conducted by the Illinois State Museum on the U. S. Army Reserve Outdoor Training Center, the survey identified two prehistoric archeological sites: Wi205 and Wi206. Artifact collection included bone and ceramics from Wi205 and approximately 150 flakes and groundstone from Wi206. In addition, at least two and possibly five potential prehistoric and 250 potential historic sites have been documented on the facility.

1.4 THE SOCIOCULTURAL CONTEXT OF THE ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Two known and two potential prehistoric sites have been located on the facility to date. Since little information has been gathered concerning the prehistoric sites, no known value can be attached to them by any indigenous Native American groups. Any ties to modern day groups would be remote because of the westward displacement of Native Americans during the historic period. These same resources may have high value to

scientific researchers. The lack of known archeological resources on the Joliet AAP is a function of the lack of investigations on the facility. A full range of site types and time periods can be expected in this portion of Illinois. Thus, models of settlement/subsistence which have been developed for surrounding areas can be tested on facility resources to enhance our understanding of prehistoric human behavior.

There are no known archeological resources on the Joliet facility dating from the historic period that could be of ethnic concern to the Native American community. The nineteenth-century cultural resources are associated with people of Euroamerican extraction who, from earlier settlements to the east, followed the westward frontier movement into northeastern Illinois where they established a typical rural agricultural settlement pattern. Consequently, the nineteenth-century resources are most significant to descendants of such Euroamerican pioneers and to persons having a scholarly interest in the nineteenth-century settlement and development of the Midwest. The cultural resources dating to the twentieth century developed out of the nineteenth-century cultural base and therefore are significant to the same groups.

2.0 AN OVERVIEW OF THE CULTURAL AND RELEVANT NATURAL HISTORY OF THE JOLIET AAP

This section presents a brief discussion of the physical and cultural environments of the Joliet AAP. These data provide a baseline for considering historic land use and for assessing archeological site information to produce an effective management plan for facility lands. In addition, this section describes pertinent archeological research directions.

2.1 THE PHYSICAL ENVIRONMENT

This section describes the modern earth, water, climatic, plant and animal resources that were probably available for human use during the historic period. These data can be used as a baseline against which paleoenvironmental resources may be inferred.

2.1.1 Earth Resources

The Joliet AAP is on the Kankakee plain, Till Plain section of the Central Lowland province (Leighton, Ekblow, and Horberg 1948). This physiographic unit is a nearly level to gently undulating plain with low morainic islands, glacial terraces, torrent bars, and dunes. The landscape is largely a consequence of glacial and glacial-related events of Wisconsinan age, roughly 22,000 to 12,000 BP (Willman and Frye 1970). The Kankakee plain is partly fluviolacustrine in origin, the result of temporary glacial floods expanding behind Wisconsinan morainic systems (Leighton, Ekblow, and Horberg 1948).

The facility is located in part on a modified intermorainic basin floored with thin ground moraine and chert-bearing Silurian dolomite (Willman et al. 1967), bedrock, outliers of the Rockdale Moraine, and floodbasins of the Kankakee and Des Plaines Rivers. The two rivers converge immediately west of the facility to form the Illinois River. Directly above the river confluence and west of the facility is the Minooka Moraine.

Relief on the facility is variable. From the highest Rockdale morainal crest to the general surrounding drift comprising the uplands there exists a maximum relief of 100 feet. Small intermittant drainages are shallowly incised into the drift creating a rolling topography. The same moraine crest lies about 180 feet above the two major river valleys, with outwash or drift terraces and bars up to 50 feet above the floodbasins.

Valley deposits are largely composed of sand and gravel belonging to the Henry Formation and are formed as glacial outwash and terrace remnants of former valley trains (Willman and Frye 1970, Lineback 1979). The terraces in the facility may have on the order of one to two feet of overlying loess. The remainder of the valley in the facility is essentially bedrock with only a less than 2-foot thick unit of local alluvium.

The glacial drift under the facility belongs to the Yorkville Till Member of the Wedron Formation. The Yorkville is a very clayey till and in places is overlain by glaciolacustrine clay; a thin loess cap overlies the till. Some drift may be preserved under valley terraces indicating they are at least in part erosional.

Prairie Creek and Jackson Creek both traverse portions of the facility. They have narrow floodplains with Holocene sand, silt, and clay deposits.

Soils of the facility reflect the presence of a variety of parent materials (Wascher, Veale, and Odell 1962). Major soils of the uplands developed on Yorkville till and on a thin unit of overlying loess, less than two feet thick. They are somewhat poorly drained. Elliott silt loam is developed on gently to moderately rolling areas with slopes ranging from one to six percent. Ashkum silty clay loam is developed in upland drainageways in thin loess or local colluvium over till. These soils are on nearly level surfaces and are poorly drained. Major soils that developed on river valley terraces of Henry Formation are moderately to poorly drained. They are characterized by one to four feet of pedogenically altered loess and/or silty alluvium over stratified and non-stratified drift or outwash. Major terrace soils include Drummer silty clay loam, and Proctor and Brenton silt loams.

Floodplain soils tend to be thin, generally less than two feet, and developed in drift or alluvium over bedrock. They formed on nearly level area or over slight depressions. Major floodplain soils in the facility include the Joliet and Channahon silt loams.

2.1.2 Water Resources

Most of the facility is drained by Prairie Creek, a perennial stream exhibiting a very narrow floodplain along its lowermost reach. A network of intermittent streams are tributary to Prairie Creek. Two meanders of Jackson Creek, comparable in size to Prairie, loop in the extreme north and west part of the facility.

Immediately west of the facility two rivers converge that drain the northeast part of Illinois, the Kankakee and the Des Plaines. The entire floodplain area is very poorly drained with several marsh areas along the western border of the facility.

2.1.3 Modern Climate

The climate at Joliet is predominantly continental, with relatively warm summers and relatively cold winters, but modified somewhat by Lake

Michigan (Wascher, Veale, and Odell 1962). Mean daily temperatures range between 17°F. and 33°F. (-8.3°C and .5°C) in January and between 62°F. and 87°F. (16.6°C and 30.5°C) in July. The highest temperature recorded to date was 109°F. (43°C) in July, 1936, and the lowest was -25°F. (-31.7°C) in December, 1872. The average frost-free season is 162 days, from May 2 to October 11.

Yearly precipitation (rainfall and melted snowfall) averages about 34 inches (86 cm) with a range of 24-56 inches (61-142 cm). During the growing season (April through September) rainfall averages about 21 inches (53 cm). About one year in four, rainfall is less than 17 inches (43 cm) and one year in seven it is more than 25 inches (64 cm).

2.1.4 Plant Resources

The Joliet AAP is included in the Grand Prairie Section of the Grand Prairie Division of the natural areas of Illinois (Schwegman 1973:14-16). The presettlement early nineteenth-century vegetation (Figure 2-1) consisted of 93 percent prairie (including marsh) and 7 percent forest. These vegetation units were mapped by referring to the 1821 U. S. Government Land Surveys (n.d.); their limits within sections were interpolated with the aid of the Will County soil report (Wascher, Veale, and Odell 1962).

Wet prairie and marsh were intermingled with mesic prairie throughout the study area. Hewes (1951:314) includes it in the area of Illinois that is more than one-third poorly drained wet prairie and marsh. The mesic prairie, dominated by big bluestem, Indian grass, and dropseed grass, contained few plant food resources. The wet prairie had surface water present during the winter and spring and the soil was nearly always saturated (White 1978). It was dominated by sloughgrass, switchgrass, reedgrass, and sedges. Marshes dominated by sedges, reeds, cattails, and rushes had water near or above the surface most of the year. Food plants of economic significance include duck potato and cattail.

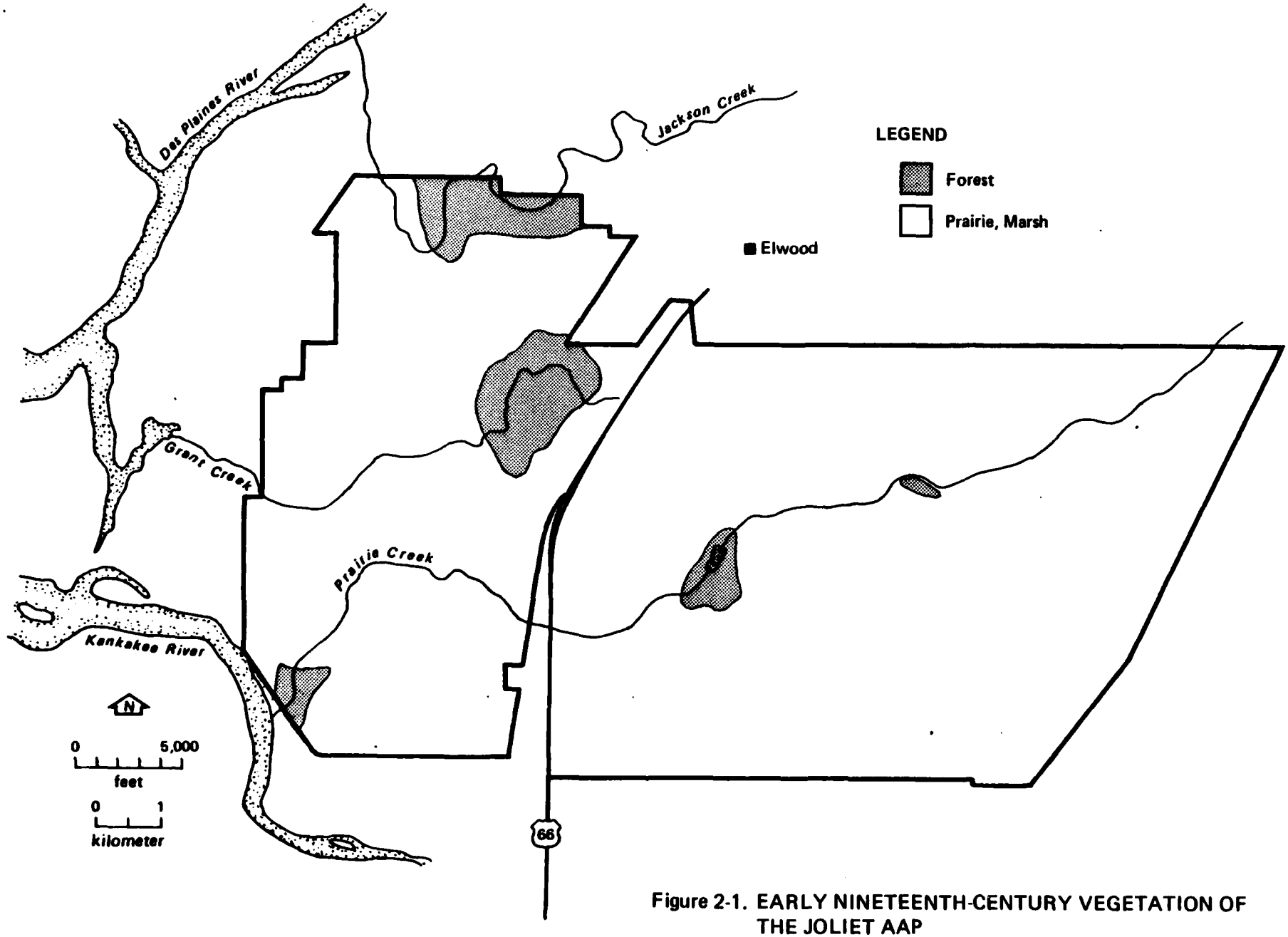


Figure 2-1. EARLY NINETEENTH-CENTURY VEGETATION OF THE JOLIET AAP

There was little forest present within the study area. In the large glacial valley within which the Kankakee and Des Plaines rivers merge, the early land surveyors recorded forests only on the sandy soils adjacent to the Kankakee River at the southwest edge of the Joliet AAP. This was not a wet floodplain forest, but rather consisted of scattered black oak, white oak, and hickory. Its composition resembled that of dry forests established on sandy soils throughout the region (Cowles 1901:173-177), though the early land surveyors' selection of witness trees ranging between 12 and 36 inches (30.5 and 91.4 cm) in diameter suggests that it was less scrubby.

Small forest groves were established along Jackson, Grant, and Prairie Creeks. These groves extended from the creek banks up the valley slopes onto nearly level terrain. Established on silt loams, they were mesophytic in character, and trees included white oak, bur oak, walnut, sugar maple, basswood, hackberry, ash, and elm and with an undergrowth of hazelnut, plum, and vines (U. S. Government Land Surveys n.d., Kilburn 1955, Hill 1927). The forest groves would have been an important source of nuts, fruits, fuel, shelter, and game animals.

2.1.5 Animal Resources

The prairies, marshes, and open forests of the Joliet AAP would have provided favorable habitat for many large and small mammals and for numerous migratory waterfowl. Economic animals of the various habitats would have included the following species (Bellrose 1968; Faulkner 1972; Hoffmeister and Mohr 1972; Jones and Fuller 1955; Parmalee 1967; Perrot 1911; Raudot 1940; and Smith 1979):

Mesic and wet prairie	Rivers and creeks
bison (late prehistoric)	fish
prairie chicken	turtle
grouse	mussel
quail	otter
coyote	

Marsh and swamp	Forests and forest edges
muskrat	deer
mink	elk
waterfowl (Canada goose, mallard, wood duck, teal, white and gray bittern, swan)	wild turkey
	raccoon
	rabbit
	woodchuck
crayfish	chipmunk
bullfrog	skunk
	opossum
	squirrel (fox, gray)
	gray wolf
	gray fox

2.1.6 Paleoenvironment

In northeastern Illinois, the spruce-dominated boreal forests of the Late Pleistocene began to be replaced about 12,000-11,000 years ago by cool temperate deciduous forests (Table 2-1). As climatic warming continued, presumably with increased dryness, the mixed hardwood forest was replaced by oak-dominated forests and subsequently by prairie. At Chatsworth Bog, 70 km (43.5 mi.) south of the Joliet AAP, prairie was established at 8300 BP. At Volo Bog, 105 km (65.3 mi.) north, the cool climate trees declined about 8000 BP and were not replaced by prairie. It is likely that prairie became dominant at the Joliet AAP at about 8300 BP.

General paleoenvironmental reconstructions for the Midwest suggest that a return toward cooler, moister conditions had begun by 4000 BP during the most recent, post-Hypsithermal climatic period (Wright 1976). This change was not registered in the pollen profiles for Chatsworth Bog where trees were unable to reinvade the surrounding undissected grassland terrain. At the Joliet AAP the prairie also continued to dominate, but it was a more favorable area than was Chatsworth for the re-establishment of forests (which possibly are relict stands from the early Holocene hardwood forests) because it is nearer to the forest-prairie boundary, nearer to floodplain refugia for trees, and had a more dissected terrain. The fact that historic groves correlate very closely with soils classified as forest soils (Wascher, Veale, and Odell 1962) indicates that they have existed long enough to influence soil development.

Table 2-1. A SUMMARY OF THE ENVIRONMENTAL HISTORY OF THE AREA OF THE JOLIET AAP

King 1981 Chatsworth Bog, east-central Illinois 70 km S		King 1981 Volo Bog, northeastern Illinois 105 km N	
Date[a]	Inferred Climate and vegetation	Date[a]	Inferred Climate and vegetation
8300 BP-Present	Climate relatively stable; expansion of prairie onto dry uplands; forest cover in lowlands and river valleys	400 BP-Present	Climate similar to present
		900-400 BP	Cooler (or wetter) climate; increase in birch trees
		7900-900 BP	Stable, dry climate; open oak forest
10,600-8300 BP	Increasing warmth and dryness; culmination of transition to oak-dominated deciduous forest; elm and ironwood reach a maximum while oak and hickory increase	10,300-7900 BP	Slowly increasing temperature and decreasing moisture, change from cool temperate or mesic trees to oak-dominated forest
11,600-10,600 BP	Increasing temperature; development of cool temperate deciduous forest with oak, hickory, maple uplands; birch, alder, elm, and ash on low wet areas. Some spruce and fir is still present as ash decreases, alder peaks, elm and oak increase	10,900-10,300 BP	Slowly increasing temperature and decreasing moisture; pine, fir, birch, and ash peak and then decline; elm and oak increase; walnut, dogwood, and hackberry appear
13,800-11,600 BP	Slowly increasing temperature; tundra on uplands, black ash expanded onto wet lowlands. Spruce pollen decreases dramatically		
Before 13,800 BP	Late glacial climate; open spruce woodland and tundra	11,070-10,900 BP	Late glacial climate; spruce woodland

[a] BP = years before present, with a present baseline of AD 1950.

2.2 THE CULTURAL ENVIRONMENT

A brief overview of the cultural chronology of the Joliet AAP and surrounding region within a radius of approximately 100 miles (160 km) is presented in Table 2-2. Within this portion of Illinois, archeological sites dating from the Paleo-Indian to Mississippian to proto-historic and historic Indian groups have been recorded. Site types are varied and include small camps, villages, and mortuary sites.

2.2.1 Prehistory

The Joliet AAP is located within the northern Illinois Valley archeological region (Wray 1952). Prehistoric traditions represented in Will County include Paleo-Indian, Archaic, Woodland, and Upper Mississippian.

Isolated artifacts representing hunting losses are all that is known of the earliest inhabitants of northern Illinois during the Paleo-Indian tradition (12,000 to 8000 BC). The small population used small seasonal encampments or base camps and a hunting and gathering economy, with an emphasis on the hunting of large animals (megafauna).

Population increase throughout the Archaic tradition (8000 to 1000 BC). Hunting and gathering continued, but more vegetable foods and aquatic and nut resources were utilized.

Ceramics were first manufactured during the Early Woodland period (1000 to 200 BC). Larger populations at this time and in succeeding times began to rely on more plant resources. Domestication of plants occurred during Middle Woodland times (200 BC to AD 400). Only during Late Woodland, times starting around AD 400, was corn (maize) agriculture an important subsistence practice.

An extensive socio-politico-religious complex known as Hopewell was characteristic of Middle Woodland times. Artifacts were traded widely,

Table 2-2. A SUMMARY OF THE CULTURAL CHRONOLOGY OF THE AREA OF THE JOLIET AAP

Cultural Unit					
Tradition	Period or Phase	Date	General Settlement Patterns	General Subsistence Systems	Kinds of Archeological Remains Representative of Period
American	Late Industrial	AD 1920 to Present	Small farms consolidated into large farms. Small towns diminish in importance as transportation creates regional centers for marketing and buying goods	Agriculture and livestock raising	Dominance of American manufactured goods; automatic bottle-machine-made bottles, decal decorated ceramics, plastic disposable packaging
	Early Industrial	AD 1860 to 1920	New markets for agricultural produce and access to manufactured goods	Agriculture, livestock raising, some gas and oil exploration 1880 to 1900	English white ironstone ceramics at beginning of period with American ceramics dominating at the end of this period, clay marbles, semi-automatic mold-blown bottles, canning jars with metal rims and liners, wire nails
	Homestead	AD 1829 to 1860	American settlement in region begins in 1819 with many small farmsteads established. Beginnings of transportation networks and industrial and urban centers with steam power industrial development beginning in 1830-40s	Agriculture, livestock raising	Log and post and beam structures during early part of period; by end of period balloon frame being built. English ceramics dominant; pearlware then whitewares; decorations such as handpainted, slip-banded etc. hand-forged nails (early) to machine-cut (late), hand-blown glass containers
	Frontier	AD 1783 to 1829	America gains control of region with a slight infiltration of American settlers into region; French traders and settlers still occupy region as well as British traders; historic Indian groups such as Miami and Kickapoo occupy region	Hunting, gathering, trading, and agriculture	Log and post and beam structures; English creamware and pearlware refined wares; hand-wrought nails; hand-blown glass containers; kettle brass
Colonial	European Competition	AD 1740 to 1783	Establishment of first permanent French settlements in IL; shift in settlement pattern in that a number of independent traders establish more permanent trading centers; English penetrate into Ohio River Valley and compete for fur trade; by 1763 English control region; Native American tribes continue trade with French and English	Hunting, gathering, trading, and agriculture	French faience ceramics and English salt-glazed and creamware ceramics, hand-blown bottles, gunflints, metal knives, hand-forged nails, kettle brass, glass beads, trader silver, etc.

Table 2-2. A SUMMARY OF THE CULTURAL CHRONOLOGY OF THE AREA OF THE JOLIET AAP (continued)

Cultural Unit					
Tradition	Period or Phase	Date	General Settlement Patterns	General Subsistence Systems	Kinds of Archeological Remains Representative of Period
Colonial (cont.)	Early Exploration	AD 1660 to 1740	First Europeans were French explorers followed by fur traders and missionaries; sites left by them would be short-term camps along rivers; Native American tribes were the Mascouten, Fox, Potawatomi, and Kaskaskia	Hunting, gathering, and trading (French)	Small temporary log structures, cache pits, Faience ceramics, hand-blown glass containers, glass beads, kettle brass, iron knives, gun parts and gunflints (French)
Native American		AD 1600 to 1846	The Atchatchakangouen, Kilatika, Pepikikia, Piankashaw, and Wea groups were all Miami groups living in the general area of the Joliet facility	Corn and bean agriculture, hunting, trading, gathering	Small villages with house remains, pit features, middens, stone tools, French trade goods such as glass beads, brass kettles, steel knives, axes, silver ornaments, guns
Mississippi[a]	Upper	AD 700 to Contact	Increased population and sedentism	Aquatic and riparian food sources exploited. Corn, beans and squash cultivated	Increased ceramic complexity, particularly, Fisher, Landford, and Huber
Woodland	Late	AD 400 to 700	Greater localization of populations; sites in variety of environmental settings; smaller more numerous sites than Middle Woodland	Broad spectrum of wild foodstuffs utilized; corn, beans, and squash played a minor role	Diverse ceramic styles, small triangular points; sharp decrease in Hopewell Interaction Sphere items
	Middle	200 BC to AD 400	Population increase and increased sedentism; habitation sites and earthworks; conical burial mounds in bottom lands along major streams or on bluff edges overlooking villages; Hopewell culture	Dependence on cultivated plants (starchy and oily seeded species; squash, bottle gourd); hunting (particularly deer); gathering of wild plants; trade in exotic items	Habitation sites with variable number of structures and pit features, large mortuary related sites including mounds, charnel houses, habitation areas; small seasonally occupied sites dependent on available plant and animal resources; Hopewell Interaction Sphere items, Havana and Hopewell ceramics; Baehr, Weaver ceramics, corner notched and stemmed projectile points
	Early	1000 to 200 BC	Increased sedentism; village sites; continued pattern of seasonal and camp sites; burials flexed and with use of red ochre	Continued Archaic pattern of hunting and gathering, with increased reliance on vegetal resources	First evidence of ceramic technology; cord-marked pottery; diagnostic types include Marion Thick, Black Sand Incised, Dane Incised, Spring Hollow ceramics; Kramer projectile points

Table 2-2. A SUMMARY OF THE CULTURAL CHRONOLOGY OF THE AREA OF THE JOLIET AAP (concluded)

Cultural Unit					
Tradition	Period or Phase	Date	General Settlement Patterns	General Subsistence Systems	Kinds of Archeological Remains Representative of Period
Archaic	Late	2000 to 1000 BC	Small seasonal or base camps with increased use of local resources, especially aquatic; shell mounds; sites located in floodplains, on terraces, bluff tops, and at base of bluffs; mortuary-related sites possible in mounds on bluffs bordering river valleys	Hunting and gathering of small game animals; utilization of nut and aquatic resources in cooler, moister environmental conditions	Lithic scatters with a variety of projectile points; ground stone; general purpose tool kits. Heavy concentration of artifacts possible in some locations
	Middle	5000 to 2000 BC	Slight population increase; occupation of small seasonal or base camps in riverine or forest areas; reduced mobility	Smaller game animals hunted; increasing use of aquatic and nut resources; warmer, drier climate	Lithic scatters with side-notched points and ground stone common
	Early	8000 to 5000 BC	Small seasonal or base camps in riverine and forest areas; probable semi-permanent or repeatedly occupied special activity sites and increased use of rockshelters; open campsites and isolated burials also occur during this time period	Hunting and gathering of smaller game animals (deer, elk); more diversified economy; increased use of vegetal foods; exploitation of more local resources during Hypsithermal	Lithic scatters with ground stone, side-notched, and stemmed points, side-notched scrapers; Hardin Barbed, Thebes, and Dalton projectile points are diagnostic; local cherts used
Paleo-Indian		12000 to 8000 BC	Population density low; small seasonal camps or base camps the pattern; isolated artifacts found on bluff tops, upland knolls, river terraces, lake beaches, and bog edges	Megafauna (mastodon, mammoth, bison, muskox, giant beaver) and smaller fauna hunted; generalized foraging	Projectile point occur as isolated finds; diagnostic forms include large fluted as well as unfluted lanceolate points

[a] Information for the prehistoric traditions comes from Billeck and Benchley (1982); and Holien, Hancock, and Hobson (1978a, 1978b). Information for the historic traditions is from Billington (1974); Historical Directory Publishing Company (1884); Howard (1972); and Woodruff, Perrins, and Hill (compilers [1878]).

including items of chert, galena, mica, and obsidian. During the Late Woodland people occupied smaller yet more numerous sites. In addition to corn, beans, and squash, a wide spectrum of wild foodstuffs were utilized.

Both population and sedentism increased during the period known as the Upper Mississippian tradition (AD 700 to contact). Large villages were occupied and populations depended on cultivated maize, beans, and squash.

2.2.2 Ethnohistory

Various Native American groups utilized the area of the Joliet AAP during ethnohistoric times: the Mascouten (Goddard 1978), Illinois (Callender 1978a), Miami (Callender 1978b), and the Potawatomi (Clifton 1978). These groups all practiced hunting, gathering, fishing, and agriculture, as well as trading; they occupied large semi-permanent summer agricultural villages, summer hunting camps, and winter camps.

2.2.3 History

Louis Joliet and Father Jacques Marquette passed through the area of the Joliet AAP on the Des Plaines River during their return from the Mississippi in 1673. A few years later La Salle and Father Hennepin travelled the Kankakee past the Joliet AAP's present boundary (Woodruff, Perrins, and Hill 1878:231).

French hegemony in the North American interior was challenged by the British, particularly through the efforts of George Croghan, Britain's Indian commissioner, Pennsylvania trader, and emissary of Sir William Johnson, (Billington 1974). Croghan's agents traded as far west as Illinois.

The Treaty of Paris (1763) reflected Britain's triumph in the rivalry for control of western trade. France ceded virtually all territory east of the Mississippi River to Great Britain, thus opening the Mississippi Valley to Anglo-American frontiersmen (Billington 1974). At the end of

the Revolutionary War (1783), the territory east of the Mississippi River passed into American control; thus began the Frontier Period.

The portage between the Chicago and the Des Plaines rivers continued as a relatively easy transportation route through the region. According to local tradition, the Ottawa leader Pontiac was assassinated in 1769 near the Joliet AAP at a site called "Mound Joliet" (Woodruff, Perrins, and Hill 1878:131).

The southern boundary of a strip of land ceded by the Indians in 1816 for the construction of a canal to Lake Michigan runs through part of the Joliet facility (Howard 1972:94). This line was surveyed in 1819, then retraced and marked with mileposts in 1834 (Historical Directory Publishing Company 1884:136). Gurdon Saltonstall Hubbard, sometime partner in John Jacob Astor's American Fur Company (Howard 1972:94) is said to have made his first trip to Fort Dearborn over the Des Plaines route as early as 1818 (Woodruff, Perrins, and Hill 1878).

The Homestead Period began in 1829 and lasted until 1860. Farmstead sites, especially the earlier ones, would likely lie near prairie-forest boundaries, with bluff bases and prairie groves the greatest potential locations. Schools, churches, and stores would likely be situated beside roads, particularly at crossroads. Family cemeteries are likely to have occurred on bluff crests or other elevated spots near family farmsteads, while community cemeteries would likely be located beside major roads. Historical documents identify a number of farmsteads, cemeteries, churches, schools, and a brickyard from the Homestead Period, and others (especially farmsteads) probably exist for which no documentation has yet been found.

The basic settlement pattern of the Homestead Period continued in the Early Industrial Period (1860 to 1920). The density of farmstead distribution became greater due to a general population increase. Most early houses were abandoned as farmers became more affluent and moved into more pretentious quarters.

The pattern of historic cultural resources dating from the Late Industrial Period (1920 to the present) would likely follow the pattern of the previous period. Some farmsteads were abandoned as mechanization of farming led to the consolidation of small farms into larger ones. This would likely be evidence in the archeological record. See Table 2-2 for more detail.

A new set of of historic archeological resources has been created through the constructon of the Joliet AAP facilities in 1941 and through the other activities that have taken place there. Although these are too recent to currently fall under statutory protection, they constitute an important cultural resource that will deserve conservation management in the future.

The historical community on the facility property was typical of the rural settlement pattern in the general region. Roads tended to follow section lines, and farmhouses usually were beside the roads -- places where two roads crossed being particularly favored sites. The size of the farms and the placement of cemeteries, schoolhouses, and churches were similar to the prevailing pattern in the surrounding area.

In sum, given the extant cultural history of the Joliet facility and surrounding area, the potential for further archeological resources on the facility is high.

2.3 ARCHEOLOGICAL RESEARCH DIRECTIONS

The Illinois Department of Conservation, Division of Historic Sites, has completed an interim archeological preservation plan for the State of Illinois (Downer et al. n.d.). As of March 1979, Will County lands were essentially unsurveyed for archeological resources. Will County was ranked in the top two percent of counties needing survey, as based on projected population growth and lack of existing data. A regional summary of previous cultural resources investigations was prepared by Billeck and Benchley (1982).

Even though archeological work within northern Illinois has been on-going since the late 1800s, the data base is generally inaccessible due to limited publication distribution or inclusion in state or organization files with no further detail. Also, surveys conducted within this area have tended to investigate major river valleys and to locate large sites or mounds; thus a representative sample of site types and locations is not known (Billeck and Benchley 1982:4).

A predictive model for site location in the Upper Illinois River concluded that sites are more likely to occur near a permanent water source, in floodplain areas during Woodland and Mississippian times, and in forests (Weston 1981). All of these contexts occur on the Joliet AAP.

Archeologial sites dating to all prehistoric and historic time periods have been recorded in this portion of northern Illinois. These include Paleo-Indian, Archaic, Woodland, Mississippian, ethnohistoric, and historic sites (Billeck and Benchley 1982).

Paleo-Indian research in the area has been sporadic because of the isolated nature of the archeological remains. The occurrence of isolated Paleo-Indian artifacts in southern Wisconsin and northern Illinois suggest that Paleo-Indian remains may yet be found on the facility.

During the Archaic period it appears that the distribution of grasslands expanded in northeastern Illinois. Archaic hunters and gatherers may have responded by abandoning upland regions and locating sites in floodplain areas; evidence of such adaptations may be retained in archeological sites on the Joliet facility. In addition to changes in settlement location, resource exploitation, and mobility, later Archaic peoples participated in more visible mortuary behavior and trade, particularly as it involved copper. These patterns were elaborated and intensified during the post-Archaic Woodland and Mississippian traditions. Investigations of regional Archaic sites can provide a baseline against which to analyze later changes in prehistoric patterns

of resource exploitation and in other religious, economic, and social behavior.

One of the major research questions relating to Early Woodland sites is the development and effect of ceramic production on other prehistoric cultural systems. In addition, cultural-ecological adaptations and social and religious patterns previously evident during the Archaic seem to be intensified. It has been postulated that Early Woodland people lived in semi-permanent villages or hamlets and used natural resources according to a wide, seasonal round of exploitation, possibly as far south as central Illinois (Munson 1982). Middle Woodland sites located in Illinois were related to a larger socio-politico-religious unit known as Hopewell. Northern Illinois is between the major Hopewell heartland in Ohio and the periphery of Hopewell occupation in Wisconsin, Minnesota, and Iowa, and may be critical in understanding interactions between these two major areas. Also, there was an apparent increase in mortuary-related behavior (i.e., burial mounds) during Middle Woodland times. Further, maize, squash, amaranth, and chenopod horticulture occurred during the Middle Woodland in surrounding areas, and its effects on the sites of this region is an important research consideration that might be able to be addressed on the AAP.

During the Late Woodland period economic and social changes are apparent in the present archeological record. These consist of the increased use of aquatic resources and seeds, and a decrease in artifactual and social complexity. Investigations of any such sites present in this region may be critical in understanding the transition between Middle Woodland cultural complexity and succeeding Mississippian developments.

The height of prehistoric complexity in the central Midwest was reached in the Mississippian period. Increased population, sedentism, and ceramic complexity were evident in northern Illinois during Upper Mississippian times. The area of the Joliet AAP is outside of the

classic or Middle Mississippian development as evidenced at Cahokia to the southwest and Aztalan to the northeast. Sites pertaining to this time period may provide important information regarding the relationship between the Upper and Middle Mississippian traditions and any ties to historic Native American groups.

Contact with early traders and trappers produced a profound change in the social political, and economic adaptations of Native Americans in the region in the seventeenth and eighteenth centuries. As a result of early explorations and later settlements, disease, trade goods, and different economic pursuits were introduced. In addition, inter-tribal hostilities may have been accentuated. The relationship between early Euroamericans and Native Americans may be examined within the Joliet area.

Historic archeological research can be extremely varied. Major questions for regional investigation may include the following: the impact of early trapping and trading on Native American populations and in European political rivalries; the use of rivers and later of railroads for transport and its effect on surrounding industry and populations; the early settlement of the area and subsequent economic changes resulting from technological advances in agriculture; and the effect of increased industrialization on the area and the development of Joliet as a modern commerce center.

3.0 AN ASSESSMENT OF ARCHEOLOGICAL RESOURCE PRESERVATION AND SURVEY ADEQUACY

Environmental and historic constraints may limit the amount and kind of archeological site preservation. These are considered here, along with previously conducted resource investigations. Assessment is made as to the adequacy of data collection, particularly documenting any gaps that may exist.

3.1 ENVIRONMENTAL CONSTRAINTS TO SITE PRESERVATION

Archeological site preservation is likely to be good on the Joliet AAP. The floodplain in the western portion of the facility has been subject to periodic inundation, so burial of archeological sites could have occurred in this area; however, the Holocene alluvium on the AAP is approximately two feet thick and archeological deposits would not be deeply buried. Surficial erosion due to deforestation and/or plowing may have impacted archeological sites.

3.2 HISTORIC AND RECENT LAND USE PATTERNS

Prior to government purchase the Joliet AAP was used for agricultural purposes. Currently, 14,000 acres of the AAP are leased for grazing and agriculture and are scattered throughout the facility (Tom Erdman, personal communication 1983). Leases are let for a period of five years.

Approximately 45 percent of the Joliet AAP has been impacted by modern construction of some sort. Table 3-1 presents a summary of the major areas of ground disturbance, along with their associated area,

Table 3-1. A SUMMARY OF HISTORIC AND MODERN GROUND DISTURBANCE THAT MIGHT LIMIT THE PRESENT ARCHEOLOGICAL RESOURCE BASE ON THE JOLIET AAP

GDA No.[a]	Type of Disturbance	Date Conducted (yr)	Reference[b]	Area Disturbed (acres)	Estimated Depth Below Surface (ft)	Ratio of Disturbed to Total Area[c]	Location of Disturbed Area						Coincidental Sites[f]
							UTM[d]		Legal Reference				
							Northing	Easting	Township	Range	Section	USGS Quad Map[e]	
1	Igloo storage, high explosives magazine	1942	RPUM	1280	1-3	9:10			34N 33N	10E 10E	36 1,2,11, 12	ELW753 SYM753	185,186,188, 189,273,274, 276,277,278
2	Igloo storage	1942	RPUM	307	1-3	9:10			33N	10E	14,15	SYM753	322,324-327
3	Safe houses, maintenance shops, loading plant, bomb filling plant	1941-1960	RPUM	1555	10-14	9:10			33N	10E	2,3,10, 11,15,16	SYM753	268,270-272, 283-284,287, 314-319,329-331,323,335.
4	Igloo storage	1942	RPUM	325	1-3	9:10			34N	10E	35	ELW753	176,177,179
5	General warehouses	1942	RPUM	230	1-3	9:10			34N	10E	34	ELW753	169,170,174, 175.
6	Administration, truck check point	1942	RPUM	192	1-3	1:3			33N	10E	4	ELW753 SYM753	165,166.
7	General purpose warehouse	1942	RPUM	34	1-3	2:3			33N	10E	9	SYM753	---
8	General purpose warehouse	1942	RPUM	45	1-3	1:1			33N	10E	8,9,16	SYM753	---
9	Administration, family housing and sewage plants	1942-1950	RPUM	1656	10-14	9:10			33N	10E	7,8, 17,18	SYM753 WLM754	306,312,339-348,239-241, 210-212,305.
10	Dam, water treatment	1942	RPUM	130	1-3	9:10			33N	10E	5,8	SYM753	261,262,293, 296.
11	Igloo storage	1942	RPUM	518	1-3	9:10			34N 33N	10E 10E	31,32,33/ 4,5,6	ELW753 SYM753	155,158,159, 160,264
12	Load lines?		RPUM	48	1-3	1:3			34N	10E	33	ELW753	---
13	Salvage property	1942	RPUM	32	1-3	2:3			34N	10E	13	ELW753	149
14	TNT & acid storage, explosivies storage, holding lots, administration, borrow pits	1942	RPUM	3712	10	9:10			33N 34N	9E 9E	11,12 35,36,25, 26	WLM754 CHM754	43-46,48-50, 56-66,74-77, 80-85,101-104, 197-204,207-8, 213-217,234-5.

Table 3-1. A SUMMARY OF HISTORIC AND MODERN GROUND DISTURBANCE THAT MIGHT LIMIT THE PRESENT ARCHEOLOGICAL RESOURCE BASE ON THE JOLIET AAP (concluded)

[a] Ground Disturbance Areas (GDAs) as mapped in Figure 3-1.

[b] RPUM = Real Property Utilization Map (1973, revised 1983).

[c] 1:1 = 90-100 percent disturbance, 2:3 = 30-60 percent disturbance, 1:3 = 0-30 percent disturbance.

[d] UTM zone 16.

[e] ELW753 = Elwood Quadrangle, 7.5 minute series, 1953; photorevised 1973.
SYM 753 = Symerton Quadrangle, 7.5 minute series, 1953; photorevised 1973.
WLM 754 = Wilmington Quadrangle, 7.5 minute series, 1954; photorevised 1973.
CHN 754 = Channahon Quadrangle, 7.5 minute series, 1954; photorevised 1973.

[f] All coincidental sites are potential historic sites; the historic sites within Joliet AAP boundaries are not sequentially numbered.

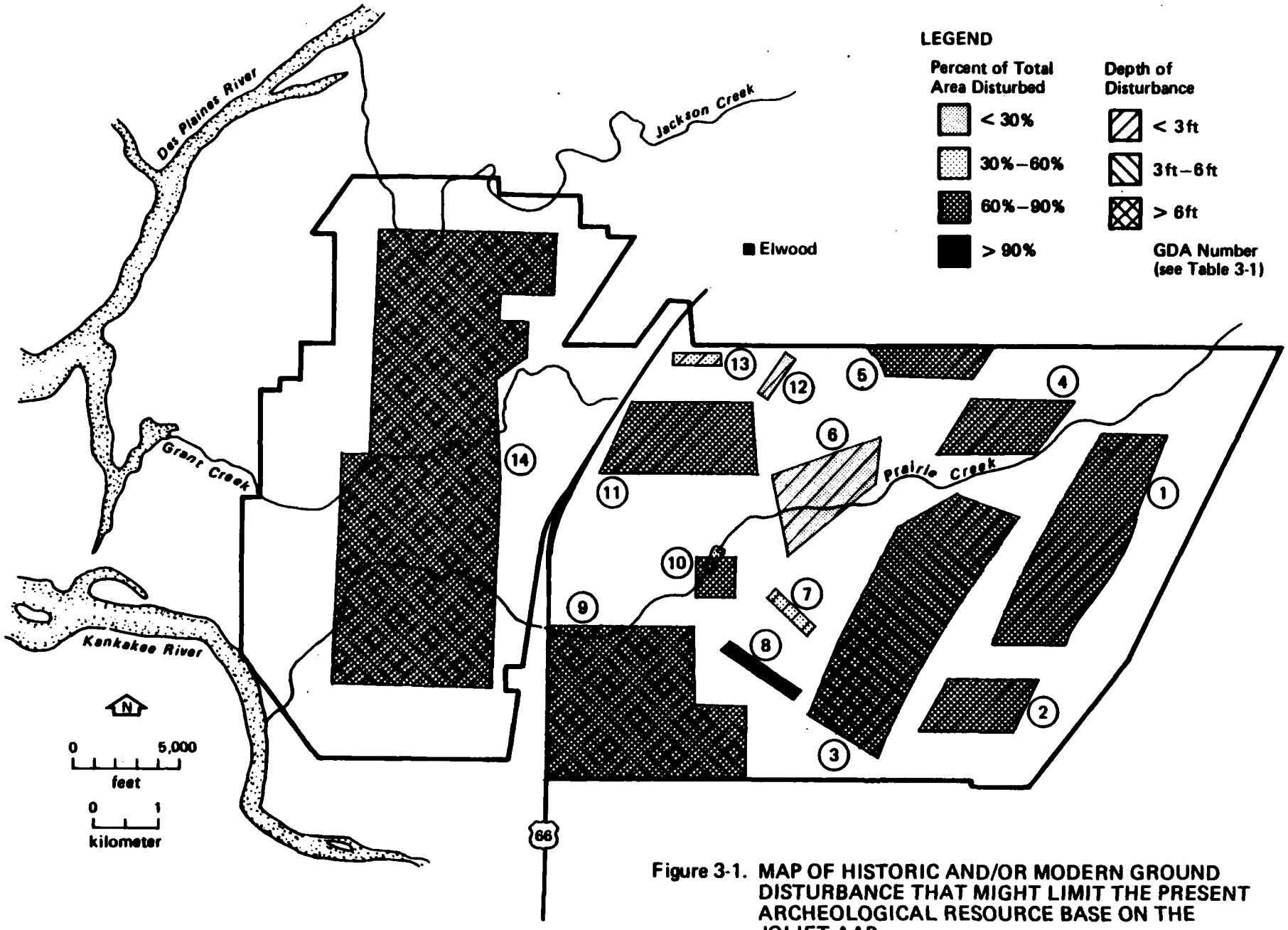


Figure 3-1. MAP OF HISTORIC AND/OR MODERN GROUND DISTURBANCE THAT MIGHT LIMIT THE PRESENT ARCHEOLOGICAL RESOURCE BASE ON THE JOLIET AAP

ratio of disturbed to total area, and location. Figure 3-1 provides the location of ground disturbance area. The ratios of area disturbed are based on the type of disturbance, concentration of building activity within the ground disturbance area, and function of the areas. Applying these criteria, building complexes related to the administration truck check point and load lines are coded as 0-30 percent disturbed; the north general purpose warehouse and the salvage property are coded as 30-60 percent disturbed; the south general purpose warehouse is coded as 90-100 percent disturbed; while all remaining ground disturbance area are classed as 60-90 percent disturbed. In addition, roads, railroads, and electrical, gas, and water lines criss-cross the facility.

The depth of subsurface disturbance is generally similar throughout the facility's ground disturbance areas. Only three of the 14 ground disturbance areas have had subsurface impacts greater then ten feet (GDAs 3, 9, and 14). In all instances basements were constructed to a depth of 10 to 14 feet. In the remaining areas depths of disturbance range from one to three feet. Thus, even though the surficial disturbance on the Joliet AAP is great, the subsurface disturbance is generally minimal.

3.3 PREVIOUS CULTURAL RESOURCE INVESTIGATIONS: COVERAGE AND INTENSITY

One archeological reconnaissance survey with shovel testing was conducted on the U. S. Army Reserve Outdoor Training Area immediately to the north of the Joliet AAP (Holien, Hancock, and Hobson 1978a, 1978b). Two non-parallel transects, each 950 feet (290 meters) long, were placed in an extreme northern area of the facility. A total of 6.4 acres of the AAP were investigated by these transects located 1320 feet (402 meters) apart. Two prehistoric sites, Wi205 and Wi206, were found. Table 3-2 summarizes available information regarding this survey, and Figure 3-2 depicts survey transect locations. [NB: The Illinois SHPO has indicated that this survey method is inadequate, and considers this 6.4-acre plot to be "unsurveyed" (William G. Farrar, personal communication 1984)].

Table 3-2. ARCHEOLOGICAL SURVEYS CONDUCTED ON THE JOLIET AAP

Survey Administration					Survey Location						Artifacts		Survey Characteristics					Identified Archeological Resources	
					UTM[b]		Legal Description												
SHPO Survey No.	Survey Institution, Firm[a]	Survey Date (yr)	Survey Record Repository[a]	Bibliographic Reference	Northing	Easting	Township	Range	Section	USGS Quad Map[c]	Collection Policy[d]	Curatorial Repository[a]	Survey Type, Area[e]	Temporal Coverage[f]	Transect Type, Interval (m.)[g]	Rate (a./person day)	Subsurface Tests[h]	Sites[i]	Isolated Finds, Features
None	ISMS	1978	ISMS	Holien, Hancock, and Hobson 1978a,b	4584500 to 4585250	401500 to 406000	34N	9E 10E	24,23 19	CHN 754	CS	ISMS	B,<1	PH	T,45	UN	A,S	Wi205 Wi206	--

[a] ISMS = Illinois State Museum Society, Quaternary Studies Center, Springfield, IL.

[b] UTM zone 16. UTMs define approximate boundaries of the survey.

[c] CHN 754 = Channahon Quadrangle, 7.5 minute series, 1954; photorevised 1973.

[d] Survey collection policy was collection of the entire surface without any location mapping.

[e] Surveys vary greatly in intent and coverage and as a state-of-the-art method that has varied over the years. Survey methods utilized here are B (an intensively reviewed sample of a broader area; area is less than one 100-acre unit of total survey area.

[f] PH = Prehistoric

[g] Transects were laid on a grid; parallel transects were at 15 m intervals from a central transect for a total width of 45 meters (Holien, Hancock, and Hobson 1978a).

[h] A = Auger cores (40 cm dia.); S = shovel testing

[i] IAS (Illinois Archeological Survey) Wi205 and Wi206 are the same as ISM (Illinois State Museum) sites $Wi^{V}193$ and $Wi^{V}194$.

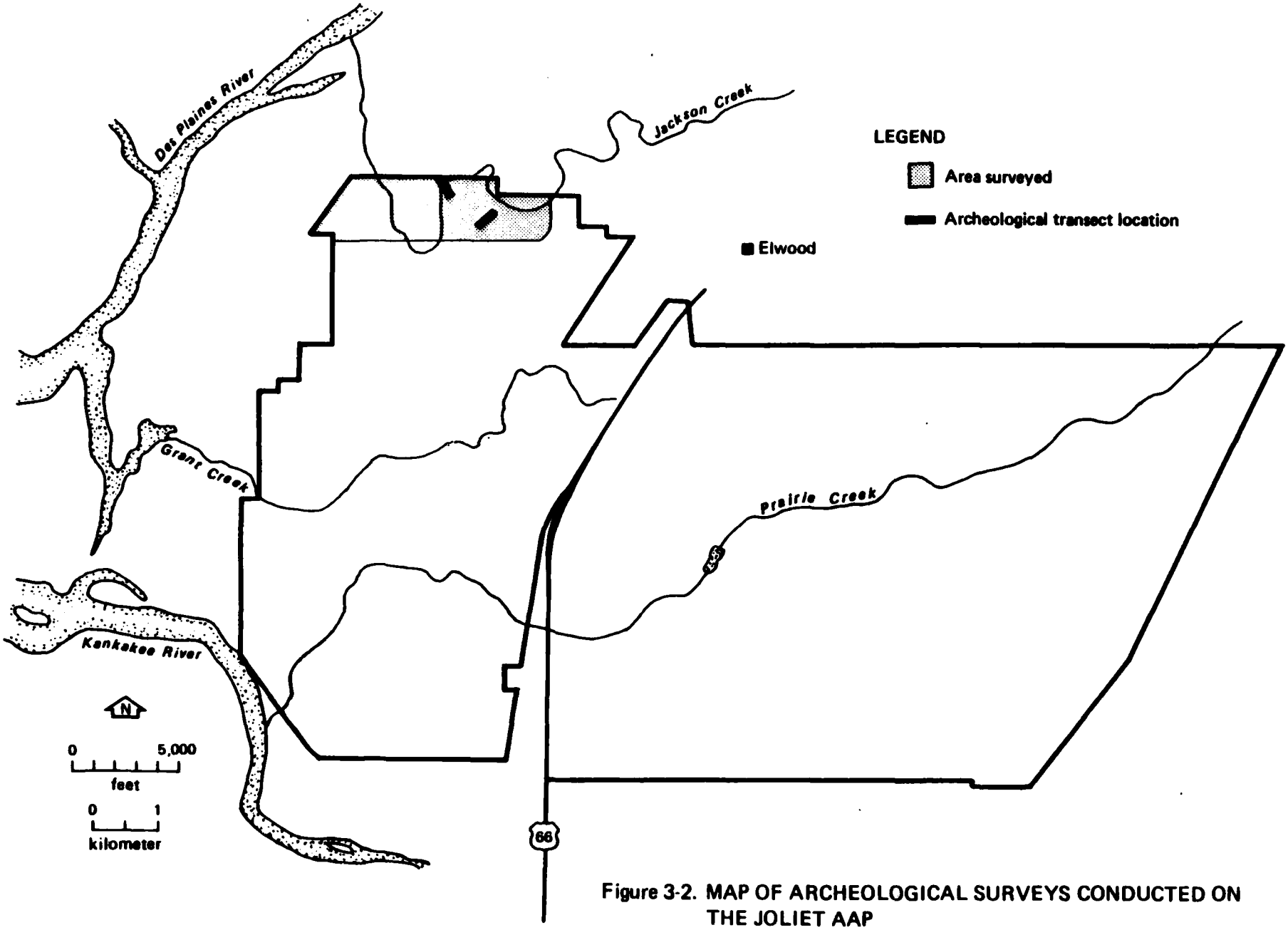


Figure 3-2. MAP OF ARCHEOLOGICAL SURVEYS CONDUCTED ON THE JOLIET AAP

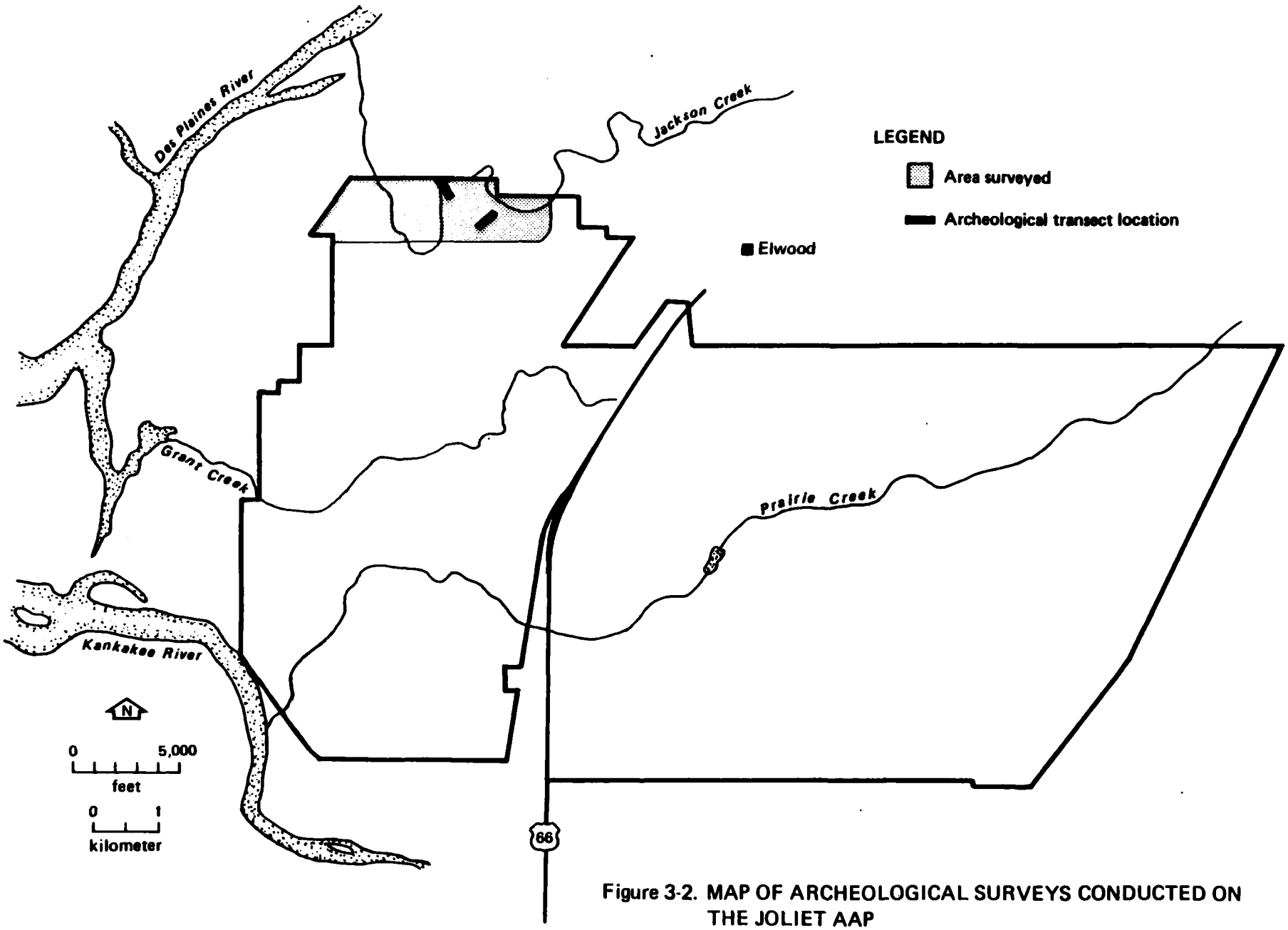


Figure 3-2. MAP OF ARCHEOLOGICAL SURVEYS CONDUCTED ON THE JOLIET AAP

In sum, out of a total of 13,479 undisturbed acres on the Joliet AAP, slightly more than six acres have been investigated for the presence of archeological resources. Thus, the total acreage and the intensity of archeological investigations for the Joliet AAP is extremely low.

3.4 SUMMARY ASSESSMENT OF DATA ADEQUACY, GAPS

Only one small archeological investigation has been conducted on the facility, and this has been deemed inadequate by the Illinois SHPO. Given the number and kinds of sites recorded within the Joliet AAP area, it is expected that more archeological resources likely exist within the facility boundaries. At present the data available for the Joliet AAP are not sufficient to make a reliable assessment of the nature of the archeological resources which likely remain. Overall, site preservation would be expected to be good even though deeply buried sites are not expected to occur. The Joliet AAP represents a data gap for the northern Illinois area.

4.0
KNOWN ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Three archeological sites are known to exist on the Joliet AAP, two of which date to the prehistoric period and one, Reed's Cemetery, to the historic period. Information regarding these sites is summarized in Tables 4-1, 4-2, and 4-3, and in Appendix A (Table A-1, Figure A-1).

Five prehistoric sites (Wi2, -8, -9, -26, and -48) have been recorded by the Illinois Archaeological Survey (IAS) as either just within or very near the facility boundary. Confusion as to the exact location of these resources has resulted from two things: incorrect mapping of the southwest facility boundary (near the Prairie Creek and Kankakee River confluence) on USGS 7.5 minute topographic maps; and only approximate locational data (no UTM coordinates) provided for four of the sites, all located in the section along the southwest boundary (an area with high likelihood for containing prehistoric archeological sites). As these sites are potentially on the AAP, facility personnel should be made aware of these known sites even though only two (Wi2 and Wi48) of the five are presently mapped as being on the property boundary. These two sites are summarized in Tables 4-4 and A-2, and are mapped in Figure A-2.

In addition, 250 potential historic sites have been documented for the facility and these constitute a major research base for historical archeological investigations on the AAP. The historic archeological sites thought to be present on the facility on the basis of documentary evidence are divided into functional classes: farmsteads, schools, churches, and cemeteries. These resources are summarized in Table 4-4, Table A-2, and are mapped in Figure A-2.

Table 4-1. PRESENTLY IDENTIFIED ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP: ADMINISTRATIVE DATA

Site Number[a]	Site Recorder[b]	Date of Site Record	SHPO Survey Number	Site Record Repository[b]	Survey Collection Policy[c]	Current Status of Investigation	NRHP Status[d]	State, Local Status	Architectural Association	Bibliographic Reference
Wi205	ISMS	1978	None	ISMS	CS	None	INSF	None	None	Holien, Hancock and Hobson 1978b
Wi206	ISMS	1978	None	ISMS	CS	None	INSF	None	None	Holien, Hancock and Hobson 1978b
H-1	US Army	1977	None	US Army	UN	None	NRI	None	None	U. S. Army 1977:19

[a] IAS (Illinois Archaeological Survey) sites Wi205 and Wi206 are the same as ISM (Illinois State Museum) sites Wi^{V}193 and Wi^{V}194; H-1 is the designator within the context of this report for the historic site known as Reed's Cemetery.

[b] ISMS = Illinois State Museum Society, Springfield, Illinois.

[c] CS = Collect entire surface, no mapping.

[d] INSF = insufficient information available by which to make a judgement as to the site's National Register of Historic Places (NRHP) status; NRI = determined by the National Register to be ineligible for listing.

Table 4-2. PRESENTLY IDENTIFIED ARCHEOLOGICAL COMPONENTS ON THE JOLIET AAP: DESCRIPTIVE DATA

	Unit Age				Unit Description							Evaluation[g]			
	Date[b]		Temporal Unit[c]						Dimension[f]						
Site Number[a]	DM	Years BC/AD	Tradition	Phase (Period)	Artifacts[d]	Features[e]	Depositional Context	Landform	Area (m^2)	Depth (m)	Ascribed Function	Percent Intact	Value Integrity	RV	CR
Wi205	Rel	Unknown Prehistoric	Unknown Prehistoric	UN	FL, GS,	UN	Surface	Riverine	10	NR	NR	UN	UN	UN	UN
Wi206	Rel	Post-1000 BC	Woodland or Mississippian	UN	PC	UN	Surface	Riverine	30	UN	UN	UN	UN	UN	UN
H-1	Post-1829	Rel	Historic	Euro-american	HG, HR	BR	Surface, subsurface	Uplands	UN	UN	UN	UN	L, A	4	2

[a] IAS (Illinois Archaeological Survey) sites Wi205 and Wi206 are the same as ISM (Illinois State Museum) sites $Wi^{V}193$ and $Wi^{V}194$; H-1 is the designation used within the context of this report for the hstoric site known as Reed's Cemetery.

[b] Dating method (DM) used is relative (REL) based on artifact attributes.

[c] UN = Unknown.

[d] FL = flaked lithics, which may or may not be accompanied by hammerstones of other flaking stone tools; GS = ground or grinding stones, which may or may not be accompanied by polished stone artifacts; PC = prehistoric ceramics; HG = historic grave markers; HR = human remains.

[e] Un = unknown; BR = formal human burial.

[f] Un = unknown; NR = not recorded.

[g] UN = unknown; National Register of Historic Places evaluation criteria: L = location, A = association. The cemetery is currently fenced and maintained in accordance with Improved Grounds Standards.

Table 4-3. PRESENTLY KNOWN ARTIFACT, ECOFACT, OR DOCUMENTARY COLLECTIONS FROM ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Site Number, Name[a]	Collection Location		Collection Characteristics					
			Artifact		Ecofact		Documentary	
	Curatorial Repository[b]	Accession Number(s)	Brief Description[c]	Size/No.	Brief Description[c]	Size/No.	Brief Description	Size/No.
Wi206	ISMS	None	FL	144	None	--	Hollen, Hancock, and Hobson 1978b:29	
			HS	1				
Wi205	ISMS	None	Ceramics	1	Bone	5	Hollen, Hancock, and Hobson 1978b:29	
					Shell	1		

[a] IAS (Illinois Archaeological Survey) sites Wi205 and Wi206 are the same as ISM (Illinois State Museum) sites Wi193 and Wi194

[b] ISMS = Illinois State Museum Society, Springfield, Illinois

[c] FL = flaked lithics, which may or may not be accompanied by hammerstones of other flaking stone tools; HS = hammerstone

Table 4-4. POTENTIALLY IDENTIFIABLE BUT NOT PRESENTLY RECORDED ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Site Number, Name	Reference[a]	Description	Research Value CR[b]
Wi2, Prairie Creek	IAS	Camp	3
Wi48, Corbin's Farm	IAS	Unknown	Unknown
JAAP 37	Thompson 1873	Farmstead	2
JAAP 40	B&V 1862	Farmstead	2
JAAP 41	Ogle 1909	Farmstead	2
JAAP 43	All	Farmstead	1
JAAP 44	Thompson 1873	Farmstead	1
JAAP 45	B&V 1862	Farmstead	1
JAAP 46	Thompson 1873	Farmstead	1
JAAP 47	All	Farmstead	2
JAAP 48	B&V 1862	Farmstead	1
JAAP 49	Thompson 1873	Cemetery	3
JAAP 50	Thompson 1873	Farmstead	1
JAAP 55	Ogle 1909	Farmstead	2
JAAP 56	Thompson 1873	Farmstead	1
JAAP 57	Ogle 1909	School	1
JAAP 58	Thompson 1873	Farmstead	1
JAAP 59	Thompson 1873	School	1
JAAP 60	B&V 1862	School	1
JAAP 61	B&V 1862	Farmstead	1
JAAP 62	B&V 1862	Farmstead	1
JAAP 63	Thompson 1873 Ogle 1909	Farmstead	1
JAAP 64	Thompson 1873	Farmstead	1
JAAP 65	All	Farmstead	1
JAAP 66	Thompson 1873 Ogle 1909	Cemetery	3
JAAP 67	B&V 1862	Farmstead	2
JAAP 68	B&V 1862	Farmstead	2
JAAP 70	Thompson Ogle 1909	Farmstead	2
JAAP 71	Thompson 1873	Farmstead	2
JAAP 72	Thompson 1873	Farmstead	2
JAAP 73	Thompson 1873	Farmstead	2
JAAP 74	B&V 1862 Thompson 1873	Farmstead	1
JAAP 75	B&V 1862	Farmstead	1
JAAP 76	B&V 1862	Farmstead	1
JAAP 77	Ogle 1909	Farmstead	1
JAAP 79	Thompson 1873	Farmstead	2
JAAP 80	Thompson 1873 Ogle 1909	Farmstead	1
JAAP 81	Thompson 1873 Ogle 1909	Farmstead	1
JAAP 82	B&V 1862 Thompson 1873	Farmstead	1
JAAP 83	Ogle 1909	Farmstead	1
JAAP 84	Ogle 1909	Farmstead	1
JAAP 85	B&V 1862 Thompson 1873	Farmstead	1
JAAP 86	B&V 1862 Thompson 1873	Farmstead	2
JAAP 87	Ogle 1909	Farmstead	2
JAAP 88	B&V 1862 Thompson 1873	Farmstead	2
JAAP 89	Thompson 1873	School	2
JAAP 90	Ogle 1909	Farmstead	2
JAAP 91	Ogle 1909	Farmstead	2
JAAP 92	B&V 1862 Ogle 1909	Farmstead	2
JAAP 93	Ogle 1909	Farmstead	2
JAAP 94	B&V 1862 Ogle 1909	Farmstead	2
JAAP 95	Thompson 1873 Ogle 1909	Farmstead	2
JAAP 96	Thompson 1873	Farmstead	2
JAAP 97	Ogle 1909	Farmstead	2
JAAP 98	All	Farmstead	2
JAAP 99	B&V 1862	Farmstead	2
JAAP 100	B&V 1862	Farmstead	2
JAAP 101	Thompson 1873	Farmstead	1
JAAP 102	B&V 1862 Thompson 1873	Farmstead	1
JAAP 103	Thompson 1873	Farmstead	1
JAAP 104	Ogle 1909	Farmstead	1
JAAP 105	Ogle 1909	Farmstead	2
JAAP 148	Thompson 1873 Ogle 1909	Farmstead	2
JAAP 149	B&V 1862 Ogle 1909	Farmstead	1
JAAP 150	Thompson 1873	Farmstead	2
JAAP 151	B&V 1862	Farmstead	2
JAAP 152	B&V 1862	Farmstead	2
JAAP 153	All	Farmstead	2
JAAP 154	All	Farmstead	2
JAAP 155	Thompson 1873	Farmstead	1
JAAP 156	Ogle 1909	Farmstead	2
JAAP 157	All	Farmstead	2
JAAP 158	Ogle 1909	Farmstead	1

Table 4-4. POTENTIALLY IDENTIFIABLE BUT NOT PRESENTLY RECORDED ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Site Number, Name	Reference[a]	Description	Research Value CR[b]	Site Number, Name	Reference[a]	Description CR[b]	Research Value CR[b]
JAAP 159	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 192	Thompson 1873 Ogle 1909	Farmstead	2
JAAP 160	All	Farmstead	1	JAAP 193	Ogle 1909	Farmstead	2
JAAP 161	Thompson 1873	Farmstead	2	JAAP 194	B&V 1862	Farmstead	2
JAAP 162	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 195	Thompson 1873 Ogle 1909	Farmstead	2
JAAP 163	Ogle 1909	Farmstead	2	JAAP 196	Thompson 1873 Ogle 1909	School	2
JAAP 164	B&V 1862 Thompson 1873	Farmstead	2	JAAP 197	Ogle 1909	Farmstead	1
JAAP 165	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 198	B&V 1862	Farmstead	1
JAAP 166	Ogle 1909	Farmstead	1	JAAP 199	Ogle 1909	Farmstead	1
JAAP 167	All	Farmstead	2	JAAP 200	Ogle 1909	Farmstead	1
JAAP 168	All	Farmstead	2	JAAP 201	B&V 1862	Farmstead	1
JAAP 169	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 202	B&V 1862	Farmstead	1
JAAP 170	Thompson 1873	School	1	JAAP 203	B&V 1862 Ogle 1909	Farmstead	1
JAAP 171	B&V 1862	Farmstead	2	JAAP 204	Ogle 1909	School	1
JAAP 172	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 205	B&V 1862	Farmstead	2
JAAP 173	B&V 1862	Farmstead	2	JAAP 206	Thompson 1873	Farmstead	2
JAAP 174	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 207	B&V 1862 Thompson 1873	Farmstead	1
JAAP 175	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 208	B&V 1862	Farmstead	1
JAAP 176	All	Farmstead	1	JAAP 209	Ogle 1909	Farmstead	2
JAAP 177	Thompson 1873	Farmstead	1	JAAP 210	Ogle 1909	Farmstead	1
JAAP 178	B&V 1862	Farmstead	2	JAAP 211	Thompson 1873	Farmstead	1
JAAP 179	Ogle 1909	Farmstead	1	JAAP 212	Ogle 1909	Farmstead	1
JAAP 180	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 213	B&V 1862	Farmstead	1
JAAP 181	Thompson 1873	School	2	JAAP 214	Thompson 1873 Ogle 1909	Farmstead	1
JAAP 182	Ogle 1909	Church	2	JAAP 215	B&V 1862	Farmstead	1
JAAP 183	Thompson 1873	Farmstead	2	JAAP 216	B&V 1862	Farmstead	1
JAAP 184	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 217	Thompson 1873 Ogle 1909	Farmstead	1
JAAP 185	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 218	Thompson 1873 Ogle 1909	Farmstead	2
JAAP 186	B&V 1862	Farmstead	1	JAAP 219	Thompson 1873	Farmstead	2
JAAP 187	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 222	B&V 1862	Farmstead	2
JAAP 188	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 223	Thompson 1873 Ogle 1909	Farmstead	2
JAAP 189	Ogle 1909	Farmstead	1	JAAP 224	Ogle 1909	Farmstead	2
JAAP 190	B&V 1862 Ogle 1909	Farmstead	2	JAAP 225	Thompson 1873	Farmstead	2
JAAP 191	Elwood 1953	Cemetery	3	JAAP 226	Ogle 1909	Farmstead	2
				JAAP 227	All	Farmstead	2
				JAAP 230	Ogle 1909	Farmstead	2
				JAAP 231	Ogle 1909	Farmstead	2
				JAAP 232	Thompson 1873	Farmstead	2
				JAAP 233	Ogle 1909	Farmstead	2

Table 4-4. POTENTIALLY IDENTIFIABLE BUT NOT PRESENTLY RECORDED ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Site Number, Name	Reference[a]	Description	Research Value CR[b]
JAAP 234	Ogle 1909	Farmstead	1
JAAP 235	B&V 1862	Farmstead	1
JAAP 236	Ogle 1909	Farmstead	2
JAAP 237	Thompson 1873	Farmstead	2
	Ogle 1909		
JAAP 238	B&V 1862	Farmstead	2
JAAP 239	Ogle 1909	Farmstead	1
JAAP 240	Thompson 1873	Farmstead	1
JAAP 241	Ogle 1909	Farmstead	1
JAAP 253	Thompson 1873	Farmstead	2
JAAP 254	All	Farmstead	2
JAAP 255	B&V 1862	Farmstead	2
	Thompson 1873		
JAAP 256	B&C 1862	Farmstead	2
JAAP 257	B&V 1862	Farmstead	2
	Thompson 1873		
JAAP 258	B&V 1862	Farmstead	2
	Thompson 1873		
JAAP 259	B&V 1862	Farmstead	2
JAAP 260	B&V 1862	Farmstead	2
JAAP 261	B&V 1862	Farmstead	1
JAAP 262	All	Farmstead	1
JAAP 263	Ogle 1909	Farmstead	2
JAAP 264	Ogle 1909	Farmstead	1
JAAP 265	Ogle 1909	Farmstead	2
JAAP 266	Thompson 1873	School	2
	Ogle 1909		
JAAP 267	Thompson 1873	Farmstead	2
	Ogle 1909		
JAAP 268	Ogle 1909	Farmstead	1
JAAP 269	Thompson 1873	Farmstead	2
JAAP 270	Thompson 1873	Farmstead	1
	Ogle 1909		
JAAP 271	Ogle 1909	Farmstead	1
JAAP 272	Ogle 1909	Farmstead	1
JAAP 273	Thompson 1873	Farmstead	1
	Ogle 1909		
JAAP 274	Thompson 1873	School	1
	Ogle 1909		
JAAP 275	All	Farmstead	2
JAAP 276	All	Farmstead	1
JAAP 277	Ogle 1909	Farmstead	1
JAAP 278	Ogle 1909	Farmstead	1
JAAP 280	B&V 1862	Farmstead	2
	Thompson 1873		
JAAP 281	Ogle 1909	Farmstead	2
JAAP 282	Ogle 1909	Farmstead	2
JAAP 283	Thompson 1873	Farmstead	2
JAAP 284	Thompson 1873	Farmstead	2
JAAP 285	Thompson 1873	Farmstead	2
	Ogle 1909		
JAAP 286	All	Farmstead	2
JAAP 287	B&V 1862	Farmstead	2
JAAP 288	Thompson 1873	Farmstead	2
JAAP 289	Thompson 1873	Farmstead	2
JAAP 290	B&V 1862	Farmstead	2
JAAP 291	B&V 1862	Farmstead	2
	Thompson 1873		
JAAP 292	Thompson 1873	Farmstead	2
JAAP 293	Thompson 1873	Farmstead	1
JAAP 294	Thompson 1873	Farmstead	2
JAAP 295	B&V 1862	Farmstead	2
	Ogle 1909		
JAAP 296	Ogle 1909	Cemetery	3
JAAP 297	Thompson 1873	Farmstead	2
JAAP 298	B&V 1862	Farmstead	2
JAAP 299	B&V 1862	Farmstead	2
	Thompson 1873		
JAAP 300	All	School	2
JAAP 301	All	Farmstead	2
JAAP 302	B&V 1862	Farmstead	2
	Thompson 1873		
JAAP 303	B&V 1862	Farmstead	2
JAAP 304	B&V 1862	Farmstead	2
	Ogle 1909		
JAAP 305	Thompson 1873	Farmstead	1
	Ogle 1909		
JAAP 306	B&V 1862	Farmstead	1
	Thompson 1873		
JAAP 307	Thompson 1873	Farmstead	2
	Ogle 1909		
JAAP 308	Thompson 1873	Farmstead	2
	Ogle 1909		
JAAP 309	Thompson 1873	Farmstead	2
	Ogle 1909		
JAAP 310	Thompson 1873	Farmstead	2
JAAP 311	Thompson 1873	Farmstead	2
JAAP 312	B&V 1862	Farmstead	1
JAAP 313	Thompson 1873	Farmstead	2
JAAP 314	Thompson 1873	Farmstead	1
JAAP 315	Ogle 1909	Church	1
JAAP 316	B&V 1862	Farmstead	1
	Thompson 1873		
JAAP 317	Thompson 1873	Farmstead	1
JAAP 318	Thompson 1873	Farmstead	1
JAAP 319	Thompson 1873	Farmstead	1

Table 4-4. POTENTIALLY IDENTIFIABLE BUT NOT PRESENTLY RECORDED ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Site Number, Name	Reference[a]	Description	Research Value CR[b]	Site Number, Name	Reference[a]	Description CR[b]	Research Value CR[b]
JAAP 320	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 335	Thompson 1873 Ogle 1909	Farmstead	1
JAAP 321	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 336	Thompson 1873 Ogle 1909	Farmstead	2
JAAP 322	Ogle 1909	Farmstead	1	JAAP 337	All	Farmstead	2
JAAP 323	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 338	B&V 1862	Farmstead	2
				JAAP 339	All	Farmstead	1
JAAP 324	Thompson 1873	Farmstead	1	JAAP 340	B&V 1862 Thompson 1873	Farmstead	1
JAAP 325	Thompson 1873	Farmstead	1				
JAAP 326	Thompson 1873	Farmstead	1	JAAP 341	Ogle 1909	Farmstead	1
JAAP 327	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 342	Thompson 1873	Farmstead	1
				JAAP 343	B&V 1862	Farmstead	1
JAAP 328	B&V 1862	Farmstead	2	JAAP 344	B&V 1862	Farmstead	1
JAAP 329	Thompson 1873 Ogle 1909	Farmstead	1	JAAP 345	Thompson 1873	Farmstead	1
				JAAP 346	All	Farmstead	1
JAAP 330	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 347	Ogle 1909	Farmstead	1
				JAAP 348	Ogle 1909	Farmstead	1
JAAP 331	Ogle 1909	Cemetery	3	JAAP 349	Thompson 1873	Farmstead	2
JAAP 332	Thompson 1873 Ogle 1909	Farmstead	2	JAAP 350	Thompson 1873 Ogle 1909	School	2
JAAP 333	B&V 1862 Thompson 1873	School	2	JAAP 351	Thompson 1873	Farmstead	2
				JAAP 352	Thompson 1873	Farmstead	2
JAAP 334	Thompson 1873	Farmstead	2	JAAP 353	Thompson 1873	Farmstead	2

[a] Burhans and Vechten 1862 (B&V 1862); Thompson Brothers and Burr 1873 (Thompson 1873); Ogle and Company 1909 (Ogle 1909); all of the above (ALL); Elwood Quadrangle, 7.5 minute series, 1953; photorevised 1973 (Elwood 1953). Illinois Archaeological Survey site forms (IAS).

[b] The Confidence Rating (CR) of the potential resource base's research value is a general assessment (based on available data) of the authors' confidence in the site's physical integrity and value (e.g., representation of activity diversity or uniqueness, temporal distinctiveness or reflection of diachronic relationships, representativeness). The CR is a ranked assessment: 1 = the site is likely to have little value or the information about it is too unreliable for making a value judgement; 2 = the resource may have research value and the authors are moderately confident that the information about it is reliable; 3 = the resource is likely to have high research value and the authors are quite confidence that the information about it is reliable. Because of the lack of information on these sites a moderate research value is coded. Sites in ground disturbance areas were coded with a lower rating because of the greater potential for disturbance. Cemeteries were rated with a high research value because they are probably still intact, even within ground disturbance areas.

5.0
AN ASSESSMENT OF THE SIGNIFICANCE OF THE ARCHEOLOGICAL RESOURCE BASE ON THE JOLIET AAP

Given the existence of archeological resources on the Joliet AAP, this section presents the analytical criteria for the assignment of research values inherent in the identified and predicted resource base. The significance of these resources is discussed under 5.1, while ideal goals and objectives for implementation of future archeological research are presented in 5.2.

5.1 THE SIGNIFICANT RESOURCE BASE

A tabular summary of the known as well as the potential archeological resource base of the Joliet AAP is presented chronologically in Table 5-1. Two prehistoric sites have been recorded on the facility. One site cannot be assigned to a particular time period, while the other dates to either the Woodland or the Mississippian tradition. Also on the facility is a historic site, Reed's Cemetery. Post-dating 1829, the site was petitioned to be included in the National Register of Historic Places but was denied (U. S. Army 1977). The cemetery is fenced and currently being maintained in accord with Improved Ground Standards.

To assess the research value of each identified site, it is necessary to consider the full range of archeological resources that could exist on the Joliet facility. Each major chronological period will be discussed in turn.

Potential Paleo-Indian archeological resources would represent large to small game exploitation and wild plant utilization within the area and

Table 5-1. SUMMARY OF SIGNIFICANT ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Temporal Unit	Thematic Unit	Resource Type	Type Occurrence: Known Occurrences (no.)	Type Occurrence: Potential Occurrences[a] (no.)	Type Occurrence: Other Likely Occurrences[a]	Sociocultural Association	Landform Association	Physical Integrity	Research Value[b]	RV CR[c]	Socio-Cultural Value[d]	SCV CR[c]
Paleo-Indian	Big game procurement and use	Probable kill area or camp	0	0	+	Native American	Uplands, floodplain	UN	4	2	1	3
Archaic	Small game and wild plant procurement and use	Probable small seasonal camp	0	0	++	Native American	Uplands, floodplain	UN	4	2	1	3
Early Woodland	Small game and wild plant procurement	Probable small seasonal or temporary camp	0	0	++	Native American	Uplands, floodplain	UN	4	2	1	3
Middle Woodland	Small game, wild and cultivated plant procurement and use	Probable camp and burial	0	0	++	Native American	Uplands, floodplain	UN	4	2	1	3
Late Woodland	Small game, wild and cultivated plant procurement and use	Probable small camp or habitation	0	0	++	Native American floodplain	Uplands,	UN	4	2	1	3
Woodland/ Mississippian	Unknown, Prehistoric	UN	1	0	++	Native American	Uplands	UN	4	2	1	3
Upper Mississippian	Villages, burial	Habitation	0	0	++	Native American	Uplands, floodplain	UN	4	2	1	3
Unknown, Prehistoric	Unknown, Prehistoric	Camp	0	1	++	Native American	Riverine	UN	4	2	1	3
Unknown, Prehistoric	Unknown, Prehistoric	UN	1	1	++	Native American	Floodplain, uplands	Un	4	2	1	3
American	Religious	Church	0	2	++	Euroamerican	Uplands	Fair	4	3	3	3
American	Religious	Cemetery	1	5	++	Euroamerican	Uplands	Good	4	3	3	3
American	Educational/	School	0	14	++	Euroamerican	Uplands	Fair	3	3	2	3
American	Domestic/ Agricultural Technology	Farmstead	0	229	++	Euroamerican	Variable	Fair	5	3	2	3

Table 5-1. SUMMARY OF SIGNIFICANT ARCHEOLOGICAL RESOURCES ON THE JOLIET AAP

Temporal Cultural Unit	Thematic SCV Unit	Resource Type	Type Occurrence: Known Occurrences (no.)	Type Occurrence: Potential Occurrences (no.)	Type Occurrence: Other Likely Occurrences[a]	Occurrence Association	Sociocultural Association	Physical Landform Affinity	Research Value[b]	CR[c]	Socio-Cultural Value[d]	CR[c]

[a] The number of presently known or potential archeological resources of this type is specified here. In addition a judgement has been made as to the likelihood that other members of this resource occur within the facility, based on an analysis of the ethnohistoric or historic land use patterns and/or a review of the landform patterning of prehistoric materials. The probability of these additional occurrences has been noted as negative (-), positive (+), or highly positive (++).

[b] This is a subjective summary assessment of the overall research value (RV) of the resource class. It is an evaluation of the class' quality of preservation, representation of activity diversity or uniqueness, and temporal distinctiveness or reflection of diachronic relationships. It incorporates the need to avoid triviality, but to acquire what may be redundant data so as to discern patterns among those data. Based on these research values, the resource classes under discussion are ranked from 0 (no value) to 5 (highest value), including "NA" if such an evaluation is believed to be impossible given the available information; information unknown (UN).

[c] The Confidence Rating (CR) is a further evaluation of the perceived reliability of the research (RV) or sociocultural (SCV) values of the resource class. 1 = the judgement is more guess than science, and likely not to be reliable; 2 = the judgement is moderately reliable; 3 = the judgement is most likely reliable; UN = information unknown.

[d] This is a subjective summary assessment of the overall sociocultural value (SCV) of the resource class. It is an evaluation of the social, religious, or political importance of the resource to a contemporary community, from 0 (no value) to 5 (highest value); information unknown (UN).

probably would consist of isolated artifacts. Paleo-Indian remains would most likely be small, seasonally occupied camp sites, or more probably isolated occurrences of projectile points or point fragments. Given the scarcity of such remains in the region overall, their research value would be high.

During the Early Archaic Period, various resources were exploited according to a seasonal schedule of availability. During the Middle Archaic period, people relied on more concentrated and less mobile resources, which resulted in an increase in storage facilities, decreased settlement mobility, and increased use of aquatic resources.

These changes in the archeological record coincide with environmental changes during the Hypsithermal (Wendland 1978). Increasing dryness and grassland expansion could be one reason why hunter-gatherer groups abandoned the uplands (Carmichael 1977; Hajic 1981; O'Brien, Warren and Lewarch 1982). Whatever the reason for the predominance of Early Archaic sites and the scarcity of Middle Archaic sites in the uplands, the reflection or variance from this pattern by the archeological resources on the Joliet AAP (Carmichael 1977; Conrad 1981; Hassen et al. 1981; Klippel and Maddox 1977; Lewis 1977) is a significant scientific question. Consequently, in floodplain areas the prediction is that there may be a higher proportion of Middle Archaic sites; this also merits testing.

The research value of any Early and Middle Archaic sites with integrity located on the facility is likely to be high because they may contain information useful in:

(1) determining the degree and type of human mobility,

(2) determining type of subsistence base,

(3) determining the effects of the Hypsithermal in site location and resource exploitation,

(4) understanding the development of sedentism between the Early and Middle Archaic (Brown and Vierra 1983, Ford 1977).

Late Archaic sites within the region of the Joliet facility may represent more permanent settlements with increased population density and group stability. In addition, mortuary sites may occur. The research potential of Late Archaic sites also would be moderately high because they may allow the investigation of increased social and economic complexity which is manifest in later times on the facility.

Early Woodland sites appear to represent an intensification of Late Archaic cultural-ecological adaptations within the region. Occupation sites occur on bluffs, upper terraces, and hilltops and may be concentrated along rivers. Scattered semi-permanent villages or hamlets may occur where intensive hunting, plant collecting and fishing are the major economic pursuits of the occupants. The research potential for the Early Woodland sites on the Joliet facility is high because they are relatively scarce, and contain the first evidence for a ceramic technology.

Middle Woodland sites generally consist of large burial mounds, geometric earthworks, dispersed hamlets on floodplains and terraces of major rivers, or small base camps or special use sites. Economic pursuits included hunting and gathering of amphibians, birds, fish, mammals, reptiles, shellfish, seeds and nuts. Horticulture of squash, corn, amaranth, and chenopod also occurred. Middle Woodland sites located in Illinois were related to a larger socio-religious-political unit known as Hopewell. The research potential of Middle Woodland sites is high because they contain evidence that relates to an apparent pattern of increased prehistoric social and economic complexity.

During the Late Woodland in general, and particularly in its latter stages, populations apparently increased, as manifested by an increase in numbers of sites and types of sites, artifactual, and subsistence

remains. At the same time, dependence on cultivated foods such as maize, beans, and squash, began. Any Late Woodland sites with integrity on the AAP would have high research value because their examination may assist in the regional:

- delineation of terrestrial vs. aquatic resources used by Late Woodland peoples and the determination of the resource availability of each

- determination of the relative importance of fauna derived from major habitats and the examination of the localization of resource exploitation

- reconstruction of the diet of late Late Woodland people and documentation of the prehistoric subsistence change from the Middle Woodland time period.

Finally, the Upper Mississippian Tradition in the vicinity of the Joliet AAP consists of farmsteads, special use camps, and habitation areas. Even though hunting and gathering were still practiced, maize, beans, and squash were intensively cultivated. The research potential of any Upper Mississippian sites that have integrity is likely to be high because they can aid in the delineation of subsistence and settlement patterns which are currently not well understood, as well as in the investigation of ties to historic Native American groups (Billeck and Benchley 1982:13).

Any historic archeological resource on the facility would have high research value because it may allow the investigation of the following: 1) acculturation of Native American communities following both direct and indirect contact with Europeans; 2) the sociocultural (in particular, the economic) effects of French and English trade in the area on Native American, Euroamerican, and European cultures; 3) adaptations by American Tradition farmers to the local environment and to regional and national

economic and political events, including environmental factors affecting the selection of farmsteads and other kinds of sites; exploitation of local resources, degree of self-reliance of farmstead units, dependency upon imported manufactured goods, agricultural practices, trade and communication routes, effects of political and economic events (e.g., the Civil War, industrialization) and popular styles as reflected in such things as architecture, furniture, folk art, dress, and grave markers; and 4) the reconstruction of the lifestyles and sociocultural values of historic Native Americans of the rural farming communities dating to the American Tradition.

The potential historic cultural resources on the Joliet facility all appear to post-date 1783 and thus are part of what is termed the American Tradition. These include two churches, five cemeteries, 14 schools, and 229 farmsteads which appear on nineteenth-century platbooks. It is difficult to asses the physical integrity of these sites as they have not been studied in the field. A total of 119 potential resources are contained in ground disturbance areas (Table 3-1, Figure 3-1) and may have been impacted. The remainder have probably maintained fair subsurface integrity.

5.2 IDEAL GOALS AND OBJECTIVES

Given the assumption that significant (and presently unidentified) archeological resources are located within the AAP, the following is an outline of a desirable program to manage these resources for the best preservation or use of their research and sociocultural values. An ideal facility archeological resource management program would encompass identification, evaluation, conservation, excavation and analysis, and interpretation activities. It would emphasize the conservation of significant resources, and their excavation or "use" only to mitigate any unavoidable destruction or damaging activities or in search of important information that is being collected and studied within a well designed research project.

Since only one small archeological resource survey has been conducted on the Joliet AAP, the first step in developing a management program is field identification of the sites predicted to be there. Such an identification program should begin with a more intensive and extensive review of oral and archival historic information. The focus of this preliminary review would be to evaluate the historical information base presently available without recourse to any historical archeological investigations, and through consultation with professional historians and people with personal ties to the pre-1941 occupants evaluate the historic significance of any materials that might be left on the facility. This would complement the more extensive evaluations of natural resource distributions presented within this report as the basis of evaluating the distribution and potential significance of any prehistoric archeological resources there.

The second stage of the identification program would be the field inventory of the undisturbed portions of the facility to identify the surface evidence of any historic or prehistoric archeological sites. Such an identification project would include the pedestrian survey of the facility, with close-interval spacing of survey transects. Large-scale aerial photographs and detailed topographic maps should be used for field reference. Standard forms for recording the surface characteristics of identified prehistoric and historic resources should be completed as part of the inventory procedures and the area and methods of the survey should be well documented. The preferred survey policy for most contemporary projects is to make only minimal collections of artifacts off of site surfaces, retaining only those that are diagnostic of particular styles and/or technologies or are immediately vulnerable to non-professional collection or damage. Any collected materials should be fully described and appropriately curated, provided that all of this is a federal cost.

In addition to a description of the surface evidence of these sites, the ideal inventory would include some kinds of subsurface investigation (e.g., augering, test excavation, remote sensing) to evaluate the

contents, extent, and integrity of the identified resources. Finally, this stage should include an identification of the important research or other values inherent in the inventoried sites, both as a basis for the development of future research designs as well as for the evaluation of management options should the resource be threatened with damage or destruction by non-archeological-research activities. For purposes of future research development, the identification and evaluation of the resources needs to be well documented and available to the research community. For future resource management purposes, it needs to be appropriately stated within the U. S. Department of the Interior's terminology and concepts of resource significance.

The prevailing professional approach to archeological resources for the past decade has been one of conservation (Lipe 1977:21)--"Our goal... is to see that archaeological resources everywhere are identified, protected, and managed for maximum longevity." Thus, the ideal objective is to develop a "bank" of significant sites that may be investigated through a variety of techniques, including destructive excavation, only as part of well designed research projects that are scheduled within a regional research program that seeks to maintain the overall range of undisturbed sites for future use. A corollary to this is that the sites should be allowed to be investigated by scientists in a non-reactive situation (i.e., not threatened with immediate destruction of the resource). Such basic investigation of resources on the public lands should be conducted only within research designs that are appropriate to the contemporary regional or broader study questions. It should also be conducted only within a program that includes long-term protection of the information collected from the resources, and a commitment to the public dissemination of that information.

If an archeological site evaluated as being of research or sociocultural significance is going to be damaged or destroyed, the ideal objective would be to preserve its included materials and information values through a data recovery program. Such a program would be little

different from the non-reactive investigations discussed above, but is likely to be conducted in conjunction with requirements for facility development. Again, an important element in such a research program would be the adequate analysis, curation, and publication of the recovered information.

In the event the installation has accomplished its 106 Section procedures and finds a previously unidentifiable resource during its ground disturbance and/or construction phase, it will effect compliance using 36 CFR 800.7 procedures.

Thus, in summary the ideal goals for the management of the Joliet AAP archeological resources are to:

- Conduct a preliminary oral and archival historic review of the facility area
- Inventory and evaluate all the resources on the facility
- Conserve the significant sites, allowing their research use only within a regional research design
- Recover the contents and information from any significant resources threatened by damage or destruction
- Provide the public with the substance of the information values that are inherent within or collected from the facility's archeological resource base.

6.0 A RECOMMENDED ARCHEOLOGICAL MANAGEMENT PLAN FOR THE JOLIET AAP

Given the present status of archeological investigations on the Joliet AAP, and the sociocultural and research values that appear to be inherent in the facility's prehistoric and historic archeological sites, the following preservation planning and management recommendations are presented.

6.1 FACILITY MASTER PLANS AND PROPOSED IMPACTS

At present, the sewage treatment plant (group 20 building complex) is being modified. Subsurface disturbance in this project reaches a depth of 20 feet. No further plans exist for new construction or modifications to present complexes (Tom Erdman, personal communication 1983).

Approximately 14,000 acres on the facility are leased for agricultural purposes. Excluding the major building complexes, this acreage is scattered throughout the facility. Leases are let for a period of five years with staggered expiration dates (Tom Erdman, personal communication 1984).

6.2 APPROPRIATE ARCHEOLOGICAL MANAGEMENT GOALS WITHIN THE JOLIET AAP'S MASTER PLAN

6.2.1 General Facility Planning

Army Regulation 420-40, drafted pursuant to the National Historic Preservation Act and 36 CFR 800 (Section 1.1) require that each DARCOM installation have a Historic Preservation Plan or have documentation on

file indicating that there are no installation resources appropriate to such management planning. At present, there is no such negative declaration and at least three archeological sites are known to exist on the facility. Therefore, the present report is organized so as to provide a basis for such a Plan to be developed and implemented on the facility.

Department of the Army Regulation 420-40 prescribes Army policy procedures and responsibilities for compliance with the National Historic Preservation Act of 1966, as amended; for the maintenance of state-of-the-art standards for preservation, personnel and projects; and for accomplishment of the historic preservation program. The Historic Preservation Plan has the following objectives:

- Provision of historic and archeological data for the installation's information systems
- An outline of priorities for acquiring additional information to determine if there may be additional projects not yet located or identified
- Establishment of a procedure for the evaluation of historic properties
- Provision of guidelines for the management of historic properties
- Implementation of a legally acceptable compliance procedure with the Advisory Council for Historic Preservation (ACHP) and the State Historic Preservation Office (SHPO)
- Integration of historic preservation requirements with the planning and execution of military undertakings such as training, construction, and real property or land use decisions

- Ranking of facility projects by their potential to damage historic properties

- Identification of funding, staffing and milestones needed to implement the plan.

The identification and evaluation of historic and prehistoric resources on the AAP has been initiated by the completion of this overview and plan (as well as the identification of sites Wi205, Wi206, and H-1). This needs to be followed by a full identification and evaluation program as outlined in Section 5.2: more extensive oral and archival historic review; field surface and subsurface inventory of all undisturbed AAP lands; evaluations of resource significance in terms of U. S. Department of the Interior criteria. Some or all of this recommended work could be postponed until there is a specific ground-disturbing project that requires compliance with the National Historic Preservation Act (see Sections 1.1, 6.2.2), if development of a historic preservation plan more specific than this document is also to be postponed and if such scheduling has been accepted by the Illinois State Historic Preservation Office (SHPO).

Under any schedule, until the determination has been made that identified prehistoric or historic sites are <u>not</u> significant they must be managed as if they were, for compliance with Section 110(a)(2) of the National Historic Preservation Act:

> (2) With the advice of the Secretary [of the Interior] and in cooperation with the State Historic Preservation Officer for the State involved, each Federal agency shall establish a program to locate, inventory, and nominate to the Secretary all properties under the agency's ownership or control by the agency, that appear to qualify for inclusion on the National Register in accordance with the regulations promulgated under section 101(a)(2)(A). Each Federal agency <u>shall exercise caution</u> to assure than any such property that might qualify for inclusion is not inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly [underlining added].

Under this guidance it is recommended that the three identified sites on the Joliet AAP be managed as if they were Registered. We suggest that this management include avoidance of the sites by any authorized ground-disturbing activities, and monitoring of the area to restrict their being vandalized.

As outlined in the previous discussion of ideal archeological management goals (Section 5.2), a recommended next stage in the assessment of the importance of the facility's historic archeological resources is an intensive review of archival material and evaluation of regional historic research objectives. The archival review might focus on information stored in the National Archives and Records Service, as well as a more intensive review of Will County land records, wills, and other pertinent documents and interviews of pre-1940s residents of AAP lands. This review and evaluation should include consultation with the Illinois SHPO to identify and prioritize regional historic research questions to which the historic archeological information from identified sites might contribute. The goal of this research would be to define the historic significance that any of the identified sites might have if it had contextual integrity and was to be archeologically investigated.

As discussed in Section 5.2 and required by the National Historic Preservation Act (NHPA), the next step in the identification stage of archeological resource management should be field investigation to locate sites and determine their boundaries, contents, and integrity. NHPA Section 110(a)(2) requires that all federally owned or controlled lands be surveyed to identify all significant archeological properties on them. A strict adherence to this would support the immediate intensive archeological inventory of all Joliet AAP lands not previously surveyed or not clearly documented as having deep and extensive modern ground disturbance. The current prevailing federal policy about the implementation of this requirement is that it should be a "reasonable" program consistent with the overall schedules, budget, and multiple objectives of the land-managing agency. Given the high likelihood that

there are significant prehistoric and historic archeological materials on the facility, it is recommended that it would be most cost-effective to complete the archeological inventory of all undisturbed lands on the facility as soon as it is fiscally possible. If the archival review and consultation indicate that any of the identified historic sites have potential archeologial value, then those may need further field investigation to determine their boundaries and integrity.

Based on the historic and field inventory information, the significance of all identified sites should be evaluated following criteria set forth in 36 CFR 60.6 and in accordance with guidelines from the Illinois SHPO. If sites are judged to be significant, a plan for their long-term management should be developed in the context of overall property management (including the management of any identified ethnohistoric or historic architectural/engineering resources). Such management activities might include resource conservation in place, biannual field review of site condition, public interpretation of resource values, scientific investigation of the sites, and/or planned site destruction by military activities. If significant sites are identified, it is recommended that the DARCOM officer responsible for the Joliet AAP operations provide the Illinois SHPO with the opportunity to review and comment on the proposed management plan. If the evaluation is made that none of the sites on the AAP is significant, filing of a report to that effect with the SHPO would complete the facility's compliance requirements for preservation planning.

9.2.2 Project-Specific Resource Protection or Treatment Options

Approximately 45 percent of the Joliet facility has been impacted by modern construction, and any future ground-disturbing activities in those areas is unlikely to need pre-construction review of its potential adverse impacts to significant archeological resources (the exception might be deep new excavation into previously undisturbed deposits beneath modern buildings or structures). However, new ground-disturbing construction in, or leasing of, AAP land would be a federal undertaking

requiring compliance with Section 106 of the National Historic Preservation Act (see Section 1.1 of this report). Section 106 requires that DARCOM consult with the Illinois SHPO and the federal Advisory Council on Historic Preservation about the effects of such an undertaking on significant archeological sites. Without a SHPO-accepted facility preservation plan, it is DARCOM's responsibility to either complete such an evaluation and consultation program for each project or to have on file documentation of the completion of adequate survey and evaluation so as to confirm the absence of or lack of significance of any archeological site that might be affected by the proposed activity.

Since the entire undisturbed portions of the Joliet AAP were not subjected to intensive review during the 1978 archeological survey, construction or ground-disturbance in areas currently unsurveyed could impact archeological resources. Consequently, if such activity was to occur, survey, evaluation, and perhaps required mitigative data recovery (scientific archeological investigation of a significant site) could be necessary on a project-specific basis. Such evaluation and preservation programs require consultation with several federal agencies, and are frequently time-consuming and may cause construction delays. However, such a project-specific program can usually be expedited if the appropriate preservation planning has been completed and reviewed by the State Historic Preservation Officer.

6.2.3 A Summary of Recommended Management Directions and Priorities for Effective Compliance and Program Development

In order to comply with both long-range historic preservation planning needs, and requirements for evaluating the effect of specific proposed development projects on significant archeological resources, we recommend the following management activities. These are listed in their recommended order of priority:

- Consultation with the Illinois State Historic Preservation Office (SHPO) about the recommendations in this overview and plan

- Completion of archival and oral historical research to disallow or demonstrate the potential historical significance of presently identified historic archeological sites

- Reconnaissance-level survey of undisturbed facility lands, including the 6.4-acre area "inadequately" surveyed in 1978 (13,479 acres), and evaluation of the significance of any archeological resources on them; appropriate treatment of any resources judged to be significant

- Completion of National Register eligibility assessments for all presently identified archeological resources, which is likely to involve additional field testing of the sites after their historic documentation has been reviewed

- Completion and implementation of a facility historic preservation plan if the resources are determined to be significant.

6.3 ESTIMATED SCOPE OF WORK AND COST LEVELS FOR PRESENTLY IDENTIFABLE MANAGEMENT NEEDS

6.3.1 Scope of Work

The estimated scope of work recommended here is to provide archival and oral historic evaluation of the significance of the identified historic archeological resources at the Joliet facility (including consultation with the SHPO) and the suggested survey of undisturbed lands. Because the extent of subsequent field investigations (a testing program or additional surface reconnaissance) is recommended to be a function of the historic evaluation and consultation project, no scopes of work or cost levels are provided for such field efforts.

The milestones for the recommended work would be:

- Completion of Part I, a preliminary draft report on the archival and oral historic research documenting the relative importance of the historic archeological resources presently identified on the Joliet AAP, and on needed additional field investigation of potentially significant sites; estimated to require 800 work hours in Illinois and in Washington, DC; completion of 13,479 acres survey and preliminary draft report, estimated to require 2157 hours

- Completion of DARCOM review of the preliminary draft Part I, as documented by a letter accepting the preliminary draft as appropriate for interagency consultation

- Completion of consultation (including both DARCOM representatives and the historical/archeological consultants) with the Illinois SHPO about the Part I research and evaluations, as documented in a letter of concurrence from the SHPO; estimated to require 40 consultant hours

- Completion of a report that includes the draft Part I and a draft Part II documenting the consultation process and including the statement of SHPO concurrence; estimated to require 60 consultant hours

- DARCOM review and acceptance of the report including both Parts I and II, and provision of the final report to the Illinois SHPO.

6.3.2 Implementation and Cost Estimates

Personnel needed for completion of the above-outlined tasks need professional expertise in historic archival and oral historic research, and in prehistoric and historic archeology; that expertise may reside in one person but is more likely to require work effort by at least two people. The archeological professional qualifications should meet the standards of the U. S. Department of the Interior (1983) and 36 CFR 66,

and the historical professional qualifications should meet the standards of the U. S. Department of the Interior (1983). The individual(s) making the archeological resource evaluations of significance should be skilled in management and compliance procedures, have a thorough understanding of regional historical and archeological needs and goals, and have field and/or laboratory experience in the area, and have an Antiquities Act permit.

The archivist/historian/archeologist should be supported by adequate secretarial/drafting personnel as they are needed to complete a final report. The physical plant administering implementation of the project should have adequate word processing and duplication capability to quickly and professionally prepare needed documents and correspondence.

Costs of professional archival expertise, including all necessary travel (using expertise local to each of the Washington, DC and Illinois archival research areas), reference, telecommunications, data management, search fee, and report preparation costs generally average between $25 and $30 per work-hour across the country for archival research and $20 to $25 per work-hour for reconnaissance survey. This rate does not include business fee or profit, general and administrative costs, or inflation costs, and is expressed in 1984 dollars. Using this rate, the 900 hours of professional time estimated for archival, consultation, and reporting activities for the recommended scope of work would have a baseline costs of range of $22,500 to $27,000, while the survey work of 2157 hours would have baseline costs between $43,140 and $53,925. Total costs would range between $65,640 and $80,925.

7.0
SUMMARY

As a manager of public lands, the Joliet AAP has responsibilities for the management of the natural and cultural resources held on those lands, for the general benefit of the American people. This report assesses the prehistoric and historic archeological resources retained on the Joliet facility, and presents a general set of recommendations for the future management of those cultural resources.

One archeological survey (Holien, Hancock, and Hobson 1978a, 1978b) investigated a small portion of the northernmost part of the Joliet AAP. Two survey transects were examined and two prehistoric sites located. One historic site, Reeds's Cemetery, is also recorded on the facility. In addition to these known archeological resources, two potential prehistoric sites and 250 potential historic sites are present within the facility boundaries. In order to more reliably characterize the archeological resources on the facility, both for legal compliance and for general planning purposes, a reconnaissance survey of indisturbed lands in recommended. Further, in order to better evaluate and eventually rank research priorities for the potential historic resources, additional archival research is required. Oral history research should also be undertaken to better document these sites. After the above data are collected, each site should be reevaluated and ranked and a sample of significant and/or unique sites should be field checked and then placed on a conservation list and prtotected from further disturbance.

Completion of a Historic Preservation Plan, in compliance with Army Regulation 420-40 and based on information available from this report

and from the HABS study currently being conducted, could provide the basis for an affirmative cultural resource management program appropriate to a land-managing agency whose fundamental misson is support for America's military.

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APPENDIX A

RESOURCE LOCATIONAL DATA

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